Austin Journal of Emergency and Critical Care Medicine

Open Access

Austin Publishing Group

Special Article - Burns

Refocusing to Outpatient Burn Care

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Received: May 13, 2015; **Accepted:** August 27, 2015; **Published:** August 29, 2015

Abstract

With the recent shift of burn patients' care to the outpatient arena the need for a multidisciplinary approach continues for the achievement of optimal outcomes in wound healing, functional outcomes, quality of life, psychological care, nutrition and patient satisfaction. Outcome data must be collected and evaluated to plan resources and improve quality. This article will describe one burn center's establishment of an outpatient program that ascribes to the metrics of evaluating our structure of care, processes, and outcomes while remaining financially solvent. The second purpose is to describe our outpatient registry and its ability to capture outcome measurements and be used in research.

Keywords: Outpatient burn care; Outpatient registry; Quality indicators; Multidisciplinary team

Abbreviations

ABA: American Burn Association; ER: Emergency Room; PHQ4: Patient Health Questionnaire-4

Introduction

A burn injury is a devastating and costly injury. About 450,000 burn injuries occur annually within the United States, and 40,000 are hospitalized [1]. To date, the burn survival rate in the United States is 96.6%, and burn hospitalizations have stayed consistent with a majority of these burns presenting to burn centers. However, burn centers are seeing an increase in the number of outpatients treated, with about 92% of burn injuries receiving treatment in the outpatient care setting. A shift to outpatient care is related to decreasing reimbursement for inpatient care, a drive for earlier discharges, and an effort to reduce treatment costs [2]. These patients still need the benefits of a multidisciplinary approach to have optimal outcomes including wound healing, functional outcomes, quality of life, psychological care, nutrition, and patient satisfaction.

Numerous articles have discussed the untapped resource of outpatient registries as a valuable resource for burn prevention and outcomes research [2,3]. The clinic must be financially sound for successful outpatient management [4]. To achieve this, outcome data must be collected and evaluated to plan resources and improve quality. Capturing outpatient data is the first step to evaluating the outpatient program. To have a strong quality program, the American Burn Association has recommended that any quality program should subscribe to Donebedian's [5] theory on quality of care that evaluates the structure, process and outcomes of care [6].

The purpose of this article is to describe one burn center's establishment of an outpatient program that ascribes to the metrics of evaluating our structure of care, processes, and outcomes while remaining financially solvent. The second purpose is to describe our outpatient registry and its ability to capture outcome measurements and be used in research.

Structure

Traditionally a burn patient was admitted and treated for several days to months in the inpatient setting, with the multidisciplinary team developing and implementing the plan of care. When the patient transitioned to the outpatient setting, wounds were almost completely healed and dressings were minimal. Priority of care was geared toward reentry, rehabilitation, and recovery. In the changing healthcare environment, the priorities for hospitalized patients are now to decrease length of stay and reduce costs while providing quality outcomes. This has shifted more patients to the outpatient care arena, where often the multidisciplinary team element is lacking. Thus, our burn program was tasked with meeting the needs of these complex patients in an ambulatory setting.

Process

Burn patients enter our system through a variety of mechanisms, whether initially triaged and treated in the emergency room (ER) or directly admitted to the unit from a referring facility. The ability to treat our patients in diverse care areas requires a highly specialized multidisciplinary team. This process has been honed over many years and works well to meet the needs of our burn patients. In the past, if the inpatient flow was bypassed, there was a potential risk that patients' needs may not be fully addressed. Through innovative interventions, supplemented with technology, we have been successful in providing quality, personalized care for each burn survivor.

With the shift to outpatient care, our process needed to be updated. Because of this shift, many of our patients were treated in the ER and discharged home to follow-up in the outpatient clinic. Issues became apparent in that our burn patients required complex wound care and discharge teaching that was difficult to provide in a busy ER setting. Our team implemented a burn nurse consult to provide the needed support. The nurse assists with initial burn wound care and debridement, application of the long-acting silver foam dressing, provides discharge teaching, and ensures there is timely follow-up care.

Citation: Bigley AW, BaileyJK, Jones LM, Calvitti KA, Keller KC and Coffey RA. Refocusing to Outpatient Burn Care. Austin J Emergency & Crit Care Med. 2015;2(4): 1027.

Within the patient realm, the inability for some burn patients to tolerate wound care solely with oral pain medications was a barrier for discharge. Our burn center has a specialized wound care area that allows outpatient treatment and wound care with stronger narcotic and analgesic medications. Because of this improved access to care, patients can now convalesce at home comfortably and return to the outpatient treatment room for subsequent dressing changes. In our experience, patients participate more with therapy, rest better, require less pain medication, and eat better in the comfort of their own home. The ability to use this procedure area for outpatients has reduced the number of return ER visits, as we can now perform dressing changes 24 hours a day, 7 days a week.

Access to burn specialists improved when we implemented tele-burn technology. Benefits of telemedicine include an improved, streamlined process for continuity of care, accurate assessment, treatment of the burn injury by trained specialists, and a significant cost savings due to decreased travel expenses [7]. Our organization offers two different platforms for outlying hospital systems to consult with our burn center specialists for evaluation and initial management of burn patients remotely. We are fortunate to have an established tele-stroke program in our facility that collaborates with hospitals throughout the area, thus our tele-burn program is also able to conference with these facilities when needed. For healthcare systems without the tele-burn programming, they are able to use a third party HIPAA-compliant video conferencing tool via smart phone or tablet.

Outcomes

The shift to outpatient necessitates the need to streamline and evaluate quality of care and patient outcomes. The complexity of the patient served in the outpatient arena means providers can no longer wear all the hats of the multidisciplinary team. The evaluation of our patients includes looking at wound care, social and psychological needs, physical and occupational therapy, nutrition, and pain management. The following paragraphs describe our strategies to meet patient needs while maintaining quality of care.

Wound Care

As burn care products have changed, other options such as long-term silver dressings have replaced silver sulfadiazine at our burn center as the first line treatment. Now dressings are tailored to each patient's need and body to provide optimum wound coverage and functional range of motion. Long-term dressings allow for less frequent dressing changes and thus, less pain for the patient, as well as being cost-effective. Patients are able to go home earlier and return for weekly follow-up and assessment. Since our geographical area is large, this option is definitely beneficial for outpatients traveling long distances for follow-up.

The additional benefit of a specialized outpatient wound clinic is the avoidance of unnecessary oral antibiotic use. Burn centers do not empirically treat with antibiotics; their use is based on clinical assessment via cultures, biopsies, and clinical exam. The expertise of burn providers allows for differentiation between infection and inflammation. In conjunction with the provider's expertise, having an electronic medical record housing photographic documentation of wound progression is beneficial in the diagnosis of true wound infection.

Social Needs

Burn patients who have been admitted to our inpatient care area receive a consult to the social worker. The social worker performs a needs assessment and develops a plan based on that assessment. However, our patients in the outpatient setting did not automatically get a social service assessment; this only occurred when a situation warranted. Needs stem from pre-existing social issues or those created or potentiated from the incident. Issues typically encountered are difficulty with transportation to/from appointments, housing concerns due to fire damage, homelessness prior to burn injury, insurance coverage for medications or dressing supplies, financial problems due to lost income, inability to work, inadequate coverage, or dealing with the uninsured. The social worker is influential in coordinating care and ensuring the patient is linked to community resources for food, housing, mental health, addiction, transportation, financial counseling, home health care and homeless shelters. While frontline staff is attuned with assessing and addressing our patients' social needs, the burn program found that the patients in the outpatient setting often have a number of needs best addressed by a social worker. Therefore, an outpatient social worker position has been established to assist with social needs.

Psychological Needs

Receiving a burn can be a traumatic event. The ability to predict which patients will develop psychological pathology following burn injury is difficult. Current literature has not been able to identify objective measures such as total burn surface area, body part injured, gender, or age as predictors of psychological sequela [8]. The ability to talk with a psychologist in the outpatient setting and learn coping techniques can be the key to accepting their injury and moving on with life.

Causes of psychological distress are many. Sources of distress may include visualizing the wounds and wound healing process, dealing with inadequately treated pain, appearance of the healed injury, body changes from scars, unrelenting itching, and worry about the ability to return to work/school or their role in the family. They may also have changes in their physical abilities along with financial burdens accompanying the care for their burn. Loss of independence and possibly loss of family members, pets, or housing from the fire may all cause the patient distress. The psychological effect of the aftermath of the burn may include depression, anxiety, coping issues, intimacy issues, body image acceptance, and post-traumatic stress disorder. Left untreated, the patient may not be able to return to their previous level of functioning. These issues affect quality of life and may not manifest until many months after the burn. The use of simple screening tools such as the Patient Health Questionnaire-4(PHQ4) or the burn quality of life scale in the outpatient setting allows us to identify patients at risk for psychological complications earlier. The presence of the psychologist in the outpatient clinic allows for earlier intervention and long-term follow-up.

Therapy Needs

Our burn center has a large catchment area and many rural areas where services of occupational and physical therapy may not be readily available. Patients may need a one-time visit with a therapist to teach positioning and range of motion exercises but because of

financial or coverage issues, they are unable to get these services. Having therapy services in the clinic can provide patients with the tools to preserve function and mobility in burn areas. Services provided include, range of motion, splinting and early serial casting, scar management including compression, and massage. Teaching of home exercise programs and ongoing follow-up in the outpatient burn clinic is especially valuable for patients without insurance or adequate coverage for outpatient needs.

The therapist also provides ongoing objective measurements of outcome measures. They are valuable in tracking range of motion and scar progression so that progress can be trended and interventions provided in a timely manner. Their impact on functional outcomes can allow the patient to return to work or school earlier.

Nutrition Needs

With an increase in the metabolic and inflammatory response post-burn, nutrition plays a key factor in wound healing, preservation of muscle mass, and prevention of malnutrition. Nutrition needs persist for months post discharge for large burns, and both large and small burns may be at risk for poor wound healing due to pre-existing malnutrition or co-morbidities such as diabetes. This increase, coupled with patient knowledge deficit related to high protein foods rich in micronutrients, can be detrimental to the healing process.

The dietician's input is needed for those burn patients with special dietary needs. Burn patients are encouraged to eat high protein, high calorie diets, however, many times they are not told when they can resume a regular diet. This can contribute to obesity in the years post-burn. Persons with diabetes are another at risk population for dietary needs following a burn injury. It is a known fact that nationally 10% of burn patients have diabetes and for those over the age of 55, the rate increases to 32% [9]. The dietician is able to help them adjust their food intake while monitoring their blood glucose levels. A final high-risk group is those that are malnourished in the community prior to injury related to diet or life style and food inequities. Having access to dieticians within the outpatient setting has proved useful in meeting these needs.

Pain Management

Changes in wound care have allowed patients to remain at home to heal from burns. However, this has introduced a new challenge – pain management within the outpatient setting. Long-term pain management poses many obstacles in this setting. Regulatory requirements are continuously changing making it a challenge for providers to remain compliant with regulations while adequately controlling pain. The ability to consult with the pharmacist for pharmacologic support and the addition of the psychologist and social worker to provide non-pharmacological treatments have improved the long-term management. The ability to track the use of pain medication and referrals for pain management also allow us to provide better pain management for our patients.

Occasionally there are times when a patient does not achieve adequate pain control in the outpatient setting during dressing changes. If the use of the non-pharmacologic interventions is unsuccessful in augmenting the oral pain management, the burn center treatment area enables us to treat those patients effectively with stronger medications and recover them appropriately, while still maintaining their outpatient status.

Evaluating Quality and Outcomes

Evaluating quality and outcomes is not always a simple task. The development of an outpatient burn registry has allowed us to track and trend our patient outcomes. This data includes patient demographics, etiology of injuries, treatment modalities, referral patterns, utilization of resources, screening tools (such as quality of life measures and psychological or functional screening tools), complications, and when and if the patient returned to work. Additional benefits of the outpatient registry include tracking volume trends both within and outside our health system. The data has been valuable in justifying our need for a psychologist, social worker, physical and occupational therapist, and additional nursing staff within the clinic. Having an outpatient burn registry has lent to other unanticipated benefits as well. As a rich source of epidemiological data, this registry allows us to develop prevention campaigns based on injury data and target our outreach programs to high-risk areas. As more burn centers develop outpatient registries, multi-center research studies with consistent methodologies and larger sample sizes can be conducted to influence or change future practice.

Future Challenges

A future challenge is to continue to measure the value of the outpatient program. The benefits of a robust outpatient program include patients being cared for by a specialized multidisciplinary team proficient in the treatment of burn survivors, reduced hospital days, improvement of functional outcomes, reduced perceived pain, improvement in patient satisfaction, and reduced wound healing times. Currently, many of these outcomes do not have tools to measure them. Although patient satisfaction for burn care does not have a formalized measurement tool, it is believed satisfaction with burn care stems from a patient's desire to remain pain-free, heal without incident, have a positive cosmetic outcome, and return to everyday life.

Conclusion

A robust outpatient burn program that is multidisciplinary in nature allows for improved outcomes, lower costs and a quality program. With the changing health care environment, outpatient programs that meet all of the needs of the burn patient are needed. The challenge is to quantify the value of providing such integrated care in an outpatient setting. Organizations need to be able to measure the importance of the multidisciplinary outpatient burn clinic and one way to do this is through an outpatient registry to measure outcome data such as return to work data, utilization of resources or by collecting epidemiological data for prevention education.

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Austin J Emergency & Crit Care Med - Volume 2 Issue 4 - 2015
ISSN : 2380-0879 | www.austinpublishinggroup.com

Citation: Bigley AW, BaileyJK, Jones LM, Calvitti KA, Keller KC and Coffey RA. Refocusing to Outpatient Burn Care. Austin J Emergency & Crit Care Med. 2015;2(4): 1027.