GUIDELINE FOR THE MANAGEMENT OF CAESAREAN SECTION INCISIONS AND SKIN PREPARATION

TARGET AUDIENCE	All Midwifery and Medical Staff providing maternity care in NHS Lanarkshire.
PATIENT GROUP	All pregnant women booked for maternity care within NHS Lanarkshire

Clinical Guidelines Summary

SITUATION

Surgical site infection (SSI) is one of the most common types of Healthcare Associated Infection (HAI), estimated to account for 16.5% of inpatient HAI within NHS Scotland (Health Protection Scotland 2019). SSIs can result in delayed incision healing, increased hospital stays, unnecessary pain and possibly further surgical intervention, readmission, loss of earnings, suffering and sometimes death. SSIs are estimated on average to double the cost of treatment, mainly due to the resultant increase in length of stay.

BACKGROUND

Preparation for surgery has traditionally included the routine removal of body hair as its presence can interfere with the exposure of the incision and subsequent wound, the suturing of the incision and the application of adhesive drapes and wound dressings. Hair is also perceived as being a potential source of bacterial infection. However, the process of removing hair might cause primary infection because of microscopic cuts to the skin.

ASSESSMENT

A Cochrane review (2011) was carried out to assess the relative benefits and harms of hair removal, the different methods of hair removal and the effect of timing.

RECOMMENDATIONS

- There is no evidence that routine preoperative hair removal reduces surgical site infection but when it is necessary to remove hair the existing evidence suggests that clippers are associated with fewer SSIs than razors.
- If hair removal is required, it can be undertaken in theatre where clippers are available. It is also recommended that where possible patients should be advised to avoid the application of fake tan due to the amount of chemicals present within it.
- Health Protection Scotland (2015) also recommends that the patient should have a shower on the day or the day before surgery using soap.

Immediate Incision Management

Skin preparation

A Cochrane review (2018) was carried out to assess the most effective method of skin preparation before caesarean section in preventing infection after the operation. The review concluded there was insufficient evidence available to fully evaluate different agents and methods of skin preparation for preventing infections following caesarean section.

- Health Protection Scotland (2015) recommend pre-skin incision swabbing should be carried out using 2% Chlorhexidine gluconate in 70% isopropyl alcohol solution or if patient sensitive, use povidone-iodine
- This should be applied for 1 minute (30 seconds at the incision site) and allowed to dry naturally for 1 minute or until dry as per manufacturer's instructions.

Antibiotics

- Prophylactic antibiotics should be administered as per NHS Lanarkshire (2019) adult antibiotic prophylaxis in obstetric and gynaecological surgery guideline. **Please note that if there is suspicion of sepsis, patients with Penicillin allergies should also receive Gentamicin 3mg/Kg IV after the cord is cut**
- Co-Amoxiclav 1.2g IV should be given pre–skin incision
- Those patients allergic to Penicillin should be given Clindamycin 600mg IV pre-skin incision.

Skin suture

A Cochrane (2012) review of skin closure after a caesarean section highlighted, there is currently no conclusive evidence about how the skin should be closed after caesarean section. Staples are associated with similar outcomes in terms of incision infection, pain and cosmesis compared with sutures, and these two are the most commonly studied methods for skin closure after caesarean section. If staples are removed on day three, there is an increased incidence of skin separation and the need for reclosure compared with absorbable sutures. It is accepted that in some instances individualised selection of suture material will be required.

- Sub-cuticular sutures are preferable to staples
- Both monofilament and braided absorbable sutures can be used.
- Use of non-absorbable suture should be restricted unless there is a good reason to do so.

Ongoing Incision Management

- Within our department our dressing choice is either standard Tegaderm or PICO. Please refer to the SOP for PICO dressing when choosing the most appropriate dressing.
- Following closure of the skin a sterile, waterproof, breathable Tegaderm + pad dressing is applied (unless the patient is allergic). Manufacturer's recommendations are that this dressing should remain in situ for at least 48 hours but can be left for up to 5 days. This dressing can be used in the shower without dislodging. If the dressing is removed then the date, time and reason for removal should be recorded in the patient's case notes.
- If there is blood leakage through the dressing shortly after surgery, then the first response should be the application of a pressure dressing and not removal of the dressing.
- If there is blood leaking through the pressure dressing, then the patient will require review by the medical staff and potentially further surgical intervention.
- If the dressing requires to be changed, aseptic technique should be used with hand hygiene being performed immediately prior to it.
- Sutures or staples will normally be removed after 5 days when the layer of new epithelium migrating across the incision surface has become intact, however in women with a BMI>30, consider removing them on day 6 and 7.
- If a drain has been inserted it should be removed when clinically indicated.

Aftercare advice

- The women should be advised to pat the incision dry carefully with a clean towel reserved for their use and to keep the incision clean and dry.
- The bath should be cleaned before use. Choice of clothing is important to ensure comfort and avoid rubbing against the incision.
- Some women may prefer to keep the incision covered with a dressing to avoid friction from clothing.
- Women should further be advised to support the incision by placing their hands on either side of it during coughing and to report any increased pain, tenderness of discharge to the midwife immediately.
- If a SSI is suspected obtain a sample of pus or exudate for culture if present.

Advice given to women before discharge should include written information about: nutrition; exercise; moving and handling; rest; management of pain; and what to do in the event of complications. It is important that women are informed about how to recognise the signs and symptoms of incision infection and to contact the midwife or GP if they suspect they have infection. **To avoid straining the tissues, women should be advised not to lift anything heavy (no more than a full kettle of water) for at least six weeks after surgery.**

Diabetes and Obesity

- Griffiths et al (2018) highlight obesity and diabetes as strong predictors of SSIs. Their evidence suggests patients undergoing caesarean sections should be categorised into high and low risk groups for developing SSIs. These risk factors should prompt consideration of the use of prolonged antibiotics (24 hours of intravenous antibiotics) and a specialised dressing.

References/Evidence

1. Griffiths, M.K., Nguyen, M.X., Maxwell, M.R., Polnakovik, M.H, Shahin, M.M, & Galloway, M.M (2018) Cesarean Wound Risk Assessment and Management: A Quality Improvement Study351}. Obstetrics & Gynaecology. 2018 131 Suppl 1 107S-107S

2. Hadiata, D.R., Hakimi, M., Nurdiati, D.S., Da Silva, L. & Ota, E. (2018). Skin preparation for preventing infection following caesarean section. *Cochrane Database of Systematic Reviews.* Online: Available from URL:hppt://www.cochrane.org/CD007462/PREG_skin-preparation-preventing- infection-following-caesarean-section

3. Health Protection Scotland (2015). Preventing surgical site infections. Available from URL:http://hpspubsrepro.blob.core.windows.net/hps-website/nss/2571/documents/2_SSI-v2.pdf

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5. Tanner, J., Norrie, P. & Melen, KM (2011). No evidence that routine preoperative hair removal reduces surgical site infection. *Cochrane Database of Systematic Reviews* Online: Available from URL:http://www.cochrane.org/CD004122/WOUNDS_no-evidence-that-routine- preoperative-hair-removal-reduces-surgical-site-infection

6. https://rightdecisions.scot.nhs.uk/media/2361/adult-antibiotic-prophylaxis-for-gynaecological-and-obstetric-surgery.pdf

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Appendices

1. Governance information for Guidance document

Lead Author(s):	Shona Ferguson / Sharon Hannah Update by E Jarvie / H Fulton
Endorsing Body:	Clinical Effectiveness Subgroup Maternity
Version Number:	
Approval date	February 2024
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Responsible Person (if different from lead author)	E Jarvie / H Fulton

CONSULTATION AND DISTRIBUTION RECORD	
Contributing Author / Authors	Shona Ferguson / Sharon Hannah Update by E Jarvie / H Fulton
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Distribution	All in Maternity

CHANGE RECORD			
Date	**Lead Author**	**Change**	**Version No.**
		e.g. Review, revise and update of policy in line with contemporary professional structures and practice	1
			2
			3
		.	4
			5

2.You can include additional appendices with complimentary information that doesn't fit into the main text of your guideline, but is crucial and supports its understanding.

e.g. supporting documents for implementation of guideline, patient information, specific monitoring requirements for secondary and primary care clinicians, dosing regimen/considerations according to weight and/or creatinine clearance