Optimizing Electronic Health Record Use for Management of Type 2 Diabetes in Primary Care

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Type 2 Diabetes

A Global Problem
Type 2 Diabetes

- Epidemic proportions
  - Global prevalence of diabetes~ 9% (WHO, 2015)

- Financial cost
  - Global annual cost of diabetes~ $612 billion (IDF, 2014)
  - One healthcare dollar in nine is spent on diabetes (IDF, 2014)

- Human cost
  - Cardiovascular disease
  - Retinopathy
  - Neuropathy
  - Nephropathy
  - Death
Type 2 Diabetes
Management by Primary care

• Guideline based treatment improves patient outcomes, reducing personal and financial costs (ADA, 2015)
• Guidelines often not followed in primary care (Appiah, et al., 2013; He, 2011)
• Gap between guideline based and actual care of people with diabetes results in poor patient outcomes and increased costs (Worswick et al., 2013)
Type 2 Diabetes

- Provider barriers to guideline based treatment
  - Lack of time
  - Lack of access to patient information
  - Lack of knowledge of guidelines (Appiah et al., 2013)
- Implementation of multiple strategies increases likelihood of improved patient outcomes (ADA, 2015)
- Electronic health record and workflow are components of quality management of Type 2 diabetes in primary care (He, 2011)
Electronic Health Record (EHR)

Improving Healthcare
EHR Goal: Improve Healthcare

Core Functions of the EHR (National Research Council, 2003)

• Effective care delivery
• Facilitation of chronic disease management
• Improved efficiency
• Enhanced patient safety
EHR Goal: Improve Healthcare

Mixed evidence of effectiveness of EHR in improving healthcare

• Importance of incorporation of Chronic Care Model (Tsai, Morton, Mangione, & Keeler, 2005)
• Importance of advanced functionality of EHR (He, 2011; Hummel, 2013)
  o Decision support
  o Registry activation
  o Provider audit
• Small clinics struggle with optimal use (Weber, Bloom, Pierdon, & Wood, 2007)
• Importance of workflow changes (He, 2011; Weber et al., 2007)
Clinical Scenario

Expanding Electronic Health Record Use and Structuring Evidence Based Workflow
Clinical Scenario Implementation

Review of the literature
- Diabetes Management Guidelines
- Electronic Health Record Use

Implementation of effective EHR
- Understanding the system:
  - Vendor Website
  - Help documents

- Goal: Optimizing the EHR to mitigate provider barriers to optimal care
  - Lack of time
  - Lack of access to patient information
  - Lack of knowledge of guidelines
Clinical Scenario

• Capturing data
  o Mapping Logical Observation Identifier (LOINC) and Current Procedural Terminology codes (CPT)
  o Structured Data in Progress Notes

• Activating Clinical Decision Support System Alerts

• Configuring Diabetes Flowsheets

• Populating the Diabetes Registry

• Developing a Diabetes Order Set
Clinical Scenario

- Clinical Decision Support System Alerts
  - Support provider time and offer guideline reminders
Clinical Scenario

- Diabetes Flowsheets
  - Furnish easily accessible patient progress data
**Clinical Scenario**

- Diabetes Registry Summary Report
  - Access to evidence-based patient treatment results
Clinical Scenario

- Diabetes Order Set
  - Supports Provider Time
  - Medications
Clinical Scenario

- Diabetes Order Set
  - Supports Provider Time and Access to Guidelines
    - Labs, Referrals, Immunizations, Guidelines
Clinical Scenario

Revising Workflow
Clinical Scenario

Evidence based workflow

- Incorporates teamwork to reduce appointment time and promote evidence based treatment

Identify Diabetes
Identify Managing Provider
Identify last Labs: A1c, Lipids, Creatinine, Microalbumin/Creatinine
Immunizations: Influenza Pneumococcal Hepatitis B
Monofilament Tuning Fork Reflex Hammer Footwear Off
Draw Labs Referrals as directed
Clinical Scenario

Sustainability

• Developing a vision

• Partnering with available resources
  o Quality Improvement Network-Quality Improvement Organization
    • Expands patient self-management education
    • Strengthens sustainability
    • Catalyzes continuous quality improvement

• Ongoing quality improvement
  o Patient outcomes
  o Billing/incentives
Conclusions

Reproducibility
- Become familiar with current guidelines
- Learn EHR system capabilities
- Share the vision
- Implement evidence based changes
- Partner with support
Questions
References


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