

Access to Diabetes Care for Patients at a FQHC System in Central Texas

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Background:

People with diabetes are advised to visit their health care providers regularly for blood sugar and lipid level monitoring to prevent or postpone diabetes complications. However, low-income individuals and populations that lack health insurance are less likely to receive regular checkups and may face increased challenges with diabetes management. The aim of the study was to compare the frequency of blood testing and compare improvements among patients who attended specialty provider visits (pharmacists for diabetes management, case manager visits, and both types of visits).

Methods:

We conducted a secondary analysis of 2015 data from 2,345 adult patients with diabetes from 14 clinics in a network of Federally Qualified Health Centers (FQHC) in central Texas who visited a pharmacist or case manager for diabetes, or both the pharmacist and case manager. We explored the frequency of laboratory tests and values for A1C, high-density lipoprotein cholesterol (HDL), low-density lipoprotein cholesterol (LDL), triglycerides, and total cholesterol among three type of appointments (case management, pharmacy, and both case management and pharmacy). Additionally, paired t-test was used to compare baseline and most recent laboratory data, and one-way ANOVA was conducted to analyze the changes of laboratory data among three visit types.

Results:

Participants were 18 - 97 years old (mean = 55); 61.4 % were female; and 69% were Hispanic (see Table 1). Participants had A1C checked twice a year and a lipid panel test of once a year. Twenty-eight percent of patients came for case management, 60% for pharmacist visits, and 11% came for both case management and pharmacist visits.

Patients of all three visit categories showed statistically significant improvements over time in their A1C, LDL, and total cholesterol levels. Those who visited both case management and pharmacists underwent blood testing at significantly higher frequencies than those who visited only one or the other. However, patients who were referred to the pharmacist had significantly higher baseline A1C measurements (a criterion for referral). Participants who visited both case manager and pharmacist experienced the largest average A1C improvement compared to participants who only visited one or the other. There was no significant difference in lipid panel improvement when comparing the three visit categories.

Discussion:

As expected, patients with diabetes in this clinical system were predominantly older, female, and Hispanic. This matches the risk factors for diabetes. Patients with the highest A1Cs were referred the pharmacists as part of the FQHC system policy to address diabetes. Patients who visited with a pharmacist and case managers had the greatest improvement. However, as a whole, the frequency of A1C check-ups was less than what is recommended by the American Diabetes Association (ADA).

Table 1. Descriptive Characteristics of Sample (N=2345)

Variables	M± SD or %	Range
Age (year)	54.73 ± 12.54	18-96
Gender (Female)	1441 (61.4 %)	
Hispanic or Latino	1617 (69.0%)	
Visiting Type		
Case management	687 (29.3%)	
Pharmacist	1399 (59.7%)	
Both case management and Pharmacist	259 (11.0%)	
Frequency of Check-up		
Times of A1C check-up	2.16± 1.09	0-7
Times of lipid panel	1.37± .82	0-5

Figure 1. Laboratory data comparison between baseline and latest measurements

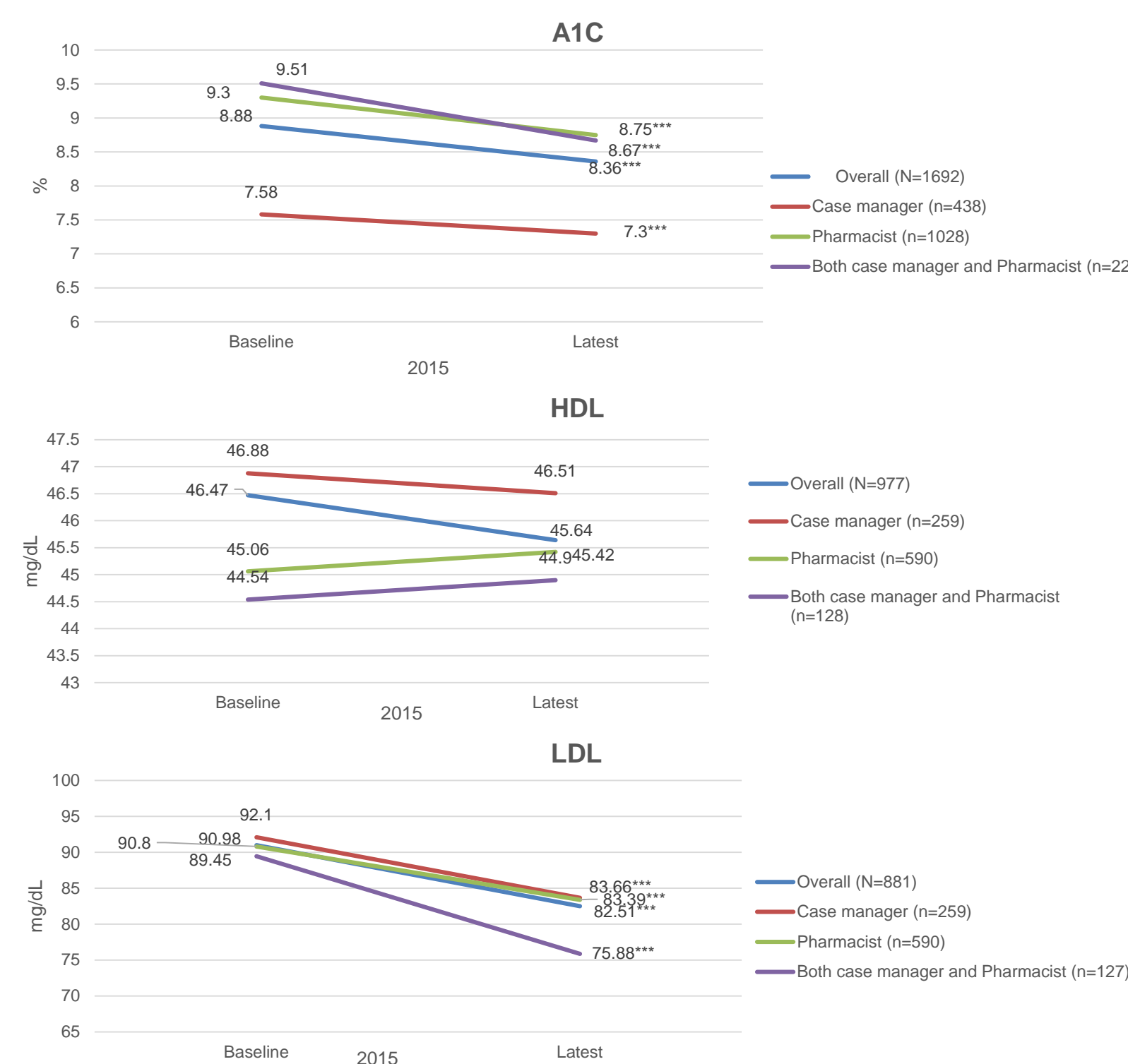


Figure 1. Laboratory data comparison between baseline and latest measurements (cont')

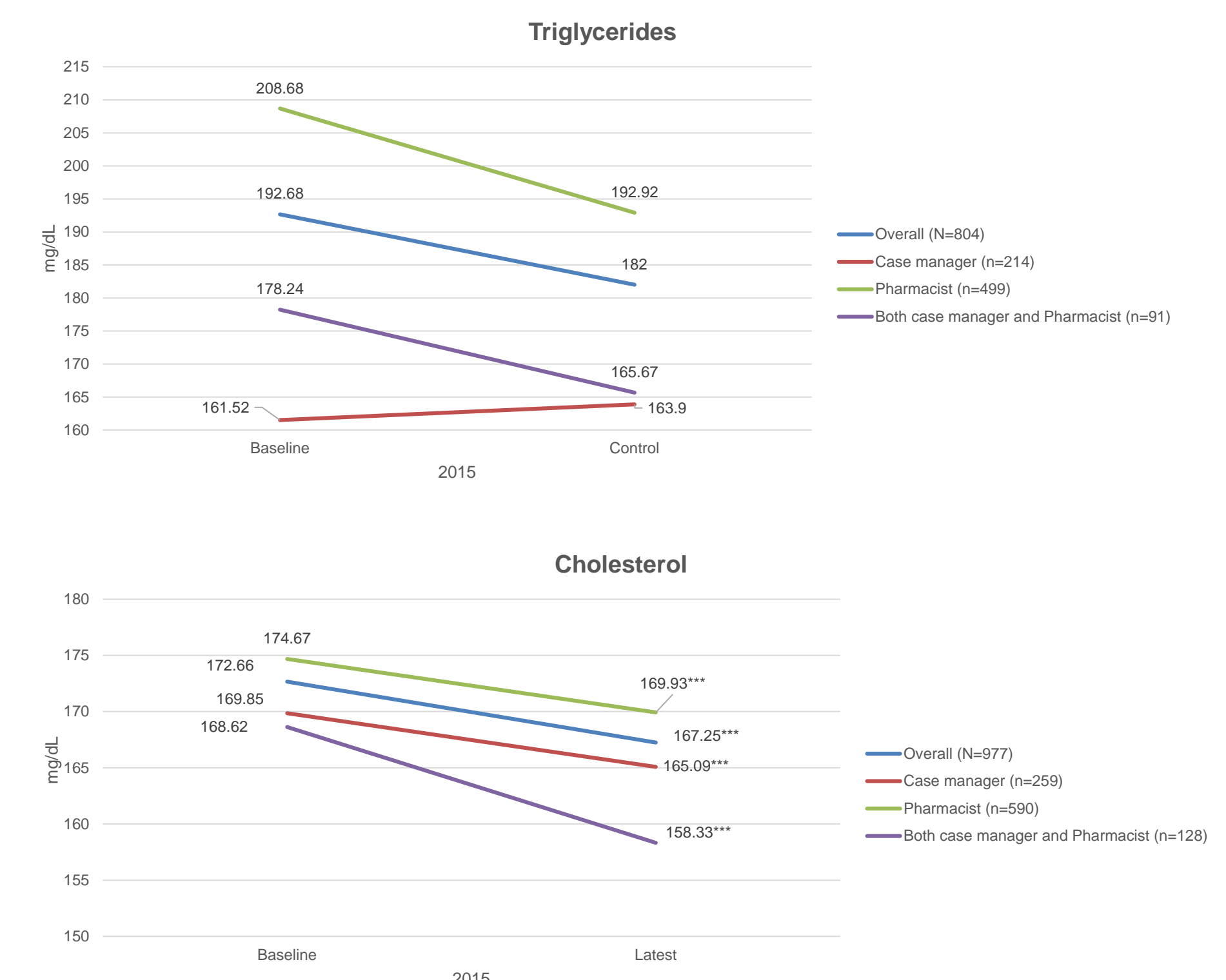


Table 2. Frequency of laboratory test comparison among three visiting categories

Variables	Case Management (n= 687)	Pharmacist (n= 1399)	Both (n= 259)	F (p)
Number of A1C check-ups	1.92±1.11***	2.19±1.05***	2.61±1.03***	40.26 (<.001)
Number of lipid panel check-ups	1.26± .88***	1.40± .79***	1.53± .77***	12.54 (<.001)

All significant differences were noted by * p < .05, ** p < .01, *** p < .001.

Table 3. Comparison with changes of lab data among three visiting categories

Variables	Visit types	Case Management	Pharmacist	Both	F (p)
A1C		-.28± 1.48**	-.55± 1.92*	-.83± 2.1***	7.16 (<.001)
HDL		.37± 7.87	.42± 8.17	.36± 7.61	.91 (.40)
LDL		-8.44± 29.78	-7.42± 33.58	-13.57± 39.93	1.56 (.21)
Triglycerides		2.38± 76.02	6.66±131.98	-12.57±85.52	.69 (.50)
Cholesterol		-9.86±37.18	-9.39±47.14	-19.30±50.52	2.60 (.08)

All significant differences were noted by * p < .05, ** p < .01, *** p < .001.

