



**Personal Protective  
Equipment (PPE):  
Footwear Literature  
Review  
Evidence Tables**



**Version: 1.0**

**8 December 2025**

## 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 or policy.

Version	Date	Summary of changes
1.0	December 2025	New document

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## Introduction

All studies which are critically appraised as part of the literature review are assigned a grade of evidence based on the SIGN 50 methodology grading system (SIGN, 2004), which allows scientific studies to be assessed for quality using a number of reviewing forms (available from the [SIGN website](#)).

The main conclusions from the studies are summarized along with a brief description of the study quality in an Evidence Table. Studies, which have sufficient quality and specifically answer a defined research question are grouped together to enable formation of a “considered judgment” based on this information. This “considered judgment” is then used as the basis for formulation of recommendations.

This system allows formulation of recommendations supported by good quality observational studies in the case when RCTs are not available for practical or ethical reasons, as is generally found in infection control literature.

## Evidence grading

The following grades were given to the papers included in this evidence table:

Grade	Description
1++	High quality meta analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias
1+	Well conducted meta analyses, systematic reviews of RCTs, or RCTs with a low risk of bias
1-	Meta analyses, systematic reviews of RCTs, 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, bias, or chance and a high probability that the relationship is causal
2+	Well conducted case control or cohort studies with a low risk of confounding, bias, or chance and a moderate probability that the relationship is causal

Grade	Description
2-	Case control or cohort studies with a high risk of confounding, bias, or chance and a significant risk that the relationship is not causal
3	Non-analytic studies, for example case reports, case series
4	Expert opinion

Grade	Description
<b>AGREE 'Recommend'</b>	This indicates that the guideline is of high overall quality and can be considered for use in practice without modifications.
<b>AGREE 'Recommend with modifications'</b>	This indicates that the guideline is of moderate overall quality. This could be due to insufficient or lacking information in the guideline for some items. If modifications are made, the guideline could still be considered for use in practice when no other guidelines on the same topic are available.
<b>AGREE 'Do not Recommend'</b>	This indicates that the guideline is of low overall quality and has serious shortcomings. Therefore, it should not be recommended for use in practice.

## Research questions for evidence tables

**Question 1: Are there any legislative requirements or standards (BS/EN/ISO) for the use of footwear as PPE for infection control purposes?**

**Evidence added to 2024 update:**

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
British Standards Institution (BSI)  <a href="#">BS ISO 15190:2020</a>  <a href="#">Medical laboratories — Requirements for safety.</a>  Accessed 15 March 2024	Standard, UK	Level 4	N/A	N/A	N/A
<b>Assessment of evidence</b>					
This document outlines the requirements for establishing and sustaining a secure working environment within a medical laboratory. While primarily intended for use across recognised disciplines of medical laboratory services, it may also prove beneficial to other related services and disciplines. However, it's important to note that this document does not provide guidance					

### Assessment of evidence

on accreditation. Nonetheless, it may be utilised for accreditation purposes by governmental, professional, or other authoritative bodies as deemed appropriate.

Regarding footwear, the standard specifies the following:

- Footwear must be comfortable, featuring nonslip soles, and should cover the entire foot, including the heel, toes, and instep.
- It is recommended to use leather or synthetic footwear that is fluid-impermeable.
- Disposable, fluid-resistant shoe covers may be worn for tasks involving anticipated splashing. If the spill is large and/or the worker's shoes could potentially be contaminated, water-impermeable shoe covers should be worn.
- Additional protective shoes, such as steel-toed footwear, may be necessary for specific tasks like transporting large compressed gas cylinders.
- Shoes for routine laboratory work should be flat and ergonomically comfortable.
- Specialised footwear, such as disposable or rubberised boots, may be required for specific laboratory areas, including those with high infection containment measures.
- Approved safety shoes may be necessary for handling bulk chemicals, engaging in hazardous activities, or working in histopathology areas where sharp instruments are regularly used.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
British Standards Institution (BSI) <a href="#">BS EN ISO 20347:2022+A1:2024. Personal protective equipment — Occupational footwear</a> Accessed 15 March 2024	Standard, UK	<b>Level 4</b>	N/A	N/A	N/A

### Assessment of evidence

This document outlines both fundamental and supplementary (optional) criteria for occupational footwear designed for general purposes. It encompasses considerations such as protection against mechanical hazards, slip resistance, thermal insulation, and ergonomic performance. Additionally, it delineates specifications for occupational footwear featuring customised insoles, personalised designs, or individually manufactured variations. Notably, this standard excludes provisions for high visibility attributes due to potential obstructions from clothing (for example, trousers covering the footwear) and conditions within the work area (for example, dirt, mud). As such, it's not specific to health and care settings. While primarily applicable across various sectors, it may offer relevant guidance for selecting appropriate footwear in health and care environments.

The standard makes the following recommendations:

- “Occupational footwear shall not adversely affect the health or hygiene of the user. Occupational footwear shall be made of materials such as textiles, leather, rubbers or plastics that pose no risk to the wearer health and hygiene.” Specifically,

Assessment of evidence
<p>these materials should not release or degrade to release substances known to be toxic, carcinogenic, mutagenic, allergenic, harmful to reproduction, or otherwise hazardous.</p> <ul style="list-style-type: none"><li>It is crucial to prioritise the use of slip-resistant footwear whenever there is a possibility of slipping. Wearing comfortable footwear plays a key role in promoting adherence to this safety measure. The slip resistance test specified in ISO 13287.</li><li>“No footwear can ever provide complete safety under particularly demanding conditions such as spillages of oil. Under such conditions, slip-resistance footwear can only reduce the risk. Often the only so solution in such circumstances is to either prevent contamination in the first place or promptly clean-up the spill.”</li><li>“It is recommended that footwear is cleaned, maintained, inspected and replaced as necessary to ensure optimum performance.”</li><li>“Occupational footwear shall be classified in Class I, II and III in accordance with BS EN ISO 20347:2022+A1:2024.”</li></ul>

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
UK Government. <a href="#">Health and Safety at Work etc. Act 1974. Changes 02 April 2024.</a>  Accessed 03 April 2024.	Legislation, UK	Mandatory	N/A	N/A	N/A

Assessment of evidence
<p>“An Act to make further provision for securing the health, safety and welfare of persons at work, for protecting others against risks to health or safety in connection with the activities of persons at work, for controlling the keeping and use and preventing the unlawful acquisition, possession and use of dangerous substances, and for controlling certain emissions into the atmosphere; to make further provision with respect to the employment medical advisory service”</p> <ul style="list-style-type: none"><li>“It shall be the duty of every employer to ensure, so far as is reasonably practicable, the health, safety and welfare at work of all his employees”</li></ul>

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
<p>British Standards Institution (BSI)</p> <p><a href="#">BS EN ISO 20344:2021+A1:2024</a></p> <p><a href="#">Personal protective equipment. Test methods for footwear</a></p> <p>Accessed 15 March 2024</p>	Standard, UK	Level 4	N/A	N/A	N/A
Assessment of evidence					
This document specifies methods for testing footwear designed as personal protective equipment.					

**Assessment of evidence**

- Test methods for footwear include “Mechanical testing, Occupational safety, Protective clothing, Water-absorption tests, Performance testing, Water-resistance tests, Testing conditions, Protective footwear, Oil-resistance tests, Footwear, Electrical testing, Thermal testing”

**Evidence from previous update(s):**

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
UK Government. <a href="#">The Control of Substances Hazardous to Health Regulations 2002 (as amended). Sixth Edition. 2013</a>  Accessed 15 March 2024	Legislation	<b>Mandatory</b>	N/A	N/A	N/A

**Assessment of evidence**

The Substances Hazardous to Health Regulations 2002 (as amended) (COSHH) cover all substances to which the regulations apply.

The following recommendations regarding footwear are made:

- “Every employer shall ensure that the exposure of his employees to substances hazardous to health is either prevented or, where this is not reasonably practicable, adequately controlled.”

### Assessment of evidence

- “The employer must provide employees with suitable PPE, e.g respiratory protective equipment (RPE), protective clothing, protective gloves, footwear, and equipment to protect the eyes. This is in addition to all other control measures if the combination of those measures fails to achieve adequate control of exposure.”
- “Exposure to harmful substances should be eliminated/prevented in the workplace, but where avoidance of this is not reasonably practicable, control measures should be employed which are appropriate to the activity and consistent with the risk assessment. where adequate control of exposure cannot be achieved by other means, the provision of suitable personal protective equipment”
- “Every employer shall ensure that personal protective equipment, including protective clothing, is:
  - (a) properly stored in a well-defined place;
  - (b) checked at suitable intervals; and
  - (c) when discovered to be defective, repaired or replaced before further use.”
- Following use, PPE should be “removed on leaving the working area and kept apart from uncontaminated clothing and equipment.
- “The employer shall ensure that removed/disposed PPE is “subsequently decontaminated and cleaned or, if necessary, destroyed.”

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Scottish Government. <a href="#">The Scottish Government National Uniform Policy, Dress Code and Laundering Policy. 2018</a> Accessed 10 June 2024	Government Policy, Scotland	<b>Mandatory</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<p>This government policy issued through a DL “confirms a change to the National Uniform Policy, following the introduction of a uniform for Clinical Nurse Managers of band 8A and above, to be worn at all times when working in a clinical environment. This has been agreed by the Cabinet Secretary for Health and Sport following consideration by the National Uniform Partnership Group and at the recommendation of the Scottish Workforce and Staff Governance Committee (SWAG).” The following.</p> <p>“Appropriate health and safety requirements for staff should always be met i.e. staff should wear soft-soled, closed toe shoes.”</p>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
UK Government. UK Statutory Instrument No. 8 Health and Safety <a href="#">The Personal Protective Equipment at Work (Amendment) Regulations.</a> 2022. Came into force 6th April 2022 Accessed 15 March 2024	Legislation	<b>Mandatory</b>	N/A	N/A	N/A
<b>Assessment of evidence</b> Note: Below information taken from both the 1992 regulations and 2022 amendment. “These Regulations may be cited as the Personal Protective Equipment at Work (Amendment) Regulations 2022 and come into force on 6th April 2022.”					

## Assessment of evidence

### Regulation 4:

“(1) Every employer shall ensure that suitable personal protective equipment is provided to his workers who may be exposed to a risk to their health or safety while at work except where and to the extent that such risk has been adequately controlled by other means which are equally or more effective.”

“(3) [...] personal protective equipment shall not be suitable unless—

- (a) it is appropriate for the risk or risks involved and the conditions at the place where exposure to the risk may occur;
- (b) it takes account of ergonomic requirements and the state of health of the person or persons who may wear it;
- (c) it is capable of fitting the wearer correctly, if necessary, after adjustments within the range for which it is designed;
- (d) so far as is practicable, it is effective to prevent or adequately control the risk or risks involved without increasing overall risk;
- (e) it complies with any enactment (whether in an Act or instrument) which implements in Great Britain any provision on design or manufacture with respect to health or safety in any relevant Community directive listed in Schedule 1 which is applicable to that item of personal protective equipment.”

### Maintenance and replacement of PPE:

### Regulation 7:

“(1) Every employer shall ensure that any personal protective equipment provided to his workers is maintained (including replaced or cleaned as appropriate) in an efficient state, in efficient working order and in good repair.

“(2) Every self-employed person shall ensure that any personal protective equipment provided to him is maintained (including replaced or cleaned as appropriate) in an efficient state, in efficient working order and in good repair.”

## Assessment of evidence

Accommodation for PPE:

Regulation 8:

“Where an employer or self-employed person is required, by virtue of regulation 4, to ensure personal protective equipment is provided, he shall also ensure that appropriate accommodation is provided for that personal protective equipment when it is not being used.”

“PPE must be properly looked after and stored when not in use, for example in a dry, clean cupboard. If it is reusable it must be cleaned and kept in good condition”

“The Personal Protective Equipment Regulations 2002 which are associated with PPE Directive 89/686/EEC (now the Personal Protective Equipment (Enforcement) Regulations 2018 which are associated with Regulation (EU) 2016/425) state that PPE on the market must be supplied with relevant information on:

- (i) storage, use, maintenance, servicing, cleaning and disinfecting;
- (ii) the level of protection provided by the PPE;
- (iii) suitable PPE accessories and appropriate spare parts;
- (iv) limitations on use
- (v) the obsolescence period for the PPE or certain of its components.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
UK Government <a href="#">Regulation 2016/425 and the Personal Protective Equipment (Enforcement) Regulations 2018</a>	Legislation	<b>Mandatory</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<p>To obtain a CE mark manufacturers of PPE should comply with these regulations (date dependent). These regulations do not affect end users of PPE who should ensure the CE marking is present in line with the Personal Protective Equipment at Work Regulations 1992.</p> <p>Previous version (2002) included in review.</p> <ul style="list-style-type: none"> <li>In place from April 2021. "Regulation (EU) 2016/425 (as incorporated into UK law) sets out the essential health and safety requirements that must be met before PPE products can be placed on the GB market."</li> <li>UKCA - Marking The Product Safety and Metrology etc. (Amendment etc.) (EU Exit) Regulations 2019</li> </ul> <p>To be UKCA marked, PPE manufacturers should comply with relevant regulations.</p> <p>"PPE should be UKCA marked, not CE Marked, from 1<sup>st</sup> January 2021. If the conformity assessment was done by a UK conformity assessment body before 1 January 2021, the CE marking can still be used, but the product must be placed on the GB market before 31 December 2021.</p>					

## Question 2: What type(s) of footwear are suitable for health and care settings?

### Evidence added to 2024 update:

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
British Standards Institution (BSI) <a href="#">BS ISO 15190:2020</a> <a href="#">Medical laboratories — Requirements for safety.</a> Accessed 15 March 2024	Standard	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<ul style="list-style-type: none"> <li>This document outlines the requirements for establishing and sustaining a secure working environment within a medical laboratory. While primarily intended for use across recognized disciplines of medical laboratory services, it may also prove beneficial to other related services and disciplines. However, it's important to note that this document does not provide guidance on accreditation. Nonetheless, it may be utilised for accreditation purposes by governmental, professional, or other authoritative bodies as deemed appropriate.</li> </ul>					

### Assessment of evidence

- Regarding footwear, the standard specifies the following:
  - Footwear must be comfortable, featuring nonslip soles, and should cover the entire foot, including the heel, toes, and instep.
  - It is recommended to use leather or synthetic footwear that is fluid-impermeable.
- Disposable, fluid-resistant shoe covers may be worn for tasks involving anticipated splashing. If the spill is large and/or the worker's shoes could potentially be contaminated, water-impermeable shoe covers should be worn.
- Additional protective shoes, such as steel-toed footwear, may be necessary for specific tasks like transporting large compressed gas cylinders.
- Shoes for routine laboratory work should be flat and ergonomically comfortable.
- Specialised footwear, such as disposable or rubberized boots, may be required for specific laboratory areas, including those with high infection containment measures.
- Approved safety shoes may be necessary for handling bulk chemicals, engaging in hazardous activities, or working in histopathology areas where sharp instruments are regularly used.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
<a href="#">Personal Protective Equipment: Safety Footwear</a>  Canadian Centre for Occupational Health and Safety. 2024  Accessed 15 March 2024	Expert Opinion	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<p>This guidance is provided by the Canadian Centre for Occupational Health and Safety. It's important to emphasize that this guidance pertains to footwear requirements across various industries and is not specific to health and care settings.</p> <p>Regarding footwear, the following recommendations are provided:</p> <ul style="list-style-type: none"> <li>Select footwear based on identified hazards, those relevant to health and care settings, which may include:               <ul style="list-style-type: none"> <li>Sharp or pointed objects that could potentially cut the top of the feet.</li> <li>Potential exposure to corrosive or irritating substances.</li> <li>Environmental conditions and walking surfaces workers may encounter, such as loose ground cover, smooth surfaces, varying temperatures, wet or oily conditions, and exposure to chemicals.</li> <li>Risk of exposure to water or other liquids that could penetrate the footwear, causing harm to the foot and the footwear itself.</li> </ul> </li> </ul>					

**Assessment of evidence**

- Ensure that boots offer sufficient toe room, with toes positioned approximately 12.5 mm away from the front of the footwear.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Australian Commission on Safety and Quality in Health Care (National Health and Medical Research Council). <a href="#">Australian Guidelines for the Prevention and Control of Infection in Healthcare. 2019.</a> Accessed 21 March 2024	Expert Opinion	<b>Level 4</b>	N/A	N/A	N/A

**Assessment of evidence**

These guidelines were developed to enhance the quality of care provided, aiming to advance the overarching objective of infection prevention and control: fostering safe healthcare environments by implementing evidence-based practices that reduce

Assessment of evidence

the risk of infectious agent transmission. Intended for utilization by all personnel in acute healthcare settings — including healthcare workers, management, and support staff — the guidelines encompass various recommendations.

However, it's important to note that while some sections underwent systematic reviews to inform the recommendations, the section pertaining to footwear review lacked such systematic review of evidence. Consequently, it is presented here as expert opinion.

The following recommendation is advised:

- Footwear appropriate for the specific duties must be worn, preferably designed to mitigate the risk of injury from dropped sharps, as well as minimize exposure to blood and bodily substances.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health and Health Protection Agency. <a href="#">Prevention and control of infection in care homes – an information resource. 2013.</a>  Accessed 21 March 2024	Expert Opinion, UK	Level 4	N/A	N/A	N/A

### Assessment of evidence

This document serves as a resource to help staff take all reasonable steps to protect residents and staff from infections and prevent cross-contamination across care homes. It provides information and guidance on infection prevention and control, assisting managers in conducting risk assessments and developing policies.

Regarding footwear recommendations is suggested

- “Wear soft-soled, closed-toed shoes which offer protection against spills and dropped sharps”

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Health and Safety Executive, HSE. <a href="#">Using personal protective equipment (PPE) to control risks at work. 2022</a>  Accessed 15 March 2024	Expert Opinion Guidance, UK	<b>Level 4</b>	N/A	N/A	N/A

### Assessment of evidence

“This guidance provides practical advice on how you can comply with the requirements of the Personal Protective Equipment at Work Regulations 1992 as amended by the Personal Protective Equipment at Work (Amendment) Regulations 2022. This HSE guidance is not specific to footwear but broadly covers all types of PPE, therefore this should be taken into account when using this guidance. The following recommendation was found to be relevant to footwear

**Assessment of evidence**

- “Select equipment that suits the worker – consider the size, fit, compatibility and weight of the PPE and the physical characteristics of the user. Modifying PPE to fit is not a suitable solution”
- “Select appropriate footwear for the risks. It can have a variety of sole patterns and materials to help prevent slips in different conditions, including oil or chemical-resistant soles. It can also be anti-static, electrically conductive or thermally insulating”

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Health and Safety Authority, Ireland.  <a href="#">Report of the advisory committee on health services/ 2001</a>  Accessed 15 March 2024	Expert Opinion, Ireland	<b>Level 4</b>	N/A	N/A	N/A

**Assessment of evidence**

This document contains recommendations and strategies laid out by the Advisory Committee to the Health and Safety Authority (HSA) to improve health services within Ireland.

The following recommendations regarding footwear are made:

**Assessment of evidence**

"While use of protective footwear is increasing, generally it is recommended that staff wear rubber-soled shoes with broad heels for good grip and balance. The shoes should be comfortable and provide support. Slip-on and clog-type shoes should be discouraged"

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Hafiani EM, Cassier P, Aho S, et al. French Society for Anaesthesia & Intensive Care (SFAR)  Guidelines for clothing in the operating theatre, 2021.  Anaesth Crit Care Pain Med. 2022;41(3):101084. doi:10.1016/j.accpm.2022.101084	Guidance, France	<b>AGREE recommend with provisos</b>	N/A	N/A	N/A

**Assessment of evidence**

These guidelines were developed by the French Society for Anaesthesia and Intensive Care (SFAR) to develop a framework facilitating decision- making on operating theatre attire. The present guidelines for professional practice pertain to attire to be worn by operating theatre staff: state-licensed anaesthesia nurses, state-licensed operating theatre nurses, nursing auxiliaries, surgeons, interventional doctors, intensive care anaesthetists, etc. These guidelines do not pertain to surgical draping, sterile surgical gowns, or to the garments worn by patients.

### Assessment of evidence

The following recommendations regarding specialist footwear were made:

- “Dedicated shoes are considered as personal protective equipment for hospital staff, and they fall under the jurisdiction of standard EN ISO 20347:2012, which considers them as “occupational footwear that is not exposed to any mechanical risks”. The experts consequently suggest that the shoes reserved for the operating theatre be in compliance with this norm; in detail, they must be weatherproof, closed in front, and without perforation at the back of the foot, the objective being to protect the front of the foot from sharp-pointed, sharp-edged or jagged objects”
- “The experts also suggest that establishments maintain a “collective” stock of shoes dedicated to the operating theatre, thereby facilitating distribution to staff, organisation of the daily laundering circuit, and satisfactory control of the hermetic quality as well as the wear and tear of the shoes, which could be adequately replaced once their protective functions are no longer ensured. Lastly, the experts suggest that the collective stock include dedicated shoes reserved for occasional visitors to the operating theatre.”

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Health Service Executive, Ireland <a href="#">Public Health &amp; Infection Prevention &amp; Control Guidelines on Prevention and Management of Cases and Outbreaks of</a>	Expert Opinion, Ireland	<b>Level 4</b>	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
<a href="#">COVID-19, Influenza &amp; other Respiratory Infections in Residential Care Facilities. V1.13 13.12.2023.</a>  Accessed 29 April 2024					
<b>Assessment of evidence</b>  This document is framed as general guidance for congregated care settings in the management, control and prevention of COVID-19, Influenza and other respiratory infections. This guidance applies to residential care facilities (RCF) where residents are provided with overnight accommodation.  The document makes the following recommendation. <ul style="list-style-type: none"> <li>As risk of virus transmission from contaminated footwear is likely to be extremely low, shoe covers are not recommended. However, healthcare workers may consider designating a pair of comfortable, closed, and cleanable shoes specifically for use in COVID-19 care areas</li> </ul>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Health and Safety Authority. <a href="#">An information pack for managing hazards in the workplace. 2023.</a> Accessed 15 March 2024	Expert Opinion, Ireland	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<p>This guidance document from Ireland is not specific to health and care settings but broadly covers how to manage occupational hazards across all industries. The recommendations made that maybe relevant to footwear within health and care settings include:</p> <ul style="list-style-type: none"> <li>• “Ensure slip resistant footwear is provided and worn as needed”</li> <li>• “Choose footwear that is reasonably easy to clean and maintain”</li> <li>• “For indoor slip resistance, choose a shoe with a well-defined tread pattern and a flexible sole”</li> </ul>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
NHS England. <a href="#">Uniforms and workwear: guidance for NHS employers. 2020.</a>  Accessed 22 March 2024	Expert Opinion Guidance, UK	<b>Level 4</b>	N/A	N/A	N/A
Assessment of evidence					
<p>This guidance was produced by NHS England and NHS Improvement ensure it is more accessible and inclusive to NHS employers and NHS employees. This was a joint initiative with key stakeholders, led by NHS Employers, including the British Medical Association (BMA), University College London Hospitals NHS Foundation Trust (UCLH), Healthcare Infection Society, The Infection Prevention Society and the British Islamic Medical Association.</p> <p>The guidance document recommends to wear soft-soled shoes, closed over the foot and toes as a good practice. The reason given for this is “closed shoes offer protection from spills and dropped objects. Open shoes risk injury or contamination for staff. Soft soles reduce noise in wards.”</p>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
NHS Wales <a href="#">All Wales NHS Dress Code. 2010.</a> Accessed 22 March 2024	Expert Opinion Guidance, Wales	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b> <p>This guidance document was developed to encompass the principles of inspiring confidence, preventing infection and for the safety of the workforce.</p> <p>The document makes the following good practice point regarding footwear/shoes within the work place,</p> <ul style="list-style-type: none"> <li>• “Staff must wear footwear that complies with the relevant health and safety requirements, for example, soft soled for reduced noise, low heeled for manual handling and ease of movement, and closed toes for protection”</li> <li>• “Footwear worn in the clinical areas should be suitable for purpose and comply with the relevant health and safety requirements”</li> </ul>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Association for Perioperative Practice (AfPP) <a href="#">Standards and recommendations for safe peri-operative practice. 2022</a> Accessed 06 June 2024	Expert Opinion Guidance	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b> <p>This is an expert opinion document developed by the AfPP by practitioners to provide guidance as a reference tool for theatre departments. It provides best practice recommendations for minimising risk in and around the operating theatre.</p> <p>The following recommendations are made, however, some have not been included as they are extracted from the NIPCM manual.</p> <ul style="list-style-type: none"> <li>“All staff entering restricted areas of the theatre suites should don clean theatre attire for example hats, cotton scrub suits/disposable scrub suits and non-antistatic shoes. Clean attire must be donned before every re-entry to restricted areas according to local policy”</li> <li>“A risk assessment should be carried out to determine whether the type of footwear is suitable for decontamination”</li> <li>“Footwear should provide antistatic properties in accordance with BS EN ISO 20347”</li> </ul>					

**Assessment of evidence**

- “Footwear should be cleaned in and area outside the operating theatre and not left in a contaminated state or on changing room floors. Footwear should be clean and stored, ready for use.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Australian and New Zealand College of Anaesthetists (ANZCA) <a href="#">PG28(A) Guideline on infection control in anaesthesia 2015</a> Accessed 21 June 2024	Expert Opinion Guidance	<b>Level 4</b>	N/A	N/A	N/A

**Assessment of evidence**

The Australian and New Zealand College of Anaesthetists (ANZCA) developed this guideline to assist practitioners and facilities to implement strategies that will reduce risks of transmission of infection, based on evidence at the time. However, this was not a systematic review of evidence and therefore, taken as expert opinion.

The following recommendations are stated:

- “Footwear should meet occupational health and safety standards and be kept clean.”

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health, Ireland. <a href="#">Infection Prevention and Control (IPC)</a> <a href="#">National Clinical Guideline No. 30, 2023. Volume 1</a> Accessed 26 November 2024.	Expert Opinion, Ireland.	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b> <p>These guidelines were developed by the Infection and Prevention Infection Prevention and Control Guideline Development Group (GDG) to assist practitioner and service users' decisions about appropriate healthcare for specific clinical circumstances across the entire clinical system in Ireland. Although it's mentioned that these guidelines were systematically developed, based on a thorough evaluation of the evidence, no methodology is provided and as such are considered expert opinion.</p> <p>The following recommendations are made relevant to the research question.</p> <ul style="list-style-type: none"> <li>• "Footwear suitable for the duties being undertaken must be worn and preferably be designed to minimise the risk of injury from dropped sharps as well as minimise risk of exposure to blood and body substances."</li> <li>• "Footwear that leaves the skin of the foot exposed is generally not appropriate for clinical environments because of the risk of dropped sharps."</li> </ul>					

## Evidence from previous update(s):

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Bearman G, Bryant K, Leekha S, et al. Healthcare personnel attire in non-operating-room settings. Infect Control Hosp Epidemiology. 2014;35(2):107-121. doi:10.1086/675066	Expert Opinion Guidance. Developed by SHEA USA.	<b>Level 4</b>	N/A	N/A	N/A

### Assessment of evidence

This document developed on behalf of Society for Healthcare Epidemiology of America (SHEA) provides a general guidance to the medical community regarding healthcare workers' attire outside the operating room.

The following recommendation was made regarding footwear.

- "Health Care Personnel (HCP) footwear: All footwear should have closed toes, low heels, and non skid soles. The choice of HCP footwear should be driven by a concern for HCP safety and should decrease the risk of exposure to blood or other potentially infectious material, sharps injuries, and slipping."

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
<p>Moszkowicz D, Hobeika C, Collard M, et al.</p> <p>Operating room hygiene: Clinical practice recommendations. J Visc Surg. 2019;156(5):413-422. doi:10.1016/j.jviscsurg.2019.07.010</p> <p>Accessed 03 April 2024</p>	Expert Opinion Guidance, France	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<p>The guidance document is produced by the French Society of Gastro-Intestinal Surgery and the Association of hepato-bilio-pancreatic and transplantation surgery. Although, the literature was analysed according to the High Authority of Health (Haute Autorité de santé [HAS]) methodology and after consultation of the Cochrane and Medline databases as stated in the document, the methodology is briefly described and there is a lack of evidence to recommendation framework to detail how recommendations were formed. As such, this document is included as expert opinion guidance.</p> <p>The document makes the following recommendations in relation to the use of overshoes and/or shoe covers.</p> <ul style="list-style-type: none"> <li>The document reported that no studies showed any value of wearing clogs or shoe covers in the operating room, however, the working group recommended wearing clogs that remain in the operating theatre and are washed every day, or else disposable overshoes for every surgical intervention</li> </ul>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
<p>Lafrenière R, Bohnen JM, Pasieka J, Spry CC.</p> <p>Infection control in the operating room: current practices or sacred cows?.</p> <p>J Am Coll Surg. 2001;193(4):407-416.</p> <p>doi:10.1016/s1072-7515(01)01035-3</p>	Expert Opinion Guidance, USA	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<p>These were recommendations from an annual meeting of the American College of Surgeons following a 2-hour symposium focusing on assessing infection prevention and control in the operating room</p> <ul style="list-style-type: none"> <li>“Dedicated OR [operating room] shoes that are comfortable, have good traction and can be easily cleaned” are recommended. This recommendation is only concerned with operating theatres/rooms.</li> </ul>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
World Health Organization. <a href="#">Infection Prevention and Control of Epidemic- and Pandemic-Prone Acute Respiratory Infections in Health Care. Geneva: World Health Organization; 2014.</a> Accessed 10 June 2024	Expert Opinion Guidance, Global.	<b>AGREE Recommend</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<p>These guidelines provide recommendations, best practices and principles for non-pharmacological aspects of infection prevention and control (IPC) for acute respiratory infections (ARI) in health care, with special emphasis on ARI that can present as epidemics or pandemics. The guidelines are intended to help policy-makers, administrators and health-care workers to prioritise effective IPC measures.</p> <p>The following recommendations is made with regard to footwear review:</p> <p>“Packing and transporting patient-care equipment, linen and laundry, and waste from isolation areas: Ensure that all personnel handling the used equipment and soiled linen and waste use Standard Precautions and perform hand hygiene after removing</p>					

### Assessment of evidence

PPE. Heavy-duty tasks (e.g. cleaning of the environment) require more resistant PPE (e.g. rubber gloves and apron, and resistant closed shoes)."

## Question 3: Should overshoes be used?

### Evidence added to 2024 update:

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
<p>Hafiani EM, Cassier P, Aho S, et al. French Society for Anaesthesia &amp; Intensive Care (SFAR)</p> <p>Guidelines for clothing in the operating theatre, 2021.</p> <p>Anaesth Crit Care Pain Med. 2022;41(3):101084. doi:10.1016/j.accpm.2022.101084</p>	Guidance, France	<b>AGREE recommend with modifications</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<p>These guidelines were developed by the French Society for Anaesthesia and Intensive Care (SFAR) to develop a framework facilitating decision- making on operating theatre attire. The present guidelines for professional practice pertain to attire to be worn by operating theatre staff: state-licensed anaesthesia nurses, state-licensed operating theatre nurses, nursing auxiliaries, surgeons, interventional doctors, intensive care anaesthetists, etc. These guidelines do not pertain to surgical draping, sterile surgical gowns, or to the garments worn by patients.</p> <p>The following recommendations regarding specialist footwear were made:</p> <ul style="list-style-type: none"> <li>“The experts suggest that operating theatre staff not accompany the dedicated shoes with overshoes, which not only are ineffective in reducing environmental contamination, but also entail a risk of contamination of the hands.”</li> </ul>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
American Society of Anaesthesiologists (ASA) <a href="#">Statement on Surgical Attire.</a> Accessed 02 June 2024	Expert Opinion	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b> <p>The American Society of Anesthesiologists (ASA) Committee on Occupational Health (COOH) evaluated scientific evidence and expert opinions regarding infectious outcomes linked to anesthesia care. Subsequently, the COOH produced expert consensus statements concerning surgical attire. These recommendations were intended to minimise the spread of infections in surgical and procedural environments.</p> <p>The following recommendation were deemed relevant for this question,</p> <ul style="list-style-type: none"> <li>Do not wear shoe covers for the prevention of SSI. However, this was reproduced from the 1999 CDC Guideline for the Prevention of Surgical Site Infection</li> </ul>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
<p>Australian Government, Department of Health and Aged Care.</p> <p><a href="#">Infection Prevention and Control Expert Group – Guidance on the use of personal protective equipment (PPE) for health workers in the context of COVID-19. 2022</a></p> <p>Accessed 30 April 2024</p>	Expert Opinion	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<p>This document, formulated by the Infection Prevention and Control Expert Group (ICEG) and sanctioned by the Australian Health Protection Principal Committee, offers comprehensive guidance on the utilisation of personal protective equipment (PPE) for healthcare workers during the COVID-19 pandemic. The recommendations outlined within establish the minimum national standard for PPE use by healthcare workers in the context of COVID-19 within Australia.</p> <p>The following recommendation made was found to be relevant to footwear.</p>					

**Assessment of evidence**

- “The use of boots or shoe covers is not recommended unless gross contamination is anticipated, or they are required as standard attire in operating theatre or trauma room”

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
The World Health Organization. <a href="#">Steps to put on personal protective equipment (PPE) including coverall. 2015</a> Accessed 12 March 2024	Expert Opinion Guidance, Global	<b>Level 4</b>	N/A	N/A	N/A

**Assessment of evidence**

This is a resource detailing the sequential steps in putting on personal protective equipment.

- “If boots are not available, use closed shoes (slip-ons without shoelaces and fully covering the dorsum of the foot and ankles) and shoe covers (nonslip and preferably impermeable)”

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Health and Safety Executive, HSE. <a href="#">Control Guidance Sheet S101.</a> <a href="#">Selection of personal protective equipment. 2006</a> Accessed 15 March 2024	Expert Opinion Guidance, UK	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b> <p>“The guidance in this sheet is aimed at employers and the self-employed to help them comply with the requirements of the Control of Substances Hazardous to Health Regulations 2002 (COSHH), by controlling exposure to chemicals and protecting workers’ health.</p> <p>The sheet is part of the HSE guidance pack COSHH essentials: easy steps to control chemicals. It can be used alongside control approaches 1-4 where the guidance allocates a chemical to hazard group S ie where chemicals can cause harm in contact with skin and eyes. This sheet provides advice on the selection and use of personal protective equipment (PPE). It describes the key points you need to follow to provide adequate control and to help ensure exposure is reduced to an acceptable level. Other sheets in the S series provide additional help on specific issues related to substances in group S.”</p> <p>The following recommendation is made.</p> <ul style="list-style-type: none"> <li>“When there is a risk of liquid coming into contact with the lower leg, wellington boots should be worn.”</li> </ul>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
<p>Moszkowicz D, Hobeika C, Collard M, et al.</p> <p>Operating room hygiene: Clinical practice recommendations. J Visc Surg. 2019;156(5):413-422. doi:10.1016/j.jviscsurg.2019.07.010</p> <p>Accessed 03 April 2024</p>	Expert Opinion Guidance, France	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<p>The guidance document is produced by the French Society of Gastro-Intestinal Surgery and the Association of hepato-bilio-pancreatic and transplantation surgery. Although, the literature was analysed according to the High Authority of Health (Haute Autorité de santé [HAS]) methodology and after consultation of the Cochrane and Medline databases as stated in the document, the methodology is briefly described and there is a lack of evidence to recommendation framework to detail how recommendations were formed. As such, this document is included as expert opinion guidance.</p> <p>The document makes the following recommendations in relation to the use of overshoes and/or shoe covers</p> <ul style="list-style-type: none"> <li>The document reported that no studies showed any value of wearing clogs or shoe covers in the operating room, however, the working group recommended wearing clogs that remain in the operating theatre and are washed every day, or else disposable overshoes for every surgical intervention</li> </ul>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
National Institute for Health and Care Excellence (NICE) <a href="#">Surgical Site Infection, Quality Standard (QS49) Quality Statement: Interoperative staff practices 2013.</a> Accessed 15 March 2024	Expert Opinion Guidance, UK	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b> <p>“NICE quality standards describe high-priority areas for quality improvement in a defined care or service area. Each standard consists of a prioritised set of specific, concise and measurable statements. This quality standard covers preventing and treating surgical site infections. It covers adults, young people and children having a surgical procedure that involves a cut to the skin in all healthcare settings. It describes high-quality care in priority areas for improvement.”</p> <p>Within the document the following statement regarding the use of overshoes in theatre is suggested as best practice</p> <ul style="list-style-type: none"> <li>“Staff should wear specific non-sterile theatre wear (scrub suits, masks hats and overshoes) in all areas where operations are undertaken”</li> </ul>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
<p>National Institute for Health and Care Excellence (NICE)</p> <p><a href="#">Surgical site infections: prevention and treatment. London: National Institute for Health and Care Excellence (NICE); 2020 Aug 19. (NICE Guideline, No. 125.)</a></p> <p>Accessed 15 March 2024</p>	Guidance, UK	<b>AGREE</b> <b>Recommend with modifications</b>	N/A	N/A	N/A
Assessment of evidence					
<p>“This guideline covers preventing and treating surgical site infections in adults, young people and children who are having a surgical procedure involving a cut through the skin. It focuses on methods used before, during and after surgery to minimise the risk of infection.”</p> <p>Within the document the following statement regarding the use of overshoes in theatre</p> <ul style="list-style-type: none"> <li>“There is no evidence available that examines whether the wearing of scrub suits or head attire or overshoes by scrubbed or circulating theatre staff can prevent SSI”</li> </ul>					

### Assessment of evidence

- “Although there is limited evidence concerning the use of specific non-sterile theatre wear (scrub suits, masks, hats and overshoes), the GDG consensus was that wearing non-sterile theatre wear is important in maintaining theatre discipline and may therefore contribute to minimising the risk of SSI”

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Australian and New Zealand College of Anaesthetists (ANZCA) <a href="#">PG28(A) Guideline on infection control in anaesthesia 2015</a> Accessed 21 June 2024	Expert Opinion Guidance	<b>Level 4</b>	N/A	N/A	N/A

### Assessment of evidence

The Australian and New Zealand College of Anaesthetists (ANZCA) developed this guideline to assist practitioners and facilities to implement strategies that will reduce risks of transmission of infection, based on evidence at the time. However, this was not systematic review of evidence and therefore, taken as expert opinion.

The following recommendations are stated.

**Assessment of evidence**

- “Overshoes are not necessary for clean shoes (that are specially kept for use in theatre). Overshoes should be worn if there is any possibility that dirt may be on the shoes. If overshoes are used, hand hygiene should be performed after donning and removing them”

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health, Ireland. Infection Prevention and Control (IPC) <a href="#">National Clinical Guideline No. 30, 2023. Volume 1</a> Accessed 26 November 2024.	Expert Opinion, Ireland.	<b>Level 4</b>	N/A	N/A	N/A

**Assessment of evidence**

These guidelines were developed by the Infection and Prevention Infection Prevention and Control Guideline Development Group (GDG) to assist practitioner and service users' decisions about appropriate healthcare for specific clinical circumstances across the entire clinical system in Ireland. Although it's mentioned that these guidelines were systematically developed, based on a thorough evaluation of the evidence, no methodology is provided and as such are considered expert opinion.

The following recommendations are made relevant to the research question.

**Assessment of evidence**

- “Disposable shoe covers are generally not appropriate for IPC purposes. Use of disposable shoe covers may contaminate hands when putting on or taking off.”

**Evidence from previous update(s):**

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
American Association of Nurse Anaesthesiology (AANA) <a href="#">Infection Prevention and Control Guidelines for Anaesthesia Care. 2015</a>	Expert Opinion Guidance	<b>Level 4</b>	N/A	N/A	N/A

**Assessment of evidence**

This guidance document developed by the American Association of Nurse Anaesthetists (AANA) supports patient safety through the use of evidence-based infection prevention and control practices. The purpose of these guidelines is to describe infection prevention and control best practices to increase awareness and reduce the risk of patients, Certified Registered Nurse Anaesthetists (CRNAs), and other healthcare providers transmitting and acquiring an HAI.

The recommendations below were found to be relevant to this research question.

### Assessment of evidence

- Indication for shoe covers: Risk of splash contamination (no information provided regarding definition of splash contamination or degree of splash contamination risk)
- “Slip coverings over shoes prior to donning gloves and other PPE”
- Shoe coverings must be changed each time a worker exits the area.
- If donning double gloves, dispose of outer glove following sterile glove removal protocol prior to removing shoe covers.
- With already donned gloves, remove shoe coverings.
- Dispose of coverings in proper waste receptacle.
- Spray shoes with disinfectant if necessary.”

## Question 4: When should specialist footwear be worn?

### Evidence added to 2024 update:

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
<p>Hafiani EM, Cassier P, Aho S, et al. French Society for Anaesthesia &amp; Intensive Care (SFAR)</p> <p>Guidelines for clothing in the operating theatre, 2021.</p> <p>Anaesth Crit Care Pain Med. 2022;41(3):101084. doi:10.1016/j.accpm.2022.101084</p>	Guidance, France	<b>AGREE recommend with modifications</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<p>These guidelines were developed by the French Society for Anaesthesia and Intensive Care (SFAR) to develop a framework facilitating decision- making on operating theatre attire. The present guidelines for professional practice pertain to attire to be worn by operating theatre staff: state-licensed anaesthesia nurses, state-licensed operating theatre nurses, nursing auxiliaries, surgeons, interventional doctors, intensive care anaesthetists, etc. These guidelines do not pertain to surgical draping, sterile surgical gowns, or to the garments worn by patients.</p> <p>The following recommendations regarding specialist footwear were made. These were formed by experts due to a lack of powered studies</p> <ul style="list-style-type: none"> <li>“The experts suggest that in order to reduce contamination of the operating theatre environment, staff wear shoes reserved exclusively for use within the perimeter of the operating theatre, in compliance with standard EN ISO</li> </ul>					

### Assessment of evidence

20347:2012. These specifically reserved shoes must be changed at least once a day, and more often in the presence of visible stains, and they need to be regularly machine washed.”

- “Dedicated shoes are considered as personal protective equipment for hospital staff, and they fall under the jurisdiction of standard EN ISO 20347:2012, which considers them as “occupational footwear that is not exposed to any mechanical risks”. The experts consequently suggest that the shoes reserved for the operating theatre be in compliance with this norm; in detail, they must be weatherproof, closed in front, and without perforation at the back of the foot, the objective being to protect the front of the foot from sharp-pointed, sharp-edged or jagged objects”
- “The experts also suggest that establishments maintain a “collective” stock of shoes dedicated to the operating theatre, thereby facilitating distribution to staff, organisation of the daily laundering circuit, and satisfactory control of the hermetic quality as well as the wear and tear of the shoes, which could be adequately replaced once their protective functions are no longer ensured. Lastly, the experts suggest that the collective stock include dedicated shoes reserved for occasional visitors to the operating theatre.”

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Australian and New Zealand College of Anaesthetists (ANZCA) <a href="#">PG28(A) Guideline on infection control in anaesthesia 2015</a>	Expert Opinion Guidance, Australia	<b>Level 4</b>	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Accessed 21 June 2024					
<b>Assessment of evidence</b>					
<p>The Australian and New Zealand College of Anaesthetists (ANZCA) developed this guideline to assist practitioners and facilities to implement strategies that will reduce risks of transmission of infection, based on evidence at the time. However, this was not a systematic review of evidence and therefore, taken as expert opinion.</p> <p>The following recommendations are stated.</p> <ul style="list-style-type: none"> <li>“Dedicated footwear is preferred for restricted areas.”</li> </ul>					

### Evidence from previous update(s):

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Bailey, CR, Groatorex, B. Hyde, Y et al.  <a href="#">Association of Anaesthetists of Great Britain &amp; Ireland</a>  <a href="#">Guidelines - Infection prevention and control 2020</a>		<b>Level 4</b>	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Accessed 11 June 2024					
<b>Assessment of evidence</b>					
<p>These guidelines produced by the Association of Anaesthetists are presented for the organisational management of infection prevention and control. The advice presented is based on published data, clinical studies and expert opinion.</p> <ul style="list-style-type: none"><li>• “Designated footwear should be worn in the operating department and cleaned after use.”</li><li>• “When entering the operating theatre, visitors should change into theatre suits and wear designated footwear.”</li></ul>					

## Question 5: Where and how should footwear be donned?

### Evidence added to 2024 update:

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
<p>The World Health Organisation.</p> <p><a href="#">Steps to put on personal protective equipment (PPE) including coverall. 2015</a></p> <p>Accessed 12 March 2024</p>	Expert Opinion Guidance, Global	<b>Level 4</b>	N/A	N/A	N/A
Assessment of evidence					
<p>This is a resource detailing the sequential steps in putting on personal protective equipment.</p> <ul style="list-style-type: none"> <li>• Within this resource, it is recommended to put on a scrub suit and rubber boots in the changing area as the second step, after removing all personal items.</li> <li>• “If boots are not available, use closed shoes (slip-ons without shoelaces and fully covering the dorsum of the foot and ankles) and shoe covers (nonslip and preferably impermeable)”</li> </ul>					

## Evidence from previous update(s):

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
American Association of Nurse Anaesthesiology (AANA) Infection Prevention and Control Guidelines for Anaesthesia Care. 2015	Expert Opinion Guidance	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<p>This guidance document developed by the American Association of Nurse Anaesthetists (AANA) supports patient safety through the use of evidence-based infection prevention and control practices. The purpose of these guidelines is to describe infection prevention and control best practices to increase awareness and reduce the risk of patients, Certified Registered Nurse Anaesthetists (CRNAs), and other healthcare providers transmitting and acquiring an HAI. The recommendations below were found to be relevant to this research question.</p> <ul style="list-style-type: none"> <li>• “Slip coverings over shoes prior to donning gloves and other PPE”</li> <li>• “Shoe coverings must be changed each time a worker exits the area.”</li> <li>• “Indication for shoe covers: Risk of splash contamination (no information provided regarding definition of splash contamination or degree of splash contamination risk)”</li> </ul>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Bailey, CR, Greatorex, B. Hyde, Y et al.  Association of Anaesthetists of Great Britain & Ireland  Guidelines Infection prevention and control 2020	Expert opinion guidance, UK	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<p>These guidelines produced by the Association of Anaesthetists are presented for the organisational management of infection prevention and control. The advice presented is based on published data, clinical studies and expert opinion.</p> <ul style="list-style-type: none"> <li>• “Designated footwear should be worn in the operating department and cleaned after use.”</li> <li>• “When entering the operating theatre, visitors should change into theatre suits and wear designated footwear.”</li> </ul>					

## Question 6: Where and how should footwear be doffed?

### Evidence added to 2024 update:

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
<p>Humphreys H, Bak A, Ridgway E, et al.</p> <p>Rituals and behaviours in the operating theatre - joint guidelines of the Healthcare Infection Society and the European Society of Clinical Microbiology and Infectious Diseases. J Hosp Infect. 2023;140:165.e1-165.e28. doi:10.1016/j.jhin.2023.06.009 2023.</p> <p>Accessed 30 April 2024.</p>	Guidance	<b>AGREE Recommend with modifications</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<p>These guidelines were developed by the Health Infection Society in collaboration with the European Society of Clinical Microbiology and Infectious Diseases for an international audience. They are designed for any healthcare practitioner working in the operating theatre environment and can be adapted for local use. Intended users include clinical microbiologists, IPC doctors and nurses, theatre managers, surgeons, anaesthetists, surgical nurses, anaesthetic assistants, operating department practitioners, and estates staff. Systematic searches and analysis were performed to inform the recommendations, however,</p>					

Assessment of evidence

there are issues around applicability that were not addressed such as potential barriers and facilitators and tools to enhance implementation. Additionally, there is no clarity to show an explicit link between the evidence and forming the recommendations. Therefore, these limitations should be taken into account.

The following recommendation was made:

- As no evidence exists, the guidance suggests a good practice point: "Change footwear if leaving the operating theatre complex with the intention of returning

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
<div>The World Health Organization.</div> <div><a href="#">Steps to take off personal protective equipment (PPE) including gown. 2015</a></div> <div>Accessed 12 March 2024</div>	Expert Opinion Guidance, Global	Level 4	N/A	N/A	N/A
Assessment of evidence					
This is a resource detailing the sequential steps in taking off personal protective equipment.					

### Assessment of evidence

- Within this resource, it is recommended to remove rubber boots without touching them (or overshoes if wearing shoes). This should be done after removing the apron, head and neck covering, gown, eye/face protection, and masks, but before removing gloves ensuring the hand hygiene is performed on hand gloves before removal.
- “If the same boots are to be used outside the high-risk zone, keep them on but clean and decontaminate them appropriately before leaving the doffing area”.

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Health Service Executive, Ireland. <a href="#">Acute Hospital Infection Prevention and Control Precautions for Possible or Confirmed COVID-19 in a pandemic setting. V2.20 13.12.2023.</a> Accessed 21 March 2024	Expert Opinion Guidance	<b>Level 4</b>	N/A	N/A	N/A

## Assessment of evidence

This document developed by the HSE Ireland, provides guidance in the management of COVID-19 in Acute Hospitals. It also applies to community hospitals, acute mental health services, facilities providing inpatient acute rehabilitation services and specialist in-patient palliative care services that have assessed the service they deliver as very similar to that provided in an acute hospital setting. It was informed by guidance from the Department of Health and Social Care (DHSC), Public Health Wales (PHW), Public Health Agency (PHA) Northern Ireland, Health Protection Scotland (HPS) Public Health England (PHE), European Centre for Disease Control (ECDC) and the World Health Organization (WHO).

Although not specific to footwear, the guidance makes recommendations regarding doffing PPE in general with the following recommendations made

- “The procedure for removing PPE may vary across organisations, depending on the layout of the facility and availability of PPE”
- “The most important thing when removing PPE is to avoid self-contamination and to pay close attention to hand hygiene.”
- “Where a patient is in a single room with an ante-room all PPE should be removed and discarded in the ante-room”

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
The Association for Perioperative Practice (AfPP). Standards and Recommendations for Safe Perioperative Practice. 2022	Expert Opinion Guidance, UK	<b>Level 4</b>	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Fifth Ed. PP:202-203.					
<b>Assessment of evidence</b>					
<p>“AfPP’s benchmark publication has been updated for 2022, providing comprehensive guidance on evidence-base best practice and minimising risk in and around the operating theatre”</p> <p>The following recommendations as regards to storage of footwear.</p> <ul style="list-style-type: none"> <li>“Footwear should be removed in an area outside the operating theatre and not left in a contaminated state or on changing room floors.”</li> </ul>					

### Evidence from previous update(s):

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
American Association of Nurse Anaesthesiology (AANA) <a href="#">Infection Prevention and Control Guidelines for Anaesthesia Care. 2015</a>	Expert Opinion Guidance, US	<b>Level 4</b>	N/A	N/A	N/A

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Accessed 30 May 2024					
<b>Assessment of evidence</b>					
<p>This guidance document developed by the American Association of Nurse Anaesthetists (AANA) supports patient safety through the use of evidence-based infection prevention and control practices. The purpose of these guidelines is to describe infection prevention and control best practices to increase awareness and reduce the risk of patients, Certified Registered Nurse Anaesthetists (CRNAs), and other healthcare providers transmitting and acquiring an HAI.</p> <p>The recommendations below were found to be relevant to this research question.</p> <ul style="list-style-type: none"> <li>• “Shoe coverings must be changed each time a worker exits the area.</li> <li>• If donning double gloves, dispose of outer glove following sterile glove removal protocol prior to removing shoe covers.</li> <li>• With already donned gloves, remove shoe coverings.</li> <li>• Dispose of coverings in proper waste receptacle.</li> <li>• Spray shoes with disinfectant if necessary.”</li> </ul>					

## Question 7: When and how should footwear be cleaned?

### Evidence added to 2024 update:

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
<p>Hafiani EM, Cassier P, Aho S, et al. French Society for Anaesthesia &amp; Intensive Care (SFAR)</p> <p>Guidelines for clothing in the operating theatre, 2021.</p> <p>Anaesth Crit Care Pain Med. 2022;41(3):101084. doi:10.1016/j.accpm.2022.101084</p>	Expert Opinion, France	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<p>These guidelines were developed by the French Society for Anaesthesia and Intensive Care (SFAR) to develop a framework facilitating decision- making on operating theatre attire. The present guidelines for professional practice pertain to attire to be worn by operating theatre staff: state-licensed anaesthesia nurses, state-licensed operating theatre nurses, nursing auxiliaries, surgeons, interventional doctors, intensive care anaesthetists, etc. These guidelines do not pertain to surgical draping, sterile surgical gowns, or to the garments worn by patients.</p> <p>The following recommendations regarding specialist footwear were made:</p> <ul style="list-style-type: none"> <li>“The experts suggest that in order to reduce contamination of the operating theatre environment, staff wear shoes reserved exclusively for use within the perimeter of the operating theatre, in compliance with standard EN ISO</li> </ul>					

**Assessment of evidence**

20347:2012. These specifically reserved shoes must be changed at least once a day, and more often in the presence of visible stains, and they need to be regularly machine washed"

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health, England. <a href="#">Surgery: Health Building Note 10-02: Day surgery facilities. 2007</a> Accessed 15 March 2024	Expert opinion	<b>Level 4</b>	N/A	N/A	N/A

**Assessment of evidence**

Health Building Notes provide "best practice" guidance on the design and planning of new healthcare buildings and the adaptation or extension of existing facilities. They offer information to support the briefing and design processes for individual projects in the NHS building program. This specific Building Note gives guidance on facilities for surgical procedures in all healthcare settings.

Regarding footwear cleaning, the document makes the following recommendations

- "Theatre footwear should be cleaned daily or if visibly contaminated. A washer should be conveniently located near to the male and female changing facilities."

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health, England. <a href="#">HBN 26: Facilities for surgical procedures: Volume. 2004</a> Accessed 15 March 2024	Expert Opinion, UK	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b> This Health Building Note (HBN) gives guidance on facilities for surgical procedures in all healthcare settings. The document describes the facilities required to support inpatient operating theatres in an acute general hospital. In relation to footwear, the following recommendations are suggested. <ul style="list-style-type: none"> <li>“Footwear should be cleaned daily, or if visibly contaminated”</li> <li>“The washer should be located near to the male and female changing facilities.”</li> </ul>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
<p>The World Health Organization.</p> <p><a href="#">Steps to take off personal protective equipment (PPE) including gown. 2015</a></p> <p>Accessed 12 March 2024</p>	Expert Opinion Guidance, Global	<b>Level 4</b>	N/A	N/A	N/A
Assessment of evidence					
<p>This is a resource detailing the sequential steps in taking off personal protective equipment. The resource makes the following recommendation regarding cleaning footwear.</p> <ul style="list-style-type: none"> <li>“Appropriate decontamination of boots includes stepping into a footbath with 0.5% chlorine solution (and removing dirt with toilet brush if heavily soiled with mud and/or organic materials) and then wiping all sides with 0.5% chlorine solution. At least once a day boots should be disinfected by soaking in a 0.5% chlorine solution for 30 min, then rinsed and dried.”</li> </ul>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Health and Safety Executive, HSE. <a href="#">Control Guidance Sheet S101.</a> <a href="#">Selection of personal protective equipment. 2006</a> Accessed 15 March 2024.	Expert Opinion Guidance, UK	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b> <p>“The guidance in this sheet is aimed at employers and the self-employed to help them comply with the requirements of the Control of Substances Hazardous to Health Regulations 2002 (COSHH), by controlling exposure to chemicals and protecting workers’ health.</p> <p>The sheet is part of the HSE guidance pack COSHH essentials: easy steps to control chemicals. It can be used alongside control approaches 1-4 where the guidance allocates a chemical to hazard group S i.e where chemicals can cause harm in contact with skin and eyes. This sheet provides advice on the selection and use of personal protective equipment (PPE). It describes the key points you need to follow to provide adequate control and to help ensure exposure is reduced to an acceptable level. Other sheets in the S series provide additional help on specific issues related to substances in group S.”</p> <p>Although not specific to footwear, the following recommendations are made as general precautions to PPE.</p> <ul style="list-style-type: none"> <li>• “Check protective equipment for damage both before and after use”</li> <li>• “Clean and maintain all PPE regularly”</li> </ul>					

**Assessment of evidence**

- “Provide a good standard of personal washing facilities”

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Public Health Wales.  <a href="#">Personal Protective Equipment Procedure.2023</a>  Accessed 14 March 2024	Expert Opinion Guidance, Wales.	<b>Level 4</b>	N/A	N/A	N/A

**Assessment of evidence**

“This procedural document developed by Estates, Safety and Facilities Team forms part of the suite of health and safety documents to achieve this through advising on the requirements to applying the Personal Protective Equipment Regulations 1992 (PPER 1992) and The Personal Protective Equipment at Work (Amendment) Regulations 2022 (PPER 2022) in Wales.”

The recommendations here aren't specific to footwear but rather broadly cover PPE.

- “It is important to make sure equipment is kept clean, in good repair and good working order, that manufacturer's instructions for the safe operation is known and adhered to and including recommended replacement periods and shelf life. There should be systems in place to examine, test, repair and replace PPE as appropriate, with agreed arrangements for cleaning and disinfecting the PPE so there are no health risks associated with further use by another employee. All systems to test, repair and replace PPE as well as the cleaning and disinfecting of PPE should be recorded and monitored.”

### Assessment of evidence

- “PPE must be well looked after and properly stored when it is not being used. This should protect PPE from contamination, dirt ingress, loss or damage”.
- “Depending on the type of PPE and the workplace, the storage may be lockers, pegs, boxes etc.”
- “Special arrangements are needed for the storage, cleaning or disposal of infected or contaminated PPE”

### Evidence from previous update(s):

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Bailey, CR, Greatorex, B. Hyde, Y et al.  Association of Anaesthetists of Great Britain & Ireland  <a href="#">Guidelines - Infection prevention and control 2020</a>		<b>Level 4</b>	N/A	N/A	N/A

### Assessment of evidence

These guidelines produced by the Association of Anaesthetists are presented for the organisational management of infection prevention and control. The advice presented is based on published data, clinical studies and expert opinion.

- “Designated footwear should be worn in the operating department and cleaned after use.”

#### Assessment of evidence

- “Trusts should ensure that a system for cleaning theatre footwear is in place in each theatre suite.”

## Question 8: How should footwear be stored?

### Evidence added to 2024 update:

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health, England. <a href="#">Surgery: Health Building Note 10-02: Day surgery facilities. 2007</a> Accessed 15 March 2024	Expert opinion, UK	<b>Level 4</b>	N/A	N/A	N/A
Assessment of evidence					
<p>Health Building Notes provide "best practice" guidance on the design and planning of new healthcare buildings and the adaptation or extension of existing facilities. They offer information to support the briefing and design processes for individual projects in the NHS building program. This specific Building Note gives guidance on facilities for surgical procedures in all healthcare settings.</p> <p>Regarding footwear storage, the document makes the following recommendations.</p> <ul style="list-style-type: none"> <li>“Facilities should be provided for the storage of footwear on easily accessible boot racks in a space supplied with mechanical extract ventilation to limit odours”</li> </ul>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Department of Health, England. <a href="#">HBN 26: Facilities for surgical procedures: Volume. 2004</a> Accessed 15 March 2024	Expert Opinion, UK	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b> <p>This Health Building Note (HBN) gives guidance on facilities for surgical procedures in all healthcare settings. The document describes the facilities required to support inpatient operating theatres in an acute general hospital.</p> <p>In relation to footwear, the following recommendations are suggested.</p> <ul style="list-style-type: none"> <li>“Footwear should be stored on a designated, easily-accessible boot rack in a space provided with mechanical extract ventilation to limit odours.”</li> </ul>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Health and Safety Executive, HSE. <a href="#">Using personal protective equipment (PPE) to control risks at work. – Maintenance. 2022</a> Accessed 15 March 2024	Expert Opinion Guidance, UK	<b>Level 4</b>	N/A	N/A	N/A
Assessment of evidence					
<p>“This guidance provides practical advice on how you can comply with the requirements of the Personal Protective Equipment at Work Regulations 1992 as amended by the Personal Protective Equipment at Work (Amendment) Regulations 2022. This HSE guidance is not specific to footwear but broadly covers all types of PPE, therefore this should be taken into account when using this guidance. The following recommendation was found to be relevant to footwear.</p> <ul style="list-style-type: none"> <li>• “PPE must be properly looked after and stored when not in use, for example in a dry, clean cupboard. If it is reusable it must be cleaned and kept in good condition”</li> <li>• “Every employer shall ensure that any personal protective equipment provided to his employees is maintained (including replaced or cleaned as appropriate) in an efficient state, in efficient working order and in good repair.”</li> </ul> <p>“Storage is required to:</p> <ul style="list-style-type: none"> <li>○ (a) prevent damage from chemicals, sunlight, high humidity, heat and accidental knocks;</li> </ul>					

**Assessment of evidence**

- (b) prevent contamination from dirt and harmful substances;
- (c) reduce the possibility of losing the PPE;
- (d) enable the sufficient drying of PPE to ensure its effectiveness is maintained, for example retaining its insulating capabilities if used in damp, hot or cold environments.”

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Health and Safety Executive. <a href="#">The Control of Substances Hazardous to Health Regulations. Sixth Edition. 2013</a> Accessed 15 March 2024	Legislation	<b>Mandatory</b>	N/A	N/A	N/A

**Assessment of evidence**

The Substances Hazardous to Health Regulations 2002 (as amended) (COSHH) cover all substances to which the regulations apply.

The following recommendations regarding footwear are made:

- “Employers should ensure that accommodation is provided for PPE so that it can be safely stored or kept when it is not in use. The adequacy of the accommodation will vary according to the quantity, type and its use, e.g pegs, (labelled) lockers,

**Assessment of evidence**

shelves or containers etc. The storage should be adequate to protect the PPE from contamination, loss or damage by, for example, harmful substances, damp or sunlight.”

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
The Association for Perioperative Practice (AfPP). Standards and Recommendations for Safe Perioperative Practice. 2022 Fifth Ed. PP:202-203.	Expert Opinion Guidance, UK	<b>Level 4</b>	N/A	N/A	N/A

**Assessment of evidence**

“AfPP’s benchmark publication has been updated for 2022, providing comprehensive guidance on evidence-base best practice and minimising risk in and around the operating theatre”

The following recommendations as regards to storage of footwear

- “Footwear should be clean and stored, ready for use.”

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Health Facilities Scotland  Status in NHSScotland best practice guidance. <a href="#">Health Building Note 04-02 Critical care units. 2014</a>  Accessed 19 June 2024	Expert Opinion Guidance, UK	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<p>“Health Building Notes give “best practice” guidance on the design and planning of new healthcare buildings and on the adaptation/extension of existing facilities”</p> <p>The following recommendation is made:</p> <ul style="list-style-type: none"> <li>• “Space is required within the changing areas for the storage and disposal of scrub suits and footwear.</li> </ul>					

## Question 9: When and how should footwear be disposed of?

### Evidence added to 2024 update:

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
Personal Protective Equipment: Safety Footwear  <a href="#">Canadian Centre for Occupational Health and Safety. 2020</a>  Accessed 15 March 2024	Expert Opinion	<b>Level 4</b>	N/A	N/A	N/A
Assessment of evidence					
<p>This guidance is provided by the Canadian Centre for Occupational Health and Safety. It's important to emphasize that this guidance pertains to footwear requirements across various industries and is not specific to health and care settings.</p> <ul style="list-style-type: none"> <li>Regarding the disposal of footwear, the following recommendations are outlined:               <ul style="list-style-type: none"> <li>Regularly inspect footwear for any damage, such as cracks in the soles, breaks in leather, or exposed toe caps.</li> <li>Repair or replace any worn or defective footwear promptly.</li> <li>Footwear that has been exposed to sole penetration or impact may not show visible signs of damage. In such cases, it is advisable to replace the footwear after an event.</li> </ul> </li> </ul>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
British Standards Institution <a href="#">BS EN ISO 20347:2022+A1:2024. Personal protective equipment. Occupational footwear</a> Accessed 15 March 2024	Standard	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b> <p>This document outlines both fundamental and supplementary (optional) criteria for occupational footwear designed for general purposes. It encompasses considerations such as protection against mechanical hazards, slip resistance, thermal insulation, and ergonomic performance. Additionally, it delineates specifications for occupational footwear featuring customized insoles, personalized designs, or individually manufactured variations. Notably, this standard excludes provisions for high visibility attributes due to potential obstructions from clothing (e.g., trousers covering the footwear) and conditions within the work area (e.g., dirt, mud). As such, it's not specific to health and care settings. While primarily applicable across various sectors, it may offer relevant guidance for selecting appropriate footwear in health and care environments.</p> <p>The standard makes the following recommendations.</p> <ul style="list-style-type: none"> <li>“It is recommended that footwear is cleaned, maintained, inspected and replaced as necessary to ensure optimum performance.” However, necessary is not specified within the document.</li> </ul>					

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
<p>Hafiani EM, Cassier P, Aho S, et al. French Society for Anaesthesia &amp; Intensive Care (SFAR)</p> <p>Guidelines for clothing in the operating theatre, 2021.</p> <p>Anaesth Crit Care Pain Med. 2022;41(3):101084. doi:10.1016/j.accpm.2022.101084</p>	Guidance, France	<b>AGREE II recommend</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<p>These guidelines were developed by the French Society for Anaesthesia and Intensive Care (SFAR) to develop a framework facilitating decision- making on operating theatre attire. The present guidelines for professional practice pertain to attire to be worn by operating theatre staff: state-licensed anaesthesia nurses, state-licensed operating theatre nurses, nursing auxiliaries, surgeons, interventional doctors, intensive care anaesthetists, etc. These guidelines do not pertain to surgical draping, sterile surgical gowns, or to the garments worn by patients.</p> <p>The following recommendations regarding specialist footwear were made.</p> <ul style="list-style-type: none"> <li>“The experts also suggest that establishments maintain a “collective” stock of shoes dedicated to the operating theatre, thereby facilitating distribution to staff, organisation of the daily laundering circuit, and satisfactory control of the hermetic quality as well as the wear and tear of the shoes, which could be adequately replaced once their protective functions are no longer ensured. Lastly, the experts suggest that the collective stock include dedicated shoes reserved for occasional visitors to the operating theatre.”</li> </ul>					

## Evidence from previous update(s):

Study	Study Type	Evidence Level	Intervention	Comparison	Outcome measure
American Association of Nurse Anaesthesiology (AANA) <a href="#">Infection Prevention and Control Guidelines for Anaesthesia Care. 2015</a>	Expert Opinion Guidance	<b>Level 4</b>	N/A	N/A	N/A
<b>Assessment of evidence</b>					
<p>This guidance document developed by the American Association of Nurse Anaesthetists (AANA) supports patient safety through the use of evidence-based infection prevention and control practices. The purpose of these guidelines is to describe infection prevention and control best practices to increase awareness and reduce the risk of patients, Certified Registered Nurse Anaesthetists (CRNAs), and other healthcare providers transmitting and acquiring an HAI.</p> <p>The recommendations below were found to be relevant to this research question.</p> <ul style="list-style-type: none"> <li>“Shoe covers (indication for use defined as risk of splash contamination), must be changed each time a worker exits an area. Shoe covers should be disposed in a proper waste receptacle.”</li> </ul>					