Wound Care ADVISOR

PRACTICAL ISSUES IN WOUND, SKIN, AND OSTOMY MANAGEMENT

Official journal of National Alliance of Wound Care and Ostomy®

Fighting pressure ulcers in a rehab facility

Negative pressure wound therapy

Effect of turning programs on sleep

Achieving a work-life balance

March/April 2014 • Volume 3 • Number 2

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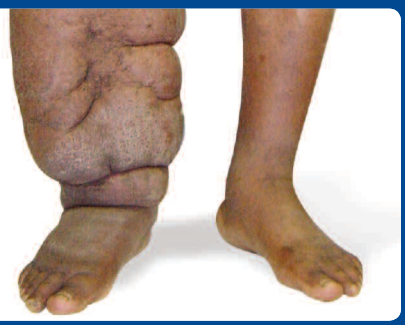

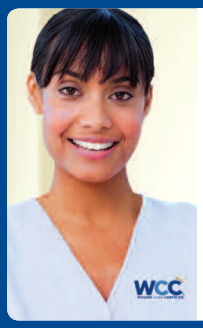

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Best PRACTICES

A guide to diabetic foot ulcers

By Donna Sardina, RN, MHA, WCC, CWCMS, DWC

This chart explains the differences among ischemic, neuropathic, and neuroischemic diabetic foot ulcers, making it easier for you to select the best treatment for your patient.

View: Diabetic foot exam

Differentiating diabetic foot ulcers

Ischemic ulcers | Neuropathic ulcers | Neuroischemic ulcers

Anatomic location
- Between toes or tips of toes
- Over phalangeal heads
- Borders or dorsal aspect of feet

- Plantar metatarsal heads
- Plantar heel
- Over plantar bony prominences and deformities
- Areas subjected to weight bearing on plantar surface
- Areas subjected to stress (eg, dorsal portion of hammer toes)

- Margins of foot, especially on medial surface of first metatarsophalangeal joint
- Over lateral aspect of fifth metatarsophalangeal joint
- Tips of toes; beneath toenails

Wound characteristics
- Deep, pale wound bed
- Even wound margins
- Gangrene or necrosis
- Redness at borders of ulcer
- Blanched or purpuric periwound tissue
- Severe pain
- Cellulitis
- Minimal exudate

- Red base, with healthy granular appearance
- Even wound margins
- Callus formation at borders of ulcer
- Painless, unless complicated by infection
- Rounded or oblong shape over bony prominence
- Variable exudate

- Pale pink of yellow wound bed
- Even wound margins
- Rounded or oblong shape over bony prominence
- Callus; may or may not be present
- Painless, owing to neuropathy
- Minimal exudate

Associated findings
- Thin, shiny, dry skin
- Absent or diminished pulses
- TBPI < 0.7 mm Hg
- $TcPO_2$ < 30 mmHg
- Skin cool to touch, pale, or mottled
- No findings of peripheral neuropathy
- Hair loss on ankle and foot
- Thick dystrophic toenails
- Pallor on elevation; dependent rubor
- Cyanosis

- Dry skin
- Bounding pulses
- TBPI ≥ 0.7 mm Hg
- $TcPO_2$ > 30 mm Hg
- Warm foot
- Evidence of peripheral neuropathy
- Atrophy of small muscles of feet
- Distended dorsal foot veins
- Cyanosis

- Thin, shiny, dry skin
- Absent or diminished pulses
- TBPI < 0.7 mm Hg
- $TcPO_2$ < 30 mm Hg
- Skin cool to touch, pale, or mottled
- Evidence of peripheral neuropathy
- Hair loss on ankle and foot
- Thick dystrophic toenails
- Pallor on elevation; dependent rubor

Source: Wound Care Education Institute. TBPI = toe brachial pressure index; $TcPO_2$ = transcutaneous oxygen pressure.

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Business CONSULT

"But I left voice messages and a note…"

By Nancy J. Brent, MS, RN, JD

Often nurses get named in a lawsuit when they are involved in clearly negligent conduct that causes an injury to or the death of a patient. Examples include administering the wrong medication to the wrong patient or not positioning a patient correctly in the operative suite prior to surgery. Sometimes, however, the negligent behavior of a nurse is not as clear to the nurse involved in the care of the patient.

That was apparently the circumstance in the reported case, *Olsten Health Services, Inc v. Cody.*[1] In September 2000, Mr. Cody was the victim of a crime that resulted in paraplegia. He was admitted to a rehabilitation center and discharged on November 15, 2000. His physician ordered daily home health care services in order to monitor his "almost healed" Stage 2 decubitus pressure sore.[2] The home health care agency assigned a registered nurse (RN) to Mr. Cody and, after Mr. Cody's health care insurance would not approve daily visits, a reduced visit plan was approved by Mr. Cody's physician.

A progressive problem

On November 16, 2000, the nurse visited Mr. Cody for the first time. During that visit, she did an admission assessment and noted that the pressure sore, located at the area of the tailbone, measured 5 cm by 0.4 cm wide and 0.2 cm deep. She believed the pressure ulcer could be completely healed within 3 weeks. The nurse called Mr. Cody's physician and left him a voice message concerning her visit and her findings.

On November 19, a second visit took place and the nurse observed and documented that Mr. Cody's pressure sore was "100%" pink and no odor was detected.

On November 20, she attempted another visit but did not see Mr. Cody because the front gate surrounding his home was locked. The nurse buzzed the gate doorbell several times to no avail. She left a note on the front gate for the Cody family and left a voice message for Mr. Cody's physician.

The next visit took place on November 21. The pressure ulcer was now only "90% pink" and had a "fetid" odor; this condition did not improve over the next 24 hours. The nurse documented this fact in her nurses' notes. Again, she left a voice mail message for the physician concerning these findings.

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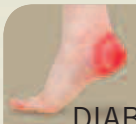

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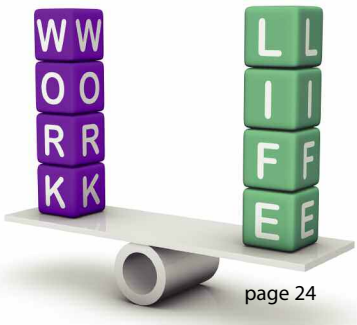

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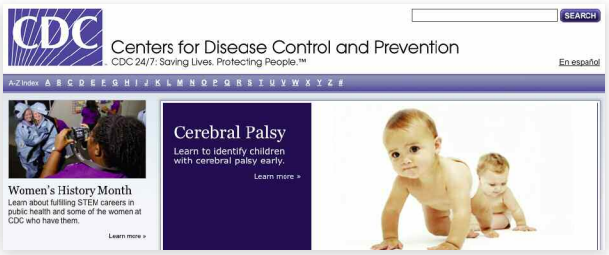
From the EDITOR

"This is how we've always done it" isn't good enough

Have you ever faced responsibility for a patient-care situation you learned about in school but had yet to encounter in the real world? With so many different health conditions and constant advancements in medical care, it's not surprising that this happens frequently to many clinicians.

The first and easiest way for most of us to handle this situation is to ask our coworkers what to do. While this isn't necessarily a bad thing, we as clinicians should reach a little further and get corroboration of what coworkers tell us. What we learn on the job may sound—

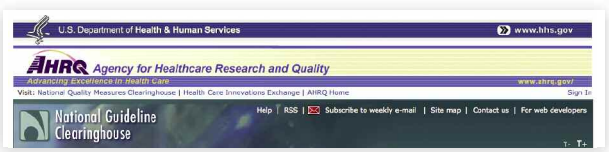


and even seem—credible but it also needs validity so it can stand up in a legal situation. Recently, I was teaching a class to clinicians on ostomy care when one student shrieked, "Our entire hospital system has been doing this wrong for years."

You've probably heard the old saying, "Just because everyone is doing it doesn't make it right." As clinicians, our responsibility to ourselves and, more importantly, to our patients requires us to double-check and even triple-check our actions for appropriateness and accuracy.

Various resources are available for researching appropriate healthcare interventions, including medical reference books, policy and procedure manuals, and the Internet. When using the Internet to research clinical topics, stick to scientific websites, such as those that post standard-of-care guidelines, nursing or medical journals, wound care journals, and government medical websites: the **Agency for Healthcare Research and Quality**, **Clinician Resources**, ***American Nurse Today***, and the **CDC**. Don't use, for instance, someone's blog; doing that could get you right back to learning the wrong thing from a coworker.

To take your knowledge search to the next level, attend educational seminars, participate in webinars, or even attend certification courses. These extra steps may sound labor-intensive and time-consuming—but what if you or a family member were the one receiving the care? I encourage and challenge other clinicians to take it further and not blindly accept clinical education that comes from the school of "This is how we've always done it."



Donna Sardina, RN, MHA, WCC, CWCMS, DWC, OMS
Editor-in-Chief
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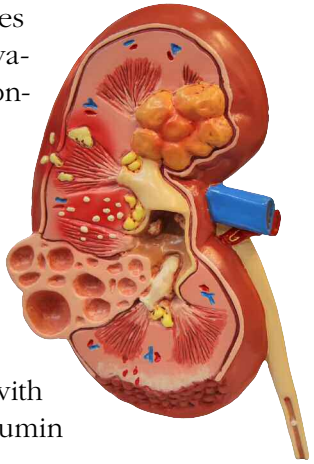
Low BMD common after ostomy

Low bone mineral density (BMD) is common in patients with inflammatory bowel disease who have a stoma placed, according to "**Frequency, risk factors, and adverse sequelae of bone loss in patients with ostomy for inflammatory bowel diseases**," published in *Inflammatory Bowel Diseases*.

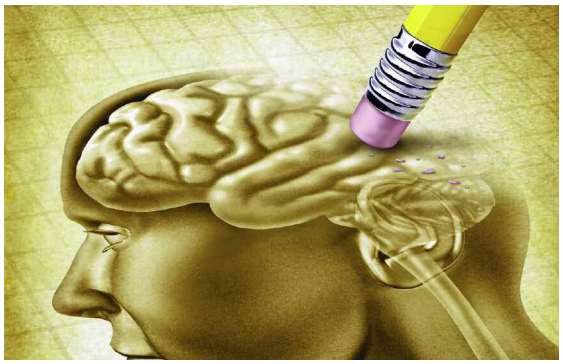
A total of 126 patients participated in the study, with most (120) undergoing an ileostomy. Fragility fractures occurred five times more often in ostomy patients who had a low BMD compared with those who had a normal BMD. Low BMD was also associated with a low body mass index.

Prevalence of CKD higher in African Americans and Hispanics with diabetes

African Americans and Hispanics with diabetes have a higher prevalence of early chronic kidney disease (CKD), according to a study in *Diabetes Care*. The study also found early CKD was significantly associated with higher urinary albumin excretion and/or C-reactive protein.



"**Association of race/ethnicity, inflammation, and albuminuria in patients with diabetes and early chronic kidney disease**" analyzed data from 2,310 patients with diabetes in the National Health and Nutrition Examination Survey (1999-2008) who were age 20 or older and had a fasting plasma glucose of 126 mg/dL or higher.



Severe hypoglycemia associated with cognitive decline

"**Severe hypoglycemia and cognitive decline in older people with type 2 diabetes: the Edinburgh Type 2 Diabetes Study**," published in *Diabetes Care*, found that severe hypoglycemia in older adults with type 2 diabetes was associated with poorer cognitive ability and faster decline in ability.

The researchers assessed cognitive function in 831 adults age 60 to 75 who had type 2 diabetes, then repeated the assessment after 4 years. Hypoglycemia at baseline and at the follow-up was associated with cognitive decline, with greater decline at the 4-year mark.

HBOT benefits patients with diabetic foot ulcers

The most common benefits of hyperbaric oxygen therapy (HBOT) in patients who

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have diabetes and foot ulcers are reduced amputation rates and improved healing, according to a literature review published in *International Wound Journal*.

"**Diabetic foot ulcers treated with hyperbaric oxygen therapy: a review of the literature**" included 10 prospective and 7 retrospective studies that evaluated use of HBOT in patients with diabetic foot ulcers. The few studies that analyzed long-term outcomes found that the wounds were likely to remain intact in the future.

Most of the studies had methodological flaws and small sample sizes, so the authors recommend more "robust" research.

Pain in chronic leg wounds common

A study published by *Acta Dermato-Venereologica* reports that 82% of 49 patients with a chronic leg wound experienced wound-related pain, and 42% said their analgesia was insufficient for pain relief.

Of the patients who participated in the "**Association of pain level, health and wound status in patients with chronic leg ulcers**" study, up to 69% had leg ulcerations caused by vascular disease. Patients with a pain level equal to or greater than 5 on the visual analogue scale had a lower health status than those with lower pain scores.

HbA1c variability predictor for mortality in patients with diabetes

Variability in HbA1c is a predictor of mortality, especially noncancer mortality, in patients with type 2 diabetes, according to a study in the *Journal of Diabetes and Its Complications*. Prediction was independent of mean HbA1c.

"**Association between HbA1c variability and mortality in patients with type 2 diabetes**" studied 754 patients who were first seen between 1995 and 1996, had been followed for at least 2 years, and had four or more HbA1c values. Through June 2012, 63 patients died. The researchers also found that mean HbA1c, but not HbA1c variability, predicted mortality from cancer.

Acetaminophen risk

The U.S. Food and Drug Administration (FDA) **warns** that acetaminophen can cause

three rare but serious skin reactions. Clinicians should instruct patients to stop taking acetaminophen immediately if a rash or other skin reaction occurs and promptly seek medical attention.

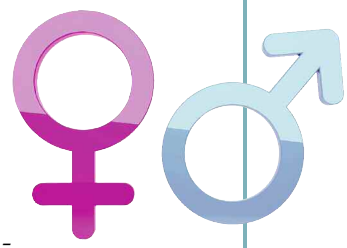
Stevens-Johnson Syndrome and *toxic epidermal necrolysis* usually require hospitalization and can cause death. Patients with these conditions usually experience flu-like symptoms followed by rash, blistering, and extensive damage to the surfaces of the skin. Recovery can take weeks or months, and possible complications include scarring, changes in skin pigmentation, blindness, and damage to internal organs. *Acute generalized exanthematous pustulosis* usually resolves within 2 weeks of stopping the medication.

Revascularization less costly than primary amputation

Revascularization costs less and provides more health benefits than wound care alone or primary amputation, according to a study in the *Annals of Vascular Surgery*.

"**Cost-effectiveness of revascularization for limb preservation in patients with marginal functional status**" used a model to simulate clinical outcomes, health utilities, and costs over a 10-year period. The researchers found that the total 10-year costs of endovascular or surgical revascularization were lower than the costs of local wound care or primary amputation. Revascularization health benefits included more years of ambulatory ability, limb salvage, or quality-adjusted life years.

Effect of ostomy on sexual function



"**Gastrointestinal ostomies and sexual outcomes: a comparison of colorectal cancer patients by ostomy status**" found that a current or past ostomy increases the likelihood of a negative impact on sexual function compared with patients who never had an ostomy.

A total of 141 patients participated in the study (18 with a past ostomy, 25 with a current ostomy, and 98 with no ostomy), published in *Supportive Care in Cancer*. The researchers conclude, "Colorectal cancer treatment puts patients at risk for sexual difficulties and some difficulties may be more pronounced for patients with ostomies as part of their treatment." They recommend clinical information and support.

Editor's note: Patient information on sexuality is available from **United Ostomy Associations of America, Inc.**

RLNR increases lymphedema risk

Regional lymph node radiation (RLNR) significantly increases the risk of lymphedema compared with breast/chest wall radiation alone, according to a study in *International Journal of Radiation Oncology*Biology*Physics*.

"**The impact of radiation therapy on the risk of lymphedema after treatment for breast cancer: a prospective cohort study**" included 1,476 patients with breast cancer. Treating each breast individually, 1,099 of 1,501 patients received radiation therapy, and researchers used a Perometer® to obtain preoperative and postoperative arm volume measurements.

The researchers recommend that clinicians "weigh the potential benefit of RLNR for control of disease against the increased risk of lymphedema."

Prophylactic dressings may help prevent pressure ulcers

A systematic review published in *International Wound Journal* found that the use

of a dressing as part of prevention may help reduce the incidence of pressure ulcers associated with medical devices, especially in intensive care unit patients who are immobile.

"**Systematic review of the use of prophylactic dressings in the prevention of pressure ulcers**" reviewed 21 studies, including one randomized clinical trial. The researchers note that the evidence doesn't suggest that one dressing type is more effective than another.

Turning programs hinder a good night's sleep

By Jeri Lundgren, BSN, RN, PHN, CWS, CWCN

We've all experienced how a bad night's sleep can affect our mood and ability to function the next day. Now imagine you're a patient who has a pressure ulcer, most likely secondary to a declining disease state, and you're being awakened and manipulated every 2 hours or in some cases hourly. How is your body supposed to recover without adequate sleep?

Studies have found that it's critical for nursing-home residents to achieve two cycles of 3.5 to 4 hours of uninterrupted sleep for psychological and physical healing. Overall, a good night's sleep can enhance daily function, alertness, and cognitive and physical abilities, and can even reduce the risk of falls. So how can we provide quality care and promote pressure-ulcer healing if we disturb patients every 2 hours?

Good news

Good news comes in the form of studies by Bergstrom and colleagues (2013) and Defloor and colleagues (2005) showing that with the appropriate support surface (high-density foam or viscoelastic mattresses), patients can be turned at 4-hour intervals without increasing the risk of pressure-ulcer development. (See *About support surfaces.*) One ongoing study, which began in October 2011, includes 24 nursing homes in Minnesota. The facilities use pressure redistribution mattresses, appropriate overnight incontinent products, and technology to monitor residents' movements.

Empira, a group of older adult service providers in Minnesota collaborating to integrate clinical excellence and best practices across the care continuum, is conducting the study. According to Sue Ann Guilderman, director of education for Empira, as of February 2014, none of the participating nursing homes had experienced an increase in pressure-ulcer development secondary to allowing the residents to sleep uninterrupted for 4 hours. (One surprising finding is that residents who were thought to be dependent on others for turning are making subtle movements while they sleep.)

Looking to the future

Research is demonstrating that with the provision of the appropriate support surface and incontinence products, patients can be allowed to get the sleep they need to heal and enhance quality of life. Now the question is how a regulatory environment that holds facilities to established standards will interpret and enforce these results. Ideally, if clinicians can show that the turning interval was based on assessment and implementation of appropriate interventions, regulatory agencies will

About support surfaces

The National Pressure Ulcer Advisory Panel developed "**Terms and Definitions Related to Support Surfaces**." This document includes a definition of *support surface*, followed by definitions of physical concepts related to support surfaces, components of support surfaces (see below, reprinted with permission), and features of support surfaces.

Term	Definition
Air	A low-density fluid with minimal resistance to flow
Cell/bladder	A means of encapsulating a support medium
Viscoelastic foam	A type of porous polymer material that conforms in proportion to the applied weight. The air exits and enters the foam cells slowly, which allows the material to respond slower than a standard elastic foam (memory foam).
Elastic foam	A type of porous polymer material that conforms in proportion to the applied weight. Air enters and exits the foam cells more rapidly, due to greater density (non-memory).
Closed-cell foam	A non-permeable structure in which there is a barrier between cells, preventing gases or liquids from passing through the foam
Open-cell foam	A permeable structure in which there is no barrier between cells and gases or liquids can pass through the foam
Gel	A semisolid system consisting of a network of solid aggregates, colloidal dispersions, or polymers that may exhibit elastic properties; can range from a hard gel to a soft gel
Pad	A cushion-like mass of soft material used for comfort, protection, or positioning
Viscous fluid	A fluid with a relatively high resistance to flow of the fluid
Elastomer	Any material that can be repeatedly stretched to at least twice its original length; upon release, the stretch will return to approximately its original length
Solid	A substance that does not flow perceptibly under stress. Under ordinary conditions, retains its size and shape.
Water	A moderate-density fluid with moderate resistance to flow

likely support this evidence-based practice, even though the length of time for turning differs from traditional practice. ■

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Jeri Lundgren is vice president of clinical consulting at Joerns in Charlotte, North Carolina. She has been specializing in wound prevention and management since 1990.

It takes a village: Leading a wound team

By Jennifer Oakley, BS, RN, WCC, DWC, OMS

I used to think I could do it alone. I took the wound care certification course, passed the certification exam, and took all of my new knowledge—and my new WCC credential—back to the long-term care facility where I worked. I was ready to change the world.

It didn't take me long to figure out that I couldn't change the complex world of wound care alone. I needed a team of specialists who could manage my patient's troubles with nutrition, swallowing, activities of daily living, positioning, body image issues, and many other areas that required expertise I didn't have.

A team consists of a group of people who are working together toward a common goal. A team has members whose skills complement each other. A successful team maximizes individuals' strengths and establishes a strong sense of mutual commitment. That success begins with effective leaders. Here are tips that will help you become one of those effective leaders.

Recruit the right players for your team

As wound care clinicians, we must always treat the *whole* patient, not just the *hole* in the patient. Treating the patient holistically requires input from everyone on the healthcare team or, in essence, the "village." At a minimum, your village should include a certified wound care clinician, physical therapist, occupational therapist, dietician, nurse manager, nurse aide, social worker, speech language pathologist, minimum data set coordinator or utilization review specialist, the director of nursing for the facility, the patient's prescriber and, of course, the patient.

Understand leadership characteristics

Good leaders believe in themselves and are "authentic." Authentic leaders understand themselves and their strengths and weaknesses. They are honest, act with integrity, and can articulate the vision or goal of the team to its members. Effective leaders embrace the future and let go of the past; they understand that change is an essential part of health care today. Leaders see possibilities, not just prob-

TAKE ACTION: Take a quiz to see how authentic a leader you are.

lems, and are able to communicate clearly.

Leaders depend on the goodwill of their team to get things done (rather than authority from the top down), use the word "We" instead of "I," ask for action, and say, "Lets go do this together." Leaders use their influence, supported by evidence-based practice, to change minds, shape opinions, and move others to act.

Whether you focus on preventing pressure ulcers, developing product formularies, or implementing ankle-brachial index testing, you'll find that combining a positive attitude with best practices and being authentic will help you lead the team in achieving its goals.

Keep the team motivated

Keeping your team motivated can be difficult. How do you inspire people every day? Most facilities don't have the budget for raises or bonuses; in reality, other ways are more effective for helping your team keep their workplace passion.

Here are some ideas to get you started. Offer positive praise for a job well done, say "thank you," give awards and certificates, catch members "doing the right thing" and post their pictures on bulletin boards, celebrate success with parties, or host a break-time brunch or pizza party lunch. The goal is to foster an environment that rewards positivity rather than one that focuses on negativity.

Remember that knowledge is power, so if you educate your team, amazing things will happen. Members will be able not only to identify when there is a problem but also solve that problem on their own without intervention from management, creating pride in a job well done.

We are social creatures, so get out from behind your desk and be "present" on the unit or in the clinic. Team members appreciate a leader who is visible and willing to answer questions.

Take time to get to know your staff and team members on a personal level, too. What we do for a living is much more than just a job for most of us. If you ask me to tell you about myself, I would start by saying, "I'm a wound care nurse"; many of us associate a large part of our identity with our careers. When you help your staff find camaraderie in teamwork and pride in the job they do, it's a win-win for all involved and promotes successful outcomes.

Remember that knowledge is power, so if you educate your team, amazing things will happen.

Plan how to manage conflict

As the leader, you will have to interact with all types of personalities on your team and maximize their strengths while minimizing their weakness. Keep in mind

(continued on page 35)

A Saudi rehabilitation facility fights pressure ulcers

Sultan Bin Abdulaziz Humanitarian City is committed to serving as a center for wound care excellence.

By Joanne Aspiras Jovero, BSEd, BSN, RN; Hussam Al-Nusair, MSc Critical Care, ANP, RN; and Marilou Manarang, BSN, RN

A common problem in long-term care facilities, pressure ulcers are linked to prolonged hospitalization, pain, social isolation, sepsis, and death. This article explains how a Middle East rehabilitation facility battles pressure ulcers with the latest evidence-based practices, continual staff education, and policy and procedure updates. Sultan Bin Abdulaziz Humanitarian City (SBAHC) in Riyadh, Saudi Arabia, uses an interdisciplinary approach to address pressure-ulcer prevention and management. This article describes the programs, strategies, and preventive measures that have reduced pressure-ulcer incidence.

Committed to excellence

With 409 beds, SBAHC is the largest rehabilitation facility in the Middle East; it treats both inpatients and outpatients. Therapeutic, supportive, and educational services are designed to restore patients' health and function after acute illness and promote their safe return to the home and community. SBAHC admits adult and pediatric patients who have suffered brain injuries, spinal-cord injuries (SCIs), stroke, and limb loss. The facility also offers other services (such as prosthetics, orthotics, and wound care) at clinics that operate 5 days a week.

SBAHC launched its wound care service in late 2007, with the mission of becoming a center for wound care excellence. To prevent and manage pressure ulcers, it uses guidelines from the National **Pressure Ulcer Advisory Panel** (NPUAP) (www.npuap.org) and the **European National Pressure Ulcer Panel**. From the onset, the SBAHC administration has fully supported efforts to eradicate pressure ulcers. It has a well-defined process, studied thoroughly and approved by an interdisciplinary team, for identifying, preventing, and managing pressure ulcers.

Initial evaluation

Before admission, patients are screened with special attention to their rehabilitation potential. (Patients who need acute medical care are transferred to an acute-care facility.) Those admitted with community-acquired pressure ulcers are distinguished from those with hospital-acquired pressure ulcers (HAPUs). Within 2 to 6 hours of admission, all patients undergo a comprehensive, front-to-back and head-to-toe skin assessment to check for wounds. Within 24 hours, a pressure ulcer or other wound must be documented; pressure ulcers found later than 24 hours after admission are considered HAPUs.

Also on admission, patients undergo a risk assessment using the **Braden scale**, a standardized assessment tool for evaluating pressure-ulcer risk. Early identification of at-risk patients is crucial for early implementation of preventive measures and to establish a baseline for later comparison, as when patients sustain new wounds in the facility. The Braden score corresponds to a **prevention protocol** that varies with the patient's risk level. A change in the patient's condition calls for reevaluation with the Braden scale. All direct-care staff are involved in the process and take an active role in the protocol. Pressure ulcers of all stages are referred to the wound care specialist, who in turn may refer the patient to the consultant surgeon, if needed.

Pink clover status

A communication process alerts all SBAHC care providers that a patient has developed a pressure ulcer or is at increased risk. A rotating pink clover icon (chosen to symbolize that healthy skin is pink and that the patient requires repositioning and checking of the skin) is activated for patients with Braden scores of 18 or below. This alert icon appears across the patient's name and medical-record number in the electronic system, signaling caregivers to use caution because certain types of care or other activities may cause or exacerbate existing pressure ulcers in at-risk patients.

Campaign to lower HAPU rates

The alarming rate of pressure ulcers impelled the SBAHC wound care team to review and revise existing preventive measures, develop new policies and procedures (which are reviewed annually and revised every 3 years or as necessary), and fine-tune its prevention and management protocols. HAPU incidence became an internal quality indicator. In 2012, an initiative was implemented to reduce HAPU incidence to less than 1% of the monthly total average census. The project had three goals:

> Early identification of at-risk patients is crucial for early implementation of preventive measures.

- to educate at least 80% of all direct-care staff (including nursing, medical, and rehabilitation staff) on pressure-ulcer identification and prevention
- to reduce pressure-ulcer incidence in patients with SCIs to less than 27% of the total incidence (monthly report trends and data from other hospitals worldwide indicate most pressure ulcers occur in SCI patients)
- to reduce the number of pressure ulcers in patients permitted to go on therapeutic-leave pass to 50% or fewer monthly, within 1 year.

The HAPU prevention team took on the challenge of lowering the incidence. At monthly meetings, staff receive up-

dates on issues related to pressure ulcers. The team addresses these issues, identifies factors that contribute to pressure ulcers, discusses updated evidence-based practices in areas that may need improvement, and provides input on implementation with team members' consensus.

By the end of 2012, about 82% of direct-care staff had received education. From 2011 to 2012, pressure-ulcer incidence in SCI patients dropped significantly to 18.6%. Also that year, no pressure ulcers were reported in patients who had therapeutic-leave passes. Overall, the project has achieved its goals. Average HAPU incidence for 2012 was 1.8%. Incidence for 2013 was 1.05%—a 41.6% decrease.

From 2011 to 2012, pressure-ulcer incidence in SCI patients dropped significantly to 18.6%.

Because a lower HAPU incidence reflects a facility's high standards of care, these initiatives have placed SBAHC's quality of care in the spotlight. In published data, HAPU rates in long-term care facilities range from 2.2% to 23.9%. At SBAHC, the goal is a rate below 1%.

Pressure-ulcer surveys

Monthly HAPU incidence reports are compiled for monitoring and reference. The facility also conducts a quarterly point-prevalence survey. The survey measures the proportion of individuals in a defined population who have a pressure ulcer at a given time, such as a particular date.

For the second year, a hospital-wide prevalence survey was conducted simultaneously in all in-patient units, with a thorough skin check of all patients admitted on a designated day. Total prevalence included all patients with preexisting pressure ulcers and those with HAPUs. (However, not all patients could participate. Some were in therapy sessions or undergoing procedures outside the unit; others simply refused to be assessed.) Inter-rater reliability testing using kappa statistics has been adopted and results are submitted quarterly, with the goal of comparing reliability of pressure-ulcer identification by the nursing and medical staff to that of SBAHC wound care specialists.

Staff training and testing

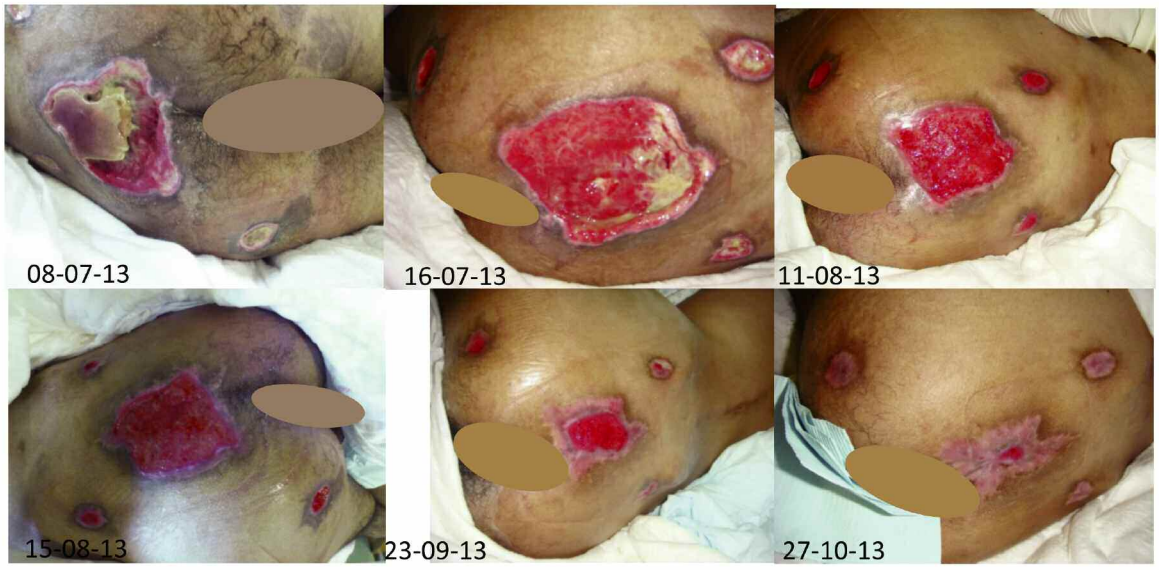
As part of our continual staff education on pressure ulcers, all newly hired direct-care staff receive initial training and competency testing in wound care procedures. Topics include frequency of skin inspections and reinspection in patients at risk for pressure ulcers, use and implementation of pressure-ulcer prevention plans and protocols, identification of pressure-ulcer stages based on NPUAP guidelines, and completion of the comprehensive wound-assessment tool. Annual competency checks are done for staff who have been with SBAHC for more than 1 year to ensure their current practice is evidence-based and doesn't deviate from standards. Nursing staff (including nurses' aides) receive weekly wound care education sessions, with greater emphasis on pressure-ulcer prevention and identification. Physicians and rehabilitation staff are educated in separate sessions. The goal is to ensure that at least 80% of all direct-care staff receive education aimed at reducing or eliminating pressure ulcers.

Expanding the wound care service

Currently, the wound care unit at SBAHC has four beds and admits patients with stage 3 or 4 pressure ulcers or unstageable ulcers who have rehabilitation potential. The goal is to treat patients capable of sus-

Photos tell the story

The images below show the progress of a patient's pressure ulcers from the time of admission to Sultan Bin Abdulaziz Humanitarian City on August 7, 2013, until October 27, 2013. This patient was transferred to rehabilitation services for a full rehabilitation program once his wounds improved, and was discharged with the wounds fully healed. He verbalized an understanding of pressure-ulcer prevention and skin care, as well as the importance of avoiding one position for long periods.



taining an optimal functioning level after their debilitating pressure ulcers heal. Later, the service will expand to up to 11 beds, with patient stays of at least 6 weeks.

The first patient admitted to the service had a stage 4 pressure ulcer on the right trochanter; after 1 month of wound management, he was discharged with the ulcer healed and was able to participate in intensive rehabilitation sessions. Other patients have been admitted with multiple and more severe pressure ulcers; their wounds have improved significantly. (See *Photos tell the story.*)

Some patients' wounds aren't totally healed at discharge because of expired funding, noncompliance with management, or refusal to cooperate. They are advised to return to the wound care clinic to ensure continuity of care. SBAHC plans to implement benchmarking to compare its performance against that of other facilities and help gauge the success of its pressure-ulcer practices.

100 Days campaign

Around the same time SBAHC opened its wound care unit, the hospital launched the "100 Days—100% HAPU Free" Campaign. The goal was to reach zero HAPUs in all hospital units for 100 days and to empower all healthcare providers in all disciplines to use effective pressure-ulcer prevention strategies. This campaign was the first of its kind in the Middle East. Spearheaded by the SBAHC wound care team, the campaign spotlights our facility as a role model for evidence-based, innovative wound care. ■

The authors work at Sultan Bin Abdulaziz Humanitarian City in Riyadh, Saudi Arabia. Joanne Aspiras Jovero is a wound and stoma care specialist and educator. Hussam Al-Nusair is director of nursing. Marilou Manarang is a senior wound and stoma care specialist and educator.

Apple BITES

From

WOUND CARE
EDUCATION INSTITUTE®

How to assess wound exudate

By Nancy Morgan, RN, BSN, MBA, WOC, WCC, DWC, OMS

Each issue, *Apple Bites* brings you a tool you can apply in your daily practice.

Exudate (drainage), a liquid produced by the body in response to tissue damage, is present in wounds as they heal. It consists of fluid that has leaked out of blood vessels and closely resembles blood plasma. Exudate can result also from conditions that cause edema, such as inflammation, immobility, limb dependence, and venous and lymphatic insufficiency.

Accurate assessment of exudate is important.

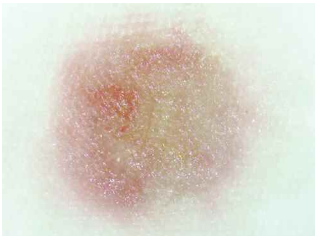
Accurate assessment of exudate is important throughout the healing process because the color, consistency, odor, and amount change as a result of various physiologic processes and underlying complications.

Consistent terminology is crucial to ensure accurate communication among clinicians. Here are terms you should keep in mind when observing the wound and documenting your findings.

Type

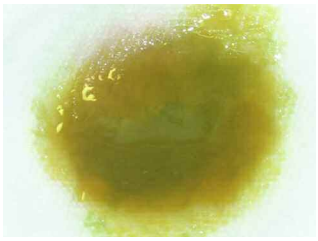
- Serous—thin, clear, watery plasma, seen in partial-thickness wounds and venous ulceration. A moderate to heavy amount may indicate heavy bio-burden or chronicity from a subclinical infection. Serous exudate in the acute inflammatory stage is normal.

- Sanguineous—bloody drainage (fresh bleeding) seen in deep partial-thickness and full-thickness wounds during angiogenesis. A small amount is normal in the acute inflammatory stage.



- Serosanguineous—thin, watery, pale red to pink plasma with red blood cells. Small amounts may be seen in the acute inflammatory or acute proliferative healing phases.
- Purulent—thick, opaque drainage that is tan, yellow, green, or brown. Puru-

lent exudate is never normal and is often associated with infection or high bacteria levels.



Amount

- None—Wound tissues are dry.
- Scant—Wound tissues are moist, but there is no measurable drainage.
- Small/minimal—Wound tissues are very moist or wet; the drainage covers less than 25% of the dressing.
- Moderate—Wound tissues are wet; the drainage involves more than 25% to 75% of the dressing.
- Large or copious—Wound tissues are filled with fluid that involves more than 75% of the dressing.

Consistency

- Low viscosity—thin, runny
- High viscosity—thick or sticky; doesn't flow easily

Odor

- No odor noted
- Strong, foul, pungent, fecal, musty, or sweet

Use the following terms to describe the condition of primary and secondary wound dressings:

- Dry—The primary dressing is unmarked by exudate; the dressing may adhere to the wound.
- Moist—Small amounts of exudate are visible when the dressing is removed; the primary dressing may be lightly marked.
- Saturated—The primary dressing is wet and strikethrough occurs.

Use the terms dry, moist, saturated, and leaking to describe the condition of primary and secondary wound dressings.

- Leaking—The dressings are saturated, and exudate is leaking from primary and secondary dressings onto the patient's clothes.

A useful resource to help you with your assessment is the **Bates-Jensen Wound Assessment Tool**.

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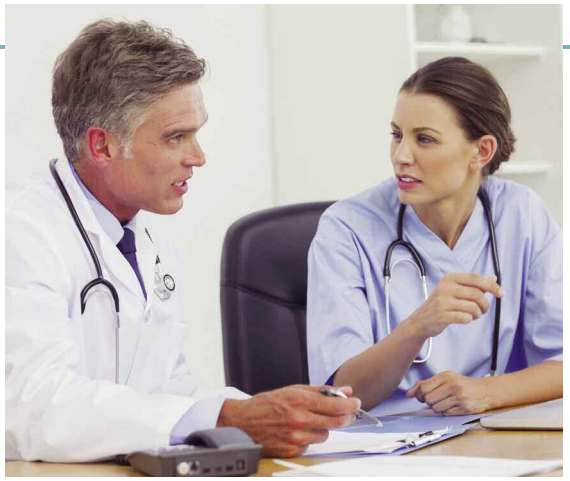
Nancy Morgan, cofounder of the Wound Care Education Institute, combines her expertise as a Certified Wound Care Nurse with an extensive background in wound care education and program development as a nurse entrepreneur.

Becoming a wound care diplomat



By Bill Richlen, PT, WCC, CWS, DWC, and Denise Stetter, PT, WCC, DCCT

The Rolling Stones may have said it best when they sang, "You can't always get what you want," a sentiment that also applies to wound care. A common frustration among certified wound care clinicians is working with other clinicians who have limited current wound care education and knowledge. This situation worsens when these clinicians are making treatment recommendations or writing treatment orders not based on current wound-healing principles or standards of care.

Frequently, these same clinicians seem uninterested in listening to what you say and aren't receptive to treatment suggestions. This is where your skills of diplomacy will make all the difference. Rarely is it a simple matter of sharing your expertise to change a person's mind. Lack of training and knowledge of current best practices may be part of the reason for resistance. "We've always done it that way" or "The rep told me" are common statements you might hear. Other factors include ego, self-image, politics, and the need to be in control. Sadly, human nature gets in the way more often than we think.

Practicing our diplomacy skills will help us bridge the gap between resistance and openness to learning. Here's what makes a good diplomat.

Communication skills

The words you choose and your tone can make a huge difference in how the information you give is received. Avoid using "you" in your statements because this generally makes the other person feel defensive. Instead use "I" or "we" statements beginning with "I think" or "I feel." For example, "Dr. Smith, I see that the treatment for Jane Doe is currently wet to dry b.i.d. When we assessed the wound today, we noted she had a fair amount of drainage and some slough. I think that an absorptive dressing like an alginate would handle the drainage better and help promote debridement of the slough. It might be a better choice for Jane. Would you consider trying that for a couple of weeks and see what happens?"

When discussing opposing viewpoints, work to get agreement on smaller or more general issues before addressing the main concern: "Can we agree that using current evidence-based practice is what's best for Mrs. Jones?"

Knowledge

Be prepared to defend your position with evidence-based practices and, if necessary, provide resources to support your position. When clinicians refuse to listen or acknowledge facts, it can be a sign that their position is more about ego and power than what's right for the patient.

Use open-ended questions to help create dialogue and the sharing of ideas. Ques-

tions such as, "Do you have experience with this product? What were your results?" or "This product may not be on your formulary, but if I got a sample, would you consider trying it?" put you on a collegial level with the clinician. It becomes a collaboration rather than a power struggle. When interacting with clinicians who aren't certified in wound care, it's not a good idea to play your "certification" trump card. This strategy only makes you appear arrogant, causing the perception that you think you're superior to the other person, putting your colleague on the defensive and seriously compromising the potential for further debate and reaching a solution.

Emotional control

We're all passionate about caring for our patients, so it's easy to take criticism and conflict personally. When emotions run high, logical thinking is impaired. We can lose grasp of our objectivity and say things we may regret, potentially undermining our integrity and damaging lines of communication. Consider scripting communication points or responses to help maintain professionalism. Use such phrases as "Have you considered...", "I know we both have the patient's best interest at heart…" or, when making a request, finishing with "…does that seem reasonable?"

Ability to compromise

Compromise doesn't mean compromising on principles or standards of care. However, we may not get the exact treatment we want. It's the old saying, "You aim for the eagle, you bag the pheasant, and you don't eat crow." We need to be creative and think outside the box to offer treatment options that will promote healing as best as possible and ultimately win the approval of the person with whom we are compromising. Sometimes we just have to accept the lesser of two evils. Our willingness to compromise can set the stage for future dialogue and less conflict.

Integrity

Become an ambassador for wound care. Be the same person in public as you are in private. Always promote best practice and not personal gain. It's no surprise that news travels fast, especially bad news. If people figure out that you're manipulative, dishonest, or egotistical, it won't be long before your reputation will precede you and you'll lose the confidence of your colleagues. Perception is reality in the minds of others. How are you representing wound care clinicians?

Sincere appreciation

Kill them with kindness. Drawing battle lines and creating conflict over differing opinions doesn't help our patients. We can catch more flies with honey than vinegar. But no one wants to hear insincere flattery or thank-you's. Take the time to tell others how much you appreciate their cooperation.

In the end, we need to remember that the patient has to be our focus. Our own personal issues need to be put aside. It's not ever about winning; it's about doing what's best for the patient.

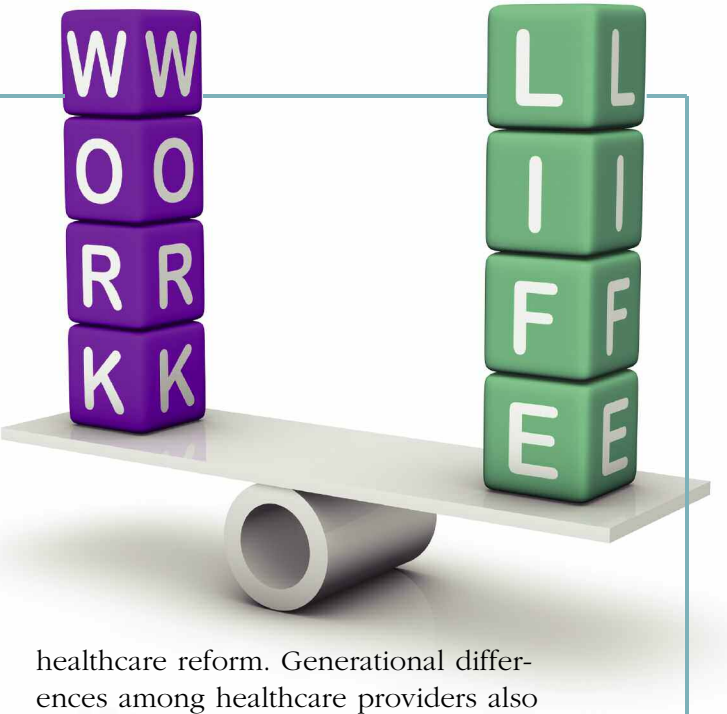
As the Rolling Stones sang, "You can't always get what you want, but if you try sometimes, well you might find, you get what you need."

Bill Richlen is CEO of Infinitus, LLC in Ferdinand, Indiana. Denise Stetter is area manager for southern Indiana for Paragon Rehabilitation in Louisville, Kentucky.

Achieving a work-life balance

The author's advice can help you overcome barriers to balancing work and life.

By Julie Boertje, MS, RN, LMFT, QMRP, and Liz Ferron, MSW, LICSW



Almost everyone agrees that achieving a work-life balance is a good thing. Without it, we risk long-term negative effects on our physical and mental health, our relationships, and our work performance. But many clinicians have a hard time achieving this balance due to job demands, erratic work schedules, or the inability to say no when someone asks for help.

The challenges of stress and burnout

Stress and job burnout can cause, contribute to, or result from a poor work-life balance. They disrupt our normal patterns, behaviors, and feelings.

Of course, no one can escape stress altogether. Sometimes stress is a good thing, but we need to be able to identify when it's a problem. For many clinicians, stress springs from the desire to provide good service and care in all parts of their lives. This desire can create stress, especially when barriers exist to achieving it.

Barriers to balancing work and life

Some barriers are external and outside one's control. These may include everything from inadequate staffing levels to changes in practice expectations due to healthcare reform. Generational differences among healthcare providers also may pose an external barrier. Clinicians from different generations have different training, expectations, and skill sets. This can lead to new paradigms, changes, conflict, and other challenges.

Other stressors are more personal and internal—and within one's control. Most clinicians try to stay hopeful and promote realistic hope in their patients, but this can be exhausting. What's more, time, age, and life stage can change a person, altering his or her goals, priorities, and perhaps bedside manner. This can create a gap between the goal of on-the-job perfection and the realities of daily life. Guilt and frustration can result.

How to help yourself

First, come to terms with some fundamentals. Acceptance is a good starting point for combating stress. Start by acknowledging the things you can't change. Then develop better coping strategies so you can address your feelings about these things and help remove them as barriers to finding a work-life balance.

- Embrace your perfectionism, but be alert to when it's tormenting you or others. When it comes to patient safety, perfection is a necessity. But because

we're human, we sometimes make mistakes. We need to be able to learn from them and move on, or the result can be crippling. When patient safety isn't at risk, try to do the best you can; you simply don't have the time to dwell on entering information in a chart perfectly. Give it a once-over to make sure it's accurate, then move on.

- Develop empathy for others, rather than judging them. Judging others and finding they don't meet your expectations adds unnecessary stress. Instead, ask questions and seek to understand their point of view.
- Take a "time out" when possible if things get overwhelming. Do some deep breathing or brief meditation. This helps ground you so you're better able to focus, concentrate, and stay calm.

Moving toward a better balance

Once you've set ground rules for yourself, achieving a better work-life balance can help clear away other stressors. Don't take shortcuts here: Either you make work-life balance a priority or you don't. If you decide to make it a priority, recognize you don't need to change everything at once. Just making a few changes can lead to better-than-expected results.

More effective time management

For most clinicians, practicing better time management is a challenge because we have so many demands we may perceive as conflicting. Here are ways to manage your time more effectively:

- Sit down with your spouse or partner to discuss and negotiate relationship expectations.
- Align your priorities and values between home and work.
- Look for areas where you should set limits and boundaries on your time—both at home and at work—and stick to them.
- Set limits with patients while still conveying empathy and instilling their confidence in your care.
- Seek mentors who model good time management, and ask for their advice and guidance.
- Work on self-acceptance for the person you are today. Acknowledge that you're doing your best, and keep boundaries by trusting and allowing others to do their job.

Develop empathy for others, rather than judging them.

Stronger relationships

Relationship problems can be a great drain on your time and emotional energy. Here are some ways to strengthen your relationships both at work and at home.

- Engage in necessary conversations regarding conflict. Addressing conflict and moving beyond it can make an enormous difference in your feelings and perceptions.
- Set regular times to get together with family and friends, and stick to those plans. Find time for regularly scheduled family meetings and meals together. Everyone may have to give a

little to make this happen, but it will be worth it.
- Give people the benefit of a doubt and avoid jumping to conclusions. Work on identifying obstacles to trust.
- Be open to reasonable feedback.
- Ask for help and delegate responsibilities and duties when possible.

Better self-care

Make yourself a priority by practicing good self-care. To build "down" time into your schedule, take restorative breaks throughout the day. Enroll in a yoga, Pilates, or mindfulness meditation class or other activity that helps reduce stress. Read fiction, write in a journal, or meditate.

Take time to reflect on the positive parts of your day and life. Doing this before bedtime can promote a good night's sleep. Speaking of sleep, make it a priority. If you can't get a full night's sleep, take short naps.

> Never underestimate the power of small changes.

Identify more ways to integrate exercise into your day. Exercise is the cheapest antidepressant around. Go for a 10-minute walk outside the clinic or hospital. Purchase exercise equipment for your home, or use onsite facilities if they're available. Get a partner for workouts, running, or other activities.

Improve your nutrition by sitting down to breakfast, taking a break for lunch, bringing healthy snacks to work, and being there for family dinners.

Take care of yourself mentally and emotionally. Acknowledge losses and give yourself permission to grieve.

Identify workplace and personal challenges that create stress, and develop an action plan for addressing or coping with them. Set realistic goals for stress management and update them as needed, either alone or with a coach, therapist, friend, or partner.

One step at a time

Perhaps you agree with our advice, but think your life is too overwhelming and demanding to put our recommendations into practice. If so, keep in mind that just wishing and hoping things will get better won't make it happen. You may end up wishing and hoping for the rest of your life.

So take it one small step at a time. Never underestimate the power of small changes. Start by making one small change that takes just a few minutes. After the first week, evaluate the results of this change. You may find they're good enough to inspire you to make further changes.

Finally, don't go it alone. Look for and request support in areas that seem the most challenging. Consider your organization's employee assistance program (EAP), a life coach, a peer coach, family or marital counseling, and individual counseling. The investment you make in yourself will help you become a better clinician, increase your satisfaction, and have a positive effect that carries over into all areas of your life. ■

The authors work at Midwest EAP Solutions in St. Cloud, Minnesota. Julie Boertje is a nurse peer coach. Liz Ferron is a senior EAP consultant.

Medicare reimbursement for hyperbaric oxygen therapy

By Carrie Carls, BSN, RN, CWOCN, CHRN, and Sherry Clayton, RHIA

In an atmosphere of changing reimbursement, it's important to understand indications and utilization guidelines for healthcare services. Otherwise, facilities won't receive appropriate reimbursement for provided services. This article focuses on Medicare reimbursement for hyperbaric oxygen therapy (HBOT). (See *What is hyperbaric oxygen therapy?*)

Indications and documentation requirements

The Centers for Medicare & Medicaid Services (CMS) National Coverage Determination for HBOT lists covered conditions for HBOT, as do the individual Medicare Administrative Contractor's (MAC) Local Coverage Determination policies and/or articles. (See *Conditions for which CMS approves use of HBOT.*) Providers should thoroughly review the indications and utilization guidelines to ensure coverage criteria are met for each clinical condition.

It's important that the documentation in the patient's medical record supports the medical necessity for HBOT. Reimbursement hinges on documenting all services performed. For example, diabetic wounds of the lower extremity will first require the assessment of the patient's vascular status with correction of any problems found, optimization of nutritional status and glucose control, removal of nonviable tissue, appropriate offloading of the ulcer, treatment and resolution of infection, and maintenance of a clean, moist wound bed.

HBOT is indicated if all of the above have been done and the ulcer doesn't show measurable signs of healing after 30 days of standard wound care.

Provider requirements

For HBOT to be reimbursed, a facility must ensure the provider supervising the treatment meets CMS requirements. Physicians who supervise HBOT should be certified in Undersea and Hyperbaric Medicine or must have completed a 40-hour, in-person training program by an ap-

What is hyperbaric oxygen therapy?

Hyperbaric oxygen therapy (HBOT) is defined as intermittent administration of 100% oxygen inhaled at a pressure greater than sea level. The treatment may be given in multiplace chambers compressed to depth by air while the patient breathes 100% oxygen through a facemask or hood, or in monoplace chambers compressed to depth with oxygen.

Read more about HBOT and **watch a lecture** on the topic. You can also access a fun, simple **explanation of HBOT** that uses drawings.

Conditions for which CMS approves use of HBOT

The Centers for Medicare & Medicaid Services (CMS) National Coverage Determination for Hyperbaric Oxygen Therapy (HBOT) Covered Conditions include the following:

- Acute carbon monoxide intoxication*
- Decompression illness*
- Gas embolism*
- Gas gangrene*
- Acute traumatic peripheral ischemia*
- Crush injuries and suturing of severed limbs*
- Acute peripheral arterial insufficiency*
- Progressive necrotizing infections*
- Preparation and preservation of compromised skin grafts
- Chronic refractory osteomyelitis
- Osteoradionecrosis
- Soft-tissue radionecrosis
- Cyanide poisoning
- Actinomycosis
- Diabetic wounds of the lower extremity with type 1 or 2 diabetes, a Wagner Grade 3 or higher ulcer, and failure of adequate course of standard wound therapy.

*Emergent conditions normally treated in an inpatient setting; facilities will not be reimbursed if the patient is treated in the outpatient setting.

proved entity. In addition, if HBOT is performed off-site from a hospital campus or in a physician's office, Advanced Cardiac Life Support training and certification of the supervising physician are required.

CMS also requires appropriate direct physician supervision for coverage, meaning that the physician must be present on the premises and immediately available to furnish assistance and direction throughout the performance of the procedure.

Billing and coding

In a hospital outpatient setting, the correct code is C1300, hyperbaric oxygen under pressure, full body chamber, per 30-minute interval. Physician supervision of HBOT is reported with CPT code 99183, physician attendance and supervision of hyperbaric oxygen therapy, per session. It's important to note that the physician supervision code should be reported in a unit of 1, and the hospital outpatient procedure code of C1300 will be in multiple units, typically 4 units.

Prepay probes

Providers may be asked to submit medical documentation for specific claims identified by the MAC prior to payment ("prepay probes"). These Additional Development Requests require a response within 30 days and generally involve 20 to 40 claims per provider. Such requests occur in both inpatient and outpatient settings, and some MACs are starting to use prepay probes in skilled nursing facilities as well.

After review of the documentation, providers receive notification of the results. Further reviews are based on the provider error rate calculated.

Skilled nursing facility, inpatients, critical access hospitals

In a skilled nursing facility, HBOT is part of the facility Prospective Payment System (PPS) payment in Medicare part A stays. For hospital inpatients, HBOT is reported under revenue code 940. For critical access hospitals, a reasonable cost-based system is used.

Ensuring reimbursement

To ensure reimbursement of HBOT, check CMS policies and articles for indications, utilization guidelines, and provider re-

(continued on page 39)

Guidelines for safe negative-pressure wound therapy

Rule of thumb: Assess twice, dress once

By Ron Rock MSN, RN, ACNS-BC

Since its introduction almost 20 years ago, negative-pressure wound therapy (NPWT) has become a leading technology in the care and management of acute, chronic, dehisced, traumatic wounds; pressure ulcers; diabetic ulcers; orthopedic trauma; skin flaps; and grafts. NPWT applies controlled suction to a wound using a suction pump that delivers intermittent, continuous, or variable negative pressure evenly through a wound filler (foam or gauze). Drainage tubing adheres to an occlusive transparent dressing; drainage is removed through the tubing into a collection canister. NWPT increases local vascularity and oxygenation of the wound bed and reduces edema by removing wound fluid, exudate, and bacteria.

Every day, countless healthcare providers apply NPWT devices during patient care. More than 25 FDA Class II approved NPWT devices are available commercially. If used safely in conjunction with a comprehensive wound treatment program, NPWT supports wound healing. But improper use may cause harm to patients. (See *Risk factors and contraindications for NPWT.*)

Lawsuits involving NPWT are increasing. The chance of error rises when inexperienced caregivers use NPWT. Simply applying an NPWT dressing without critically thinking your way through the process or understanding contraindications for and potential complications of NPWT may put your patients at risk and increase your exposure to litigation.

Proper patient selection, appropriate dressing material, correct device settings, frequent patient monitoring, and closely managed care help minimize risks. So before you flip the switch to initiate NPWT, read on to learn how you can use NPWT safely.

Understand the equipment and its use

Consult your facility's NPWT protocols, policies, and procedures. If your facility lacks these, consult the device manufacturer's guidelines and review NPWT indications, contraindications, and how to recognize and manage potential complications. Ideally, facilities should establish training programs to evaluate clinicians'

Risk factors and contraindications for NPWT

Since 2007, the Food and Drug Administration (FDA) has received 12 reports of death and 174 reports of injury related directly to negative-pressure wound therapy (NPWT). The deaths occurred in patients' homes and long-term care facilities. The most serious complications were bleeding and infection. Patients taking anticoagulants and those who had vascular grafts or infected wounds were most at risk. In 32 of the injuries, dressings had adhered to tissue and foam was embedded or retained in the wound; most of these patients had to be readmitted for surgical removal of foam, management of dehisced wounds, and antibiotic therapy. Infection from the original wound or retained foam was reported in 27 additional injury cases.

These reports compelled the FDA in 2011 to recommend that clinicians use extreme care when prescribing NPWT. The agency stressed that clinicians should know that NPWT is contraindicated for specific wound types and should thoroughly consider all patient risk factors before prescribing it. Once NPWT has been applied, clinicians must assess and monitor the patient in an appropriate setting. Monitoring frequency depends on the patient's condition, wound status, wound location, and comorbidities. Most importantly, clinicians must be vigilant in checking for potentially life-threatening complications and be prepared to respond appropriately.

The Pennsylvania Patient Safety Authority reported 419 adverse events linked to NPWT between January 2008 and December 2009. Assessment and monitoring deficiencies accounted for nearly half; delayed or incorrect dressing application accounted for another 21%.

Contraindications

Contraindications for NPWT include:

- inadequately debrided wounds
- necrotic tissue with eschar
- untreated osteomyelitis
- cancer in the wound
- untreated coagulopathy
- nonenteric and unexplored fistulas
- exposed vital organs.

Patient risk factors

Factors that increase the risk of harm from NPWT include:

- increased risk for bleeding and hemorrhage
- anticoagulant or platelet aggregation inhibitor therapy
- friable or infected blood vessels
- spinal cord injury
- enteric fistulas.

View: FDA information on NPWT adverse events

skills. Enhanced training should include comprehension of training materials, troubleshooting, and correct operation of the device, as shown by return demonstration of the specific NPWT device used in the facility.

Assess the patient thoroughly

The prescribing provider is responsible for ensuring patients are assessed thoroughly to confirm they're appropriate NPWT candidates. Aspects to consider include comorbidities, contraindicated wound types, high-risk conditions, bleeding disorders, nutritional status, medications that prolong bleeding, and relevant laboratory values. The pain management plan also should be evaluated and addressed.

Assess the order

Before NPWT begins, make sure you have a proper written order. The order should specify:

- wound filling material (foam or gauze dressing and any wound adjunct, such as a protective nonadherent, petrolatum, or silver dressing)
- negative pressure setting (from -20 to -200 mm Hg)
- therapy setting (continuous, intermittent, or variable)
- frequency of dressing changes.

Follow all parts of the order as prescribed. Otherwise, you may be held responsible if a complication arises—for example, if you apply a nonadherent

Assessing with DIM

To assess your patient's wound, use the acronym *DIM*—**D**ebridement, **I**nfection and **I**nflammation control, and **M**oisture balance.

Debridement. This procedure reestablishes a viable wound base with a functional extracellular matrix. Necrotic or devitalized tissue harbors bacteria and cells, which impede wound healing. It also prevents NPWT from being distributed equally across the wound bed, which reduces NPWT efficacy and prevents effective exudate removal. In wound beds with more than 20% nonviable tissue consider debridement (surgical, mechanical, enzymatic, chemical, or autolytic) before initial NPWT application. The debridement method will vary depending on the patient's condition.

Infection and inflammation control. Infection and inflammation delay wound healing. Antimicrobial (silver) dressings are effective in localized infections and inflamed wounds due to their anti-inflammatory effects. Wound debridement also reduces bacterial burden, including biofilm. NPWT then can remove surface wound fluid–containing contaminants.

Moisture balance. Moisture balance allows cells within the wound to function effectively. If the wound is too moist, wound edges may become macerated, turning white. On the other hand, too little moisture may inhibit cellular growth and promote eschar formation. NPWT helps preserve a moist environment and reduces edema, contributing to improved tissue perfusion. Incremental increases or decreases in negative pressure may be needed to ensure a moist wound environment.

dressing when none is ordered and this dressing becomes retained, requiring surgery for removal; or if you set a default pressure when none is ordered and the patient suffers severe bleeding or fistula formation as a result.

Assess the wound

If you know what your patient's wound needs, you can take proactive measures. What is the wound "telling" you? With adept assessment, you can become a "wound whisperer"—a clinician who understands wound-healing dynamics and can interpret what the wound is "saying." This allows you to see the wound as a whole rather than just maintaining it as a "hole."

- If the wound tells you it's too wet, take steps to absorb fluid or consider increasing negative pressure, as ordered.
- If it's telling you it's dry, consider decreasing negative pressure, as ordered. If the wound bed remains dry, you might want to take a NPWT "time out". Apply a moisture dressing for several days and assess the patient's hydration status before restarting NPWT.
- If the wound says it's moist, maintain the negative pressure.
- If it tells you it's infected, treat the infection.
- If it tells you it's dirty, debride it.
- If it says it's malnourished, feed it.

The DIM approach

To establish a baseline evaluation, develop a systematic approach for assessing the wound before NPWT. This will help optimize wound-bed preparation, enhance NPWT efficacy, and prevent delayed wound healing. (See *Assessing with DIM.*)

Take a time-out

Before you apply the NPWT dressing, be a **STAR—S**top, **T**hink, **A**ct, and **R**eview your action. This time-out allows you to critically think your way through the application process and consider potential consequences of your actions.

Ongoing patient assessment and monitoring

Follow these guidelines to help ensure safe and effective NPWT:

- Follow the device manufacturer's instructions and your facility's NPWT protocol, policy, and procedures.
- Identify and eliminate factors that can impede wound healing (poor nutritional status, limited oxygen supply, poor circulation, diabetes, smoking, obesity, foreign bodies, infection, and low blood counts).
- Evaluate the patient's nutritional status to ensure protein stores are adequate for healing.
- Assess and manage the patient's pain accordingly.
- Protect the periwound from direct contact with foam or gauze.
- Prevent stretching or pulling of the transparent drape to secure the seal and avoid shear trauma to surrounding tissue.

Don't overpack the wound too tightly with foam. Compressing the foam prevents negative pressure from reaching the wound bed.

- Prevent stripping of fragile skin by minimizing shear forces from repetitive or forceful removal of transparent drapes.
- Use protective barriers, such as multiple layers of nonadherent or petrolatum gauze, to protect sutured blood vessels or organs near areas being treated with NPWT.
- Don't overpack the wound too tightly with foam. Compressing the foam prevents negative pressure from reaching the wound bed, causing exudate to accumulate.
- Position drainage tubing to avoid bony prominences, skinfolds, creases, and weight-bearing surfaces. Otherwise, a drainage tubing related pressure wound may develop.
- Bridge posterior wounds to the lateral or anterior surface to minimize drainage tubing related pressure wounds to the surrounding tissue.
- Count and document all pieces of foam, gauze, or adjunctive materials on the outer dressing and in the medical record, to help prevent retention of materials in the wound.
- Ensure the foam is collapsed and the NPWT device is maintaining the prescribed therapy and pressure at the time of initial patient assessment and when rounding.
- Address and resolve alarm issues. If you can't resolve these issues and the device needs to be turned off, don't let it stay off more than 2 hours. While the device is off, apply a moist-to-dry dressing.
- With a heavily colonized or infected wound, consider changing the dressing every 12 to 24 hours.
- Monitor the patient frequently for signs and symptoms of complications.

Evaluate patient comprehension of teaching

A proactive approach to education can ease the patient's anxiety about NPWT. Unfamiliar sounds and alarms may heighten anxiety and cause unwarranted concerns, so inform patients in advance that the device may make noise and cause some discomfort. An educated and empowered patient can participate actively in treatment. Improved communication may enhance outcomes and help identify errors in technique before they cause complications.

Be prepared to answer patients' questions, which may include:

- Am I using the device correctly?
- How long will I have to use it?

- What serious complications could occur?
- What should I do if a complication occurs? Whom should I contact?
- How do I recognize bleeding?
- How do I recognize a serious infection?
- How do I tell if the wound's condition is worsening?
- Do I need to stop taking aspirin or other medicines that affect my bleeding system or platelet function? What are the possible risks of stopping or avoiding these medicines?
- Can you give me written patient instructions or tell me where I can find them?

View: Patient Education

Be a STAR

To avoid patient harm and potential litigation, be a STAR and a wound whisperer. If you're in doubt about potential complications of NPWT or how to assess and monitor patients, stop the therapy and seek expert guidance. "Listen" to the wound and assess your patient. This may take a little time, but remember—monitoring NPWT, the wound, and the patient is an ongoing process. You can't rush it. Sometimes, to go fast, you need to go slowly.

Access more information about **NPWT**.

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Ron Rock is the nurse manager and clinical nurse specialist for the WOC nursing team in the Digestive Disease Institute of the Cleveland Clinic in Cleveland, Ohio.

Clinician RESOURCES

Take a few minutes to check out this potpourri of resources.

International Ostomy Association

The International Ostomy Association is an association of regional ostomy associations that is committed to improving the lives of ostomates. Resources on the association's **website** include:

- a variety of discussion groups
- information for patients
- list of helpful links.

The site also provides contact information for the regional associations.

Substance use disorder in nursing

Substance use disorder (SUD) can have a profound effect not only on patients but also on the nursing profession. "**What You Need to Know About Substance Use Disorder in Nursing**," a brochure from the National Council of State Boards of Nursing, discusses SUD, including how to recognize the warning signs and what to do to get a colleague help.

Enhancing patient and family engagement

The Agency for Healthcare Research and Quality has released the "**Guide to Patient and Family Engagement in Hospital Quality and Safety**," an evidence-based resource to help hospitals work as partners with patients and families to improve quality and safety. The guide includes the following:

- **Strategy 1: Working With Patients and Families as Advisors** shows how hospitals can work with patients and family members as advisors at the organizational level.
- **Strategy 2: Communicating to Improve Quality** helps improve communication among patients, family members, clinicians, and hospital staff from the point of admission.
- **Strategy 3: Nurse Bedside Shift Report** supports the safe handoff of care between nurses by involving the patient and family in the change-of-shift report.
- **Strategy 4: IDEAL Discharge Planning** helps reduce preventable readmissions by engaging patients and family members in the transition from hospital to home.

Download the entire guide.

Lymphedema Treatment Act

The Lymphedema Treatment Act (HR 3877) is intended to improve coverage for the treatment of lymphedema from any cause. You can visit the Act's **website** to learn how to contact your members of Congress about the Act and join your state's advocacy team. Consider these six easy ways to increase awareness:

- Distribute information cards.
- Distribute or post fact sheets.
- Like the Act's Facebook page.
- Follow the act on Twitter and re-tweet tweets.
- Include information on your website or blog.
- Use a tell-a-friend form to quickly tell up to 10 people at a time about the website.

You can also access an **update** on the Act on the National Lymphedema Network's website.

(continued from page 15)

that few teams run smoothly all the time. Challenges the team might encounter include a lack of trust among members, passivity, lack of commitment or accountability, members who make excuses or cling to the past, negative attitudes, fear of conflict, and actual conflict.

You will need to address potential and actual conflicts to ensure the team's success. Two strategies are *compromising*, where each party gives in a little bit to meet in the middle, and *collaborating*, where each party works together to come up with a solution. These methods foster teamwork and better working relationships.

Whichever strategy you use, be sure you have all the facts, that everyone's emotions are in check, and that the timing is appropriate for discussing the conflict. Use effective communication, make eye contact, be sure your body language is "open," use "I feel" statements and open-ended questions, and thank each party when finished. Addressing—and solving—problems quickly will put your team back on track to the real problem at hand: healing those wounds!

Reap the benefits

An effective team leader chooses the right team members, understands leadership characteristics, encourages and motivates each team member, and addresses conflicts appropriately. If you accomplish all this, your reward will likely be better patient outcomes and personal satisfaction from working with your village of professionals.

Jennifer Oakley is a clinical instructor for the **Wound Care Education Institute** in Plainfield, Ill.

NAWCO NEWS

A letter from one of our own

I am writing this letter to share the sense of honor and privilege I felt in working with the National Alliance of Wound Care and Ostomy (NAWCO) to organize the first Eastern Region WCC Conference during the Fall of 2013. What an experience! In addition to representing a top-notch organization, I increased my knowledge of wound care and its products dramatically and met many amazing clinicians on the same journey.

Traveling from seven states and a wide variety of care settings, nearly 100 wound care clinicians came together with the common goal of enhancing their ability to make a difference in the lives of their patients. We launched the process of forming a vital clinician network that will allow us to share product and procedure information and experiences, leverage the information in our individual care settings, and strengthen the wound care knowledge of our peers.

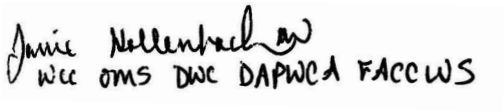
Throughout this experience, I talked with dozens of local wound care product representatives. Like the clinicians, they provided a wealth of wound care insights. I encourage clinicians to reach out to these "best friends" of wound care and take advantage of their depth of knowledge.

I am passionate about advocating proper wound care, and if I can help disseminate wound treatment knowledge to other clinicians in support of their patients, I need no better reward.

Finally, the opportunity to represent NAWCO filled me with pride because of the respect I have for its vision. I believe in the importance of continuing education, furthering knowledge, and ensuring expertise through a certification process that is based on solid, research-based wound care. My hope is to represent NAWCO in the future.

Thank you for this exciting opportunity!

Sincerely,



Janie Hollenbach, RN, WCC, OMS, DAPWCA, FACCWS

NAWCO names new executive director

The National Alliance of Wound Care and Ostomy (NAWCO), the largest wound care and ostomy certification organization in the United States, is pleased to announce that Cynthia (Cindy) Broadus, RN, BSHA, LNHA, CLNC, CHRM, WCC, DWC, OMS, was named executive director effective February 1, 2014.

Ms. Broadus brings a wealth of experience and knowledge to the organization. She has excelled for over 2 decades in specialty nursing care, litigation, corporate management, and company development. She joins the organization at a time of exciting change and will be instrumental in achieving accreditation that will provide national and international recognition for NAWCO.

"I am excited to be a part of such a great organization and supporting the efforts of the close-knit community that makes up the NAWCO certificants," Ms. Broadus says.

Read the full press release.

New certificants

Below are WCC, DWC, and OMS certificants who were certified in December 2013 and January 2014.

Ann Marie Adams
Hazem Afifi, MD
Jada Bailey
Janice Baker Shuman
Sandra Barnes
Betty Barnett
Norman Barnette
Pamela Behrens-Looney
Wanda Bell
Billie Bennett
Richard Bernard, Jr
Delia Bias
Cherie Birkey
Jill Boss
Bridgett Boyett
April Branham
Shireen Brohi, MD
Elizabeth Broussard
Lynette Brown
Justin Brown
Christy Brown
Bridgette Brown-Eustache
Melody Brownlie
Mona Buffum
Razel Cachero
Amanda Calhoun
Linda Cameron
Russell Carlson, DPM
Sheri Carstens
Omana Chandrabos
Sue Chang
Linda Charley
Amy Clark
Amy Clement
Terry Collins
Jacqueline Cook
Jane Cooper
Bonnie Culbertson
Allison Cummings
Jennifer Daniels
Brittany Davenport
Jean Davis
Ellen Davis
Jason Davis, DO
Hermina Delic
Mary DeSpain
Carmen DeYoung
Crystal Draper
Luviminda Duana
Irene Dudley
Jaime Eckwood
Tammy Edwards
Cedric Edwards, MD
Catherine Egan
Violet Ellowsky
Katja Estrada
Peggy Everlith
Terri Fain
Lisa Fake
Angela Felmeten
Ashlie Ferry
Victorina Fischenich
Laura Foley
Krystle Forsyth
Kim Fox
Kathy Gaskins
Rachael Gerber
Debra Gonzalez
Jessica Green
Francina Greene
Patricia Grier
Danielle Hail
Connie Hall
Marisa Hardy
Katherine Harper Burger
Chelsey Hawthorne
Cheryl Haynes
Sandra Hernandez
Brenda Higgins
Tanya Hodge
Lindsay Hoffer
Jacob Holm
Faith Holmquist
Rachel Houk
Bobby Hurt
Samantha Ianaro
Linda Jager, MD
Lori Jalowiec
Barbara Janczy
Stephanie Johnson
Laura Johnson
Tracy Johnson
Sarah Jordan
Ashley Jordan
Paula Kaminski
Melissa Kaskovich
Michael Katzman
Hileen Kurdi
Stephanie LaBudde
Ramona Land
Aimee Larracas
Jennifer Lesak
Charles Lester
Natividad Linares
Marife Llamzon
Sharon Loga
Christine Lopez-Rincon
Carol Lowes
Arlyn Lucena
Eileen Macatangay
Cathy Macklin
Colleen Martin
Valerie Martinus
Mary Mauzy Dooley
Mary Mauzy Dooley
Dimitrios Mavrophilipos, MD
Jessica Mayfield
Andrea McCann
Rosemary McCarthy
Kellie McChurch
Catherine McCoskey
Rachel McNett
Lynnemarie Merrill
Grzegorz Mierzwa
Lisa Mizer Locke
Lisa Molidor
Melanie Mullenix
Cassandra Munoz
Amanda Nelson
Sarah Nesgoda
Maggie OBrian
Becky Olsen
Javette Orgain, MD
Penny Pahis
Rebecca Peralta
Jacqueline Perry
Thomas Persinger
Cuong Pham
Janet Phillips
Pamela Potter
Katherine Pratola
Janice Quiton
Rosalina Ramirez
Osvaldo Ricardo
Dorothy Roberts
Cassandra Rodriquez
Feliza Rojas
Kathryn Rosengren
Liz Russo
Jenifer Schaller
Charity Schneider
Linda Schubert
Alicia Scott

Rebecca Searles
Beau Shay, DPM
Alison Smith
Karra Smith
Monica Smith
Christina Snyder
Sarah Spangler-Farley
Michael Stettler
Mia Stith
Erin Stone
April Stone
Dawn Strecker
Kathie Sullivan
Richard Sundstrom
Paul Sutherland, Jr., MD
Cari Szczesniak
Isabella Tembe
Deborah Tenge
Kimberly Thacker
Rajiv Thakkar, MD
Elizabeth Townley
Julia Trainor
Hollie Tumosa
Carolina Uranga
Naomi Varda
Phelp Veneracion
Sharon Walsh-Bonadies
Julia Ward
Debra Warren
Olga Wells
Jacqueline Wiegand
Karen Willenbrecht
Cordilla Williams
Mary Witt
Sandraleen Wofford
Gizaw Woldehiwot, MD
Linda Wolfe
Nancy Zondor
Yvonne Afenir

Recertified certificants

Below are WCC certificants who were recertified in December 2013 and January 2014.

Maria Aguilar
Carmen Albu
Judith Aldridge
Frederic Allen
Ronnel Alumia
Tracey Anderson
Rosie Apura
Lisa Baillie
Isabel Baker
Daren Barrett
Jodi Binder
Christine Black
Rachael Borden
Ann Bradish
Kimberly Brandow
Faye Brass
Jennifer Brown
Laura Brown
Maureen Browne
Micheal Bush
Amy Caldwell
Christi Calhoun-Chapin
Reginald Casilang
Georgina Castillo
Kathleen Cavera
Karen Christian
Susan Cleveland
Ty Cook
Ginette Coriolan
Lauren Cragin
Randy Danan
Dianna Dashner
Susan Daugherty
Jasper Diaz
Edward DiTommaso
Ashley Divers
Kyle Doerges
Pamela Donegan
Virginia Dornheggen
Karen Eads
Elaine English
Dawn Erickson
Aida Espina-Lo
Mary Favata
Elaine Framberg
Jaclynne Frister
Deborah Gallagher
Shelley Garcia
Catherine Gardner
Rebecca Gassett
Nancy Geerdts
Jody Goeb
Melinda Gomez
Linda Good
Mary Guillory
Stephanie Hallifax
Carol Heimerl
Lori Hernandez
Linda Hernandez
Laura Hertzog
Lisa Hill
Sandra Hill
Gayatri Hingwala
Jolene Hitz
Jennifer Hope
Scott Hotzel
Barbara Hulwick
Jessica Hurley
Daniel Imlay
Catherine Jackson
Diana Jacoby
Catherine Jimenez
Kanchan Jindal
Richard Johnson
Patricia Johnson
Kristie Jones
Pamela Kane
Denise Kelly
Laurie Kendricks
Maria Kessel
Susan Ketchum
Sandra Kingsley
Sheila Kint
Mary-Lynne Klinck
Cheryl Kneier
Debbi Koch
Jeanie Kramer
Sheila Landis
Debra Larson
Sara Leighton
Margaret Lemon
Joan Lenard
Annie Letkiewicz
Claudia Lewis
William Lucky
Juliet Macaranas
Wendy Maddux
Marina Maduro
Paula Mangiaracina
Teresita Maragay
Eileen Marino
Sonia Martinez-Rivera
Erin Mason
Jennifer Maynard
Jaqueline McGinnis
Kim McIntosh
Brenda Megna
Jean Meranda
Diana Miller
Gwendolyne Mitchell
Shaunyetta Mitchell
Tala Montoya
Rebecca Moore
Naomi Moraga
Eileen Morgan

Donna Morrow
Maryrose Mueller
Karen Murnan
Sylvia Murphy-McCray
Barbara Nehmer
Nona Neil
Terri Noftsger
Alejandra Novillos
Patricia Nowak
Catherine Ntem
Erika Nwude
Kimberly Olson
Victoria Pardo
Sheila Pease
Sarah Pelishek
Linda Peterson
Lisa Petrillo
Roxanne Pfarr
Joseph Pinnavaia
Susan Qaimari
Cheri Raines
Lisa Reed
Ewa Rejniak
Christine Renninger
Darla Restivo
Juanita Reyes-Tineo
James Rider
Barbara Ritchwood
Ellen Roback
Jared Rodgers
Angela Rodriguez
Cynthia Rogers
Karen Rogge
Margaret Ross
Julie Rounds
DeLynn Rucker
Dohn Salvador
Susan SanMarco
Debra Schmelzle
Tracy Schultz
Jaime Schwingel
Sandra Shaheed
Noel Silva
Barbara Siminski
Mary Simmelink
Susan Simpkins
Valerie Smith
Carl Sneed
Oscar Solis
Penny Sorensen
Diane Storms
Deanna Strama
Mary Strickland
Terri Sullivan
Judea Sy
Penny Thomas
Kelli Thompson
Pamela Timmers
Deborah Tinch
Jill Tout
Loren Trapp
Debra Tumulak
Dean Turner
Lucila Udarbe
Patricia Uebel
Linda Van Bommel
Sandra Vassell
Jeannie Wahl
Cynthia Weaver
Katherine Weber
Nancy Wermert
Donna Wilchek
James Wilcox
Nicole Williams
Meredith Williams
Dorothy Williams
Brandi Wilson
Lori Windham
Donna Winsor
Diane Woods
Dorcas Yates
Karen Yoder
Laure Zulkowski

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quirements. In addition, ensure that documentation clearly supports the need for HBOT and follows the billing and coding requirements.

Both authors work at Passavant Area Hospital in Jacksonville, Illinois. Carrie Carls is the nursing director of advanced wound healing and hyperbaric medicine and Sherry Clayton is the director of managed care and revenue integrity.

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