Efficacy of Co-Located Pharm D on Diabetic Outcomes in an Urban Family Medicine Clinic
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**BACKGROUND**
- Improving outcomes for Type 2 Diabetic patients is challenging for primary care providers.
- Reimbursement is increasingly tied to quality outcomes for diabetic patients.
- Developing care teams as part of a Patient Centered Medical Home aid in obtaining quality outcomes for these patients.
- Pharm D’s trained as certified diabetic care manager can be a vital part of the PCMH care team.

**AIM**
To determine whether a co-located Pharm D improves a1c levels, LDL and/or blood pressure outcomes for type 2 diabetic patients (ICD-9 codes 250.00/250.02)

**METHODS**
- A cohort of patients with Type 2 Diabetes (ICD 250.00/250.02) seen by the Pharm D within 12 months in our Family Medicine clinic were studied.
- Analysis inclusion criteria included if the patient was seen by Pharm D ≥ 1 visit and an uncontrolled outcome measure.
- Uncontrolled outcome measures included:
  - Hemoglobin a1c ≥ 9
  - LDL >100
  - Systolic blood pressure >140
  - Diastolic blood pressure >90
- Patients with missing outcome measure data were excluded from the analysis.
- Outcomes at the beginning and end of the study period were analyzed using student t-test.
- Statistical significance was set at ≤0.05

**RESULTS**

<table>
<thead>
<tr>
<th>Measure</th>
<th>N</th>
<th>Mean</th>
<th>95% CI</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>a1c</td>
<td>99</td>
<td>-0.88</td>
<td>-0.34 - -1.2</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>LDL</td>
<td>88</td>
<td>-24.4</td>
<td>-14.8 - -15.4</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>SBP</td>
<td>54</td>
<td>-15.5</td>
<td>-9.0 - -22.0</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>DBP</td>
<td>31</td>
<td>-9.9</td>
<td>-4.5 - -15.4</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

**CONCLUSIONS**
- 10.5% of diabetic patients were seen by the Pharm D from Sept 2013-Sept 2014.
- Patients referred to the Pharm D had a higher mean hemoglobin a1c than those not referred.
- Baseline mean LDL, systolic and diastolic blood pressure were similar between those referred to the Pharm D and those not.
- There was a significant improvement in ALL measures for those patients who were seen by the Pharm D.

**LIMITATIONS**
- A comparison group not seen by the Pharm D was not analyzed.
- Patients with missing data were not included in the analysis.
- The data were not controlled for confounders including those patients co-managed with endocrinology or severity of disease.
- Enrollment with the Pharm D was by provider referral, so there is possible referral bias.

**NEXT STEPS**
- Compare outcomes to control group not seen by Pharm D.
- Evaluate hospitalization, emergency room visits, patient and provider satisfaction.
- Cost analysis to evaluate ROI.