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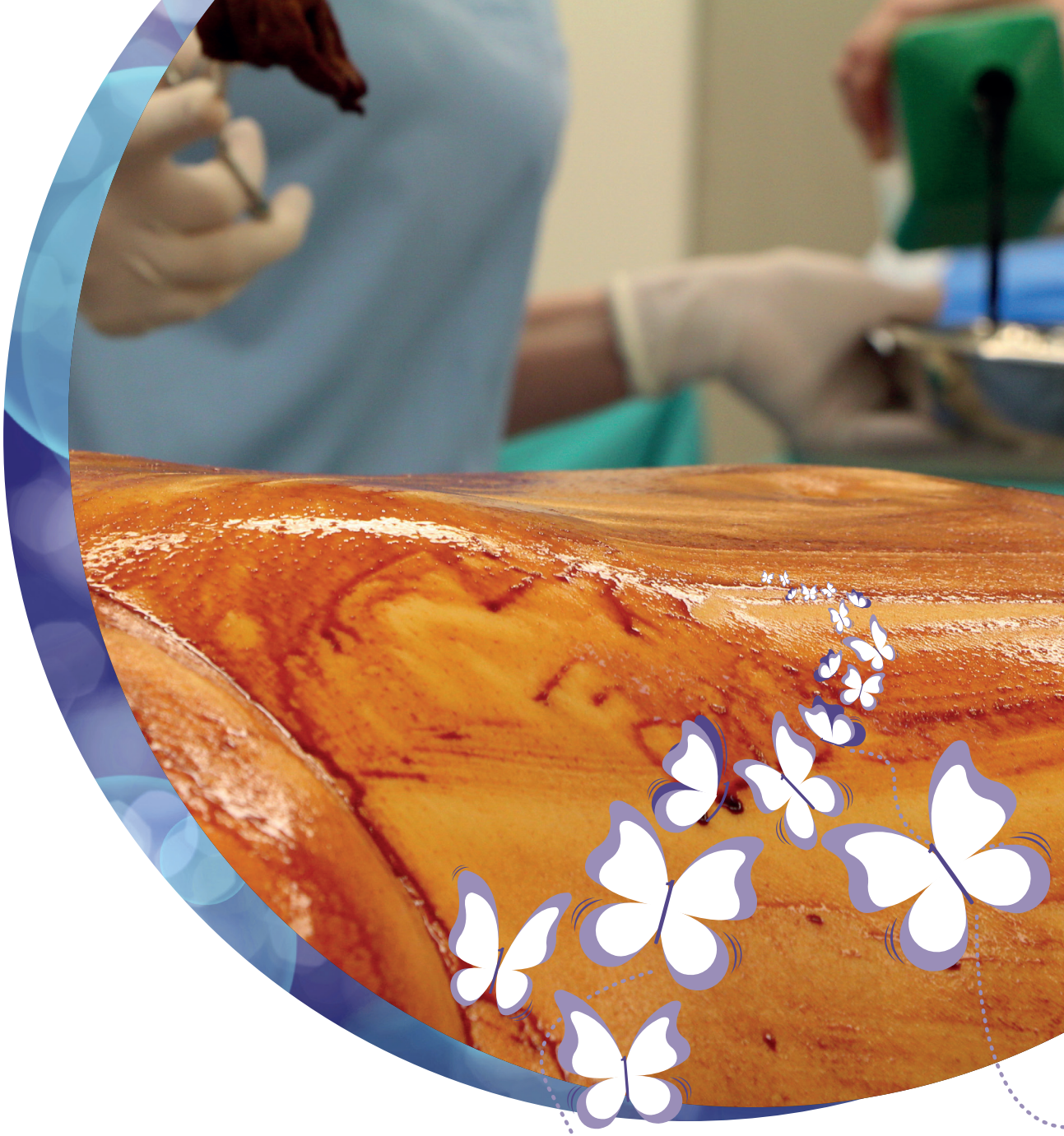


Surgical Skin Preparation

Quality Improvement Resource

Version 2

AfPP PROGRESSING SAFER SURGERY
The Association for Perioperative Practice

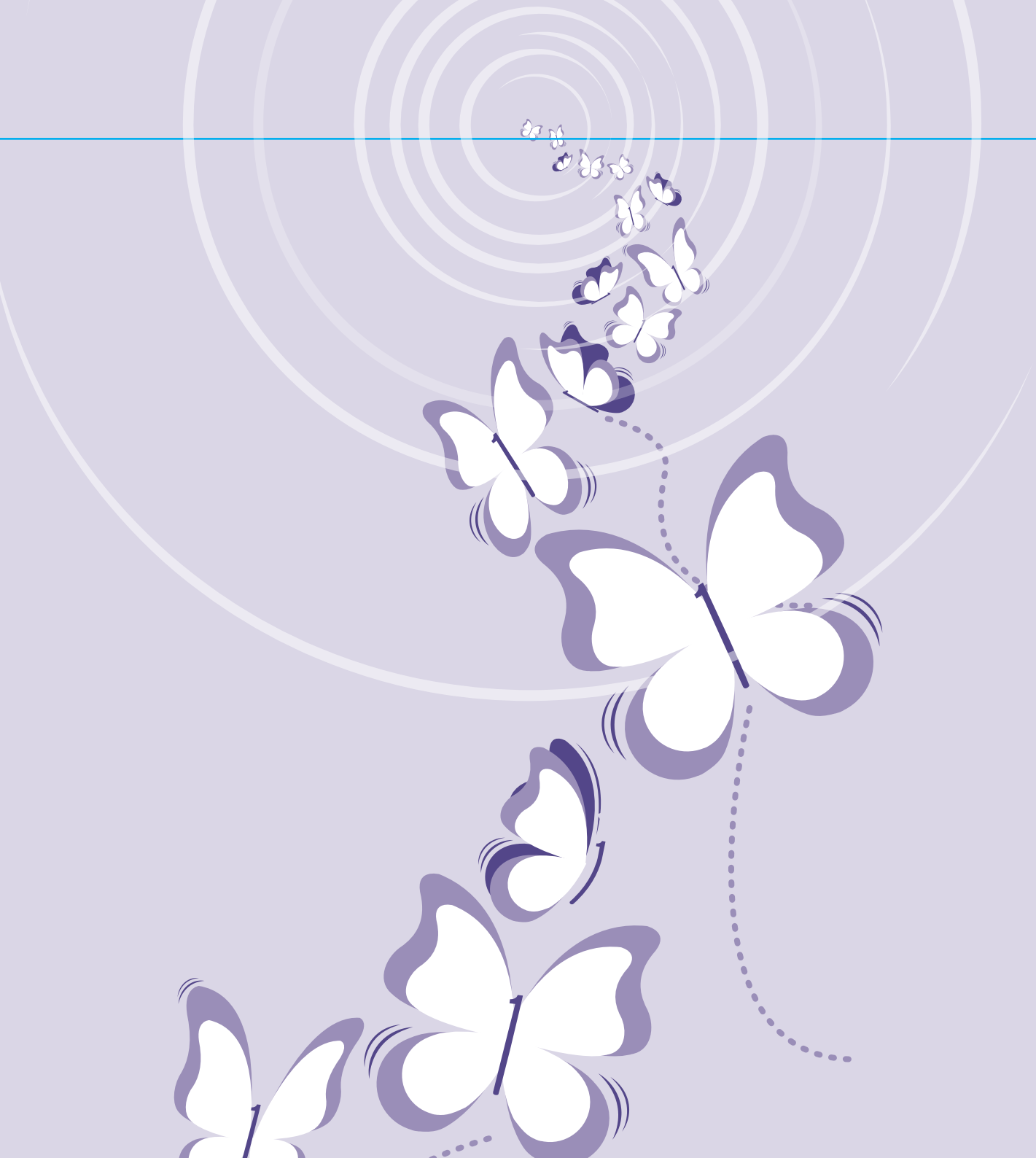
CODP
College of Operating Department Practitioners

CSC
CENTRAL STERILISING CLUB

ips Infection Prevention Society

Royal College of Nursing

3M Science. Applied to Life.™



Contents

1 Introduction to OneTogether

OneTogether is a partnership between leading professional organisations with an interest in the prevention of surgical site infection (SSI). The founding partners are:

- Association for Perioperative Practice (AfPP)
- Infection Prevention Society (IPS)
- College of Operating Department Practitioners (CODP)
- Royal College of Nursing (RCN)
- 3M Company
- 2019 partner: Central Sterilising Club (CSC)

The partnership is a quality improvement collaborative which aims to promote and support the adoption of best practice to prevent SSI throughout the patient's surgical journey. We seek to provide resources that make the evidence for practice to prevent SSI accessible to those involved in caring for surgical patients.

Resources created by the OneTogether partnership can be freely downloaded from our website: **www.onetogether.org.uk**

OneTogether Resource Development Group and Acknowledgments

OneTogether Resource Development Group

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Acknowledgements

Dr Mike Reed	Trauma and Orthopaedic Consultant Surgeon, Northumbria NHS Foundation Trust
Ellie Wishart	Scientific Affairs Manager, Ecolab
Kate Woodhead	Director of KMW Healthcare Consultants Ltd & Technical Editor of Clinical Services Journal

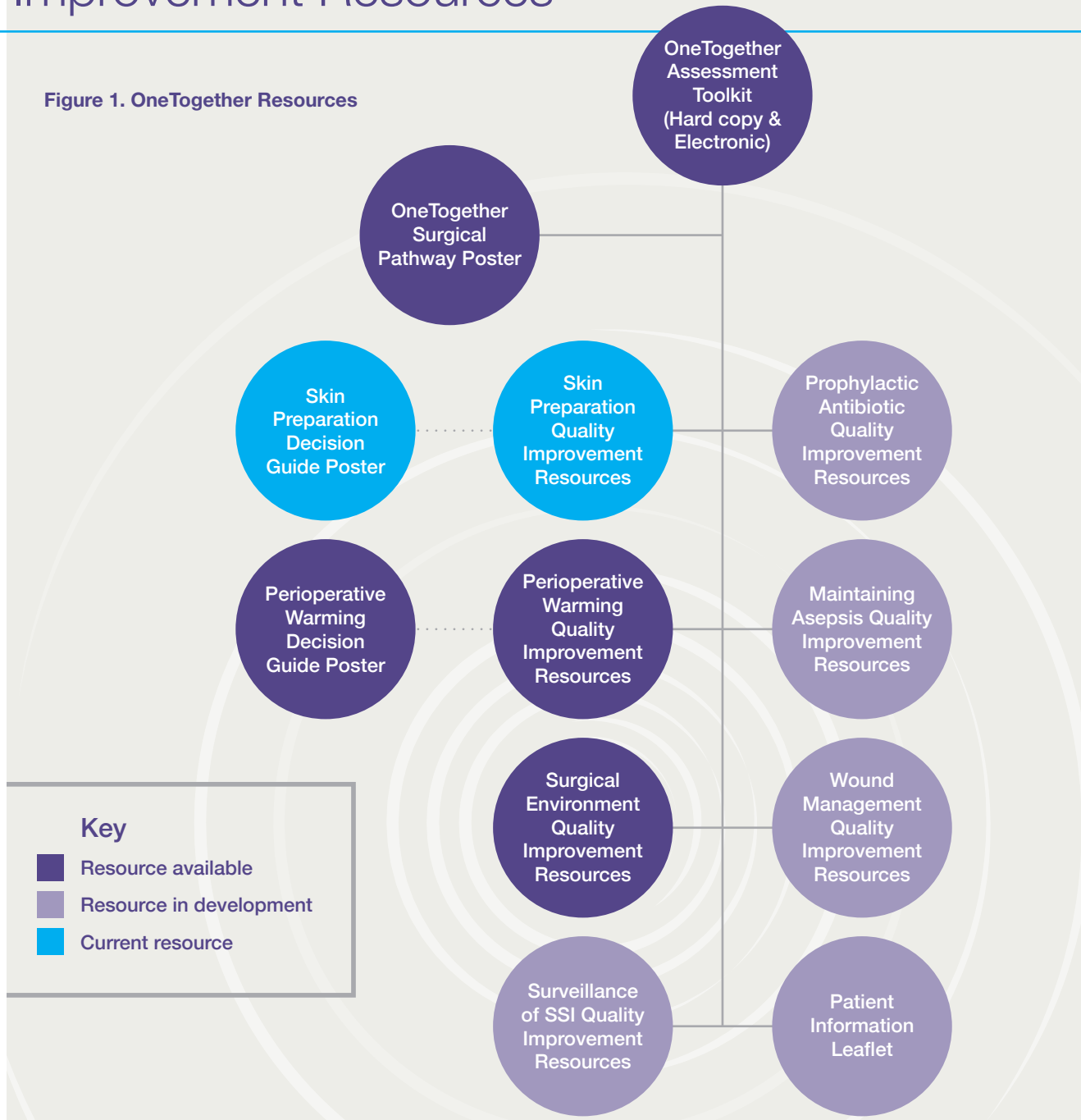
2 Overview of the Quality Improvement Resources

The OneTogether Quality Improvement Resources are intended to provide practical information for implementing best practice for each of the elements of care across the surgical pathway. These resources can be used as stand-alone documents, but we recommend they are used in conjunction with the OneTogether Assessment Toolkit.

The OneTogether Assessment Toolkit is designed to measure adherence to best practice to prevent surgical site infection (SSI). Following completion of the OneTogether Assessment, healthcare professionals will be able to identify areas of low compliance and develop a prioritised action plan for improvement.

Quality Improvement Resources summarise the evidence underpinning recommended practice and provide a competency assessment checklist. The information they contain is drawn from evidence-based guidelines or expert recommendations from professional bodies.

Figure 1. OneTogether Resources



3 Preventing Surgical Site Infection

Surgical site infection (SSI) accounts for more than 15% of all healthcare associated infections and affects at least 5% of patients who have surgery.[1,2]

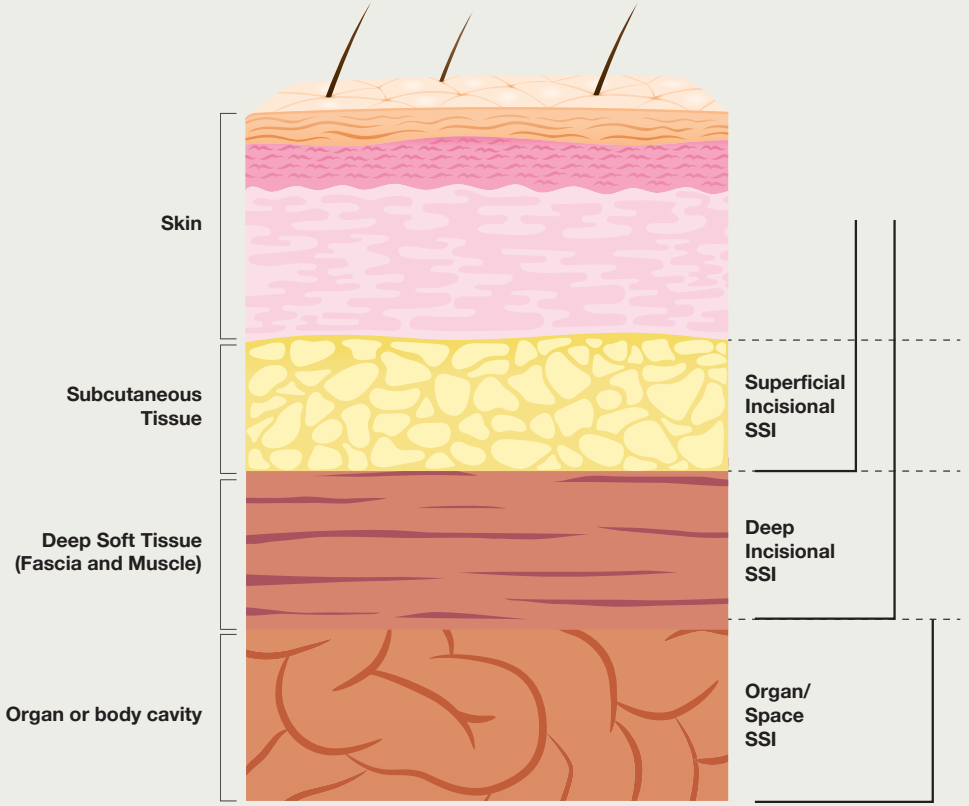
Impact of SSIs

Surgical Site Infections are associated with an increase in:[3,4]

How does SSI occur?

SSI occurs when microorganisms introduced into the incision site during the surgical procedure multiply in the wound and cause signs and symptoms such as inflammation or pus, wound breakdown or fever. Symptoms of SSI may take several days to develop and may not become apparent until after the patient has been discharged from hospital. Most SSIs affect only the superficial tissues, but some affect the deeper tissues or other parts of the body handled during the procedure.[1] (Figure 2)

Figure 2. Types of surgical site infection



3 Preventing Surgical Site Infection

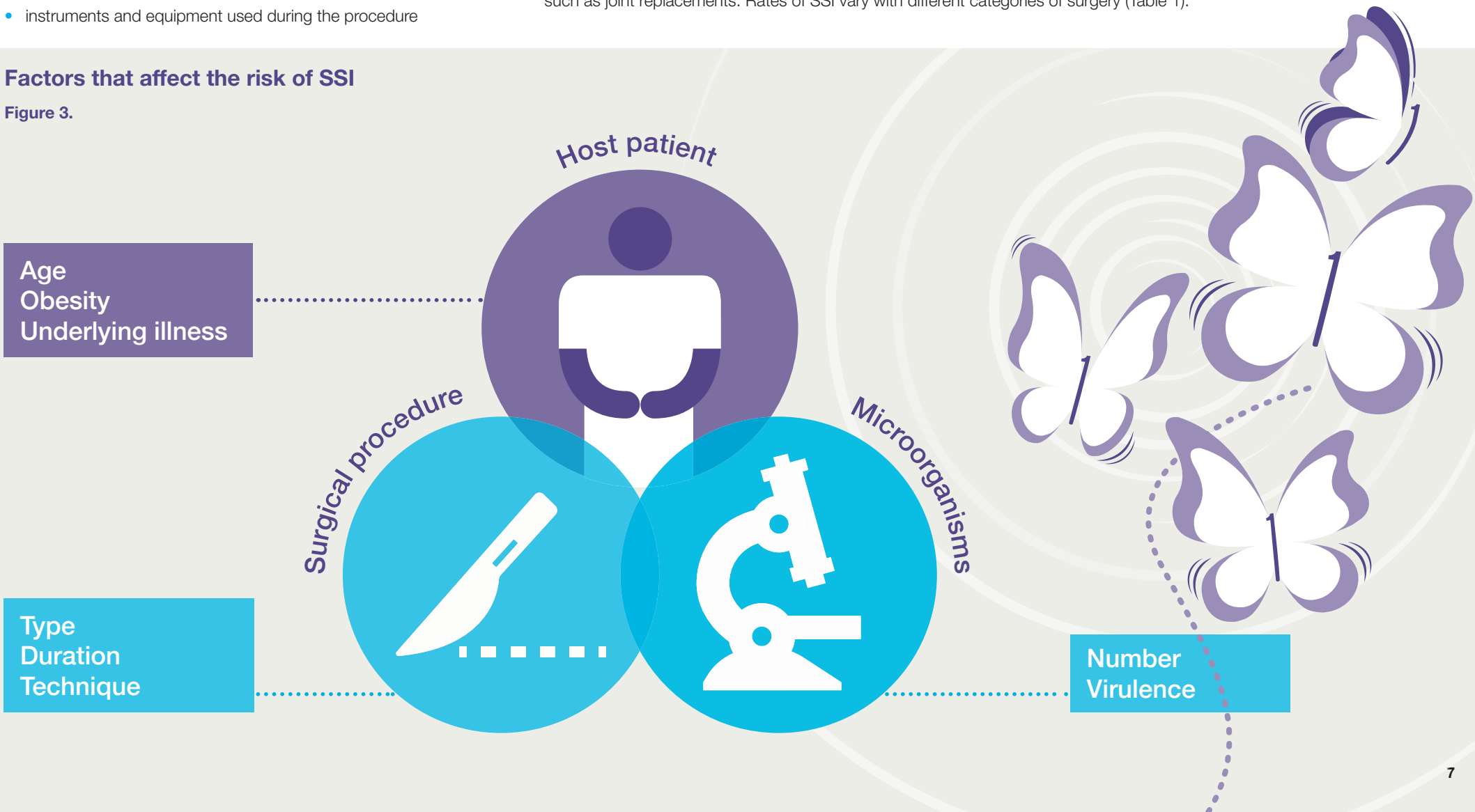
Pathogens that cause SSI may originate from:

- the patient's own microbial flora present on skin and in the body
- the skin or mucous membranes of operating personnel
- the operating room environment
- instruments and equipment used during the procedure

There are several factors which increase the risk that an SSI develops (see Figure 3). The most important is the presence of microorganisms at the site involved in the surgery. Procedures that involve parts of the body with a high concentration of normal flora, such as the bowel, are therefore associated with a higher risk of SSI than those involving sterile tissues, such as joint replacements. Rates of SSI vary with different categories of surgery (Table 1).

Factors that affect the risk of SSI

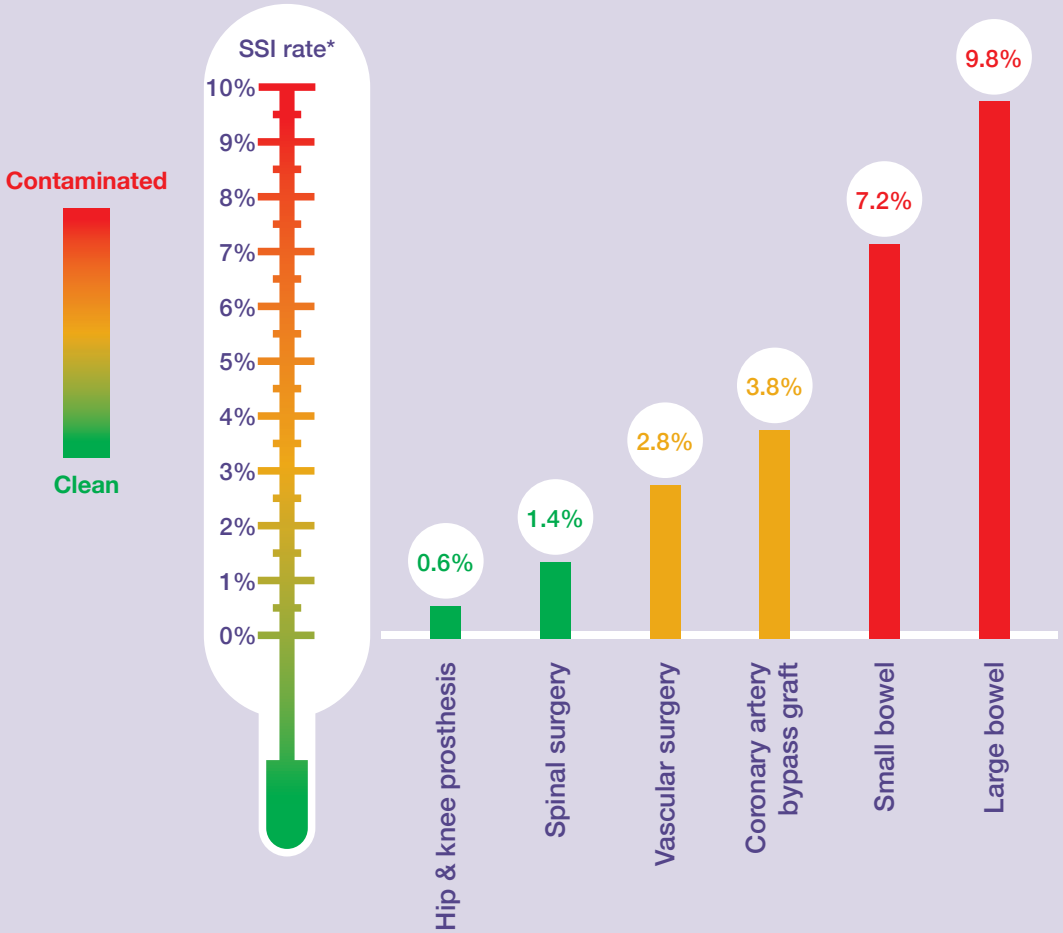
Figure 3.



3 Preventing Surgical Site Infection

Rates of SSI vary with different categories of surgery

Table 1.



*Based on SSI detected in inpatients and readmissions after surgery
Source: Surveillance of Surgical site infection in NHS hospitals in England, 2015/16

Microorganisms can be introduced into the incision site during the procedure. They may be directly introduced from the personnel involved in the operation but also indirectly on airborne particles that settle into the open tissues or on to instruments used in the procedure. The longer the procedure the greater the length of time that tissues are exposed to contamination.

The efficacy of the patients' immune response is also an important factor in determining whether microorganisms in the incision site are able to multiply to cause infection.

The risk of SSI increases with:

- The age of the patient.
- A diminished immune response due to an underlying illness (e.g. diabetes) or immunosuppressive therapy.
- Where local conditions impair healing e.g. obesity.[5]

A surgical technique that minimises damage to tissues and prevents haematoma formation reduces the risk that microorganisms left in the incision.

3 Preventing Surgical Site Infection

Practices designed to prevent SSI are an essential part of perioperative care and must be applied consistently to ensure the risk of SSI is minimised.

Procedures to prevent SSI are aimed at:

Minimising the number of microorganisms introduced into the incision site, for example removing microorganisms that normally colonise the skin of patient, maintaining asepsis and managing air quality.

Preventing the multiplication of microorganisms at the incision site, for example using prophylactic antibiotics.

Enhancing the patients' defences against infection, for example by minimising tissue damage and maintaining normal body temperature during the procedure.

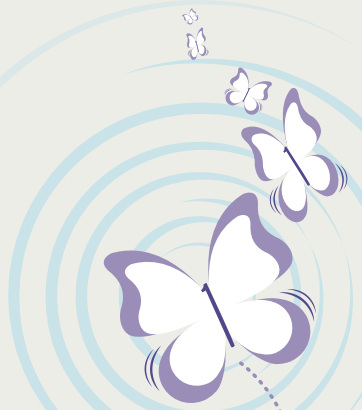
Preventing access of microorganisms into the incision site, for example postoperatively by use of a wound dressing.

Source of guidance on preventing SSI

The most authoritative guidance on the prevention of SSI can be obtained from high quality systematic reviews of research on the efficacy of interventions. In the main these studies are referenced in the following major guidelines:

- National Institute for Health and Care Excellence (NICE) guideline [NG125] Surgical site infections: prevention and treatment (2019)
- World Health Organisation (WHO) Guideline (2016)
- Centers for Disease Prevention and Control (CDC)/ Healthcare Infection Control Practices Advisory Committee (HICPAC) guidelines (2017)

Advice contained in the OneTogether Improvement Resources has been drawn from these sources and other reviews of similar quality.



4 Surgical Skin Preparation

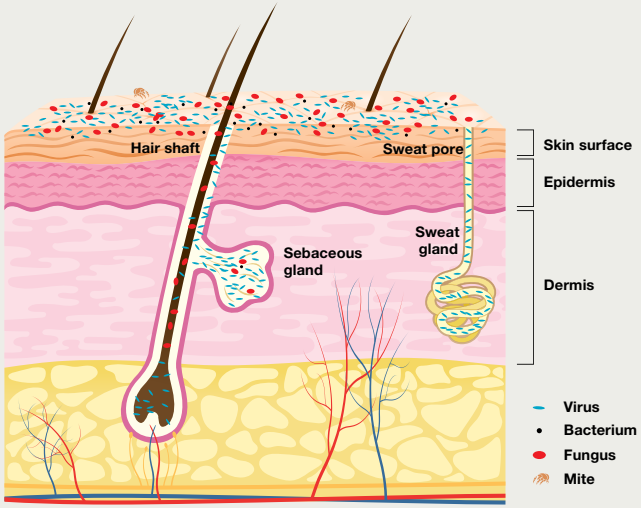
Why skin preparation is important to prevent SSI

Human skin is colonised by a large number of microorganisms known as the 'resident' or 'normal' flora which tend to live deep in the skin folds, sebaceous glands and hair follicles. The surfaces of the skin can also be contaminated with microorganisms from body excretions/secretions, dirt or from contact with contaminated surfaces or items ('transient' flora). Whilst all these microorganisms are harmless on the surface of the skin, if they get into a surgical incision they can cause a surgical site infection.

Cleansing of the skin prior to surgery is therefore required to remove as many microorganisms as possible from the skin surface.

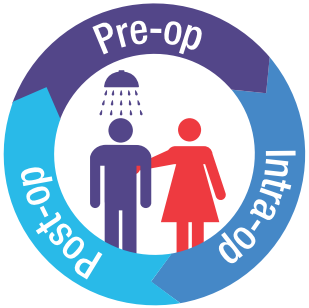
Soap and water physically removes dirt and secretions, and with it the transiently located microorganisms.

Antiseptic agents such as alcohol, chlorhexidine, triclosan and iodine contain agents that can rapidly kill both resident and transient microorganisms. Some agents are also able to suppress their regrowth for the duration of the surgical procedures.



There are several steps recommended for preoperative skin preparation:

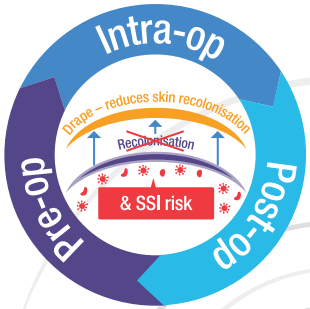
1 Pre-operative washing



2 Appropriate hair removal from incision site

3 Disinfection of site of incision

4 Reducing skin recolonisation



4.1 Patient Washing

Why is a shower/bath prior to surgery recommended?

The aim of pre-operative washing is to ensure the skin is clean before surgery. Patients should be encouraged (or if necessary assisted) to have a shower or bath with soap.[5,9]

What should be used for pre-operative washing?

Soap solutions are recommended to physically remove dirt and remove transient microorganisms from the surface of the skin.[5,10]

Using antiseptic in the soap solution is a strategy for reducing skin flora however, there is limited evidence for their efficacy in preventing SSI. Some patients may also have an allergic reaction to some antiseptic solutions.[5,6,10]

A number of randomised controlled trials have compared the effect of chlorhexidine gluconate (CHG) 4% or povidone iodine (PI) detergent solutions with a placebo solution, plain soap or no wash but these have not shown that the antiseptic confers any benefit in terms of prevention of SSI (see Box 1).

Studies on the efficacy of CHG washcloths compared to other antiseptics or no bathing in preventing SSI are limited and of low quality. Therefore, there is insufficient evidence to favour their use for pre-operative washing.[6,7]

Box 1: Summary of evidence for efficacy of preoperative washing

- High quality evidence from one systematic review of seven Randomised Controlled Trials (RCT) evaluating CHG solution and one RCT evaluating PI solution found no evidence to favour the use of one antiseptic over another or in preference to soap alone.[7]
- A systematic review including nine studies (7 RCTs and two observational studies) and a total of 17,087 adult patients investigated preoperative bathing or showering with an antimicrobial soap compared to plain soap. This found moderate quality of evidence that bathing with CHG soap does not significantly reduce SSI rates compared to bathing with plain soap.[6]
- A Cochrane review showed no clear evidence of benefit for preoperative showering or bathing with CHG over other wash products, to reduce surgical site infection.[8]

4.2 Hair Removal

Why remove hair from the site of incision?

The removal of hair from the site of incision may be necessary to access the surgical site.

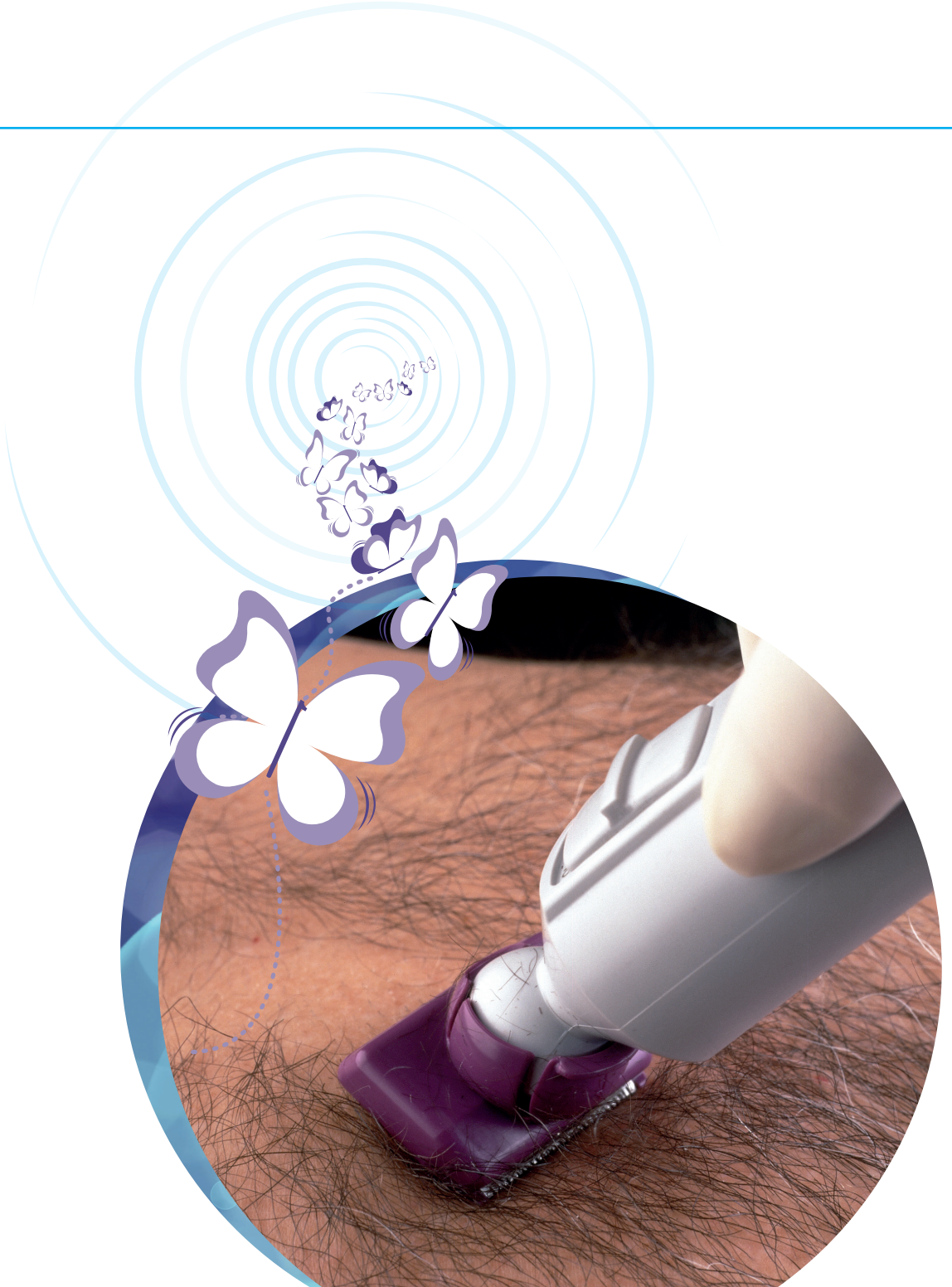
The perception that the presence of hair at the site increases microbial contamination and therefore risk of SSI is not supported by evidence. Systematic reviews have found no difference in SSI rates between procedures involving hair removal and no hair removal.[5,6,9,10]

How should hair be removed from the operative site?

If hair must be removed then the method used should avoid damage to the skin. Micro-abrasions, such as those caused by razors, may encourage the proliferation of microorganisms on the skin surrounding the operative site and increase the risk of the incision becoming contaminated. The longer the period between hair removal and the incision being made the greater the risk of contamination.[5]

Hair clippers cut the hair close to the skin without the blade actually touching it and is the preferred method of removing hair as they are associated with the lowest risk of causing abrasions.6 Electric clippers with a disposable, single-patient use head are the most cost effective method.[5]

Depilatory creams also do not abrade the skin but are less practical as they need to be left in place for several minutes and have the potential to cause allergic reactions.[6] There are no studies of any quality that have compared clippers with depilatory creams.



4.2 Hair Removal

Box 2: Summary of evidence for the efficacy of different hair removal techniques

- No significant difference in the rate of SSI was found in six RCTs comparing hair removal (shaving, clipping or depilatory cream) with no hair removal although the studies consisted of a small sample.[9]
- Shaving was found to double the risk of SSI compared with clipping in three studies.[9]
- No significant difference in SSI rates was found in seven studies between hair removal by shaving compared with depilatory cream, although studies consisted of a small sample.[9]
- One study found no difference in rate of SSI when hair removal occurred the day before surgery compared to hair removal on the day of surgery, although the number of participants was small.[6]

When should hair be removed from the operative site?

There is limited evidence to inform the timing of hair removal.[6,9] However, guidance recommends hair should be removed as close to the time of surgery as possible, preferably on the day of surgery.[5]

Patients should be advised not to shave themselves prior to surgery as shaving may increase their risk of developing an SSI.

4.3 Antiseptic Skin Preparation

Why use antiseptics to disinfect the skin prior to surgery?

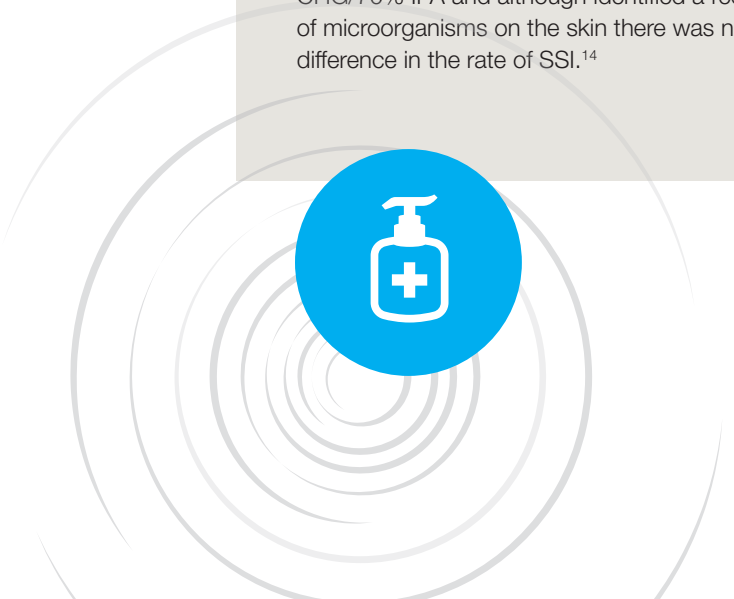
Cleaning the skin with soap and water removes dirt, skin secretions such as sweat and sebum, together with superficial microorganisms. However, microorganisms that live in the folds of the skin, sebaceous glands and hair follicles are not removed by washing. The aim of skin disinfection is to apply antiseptic solutions to rapidly kill or remove skin microorganisms at the site of the incision and reduce the risk of contamination of the surgical site.

When should skin antiseptics be applied?

Preparation of the surgical site should occur as close to the point of surgery as possible and immediately prior to draping. There is no evidence to suggest that multiple applications of different skin antiseptics increases efficacy.

Box 3: Summary of evidence for the efficacy of different skin antiseptics

- Agents containing alcohol have the highest probability of being the most effective for preventing SSI, but there are few studies that have directly compared different alcohol based formulations.[6,11]
- Most studies are too small to detect differences in rates of SSI, measure only the change in skin colonisation, or have focused on single types of operative procedure.
- There is one randomised controlled trial that found 2% CHG in 70% isopropyl alcohol (IPA) to be significantly more effective at preventing SSI than 8.3% PI in 72.5% IPA; but was conducted only on patients undergoing caesarean section.[12]
- A similar comparison in a study by Berry et al (1982) included a broader range of surgery but the methods were poorly described, did not use a clear, objective definition for SSI and did not account for variation in the period of follow-up.[13]
- One small study has compared 0.5% CHG/70% IPA with 2% CHG/70% IPA and although identified a reduction in the number of microorganisms on the skin there was not a significant difference in the rate of SSI.[14]



4.3 Antiseptic Skin Preparation

What antiseptics can be used for skin preparation?

The two main antiseptic agents used for pre-operative skin preparation are:

- Chlorhexidine gluconate (CHG)
- Iodophors (povidone iodine; PI)

They are available in either an aqueous or alcohol-based form. In 2019 NICE recommend chlorhexadine as choice in skin preparation.

Alcohol is also an antiseptic agent and products based on alcohol (Isopropyl Alcohol (IPA) are probably more effective than aqueous products in preventing SSI.[6,7,11] Evidence for differences in efficacy between PI and CHG is currently limited but tends to favour CHG (see Box 3).

Conventionally CHG for skin preparation has been available as a 0.5% solution. Assumptions that a 2% solution is more effective have been made because of guidance related to intravenous (IV) devices.[15] However, since an IV device remains in the skin for prolonged periods the conditions are not comparable. Currently there is limited evidence for the enhanced efficacy of 2% solutions in surgical skin preparation.

How to select an appropriate skin preparation?

Alcohol-based solutions should be used where they are suitable for the particular site of incision as they include an additional, rapid acting antiseptic agent that dries quickly. However, alcohol can damage mucous membranes and aqueous solutions should be used for this type of surgery. The skin of pre-term infants is immature and exposure to antiseptics should be avoided as it may cause skin irritation, erythema or burns.[16]

Both PI and CHG are effective against a broad range of skin microorganisms and exert persistent activity that prevents regrowth for several hours after application.[17,18] There are some situations where PI or CHG are contra-indicated (see Table 1).

CHG is a potential allergenic antiseptic in susceptible individuals although allergy is rare. Reported prevalence in England is 0.01%.[19] It will initially cause a minor hypersensitivity reaction, which should be documented in the patients records, as subsequent exposures to CHG may lead to anaphylaxis. Allergic reactions to PI may also occur but since this agent is less frequently used these are uncommon. However, repeat exposure to PI can cause iodine toxicity in pregnant or breastfeeding women.

Expert guidance therefore supports the use of alcohol-based skin preparation solution where possible (Table 2). Selection of CHG or PI depends on the patient, the site of incision and nature of procedure and should therefore be guided by local policy (Table 2).

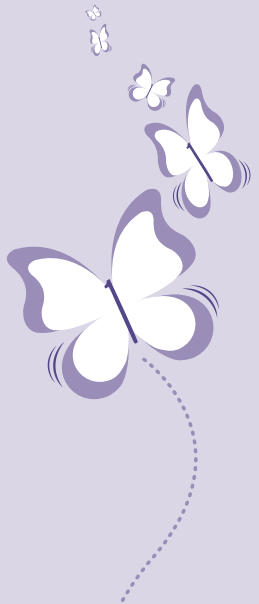


Table 2: Properties of active agents in pre-operative skin preparations

	Chlorhexidine Gluconate (CHG)	Iodophors (PI)	Alcohol
Mechanism of action	Disrupts cell membrane	Releases iodine which oxidises and substitutes cell material	Denatures cell wall protein
Preparation strength	0.5%; 2%	7 – 10%	Denatures cell wall protein
Quick kill	Moderate		Denatures cell wall protein
Persistent activity	High (up to 48hrs)	Moderate	Denatures cell wall protein
Use on eyes	No (damage to cornea)	Dilute 1:1 10% solution with balanced salts to make 5%	Denatures cell wall protein
Use on ears	No (damages middle ear)	Yes	Denatures cell wall protein
Use on mouth	Use 0.12% oral rinse	Yes	Denatures cell wall protein
Use on genital area	No	Yes	Denatures cell wall protein
Use on tissues	No	No	Denatures cell wall protein
Contraindications	• Sensitivity or allergy • Neonates	• Sensitivity or allergy • Neonates • Inactivated in presence of blood Note: risk of iodine toxicity in repeat use in patients with thyroid disorders, pregnant/breastfeeding women but unlikely to be a problem for single preoperative skin preparation	• Sensitivity or allergy • Neonates • Inactivated in presence of blood

4.3 Antiseptic Skin Preparation

NICE 2019 Recommendations

Choice of antiseptic skin preparation	When
Alcohol-based solution of chlorhexidine	First choice unless contraindicated or the surgical site is next to a mucous membrane
Aqueous solution of chlorhexidine	If the surgical site is next to a mucous membrane
Alcohol-based solution of povidone-iodine	If chlorhexidine is contraindicated
Aqueous solution of povidone-iodine	If both an alcohol-based solution and chlorhexidine are unsuitable

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NICE 2019 Fit For Purpose

Selecting a product should be in line with that products marketing authorisation for use. Outside of this the user must take responsibility for the decision. Informed consent should be obtained and documented. If using a product outside of marketing authorisation, the user should refer to the General Medical Council's Prescribing guidance: prescribing unlicensed medicines for further information.

How should skin antiseptics be applied?

The incision site should be rubbed with sufficient solution to adequately cover the site and ensure that microorganisms in skin folds and sebaceous glands are treated (refer to manufacturer instructions for coverage area information). Either gauze swabs or commercially available applicators are effective in achieving this.[20] Good practice suggests that the direction of cleansing should be away from the incision site but there is no evidence that support the efficacy of a particular technique.

The solution must be allowed to dry on the skin before drapes are fixed and the incision is made, in order to enable sufficient time for the antiseptic to kill the microorganisms on the skin. The risk of fire associated with alcohol-based solutions can be prevented by allowing skin to completely dry after application, and removing alcohol pooled e.g. in umbilicus, or body hair.

Skin antiseptic may be confused with medication if both are placed in unlabelled gallipots on the sterile field. Therefore skin antiseptics should be removed from the sterile field immediately after use and medications must always be drawn directly from source ampoule or bottle.[21]

How should skin antiseptics be handled?

Delineation of the area prepared is easier with iodine-based or tinted agents. To facilitate this where CHG is used, dye can be added to the solution immediately prior to use. The dye used must be recommended by the manufacturer and licensed for use with the product.

Topical antiseptics must be manufactured under current Good Manufacturing Practice (cGMP) regulations to eliminate all potentially harmful microorganisms. However, they are not required to undergo sterilisation since they are applied to intact skin.

Multi-dose containers may become contaminated during use, especially aqueous formulations. It is therefore essential to use appropriate aseptic non touch techniques during handling e.g. taking care not to contaminate the cap or inside neck of the bottle with fingers, not returning unused solution to the bottle. Best practice indicates that the container should be labelled with the date of opening, and opened containers used for a defined period as recommended by the manufacturers.

4.4 Reducing Skin Recolonisation

Why use an incise drape?

Surgeons report that an incise drape secures and protects the incisional area. It ensures the area is protected from other surgical drapes shifting and it allows limb mobilisation without disturbing the sterile field and can support heavy retraction with reduced tension.

The benefits of using an incise drape to reduce the risk of SSI has not been proven, however NICE (2008) acknowledge the incise drape is an integral element of draping in some surgical specialties.

What type of incise drape?

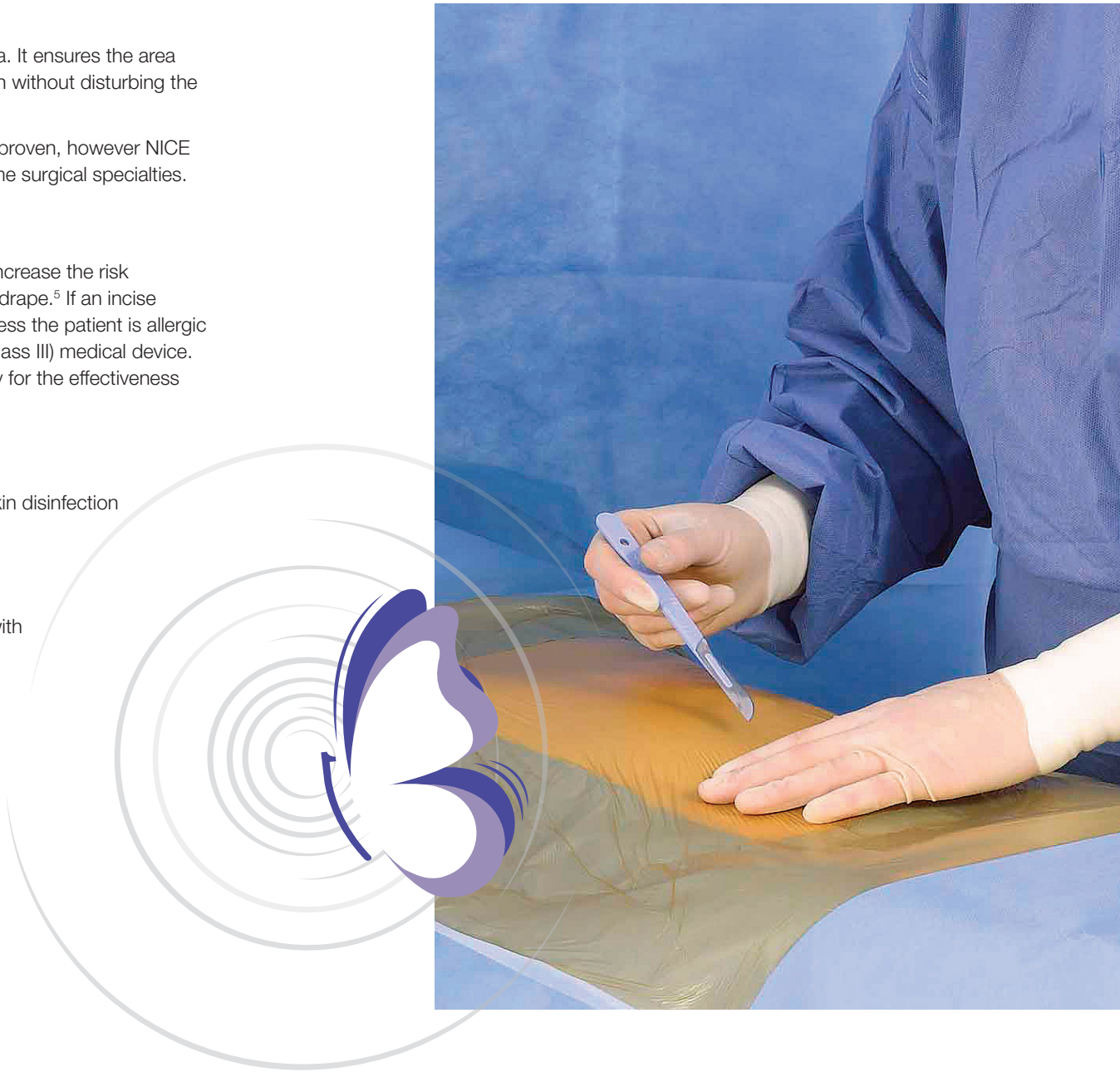
There is some evidence that the use of non-impregnated incise drape may increase the risk of SSI in comparison to no incise drape or the use of an impregnated incise drape.[5] If an incise drape is used in a surgical procedure it should be iodophor impregnated unless the patient is allergic to iodine. Iodophor impregnated incise drapes are classified as a high risk (class III) medical device. In accordance with medical device directive 93/42/EEC. This provides surety for the effectiveness of the iodophor.

When is the incise drape applied?

The incise drape is part of creating the sterile field and is applied following skin disinfection and prior to incision.

How is the incise drape applied?

As with all medical devices the application and use must be in compliance with the manufacturer's instructions.



4.5 Reducing Nasal Colonisation

Reducing nasal colonisation prior to surgery requires further study. Based on the current body of evidence NICE recommends consider applying nasal mupirocin in combination with a chlorhexidine bodywash before procedures in which *staphylococcus aureus* is a likely cause of a surgical site infection.

This should be locally determined through discussions between surgical and infection prevention teams and take into account:

- **The type of procedure**
- **The increased risk of side effects in preterm infants**
- **Individual patient risk factors**
- **The potential impact of infection**

Surveillance on antimicrobial resistance associated with the use of mupirocin should be undertaken.

5 Competency Assessment Checklist

Prepare patients for clinical procedures	Demonstrated to learner	Assessment of competence by Assessor		
		6 weeks	3 months	6 months
Skill criteria	**Signature/date**	**Signature/date**	**Signature/date**	**Signature/date**
Demonstrate the correct identification of the patient, their operative site and clarify any uncertainties prior to preparation				
Ensure that patient allergies are checked prior to procedure				
Ensure patient dignity and safety are maintained throughout				
Demonstrate the correct method of hair removal				
Demonstrate the correct method of skin preparation				
Demonstrate the correct application of incise drapes				
Demonstrate the correct application of nasal mupirocin				
Underpinning Knowledge		**Discussed Signature/date**	**Knowledge achieved Signature/date**	**Assessment method**
Discuss the importance of verbal and non verbal communication to the patient				
Discuss the rationale for using nasal muprocin				
Identify factors which may compromise patient dignity during procedures and how these may be minimised				
Discuss the rationale for skin washing prior to surgery e.g. preoperative showering/bathing				
Discuss the types of antiseptic preparations used to disinfect the skin and the indications for their use				
Discuss the rational for using an incise drape				
Identify the dangers of pooling of preparation fluids and preventative measures				
Discuss sources of contamination when preparing the surgical field and appropriate measures to deal with them				
Discuss the relationship between hair removal at the operative site and infection prevention				
Describe the potential consequences of wound contamination				
Discuss the rational of using nasal mupirocin with chlorhexidine body wash in certain procedures				

6 References

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4 Jenks PJ, Laurent M, McQuarry S, Watkins R. Clinical and economic burden of surgical site infection (SSI) and predicted financial consequences of elimination of SSI from an English hospital. *J. Hosp Infection* 2014; 86(1): 24–33.

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Standards and Guidance
Reducing the risk of Surgical Site Infection (SSI)

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1. Skin Preparation

1.1 Washing

Recommendation

NICE recommends that patients should shower or have a bath (or be assisted to shower, bath or bed bath) using soap, either the day before, or on the day of surgery.[1]

1.2 Hair Removal

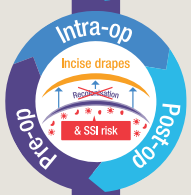
Recommendation

NICE recommends that razors should not be used for hair removal because they increase the risk of SSI. If hair must be removed, then clippers with disposable heads are recommended.[1]

1.3 Skin Antisepsis

Recommendation

Prepare the skin at the surgical site immediately before incision using an antiseptic preparation. Unless contra indicated alcohol-based solution of chlorhexidine is first choice.[1]



1.4 Reducing Skin Recolonisation

Recommendation

NICE recommends that if an incise drape is used, this should be iodophor impregnated unless the patient has an iodine allergy.[1]

1.5 Reducing Nasal Colonisation

Recommendation

NICE recommends to consider applying nasal mupirocin in combination with a chlorhexidine body wash before procedures which are locally determined.

4. Maintaining Asepsis

Recommendation

All pre sterilised instruments must be checked for evidence that they have been sterilised and that the packs are intact.

Instruments should be set up in a clean area, as close to the procedure time as possible. All prepared instruments must be closely observed at all times.

Staff who undertake procedures which require skills such as aseptic technique, must be trained and demonstrate proficiency before being allowed to undertake these procedures independently.[5,6]

3. Perioperative Warming

Recommendation

NICE recommends that all patients should be assessed within the hour prior to surgery for their risk of perioperative hypothermia and their temperature measured using a site that produces a direct measure or direct estimate of core temperature.

Active warming should commence on the ward/emergency department at least 30 minutes prior to induction of anaesthesia for all patients (and immediately if their temperature is below 36°C).

The patient's core temperature should be 36°C or above before they are transferred to theatre, unless there is a need to expedite surgery.

Patients having anaesthesia for longer than 30 minutes, or at a higher risk of perioperative hypothermia are warmed from induction of anaesthesia using forced-air warming.

The patient's temperature should be measured and documented before induction of anaesthesia and then every 30 minutes until the end of surgery.

Induction of anaesthesia should not begin unless the patient's temperature is 36.0°C or above.

Intravenous fluids (500 ml or more) and blood products should be warmed to 37°C using a fluid warming device.

Irrigation fluids should be warmed in a thermostatically controlled cabinet to a temperature of 38°C to 40°C.

The patient's temperature should be monitored and documented every 15 minutes in recovery.

The patient should not be transferred to the ward, until their temperature is 36°C or above.[4]

2. Prophylactic Antibiotics

Recommendation

NICE recommends that there must be a local guide to antibiotic prescribing including advice on appropriate surgical prophylaxis.[1]

Surgical prophylaxis should be given intravenously on induction of anesthesia or within 60 mins before the incision is made.[2]

In most circumstances a single dose of antibiotic with a long enough half-life to achieve activity throughout the operation is sufficient.[3]

7. Surveillance

Recommendation

The risk of SSI should be monitored using a standardised surveillance methodology to provide feedback to surgeons and the surgical team about the quality of infection prevention in the operating theatre.

Monitoring of infection rates is essential to provide patients with accurate information about the risk of SSI associated with the operation.[6,7]

5. Surgical Environment

Recommendation

An effective air changing ventilation system should be in operation and regularly monitored.

The doors to the operating theatre should remain closed and traffic in and out of theatre restricted to a minimum to ensure efficiency of the ventilation.

The number of personnel present in theatre should be kept to a minimum.[5]

There is a process to ensure equipment is cleaned prior to admission into the operating theatre.

6. Incision and Wound Management

Recommendation

6.1. Only apply an antiseptic or antibiotic to the wound before closure as part of a clinical research trial.

6.2. NICE recommends that when using sutures, consider using antimicrobial triclosan-coated sutures, especially for paediatric surgery.

6.3. NICE recommends consider using sutures rather than staples to close the skin after caesarean section to reduce the risk of superficial wound dehiscence.

6.4. NICE recommends that surgical incisions should be covered with an appropriate interactive dressing at the end of the operation.[1]

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The Association for Perioperative Practice is a registered charity working to enhance skills and knowledge within the perioperative arena. For more than 50 years they have promoted best practice and standards of care within this area and currently represent 7,200 theatre practitioners from across the UK and overseas.
www.afpp.org.uk

The Infection Prevention Society is a registered charity whose mission is to inform promote and sustain expert infection prevention policy and practice in the pursuit of patient or service user and staff safety wherever care is delivered. Its vision is that no person is harmed by a preventable infection.
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The College of Operating Department Practitioners is the professional body for operating department practitioners (ODPs).
It provides guidance on professional and educational issues to members of the profession, and advises a broad selection of national and local bodies on matters relating to operating department practice.
It represents more than 5000 members throughout the UK and overseas, and hosts regular seminars and other public events.
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The Royal College of Nursing is the UK's largest nursing professional body and trade union representing more than 430,000 nursing staff. Founded in 1916, the RCN has worked for more than 100 years to improve nursing education, develop and share good practice and promote nursing as a profession.
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