

# SCOPE

## 1 Guideline title

Surgical wounds: prevention and treatment of surgical site infection

### 1.1 Short title

Surgical wounds

## 2 Background

- a) The National Institute for Clinical Excellence ('NICE' or 'the Institute') has commissioned the National Collaborating Centre for Nursing and Supportive Care to develop a clinical guideline on the prevention and treatment of surgical site infection for use in the NHS in England and Wales. This follows referral of the topic by the Department of Health and Welsh Assembly Government (see Appendix A). The guideline will provide recommendations for good practice that are based on the best available evidence of clinical and cost effectiveness. Reference will be made to existing good quality guidelines of relevance.
- b) The Institute's clinical guidelines will support the implementation of National Service Frameworks (NSFs) in those aspects of care where a Framework has been published. The statements in each NSF reflect the evidence that was used at the time the Framework was prepared. The clinical guidelines and technology appraisals published by the Institute after an NSF has been issued will have the effect of updating the Framework.

### 3 Clinical need for the guideline

- a) Surgical site infection (SSI) is a postoperative complication occurring within 30 days following a surgical procedure and is an important cause of morbidity and mortality for patients undergoing surgery. The National Prevalence Survey of Infections in Hospitals (1996) conducted in 157 hospitals in England, Scotland, Wales and Ireland involving data from 37,111 patients reported an overall prevalence of hospital acquired infection of 9.0%. Four major groups of infections were identified: urinary tract infections; lower respiratory tract infections, skin infections, and SSIs. The prevalence of surgical SSI was 10.7%. Furthermore, *Surveillance of surgical site infection in English hospitals* reported an incidence of SSI of 4.2% from the 152 hospitals that participated in the surveillance between 1997 and 2001.
- b) SSI increases the length of hospital stay and subsequent utilisation of healthcare resources. The costs associated with each type of operation in the UK have been studied and the total attributable hospital cost due to SSI is estimated at £409 per infection.
- Patient-related conditions and operation characteristics may influence the risk of SSI development. The assessment and identification of the presence of these factors facilitates both surveillance and the implementation of targeted prevention measures. In addition, the incidence of infected surgical wounds may be influenced by factors such as preoperative care, the operating room environment, postoperative care and type of surgery. The classification of the type of surgery is determined by the degree of contamination at the time of surgery as follows (see Appendix B):
    - clean wounds
    - clean-contaminated wounds
    - contaminated wounds
    - dirty or infected wounds.

Classification of infection is determined by the depth of invasion of micro-organisms. Such classification is described as:

- superficial incisional – involving the skin and subcutaneous tissues
- deep incisional – involving the soft tissues (fascia and muscle)
- organ/space.

c) The Nosocomial Infection National Surveillance Scheme (NINSS), established in response to the need for a defined programme of surveillance of infection in English hospitals, uses a risk index to stratify surgical wound infection rates by risk factors. Risk category is determined by allocating a point for the presence of each of the following risk factors:

- a contaminated or dirty wound class (see Appendix B)
- American Society of Anesthesiologists score of 3, 4 or 5 (see Appendix C)
- a procedure lasting longer than the expected duration of surgery for that particular operation.

## 4 The guideline

a) The guideline development process is described in detail in three booklets that are available from the NICE website (see 'Further information'). *The Guideline Development Process – Information for Stakeholders* describes how organisations can become involved in the development of a guideline.

b) This document is the scope. It defines exactly what this guideline will (and will not) examine, and what the guideline developers will consider. The scope is based on the referral from the Department of Health and Welsh Assembly Government (see Appendix A).

c) The areas that will be addressed by the guideline are described in the following sections.

## **4.1 Population**

### **4.1.1 Groups that will be covered**

- a) The guideline will consider people undergoing an incisional surgical procedure. It will also consider people undergoing surgical implant and people with surgical drain sites.
- b) Groups with characteristics considered as risk factors for the development of SSI as defined by the NINSS surgical risk stratification system will also be considered, but the management of specific underlying conditions will not be covered.

### **4.1.2 Groups that will not be covered**

- a) People undergoing any surgical procedure that does not involve a visible surgical incision, and therefore does not result in the presence of a conventional surgical wound.

## **4.2 Healthcare setting**

- a) Patients undergoing surgical procedures in acute hospital trusts and primary health care settings.
- b) Patients discharged to a home care setting (own home or extended care settings) with a recent surgical intervention and subsequent wound.

## **4.3 Clinical management**

- a) Preoperative

### **Patient specific**

- Hand-washing technique.
- Prophylactic antibiotics.
- Hair removal.
- Nutrition and hydration.

- Other interventions targeted at high-risk patients.

#### **Service/environment**

- Length of preoperative stay.

#### b) Intraoperative

##### **Patient specific**

- Skin preparation solutions and technique.
- Normothermia and warming.
- Antibiotic prophylaxis for prolonged surgery.
- Topical intra-wound solutions and antibiotics.

##### **Surgical intervention**

- Type of surgery: minimally invasive or invasive.
- Suturing materials and techniques.
- Wound closure techniques.

##### **Management of environment**

- Theatre wear and masks.
- Drapes.
- Hand washing solutions and technique.
- Airflow and theatre environment.

#### c) Postoperative prevention and treatment

##### **Patient specific**

- Use of drains.
- Dressings and cleansing.
- Debridement for open wounds.
- Antibiotics.

##### **Management of infection**

- Diagnosis and classification systems.
- Surveillance.

#### d) Management of antibiotic-resistant bacteria will not be included.

- e) Recommendations will address the information needs of patients and their carers.
- f) Because of the number of settings covered and associated interventions/preventive actions, it is likely that referral will be made to existing guidelines and principles of prevention and management within those guidelines.
- g) The NICE technology appraisal on debridement for infected surgical wounds will be updated as part of this work<sup>1</sup>.

#### **4.4 Audit support within guideline**

The guideline will incorporate review audit criteria and advice.

The audit will complement any existing and proposed work of relevance.

#### **4.5 Status**

##### **4.5.1 Scope**

This is the consultation draft of the scope. The consultation period is from 20 January to 17 February 2004.

##### **4.5.2 Guideline**

The development of the guideline recommendations will begin in June/July 2004.

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<sup>1</sup> National Institute for Clinical Excellence (2001) Guidance on the use of debriding agents. *NICE Technology Appraisal* No.45. London: National Institute for Clinical Excellence. Available from [www.nice.org.uk](http://www.nice.org.uk).

## 5 Further information

Information on the guideline development process is provided in:

- *The Guideline Development Process – Information for the Public and the NHS*
- *The Guideline Development Process – Information for Stakeholders*
- *The Guideline Development Process – Information for National Collaborating Centres and Guideline Development Groups*

These booklets are available as PDF files from the NICE website ([www.nice.org.uk](http://www.nice.org.uk)). Information on the progress of the guideline will also be available from the website.

## **Appendix A – Referral from the Department of Health and Welsh Assembly Government**

The Department of Health and Welsh Assembly Government asked the Institute:

“To prepare guidance for the NHS in England and Wales on the prevention, management and treatment of wounds. The guidance should include the prevention of skin breakdown, prevention of pressure sores, prevention of diabetic foot ulceration, prevention of recurrence of venous leg ulcers and prevention of breakdown of surgical wounds.”



## **Appendix B: Surgical wound classification**

**Clean:** An uninfected operative wound in which no inflammation is encountered and in which the respiratory tract, alimentary, genital, or uninfected urinary tracts are not entered.

**Clean-contaminated:** Operative wounds in which the respiratory, alimentary, genital, or urinary tract is entered under controlled conditions and without unusual contamination.

**Contaminated:** Open, fresh, or accidental wounds; operations with major breaks in sterile technique or gross spillage from the gastrointestinal tract; and incisions in which acute, non-purulent inflammation is encountered.

**Dirty or infected:** Old traumatic wounds with retained devitalised tissue, and those that involve existing clinical infection.

(National Academy of Science 1964)

## **Appendix C: American Society of Anesthesiologists (ASA) physical status classification**

<b>Code</b>	<b>Patient's preoperative physical status</b>
1	Normal, healthy patient.
2	Patient with mild systemic disease.
3	Patient with severe systemic disease that is not incapacitating.
4	Patient with an incapacitating systemic disease that is a constant threat to life.
5	Moribund patient who is not expected to survive 24 hours with or without operation.