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### Quality Improvement: Implementing a diabetic foot exam to improve quality of care for youth with diabetes mellitus

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## **Quality Improvement: Implementing a diabetic foot exam to improve quality of care for youth with diabetes mellitus**

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**IRB Number (if applicable): N/A**

**Describe role of Submitting/Presenting Trainee in this project (limit 150 words):**

**I was the project leader for this endocrine departmental QI project.**

**Problem Statement/Question, Background/Project Intent (Aim Statement), Methods (include PDSA cycles), Results, Conclusions limited to 500 words**

### **Problem Statement/Question:**

Nerve conduction studies show 50% of youth with diabetes mellitus have peripheral neuropathy. The American Diabetes Association (ADA) guidelines recommend an annual diabetic foot exam in patients with type 1 and 2 diabetes who are  $\geq 10$  years old and who are diagnosed with diabetes  $\geq 5$  years. The exam may identify peripheral neuropathy sooner and decrease long term complications. Only 1% of eligible patients presenting to diabetes clinics in September 2017 had a foot exam documented. Multiple factors contribute to the problem. There is a lack of knowledge about the prevalence of peripheral neuropathy in pediatric patients and on how to complete the foot exam. The documentation for the foot exam in the electronic health record (EHR) is unclear and monofilaments are unavailable.

### **Background/Project Intent (Aim Statement):**

By June 30, 2018, our baseline of 1% will increase to 50% of patients with type 1 or 2 diabetes who are  $\geq 10$  years old and have had diabetes for  $\geq 5$  years being seen in diabetes clinics will have a documented annual diabetic foot exam.

### **Methods (include PDSA cycles):**

Using a fishbone diagram we identified multiple factors contributing to the problem. The root cause was a provider knowledge gap of disease prevalence. A prioritization matrix was used to classify interventions and focus efforts on those that lead to the highest impact. Our focus was on education of providers which included a journal club, adult endocrinologists providing on-site training on how to perform the exam, and educational handouts and online tutorials for future referencing. We supplied monofilaments, updated documentation in the EHR, and handed out reminder cards in clinic. We used PDSA cycles to assess these

interventions and how they contribute to our objective of increasing the percentage of patients who have a documented foot exam. We arranged treatment plans for positive screens including medication management and referral to neurology. Data regarding foot exams was collected using an automated monthly report from the EHR. We calculated the percentage of eligible patients who had a documented foot exam on a monthly basis. We collected provider names associated with each visit to help facilitate accountability.

**Results:**

We increased from a baseline of 1% up to 68% of eligible patients receiving the foot exam in June 2018. Each month we updated our run chart which was distributed to show our progress. We got feedback at monthly provider meetings to identify barriers to performing the exam. We used the rounding to influence process to visit clinics, check monofilament supplies, and identify barriers. We created a standard work tool to teach new providers the process of completing and documenting the exam.

**Conclusions:**

The ADA guidelines recommend an annual diabetic foot exam in patients with type 1 and 2 diabetes who are  $\geq 10$  years old and who have been diagnosed with diabetes  $\geq 5$  years. We utilized quality improvement tools to improve our care by implementing a diabetic foot exam. We increased to 68% of eligible patients receiving the diabetic foot exam. Next steps include increasing our compliance with exams and focusing on sustainability long-term.