

ARHAI Scotland

Antimicrobial Resistance and Healthcare Associated Infection



National Infection Prevention and Control Manual

Methodology

Publication date: 8 November 2021

Key Information

Document title: National Infection Prevention and Control Manual Methodology

Date published/issued: 8 November 2021

Date effective from: 8 November 2021

Version/issue number: 3.3

Document type: Literature review

Document status: Final

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Version history

This literature review will be updated in real time if any significant changes are found in the professional literature or from national guidance/policy.

Version	Date	Summary of changes	Changes marked
3.3	November 2021	Updates to Appendix 5: Literature review search strategies.	
3.2	July 2021	Updates to Appendix 5: Literature review search strategies.	
3.1	September 2020	Updates to Appendix 5: Literature review search strategies	
3.0	September 2019	Updated to include two-person systematic methodology. Grading of recommendations updated to include new system based on HICPAC grading. New search strategies including this for CINHAL included for select literature reviews - more to be included as work progresses.	
2.0	July 2017	Addition of section 3.3.4 – Grading as ‘mandatory’ Addition of search terms for TBPs literature reviews ‘Infection Control During Care of the Deceased’ and ‘Personal Protective Equipment (PPE) for Infectious Diseases of High Consequence (IDHC).’	
1.0	November 2016	New document	

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1. Introduction

The NHSScotland National Infection Prevention and Control Manual (NIPCM) was first published on 13 January 2012, by the Chief Nursing Officer ([CNO \(2012\)1](#)), and updated on [17 May 2012](#). It is an evidence-based practice guide for use in Scotland containing Standard Infection Control Precautions (SICPs) and Transmission Based Precautions (TBPs), which when used can help reduce the risk of Healthcare Associated Infection (HAI) and ensure the safety of those being cared for, staff and visitors in the care environment.

The NIPCM aims to:

- Make it easy for care staff to apply effective infection prevention and control precautions.
- Reduce variation and optimise infection prevention and control practices throughout Scotland.
- Help reduce the risk of HAI.
- Help align practice, monitoring, quality improvement and scrutiny.

The NIPCM is mandatory for NHSScotland employees and applies to all healthcare settings. It can also be used in other care settings (for example care homes) where it should be considered best practice.

The NIPCM is underpinned by systematic literature reviews, these are primarily aimed at infection control specialists and summarise the available evidence and highlight research gaps. A number of supporting tools are available to complement the NIPCM including a compliance monitoring tool which may be utilised locally to monitor and record compliance with elements of the NIPCM. In April 2016 the [National Infection Prevention and Control Manual website](#) was launched to present the NIPCM and its associated literature reviews and supporting tools on a single standalone website which is also mobile device friendly.

2. Consensus and steering groups

2.1 Purpose

It is fundamental to the integrity and applicability of the NIPCM that a wide group of stakeholders are involved in its development. Involving experts from all appropriate multidisciplinary groups during development of the NIPCM and its associated literature reviews and supporting tools ensures that its recommendations are appropriate, practical and acceptable in all healthcare settings. The NIPCM is presented in chapters; a consensus group is created for the development of each new chapter. The National Infection Prevention and Control (NIPC) consensus group is responsible for contributing to the development of each chapter by taking part in wider consultation of the literature reviews underpinning the chapter and agreeing the resulting evidence-based recommendations.

Typically, following publication of a new chapter the consensus group is disbanded and the NIPC steering group oversees the maintenance of the chapter and its associated literature reviews and tools.

2.2 Membership

Both the consensus and steering groups have at least 1 representative (may also have a deputy) from each of the following professional organisations:

- Care Inspectorate
- Consultant Microbiologists
- Consultants in Public Health Medicine
- Health Facilities Scotland
- Healthcare Improvement Scotland
- Health Protection Nurses Network
- Health Protection Scotland
- Independent Health Care Forum

- Infection Control Doctors Network
- Infection Control Managers Network
- Infection Control Nurses Network
- Infection Prevention Society
- Institute of Occupational Safety and Health
- NHS National Education Scotland
- Occupational Health Nurses
- Occupational Health Doctors
- Scottish Care
- Scottish Clinical Virology Consultants Group
- Scottish Executive Nurse Directors
- Scottish Government Health and Social Care Directorates (observing only)
- Scottish Medical Microbiology and Virology Network
- Scottish Prison Service

Members are recruited by an invitation sent to NHS board or organisational executive leads to nominate representatives and deputies. All members must be employed in a relevant position i.e. related to Healthcare Associated Infection and Infection Control. A lay representative is also engaged for the lifespan of the NIPC steering group. This person will have an interest in the NHS and the reduction of the incidence and impact of HAI in Scotland through applicable and accessible infection prevention and control guidance. This person will also have a good understanding of the subject matter and will be a resident of a local NHS board. The lay representative is expected to attend all meetings and comment on recommendations from the perspective of patients.

2.3 Roles and responsibilities

The roles and responsibilities of all members of the consensus and steering groups are laid out in full in the terms of reference (ToR) corresponding to each group. Briefly, steering group members must:

- Contribute to the consultation process on the NIPCM (including literature reviews and any supporting documents/tools); feeding back the views of the professional groups/ organisations they represent such as barriers to implementation.
- Contribute to the identification of evidence/research gaps in the literature pertaining to the NIPCM and support the development of research studies to enhance the evidence base.
- Identify/review/update new/existing tools/procedures/systems that could assist NHS Boards & HPS in the prevention, identification and control of healthcare outbreaks and incidents.

Consensus group members must:

- Contribute to the continual development of the National Infection Prevention and Control Manual.
- Provide expert opinion/support to the National Policies Guidance and Outbreak Steering Group on the development of additional guidance.
- Agree the content of any supporting documentation and tools to ensure they are implementable across NHS Scotland.
- Contribute to the consultation and testing process of any new supporting documents and tools if required.
- Provide input at meetings; representing the views of all appropriate staff members /groups within their representing/professional body.

2.4 Meetings

Meetings of both the consensus and steering groups are scheduled on a quarterly basis for the lifespan of the group. In order for a meeting to be quorate at least 10 members (including the chair or their deputy) must be present and at least 6 organisations represented.

2.5 Competing interests

All members (including chairs) of both the consensus and steering group are required to declare any competing interests in accordance with the NIPCM competing interests policy ([appendix 2](#)).

3. Literature review methodology

Two methods for literature reviewing are currently in use for production of the NIPCM; a single-person methodology and a two-person methodology. It is intended that all NIPCM literature reviews will be update using the two-person methodology by end 2021. A summary comparison of the two methods is provided in [Appendix 7](#): Comparison of single-person and two-person methodology.

3.1 Development of research questions

The question sets within the literature reviews are based on the recommendations of the original Model policies (previously used in NHSScotland (archived December 2011)). All question sets are agreed by consultation with the NIPC steering and/or consensus group as well as relevant experts co-opted from within, healthcare, academia or other professional organisations. Additional research questions are also posed ad hoc if there is a need to address emerging infection control issues that have been identified by the NIPC steering group, or common themes emerging from stakeholder enquiries; these are refined and agreed using the same process.

3.2 Identifying evidence

In both the single- and two-person methodologies a lead scientist is responsible for running searches and retrieving articles. First and second stage screening and selection of relevant

articles is done independently either by a single reviewer or by at least two reviewers. In a single-person review there is no cross-checking of included and excluded articles, in a two-person review the final list of included articles is agreed jointly; if agreement cannot be reached the final decision will be made by a lead nurse consultant in infection control (NCIC). All search results, exclusions and consensus decisions are recorded for two-person review (full files are available on request).

3.2.1 Search strategies

Search strategies for literature reviews are initially developed by NIPC programme scientists using the PICO framework; these are further optimised by the HPS library service. A complete list of NIPCM search strategies is available in [Appendix 5](#): Literature review search strategies.

3.2.2 Databases and resources searched

The following electronic databases are searched for all relevant papers using the search terms in [appendix 5](#):

- Medline
- Embase
- Cinahl (Cumulative Index to Nursing and Allied Health Literature)
- The Cochrane Library (Cochrane DSR, DARE, CCTR, CMR, HTA, NHSEED)

The following online resources are also searched where appropriate in order to identify any relevant policy or guidance documents or any significant grey literature:

- Scottish Government Health Department (SGHD)
- Department of Health (DH)
- World Health Organization (WHO)
- Centers for Disease Control and Prevention (CDC)
- Public Health England (PHE)
- European Centre for Disease Prevention (ECDC)

- Society for Healthcare Epidemiology of America (SHEA)
- Association for Professionals in Infection Control and Epidemiology (APIC)
- National Resource for Infection Control (NRIC)
- SIGLE (Systems for the Information on Grey Literature in Europe)

3.2.3 Inclusion/exclusion criteria

A decision making algorithm is utilised by the responsible scientist(s) to aid the systematic search process ([appendix 6](#)). To avoid duplication of effort and ensure the recommendations of the NIPCM are compliant with mandatory guidance and legislation the responsible scientist(s) will first aim to identify whether the following evidence exists that answers the research question(s):

- Mandatory recommendations or legislation.
- Recent (<1 year) International/National guidelines that achieve the AGREE recommend rating.
- Older (>1 year) International/National guidelines that achieve the AGREE recommend rating and whose recommendations haven't been refuted/criticised by subsequent systematic reviews/meta-analysis.
- Recent (<1 year) systematic review/meta-analysis that achieve SIGN50 level 1++.

If evidence of the types described above is available it may not be necessary to carry out further literature searches, however, this will depend on the volume and quality of available evidence.

Titles and abstracts are reviewed according to appendix 6 and by subject relevance (inclusion), the following exclusion criteria are then applied.

Exclusion:

- Item is not applicable to health or social care settings;
- Item is focussed on compliance/promotion/monitoring or effectiveness of training;
- Item studies intervention(s) as part of a bundled approach;

- Item is appraised as having an unacceptable level of bias i.e. SIGN50 level 1- or 2-;
- Item is not available in English language;
- Item uses animal models of infection;
- Item was published outwith date limits.

3.3 Critical appraisal and grading of evidence

Identified studies and guidance documents are appraised and graded using the SIGN 50 methodology and AGREE tool, respectively. A lead reviewer critically appraises each study or guidance document, in two-person reviews a second reviewer carries out a check of a minimum 30% of the included studies. Errors or omissions are resolved by discussion, a final decision on any disagreements is made by the NCIC.

3.3.1 SIGN50 levels of evidence

1++

High quality meta-analyses, systematic reviews of Randomised Control Trials (RCTs), or RCTs with a very low risk of bias

1+

Well-conducted meta-analyses, systematic reviews, or RCTs with a low risk of bias

1-

Meta-analyses, systematic reviews, or RCTs with a high risk of bias

2++

High quality systematic reviews of case control or cohort studies

High quality case control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal

2+

Well-conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal

2-

Case control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal

3

Non-analytic studies, e.g. case reports, case series

4

Expert opinion

3.3.2 AGREE grades of recommendation

Strongly recommend: This indicates that the guideline has a high overall quality and that it can be considered for use in practice without provisos or alterations.

Recommend: This indicates that the guideline has a moderate overall quality. This could be due to insufficient or lacking information in the guideline for some items. If provisos or alterations are made the guideline could still be considered for use in practice, in particular when no other guidelines on the same topic are available.

Would not recommend: This indicates that the guideline has a low overall quality and serious shortcomings. Therefore it should not be recommended for use in practice.

3.4 Development of recommendations

Recommendations for practice are made within the literature reviews and are based on an assessment of the extant professional and scientific literature. Following assessment of the extant scientific literature evidence tables are compiled summarising each item and discussing its impact on/contribution to the specified topic area. Evidence tables are used in conjunction with the SIGN50 considered judgment form ([appendix 3](#)) to synthesize and grade draft recommendations based on the volume, consistency, applicability etc. of the available evidence.

Following a period of consultation (see [section 3.5](#)) final recommendations are agreed by consensus; if consensus is not reached a final decision is taken to a vote overseen by the chair of the NIPC steering group.

3.4.1 Grading of recommendations

Final recommendations are given a grade to highlight the strength of evidence underpinning them, the NIPCM grades of recommendations are as follows*:

Grade	Descriptor	Levels of evidence
Mandatory	'Recommendations' that are directives from government policy, regulations or legislation	N/A
Category A	Based on high to moderate quality evidence	SIGN level 1++, 1+, 2++, 2+, AGREE strongly recommend
Category B	Based on low to moderate quality of evidence which suggest net clinical benefits over harm	SIGN level 2+, 3, 4, AGREE recommend
Category C	Expert opinion, these may be formed by the NIPC groups when there is no robust professional or scientific literature available to inform guidance.	SIGN level 4, or opinion of NIPC group
No recommendation	Insufficient evidence to recommend one way or another	N/A

*literature review published before October 2018 use the SIGN50 (1999-2012) ABCD system for grading recommendations; this will be phased out as reviews are updated, anticipated completion by end 2021.

3.5 Consultation

All literature reviews undergo a process of consultation to ensure recommendations are unbiased and appropriate for all care settings. Where appropriate literature reviews are disseminated via the NIPC steering or consensus group (see [section 2.1](#)) to each of the professional bodies listed in [section 2.2](#) accompanied by a literature evaluation tool ([appendix 4](#)). Each member of the steering or consensus group is expected to collate and return the comments of the professional body/organisation they represent using the literature review evaluation tool ([appendix 4](#)). HPS collates all feedback from the group and addresses any concerns before final agreement at the next steering or consensus group meeting.

3.6 Wider consultation

All new literature reviews are required to undergo wider consultation (external peer review) before publication. Wider consultation follows the process described in section 3.5 but includes additional NHS Stakeholders and external organisations who are not involved in the development process. Literature reviews, any supporting tools and final chapters (where applicable) are sent to the following organisations in addition to the NIPC consensus group:

- Healthcare Environment Inspectorate
- NHS Board Health Protection Teams
- Executive Nurse Directors
- NHS 24/Inform
- Glasgow Caledonian University
- Scottish Heads of Academic Nursing & Allied Health Professionals
- British Medical Association
- British Dental Association
- Care Inspectorate
- Infection Prevention Society – Scottish Branch
- Royal College of Surgeons
- Royal College of Nursing
- Scottish Prison Services
- Scottish Care

4. Development of the NIPCM

All literature review recommendations are incorporated into in the NIPCM. The recommendations are consolidated into practice statements to allow a streamlined presentation which is easier for staff nearest to patients to read, understand and put into practice.

The SICPs literature review recommendations are consolidated under the ‘10 elements of SICPs’ in Chapter 1:

- Patient placement
- Hand hygiene
- Respiratory and cough hygiene
- Personal protective equipment
- Safe management of care equipment
- Safe management of the care environment
- Safe management of linen
- Safe management of blood and body fluid spills
- Safe disposal of waste
- Occupational safety: Prevention and exposure management (including sharps)

The TBPs literature review recommendations are consolidated under the following headings in Chapter 2:

- Patient placement
- Safe management of patient care equipment in an isolation room/cohort area
- Safe management of the care environment
- Personal protective equipment
- Infection prevention and control during care of the deceased

Chapter 3 is underpinned by a single literature review which informs the sections:

- Definitions of Healthcare Infection Incident, Outbreak and Data Exceedance, and
- Detection and recognition of a Healthcare Infection incident/outbreak or data exceedance

New chapters and any changes to the NIPCM are agreed by a process of consultation with the consensus and steering group, respectively (see [sections 2](#) and [3.5](#)).

5. Development of supporting tools

To support the implementation of the NIPCM by stakeholders a number of supporting tools are available. The tools are included in the NIPCM as appendices and are typically in the form of diagrams to illustrate processes and procedures, or algorithms to aid decision making processes. Supporting tools are directly informed by the content of the NIPCM and its associated literature reviews; they are subject to the same consultation process as the literature reviews that underpin them, which ensures they are evidence-based and fit for purpose.

6. Maintaining and updating the NIPCM

The NIPCM is a 'live' document; it is under continual review using a defined, systematic process. The evidence base which underpins the NIPCM recommendations is monitored using monthly autoalerts which utilise the search strategies detailed in [appendix 5](#); and RSS feeds for the following organisations:

- ECDC (Publications; News; Events)
- CDC (MMWR; Emergency Preparedness and Response; Recent Outbreaks and Incidents; Emerging Infectious Diseases Journal)
- HICPAC
- Cochrane library
- HSE (Health Services)
- WHO (News; Disease Outbreak news; Director General Speeches)

- NICE (Published Clinical Guidelines; Press Releases)
- Scottish Government (Health and Community Care; Public sector)
- UK Government (Public health England; Department of Health)
- ISD (latest Publications – Public Health; Research)

Periodic (annual) searches are run on other databases (CINAHL/EMBASE) using the original strategies to ensure that no relevant articles have been missed.

The responsible scientists (typically two named scientists for the NIPC programme) review all titles and abstracts to identify any evidence that supports, modifies or refutes the recommendations of the NIPCM. Any evidence identified which disagrees with current recommendations is subjected to immediate appraisal and inclusion in the relevant literature review following the methodology described in [section 3](#) of this document; changes are made to the NIPCM after consulting with the NIPC steering group. Any evidence identified which supports the current recommendations of the NIPCM is collated in an ongoing evidence table which is presented to the steering group on a quarterly basis. The identified evidence is subject to full appraisal as per the research methodology and addition to the relevant literature review(s) during the scheduled update (every three years).

Detailed roles and responsibilities for updating the NIPCM can be found in [appendix 1](#).

7. Presentation of guidance

All literature reviews are presented in a standardised format, the contents are limited to:

1. Objectives
2. Discussion
 - 2.1 Implications for practice
 - 2.2 Implications for research
3. Recommendations
4. References
5. Appendices

All draft versions of guidance and supporting tools are finalised by an information officer to ensure version control and consistency of presentation.

7.1 Document control

Document control sheets are standardised, present and up to date on all literature reviews and the NIPCM itself. Document control sheets include;

- Current version number;
- Publication date of current and previous versions;
- Any changes made to the document if a previous version exists (update level);
- Purpose and description of the document;
- Approvals;
- Target audience;
- Target clinical areas and any clinical areas to which the recommendations are not applicable;
- A cross reference section linking to this document and any related literature reviews or guidance documents.

The date of next review and owner/author will be printed on the title page of the document.

Similarly, all supporting tools should state the publication date, current version number and have ARHAI/NSS branding.

7.2 Language, clarity and ease of understanding

The NIPCM summarises the literature review recommendations into practice; individual recommendations and evidence (including grade(s)) underpinning these is presented in the associated literature reviews. This ensures staff nearest to patients can quickly access the necessary information via the NIPCM while the literature reviews provide a professional resource for infection control specialists.

To ensure recommendations are written explicitly so as to prevent misinterpretation by stakeholders and staff nearest to patients the literature review evaluation tool ([appendix 4](#)) specifically asks ‘Are the recommendations clear?’ In addition, the NIPCM includes an up to date glossary of terms. When a literature review is updated the responsible scientist and Senior Infection Control Nurse/Nurse Consultant in Infection Control determine whether any new terminology has been used which would require to be added to the glossary. New terms may also be added at the request of stakeholders e.g. via the NIPC steering group. Abbreviations are avoided where possible, only those that are commonly and frequently used in most care settings e.g. ABHR (alcohol based hand rub) are included.

8. Editorial independence

The NIPCM and its associated literature reviews and tools are funded by the Scottish Government. The Scottish Government HAI policy unit is present at meetings of the NIPC consensus and steering groups; however, this forms part of the governance structure and the representative acts as an observer only i.e. they do not take part in consultations or the forming of recommendations. The representative also complies with the competing interest policy for completeness.

9. Publication and dissemination

The NIPCM and its associated literature reviews and supporting tools are available electronically from the [NIPCM website](#). Any changes or updates to the content of the NIPCM, its associated literature reviews or supporting tools are communicated to stakeholders via the infection control digest (email); this is prepared and disseminated by the information officer and forms part of an overarching NIPC communications strategy.

10. Implementation

It is the responsibility of organisations to ensure adoption and implementation of the NIPCM in accordance with local governance policies (see [appendix 1](#)). As described in [section 5](#), a number of [supporting tools are available to support implementation of the NIPCM](#). In addition a compliance and quality improvement data collection tool accompanies the NIPCM. This data

collection tool has been designed to support SICPs implementation at a local level, e.g. ward level. It can be used by all staff disciplines in any care environment. The tool enables staff to assess compliance with any and all of the 10 SICPs elements as well as TBPs for patient placement and to identify any critical elements that need to be improved and the system changes that can help clinical teams ensure compliance and reduce the HAI risks in their care setting.

If an educational requirement is identified HPS collaborates with partner organisations such as NHS National Education Scotland (NES) to ensure the correct educational resources are considered/provided to staff.

11. Feedback and enquiries

The NIPCM website has a feedback section to allow frontline staff to comment on the usability of the website and its tools as well as issues with content or clarity. In addition, the HPS ICT has an enquiry system in place to field queries regarding infection control practices including implementation of the NIPCM. Issues with clarity, presentation, research gaps or barriers to implementation can also be highlighted through this system.

Appendix 1: Roles and responsibilities

The following responsibilities form part of the standard operating procedure (SOP) for maintaining the National Infection Prevention and Control Manual.

A list of [roles and responsibilities for adopting and implementing the NIPCM](#) can be found on the NIPCM website.

Nurse Consultant Infection Control responsible for:

- Chairing internal HPS NIPCM Editorial Group.
- Attending and contributing to the NIPC Steering Group and NIPCM Editorial Group.
- Proposing changes to and appraising feedback from the NIPCM from the HPS NIPC Steering Group and other relevant persons.
- Leading the ongoing development and maintenance of the NIPCM.
- Managing the updates to the NIPCM and /or supporting literature reviews to be undertaken by the Infection Control Team.
- Feedback proposed updates to the NIPCM and/or supporting literature reviews to the Scottish Antimicrobial Resistance and Healthcare Associated Infections (SARHAI) group.

Senior Nurse Infection Control/Programme Manager responsible for:

- Attending and contributing to the NIPC Steering group and the NIPCM Editorial Group.
- Preparing updates to the NIPCM based on the information provided by the Healthcare Scientist/Editorial Group and feedback from the HPS NIPC Steering Group.
- Ensuring that approved changes are made to the NIPCM and/or literature reviews by the Healthcare Scientist/Information Officer.
- Signing off document changes on the sign off-sheet.

Healthcare Scientists responsible for:

- Establishing autoalerts as required i.e. on identification of new subject areas/ agreement with Nurse Consultant Infection Control
- Monitoring outputs of the autoalerts (monthly)

- Screening the titles and abstracts for relevance
- Obtaining potentially relevant papers
- Critically appraising identified literature deemed to have a direct impact on recommendations
- Producing an ongoing evidence table of literature to be used for the annual update of literature reviews
- Producing a summary evidence table for discussion at the HPS NIPCM Editorial Group and for reporting at NAG meeting
- Updating literature reviews every 3 years or when new evidence will make a major change to recommendations
- Preparing agenda, minutes and other paperwork for the NIPCM Editorial Group Meeting

Information Officer responsible for:

- Attending the NIPCM Editorial Group
- Making changes to the NIPCM as instructed by the Senior Nurse Infection Control/Healthcare Scientist
- Completing the table of changes made to each version of the NIPCM
- Editing and formatting of the NIPCM and literature reviews
- Ensuring that these documents are signed off by the Senior Nurse Infection Control using the sign off sheet
- Updating the HPS website/NIPCM website with the NIPCM and literature reviews

Team Administrator responsible for:

- Preparing minutes and agenda and other correspondence for the NIPC Steering Group
- Collating comments received from consultation documents sent out for the NIPCM
- Booking meetings for the NIPC Steering Group

HPS Infection Control Team

- Informing Healthcare Scientist(s) of any new literature/guidance/legislation they become aware of which may impact on the NIPCM

Appendix 2: Competing interests policy and declaration of interests form

Why do we need a competing interests policy?

A competing interests policy strengthens the integrity of the development process for the National Infection Prevention and Control Manual (NIPCM) to ensure the recommendations produced are unbiased, evidence-based and not subject to any outside influence or commercial interests.

Who does this policy apply to?

This policy applies to all persons involved in the development of the NIPCM, its associated literature reviews and supporting tools. All members (including chairs) of the National Infection Prevention and Control Consensus and Steering groups and any invited peer reviewers from outwith these groups should complete the accompanying declaration of interests form.

How will declared competing interests be managed?

Individuals with competing interests are not eligible to chair the National Infection Prevention and Controls Consensus or Steering groups. Declared competing interests will be considered by the chair in the first instance, if the potential impact of the declared interest is unclear this will be discussed by the other members of the consensus/steering group(s) and taken to a vote. If declared interests are likely to impact on a significant number of topics the member may be asked to withdraw completely from the consensus/steering group(s). Members who have declared a topic-specific competing interest should withdraw from commenting or contributing to the development of any guidance to which the competing interest applies, an appointed deputy should take their place.

How will this policy be applied?

As per the terms of reference for both the steering and consensus groups, members will be asked to declare any new competing interests before each group meeting commences. Outwith meetings, new declarations should be made to the relevant chair using the 'declaration of competing interests' form, this should be copied to the HPS infection control mailbox for recording. Electronic copies of declaration of interest forms and related correspondence will be archived by HPS. All declarations of interest are solely for the use of the NIPC programme and will be treated as confidential.

What are competing interests?

A competing interest is any interest that conflicts with your official duties, impairs your ability to carry out your duties, and/or impacts on your work. Specifically, this policy describes any interest that may consciously or unconsciously influence your ability to provide independent, unbiased contributions to the development of the NIPCM, or its associated literature reviews and supporting tools.

Competing interests can be financial or non-financial, professional, or personal. Competing interests can arise in relation to an organisation or another person. Examples of conflicts of interest may include:

- A role or association with any commercial healthcare organisation/supplier including:
 - Share holding;
 - A prospect of future employment;
 - Partnerships and other forms of business e.g. consultancy;
- Receiving products directly from a commercial organisation without charge or at a reduced rate for any purpose (does not include unsolicited trial products, small promotional materials such as pens or any product purchased at a reduced rate negotiated by NHS Procurement and Commissioning Facilities);
- Where a family member or close personal relationship exists with an external body or somewhere where you may be in a position to award services to;
- *Membership of professional bodies (voluntary or remunerated) or mutual support organisations, including lobbying or advocacy organisations, political parties, funding bodies such as nongovernmental organisations, research institutions, or charities;
- A position of authority in an organisation in the field of health care;
- Patent applications (pending or actual), including individual applications or those belonging to the organisation to which the member is affiliated and from which the member may benefit;
- Research grants (from any source, restricted or unrestricted);
- Writing or consulting for an educational company;

- An author or associated personally or professionally with an author on any published study or guideline that is being discussed as part of development of the NIPCM or its associated literature reviews and supporting tools.

*Members are expected to present the opinions and concerns of the professional body or organisation they are representing; this is a fundamental process for both the consensus and steering group and includes raising organisational barriers to implementation that have been identified by their peers and colleagues, as such these do not constitute a competing interest.

National Infection Prevention and Control Group

Declaration of Competing Interests

All relevant persons as identified in the National Infection Prevention and Control (NIPC) Group Competing Interests Policy are required to complete and return this form in the event that a competing interest arises that may prevent them from contributing to the development of the National Infection Prevention and Control Manual (NIPCM), its associated literature reviews and supporting tools.

Individual to complete

Name	
Job title	
Representing body/professional body	
Email	

Statement of competing interest(s):

(Please provide details of the nature of any competing interests, including whether they apply to the development of the NIPCM in its entirety or to specific sections and whether they are temporary or permanent)

I confirm that I have read and understood the NIPC competing interests policy and that the information within this form is accurate and complete to the best of my knowledge.

Signed:

Date:

Signed by Chair:

Date:

Appendix 3: Considered judgement form (SIGN50)

Question:	Evidence Table Ref:
1. Volume of Evidence - Quantity of evidence on this topic and quality of method	
2. Applicability – in Scotland	
3. Generalisability - How reasonable it is to generalise from the available evidence	
4. Consistency - Degree of consistency demonstrated by the available evidence	
5. Potential Impact of the intervention	
6. Other factors to consider while assessing the evidence base	

7. Evidence Statement – synthesis of the evidence relating to this question	Evidence level
8. Recommendation -	Grade of Recommendation

Appendix 4: Literature review evaluation tool

Once completed, please return to HPS Infection Control Team at:

NSS.HPSInfectioncontrol@nhs.net.

Name:	
Organisation:	
Date:	
Literature Review Title:	

*Please provide further detail in comments column.

Does the literature review meet its objectives?		
Yes/No*	Section / Page No.	Comments / Suggested Amendments

Are the recommendations linked to the supporting evidence?		
Yes/No*	Section / Page No.	Comments / Suggested Amendments

Are the recommendations clear?		
Yes/No*	Section / Page No.	Comments / Suggested Amendments

Are there any relevant legislative/mandatory requirements or evidence that have not been included in the literature review?		
*Yes/No	Section / Page No.	Comments / Suggested Amendments

Are there any gaps in this literature review?		
*Yes/No	Section / Page No.	Comments / Suggested Amendments

Are there any errors in this literature review?		
*Yes/No	Section / Page No.	Comments / Suggested Amendments

Any further comments?		
Please use the box below to write any additional comments):		

Appendix 5: Literature review search strategies

Hand Hygiene (SICPs):

Hand Hygiene Products

EMBASE and MEDLINE search 2000 to current

1. exp Hand Disinfection/
2. exp Hand Hygiene/
3. handwash\$.mp.
4. (hand\$ adj2 wash\$).mp.
5. hand disinfection.mp.
6. hand hygiene.mp.
7. hand cleansing.mp.
8. hand saniti\$.mp.
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8
10. exp Cross Infection/
11. exp Infection/
12. exp Disease Transmission, Infectious/
13. exp Infection Control/
14. exp Bacterial Infections/
15. 10 or 11 or 12 or 13 or 14
16. exp Disinfectants/
17. exp Soaps/
18. soap\$.mp.
19. exp Anti-Infective Agents, Local/
20. alcohol based hand rub\$.mp.
21. non alcohol based hand rub\$.mp.
22. ABHR.mp.

- 23. antimicrobial hand wipe\$.mp.
- 24. 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23
- 25. 9 and 15 and 24

Limit 25 to English language

CINAHL search 2000 to current

- S26 S9 AND S15 AND S24 (English language)
- S25 S9 AND S15 AND S24
- S24 S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23
- S23 "antimicrobial hand wipe*"
- S22 "ABHR"
- S21 "non alcohol based hand rub"
- S20 "alcohol based hand rub*"
- S19 (MH "Antiinfective Agents, Local+")
- S18 "soap*" S17 (MH "Soaps")
- S16 (MH "Disinfectants")
- S15 S10 OR S11 OR S12 OR S13 OR S14
- S14 (MH "Bacterial Infections+")
- S13 (MH "Communicable Diseases+/TM")
- S12 (MH "Infection Control+")
- S11 (MH "Infection+")
- S10 (MH "Cross Infection+")
- S9 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7
- S8 (hand*) N2 (wash*)
- S7 "hand disinfection"
- S6 hand saniti*
- S5 "hand cleansing"
- S4 handwash*
- S3 (MH "Surgical Scrubbing")
- S2 "hand hygiene"
- S1 (MH "Handwashing+")

Hand Washing, Hand Rubbing and Indications for Hand Hygiene

EMBASE and MEDLINE search 2000 to current

1. exp Hand Disinfection/
2. exp Hand Hygiene/
3. handwash\$.mp.
4. (hand\$ adj2 wash\$).mp.
5. hand disinfection.mp.
6. hand hygiene.mp.
7. hand cleansing.mp.
8. hand saniti\$.mp.
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8
10. five moment\$.mp.
11. 5 moment\$.mp.
12. indication\$.mp.
13. exp Temperature/
14. temperature.mp.
15. method\$.mp.
16. technique\$.mp.
17. procedure\$.mp.
18. dry\$.mp.
19. jewelery.mp.
20. exp Jewelry/
21. jewellery.mp.
22. (hygiene adj4 facilit\$).mp.
23. exp Health Facility Environment/
24. exp Anti-Infective Agents, Local/
25. alcohol based hand rub\$.mp.

- 26. abhr.mp.
- 27. 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26
- 28. 9 and 27

Limit 28 to English Language

CINAHL search 2000 to current (indications)

- S9 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 (English language)
- S8 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7
- S7 (when or indication*) N4 (wash* N2 hand*)
- S6 (when or indication*) N4 (hand hygiene)
- S5 (when or indication*) N4 (clean* N2 hand*)
- S4 (when or indication*) N4 (disinfect* N2 hand*)
- S3 (when or indication*) N4 (handwash*)
- S2 "5 moment**"
- S1 "five moment**"

CINAHL search 2000 to current (hand washing)

- S24 S9 AND S22 (English language)
- S23 S9 AND S22
- S22 S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21
- S21 (hand) N2 (wash*) N4 (basin*)
- S20 (hand) N2 (wash*) N4 (sink*)
- S19 (hygiene) N4 (facilit*)
- S18 (MH "Health Facility Environment")
- S17 "jewelry"
- S16 "jewellery"
- S15 (MH "Jewelry")

S14 "dry*"

 S13 "procedure*"

 S12 "technique*"

 S11 "temperature"

 S10 (MH "Temperature+")

 S9 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8

 S8 "hand disinfection"

 S7 hand saniti*

 S6 "hand cleansing"

 S5 (hand*) N2 (wash*)

 S4 "handwash*"

 S3 (MH "Surgical Scrubbing")

 S2 "hand hygiene"

 S1 (MH "Handwashing+")

CINAHL search 2000 to current (use of ABHR)

S25 S16 AND S23 (English language)

 S24 S16 AND S23

 S23 S17 OR S18 OR S19 OR S20 OR S21 OR S22

 S22 "religio*"

 S21 (MH "Religion and Religions+")

 S20 (hygiene) N4 (facili*)

 S19 (MH "Health Facility Environment")

 S18 "procedure*"

 S17 "technique*"

 S16 S9 AND S15

 S15 S10 OR S11 OR S12 OR S13 OR S14

 S14 "alcohol*"

 S13 (MH "Alcohols+")

 S12 "ABHR"

 S11 "alcohol based hand rub*"

 S10 (MH "Antiinfective Agents, Local+")

 S9 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8

 S8 "hand disinfection"

- S7 hand saniti*
- S6 "hand cleansing"
- S5 (hand*) N2 (wash*)
- S4 "handwash**"
- S3 (MH "Surgical Scrubbing")
- S2 "hand hygiene"
- S1 (MH "Handwashing+")

Skin Care

EMBASE and MEDLINE search 2000 to current

1. exp Hand Disinfection/
2. exp Hand Hygiene/
3. handwash\$.mp.
4. (hand\$ adj2 wash\$).mp.
5. hand disinfection.mp.
6. hand hygiene.mp.
7. hand cleansing.mp.
8. hand saniti\$.mp.
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8
10. exp Dermatitis, Contact/
11. exp Dermatitis, Irritant/
12. exp Eczema/
13. exp Hand Dermatoses/
14. exp Skin/
15. exp Skin Care/
16. 10 or 11 or 12 or 13 or 14 or 15
17. exp Soaps/
18. liquid soap\$.mp.
19. Anti-Infective Agents, Local/
20. alcohol based hand rub\$.mp.
21. ABHR.mp.
22. exp Emollients/
23. emollient\$.mp.
24. 17 or 18 or 19 or 20 or 21 or 22 or 23
25. 9 and 16 and 24

Limit 25 to English language

CINAHL search 2000 to current

S30 S9 AND S19 AND S28 (English language)
S29 S9 AND S19 AND S28
S28 S20 OR S21 OR S22 OR S23 OR S24 OR 25 OR S26 OR S27
S27 "emollient*"
S26 (MH "Emollients+")
S25 "ABHR"
S24 "alcohol based hand rub*"
S23 (MH "Antiinfective Agents, Local+")
S22 "liquid soap"
S21 "soap*"
S20 MH "Soaps"
S19 S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18
S18 "Skin Care+"
S17 MH "Skin+"
S16 S14 AND S15
S15 MH "Hand+"
S14 "MH "Dermatitis+"
S13 "hand dermatitis"
S12 (MH "Eczema")
S11 (dermat*) N2 (irritant*)
S10 (MH "Dermatitis, Contact+")
S9 1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8
S8 (hand*) N2 (wash*)
S7 "hand disinfection*"
S6 hand saniti*
S5 "hand cleansing"
S4 handwash*
S3 MH "Surgical Scrubbing"
S2 "hand hygiene"
S1 MH "Handwashing+"

Surgical Hand Antisepsis in the Clinical Setting

EMBASE and MEDLINE search 2000 to current

1. exp Hand Disinfection/
2. exp Hand Hygiene/
3. handwash\$.mp.
4. (hand\$ adj2 wash\$).mp.
5. hand disinfection.mp.
6. hand hygiene.mp.
7. hand cleansing.mp.
8. hand saniti\$.mp.
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8
10. exp Specialties, Surgical/
11. invasive procedure\$.mp.
12. exp Operating Rooms/
13. operating theatre\$.mp.
14. 10 or 11 or 12 or 13
15. surgical scrub\$.mp.
16. (surg\$ adj2 scrub\$).mp.
17. jewelry.mp.
18. jewellery.mp.
19. technique\$.mp.
20. method\$.mp.
21. procedure\$.mp.
22. dry\$.mp.
23. (hygiene adj4 facilit\$).mp.
24. exp Health Facility Environment/
25. 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24
26. 9 and 14 and 25

Limit 26 to English language

CINAHL 2000 to current

- S29 S26 OR S27 (English language)
- S28 S26 OR S27
- S27 MH "Surgical Scrubbing"
- S26 S8 AND S14 AND S24
- S25 S8 AND S14 AND S24 149
- S24 S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23
- S23 MH "Health Facility Environment"
- S22 (hygiene) N4 (facilit*)
- S21 "dry*"
- S20 "procedure*"
- S19 "method*"
- S18 "technique*"
- S17 "jewellery"
- S16 "jewelry"
- S15 MH "Jewelry"
- S14 S9 OR S10 OR S11 OR S12 OR S13
- S13 "operating theatre*"
- S12 MH "Operating Room Personnel+"
- S11 MH "Operating Rooms"
- S10 MH "Invasive Procedures+"
- S9 MH "Specialties, Surgical+"
- S8 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7
- S7 "hand disinfection"
- S6 "hand saniti*"
- S5 "hand cleansing"
- S4 (hand*) N2 (wash*)
- S3 "handwash*"
- S2 "hand hygiene"
- S1 MH "Handwashing+"

Management of equipment and the environment

Management of Patient Care Equipment (SICPs and TBPs)

EMBASE and MEDLINE search 2000 to current

1. diagnostic equipment/
2. disposable equipment/
3. (reus* adj3 equipment).mp.
4. (communal adj3 equipment).mp.
5. (non invasive adj3 equipment).mp.
6. medical device/
7. 1 or 2 or 3 or 4 or 5 or 6
8. disinfection/
9. decontamination/
10. decontaminat*.mp.
11. hospital service/
12. disinfectant agent/
13. surfactant/
14. cleaning/
15. infection control/
16. 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15
17. 7 and 16
18. disposable equipment/
19. (dispos* adj3 equipment).mp.
20. (single-use adj3 equipment).mp.
21. 18 or 19 or 20
22. (terminal adj3 clean*).mp.
23. (terminal adj3 disinfect*).mp.
24. deep clean*.mp.
25. (discharge adj3 clean*).mp.
26. 22 or 23 or 24 or 25
27. 21 and 26
28. 17 or 27

Limit 28 to English language

Safe Management of the Care Environment (SICPs)

EMBASE and MEDLINE search 2000 to current

1. disease transmission/
2. infection/
3. exp disinfection/
4. hospital service/
5. communicable disease control/
6. cross infection/
7. infection control/
8. 1 or 2 or 3 or 4 or 5 or 6 or 7
9. cleaning/
10. (environment* adj3 clean*).mp.
11. (environment adj3 contamin*).mp.
12. (environment adj3 disinfect*).mp.
13. (environment* adj3 decontaminat*).mp.
14. (surface* adj3 clean*).mp.
15. (surface* adj3 contaminat*).mp.
16. (surface* adj3 disinfect*).mp.
17. (surface* adj3 decontaminat*).mp.
18. 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. 8 and 18

Limit 19 to English language and human

Safe Management of the Care Environment (TBPs)

EMBASE and MEDLINE search 2000 to current

1. exp disinfection/
2. decontamination/
3. detergent/
4. disinfectant agent/
5. exp contamination/
6. contaminat*.mp.
7. 1 or 2 or 3 or 4 or 5 or 6
8. patient isolation/ or isolation/

9. isolation hospital/
10. cohorting.mp.
11. side room.mp.
12. single room.mp.
13. (patient* adj3 room*).mp.
14. 8 or 9 or 10 or 11 or 12 or 13
15. 7 and 14

Limit 15 to English language

Safe Management of the Care Environment – Isolation and Cohorting (TBPs)

EMBASE and MEDLINE search 2000 to current

1. exp Patient Isolation/
2. exp Hospitals, Isolation/
3. cohorting.mp.
4. exp Patients' Rooms/
5. side room.mp.
6. single room.mp.
7. 1 or 2 or 3 or 4 or 5 or 6
8. decontamina*.mp.
9. exp Disinfection/
10. exp Disinfectants/
11. exp Detergents/
12. exp Decontamination/
13. 8 or 9 or 10 or 11 or 12
14. 7 and 13

Limit 14 to English language

Safe Management of the Care Environment - Terminal Cleaning (TBPs)

EMBASE and MEDLINE search 2000 to current

1. (terminal adj3 clean*).mp.
2. (terminal adj3 disinfect*).mp.
3. deep clean*.mp.
4. (discharge adj3 clean*).mp.

5. 1 or 2 or 3 or 4

Limit 5 to English language

Personal Protective Equipment (PPE)

Aprons and Gowns (SICPs and TBPs)

EMBASE and MEDLINE search 2000 to current

1. Gown?.mp
2. Apron?.mp
3. 1 or 2
4. Exp Infection/
5. Exp Cross Infection/
6. Exp Infection Control/
7. Exp Disease Transmission, Infectious/
8. 4 or 5 or 6 or 7
9. 3 and 8

Limit 9 to English language

Eye/Face Protection (SICPs and TBPs)

EMBASE and MEDLINE search 2000 to current

1. Exp Eye Protective Devices/
2. Goggles.mp
3. Face shield?.mp
4. Visor?.mp
5. 1 or 2 or 3 or 4
6. Exp Hospitals/
7. Exp Infection/
8. Exp Infection Control/
9. Exp Cross Infection/
10. Exp Disease Transmission, Infectious/
11. 6 or 7 or 8 or 9 or 10
12. 5 and 11

Limit 12 to English language

Footwear (SICPs)

EMBASE and MEDLINE search 2000 to current

1. Shoes/
2. (shoe* adj3 cover*).mp
3. overshoe*.mp
4. over shoe*.mp
5. footwear.mp
6. shoe*.mp
7. 1 or 2 or 3 or 4 or 5 or 6
8. Exp Hospitals/
9. Exp Infections/
10. Exp Infection Control/
11. Exp Disease Transmission, Infectious/
12. 8 or 9 or 10 or 11
13. 7 and 12

Limit 13 to English language and human

CINAHL search 2000 to current

- S14 S7 and S12 (English language)
- S13 S7 and S12
- S12 S8 or S9 or S10 or S11
- S11 (MH "Disease Transmission+")
- S10 (MH "Infection Control+")
- S9 (MH "Infection+")
- S8 (MH "Hospitals+")
- S7 S1 or S2 or S3 or S4 or S5 or S6
- S6 shoe*
- S5 footwear
- S4 over shoe*
- S3 overshoe*
- S2 shoe* n3 cover*
- S1 (MH "Shoes")

Gloves (SICPs)

EMBASE and MEDLINE search 2000 to current

1. Exp Gloves, Protective/
2. Exp Gloves, Surgical/
3. Glove?.mp
4. 1 or 2 or 3
5. Exp Infection/
6. Exp Infection Control/
7. Exp Cross Infection/
8. Exp Disease Transmission, Infectious/
9. 5 or 6 or 7 or 8
10. 4 and 9

Limit 10 to English language

Headwear (SICPs)

EMBASE and MEDLINE search 2000 to current

1. Head Protective Devices/
2. head wear.mp.
3. headwear.mp.
4. headgear.mp.
5. head gear.mp.
6. hat?.mp.
7. 1 or 2 or 3 or 4 or 5 or 6
8. exp Infections/
9. exp Infection Control/
10. exp Disease Transmission, Infectious/
11. exp Hospitals/
12. 8 or 9 or 10 or 11
13. 7 and 12

Limit 13 to English language

CINAHL search 2000 to current

- S14 S6 AND S13 (English language)
- S13 S7 OR S8 OR S9 OR S10 OR S11 OR S12
- S12 (MH "Cross Infection+")
- S11 (MH "Religion and Religions+")
- S10 (MH "Disease Transmission+")
- S9 (MH "Infection Control+")
- S8 (MH "Infection+")
- S7 (MH "Hospitals+")
- S6 S1 OR S2 OR S3 OR S4 OR S5
- S5 "headwear"
- S4 headgear
- S3 head wear
- S2 hat?
- S1 (MH "Head Protective Devices")

Surgical Face Masks (SICPs and TBPs)

EMBASE and MEDLINE search 2000 to current

1. exp Masks/
2. mask?.mp.
3. surgical mask?.mp.
4. 1 or 2 or 3
5. exp infection/
6. exp Infection Control/
7. exp Cross Infection/
8. exp Disease Transmission, Infectious/
9. transmission based precaution?.mp. (203)
10. exp infectious disease transmission, patient-to-professional/
11. ((contact or airborne or droplet) and infection\$).mp.
12. ((contact or airborne or droplet) and precaution\$).mp.
13. barrier precautions.mp.
14. exp Patient Isolation/
15. exp Universal Precautions/

16. enteric precautions.mp.
17. source isolation.mp.
18. isolation precautions.mp.
19. strict isolation.mp.
20. 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19
21. 4 and 20

Limit 21 to English language

Respiratory Protective Equipment (RPE) (TBPs)

EMBASE and MEDLINE search 2000 to current

1. exp Respiratory Protective Devices/
2. respiratory.mp.
3. respirators.mp.
4. FFP3.mp.
5. filtering face piece.mp.
6. filtering facepiece.mp.
7. 1 or 2 or 3 or 4 or 5 or 6
8. exp Infection/
9. exp Infection Control/
10. exp Cross Infection/
11. exp Disease Transmission, Infectious
12. decontamination.mp. or Decontamination/
13. contamination.mp. or Equipment Contamination/
14. 8 or 9 or 10 or 11 or 12 or 13
15. 7 and 14

Limit 15 to English language

CINAHL search 2000 to current

- S22 S7 AND S20 (English language)
- S21 S7 AND S20
- S20 S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR 17 OR S18
OR S19
- S19 (MH "Bacterial Contamination")

S18 (MH "Microbial Contamination")
 S17 "contamination"
 S16 (MH "Equipment Contamination")
 S15 "decontamination"
 S14 (MH "Sterilisation and Disinfection+")
 S13 (MH "Disease Transmission, Horizontal+")
 S12 (MH "Disease Transmission, Patient-to-Professional")
 S11 (MH "Disease Transmission+")
 S10 (MH "Cross Infection+")
 S9 (MH "Infection Control+")
 S8 (MH "Infection+")
 S7 S1 OR S2 OR S3 OR S4 OR S5 OR S6
 S6 "FFP3"
 S5 "filtering facepiece"
 S4 "filtering face piece"
 S3 "respirators"
 S2 "respirator"
 S1 (MH "Respiratory Protective Devices")

Personal Protective Equipment (PPE) for Infectious Diseases of High Consequence (IDHC) (TBPs)

EMBASE and MEDLINE search 2000 to current

1. PPE or personal protective equipment.mp
2. coverall or suit.mp
3. glove\$ or apron or visor\$.mp
4. boot cover\$ or over shoes or shoe cover.mp
5. surgical mask\$.mp
6. respiratory protection or respirator or N95 or FFP3 or filtering face piece.mp
7. enhanced PPE or enhanced personal protective equipment.mp
8. 1 or 2 or 3 or 4 or 5 or 6 or 7
9. pandemic or epidemic.mp

10. VHF or viral haemorrhagic fever or ebola or Crimean Congo haemorrhagic fever or Marburg virus.mp
11. influenza or avian influenza.mp
12. MERS-CoV or middle eastern respiratory syndrome or coronavirus or SARS or severe acute respiratory syndrome.mp
13. smallpox or monkeypox.mp
14. nipah virus or hantavirus.mp
15. plague or Yesinia pestis.mp
16. Severe fever with thrombocytopaenia syndrome.mp
17. infectious disease\$ of high consequence or high consequence infectious disease\$ or high consequence infection.mp
18. 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. donning or doffing or remov\$.mp
20. contamination or decontamination.mp
21. competence or competency or competent.mp
22. infection control.mp
23. 19 or 20 or 21 or 22
24. 8 and 18 and 23

Limit 24 to English language

Aerosol Generating Procedures (AGPs) (TBPs)

EMBASE and MEDLINE search 2000 to current

1. exp high frequency ventilation/
2. ventilation, mechanical.mp
3. intubation, intratracheal/
4. Endotracheal intubation.mp.
5. Tracheostomy.mp.

6. bronchoscopy.mp.
7. (Nebulization or nebulie).mp.
8. (Sputum adj2 induction).mp.
9. (Oxygen adj2 therapy).mp.
10. (Autopsy or Post-mortem).mp.
11. ((Respiratory or airway or air way or open) adj3 suction*).mp.
12. Heat moisture exchange.mp. (
13. thoracostomy.mp.
14. ((chest adj3 physiotherapy) or (chest adj3 physical therapy)).mp.
15. (sputum adj3 (induction or inducing)).mp.
16. (lung function test* or pulmonary function test*).mp.
17. exp cardiopulmonary resuscitation/
18. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. aerosol generating procedure.tw.
20. aerosol generating procedure*.mp.
21. (aerosol adj3 procedure).mp.
22. (aerosol or airborne or airbourne).mp.
23. Occupational exposure.mp.
24. Infectious disease transmission.mp.
25. Airborne infection.mp.
26. Infection control.mp.
27. Infection control, dental.mp.
28. exp cross infection/
29. Disease outbreaks.mp.
30. Disease transmission.mp.
31. Aerosol*.mp.
32. 19 or 20 or 21 or 22 or 25 or 31

33. 18 and 32
34. 23 or 24 or 26 or 28 or 29 or 30 or 33
35. 18 and 32 and 34
36. limit 35 to english language
37. limit 36 to human
38. limit 37 to humans

CINAHL search 2000 to current

- S20 Limit to English language
- S19 S17 AND S18
- S18 S12 OR S14 OR S15 OR S16
- S17 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S13
- S16 "exp infection control" OR (MH "Infection Control+") OR (MH "Cross Infection+")
- S15 (MM "Occupational Exposure")
- S14 "airborne"
- S13 (MH "Ultrasonic Surgical Procedures+")
- S12 "aerosol generating procedure" OR (MM "Aerosols")
- S11 (MH "Resuscitation, Cardiopulmonary") OR (MH "Bystander CPR") OR "cardiopulmonary resuscitation"
- S10 (MH "Chest Physical Therapy") OR (MH "Chest Physiotherapy (Iowa NIC)") OR (MH "Chest Physiotherapy (Saba CCC)") OR "chest physiotherapy or chest physical therapy"
- S9 "Autopsy or Postmortem"
- S8 (MH "Sputum") OR "induction of sputum or sputum induction"
- S7 (MH "Nebulizers and Vaporizers") OR (MH "Bronchial Provocation Tests") OR "Nebulisation or nebulise or nebulization or nebulize" S6 (MH "Bronchoscopy") OR "bronchoscopy"
- S5 (MH "Thoracostomy")
- S4 (MH "Tracheostomy") OR "tracheostomoy"
- S3 (MH "Intubation, Intratracheal+") OR (MH "Intubation+") OR (MH "Tube Removal") OR (MH "Laryngeal Masks") OR (MH "Extubation")

- S2 (MH "Ventilation, High Frequency+") OR (MM "Ventilators, Mechanical") OR (MH "Positive Pressure Ventilation+") OR (MH "Tracheostomy and Ventilator Swallowing and Speaking Valve") OR (MH "Ventilation, Manual") OR (MH "Ventilation, Negative Pressure") OR (MM "Intermittent Positive Pressure Ventilation") OR (MH "Respiration, Artificial+")
- S1 (MH "Ventilation, High Frequency+")

Management of Blood and Body Fluid Spillages (SICPs)

MEDLINE search 2020 to current

1. exp Blood/
2. exp Body Fluids/
3. exp Feces/
4. exp Urine/
5. exp Bodily Secretions/
6. exp Vaginal Discharge/
7. 1 or 2 or 3 or 4 or 5 or 6
8. exp Disinfection/
9. exp Decontamination/
10. exp Disinfectants/
11. housekeeping, hospital/ or laundry service, hospital/
12. Occupational Exposure/pc [Prevention & Control]
13. clean*.mp
14. exp Universal Precautions/
15. 8 or 9 or 10 or 11 or 12 or 13 or 14
16. 7 and 15

Limit 16 to English language

EMBASE search 2000 to current

1. exp blood/
2. exp body fluid/
3. exp urine/
4. exp feces/
5. exp bodily secretions/
6. bodily secretions.mp.
7. bodily fluids.mp.
8. 1 or 2 or 3 or 4 or 5 or 6 or 7
9. occupational exposure/pc [Prevention]
10. exp disinfection/
11. exp disinfectant agent/
12. exp decontamination/
13. exp detergent/
14. exp hospital service/
15. exp laundry/
16. exp cleaning/
17. domestic chemical/
18. housekeeping/
19. clean*.mp.
20. 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19
21. 8 and 20
22. exp animals/ not humans
23. 21 NOT 22
24. limit 23 to (conference abstract or letter)
25. 23 NOT 24

Limit 25 to English language

CINAHL search 2000 to current

- S24 S8 AND S21 (Limit year 2000 to 2019)
- S23 S8 AND S21 (English language)
- S22 S8 AND S21
- S21 S8 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20
- S20 (MH "Mandatory Reporting") OR "mandatory requirements"
- S19 (MH "Policy and Procedure Manuals")
- S18 (MH "Hospital Policies+")
- S17 (MH "Legislation") OR (MH "Government Publications") OR (MH "Grey Literature")
- S16 "clean*"
- S15 (MH "Housekeeping Department") OR (MH "Laundry Department")
- S14 (MH "Disinfectants")
- S13 (MH "Cleaning Compounds")
- S12 "spillage*"
- S11 (MH "Occupational Exposure/PC")
- S10 (MH "Sterilisation and Disinfection+")
- S9 (MH "Universal Precautions")
- S8 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7
- S7 vaginal discharge
- S6 bodily fluids
- S5 "bodily secretions"
- S4 (MH "Feces+")
- S3 (MH "Urine")
- S2 (MH "Body Fluids+")
- S1 (MH "Blood+")

Occupational Exposure Management (including sharps) (SICPs)

EMBASE and MEDLINE search 2000 to current

1. Exp Needlestick Injuries/
2. Exp Occupational Exposure/
3. (sharp? Adj3 injur*).mp
4. 1 or 2 or 3
5. Exp Accident Prevention/
6. Exp Cross Infection/
7. Exp Infection Control/
8. Exp Infection/
9. (safe adj2 practice).mp
10. Exp Infectious Disease Transmission, Patient-to-Professional/
11. 5 or 6 or 7 or 8 or 9 or 10
12. 4 and 11

Limit 12 to English language

Safe Management of Linen (SICPs and TBPs)

MEDLINE and EMBASE search 2000 to current

1. Exp "Bedding and Linens"/
2. linen*.mp
3. bedding*.mp
4. 1 or 2 or 3
5. Laundering/
6. Laundry Service, Hospital/
7. laundr*.mp
8. launder*.mp

9. exp Hospitals/
10. exp Infections/
11. exp Infection Control/
12. exp Disease Transmission, Infectious/
13. 5 or 6 or 7 or 8
14. 9 or 10 or 11 or 12
15. 4 and 13 or 14

Limit 15 to English language

Safe Disposal of Waste (SICPs)

EMBASE and MEDLINE search 2000 to current

1. exp Medical Waste/
2. exp Hazardous Waste/
3. exp Refuse Disposal/
4. exp Waste Disposal, Fluid/
5. exp Waste Management/
6. exp Medical Waste Disposal/
7. clinical waste.mp.
8. health* waste.mp.
9. sharp* disposal.mp.
10. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9
11. exp Hospitals/
12. exp Infection/
13. exp Infection Control/
14. exp Cross Infection/
15. exp Transportation/
16. exp Disease Transmission, Infectious/
17. 11 or 12 or 13 or 14 or 15 or 16

18. 10 and 17

Limit 18 to English language

CINAHL search 2000 to current

- S17 S8 AND S15 English Language
- S16 S8 AND S15
- S15 S9 OR S10 OR S11 OR S12 OR S13 OR S14
- S14 (MH "Transportation+")
- S13 (MH "Communicable Diseases+")
- S12 (MH "Cross Infection+")
- S11 (MH "Infection Control+")
- S10 (MH "Infection+")
- S9 (MH "Hospitals+")
- S8 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7
- S7 "health* waste"
- S6 "clinical waste"
- S5 "waste management"
- S4 (MH "Sharps Disposal")
- S3 (MH "Medical Waste Disposal")
- S2 (MH "Medical Waste+")
- S1 (MH "Hazardous Materials")

Cough Etiquette/Respiratory Hygiene (SICPs)

MEDLINE search 2015 to current

1. Exp cough/
 2. Exp sneezing/
 3. Cough etiquette.mp
 4. Respiratory hygiene.mp
-

5. 1 or 2 or 3 or 4
6. Exp Hand hygiene/
7. Exp Infection Control/
8. Exp Cross Infection/
9. Exp Disease Transmission, Infectious/
10. 6 or 7 or 8 or 9
11. 5 and 10

Limit 11 to English language

EMBASE search 2015 to current

1. Exp coughing/
2. Exp sneezing/
3. Cough etiquette.mp
4. Respiratory hygiene.mp
5. 1 or 2 or 3 or 4
6. Exp hand washing/
7. Exp infection control/
8. Exp cross infection/
9. Exp disease transmission/
10. 6 or 7 or 8 or 9
11. 5 and 10

Limit 11 to English language

CINAHL searched 2015 to current

S11 S5 and S10 English language and human

S10 S6 or S7 or S8 or S9

S9 (MH"Disease Transmission+")

S8 (MH"Cross Infection+")

S7 (MH"Infection Control+")

S6 (MH"Handwashing+")

S5 S1 or S2 or S3 or S4

S4 "Respiratory hygiene"

S3 "Cough etiquette"

S2 (MH"Sneezing")

S1 (MH"Cough")

Patient Placement, Isolation, and Cohorting

Patient Placement Isolation and Cohorting (SICPs)

MEDLINE search 17th July 2018 to current

1. exp patient isolation/
2. exp hospitals, isolation/
3. cohorting.mp.
4. (EXP RESIDENTIAL FACILITIES/ OR EXP HOME CARE SERVICES/) AND ISOLATION.MP
5. exp patients' rooms/
6. single room?.mp.

7. side room?.mp.
8. 1 or 2 or 3 or 4 or 5 or 6 or 7
9. exp infections/
10. exp disease transmission, infectious/
11. exp universal precautions/
12. exp infection control/
13. 9 or 10 or 11 or 12
14. 8 and 13

Limit 14 to English language and humans

EMBASE search 17th July 2018 to current

1. exp patient isolation/
2. exp hospitals, isolation/
3. cohorting.mp.
4. (EXP RESIDENTIAL FACILITIES/ OR EXP HOME CARE SERVICES/) AND ISOLATION.MP
5. exp patients' rooms/
6. single room?.mp.
7. side room?.mp.
8. 1 or 2 or 3 or 4 or 5 or 6 or 7
9. exp infections/
10. exp disease transmission, infectious/
11. exp universal precautions/
12. exp infection control/
13. 9 or 10 or 11 or 12
14. 8 and 13 English language and humans

Limit 14 to (English language and humans)

CINAHL search 17th July 2018 to current

S13 S11 and S12 (Limit to English language and exclude Medline results)

S12 S7 or S8 or S9 or S10

S11 S1 or S2 or S3 or S4 or S5 or S6

S10 (MH "Infection Control+")

S9 TX universal precautions

S8 (MH "Disease Transmission+")

S7 (MH "Infection+")

S6 TX single room

S5 TX side room

S4 (MH "Patients' Rooms+")

S3 TX cohorting

S2 (MH "HOSPITALS+" AND "ISOLATION") OR (MH "RESIDENTIAL FACILITIES+" AND "ISOLATION")

S1 (MH "Patient Isolation+")

Infection Prevention and Control during Care of the Deceased (TBPs)

EMBASE and MEDLINE search 2000 to current

1. Exp. Cadaver/
2. Last offices.mp
3. Exp funeral rites/
4. Care after death.mp
5. Exp mortuary practice/
6. (recent*adj3 deceased).mp
7. Exp embalming/
8. Body bag*.mp
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8
10. Exp infection/
11. Exp infection control/
12. Exp cross infection/
13. Exp disease outbreaks/
14. Exp disease transmission, infectious
15. 10 or 11 or 12 or 13 or 14
16. 9 and 15

Limit 16 to English language

Management of Incidents and Outbreaks in Neonatal Units (NNUs)

EMBASE and MEDLINE search 2000 to current

1. (neonat* or NICU or newborn or preterm or premature)
2. (outbreak adj3 prevention).mp
3. (outbreak adj3 management).mp
4. (outbreak adj3 control).mp
5. (outbreak adj3 reporting).mp
6. (outbreak adj3 investigation).mp

7. 2 or 3 or 4 or 5 or 6

8. 1 and 7

Limit 8 to English language

Definitions of Transmission Based Precautions (TBPs)

MEDLINE and EMBASE search 2000 to current

1. "transmission based precaution*".mp.

2. "additional infection control*".mp.

3. "airborne transmission*".mp.

4. "droplet transmission*".mp.

5. "contact transmission*".mp.

6. airborne.mp.

7. droplet*.mp.

8. "contact precaution*".mp.

9. exp Aerosols/

10. aerosol*.mp.

11. exp Infection Control/

12. exp Infections/

13. exp Disease Transmission, Infectious/

14. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10

15. 11 or 12 or 13

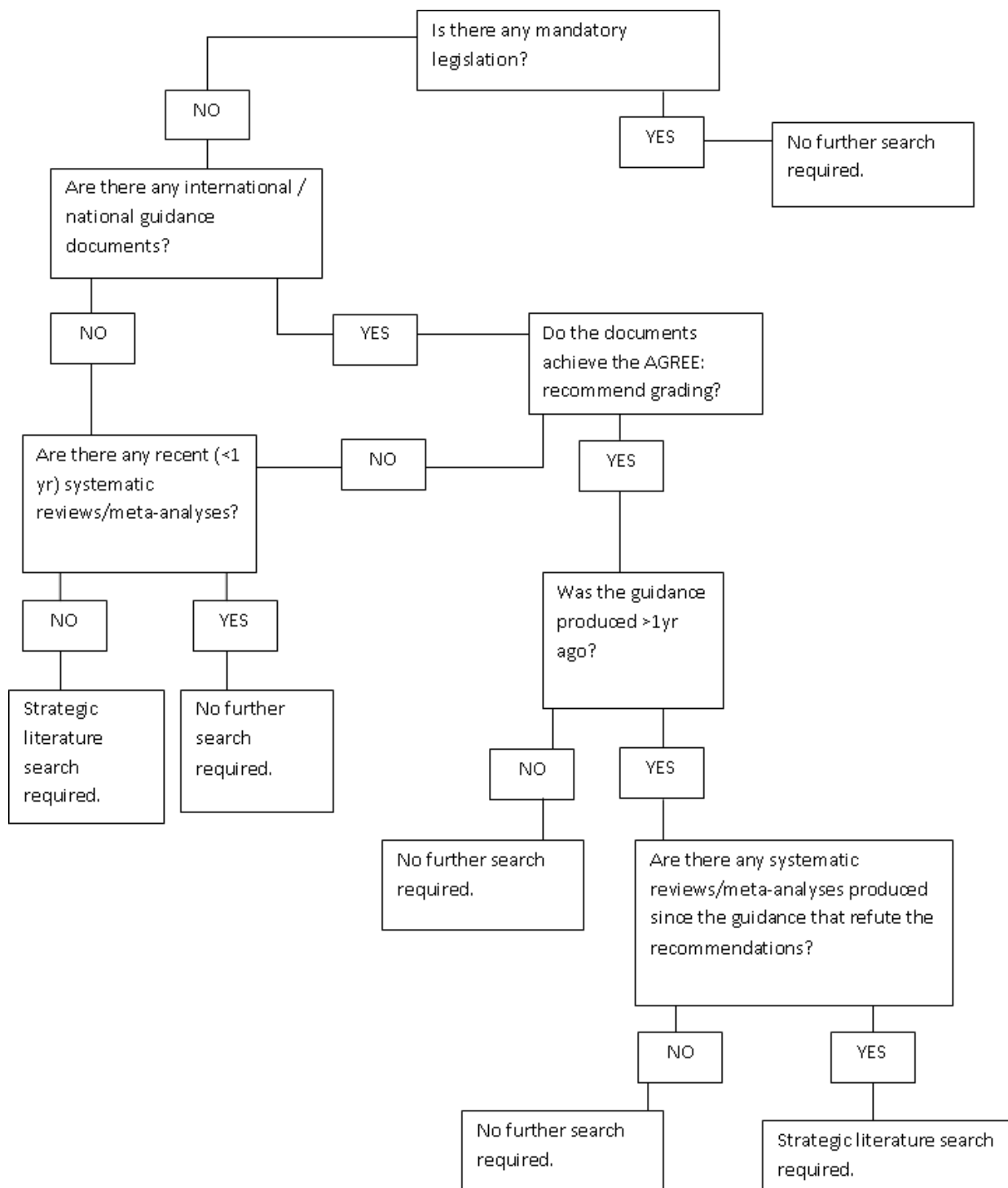
16. 14 and 15

Limit 16 to English language

Healthcare Infection Incidents and Outbreaks in NHSScotland

Existing legislation and recent (<1 year) guidance was available to answer all research questions for this review and so as per appendix 6, no search strategy was required.

Appendix 6: Decision making process for literature searching



Appendix 7: Comparison of single-person and two-person methodology

Protocol/methodology	Single-person review	Two-person systematic review
Development of research questions	No difference	No difference
Identifying evidence	Lead reviewer only	Both reviewers independently select articles for inclusion and agree by discussion
Evidence appraisal and grading	Lead reviewer only	Lead reviewer appraises all evidence and completes evidence tables, second review completes a check of at least 30% of the appraisals and evidence tables
Development of recommendations	Lead reviewer suggests recommendations for Sign-off by the NCIC	Lead reviewer suggests recommendations, second author agrees the content before sign-off by the NCIC,
Consultation	No difference	No difference
Development of the NIPCM	No difference	No difference
Development of supporting tools	No difference	No difference
Maintaining and updating the NIPCM	No difference	No difference
Presentation of guidance	No difference	No difference