## The University of Chicago Medical Center Policy and Procedure Manual

**Policy:** PC 159 Skin/Pressure Injury Risk/Wound Assessments and Care

**Issue Date:** December 1972 **Revised Date:** March 2022

#### **POLICY:**

#### 1. Skin Assessment

Full head to toe patient assessments (including assessment of skin condition) are conducted by each registered nurse at admission to the Medical Center, at points of transfer of care and at the beginning of each shift.

#### 2. Risk Assessment

All inpatients, except healthy ante-partum and postpartum patients and their healthy newborns, will be assessed for risk of pressure injury development within 12 hours of admission.

- a. The Braden Risk Assessment Scale will be used to document the pressure injury risk assessment for pediatric patients 8 years of age and older as well as adult patients.
- b. The Braden Q Risk Assessment Scale will be used to document the pressure injury risk assessment for pediatric patients >3 weeks but <8 years of age.
- c. The Neonatal Skin Condition Score will be used to document the skin condition of all neonates within the NICU.

#### 3. Wound Assessment

- a. All acute and chronic wounds (including, but not limited to: surgical, arterial, venous, neuropathic, and pressure injuries) will be assessed on admission and every shift. Assessment includes noting the condition of the dressing and surrounding skin if a dressing change is not warranted.
- b. Any patient assessed to be at risk for skin breakdown or identified with an alteration in skin integrity will have appropriate interventions implemented based on provider orders or the UCM Nursing Practice Guidelines.

#### 4. Documentation

All assessments and interventions will be monitored and documented every shift or as indicated.

- a. Documentation may include: Braden / Braden Q for Pressure Sore Risk Assessment score
- b. Neonatal Skin Condition Score
- c. Wound/dressing description and care provided

- d. Interventions, and patient response to interventions
- e. Patient and family education and response to teaching
- f. Plan of care
- g. Consult to nutrition services, if needed.
- h. Inability to Assess wound (e.g. off unit, clinically contraindicated. Etc.) i. Photography

#### **5.** Notifications/Consults

- a. After initially identifying and assessing a wound (upon admission or during the hospitalization), the primary service should be notified. Additionally, the provider or nurse may place a consult (per protocol) for further evaluation and treatment recommendations to the clinical nurse specialist/clinical nurse educator for wound care. A consult may be placed to the Registered Dietitian as appropriate, for a specific nutrition care plan.
- b. The provider may request a consult for treatment recommendations from Wound Care, Therapy Services Department, Surgery or Plastics and Reconstructive Surgery as needed.

#### **Attachments:**

Clinical Guidelines for Pressure Injury Prevention, Skin Care and Wound Care (revision date February 1, 2022)

#### **Interpretation, Implementation and Revision:**

The Manager, Nursing Clinical Services the Clinical Practice, Informatics, and Policy (CPIP)Committee are responsible for revisions to this policy.

#### **References:**

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Baranoski, S., Ayello, E. (2004) Wound Care Essentials, Practice Principles. Lippincott Williams and Wilkins.

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Magnan, M. A., & Maklebust, J., (2009). Braden Scale Risk Assessments and Pressure Ulcer Prevention Planning: What's the Connection? *Journal of Wound, Ostomy and Continence Nursing,* 36(6), 622-634.

National Pressure Ulcer Advisory Panel. (2016) www.npuap.org

European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel and Pan Pacific Pressure Injury Alliance. Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline. The International Guideline. Emily Haesler (Ed.). EPUAP/NPIAP/PPPIA; 2019.

Berlowitz D, Van Duesen Lukas C, Parker V, et al. *Preventing Pressure Ulcers in Hospitals: A Toolkit for Improving Quality of Care*. Agency for Healthcare Research and Quality (AHRQ), U.S. Department of Health and Human Services; 2014.

https://www.ahrq.gov/professionals/systems/hospital/pressureulcertoolkit/index.html

Walsh NS, Blanck AW, Smith L, Cross M, Andersson L, Polito C. Use of a Sacral Silicone Border Foam Dressing as One Component of a Pressure Ulcer Prevention Program in an Intensive Care Unit Setting: *J Wound Ostomy Continence Nurs*. 2012;39(2):146-149. doi:10.1097/WON.0b013e3182435579

US Dept of Health and Human Services, Agency for Health Care Policy and Research. (1992). *Clinical Practice Guideline Number 3: Pressure Ulcers in Adults: Prediction and Prevention*. (AHCPR publication 92-0047) Rockville, Md.

Wound, Ostomy and Continence Nurses Society-Wound Guidelines Task Force (2016). WOCN 2016 Guideline for Prevention and Management of Pressure Injuries (Ulcers): An Executive Summary. *J Wound Ostomy Continence Nurs*. 2017; 44(3): 241–246. doi: 10.1097/WON.0000000000000321

Noonan, C., Quigley, S., & Curley, M. A. Q. (2011). Using the Braden Q Scale to predict pressure ulcer risk in pediatric patients. *The Journal of Pediatric Nursing*, 26(6):566-75.

Curley, M. A. Q., Razmus, I.S., Roberts, K.E., & Wypij, D. (2003). Predicting pressure ulcer risk in pediatric patients - the Braden Q Scale. *Nursing Research*, *52*, 22-33.

## **Pressure Injury Prevention Guidelines**

**Overview:** The skin protects the body from injury or disease including infection. An evidence-based pressure injury prevention program will address risk factors for pressure injury as identified by the . Braden Scale and other risks as identified during the physical assessment. To aid Healthcare Professionals (HCPs) in the appropriate prevention interventions, UCM has adopted clinical guidelines.

**Risk Factors:** sensory impairment, moisture, limited activity, limited mobility, poor nutrition and/or fluid intake, and shear force.<sup>1</sup> Certain medical conditions may further increase risk and may lead to the development of an unavoidable pressure injury including: poor perfusion,<sup>2</sup> organ failure,<sup>2-5</sup> sepsis/septic shock<sup>2,3</sup> and critical care requirements.<sup>4,5</sup>

**Guideline Objective(s):** To provide evidence-based clinical decision making for the prevention of pressure injuries.<sup>6,7</sup>

**Expected Use:** The RN will use the Pressure Injury Prevention Guidelines and determine the appropriate intervention(s). Interventions may differ slightly based on Braden(Q) Scale subscales, patient comorbidities, level of care or patient population.

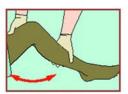
Goals and Expected Outcomes: To promote healthy skin and to prevent pressure injuries.



## **Pressure Injury Prevention Guidelines**



Monitor Sensory Perception Check often for red areas or moisture on skin



Increase Activity
Encourage mobility/range of motion



Manage Mobility
Use pillow or wedges to reposition
Use pillows/rolled linen to avoid contact of
one bony prominence against another





Manage Moisture
Moisturize dry skin
Cleanse at time of soiling
Topical agent as barrier to moisture
Consider pouch or collection device



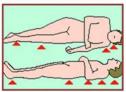
Manage Mobility
Turn and reposition to reduce pressure
Frequently in bed and chair
Microshifts if hemodynamic instability



Manage Mobility
Keep heels off of the bed, heel boots
or pillows may be used



Manage Moisture
Do not massage red areas
Axoid the use of diapers in bed unless
below potty training age
Incontinence pads to wick moisture

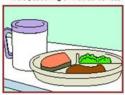


Manage Mobility

Avoid pressure over bony prominences

Avoid pressure on existing pressure ulcers

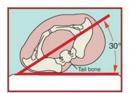
Avoid positioning on medical devices



Manage Nutrition and Hydration Eating and drinking well is important Order dietician consult if indicated



Increase Activity
Encourage activity as tolerated/indicated



Manage Mobility

Do not position directly on the side/hip

Position at 30° angle



Manage Shearing
Keep the head of the bed as low as
possible unless contraindicated
Lift- don't drag to reposition
Silicone sacral dressing

## **Wound Care Guidelines**

**Overview:** A moist wound environment is considered fundamental to promote moist wound healing and prevent delayed healing or complications. The wound characteristics (e.g., drainage amount, amount of necrotic tissue etc.) should guide the appropriate product selection. To aid Healthcare Professionals (HCPs) in the appropriate dressing selection, UCM has adopted clinical guidelines adapted from the validated Solutions Algorithms for Wound Care. 1

In addition to the topical treatment of acute and chronic wounds, care should be given to control or eliminate causative factors. This may include direct nursing care such as incontinence care, turning and repositioning and the use of pressure-redistributing support surfaces. The medical management of causative factors such as Peripheral Arterial Disease (PAD) or Diabetes Mellitus (DM) must be addressed as well.

**Disease/Conditions:** Acute and chronic wounds including arterial, diabetic, pressure, venous, or mixed arterial-venous ulcers.<sup>1</sup>

**Guideline Objective(s):** To provide evidence-based clinical decision making for the topical treatment of acute and chronic wounds.

**Expected Use:** The RN will assess the wound and use the Wound Care Guidelines to choose the appropriate dressing. If indicated, a wound consult or referral should be placed.

**UChicago** 

Goals and Expected Outcomes: To promote wound healing by providing an optimal environment and to prevent delayed wound healing and/or complications.

## **Wound Care Guidelines**

Hard Dry Necrotic Tissue on Extremities Leave Uncovered: Never Apply Dressings







**Key Clinical Points** 

- Always cleanse first with normal saline (NS)
- Odor that remains after cleansing is concern for infection
- Choose cover dressing 1-inch larger than wound
- Fill with ribbon

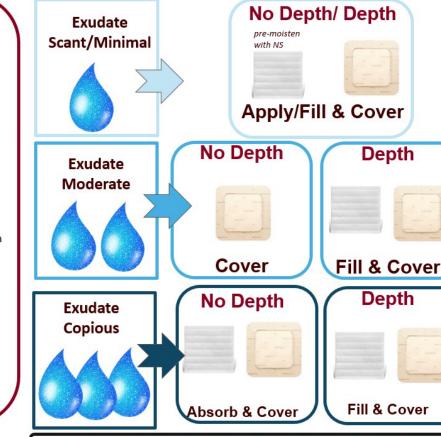
or sheet

- Silver (Ag) may be used
- DTPI: may cover with foam, no pre-moisten
- Silicone adhesive is preferred to reduce pain upon removal and risk of medical adhesive related skin injury (MARSI)

#### Assessment

- Wound assessment by RN on admission, transfer and weekly on Wednesdays
- Notify FCP of new or worsening wound
- Document: dressing change or if intact
- RN initiates treatment based on guidelines
- Consider wound care nurse consult for pressure injuries (all stages) and other complex wounds Reconsult if wound worsens





Change every Monday/Wednesday/Friday or Tuesday/Thursday/Saturday & PRN

Pressure injury of any stage- consider wound consult

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## Wound Care Guidelines: Selected References

- 1. National Guideline Clearinghouse. (2013, September). *Solutions® wound care algorithm*. Retrieved from http://www.guideline.gov/content.aspx?id=47857&search=solutions+wound
- 2. Baranoski, S. & Ayello, E.A. (February 2012). Wound Dressings: An Evolving Art and Science. *Advances in Skin & Wound Care, 25(2)*: 87-92.
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- 4. Beitz, J.M. & van Rijswijk, L. (April 2010). A cross-sectional study to validate wound care algorithms for use by registered nurses. *Ostomy Wound Management*; 56(4):46-59.
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- 6. Beitz, J.M. & van Rijswijk, L. (September 1999). Using wound care algorithms: a content validation study. *Journal of Wound Ostomy Continence Nursing*, 26(5):238-9, 241-9.



# **Pressure Injury Prevention Guidelines**

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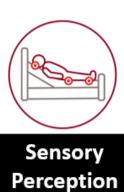
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Goals and Expected Outcomes: To promote healthy skin and to prevent pressure injuries.



## At a Glance: EBP Interventions for HAPI Prevention







Activity

<3



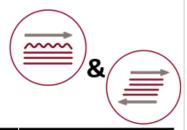
Mobility

<3



Nutrition

<2



Friction &

Shear

<2

<u>&lt;3</u>
Q
assess skin



<3

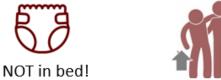






















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## At a Glance: EBP Interventions for HA-MDRPI Prevention











Trach	
plate/coll	ar

Nasogastric Tube

**Cervical Collar** 

Bi-pap Mask

**Endotracheal** Tube

**All Devices** 

Assess Skin

Assess Skin

Assess Skin

**Assess Skin** 

Assess Skin

**Assess Skin** 

Tubes, lines over

patient, not under



overtighten



Float in nare. secure with tape OR nasal bridle if indicated



Change pads daily



Foam dressing to protect bony areas



Foam dressing or gel pad to nasal bridge, cheeks



Secure straps, don't overtighten



FTT holder: rotate width of tube Q2 hours



Tape: retape when soiled



# **UChicago Medicine**



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## **Pressure Injury Prevention Guidelines: Selected References**

- 1. Bergstrom N, Braden BJ, Laguzza A, Holman V. The Braden Scale for Predicting Pressure Sore Risk. Nurs Res. 1987;36(4):205-210.
- 2. Delmore B, Cox J, Rolnitzky L, Chu A, Stolfi A. Differentiating a Pressure Ulcer from Acute Skin Failure in the Adult Critical Care Patient. *Adv Skin Wound Care*. 2015;28(11):514-526 13p.
- 3. Curry K, Kutash M, Chambers T, Evans A, Holt M, Purcell S. A prospective, descriptive study of characteristics associated with skin failure in critically ill adults. *Ostomy Wound Manag.* 2012;58(5):36-43 7p.
- 4. Levine J, Humphrey S, Lebovits S, Fogel J. The Unavoidable Pressure Ulcer: A Retrospective Case Series. J Sci Commun. 2009;16(8):359-363.
- 5. Pittman J, Beeson T, Terry C, et al. Unavoidable Pressure Ulcers. J Wound Ostomy Continence Nurs. 2016;43(1):32-38 7p. doi:10.1097/WON.0000000000000191
- 6. US Dept of Health and Human Services, Agency for Health Care Policy and Research. (1992). Clinical Practice Guideline Number 3: Pressure Ulcers in Adults: Prediction and Prevention. (AHCPR publication 92-0047) Rockville, Md.
- 7. Wound, Ostomy and Continence Nurses Society-Wound Guidelines Task Force (2016). WOCN 2016 Guideline for Prevention and Management of Pressure Injuries (Ulcers): An Executive Summary. *J Wound Ostomy Continence Nurs*. 2017; 44(3): 241–246. doi: 10.1097/WON.000000000000321
- 8. National Pressure Ulcer Advisory Panel (NPUAP) and European Pressure Ulcer Advisory Panel (EPUAP) (2009). Pressure Ulcer Prevention and Treatment: Clinical Practice Guideline. Washington, D.C.: NPUAP.
- 9. European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel and Pan Pacific Pressure Injury Alliance. Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline. The International Guideline. Emily Haesler (Ed.). EPUAP/NPIAP/PPPIA; 2019.
- 10. Berlowitz D, Van Duesen Lukas C, Parker V, et al. Preventing Pressure Ulcers in Hospitals: A Toolkit for Improving Quality of Care. Agency for Healthcare Research and Quality (AHRQ), U.S. Department of Health and Human Services; 2014. https://www.ahrq.gov/professionals/systems/hospital/pressureulcertoolkit/index.html
- 11. Walsh NS, Blanck AW, Smith L, Cross M, Andersson L, Polito C. Use of a Sacral Silicone Border Foam Dressing as One Component of a Pressure Ulcer Prevention Program in an Intensive Care Unit Setting: J Wound Ostomy Continence Nurs. 2012;39(2):146-149. doi:10.1097/WON.0b013e3182435579
- 12. Noonan, C., Quigley, S., & Curley, M. A. Q. (2011). Using the Braden Q Scale to predict pressure ulcer risk in pediatric patients. The Journal of Pediatric Nursing, 26(6):566-75.



# **Skin Care Guidelines**

#### **For Intact Skin**







under dressing

#### **Key Clinical Points**

- For pressure injury risk, may place foam over sacral area
- Avoid moisturizer/ointment between toes, in skin folds or where dressing is placed
- Flat sheets only on active (air) mattresses
- Single layer of incontinent pad
- No diapers in bed
- Silicone adhesive is preferred to reduce pain upon removal and risk of medical adhesive related skin injury (MARSI)

#### Assessment

- Document location of common skin injuries including IAD, ITD & friction
- Head to toe skin assessment as close to start of every shift as possible
  - Inspect beneath medical devices
- Braden every shift
- Prevention interventions for subscale < 3

















## **HemOnc Skin Care Guidelines**

# Cleanse, Moisturize & Protect if at risk if incontinent

#### **Key Clinical Points**

- Avoid moisturizer/ointment between toes, in skin folds or where dressing is placed
- Flat sheets only on ICU mattresses
- Single layer of incontinent pad
- No diapers in bed
- Silicone adhesive is preferred to reduce pain upon removal and risk of medical adhesive related skin injury (MARSI)

#### **Assessment**

- Document location of common skin injuries including IAD, ITD & friction
- Head to toe skin assessment as close to start of every shift as possible
  - Inspect beneath medical devices
- Braden every shift
- Prevention interventions for subscale < 3

















## **ICU Skin Care Guidelines**

# Cleanse, Moisturize & Protect if incontinent

#### **Key Clinical Points**

- Avoid moisturizer/ointment between toes, in skin folds or where dressing is placed
- Flat sheets only on ICU mattresses
- Single layer of incontinent pad
- No diapers in bed
- Silicone adhesive is preferred to reduce pain upon removal and risk of medical adhesive related skin injury (MARSI)

#### **Assessment**

- Document location of common skin injuries including IAD, ITD & friction
- Head to toe skin assessment as close to start of every shift as possible
  - Inspect beneath medical devices
- Braden every shift
- Prevention interventions for subscale < 3

















## **PICU Skin Care Guidelines**

# For Intact Skin Cleanse, Moisturize & Protect \*no ointment

if incontinent

#### **Key Clinical Points**

under dressina

- Avoid moisturizer/ointment between toes, in skin folds or where dressing is placed
- Flat sheets only on ICU mattresses
- Single layer of incontinent pad
- No diapers in bed (unless under age of potty training)
- Silicone adhesive is preferred to reduce pain upon removal and risk of medical adhesive related skin injury (MARSI)

#### **Assessment**

- Document location of common skin injuries including IAD, ITD & friction
- Head to toe skin assessment as close to start of every shift as possible
  - Inspect beneath medical devices
- Braden/Braden Q every shift
- Prevention interventions for subscale < 3</p>

















## **Pediatric Skin Care Guidelines**



#### **Key Clinical Points**

- Avoid moisturizer/ointment between toes, in skin folds or where dressing is placed
- Flat sheets only on ICU mattresses
- Single layer of incontinent pad
- No diapers in bed (unless under age of potty training)
- Silicone adhesive is preferred to reduce pain upon removal and risk of medical adhesive related skin injury (MARSI)

#### **Assessment**

- Document location of common skin injuries including IAD, ITD & friction
- Head to toe skin assessment as close to start of every shift as possible
  - Inspect beneath medical devices
- Braden/Braden Q every shift
   Prevention interventions for subscale < 3</li>

















## **NICU Skin Care Guidelines**

## <u>Routine Care, 32 weeks gestational age or older</u> First Bath

- Once thermal and cardiorespiratory stability achieved
- Ideally after 24 hours, may bathe at 6 hours at parents request (if stable)
- Limit to 5-10 minutes, see additional bathing tips below

#### **Bathing**

- Minimize heat loss during bathing
- Use Bedside-Care Sensitive Skin Foam (no-rinse)
- Leave residual vernix in place, allow it to wear off
- Bathe every few days as needed
- Shampooing 1-2 times per week is usually adequate
- Approved bathing methods include: sponge bath/immersion/swaddling

#### After bathing

- -Dry, diaper, place cap on head and wrap in warm blankets
- -Within 10 min: dress, change cap, wrap in warm blankets

#### Moisturizing

- May use moisturizer at the first sign of dryness, fissures or flaking
- Every 12 hours and PRN apply gently, avoid friction
- Routine use may be indicated in full-term newborns with cradle cap or atopic dermatitis (eczema)

#### **Diaper Care**

- Change diapers every 1-3 hours
- Cleanse area with warm water, may use approved wipes
- Avoid vigorous scrubbing
- Prevent/protect if frequent stooling or high risk
   (e.g., antibiotic use, infections, malabsorption, withdrawal)











Provider approval <32 weeks

#### Prevent/Protect

Apply 20% Zinc Oxide Ointment (Rx from pharmacy)

TIPS: Apply as thick layer

DO NOT scrub to remove, gently cleanse and reapply

Contact NNP if not improved in 24 hours



**Contact NNP for recommendations** 

Triple paste

Zinc oxide + pectin/stoma powder

iLEX Must follow instructions for use

Provider approval <32 weeks

**Contact NNP for recommendations** 

**Nystatin Powder** 

**Antifungal Ointment** 



🔔 Provider approval <32 weeks



## **NICU Skin Care Product Use Guidelines**



**Provider approval <32 weeks** 



#### **Bedside-Care Sensitive Skin Foam (no-rinse)**

This is a no rinse product; however, consider a warm water rinse if <32 weeks gestational age

When cleansing neonates, avoid harsh rubbing or scrubbing



#### **Triple Paste**

- Apply liberally so that there is a visible layer completely covering diaper area/diaper dermatitis
- - Gently cleanse diaper area when soiling occurs, do **not** scrub to remove (some residual may remain)
- Gently reapply as needed

#### 20% Zinc Oxide Ointment

(May also be applied to prevent skin issues)

- Apply as a thick layer
- Gently cleanse diaper area when soiling occurs, do **not** scrub to remove (some residual may remain)
- Gently reapply as needed



If skin is weepy, may apply light dusting of pectin/stoma powder first. Do not over apply or cake it on



#### Must follow instructions to prevent skin damage

**iLEX Skin Protectant** 

#### **Initial Application:**

- 1. Cleanse skin gently with warm water and minimal amount of approved cleanser
- 2. Apply thin coating of iLEX over entire area
- 3. Allow iLEX to dry for at least 30 seconds
- 4. Apply a solid coating of petroleum jelly over the ILEX and surrounding skin

#### Subsequent Application / Cleansing when soiled:

- 1. Only the stool should be wiped off using soft cloth and water, leaving the iLEX intact
- 2. Reapply iLEX if needed
- 3. Reapply solid coating of petroleum jelly over the iLEX

#### Daily Care: iLEX should only be removed ONCE per day

- 1. Use a soft cloth with mineral oil, baby oil or water and mild soap (Sensi-Care)
- 2. Do not forcibly try to remove iLEX that has adhered to the skin





#### **Skin and Wound VAC Maintenance**

#### **Wound VACs**

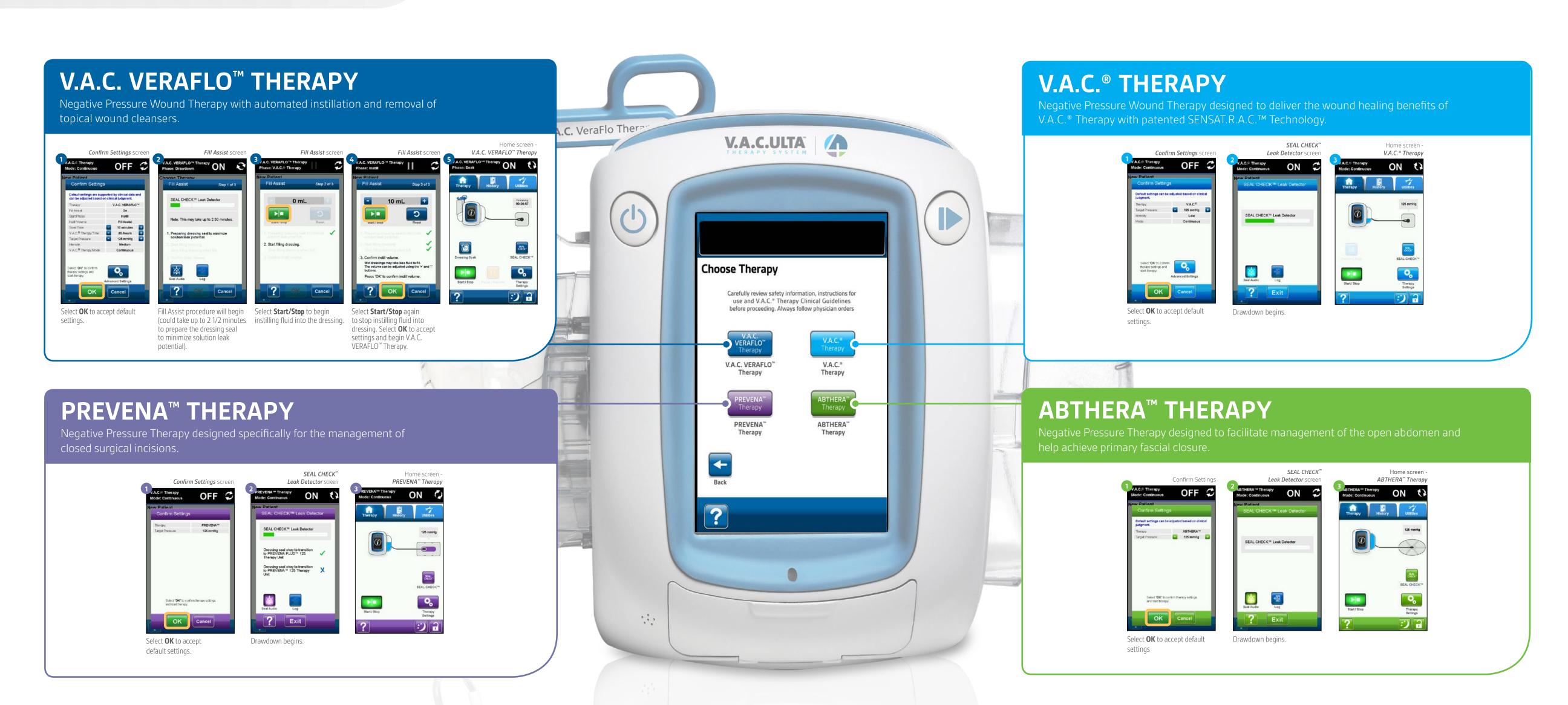
- Negative pressure would therapy (NPWT aka wound VAC) needs to be assessed to ensure
  there is an adequate seal and that it is working appropriately. We typically use KCI/3M here
  and they have reps that can provide materials on trouble shooting. If a VAC needs to be
  changed the service takes care of that; if it is a wall suction NPWT, Physical Therapy manages
  those.
  - If wound VAC is connected to wall suction:
    - Managed by Physical Therapy
  - o If KCI/3M commercial wound VAC is placed
    - RN troubleshoots
    - Contact team who placed (ordering provider) for question
    - KCI/3M rep can provide assistance/resources: Patricia Forray (224) 330-9936
    - Wound Care RNs may also be able to help answer questions as well



V.A.C.ULTA™ Negative Pressure Wound Therapy System







For more information, contact us at 800-275-4524 or visit acelity.com







## **EVOLVED BY WOUND CARE EXPERTS—YOU**

Four therapies, one V.A.C.ULTA<sup>™</sup> 4 Therapy System













### V.A.C.ULTA™ 4 THERAPY SYSTEM

The result of our continuing commitment to wound care innovation based on clinician and patient needs. More convenient, easier to use, same outcomes.

# ADVANCED TECHNOLOGY MADE SIMPLE — SO YOU CAN MOVE ON TO WHAT'S NEXT

- **Efficient**: One device, four therapies
- Intuitive: Simplified navigation means less training time
- Familiar: Compatible with most of the existing V.A.C.® Therapy accessories
- Adaptable: Choose new Tap and Begin (TAB) quick-start default based on clinical data or choose customized therapy
- Insightful: Access to 24 hour and cumulative Therapy Information Monitoring (TIM) data
- Proactive: Early Detection System (EDS) notifies if leak is present and an alert will occur soon if not addressed



### Start therapy in fewer steps with the V.A.C.ULTA™ 4 Therapy System

Easier initiation of V.A.C.® Therapy and V.A.C. VERAFLO™ Therapy:

P43% REDUCTION IN NUMBER OF BUTTON PUSHES





## TIME AFTER TIME, IT'S V.A.C.® THERAPY

The technology you trust to deliver the outcomes you need. That's the proven Certainty of Acelity™

**SENSAT.R.A.C.**™ **Technology:** Proprietary technology that continuously monitors and maintains pressure at the wound site by adjusting pump output and compensating for wound distance, position and exudate characteristics.\*

**EASYCLEAR PURGE™ Technology:** Aids in the prevention and clearance of blockages by forcing air periodically through outer lumens.

**SEAL CHECK**<sup>™</sup> **Leak Detector:** Visual cues offer instant feedback to help identify leaks.

95% of published NPWT clinical evidence is based on V.A.C.® Therapy¹

**10M** wounds treated worldwide with V.A.C.® Therapy <sup>2\*</sup>

## V.A.C. VERAFLO™ THERAPY

#### Combines the benefits of V.A.C.® Therapy with automated solution distribution and removal:

• Volumetric delivery: Automated pump delivers topical wound solutions

• Fill assist: Monitor the correct instill volume and save data for future use

• **Dressing soak:** Instill topical wound solution into the wound for easier dressing removal and increased patient comfort

#### New Features in V.A.C. VERAFLO<sup>™</sup> Therapy:

- Instillation Connectors: Redesigned with wings to make connection and disconnection easier
- Hanger Arm Extension: Provides additional clearance to help reduce tubing kinks that can cause Solution Bag/Bottle **Empty Alerts**
- Now with the ability to track 24 hour and cumulative instillation volume

CLEANSE CHOICE™ Dressing

V.A.C. VERAFLO™ Dressing

#### When V.A.C.® Therapy alone is not enough.

V.A.C. VERAFLO

In a retrospective historical cohort controlled study of infected wounds requiring operative debridement, V.A.C. VERAFLO<sup>™</sup> Therapy with Prontosan<sup>®</sup> Instillation was compared to standard V.A.C.<sup>®</sup> Therapy and demonstrated:<sup>3</sup>

**REDUCTION IN** I FNGTH OF STAY WOUNDS CLOSED AT DISCHARGE VS. 62% WITH V.A.C.® THERAPY ALONE\*\*

**SAVINGS PER PATIENT**#

\$8,613 IN THE 6 MIN.

DWELL TIME GROUP

\$9,117 IN THE 20 MIN.

DWELL TIME GROUP

Based on 20 minute dwell time and calculation of % reduction (11.4+/-5.1 vs. 14.92 +/-9.2) (p=0.034). Based on 6 minute dwell time (p=0.0001).

<sup>\*</sup>Calculation of cost savings based on reduced length of hospital stay. Actual savings will vary based on individual facility costs, protocol and patients.

## V.A.C.® THERAPY

# From trauma wounds to pressure ulcers, it's the same NPWT you rely on today to provide positive outcomes:

- Promote granulation tissue formation
- · Decrease wound margins
- Remove exudate
- · Remove infectious material



#### Not all NPWT is V.A.C.® Therapy.

A retrospective observational database analysis conducted on records from 21,638 hospitalized patients by Premier Research Services compared V.A.C.® Therapy vs. other NPWT products and demonstrated:<sup>4</sup>

10%
LOWER LENGTH
OF STAY\*

11%
LOWER TOTAL
HOSPITAL CHARGES\*\*

\$14,500

DECREASE IN HOSPITAL
CHARGES PER PATIENT

## PREVENA™ THERAPY

#### Optimal management of linear and non-linear incisions:

- · Helps to hold incision edges together
- Removes fluids and infectious materials



#### Simple application and transfer:

Unique, integrated PEEL & PLACE™ Dressings

#### Easy out-patient transfer without removing dressing:

• **SEAL CHECK™ Feature:** Indicates if the seal is intact for transfer to PREVENA™ 125 or PREVENA PLUS™ Therapy Units



#### Incisions can be complicated and costly.

A randomized study evaluating negative-pressure therapy to decrease vascular groin wound complications in 140 patients compared PREVENA™ Therapy to standard gauze dressings in high risk patients and demonstrated⁵:

CUSTOMIZABLE™ Dressing

61%

REDUCTION IN MAJOR WOUND COMPLICATIONS (p<0.001)\*

**59**%

REDUCTION IN READMISSION RATES  $(p<0.04)^{**}$ 

\$6,045

V.A.C.ULTA

REDUCTION IN MEAN TOTAL COST PER PATIENT (p=0.11)<sup>5</sup>

## ABTHERA™ THERAPY

#### Designed for simplicity and rapid application to actively manage the open abdomen:

 Provides medial tension, which helps minimize fascial retraction and loss of domain<sup>6</sup>

 Provides continuous negative pressure to remove high-volume exudate and help reduce edema

#### Take the guesswork out of managing leaks:

• Early Detection System (EDS): Provides visual feedback to help identify leaks before an alert/alarm occurs

 Leak Alert with Continuous Pump: In the event of a leak alert, the pump will continue to operate, exactly like the current ABTHERA™ Therapy Unit



Prospective study of ABTHERA<sup>™</sup> Therapy showed improved 30-day results compared to Barker's vacuum-packing technique in trauma and surgical patients:<sup>7</sup>

FEDUCTION
IN ALL-CAUSE
MORTALITY RATE

Study Note: Study 1:168 trauma and surgical patients (n=111 for ABTHERA™ Therapy, n=57 for Barkers Vacuum Packing Technique)

35% MORE LIKELY TO ACHIEVE PRIMARY FASCIAL CLOSURE"

V.A.C.ULTA™ 4 Therapy System Ordering Information			
PRE1155US	PEEL & PLACE™ Dressing — 13cm	ULTVFL05SM	V.A.C. VERAFLO™ Dressing, 5-pack, Small
PRE1055US	PEEL & PLACE™ Dressing — 20cm	ULTVFL05MD	V.A.C. VERAFLO™ Dressing, 5-pack, Medium
PRE3255US	PEEL & PLACE™ Dressing — 35cm	ULTVFL05LG	V.A.C. VERAFLO™ Dressing, 5-pack, Large
PRE4055US	PREVENA PLUS™ CUSTOMIZABLE™ Dressing	ULTVCL05MD	V.A.C. VERAFLO CLEANSE <sup>™</sup> Dressing, 5-pack, Medium
PRE1095	PREVENA™ 45ml Canister	ULTVCC05MD	V.A.C. VERAFLO CLEANSE CHOICE™ Dressing, 5-pack, Medium
PRE4095US	PREVENA PLUS™ 150ml Canister	ULTLNK0500	V.A.C. VERALINK™ Cassette, 5-pack
370620	ABTHERA™ Canister, case of 20	ULTDUO0500	V.A.C. VERAT.R.A.C.DUO™ Tube Set, 5-pack
370642	ABTHERA™ Open Abdomen Tubing Set, case of 5	400230	PRONTOSAN™ Wound Irrigation Solution with Adapter, case of 10
M8275026/5	ABTHERA™ SENSAT.R.A.C.™ Open Abdomen Dressing, case of 5	M8275063/5	INFOV.A.C. <sup>™</sup> 500ml Canister with Gel, case of 5
ULTDEV01/US	V.A.C.ULTA™ 4 Therapy Unit (U.S.)	M8275063/10	INFOV.A.C.™ 500ml Canister with Gel, case of 10
		M8275093/5	INFOV.A.C.™ 1000ml Canister with Gel, case of 5

"V.A.C.ULTA™ 4 Therapy Unit is compatible with all INFOV.A.C.™ Canisters

# For more information about the V.A.C.ULTA<sup>™</sup> 4 Therapy System, contact your ACELITY sales representative or visit **acelity.com**

#### Reference:

- 1. Data on file.
- 2. As of June 2016. Data on file.
- 3. Kim PJ, Attinger CE, Steinberg JS, et al. The impact of negative pressure wound therapy with instillation compared with standard negative-pressure wound therapy: a retrospective, historical, cohort, controlled study. *Plast Reconstr Surg.* 2014:133:709-716.
- 4. Data on file. A retrospective observational database study was conducted by Premier Research services to evaluate the costs and readmission rates of NPWT patients at facilities using KCI versus competitor therapies. Data analyses from 144 hospitals for KCI and 24 for competitor from 07/2011 to 06/2013; KCI n=18,385, Competitor n=3,253. PRS included only those hospitals using procedural cost accounting. Dual hospitals were excluded. Patient cases were included for all indicated wound types. Data points falling in the lower and upper .05% were considered outliers and removed from summary calculations. Research funded by KCI.
- 5. DiMuzio P, Staley C, Reiter D, McCullough M, Goss S, Arosemena M, Abai B, Salvatore D. A randomized study evaluating negative-pressure therapy to decrease vascular groin wound complications. *J Vasc Surg.* 2017 July;65(6):1335.
- 6. Miller PR, Meredith JW, Johnson JC, Change MC. Prospective evaluation of vacuum-assisted fascial closure after open abdomen: planned ventral hernia rate is substantially reduced. *Annals of Surgery*. 2004 May;239(5):608-614.
- 7. Cheatham ML, Demetriades D, Fabian TC, et al. Prospective study examining clinical outcomes associated with a negative pressure wound therapy system and Barker's vacuum packing technique. *World J Surg.* 2013 Sept;37(9):2018-2030.

NOTE: Specific indications, contraindications, warnings, precautions and safety information exist for KCI products and therapies. Please consult a clinician and product instructions for use prior to application. Rx only.

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Quick Reference Guide



#### Important Information For Users:

A Safety Information Sheet and this separate Quick Reference Guide (containing basic operating information) are provided with the V.A.C.Ulta™ Therapy Unit. This Quick Reference Guide is not intended to be a comprehensive manual. For additional information concerning the V.A.C.Ulta™ Therapy System, including detailed operating instructions, please consult the V.A.C.Ulta™ Therapy System User Manual and the treating physician.

A copy of the V.A.C.Ulta™ Therapy System User Manual has been provided to the ordering healthcare facility. For an additional copy, in the US visit www.kci1.com, www.vaculta.com or contact KCI at 1-800-275-4524. Outside the US, visit www.kci-medical.com.

#### Warning

#### Important Safety Information Accompanies This Device

Indications, Contraindications, Warnings, Precautions and other Safety Information are contained in the V.A.C.Ulta™ Therapy System Safety Information Sheet. This information sheet is included with the therapy unit and also included in V.A.C.Ulta™ Dressing cartons. Please consult the V.A.C.Ulta™ Therapy System User Manual and the Safety Information Sheet before applying V.A.C.® Therapy or V.A.C. VeraFlo™ Therapy. If there are questions, or if this information sheet is missing, immediately contact your local KCI representative.

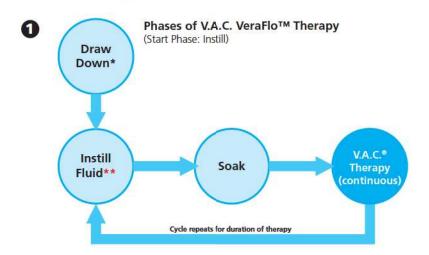
Additional product information can be found at www.kci1.com (US) or www.kci-medical.com (outside the US).

As with all prescription medical devices, failure to follow product instructions or adjusting settings and performing therapy applications without the express direction and / or supervision of your trained clinical caregiver may lead to improper product performance and the potential for serious or fatal injury. For medical questions, please consult a physician. In case of medical emergency, immediately contact your local emergency services provider.

CAUTION: Federal law (US) restricts this device to sale or rental by or on the order of a physician.

The V.A.C.Ulta<sup>™</sup> Negative Pressure Wound Therapy System (V.A.C.Ulta<sup>™</sup> Therapy System) is an integrated wound therapy system that can deliver (1) V.A.C. VeraFlo<sup>™</sup> Therapy or (2) V.A.C.® Therapy alone.

#### V.A.C. VeraFlo™ Therapy

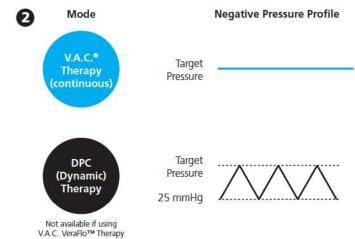


V.A.C. VeraFlo™ Therapy (Instillation) consists of negative pressure wound therapy (V.A.C.® Therapy) coupled with controlled delivery and drainage of topical wound irrigation treatment solutions and suspensions over the wound bed.

<sup>\*</sup> Seal Check™ Leak Detector

<sup>\*\*</sup> Fill Assist allows user to monitor initial wound fill by manually starting and stopping instillation to determine correct instill volume after dressing is applied. Once determined, this volume will be the set point for each subsequent instill phase of V.A.C. VeraFlo<sup>TM</sup> Therapy.

### V.A.C.® Therapy

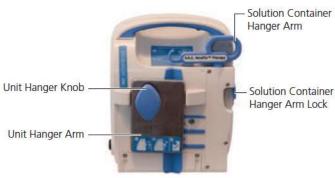


V.A.C.® Therapy consists of negative pressure wound therapy alone.

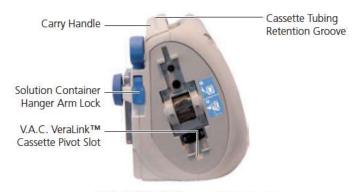
#### V.A.C.Ulta™ Therapy Unit Feature Identification



V.A.C.Ulta™ Therapy Unit - Front



V.A.C.Ulta™ Therapy Unit - Back



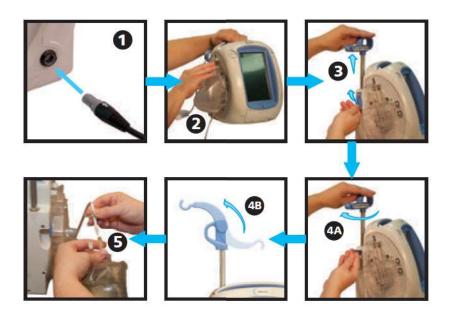
V.A.C.Ulta™ Therapy Unit - Left

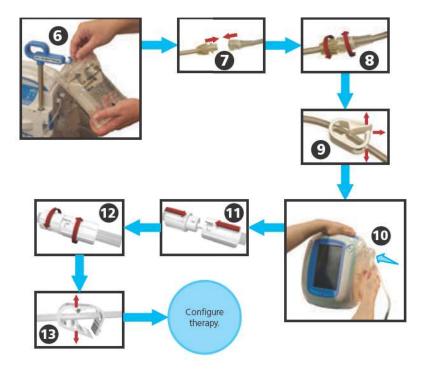


V.A.C.Ulta™ Therapy Unit - Right

# Preparing the V.A.C.Ulta™ Therapy Unit for Use

Apply the dressing according to the instructions for use included in the V.A.C.Ulta $^{TM}$  Dressing cartons, then set up the therapy unit as follows.





Refer to the V.A.C.Ulta  $^{\text{TM}}$  Therapy System User Manual for more detailed information.

# Common Touch Screen Buttons

Most screens have one or more common control buttons. These are:



Access Help screens



Select to activate Screen Guard

Select and hold to activate Settings Lock



Activate Night Mode



Confirm selection



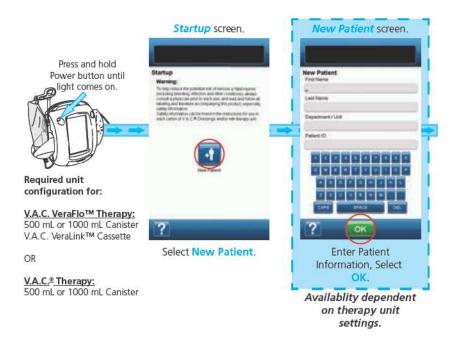
Close pop-up screen



Cancel operation

# Configure Therapy

Refer to the V.A.C.Ulta $^{\text{TM}}$  Therapy System User Manual for more detailed information.



**NOTE:** Screen shots are for representation only. Refer to the V.A.C.Ulta™ Therapy System User Manual for more detailed information.

# Configure Therapy - V.A.C. VeraFlo™ Therapy



Settings displayed will vary depending on settings defined by user.

# Configure Therapy - V.A.C.® Therapy



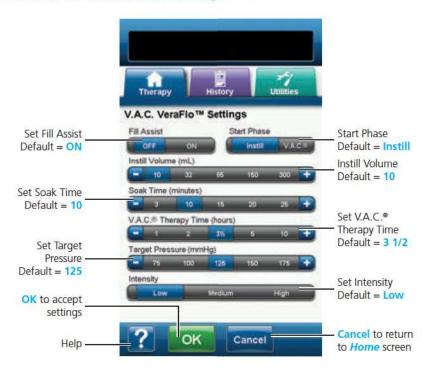
Settings displayed will vary depending on settings defined by user.



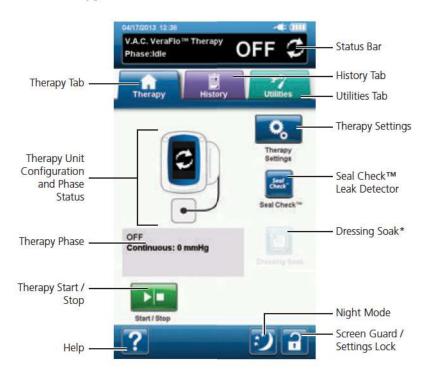


# Therapy Settings - V.A.C. VeraFlo™ Therapy

From the V.A.C. VeraFlo<sup>TM</sup> Therapy Home screen, select Therapy Settings to continue to the V.A.C. VeraFlo<sup>TM</sup> Settings screen.



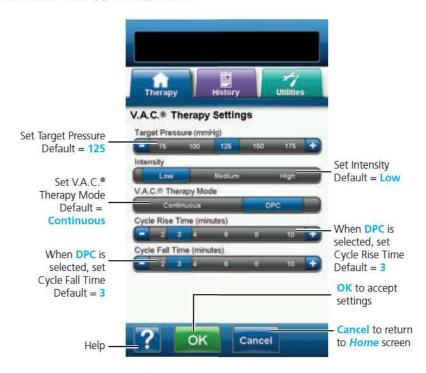




<sup>\*</sup> V.A.C. VeraLink™ Cassette must be installed for **Dressing Soak** to be available.

# Therapy Settings - V.A.C. ® Therapy

From the *V.A.C.® Therapy Home* screen, select Therapy Settings to continue to the *V.A.C.® Therapy Settings* screen



## Seal Check™ Leak Detector

The Seal Check™ Leak Detector is used to help find negative pressure leaks.



Access the Seal Check™ Leak Detector from the *Home* screen. The Seal Check™ Leak Detector will also automatically run during the initial Drawdown phase of V.A.C. VeraFlo™ Therapy and once V.A.C.® Therapy has been initiated.

## Most leaks occur:

- where the drape meets the skin.
- where the V.A.C. VeraT.R.A.C.™ Pad, V.A.C. VeraT.R.A.C. Duo™ Tube Set pads or SensaT.R.A.C.™ Pad are attached to the drape.
- at tubing connections.
- if the canister is not fully seated to the therapy unit.

## Seal Check™ Leak Detector Defaults

Seal Audio default is set to OFF.

Drawdown can take up to two minutes and thirty seconds to establish seals. During this drawdown, observe the dressing for leaks.



The Establishing Dressing Seal timer is set for two minutes and thirty seconds; however, once the V.A.C.Ulta™ Therapy Unit has reached target pressure and determined that the dressing air leaks are small enough to continue V.A.C. VeraFlo™ Therapy, OK will highlight at the bottom of the screen. Select OK to continue to the *Home* screen or *Fill Assist* screen depending on therapy settings.

The Seal Check<sup>TM</sup> Leak Detector time is designed to help minimize the potential for leaks by pulling the drape against the skin and allowing the adhesive time to cure.

Ensure that disposable changes are recorded using Log tool.

#### Fill Assist

Fill Assist helps the user determine the correct instill volume to use during the instill phase of a V.A.C. VeraFlo™ Therapy cycle.

It allows the user to monitor initial wound fill by manually starting and stopping instillation to determine the correct instill volume for each instill phase. If correct instill volume is already known, select Fill Assist **OFF** to use the Instill Volume selection bar.

#### **Using Fill Assist**

NOTE: After confirming settings by selecting OK, negative pressure is applied to establish dressing seal (Seal Check<sup>TM</sup> Leak Detector screen). Fill Assist screen will appear (if selected) in approximately three minutes.



- Select Start / Stop on Fill Assist screen to begin delivering solution to wound.
- 2. Watch the wound as it fills with solution.



Select Start / Stop again to stop solution delivery when suitable fill volume has been delivered to the wound bed.



 Select OK to confirm the determined fluid volume as displayed on the *Fill Assist* screen and return to the *Home* screen. The therapy unit will then begin the soak phase.



If wound has been over-filled, solution needs to be removed, or Fill
Assist needs to be restarted, select Reset to remove solution from
the wound and return to the Fill Assist screen.

## Test Cycle

Use to complete an abbreviated V.A.C. VeraFlo™ Therapy cycle. Each phase of the cycle will be tested to ensure system is set up and functioning correctly.



- 1. Select Test Cycle from the *Home* screen.
- 2. Once Test Cycle is complete, select Exit to go to V.A.C.® Therapy phase.

## **Dressing Soak**



Use to soak the dressing with solution in preparation for a dressing change. Refer to the V.A.C.Ulta™ User Manual for more detailed information.

## Alerts and Alarms

Refer to the Alerts and Alarms section of the V.A.C.Ulta™ Therapy System User Manual or select Help for more detailed information.

Alerts and Alarms appear on the touch screen and are accompanied by a repeating audible tone.



Select Audio Pause to silence the audible tone for two minutes.



Select Help for more information regarding alarm resolution.

If alarm conditions cannot be resolved, contact KCI.

**Low Priority Alarm / Alert Condition -** Displayed on the touch screen when the V.A.C.Ulta™ Therapy Unit detects a condition that requires attention. Alerts will be accompanied by a repeating audible tone approximately every 20 seconds (two beeps).

**Battery Low Alert** 

V.A.C.® Therapy Blockage Alert

V.A.C. VeraFlo™ Blockage Alarm (Therapy Interrupted)

V.A.C. VeraLink™ Not Engaged Alarm

Solution Bag / Bottle Empty Alarm

Fill Assist Inactive Alarm

Internal Temperature Alarm

Medium Priority Alarm Condition - Displayed on the touch screen when the V.A.C.Ulta™ Therapy Unit detects a condition that requires prompt attention in order to ensure the prescribed therapy is being delivered. Alarms will be accompanied by a repeating audible tone approximately every two seconds (three beeps) and a flashing screen title.

**Battery Critical Alarm** 

Canister Full Alarm (Therapy Interrupted)

Canister Not Engaged Alarm

V.A.C.® Therapy Leak Alarm

V.A.C.® Therapy Leak Alarm (Therapy Interrupted)

V.A.C. VeraFlo™ Pressure Deviation Alarm (Therapy Interrupted)

V.A.C.® Therapy Blockage Alarm (Therapy Interrupted)

V.A.C.® Therapy Low Pressure Alarm (Therapy Interrupted)

System Error Alarm

Therapy Inactive Alarm

## **Customer Contact Information**

For questions regarding this product, supplies, maintenance, or additional information about KCI products and services, please contact KCI or a KCI authorized representative, or:

In the US call 1-800-275-4524 or visit www.kci1.com or www.vaculta.com KCI USA, Inc. 12930 IH 10 West San Antonio, TX 78249

Outside the US visit www.kci-medical.com



KCI USA, Inc. 12930 IH 10 West San Antonio, TX 78249 USA 1-800-275-4524 www.kci1.com www.vaculta.com

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# BASIC APPLICATION GUIDE FOR V.A.C.® DRESSINGS

## For Wounds Without Exposed Vessels, Organs, Tendons and Nerves



Instructions for Use and Safety Information: This is a quick reference showing the basic steps in a typical dressing application. As with any device, it is important to read and understand the detailed instructions for use and safety information (including information on exposed vessels, organs, tendons, nerves, and infection) applicable to your V.A.C.\* Therapy Unit and dressing application that can be found with the therapy unit, disposables carton or in the V.A.C.\* Therapy Clinical Guidelines.

Questions and Information: For additional, detailed information, please refer to specific dressing instructions for use (contained in disposables cartons) and the V.A.C.® Therapy Clinical Guidelines. These sources provide information concerning the proper application of all V.A.C.® Therapy Dressings including advanced applications and techniques. If you have product questions, please contact KCI at 800-275-4524.

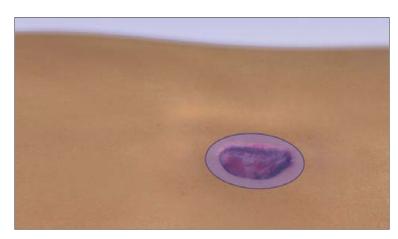
NOTE: Specific indications, contraindications, warnings, precautions and safety information exist for KCI products and therapies. Please consult a physician and product instructions for use prior to application. Rx only.

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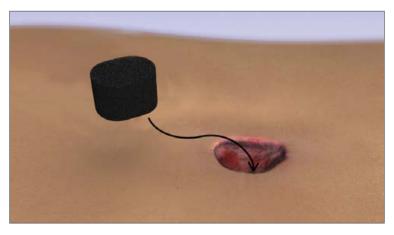


# STEP 1 - Assess wound size and type



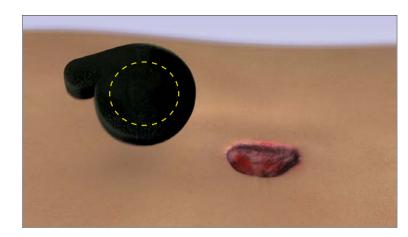
Prepare wound bed appropriately.

# **STEP 3** - Place dressing in wound



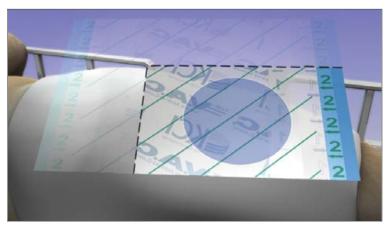
Note the total number of pieces of foam used in the wound.

# **STEP 2** - Cut appropriate dressing to size



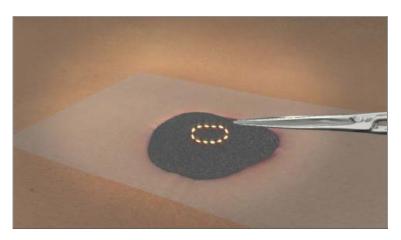
Do not cut dressing over wound as this could result in foam particles falling into the wound.

# STEP 4 - Trim V.A.C. Drape to size



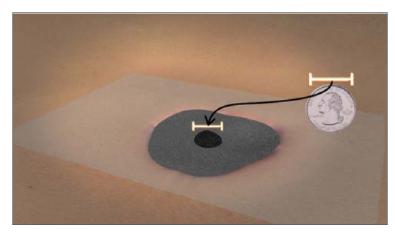
Peel back one side of Layer 1 and place adhesive side down over wound. Remove the remaining side of Layer 1, the green striped stabilization Layer 2 and the perforated Blue Handling Tab(s)

**STEP 5** - SENSAT.R.A.C.™ Pad Application



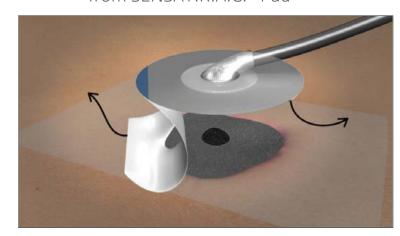
Identify application site for SENSAT.R.A.C.™ Pad.

STEP 6 - Pinch drape and cut a 2.5cm round hole

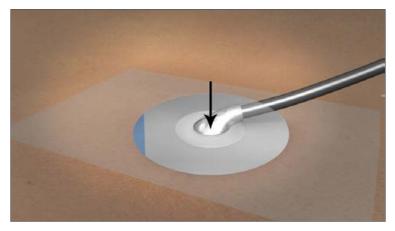


Consider the diameter of a Quarter for size reference.

**STEP 7** - Remove backing Layers 1 and 2 from SENSAT.R.A.C.™ Pad



STEP 8 - Place SENSAT.R.A.C.™ Pad opening directly over hole



Pull blue tab to remove stabilization layer. Record date and number of foam pieces used on the Foam Quantity Label and place in the patient record.

**STEP 9** - Connect SENSAT.R.A.C.™ Pad tubing to canister tubing



STEP 10 - Turn on power to V.A.C.® Therapy Unit



Set to the physician prescribed therapy settings to initiate therapy.