




Overview of Device Related Pressure Ulcers

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Objectives

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- Learn incidence of device related pressure ulcers reported in the literature and in Minnesota
 - List characteristics of device related pressure ulcers
 - Differentiate between reportable and non-reportable pressure ulcers
 - Describe strategies for preventing and managing device related skin damage



Incidence of Device Related PU

Minnesota Hospitals 2009

- 25% nosocomial stage III, IV, and unstageable (MDH, 2010)
- 30% nosocomial stage III, IV, and unstageable (MDH, 2011)

Cervical Collars Users

- 33-44% of users (Davis et al, 1995)
- 45% of all reportable device related PU (Nix et al, 2009)

Pulse Oximetry Users in ICU

- 5% in ICU (Wille et al, 2000)

Nasoenteric (NG) Tube

- 12% of all device related PU (Penney et al, 2010)





Incidence Device Related PU

Respiratory Devices

- 33% of all reportable device related PU (Nix et al, 2010)
- Tracheostomies 14% of all device related (Penney et al, 2010)

Pediatric Pressure Ulcers

- 50% (Baharestani and Ratliff, 2007)

Nebraska Medical Center P&I

- 34.5% (Black et al , 2010)

Duke University Hospital

- 42% (Penny et al, 2010)



Presentation & Differential Diagnosis

- Risk- not captured with a scale/tool
- Shape-may mimic the shape of the device
- Location- under or near a medical device
- Less frequently associated with a bony prominence
- Progression-may deteriorate rapidly due to moist environment and/ or lack of fatty tissue



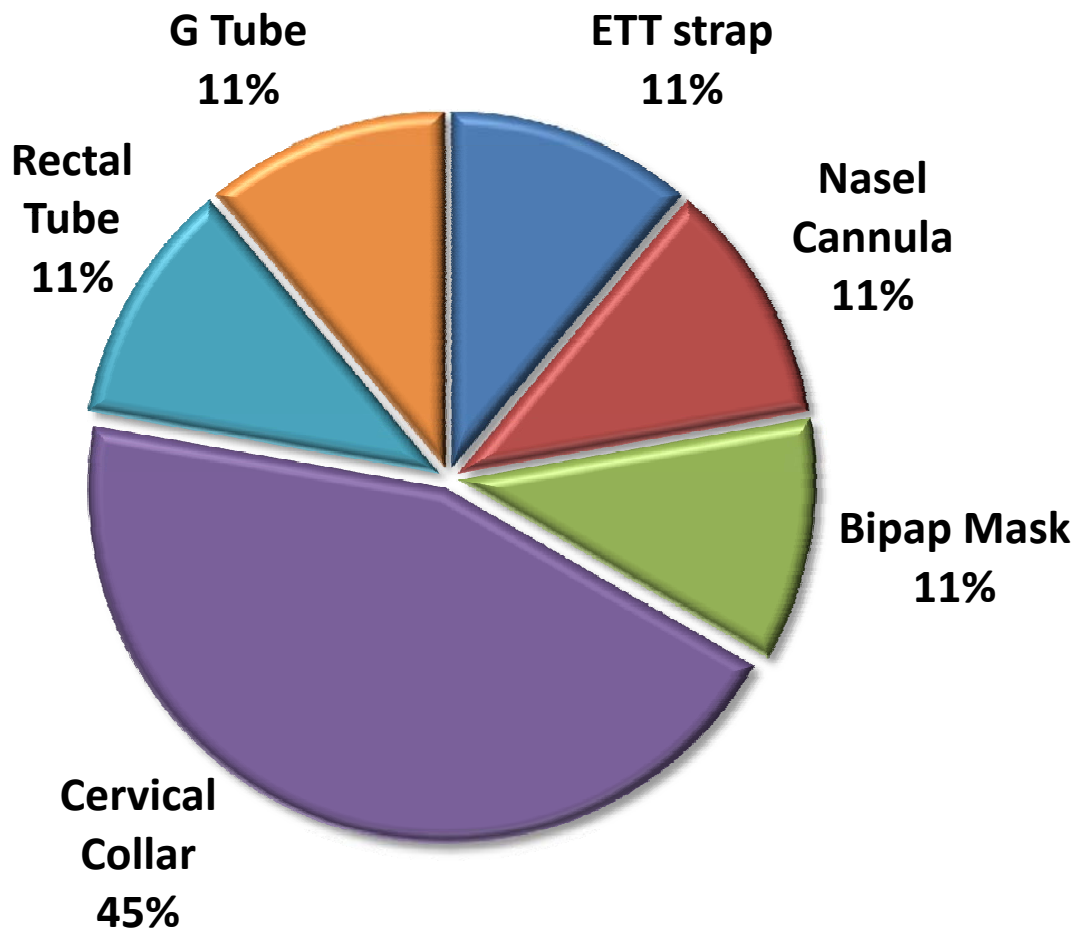
Common Anatomical Locations

Devices Involved	Wound Location
Nasal Cannula	Ears
Bipap Mask	Nasal Bridge
Cervical Collar	Neck/Occiput
Fecal Containment Tube	Perianal/Buttocks
Gastrostomy Tube	Abdomen
Podus/Splint	Heels
ETT Ties and Straps	Lips/Cheek/Neck
Antiembolism Stockings	Lower Extremities



TYPES OF DEVICES

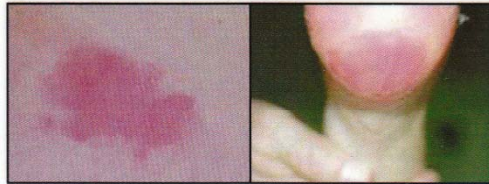
% STAGE III, IV, UNSTAGEABLE



Q1-Reporting Year
2009-2010

Pressure Ulcer Staging

Suspected Deep Tissue Injury (sDTI): Purple or maroon localized area of discolored intact skin or blood-filled blister due to damage of underlying soft tissue from pressure and/or shear. The area may be preceded by tissue that is painful, firm, mushy, boggy, warmer or cooler as compared to adjacent tissue.



Stage 1: Intact skin with non-blanchable redness of a localized area usually over a bony prominence. Darkly pigmented skin may not have visible blanching; its color may differ from surrounding area.

← NO



Stage 2: Partial thickness loss of dermis presenting as a shallow open ulcer with a red pink wound bed, without slough. May also present as an intact or open/ruptured serum-filled blister.

← NO



Stage 3: Full thickness tissue loss. Subcutaneous fat may be visible but bone, tendon or muscle are not exposed. Slough may be present but does not obscure the depth of tissue loss. May include undermining and tunneling.

← NO



Stage 4: Full thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present on some parts of the wound bed. Often include undermining and tunneling.

← YES



Unstageable: Full thickness tissue loss in which the base of the ulcer is covered by slough (yellow, tan, gray, green or brown) and/or eschar (tan, brown or black) in the wound bed.

← YES

← YES



Pressure Ulcers NOT Reportable in MN

- Stage I and II
- Mucosal
- Suspected Deep Tissue Injury (sDTI)



Pressure Ulcers NOT Reportable in MN

Suspected Deep Tissue Injury (sDTI)

- Purple or maroon localized area of discolored intact skin or blood-filled blister due to damage of underlying soft tissue from pressure and/or shear
- Do not confuse sDTI with Unstageable



Unstageable = Reportable



sDTI = NOT Reportable

Pressure Ulcers NOT Reportable in MN

Stage I

Intact skin with non-blanchable redness of a localized area.

Darkly pigmented skin may not have visible blanching; its color may differ from the surrounding area



Stage II

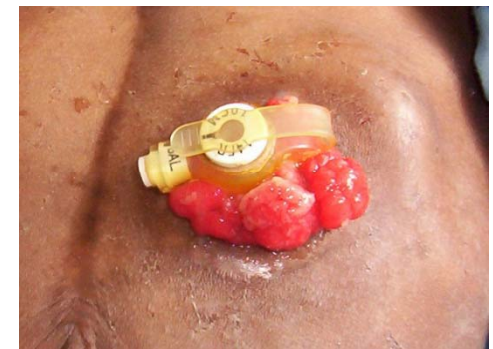
Partial thickness loss of dermis presenting as a shallow open ulcer with a red pink wound bed without slough.

May also present as an intact or open/ruptured serum-filled blister.

Pressure Ulcers NOT Reportable in MN

Mucosal Pressure Ulcers

- Located on moist lining of body cavities that communicate with the exterior
- Lines the tongue, gastrointestinal (GI) tract, nasal passages, urinary tract and vaginal canal
- Vulnerable to pressure from medical devices, such as oxygen tubing, endotracheal tubes, bite blocks, nasogastric tubes, urinary catheters and fecal containment devices



Statewide Response to Device Related PU

Guidance Documents and Tools

- AES
- Cervical Collars
- Respiratory Devices



Most Effective Action Plans

- Focused Inspection
- Pressure Redistribution
- Appropriate Stabilization
- Protection from Moisture/Friction/Shear
- Interdisciplinary Infrastructure



Focused Inspection

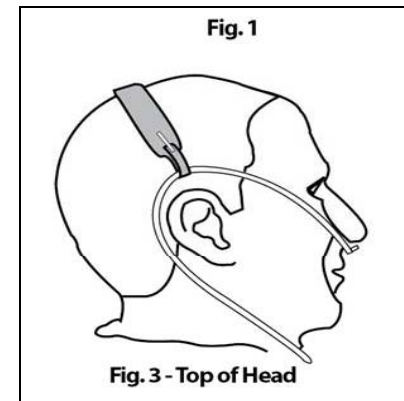
(Combine with routine cares)

Device	Site (Activity)
NC	Ears (oral cares)
Mask	Nasal Bridge (oral cares)
Collars	Neck/Occiput (oral cares)
ETT	Lips/Cheek/Neck (oral cares)
FCD	Perianal/Buttocks (repositioning)
GT	Abdomen (site care)

Watch the skin folds!

Pressure Redistribution/ Offloading

- Reposition devices routinely
- **Remove/change/apply per manufacturers instructions!**
- Secure straps with least amount of pressure to obtain adequate placement/seal.
- Consider utilizing alternative product to redistribute/offload pressure



Appropriate Stabilization




- (AHA) International guidelines (2005)



- Gray et al, 2006







Interdisciplinary Infrastructure

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- Standardization across disciplines
 - Procedures and protocols
 - Document (Who? Where? When?)
 - Hand-offs
 - Roles, functions, responsibilities
 - Quality Improvement initiatives
 - Committee membership (products, skin and wound, clinical practice)

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