Berlin, NJ — The necrotic, gangrenous wound literally only scratched the surface of the limb- and life-threatening situation. The patient, 65-year-old June Flinn of Blackwood, NJ, was septic with a white blood cell count nearing 20,000 and experiencing diabetic ketoacidosis with her blood sugar level pushing 400 when she arrived to the emergency department (ED) at Virtua Berlin on a chilly winter morning last February. Sent to the ED by her podiatrist during an appointment she had made due to a “spot” she had noticed on her foot weeks earlier, Flinn would require emergency surgery to debride and evacuate an abscess that had led to a bacterial infection and cellulitis reaching up to her thigh.

“And it was continuing to move,” said Christopher LaRosa, DPM, medical director of the Wound Healing Center at Virtua Berlin, who would have her in the operating room to perform surgery by noon that day. “The wound was just three-by-three centimeters, but we were dealing with an aggressive form of bacteria and necrotizing infection causing an immense amount of soft tissue destruction,” he continued. “Had her initial podiatry appointment been scheduled for a few hours later, she probably wouldn’t have survived, so immediate surgical intervention was paramount for limb salvage.”

As harrowing a scenario as it might have been in the moment, the experience provides a rather routine account as to why LaRosa and a few colleagues had lobbied for a wound care-devoted center to be established at one of South Jersey’s largest hospital networks.

“Her got to the hospital,” explained LaRosa, who, along with fellow physician Paul Quintavalle, DPM, and Kathleen Judge, ACNS-C, NEA-BC, CWOCN, MSN, commissioned Virtua administration in 2001 about the prospects and the need for a specialized center for their community. “We were beginning to realize that many of our inpatients didn’t have the resources when they became outpatients to have their wounds cared for in a comprehensive center,” said LaRosa, a member of Virtua’s staff since completing his residency in foot and ankle surgery at the network’s Voorhees campus in 1998 who had similarly begun to notice an increasing number of patients facing the same challenges through his private practice in Gibbsboro, NJ, which he still operates.“And it always seemed to come back to that lack of disease awareness among our patients.”

Going unaware of one’s comorbid diabetes and other conditions not only defined the existence of many wounds for patients, it further complicated their chances for healing. Unsurprisingly, these individuals often lacked the education needed to manage their diseases and further increased their risk of developing chronic wounds after discharge. An opportunity to meet the needs of the community was there for the taking.

“It would have been difficult and challenging for any provider to continue the kind of care required for these patients in the office setting,” LaRosa said. “Plus, I was having to provide a lot of wound care in the inpatient setting and we didn’t always have the resources to make available to those patients.”

They do now.

Continued on page 24
Serving Up Specialties at Virtua Washington Township

When the opportunity for a new multidiscipline wound program in South Jersey arose, Virtua went all in.

Washington Township, NJ — Jack Bondi, DPM, DABPS, had become beyond frustrated with having to refer people “across the river” for their wound care. After 15 years of running his own podiatry practice in South Jersey, he was seeking a means to keep his patients within the local community throughout the continuum of care. So when he learned that Virtua, for which he also worked in the inpatient setting, was constructing a multidisciplinary healthcare facility on its Washington Township campus, he didn’t blink before communicating his desire to make a wound care clinic part of the plans.

“I was seeing too many patients in this region who were dealing with wounds that weren’t being treated in a consolidated facility — we weren’t seeing that multidisciplinary approach that these patients needed,” said Bondi, who today serves as medical director of the Wound Healing Center at Washington Township in addition to his private practice located just a few miles away.

Surely the opportunity to refer patients to Virtua’s Berlin clinic had been an option for several years, but the commute to neighboring Philadelphia was sometimes more convenient for his patient population and, more often than not, out-of-network referrals were the reality.

“I was having to farm patients out to multiple specialty providers, and I think if you look at the statistics in general, a good number of people do that for their medical care,” Bondi continued. “But with Virtua I saw an opportunity to develop a ‘one-stop shop,’ so to speak, for those patients who would come to us for their healthcare needs but then fall through the cracks when it came to wound care. I think that’s where Virtua saw the need and that was the genesis of how we began here.”

And what’s been created is a multidiscipline center that offers specialty-trained wound care nurses, radiology, and physical therapy (PT) as well as onsite certified experts in nutritional counseling, diabetes education (CDE), and lymphedema care.

In particular, the availability of experts in lymphedema was seen as a priority that’s not widely available.

“We really wanted to be able to address that here because there was a huge need in this region and there was nobody around here who was doing lower extremity therapy, probably because it’s time-consuming and there’s extra training and certification within physical therapy involved,” said Bondi. “It’s not easy work.”

Located one floor below the wound clinic, Virtua In Motion offers not only PT and lymphedema therapy but occupational therapy, oncology rehab, and aquatic therapy, among other services.

“We found the need for a mutual collaboration with the wound care staff because PTs in their natural element do see wound care patients and there’s overlapping care that will take place related to their wounds,” said Keith Abruzzese, PT, program manager. “There’s also a lot that we can do for wound patients here and focus on their true functionality. They could have dysfunction in gait and balance, for instance with a lower extremity wound, and require treatment for that, which can also be addressed by the wound care physician or nurse in conjunction with PT.”

When it comes to diabetes and nutritional counseling, each patient referred to the clinic is given a comprehensive assessment by a CDE (Virtua employs 20 throughout the network) to determine interventional need.

“The protocol for all of our patients, even when they’re in the acute care setting, is to meet with a CDE or certified dietician to follow very closely their sugars and nutrition,” said Kathleen Judge, ACNS-C, NEA-BC, CWOCN, MSN, wound clinic director. “We conduct nutritional screenings for every patient. We’ll evaluate blood chemistry panels and prealbumin levels, we’ll talk about their eating habits at home and in social settings, and we encourage ankle-brachial index testing — particularly for compression. At least 95 percent of our patients will need to see a CDE. Getting them to actually go can be another story, but it’s our job to help them understand the relationship between wound healing and proper nutrition and diabetes control.”

Likewise, the comprehensive screenings are conducted not just for the purposes of benchmarking, which the facility has many types established, but to help patients understand that appropriate healthcare is not static.

“You can’t practice in healthcare, and especially wound care, anecdotally,” Bondi said. “This is the era of evidence-based medicine, and we’ve developed a multidiscipline approach through our screening process and algorithms that reflects that.”

— Joe Darrah
COMPREHENSIVE RESOURCES

From the availability of certified diabetes educators and dieticians to wound care-certified nurses and physicians, Virtua’s wound care service features a multidisciplinary staff including vascular, plastics, and infectious disease specialists. Services have since expanded to include an independent satellite clinic that launched three years ago on its Washington Township campus. In 2012, more than 6,500 patients, many of them like Flinn who were previously undiagnosed diabetic, were treated within the two clinics, which often serve as referral sites for one another. Where Berlin is equipped to provide HBOT and an ostomy clinic (see sidebar on page 25), Washington Township offers onsite physical therapists, lymphedema experts, and a certified diabetes educator [CDE] (see sidebar on page 23).

“We are really one entity — we consider ourselves a combined wound care program,” said Jack Bondi, DPM, DABPS, medical director at Virtua Wound Healing Center Washington Township. “We have standardized protocol that we follow and joint goals that we aim to meet, such as quality control, that are required by the facility, but we try to make the program as homogenous as we can.”

In many respects, the patients dictate the collegial relationship among the centers based on their circumstantial similarities.

“Many of them just don’t know they’re living with diabetes due to their neuropathy, and they just don’t feel the pain that should facilitate them in going to the doctor or the hospital,” LaRosa said. “It’s not until they feel so ill and so lethargic that it actually motivates them to be seen by someone.”

Enter Flinn, who said she didn’t feel well for months leading up to her surgery, but did not have a designated family physician. A mother of two grown children who had long become accustomed to juggling a busy home and work schedule as a full-time homemaker and chiropractor’s assistant, Flinn said feeling sick and exhausted simply had become tolerable.

“I would just go home from work, cook dinner, lay down all night, and start all over again the next day,” she said. “In October I had seen a little sore on the bottom of my foot, near my toes, that I put a Band-Aid on and thought was healed. We went on vacation in November and I didn’t think anything of it, but apparently it never went away.”

While walking downtown in Philadelphia one afternoon the following February with her husband George, Flinn felt pain in her foot, developed a fever by the time they returned home that evening, and remained bedridden throughout the weekend. The following day she saw the podiatrist and her life forever changed. Though, her recollection of the day’s events are still fuzzy at best.

“I don’t remember much,” Flinn told Today’s Wound Clinic during a recent visit to the wound center. “By the time I got to the hospital I wasn’t coherent. When I saw my husband and children later that evening it was all very overwhelming. And when I saw my foot for the first time after surgery, I really didn’t realize what I was looking at. I thought the exposed tendons were something they forgot to take out during surgery. But I soon began to realize how bad things really were.”
She only sacrificed a toe during the procedure, but things would become more complicated when Flinn would be unable to tolerate hyperbaric oxygen therapy (HBOT). Her unique situation is what Virtua clinicians say characterizes their typical individualized approach to care.

**HEALING WOUNDS WITH PERSONALIZED TREATMENTS**

Following surgery, Flinn was transferred to the hospital’s med/surg unit before ultimately being housed in long-term subacute rehabilitation, where she remained for five weeks while requiring weekly visits to the Berlin clinic for wound assessment and re-dressings. Three months post-surgery, she’s undergone five additional debridements and has received three applications of bi-layered skin substitute. She’s also required the services of visiting nurses, which is also coordinated through Virtua’s comprehensive care plan, and now is seen in the clinic weekly as an outpatient.

“She’s been through a long haul,” said Judge, director of the wound programs at Berlin and Washington Township. “Her wound was very challenging to conduct negative pressure therapy because of its location under the foot and around the dorsal area, so it was very critical for her to have access to our specialty-trained wound care nurses for her dressings.”

However, Flinn’s care plan could not include HBOT due to her claustrophobia, something she has struggled with for some time.

“I can handle being in an elevator, but being in [the chamber] was just too much,” she said. “Even though I was told about the benefits, I was too scared.”

Not an uncommon fear among their patients, claustrophobia is something the staff at Virtua doesn’t take lightly, LaRosa said, acknowledging that in Flinn’s case the risk of amputation was such a consideration that they even broached the possibility of treatment in a multipurpose chamber for space considerations.

“And there’s still some patients who just can’t do it,” he said. “We’ll engage family members into that conversation and if there’s any stalling or regression of healing, then we’d have to look at that as a major necessity for limb salvage; but it’s the patient’s right to choose the type of care they want.”

However, Flinn would see enough progress that HBOT has been justifiably avoided.

“Her wounds have been healing quite progressively with the comprehensive plan of care we’ve put into place and she hasn’t stalled at all,” LaRosa said, attributing the success in large part due to the individualized education she’s received.

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**The Clinic Within the Clinic**

Not all wound care patients experience the same maladies. For those living with ostomies, Virtua offers additional support.

Living with a chronic wound is challenging enough, regardless of etiology. However, those who live with wound ostomies often have additional stressors related to overall quality of life, according to the United Ostomy Associations of America Inc. At Virtua Berlin, a monthly ostomy clinic is offered for patients who’ve undergone urostomy, colostomy, or ileostomy to meet with wound ostomy-certified nurses for ongoing evaluation, care management, and emotional support.

“We’ve had it in place three years now, and each year we continue to grow,” said Kathleen Judge, ACNS-C, NEA-BC, CWOCN, MSN, wound clinic director. “It’s a much needed service in the community.”

Officials at Virtua acknowledged a need for the clinic due to more patients expressing feelings of embarrassment and fear that their ostomies may cause an uncomfortable or even emergent situation away from home.

“Patients were telling us that they hadn’t really left their homes in months or years because they couldn’t go more than a few hours without their ostomy leaking, and that they’d become isolated and depressed,” Judge said. “And it’s often something as simple as finding the right sized appliance to work for them or getting the wounds underneath the appliance to heal. They often only need one visit, and it can change their lives. They just need that education.”

— Joe Darrah
An Unexpected Route of Infection

One MRSA patient experiences a surprising set of wound circumstances.

Harry Hofflinger had lived with diabetes for nearly 60 years before his first chronic wound developed, when a nail that he stepped on went through his shoe and punctured his foot. A small wound had formed and effectively treated by his primary provider, but months later while riding his exercise bike (a part of his daily activities to aid blood flow to his legs), Hofflinger complained of more pain in the foot and swelling in his leg. The following morning at the breakfast table with his wife Pat, the pain had intensified and his sock felt wet. A callus had formed on the bottom of his foot, just below the big toe, and had burst. An infection had begun to spread by the time he went back to the doctor. It was later revealed that the nail had remained in his shoe the entire time. At its worst, the wound had grown to 2.8 cm x 1.8 cm x 0.2 cm.

“He had developed a foot ulcer with cellulitis, a neuropathic ulceration that had grown out MRSA,” said Jack Bondi, DPM, DABPS, to whom he was referred at the Wound Healing Center at Washington Township by his primary provider. Having received his sixth application of human fibroblast-derived dermal substitute, Hofflinger, 66, of Westfield, NJ, has had to scale back his exercise regime and use a wheelchair to assist healing, but is expected to be back in his boat fishing, his true hobby, in a matter of weeks.

“We’re seeing tremendous incremental closing, peripheral re-epithelialization of the wound,” Bondi said during a recent visit to the facility by Today’s Wound Clinic. “We’ve taught him the key is offloading because it’s neuropathic-based, and in a couple weeks he’ll be healed. But given the situation he was in he could have lost his leg with this.”

— Joe Darrah

an aggressive treatment protocol, and a change to her dietary habits.

“My lifestyle now is totally different,” said Flinn. “I’m eating three meals per day — no sugar at all. Before, I was always eating cupcakes, ice cream, and candy. I was picking at snacks all day. They really taught me how to be healthy here.”

On the opposite end of the diabetes spectrum is Robert Way, 69, of Tabernacle, NJ, a patient who first arrived to the Washington Township clinic last October for recurring sores between the toes of his right foot. Diagnosed with diabetes as a child, Way has managed his health most of his life — in a manner of speaking. A longtime consumer of red meat, he experienced a major heart attack in 2005 and went otherwise unaware of the effects of diabetes on his cardiovascular health for many years. Referred to the Berlin center for vascular care due to a lack of blood flow to the affected foot, Way would undergo debridement and bypass surgery. However, the wound would develop gangrene after hospital discharge and two toes had to be amputated. A subsequent stay in Virtua’s Berlin long-term care facility allowed him to easily coordinate the more than 50 hyperbaric treatments he’s required.

At the time of TWC’s visit to the Washington Township campus, Way and his wife Alberta had been counseled by the CDE and negative pressure therapy had been initiated in the clinic and in his home. Had he not been referred to the clinic, he likely would have needed a second lower extremity amputation (he lost his left leg after developing a heel ulcer in 2007).

“All the red flags went up for him when he came in, but he’s very committed to staying healthy and that’s when you tend to see a difference with patients,” Judge said. “Not every patient can get through the extent of hyperbaric therapy he’s had, but the wound has made significant progress and we’re continuing to granulate healthy tissue and advanced wound care until we get it to close. It’s really been a collaborative effort with this wound.”

It’s collaboration predicated on building relationships with appropriate staff members at the onset of care.

“During the initial phone screening for each patient, they’re scheduled with either a podiatric physician or a vascular physician depending on the locality of the wound,” Bondi explained. “We strive to keep continuity of care, so when patients return for each follow up they’re going to be assigned to the same physician and, for the most part, the same nurse. From a practical standpoint, that’s what’s best for benchmarking the progress of each wound and helping patients form a relationship with our staff.”

This approach has not just led to improved healing rates, it’s also turned patients’ wound care experience into an uplifting event, Judge added.

“Their treatments actually become something they look forward to because many of these patients have become accustomed to not seeing a lot of success with their wounds. It’s just a very positive interaction for everybody.”

Joe Darrah is managing editor of Today’s Wound Clinic.

PHOTO SLIDESHOW: VIRTUA WOUND HEALING CENTERS

For a comprehensive selection of patient photos and other images collected during TWC’s visit to Virtua, go to www.todayswoundclinic.com.