

Improving the Rate of Diabetic Foot Screening in a Resident-based Clinic

J. Makadia, MD; M. Kiazand, MD FACP

Department of Medicine, University of Pittsburgh Medical Center, Mercy Hospital

Study Goal

- Establish the rate of diabetic foot exam by resident PCPs (primary care physicians) in our teaching clinic.
- Outline the efficacy of various changes implemented to improve the rate of screening.

Background

- The lifetime risk of a foot ulcer in diabetic patients is as high as 34%¹.
- Diabetic foot disease represents a spectrum of complications including superficial ulcer formation to deep osteomyelitis caused by vascular and neuropathic involvement.

Methods

- This is a mixed-methods study.
- The study population included a total of 121 adults with diabetes (confirmed by HbA1c) between June 2021 - March 2022 in outpatient clinic.
- They were divided into two groups: pre-intervention (52) and post-intervention (69).
- The health records of the control group (pre-intervention phase of 3 months) were reviewed retrospectively. Intervention phase (3 months) included measures to increase awareness for diabetic foot examination amongst the resident PCPs. In the post-intervention phase (4 months), we evaluated the effects of these changes on the rate of screening prospectively.
- Comparison between the two groups was made using the chi-square calculation. We followed the PDSA cycle (Plan - Do - Study - Act).

Results

- The frequency of diabetic foot examination completed in the pre-intervention group is 44.2% (23/52) compared to 65.2% (45/69) in the post-intervention group (Fig. 1).
- The percentage of overdue examinations significantly decreased in the post-intervention phase [34.8% (24/69)] compared to the pre-intervention phase [55.8% (29/52) P = 0.034] (Fig. 2)
- The average age of the patients in the study was 60 years and the majority of the demographic population was African American (70%).

Fig. 1 Diabetic foot screening: pre- and post-intervention

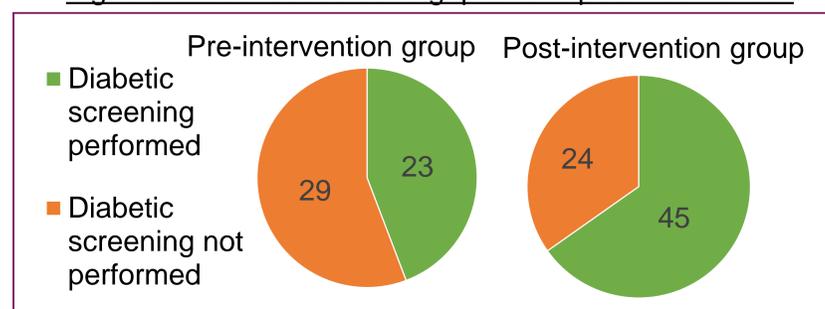
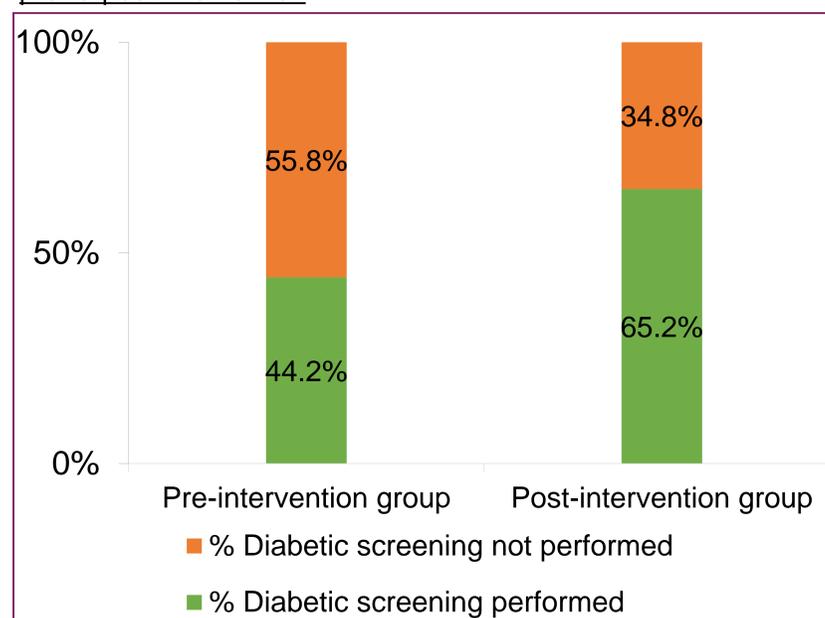


Fig. 2 % Comparison of rate of diabetic foot screening between pre- & post-intervention



Discussion

- The rate of diabetic foot screening increased significantly in the post-intervention group by implementing the following measures:
 1. Checking care gaps via electronic health record regularly
 2. Displaying "catchy leaflets" at workstations (Fig. 3)
 3. Implementing "no shoe rule"
 4. Providing monofilament by staff while rooming diabetic patients
- The limitation of this study is the small sample size and a single institution.

Fig. 3 Display of catchy leaflets at the workstations in the clinic



Conclusion

- We found a significant increase in the screening rates of diabetic foot exam in our teaching clinic by conducting educational didactics and visual reminders to learners.
- We are planning to re-evaluate the rate in 12 months to monitor the long-term efficacy of our approach.

References

1. Boulton, A. J., Vileikyte, L., Ragnarson-Tennvall, G., & Apelqvist, J. (2005). *The global burden of diabetic foot disease. The Lancet*, 366(9498), 1719–1724. doi: <https://doi.org/10.1016/B978-0-444-53480-4.00008-4>