

CARE INTERVENTIONS EDITION

Care Analytics

NEWS

Advancements in Wound Care Technology Help Providers Better Care for Diabetic Populations

By J. D. Tyler, MD

Providers have long-recognized that diabetic patients are among the most challenging to treat. They are older, have multiple co-morbidities, and often are non-compliant with diet, exercise and medication regimens.

According to the CDC, [about 34 million Americans](#), or roughly 10.5% of the population, have diabetes. One of the many challenges to be addressed in diabetic patients is wound care, which is necessitated by pressure wounds or ulcers. Each year, about [8 million diabetics](#) end up in the hospital. Roughly [25 percent of those patients](#) will suffer a condition-related wound over the course of their condition.

Here is where all those statistics become even more troubling for hospitals and caregivers. An estimated [73,000](#) diabetic patients undergo a lower-limb amputation due to wounds that do not heal, and an estimated 60,000 die.

Clearly, pressure wounds are a serious concern for hospitals and providers. No surprise in the world of healthcare alphabet soup; there's even an acronym, Hospital Acquired Pressure Injury (HAPI). According to the [AHRQ](#), there are 23 HAPIs for every 1,000 patient discharges.

HAPIs contribute to lower patient satisfaction, decreases in reimbursement and significant hits to the all-important quality ratings. In severe cases, HAPIs also contribute to mortality. These and projected future statistics for those with diabetes, mean innovative ways to meet the diverse needs of these patients are vital.

New advances in wound care technology are providing the support clinicians need to better diagnose, monitor and treat wounds, helping to increase outcomes, manage costs and create care efficiencies in hospitals and clinics.

Addressing Pressure Wound Challenges

A pressure wound occurs in bony areas, such as the heels, buttocks, sides of a leg or even the back of the head. Often, they occur in elderly hospitalized or institutionalized patients who are bedridden or are in wheelchairs. Medical devices may also contribute to the condition. Diabetic patients are especially susceptible to wounds due to circulatory issues and other comorbidities.

Providers, and especially hospitals, want to tackle this problem for a number of reasons. It's a significant source of pain and lower quality of life for patients, leads to other conditions, and can delay recovery. Pressure wounds are also expensive. Pressure ulcers cost the nation's health systems some [\\$26.8 billion a year](#). Advanced HAPIs are categorized as "never events" under the CMS Hospital-Acquired Condition (HAC) program and carry substantial direct and indirect costs for hospitals and health systems.

(continued on page 2)

In This Issue

- 1 Advancements in Wound Care Technology Help Providers Better Care for Diabetic Populations
- 2 Analysis of Epic EHR Data Indicates Racial Disparities in COVID-19 Prevalence
- 4 Infographic: Metabolic Syndrome Prevalence
- 5 COPD Program Decreases 30-Day Hospital Readmission, May Increase Mortality
- 5 Factoid: COPD, Health Status & Chronic Conditions by Smoking Status
- 6 Anthem Claims Data Analytics Identified Care Gap for Opioid Use Disorder Patients, Resulting In Improved Intervention Strategies
- 7 Industry News
- 8 Study Identifies Geographic Clusters of Pregnant Women Who Missed Flu Shots

Advancements in Wound Care Technology Help Providers Better Care for Diabetic Populations...continued from page 1

New Technologies and Approaches on the Horizon

To combat pressure wounds, new technologies and promising approaches are emerging. These include:

- Smartphone images. High-resolution images and videos filmed on smartphones can now build 3D models of wounds and accurately calculate wound depth. These insights provide a wealth of important clinical information such as estimating the time to heal and even product recommendations, such as skin substitutes for burn patients.
- Virtual clinical decision support. Mobile platforms can also help rural hospitals or clinics that don't have wound care experts virtually access expert guidelines and support.
- Point-of-Care-Devices. Measure variables related to bacterial infection and perfusion and can now be integrated via application programming interfaces (API) to a mobile application to circumvent EHRs and provide faster access/sharing of data.
- Remote patient monitoring. Allows patients to take photos and measurements from anywhere in the world. Photos are then sent through a secure cloud portal to their provider. The provider can diagnose and treat, as well as send reminders and alerts to patients to ensure timely submission of photos. Remote monitoring also helps with patient compliance.

Interoperability

One of the more practical innovations in wound care is the drive to greater interoperability across different electronic health records (EHRs). Interoperability helps to significantly improve workflow efficiencies, as providers don't have to log into separate systems (e.g., one for hospital, one for clinic) to piece together the patient's medical chart. This ensures clinicians have more time for hands-on patient care, and less time sitting in front of screens.

Predictive Modeling

Forecasting the time-to-heal for chronic wounds has been the holy grail of wound care. We are getting closer to the point where patient and wound profiles are robust enough to provide accurate time-to-heal predictions. When this technology is implemented, we'll be better able to allocate resources, manage costs and gather data to help improve future treatments

Increasing uniformity in care/addressing healthcare disparities

The current emphasis on Social Determinants of Health (SDOH), and the need to decrease health disparities, has many hospitals looking for ways to ensure high-quality care for all patients.

One of the many reasons to adopt technology for wound care is that it can help ensure a more unified approach to treatment. Consistent treatment begins with a dedicated wound care technology platform. Traditionally, and still in many facilities, wounds are measured using rulers, much the way providers used to use manual blood pressure cuffs or mercury thermometers.

Through a technology-based approach to wound care, manual (and highly subjective) devices are replaced in hospitals and clinics with digital versions in order to provide consistent, accurate and more rapid measurements. One of the more important tools of the past decade has been advancements in smartphone technology. Years ago, taking a picture of a wound would require a digital camera, memory card, and a computer to email it with. Now, all of this can be done with a messaging app and one click. The wide-spread use of smartphones also helps address issues of access and patient disparities.

What's equally promising in terms of SDOH is when the data from those patient encounters is input into an EHR. There's a wealth of value contained in the databases of wound care EHRs. For example, a national or regional health system can tap it to ensure that the same level of care is provided to urban and rural patients and to private as well as public patients.

Wound care databases can also be used to identify populations in need. If a hospital sees higher incidents of wounds in patients from a specific SNF, they can work with that facility to improve care and outcomes. This is still a new area, but it's one with much promise. Forward-thinking organizations will look for new ways to use their data to help all patients.

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(continued on page 3)

Advancements in Wound Care Technology Help Providers Better Care for Diabetic Populations...continued from page 2

Why We Do It: Helping Patients

The statistics on the future rates of diabetes are troubling. Some 88 million Americans are pre-diabetic, meaning cases could increase in the coming years. Hospitals and health systems need to be ready to treat these, as well as current patients. To meet organizational and patient needs, we need to adopt new tools for our wound care arsenals that will help ensure that all patients get optimal care and that we find ways to prevent and effectively treat pressure wounds in diabetic patients.

The technology that hospitals need to improve wound care outcomes and help patients lead better lives is available. More advancements are on the way. Now is the time to examine current approaches to wound care therapies and explore promising options.

J. D. Tyler, MD, is the Chief Medical Officer for Tissue Analytics, a Net Health company. Previously, he was the Chief Medical Information Officer at Regional West Health System and Senior Physician Solution Executive at Cerner Corporation. Prior to his career in healthcare IT, he was a practicing hospitalist and completed his training in Internal Medicine/Pediatrics at the University of Missouri- Columbia, and his medical degree from the University of Oklahoma. He is based in Kansas City, MO. For more information, visit <https://www.nethealth.com/solutions/wound-care/#boost-wound-care>