

VALUE OF THE DIABETES EDUCATOR APPENDICES

APPENDIX 1

Our available data consisted of separate datasets of patients with diabetes (Commercial and Medicare) from national payer data. We define the variable ranges in these tables as follows:

Table 3: Variable Definitions

Variable	Definition
Urban %	Proportion of patients with diabetes living in areas with over 50% urban population
Low income %	Proportion of patients with diabetes with annual income \leq \$30,000
Mid income %	Proportion of patients with diabetes with annual income between \$30,000-\$70,000
High income %	Proportion of patients with diabetes with annual income \geq \$70,000
Concurrent risk average	Solucia/diabetes concurrent risk score
Prospective risk average	Solucia/diabetes prospective risk score

We used the general linear model to test the statistical difference of PMPMs between groups as well as changes of PMPMs over time. For the descriptive statistics, such as demographics, risk score, zip income, etc., we used the Chi-Square test to examine the statistical difference between groups.

Table 4: Database statistics

	Commercial			
	Non-Diabetes Education	Diabetes Education	Total	P-Value
Patients	447,343	35,228	482,571	<.0001
Eligibility months average	11.1	11.4	11.2	<.0001
Diabetes education %	0.0%	100.0%	7.3%	<.0001
Age average	57.2	48.8	56.6	<.0001
Female %	46.4%	55.6%	47.1%	<.0001
Urban %	74.7%	76.7%	74.9%	<.0001
Low income %	16.3%	12.8%	16.1%	<.0001
Mid income %	77.4%	80.4%	77.6%	<.0001
High income %	6.3%	6.8%	6.3%	<.0001
Concurrent risk average	0.85	0.85	0.85	0.4806
Prospective risk average	0.88	0.86	0.88	0.0003

Commercial members who participate in diabetes education are more likely to be younger, female, and have higher income than those that do not participate. They also have a lower risk score (consistent with their younger average age).

Table 5: Database statistics

	Medicare			
	Non-Diabetes Education	Diabetes Education	Total	P-Value
Patients	145,658	6,416	152,074	<.0001
Eligibility months average	11.4	11.7	11.5	<.0001
Diabetes education %	0.0%	100.0%	4.2%	<.0001
Age average	74.3	71.3	74.2	<.0001
Female %	54.0%	58.1%	54.2%	<.0001
Urban %	89.5%	89.4%	89.5%	0.8798
Low income %	18.4%	15.8%	18.2%	<.0001
Mid income %	77.7%	80.2%	77.8%	<.0001
High income %	4.0%	4.0%	4.0%	0.909
Concurrent risk average	1.5	1.4	1.50	<.0001
Prospective risk average	1.6	1.5	1.61	<.0001

Differences between diabetes education participants and non-participants among Medicare patients are similar to those in the Commercial population: patients are more likely to be younger and female, lower risk and higher income.

APPENDIX 2

Diabetes cohort (2005).

COMMERCIAL

	Non-Diabetes Education	Diabetes Education	Total	P-Value
Patients	59,619	5,572	65,191	<.0001
Eligibility months average	11.6	11.7	11.6	<.0001
Age average	58.3	49.3	57.6	<.0001
Female %	44.0%	52.2%	44.7%	<.0001
Urban %	74.6%	76.1%	74.7%	0.0146
Low income %	16.8%	12.1%	16.4%	<.0001
Mid income %	77.2%	81.0%	77.6%	<.0001
High income %	5.9%	7.0%	6.0%	0.0018
Concurrent risk average	0.79	0.82	0.80	0.0083
Prospective risk average	0.79	0.83	0.80	0.0055

Among the cohort of Commercial patients first identified as having diabetes in 2005, similar characteristics are observed in the diabetes education population: this population is more likely to be younger, female, higher income and lower risk than non-participants. The composition of the Medicare population is similar to the Commercial cohort and is more likely to be female, slightly younger and more affluent.

MEDICARE

	Non-Diabetes Education	Diabetes Education	Total	P-Value
Patients	27,183	1,300	28,483	<.0001
Eligibility months average	11.8	11.8	11.8	0.5609
Age average	74.0	71.7	73.9	<.0001
Female %	54.6%	59.4%	54.9%	0.0008
Urban %	89.8%	90.7%	89.9%	0.3072
Low income %	19.1%	15.5%	18.9%	0.0015
Mid income %	77.1%	79.8%	77.2%	0.0190
High income %	3.9%	4.6%	3.9%	0.1776
Concurrent risk average	1.35	1.39	1.35	0.1698
Prospective risk average	1.34	1.38	1.34	0.1762

APPENDIX 3: Provider use of Diabetes Education

COMMERCIAL

	Least Likely (0-5%)	Middle (5-10%)	Most Likely (>10%)	Total	P-Value
Patients	173,801	69,461	52,211	482,571	<.0001
Eligibility months average	11.1	11.3	11.2	11.2	<.0001
Diabetes education %	3.9%	8.9%	18.7%	7.3%	<.0001
Age average	59.2	54.7	51.8	56.6	<.0001
Female %	48.2%	46.4%	49.6%	47.1%	<.0001
Urban %	78.1%	79.8%	76.9%	74.9%	<.0001
Low income %	18.1%	14.1%	11.4%	16.1%	<.0001
Mid income %	77.0%	81.4%	84.7%	77.6%	<.0001
High income %	4.8%	4.5%	3.9%	6.3%	<.0001
Concurrent risk average	0.87	0.84	0.82	0.85	<.0001
Prospective risk average	0.90	0.86	0.84	0.88	<.0001

There is wide variation among providers in their use of diabetes education. Patients in higher-prescribing practices, on average, participate 19% of the time, almost 5 times as frequently as those in lower-prescribing practices (3.9%).

MEDICARE

	Least Likely (0-5%)	Middle (5-10%)	Most Likely (>10%)	Total	P-Value
Patients	85,390	43,312	19,071	152,074	<.0001
Eligibility months average	11.4	11.6	11.5	11.5	<.0001
Diabetes education %	2.0%	5.5%	11.0%	4.2%	<.0001
Age average	74.5	73.9	73.4	74.2	<.0001
Female %	53.7%	54.6%	55.7%	54.2%	<.0001
Urban %	90.3%	87.5%	90.1%	89.5%	<.0001
Low income %	19.6%	17.5%	14.0%	18.2%	<.0001
Mid income %	76.3%	78.7%	82.5%	77.8%	<.0001
High income %	4.1%	3.8%	3.5%	4.0%	<.0001
Concurrent risk average	1.55	1.44	1.44	1.50	<.0001
Prospective risk average	1.65	1.55	1.55	1.61	<.0001

On average the prevalence of diabetes education is lower among Medicare patients, although the relationship between the high-prescribing practices and the low-prescribing practices is similar to that in Commercial patients (approximately 5 times as likely in the former).