Clinical innovation: wound management in an outpatient setting

Wound healing is an evolving specialty with wound care practitioners facing many challenges, including rising healthcare costs and difficulties in ensuring access to and quality of care. Current US delivery models are mainly hospital-based and hospital-centered. We describe our outpatient model, which addresses these challenges by streamlining safe, cost-effective and easily accessible care for patients. We outline different models of health care and describe how our model is an effective example of a patient-centered model.

Rising healthcare costs are an ongoing concern for employers, insurers, patients and governmental agencies in the USA. In 2012, healthcare spending increased by 3.7% to approximately $2.8 trillion. Of this, $882.3 billion was attributed to hospitals. Growth in spending from Medicare, Medicaid, and private health insurance providers all accelerated in 2012 compared to 2011, influenced by growth in both prices and non-price factors including the use and intensity of services.

Outpatient model attributes

One of the advantages of an outpatient wound-healing centre is that it lowers healthcare costs overall. An outpatient setting requires less overhead expenses which reduces costs dramatically. By centralising all wound care services under one roof, without the size and space required by a hospital, the costs more accurately reflect the services and procedures for which the patient is paying. Since the outpatient facility is generally smaller, the staff is reduced and the result is more cost-effective wound treatment for the patient. According to the 2014 Medicare National Fee schedule for instance, the application of a wound matrix product in a hospital setting is four times the cost than if that service had been performed in an outpatient centre.

In addition to cost concerns of hospital-based wound care, hospital-acquired infections are an unfortunate by-product of hospital care. According to a survey conducted by the Centers for Disease Control and Prevention, one in 25 US patients has at least one infection contracted during the course of their hospital care, adding up to about 722,000 infections in 2011. That same year, approximately 75,000 patients with healthcare-associated infections died during their hospitalisations.

A study completed by the Centers for Disease Control and Prevention in Atlanta, Georgia, suggests that the rate of resistance in nosocomial pathogens to a variety of antimicrobials commonly used to treat nosocomial infections is significantly higher in the hospital setting than in the outpatient setting.

These nosocomial infections are more likely to become resistant to antibiotics owing to the number of healthcare providers and ancillary workers situated in the hospital setting, who are charged with transporting the pathogens. Conversely, outpatient wound centres dramatically reduce these risks since fewer workers staff them.

Another disadvantage to hospital-based care is the lack of access that patients may have to their physicians and the continuity of care that can suffer because of it. In our clinical experience of treating patients from hospitals, we’ve noted that too many doctors working different shift times creates gaps in patient treatment timelines, which also creates confusion for the patient. Who should the patient contact with questions? What if that doctor is unavailable? The physician who is finally reached then has the formidable task of deciphering a plethora of doctors’ notes. Patients then have to wait while important details get lost in translation, and care is compromised. In an ideal outpatient centre, one expert physician oversees all treatment and the patient receives seamless care at each visit, thereby ensuring complete continuity of care.

There may also be issues around quality of care in hospital-based wound treatment. Since
there are numerous factors that contribute to wounds not healing, patients often have to visit several hospital departments to receive comprehensive treatment. For example, a patient might have to visit the lymphoedema department, the hyperbaric centre, and then see the infectious diseases specialist. In contrast to this, a wound care centre with hospital-level equipment houses everything for wound management under one roof.

This model is similar to that of outpatient parenteral antimicrobial therapy (OPAT), which takes intravenous (IV) therapy out of the hospital and delivers care in an outpatient setting. Today, this is a standard modality for patients with many infections requiring long-term IV antibiotic therapy. OPAT delivery now occurs in physicians’ offices, hospital clinics, specialist infusion centres, and most often in patients’ homes with self-administration.[5]

Until now, wound care services outside of the US hospital most often involved an administrative service company that was in contracted partnership with a hospital to capitalise on facilities such as hyperbaric oxygen chambers, gather the available physicians and create a billing-based outpatient wound centre. Creating outpatient services out of a hospital-centered inpatient business, however, is not satisfactory, since patients still suffer fragmented care, having to move from one area of medicine to another, often on and off the hospital site. Thus, the same considerable barriers still exist as outlined above.

A specialist outpatient centre

Our outpatient wound care centre, Encompass HealthCare and Wound Medicine in Michigan, USA, was opened in 2010. This centre is an expansion of the OPAT practice, which opened in 1994, addressing the problems highlighted above in addition to addressing the more complicated issues surrounding why some wounds do not heal, regardless of present infection. The centre staffs nine, treats patients from all over the metropolitan Detroit and surrounding areas, and can accommodate up to 20 patients at a time.

Encompass HealthCare is located on the ground floor and the centre features three monoplace hyperbaric oxygen chambers, an IV antibiotic suite, venous ablation, wound debridement, and an in-house pharmacy. The centre also has a small surgical room, a lift system to help paraplegics and quadriplegics get on and off examination tables, an indirect calorimeter machine, a roll-in bathroom with shower, several treatment areas, and a nutrition bar. All of these modalities allow us to treat patients with very complicated wounds, such as outlined in the case study below.

Case study

A 65-year-old man with diabetes was urgently referred to our centre by his primary care physician for the evaluation and treatment of an acute infection that developed from a blister on his right, second toe. On initial assessment, the patient had soft tissue gangrene, abscess, and open areas probing to bone [Figure 1a, 1b]. His glucose was 340 mg/dl and he was insensate.

Cultures were taken and IV vancomycin and IV ertapenem were administered. Excision of dead tissue and drainage of abscess was accomplished in this visit. In addition, hyperbaric oxygen therapy was initiated for treatment of the wet gangrene noted on initial exam and continued for 40 dives owing to Wagner’s grade 3 ulcer, which is associated with clinically suspicious osteomyelitis. The patient completed 6 weeks of specific IV antibiotics for meticillin-resistant staphylococcus aureus (MRSA), Bacteroides, and Escherichia coli. The patient was given a specialised boot to promote offloading. His nutritional status was assessed and protein supplements of 40 additional grams daily were provided during his daily treatment in our centre. His wound had completely healed at the end of this treatment [Figure 1c, 1d].

Four models of wound care

Recently, four proposed organisation models for wound care were suggested by Scarborough,[6] and they can be seen in current practice. The first is the unidisciplinary team whereby the healthcare provider works with the patient to establish the healthcare plan without any input from other healthcare providers. The second model is the multidisciplinary team, in which team members work to establish a plan, but each team member works independently to achieve discipline-specific goals. However, team members may not directly communicate with each other. The third approach is the interdisciplinary team.
model. In this model, the team expands the multidisciplinary team approach by including collaborative communication and shared information between team members.

The fourth approach is the transdisciplinary team model. This model represents the highest level of collaboration, in order to create the most communication and collaboration possible. This model transcends each of the individual discipline’s perspective, putting the patient at the centre of the model [Figure 2]. We suggest our woundcare centre uses this fourth model. This approach has helped us achieve a near-100% success rate, using the following criteria to measure success: resolved infections, healed wounds, maximal patient satisfaction and communication, and the patient returning to a ‘pre-injury,’ productive self.

The future
Taking the outpatient concept further, WellStar Health System in Georgia has built a healthcare ‘mall’ where members of the same family can make all of their medical appointments in one location. For instance, mothers can get their mammograms while fathers get their cardiac ultrasounds, all in the same facility. The Marietta, Georgia-based system has spent $109 million building two health parks with these characteristics, and opened the first in July 2012.[7]

Clearly, the trend in health care seems to be moving away from hospital-based care to the more centralised outpatient models that have benefitted patients in the areas of intravenous antibiotics, and now, wound management. Encompass HealthCare and Wound Medicine is an example of such an outpatient model, which puts the patient at the centre of care.

References