

Supplementary Table S1: Baseline characteristics of patients in Ontario, Canada with diabetes and schizophrenia on April 1, 2011

	N	%
<b>Total patients</b>	26259	
<b>Demographic characteristic:</b>		
Age, mean±SD	58.8±14.6	
Male	12287	46.8
Rural residence	2388	9.1
Ethnic concentration score, mean±SD*	.52±.9	
Income quintile		
1	9237	35.2
2	5630	21.4
3	4400	16.8
4	3716	14.2
5	2971	11.3
<b>Illness characteristics:</b>		
Duration of diabetes in years, mean±SD	8.2±5.7	
Duration of schizophrenia in years, mean±SD	10.6±6.5	
ADG comorbidity score, mean±SD	5.5±3.6	
<b>Health service use in past year:</b>		
Primary care visits for mental health reasons, mean±SD	1.7±4.5	
Number of visits: 0	15605	59.4
1-2	6038	23.0
3+	4616	17.6
Primary care visits for non-mental health reasons, mean±SD	8.2±10.4	
Number of visits: 0	3013	11.5
1-2	3851	14.7
3+	19395	73.9
Outpatient psychiatrist visits, mean±SD	2.6±5.7	
Number of visits: 0	15518	59.1
1-2	3124	11.9
3+	7617	29.0
ED visits for mental health reasons, mean±SD	0.3±1.4	
Number of visits: 0	22629	86.2
1-2	2805	10.7
3+	825	3.1
ED visits for non-mental health reasons, mean±SD	1.1±3.1	
Number of visits: 0	16067	61.2
1-2	6993	26.6
3+	3199	12.2
Mental health hospitalizations, mean±SD	0.2±0.6	

Number of visits: 0	23758	90.5
1-2	2183	8.3
3+	318	1.2
Non-mental health hospitalizations, mean±SD	0.2±0.8	
Number of visits: 0	22221	84.6
1-2	3542	13.5
3+	496	1.9

\* This aggregate measure refers to high area-level concentrations of recent immigrants and people belonging to a 'visible minority' group. Specific ethnic compositions were not available in this database

Supplementary Table S2: Sensitivity analysis after excluding patients receiving primary care only from a psychiatrist (n = 25,628)

Co-variate	Optimal tests (3 vs <3)		Any tests (1+ vs 0)	
	OR	95% CI	OR	95% CI
<b>Demographic characteristic:</b>				
Male (reference: female)	.95	.89-1.0	.88	.82-.95
Age (reference: 55-64)				
18-24	.39	.23-.66	.36	.25-.52
25-34	.54	.44-.65	.48	.40-.57
35-44	.71	.64-.79	.69	.61-.79
45-54	.84	.77-.91	.90	.81-1.00
65-74	.99	.91-1.07	1.16	1.02-1.31
75-84	.67	.60-.74	.78	.68-.89
Income deprivation score quintile (reference: 1)				
2	1.04	.94-1.15	.81	.70-.94
3	1.14	1.02-1.28	.81	.69-.94
4	.91	.82-.99	.59	.46-.74
5	.81	.65-1.00	.58	.46-.74
Rural vs urban residence	1.00	.90-1.12	.96	.84-1.09
<b>Illness characteristics:</b>				
ADG comorbidity score (reference: 0)				
1	2.91	2.17-3.90	3.17	2.65-3.78
2+	3.64	2.77-4.79	4.43	3.78-5.18
Diabetes duration in years (reference: 0-5)				
6-10	1.19	1.10-1.28	1.06	.97-1.16
11-15	1.46	1.34-1.59	1.08	.97-1.20
16-20	1.57	1.44-1.71	1.27	1.13-1.43
<b>Health service use in past year:</b>				
Outpatient psychiatry visits (reference: 0)				
1-2	1.11	1.01-1.22	1.18	1.04-1.33
3+	1.26	1.18-1.35	1.44	1.31-1.59
Emergency visits for mental health (reference: 0)				
1-2	.76	.67-.86	.82	.71-.94
3+	.67	.54-.84	.65	.52-.82
Emergency visits for non-mental health (reference: 0)				
1-2	1.01	.94-1.09	1.02	.93-1.13
3+	.95	.85-1.06	1.05	.91-1.20
Hospitalizations for mental health (reference: 0)				

	1-2	.99	.86-1.13	.82	.70-.96
	3+	.73	.51-1.05	.69	.50-.95
Hospitalizations for non-mental health (reference: 0)					
	1-2	.89	.81-.98	.76	.68-.86
	3+	.67	.52-.86	.55	.42-.71

Supplementary Table S3: Sensitivity analysis after excluding patients hospitalized during the study period (n = 14,530)

Co-variate	Optimal tests (3 vs <3)		Any tests (1+ vs 0)	
	OR	95% CI	OR	95% CI
<b>Demographic characteristic:</b>				
Male (reference: female)	.95	.88-1.03	.87	.79-.96
Age (reference: 55-64)				
18-24	.31	.15-.64	.26	.16-.40
25-34	.60	.47-.75	.50	.41-.62
35-44	.74	.65-.85	.77	.66-.90
45-54	.81	.73-.90	.93	.82-1.07
65-74	.98	.87-1.11	1.12	.95-1.32
75-84	.64	.55-.74	.76	.63-.91
Income deprivation score quintile (reference: 1)				
2	1.05	.91-1.21	.82	.69-.98
3	1.23	1.05-1.43	.81	.67-.99
4	.91	.80-1.03	.72	.61-.85
5	.91	.68-1.22	.46	.34-.62
Rural vs urban residence	.99	.85-1.15	1.01	.85-1.20
<b>Illness characteristics:</b>				
ADG comorbidity score (reference: 0)				
1	3.31	2.33-4.71	3.33	2.73-4.07
2+	3.93	2.81-5.49	3.95	3.30-4.73
Diabetes duration in years (reference: 0-5)				
6-10	1.10	1.00-1.22	1.03	.92-1.16
11-15	1.40	1.25-1.57	1.01	.88-1.16
16-20	1.35	1.19-1.53	1.13	.97-1.31
<b>Health service use in past year:</b>				
Primary care visits for mental health (reference: 0)				
1-2	.95	.86-1.04	1.13	1.00-1.27
3+	.77	.69-.87	.99	.87-1.14
Primary care visits for non-mental health (reference: 0)				
1-2	1.14	.93-1.39	1.70	1.45-1.99
3+	2.33	1.96-2.77	3.67	3.18-4.23
Outpatient psychiatry visits (reference: 0)				
1-2	1.11	.97-1.26	1.26	1.08-1.46
3+	1.30	1.18-1.42	1.52	1.35-1.72

Emergency visits for mental health (reference: 0)				
1-2	.77	.64-.93	.85	.70-1.04
3+	.53	.34-.83	.54	.37-.78
Emergency visits for non-mental health (reference: 0)				
1-2	1.01	.91-1.12	1.00	.89-1.14
3+	.93	.78-1.12	.89	.73-1.09

Supplementary Table S4: Sensitivity analysis after excluding patients whose physicians were not practicing in a representative manner (n = 23,059)

Co-variate	Optimal tests (3 vs <3)		Any tests (1+ vs 0)	
	OR	95% CI	OR	95% CI
<b>Demographic characteristic:</b>				
Male (reference: female)	.98	.91-1.03	.93	.86-1.01
Age (reference: 55-64)				
18-24	.35	.20-.62	.31	.21-.47
25-34	.53	.44-.65	.46	.38-.55
35-44	.70	.63-.79	.63	.55-.73
45-54	.83	.76-.90	.85	.75-.95
65-74	1.0	.91-1.09	1.2	1.04-1.38
75-84	.68	.61-.76	.79	.68-.92
Income deprivation score quintile (reference: 1)				
2	1.03	.93-1.14	.85	.73-.99
3	1.16	1.03-1.30	.89	.76-1.05
4	.95	.86-1.04	.87	.76-1.00
5	.89	.72-1.12	.76	.57-1.01
Rural vs urban residence	1.16	1.03-1.30	1.11	0.95-1.30
<b>Illness characteristics:</b>				
ADG comorbidity score (reference: 0)				
1	2.85	1.95-4.17	2.59	2.07-3.23
2+	3.29	2.28-4.74	3.46	2.83-4.24
Diabetes duration in years (reference: 0-5)				
6-10	1.20	1.12-1.30	1.05	.95-1.15
11-15	1.49	1.37-1.63	1.08	.95-1.21
16-20	1.59	1.36-1.75	1.31	1.15-1.50
<b>Health service use in past year:</b>				
Primary care visits for mental health (reference: 0)				
1-2	.96	.89-1.04	1.09	.99-1.21
3+	.83	.77-.91	.97	.87-1.09
Primary care visits for non-mental health (reference: 0)				
1-2	1.23	1.03-1.47	1.57	1.35-1.82
3+	2.51	2.14-2.95	3.30	2.88-3.78
Outpatient psychiatry visits (reference: 0)				
1-2	1.15	1.04-1.27	1.26	1.11-1.44
3+	1.28	1.20-1.37	1.59	1.43-1.76
Emergency visits for mental health (reference: 0)				

	1-2	.78	.69-.89	.85	.73-.99
	3+	.67	.53-.85	.64	.50-.83
Emergency visits for non-mental health (reference: 0)					
	1-2	1.00	.93-1.08	0.96	.87-1.07
	3+	.95	.84-1.06	1.00	.85-1.16
Hospitalizations for mental health (reference: 0)					
	1-2	.96	.83-1.10	.75	.63-.88
	3+	.77	.54-1.12	.69	.48-.99
Hospitalizations for non-mental health (reference: 0)					
	1-2	.90	.82-1.0	.76	.67-.87
	3+	.66	.51-.86	.57	.43-.76



Supplementary Content S5: Health service system characteristics of Ontario, Canada

- Publicly funded single payer system for physician/hospital services and medically indicated diagnostic testing
- Physicians work in independent and group practices (i.e. health centers, hospital-based departments or primary health care teams)
- Majority of health care, including mental health, is provided by primary care services (i.e. general practitioners, family physicians, nurse practitioners)
- Coordination of care is generally decentralized with primary care providers referring to specialists (i.e. psychiatrists)
- Outpatient psychiatrists may work as a consultant to primary care physicians or assume mental health care for short of long term follow up

Source: Lin E, Goering P, Offord DR, Campbell D, Boyle MH. The use of mental health services in Ontario: epidemiologic findings. *The Canadian Journal of Psychiatry*. 1996 Nov;41(9):572-7.