

Impact of a Standardized Patient Referral Process for Pharmacist-provided Collaborative Drug Therapy Management on Access to and Quality of Care

Investigator Presley Legerski, PharmD, PGY1 Pharmacy Resident
 Billings Clinic, 2800 10th Ave North, Billings, Montana 59101
 plegerski@billingsclinic.org

Background

- Collaborative drug therapy management (CDTM) by pharmacists increases patients' access to high quality care and improves medication-related outcomes using a team based approach.^{1,2}
- The values of CDTM in the medical home include improved clinical outcomes, increased attention to medications, and saved physician time.^{1,2}
- Prior to the standardized electronic process, patients were referred to the pharmacist for CDTM following only physician referral.
- Baseline clinic time to see a provider is 2 weeks for an established patient and 5 months for a new patient.

Methods

Purpose: Increase patient access to and quality of care after implementation of a standardized electronic patient referral process to an ambulatory care pharmacist for management of hypertension and/or diabetes mellitus

- Prospective, single-center, interventional study
- Study groups
 - Historical control group (November 15, 2015 – January 31, 2016)
 - Intervention group (December 15, 2016 – February 28, 2017)

Eligibility Criteria - Providers

Inclusion Criteria

- Billings Clinic downtown provider

Exclusion Criteria

- Physician resident

Primary Outcome

- Percentage of referred patients who attended their initial appointment with the pharmacist

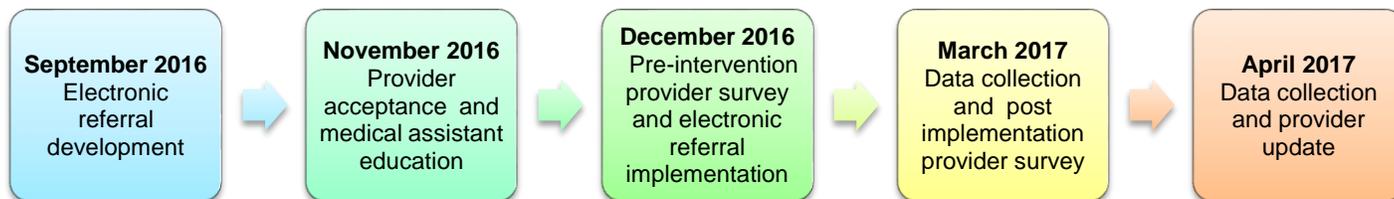
Secondary Outcomes

- No show rates to initial appointment with pharmacist
- Changes in hemoglobin A1c and blood pressure
- Provider satisfaction pre- and post-intervention

Eligibility Criteria - Patients

Inclusion Criteria	Exclusion Criteria
<p><u>Both Groups</u></p> <ul style="list-style-type: none"> • Age 18 - 80 years • Hemoglobin A1c >9% and/or • Blood pressure >150/90 mmHg and eGFR 10-50 mL/minute in last 6 months • Attended ≥1 appointment with a BC downtown PCP in clinic in the last year <p><u>Intervention Group</u></p> <ul style="list-style-type: none"> -Identified by the standardized electronic referral process 	<ul style="list-style-type: none"> • Patient already seeing pharmacist • No hypertension diagnosis • Quality measures completed during a hospitalization or outpatient surgery • Other reasons identified by clinical pharmacist
<p>BC: Billings Clinic, eGFR: estimated glomerular filtration rate, mL: milliliter, PCP: primary care provider</p>	

Study Timeline



Intervention Workflow



References

1. McBane SE, Dopp AL, Abe A, et al. Collaborative drug therapy management and comprehensive medication management. *Pharmacotherapy* 2015;35(4):39-50.
2. McInnis T, Webb E, Strand L. The patient-centered medical home: integrating comprehensive medication management to optimize patient outcomes (June 2012). Patient-Centered Primary Care Collaborative Web site. Available at: <https://www.pccpc.org/sites/default/files/media/medmanagement.pdf>. Accessed April 22, 2017.

Results

Baseline Demographics

Baseline Characteristics	Intervention (n=135)	Control (n=6)
Age, mean years \pm SD	62.8 \pm 12	59.5 \pm 11.9
Females, n (%)	79 (59)	4 (67)
Comorbidities, n (%)		
Coronary artery disease	22 (16)	1 (17)
Current or former smoker	67 (50)	4 (67)
Diabetes mellitus	105 (78)	5 (83)
Hyperlipidemia	86 (64)	3 (50)
Hypertension	107 (79)	4 (67)
Microalbuminuria/proteinuria	10 (7)	0 (0)
Obesity	57 (42)	3 (50)

Appointment Results

	Intervention Group	Control Group
Eligible patients, n	135	135
Referred patients, n (%)	135/135 (100)	6/135 (4.4)
Referred patients scheduled, n (%)	46/135 (34.1)	5/135 (83.3)
Referred patients who attended first appointment, n (%)	35/135 (25.9)	2/6 (33.3)
Scheduled patients who attended first appointment, n (%)	35/46 (76.1)	2/5 (40)
Scheduled patients who no-showed first appointment, n (%)	11/46 (23.9)	3/5 (60)
Time to see pharmacist, mean days \pm SD	11.8 \pm 10.6	16.4 \pm 12.4

Secondary Outcome – Provider Satisfaction

Question/Statement	Answer, n (%)	Pre-Intervention (n=8)	Post-Intervention (n=6)
Satisfied with the new process	Strongly Agree Agree Neutral	-----	2 (33.3) 3 (50) 1 (16.7)
Better understanding of medications	Strongly Agree Agree	6 (75) 2 (25)	5 (83.3) 1 (16.7)
Better control of disease states	Strongly Agree Agree	4 (50) 4 (50)	5 (83.3) 1 (16.7)
Increased access to high quality care	Strongly Agree Agree	6 (75) 2 (25)	5 (83.3) 1 (16.7)
Benefit from having pharmacist as a part of team	Strongly Agree Agree	6 (75) 2 (25)	6 (100)
Satisfied with the clinical pharmacist	Strongly Agree Agree	6 (75) 2 (25)	6 (100)

Discussion

- 1st study to evaluate the impact of an electronic referral process with pharmacist interventions and access to care
- Increased pharmacist referral rates for hypertension and diabetes mellitus by over 95%
- Decreased appointment no show rates with electronic referral by 36%
- Providers have increased satisfaction of pharmacist-provided care post-intervention

Limitations

- Pharmacist beginning services in control group time frame
- Only one pharmacist with other responsibilities leading to scheduling barriers
- Short study duration
- Clinically inappropriate referrals

Conclusions

- Electronic, standardized referral system that identifies adult patients with uncontrolled hypertension or diabetes mellitus may increase patients' access to and quality of care

Lessons Learned

- Close relationship with informatics team
- Continually look for ways to improve and refine referral process

References

1. McBane SE, Dopp AL, Abe A, et al. Collaborative drug therapy management and comprehensive medication management. *Pharmacotherapy* 2015;35(4):39-50.
2. McInnis T, Webb E, Strand L. The patient-centered medical home: integrating comprehensive medication management to optimize patient outcomes (June 2012). Patient-Centered Primary Care Collaborative Web site. Available at: <https://www.pcpcc.org/sites/default/files/media/medmanagement.pdf>. Accessed April 22, 2017.

- Importance of medical assistant training on phone calls to patients
- Coordination and collaboration with inter-professional teams

References

1. McBane SE, Dopp AL, Abe A, et al. Collaborative drug therapy management and comprehensive medication management. *Pharmacotherapy* 2015;35(4):39-50.
2. McInnis T, Webb E, Strand L. The patient-centered medical home: integrating comprehensive medication management to optimize patient outcomes (June 2012). Patient-Centered Primary Care Collaborative Web site. Available at: <https://www.pcpcc.org/sites/default/files/media/medmanagement.pdf>. Accessed April 22, 2017.