Monitoring Prediabetes Screening in Two Primary Care Clinics in Rural Appalachia: A Quality Improvement Project

Rebecca Teresa Clark  
East Tennessee State University

Christine Michelle Mullins  
East Tennessee State University

Jean Croce Hemphill  
East Tennessee State University

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Monitoring Prediabetes Screening in Two Primary Care Offices in Rural Appalachia: A Quality Improvement Project
Rebecca T. Clark, Dr. Christine M. Mullins, & Dr. Jean C. Hemphill
East Tennessee State University

**Introduction**

- Prediabetes is a physiologic state of an elevated serum glucose without diagnosis of Type 2 Diabetes Mellitus (T2DM) and increases risk of developing T2DM.
- Exists when a person has an impaired fasting glucose (100-125 mg/dl), or impaired glucose tolerance (140-199 mg/dl) test result, or elevated hemoglobin A1c (5.7-6.7%) (Perreault, 2019)
- Is often considered as not a serious medical condition worth managing (Kandula et al., 2018)

**Background**

- T2DM is a prevalent healthcare burden
- 415 million individuals are affected by T1DM and T2DM
- 90% of diabetes cases are T2DM
- T2DM increases morbidity and mortality with rising economic/healthcare burden
- T2DM is preventable in most cases
- ADA, CDC, and USPSTF recommend screening for prediabetes

**Prediabetes**

- Risk increases with growing obesity rate
- 34% of the American population
- 50% of adults >65
- 90% remain undiagnosed
- 70% develop T2DM within 10 yrs if not managed appropriately
- 1 in 3 will develop T2DM, by 2050

(Perreault, 2019)

**Methods**

**Design - Quality Improvement Project**

**Setting** – Two rural primary care clinics that are Federally Qualified Health Center (FQHC)

**Sample** – Convenience sampling of aggregate data collected by healthcare providers, over a 6 week period

**Procedures** – Educational session with staff if patient met inclusion criteria, then was given a screening tool. Provider assessed screening tool score. If patient scored at risk for prediabetes, the provider was to offer evidence-based (EB) recommendations per ADA and CDC guidelines

**Instrument** – “Are You At Risk for Type 2 Diabetes?” by the ADA (ADA, 2019)

**Research**

- Aims of the project were threefold:
  - Develop a site-wide educational initiative on prediabetes screening for providers and staff.
  - Implement a screening/referral process for healthcare providers.
  - Prevent or delay the onset of T2DM

Aims correlate with the Healthy People 2020 Objective D-16, on targeting prevention behaviors in those at risk for developing T2DM (Healthy People 2020, 2020)

**Results**

**Patient Demographics and Risks:**
- 420 patients eligible for screening
- 269 patients completed screening (64%)
- 196 female, 73 male (n=269)
- Prevalent age group was 18 - 40 (n=116)
- English speaking (n=242); Spanish (n=27)
- 40.5% (n=109) family history of T2DM
- 27.1% (n=70) being physically active
- 81.4% (n=219) being overweight
- 40.0% (n=113) personal history of hypertension
- 27.1% (n=70) having a family history of T2DM
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**Healthcare Provider Actions:**
- Obtained a Hgb A1c 40.5% (n=45)
- Referral to Registered Dietician 33.3% (n=37)
- Education on Weight Loss 67.4% (n=242)
- Education on Exercise 43.9% (n=27)
- Education on Healthy Eating 37.0% (n=27)
- Ordered Hgb A1c 47.4% (n=27)
- Referred to Nutritionist 39.5% (n=37)

**Conclusions and Implications**

- Percentage of patients found to be at risk is higher than reported in the literature.
- Neither clinic achieved 100% screening rate of patients that fit inclusion criteria.
- Older age did increase risk for prediabetes.
- Being overweight/obese was not the highest the risk for prediabetes, differing from the literature.
- Providers offered higher rates of education on weight loss and exercise rather than recommending/referring patients to the registered dietician.
- Interprofessional practice is essential for quality improvement projects.
- Sustainability and consistency are essential in reducing risk of developing T2DM.
- Advanced practice nurses are essential for health promotion and disease prevention.
- Providing the appropriate tool and resources helps prevent chronic disease and reduce morbidity.
- Set benchmarks for future efforts to educate and measure provider successes.

**Contact Information**

Rebecca Clark
828-434-0850
clect@etsu.edu

Christine Mullins
423-439-4646
mullinscm@etsu.edu

Jean Hemphill
423-439-4603
hemphill@etsu.edu

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