

## Introduction

- More than 34 million Americans have either diagnosed or undiagnosed diabetes in the US
- Prevalence of Americans with diabetes has quadrupled since 1990
  - Diabetes-related complications have increased
  - Minorities disproportionately affected
- Diabetic foot ulcers (DFUs) account for >100,000 lower limb amputations, annually
  - Financial impact over \$1B
- US has the 3<sup>rd</sup> highest prevalence of DFUs in the world: 13%

## Background & Significance

- Of the diabetes-related complications, the feet are often affected first
- Many patients with diabetes are managed in primary care and may not have access to specialized care
- Comprehensive DFU prevention that is standardized and systematic is missing in primary care
- US is below the Agency for Healthcare Research & Quality (AHRQ) Benchmark 84% for people with diabetes age ≥40 who had a foot exam within the calendar year: 64.1% (2018)
- DFUs frequently develop when a patient with diabetes has two or more risk factors
  - Diabetic peripheral neuropathy (DPN)/ Loss of Protective Sensation (LOPS)
  - Peripheral artery disease (PAD)
  - Biomechanical foot and ankle abnormalities

## PICO Question

**In patients with diabetes within a primary care setting, does an evidence-based protocol on diabetic foot ulcer prevention improve the early identification of patients at risk for developing a diabetic foot ulcer compared to current practice over three months?**

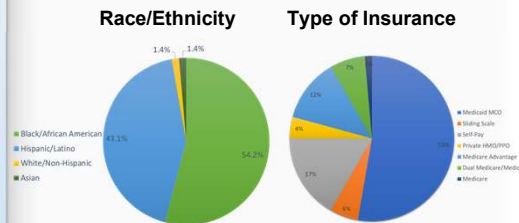
## Methodology

- **Design of Project**
  - QI project: pre- and post-intervention design with a retrospective chart review for data collection
- **Setting**
  - Urban community health center that serves as primary care clinic
    - Most of the providers were APNs
- **Study Population**
  - Adults ages ≥ 18 years with diagnosis of Type 1 or Type 2 Diabetes
    - Pre-intervention: 36 random charts from 2019
    - Post-intervention: 36 random charts from 11/18/21 – 2/16/22
- **Intervention**
  - Protocol developed based on International Working Group on the Diabetic Foot (IWGDF) guidelines
  - Virtual review session with clinical staff included:
    - IWGDF Guidelines & Risk Categories 0-3/Very Low to High Risk
    - Algorithm “How to Manage People who are at Risk of DFU”
    - “Foot screening sheet for clinical examination”
    - Sensory foot exam tests

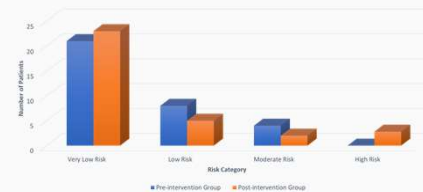


## Results

### Data Analysis



### Risk Stratification by Group



### Outcomes

- Was risk category appropriately applied?
  - Risk categories were not documented in EMR but risk factors were available
  - Did not negatively affect appropriate management of care
- Was management plan appropriately applied based on risk category?
  - Statistically significant ( $p=.005$ )
  - Clinically significant
    - Referrals to podiatry increased 52.8% → 75.0%
    - Absence of foot care education decreased 27.8% → 8.3%

References & Intervention Resources →



## Discussion

### Conclusions

- Majority of patients were in the very low risk category (66.7%), evaluation of those at risk was very limited
- Project site above AHRQ Benchmark at 92%
- Regular education with PCPs on DFU risk factors is needed to identify those at risk & improve management of patients by stratifying risk
- PCPs play a vital role in DFU prevention with patients who are underserved and uninsured

### Limitations

- Small sample size, retrospective data
- Not all providers attended virtual review session

### Implications

- **Clinical practice**
  - Increase awareness and knowledge of PCPs to manage patients based on DFU risk
- **Healthcare Policy**
  - Improve access to diabetic shoes by permitting APNs to certify medical need
- **Quality & Safety**
  - Ensure high quality care by clinicians participating in the Merit-based Incentive Payment System (MIPS)
- **Education**
  - Provide education to patients tailored to risk factors
- **Economic**
  - Decrease financial burden of DFU treatment by focusing on prevention strategies