

Diabetic Foot Exam Screening Rates in the ECU Adult and Pediatric Health Care Clinic



Anna Laughman, MD Candidate Class of 2019; Mary Catherine Turner, MD; Erica Turner, RN

WHY THIS PROJECT?

The American Diabetes Association states that diabetic foot exams screening using monofilaments should be conducted annually for all patients with diabetes¹. Yet, it is estimated that **less than 12-20% of outpatient providers conduct regular diabetic foot exams** due to perceived office visit time restraints².

Diabetic foot exam screening rates are now considered **indicators of clinical adherence to best practice healthcare delivery** in several outpatient primary care facilities including at East Carolina University's (ECU) Adult and Pediatric Health Care Clinic (APHC).

Before this quality improvement (QI) project, monthly diabetic foot screening exam rates for eligible patients were around 60% at APHC. **Ideally, monthly diabetic screening rates for eligible patients would be at least 75%.**

¹ American Diabetes Association. "Microvascular Complications and Foot Care. Standards of Medical Care in Diabetes—2018." Diabetes Care 2018 Jan. 41(Supplement 1): S105-S118. Pdf accessed online at <https://doi.org/10.2337/18-S010>.
² Miller, J., Carter, E., Shih, J. "How to do a 3-minute diabetic foot exam." J Fam Pract. 2014 November. 63(11):646-649.653-656.

AIM STATEMENTS

Global Aim:

To reduce undiagnosed pedal neuropathy in patients with diabetes by increasing monthly amount of diabetic foot exams.

Specific Aim:

To increase the amount of monthly diabetic foot exams conducted on diabetic adult patients by healthcare providers using monofilaments at APHC from 63% to 75% by December 1, 2018.

PROJECT DESIGN

Location: ECU Adult and Pediatric Health Care Clinic (APHC)

Duration: July – December 2018

Strategy: Conduct 3 PDSA cycles

Personnel Involved: medical student, attending physician mentor, clinic nurse manager, Internal Medicine-Pediatrics (Med-Peds) residents, medical assistants, other attending physician faculty at clinic, LINC Scholars Program advisors and faculty

Outcome Measure: monthly average diabetic foot exam screening documentation percentage in EPIC

Potential Barriers: duration of project, additional time and work constraint on clinic personnel, project topic may not be considered interest-provoking or exciting



Foot-shaped "DARCO" monofilaments are labeled for each respective clinical exam room.

PLAN, DO, STUDY, ACT (PDSA) CYCLES



Before PDSA 1

CAN YOU FIND THE MONOFILAMENT?

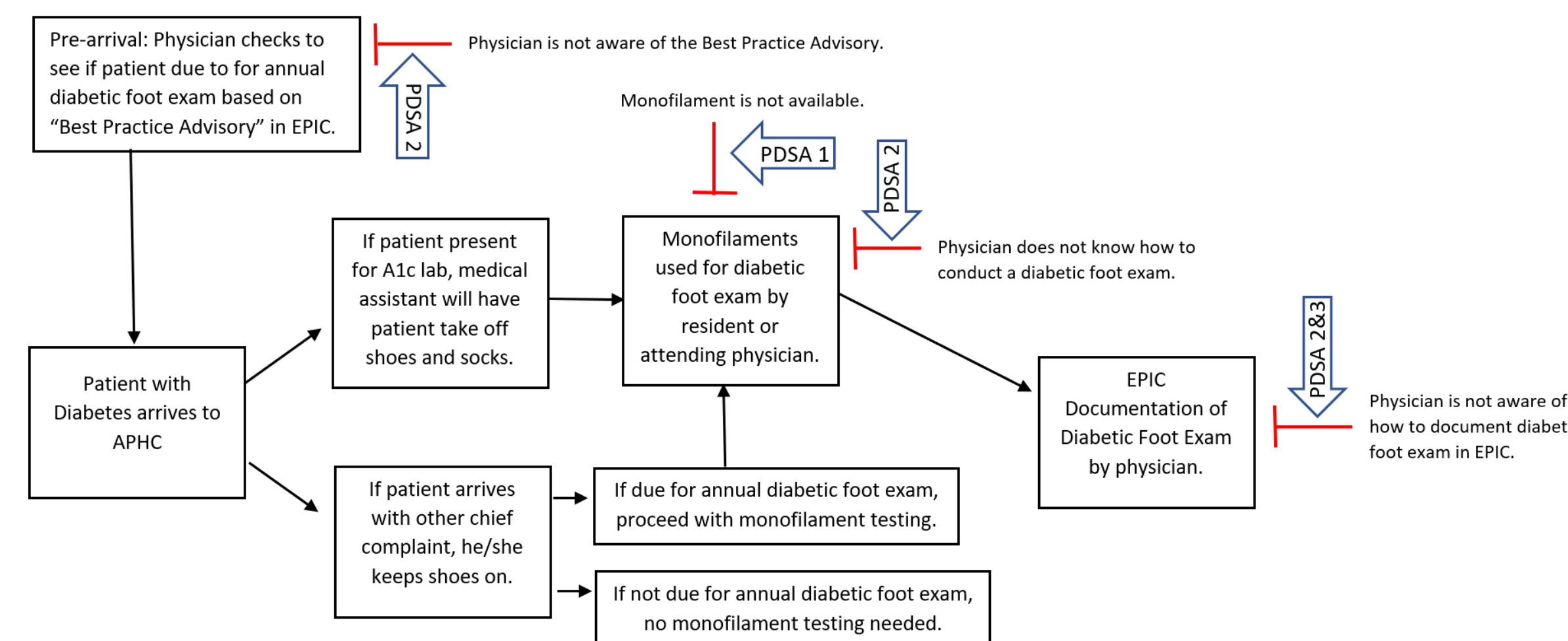
HOW ABOUT NOW?



After PDSA 1

PDSA 1 : Ensuring monofilaments are available in all clinical exam rooms at APHC.

Prior to PDSA, 46% of rooms had a monofilament that were various styles and difficult to identify. After PDSA 1, 100% of rooms had labeled "DARCO" foot-shaped monofilaments that were checked for availability weekly by nursing and medical assistant staff.

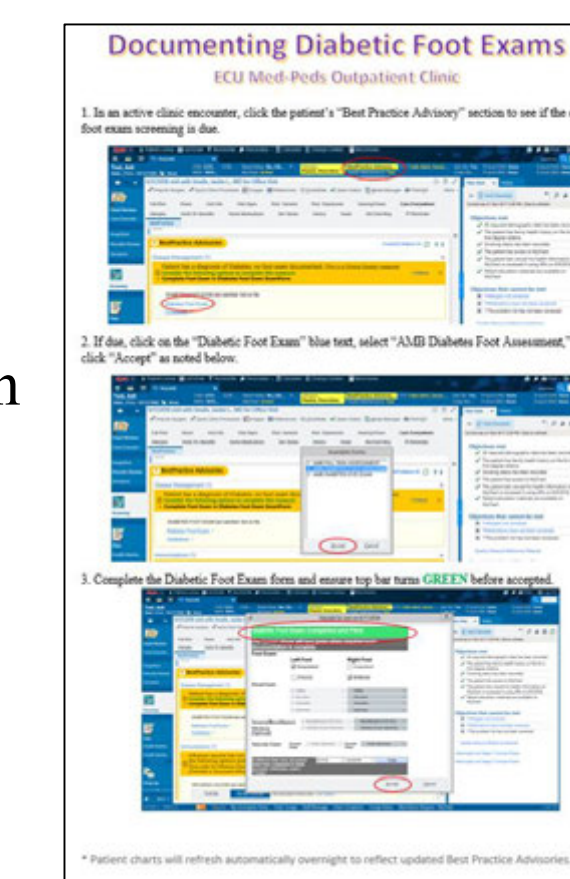


Diabetic Foot Exam Flowchart

The diagram to the left is a flowchart of the process of a patient receiving a diabetic foot exam in the APHC. Barriers to the flowchart are indicated with the red symbols. The PDSA cycle that impacts the associated barrier are indicated with arrows.

PDSA 2: Educate Med-Peds residents about indications, technique, and documentation for diabetic foot exam.

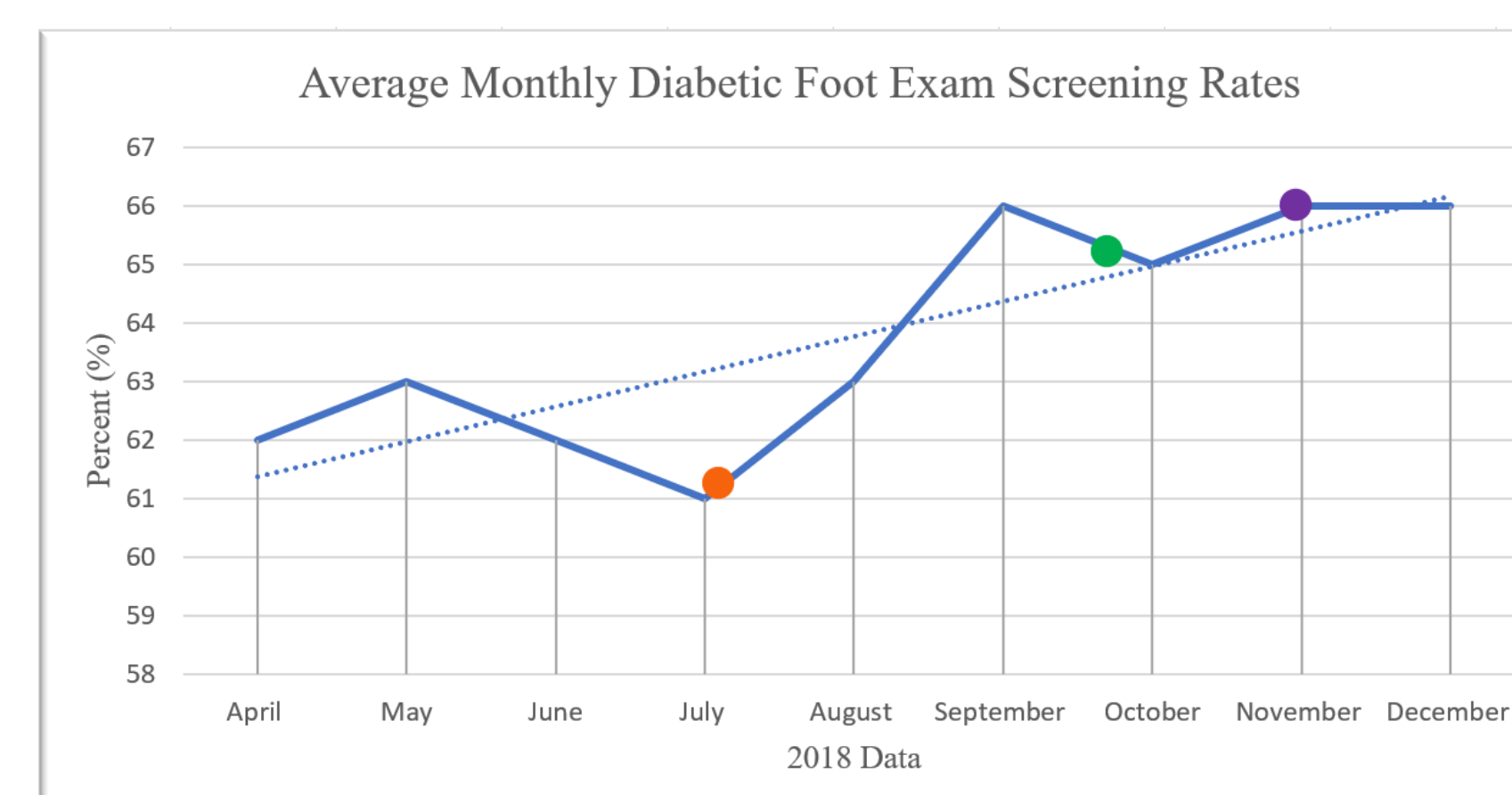
During a noon-conference, 10 out of 24 Med-Peds residents were instructed using a PowerPoint presentation (left image) about the indications, technique, and EPIC documentation for outpatient diabetic foot exams. The presentation was also emailed to the chief residents for email distribution to all Med-Peds residents.



PDSA 3: Displaying one-page Diabetic Foot Exam EPIC documentation instructions in the APHC.

Laminated diabetic foot exam documentation instruction sheets (right image) were displayed on corkboards and in free-standing display cases in the APHC resident computer workroom.

RESULTS



A run chart depicting the APHC's average diabetic monthly foot exam documentation percentiles for April –December 2018.

Chart Legend:
 ● PDSA 1
 ● PDSA 2
 ● PDSA 3

Month (2018)	Average Screening %
April	62
May	63
June	62
July	61
August	63
September	66
October	65
November	66
December	66

Results Interpretation:

- Monthly average screening rates at APHC has increased since PDSA cycle 1 and 2; but has not yet achieved the goal of 75%.
- The trend in monthly average diabetic foot exams may be slow to observe numerically as diabetic patients usually return to clinic in 3 month intervals for routine A1c laboratory testing. Thus, there may be at least three months before a patient who is due for an annual diabetic foot exam visits the clinic – potentially delaying implementation of skills and knowledge gained through our PDSA cycles and quality improvement project.

LESSONS LEARNED

Increasing monthly diabetic foot exam screening rates in an outpatient healthcare clinic requires a multifaceted strategy of ensuring appropriate screening tools, education, and visual reminders are available to clinic staff. As the clinic involved in this QI project utilizes both resident and attending physicians, it was important to create time-sensitive yet efficacious educational materials to assist with achieving the project's goal. Additionally, the help from nursing clinical staff was significant in ensuring the monofilaments were adequately stocked in the appropriate exam rooms.

Clinic visit time constraints, chief complaint of patient, and resident familiarity with diabetic foot exam screening protocols may have also impacted the overall monthly diabetic foot exam screening rates. Residents of all years were providing care to diabetic patients in the clinic; experience in the workplace may have also impacted screening rates. The physician and nursing staff's perceived importance of and barriers to conducting diabetic foot exams were not captured objectively during this QI project, but would be a process measurement to consider in similar projects. In future initiatives, it may also be advantageous to assess individual resident and faculty monthly diabetic foot exam screening rates and have focused problem solving and/or educational sessions for those routinely reporting below monthly goal percentiles.

NEXT STEPS

- Monthly average diabetic foot exam screening percentiles will continue to be measured at APHC for the foreseeable future.
- Labeled foot-shaped monofilaments will remain in each clinical exam room, and be resupplied as needed (PDSA 1).
- Subsequent cohorts of Med-Peds residents will need to be taught about diabetic foot exams using the presentation created in PDSA 2.
- Continue to use the displayed documentation instruction sheets (PDSA 3) for the next few months and assess its impact over a longer period of time.
- Med-Peds residents will be reminded of the goals of this QI project in a noon-conference presentation in March 2019.
- With these continued project endeavors, we hope to achieve the goal of 75% clinical average diabetic foot exam documentations by December 2019.

ACKNOWLEDGEMENTS

This project was made possible by the guidance, mentorship, and teamwork of Dr. Mary Catherine Turner, Erica Turner, and the Leaders in Innovative Care Scholars Program faculty – Dr. Timothy Reeder and Jenna Garris. It has been an absolute joy to learn about and implement a quality improvement project at APHC. I am thankful for all of the individuals who have made this project an incredible learning opportunity. Lastly, I would love to acknowledge all of the medical assistant, nursing, residents, and attending physicians who are implementing the resources and patient care provided by this initiative. This endeavor has been an honor.



Anna Laughman, BSPH
 Medical Student, Class of 2019
 Brody School of Medicine at ECU
 Greenville, North Carolina 27858
 252.327.4025
 Bawtinhimera15@students.ecu.edu