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Wound Care CANADA

THE OFFICIAL PUBLICATION OF THE CANADIAN ASSOCIATION OF WOUND CARE

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Canadian Association of Wound Care
Association canadienne du soin des plaies

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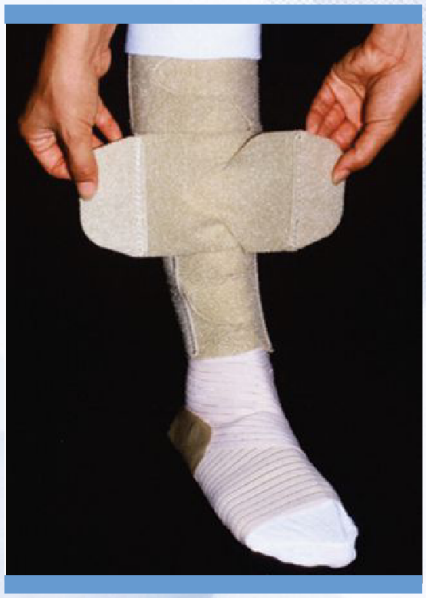

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Sharing Knowledge, Experience and Expertise

Sue Rosenthal

The Canadian Association of Wound Care and its primary publication, *Wound Care Canada*, are, first and foremost, a means through which wound-care clinicians can share what they know and what they need to know. The Annual Conference, the S-Series and the Web site all support this vision.

In this issue, as with every other, each article is another example of this vision. In "News in Wound Care," practitioners can read about upcoming events and the latest from our corporate partners. The articles in the Clinical Practice section range from a basic "How Wounds Heal" to the more advanced "Puzzling Cases," with other topics that clinicians have expressed interest in to round things out. Our "Ask the Expert" article focuses on patient adherence and is nicely complemented by the article on compression stockings, in which the authors share their expertise in overcoming specific patient objections and common complaints related to adherence. In the Research article "How to Develop a Poster," the authors share their best tips on how to create and present professional-level conference posters—which is another great way to share knowledge and expertise with other health-care professionals! Even though every article is educational, our Education section contains specific information on courses, programs and processes that readers can access to further their knowledge and expertise. Our Interview and a special feature on Nurses in Industry give our subjects an opportunity to share their first-person perspectives with readers, for a behind-the-scenes look at two quite different aspects of wound care.

I hope after reading this issue of *Wound Care Canada*, you'll share your thoughts on the articles with other clinicians.

Sue Rosenthal,
Editor

Sue Rosenthal, BA, MA, specializes in health and wellness communications and has been associated with the CAWC since 2000.

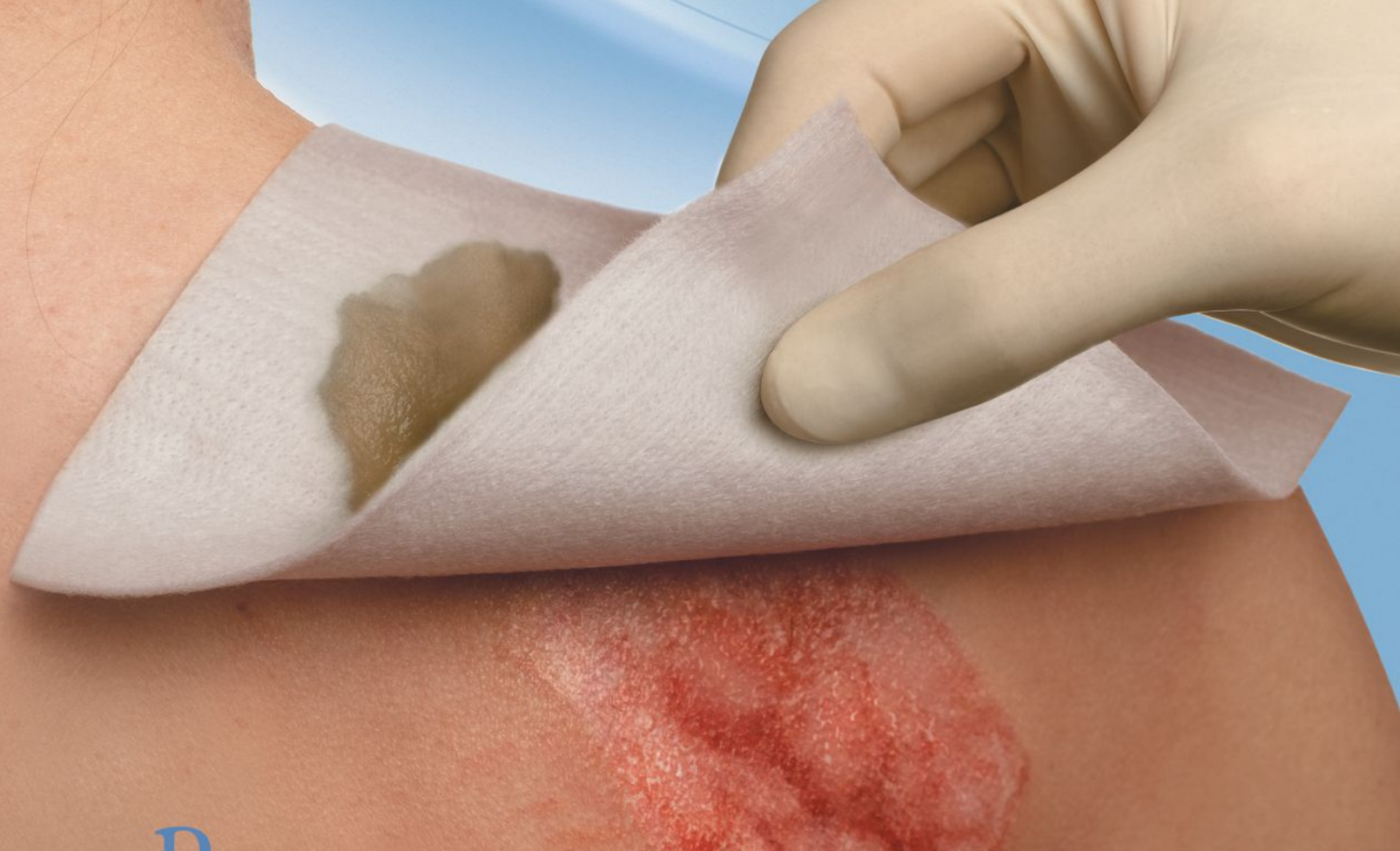
Partager les connaissances, l'expérience, et l'expertise

L'Association canadienne du soin des plaies, et sa principale publication, *Wound Care Canada*, sont d'abord et avant tout un moyen par lequel les cliniciens en soin des plaies peuvent partager leurs connaissances et exprimer ce qu'ils doivent savoir. La conférence annuelle, la Série S et le site Web appuient cette vision.

Et dans ce numéro, comme dans tous les autres, chaque article reflète cette vision. Dans la section « News in Wound Care », les praticiens peuvent se tenir au courant des événements à venir et des nouvelles les plus récentes provenant de nos partenaires corporatifs.

Les articles de la section de « Pratique clinique » vont d'une notion de base comme « How Wounds Heal » à des sujets plus avancés comme « Puzzling Cases », et d'autres sujets pour lesquels les cliniciens ont exprimé de l'intérêt. Notre article « Ask the Expert » porte sur la fidélité au traitement, et se complète bien par l'article sur les bas de compression, dans lequel les auteurs partagent leur expertise à surmonter les objections spécifiques des patients et les plaintes liées au suivi du traitement. Dans l'article de recherche « How to Develop a Poster », les auteurs exposent leurs meilleurs trucs sur la façon de créer et de présenter des affiches de conférence de calibre professionnel – une autre bonne façon de partager les connaissances et l'expertise avec d'autres professionnels de la santé! Même si chaque article est à caractère éducatif, notre section sur l'« Éducation » contient des renseignements spécifiques sur les cours, les programmes et les processus auxquels les lecteurs peuvent accéder pour parfaire leurs connaissances et leurs expertises. Notre « Interview » et une chronique spéciale sur les infirmières dans l'industrie donnent à nos sujets une occasion de partager leurs perspectives de première main avec les lecteurs, pour un aperçu en coulisse de deux aspects tout à fait différents du soin des plaies. J'espère qu'après avoir lu ce numéro de *Wound Care Canada*, vous partagerez vos idées sur les articles avec d'autres cliniciens.

La rédactrice, Sue Rosenthal



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[†] *In vitro* testing, using simulated wound fluid model.

Reference: 1. Bowler PG, Jones SA, Walker M, Parsons D. The spectrum of activity of an antimicrobial Hydrofiber® dressing against potential wound pathogens. Poster presented at: the 16th Annual Symposium on Advanced Wound Care; April 2003; Las Vegas, Nev.

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Canadian Association of Wound Care / Association canadienne du soin des plaies

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The Canadian Association of Wound Care is a non-profit organization of health-care professionals, industry participants, patients and caregivers dedicated to the advancement of wound care in Canada.

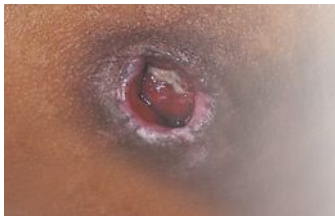
The CAWC was formed in 1995, and its official meeting is the CAWC annual conference held in Canada each year. The association's efforts are focused on five key areas: public policy, clinical practice, education, research and connecting with the international wound-care community. The CAWC works to significantly improve patient care, clinical outcomes and the professional satisfaction of wound-care clinicians.

L'Association canadienne du soin des plaies est un organisme sans but lucratif regroupant des professionnels de la santé, des gens de l'industrie, des patients et des membres du personnel soignant fortement intéressés à l'avancement des connaissances pour le soin des plaies au Canada.

Fondée en 1995, l'ACSP organise, chaque année, au Canada, un congrès qui lui tient lieu de réunion officielle, le Congrès annuel de l'ACSP. L'association consacre ses efforts dans cinq domaines particuliers : les politiques gouvernementales, la pratique clinique, la formation, la recherche et la création de liens avec la communauté internationale directement impliquée dans le soin des plaies. L'Association canadienne du soin des plaies vise une amélioration significative du soin donné au patient, des résultats cliniques et de la satisfaction professionnelle des spécialistes en soin des plaies.

Features

CLINICAL PRACTICE



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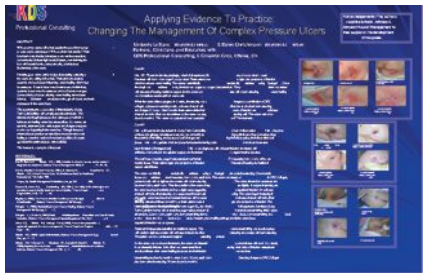

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All editorial material published in *Wound Care Canada* represents the opinions of the authors and not necessarily those of the Canadian Association of Wound Care.

Discussions, views and recommendations as to medical procedures, choice of treatments, dosage or other medically specific matters are the responsibility of the authors. No responsibility is assumed by the publisher or publishing partners for any information, advice, errors or omissions contained herein.

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Departments

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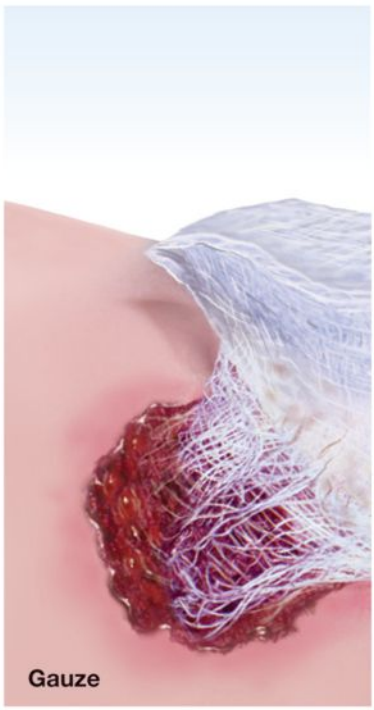

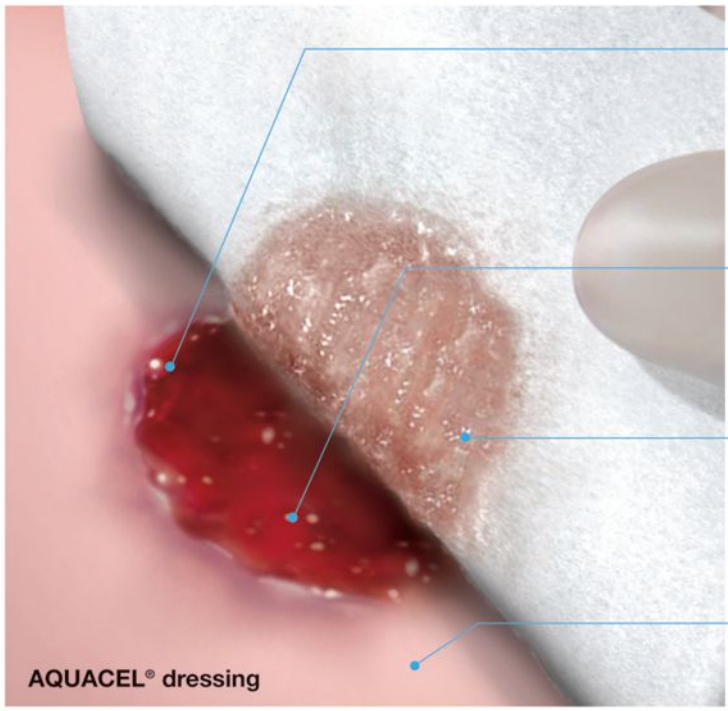

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References: **1.** AQUACEL™ Hydrofibre™ dressing. In: Krieg T, Harding KG, eds. AQUACEL™ Hydrofibre™ dressing: the next step in wound dressing technology. Proceedings Satellite Symposium, European Academy of Dermatology & Venereology. February 1998. London, UK: Churchill Communications Europe Ltd; 1998:1-3. **2.** Walker M, Hobot JA, Newman GR, Bowler PG. Scanning electron microscopic examination of bacterial immobilisation in a carboxymethyl cellulose (AQUACEL®) and alginate dressings. *Biomaterials.* 2003;24:883-890. **3.** Robinson BJ. The use of a hydrofibre dressing in wound management. *J Wound Care.* 2000;9(1):32-34.

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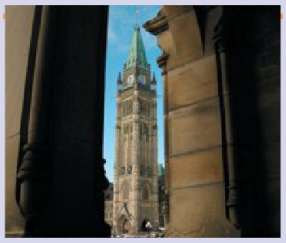

"Working Well: Taking the Pressure Off" Twelfth Annual Conference of the Canadian Association of Wound Care
November 16–19, 2006
Ottawa Congress Centre
Ottawa, ON
www.cawc.net

Other Events

"A New Horizon of Transcultural Care"
WOCN 38th Annual Conference
July 2–6, 2006
Hong Kong, China
www.wcet2006.com.hk

National Pressure Ulcer Advisory Panel
Bi-annual 10th National Conference
February 9–11, 2007
San Antonio, TX

Premier congrès international de stomothérapie pédiatrique/ First International Pediatric Enterostomal Therapy Congress
October 1–3, 2007
Montreal, QC
Information:
Louise Forest-Lalande
E-mail: forest.lalande@sympatico.ca

News from the Corporate World

Huntleigh Healthcare Invests in Patient Care in Canada

Huntleigh Healthcare, a global medical device manufacturer, is increasing its presence in the Canadian market. Huntleigh Healthcare was a founding corporate member of the Canadian Association of Wound Care. In 2006, Huntleigh Healthcare continues its corporate membership and looks forward to supporting clinicians, administrators and patients in Canada.

Huntleigh Healthcare is the market leader in hand-held Dopplex® Dopplers, used in lower limb arterial and venous assessment. Huntleigh Healthcare bed frame and support surfaces have achieved a new standard in pressure area prevention and management in health-care settings throughout the world, helping to minimize costly reoccurrence and conserve health-care dollars.

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KCI Medical Launches New Web Site

KCI Medical is excited to launch our new International Corporate Web site, which includes a Canadian link. The new address is www.kci-medical.com. You will be able to find the latest information relating to V.A.C.® Therapy™ and therapeutic surfaces, including the most up-to-date evidence-based literature, which may be of interest to your practice. As well if you have any questions for KCI Medical Canada, please contact us at infocanada@kci-medical.com and we will be happy to respond to you.

JOBST Updates

BSN-JOBST is pleased to announce the addition of Brenda Leavey, Territory Manager for Ontario West/Manitoba, to our Canadian team. Brenda may be contacted at 1-800-876-3664 ext. 6994 or Brenda.Leavey@bsnmedical.com.

New Products: JOBST is excited to offer the First Open-toe Sheer Stocking! The UltraSheer Open-toe Knee-high is now available in three colour choices and four styles!

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TIME is an acronym which identifies the key barriers to the healing of chronic wounds and provides a framework to help clinicians make the right treatment decisions for optimal outcomes. The **TIME** principles expand on the concept of wound bed preparation to include wound edge assessment and management.

Removing the Barriers to Wound Healing

To know more about how you can implement **TIME** into your practice, visit www.woundbedprep.ca or call your clinical sales representative or the Customer Action Center today at 1-800-463-7439.

References
1. Schultz GS, Sibbald RG, Falanga V et al. Wound Bed Preparation: a systemic approach to wound management. Wound Rep Regen 2003;11:1-28.
2. Ayello E, et al. TIME Heals All Wounds. Nursing 2004;34:36-41.

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How Wounds Heal:
A Guide for the Wound-care Novice

BY Christine Pearson

Christine Pearson, RN, IIWCC, is a wound clinician for Vancouver Coastal Health and has worked in community nursing for the last 25 years. She develops and presents wound education sessions in post-secondary institutions and provides consultation on difficult wounds for physicians, community nurses, student nurses, long-term-care facilities, street clinics and jails.

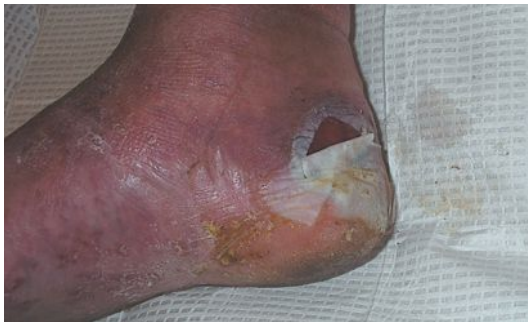
This article covers the basics of how wounds heal and how you can help healing progress in a timely fashion. Words highlighted in red are defined in the glossary at the end of the article. The References and Suggested Reading lists will help you continue your understanding of wound healing.

Although this article is focused on the wound, it is important that readers always remember to look at the whole patient and address patient-centred concerns (see Figure 1); there is a person attached to the wound. Be sure to get a good patient history; assess nutrition, medications, lifestyle (e.g., smoking), pain; and determine adequate blood supply, patient's goals, etc.[1]

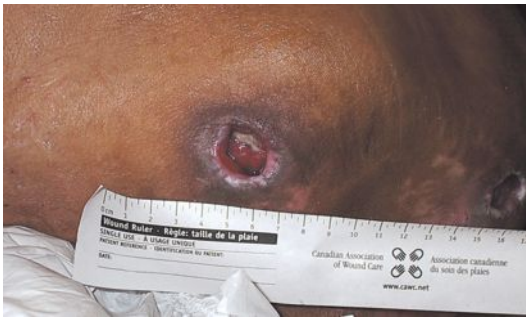
Types of Wounds

The vast majority of wounds are considered *acute* and heal quickly for most people. However, some wounds that do not heal quickly become *chronic* for a variety of reasons. It is important to understand what processes need to occur for a wound to heal so we can identify the obstacles that are hindering healing and implement strategies to overcome them.

When someone has a superficial, or partial-thickness, wound, the wound will heal through the creation of new epithelium from the edge of the wound, as well as from the hair follicles, sweat glands and sebaceous glands, to cover the damage.



Partial thickness

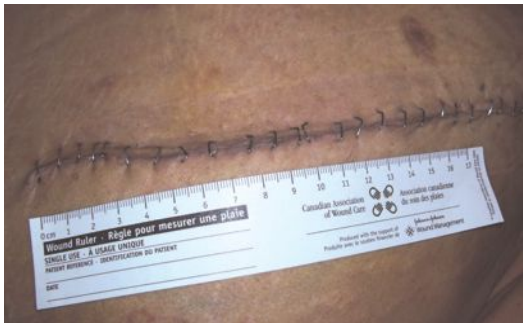


Full thickness

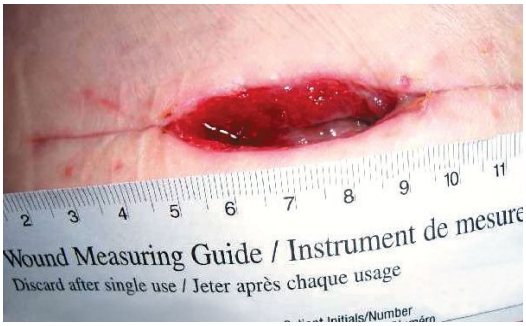
When someone has a deeper, or full-thickness, wound, it isn't as simple. Humans are not like newts. If you cut off a newt's tail, it grows a new one. If we lose significant tissue, we grow granulation tissue to fill the damaged area, thereby losing most of the original components of the dermis such as nerve endings, sebaceous glands and hair follicles.

If the wound edges are sutured or stapled together, it is called *primary intention* or *primary closure*.

If the wound cannot be closed for some reason (e.g., infection), then it is left open to heal by *secondary intention* or *secondary closure*.



Primary intention or closure



Secondary intention or closure

The Phases of Healing

For a wound to heal it must go through certain overlapping phases. These three phases of wound healing are the *inflammatory, proliferative* and *maturation phases*.[2]

The moment a wound occurs, whatever the cause (be it falling off a bike or having surgery), the inflammatory phase starts as the blood vessels constrict and blood cells called platelets form a clot to stop the bleeding (hemostasis). For the next few days, white blood cells called neutrophils and other white blood cells called macrophages migrate to the wound to remove bacteria and start the clean-up of debris (autolytic debridement). Macrophages also send out signals to bring other needed cells, chemicals, proteins and growth factors to the injury site. With all these new cells and activity happening at the wound site, you will find increased redness, heat, swelling, pain and drainage. For the first three to four days this is the normal, natural healing process—not signs of clinical infection. People who mistake this for infection tend to want to needlessly apply topical antibiotics that can lead to antibiotic resistance.

The *proliferative*, or *granulation*, phase occurs over approximately the next two to three weeks (or longer for large wounds). Cells called fibroblasts start off the reconstruction by laying down new collagen fibres and stimulating the growth of new blood vessels *(angiogenesis)*. This highly vascular substance, called granulation tissue, fills the wound. The edges of the wound start contracting and new epithelial cells close the wound if the conditions are just right. A scar has now replaced the open wound.

At this point, we say the wound is *closed*, not healed. The randomly placed collagen that was used to close the wound is not very strong, so during the *maturation phase* it is replaced with a stronger collagen that is laid in a more organized fashion. The scar softens, flattens, and changes colour. This process takes from six months to two years to complete. At the end of the phase the wound is finally healed, but the resulting scar tissue is only about 80 per cent as strong as the original skin.

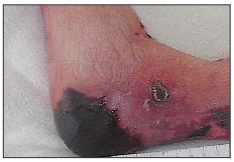
Factors Affecting Healing

An *acute wound* is one that heals following the timely reparative process described above. A *chronic wound* is one that gets "stuck" in one of the phases and needs help to progress. The most common reasons for a wound becoming chronic are infection or heavy colonization; lack of oxygen delivery to the tissues; presence of debris, slough, or necrotic tissue; repeated trauma or pressure to the area; systemic issues such as diabetes, malnutrition, dehydration or immunodeficiency; and certain medications. You need to identify the reason why the wound is stuck and correct the hindrance where possible.

You can improve healing by optimizing the conditions in the wound. This process is called wound bed preparation (see Figure 1).

The first step in wound bed preparation is to treat or remove the cause of the wound. For instance, if the cause of the leg ulcer is venous insufficiency the patient may need compression wraps or stockings to improve the venous flow, thus reducing the edema.

continued on page 12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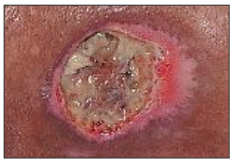
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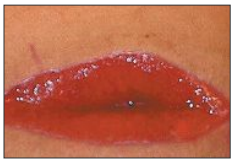
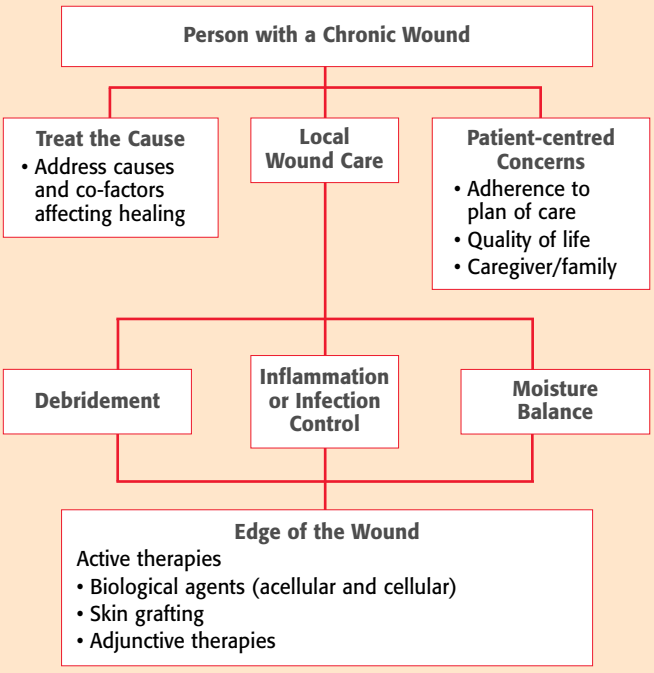

Granulation

FIGURE 1

Preparing the Wound Bed



Sibbald RG, Orsted HL, Schultz GS, et al.[1]

TABLE 1

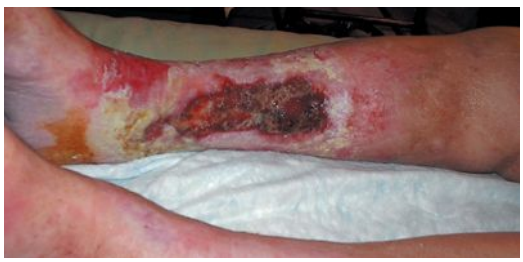
Methods of Debridement

Type	When to use	Advantage	Disadvantage
Surgical • done by a physician, usually in an OR with anesthetic	• grossly contaminated wounds • for large, chronic or non-healing ulcers • large areas of necrosis • exposed vital structure • to prepare for skin grafts or flaps	• most expedient and effective • fast and selective • removes all tissue down to bleeding, which kick-starts the inflammatory phase • reduces wound contamination • faster healing	• painful • difficult to find someone to do it • costly • sterile procedure should be used
Sharp • done by a qualified clinician	• when there is loose slough or eschar • vital structures can be identified	• removes excess dead tissue • fast and selective	• may cause bleeding • does not remove all dead tissue
Autolytic • using products that allow moisture balance in the wound	• painful wounds	• selective and inexpensive • relatively painless • versatile • requires little skill	• slow • not useful with severe infection • can be odorous
Mechanical • pressure irrigation <16psi • wiping with moist gauze (Wet-to-dry dressings are not recommended because they are painful and not selective)[3]	• wounds with moderate to large amounts of debris	• inexpensive	• nonselective • may damage healthy tissue • healing delayed by repeated trauma • usually painful • time-consuming and messy for staff • pressurized irrigation can drive bacteria into deeper tissues
Biological • maggots	• wounds with moderate to large amounts of debris	• fast and selective • removes dead tissue and bacteria • stimulates granulation	• some patients will not want this method • maggots sometimes escape • moderate cost
Enzymatic • none available	• wounds with moderate amount of debris • if type of enzyme matches the type of debris	• selective • moderately fast	• no product available in Canada at this time • moderate cost

The second step is to determine the need for local wound care by assessing the wound bed for debris, infection and moisture balance. The wound bed may have debris, slough or necrotic material. Healthy granulation tissue is needed for optimal healing.

If it is appropriate based on the clinical assessment of the patient (e.g., the patient does not have a bleeding disorder or is on anticoagulants), and there is sufficient blood flow to the area for healing, then this debris needs to be removed (debrided) or healing will be delayed. There are several debridement options available (see Table 1).

Moisture balance in the wound is vital. If the wound is allowed to dry, then the cells are dry; a dry cell is a dead cell, and it cannot be brought back to life. The body will have to grow all new cells to replace the dead ones, therefore slowing healing. In contrast, if there is too much moisture or drainage in the wound it will be like a gushing flood and wash out many of the necessary cells, proteins and enzymes from the wound bed and damage the surrounding skin (maceration).



Maceration

Examine the **edge of the wound** to determine the edge effect. If it is healthy and attached to the wound base, new epithelium will likely spread across the moist wound bed to close the wound. If the edge is unhealthy,

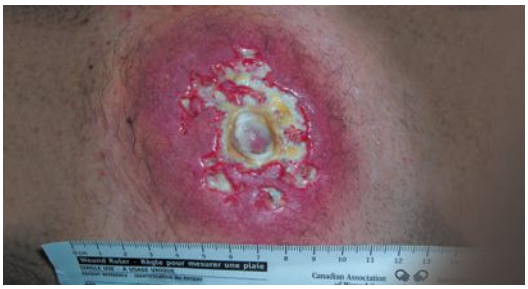
rolled, unattached, scarred, calloused, or macerated, you are unlikely to see epithelialization occurring.[4]

Choosing the appropriate dressing at the appropriate time will allow you to maintain an appropriate moisture balance. For instance, when a wound is heavily exudating you need dressings that are very absorbent such as foams, alginates and combination dressings. As the wound improves and the drainage decreases, you must change the type of dressing used or you could dehydrate the wound. When there is just the right amount of drainage you can maintain the moisture balance with hydrocolloids, acrylics or transparent dressings.

If there is too little moisture in the wound you may be using too absorbent a dressing or a dressing that allows too much moisture to escape such as gauze. Adjust your dressing choice. If that doesn't work, consider using an amorphous gel that will add moisture to the wound. Note, however, that gels can also cause maceration if too much is used.

Check your facility's wound product formulary to familiarize yourself with your product options. Find out what each product is made of (the form) and what it can do for the wound (the function), so you can make the best-informed choice for optimal healing.[5]

A wound with too much bacteria will cause a competition for available oxygen and nutrients: the bacteria will win and the wound will lose. All chronic wounds are colonized with bacteria, and we know that the wound actually needs some bacteria present for optimal healing. Again, we need the right balance—in this case, *bacterial balance*. If the wound is heavily colonized, wound healing will slow or stop. Thorough flushing of the wound with a non-toxic cleanser, such as normal saline, will help reduce the number of bacteria. There are also many topical antimicrobial dressings available that do not promote antibiotic resistance (e.g., cadexomer iodine and silver dressings). Many of the over-the-counter and prescription antibiotic creams and ointments do promote antibiotic resistance. If the bacteria win the competition and have taken over the wound, you have *clinical infection* (increased redness, heat, drainage, purulence, odour, pain, slough and size) and the wound and the host will deteriorate further. This is when systemic antibiotics are needed.



Wound infection related to antibiotic resistance

Over the last few years there has been an increased interest in wounds and healing, which has prompted more clinical research into how wounds heal. Some articles have shown that the wound also needs *chemical balance*. Acute wounds have been found to have many different kinds and large amounts of proteins—called growth factors—that stimulate growth, and not many destroyer cells (matrix metalloproteases). Chronic wounds have been found to have the opposite conditions: few kinds and small amounts of growth factors and too many destroyer cells. To address these conditions and get closer to chemical balance in the wound, products are available that may help (some examples are oxidized regenerated cellulose with collagen dressing, porcine intestinal submucosa dressing and growth factor gels).[6]

continued on page 18

Glossary

Antibiotic resistance: Occurs when bacteria have mutated and are no longer susceptible to the effects of a particular antibiotic.

Collagen: An insoluble fibrous protein.

Epithelial cells: Some of the cells needed to form new skin.

Fibroblast: A cell that secretes proteins and collagen to form a matrix of connective tissue.

Full-thickness wound: Loss of dermis with its blood vessels, sebaceous glands, hair follicles, nerves and possibly deeper tissues; wounds that heal by filling with granulation or scar tissue.

Growth factors: Substances that promote cellular growth

Maceration: A condition that occurs when the outer layer of the epidermis is exposed too long to moisture and separates from the lower layer; the skin appears white and/or wrinkled.

Macrophages: A phagocytic (cell-debris-eating) tissue cell of the immune system.

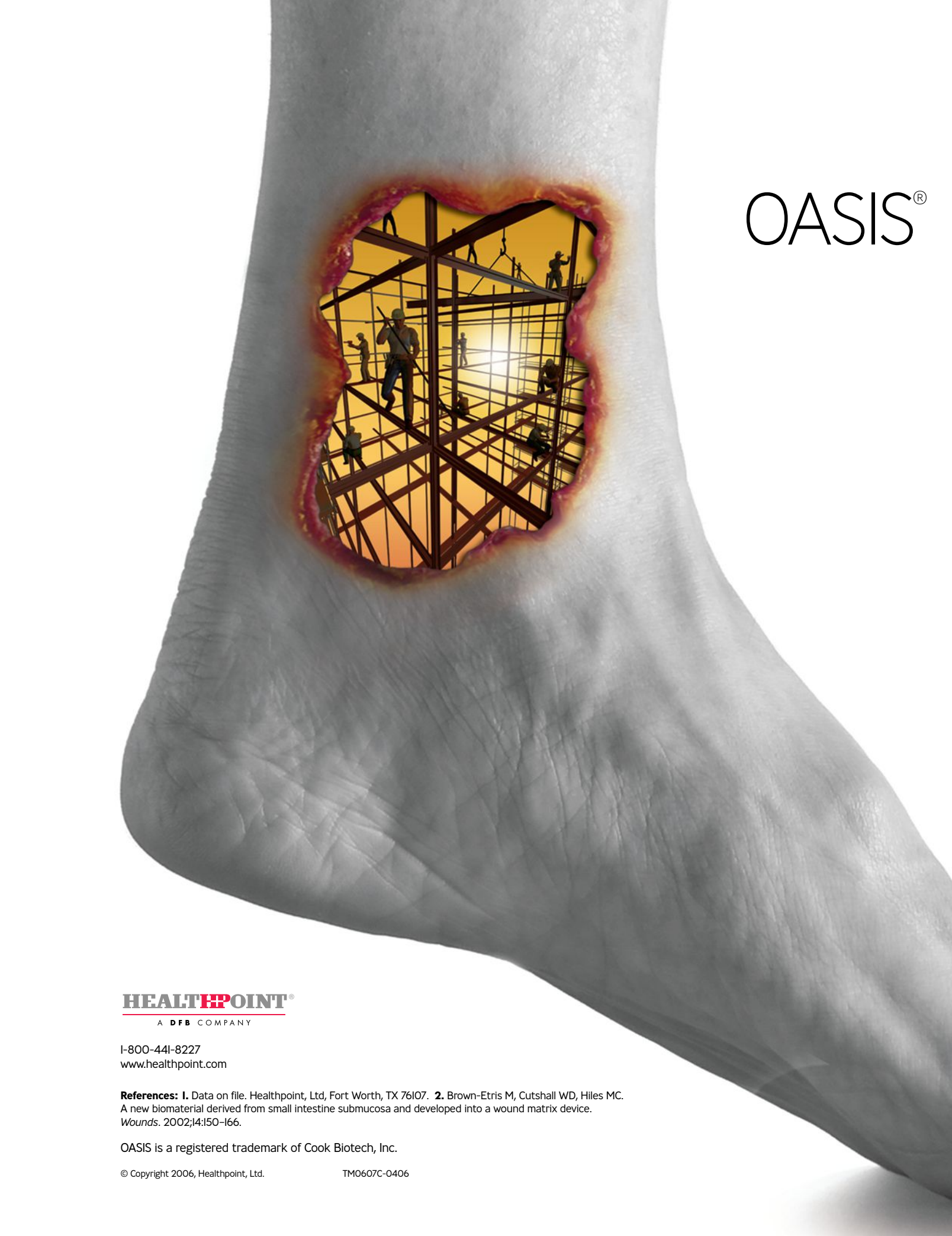
Matrix metalloproteases: Enzymes that break down the protein that holds cells in place.

Neutrophil: A phagocytic white blood cell.

Partial-thickness wound: Loss of epidermis and maybe superficial dermis; wounds that heal by growing new epidermis over the area.

Platelets: A minute disk that is released from the bone marrow into the blood: it assists in blood clotting by sticking to other platelets and to damaged epithelium.

Venous insufficiency: An impairment to the blood flow returning from the feet to the heart.



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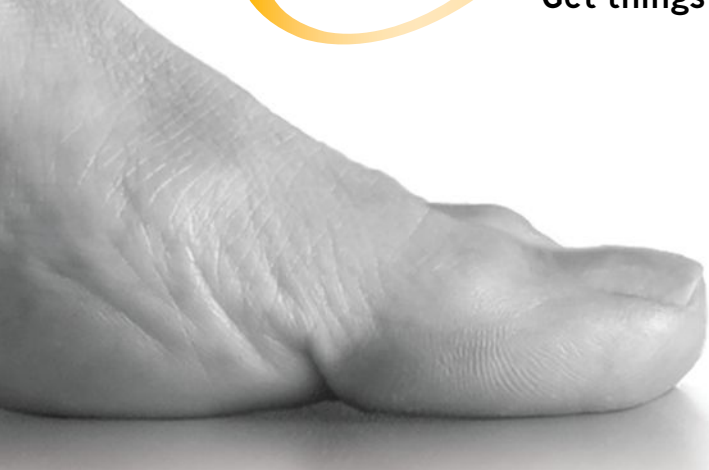

Incorporating Digital Photography into Your Wound-care Practice

BY Kathleen Phillips

The introduction of digital photography is a relatively cost-effective way to document wound care and can be easily incorporated into nursing practice. Some of the positive outcomes of digital photography are the use of the photographs as a teaching tool, improved accuracy of initial and ongoing assessments, and prompt evaluation and feedback to physicians and third-party payers in order to improve outcomes. Barriers to change (i.e, the introduction of digital photography), including confidentiality and privacy issues, will be identified.

Literature Review

There is a lack of published information about digital photography as a best practice in Canada in the assessment of wounds; however, studies from other countries suggest the promise of this technology:

- It is becoming a more common practice in home-care agencies in the United States for nurses to assess and monitor wounds with digital photography and/or video. Chetney and Sauls discuss the use of digital photography and camcorders in their practice, stating that, "The accuracy and detail of a picture can assist in appropriate wound staging and in properly assessing the extent of healing." They report that a telehealth program is also common in the U.S., where it has been shown as a cost-saving measure to decrease supply costs and shorten healing time.[1]
- According to Demarest and Acoraci, "Incorporating digital photography into home care shows promise for improving the quality of wound care, enhancing its availability, reducing costs, and generating valuable outcomes data."[2]
- A more recent article by Buckley, Anderson and Hess[3] outlines a comprehensive program and competency checklist for wound digital photography developed for their agency.
- Fischetti, et al., state, "… nurse imaging program provides the nurse with a powerful tool to strengthen the existing documentation and communication processes of wound-care management."[4]
- The Australian Resource Centre for Healthcare Innovations outlines a project "aimed to standardise the documentation of wounds in an aged care unit by using digital imagery."[5]
- Another innovative proprietary project involves a wireless digital-imaging system that allows specialists to inspect a wound and recommend immediate treatment without actually seeing the patient in person.[6]

Getting Started

After attending a wound-care course at the Chicago Rehabilitation Institute in 2000, I decided to incorporate digital photography as part of the assessment and management of wound care in my practice as a nurse in a home health-care agency. Up until then, I had been taking Polaroid pictures, which were of poor quality and faded with time. There appeared to be a need for better documentation of wound care, specifically for the traumatic wounds that formed the bulk of our practice. We were contracted by the Workers' Compensation Board (WCB) of British Columbia (WorkSafeBC) as well as the Insurance Corporation of British Columbia (ICBC) to provide nursing care,

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including wound management. As well, a number of private patients who were not covered under the provincial Medical Services Plan required our services.

The first step was to purchase a digital camera with at least 3.1 megapixels resolution. The one I bought also had a zoom function and a drive for viewing and editing the photos. This equipment was quite expensive at that time. Now most comparable digital cameras are available for under $500 and are already equipped with a variety of programs for editing, printing and saving images.

A computer program was installed to store the images on our computer and set up patient files. Learning to take good quality photographs was a challenge, and my skills improved over time. Initially, the photographs were printed as hard copies and stored in paper files, so good-quality photo paper was needed. We now store photographs electronically on disk. Our general patient consent form was modified to include taking digital photographs of appropriate patients.

The Program

In our agency, the Client Care Manager (CCM) completes the initial assessment on all patients, including wound-care assessments. Once the care plan has been developed, the CCM sees the patient weekly to reassess wound-healing progress. Acute wounds are reassessed weekly, with photos taken to monitor healing. Chronic wounds are reassessed weekly and photographed monthly. Over time, as the number of wound-care patients increased, it became necessary to have our field nurses provide the daily care. The photographs were useful as a teaching tool for the field nurses, especially in regard to severely traumatic wounds. The nurses appreciated knowing what they were going to see during their first visit to the patient, as some of the wounds were quite catastrophic. The CCM would show the photographs and clarify the written dressing procedure with the nurses before they ever saw the patient.

Patients with traumatic wounds often feel that they are not healing as quickly as they would like. Sharing the initial photos and comparing them with the current one enables the patient to see how the wound is progressing toward healing.

As the case managers with WCB and ICBC became more aware of our program, they were able to receive the digital images and add them directly to the patient files via e-mail. When sending the photos via e-mail, the patient was not identified by name, and care was taken not to show any images where the patient might be identified.

WCB Nurse Advisors were excited about having this documentation. They were better able to explain to case managers a worker's inability to return to work and the extent of the injury. In one case, the manager perceived that the worker had a minor thumb injury until the photos showed the extent of the wound, which was not only a thumb injury but a degloving injury of the forearm as well. The photos we send are put on the worker's file and presented at team meetings.

ICBC adjusters and case managers are generally not nurses. With the help of digital photography, they were better able to understand what a dressing procedure entailed and the extent of the patient's injury than they would have by only reading an assessment report.

Many of our patients have had their surgeries in a tertiary care centre, with the follow-up with physicians in the city. We were pleased to see the following request written as part of the wound-care order from the surgeons when they knew we could forward photos to them: "Please send photos." This is popular, in part, because the local physicians can see a photo of the wound without having to take the dressing apart in the office, where they often do not have the required products to redress the wound. Complications that arise post procedure can be followed up very quickly when we send a current photo of the wound to the surgeon. One patient developed a severe hematoma over the entire graft overnight. When the surgeon got our photo, he asked for the patient to be sent to Emergency where he was readmitted for care. This prompt reassessment and forwarding of information with a photograph allows the surgeon see the problem first-hand, rather than relying on the nurses' verbal or written descriptions.

Collaboration with other members of the health-care team is increased when sharing information in such a manner. We not only collaborate and work with the wound care/enterostomal nurse in our local hospitals but with other experts in wound-care clinics outside our region.

Barriers to Change

Despite the benefits of digital photography as a part of wound-care assessment, there are four barriers to incorporating the technology that must be acknowledged. However, I believe these barriers are becoming less of an obstacle.

1. Cost/maintenance of equipment

Digital cameras are increasingly a part of everyday life. Not only is the equipment now more affordable, but it is also easier to learn and use than in the past.

2. Resistance to technology

In the past, nurses have been reluctant to learn new procedures involving unfamiliar equipment. Things have changed, with computers becoming part of the work environment and many innovative assessment and treatment tools being part of the work day.

3. Competency in taking quality photographs

The "development of a systematic procedure and competency for wound photography" is outlined in Buckley, et al.[3] I would highly recommend that agencies considering digital photography incorporate something similar.

4. Confidentiality/privacy issues

Appropriate consent forms that inform the patient that the photographs will be used for treatment and/or educational purposes only, and that confidentiality and privacy will be maintained are a must. Ensuring that no identifying features of a patient are shown in the photo can be accomplished when editing the picture.

Conclusion

In summary, incorporating digital photography as part of your everyday wound-care assessment and practice will provide more accurate assessments and consistent descriptions of wound healing. It will enable better collaboration and information sharing between professionals, thus leading to a positive outcome for the patient. Resistance or barriers to making digital photography part of your wound assessments can easily be overcome.

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How Wounds Heal *continued from page 16*

Conclusion

Now you have the basic information for healing most wounds. When you achieve the correct balance of all the factors (tissue, moisture, bacterial and chemical balance), you will usually achieve wound healing in a timely fashion. Unfortunately, there can be exceptions. If you do not see improvement after two weeks of optimal wound care, refer your client to a wound-care specialist for further investigations— this will also present another opportunity for you to learn even more about wound healing!

Suggested Readings

The following valuable resources are available free online at www.cawc.net/open/library/clinical/clinical_res.html

- R. Gary Sibbald, RG, Williamson D, Orsted HL, Campbell K, Keast D, Krasner D, Sibbald D. Preparing the Wound Bed — Debridement, Bacterial Balance, and Moisture Balance
- Orsted, HL, Keast D. Principles of Wound Healing,
- Recommendations for Practice: Preparing the Wound Bed (Quick Reference Guide)

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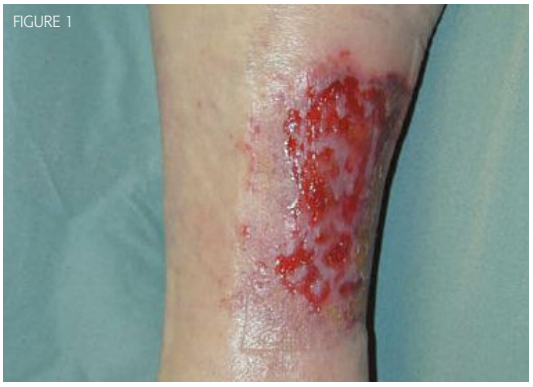
Puzzling Cases: Wound Sleuth

BY Rob Miller

This 65-year-old female has had a gradually enlarging ulcer develop on her leg over the last six years. Her ABPIs are normal and she is not diabetic. Despite appropriate dressings and compression therapy, there has been little improvement over the last four months.

Figure 1 shows the leg ulcer as it presented to the wound-care clinic.

FIGURE 1



Question

At this stage which of the following would you do?

(a) Choose a silver foam dressing to control bacterial bioburden.

(b) Do bacterial, viral and fungal cultures.

(c) Order an X-ray of the leg to exclude osteomyelitis.

(d) Ask the physician to do a skin biopsy.

Answer

(d) Ask the physician to do a skin biopsy.

The correct diagnosis determines the treatment. A chronic ulcer that does not heal despite appropriate dressing techniques should be considered suspect, and a skin biopsy should be taken. In this case, the biopsy showed a basal cell carcinoma.

A basal cell carcinoma is one of three skin cancers that can arise from the epidermis (the top layer of the skin). Although basal cell carcinomas are more frequently seen on sun-exposed areas such as the face, they can occur virtually anywhere on the skin surface. The other two types of skin cancers that can cause ulcers on the legs are squamous cell carcinoma and malignant melanoma.

The basal cell carcinoma is the most benign of these three skin cancers. Treatment for all skin cancers is usually surgical excision. This patient was referred to plastics where the skin cancer was excised and a skin graft applied. No further problems were encountered.

Learning points

1. Always try to determine the etiology of an ulcer before embarking on therapy.
2. Don't be afraid to question and change your initial diagnostic impressions so that the necessary steps can be taken to confirm your suspicions.
3. Chronic ulcers may not heal for many reasons. A skin biopsy is a relatively easy means of excluding a malignant etiology.

Rob Miller, MD, FRCPC, has been practising dermatology for the past 20 years. He worked as a general practitioner in Ontario, British Columbia and South America before pursuing his studies in dermatology at McGill University in Montreal, QC. He is currently Associate Professor of Medicine at Dalhousie University and Co-director of the Chronic Wound Care Clinic at the QEII Hospital in Halifax, NS.

Compression Stockings:

A Practical Approach to Common Complaints

BY
Patricia Coutts
AND
Nancy Parslow

Venous leg ulcers account for an estimated 70 to 90 per cent of all lower extremity ulcers.[1] Venous ulcer disease is typically cyclical and chronic, with periods of healing followed by recurrence. It is not uncommon for leg ulcers to persist for years, with recurrence rates as high as 76 per cent within one year.[2] Graduated compression stockings are a recognized modality in the management of venous hypertension, prevention of leg edema and reduction in the recurrence of venous ulcers. Research has shown that the recurrence rates of venous ulcers are higher in patient populations who did not wear compression stockings.[3] While wearing compression stockings has been shown to decrease the frequency of recurrent ulcers, patient compliance is a major issue.[4] Challenges that have been reported by wearers of compressions stockings include discomfort, difficult application and removal, slippage, cost and poor aesthetics. This article will use a case-based scenario to address some of the challenges that have been encountered and provide recommendations, including patient education, that can assist in promoting adherence. [For more information on compliance/adherence, please refer to the article "Fostering Treatment Adherence" on page 46.]

Case

Mrs. Jones (Mrs. J) is a 75-year-old mother of five who worked long hours in her family bakery while her children were growing up. She has a one-year-plus history of recurrent lower leg ulcerations over the medial malleolus. Thorough assessment of her physical, social, cognitive and vascular status had previously determined a diagnosis of venous stasis disease without arterial compromise. High-compression bandages had been used in the past to facilitate wound closure. A prescription for medium-level compression stockings was provided, and Mrs. J was advised that she should wear them daily to prevent limb edema and ulcer recurrence.

A few months later, Mrs. J's daughter called to request an appointment for her mother as the ulcers had returned. During the appointment, it was noted that Mrs. J did not have her stockings on. She reported that it had been too hot to wear them during the summer months and that they were too tight so she couldn't get them on. She also said that it would be faster and more convenient for the doctor if she didn't wear her stockings to the visit. She complained that her legs were very itchy, and she had been scratching them.

Scenarios similar to those of Mrs. J are very common for those involved in providing care for patients with venous leg ulcerations. It is important to understand the reasons why Mrs. J was not wearing her compression stockings, and to develop some strategies to ensure adherence to the care plan.

Common Complaints

Patients commonly complain that compression stockings

- are too hot
- are too tight
- with the "toe in" are too constricting

- with the "toe out" are too snug around the forefoot and uncomfortable over bunions
- often slip, causing an indentation at the top of the calf resulting in concerns about circulation
- are costly to purchase
- have an unstylish appearance
- are difficult to apply and remove

Actively listening to the patient is essential to accurately identifying the cause of complaint. Only then can a plan be developed to address each complaint and resolve the underlying issues.

Problem: Discomfort and Slippage

In our case study, Mrs. J did not want to wear her stockings because they were too hot in the summer. Her legs would swell and it became difficult for her to put the stockings on.

Solutions

- A professional fitter should measure the patient's limb and fit the stocking to ensure comfort. Measurements should be done immediately after compression bandages have been removed or as early as possible in the morning to ensure minimal edema resulting from limb dependence.
- The stocking length is an important consideration to ensure comfort and to prevent slippage. A knee-high stocking should extend above the curvature of the calf, but be two finger-widths below the bend of the knee. Stockings should not be rolled down if too long, as an increased number of layers will decrease the effectiveness of the stocking.
- Stockings are also available in thigh-high or pantyhose style if slippage continues to be problematic or edema extends above the knee.
- "Skin glue" applied to the skin under the top of the stocking will help the stocking remain in place. Patients require reassurance that the glue is skin-friendly and can be easily removed.
- A rubber "non-slip-gripping" device can be used to gently reposition stockings after application and throughout the day.
- Prior to purchase, patients should be encouraged to shop around, ask lots of questions and become educated about the options available. Different stocking styles and those from various manufacturers should be tried to determine the most comfortable fit. Stockings made of lightweight materials are cooler for wear during the hot weather. Stockings are also available with "toe in" and "toe out" styles. "Toe in" styles may be more comfortable over the forefoot and bunions.

Problem: Cost

Stockings are expensive and require replacement every four to six months to maintain a therapeutic level of compression. Government health-care plans in most provinces do not cover the cost of stockings.

Solutions

- To avoid delays in obtaining coverage for stockings, the patient's benefit plans should be investigated early—prior to closure of the wound. A social worker may be able to help find additional sources of funding such as Veterans Affairs, Workers' Compensation, etc.
- Patients should be encouraged to shop around to explore price variances and payment options. Some manufacturers offer better prices for similar stockings. Some vendors offer discounts for seniors or have special days that offer discounts for seniors.
- Families may be willing to contribute toward the cost of stockings as gifts.
- Using "rubber" donning gloves to apply stockings will minimize damage as well as make them easier to apply. Stockings that are pulled and stretched excessively during application and those with runs and holes no longer provide a therapeutic level of compression and require earlier replacement—which increases cost. Stockings without toes are less likely to be damaged accidentally by sharp nails.

Problem: Appearance

Stockings are thought to have an unacceptable cosmetic appearance. They are often made of thick materials and come in a limited choice of colours. They are also difficult to wear with open-toed shoes, short skirts and shorts.

Solutions

- Many manufacturers now offer stockings with a variety of colours and lengths and in various weights of fabrics, including sheer styles. Fashion pantyhose are available in various colours, and thigh-high stockings have lacy tops for a feminine appearance.
- Support stockings can be concealed by wearing regular coloured hosiery over the top of the stocking.

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Nancy Parslow, RN, ET, is an Enterostomal Therapist/Wound Care Clinician at The Scarborough Hospital in Toronto, ON. She is the co-author of *Caring for Oncology Wounds: Management Guidelines* and *Wound Care: A Comprehensive Guide for Community Nurses*.

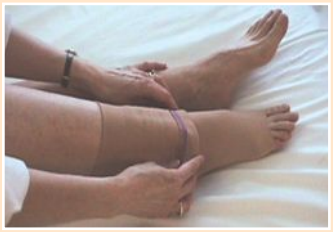
Problem: Application Difficulties

People with underlying co-morbid conditions may have difficulty with stocking application depending on their abilities. Conditions such as arthritis, back problems, large abdominal girth, lack of flexibility, inability to reach the feet, weakness in the arms and hands, poor eyesight, unresolved edema and pain can make the donning of stockings a challenge.

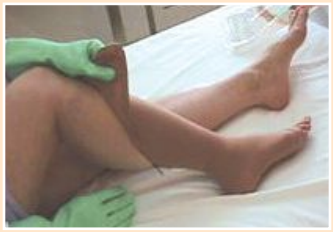
Solutions

- Patients should be measured and fit for stockings by a professional stocking fitter to ensure that the right size and length is obtained.[2]
- Donning aids may be useful to simplify stocking application.
- Aids include
  - "rubber" gloves. The rubber in the gloves will help grip the rubber in the stocking, thus easing the stocking up the limb.
  - donning frames, with and without extended handles
  - slides
  - silky toe and heel covers
  - foot and limb sleeves made of parachute-type material for both "toe in" and "toe out" stockings
  - special resistive mats
  - some stockings are available with zippers, allowing the stocking to be rolled down overnight and repositioned easily in the morning.
- For some individuals, it may be appropriate for stockings to be left on overnight and changed on bath days when assistance is available.
- Stockings that are left on for 24 hours will require frequent replacement as elastic fibres will deteriorate rapidly when under constant stretch.
- Applying stockings in layers allows for easier application and maintains the therapeutic level of compression.
- A liner may be applied prior to applying a stocking with a lower level of compression. The combination of the pressure provided by the two layers will achieve the therapeutic level of compression.
- Family members or other caregivers are often available to assist with application.
- Patients and caregivers require hands-on education about how to apply and remove stockings correctly to ensure effectiveness and avoid damage.
- Before purchase, patients should ensure they are able to successfully apply and remove stockings.
- To ensure success, health-care providers must become familiar with the various products available and advocate for the client to obtain what they require.

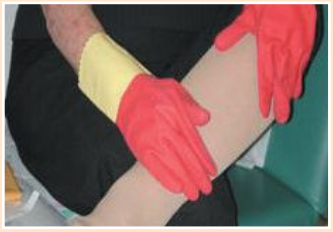
Support Stocking Tips for Application Difficulties



Roll the stocking down at night and just lift up in the morning.

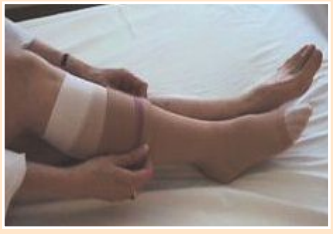


Use a zippered stocking.

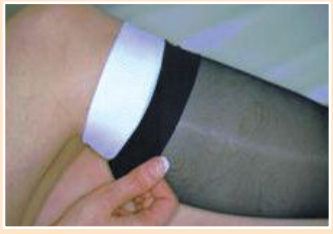


Use rubber gloves to apply stockings.

Use a stocking assistive device.



Use a nylon/cotton undersleeve and a compression stocking on top.



Apply two lower strength stockings on top of each other.

Patient Education

Education on the rationale and proper use of compression stockings is necessary for both the patient and their family. To prevent recurrence of venous stasis ulcers, the key message must emphasize the necessity of using "compression for life." Time must be taken to address the proper measurement and application of the compression stockings. The patient should be aware of possible challenges that may occur and potential solutions to overcome them. Resolving the patient's concerns will help ensure that the recommended options will be accepted by the patient, which in turn will facilitate adherence to the treatment plan and improve outcomes.

Helpful Tips for Patients

- To avoid damage from pulling and stretching the fabric of the stocking and to increase the life of the stocking, rubber gloves should be used to gently "milk" the stocking up the limb.
- Elevation of the foot of the bed will assist with edema reduction overnight (note: make sure the patient's bed partner does not have arterial disease before recommending this option).
- Apply stockings when first up out of bed in the morning before edema accumulates in the limb. The person may need to plan to get up a little earlier to allow extra time for stocking application.
- Edema can be reduced during the day by rest periods with limb elevation *above the level of the heart*. Chairs that recline with the foot up or elevating the feet on the arm of a two-seater couch will help with venous return and the reduction of edema.
- Exercises using resistance bands to improve ankle joint flexibility and strengthening of the calf muscle pump will assist with venous return.[5]

Considerations When Choosing a Support Stocking

- Ensure proper fit by using a certified, knowledgeable fitter.
- Re-assess patient's vascular supply as is clinically indicated.
- Avoid in patients with significant arterial insufficiency and symptomatic heart failure.
- Note that anti-embolic stockings *do not* provide therapeutic levels of compression.
- Ensure that the person wearing the stocking is able to apply or has arranged for assistance prior to purchase.

- Antiembolic (TEDS) stockings are for use post-operatively when the patient is **confined to bed** and **do not provide** adequate compression when a patient is ambulatory.
- To avoid damage, stockings should be hand-washed using cool water and a mild detergent and then laid flat to dry, or they can be placed inside a laundry

Solutions to stocking usage problems

Barrier	Solution
Co-morbid illness	Use gloves, aids
Difficult to put on	Spend time one-on-one to review technique
Cost	Check with different suppliers
Comfort	Options: Toe in, toe out, length, composition
Cosmetic appearance	Wear a regular sock over stocking
Forgetting	Put on before getting out of bed
Care	Use gloves to apply
Replacement	Every three to six months
Itch, dermatitis	Avoid topical steroids under stockings

bag and machine-washed using the gentle cycle. Hot water or dryer use should be avoided.

- Two pairs of stockings will allow time for stockings to be washed and dried, especially when more frequent laundering is required during hot weather.
- Creams, including cortisone products, should be applied at bedtime after stockings have been removed. Unabsorbed creams and powders will damage the fabric of the stocking. Patients should avoid the application of skin-care products that are likely to cause skin sensitivity such as those containing perfumes, dyes, lanolin, phenol alcohol, or topical antibiotics.[2]
- Replacement of stockings is required when they are torn or they become "easy" to apply, or every three to six months, according to the manufacturer's directions.[1]
- Potential allergens such as latex can be avoided by educating patients and health-care providers about the various materials used to make stockings. Cotton stockings are available for those with allergies.

Ongoing Care

- Initial follow-up should be arranged every two to three months to ensure that the patient is able to tolerate the level of compression and to facilitate a gradual increase to the therapeutic level.
- Some compression is better than no compression. In their analysis, Fletcher, et al., found that there was no clear difference in the effectiveness of any one compression system and that the use of a correctly applied high compression system should be advocated.[5]
- The best compression is the compression that the client will wear.
- Compression stockings are effective if they control the edema and not effective if they do not!
- Follow-up to monitor the level of compression, changes in health conditions and vascular status should continue on a routine basis for life.[2]
- Vascular and physical reassessment is required every six months if the patient has underlying health conditions such as a history of cardiac disease, renal disease, diabetes, rheumatoid arthritis, increased pain, or recurrent ulcerations.

Summary

We have addressed some common complaints and provided some recommendations to support the use of compression stockings. By understanding the issues that patients are confronted with, care providers will be better able to address common concerns and communicate effectively to devise a mutually agreeable plan of care, thus enabling adherence. Education of the patient and family is a vital component in making compression stockings a part of their daily routine.

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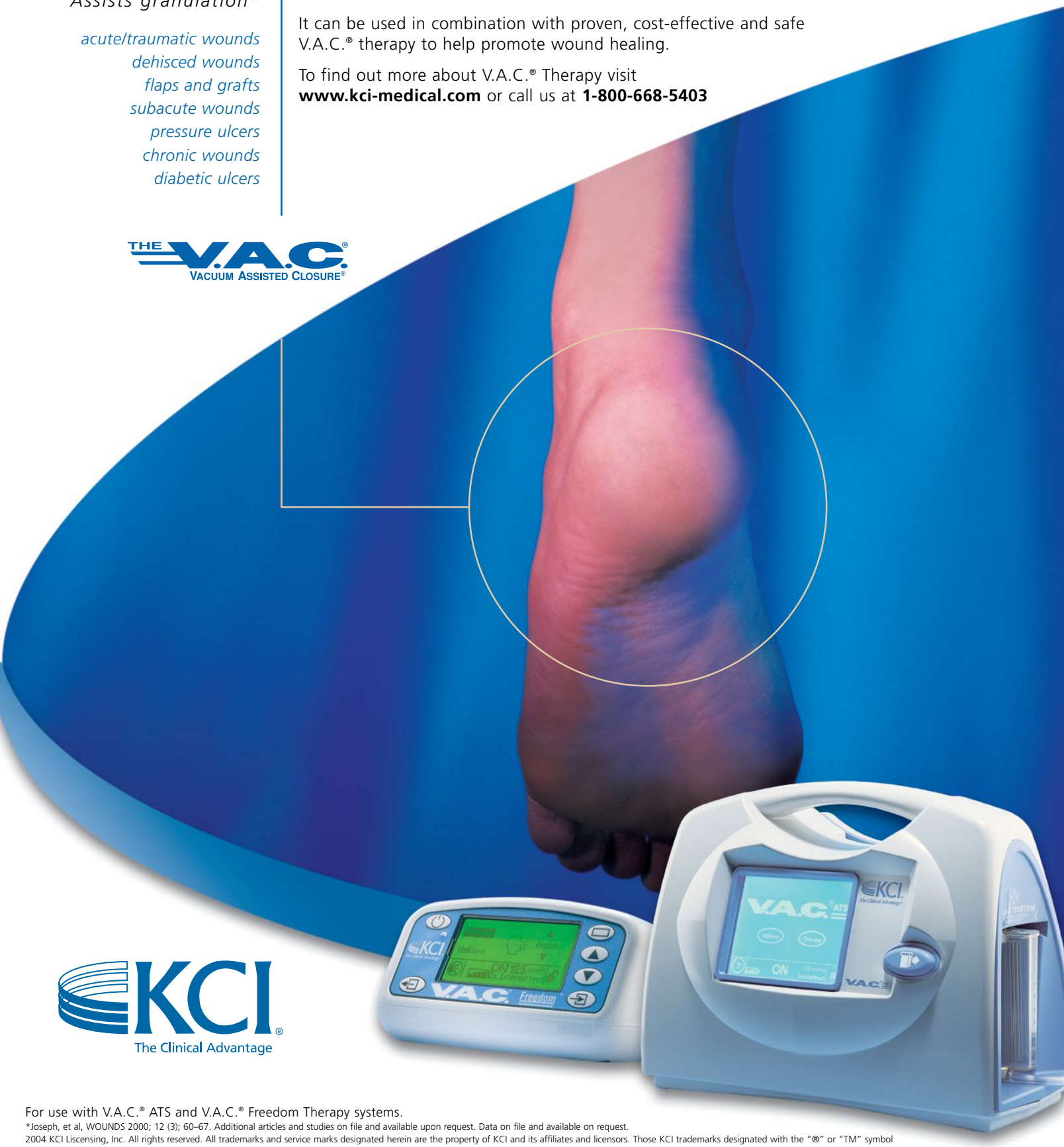

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*Joseph, et al, WOUNDS 2000; 12 (3); 60–67. Additional articles and studies on file and available upon request. Data on file and available on request.

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Web Connect

Saskatchewan Health Quality Council

Test Drives New Pressure-ulcer Guidelines

By Laurie Gander

and Catherine Delaney

Seven long-term-care facilities in Saskatchewan made significant changes to their skin- and wound-care practices by implementing new pressure-ulcer guidelines while participating in a quality improvement pilot project. These guidelines comprise one chapter of the Saskatchewan Skin and Wound Care Guidelines, which also include chapters on normal wound healing and lower limb ulcers, as well as a guide for organizational implementation. Diabetic foot guidelines will be added shortly.

The Guidelines are the product of the Saskatchewan Skin and Wound Care Action Committee (Action Committee), established in response to the need for standardized, evidence-based wound management in Saskatchewan. The committee, co-chaired by the Health Quality Council (HQC) and the Saskatchewan Association of Health Organizations (SAHO), was composed of skin- and wound-care experts and representatives from regional health authorities. The committee's objectives were to develop and assist with the implementation of a provincial skin- and wound-care initiative promoting and supporting the use of best practice.

The project began with the Action Committee producing pressure-ulcer guidelines. After reviewing several existing guidelines, the committee adapted guidelines, developed by the Registered Nurses' Association of Ontario, to reflect Saskatchewan services and wound-care products. Stakeholders across the province reviewed the adapted guidelines; many of their suggestions were incorporated into the final version.

The HQC led the pressure-ulcer guidelines implementation pilot project. In June 2004, a call went out to locate long-term-care facilities interested in participating. To be eligible, sites needed senior leadership

The HQC, the first organization of its kind in Canada, was formed by an Act of the Saskatchewan legislature in 2002. The Council's primary goal is to improve the quality of care and the caring experience in Saskatchewan by encouraging the use of best practice. It achieves this by conducting research into current care practices, identifying areas for improvement, and working with health-care providers and other stakeholders to encourage the adoption of evidence-based practices. Evaluation of the effectiveness of changes in care is an essential part of all Council projects. The Council also provides support and training in quality improvement concepts and quality measurement tools and analysis.

Web Connect

The CAWC's own Pressure Ulcer Awareness pilot program is underway, with five sites participating. A new Web site supporting the program can be viewed at www.preventpressureulcers.ca.

support and a strong desire to improve their current pressure-ulcer prevention and management practices. Preference was given to facilities without a wound-care protocol, since these sites offered the greatest room for improvement.

The project team included a Knowledge Exchange Consultant—a project co-ordinator of sorts—who maintained regular contact with stakeholders, recruited pilot sites, encouraged the implementation of evidence-based practice in the sites, and responded to questions and concerns that arose during the project. An HQC researcher conducted a literature review, designed data-collection tools, worked with pilot sites to co-ordinate data collection, and analyzed data. The HQC program director managed the project, and a communications consultant helped with identifying and carrying out communication strategies related to the team's objectives.

Seven long-term-care facilities began the year-long implementation project in September 2004. The HQC, working closely with the facilities, assisted them in

- identifying a site leader who would promote the new pressure-ulcer guidelines within the organization and serve as the key contact with HQC
- co-ordinating the formation of a multidisciplinary wound-care committee
- updating the knowledge of wound-care committee members who had a role in training front-line care providers
- using reminders such as posters and pocket guides
- meeting with wound-care committees from other pilot sites to share insights, challenges and successes, and to engage in problem-solving.

The HQC evaluation of the pilot sites' implementation of the pressure-ulcer guidelines included measurement of the prevalence and incidence of pressure ulcers throughout the project. The combined results for all pilot sites showed a considerable decrease in the number of residents who acquired a new pressure ulcer.

In summary, all sites made significant changes to their skin- and wound-care strategies. The sites

- established interdisciplinary wound-care committees
- started using the Braden Risk Assessment Scale to assess every resident for risk of developing a pressure ulcer. They found ways to incorporate this information into their pressure-ulcer prevention plans, including, for example, implementing positioning schedules
- made changes to the products they use
- provided formal and informal training for their staff, including nursing staff and special-care aides, on the prevention and management of pressure ulcers
- documented wound assessment and treatment using a detailed wound record.

One site made changes to transfer and lifting procedures to minimize shearing; another developed a computer spreadsheet to track aspects of wound care, including information on mattress type, pressure-relieving devices used, regular positioning, and Braden score.

This spring, HQC mailed 750 copies of the Saskatchewan Skin and Wound Care Guidelines to all provincial health regions. A PDF of the guidelines is available on the HQC Web site at www.hqc.sk.ca.

A report on the pressure-ulcer-implementation pilot project is being prepared for publication. Active dissemination of key findings may lead to wider adoption of successful strategies in acute care, home care, and long-term care in Saskatchewan. A newly formed Saskatchewan Skin and Wound Care Network, co-ordinated by SAHO, will facilitate the spread of these strategies and make recommendations for continuing provincial communication, education and support for improvement in wound care in Saskatchewan.

LINKS Keeps Care Professionals Connected

A key communications strategy in this and other HQC quality improvement projects has been the establishment of a Learning, Innovating, Networking, Knowing, Sharing (LINKS) Team. The Knowledge Exchange Consultant identifies care providers, managers, and others with an interest in the topic and invites them to join the LINKS Team. The team is a hybrid of an advisory group, a working group, and a "just keep me informed" group. Members of the LINKS Team can be involved at one or more of these levels throughout the life of the project, depending upon their interest and availability. LINKS Team goals include keeping members informed about the project and staying aware of potential opportunities for involvement.

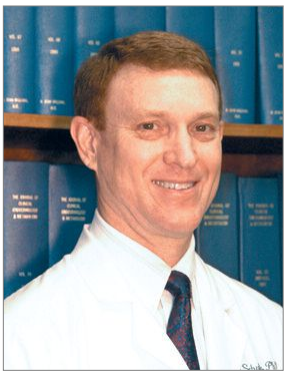
Regular project updates were sent via a brief e-newsletter to over 200 people on the Skin and Wound LINKS Team. Members were encouraged to pass the e-newsletter on to others who may be interested. For example, a request for feedback on the draft pressure-ulcer guidelines and updates on pilot site activities were sent out through the LINKS e-newsletter.

Laurie Gander, BScN, BSW, MN, is program director with the Health Quality Council, Saskatchewan, where she provides expertise in clinical practice guidelines and research on utilization of selected health services. She has extensive clinical and teaching experience in a wide range of health service areas, including public health, acute care, and long-term care.

Catherine Delaney, PhD, is a knowledge exchange consultant at the Health Quality Council, Saskatchewan. In her role, she links stakeholders committed to quality improvement (QI) and supports those who are engaged in QI initiatives. She also has eight years of experience as a change agent, trainer, and applied researcher.

An Interview with **Dr. Gregory S. Schultz**:

A Leader in Wound Healing Research



Dr. Gregory S. Schultz

INTERVIEWED BY Catherine Harley, Associate Editor, *Wound Care Canada*

Gregory S. Schultz, PhD, is a Professor of Obstetrics and Gynecology and a director of the Institute for Wound Research at the University of Florida. His research focuses on the role of growth factors, cytokines and proteases in normal and chronic wound healing in the skin and eye. He has published more than 210 research papers, chapters and review articles, which have been cited more than 5,100 times, and he has over a dozen patents in the area of wound healing. He is funded by grants from the National Institutes of Health and from pharmaceutical companies, and he is a consultant for multiple biotechnology companies. Dr. Schultz is currently the Chair of the Wound Bed Preparation Advisory Board, and he served as president of the Wound Healing Society from 1999–2001.

Q How long have you been involved in wound-related research?

About 20 years.

Q How did you first become involved in wound research?

I began conducting research on growth factors in breast cancer in the early 1980s, but at the urging of clinical colleagues in the departments of Surgery and Ophthalmology, I also started investigating the effects of exogenous growth factors on promoting healing of wounds in the skin and eye. Over the next few years, I increasingly shifted the focus of my research onto the area of wound healing, which has been my primary area for about 20 years.

In 1989, I moved from the Department of Biochemistry at the University of Louisville to the Department of Obstetrics and Gynecology at the University of Florida. In 1992, my colleagues and I established the Institute for Wound Research, which serves to integrate the collaborative research efforts of scientists and clinicians from multiple departments who are interested in various aspects of wound healing.

Q Do you work alone or with a team?

Almost all of my research involves a team approach. My faculty colleagues include surgeons (Dr. David Mozingo, head of the burn unit; Dr. Scott Berceli, vascular surgeon), ophthalmologists (Dr. Sonal Tuli, cornea; Dr. Mark Sherwood, glaucoma), an otolaryngologist (Dr. Pat Antonelli), nurses (Dr. Joyce Stechmiller), basic scientists (Dr. Nasser Chegini, ob/gyn; Dr. Lyle Moldawer, surgery; Dr. Al Lewin, molecular genetics), a biomedical engineer (Dr. Chris Batich) and a veterinarian (Dr. Dennis Brooks). A major strength of the Institute for Wound Research is the broad background of the personnel, which spans molecular biology, biomedical engineering and clinical practice.

Q What types of wound research have you been involved in?

A major focus of my research during the last 10 years was to characterize the molecular and cellular differences between acute, healing wounds and chronic, non-healing wounds. This led to the discovery that chronic wounds have chronically elevated levels of inflammatory cytokines (TNFa, IL-1), which cause levels of proteases (matrix metalloproteases [MMPs] and elastase) to be highly elevated. Although proteases play important roles in normal healing by promoting migration of cells, formation of new blood vessels, removing denatured matrix components and remodeling scar, chronically elevated proteases have "off target" effects resulting in destruction of growth factors, receptors and intact matrix proteins that are essential for healing. This led us to develop therapies that attempt to correct these molecular imbalances, including topical treatment with growth factors and protease inhibitors. This also stimulated the development of the concept of "wound bed preparation," which incorporates molecular and cellular components into an integrated framework for advanced wound-

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care practices. The most recent areas of my research include development of advanced wound dressing with bound microbicidal polymers and development of diagnostic test strips that can assess the molecular status of acute and chronic wounds.

Q Is it easy to get research projects funded?

Funding for NIH research grants has decreased in real dollars the last few years, so that only about 15 per cent of grant applications in the area of wound healing are now being funded. Support from pharmaceutical companies, biotech companies and device companies for clinical trials remains relatively stable.

Q Could you walk me through a typical day in the life of a researcher?

My typical day is a combination of traditional academic duties such as lecturing in graduate student (PhD, MS) or professional student (MD, DDM) courses, meeting with students and residents to review results and design new experiments, performing my own lab bench experiments, attending research seminars, and serving on university or college committees (promotion and tenure committee, graduate or medical student admission committees). Other major, never-ending tasks are writing scientific manuscripts and grant applications.

Q What are some of the biggest challenges you experience in the research setting?

A major challenge is trying to stay aware of new developments in multiple fields that have a bearing on my areas of research. The rate of discovery in areas of basic science, engineering and clinical medicine is very rapid. Another challenge is assessing and selecting which pathways of research are likely to produce the most important results. Ideas are cheap; selecting the best idea is hard.

Q What is the most exciting research project you have worked on related to wounds?

That is a hard question to answer because I always get excited initiating a new project. However, if I had to choose one project, I would choose the project to assess if topical application of growth factor would promote healing of skin wounds. These studies were the first clinical studies assessing the effect of a recombinant human growth factor (epidermal growth factor, rhEGF) on the healing of skin wounds. The results, which were published in 1989 in the *New England Journal of Medicine*, clearly showed that rhEGF significantly accelerated healing of paired, partial-thickness wounds (skin-graft donor sites) in patients. These studies opened the field of adjuvant growth-factor therapies and eventually led to recombinant human platelet-derived growth factor for the treatment of chronic diabetic foot ulcers.

Q How has wound research changed since you have been involved?

Research has become more molecular-based and involves more "high-tech" approaches drawing on multiple disciplines such as biomaterials, gene therapy with viral vectors, and microarray platforms.

Q Do you have a collaboration with the clinical community?

Yes, I work closely with my clinical colleagues in the departments of Ob/Gyn, Surgery, Nursing and Ophthalmology on special problems of wound healing in their disciplines. Fortunately, wound healing in the skin, eye, and peritoneal cavity are very similar at the molecular level. In other words, skin cells, eye cells and peritoneal mesothelial cells all "read" the same biochemistry text book, and molecular regulation of wound healing is very similar in these different tissues.

Q Do you ever get the opportunity to see your research impacting clinical wound care?

Yes. The first example was the translation of basic research on growth factors into a topical treatment for chronic wounds. More recently, our research on cytokines and proteases in chronic wounds has led to a clinical trial of a topical protease inhibitor (doxycycline) and the marketing of dressings that contain collagen, which acts as a "trap" for proteases in wound fluid and preserves endogenous growth factors in wounds.

Q How do you store your research information?

All primary laboratory data are stored in research notebooks, a policy that is mandated by the National Institutes of Health. In addition, data are always backed up in computer files.

Q What are the most important tools you have to work with?

As a biochemist and molecular biologist, much of my basic research utilizes typical recombinant DNA techniques to genetically engineer pieces of DNA that enable us to develop gene-specific interventions in wound cells. As research progresses, projects tend to move from test tubes to cell culture systems, to animal models, to clinical trials.

Q Have you had a mentor who made a difference for you in your field of research?

I owe much to my post-doctoral mentor, Dr. James Jamieson at Yale University, and to my many clinical colleagues, including Dr. Marty Robson and Dr. Richard Eiferman, who patiently taught me enough clinical knowledge to envision how I might apply growth factors, proteases and inhibitors to improve healing.

Q What does the future hold for wound research?

The future of wound healing will be very exciting! New approaches will include high-tech viral-vectored gene therapy to stimulate healing of chronic wounds or to prevent excessive scarring and fibrosis. Other advances will be more low-tech, such as low-cost dressings with bound microbicidal polymers that will prevent wounds from becoming infected. A rapid, bedside diagnostic test strip that measures multiple molecular markers will be developed, which will enable wound-care providers to optimize therapy for individual patients.

Ongoing Learning:

The International Interprofessional Wound Care Course

October 13-16, 2006, and May 4-7, 2007 ■ Women's College Hospital, 76 Grenville Street, Toronto, Ontario

This popular eight-month course consists of two four-day residential weekends, 12 self-study modules, and a selective related to each registrant's day-to-day activities. Participants interact and communicate with a well-established team of faculty drawn from several wound-care professions and from international institutions.

This annual course is designed for wound-care specialists with some training and experience. The course's objective is to recruit a mix of physicians, nurses, and other health professionals working in the field or in related industry. Apply early, as enrollment is limited.

The course's goal is to provide comprehensive educational experience for wound-care specialists and to translate new knowledge into practice.

Objectives:

1. To assess and critically review wound-care literature in key subject areas.
2. To integrate wound-care principles by a self-directed learning program formulated with a learning contract.
3. To demonstrate the application of best practices by developing a selective related to the learner's everyday activities

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Photo Contest

Hey shutterbugs!
The CAWC is seeking photos from wound-care clinicians that reflect best practice. Take this opportunity to show what best practice means to you by capturing best practice in a photo. Submit the photo to the CAWC for your chance to win a grand prize of free registration to the CAWC conference in 2007. Runner-up prizes will also be awarded.

Here's the scoop:

- Only CAWC members can submit photos.
- All photos must be in digital form, high resolution (300 dpi) and accompanied by a waiver of use for educational purposes.
- All photos submitted will become the property of CAWC.
- Photos will be judged by an open vote by 2006 CAWC conference attendees.
- Photos should be sent to cawc@sympatico.ca.
- Deadline is **October 1, 2006**.

Canadian Association of Wound Care / Association canadienne du soin des plaies

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- Bacteriology 101
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- Psychosocial aspects of living with wounds
- Two new post-conference workshops: "Your Wound Case Studies," and "Nutrition and Wound Healing"
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- ***and much more!***

Canadian Association of Wound Care / Association canadienne du soin des plaies

For complete information and easy online registration visit the CAWC Web site at **www.cawc.net.**

How to Develop a Poster

A Professional's Guide to Creating and Presenting Conference Posters

BY
Virginia McNaughton,
Dawn Christensen
AND Kimberly LeBlanc

The sharing of ideas and experiences is paramount to maintaining evidence-based practice. Publication is one way of disseminating evidence into practice. Publication, however, can be a scary and daunting prospect to the novice. Poster presentations are a valuable adjunct to scientific conferences. They are an opportunity for researchers, clinicians, educators and policy-makers to share with the attendees their latest passion, burning questions, innovative practices or new paradigms for delivering care. They provide an opportunity to venture into publication and can often be a stepping-stone to journal publication.

The purpose of this article is to provide a step-by-step guide to poster development and exhibition at conferences.

Getting Started

If possible, familiarize yourself with posters that have been presented and developed by others. All conferences provide a poster hall for viewing. Most conferences divide the poster hall into sections. For example, at the Canadian Association of Wound Care (CAWC) annual conference, posters are grouped under the following themes: Clinical or Laboratory Research, Clinical Case Studies, Clinical/Instructional/Educational Reports or Health-care Policy and Delivery.

Most conferences schedule a time during which the poster authors are present and attendees may view the poster and talk to the author about their experiences. This is an exciting time for everyone, as often authors are making their professional debut and their enthusiasm for their project is contagious!

Decide which conference to submit an abstract to. Read the conference goals and objectives carefully to ensure that the conference is a positive venue to display your work. Carefully read the guidelines for abstract submissions for posters and follow the directions for submission.

Developing a Poster Topic

The first step is to identify a category into which you would like to submit your poster. Then research the literature for evidence to support your work.[1]

Poster Savvy

Posters are composed of a short title, an introduction to your hypothesis, a question or case study, an overview of what has already been done, your results and a section discussing the clinical relevance of what you have discovered. This can include innovative practice, research, teaching materials or the display of new technologies.

Posters should be visually appealing, easy to read from a distance of two to three feet and take no longer than 10 minutes to read. Imagine yourself standing in front of your poster. Ten minutes is a long time, and if your poster is hard to read or confusing you won't stick it out, nor will your reader. Your poster should have interesting photos, capture the reader's attention effectively and be easy to read.

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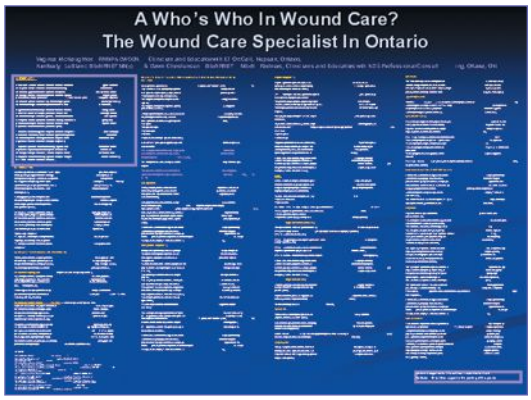
FIGURE 1



This is an example of a poster that is too wordy and is difficult to read in a conference venue. Without photos and charts, it does not effectively capture the reader's attention. An article would be a better format for the information in this poster.

Most posters are divided into sections. The usual sections included on a poster are listed as follows.

Title: Think of your title as a "grabber." Not only should it supply the reader with a quick idea of the information contained in the materials, but it should also catch their attention.

Abstract: Conference organizers will read the abstract to determine if they will accept your poster to be displayed at their conference. Abstracts are usually published in the conference syllabus. Abstracts for posters are similar to those written for journal articles. They should be concise and provide a clear overview of your poster. A good abstract will draw attention to your poster and encourage conference attendees to seek it out.[2] Once again, check the conference guidelines for abstracts. There will usually be a word limit. Two hundred words is the average length for an abstract.

Wound Care Canada (WCC) has published several articles on abstract development for oral or poster presentations.[2,3]

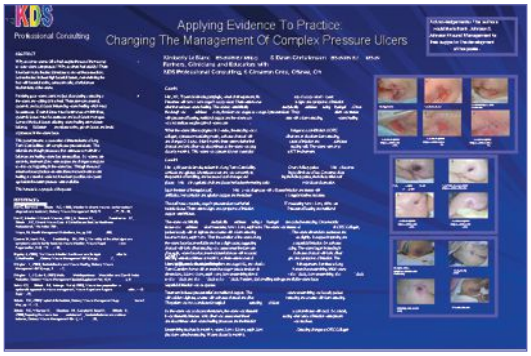
Introduction: The introduction is the key to capturing the reader's interest. It should be short, clear and concise. The introduction is a means to relate your issue to the published literature and should show validation as to why your work is unique and important.

Materials and Methods: Describe your methods; be concise. Use pictures, tables and flow charts to capture important information easily. Include a description of any statistical methods and analyses used.

Results: Describe what your experiment, new clinical initiative, educational program, case study, case series or policy achieved. Use pictures, tables and graphs to demonstrate and strengthen your position. This is the most important section of your poster. Make sure that it engages the reader (i.e., that it is big enough to read, visually appealing and contains valuable information). Remember, people are looking for ways to improve what they do.

Conclusions: Your conclusion should be concise. It should remind the reader of your hypothesis, question or clinical issue and discuss the relevance of your work to the real world. At wound-care conferences we often see posters that look very scientific but may have little relevance to clinical practice.

FIGURE 2



This poster is well balanced with enough detail in the written areas to give the reader a thorough understanding of what the problem was and what was done to solve it. It has many interesting photos, captures the reader's attention effectively, is easy to read, and acknowledges the financial support received.

References: Be sure to include all referenced literature and sources. This is a very important part of your poster. Check with the conference abstract submission guidelines for specific details for referencing materials. If no guidelines are provided, the American Psychological Association (APA) Manual provides clear instruction on reference format.[4]

Acknowledgements: Usually the conference committee will ask you to acknowledge if you have received money or support from anyone for your poster. Once again, check the guidelines for submissions to ensure you have completed this section correctly. This is your opportunity to recognize any support you have received from industry or other funding sources. You must acknowledge them specifically (i.e., provide "full disclosure").

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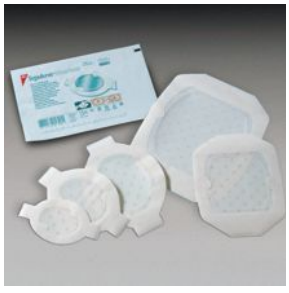

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Further information: After reading your poster, people will want to know more. Provide your e-mail address and or contact information so people can contact you to obtain further information. Once you have completed your poster, critique it using the CRAP tool to see if you have included all the vital elements.[2,3]

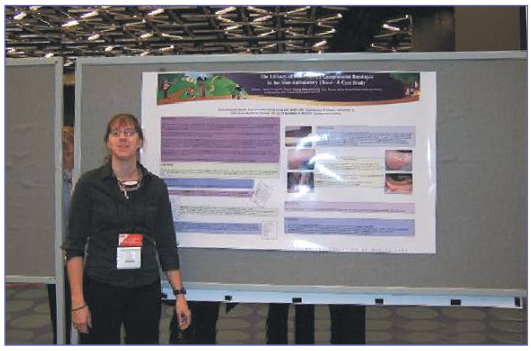
Actual Poster Construction

Before you begin, check the conference guidelines for abstracts to determine if there are size limitations. Speak with your printer; often there are significantly lower rates if the poster is 36 inches or less in at least one dimension.

If you find Microsoft® (MS) PowerPoint® intimidating, you may start your poster by laying it out in sections using pieces of paper. This is called "storyboarding." Posters are quick snapshots of your work. Determine what three key points you want to make.

- Use several pieces of 8.5" x 11" paper to mock up the poster.
- Add the headings and roughly sketch the text layout and graphics.
- Tape or pin the sheets to a wall and rearrange them until you like the arrangement.

FIGURE 3



This poster appears well balanced and easy to read. One of the authors is standing by ready to enthusiastically engage interested conference participants. She is conservatively dressed and is wearing her name tag so that the public know right away that she is the one of the authors.

Make sure that your poster is easy to read. It should flow from top left to bottom right. Use arrows, pointing hands, numbers, or letters to help clarify the sequence or flow of the poster.

If you have the bonus of access to a graphic designer, show them your storyboard, and they will help design and print your poster. If you do not have this option, a poster can be easily created by an "amateur" using MS PowerPoint.

Using MS PowerPoint®

There are many good references on the Web to help you with the actual construction of your poster using MS PowerPoint. Following is a quick guide to using PowerPoint* to create a poster.

1. Prepare the words for the poster in a MS Word® document. Save it.
2. Open MS PowerPoint.
3. Keep both MS Word and MS PowerPoint open.
4. In MS PowerPoint from the dialog box, select the blank slide. Then click **OK.**
5. Click **File / Page set up**.
6. Under **Slides Sized For**, click **Custom**.
7. Size your poster to the size you want. For example, 50 inches wide and 36 inches high is a size that is big enough to provide adequate space to display your photos, graphs and words, but small enough that it will be relatively inexpensive to have printed and laminated.
8. Click on the down arrow with the percentages and click on **Fit**. This will size the poster to fit on you computer screen. If you want to see how big the font or photos will actually be, click on **100%**.
9. To give your document a background image, go to **View / Master / Slide Master / Insert / Picture / From File**. Once you've selected the picture you would like to use as your background, double click on the picture, and then right click **Format Picture**. Then click on **Color**, choose **Washout** and click **OK**. Close out of **Master View**.
10. Click on the text box. Insert the title of your presentation across the top of the slide. Add the author's names and affiliations. Your title should be quite large; 100 points is a good start. (The person who did the most work on the poster or project is listed first.)
11. **Copy** your abstract from your MS Word document.
12. In MS PowerPoint, click on **Text Box** in the bottom ruler. Draw a text box in the area of the slide where you want the abstract to be. Click in the text box and **Paste** in the abstract. Change to font to 34 points.
13. Use the **Text Box** in combination with the **Line Style** to create boxes.
14. To add an image, go to the **Insert** menu. **Insert Picture / From File** and find the file, then click **OK**.
15. Or, you can use **Copy** and **Paste**. Select the graphic in the original document (you will see handles on the graphic), then go to **Edit / Copy**, click on the slide, then **Edit / Paste**.
16. Click on the image, hold the left mouse button down and drag the image where you want it to go. Then click on the image again, this time on one of the corners and either push in (to reduce the size of the image) or pull out, remembering to keep the left

If you are comfortable creating your draft on the computer, you may start your poster in MS PowerPoint and completely bypass the storyboarding stage.

Presenting Your Poster

How your audience perceives you when you are presenting your poster is very important to how they will perceive your poster as a whole.

- Don't be late!
- Research suggests that people are more likely to avoid your poster if you clash with it. So choose stylish but not flamboyant clothing. Dress in a professional manner.[5]
- Make eye contact and smile at the people going by.
- Engage your audience by speaking to them. Start by introducing yourself.
- Wear a name tag that is visible.
- Don't eat or chew gum during the poster session.
- Bring business cards and hand them out. Leave them available in an envelope for when you are not there.
- Have reduced handouts of your poster. If the conference has scheduled more than one poster session, make sure you have handouts for each session.
- Thank people who stop by to look at your poster. If they stay for a few minutes to chat you have succeeded in engaging them. If they leave saying, "Hmmm, very interesting," you have not engaged them.

Conclusion

Poster presentations are a fun and exciting way to enter into the world of publication and presentation of ideas. Develop an idea or concept, discuss it with colleagues and put your ideas on paper. Then, find a conference that fits with your personal mission, goals and values. Follow the steps previously outlined, and you'll soon be presenting your ideas to your peers.

References

1. Purrington C. Advice on designing scientific posters. 2005. Available online at www.swarthmore.edu/NatSci/cpurrin1/posteradvice.htm. Accessed February 19, 2006.
2. Woodbury G, Boyd M, McNaughton V, Gregoire D. How to write an abstract. *Wound Care Canada*. 2005;3(1):30-33.
3. McNaughton V, Woodbury G, Houghton P. The Critical Review of Abstract Presentations (CRAP) Tool. *Wound Care Canada*. 2005;3(2):28-31.
4. American Psychological Association. *APA Publication Manual*, Fifth Edition. Washington, DC: American Psychological Association. 2001.
5. Keegan DA, Bannister SL. Effect of colour coordination of attire with poster presentation on poster popularity. *Canadian Medical Association Journal*. 2003;169:1291-1292.

mouse button depressed.

17. Add in more text boxes and cut and paste from MS Word into the text boxes.
18. To add some colour click on the **Font Color** icon. Select the down arrow, then **More Font Colors**. Select the colour you like, remembering that you want the title to be seen from a distance. Remember that some colour combinations will not work together; e.g., dark colour on dark colour. Do not use red with green as those who are colour blind will not be able to read it. Be sure there is good contrast between the background and the print font.
19. Backgrounds can be inserted by using the **Format / Background** command. Minimize use of dark backgrounds as they use up a lot of ink and may overwhelm the viewer. Lines, boxes and arrows can be inserted using the **Drawing Toolbar**. If you don't see this **Toolbar**, use **View / Toolbars / Drawing** to make it available.
20. To insert a table or graph from MS Excel®, create the table or graph and highlight or select it in MS Excel. You can then click on **Insert / Chart or Insert / Object. Insert / Object** enables you to add a finished chart and be able to link to it so that you can continue to update MS Excel and then when you open MS PowerPoint to update your MS Excel file, you'll see that it is already updated.
21. If you have been sponsored in any way, be sure to insert a text box to acknowledge the sponsoring company or person.
22. If you want to see what the poster will look like in its final full-scale format, set your laptop up with an LCD projector to view it on a wall. Adjust the poster size by adjusting the distance between the projector and the wall until you've reached the dimensions you'd like to print your poster.[1]

* Command names may vary between different versions of PowerPoint. If you need help locating a specific command, please check your software manual.

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Roundtable Discussion:
Nurses in Industry

Moderator: Heather Orsted, RN, BN, ET, MS
Panelists: Jill Allen, Kimberly Stevenson AND Nicki Waters


Heather Orsted

An excerpt from a job search Web site called www.monster.com reads: "Does a job with a good salary, a company car, a flexible schedule, generous bonuses and no boss breathing down your neck sound like a dream come true? It's a reality for pharmaceutical company representatives. But the work isn't pure glamour. It's also intense, highly competitive and sometimes frustrating. Insiders say it's difficult to get your foot in the door with a drug company, and that it is challenging to excel once you've landed that first sales job. Do you have what it takes to make it in the field?"

In spite of how good a job like this sounds, on paper at least, the *Globe and Mail* (February 24, 2006) reports that "Sales rep positions were in the Top 10 list compiled by Manpower Canada as the most difficult positions to fill."

Introduction

The purpose of this roundtable discussion is to share information to support nurses considering or making the transition to industry-related positions. The discussion, presented in a question-and-answer format, will explore how three nurses have made the decision to join industry and will share information on the experience of working as a nurse in industry.

We started with a general discussion of what positions are available for nurses wanting to get into industry.

Nursing is generally considered a "bedside" career. Many nurses are not aware of the positions that are available in industry and don't realize the full scope of employment that a nurse can enter into.

Positions in industry are varied, with sales usually the place to start. However, there are positions in education and marketing, as well as technical support.

Sometimes an employee can wear more than one hat—a job description often varies, depending on the size and structure of the company.

Some companies hire with a focus on education and some with a focus on sales. Most of the nurses who are sales representatives have a wide variety or specialized area of knowledge; for example, operating-room nurses are hired for their area and level of expertise if the company sells operating-room equipment. Depending on what the company sells, a nurse's specific set of skills and knowledge can best represent a particular product.

Q What enticed you to go into an industry position?

Jill Allen (JA): The timing was right. I was approached about a job and knew the company and the reps I'd dealt with over the years, so I knew they were good people—I had met with several company personnel in Paris for dinner.

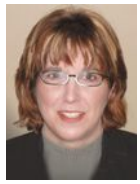

Jill Allen

There have been opportunities for travel, for personal and professional growth and to share my knowledge with other nurses and help them help their patients. Helping nurses problem-solve is almost as satisfying as being at the bedside myself, but different. I didn't start out in sales so it has been a bit different for me. I no longer have kids at home. I have done more travelling this year than in my whole life. It is more difficult to travel if you have small children.

Kimberly Stevenson (KS): I entered industry looking for personal and professional growth. I felt I had more to offer than what the daily routine of nursing care in my current position at the time had to offer me. I wanted to learn and develop new skills that would provide me with new and different opportunities to develop my career, while at the same time utilize my nursing expertise and experience as a foundation to build on this growth. Each position will have varying travel requirements depending on territory size and job description. It will vary between companies.


Kimberly Stevenson

Nicki Waters (NW): The idea of thinking outside the box is important. I have taught very similar groups of people in both roles (as an industry rep and as a clinician). Staff are more enthused [by an external expert]—industry can give a different spin. Industry presents from outside of their box.


Nicki Waters

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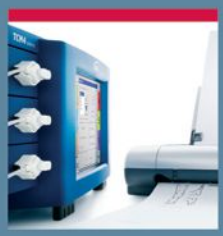

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I have kids and they are older and they are incredibly supportive. They're pleased about my doing what I want to do. I was worried about what was going to happen when I wasn't around. We actually have more conversations when I am on the road than when I am home.

"I wish someone could have been around to show me the direction I could have taken. We need to be talking to young nurses so they are aware of these different opportunities."

Q What makes you feel good about it?

JA: The education part. Clinicians bring me the worst patients they have. It's not my giving them the answer but encouraging them to ask the right questions and getting them thinking about the process.

NW: I had some ethical dilemmas about "abandoning my patients." Should I be doing this? I am probably of more benefit now. I feel I've been able to have more of an impact. I can say to a nurse, "Have you considered this or that?"

KS: Being able to provide and offer solutions—via product and/or providing education—to problems that nurses encounter on a daily basis. Sometimes the solution is a new or different product that can improve patient outcomes. Sometimes it is helping a nurse learn more about the etiology of a wound or another problem, so that she can make a more informed decision about how to best manage patient care. Work with patients is indirect but still influential.

Q What do you struggle with in your industry position?

JA: One issue is the cost of products and what drives costs up. This is an issue for all clinicians. You will always struggle with it.

NW: I don't look at it as trying to sell an expensive product. I'm trying to sell a product that will save money in the long run. Education is a very important part of this process.

JA: I realize that it costs a lot to send a group from a company to a conference. That bothered me until I realized that we can reach so many people this way.

KS: Another issue can be relationships. Because you are in industry, there can be a tendency for people to be unsure of your intentions. People may hold back. They can be reluctant to open up to you.

JA: I haven't found that so much. My colleagues and nurses realize that my values and ethics have not changed. I have only had one instance where I felt treated differently.

KS: I agree, but it is the people who don't know you. In some cases, not in all, it can take a longer time for people to trust your intentions. However, I do find that being a nurse has made other nurses I meet feel at ease. They often like to talk to an industry person that can speak the same language and understand what they mean, particularly in problem-solving situations.

JA: I think I anticipated it. It was difficult at my first conference. I didn't know where I fit in. How were the nurses going to treat me? It was totally different last year at the CAWC conference.

NW: It was a little different for me. At my first conference as a rep, I was in my hometown of Calgary. I saw a lot of people I knew and I anticipated some negativity—but I don't think I actually heard one negative comment about my joining industry.

JA: People see it as a glamorous job, travelling around the world; they don't see the other side, the hard work behind the scenes.

NW: One of the discouraging things is that when I am concentrating on one product line, it is difficult to keep up with what the other companies are doing. When I'm doing an in-service, I can't answer questions as well about the other products. I could do this when I was in nursing practice, now I can't.

JA: I agree that I don't know as much about the other products anymore. I stand up for other products because I have used them, but it is hard to keep up.

NW: One great thing about industry is you don't have to do charting.

JA: You don't have to account for your time in the same way in industry as you do in clinical practice.

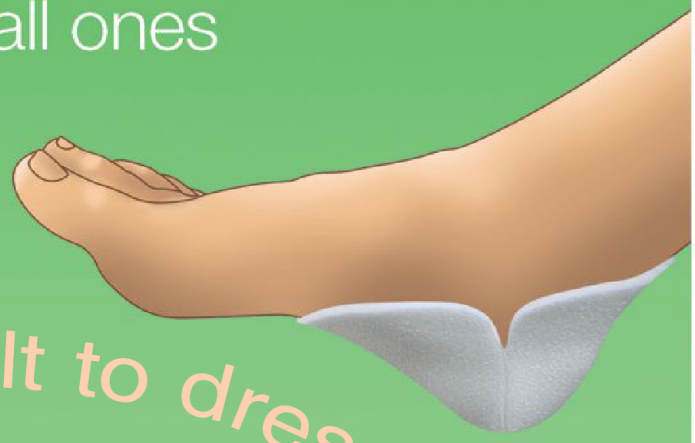
Q What skills do you bring to industry?

JA: A level of expertise and my background in wound care. I started in acute care and I was near burnout and wanted a change. I signed up for a seminar for wound care when I changed to community [practice]. I realized that I had a whole lot to learn because they were speaking a different language. Then I started going to CAWC conferences.

KS: For me it was my background. I was in home care. I was hired for my wound-care skills at the time, but now I bring passion and energy. Because the job can be demanding in many ways you have to have passion and energy about what you do and the company and products you represent. It's what keeps me going. Like anything, if you *enjoy* what you're doing and *believe in* what you are doing, you will feel good about it and you will succeed. Nurses bring a lot of natural skills to the table. Nurses are well organized, know how to prioritize, can multi-task, and know how to problem solve. These are all core skills that are important in managing your time and your responsibilities in industry.

BIG ones

small ones



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References:

1. Dahlstrøm K K. Scand J Plast Reconstr Surg Hand Surg 1995; 29: 325-327.
2. Dykes P. The Effect of Adhesive Dressings on the Stratum Corneum of Normal Skin (Data on file).
3. Dykes P. The link between the peel force of adhesive dressings and subjective discomfort in volunteer subjects. Journal of Wound Care 2003; 12 (7): 260-262.

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NW: My background is also in wound care. It has made a huge difference in how I am able to do what I do. I find it hard to understand how people without a clinical background do what we do. I'm not saying that others can't do it, but I do it differently. I know nurses are happy to hear that I am a nurse and that I understand what they are dealing with. I feel it adds to my credibility.

I always believed that I was involved in sales even when I was in a clinic setting. I spent time trying to talk a patient into buying in to what I was saying. Reading your patients is similar to reading your customers. Spending time trying to convince a patient to wear compression garments when they don't see the benefits, or spending time (at a sales meeting) trying to convince a clinician to use a product they are not sure they need are very similar processes.

Q Which skills did you need to develop to succeed in your industry position?

All: Business skills.

KS: Understanding forecasting and budgets.

JA: It's a whole different language.

KS: One that you learn through experience.

JA: I'm going to take a course.

NW: I took a course. It was a five-day sales course. It was very interesting, a lot about communication. Working as a nurse you develop communication skills—you know how to deal with the most difficult patient.

JA: My company will support any course I want to take. In my clinical setting, I couldn't do that. It was very limiting.

NW: That's a huge bonus—getting to go to events like the CAWC conference. It is a wonderful opportunity, working with frontline staff. Sometimes, as "outsiders" we hear a lot about their frustrations. We listen to stories about lack of funding, lack of educational opportunities. We have an understanding about what they are going through.

KS: When I joined industry, my professional career accelerated about three times more than when I was a clinical nurse. I learned more about myself and my abilities. I grew and blossomed both personally and professionally, which I don't think I could have achieved without the change.

NW: Presenting and having the opportunity to stand up in front of large groups of people—from nursing assistants to doctors—helps you gain confidence.

JA: Here am I, near the end of my career. When I look at how far I've come in the past year since I've been in industry, I can't believe it. I wish someone could have been around to show me the direction I could have taken. We need to be talking to young nurses so they are aware of these different opportunities.

Q How about your relationships with colleagues?

NW: One of my clinical colleagues approached me at a conference and asked where another company's booth was and then apologized. I told her you don't have to apologize.

JA: We are not enemies of the other companies.

NW: You work very independently in this career—independent but not isolated.

JA: Working in an office can sometimes be really difficult. Getting in my car and travelling around can be very nice.

Q What advice do you have for clinicians who are considering an industry position?

KS: You have to be ready to leave bedside nursing. If your heart is set on patient contact, you have to be ready to let that go and throw yourself into a business environment. The wheels turn for a different reason in a business environment than they do in a health-care environment. Some nurses have joined industry and aren't sure what they're getting into.

JA: You don't know what you're getting into. I had absolutely no idea what I was getting into. I did call people and I asked questions, like how much travelling, what the job entailed, etc. But I didn't even know what questions to ask. It is a culture shock. I started with another nurse and we were a great support to each other.

KS: Staff look at you and they think, "she comes in, she presents her stuff and she goes away—nice car, nice clothes." There is an element of glamour that others associate with the position. If you go in it for the perks, that's not a reason to go into it!

JA: The other nurse I started with went back to work in the hospital. She had great difficulty working in industry with the job demands.

KS: Jill, why did that happen? Was she not ready to leave the bedside?

JA: She thought she was., She had kids at home and felt she was putting too much time into the job and had to do the right thing for her family. Sometimes I think it would be great to leave the job at 3:30, but then I give my head a shake and look at the things I am able to do now.

NW: If you've worked a job, a regular shift, where you walk in and know what to expect, you might not do so well in industry. If you are in a situation where you are faced with the unexpected every day, you will be better prepared. When you work in industry, travel is not a holiday.

KS: In your choice of a company to work for, I feel you have to believe in their products and you have to agree with the company's philosophy. You have to feel good inside about what you're doing. Do your homework, understand the company. You need to believe that the products work and you will feel comfortable promoting them. Make sure you are a good fit to the company's culture.

NW: You can still make a difference for the patient, even if you are doing it from a different direction. You need to continue to be true to your ideals.

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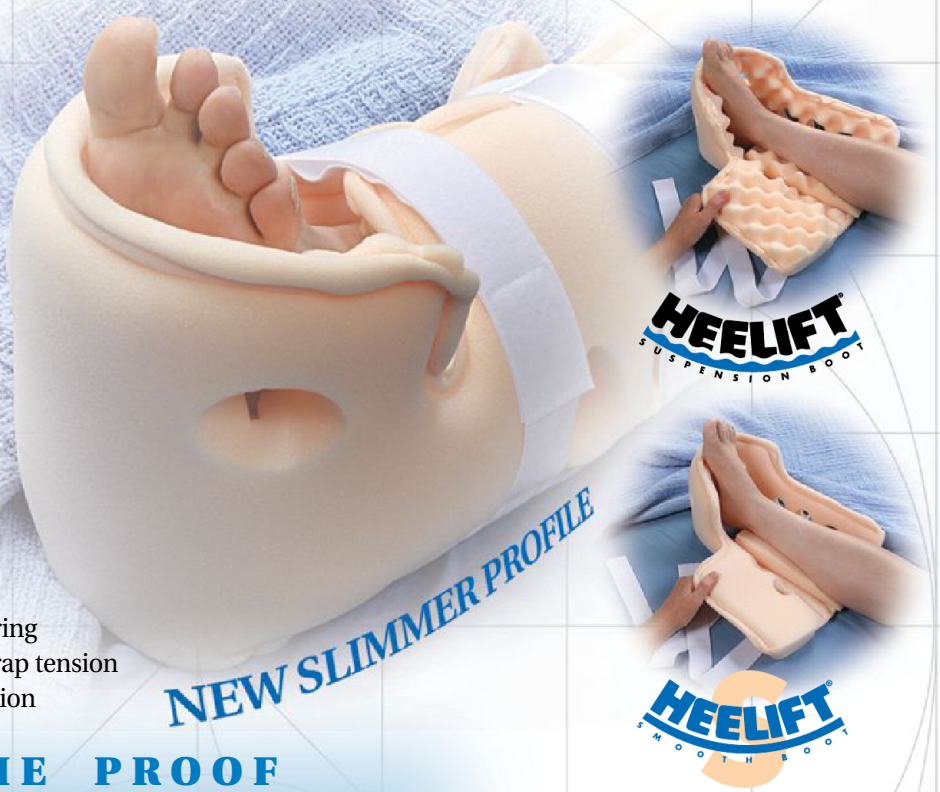

HERE'S THE PROOF

Using a 16-sensor, force sensing pad carefully affixed to the left heel of two subjects, pressure was "mapped" while the patients were lying supine and also with the knee flexed 30 degrees. Pressure mapping readings were done separately with the patient using various pressure reduction mattresses and numerous foot positioners, and heel protectors.

In all tests, Heelift® provided a pressure-free solution compared to the other typically used options.

Pressure Mapping of the Heel - Supine

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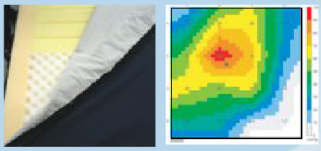
Variation coefficient	63.7%
Standard deviation	1.47
Average pressure	2.3
Maximum pressure	5.9
Center of pressure	2.7, 2.5

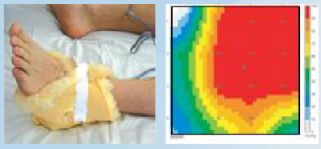
Pressure Reduction Mattress

Sensors included	16
Variation coefficient	59.7%
Standard deviation	26.8
Average pressure	44.8
Maximum pressure	100
Center of pressure	2.2, 2.2



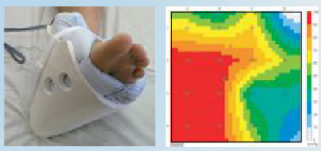
Heel Protector

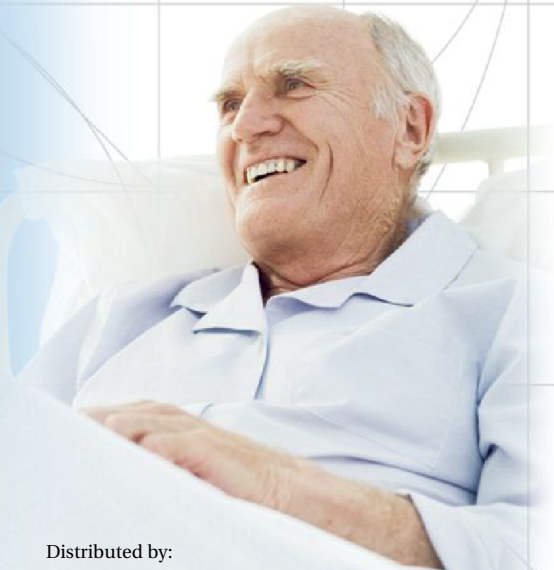
Sensors included	16
Variation coefficient	36.4%
Standard deviation	28.2
Average pressure	77.5
Maximum pressure	100
Center of pressure	2.8, 2.4



Heel Pillow

Sensors included	16
Variation coefficient	40.5%
Standard deviation	28.1
Average pressure	69.4
Maximum pressure	100
Center of pressure	2.1, 2.5





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JA: Nurses tend to be goal-oriented. In industry there is not just one thing you have to accomplish—you have multitude of things to do.

I still think of myself as a nurse/clinician. I have confidence in my skills. I am still the advocate for the patient.

KS: If the focus is the patient, that is success.

JA: Clinicians may feel that industry's goal is to sell the product, but I don't see myself like that. I know in the end, I am still helping the patients.

NW: You have to prove that you have the best in mind for the patients. In Calgary, people knew me and I didn't have to prove my clinical skills, but I had to prove my industry skills. On the other side, those who knew me in industry needed to be convinced that I had a clinical skill. I think it has been easier in places where people didn't know me.

JA: As far as credibility, you need to recognize that when there is an area where your company doesn't have a product, you have to feel comfortable recommending some other company's products.

KS: If you maintain your ethics, you will maintain your credibility.

Q Is there anything you've learned in industry that will help if you went back to clinical practice?

NW: I now have a much better appreciation of how much knowledge the reps have about their products. If I were in clinical practice, I wouldn't hesitate to go to an industry rep for product information.

JA: I agree. You have no idea—its amazing how much they know. I would use the rep a lot more.

Q What does your future hold?

NW: More e-mails, more travel! More wounds.

KS: I think it could go wherever I want to take it.

JA: I think it's very cool to be involved in launching new products and educating people.

Making the change

Ask yourself the following questions to see if you are ready for change:

- Do I like working with people, or would I rather work alone?
- Do I enjoy computer work, or does it intimidate me?
- Do I like to be in charge, or am I a follower?
- How do I feel speaking in front of a group?
- Do I like talking on the phone, or do I perform better in person?
- Is spending time with family at the top of my list?
- Do I like to travel, or do I prefer to stay local?
- Do I like sales?

Source: www.nursingspectrum.com

Conclusion

Though there are industry-related positions such as nurse advisors/educators and research associates, sales positions are the most common industry jobs and are the best way to enter the industry.

Sales representatives are a key link between pharmaceutical/medical supply companies and health-care professionals—between innovative new products and the bedside. They work strategically to increase the awareness and usage of a company's products through one-on-one contact and in-servicing for health-care professionals. They work in all health-care settings, such as general practices, community care and hospitals, and part of their job is to ensure that formularies contain their product.

If you are interested in this type of employment, pay close attention to the skills you are developing. Time management, delegation, communication, multi-tasking, assessment, problem solving, and critical thinking are all transferable to industry-related positions and should be acknowledged and noted on your résumé.

Resources

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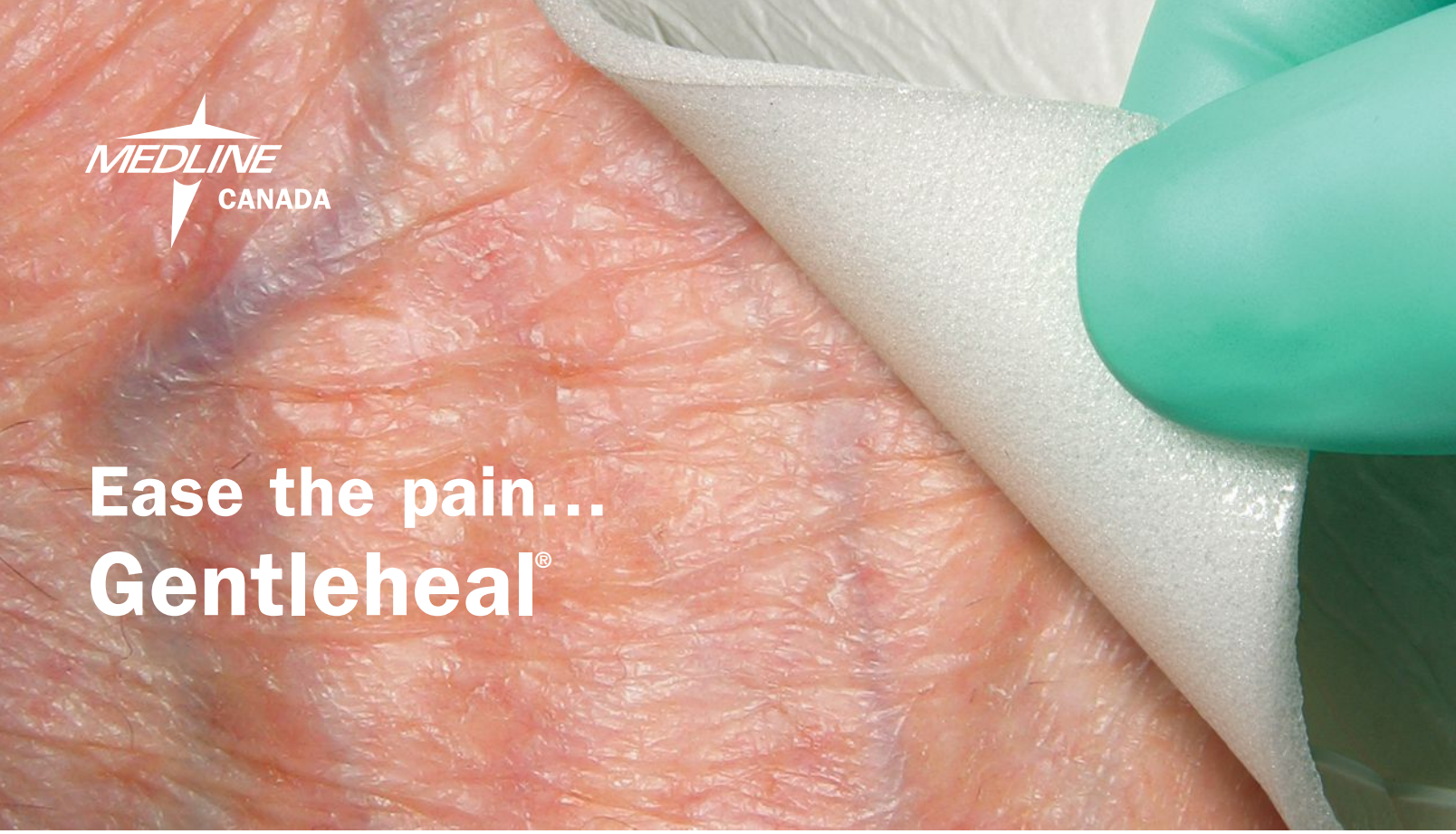
3. medzilla.com. Nurses leaving to go into pharmaceutical industry. Available online at www.medzilla.com/pressfeb02.html.
4. Ryan K. Nurses in the pharmaceutical industry (Part 2): Making the transition from the NHS. Available online at www.medzilla.com/pressfeb02.html.

Jill Allen, RN, WOCN/ET, worked in acute care in medicine and neurosciences for approximately 25 years before switching to community care for almost six years, with the last three as a Wound Ostomy Continence Nurse/Enterostomal Therapist. She joined industry in October 2004. As Senior Professional Services Advisor for Skin Health for 3M Canada Health Care, her responsibilities include all advanced wound-care products, education and technical issues related to the products. She covers BC, Alberta, Saskatchewan, some of Southwestern Ontario, and Quebec.

Kimberly Stevenson, RN, BN, is currently Territory Manager for Southern Alberta with Coloplast Canada where she represents the areas of wound care, ostomy, skin care and continence care. She joined industry in 1999 with another manufacturer where she was a sales representative and later clinical consultant for Western Canada. Before joining industry she worked as an RN for nine years in long-term care, acute care and home care throughout Western Canada. Her last nursing position was as a home-care nurse with a focus on wound care. She completed the IIWCC at the University of Toronto in 2000.

Nicki Waters, RN, MSc (c), is a former member of the Skin and Wound Assessment Team in Calgary Health Region and is currently studying for a PGDip/MSc in Wound Healing and Tissue Repair. She moved from clinical practice to industry in October 2004 and is currently working as Area Manager—Alberta for Mölnlycke Health Care. Her responsibilities include sales and customer service in acute care, home care and long-term care.



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*Data on file.

Web Connect

Linda Norton and R. Gary Sibbald Answer a Question on

Fostering Treatment Adherence

Linda Norton

R. Gary Sibbald

Linda Norton, BSc OT, OT Reg (ONT), has been working in the area of seating and mobility for approximately 14 years. She is the Rehabilitation Education Co-ordinator for Shoppers Home Health Care and is currently working on her Master of Health Science degree.

R. Gary Sibbald, BSc, MD, FRCPC (Med), FRCPC (Derm), MACP, DABD, MEd, is Associate Professor of Medicine and Director of Continuing Medical Education, Department of Medicine, University of Toronto (U of T). He is a board-certified internal medicine and dermatology specialist in both Canada and the U.S. based at the U of T and in private practice in Mississauga. He has had a special interest in wound-care education, research and patient care for the past 15 years.

Q I often get frustrated when I try to implement a plan of care and the patient doesn't comply with the plan. What can I do to make sure patients follow the instructions I set out for them?

A The treatment of a person with a chronic wound involves treating or correcting the cause while considering patient-centred concerns. The traditional concept of compliance (providers' perspective: to obey an order or command) has been replaced by adherence (patient's perspective: to stick to a treatment/regimen) and coherence (to negotiate a treatment with both perspectives considered). Coherence is a concept related to one of the main components of the Preparing the Wound Bed paradigm addressing patient-centered concerns.[1] The choices the patient makes ultimately can affect whether or not the wound will heal.

Nurses were surveyed[2] regarding "non-compliance." There was a sense that, "a situation would never improve; a wound would never heal, because the patient was, for whatever reason, acting in a manner which would prevent healing."[2] Evidence suggests that adherence rates for clients with chronic conditions are lower than those with acute conditions.[3] As a result, coherence in chronic wound management becomes of paramount importance.

Labelling clients as "non-compliant" or "non-adherent" may stigmatize the patient in future health-care interactions.[3] The focus of care may shift to discharging the patient rather than exploring alternative approaches. This approach also places "blame" for poor outcomes on the patient and removes responsibility from the health-care provider. ("Of course his or her wounds are worse, she or he is non compliant!"[2])

Client characteristics such as depression, comprehension of the treatment regimen, and insight into their condition influence coherence. In addition, health systems and health-care provider issues have proven influential.[3,4] A literature review has revealed common themes that impact treatment adherence (see Web Connect below).

Treatment Accommodation

Treatment accommodation has been defined as "the extent to which a standardized treatment approach can address the complex and unique demands of patients' lives"[4] and is concerned with three domains:

- the purpose/goal of treatment
- the content of treatment
- the method by which the treatment is delivered.

Patient and family values, along with the desired outcomes, must be reflected in the purpose and goals of treatment.[4] Involving the client in the treatment planning

Web Connect

For a diagram illustrating treatment adherence, please visit the *Wound Care Canada* section of the CAWC Web site at www.cawc.net.

process[3,5,7,8,9,10] and their belief in the treatment plan[3,4,7,11,12] have been shown to foster adherence. For example, a patient with a pressure ulcer may rate the ability to participate in everyday activities higher than healing the pressure ulcer. If the treatment plan is focused on healing the ulcer, the patient may choose not to adhere to that plan as it does not reflect his or her priorities. Negotiating a treatment plan that supports the patient's life choices, while striving toward best wound-care practices, will foster adherence.

The patient "must [also] see the content of treatments as relevant to them and their condition."[4] Patients have increased access to health-care information though resources such as the Internet,[20] and may have opinions regarding the treatment plan.[10,21] Health-care providers have a responsibility to be informed of the best practices and to educate the patient as to the options available and their relative efficacy.

In terms of treatment delivery, when appointments are scheduled and how the health-care provider interacts with the patient are important. Appointments that fit into the patient's routine are more likely to be attended and are more likely to be productive. Keller and Carroll[21] have developed a model of physician-patient communication that focuses on the four E's: engage, empathize, educate and enlist. Engaging involves eliciting and understanding the patient's story.[21] Empathy is an active concern for and curiosity about the emotions, values and experiences of another.[21] Education is more than giving information—"it does not take place until the patient is able to utilize the information in an effective manner."[21] Enlistment involves encouraging adherence and increasing the patient's responsibility and competence to care for their own health.[21]

Keller and Carroll[21] report that six specific actions increase patient adherence:

1. Keep the regimen simple.
2. Write out the regimen for the patient.
3. Motivate the patient and give specifics about the benefits of following treatment and the timetable for recovery.
4. Prepare the patient for side effects and for optional courses of action.
5. Discuss with the patient any obstacles to moving forward with the regimen.
6. Get feedback from the patient.

Conclusion

The "non-compliant" label needs to be removed from the vocabulary of health-care providers as it places the blame for not achieving the desired outcomes on the patient without looking at the underlying causes, including the roles of the health-care provider and the health-care system.

The patient's perspective and their concerns should be a major focus of the treatment and intervention process. Health-care practitioners should reflect on the patient, health-care provider and system characteristics that influence treatment. These issues need to be addressed to foster adherence.

We need to encourage patient participation in treatment planning along with adherence to the established patient-centered care plans to improve outcomes.

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Articles of Interest
Literature Review

Reviewers
Leah Shapera, RN, MSN
DG Stevens, MD, BSc, FRCSC

Effectiveness of a Topical Formulation Containing Metronidazole for Wound Odour and Exudate Control

Authors: Kalinski C, Schnepf M, Laboy D, Hernandez L, Nusbaum J, McGrinder B, Comfort C, Alvarez OM

Publication: *Wounds: A Compendium of Clinical Research and Practice*. 2005;17(4):84-90.

Reviewer: Leah Shapera, RN, MSN

The authors of this study rightfully point out that in advanced disease such as cancer, the goals of care are often not focused on wound closure or healing but rather on issues such as odour and exudate control. These issues often have profound and devastating effects on patients and their lives. This prospective study explored the use of a compounded topical formulation consisting of metronidazole (0.75%) in a gel form to help control odour and exudate in 16 cancer patients with clinically challenging, malodorous, fungating wounds.

All wounds were clinically assessed for general appearance, signs of infection, degree of exudate, maceration, wound size and local pain. A Visual Analogue Scale was used to assess odour, both by the patients and the investigator, prior to initial application and once daily for the two-week study period. All patients received the same wound cleansing and study protocol using the metronidazole (0.75%) in a gel form. Patients on systemic antibiotics, chemotherapy or radiotherapy were excluded from the study.

The results showed that complete elimination of odour was reported 24 hours after the initial application in 10 (62.5%) of the 16 patients. There was significant odour control in the remaining six (37.5%) patients. Of the six patients that noticed significant improvement without complete odour elimination, it should be noted that five of the six had wounds in the perineal and rectal areas, which present some of the most highly challenging areas for odour control.

Topical metronidazole (0.75%) in gel in this study was also seen to have a positive effect on reducing wound exudate; this was clinically evident after just two applications and persisted throughout the two-week study period, although the differences were not found to be statistically significant.

Although other research has been done on this topic and the authors do include an excellent reference list, I commend these researchers for continuing to explore this important clinical intervention and for including the aspect of exudate control in their research.

.

Negative Pressure Wound Therapy after Partial Diabetic Foot Amputation: A Multicentre, Randomized Controlled Trial

Authors: Armstrong D, Lavery L

Publication: *The Lancet*. 2005; 366:1704-10

Reviewer: DG Stevens, MD, BSc, FRCSC

This article by recognized leaders in the field of diabetic foot care offers us something still quite rare, namely a well-designed and executed randomized controlled trial. Specifically, the question is posed as to whether negative pressure wound therapy (NPWT) improves the proportion and rate of wound healing after partial foot amputation in the diabetic population compared with standard moist wound care according to consensus guidelines.

A total of 162 patients who had undergone amputation up to the transmetatarsal level were randomized to either NPWT (n=77) or moist wound care (n=85). Duration of treatment was 16 weeks, and all patients received an offloading device for ambulation.

Statistical analysis of the results revealed similar population characteristics between the two treatment groups and a similar dropout rate. Endpoint analysis revealed no difference in adverse events but showed a number of clinically significant benefits of NPWT over standard moist wound care. Specifically, the NPWT group demonstrated a more rapid and exuberant production of granulation tissue, faster time to wound closure and a higher proportion of healed wounds (56 per cent vs. 39 per cent). Also, while not reaching statistical significance, a trend toward a much-reduced risk of secondary amputation was seen (3 per cent vs. 11 per cent).

This landmark study gives us a significant scientific basis to support what clinicians employing NPWT have been reporting anecdotally for some time: enhanced granulation and faster wound healing with fewer patients requiring secondary amputation. The fact that this study analyzed large and potentially complex amputation wounds must surely further bolster claims of the observed benefits of NPWT for lesser wounds.

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Canadian Association of Wound Care News

CAWC Conference

The Canadian Association of Wound Care's 12th Annual Conference promises to be the event every wound-care professional should attend this year. The theme is "Working Well: Taking the Pressure Off," an acknowledgement of two topics on every clinician's mind: how to reduce the prevalence and incidence of pressure ulcers and how to reduce pressure in the work environment. The conference will take place November 16-19, 2006, at the Ottawa Congress Centre in Ottawa. For more information and to register online, please visit www.cawc.net.

Conférence de l'ASCP

Dans sa 12ième édition annuelle, le congrès de l'Association canadienne du soin des plaies promet d'être un événement majeur pour tous les professionnels en soin des plaies. Le thème « Working Well : Taking the Pressure Off », soulève deux questions principales à l'esprit des cliniciens : comment réduire la prévalence et l'incidence des ulcères de pression et comment réduire la tension dans le milieu du travail. Le congrès se déroulera du 16 au 19 novembre 2006 au Centre des congrès d'Ottawa, à Ottawa. Pour obtenir plus de renseignements et pour l'inscription en ligne, veuillez consulter notre site web : www.cawc.net.

New Board Members

The great programs offered by the CAWC would not be possible without the efforts of the CAWC's Board of Directors, a dedicated group of volunteers who meet in person and by phone throughout the year to keep things running smoothly. Each year, new members come aboard to replace outgoing members whose terms of office have expired. At the beginning of 2006, the Board welcomed Martine Albert, from Alberta, who is now chair of the Membership Committee, David Haligowski from Manitoba, and George Sheppard from British Columbia.

The CAWC is Now Canada's Definitive Source for Monofilaments

Monofilaments have been difficult to locate in Canada and the CAWC has taken the steps necessary to have these items produced to our specifications for sale in Canada through our online Boutique (www.cawc.net/open/boutique/boutique.html).

These simple devices are used to test patients for loss or diminution of protective sensation and are invaluable to both clinicians and patients. For more information about monofilaments and their use, or to place an order, please visit the CAWC Web site.

Scholarships

The CAWC offers educational and research scholarships worth up to $2,500 each and is pleased to announce several new scholarships for 2006.

For detailed information and an online application, please visit the Scholarship section of the CAWC Web site at www.cawc.net/open/scholarship/scholarships.html.

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