Dressing Options

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INTRODUCTION

- Desired end result of wound management is wound healing
- Way to get there is through effective dressings and adjunctive therapies
- Want to maintain a moist wound environment that does not allow the wound to be too dry or too wet
- More than 500 different types of dressings available so can be difficult to find the right one
  - Not a “one size fits all” decision
Principles of Dressing Selection

- A good dressing will do the following:
  
  **MEASURES Mnemonic**
  - M: Minimize trauma to wound bed
  - E: Eliminate dead space (tunnels, tracts, undermining)
  - A: Assess and manage the amount of exudates
  - S: Support the body’s tissue defense system
  - U: Use nontoxic wound cleansers
  - R: Remove infection, debris and necrotic tissue
  - E: Environment maintenance, including thermal insulation and a moist wound bed
  - S: Surrounding tissue, protect from injury and bacterial invasion

Principles of Dressing Selection

- When deciding on a dressing, want to consider the following about the wound:

  **NICE Mnemonic**
  - N: Necrotic tissue: slough, eschar
  - I: Infection/inflammation
  - C: Characteristics
  - E: Exudate

Introduction to Moist Wound Healing

- The traditional theory, i.e. old school of thought, behind wound healing has been:
  - Wounds should be kept clean and dry so that a scab can form over the wound
  - Wounds should be exposed to the air and sunlight as much as possible
  - When tissue loss is present, the wound should be packed to prevent surface closure before the cavity is filled
    - This is correct but must be careful what you are packing the cavity with and how hard you are packing the cavity
  - Wound should be covered with dry dressings
Is this theory right? NO!!!!

- A scab is a barrier to wound healing by slowing down migration of epidermal cells
- Allowing wounds to be open to air reduces temperature of wound, thus slowing flow of blood, oxygen, nutrients, etc. to wound
- Packing a wound with dry gauze can dry out the wound and cause trauma to the wound

A More Modern Theory... Moist Wound Healing

- Moist wound healing does not allow a scab to form thus allowing for migration of epidermal cells
- Moist wound healing does not allow a wound to dry out and can help with autolytic debridement of a wound
- Moist wound healing protects granulating tissue and, as mentioned above, encourages epithelialization
- Allows wounds to heal 3-5 times faster
Dressings picked based on:

- Pathophysiology of wound
- Ease of use by patients
- Amount and quality of drainage
- Presence or absence of infection
- Depth
- Social and economic issues
- Properties of dressing

One should also consider:

- Is dressing easy to apply?
- Is dressing cost effective?
- Can it be used in infected ulcers?
- Will it stay where you put it?

Types of Dressings

- Dressings that cover wounds
- Dressings that fill wounds
- Products to protect surrounding skin
- Secondary dressings hold primary dressing in place
  - Primary dressing: A dressing that is placed directly on the wound bed
  - Secondary dressing: Any dressing that is placed over a primary dressing
Purpose of Wound Dressings

- Dressings help provide an environment conducive to wound healing
- The proper dressing can affect a wound in many ways:
  - Debriding
  - Deodorizing
  - Granulating
  - Epithelializing

Ideal Dressing Criteria

- Remove excessive drainage but not dry out the wound
- Allow gaseous exchange so oxygen, water vapor, and carbon dioxide can pass into and out of dressing
- Be thermally insulating to maintain core body temperature at wound
- Impermeable to microorganisms
- Free of contamination
- Non-traumatic and non-adherent to wound base

Moisture-Retentive Dressings

- Facilitate autolytic debridement
- Occlusiveness: Ability of a dressing to transmit moisture vapor and gases from the wound bed to the atmosphere. Determined by moisture vapor transmission rate
  - Non-occlusive: Allows water vapor and other gases to pass through them
  - Occlusive: Does not allow anything to cross them in either direction
  - Semi-Occlusive: Allows some movement of water vapor and other gases across them
  - Start from gauze dressings being least occlusive to hydrocolloids being most occlusive
Classifications of Dressings

- Non-Occlusive
  - Dry-to-dry gauze
  - Contact layer
  - Wet-to-dry gauze
  - Wet-to-wet gauze
  - Petroleum gauze
  - Composite

- Occlusive/Semi-Occlusive
  - Semipermeable foam
  - Semipermeable film
  - Alginate, hydrofiber
  - Hydrogel
  - Composite
  - Hydrocolloid

Non-Occlusive:
- Dry-to-dry: Used for minimally draining wounds
- Wet-to-wet: Stays moistened between dressing changes with either saline or antibiotic ointment to autolytically debride or treat infected wounds
- Wet-to-dry: Nonselective debridement of wounds

No more wet-to-dry...
- Wet-to-dry dressings used to be standard wound care option until it became apparent that they ripped off good tissue with bad
- As mentioned in previous slides, big push in wound care lately has been the "moist wound environment"
- All dressings recommended now are used to help maintain that moist wound environment
Non-occlusive Dressings

▪ Used to absorb heavy drainage and bleeding
▪ Useful for wounds closed by primary intention
▪ May be useful in some degree for autolytic debridement

Non-occlusive Dressings

▪ No active healing properties
▪ Gauze, lint and fiber products
▪ Gauze can be problematic
  ▪ Sheds easily and contaminates the wound
  ▪ Highly absorptive so it may dry out the wound
  ▪ Permeable to bacteria
  ▪ Adherent

Non-occlusive Wound Dressings

▪ Non-adherent dressings
  ▪ Do not work as well as originally intended and can still stick to wounds, either because drainage dries and adheres it to the wound bed or granulation tissue grows through the dressing
  ▪ Absorbent pads with plastic film to prevent adherence, i.e. Telfa, used for minor wounds and wounds w/minimal drainage
  ▪ Petroleum dressings, i.e. Vaseline gauze or Adaptic, can be non-adherent as well but may cause problems such as maceration and increased susceptibility to infection
  ▪ Contact Layer: Allows water and electrolytes to cross dressings but not cells and proteins that can cause sticking to wound bed
Gauze Dressings

- Most readily available dressing
- Typically used as a secondary dressings or a primary dressings with wound gels or ointments
  - Can also use to fill wounds with depth or cavity
- Comes in various forms from 4x4 pads to rolls, and packing strips

Impregnated Gauze Dressings

- Impregnated with petrolatum, hydrogel, saline, zinc, etc.
- Helps with moist wound healing
- Needs secondary dressing
- Typically non-adherent
- Name Brands: Adaptic, Xeroform
Microenvironmental (Occlusive and Semi-occlusive) Dressings

- These dressings provide the right environment for a wound to heal
  - Maintaining appropriate moisture level and temperature
  - Availability of macromolecules of healing
  - Availability of growth factors
  - Acceptable levels of nonpathogenic microflora
  - Protection of environment from pathogens
  - Should not be used in infected wounds

Semipermeable Film Dressings

- Thin membranes coated with an adhesive
- Provide moist wound environment
- Allow for autolytic debridement
- Provide protection from chemicals, friction, shear and microbes
- Transmits oxygen into and carbon dioxide, water vapor out of dressing
- Can function as secondary dressing
- Not highly absorptive

Semipermeable Film Dressings

- Indications: management of minor burns and simple injuries, over suture lines, prevention and treatment of superficial pressure ulcers
- When to discontinue use: Increased amount of drainage that may indicate infection or may cause maceration
- Contraindications: Deep ulcers, full-thickness burns, infected ulcers
- Examples: Opsite, Tegaderm
Semipermeable Film Dressings
- Must take care to remove correctly or risk tearing skin
  - Skin should be stabilized
  - Lift one corner and then stretch the dressing, like taffy, causing the dressing to stretch and loosen

Film Dressings

Hydrogels
- High water content
- Provides moist environment
- Aids in autolytic debridement
- Conforms to wound shape
- Non-adherent
- Soothing on burns, abrasions
- Examples: Carrasyn, Solosite
Hydrogels

- 2 forms: Sheets and Amorphous (actual gel)
- Indications: Dry and sloughy wounds to increase moisture and encourage autolytic debridement. Facilitates granulation and epithelialization. Simple and complex wounds.
- When to discontinue: If excessive drainage.

Santyl

- Only one on market currently that can call itself an enzymatic debrider
- Collagenase Santyl is an ointment that works to debride necrotic tissue by breaking the collagen bonds at the junction of the healthy and necrotic tissue
  - Can use on eschar or slough
  - If necrotic tissue is thick, need to cross-hatch to allow Santyl to penetrate through tissue
- Does not affect healthy tissue
- Requires daily dressing changes
- Cannot be used with certain cleansers and silver dressings as it will inactivate the collagenase
Santyl

- Helps create an ideal moist healing environment
- Rinses and debrides wounds
- Soaked with Lactated Ringer's solution
- High fluid retention
- Daily dressing change
- Good for all types of wounds

Tenderwet Active

- Helps create an ideal moist healing environment
- Rinses and debrides wounds
- Soaked with Lactated Ringer's solution
- High fluid retention
- Daily dressing change
- Good for all types of wounds
Semipermeable Foam Dressings

- Polyurethane, open cell sheets
- Absorb exudate to prevent maceration, raise core temperature of wound and maintain moist environment
- Provides protection by cushioning
- Non-adherent
- Often requires no secondary dressing
- Examples: Allevyn, Hydrasorb, Curafoam

Indications: Minor and major wounds, over skin grafts, donor sites and minor burns, over hydrogels, around tracheotomy tubes and other drainage tubes and catheters

When to discontinue: Minimally draining wounds
Semipermeable Foam Dressings

- Recently, there has been the trend towards using these as a preventative dressing, especially on sacrums
  - Helps reduce friction and shear which contribute to development of pressure ulcers

Sacral Foam Dressings
Hydrocolloids

- Gel-forming polymer with adhesive
  - When polymer comes in contact with drainage, forms a gel
- Most occlusive of microenvironmental dressings
- Can be left on for several days at a time
- When removed from wound, gel is yellow and may have odor but does not indicate infection

Hydrocolloids

- Provides moist environment
- Aids in autolytic debridement
- Conforms to body shape
- Protects from antimicrobial contamination
- Provides a waterproof surface
- Requires no secondary dressing
- Examples: Duoderm, Tegasorb

Hydrocolloids

- Indications: Management of superficial ulcers, necrotic but not infected ulcers
- When to discontinue: Wound is granulated or hypergranulation occurs; However, can be used to assist with epithelialization
Hydrocolloids

See how color of hydrocolloid changes from brownish color to whitish-yellow color with absorption of drainage? Expect to see this.

Alginates

- Calcium or calcium/sodium salts composed of acids obtained from seaweed
- Looks like cotton or insulation when dry
- Turns to gel once in contact with wound drainage
  - Important to educate patient and caregiver that this gel appearance does not mean the wound is infected
- Examples: Tegagen, Sorbsan

Alginates

- Provide moist environment
- Provide high absorptive capacity
  - Can absorb up to 20 times their weight in drainage
- Conforms to body shape
- Protects
- Provides hemostasis
- Non-adherent
**Alginates**

- **Indications:** Highly exuding wounds, over areas of bleeding, can be used with infected ulcers
- **When to discontinue:** If level of drainage is insufficient to cause fiber to turn to gel.

**Hydrofibers**

- Look like alginates but are made of polymer carboxymethylcellulose (CMC)
- Activated by moisture in wound
- Able to absorb more drainage than alginate
- Example: Aquacel, CombiDERM, Versiva
Hydrofibers

- Can be a primary or secondary dressing
- Usually have 3 layers (from inside to out)
  1. Non-Adherent layer protects wound
  2. Absorbent layer absorbs drainage and protects periwound from maceration
  3. Bacterial barrier, usually made of semipermeable film

Composite Dressings

- Can be a primary or secondary dressing
- Usually have 3 layers (from inside to out)
  1. Non-Adherent layer protects wound
  2. Absorbent layer absorbs drainage and protects periwound from maceration
  3. Bacterial barrier, usually made of semipermeable film

Antimicrobial Dressings

- Silver or cadexomer iodine dressings
  - Do not want to overuse these as they can, over time, inhibit wound healing
  - Come in all types, including gauzes, films, hydrocolloid, foams, and alginates
  - May be primary or secondary dressings
  - Assists wound closure by protecting the wound from bacterial contamination and helping to maintain a moist wound environment
  - Faster kill rates for microorganisms, longer wearing times
  - Effective against gram +, gram – and fungal infections (including MRSA and VRE)
  - Examples: Aquacel Ag, Acticoat, Silvasorb, Actisorb; Iodosorb
Silver Dressings

- Broad-spectrum antimicrobial
  - Effective against aerobic, anaerobic, gram-positive, and gram-negative bacteria; Also, yeast, fungi, and viruses
    - MRSA, VRE, E. coli, Pseudomonas
  - Resistance is rare
- Some have a slow release of silver over 5-7 days while others dump the silver all at once
  - Patients can have sensitivity to silver and if used over a large surface area, patient may develop silver toxicity

Silver Dressings

Acticoat-Silver dressing
Silver Hydrofiber

Cadexomer Iodine Dressings

- Traditional iodine is cytotoxic
- Cadexomer Iodine dressings allow iodine to be released slowly over a longer period of time
- As it releases the iodine, it turns color

Iodosorb Paste and Gel Cadexomer Iodine
Bactericidal Dressings

- Doesn’t kill bacteria; rather it prevents bacteria from multiplying
- Hydrofera Blue
  - Foam dressing
    - Highly absorptive
  - Must hydrate it with saline if wound does not have a lot of drainage
  - New dressing called Hydrofera Blue Ready is already moist so needs no hydration
  - Can use with Santyl and growth factors
  - Can use under compression
  - 7-day dressing
  - Comes in many forms, including 4x4, rope, and circle that can go under ostomy dressings

Hydrofera Blue

Antibiotic Ointments

- Use of topical antibiotic ointments can help inhibit growth of bacteria
- Overuse of antibiotic ointments can lead to resistance
- Not necessary to be used if no signs/symptoms of infections are present
**Charcoal Dressings**

- Used to control odor
- Good for necrotic wounds or fungating wounds from cancer
- Help improve quality of life; doesn’t have any healing qualities

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**Honey-Impregnated Dressings**

- Made from specific honey found in New Zealand, called Manuka honey
- Comes in many delivery systems
  - Gel, alginate, hydrocolloid
- Helps to fight bacteria and control odor
- Aids in autolytic debridement
- Change pH in wound to improve healing
- Decreases pain
- Faster healing time
Honey-Impregnated Dressings

Osmotic properties help in debriding wound; patients may complain of stinging when dressings first placed.

What happens if your dressings can’t contain the drainage?

Outcomes of good exudate management:
- Less periwound maceration
- Slight bacterial thinning in the wound bed
- Prevention of bacterial proliferation from the base of the wound (WPCPIEL, 2007).
**Superabsorbent Dressings**

- Made to absorb moderate to copious amounts of drainage
- Absorb 4-5 times their weight in drainage
- Some have “diaper technology” → gels up when comes in contact with drainage
  - Xtrasorb, Sorbion
- Some have multiple layers that wick the fluid away from the wound and to the outer core of the dressing
  - Drawtex, Cutisorb
- Cost-effective because you don’t have to change dressings as often

**Recent Trends**

- Paradigm shift from moist wound environment to wound bed preparation, i.e. you want to prepare the wound bed to allow for granulation and epithelialization to occur
- Trying to optimize the chemical environment of the wound as well as the moisture balance
Collagen Dressings

- Collagen is most abundant protein in body
- Acts as building block for new tissue
  - Scaffolding for granulation tissue to grow on
- Dressings come in various forms including sheets, ropes, gels, pastes, etc.
- Often made from bovine or porcine tissue

Collagen Dressings

- Chronic wounds tend to have excessive levels of MMPs
- MMPs are normal in acute wounds and then to go away in inflammatory stage
- However, in chronic wounds, they continue to wreak havoc, causing tissue breakdown and chronic inflammation
- Tissue inhibitors of metalloproteinases (TIMPs) help fight MMPs but not enough of them in chronic wounds
- Introduce collagen into wound to distract MMPs so wounds can heal

Collagen Dressings

- Promogran:
  - Introduces collagen into wound matrix as collagen is framework responsible for granulation tissue
  - Also introduces oxygen reconstituted cellulose (ORC) into wound which binds MMPs with growth factors and allows growth factors to work more effectively
- Prisma:
  - Similar to Promogran but also has silver in it to fight bacteria
- Endoform:
  - Contains 90% native, intact collagen and 10% extracellular matrix components, Broad spectrum MMP reduction
- All 3 are cost efficient as they only need to be applied weekly
Collagen Dressings

The Future of Wound Management

- New wound care technologies are coming out all the time
- Not all wounds should be treated with advanced therapies
  - Not all insurances will cover these new technologies

When to use Advanced Therapies

- Rather, advanced therapies should be used on wounds that have failed to heal with conventional methods or on acute wounds that may be hard to heal
- It is commonly understood that advanced therapies should be used on "refractory" wounds
  - "Refractory" used to describe wounds that have not healed, despite "good" wound care
  - Used to define difficult-to-heal wounds and those not progressing towards healing
### Refractory Wound Criteria

- **Wound Characteristics Present**: undermining, tunneling, extensive necrotic tissue
- **Host Burden Present**: Extensive wounding, multiple wounds, prolonged wound duration, infection
- **Healing Risk Factors Present**: Diabetes, vascular disease, immunocompromised, hypovolemia
- **Inadequate Movement Toward Healing Present**: Full-thickness wounds that fail to improve with appropriate treatment in 2-4 weeks, partial thickness wounds that fail to improve in 1-2 weeks

### Growth Factors

- Several growth factors are recognized as regulatory polypeptides that coordinate the interaction of cellular and biochemical events that control wound healing.
- Growth factors are important because they help regulate cell proliferation, differentiation and organ growth.
- In past decade, several growth factors have been made but only one is approved for use in wound healing by the FDA.

### Platelet-Derived Growth Factor (PDGF)

- **Regranex**: FDA approved for LE diabetic ulcers only. Can be used for other wounds “off-label.” Contains platelet-derived growth factor which stimulates angiogenesis and formation of granulation tissue. Prescription required. Skill in application. Must be kept refrigerated. Very expensive. Should be discontinued if patient has extensive necrosis, untreated infection or ischemia.
Platelet-Derived Growth Factor (PDGF)

- Use as an alternative to skin grafting
- Biological skin substitutes:
  - Eliminate need for donor site
  - Be quickly and easily accessible
  - Minimize contracture and scarring
  - Be immunologically compatible
  - Sometimes available to be used right off the shelf
Cellular Tissue Products

- Many different ones on the market
- Can be human, bovine, porcine
  - Human comes from neonatal foreskin, placenta, amniotic membrane
  - Bovine: Skin or tendon
  - Porcine: Intestine
- Some are only approved for diabetic foot ulcers, some for diabetic foot ulcers and venous ulcers, while others are approved for all types of wounds
- Will discuss just a few of them today

OASIS

- Natural acellular collagen matrix
- Derived from porcine (pig) small intestine submucosa (SIS)
- Provide environment for formation of dermal and epidermal tissue with minimal scarring
- Indications: Surgical wounds, traumatic wounds, diabetic ulcers, venous ulcers, pressure ulcers, chronic vascular ulcers
- Contraindications: Untreated infected wounds, patients with sensitivity to porcine material; 3rd degree burns

OASIS

- Application:
  - Cut to fit the shape of the wound
  - Moisten with saline
  - Apply directly to the wound bed
  - Secure with steri-strips, wound glue, sutures
  - Cover with secondary dressing
  - Apply weekly
Apligraf

- FDA approved for diabetic foot ulcers and venous stasis ulcers
- Supplied as a living, bi-layered skin substitute
- Dermal layer combines bovine type I collagen and human fibroblasts
- Epidermal layer is formed by promoting human keratinocytes (epidermal cells)
- Outpatient surgical procedure
- Obtained from neonatal foreskin

Method of Application: Comes in thermally controlled box. Must be incubated before it is used. Graft is placed on the wound with overlapping edges and compression wrap is used to fix it in place.

Expected Outcomes: Initially looks like skin graft and then takes on appears of gelatin. Must be careful not to disrupt the "taking" of this product. Apligraf acts as a "biologic growth factor factory." Minimal contracture with healing
In this picture, Apligraf is on left and normal skin is on right. You can see that Apligraf contains the 2 primary layers of skin like normal skin.

Apligraf

How it is shipped

Healing with Apligraf

Epifix

- Dehydrated Human Amnion/Chorion Membrane (dHACM) allograft
- Composed of multiple layers including a single layer of epithelial cells, a basement membrane and an avascular connective tissue matrix.
- Contains multiple extracellular matrix proteins, growth factors, cytokines and other specialty proteins present in amniotic tissue to provide a barrier membrane that enhances healing.
- Stored at room temperature
**Epifix**

- Consists of a porous, three-dimensional dermal layer, comprised of collagen and glycosaminoglycan.
- Dermal layer is designed with a controlled porosity and defined degradation rate that provides a scaffold for cellular invasion and capillary growth.
- Used for all types of wounds

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**Integra**

- Consists of a porous, three-dimensional dermal layer, comprised of collagen and glycosaminoglycan.
- Dermal layer is designed with a controlled porosity and defined degradation rate that provides a scaffold for cellular invasion and capillary growth.
- Used for all types of wounds
Dermacell

Technologically advanced dermal matrix that is used in the treatment of chronic non-healing wounds such as diabetic foot ulcers.

Management of Cavities

- Any time there is “dead space,” this must be filled to prevent abscess formation.
- Used to be called “packing” a wound but this is only to be done when heavy bleeding is noted and hemostasis needs to be obtained.
- Otherwise, it is called “filling” a wound.
  - Do not want to over-“pack” because that can inhibit wound healing.

Management of Cavities

- Prevents epiboly and allows dead spaces to fill with granulation tissue.
- Can fill wounds with packing strips which can be either plain cotton strips or cotton strips soaked in iodine, called Iodoform.
- May also fill wounds with alginate or hydrofiber ropes or bandage rolls, depending on size of wound and amount of drainage.
Management of Cavities

- Can use cotton tipped applicator or tongue depressor to fill the wound
- Must be sure to leave enough of a tail hanging out of the wound to be able to adequately remove the filling material at the next dressing change

Secondary Dressings

- Now that you have selected the right type of primary dressing, how will you secure it and still allow mobility and function for the patient?
  - Your secondary dressing should:
    - Hold primary dressing in place
    - Increase absorption
    - Provide compression
    - Provide comfort, warmth and protection to area
- Will depend on type of wound, location of wound and amount of exudate
- Films, foams, gauze can all function as secondary dressings
- Cover Dressings: Has an adhesive border which allows dressing to stay in place without use of tape or kling

Secondary Dressings

- Kling
- Kerlix
Cover Dressings

Taping

- 4 Major types of tape
  1. Silk (Durapore): Most adhesive; Should not be used directly on skin; Okay to use on gauze or bandage rolls
  2. Plastic tape: Also very adhesive so not to be used directly on skin
  3. Paper tape: Less adherent and hypoallergenic; ok to use on skin
  4. Elastic foam tape: Low adhesion, conforms well, stretches with swelling

Tolerance for Adhesives

- Many people are intolerant of adhesives and adhesives can cause extensive tissue damage when used
- Any type of dressing that has adhesives in it can be damaging
- Use of skin protectant such as 3M No-Sting Skin Barrier film acts as a second skin and protects skin when adhesive is removed
- Can also use stretch netting or tubular bandages to secure dressings
Skin and Periwound Care

- Important to protect skin and area around wound from trauma from adhesives and maceration from wound drainage
- Skin Sealants and Moisture Barriers
  - Acts as a second skin
  - Protects from excess drainage and any ointments/gels put in wound
- Moisturizers
  - Maintains protective function of skin
- Tissue Adhesives
  - Skin glue
  - Seen more with incisions post-op

Economics of Dressing Changes

- Dressings can be very costly and not always reimbursed by insurance
- If dressings can be used that can stay on for 3-5 days, this is more cost-effective
- Another factor to consider is manpower
  - Twice daily or daily dressing changes in the hospital requires a skilled practitioner to do the dressing change so even if cheaper dressing used, it still costs more!

Economics of Dressing Changes

- Medicare Part B is very strict with what they will pay for
  - Will only pay for primary and secondary dressings caused by a surgical procedure, treated by a surgical procedure, or require debridement
  - Will not pay for dressings used on skin conditions treated with topical medications, draining cutaneous fistulas, dressings used to protect a wound from friction, shear, and moisture, dressings over IV sites, first degree burns, skin tears, abrasions
Economics of Dressing Changes

- Can only order 1 month of supply at a time
- Medicare will only pay 80%, encourage patients to get secondary insurance to cover other 20%
- Medicare will pay for dressings based on wound size; if request bigger dressing than appropriate, Medicare will not pay

Devices for Skin Approximation

- Sutures and staples
- Montgomery straps: Common in abdominal wounds; protects wound from trauma caused by patient moving or coughing; can be pre-made or “homemade”; this also minimizes trauma to skin from repeated removal of tape/adhesives
- Abdominal binders → Hold dressings in place
- Retention sutures: Placed by surgeon during surgery to reduce stress on wound edges

Montgomery Straps
Retention Sutures

Problem with retention sutures is the patient can end up with wounds at the insertion sites. Also, sometimes the sutures are pulled too tight, causing more damage to surrounding skin.

Staples and Sutures

- Important to be able to remove staples and sutures because may be required to in a rehab setting
- Will need staple removal kit to remove staples
- Sutures are cut at the knot and pulled in the direction that maintains any knots above the surface

Negative Pressure Wound Therapy

- Not strictly a dressing but an active wound therapy
- Negative pressure put stress on the granulation tissue causing macro- and microstrain on the wound bed and cells
- Can be used on all types of wounds
  - Not to be used on malignant wounds, untreated osteomyelitis, and in presence of poor hemostasis
- Can be powered or non-powered
  - Most commonly known is VAC therapy which is a powered NPWT system
  - SNAP is a newer technology which is non-powered, rather it is mechanically powered with a spring
Negative Pressure Wound Therapy

Veriflo VAC
ActiVAC
SNAP Therapy

Clinical Decision Making

2 key questions to ask when deciding on a dressing:

1. Is the wound draining or non-draining?
   - If draining, contain it!
   - If dry, wet it!

2. Is the wound granular or necrotic?
   - If granulating, keep it moist and protect it!
   - If necrotic, debride it!
Clinical Decision Making

- By identifying the wound description, you can determine:
  - Short Term Goals
  - Whether debridement is indicated
  - What your dressing options are to consider
- Also want to consider the following and treat appropriately:
  - Wound Infection
  - Wound and Skin Characteristics
  - Frequency of Dressing Changes
  - Availability of Dressings
  - Cost
  - Wound Location

Dressing Selection Algorithm

Conclusion

- Many different dressing options out there
- There are no absolutely right answers but there are definitely wrong choices to be made
- Make your decision based on type of wound, amount of drainage, duration of wound, compliance of patient