

# HEALING HANDS



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## Wound Care Difficult for Homeless Patients and Providers

*Numerous risk factors predispose homeless people to develop acute and chronic wounds of the skin and subcutaneous tissue. Many of the same conditions that give rise to such wounds also impede healing. HCH providers tend to rely on tried and true wound care methods; newer, more expensive products may be more cost-effective over time, but are out of reach for many health centers. The articles in this issue of Healing Hands examine risk factors, wound types, treatment options, and strategies for patient self-care. Resources are highlighted where clinicians can find more information.*

On the face of it, wound care is simple—keep the wound clean and free of infection so the body can heal itself. But health care for homeless people is rarely that simple, and wound care is no exception. Factors that increase homeless people's risk for acute and chronic wounds include communal bathing and eating, lack of facilities for washing and toileting, unsafe and unsanitary shelters, exposure to crime and trauma, inadequate nutrition, no place for bed rest, no place to store medications, excessive smoking and drinking, little or no income, and absence of family and other support to help in times of illness.<sup>1</sup> Substance abuse and mental illnesses may affect a person's ability to understand and follow a wound care treatment plan.

**ACUTE WOUNDS** Trauma is the second most frequently seen acute health problem among HCH clients; lacerations and wounds are the most common traumatic injuries.<sup>1</sup> A review of trauma among homeless people in San Francisco found a wide variety of injuries, including stab wounds, head trauma, blunt trauma, multisystem trauma, gun shot wounds, suicide attempts, burns, complex facial fractures, hip fractures, pneumothoraces, and lacerations of the neck, chest, liver, large and small bowel, and tendons of the hands.<sup>2</sup>

Among homeless people, burns may result from sleeping on steam grates or falling asleep in the sun. Frostbite is a problem in colder climates. Many homeless people have chronic medical conditions such as diabetes, liver disease, or cardiac disease that impact the rate at which an acute wound heals. Lacking access to basic hygiene, they may be unable to change a dressing by themselves or keep it clean and dry.

**CHRONIC WOUNDS** When acute wounds become chronic, non-healing wounds, they are extremely difficult to treat. Three kinds of

chronic wounds commonly seen in homeless people are venous stasis ulcers, diabetic foot ulcers, and intravenous (IV) drug use injection site infections.

**Venous stasis ulcers** are caused by vascular insufficiency that results from walking, standing, or sitting in an upright position for extended periods. Vascular fluid pools in the legs and feet, and lack of circulation causes tissue damage and breakdown of the skin. Cellulitis (infection of the skin) or an ulcer may result, notes **Brenda Merritt, MD**, Director of Primary Care for Project Renewal in New York City and Clinical Assistant Professor at Columbia University's Mailman School of Public Health. Venous ulcers account for 70-90% of all leg ulcers.<sup>3</sup>

"The basic treatment is to rest and keep your feet up, which may be difficult if not impossible for a homeless person to do," says Dr. Merritt. Treatment might also include debridement (cleaning necrotic [dead] tissue from the wound), compression stockings, and antibiotics if the wound becomes infected. Serious infections may require IV antibiotics administered in the hospital. Compression stockings force the blood and lymphatic fluid back to the center of the body, "but it's not the same as staying in bed," says Dr. Merritt.

Whether or not compression stockings are successful depends on how organized the individual's life is, notes **David Buchanan, MD**, Head of the Section of Social Medicine at John Stroger Hospital of Cook County, Chicago, and medical director for two shelter-based clinics. The stockings are difficult to get on, hard to keep clean, and they don't dry quickly. Disposable ones are less expensive but wear out faster. In Chicago, the county hospital measures and makes the stockings and will usually provide a second pair.

**Diabetic foot ulcers** are the number two problem (after IV drug site wounds) seen at Christ House, a 32-bed respite care program in Washington, DC, according to Clinical Administrator **Mary Jordan, CRNP**. To treat these wounds, “We promote regrowth of healthy tissue and treat infection with oral antibiotics,” she says. However, diabetic ulcers may be slow to heal. Any condition that affects circulation—including diabetes, high blood pressure, high cholesterol levels, and tobacco smoking—may keep an ulcer from healing.

Further, diabetic ulcers pose a serious risk of amputation, says **Robert Donovan, MD**, Medical Director of Comprehensive Care for the Homeless, the HCH project in Cincinnati, Ohio. Diabetic foot complications are the most common cause of nontraumatic lower extremity amputations in the industrialized world.<sup>4</sup>

The Centers for Disease Control and Prevention (CDC) estimate that 6.3 percent of the U.S. population (18.2 million people) has diabetes, but percentages vary greatly across the U.S. and are higher among minority populations, who are overrepresented among homeless people. Dr. Merritt says 20 percent of Project Renewal patients have diabetes.

Homeless people with diabetes face a number of barriers to care, including inadequate nutrition, difficulty monitoring their blood glucose, and lack of storage for medication. Poorly controlled diabetes can result in loss of sensation in the feet from damaged nerves; people walking in ill-fitting shoes may not notice they have a sore on their foot until it becomes an ulcer.

A simple preventive technique is to have diabetic patients remove their shoes and socks at every primary care visit. They also need properly fitting shoes, which may be difficult to obtain. Custom made shoes can relieve pressure on the feet, but these cost \$500 or more, Dr. Donovan says. A free podiatry clinic in Cincinnati can make the shoes, although there is a wait to be seen.

**IV drug injection wounds** are the number one wound care problem at respite centers in Washington, DC, and in Seattle. Typically, these abscesses are incised and drained, and the open wounds need care, according to **Leslie Enzian, MD**, attending physician at Pioneer Square Clinic and Medical Director of the Seattle-King County/Harborview Medical Respite Program. Infections may result from impure drugs, unclean needles, or skin or muscle “popping” (injecting drugs into skin or muscle when veins are depleted). Skin popping introduces an irritant that causes inflammation and eventual infection, Jordan explains. Further, many IV drug users don’t seek care right away, which may result in serious complications. To help patients with medical problems associated with addiction, Christ House added a 12-week intensive recovery program to its respite center.

Combining harm reduction techniques with wound care may help prevent serious skin complications of IV drug use. In Seattle, a nurse practitioner and a physician’s assistant run a wound care clinic, where they see clients referred from a co-located needle exchange program. They provide initial and subsequent care for smaller wounds on an outpatient basis.

**TREATMENT OPTIONS** Treatment depends on assessment of the wound, the patient, and his or her environment (see “Wound Care 101”). Sometimes treatment decisions are driven by cost. A simple wet-to-dry dressing soaked in saline removes dead tissue as it dries. “But wet-to-dry dressings have to be changed more frequently and can be painful when you take them off,” says Dr. Donovan. “They can also adhere to growing cells.”

Newer products include dressings impregnated with agents that help reduce infection and expedite healing, such as silver or iodine. Though more expensive in the short run, some of these newer dressings are ultimately cost-effective, according to **Kellie Dowell, BSN**, because they are changed less frequently and enable wounds to heal

## CASE STUDY

A 46-year-old Native American man with a history of alcoholism has been an intermittent HCH client at Yellowstone City-County Health Department in Billings, Montana, for 7 years. In the winter of 1999, he fell on the street and injured his right shin. He was sleeping on the floor of the local men’s mission at that time. He presented to the HCH clinic 2 weeks after his fall with complaints of “a sore on my leg.” When he lifted his jeans, it was clear the open wound had become gangrenous, with severe purulent drainage from just above his ankle almost to his knee. After much urging, he went to a local hospital, where he was diagnosed with MRSA osteomyelitis of the right tibia and fibula (infection of the bone and musculature in his shin).

He remained at the hospital for 4 months and underwent multiple surgeries that included bone, muscle, and skin grafts. He has little muscle left in his shin, and the skin is very fragile. As part of his discharge plan, he agreed to meet an HCH nurse every day for a wet-to-dry dressing change. Though expelled from the men’s shelter due to alcohol use, he still managed to find the HCH nurse two or three times a week. Eventually, he was taught how to change his own dressing and was given a 2-day supply that he carried in his jacket.

Approximately one month after discharge, a nurse who specialized in wound care was called in because the post-surgical wound was not healing. She consulted with his surgeons and came up with a new dressing routine. Over the next year, the patient’s surgical wound healed, but since that time he has returned frequently with new lesions from fighting. In 2003, he was granted a back settlement of Social Security disability assistance, which he used to purchase a small mobile home. Thanks to more stable housing and regular care at the HCH, he has thus far avoided contracting MRSA in any of his new wounds.

Lori Hartford, BSN, RN, Yellowstone City-County Health Department  
HCH project, Billings, MT

more quickly. A certified wound care nurse with the Visiting Nurse Service, a home health agency of the Yellowstone City-County Health Department in Billings, Montana, Dowell is frequently consulted on care for homeless people with non-healing wounds.

**MRSA** Chronic wound care is complicated by the emergence of antibiotic resistant organisms, such as methicillin-resistant *Staphylococcus aureus* (MRSA), a strain of staph bacteria resistant to the commonly used penicillin-related antibiotics. According to the CDC, MRSA has long been recognized as a problem in hospitals, but has only recently emerged as a problem originating outside health care facilities. Cases of community-acquired MRSA are associated with recent antibiotic use, recurrent skin diseases, sharing contaminated items, and living in crowded settings. Clusters of skin infections caused by MRSA have been described among injection drug users, Native Americans, incarcerated populations, and gay men, among others.<sup>5</sup>

Staph bacteria and MRSA, often found on the skin and in the nose, may not cause illness. However, any breakdown in skin integrity—from chronic skin infections, physical trauma, or poor health, all of which are common among homeless people—can promote staph and MRSA skin infections.

MRSA is diagnosed by a culture, but only wounds that do not respond to first-line antibiotics are cultured at the Yellowstone City-County Health Department's HCH project in Billings, Montana, says Program Manager **Lori Hartford, BSN, RN**. "It's a cost issue," she says.

In Albuquerque, HCH clinicians treat suspected cases of MRSA when a culture is not possible or practical. **James Wilterding, MD**, staff physician at Albuquerque Health Care for the Homeless, says the sudden onset of cellulitis in an otherwise healthy individual should raise suspicion. Also be wary when patients say they have a spider bite, but they don't remember being bitten. Both

*Continued on back*



*Stasis ulcer with cellulitis. This elderly man has venous stasis disease, marked swelling of his lower extremities, and a large stasis ulcer. He has been admitted to respite at McInnis House in Boston with frequent episodes of cellulitis. Photo by James O'Connell, MD.*

## Wound Care 101: Assessment and Treatment Techniques

Assessing a wound takes a bit of "detective work," says **Jane Carmel, MSN, RN, CWOCN**, of Pittsfield, Massachusetts, a certified wound ostomy continence nurse. Carmel teaches wound care to nurses and consults with Visiting Nurse Associations. She spoke on wound care at the 2003 National Health Care for the Homeless Conference.

The location of a wound can tell you something about its cause, Carmel says. A wound over a bony prominence may be caused by pressure or friction/shear. A wound on the lower extremity may be vascular. A wound on the foot may be caused by neuropathy (insensate foot) secondary to diabetes. Understanding a wound's etiology is important because removing the cause helps the wound heal.

**ASSESSING THE WOUND.** To assess a wound properly, you must observe its location, size and shape, depth, color, condition of the surrounding skin, and type of drainage, Carmel says. A red wound indicates healthy tissue, yellow indicates fibrin-slough, and black is necrotic tissue (eschar)

that may require debriding as it will slow the healing process. If the surrounding skin is bright red, it may indicate cellulitis. A wound that's draining may cause maceration (thinning or softening) of the surrounding skin. Foul smelling discharge from a wound may suggest infection, according to Carmel.

Wound assessment also looks at the patient's hygiene, living environment, nutrition, activity level, age, medications, history of drug abuse, pain, and other medical conditions. "You have to look at the whole person, not just the wound," Carmel says.

**SELECTING A TREATMENT** Assessment of the wound and the patient drives the decision of what type of dressing to use. Other practical guidelines to follow when recommending a dressing are: What are realistic goals? What dressings are available? How capable is the person with the wound?<sup>6</sup> Homeless people typically lack the most basic tools for self-care, including soap and water, a bed, and regular, healthy meals.

Carmel teaches the following basics of treatment:

- If a wound is too wet, dry it.
- If it's too dry, moisten it.
- If it's too deep, pack it.
- If it's necrotic, debride it.

Debridement can be sharp (using tools), autolytic (allows the body to break down necrotic tissue), enzymatic (topical enzymes), or mechanical. Wet-to-dry saline dressings and irrigation are forms of mechanical debridement.<sup>3</sup>

There are eight major categories of wound care dressing—gauze, transparent film, hydrocolloid, hydrogel, alginate, foam, collagen, and composites—and hundreds of individual products within each category, Carmel says. There are also other advanced wound care products and adjunct therapies. Carmel advises, "You don't have to use the newest products first. Start with basic care by keeping the wound clean and trying to eliminate the cause. Use simple dressings and then go up the chain of other topical dressing options." This is good news for cash poor HCH projects.

## Wound Care Difficult *Continued from page 3*

Billings and Albuquerque have seen increases in community-acquired MRSA, but most cases respond to inexpensive sulfa drugs such as Bactrim®, Hartford says.

**SELF-CARE TECHNIQUES** Ultimately, treatment decisions for homeless people are based on creating a plan the patient can follow. “Wound care is difficult for homeless people to do on their own,” says Dr. Donovan. “They’re out during the day and they can’t elevate their legs or carry bulky dressing supplies. If you ask them to do what they can’t, they won’t get better.”

Treatment plans must be simple and based on what the patient is reasonably able to do. People in shelter or doubled up may be able to find someone to help change a dressing. Minimize what you ask patients

living on the street to carry, Dowell advises. Depending on the type of wound, a foam dressing that can be cut or torn to size with some gauze or tape to secure it is a solution that is both user-friendly and effective, she says. Foam dressings are indicated for wounds that have a large amount of drainage.

Dr. Merritt teaches her patients to look for warning signs that further medical attention is required. A wound that becomes red or darker may indicate cellulitis. Swelling, pain, fever, or heat at the wound site should also alert patients to seek medical help. No matter how mentally ill or inebriated a person is, Dr. Merritt believes “a part of that person is still receptive to concrete information. You have to connect to that healthy part.”

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