Implementation of SSI NICE Guidelines – perioperative phase

Kate Woodhead

Director, KMW (Healthcare Consultants) Ltd

Objectives

- Identify key perioperative interventions that reduce the risk of SSI
- Highlight some of the challenges for implementation of the NICE guidance – Clinical Guideline 074

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Surgical Site Infections

- 8% of patients have an HCAI – of these 14% are Surgical Site Infections
- 5% of patients who have had surgery – get an SSI
- Range in severity from limited wound discharge to life threatening post-op complications.
- Caused in the main (50%) by *Staph aureus;* also *Pseudomonas aeruginosa* and other gram neg bacteria.

Impact on patients

- More than 1/3 post-op deaths are related in part to SSIs
- Poor scars :- spreading, hypertrophic or keloid
- Persistent pain and itching
- Restricted movement
- Emotional distress and reduced quality of life
- Additional time in hospital

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Cost to the taxpayer

- May double the Length of Stay
- Re-operation
- Additional care requirements
- Drug treatment costs

- Litigation potential

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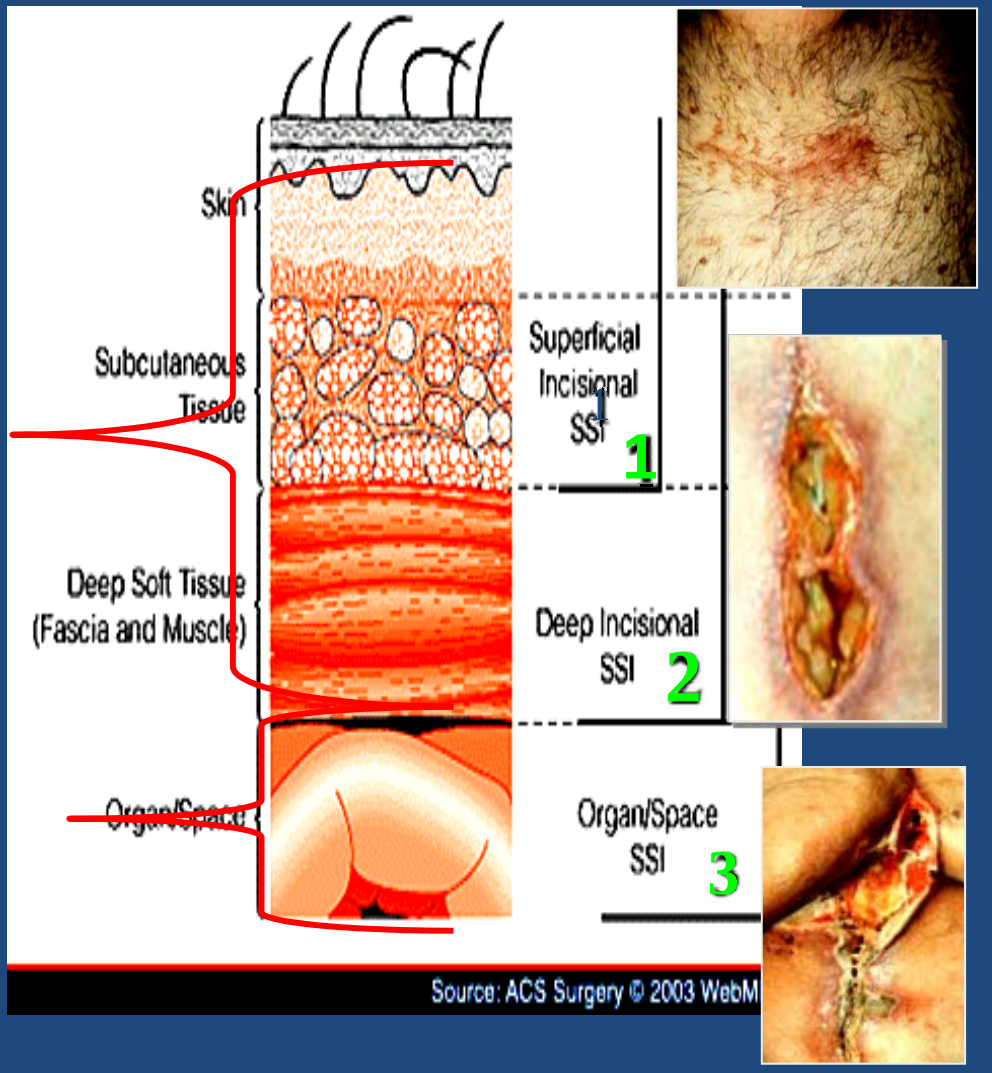
Types of Surgical Site Infections

1. Superficial incisional
2. Deep incisional
3. Organ/space

2/3 Incisional Site Infections

1/3 Organs/Space Infections



CDC Guideline 1999 on Surgical Site Infections

Nice Clinical Guideline 074

- Hand decontamination
- Incise drapes
- Use of sterile gowns/ gloves
- Antiseptic skin preparation
- Diathermy
- Maintaining patient homeostasis
- Wound irrigation
- Antiseptic agents
- Dressings

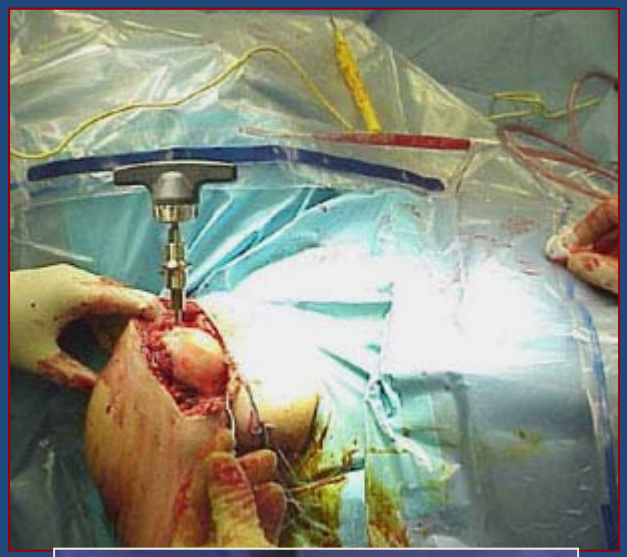
Intraoperative phase

Hand decontamination

Recommendations

- The team should wash their hands before 1st case using an aqueous antiseptic solution, a single use brush or pick for the nails.
- Hands should be washed between cases either with alcoholic hand rub or antiseptic surgical solution.

Incise drapes



Recommendations

- Do not use non- iodophor impregnated drapes routinely for surgery as they may increase the risk of surgical site infection.

- If an incise drape is required, use an iodophor –impregnated drape unless the patient has an iodine allergy

Use of sterile gowns

Recommendation

- The operating team should wear sterile gowns in the operating theatre during the operation

Disposable or reuseable drapes and gowns

Recommendation

- There is evidence of no difference between reusable and disposable drapes and gowns in terms of SSI incidence.

European Norm EN 13795

- Ensures that all single-use and multiple-use garments such as gowns, drapes, and clean air suits used in the operating theatre environment prevent the transmission of infective agents between patients and clinical staff for each use.

European Norm EN 13795

Characteristics to CE mark gowns and drapes require:

- Resistance to microbial penetration in wet and dry conditions
- Microbial cleanliness
- Cleanliness in terms of foreign particulate matter
- Resistance to linting
- Resistance to liquid penetration
- Bursting strength – both dry and wet
- Tensile strength – both dry and wet

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Gloves

Recommendations

- There is insufficient evidence to determine a difference between single and double gloving on rates of SSIs.
- Insufficient evidence to establish a correlation between incidence of SSI and glove puncture rate

Antiseptic skin preparation

Recommendations

- Prepare the skin at the surgical site immediately before incision using an antiseptic (aqueous or alcohol based); povidine - iodine or chlorhexidine are most suitable.
- If diathermy is to be used, ensure skin preps are dried by evaporation and pooling of alcohol based preps are avoided.

New research

- Skin prep used in UK now, is either 0.5% chlorhexidine in 70% isopropyl alcohol or
- Povidine idodine solution (Betadine)

NEJM Jan 7 – 2010

Published Chlorhexidine-Alcohol v. Povidine Iodine for Surgical – Site Antisepsis

Reduced risk of SSI's by 41% using 2% CHG v. Betadine.

Diathermy

Recommendation

- Do not use diathermy for surgical incision to reduce the risk of surgical site infection.

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Maintaining patient homeostasis

- Warming – or maintenance of normothermia. Covered specifically by NICE Clinical Guideline 65

"Inadvertent perioperative hypothermia."

Recommendations

- Patients should be assessed for risk status prior to surgery.
- ASA Grade 2- 5
- Pre-op temp below 36^{o}
- Undergoing regional and GA
- Undergoing major or intermediate surgery
- At risk of cardiovascular complications

Maintaining patient homeostasis – intraoperative phase. (CG 65)

- Document pts temp pre induction and then every 30 mins.
- Critical incident if pt arrives in theatre with temp below 36^{o}.
- Anaesthesia should not start unless 36^{o} or above.
- Ambient temp 21^{o}, cooler later.
- Use forced air warming technique for all surgery longer than 30 mins.
- Cover all pts to conserve heat (and dignity)
- IV fluids should all be warmed to 37^{o}

Maintaining patient homeostasis -oxygenation

Recommendation

- Maintain optimal oxygenation during surgery. In particular during major surgery and in recovery to ensure haemoglobin saturation of more than 95%

Maintaining patient homeostasis – perfusion & blood glucose

- Recommendation - perfusion
- Maintain adequate perfusion during surgery.

- Recommendation – blood glucose control
- Do not give insulin routinely to patients who do not have diabetes to optimise blood glucose postoperatively – as a means of reducing SSI.

Wound irrigation and intracavity lavage

Recommendations

- Do not use wound irrigation to reduce the risk of surgical site infection.
- Do not use intracavity lavage to reduce the risk of surgical site infection.

Antiseptic and antimicrobial agents before wound closure

- Recommendation
- Do not use intraoperative skin re-disinfection or topical cefotaxime in abdominal surgery to reduce risk of SSI.

Closure methods

Recommendation

- There is insufficient evidence to determine whether suturing or not / or placing a drain in subcu tissue reduces SSI
- Insufficient evidence that technique or material to close the abdo wall influences the incidence of SSI
- No recommendation can be made.

Wound dressings

Recommendation

- Cover surgical incisions with an appropriate interactive dressing at the end of the operation.

Challenges for practice

- Reduce the frequent use of incise drapes
- Poorly executed skin preparation with pooling of solution is a fire risk .
- Patient warming practice needs to change – comprehensively. (CG 65)

Thank you

Any Questions?

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