Appendix Table A1: Regression on Clinical Outcomes

Dependent Variable	Absolute Change in A1C from Baseline to Follow-up*		A1C ≤6.5% at Follow-up**		A1C <7% at Follow-up**	
	Direct Impact on A1C Change	*p-value*	*OR*	*p-value*	*OR*	*p-value*
Index medication						
Liraglutide	−0.31	<0.01	2.00	<0.01	1.55	<0.01
Sitagliptin (reference)						
Demographics						
Age group:						
18–44 (reference)						
45–54	−0.20	0.05	1.04	0.88	1.43	0.12
55–64	−0.33	<0.01	1.21	0.41	1.36	0.15
65–74	−0.49	<0.01	1.01	0.97	1.58	0.09
75+	−0.19	0.25	.87	0.71	0.81	0.53
Gender:						
Male (reference)						
Female	−0.08	0.19	1.22	0.15	1.04	0.74
Plan types:						
Comprehensive (reference)						
All other plan types	0.86	0.01	3.71	0.08	0.19	0.05
Region:						
Northeast (reference)						
North Central	−0.06	0.58	1.04	0.87	1.27	0.33
South	0.04	0.67	0.84	0.37	1.18	0.34
West	0.09	0.31	0.76	0.22	1.05	0.81
Metropolis area	−0.12	0.33	0.93	0.79	1.58	0.08
Index year						
2010 (reference)						
2011	0.08	0.25	0.83	0.21	0.97	0.83

Dependent Variable	Absolute Change in A1C from Baseline to Follow-up*		A1C ≤6.5% at Follow-up**		A1C <7% at Follow-up**	
	Direct Impact on A1C Change	*p-value*	*OR*	*p-value*	*OR*	*p-value*
2012	0.04	0.66	0.75	0.15	0.84	0.34
Clinical characteristics in washout period						
Provider for index medication						
Primary care physician (reference)						
Endocrinologists	−0.46	<0.01	2.28	<0.01	2.88	<0.01
Other	−0.01	0.84	1.05	0.74	1.01	0.91
Charlson comorbidity index	0.00	0.98	0.96	0.46	1.05	0.35
Comorbidities						
Retinopathy	0.14	0.28	0.91	0.75	0.85	0.57
Nephropathy	0.02	0.88	1.17	0.57	0.91	0.72
Neuropathy	0.08	0.50	1.08	0.78	0.72	0.19
Cerebrovascular	−0.19	0.38	2.25	0.08	1.12	0.81
Cardiovascular	−0.01	0.93	1.33	0.19	1.24	0.28
Peripheral vascular disease	−0.34	0.06	1.38	0.43	1.96	0.08
Depression	−0.10	0.60	1.05	0.91	0.95	0.89
Obesity	0.09	0.70	1.40	0.52	0.65	0.39
Hypertension	−0.12	0.08	1.29	0.17	1.11	0.43
Hyperlipidemia	−0.09	0.25	1.07	0.66	1.06	0.71
Use of anti-diabetic medications						
Metformin	0.08	0.21	0.82	0.16	0.83	0.14
Sulfonylurea	0.47	<0.01	0.38	<0.01	0.42	<0.01
Thiazolidione	0.20	0.01	0.60	<0.01	0.72	0.04
Other OADs	−0.07	0.73	2.19	0.64	1.35	0.47
Insulin	0.43	<0.01	0.34	<0.01	0.49	<0.01
Baseline A1C	−0.60	<0.01	0.56	<0.01	0.55	<0.01
Occurrence of severe hypoglycemia	−0.26	0.49	1.59	0.62	1.13	0.88

Dependent Variable	Absolute Change in A1C from Baseline to Follow-up*		A1C ≤6.5% at Follow-up**		A1C <7% at Follow-up**	
	Direct Impact on A1C Change	*p-value*	*OR*	*p-value*	*OR*	*p-value*
Economic characteristics in washout period						
Log of total diabetes-related costs	0.05	0.01	0.92	0.017	0.88	0.01

*Generalized linear model with normal distribution was used.

**Logistic regression was used.

Data source: 2009–2012 Truven MarketScan Commercial Insurance and Medicare Supplemental Insurance databases with linked lab data

Coef, coefficient; OAD, oral antidiabetic drug; OR: odds ratio

Appendix Table A2: Regression on Economic Outcomes

Dependent Variable	Total Diabetes-related Costs during Follow-up*		Diabetes-related Medical Costs during Follow-up*		Pharmacy Costs of Anti-diabetics during Follow-up*	
	Cost Ratio	*p-value*	*Cost Ratio*	*p-value*	*Cost Ratio*	*p-value*
Index medication						
Liraglutide	0.89	0.29	0.56	0.01	1.35	<0.01
Sitagliptin (reference)						
Demographics						
Age group:						
18–44 (reference)						
45–54	1.02	0.91	1.07	0.82	1.04	0.48
55–64	1.10	0.58	1.21	0.46	1.07	0.24
65–74	1.10	0.64	1.25	0.51	1.09	0.19
75+	1.06	0.80	0.91	0.81	1.00	0.98
Gender:						
Male (reference)						
Female	0.95	0.55	1.06	0.70	0.89	<0.01
Plan types:						
Comprehensive (reference)						
All other plan types	0.64	0.35	0.45	0.29	0.95	0.66
Region:						
Northeast (reference)						
North Central	0.95	0.79	0.89	0.74	0.86	0.01
South	0.83	0.12	1.04	0.89	0.71	<0.01
West	1.03	0.81	1.33	0.26	0.90	0.01
Metropolis area	1.19	0.17	1.41	0.24	0.99	0.88
Index year						
2010 (reference)						
2011	1.22	0.08	1.44	0.07	1.06	0.10
2012	0.93	0.50	0.85	0.48	1.11	0.01

Dependent Variable	Total Diabetes-related Costs during Follow-up*		Diabetes-related Medical Costs during Follow-up*		Pharmacy Costs of Anti-diabetics during Follow-up*	
	Cost Ratio	*p-value*	*Cost Ratio*	*p-value*	*Cost Ratio*	*p-value*
Clinical characteristics in washout period						
Provider for index medication						
Primary care physician (reference)						
Endocrinologists	1.45	0.12	1.82	0.09	0.93	0.33
Other	1.08	0.41	1.03	0.86	1.06	0.09
Charlson comorbidity index	1.03	0.39	1.11	0.11	1.00	0.72
Comorbidities						
Retinopathy	1.07	0.71	1.25	0.52	0.98	0.73
Nephropathy	0.84	0.18	0.67	0.13	0.99	0.88
Neuropathy	1.11	0.51	1.46	0.22	0.99	0.83
Cerebrovascular	1.18	0.64	0.96	0.94	1.01	0.92
Cardiovascular	1.09	0.47	1.22	0.36	1.01	0.91
Peripheral vascular disease	1.42	0.09	2.36	0.02	0.91	0.23
Depression	1.10	0.64	1.07	0.85	0.99	0.90
Obesity	2.38	0.02	4.09	0.01	1.20	0.18
Hypertension	0.93	0.44	0.81	0.23	1.06	0.07
Hyperlipidemia	1.08	0.49	1.20	0.34	0.95	0.16
Use of anti-diabetic medications						
Metformin	0.94	0.46	0.78	0.11	1.05	0.10
Sulfonylurea	1.23	0.03	1.72	0.00	1.01	0.67
Thiazolidione	0.87	0.17	0.59	0.00	1.20	<0.01
Other OADs	0.94	0.68	0.51	0.02	1.33	<0.01
Insulin	1.18	0.10	1.00	0.99	1.41	<0.01
Baseline A1C	0.95	0.06	0.89	0.01	1.03	<0.01
Occurrence of severe hypoglycemia	1.90	0.22	2.21	0.31	0.87	0.40
Economic characteristics in washout period						
Log of total diabetes-related costs	1.03	0.47	0.98	0.72	1.06	<0.01

*Generalized linear model with gamma distribution and log link was used.

Data source: 2009–2012 Truven MarketScan Commercial Insurance and Medicare Supplemental Insurance databases with linked lab data

Coef, coefficient; CR, cost ratio; OAD, oral antidiabetic drug