Transformation of Care: Challenging Roles in Primary Care to Improve Outcomes

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Commonwealth University
Nursing
• Aging population
• Complex chronic problems
• Increased healthcare costs
• Volume driven rather than quality driven
• Current Primary Care Model not sustainable
  • Shortage of Primary Care Providers
  • Underutilized Registered Nurses
  • Fragmented care

Natlional Problem: Meeting Primary Care Needs
The Patient Population Pyramid

Mountara Medical Group
National Solutions
- Government agencies pushing redesign
  - ACO’s
  - Patient Centered Medical Home
- Cost effective shifting
  - from inpatient to outpatient setting
- Evidence supports
  - Cost effective
  - Increased quality and efficiency
Overview of Redesign

Accountable Care Organization
- Large Healthcare Systems
- Shift from fee for service to bundles

Patient Centered Medical Home
- Redesign of Primary Care
- Quality, Cost, and Efficiency

RN Care Coordinator
- Function at highest educational level
- Complex Chronic Patients

- Government/Payer Driven
- 10% use 70% of healthcare $ 
- Prevention and Proactive
Family Practice Setting

- 10,000 patients
- ten % complex chronic problems
- nine % have diabetes mellitus
- 65 years or older
  - 21.5% county
  - 12.5% state

Local Problem – Meeting Needs
Practice Design Problems

- Limited access, large census
- Limited hospital follow-up (readmissions)
- Multiple physician specialists
- Transitioning from different care settings
- Difficulty navigating complex system
- Misuse/Overuse of emergency and ICU

Local Problem – Meeting Needs
Practice Design Problems

- 15 minutes visits for complex patients
  - Limited self-management and prevention

- RN functions similarly to MA or LPN
  - Haphazard workflow

- Use of EMR for quality metrics measures
  - Fragmented dissemination of quality care initiatives

Local Problem – Meeting Needs
Patient Centered Medical Home
- Coordinates care within a medical neighborhood
- Team Based health care delivery model
  • Starting with the role of the RN

New roles for healthcare team
- Includes all members
  • Free up providers
- Role development and workflow
  • RN to function at highest level of education
- Increased efficiency

In risk populations / individuals with Complex Needs

- Disease protocols
- Chronic Illness Self Management

- SWRMC: Diabetes Self-Management Program

- Home Life Assessment and Community Resource Referrals

- Diabetes
- Hypertension
- Patient
- Fixed Income/Widow
- Obesity

- Frequent ED visits
- Health promotion and prevention

- Integrated interdisciplinary plan

- Specialists

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RN Care Coordinator

• Proactively manage the diabetic patient
• Encourages patient engagement
  – Diabetes Self-Management Education
• Address quality indicators
• Resource person for PCMH initiatives
• Chart review/Telehealth with patients the HgbA1C over 8
• Transitional care: hospital to home
• Chronic disease protocols bases on EBP
Primary

Implement and evaluate a care delivery model

Integrating the RN Care Coordinator into the PCMH with a focus on the diabetes patient population

- DM Patient Quality Indicators
  - HEDIS Scores
    - Assess HgbA1C at least annually (<7 and ≤8)
    - Blood pressure measured and controlled (<140/90)
    - Screen for microalbuminuria
    - Serum fasting lipid panel (LDL <100)
    - Smoking Cessation (Counseling)
    - ASA if indicated
    - Monofilament testing of feet (Annual)
    - Retinal Ophthalmic Exam by trained professional (Annual)
Secondary
– RN Care Coordinator Role Fidelity
– Patient Satisfaction
  • Descriptive survey
  • Likert scale
  • Perceived self-management skills
  • Satisfaction with role of RN Care Coordinator
– Healthcare Team Satisfaction
  • Descriptive survey
  • Likert scale
  • Perceived workflow efficiency
  • Satisfaction with new role

Aims
Design

– Pre-post design
  • Assess effect of RNCC on quality indicators of patient’s with DM
  • Match initial values with 6 months post-implementation values

– Descriptive survey
  • Patient and healthcare team satisfaction

– Chart Audit
  • Fidelity of RNCC role integration

Methods
Methods

• IRB from Duke and EVMS
  • Exempt
• Small city of ~ 80,000
• Mid-Atlantic – Southern State
• ~10,000 patients
• ~9% with DM
• Practice
  – Providers: 3 MDs, 2 NPs, 1 PA
  – Pod: 1 provider, 1 Staff Nurse (RN, LPN, or MA), 1 Secretary
Sample
- Diabetic Registry from EMR
  • 937 Patients with DM
  • A patient of the Family Medicine
  • Over 18 years old
  • A diagnosis of DM (on one of following)
    - Inclusion
      • problem list in EMR
      • Health maintenance section of EMR
      • PMH section of EMR
    - Exclusion
      • Followed by Endocrinology more than twice in last year

Methods
Pre-Visit Planning

- Chart Review using Diabetic Registry
  - Monthly
  - Assess accuracy
  - A.A. to phone patients with:
    - No appointment or A1C
    - No appointment over one year
  - A1C ≥ 7 in 3 months
  - A1C < 7 in 6 months

- Pre-Visit Huddle
  - Identify DM on census in EMR
  - Pre-order labs
  - Note quality indicators needed
  - Plan RN workflow for A1C ≥ 7

- Staff Education
  - RN as Care Coordinator:
    - Duke University PCCP
    - Staff In-service
    - DM overview with CDE
    - Motivational Interviewing
    - Foot Exam

Visit Interventions

- Determine A1C level
  - Workflow change based on A1C
  - All patients: Order labs
  - Foot exam
  - Ophthalmology referral

- A1C > 7
  - RNCC

- A1C < 7
  - LPN/MA

Ongoing Interventions

- Group Education/Visit
  - Start with highest A1C
  - Schedule around provider visit
  - CDE
  - General DM topics

- Telehealth by RNCC
  - Insulin initiation or change
  - A1C ≥ 9
  - As needed

- Communication
  - Staff meetings
    - Monthly progress graphs
  - Day before planning
  - Morning Huddles
  - Celebrations/Recognition

- Ongoing Staff Education

Standard DM booklet
Refer to RNCC
Community resources
Results – Quality Indicators

Bar chart showing:
- Hgb A1C > 7
- Hgb A1C > 8
- Foot Exam

Comparison between Pre-Project and Post-Project.
<table>
<thead>
<tr>
<th>EDIS Score</th>
<th>Sample</th>
<th>Pre-Innovation</th>
<th>Post-Innovation</th>
<th>McNemar</th>
<th>Paired t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1C &lt; 7</td>
<td>n = 790</td>
<td>70.4%</td>
<td>74.1%</td>
<td></td>
<td>p = .001 (A1C)</td>
</tr>
<tr>
<td>A1C &lt; 8</td>
<td>n = 790</td>
<td>87.5%</td>
<td>89.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DL &lt; 100</td>
<td>n = 850</td>
<td>73.8%</td>
<td>84.8%</td>
<td>p = .013</td>
<td>p = .022</td>
</tr>
<tr>
<td>Foot Exam</td>
<td>n = 850</td>
<td>73.8%</td>
<td>84.8%</td>
<td>p = .001</td>
<td></td>
</tr>
<tr>
<td>Micro</td>
<td>n = 850</td>
<td>73.8%</td>
<td>84.8%</td>
<td>p = .01</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>n = 40 random, chart audit</td>
<td>100% post only</td>
<td>100% post only</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoking Counseling</td>
<td>n = 40 random, chart audit</td>
<td>100% post only</td>
<td>100% post only</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Results – Quality Indicators
## Patient Satisfaction Survey

<table>
<thead>
<tr>
<th>Questions</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes education by RN</td>
<td>3.8</td>
</tr>
<tr>
<td>Responsiveness of RN</td>
<td>4</td>
</tr>
<tr>
<td>Better control as result of RN</td>
<td>3.5</td>
</tr>
<tr>
<td>Recommend family/friend with DM</td>
<td>3.9</td>
</tr>
<tr>
<td>Current treatment of DM</td>
<td>3.5</td>
</tr>
<tr>
<td>Control of blood sugar</td>
<td>3.3</td>
</tr>
</tbody>
</table>

Likert Scale: 4 = Very Likely/Easy/Accurate, 3 = Likely/Easy/Accurate, 2 = neutral, 1 = Unlikely/difficult/inaccurate, 0 = Very unlikely/difficulty/inaccurate.
## Healthcare Team Survey

<table>
<thead>
<tr>
<th>Questions</th>
<th>Providers n=7</th>
<th>RNs n=2</th>
<th>OM n=1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in quality indicators influenced by RN</td>
<td>3.85</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>More time with patient for other issues</td>
<td>4</td>
<td>3.5</td>
<td>3</td>
</tr>
<tr>
<td>Accuracy of RN education</td>
<td>4</td>
<td>4</td>
<td>NA</td>
</tr>
<tr>
<td>Influence with poorly controlled patients</td>
<td>3.8</td>
<td>2.5</td>
<td>4</td>
</tr>
<tr>
<td>Enhanced role of RN increases efficiency</td>
<td>3.8</td>
<td>3.5</td>
<td>4</td>
</tr>
<tr>
<td>Increase compliance because of RN relationship</td>
<td>3.7</td>
<td>3.5</td>
<td>4</td>
</tr>
<tr>
<td>Importance of continuity with office RN</td>
<td>3.8</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Continue to increase the RN role to other populations</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Ease of adjusting workflow</td>
<td>3.6</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

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Discussion

- **Fidelity of RNCC role integration**
  - 70%
  - Random sample of 40 chart

- **A1C and Foot Exam – Nurse Driven**
  - What happened with eye exam

- **Group Visits**
  - 15 attends
  - ~3 hours
  - Future with provider

- **Limitations**
  - Data Mining Issues

- **Implications – next steps**