

# Surgical Wound Treatment Algorithm

## Complete Holistic Assessment

Physical – Mental – Emotional – Social

Surgical Procedure    Clinical History    Physical Examination    Wound/Peri wound    Patient Goals    Infection

### Determine the Cause

Risk Factors that may cause surgical wounds to open, develop infection or stall healing

- |   |   |  |
|---|---|--|
| <ul style="list-style-type: none"> <li>Diabetes</li> <li>Obesity</li> <li>Cigarette smoking</li> <li>Vascular status</li> <li>Infection</li> <li>Multiple co-morbidities</li> <li>Medications that can affect healing include: chemotherapy, anticoagulants, antiplatelets, corticosteroids, vasoconstrictors, antihypertensives, diuretics and immunosuppressives</li> </ul> | <ul style="list-style-type: none"> <li>Other medications used to treat acute episodic illnesses may affect healing: eg. antibiotics, colchicine, anti-rheumatoid arthritics</li> <li>Use of internal grafts/implants</li> <li>Emergent surgery</li> <li>Re-exploration of wound</li> <li>Prolonged surgical time</li> <li>Prolonged ventilation during surgery</li> <li>Psychosocial factors (anxiety, depression, social isolation, low economic status and pain)</li> </ul> | <ul style="list-style-type: none"> <li>Use of blood products</li> <li>Renal failure</li> <li>History of radiation treatments</li> <li>Type of Surgery (i.e. clean, clean-contaminated, contaminated or dirty and infected)</li> <li>Inappropriate use of cleansers or wound dressings</li> <li>Coincident remote site infections</li> <li>Systemic use of steroids</li> <li>Extremes of age</li> <li>Nutritional deficits</li> </ul> |
|---|---|--|

### Classifications of Surgical Wounds

#### Clean (1-2% infection rate)

- Surgery does not enter colonized viscus or body cavity and there are no breaks in surgical technique

#### Clean-contaminated (6-9% infection rate)

- Surgery does enter colonized viscus or body cavity but under elective or controlled conditions

#### Contaminated (13-20% infection rate)

- Gross contamination at the operative site in the absence of clinical infection or there are breaks in surgical technique

#### Dirty/Infected (40 % infection rate)

- Active infection already present during surgical procedure

### Expected Reduction in Wound Size

#### Primary intention:

- Wounds with minimum tissue loss
- Surgical closure joins the wound edges
- Will re-epithelialize within 2-3 days

#### Secondary intention:

- Left open to heal using moist wound healing
- 20-30% reduction in size in the first 3-4 weeks

#### Tertiary intention (Delayed Primary Closure):

- Used when wound heavily contaminated
- Reduces risk of infection and controls debris/necrotic tissue
- When the wound appears to be clean and healing, it is closed surgically

### Optimize Medical Therapy with Patient

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>Review of test results and consultation notes</li> <li>Tobacco and nicotine use cessation</li> <li>Manage incontinence/exudate to protect skin from moisture</li> <li>Address nutritional and hydration needs</li> <li>Wound care as per best practice</li> </ul> | <ul style="list-style-type: none"> <li>Manage comorbidities that affect healing</li> <li>Regular professional debridement if appropriate</li> <li>Review medication use and efficacy (prescribed and not prescribed)</li> <li>Assess and manage infection</li> <li>Referrals to members of Multi-disciplinary teams as appropriate</li> </ul> |
|--|---|

### Infection Assessment

#### Acute Surgical Site Infection (<30 days)

- Localized heat
- Pain/tenderness
- Redness
- Swelling
- Purulent drainage
- Fever (>38.5°C or 101°F)
- Spontaneous dehiscence
- Wound opened by surgeon
- Surgeon confirms SSI present
- Abscess may be present

#### Chronic Surgical Site Infection (>30 days)

- Pain
- Decline in function
- Fever may be absent
- Unresolved dehiscence
- New sinus or fistula formation
- Persistent wound drainage
- Presence of devitalized tissue/foreign body
- Poor local vascularity
- Persistent odour
- Absence of healing
- Infected prosthetic implant

#### Presence of Superficial Bacteria

- N Non-healing wound
- E Exudate increased
- R Red friable (fragile tissue that bleeds easily)
- D Debris (presence of necrotic tissue)
- S Smell

#### Presence of Spreading Bacteria

(< 3 low bacteria count, >3 high bacteria count)

- S Size increasing
- T Temperature increased
- O Os (probes to bone or bone is increased)
- N New areas of breakdown
- E Exudate present
- E Erythema and/or Edema
- S Smell

Difference of > 4 degrees Fahrenheit is measurement used to identify a temperature difference in STONEES. Compare: Wound to peri-wound or Limb to corresponding limb

This algorithm is provided as an information resource for health care professionals. It is intended to compliment, but not replace clinical judgment.

Reference website can be found at [www.woundcare.ca](http://www.woundcare.ca)

June 27 2016