Impact of clinical pharmacy services on quality care measures for patients with type 2 diabetes mellitus in an outpatient family medicine clinic

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EXCEPTIONAL CARE. WITHOUT EXCEPTION.

Background

- The Boston Medical Center (BMC) family medicine clinic cares for approximately 900 patients with type 2 diabetes mellitus (T2DM)
- Prior to the implementation of a full-time clinical pharmacist, 30% of patients had a hemoglobin A1c above 8%
- The family medicine clinic at BMC is recognized as a level 3 certified National Committee for Quality Assurance (NCQA) medical home
- Evidence to support the influence of a clinical pharmacist on compliance with standards of care in a PCMH has not been evaluated

Objective

- Assessed the impact of a clinical pharmacist on care of patients with T2DM in a certified NCQA medical home using disease specific standards

Methods

- Observational, single center, retrospective study
- Data collected from March 1, 2013 to November 30, 2014

Inclusion Criteria (n=875)

- Attendance at ≥1 visit in Family Medicine clinic at BMC between 9/1/13 and 8/31/14
- Diagnosis of T2DM
- ≥ 18 years of age

Exclusion Criteria (n=539)

- A1c <7% (n=291)
- Actively followed by endocrinologist for DM (n=38)
- Lack of A1c before or after the baseline visit within the study timeframe (n=210)

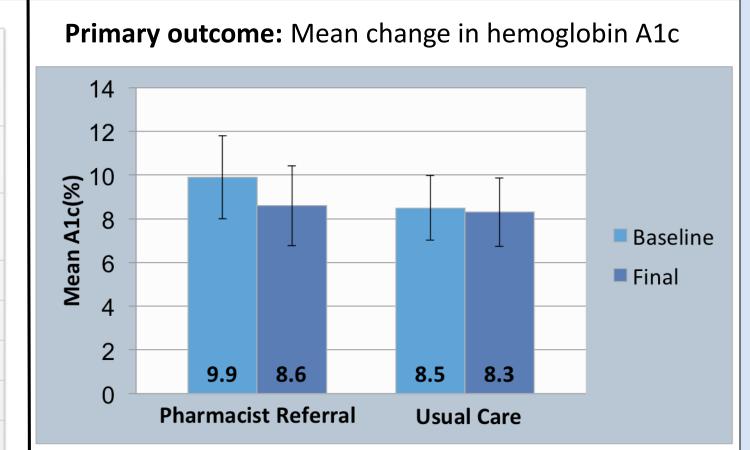| Usual Care (n=226)	Referral (n=110)
0 clinical pharmacist visits	≥1 clinical pharmacist visits

Results

Demographics

Characteristic	Pharmacist Referral (n=110)	Usual Care (n=226)	p-value
Body Mass Index, mean (±SD)	34.3 (±8.2)	32.3 (±7.2)	0.02
Male Gender, n (%)	63 (57.3)	97 (42.9)	0.01
Race, n (%)			
Caucasian	7 (6.3)	23 (10.2)	0.31
Black	86 (78.2)	161 (71.2)	0.19
Hispanic/Latino	6 (5.5)	16 (7.1)	0.65
Other	11 (10.0)	26 (11.5)	0.85
Smoking Status, n (%)			
Smoker	21 (19.1)	30 (13.3)	0.19
Family Medicine Visits, mean (±SD)	9.6 (±5.1)	4.2 (±3.1)	<0.0001

Primary Outcome

Primary outcome: Mean change in hemoglobin A1c

Bar chart values — Pharmacist Referral: Baseline 9.9, Final 8.6; Usual Care: Baseline 8.5, Final 8.3

Outcome	Pharmacist Referral (n=110)	Usual Care (n=226)	p-value
Change in A1c, mean (±SD)	-1.3 (±2.2)	-0.2 (±1.4)	<0.0001

Secondary Outcomes

Outcome	Pharmacist Referral (n=110)	Usual Care (n=226)	p-value
Outcome Metrics			
A1c <9%, n (%)	63 (57.3)	170 (75.2)	0.001
A1c <7%, n (%)	23 (20.9)	38 (16.8)	0.37
LDL <100 mg/dL, n (%)	53 (48.2)	100 (44.2)	0.56
Blood Pressure <140/80 mmHg, n (%)	44 (40.0)	73 (32.3)	0.18
Process Metrics			
Lipid Panel obtained Annually, n (%)	102 (92.7)	205 (90.7)	0.68
Urine Albumin obtained Annually, n (%)	97 (88.2)	164 (72.6)	0.0012
Referrals, n (%)			
Podiatry	33 (30.0)	32 (14.2)	0.0011
Ophthalmology	59 (53.6)	85 (37.6)	0.0068

Outcomes To Be Evaluated

- Mean change in body mass index (BMI)
- Number of patients:
  - Prescribed appropriate pharmacotherapy:
    - Statin, ACEI or ARB, Aspirin*
  - With documentation of pneumococcal vaccination status
  - With labs obtained: Hemoglobin A1c*
  - Admitted at BMC or seen in the ED for glycemic control issues

*Outcomes are currently being evaluated using the 2013 American Diabetes Association (ADA) Guidelines

Discussion

- Complicated patients are more likely to be referred for pharmacy care
  - Higher baseline A1c and BMI
- Referral to a clinical pharmacist for management of patients with T2DM results in a statistically significant decrease in A1c

References

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Disclosure

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