

Online Supplement

Table 1: Summary of the health administrative databases used for the study.

Database	Details
Ontario's Health Insurance Plan (OHIP)	The OHIP claims database contains information on inpatient and outpatient services provided to Ontario residents eligible for the province's publicly funded health insurance system by fee-for-service health care practitioners (primarily physicians) and "shadow billings" for those paid through non-fee-for-service payment plans.
National Ambulatory Care Reporting System (NACRS)	The NACRS is compiled by the Canadian Institute for Health Information and contains administrative, clinical (diagnoses and procedures), demographic, and administrative information for all patient visits made to hospital- and community-based ambulatory care centres (emergency departments, day surgery units, hemodialysis units, and cancer care clinics).
Discharge Abstract Database (DAD)	The DAD is compiled by the Canadian Institute for Health Information and contains administrative, clinical (diagnoses and procedures/interventions), demographic, and administrative information for all admissions to acute care hospitals, rehab, chronic, and day surgery institutions in Ontario.
Ontario Mental Health Reporting System (OMHRS)	The OMHRS is compiled by the Canadian Institute for Health Information and contains administrative, clinical (diagnoses and procedures), demographic, and administrative information for all admissions to adult designated inpatient mental health beds. Clinical assessment data is ascertained using the Resident Assessment Instrument for Mental Health (RAI-MH).
Registered Persons Database (RPDB)	The RPDB provides basic demographic information (age, sex, location of residence, date of birth, and date of death for deceased individuals) for those issued an Ontario health insurance number. The RPDB also indicates the time periods for which an individual was eligible to receive publicly funded health insurance benefits and the best known postal code for each registrant on July 1st of each year.
Immigration, Refugees and Citizenship Canada (IRCC) Permanent Residents database	The IRCC includes immigration application records for people who initially applied to land in Ontario. The data contains permanent residents' demographic information such as country of citizenship, level of education, mother tongue, and landing date.

Table 2: Non-affective and affective psychosis definitions (ICD-9-CM and ICD-10 codes).

Diagnostic Tool and Databases	Non-Affective Codes	Affective Codes
ICD-10 (DAD/NACRS/OMHRS after April 2019)	F20 (schizophrenia) F25 (schizoaffective disorders)	F30.2 (mania with psychotic symptoms) F31.2 (bipolar affective disorder, current episode manic with psychotic symptoms)

		F31.5 (bipolar affective disorder, current episode severe depression with psychotic symptoms) F32.3 (severe depressive episode with psychotic symptoms) F33.3 (recurrent depressive disorder, current episode severe with psychotic symptoms)
OHIP/OMHRS using ICD-9-CM	295 (schizophrenic disorders) 297 (delusional disorders) 298 (other nonorganic psychoses)	296.04 (bipolar I disorder, single manic episode, severe, with psychotic features) 296.24 (major depressive disorder, single episode, severe, with psychotic features) 296.34 (major depressive disorder, recurrent, severe, with psychotic features) 296.44 (bipolar I disorder, most recent episode manic, severe, without psychotic features) 296.54 (bipolar I disorder, most recent episode depressed, severe, with psychotic features) 296.64 (bipolar I disorder, most recent episode mixed, severe, with psychotic features)

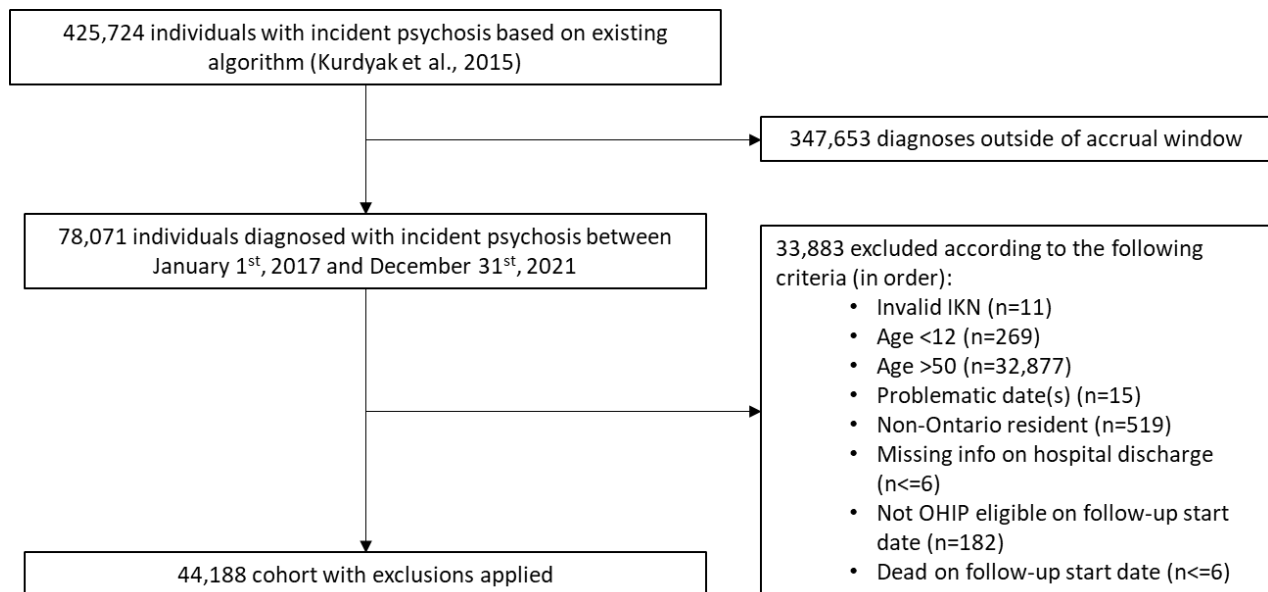


Figure 1: Exclusions for cohort of incident cases of 1st episode psychosis.

Table 3. Rates per 100,000 for incident cases of 1st episode psychosis in Ontario population aged 12-50 years (January 1, 2017 – December 31st, 2021), by Ontario Health region and psychosis type.

Psychosis Type	Variable	Value	Rate per 100,000						
			Overall	Central ^a	East ^a	North East ^a	North West ^a	Toronto ^a	West ^a
Affective	Overall^b	Overall	6.84	6.21	5.24	14.23	3.51	7.22	8.19
	Sex ^c	Female	7.54	6.56	5.69	17.48	2.59	8.18	9.37
		Male	6.14	5.85	4.80	11.16	4.40	6.25	7.10
	Age Group (years) ^d	12-25	9.25	8.74	6.01	19.89	6.45	12.21	10.69
		26-35	6.62	6.29	5.13	11.82	0.98	7.31	7.72
		36-50	5.07	4.06	4.69	11.34	2.92	4.23	6.45
Non-Affective	Overall^b	Overall	92.24	76.90	96.61	134.67	167.44	92.41	98.38
	Sex ^c	Female	73.96	60.56	75.04	112.07	155.59	74.22	81.20
		Male	110.20	93.37	118.21	156.06	178.77	110.89	114.31
	Age Group (years) ^d	12-25	120.54	103.72	118.37	174.86	272.07	130.89	125.23
		26-35	96.75	81.12	104.04	142.38	145.21	91.34	104.40
		36-50	66.38	51.82	73.44	96.79	95.21	70.84	71.64
	Site of Diagnosis ^e	Inpatient/ED (1 or both visits)	20.32	11.64	15.33	24.88	16.87	13.64	13.61
		Outpatient (both visits)	78.47	65.26	81.28	109.79	150.57	78.77	84.76
		Psychiatrist Diagnosis (both visits)	30.79	22.70	29.27	35.13	55.81	38.63	37.34
		Non-Psychiatrist Diagnosis (both visits)	29.30	26.83	31.69	47.61	53.84	21.81	29.75
		Both Provider Diagnosis	18.38	15.73	20.32	27.04	40.91	18.33	17.67

^aRegional rates: denominators used health region-specific population estimates.

^bOverall rates: denominators used year-specific population estimates.

^cSex rates: denominators used year and sex-specific population estimates.

^dAge group rates: denominators used year and age group-specific population estimates.

^eSite of diagnosis rates: denominators used year-specific population estimates and only available for non-affective cases because affective cases are restricted to hospitalizations.

Table 4: Results from the logistic regression models for 6-month mental health and addictions ED visit and hospitalization outcomes for incident cases of 1st episode psychosis in Ontario population aged 12-50 years (January 1, 2017 – December 31st, 2021), adjusted for sociodemographic characteristics.

	ED Visits		Hospitalizations	
Variable	Non-Affective Psychosis aOR (95% CI)	Affective Psychosis aOR (95% CI)	Non-Affective Psychosis aOR (95% CI)	Affective Psychosis aOR (95% CI)
Region				
Toronto	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Central	0.803 (0.738-0.873)	0.747 (0.539-1.034)	0.989 (0.915-1.070)	1.076 (0.799-1.451)
East	0.872 (0.802-0.949)	0.872 (0.614-1.238)	0.964 (0.890-1.045)	1.149 (0.832-1.586)
North East	1.014 (0.89-1.150)	1.191 (0.772-1.837)	1.253 (1.113-1.411)	1.738 (1.166-2.589)
North West	1.066 (0.917-1.239)	1.345 (0.522-3.464)	1.164 (1.008-1.345)	0.448 (0.127-1.576)
West	0.850 (0.783-0.924)	0.920 (0.671-1.261)	0.919 (0.849-0.995)	1.231 (0.917-1.652)
Age				
36-50	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
12-19	1.407 (1.306-1.516)	1.369 (1.050-1.784)	1.670 (1.559-1.788)	1.621 (1.285-2.045)
20-25	1.352 (1.256-1.446)	1.400 (1.058-1.852)	1.530 (1.439-1.628)	1.224 (0.951-1.575)
26-35	1.361 (1.278-1.450)	1.197 (0.923-1.553)	1.317 (1.241-1.398)	1.257 (1.002-1.576)
Sex				
Female	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Male	0.967 (0.921-1.015)	0.904 (0.747-1.094)	0.924 (0.883-0.967)	0.845 (0.714-1.000)
Income Quintile				
1 (lowest)	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
2	0.848 (0.794-0.906)	0.678 (0.513-0.896)	0.961 (0.903-1.023)	0.808 (0.637-1.026)
3	0.804 (0.749-0.863)	0.757 (0.570-1.004)	0.899 (0.841-0.960)	0.766 (0.597-0.982)
4	0.784 (0.727-0.846)	0.898 (0.675-1.194)	0.941 (0.878-1.009)	0.795 (0.614-1.028)
5 (highest)	0.709 (0.656-0.767)	0.771 (0.570-1.043)	0.872 (0.812-0.937)	0.681 (0.517-0.898)
Rural				
Urban	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Rural	1.037 (0.953-1.128)	1.076 (0.761-1.521)	1.032 (0.953-1.117)	0.975 (0.708-1.342)
Immigration Status				
Non-immigrants	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Immigrants	0.661 (0.608-0.718)	0.495 (0.353-0.693)	0.899 (0.836-0.966)	0.720 (0.553-0.938)

Other Immigrants	1.019 (0.711-1.460)	0.915 (0.197-4.243)	1.046 (0.744-1.470)	0.600 (0.129-2.779)
Refugees	0.716 (0.634-0.809)	0.589 (0.332-1.044)	0.943 (0.847-1.051)	1.103 (0.725-1.680)

aOR = adjusted odds ratio.

Table 5: Results from the Poisson regression models for the 6-month mental health and addictions outpatient visit outcomes for incident cases of 1st episode psychosis in Ontario population aged 12-50 years (January 1, 2017 – December 31st, 2021), adjusted for sociodemographic characteristics.

	Primary Care Visits		Psychiatrist Visits	Paediatrician Visits
Variable	Non-Affective Psychosis aRR (95% CI)	Affective Psychosis aRR (95% CI)	Non-Affective Psychosis aRR (95% CI)	Non-Affective Psychosis aRR (95% CI)
Region				
Toronto	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Central	0.990 (0.696-1.012)	1.096 (1.007-1.193)	0.633 (0.622-0.643)	0.895 (0.758-1.057)
East	0.989 (0.968-1.011)	0.938 (0.854-1.030)	0.560 (0.550-0.570)	0.760 (0.636-0.909)
North East	0.983 (0.950-1.017)	0.847 (0.744-0.964)	0.399 (0.385-0.414)	0.683 (0.522-0.892)
North West	0.964 (0.923-1.006)	0.939 (0.691-1.276)	0.286 (0.271-0.301)	0.595 (0.442-0.801)
West	0.965 (0.944-0.986)	0.960 (0.881-1.045)	0.629 (0.618-0.640)	0.924 (0.781-1.091)
Age				
36-50	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
12-19	0.518 (0.506-0.529)	0.528 (0.489-0.570)	1.629 (1.601-1.656)	103.640 (72.196-148.779)
20-25	0.715 (0.703-0.728)	0.716 (0.666-0.771)	1.335 (1.314-1.356)	4.892 (3.283-7.290)
26-35	0.987 (0.972-1.002)	0.918 (0.864-0.976)	1.158 (1.140-1.176)	1.572 (0.998-2.477)
Sex				
Female	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Male	0.948 (0.937-0.960)	0.895 (0.851-0.941)	0.867 (0.857-0.877)	0.665 (0.609-0.727)
Income Quintile				
1 (lowest)	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
2	0.980 (0.963-0.997)	0.968 (0.901-1.039)	1.052 (1.035-1.070)	0.925 (0.807-1.061)
3	0.971 (0.953-0.989)	0.876 (0.812-0.945)	1.095 (1.077-1.114)	0.779 (0.674-0.901)
4	1.006 (0.987-1.026)	1.009 (0.936-1.088)	1.152 (1.132-1.173)	1.207 (1.057-1.378)
5 (highest)	0.932 (0.913-0.951)	0.918 (0.112-5.665)	1.274 (1.252-1.296)	1.058 (0.923-1.209)

Rural				
Urban	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Rural	0.878 (0.858-0.899)	0.949 (0.860-1.047)	0.673 (0.656-0.691)	0.594 (0.490-0.720)
Immigration Status				
Non-immigrants	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Immigrants	0.792 (0.775-0.808)	0.814 (0.756-0.877)	1.023 (1.005-1.040)	0.698 (0.575-0.848)
Other Immigrants	0.664 (0.594-0.744)	0.140 (0.053-0.374)	0.921 (0.844-1.004)	0.538 (0.173-1.671)
Refugees	0.778 (0.753-0.803)	0.806 (0.705-0.921)	0.915 (0.890-0.941)	1.494 (1.209-1.847)

aRR = adjusted rate ratio.

Note: psychiatrist and paediatrician visits not included for affective psychosis as models did not converge.

Table 6: Results from the logistic regression models for 6-month mental health and addictions ED visit and hospitalization outcomes for incident cases of 1st episode psychosis in Ontario population aged 12-50 years (January 1, 2017 – December 31st, 2021), adjusted for sociodemographic characteristics and health service utilization.

	ED Visits		Hospitalizations	
Variable	Non-Affective Psychosis aOR (95% CI)	Affective Psychosis aOR (95% CI)	Non-Affective Psychosis aOR (95% CI)	Affective Psychosis aOR (95% CI)
Region				
Toronto	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Central	0.789 (0.724-0.860)	0.744 (0.534-1.036)	0.968 (0.893-1.048)	1.062 (0.785-1.436)
East	0.882 (0.808-0.962)	0.874 (0.612-1.248)	0.965 (0.889-1.047)	1.121 (0.809-1.555)
North East	0.935 (0.821-1.065)	1.215 (0.780-1.894)	1.142 (1.011-1.289)	1.691 (1.125-2.541)
North West	0.992 (0.848-1.161)	1.232 (0.469-3.239)	1.063 (0.917-1.232)	0.377 (0.105-1.347)
West	0.810 (0.743-0.882)	0.912 (0.662-1.257)	0.881 (0.813-0.955)	1.199 (0.891-1.615)
Age				
36-50	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
12-19	1.242 (1.145-1.347)	1.302 (0.978-1.734)	1.489 (1.383-1.602)	1.508 (1.176-1.934)
20-25	1.277 (1.192-1.368)	1.450 (1.092-1.927)	1.470 (1.381-1.565)	1.224 (0.948-1.581)
26-35	1.280 (1.199-1.366)	1.198 (0.920-1.559)	1.269 (1.195-1.348)	1.257 (1.000-1.580)
Sex				
Female	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]

Male	1.038 (0.987-1.092)	0.943 (0.776-1.144)	0.958 (0.915-1.003)	0.871 (0.734-1.034)
Income Quintile				
1 (lowest)	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
2	0.854 (0.798-0.914)	0.706 (0.532-0.937)	0.971 (0.912-1.035)	0.842 (0.661-1.072)
3	0.801 (0.745-0.862)	0.812 (0.609-1.083)	0.907 (0.848-0.970)	0.790 (0.614-1.018)
4	0.791 (0.732-0.854)	0.934 (0.698-1.249)	0.959 (0.893-1.029)	0.812 (0.625-1.056)
5 (highest)	0.711 (0.656-0.770)	0.798 (0.587-1.087)	0.886 (0.823-0.953)	0.700 (0.529-0.926)
Rural				
Urban	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Rural	1.045 (0.958-1.140)	1.086 (0.763-1.546)	1.023 (0.944-1.109)	0.959 (0.692-1.328)
Immigration Status				
Non-immigrants	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Immigrants	0.737 (0.676-0.802)	0.523 (0.372-0.735)	0.954 (0.887-1.027)	0.759 (0.581-0.990)
Other Immigrants	1.167 (0.808-1.687)	1.159 (0.248-5.425)	1.088 (0.771-1.536)	0.690 (0.149-3.208)
Refugees	0.791 (0.698-0.896)	0.607 (0.341-1.082)	0.993 (0.891-1.108)	1.115 (0.730-1.705)
Previous MHA-Related Hospitalization				
0 admissions	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
1 admission	0.934 (0.872-1.000)	1.027 (0.772-1.366)	1.130 (1.060-1.205)	1.356 (1.055-1.743)
2+ admissions	1.340 (1.198-1.499)	1.991 (1.289-3.074)	2.140 (1.918-2.389)	3.077 (2.017-4.694)
Previous MHA-Related ED Visits				
0 visits	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
1 visit	1.651 (1.552-1.757)	1.141 (0.902-1.443)	1.409 (1.331-1.491)	1.156 (0.945-1.414)
2+ visits	3.666 (3.414-3.936)	1.851 (1.413-2.424)	2.027 (1.892-2.172)	1.422 (1.112-1.817)
Previous MHA-Related General Practice Outpatient Visits				
0 visits	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
1-2 visits	0.975 (0.917-1.036)	0.938 (0.737-1.194)	0.846 (0.801-0.895)	1.082 (0.880-1.331)
3+ visits	1.213 (1.142-1.288)	1.154 (0.910-1.462)	0.918 (0.868-0.972)	1.062 (0.859-1.314)

Previous MHA-Related Psychiatrist Outpatient Visits				
0 visits	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
1 visit	0.952 (0.881-1.030)	0.935 (0.690-1.267)	0.887 (0.824-0.954)	1.098 (0.849-1.419)
2+ visits	0.958 (0.899-1.021)	1.178 (0.931-1.491)	0.875 (0.824-0.929)	0.923 (0.746-1.143)
Previous MHA-Related Paediatrician Outpatient Visits				
0 visits	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
1 visit	1.078 (0.928-1.253)	1.254 (0.785-2.004)	1.084 (0.945-1.244)	1.251 (0.816-1.918)

aOR = adjusted odds ratio.

Table 7: Results from the Poisson regression models for the 6-month mental health and addictions outpatient visit outcomes for incident cases of 1st episode psychosis in Ontario population aged 12-50 years (January 1, 2017 – December 31st, 2021), adjusted for sociodemographic characteristics and health service utilization.

	Primary Care Visits		Psychiatrist Visits	Paediatrician Visits
Variable	Non-Affective Psychosis aRR (95% CI)	Affective Psychosis aRR (95% CI)	Non-Affective Psychosis aRR (95% CI)	Non-Affective Psychosis aRR (95% CI)
Region				
Toronto	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Central	0.982 (0.961-1.003)	1.029 (0.845-1.120)	0.661 (0.650-0.672)	0.968 (0.819-1.143)
East	0.990 (0.968-1.012)	0.921 (0.838-1.012)	0.611 (0.600-0.622)	0.897 (0.749-1.074)
North East	0.964 (0.932-0.998)	0.895 (0.785-1.020)	0.439 (0.423-0.455)	0.641 (0.489-0.841)
North West	0.958 (0.917-1.000)	0.726 (0.532-0.989)	0.338 (0.320-0.356)	0.645 (0.477-0.870)
West	0.942 (0.921-0.962)	0.929 (0.852-1.012)	0.650 (0.639-0.661)	0.793 (0.669-0.940)
Age				
36-50	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
12-19	0.582 (0.568-0.595)	0.650 (0.600-0.705)	1.473 (1.447-1.500)	28.903 (19.942-41.892)
20-25	0.758 (0.745-0.771)	0.770 (0.715-0.828)	1.310 (1.290-1.331)	4.632 (3.108-6.903)
26-35	0.972 (0.958-0.987)	0.977 (0.919-1.038)	1.145 (1.128-1.163)	1.536 (0.975-2.420)

Sex				
Female	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Male	1.036 (1.023-1.049)	0.929 (0.883-0.977)	0.924 (0.913-0.934)	0.716 (0.654-0.784)
Income Quintile				
1 (lowest)	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
2	0.981 (0.964-0.998)	0.961 (0.895-1.032)	1.040 (1.023-1.057)	0.882 (0.769-1.012)
3	0.954 (0.936-0.971)	0.843 (0.781-0.910)	1.074 (1.056-1.093)	0.748 (0.647-0.866)
4	0.982 (0.963-1.001)	0.958 (0.888-1.034)	1.127 (1.107-1.147)	1.093 (0.956-1.250)
5 (highest)	0.911 (0.893-0.930)	0.900 (0.829-0.977)	1.216 (1.195-1.238)	0.932 (0.814-1.067)
Rural				
Urban	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Rural	0.918 (0.896-0.939)	0.906 (0.821-1.001)	0.707 (0.689-0.725)	0.773 (0.638-0.937)
Immigration Status				
Non-immigrants	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Immigrants	0.891 (0.873-0.910)	0.826 (0.767-0.890)	1.066 (1.048-1.085)	0.872 (0.718-1.060)
Other Immigrants	0.848 (0.758-0.949)	0.216 (0.081-0.576)	1.021 (0.936-1.113)	0.577 (0.185-1.796)
Refugees	0.879 (0.851-0.907)	0.840 (0.735-0.961)	0.973 (0.946-1.000)	1.819 (1.468-2.254)
Previous MHA-Related Hospitalization				
0 admissions	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
1 admission	0.991 (0.973-1.009)	1.041 (0.963-1.124)	1.033 (1.017-1.050)	1.222 (1.083-1.378)
2+ admissions	0.976 (0.947-1.006)	1.207 (1.060-1.374)	1.145 (1.115-1.175)	1.645 (1.408-1.923)
Previous MHA-Related ED Visits				
0 visits	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
1 visit	1.022 (1.006-1.039)	0.934 (0.881-0.991)	1.123 (1.107-1.139)	0.715 (0.633-0.807)
2+ visits	1.227 (1.024-1.249)	0.931 (0.866-1.000)	1.038 (1.020-1.057)	0.895 (0.784-1.022)
Previous MHA-Related General Practice Outpatient Visits				
0 visits	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
1-2 visits	1.481 (1.453-1.509)	1.506 (1.399-1.621)	1.048 (1.034-1.063)	0.797 (0.718-0.886)
3+ visits	3.710 (3.651-3.769)	3.246 (3.043-3.462)	1.079 (1.064-1.094)	0.674 (0.596-0.761)

Previous MHA-Related Psychiatrist Outpatient Visits				
0 visits	1 [Reference]	1 [Reference]	1 [Reference]	
1 visit	0.923 (0.905-0.941)	0.874 (0.810-0.943)	1.244 (1.222-1.267)	1.231 (1.082-1.400)
2+ visits	0.883 (0.869-0.897)	0.747 (0.701-0.795)	1.865 (1.841-1.890)	0.902 (0.801-1.015)
Previous MHA-Related Paediatrician Outpatient Visits				
0 visits	1 [Reference]	1 [Reference]	1 [Reference]	
1 visit	0.907 (0.861-0.955)	0.816 (0.678-0.983)	1.008 (0.977-1.039)	17.692 (15.824-19.779)

aRR = adjusted rate ratio.

Note: psychiatrist and paediatrician visits not included for affective psychosis as models did not converge.