CLINICAL MANAGEMENT extra

Wound Care Center of Excellence: A Process for Continuous Monitoring and Improvement of Wound Care Quality

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Acknowledgements: The authors would like to acknowledge Dr Harold Brem, the NYU Winthrop Wound Care team, and the NYU Winthrop Hospital Department of Surgery for all of their help and support. Special thanks to Dr Naveed Masani and Dr Dina Chenouda, cochairs of the Department of Medicine quality improvement team. This work was supported in part by a National Institutes of Health grant, NIDDK 1K24DK090135-01A1.

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GENERAL PURPOSE:

To provide information about a study using a new process for continuous monitoring to improve chronic wound care quality.

TARGET AUDIENCE:

This continuing education activity is intended for physicians, physician assistants, nurse practitioners, and nurses with an interest in skin and wound care.

LEARNING OBJECTIVES/OUTCOMES:

After completing this continuing education activity, you should be better able to:

1. Recognize problems associated with chronic wound care.

2. Identify methods used in this project to improve care.

3. Illustrate the findings from this and similar projects and implications for providing improved wound care.

ABSTRACT

Patients with chronic wounds require complex care because of comorbidities that can affect healing. Therefore, the goal of this project was to develop a system of reviewing all hospitalized patients seen by the study authors' wound care service on a weekly basis to decrease readmissions, morbidity, and mortality. Weekly multidisciplinary conferences were conducted to evaluate patient data and systematically assess for adherence to wound care protocols, as well as to create and modify patient care plans. This review of pathology and the performance of root-cause analyses often led to improved patient care.

KEYWORDS: chronic wound, outcomes, pathology, quality improvement, wound care, wound center

ADV SKIN WOUND CARE 2018;31:204–13.

INTRODUCTION

Chronic wounds are a growing healthcare concern, especially in light of the increasing number of older adult patients and patients with multiple comorbidities. In 2006, skin ulcers and wound care reportedly accounted for $11 billion in total direct and indirect US healthcare costs,[1] a number that rose to $15 billion annually in 2012[2] and $37 billion in 2016.[2] However, accurate cost measurements are difficult because these patients are seen in a wide variety of settings.[3] It is estimated that 6.5 million people in the United States are affected by chronic wounds; in developed countries, 1% to 2% of the population will experience a chronic wound in their lifetime.[4] Patients with chronic wounds require complex care; a majority have numerous contributors to their nonhealing status, including diabetes, hypertension, peripheral vascular disease, and cardiac disease. During their inpatient or outpatient care, patients often experience a high rate of complications such as sepsis, *Clostridium difficile* infection, cardiac dysrhythmias, and deep vein thromboses. Unfortunately, patients are often deemed "revolving door" patients because of their frequent readmission to an inpatient setting for emergent treatment.

Protocolized wound treatments and guidelines have been published in an attempt to standardize and improve management of chronic wounds[5–10] and reduce the associated morbidity and mortality for this high-risk patient population. Despite this, difficulty arises during protocol implementation and follow-up from a host of variables such as lack of acceptance of new protocols, multidisciplinary team involvement, and psychosocial and logistical concerns.

The goal of this project was to develop a system of reviewing all hospitalized patients seen by the authors' wound care service on a weekly basis to decrease readmissions, morbidity, and mortality. This article describes the methods used to establish a weekly multidisciplinary wound conference and collect data toward achieving the stated objective.

METHODS

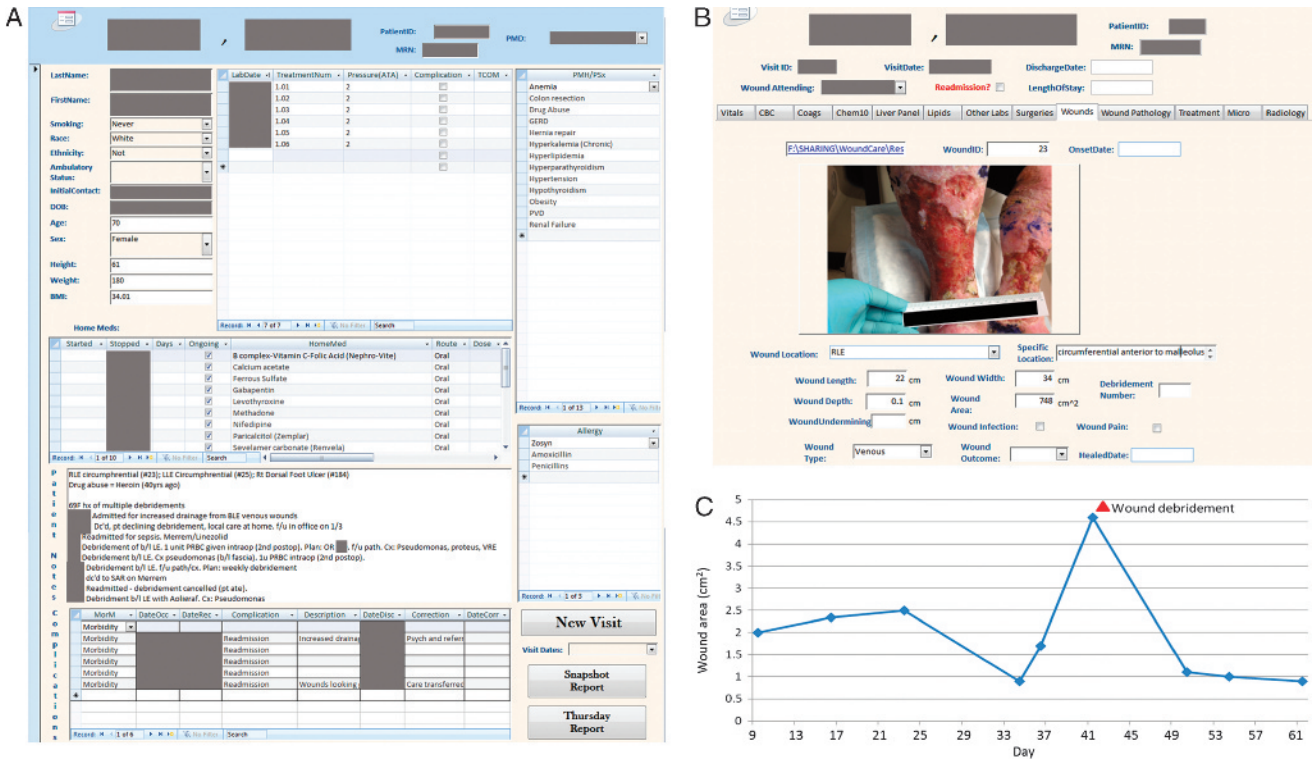
The review system chosen was a multidisciplinary wound conference that focused solely on discussion of patients with any wound (excluding burns) seen by the wound care service. This conference format was modeled after other established wound care centers[11,12] using departments such as oncology (with a focus on pathology) to help tailor treatment regimens. This work was approved by the local institutional review board to improve quality of care of patients with chronic wounds.

The wound care service comprises a unique team of 4 dedicated wound physicians (2 general surgeons, 1 plastic surgeon, and 1 emergency medicine physician), physician assistants, nurses, and ancillary staff in addition to a research scientist and fellows. The conference was attended by the wound team, specialty nurses, and members from invited specialties (eg, internal medicine, radiology, gastroenterology) to discuss patient care. This system was used to collect readmission data for patients admitted to the wound care service and compare the data to the known historical 30-day readmission rate of 21%.

A Microsoft Excel (Redmond, Washington) spreadsheet was created containing the currently active wound patients, including operative cases and primary and consult inpatients. The daily inpatient census was reviewed, and the spreadsheet was updated every morning by the service's fellows to reflect changes in patient status over a 7-day period. The fellows then participated in daily inpatient rounds, obtaining overnight patient updates and plan changes. The fellows also collected information during operative cases, including photographs of the wound before and after operative intervention, wound measurements, and any treatments given (growth factors, skin grafts, etc).

The hospital's electronic medical record was accessed to collect laboratory and radiology results, vital signs, orders, inpatient notes, pathology and culture results, and discharge

Figure 1.
WOUND CARE DATABASE



A) Main patient dashboard in which patient demographics and data from individual visits can be entered and accessed. B) Weekly snapshot report used to easily display relevant patient information and images during the weekly conference. C) Wound area graph with debridements indicated.

summaries. Data were received monthly from the surgical department containing all 30-day readmissions for the wound care service, and this information was cross-referenced with the spreadsheet to ensure capture of all readmissions.

A wound-specific database was created using Microsoft Access and subsequently used to capture and present patient information during the conference. The database was tailored to show a single-page patient summary (Figure 1A) and wound information (Figure 1B) and plot the change in wound area over time (Figure 1C). The summary included a brief history, recent hospitalizations and clinic visits, operations, pathology and microbiology results, and radiology findings. Graphing the change in wound area over time enabled easy identification of large changes from rapid healing (downslope) or debridement (sharp peak).

Weekly meetings were held with the conference attending to discuss all of the previous week's admissions and operative cases to ensure each would be presented in 1 of the 3 segments of the wound conference: Wound Board, Readmissions and Complications, and Database Wound Rounds. The weekly group of patients was divided among the wound care research fellows, who were responsible for presenting their patients' information during the conference. As part of the wound care service, the research fellows were taught the current protocols and guidelines for wound healing and regenerative medicine and the scientific methods involved in research and conducting clinical trials. They also presented relevant literature reviews during the Wound Board and Readmissions and Complications segments. During the conference, the database summaries were displayed on a monitor, which facilitated efficient discussion of each case. Conclusions from any root-cause analyses were entered in real time by 1 fellow without delaying the progression of the conference, while another fellow maintained meeting minutes.

Educational assessment was accomplished both formatively and summatively. Formatively, the fellows were assessed during the conference using the Socratic Method. This allowed the learners to be immersed in real situations that simulated clinical situations, so the learner could recall new information and knowledge. This method motivates the learner by extrinsic factors such as the requirements to attend the weekly

wound conference and with intrinsic factors such as challenging the learner to continuously move on to more complex patient situations.

Summatively, the fellows' education was assessed by reviewing patient outcomes over time to determine whether treatments were successful and adherence to wound care protocols was maintained. Further, follow-up in the clinic provided opportunities for fellows' questions to be answered and for elaboration on protocols specific to patient disease processes. Application of theory in practice also solidified learning that occurred during the weekly meetings, specifically the scenario-based learning opportunities.

Weekly conferences lasted between 1 and 3 hours, depending on the numbers of cases discussed. If a patient's care required a multidisciplinary approach, members from the relevant departments were also invited to attend and discuss the case, which frequently resulted in subsequent departmental grand rounds for extreme cases (eg, delayed diagnosis of necrotizing fasciitis). In addition, if questions were raised regarding any imaging studies, radiology faculty members were invited not only to discuss the studies in question, but also to lend their expertise with respect to optimal testing to evaluate specific diagnoses (eg, magnetic resonance imaging for osteomyelitis).

Patients were chosen for the Wound Board segment of the conference based on specific questions for the pathologist, the most common being the presence or absence of malignancy, necrotic versus viable bone, ischemia, or infection/inflammation. The pathology findings were then used to guide patient management. For example, a patient with biopsy-confirmed osteomyelitis (Figures 2A and B) was discharged on broad-spectrum antibiotics while awaiting microbiology results, then de-escalated to 6 weeks of culture-specific antibiotics once the results were available. This resulted in a shorter length of stay and shorter duration of antibiotics. In another case, Prussian blue staining was applied to a specimen obtained from the dependent portion of a sacral wound to differentiate hemosiderin versus melanin (Figures 2C and D), ruling out the presence of malignancy in a nonhealing wound, which normally would have required further excision.

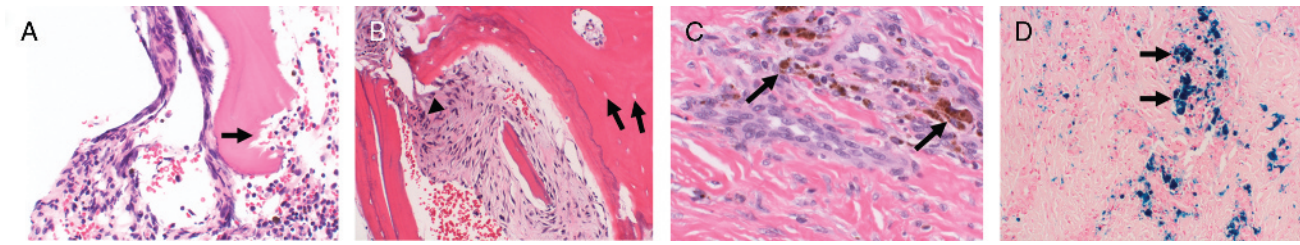
Each patient's name, medical record number, date of surgery, and specific questions were sent to the pathology department 2 to 3 days prior to the conference. This allowed the pathologist to select and photograph applicable pathology slides to present during the conference. The pathology photographs could also be uploaded to the wound database. This helpful second opinion from the pathologist occasionally changed the diagnosis (eg, chronic osteomyelitis) and subsequently the patient management (eg, commencement of hyperbaric oxygen therapy [HBOT]).

Patients with the following mortalities and morbidities were presented during the Readmissions and Complications segment of the conference: *C difficile* infection, hospital-acquired pressure injuries, major amputations, venous thromboembolism or cerebrovascular accidents, unplanned admission or readmission, and sepsis. A root-cause analysis was performed for each complication to decrease any future occurrences for patients seen by the wound care service.

During Database Wound Rounds, all inpatients and operative cases that occurred during the prior 7 days were reviewed. The focus was on establishing and following a management plan for each patient. The review included pathology and microbiology results, specifically to ensure that patients were discharged with appropriate antibiotics, if necessary. The care plan often included the following when indicated: surgical debridement, revascularization, HBOT, offloading, and referrals. The nutritional status of patients was also assessed, and malnourished patients were given appropriate supplementation. This review often resulted in concurrent communication with the treating physician and care plan modification.

The following case reports demonstrate how discussion of patients during these weekly conferences improved management

Figure 2.
WOUND BOARD



A-B) Pathology assessment of an osteomyelitis case. A) Hematoxylin and eosin (H&E) stain showing osteoclastic breakdown of osteomyelitic bone (arrow). B) H&E stain showing osteomyelitis evidenced by nonviable bone with empty lacunae (arrows) and neutrophils in the marrow space (arrowhead). C-D) Assessment of unusual hemosiderin deposition in a pressure injury case. C) H&E stain of pressure injury biopsy showing dark brown staining of possible hemosiderin deposition (arrows). D) Confirmatory Prussian blue iron staining showing hemosiderin deposits (arrows).

not only of the patient, but also of future patients with similar presentations.

CASE REPORTS

Case 1

A 75-year-old woman presented to the emergency department with a left thigh wound of approximately 6 months' duration. The patient reported that the wound had become larger and more painful over the past 2 days. Her medical and surgical history was significant for congestive heart failure, coronary artery disease, 2 myocardial infarctions, percutaneous coronary intervention with stent placement, asthma, chronic obstructive pulmonary disease, chronic kidney disease with anemia, end-stage renal disease, hypertension, hyperlipidemia, type 2 diabetes mellitus, gastric reflux, obstructive sleep apnea, history of methicillin-resistant *Staphylococcus aureus* infection, endocarditis, pulmonary fibrosis, appendectomy, hysterectomy, left partial mastectomy, lung cancer status post radiation, left nephrectomy, and inferior vena cava filter placement. She was a former smoker with no alcohol or drug use.

On evaluation, the patient's vital signs were significant for an elevated blood pressure of 164/69 mm Hg. Physical examination revealed multiple left leg wounds, the largest of which was 7 x 10 cm with a depth of 0.4 cm, with fibrinous exudate and local mild cellulitis (Figure 3A). Her laboratory test results showed a leukocytosis of 14,200/μL, with a left shift of 85%. The patient was admitted to the wound care service with the diagnosis of infected left thigh wounds with cellulitis, started on intravenous antibiotics, and scheduled for possible debridement.

In light of the patient's physical examination, end-stage renal disease, and elevated blood urea nitrogen/creatinine of 41/2.1 mg/dL, a nephrology consult was placed to rule out calciphylaxis as a cause of her wounds. The nephrology team recommended a skin biopsy, which was performed during the left thigh debridement on hospital day 3. The specimen was reviewed with the department of pathology during that week's wound conference, and the diagnosis of calciphylaxis was confirmed (Figure 3B).

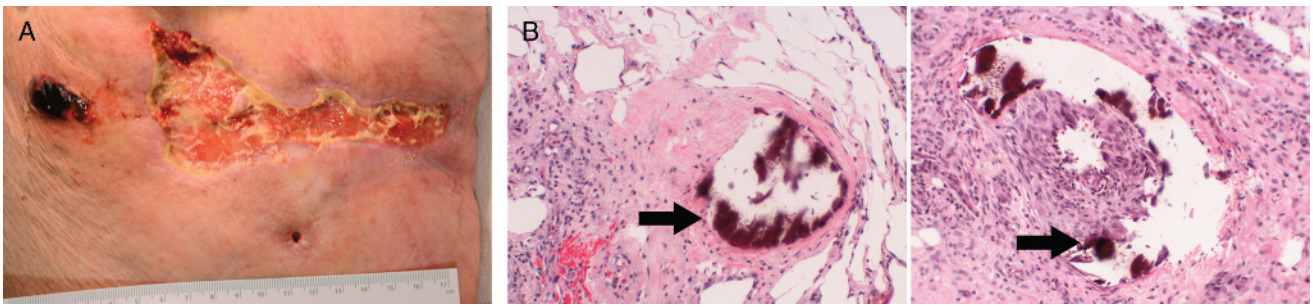
The patient deteriorated clinically on day 6 with worsening leukocytosis (14,000/μL) and underwent a second excisional debridement of the left thigh wound on hospital day 7. The patient then improved and was discharged to a skilled nursing facility on hospital day 10. Hyperbaric oxygen therapy was recommended to the patient because it can be beneficial for patients with calciphylaxis.[13] However, because of the high mortality of patients with calciphylaxis and end-stage renal disease, the patient declined HBOT and opted to receive palliative care.

Case 2

A 67-year-old woman presented to the emergency department with 5-day history of fevers to 38.9° C, 2 weeks of a nonproductive cough, generalized body weakness, nausea on the day of admission, and intermittent shortness of breath. Her medical and surgical history included type 2 diabetes mellitus, hypertension, hyperlipidemia, gastroesophageal reflux disease, chronic hepatitis, liver transplant (1995), coronary artery disease with myocardial infarction and cardiac stenting (2014), pulmonary hypertension, paroxysmal atrial fibrillation, and chronic kidney disease (baseline creatinine 2.4 mg/dL). Home medications were significant for prednisone and everolimus, and she denied any alcohol, tobacco, or drug use.

On initial examination, the patient was tachypneic to 27 breaths per minute, requiring 2 L of oxygen via nasal cannula to maintain oximetry greater than 95%. Physical examination and laboratory workup were otherwise unremarkable. A chest

Figure 3.
CASE 1: PATIENT WITH CALCIPHYLAXIS



A) Image of medial left thigh of a patient with suspected calciphylaxis wounds. B) Hematoxylin and eosin stain showing calcifications (arrows) present within the walls of small blood vessels, consistent with calciphylaxis.

radiograph showed patchy bilateral airspace disease suggestive of pneumonia. She was subsequently admitted to the medical service with the diagnosis of pneumonia and started on broad-spectrum intravenous antibiotics.

During the first week of admission, the patient developed respiratory failure requiring intubation and was upgraded to the medical intensive care unit with the diagnosis of sepsis secondary to pneumonia. She then developed multiple organ dysfunction syndrome necessitating urgent dialysis. On hospital day 9, a nursing note documented blisters and ecchymosis on her lower extremity; all prior notes reported a normal skin examination. On day 10, a physician's note mentioned a large ecchymotic area and weeping of the abdomen. On hospital day 12, the surgery team was consulted for a worsening right lower extremity wound. The lower extremity was noted to have large areas of discoloration, desquamation, blistering, drainage, and tenderness with passive movement (Figure 4A). Necrotizing fasciitis was suspected, and the patient was brought to the operating room for urgent debridement.

Intraoperative findings of lack of resistance to blunt fascial dissection extending from the distal extremity to the lower abdomen in addition to pathology findings (Figure 4B) confirmed the clinical diagnosis. Wound cultures grew vancomycin-resistant *Enterococcus*. The patient underwent multiple subsequent debridements without clinical improvement. A family meeting was held, and in light of the patient's overall poor condition and high mortality, withdrawal of care and palliative extubation were performed, and the patient died on hospital day 20.

During the discussion of this case at the weekly conference, communication, thorough skin examinations, documentation, and escalation were identified as part of the root-cause analysis. Medical quality assurance faculty were invited to attend the discussion, who then decided to hold a multidisciplinary meeting, including the director of nursing education, the director of the medical intensive care unit, attending physicians, fellows, and residents for further discussion. As a result, 2 patients who were subsequently admitted to the medical service and were suspected of having necrotizing fasciitis were treated expeditiously, leading to successful outcomes (cases 3 and 4).

Case 3

A 53-year-old man who following several days of right leg pain was found to be confused/unresponsive and brought into the emergency department. His medical history included type 2 diabetes mellitus, peripheral neuropathy, hypertension, hyperlipidemia, and asthma. Physical examination revealed an edematous right leg with blistering and ulceration (Figure 5A). Within 24 hours of admission, the patient was evaluated by the wound care team and taken to the operating room for an exploration of the right lower extremity. Intraoperative findings led to the diagnosis of necrotizing fasciitis, which was confirmed by pathology (Figure 5B). The patient underwent multiple subsequent debridements, resulting in clinical improvement and discharge to a rehabilitation facility.

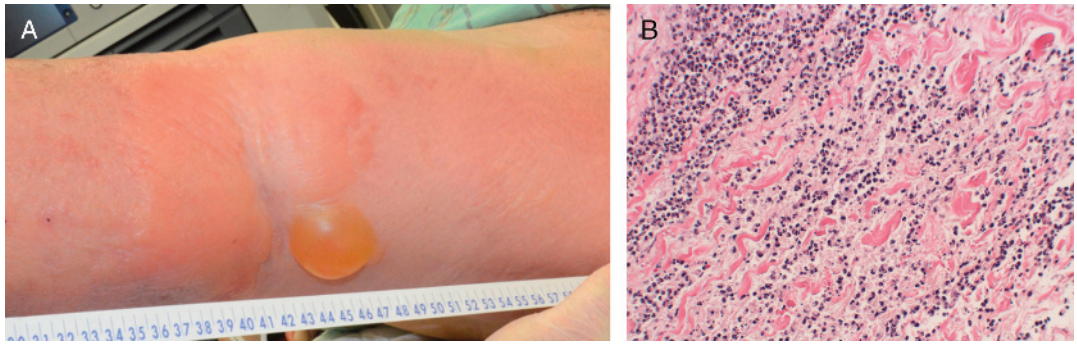
Case 4

A 79-year-old woman was found at home after an unwitnessed fall with severe, bilateral upper extremity pain that had completely restricted her mobility. Her medical history included hypertension, hyperlipidemia, type 2 diabetes mellitus, spinal

Figure 4.
CASE 2: PATIENT WITH NECROTIZING FASCIITIS

Image of posterior right lower extremity with necrotizing fasciitis. B) Low-power hematoxylin and eosin stain of a debridement specimen of the right calf showing extensive hemorrhage in the soft tissue and necrotic fascia.

Figure 5.
CASE 3: PATIENT WITH NECROTIZING FASCIITIS



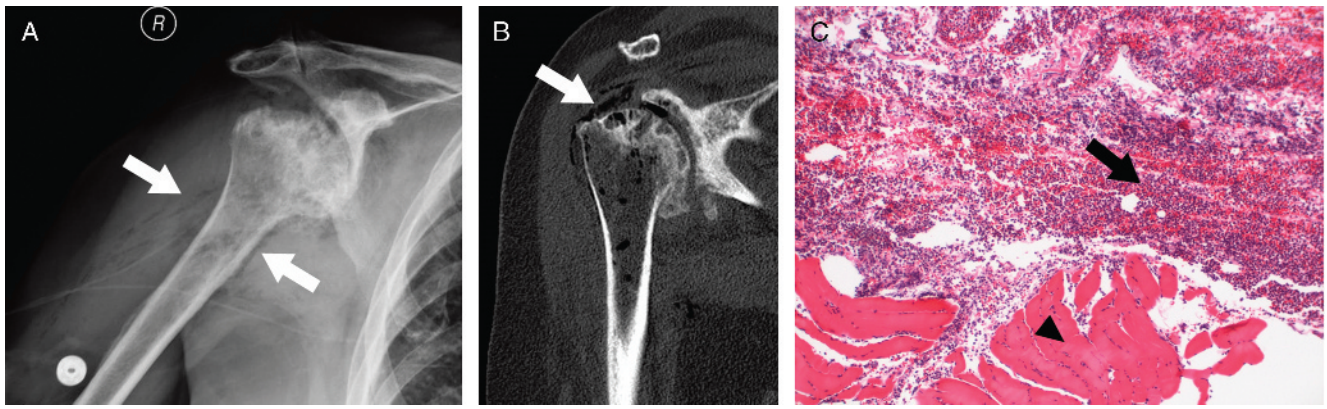
A) Image of posterior right lower extremity with blistering and erythema. B) Hematoxylin and eosin stain of a debridement specimen showing fibroadipose tissue with severe acute inflammation indicative of necrotizing fasciitis.

stenosis, and endometrial cancer status post hysterectomy. Physical examination was significant for a temperature of 38.8° C, heart rate greater than 130 beats per minute, and motion-limiting pain of the right arm. Radiograph of the right shoulder revealed diffuse subcutaneous emphysema (Figure 6A). Immediate computed tomography scan of the right upper extremity showed septic arthritis of the shoulder with resulting necrotizing fasciitis of the adjacent tissues (Figure 6B). Within 12 hours of presentation, the patient was taken to the operating room by wound care and orthopedic surgery for a joint exploration and debridement of the right shoulder and arm. Pathology showed extensive inflammation and necrosis (Figure 6C). After an additional debridement, the patient had an uneventful hospital course and was discharged to a nursing facility with plans to follow up with wound care and orthopedic surgery.

DISCUSSION

Multidisciplinary team conferences have been reported in the literature to be effective for improving patient care, especially for patients with various types of cancer. For example, 29% of treatment plans were changed for patients with primary rectal cancer after presentation at a multidisciplinary conference, with subsequent 100% compliance with treatment recommendations.[14] Conferences held to discuss cases of patients with hepatocellular carcinoma resulted in 62% of patients receiving the recommended treatments and a higher likelihood of being alive

Figure 6.
CASE 4: PATIENT WITH NECROTIZING FASCIITIS



A) Radiograph of right shoulder with subcutaneous emphysema (arrows). B) Computed tomography of the right upper extremity showing septic arthritis with necrotizing fasciitis (arrow). C) Hematoxylin and eosin stain of a debridement specimen showing marked acute inflammatory cell infiltration (arrow) with normal muscle (arrowhead).

at 1 year.[15] Meetings for patients with lung cancer resulted in a change in management plans in 58% of presented patients, and 72% of recommendations were implemented.[16] Reasons cited for nonimplementation of the remaining treatment proposals included patient deterioration, clinician preference, the influence of new clinical information received after the conference, and patient ineligibility for proposed treatments. A review published in 2016 on the impact of multidisciplinary team meetings in oncology settings showed that patients who were discussed were more likely to receive more accurate and complete preoperative staging and neoadjuvant/adjuvant treatment. However, further studies are needed to show that the meetings result in improvements in survival outcomes.[17]

Based on these findings, a multidisciplinary wound conference was established with the goal of reducing readmissions, morbidities, and mortalities for patients with wounds. This weekly conference format is particularly innovative in that it focuses specifically on the care of patients with chronic wounds and incorporates pathology and microbiology results to create the patient treatment plan.

The literature already supports the fact that multidisciplinary wound care significantly increases wound healing and reduces the severity of wound-associated pain[18] in addition to providing a mechanism for clinical investigation of nonhealing wounds.[19] It has also been shown that a multidisciplinary amputation prevention service improved healing and reduced readmission rates of patients with neuroischemic wounds.[20] Weekly review of all wound pathology and microbiology results ensures that the appropriate patient management is performed based specifically on the findings (eg, HBOT for chronic osteomyelitis and antibiotic change based on species resistance). Inpatient length of stay is also decreased for patients who are optimized for discharge and only awaiting pathology or microbiology reports. Following discharge, necessary changes to the care plan can be made as soon as results are available or during the scheduled follow-up outpatient visit.

This approach is also unique because of the diversity of specialists who are part of the authors' dedicated wound service. Besides the team of 4 physicians of varying specialties (who are trained in wound surgery), the team also includes the chairman of pathology, numerous wound care physician assistants, nurses, and ancillary staff in the inpatient, outpatient, emergency department, operating room, and hyperbaric medicine settings. The clinical nurses who are part of the wound care service maintain a level of advanced expertise in evidence-based practice aspects relative to dressings, treatments, and biological therapies. This is accomplished through wound care certification provided through the Wound Care Education Institute. This board certification enables clinical nurses to demonstrate distinct and specialized knowledge in wound management and the ability to incorporate current standards in their nursing practice. It also facilitates better comprehension of the current trends in practice. Quality indicators are measured and evaluated in the hospital setting by specialized wound care nurses who care for inpatients across the entire organization. These nurses drive initiatives within an interprofessional team and successfully optimize patients to enhance and support positive patient outcomes. This multidisciplinary team approach allows for care of patients with wounds around the clock to ensure consistent wound management and continuity of care.

One major goal of this project was to establish a system to gather data on the readmission, morbidity, and mortality of patients seen by the wound team at this institution. The Table illustrates a summary of the data collected over 10 months. After collecting data for 1 year, a comparison to historic data will be made to look for any statistically significant differences and evaluate the effectiveness of the conference. This system allows for continuous assessment and over time will reveal improvements in outcomes.

Another goal of the conference was improvement of multidisciplinary communication. Members of various medical specialties are invited to attend the conference when a comanaged patient is presented. This facilitates the formation of a care plan with direct communication not only among members of the specialty teams involved in the patient's care, but also between the physician and patient. The increased awareness and education of the multidisciplinary staff following both the wound conference and grand rounds led to better subsequent patient outcomes (eg, decreased time to diagnosis and definitive treatment of necrotizing fasciitis).

Table.
SUMMARY OF FINDINGS

Total Wound Board cases	117
Total Readmissions and Complications cases	190
Total Wound Rounds cases	1508
30-d Readmissions	112
60-d Readmissions	39
90-d Readmissions	20
1-y Readmissions	23
Unplanned admissions	9
Mortalities	22
Delayed diagnosis and/or treatment	4

Limitations

One limitation of this process is obtaining information about complications and mortalities that occur when the patient is located at other facilities such as long-term-care facilities, rehabilitation facilities, other hospitals, and the patient's home. Often, information regarding a patient's death or admission to another facility was obtained from the family when calling to inquire about a recently missed appointment. One possible solution is to send a letter to all known providers requesting current patient status when a patient has not been seen for follow-up after 3 to 6 months.

Factors to consider for implementation of the wound-specific multidisciplinary conference include the time requirement for attendees, administrative support for weekly logistical arrangements, available meeting locations, and automation of data collection. Attempts were made to hold the weekly conferences during protected time for the fellows along with cross-coverage for physicians in attendance. Despite this, members are frequently called out of the meeting to respond to calls regarding patient care, which can lead to a loss of meeting productivity. At this institution, the role of obtaining a meeting space, recording minutes, and coordinating meeting logistics belonged to the wound care fellows, which may not be available at every institution. The time required to collect and prepare data for patient presentation varied based on the number of cases for the week. Automation of the data collection process by interfacing the hospital's electronic medical record, outpatient medical record, and wound care database would significantly reduce the amount of time spent gathering data. This would allow more time for data analysis as well as real-time updates and notifications of patient status and results.

The current conference format only includes discussion of inpatients who were specifically seen or operated on by the wound care team. In the future, this method will be expanded to include all patients with wounds treated by any specialty, as well as patients seen by the wound care team in the outpatient settings.

CONCLUSIONS

Currently, a direct causality cannot be established between the implementation of a weekly wound conference, financial implications, and patient outcomes, such as a reduction in readmission, morbidity, or mortality. After continuing this process and compiling 6 months' to 1 year's worth of data, 30-day readmission rates will be compared with the known historical rate of 21% to look for a statistically significant reduction. The morbidity and mortality before and after establishment of the wound conference will also be compared. The hypothesis is that this process will lead to a decrease in readmissions and complications for patients with chronic wounds and that this method can be adopted by any wound care team to improve wound care outcomes worldwide. The cost of conducting this conference is nominal compared with the cost of complications and readmissions that could be decreased by this quality improvement intervention.

PRACTICE PEARLS

- Multidisciplinary team conferences are effective for improving patient care.
- Multidisciplinary wound care significantly increases wound healing and reduces the severity of wound-associated pain.
- This weekly wound conference is particularly innovative because it focuses specifically on the care of patients with chronic wounds and incorporates pathology and microbiology results to tailor each treatment plan.
- A weekly wound conference may lead to a decrease in readmissions and complications for patients with chronic wounds and can be adopted by any wound care team to improve outcomes worldwide.

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CE CONNECTION

CONTINUING MEDICAL EDUCATION INFORMATION FOR PHYSICIANS

Lippincott Continuing Medical Education Institute, Inc., is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Lippincott Continuing Medical Education Institute, Inc., designates this journal-based CME activity for a maximum of 1 *AMA PRA Category 1 Credit™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

PROVIDER ACCREDITATION INFORMATION FOR NURSES

Lippincott Professional Development will award 1.5 contact hours for this continuing nursing education activity.

LPD is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

This activity is also provider approved by the California Board of Registered Nursing, Provider Number CEP 11749 for 1.5 contact hours. LWW is also an approved provider by the District of Columbia, Georgia, and Florida CE Broker #50-1223.

OTHER HEALTH PROFESSIONALS

This activity provides ANCC credit for nurses and *AMA PRA Category 1 Credit™* for MDs and DOs only. All other healthcare professionals participating in this activity will receive a certificate of participation that may be useful to your individual profession's CE requirements.

CONTINUING EDUCATION INSTRUCTIONS

- Read the article beginning on page 204. For nurses who wish to take the test for CE contact hours, visit http://nursing.ceconnection.com. For physicians who wish to take the test for CME credit, visit http://cme.lww.com. Under the Journal option, select *Advances in Skin and Wound Care* and click on the title of the CE activity.
- You will need to register your personal CE Planner account before taking online tests. Your planner will keep track of all your Professional Development online CE activities for you.
- There is only one correct answer for each question. A passing score for this test is 13 correct answers. If you pass, you can print your certificate of earned contact hours or credit and access the answer key. Nurses who fail have the option of taking the test again at no additional cost. Only the first entry sent by physicians will be accepted for credit.

Registration Deadline: March 6, 2020 (nurses); May 31, 2019 (physicians).

PAYMENT

- The registration fee for this test is $17.95 for nurses; $22.00 for physicians.