

An Integrated Approach to Improving Diabetes Care and Outcomes on Chicago's South Side

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Statement of Problem

Racial minorities suffer disproportionately from diabetes:

- Predominantly African American communities on the South Side of Chicago have higher prevalence rates of diabetes (12%) compared to the city of Chicago overall (7%).
- These neighborhoods also have foot/leg amputation, kidney failure, blindness and heart disease rates (complications of diabetes) five times higher than primarily white communities.
- High rates of diabetes and complications from the disease are due in large part to racial/ethnic and socioeconomic disparities that make access to care and self-management difficult.

Few interventions have integrated health care and community approaches to improve outcomes among these populations.

Description of Integrated Approach

Our research team is implementing a 6-clinic intervention to improve diabetes care and outcomes on Chicago's South Side, a primarily working class African-American community, that includes four integrated core components:

- Patient education and empowerment classes
- Provider education
- Clinic system redesign
- Linkages to community resources

The short-term goals of this project are to improve the quality of diabetes care, as well as the clinical outcomes including HbA1c, cholesterol, and blood pressure in patients with diabetes.

Our long-term goals are to strengthen the network of community health centers, community-based organizations, and academic medical centers, while increasing awareness of local diabetes disparities and empowering communities to combat this problem.

Methods

We annually review 600 randomly identified medical charts (100 charts/clinic) to assess diabetes process measures (e.g. referral for eye exams) and outcomes measures (e.g. HbA1c value).

We conducted logistic and linear regression analyses to measure changes in outcomes from 2008 (baseline) to 2010, controlling for site, age, gender, race, treatment type, and insurance.

Demographics

Patient Characteristics	Year		
	2008 (n=581)	2009 (n=590)	2010 (n=456)
Age	54.5±14.9	58.3±14.6	57.0±14.0
Female	65.75	66.95	65.33
Diabetes Type			
I	5.86	3.39	4.14
II	89.48	96.61	91.95
Unknown	4.66	0.00	3.91
Race/Ethnicity			
White	9.69	9.49	9.77
Black	73.88	76.61	65.41
Hispanic	12.63	10.85	18.55
Others	3.81	3.05	6.27
Treatment Type			
Diet only	8.29	4.58	3.77
Oral	59.93	64.75	59.67
Insulin	12.78	13.39	15.09
Insulin & Oral	19.00	17.29	21.46
Insurance			
Medicaid only	29.81	31.07	29.55
Medicare only	11.27	11.88	34.77
Private only	19.58	12.39	15.68
Combinations or others	22.01	32.09	3.86
Uninsured	17.33	12.56	16.14



Results

Process Measures	Year	Adjusted		
		%	OR	p-value
Referral for dilated eye exam	2010	44.96	1.492	0.008
	2009	33.96	0.939	0.627
	2008	35.39	(ref)	
Provided Influenza vaccination	2010	33.87	1.922	<.0001
	2009	24.48	1.217	0.165
	2008	21.04	(ref)	
Provided Diabetes education	2010	32.17	2.180	<.0001
	2009	13.80	0.736	0.053
	2008	17.87	(ref)	
Provided urine microalbumin	2010	59.87	1.562	0.005
	2009	54.58	1.258	0.075
	2008	48.86	(ref)	
No HbA1c screening	2010	9.90	0.455	0.001
	2009	14.21	0.686	0.020
	2008	19.44	(ref)	
No LDL screening	2010	32.78	1.013	0.933
	2009	33.73	1.058	0.671
	2008	32.48	(ref)	
Outcomes Measures	Year	Adjusted		
		Mean	Coefficient Estimate	p-value
BMI value	2010	33.44	0.780	<.0001
	2009	32.75	0.091	0.150
	2008	32.66	(ref)	
HbA1c value	2010	7.91	0.140	0.072
	2009	7.76	-0.005	0.945
	2008	7.77	(ref)	
LDL value	2010	102.50	-1.208	<.0001
	2009	105.24	1.535	<.0001
	2008	103.70	(ref)	
SBP value	2010	131.10	0.721	<.0001
	2009	128.69	-1.685	<.0001
	2008	130.38	(ref)	
DBP value	2010	76.62	0.457	<.0001
	2009	75.80	-0.367	<.0001
	2008	76.16	(ref)	

Conclusion

Our integrated approach can improve diabetes care among vulnerable populations in real-world settings, but health outcomes may take more than 2 years to show improvements.

Our intervention is 7 years and updated analyses are underway.