National Infection Prevention and Control Manual:

Development process

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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**
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).'	
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Approvals – this document requires the following approvals (in cases where signatures are required add an additional 'Signatures' column to this table)::				
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HPS ICT Document Information Grid	
Purpose:	This document describes the processes undertaken and governance arrangements for development of the National Infection Prevention and Control Manual.
Target audience:	All Health Protection Scotland staff involved in the development of the NIPCM. Available to all NHSScotland staff and the wider public.
Circulation list:	Infection Control Managers, Infection Prevention and Control Teams, Public Health Teams.
Description:	This document describes the methodology for developing the NIPCM, it should be used as a reference for all HPS staff involved in the development of the NIPCM.
Update/review schedule:	Annually following scheduled review of related SOPs.
Cross reference:	The National Infection Prevention and Control Manual website. http://www.nipcm.hps.scot.nhs.uk/

Contents

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) http://www.sehd.scot.nhs.uk/cmo/CNO(2012)01.pdf , and updated on 17 May 2012 (http://www.sehd.scot.nhs.uk/cmo/CNO(2012)01update.pdf). 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 27 targeted 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 is 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 Policies, Guidance and Outbreaks (NPGO) 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.

Following publication of a new chapter the consensus group is disbanded and the NPGO 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 infection control (IC) managers, IC nurses, IC doctors and 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 NPGO 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, 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.

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

For each literature review a set of research questions is agreed by the consensus group. These are presented as objectives within each literature review. Recommendations on practice are made within the literature review based on an assessment of the extant professional literature.

A search strategy for each literature review is undertaken using key terms (appendix 5). This is then used to search a number of electronic databases for relevant papers. A number of websites are also searched for relevant policy or guidance documents or any significant grey literature.

Titles and abstracts are reviewed for relevance. Any material identified as being potentially relevant is obtained in full text.

Studies identified for review are critically appraised using SIGN-50 methodology (SIGN, 2008). Evidence-based guidelines, where identified, are reviewed using the AGREE instrument (AGREE, 2001). The methodology for grading the supporting evidence is included in the

evidence tables, which incorporate a considered judgment section, and are available from the HPS Infection Control Team on request.

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). The PICO framework alongside expert input from the NPGO steering group is used to develop and refine these questions. Additional research questions are posed if there is a need to address emerging infection control issues that have been identified by the NPGO steering group, or common themes from stakeholder enquiries; these are refined and agreed using the same process.

3.2 Identifying evidence

A decision making algorithm is utilised by the responsible scientist 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 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.

3.2.1 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)

3.2.2 Inclusion/exclusion criteria

Titles and abstracts are reviewed for subject relevance (inclusion), the following exclusion criteria are then applied.

Exclusion:

- Item is relevant to TBPs rather than SICPs and vice versa (depending on review);
- 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 Evidence appraisal and grading

Identified studies and guidance documents are appraised and graded using the SIGN 50 methodology and AGREE tool, respectively.

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 SIGN50 grades of recommendations

The Scottish Intercollegiate Guidelines Network (SIGN) amended their grading system for recommendations in 2013; HPS continues to use the SIGN50 (1999-2012) ABCD system for grading recommendations as this is more suitable for the types of evidence underpinning the recommendations of the NIPCM and is well understood by our stakeholders.

A At least one meta-analysis, systematic review, or RCT rated as 1++, and directly applicable to the target population; or

A body of evidence consisting principally of studies rated as 1+, directly applicable to the target population, and demonstrating overall consistency of results.

B A body of evidence including studies rated as 2++, directly applicable to the target population, and demonstrating overall consistency of results; or

Extrapolated evidence from studies rated as 1++ or 1+.

C A body of evidence including studies rated as 2+, directly applicable to the target population and demonstrating overall consistency of results; or

Extrapolated evidence from studies rated as 2++.

D Evidence level 3 or 4; or

Extrapolated evidence from studies rated as 2+.

Good Practice Points

√ Recommended best practice based on the clinical experience of the guideline development group.

SIGN. Key to evidence statements and grades of recommendations. SIGN 50: a guideline developer's handbook. Edinburgh: SIGN; 2008. Available at: http://www.sign.ac.uk/guidelines/fulltext/50/annexb.html (Reproduced with permission)

3.3.3 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.

(AGREE Collaboration. Instructions for overall judgements. AGREE Instrument training manual. London: AGREE Collaboration; 2001.
Available at: http://www.agreecollaboration.org/pdf/aitraining.pdf (Reproduced with permission)

3.3.4 Grading as 'mandatory'

Recommendations that are directives from government policy, regulations or legislation cannot be appraised or given a grade of recommendation, these recommendations are classed as 'mandatory'.

3.4 Development of recommendations

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.

3.4.1 Note about categories of recommendations

Due to the nature of the extant professional literature on infection control the ranking of evidence often yields a SIGN grading of C, D, or GPP (Good Practice Point). In part this is due to ethical restrictions which prevent randomized clinical trials or other types of quantitative

research being conducted on certain aspects of infection control practice, especially in relation to disease outbreaks; however trials which assess the efficacy of equipment are often undertaken. Furthermore, infection control measures are often enacted in a multi-interventional fashion – meaning that it is not possible to assess the efficacy of any single intervention. Similarly, infection control literature based on experimental laboratory based studies cannot be easily appraised using existing methodologies. Despite this, a grading of C, D, or GPP in the review does not mean that the recommendation is weak. Instead it highlights that it is not possible for the review to make recommendations based on high level evidence because there is a paucity of such research. All literature reviews are subject to assessment by a representative panel of experts and subject specialists, therefore final recommendations also take into account existing best professional practice.

3.5 Consultation

All literature reviews undergo a process of consultation to ensure recommendations are unbiased and appropriate for all care settings. Literature reviews are disseminated via the NPGO 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 NPGO consensus group:

- Healthcare Environment Inspectorate
- NHS Board Health Protection Teams
- 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 frontline staff 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

New chapters and any changes to the NIPCM are agreed by a process of consultation with the consensus or 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 scientist(s) reviews 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 NPGO 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. Recommendations
3. Discussion

   3.1 Implications for practice

3.2 Implications for research

4. References

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

7.1 Document control

Document control sheets should be standardised, present and up to date on all literature reviews and the NIPCM itself. Document control sheets must 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 HPS/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 front-line staff 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 front-line staff 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 NPGO 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; funds are distributed annually via the Scottish Antimicrobial Resistance and Healthcare Associated Infection (SARHAI) commissioning group. The Scottish Government HAI policy unit is present at meetings of the NPGO 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 at http://www.nipcm.hps.scot.nhs.uk/. Any changes or updates to the content of the NIPCM, its associated literature reviews or supporting tools are communicated to stakeholders via a weekly infection control digest (email); this is prepared and disseminated by the information officer and forms part of an overarching HPSICT 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 and is available from the NIPCM website at http://www.nipcm.hps.scot.nhs.uk/resources/tools/. 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 partners such as NHS National Education Scotland (NES) to ensure the correct educational support is 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 Infection Control Team has an enquiry system in place to field queries regarding infection control practises including implementation of the NIPCM. Issues with clarity, presentation, research gaps or barriers to implementation can 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: http://www.nipcm.hps.scot.nhs.uk/responsibilities/

Nurse Consultant Infection Control responsible for:

- Chairing internal HPS NIPCM Editorial Group.
- Attending and contributing to the NPGO Steering Group and NIPCM Editorial Group.
- Proposing changes to and appraising feedback from the Manual from the HPS NPGO Steering Group and other relevant persons.
- Managing the updates to the Manual and /or supporting literature reviews to be undertaken by the Infection Control Team.
- Feedback proposed updates to the Manual 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 NPGO Steering group and the NIPCM Editorial Group.
- Preparing updates to the Manual based on the information provided by the Healthcare Scientist/Editorial Group and feedback from the HPS NPGO Steering Group.
- Ensuring that approved changes are made to the Manual and/or literature reviews by the Healthcare Scientist/Information Officer.
- Signing off document changes on the sign off-sheet.

Healthcare Scientist(s) 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 (scheduled review due in year 2015/2016) or when new evidence will make a major change to recommendations
- Attending and contributing to NIPCM Editorial Group/NPGO Steering Group

Information Officer responsible for:

- Attending the NIPCM Editorial Group
- Preparing agenda, minutes and other paperwork for the NIPCM Editorial Group Meeting
- Making changes to the Manual as instructed by the Senior Nurse Infection Control/Healthcare Scientist.
- Completing the table of changes made to each version of the Manual.
- Editing and formatting of the Manual 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 Manual and literature reviews

Team Administrator responsible for:

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

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 Policy, Guidance and Outbreak 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 Policy, Guidance and Outbreaks 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?

All relevant persons will complete the attached declaration of interests form and return to the HPS infection control mailbox (NSS.HPSInfectionControl@nhs.net) for recording and consideration by the chair of the relevant group. Members are also required to declare any new competing interests as they arise. 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 in writing (email) and copied into the HPS infection control mailbox for recording. If additional competing interests are declared, a new declaration of interests form will be required to be completed. However, if a new competing interest is likely to be temporary a written and signed declaration can be appended to the individual's existing declaration of interests form and recorded in minutes for any meetings where the individual is unable to contribute. Electronic and hard 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 NPGO 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 Policy Guidance and Outbreak Programme

Declaration of Competing Interests

All relevant persons as identified in the National Policy, Guidance and Outbreaks (NPGO) Programme Competing Interests Policy are required to complete and return this form before 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):

I have no competing interests to declare ☐

I have a competing interest to declare ☐

Please provide details of any and all competing interests

I confirm that I have read and understood the NPGO 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

Search strategies date limits 1999-2010 (original searches), 2010 to current (2015/16 scheduled reviews where applicable)

Standard Infection Control Precautions

Cough etiquette

1. Exp Cough/
2. Cough etiquette.mp
3. Respiratory hygiene.mp
4. 1 or 2 or 3
5. Exp Infection Control/
6. Exp Cross Infection/
7. Exp Disease Transmission, Infectious/
8. 5 or 6 or 7
9. 4 and 8

Limit 9 to English language

Hand hygiene products

1. Hand?.mp
2. Exp Detergents/
3. Exp Soaps/
4. Exp Disinfectants/
5. Alcohol based hand rub?.mp
6. Soap?.mp
7. ABHR.mp
8. 2 or 3 or 4 or 5 or 6 or 7
9. Exp Infection/
10. Exp Infection Control/
11. Exp Cross Infection/
12. Disease Transmission, Infectious/
13. 9 or 10 or 11 or 12
14. 1 and 8 and 13

Limit 14 to English language

Hand hygiene handwashing

1. Exp Hand Hygiene/
2. Exp Hand Disinfection/
3. (hand? Adj2 wash*).mp
4. 1 or 2 or 3
5. Temperature.mp
6. Technique.mp
7. Procedure.mp
8. Method.mp
9. Dry*.mp
10. Exp Jewelry/
11. 5 or 6 or 7 or 8 or 9 or 10
12. 4 and 11

Limit 12 to English language

Hand hygiene indications

1. Five moments.mp
2. 5 moments.mp
3. (when adj4 hand hygiene).mp
4. (when adj4 handwashing).mp
5. (when adj4 wash* adj2 hand?).mp
6. 1 or 2 or 3 or 4 or 5

Limit 6 to English language

Hand hygiene skincare

1. Exp Hand Hygiene/
2. Exp Hand Disinfection/
3. (hand? Adj2 wash*).mp
4. 1 or 2 or 3
5. Exp Dermatitis, Contact/
6. Exp Dermatitis, Irritant/
7. Exp Eczema/
8. Exp Hand Dermatoses/
9. Exp Skin/
10. Exp Emollients/
11. Hand cream?.mp
12. 5 or 6 or 7 or 8 or 9 or 10 or 11
13. 4 and 12

Limit 13 to English language

Hand hygiene surgical scrub

1. Exp Hand Hygiene/
2. Exp Hand Disinfection/
3. 1 or 2
4. Exp Specialties, Surgical/
5. 3 and 4
6. (surg* adj2 scrub*).mp
7. 5 or 6

Limit 7 to English language

Management of blood and body fluid spills

1. Exp Blood/
2. Exp Body Fluids/
3. Exp Urine/
4. Exp Feces/
5. Exp Bodily Secretions/
6. 1 or 2 or 3 or 4 or 5
7. Exp Disinfection/
8. Exp Decontamination/
9. Exp Housekeeping, Hospital/
10. Exp Disinfectants/
11. Clean*.mp
12. 7 or 8 or 9 or 10 or 11
13. 6 and 12

Limit 13 to English language

Management of care equipment

1. Exp Diagnostic Equipment/
2. Exp Durable Medical Equipment/
3. Exp “equipment and supplies, hospital”/
4. 1 or 2 or 3
5. Exp Disinfection/
6. Exp Decontamination/
7. Exp Housekeeping, Hospital/
8. Exp Disinfectants/
9. Exp Detergents/
10. Clean*.mp
11. 5 or 6 or 7 or 8 or 9 or 10
12. 4 and 11

Limit 12 to English language

Occupational exposure

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

Patient placement

See TBPs search strategy

PPE Aprons and gowns

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

PPE eye/face protection

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

PPE Footwear

1. Exp Shoes/
2. (shoe? Adj3 cover*).mp
3. Overshoe?.mp
4. Over-shoe?.mp
5. Footwear.mp
6. 1 or 2 or 3 or 4 or 5
7. Exp Infection/
8. Exp Infection Control/
9. Exp Cross Infection/
10. Exp Disease Transmission, Infectious/
11. 7 or 8 or 9 or 10
12. 6 and 11

Limit 12 to (English language and humans)

PPE gloves

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

PPE headwear

1. Exp Head Protective Devices/
2. Headwear.mp
3. Hat?.mp

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

Limit 11 to English language

PPE surgical masks

1. Exp Masks/
2. Mask?.mp
3. 1 or 2
4. Exp Hospitals/
5. Exp Infection/
6. Exp Infection Control/
7. Exp Cross Infection/
8. Exp Disease Transmission, Infectious/
9. 4 or 5 or 6 or 7 or 8
10. 3 and 9

Limit 10 to English language

Routine cleaning of the environment

1. (environment* adj3 contaminat*).mp
2. (environment* adj3 clean*).mp
3. (environment* adj3 disinfect*).mp
4. (environment* adj3 decontaminat*).mp
5. (surface adj3 contaminat*).mp
6. (surface adj3 clean*).mp
7. (surface adj3 disinfect*).mp
8. (surface adj3 decontaminat*).mp
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8
10. Exp Hospitals/
11. Exp Housekeeping, Hospital/
12. Exp Infection/
13. Exp Infection Control/
14. Exp Cross Infection/
15. Exp Disease Transmission, Infectious/
16. 10 or 11 or 12 or 13 or 14 or 15
17. 9 and 16

Limit 17 to English language

Safe management of linen

1. Exp “Bedding and Linens”/
2. Linen?.mp
3. 1 or 2
4. Exp Laundering/
5. Exp Laundry Service, Hospital/
6. (linen? Adj4 handling).mp
7. (bedding adj4 handling).mp
8. (linen? Adj4 manag*).mp
9. (bedding adj4 manag*).mp
10. 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 Disease Transmission, Infectious/
16. 11 or 12 or 13 or 14 or 15
17. 3 and 10 and 16

Limit 17 to English language

Safe management of waste

1. Exp Medical Waste/
2. Exp Hazardous Waste/
3. Exp Medical Waste Disposal/
4. Exp Waste Management/
5. Clinical waste.mp
6. Health* waste.mp
7. Exp Refuse Disposal/
8. 1 or 2 or 3 or 4 or 5 or 6 or 7
9. Exp Hospitals/
10. Exp Infection/
11. Exp Infection Control/
12. Exp Cross Infection/
13. Exp Disease Transmission, Infectious/
14. 9 or 10 or 11 or 12 or 13
15. 8 and 14

Limit 15 to English language

Transmission Based Precautions

Patient placement

1. Exp Patient Isolation/
2. Exp Hospitals, Isolation/
3. Cohorting.mp
4. Single room?.mp
5. Side room?.mp
6. 1 or 2 or 3 or 4 or 5
7. Exp Infection/
8. Exp Cross Infection/
9. Exp Infection Control/
10. Exp Disease Transmission, Infectious/
11. 7 or 8 or 9 or 10
12. 6 and 11

Limit 12 to English language

Patient care equipment

1. Exp “Equipment and Supplies”/
2. Single-use.mp
3. Disposable.mp
4. 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. 1 and 4 and 9

Limit 10 to English language

Environmental decontamination

1. Exp Patient Isolation/
2. Exp Hospitals, Isolation/
3. Cohorting.mp
4. Single room.mp
5. Side room.mp
6. 1 or 2 or 3 or 4 or 5
7. Exp Detergents/
8. Exp Disinfectants/
9. Exp Disinfection/

10. Exp Decontamination/
11. 7 or 8 or 9 or 10

Limit 11 to English language

Terminal cleaning

1. (terminal adj2 clean*).mp
2. (terminal adj2 disinfection).mp
3. (discharge adj2 clean*).mp
4. Deep clean*.mp
5. 1 or 2 or 3 or 4

Limit 5 to English language

Surgical masks

1. Masks/
2. Surgical mask$.tw.
3. or/1-2
4. exp Infection control/
5. Infectious Disease Transmission, Patient-to-Professional/
6. Cross infection/
7. Transmission based precautions.tw.
8. ((Contact or airborne or droplet) and precautions).tw.
9. ((Contact or airborne or droplet) and infection$).tw.
10. Barrier precautions.tw.
11. exp Patient Isolation/
12. exp Universal precautions/
13. Enteric precautions.tw.
14. Source isolation.tw.
15. Isolation precautions.tw.
16. strict isolation.tw.
17. or/4-16
18. 3 and 17
19. limit 18 to English language

Respiratory protection

1. Respirator.mp
2. Respirators.mp
3. Exp Respiratory Protective Devices/
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. 8 or 9 or 10 or 11
13. 7 and 12

Limit 13 to English language

Infection prevention and control during care of the deceased

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

Personal Protective Equipment for Infectious Diseases of High Consequence

1. Exp personal protective equipment or PPE/
2. Exp infection control
3. Enhanced PPE.mp
4. coverall or protective suit or gown.mp
5. glove$ or apron or visor$.mp
6. boot cover$ or over shoes or shoe cover.mp
7. surgical mask$ or respiratory protection or respirator or N95 or FFP3 or filtering face piece.mp
8. 1 or 2 or 3 or 4 or 5 or 6 or 7
9. pandemic or epidemic
10. viral haemorrhagic fever or ebola or influenza or MERS-CoV or middle eastern respiratory syndrome or coronavirus or SARS or severe acute respiratory syndrome or smallpox.mp

11. donning or doffing or remov$ or contamination or decontamination
12. competence or competency or competent
13. 9 or 10 or 11 or 12
14. 8 and 13
15. Limit 14 to English language

Supplementary searches

Disinfection 1

1. Exp Patient rooms/
2. Patient isolation/
3. (isolation adj2 (patient? Or ward? Or unit? Or room?)).tw
4. (isolation adj2 (polic$ or protocol? Or procedure? Or precaution?)).tw
5. ((isolation or isolated or isolate) adj2 (“side-room” or “side-rooms” or (side adj room$))).tw
6. ((isolation or isolated or isolate) adj2 (“single-room” or “single-rooms” or (single adj room$))).tw
7. (patient$ adj2 cohort$).tw
8. 1 or 2 or 3 or 4 or 5 or 6 or 7
9. Exp “equipment and supplies, hospital”/
10. Exp diagnostic equipment/
11. Durable medical equipment/
12. Exp Equipment Contamination/
13. Equipment.tw
14. 9 or 10 or 11
15. Transmission based precautions.tw
16. ((Contact or airborne or droplet) and precautions).tw
17. ((Contact or airborne or droplet) and infection$).tw
18. Barrier precautions.tw
19. Exp Infection control/
20. Exp Patient Isolation/
21. Exp Universal precautions/
22. Enteric precautions.tw
23. Source isolation.tw
24. Isolation precautions.tw
25. Strict isolation.tw
26. 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25
27. 8 and 14 ad 26
28. Limit 27 to (English language and humans)

Disinfection 2

1. Routine disinfect$.tw
2. (Frequen$ adj2 disinfect$).tw
3. Regular disinfect$.tw
4. (disinfect$ adj (schedule$ or practice$ or procedure$ or protocol$ or polic$)).tw
5. 1 or 2 or 3 or 4
6. Environmental Microbiology/
7. Exp Housekeeping, Hospital/
8. Exp Health Facility Environment/
9. Exp “equipment and supplies, hospital”/
10. Exp diagnostic equipment/
11. Durable medical equipment/
12. Exp equipment Contamination/
13. Equipment.tw
14. 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13
15. 5 and 14
16. Limit 15 to (English language and humans)

Appendix 6: Decision making process for literature searching