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Implementing Diabetic Foot Care in the Primary Care Setting

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ABSTRACT

Patients with diabetes mellitus are at risk for foot ulcers and subsequent amputations. The outpatient diabetic population could benefit from services to prevent factors that lead to the development of foot ulcers and further complications. The purpose of this project was to evaluate the effectiveness and feasibility of implementing a foot care program in the primary care setting. An evaluation of the outcomes supported these foot care services. Future studies showing the effectiveness of foot care services in the primary care setting would further substantiate the benefits of providing diabetic foot care in primary care practice.

Keywords: diabetic foot care, diabetic foot ulcer, diabetic foot ulcer prevention, foot care programs, nontraumatic amputation

Foot ulcers are the leading cause of nontraumatic lower extremity amputations in the United States.[1] It has been noted that foot care programs promote prevention and early recognition, and the treatment of factors involved in the development of foot ulcers could lead to a reduction in their occurrence and severity. "Foot care programs that include regular examinations and patient education could prevent up to 85% of diabetes-related amputations."[2] Given these statistics, patients would benefit from primary and secondary preventative foot care interventions.

In 2010, only 67.5% of diabetic patients 18 years and older reported receiving an annual foot examination.[3] What is even more concerning is that many other studies have found that primary care providers do not commonly provide foot examinations during routine office visits.[4] In speaking with many primary care providers, time is a major factor impeding routine foot assessments. In the primary care setting, the opportunity to provide primary and secondary preventative services that can reduce the incidence of foot ulcer occurrences and subsequent amputations has prompted further investigation on the feasibility of offering foot care programs in primary care.

The purpose of this quality improvement project was to examine 3 aspects of offering diabetic foot care services in the primary care setting: practicality, affordability, and benefit. Practicality was evaluated by noting whether all required aspects of diabetic foot care by Medicare could be incorporated within a traditional 15-minute office visit. Also, the affordability of a diabetic foot care program was considered, particularly the cost of supplies such as clippers. In addition, the benefits of providing a formal diabetic foot care program by examining financial gain, improved patient knowledge, and satisfaction were evaluated.

The quality improvement project was implemented after receipt of institutional review board approval. During scheduled office visits, the intervention began by collecting the patient's written consent followed by the administration of a precare survey followed by a review of the patient's responses by the nurse practitioner (NP). It was during actual foot care services that verbal education and discussion were provided by the NP to address areas of the precare survey that required further patient education. After the completion of care, a postcare survey including questions evaluating knowledge gained and inquiry of the likelihood of patients returning for future services was administered.

Patient knowledge was evaluated using a 10-question survey previously used in a similar study by Kafaie et al[5] that examined the role of self-care education in preventing diabetic foot complications.

Table 1. Survey Results: Foot Self-care Behavior Before and After Education

Foot Self-care Behavior	Daily/Always (%)	Often (%)	Sometimes (%)	Rarely (%)	Never (%)
Inspect feet					
Before	67.7	16.1	9.7	3.2	3.2
After	100				
Inspect shoes before putting them on					
Before	38.7	22.6	9.7	12.9	16.1
After	96.8	3.2			
Wash feet					
Before	80.6	19.4			
After	93.5	6.5			
Dry feet well after washing					
Before	74.2	25.8			
After	93.5	6.5			
Use emollients for dry skin					
Before	25.8	16.1	25.8	9.7	22.6
After	90.3	9.7			
Cut toenails straight across					
Before	35.5	6.5		12.9	45.2
After	87.1	3.2			9.7
Walk barefoot					
Before	16.1	9.7	3.2	25.8	45.2
After		6.5		3.2	90.3
Check between toes					
Before	38.7	38.7	9.7		12.9
After	93.5	6.5			
Check of water temperature					
Before	61.3	16.1		3.2	19.4
After	93.5	6.5			
Seek professional help for any problem					
Before	74.2	22.6	3.2		
After	93.5	6.5			

This 5-column table survey was based on a 5-point Likert scale, with responses ranging from daily to never. A value was assigned to each of these frequencies, with 5 being the most ideal frequency and 1 being the less desired frequency. The lowest a patient could score was 10, with the highest score being 50. This survey was administered before and upon completion of foot care services with specific questions depicted in Table 1. In addition, a postcare survey inquiring if a patient had received foot care services before and the likelihood of him or her returning to the primary care setting for future services was given.

After the intervention concluded, 31 patients were noted to have participated. The average time spent with each patient during foot care services was