Clinicians Speak Out: Innovations in Products and Practice

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Ostomy Wound Management invited its Editorial Board members to voice their opinions on what have been the most important recent (past 5 to 10 years) clinical innovations and observations in the wound, ostomy, and continence healthcare niche. Their insights reflect years of experience and enthusiasm for adapting to change, a concept clinicians often are accused of avoiding. Not only are these practitioners keeping up with advancing technology, redefined approaches, and increasing regulatory/legislative directives, but they also are incorporating, indeed thriving on, enhanced options and their ability to provide better care. The editors thank the respondents and encourage readers to dialogue at www.o-wm.com.

Innovative Products/Technology

Stem cell therapy. According to emerging research, the wound healing potential of stem cell therapy is amazing. To be able to turn on and off these cells and turn cells from one kind to another is fascinating. The potential opportunities in taking wounds to closure with this therapy are much anticipated.

Tissue engineering/bioengineered skin. Tissue engineering, including bilayered epidermis, cultured fibroblasts, and collagen products from animals, can be utilized to improve wound healing outcomes in cost-effective ways.

Negative pressure wound therapy. NPWT was mentioned by several respondents. Use of NPWT is blossoming—and now the evidence base and number of vendors is increasing. This technology has seen huge success in the wound care arena as a device that has had a variety of applications, positive outcomes, and a cost-benefit ratio that is acceptable to healthcare payors. At the same time, it is an innovation that is overused: in a number of instances and indications involving NPWT use, more traditional moisture-retentive dressings can do a similar job without the expense and hassle associated with NPWT. Having said that, wound edema reduction and management of intra-abdominal compression syndrome are areas where NPWT excels.

Innovative technology in pressure redistribution. A new manufacturing process, variable pressure foaming (VPF™, FXI) results in a viscoelastic polyurethane open-cell foam with 40% higher air flow than traditional technology. Surface modification technology (SMT™, also FXI) is a technique used to generate high levels of pressure redistribution in known high-risk areas, such as the heels and trochanter. When used together, these two processes produce a support surface superior to traditional viscoelastic mattresses. One Board member’s acute care facility achieved zero incidence of pressure ulcers for more than 90 days using this support surface.

Back to the future. Several respondents noted the rediscovery of ancient approaches—ie, the use of silver and honey for wound care. As we approach the post-antimicrobial age, interventions that do not require the use of antibiotics will re-model future care. It has been noted that most medical honeys will heal a wound. A few thousand years of practical use finally resulted in an FDA device. Just like the movies, it is back to the future.

Incontinence products that help prevent skin breakdown. The most important innovation in wound care in recent years is the development of sophisticated, dynamic products that help protect moisture-vulnerable skin due to incontinence and thus aid in the prevention of skin breakdown and pressure ulcers. Two such examples are: 1) InterDry Ag™ (Coloplast), a woven polyester textile impregnated with silver that is classified as a medical device, and the only one approved by the FDA to address moisture, friction, and bacterial burden within skin folds; and 2) AquiDry™ Plus (Tredegar Film Products), a perforated synthetic film built into absorbent products as a distribution layer that serves as a one-way valve to significantly reduce skin wetness.

Fecal management devices. New ways to contain excrement are improving patient quality of life and reducing potential for skin issues.

Products that reduce friction. Two products noted are TouchlessCare® (Touchless Care Concepts, LLC) and Parafricta™ (APA Parafricta Ltd).

Product combinations. The unique combinations of ingredients being put into products, or the combinations of use of different products throughout the course of the wound healing cycle, is improving outcomes.

Practice

The concept of deep tissue injury. For many respondents, the biggest “leap” in wound care has been the recognition and description of deep tissue injury by the National Pressure Ulcer Advisory Panel. Without a doubt, proliferation of this
concept in wound care should and will revolutionize how we care for our patients at risk for pressure ulcers. It also has served as an important platform for research going forward. Numerous clinicians have voted this the most revolutionary determination of the past 5 to 10 years.

**Implementation of evidence-based guidelines.** A number of respondents stated that the most important innovation in wound care is the emerging use of evidence-based, content-validated algorithms of care that focus on the functional aspects of interventions. The guidelines help deliver sterling clinical and patient-oriented outcomes economically. Evidence-based guidelines also are driving forces for reimbursement and justifying the need for quality wound care in the US. With the changes in Centers for Medicare and Medicaid Services (CMS) related to pressure ulcers, the guidelines for care also help bring additional qualified wound care providers to the bedside. Ultimately, having quality providers means increasing emphasis on certified wound care practitioners who are able to appropriately implement and evaluate the outcomes of care related to evidence-based guidelines.

As a consequence, this new focus on evidence-based care is fostering a shift away from focusing on what dressings are made of toward meeting wound and patient needs.

**The rise of specialty teams.** Several respondents noted the rise of specialty teams dedicated to wound healing and amputation prevention. The understanding and appreciation of the idea that by involving multiple healthcare providers in the treatment process of these patients before, during, and after they develop ulcers will help expedite healing and more importantly, prevent their development, as well as their recurrence. Team participants can include vascular surgeons to ensure adequate blood flow to the affected area, general surgeons and podiatrists to debride wounds, orthotists for bracing, internists and endocrinologists to ensure that patients are medically stable, nurses for daily wound dressings and pressure relief, and others who all must work together to achieve success.

Although many interesting technologies exist and will be developed over the coming few years, in the end, teams trump technology.

**The recognition of wound care as a subspecialty.** Wound care is finally being recognized as a subspecialty. The challenge is to accept that all disciplines have a spot at the table, as each of us has a unique contribution.

**Incontinence terminology clarification and recognition.** Although the recognition of incontinence-associated dermatitis (IAD) and moisture-associated skin damage (MASD) may not be the most important innovation of the last 5 to 10 years, it certainly has helped many clinicians accurately describe these skin conditions and removed them from the Stage II phenomenon.

**Infection.** The 2005 publication relating to infection criteria by wound type was an important addition to the wound care literature.

**Inflammation.** In both basic and clinical science, there has been a change in thinking about the role of inflammation (its positive and negative effects) in wound healing over the last 10 years.

**Focus on the wound bed.** The most important innovation or change in wound care is the knowledge and/or analysis of, and the impact of dressings on, the wound bed environment. This has led to a plethora of products, particularly collagen products. This observation, although not supported by rigorous studies, has increased awareness of the wound environment and (as reported anecdotally) improved wound outcomes.

**Regulatory involvement.** One of the most important initiatives to advance the fight on pressure ulcers has been government intervention. Hospitals are now on alert for hospital-acquired pressure ulcers and the need to report events. Many hospitals have made pressure ulcers a priority safety measure. It took along time, but we are seeing results.

**Understanding the realities of care.** The death of Superman Chris Reeve showed that even with the best of care, including 24/7 docs and nurses, people still die. Disease mechanisms can still perplex us and it does not mean negligence or malpractice is involved.

**The ramifications of drug use on venous disease/falls.** An important contribution to wound care in the last 5 to 10 years has been work that has shown the high relationship of injection drug use to venous disease. One board member’s team used a cross-sectional design with comparative stratification by age, gender, ethnicity, and three types of drug use (noninjection, arm or upper body injection only, and legs with or without upper body injection) to study related phenomena. Chronic venous insufficiency (CVI) was examined in 713 persons who injected illicit drugs; 39% of leg +/- arm injectors versus 4.2% of noninjectors or arm only injectors had moderate to severe CVI. Persons who injected in the legs +/- arms were 9.14 times more likely to develop venous ulcers than those that injected in the arms and upper body only and 34.64 times more likely as those who never injected. Decreased ankle and general mobility and decreased balance and gait—all of which negatively affect fall risk—also need to be addressed. CVI, injection drug use, and fall risk need to be examined together because persons born between the late 1940s and early 1960s have the highest prevalence of drug use and are aging. CVI and impaired mobility affect their safety in terms of falls.

**Observations**

- **Need to understand the basics.** We need to increase understanding of wound physiology and how shear affects skin.

- **The value of prevention.** It wasn’t until organizations were going to lose money while providing patient care that the value of prevention was appreciated. Because of this, organizations were finally motivated to spend more to lose
less. This is seen not only for pressure ulcers, but also for surgical site infections, ventilator-associated pneumonia, and other concerns. How sad that the patients and their outcomes weren’t the focus in the first place.

The potential for over-prevention. Whatever happened to the practice of not introducing antimicrobials to a wound environment until they were needed to treat an actual infection?

Preserving skin. Adhesive technologies continue to evolve to less destructive interactions with brand new epithelium.

Care continuum issues. Transitioning patients across the continuum continues to be challenging, but it is also an issue ripe for research.

(Lack of) standard of care. Standard care isn’t getting into widespread practice. If patients received best practice across the country, we would not have the significant issues we have today with indurated, long-standing wounds. Standard care isn’t fancy—eg, compression bandaging for venous leg ulcers—but it is extremely effective. However, appropriate assessments to evaluate arterial flow or adequate clinical competency to apply the bandaging aren’t always available. We need to push standard care to ensure it is practiced—easier said than done. But it needs to be done to make real improvements in wound care.

Better understanding of biofilms. The increasing recognition and understanding of biofilms, as well as inflammatory compounds, and their influence on wound healing was important to several respondents. Unfortunately, so far these observations have not yet had a major impact on treatment, because we really do not know yet how to utilize the available information.

Need for product comparison. Comparative effectiveness research is important to evaluating new wound care products. Otherwise, how do you really know that one alginate is better than its competitor? Let the research begin!

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