Implementation of an Integrated Diabetes Discharge Planning Pathway: A Quality Improvement Initiative
Content for Discussion

- Problem/project purpose
- Innovation proposed by the project
- Methodology
- Project results
- Implications for policy and/or practice
- Sustainability
Problem Identification: Diabetes & Hospitalization

- 25.8 million Americans have diabetes (8.3%) (CDC, 2011)
- 26.9% of Americans > 65 years have diabetes (CDC, 2011)
- 12.4 – 25% of patients admitted to the hospital have diabetes (Campbell, 2007)
- People with diabetes experience longer hospital stays (ADA, 2011)
- Longer lengths of stay → additional nursing care and expertise when caring for patients with diabetes (Campbell, 2007)

![Bar chart showing estimated number of new cases of diagnosed diabetes among people aged 20 years or older, by age group, United States, 2010.](chart)

Problem Identification – Nursing Knowledge & Diabetes

- Important to develop a diabetes specific “teaching protocol” for staff nurses (Davis, 2000)
- “Nurses in all settings need to be skilled in teaching and supporting patients in their life-long journey to succeed with long-term glycemic control” (Gerard, et al., p. 161, 2009)
- The “admission process affords the nurse the opportunity to evaluate and initiate a patient’s steps toward better glycemic control” (Gerard, et al. 2009)
- Diabetes survival skill knowledge among Cardiac Nurses was low (Modic et. al, 2009)
- Half of the Adult Unit Staff nurses felt that patients knew as much if not more about diabetes then they did (Moriarty & Stevens, 2000)
Problem Identification

In-balance between a nurse’s knowledge of diabetes and the patient’s need for diabetes related education (diabetes rates are increasing)

Increased rates of patient’s being admitted to hospitals with diabetes is adding a “heavier” load of nursing responsibility related to patient education
## Project Purpose & Innovation Proposal

### Project Purpose
- Improve the in-patient education & discharge planning process of patients admitted to the hospital with a medical history of diabetes

### Innovation Proposal
- Collaborative Quality Improvement Initiative: Outpatient Diabetes Management, Medical/Surgical Unit, Pharmacy, Social Services, & Dietician

### Question:
*Does the initiation of an integrated diabetes discharge planning pathway compared to current practice in discharge planning improve the discharge planning process for patients with diabetes in a rural critical access hospital?*
<table>
<thead>
<tr>
<th>Hospital</th>
<th>Nursing Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rural</strong> Midwestern Critical Access Hospital</td>
<td>Variety of educational levels: RN (ADN &amp; BSN), LPN, CNA (mostly ADN prepared)</td>
</tr>
<tr>
<td>25-bed acute care Medical-Surgical floor</td>
<td>Nurses maintain competencies in ACLS, NRP, Fetal Monitoring, PALS, and TNCC</td>
</tr>
<tr>
<td>Patient mix: orthopedic, cardiac, trauma, general surgical, obstetrics, and respiratory</td>
<td>Charge Nurse Role</td>
</tr>
<tr>
<td>Out-patient programs</td>
<td>Rotate to ER, Med/Surg, OB, and Post-anesthesia Recovery</td>
</tr>
</tbody>
</table>

Nurses at this hospital practice as Nurse Generalist (Rural Nursing)
Current Practice: Result of Retrospective EMR Audit
Convenience Sample (n=46)

Patients admitted with diabetes: 7/25/10 – 8/31/10

- Patients > 65 yo = 31
  - Diabetes = 11
- Patients < 65 yo = 15
  - Diabetes = 3

Number of patients admitted during this time frame with diabetes = 14 (30% of total admissions)

Current Practice
Referrals and Education

- Total patients referred to the Out-patient diabetes program = 3
- In-patient diabetes related “survival skills” education given by staff prior to patient discharge = 0
- Dietary Consult given by RD = 14
Barriers to Knowledge

- Limited opportunities for in-house education offered by expert clinicians
- Lack of time to offer education
- Financial budget constraints that affect the opportunity to attend off-site seminars and conferences
- Lack of professional resources for consultation
- Variety of educational levels within the nursing team
- Nurses practice as Nurse Generalist – must stay competent in many areas

Concepts to Consider

Rural nurses are held to the same standards of care established by the specialties in nursing .. difficult for the nurse to stay current with best practice
(Rosenthal, 2006)

“if rural nursing is considered to be a generalist practice, is the ‘specialized’ knowledge needed by registered nurses working in the rural health care setting sufficient”
(MacLeod et al., p. 299, 2008)

(Lee & Winters, 2006)
## Literature Review of Findings

### Four Themes Identified in the Literature

- Nurses practicing in a variety of clinical areas feel unprepared to deliver diabetes education
- The use of clinical pathways can enhance nursing care based on best practice
- Diabetes education is frequently not addressed in the hospital setting
- Diabetes education requires an interdisciplinary approach

### Important Implementation Considerations

- Choose a **clinical guideline**
- Understand **current practice**
- Choose a **theoretical framework**
- Understand the nurses’ **readiness for change**?
- Develop an **Implementation plan**
## Methodologies for Practice Improvement

### Strategies

<table>
<thead>
<tr>
<th>Identify a <strong>clinical guideline</strong></th>
<th>American Association of Clinical Endocrinologist Clinical Guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understand <strong>current nursing practice</strong></td>
<td>Retrospective patient medical record audit</td>
</tr>
<tr>
<td>Choose process indicators</td>
<td>AACE educational focused recommendations</td>
</tr>
<tr>
<td>Understand nurses’ <strong>readiness for change</strong></td>
<td>Prochaska’s stage of “Contemplation”</td>
</tr>
<tr>
<td><strong>Theoretical Framework</strong> to guide project</td>
<td>American Association of Critical Care Nurses’ Synergy Model</td>
</tr>
<tr>
<td><strong>Implementation plan</strong> based on the hospital’s QI model</td>
<td>Plan – Do – Study – Act QI model</td>
</tr>
</tbody>
</table>
American Association of Clinical Endocrinologist (AACE) Clinical Guideline – Hospital Setting

| 1. Glycemic management plan prior to hospital |
| 2. Data Collection & Record Keeping |
| 3. Meal Plan |
| 4. Target blood glucose levels |
| 5. Insulin management plan |
| 6. Hypoglycemia Prevention |
| 7. Co-management |
| 8. Hospital Discharge Planning & Survival Skills |

### Implementation Strategy

| Admission Data Base II Document Added **ASKME** questions: |
| **A** = A1c |
| **S** = Support (family and financial) |
| **K** = Knowledge about diabetes |
| **M** = Medications |
| **E** = Eating (follow-up with dietician) |
| Developed a hospital-wide Hypoglycemia Protocol that is also used for patient teaching |
| Answering the **ASKME** questions, activate the interdisciplinary team |
| Developed a diabetes discharge planning pathway focusing on “survival skills”- Integrated into EMR |

Quality Improvement Process Indicators

Proportion of patients who:
- were given diabetes education related to “sick day” management
- referred to Out-Patient Diabetes Education Program at discharge
- received education about their diabetes medications
- received education about Hypoglycemia
- received a Nutrition Consultation prior to discharge
- received education about home glucose monitoring
- had an A1c value available prior to discharge

A pre-implementation/post-implementation comparison of the outcome indicators using descriptive data analysis was used to evaluate improvement in the discharge planning process for patients with a history of diabetes.
Implementation Plan: P-D-S-A Cycles

**Plan:** Gain support from Senior Managers

- **Do:** Form an interdisciplinary team, develop creative strategies to integrate practice changes, offer educational sessions to staff, utilize the capabilities of existing data management systems

- **Act:** make changes based on results learned

- **Study:** results for each small cycle of change

- **Report** and update team, begin new cycle again until results are achieved – ongoing evaluation

- Ongoing evaluation
Additional Strategies

EMR computerized reminders & prompts are automatically uploaded into the nurses’ problem list when the admission ASKME questions are asked:

- Obtain the patient’s A1c
- Educate and document using an interdisciplinary discharge planning pathway document
- Initiate an out-patient diabetes referral to the hospital’s out-patient education program

Developed protocols, admission sets, and patient education guide:

- Hypoglycemia Protocol – based on the “Rule of 15”
- Nursing initiated diabetes admission data set
- A nurse’s patient teaching guide that helps identify “teachable moments” based on the ASKME approach.
ASKME Approach to Teachable Moments – Nurse’s Teaching Guide

- Assists the nursing staff when identifying key moments for delivering education to their patient’s

- Each ASKME topic refers to a page number in the patient’s education booklet

- This “Quick Guide” offers nursing examples of questions to ask that prompt discussion with the patient
Pre/Post Implementation Evaluation of Outcomes

Table 2

Comparison between Pre-implementation and Post-implementation Process Indicators

<table>
<thead>
<tr>
<th>Process Indicator</th>
<th>Pre-Implementation (N-14)</th>
<th>Post-Implementation (N-10)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number Received</td>
<td>Percentage</td>
</tr>
<tr>
<td>Hypoglycemia</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Diabetes Medication</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Home Glucose Monitoring</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Nutrition</td>
<td>14</td>
<td>100%</td>
</tr>
<tr>
<td>Sick Day Management</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Referral to Out-patient Education</td>
<td>2</td>
<td>14%</td>
</tr>
<tr>
<td>A1c available at time of admission</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

*Pre-implementation convenience sample of all 46 patients admitted to the Medical/Surgical Unit during 7/25/10 – 8/31/12; patients with a history of diabetes (N=14).

*Post-implementation convenience sample of all 39 patients admitted to the Medical/Surgical Unit during 12/15/11 – 1/22/12; patients with a history of diabetes (N=10).
The ASKME Approach to teaching is easily transferrable to other facilities – creative approach to remembering the components of diabetes topics

This project demonstrated meaningful use of patient EMR i.e. integrating clinical guidelines, adding prompts and triggers to remind nurses about nursing interventions, using an interdisciplinary approach to patient care

An increased awareness by the nursing staff was raised pertaining to actual numbers of patients admitted with a history of diabetes – identifying nurses’ needs for diabetes related education, and emphasizing the importance of patient education pertaining to diabetes self-care

An increased number of patient’s received education about their diabetes prior to discharge & more patients referred to out-patient education

**Ongoing nursing staff education will need to be given** along with ongoing evaluation of discharge planning pathway utilization (concurrent EMR audits) to ensure continued use of the discharge planning pathway.
References


Thank You & Questions?