



An Evaluation of the Impact of a Physician-led Health Adherence Program on Diabetes Outcomes

Compassionate Family Medicine Services, Syracuse, NY

Ted Triana, DO¹; Frankie Quarles, DO²; Maria Cannito, PharmD, MS³

Purpose:

To evaluate a physician-led health education program for underserved, high-risk health care patients who are non-adherent to diabetes therapy.

Background:

Maintaining adherence to diabetes therapy is a key strategy to achieving long-term glycemic control. However levels of non-adherence to prescribed regimens ranges from 9-80%. One factor that could influence adherence is poor health literacy. Ethnic minority groups, older patients, and those with low socioeconomic status are especially vulnerable. Possible consequences include inability to understand medication directions, information on appointment slips and ineffective treatment of chronic and acute conditions.

Objectives:

- Demonstrate importance of adherence to diabetes treatment outcomes for those practices that provide health care to the underserved, high-risk patient population
- Demonstrate impact of in-house physician-led health education program
- Promote communication including patient education around expectations of diabetes treatment, value of adherence to medication and lifestyle guidance
- Evaluate how education level and primary language influence treatment outcomes and number of missed education and lab appointments

Methodology:

- Retrospective, HIPPA compliant, EMR data
- Inclusion criteria: Provider-determined non-adherence to diabetes therapies
- Enrollment period: Jun 2009 – Dec 2009
Follow-up end data: Jul 2010
- Dedicated, customized physician-led education
- program included disease, medication and activities of daily living topics and checklists
- Outcome measures followed NCQA Diabetes Recognition Program endpoints and descriptions

Results:

Parameter (n=35)	% of Patients (n)
Age (years):	
18-44	20% (7)
45-54	29% (10)
55-64	31% (11)
65-74	17% (6)
≥75	3% (1)
Gender:	
Male	51% (18)
Female	49% (17)
Ethnicity:	
White/Caucasian	20% (7)
Hispanic/Spanish/Latino	43% (14)
Black/African American	31% (11)
Other	6% (2)
Primary Language:	
English	54% (19)
Spanish	43% (15)
Other	3% (1)
Level of Education:	
<High School	34% (12)
High School / Professional	49% (17)
College or University	6% (2)
Graduate School	6% (2)
Unknown	6% (2)
Comorbidities:	
1-2	6% (2)
3-4	6% (2)
≥ 5	89% (31)
*Psychiatric Subset:	46% (16)
Depression	(7)
Anxiety	(3)
Depression/Anxiety	(4)
Schizophrenia	(1)
Alzheimer's Disease	(1)

Outcomes:

Measure (n)	Baseline	Follow-up	Average % Change
HbA1c (35)	9.95 ± 2	9.5 ± 2	-5%
LDL (18)	98.1 ± 29	100.1 ± 31	2%
SBP (35)	132.8 ± 14	130.1 ± 21	-2%
DBP (35)	73.6 ± 9	73.9 ± 8	<1%

HbA1c by Level of Education :

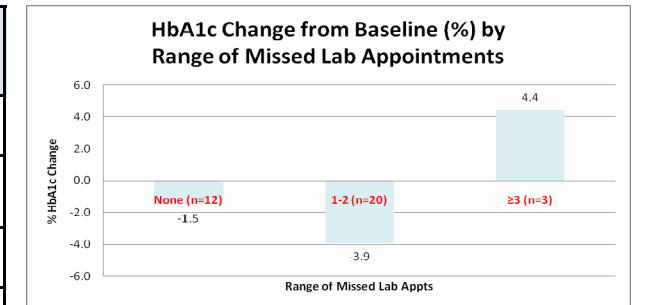
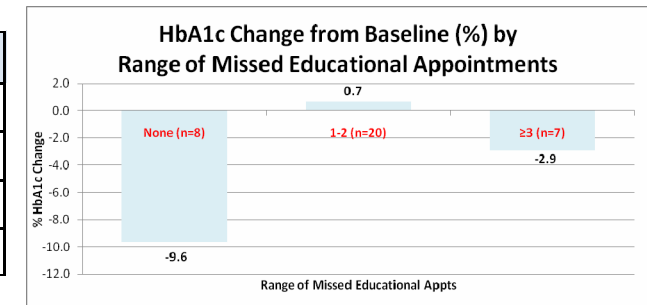
Level of Education (n=35)	Baseline	Follow-up	Average % Change
< HS (12)	9.8 ± 2	9.3 ± 2	-5%
HS / Profess (17)	9.7 ± 3	9.3 ± 2	1%
College/University (2)	11.0 ± 2	10.5 ± 1	-3%
Graduate School (2)	10.7 ± 3	8.6 ± 3	-21%
Unknown (2)	11.8 ± 3	12.1 ± 2	5%

HbA1c by Language ::

Primary Language (n)	Baseline	Follow-up	Average % Change
English (19)	10.2 ± 2.1	9.6 ± 2.0	-4%
African (1)	10.2	12.1	19%
Spanish (15)	9.6 ± 2.4	9.3 ± 2.1	-2%

HbA1c by Psychiatric Comorbidity :

Psychiatric Comorbidity (n)	Baseline	Follow-up	Average % Change
Depression (8)	10.2 ± 2.3	9.2 ± 1.6	-9.0%
Anxiety (2)	8.8 ± 2.6	9.8 ± 1.9	18.6%
Depression/Anxiety (4)	9.7 ± 1.8	9.5 ± 1.5	-1.4%
Schizophrenia (1)	6.7	6.7	0
Alzheimer's Disease (1)	11.6	6.7	-42.2%



Limitations:

- Sample size
- Non-adherence (appointments, medication, referrals, nutrition / home testing)
- Transfer level of care
- Insufficient health literacy

Conclusions / Recommendations:

- Preliminary results suggest that intensive diabetes education on disease state, medication adherence and lifestyle issues may influence outcomes.
- Patients with psychiatric comorbidities also obtained significant % change in HbA1c (-5.2%) from baseline
- Continue program and follow-up
- Continue to work to address health disparities to eliminate inequalities in the underserved

¹Medical Director and ²Associate Medical Director, Compassionate Family Medicine Services. ³Medical Outcomes Specialist, Pfizer