North Dakota Academy of Physician Assistants

the review

Randy Perkins, PA-C, Editor

November, 2015

Wound Care - Why It Matters

Why bother with chronic wounds? Can't they just be wrapped up sent home? The answers to these questions are both simple and complex. This edition of the "review" will focus on the general nature of wound care, some of the demographics, mortality rates, diagnostic and treatment techniques. Evidenced based practice has now become the mainstay for all fields of medical practice and wound treatment is no different. Hopefully, this information will assist the reader with practice related information.

Inside this issue:

My Two Cents Worth

By Curt Kroh, NDAPA President

With October over, I sincerely hope everyone had a fun National PA day!

Remember this May we will be voting on president-elect, vice president, secretary, treasurer, and director at large. We will also be voting on Junior Delegate and two alternate delegates for AAPA convention in Las Vegas on 14-18 May 2017. I encourage anyone who may be interested in any of these opportunities to contact Terri Lang or Alice Schatz.

I would also like to thank Roger Preszler who was our NDAPA Historian over the last few years. He has retired and moved closer to his children and grandchildren in Nebraska so we wish him luck on this new phase of his life. As a result, the NDAPA is in need of a historian so if anyone has a knack for taking pictures and would like to be the NDAPA Historian let me know.

I am also happy to report that Cindy Renner received all of the packages we sent to her in Africa. Thanks again to all those who contributed and to Randy for getting them in the mail. I always look forward to reading about her experiences as she provides care to those in that region of the world. Don't forget to check out the new additions including information about ICD 10 on the NDAPA web site.

Update from Malawi!

Cindy Renner, PA-C

On November 10th we headed back to Malawi after nearly 6 weeks in the USA. Before we left our village, one of the Mamas, wondering how I could ever leave Malawi for 6 weeks asked me "What will you see in America that is different from HERE?" I was thinking "where do I begin", but answered "well, when I am walking down the street in the USA I will not see ONE person carrying anything on their head!" The other Mamas in the group expressed disbelief at the absurdity of this statement, and one said "Not even SMALL packages??!"

As we traveled around visiting family and friends we were overwhelmed by many emotions. It was *wonderful* seeing everyone we have missed so much! We are *thankful* that my parents are still with us, and able to live on their own. We were so *grateful* when reconnecting with dear co-workers and church family, to find that we have not been forgotten, that people think about us and pray for us and want to stay involved in helping us.

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Mission:

The mission of NDAPA is to promote quality, cost-effective, accessible health care to enhance the health and well-being of the people of North Dakota and to promote the professional and personal development of Physician Assistants.

Renner—*continued from page 1*

Sara Wiedrich, Cindy Renner and Deb Fueller. Not pictured: Ellen Dobler

I stopped in at my former clinic and talked about some of our stories and experiences. I mentioned that one of the Medical Officers in Mzuzu had told me he would sure appreciate a stethoscope if I could find one for him in the US. Imagine trying to take care of your patients without a stethoscope? I cannot count all the stethoscopes my friends and I have gone through as we up graded to newer technology over the years. The next day I returned to the clinic to say goodbye and was presented with a brand new really nice stethoscope from one of the Cardiologists, and another from my friend and former office mate! My diabetes colleagues Ellen Dobler PA-C and Sara Wiedrich FNP had also compiled a huge box of supplies which are like GOLD at the hospital in Malawi, and will be SO helpful in treating patients there. A Pediatrician from Sanford purchased blood glucose meters and test strips for me to take back since they are frequently unavailable in Mzuzu.

Before arriving we had been wondering what impact the difference in living conditions between Malawi and the USA would have on us. Would we feel bitter thinking about all the needs of our friends back in Mzuzu as we are again immersed in American bounty? The most obvious difference we see is how much "stuff" there is. Countless times in our village we would wish for just one hour in the US to gather items which are available ANYWHERE there, but are not available in Malawi. In America, if you want to fix something that has broken, or buy new shoes, or remodel your bedroom, you can drive on a smooth paved road with no pedestrians, goats or bicycles on them, stop at one of any number of stores to find exactly what you need in your choice of designer colors, and then go home and Google how to do your project on instant internet. You can easily buy things like cold medicine, marshmallows, school folders, chocolate chips, good pencils and pens that don't break the first time you use them, shoes that last more than a couple of weeks, a special bowl just to serve chips and salsa – the list is endless! We did not need to feel bitter however, because time and time again, when simply presented with some of the needs in Malawi, our friends would immediately ask what they could do to help. I am once again reminded that although not everyone gets to actually GO to a country in need , MANY people have caring, giving hearts and go out of their way to share what they can from American soil. We have been overwhelmed by the outpouring of generosity and concern for our dear friends in Malawi.

So far through the mail I have received three huge boxes of supplies for the hospital, and for our Rafiki kids sent by you dear NDAPA colleagues. Bandaids, gauze, ACE wraps, catheters, endotracheal tubes, insulin syringes (which arrived just at a time the hospital had completely run out!), epidural catheters, nasal airways, alcohol wipes, toothbrushes and tooth paste, glucose test strips and meters, suture, surgical blades, and countless other items, including some surprises just for me! I had to explain what some of the items were. My friends at the hospital were amazed, and once again I am so proud to be associated with you all. Thank you SO MUCH for reaching out in love to people you will never meet. You are a blessing to them, and to me!

PANRE Focus Group

Lori Dockter, PA-C

As a panel member of 29 certified PA's across the U.S., I had the opportunity to participate in the PANRE Focus Group. We worked hard for 3 days to identify viable improvements to the current recertification exam by identifying a wide range of complex issues. This was held in Johns Creek Georgia, at the NCCPA headquarters, Sept.9-11th.

The exam development team and other staff members presented the test development process to us. This is a very complicated, mathematical, and strategic process.

Several of the medical specialty groups are getting away from formal sit down testing, and moving towards continued learning with performance based certification. We heard lots of discussion on bringing back the Pathway II concept as an option possibly.

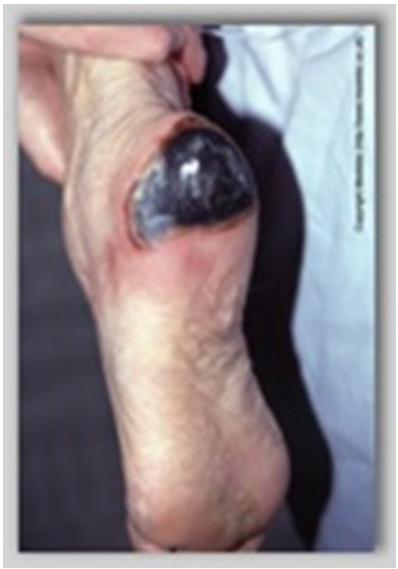
The NCCPA is very committed to making the necessary changes to continue to move our profession forward into the future. I would urge everyone to make their voices known to the NCCPA. They value our input and are very open to suggestions. Please take the time to complete the surveys sent to you. They truly want us to be the best we can be, for our profession and our patients.

I was truly humbled by their warmth, sincerity and appreciation for our commitment in attending this group. They have a very impressive staff that is committed to our profession. I am certain we will be seeing changes to our PANRE recertification process in the future, but it will take time. Watch for the NCCPA news blasts sent out, as they will keep us updated on the developments of this process.

Feel free to contact me if you have questions, thoughts, or want more information.

A Very Brief History of Wound Care

It has been said that the history of wound care parallels the history of humankind. Much of what constitutes current wound therapy is rooted in the ancient practices of the Egyptians, Greeks and Chinese. Current wound care dressings have advanced considerably in the past 20 years. There are now over 5,000 wound care products. This is a brief overview of where current practice originated. Wound care has changed little in the past 5,000 years until the past century.[1]



The earliest known record of wound treatment can be found on clay tablets of Mesopotamian origin from 2500 BCE. These are thought to be copies from even much older manuscripts from 5000 BCE. Some of this information comes from the Edward Smith Papyrus, an ancient Egyptian surgical trauma manual. The manuscript was purchased at an auction sale in 1862. Ancient Egyptian wound care arose from a spiritual basis and evolved into a scientific process. The spiritual context focused on keeping bad spirits out of the body (wound covering). This included wound washing, dressings made from honey, herbs, donkey feces, moldy bread, oil and wine. These cultures also described the "Three Healing Gestures"- wash the wound, make plasters and bandage the wound.[2]

Chinese medicine has focused on a holistic approach and has changed little over thousands of years.

Homer, in the "Iliad", (800 BCE), wrote about battle wounds during the battle of Troy. Greeks used wine and vinegar on wounds to promote healing. The Middle Ages were a setback for just about everything. Wound care centered on bloodletting.

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The 1800's saw the introduction of hand washing, carbolic acid and phenol and the introduction that bacteria cased fermentation. Robert Wood Johnson (Johnson and Johnson) started to mass produce gauze and gauze impregnated with iodine.

The current practice of using multilayer wound dressings was identified and in WWI and II.[2]

Current wound care practice focuses on evidenced based practice as much as any other area of medicine. That being said, much of the world still uses wet-to-dry dressings. Wound care centers now utilize team based approaches to better manage these complicated problems. One of the major changes to chronic wound care has been the recognition that there are different types of wounds and that different approaches need to be considered based upon the individual wound assessment and related comorbidities. The use of hyperbaric oxygenation for treatment of chronic wounds will be discussed in the next edition of "the review". (editor)

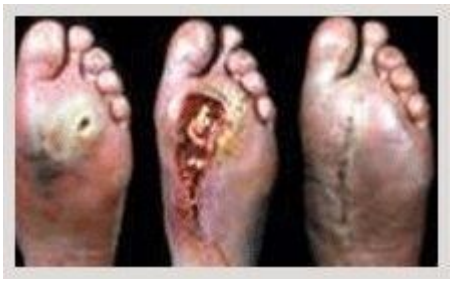
1. Shah, J. "The History of Wound Care". Journal of the American College of Certified Wound Specialists. (2011). 3. 65-66.

2. Kothari, D. "A History of materials and Practices for Wound Healing". Wound practice and Research. Nov., 2012

Wound Care Essentials for Practicing Clinicians

Les Kiemele, PA-C

Chronic wounds, those greater than three months in duration, are commonly encountered in patients with chronic medical conditions in outpatient settings, hospitals, and long-term care facilities. Chronic wounds are often used as an indicator of health care quality, and present issues that often are time-consuming and expensive. Each wound is unique. They take time to heal, and requires careful attention. The underlying pathophysiology associated with chronic wounds may not be fully recognized, preventing an accurate diagnosis from being made. In treating chronic wounds, the underlying medical condition needs to be established, and the patient/family must be given realistic expectations regarding wound healing, if the wound will heal or not. The basis for chronic wound care is often anecdotal. However this is changing. The one size fits all approach is being replaced with individualized therapy, based on evidence and wound physiology.



The process of developing an effective wound regimen hinges on four essential principles:

1. **Diagnose the Underlying Cause.** This provides the basis for effective treatment and prognosis. Several types of ulcers occur infrequently, such as small-vessel ulcers and those associated with dermatologic conditions (i.e., pyoderma gangrenosum); however, most chronic ulcers fit into one of four major types: pressure, ischemic, venous, or neuropathic. Sometimes, chronic ulcers are multifactorial.
2. **Maintain Proper Nutrition.** Proper nutrition is essential for maintaining skin structure and wound healing. Determining whether a patient is malnourished can be challenging. The most useful indicator of malnutrition is a 15% decrease in weight from baseline. Routinely measuring serum albumin and total cholesterol (in the absence of other clinical symptoms of malnutrition) is not recommended, as the

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sensitivity and specificity are poor. A diet containing 1 to 1.5 g of protein per kilogram of body weight is generally required for healing. Several studies have shown that zinc supplementation does not accelerate wound healing. Adding a multivitamin to the regimen is safe and may benefit almost all patients; however, these have not been proven to enhance wound healing. Dehydration must be corrected to improve appetite and maintain tissue health.

3. **Infection Control.** Wound healing requires an infection-free environment. All skin is colonized with bacteria, and critical colonization leads to cellulitis and osteomyelitis, which impede wound healing. After diagnosing an infection, appropriate antibiotic therapy should be initiated. The diagnosis of osteomyelitis is difficult, and should be based on clinical signs that are similar to those of cellulitis—erythema, edema, exudate, fever, and odor. Osteomyelitis should be considered in chronic ulcers that are not healing. If bone is palpable, osteomyelitis is likely. Initial diagnostics include radiography, leukocyte count, and erythrosedimentation rate. Radiography is not always able to distinguish between true osteomyelitis from other osseous changes until the changes are advanced. Bone biopsy is the gold standard for diagnosing osteomyelitis. Magnetic resonance imaging or 3-phase bone scan are more commonly used. Treatment involves debridement and prolonged antibiotic therapy. In some cases, amputation may be necessary.

4. **Wound Management Consultation.** Consulting a wound specialist is often necessary to help guide further appropriate care. Except for ischemic ulcers, chronic wounds must be kept moist. Ischemic ulcers, however, should remain dry to prevent wet gangrene. Traditionally, saline has been used to maintain a moist environment; however, hydrocolloid dressings and hydrogels are good options for maintaining adequate moisture and reducing the frequency of dressing changes. It is important to remember that the dressings don't heal a wound; the body heals the wound. Our task is to provide the best possible environment for healing to occur. Wound dressing should be selected on the basis of convenience, cost, function, and availability. Debridement is a necessary component of achieving wound healing. Sharp debridement effectively removes fibrin and eschar, allowing granulation tissue to develop. If this cannot be performed, mechanical debridement will effectively remove devitalized tissue. Enzymatic debridement may also be used.

Conclusion. Clinicians need to optimize the underlying medical condition for chronic wounds to heal. The wound environment needs to be amenable to an appropriate wound regimen. Improving nutrition, assuring adequate blood flow, relieving pressure and controlling edema are necessary to achieve wound healing. When standard therapies fail or are impractical, other adjunctive wound healing measures should be considered.

(editor: Kiemele is a wound care specialist in the Mayo Clinic System in Rochester, Minnesota. He is a former Bismarck resident and past member of the NDAPA and NDAPA board member. Kiemele was instrumental in the formation of the original North Dakota Physician Assistant prescriptive practice act)

Save the Date!

38th Annual NDAPA Primary Care Seminar

May 5-6, 2016

Thank You For Your Service, MPAS Class of 2016

The UND Master of Physician Assistant Studies Class of 2016 volunteered at various locations on October 1, 2015. From the class of 33 students, 10 assisted the staff at HERO (Healthcare Equipment Recycling Organization) in Fargo. They classified and sorted thousands of donated healthcare supplies that are redistributed to those in need. Most of the items stay within the community; however, many are sent to various other areas within the United States as well as mission trips to developing countries. Terrie Wold, MSHS, PA-C, program faculty member, routinely volunteers at HERO and assisted students throughout the day.

Nineteen of the PA students volunteered at Northlands Rescue Mission in Grand Forks, assisting their staff in numerous areas, including cooking, baking, sorting items in the thrift store, packaging sack lunches, and even helping with carpentry and other remodeling projects. Northlands Rescue Mission serves 21 counties of North Dakota and Minnesota by providing shelter, meals, clothing, spiritual guidance, and case management for the homeless and mentally ill 24 hours a day, 365 days a year.

The remaining four students spent their time discussing the PA profession and demonstrating punch biopsies and suturing to 22 students in the anatomy class at Thompson High School. Patrick Riley is shown above demonstrating suturing to the Thompson students.

The Department of Physician Assistant Studies faculty and staff are extremely proud of the Class of 2016 for their efforts and dedication in providing their time and compassion to local residents.

Jay R. Metzger, MPAS, PA-C
Assistant Professor
Department of Physician Assistant Studies

WOUND CARE BASICS- WOUND DOCUMENTATION

Wound care, in this article, is defined as care of the chronic wound (as opposed to trauma or acute care post op cases). These are the wounds that have been non-healing for at least 12 weeks. The general types include pressure ulcers (i.e. bed sores), neuropathic foot ulcers, i.e. diabetic ulcers, venous and arterial ulcers. Management can be frustrating and wounds often get worse before they get better. Chronic wounds pose a significant health risk due to increased mortality rates. Five year survival rate of some of these wounds rival major cancer rates. Chronic wounds are life altering. Treatment costs are staggering. Proper wound documentation leads to better treatment and outcomes, controls and assists in interdisciplinary management. This article will provide you with a short course or wound descriptors.

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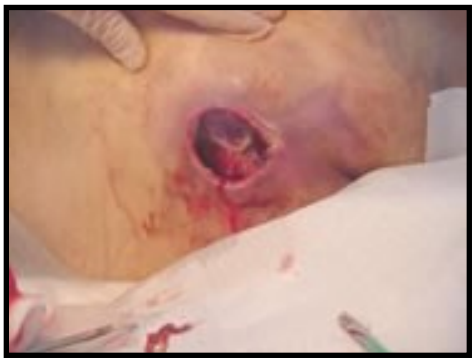


Wound assessment requires documentation of size and stage. This includes length, width, depth, shape, and edge identification. Sizes are measured in metric and location on the military clock. Staging is defined as a I (non-blanchable erythema), II- partial thickness, III- full thickness (no bone exposed) and IV- full thickness with exposed bone, unstageable- a full thickness loss when the wound bed depth is unknown to obscuring factors such as eschar and DTI- deep tissue injury- purple or maroon area from pressure and or shear. [1]

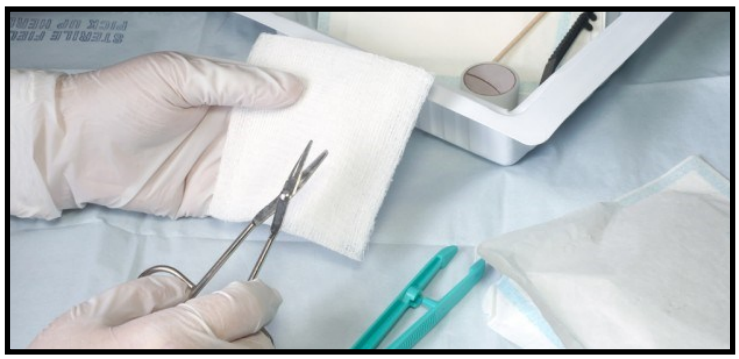
Wound base descriptors include granulation, slough, epithelialization, and necrosis/eschar. Wound edges can show undermining and/or tunneling, and rolling (epibole)-premature closed edge. The peri-wound area can show maceration, induration, and edema. Drainage needs to be noted for amount, type and odor. Documentation needs to include pain assessment at the wound and interventions. Treatment progress needs to identify the time frame of healing and non-healing [2]

1. CCHCS Care Guide: Wound and Skin Ulcer Management. 2012.
2. Indiana State Department of Health. Would Documentation Guidelines. 2007.

Why Say No to Wet-To-Dry Dressings

MaKayla Vaughan, MSN, FNP-c, WCC

Wet-to-dry dressings are still some of the most widely used primary dressings in the United States. It is known that wet-to-dry dressings are substandard for optimal wound care for several reasons: they may add to patient's discomfort, impede healing, and increase the risk of infection. What a wet-to-dry dressing actually does is debride a wound bed. This dressing is considered a non-selective type of debridement, meaning it also removes healthy tissue, when removing the dressing. With the evaporation of the fluid in the wound and gauze dressing this promotes wound desiccation of the tissue. The gauze is then removed from the wound bed which then the patient may endure pain with the removal of the wet-to-dry dressing.



Wet-to-dry dressings impede healing and require frequent dressing changes. Frequent changes lead to a drop in wound temperature. A drop in wound temperature causes vasoconstriction and decrease in blood perfusion. Vasoconstriction and decrease blood perfusion impairs the ability of oxygen to rid bacteria from wound, allowing for an increase in tissue infectability. This prolongs the inflammatory phase of healing. A wound cannot effectively heal and close in this phase of healing. Research studies show that infection rates in wound dressed with gauze alone are actually higher than that of a wound dressed with moisture-retentive dressings.

Wet-to-dry dressing require two to four dressing changes throughout the day. This is a labor intensive and costly. Research has shown that advanced wound dressings are cost effective. Utilizing a more expensive dressing type often requires less dressing changes and results in shorter healing times. This ultimately decreases total cost of wound treatment. Proper healing needs a moist wound environment. There are many advanced wound dressings to replace a wet-to-dry dressing all of which are utilized differently in wound care dressing selection. Advanced wound care dressings and topicals include: films, foams, hydrocolloids, hydrogels, collagen, and alginates.

Continued on Page 8—Wet-To-Dry Dressings

Continued from Page 7 — Wet-to-Dry Dressings

To provide the best patient wound care practices know that wet-to-dry dressings are not the answer. Preserving an optimally moist wound bed, homeostatic temperature, and occlusion have been shown to produce better outcomes than practices that allow wounds to dry out. There are many factors that play into optimal wound healing and one is dressing selection that optimizes wound granulation and epithelialization. Wet-to-dry dressings increase discomfort, impedes healing, and increases infection risk. Be a patient advocate in wound healing, say "NO" to wet-to-dry dressings.

Fleck, C. (2009). Why wet to dry. *Journal of the American College of Certified Wound Specialists, 1,* 109-113.

Ovington, L. (2001). Hanging wet to dry dressings out to dry. *Home Healthcare Nursing, 19*(8), 477.

(editor: Vaughan is the director of the Jamestown Regional Medical Center Wound Care Clinic)

Signs and Symptoms — Burns

The characteristics of a burn depend upon its depth. Superficial burns cause pain lasting two or three days, followed by peeling of the skin over the next few days. Individuals suffering from more severe burns may indicate discomfort or complain of feeling pressure rather than pain. Full-thickness burns may be entirely insensitive to light touch or puncture. While superficial burns are typically red in color, severe burns may be pink, white or black. Burns around the mouth or singed hair inside the nose may indicate that burns to the airways have occurred, but these findings are not definitive. More worrisome signs include: shortness of breath, hoarseness, and stridor or wheezing. Itchiness is common during the healing process, occurring in up to 90% of adults and nearly all children. Numbness or tingling may persist for a prolonged period of time after an electrical injury. Burns may also produce emotional and psychological distress.

Type	Layers involved	Appearance	Texture	Sensation	Healing Time	Prognosis
Superficial (1st-degree)	Epidermis	Red without blisters	Dry	Painful	5–10 days	Heals well; Repeated sunburns increase the risk of skin cancer later in life.
Superficial partial thickness (2nd-degree)	Extends into superficial (papillary) dermis	Redness with clear blister. Blanches with pressure.	Moist	Very painful	less than 2–3 weeks.	Local infection/cellulitis but no scarring typically.
Deep partial thickness (2nd-degree)	Extends into deep (reticular) dermis	Yellow or white. Less blanching. May be blistering.	Fairly dry	Pressure and discomfort	3–8 weeks	Scarring, contractures (may require excision and skin grafting)
Full thickness (3rd-degree)	Extends through entire der-mis	Stiff and white/brown No blanching	Leathery	Painless	Prolonged (months) and incomplete	Scarring, contractures, amputation (early excision recommended)
4th-degree	Extends through entire skin, and into underlying fat, muscle and bone	Black; charred with eschar	Dry	Painless	Requires excision[10]	Amputation, significant functional impairment, and, in some cases, death.

Source: Wikipedia

the review

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NEXT EDITION OF THE REVIEW:

"ADVANCED WOUND CARE: HYPERBARIC OXYGEN CHAMBERS "

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