

## Long-Term Care Survey Alert

### CLINICAL CARE: Combat Wound Infection With These 4 Key Strategies

#### Find out the first signs that the bugs may be getting the upper hand.

Preventing, identifying, and treating wound infection can head off serious negative resident outcomes -- not to mention actual harm or even immediate jeopardy citations. To pull off this difficult feat, wound-care experts suggest covering these essential bases.

Strategy No. 1. Recognize when a skin ulcer shows early signs of trouble.

To do that, look for signs of critical colonization, which include a wound that stops healing for unexplained reasons, advises **Dorothy Doughty, MN, RN, CWOCA**, director of the Emory University Wound, Ostomy, and Continence Nursing Education Center. Or you may see "sudden deterioration in the quantity or quality of the granulation tissue, increased exudate, and increased pain."

Left untreated, "critical colonization typically progresses to invasive wound or systemic infection," cautions **Joyce Black, PhD, RN, CPSN, CWCN, FAPWCA**, former president of the National Pressure Ulcer Advisory Panel and a nursing professor at the University of Nebraska in Omaha. "Usually the bacteria are Staph, Strep, Pseudomonas, although there can be others."

A stalled wound may have a biofilm, which is a protective matrix that won't allow antibiotics and antiseptics through. "We are coming to understand that there are probably more biofilms on wounds than we realized," says Black. "And the biofilms seem to delay wound healing. If you apply topical agents, you're treating the planktonic organisms on the surface and not those behind the biofilm which are the ones causing a problem."

Time to debride: You have to mechanically remove a biofilm. "You can do this by using instrumental debridement or by curettage of the wound surface," Doughty notes.

Once you've "opened the wound up and have bloody tissue, then it's worthwhile to apply an antiseptic or antibiotic topical preparation for a time," Black says.

Strategy No. 2. Identify signs of invasive skin ulcer infection. These include erythema, increased exudate and wound pain, as well as induration around the wound, "particularly if it extends more than 2 cm from the wound edge," Doughty notes.

Assessment tips: "Be aware that some topical wound products can cause a change in drainage color," advises **Carol White, RN, MS, ANPC, GNPC, DNP, CLNC**, CEO of NationalHI Inc. in Huntington, Ind. For example, "hydrocolloids may interact with the wound drainage, producing a creamy-colored substance." Some silver-based products may make the wound appear to be producing yellow/black fluid, she adds. And "some of the silver products are actually black in color." Immunocompromised patients or those with poor perfusion will show "more subtle signs of infection," Doughty warns.

You may see a wound with "faint erythema and mild induration," although typically the patient will have increased wound pain, she adds.

Be proactive: The wound care team should assess perfusion to the site of a leg ulcer and evaluate factors that may affect immune function, says **Jenny Hurlow, GNP, CWOCA**, a geriatric nurse practitioner and wound care specialist with the Plastic Surgery Group of Memphis, Tenn. The list includes age, nutrition, and immune-suppressive drugs, such as steroids, she adds.

**Strategy No. 3. Obtain a proper culture of a skin ulcer.** "The gold standard for wound culture is tissue biopsy,"

which requires a physician, physician assistant, or advance practice nurse who can do it, says **Mary Arnold Long, MSN, RN, CRRN, CWOCN-AP, ACNS-BC**, a clinical nurse specialist at Drake Center in Cincinnati, Ohio. Tissue swabs are an alternative, however, she adds.

To get the best swab culture, use Levine's technique, which involves the following steps, Long advises:

- Cleanse the wound (use saline, advises Doughty);
- Express new exudate;
- Find the least healthy area of the wound;
- Swab rotating the swab 1 cm to each number on the clock face.

"Think of the starting point as a clock, and you're swabbing 1 cm to 12:00, 1 cm to 1:00, etc.," Long suggests.

**Beware:** The biggest mistake Doughty sees in nursing homes related to assessing wound infection is culturing dead tissue, as this can cause the clinician to order the wrong antibiotic. "You can only get a valid culture if you have viable tissue in the wound," she cautions.

"Thus, if it's covered with slough or eschar, you can't do a swab culture." Instead, you either have to debride the wound first or "just begin broad spectrum antibiotics if there is active cellulitis."

Strategy No. 4. Track surgical wound progress by obtaining a baseline. The nursing staff should assess the resident's surgical sites when he's admitted to the facility, advises Hurlow. "Carefully assess for any incisional drainage, areas of dried exudate, and any redness or induration along the line of the incision." Contact the surgeon if you have any concerns about the wound in order to help prevent significant surgical site infection, she advises.

Surgical wounds may normally be slightly red and edematous for a few days post-op, Doughty notes. But if those signs are worsening rather than improving on day four or five after surgery, the wound could be infected. If you're starting to see fluid drainage from the incision at that point, that is also typically an indicator of infection, she adds. Usually the inflammatory responses are subsiding by day four or five post-op rather than getting worse, Doughty notes.