Cost-Effectiveness and Social Return on Investment Analyses in the Care Type II Diabetics via Group Care vs. Standard Care

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Introduction

Population Statistics

- 29.1 million people have diabetes \[^1\]
- 24.6 million are 45 and older \[^1\]
- 2012 diabetes diagnoses in populations $\geq 20$ years and older \[^1\]:
  - 13.2% of Non-Hispanic blacks
  - 12.8% of Hispanics
  - 7.6% of the Non-Hispanic whites

Cost Statistics

- Diabetes complications = strongest predictor of total costs \[^2\]
  - Cardiovascular Disease, Stroke, Retinopathy, Nephropathy, Neuropathy

- Estimated 2012 total diabetes cost: $245 billion \[^1\]
  - $176 billion - direct medical costs
  - $69 billion - indirect costs
Background

Group Care Model:

St. John’s Williams Clinic
Weekly Class
- Patient Check-In & Vitals
- Diabetes Management Education
- Diabetes Complications Education
- Break/Meal Time
- Exercise

Previous Research
- Has shown effectiveness in the management of diabetic patients
- Non-Intervention Group showed [3]:
  - lower mean age
  - higher probability of medical specialty care use
  - higher probability of comorbid heart disease
  - higher mean HbA1c levels
  - higher probability of having no HbA1c within the past year
Context of the Project

**Goal:** Begin a longitudinal analysis on the group care diabetes class at Williams to determine the program’s effectiveness in managing Type II Diabetes patients

- **Inclusion criteria:**
  - **Ethnicity:** Hispanic or Latino descent
  - **Income:** Low-income
  - **Diagnosis:** Type II Diabetes
  - **Home Clinic:** St. John’s Williams Clinic
  - **Age:** Adult aged 18+

- **Exclusion criteria:**
  - No HbA1c lab value reading since Jan. 2014

**Results**

- 55 attendees from 05/07/14-07/02/14
- 15/55 did not have a HbA1c lab value on record since Jan. 2014
- → 40 patients included in longitudinal analysis
Methodology

• Utilized Data Extraction System (i2i Tracks) to Establish a Set of Matched-Controls

Management Outcomes

• Utilized Group Care Class Records to Track Weekly Group Care Outcomes
  • Weight, Blood Pressure, FBS/NFBS

• Utilized Electronic Medical Records to Track Standard Care Outcomes
  • Weight, Blood Pressure, FBS/NFBS, HbA1c
  • Diabetic Complications
## Preliminary Results

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Control Group</th>
<th>Treatment Group</th>
</tr>
</thead>
<tbody>
<tr>
<td># of Study Participants</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Females; Males</td>
<td>32 females; 8 males</td>
<td>32 females; 8 males</td>
</tr>
<tr>
<td>Age</td>
<td>57 years old</td>
<td>57 years old</td>
</tr>
<tr>
<td>Range: 39-79</td>
<td></td>
<td>Range: 38-77</td>
</tr>
</tbody>
</table>

### HbA1c

Most Recent HbA1c > 7

- **Control Group**: 30 patients (23 females, 7 males)
- **Treatment Group**: 19 patients (15 females, 4 males)

### Blood Sugar Levels

- **FBS ≥ 130**: 7/12 (58%) vs. 25/34 (74%)
- **NFBS ≥ 180**: 20/32 (62.5%) vs. 12/28 (43%)

### Types of Complications

- **Neuropathy**: 8 vs. 7
- **Nephropathy**: 2 vs. 4
- **Retinopathy**: 1 vs. 4
- **Ulcer/Amputation**: 1 (Ulcer) vs. 0

### Number of Complications

- **0-1 Complications**: 12 vs. 15
- **≥ 2 Complications**: 0 vs. 3
Moving Forward & Recommendations

**Future Steps**

- Continue to track the management outcomes in 2014
- Begin tracking Referrals and Hospitalization Rates
- Determine Cost for:
  - Uninsured Visits, Quarterly Labs, Preventive Screenings, Medication
- Determine social value of group care
- Conduct Analyses
  - Cost-Effectiveness
  - Social Return on Investment

**Project Recommendations**

- Establish a set mechanism for ongoing data collection
Conclusions

- Despite small study size & short duration
  - Data shows promising trends in:
    - HbA1c values & NFBS

- Long-term evaluation of management outcomes can show more positive trends associated with group care

- Only after long-term evaluation can cost-effectiveness and social return of investment analysis have significant meaning for group care practices
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References

