Appendix Table 1 – Summary of measures, their definitions, rationale, timing and data sources. The datasets indicated in this table were linked using unique encoded identifiers and analyzed at ICES

Measure	Definition	Rationale/ Concept	Data sources
Vaccination status	Fully vaccinated – 2 doses of any Health Canada approved vaccine Partially vaccinated – 1 dose of any Health Canada approved vaccine Unvaccinated – no doses	Outcome	Ontario COVID-19 Vaccine Data (COVaxON)
Sex	Male, Female	Confounder	Registered Persons Database (RPDB) (Demographic data)
Age group	Age was calculated as of September 17, 2021 using date of birth recorded in RPDB	Confounder	Registered Persons Database (RPDB)
Income quintile	Community specific neighbourhood-income quintiles were determined using methods developed by Statistics Canada and is based on average household income adjusted for household size. This was measured at the level of the dissemination area (DA; consisting of 400-700 people) where 20% of Ontario's population is in each income quintile and the population of each DA is assigned to one of five quintiles.	Confounder	Registered Persons Database (RPDB) Postal Code Conversion File (PCCF) (Geographic data)
Diagnostic categories	For each subject, it was determined whether they had a psychiatric hospitalization, a mental health-related Emergency Department visit, a mental health-related outpatient visit or no prior mental health service use in a 5-year lookback period. Individuals were assigned only to the most severe psychiatric utilization (psychiatric hospitalization being the most severe, no prior mental health service utilization being the least). The diagnosis associated with mental health service utilization among those with prior mental health service utilization was used to assign individuals into the following diagnostic categories: anxiety, mood, substance use, psychotic, or other disorders.	Main Exposure	Ontario Health Insurance Plan Claims Database (OHIP) (Physician visits), National Ambulatory Care Reporting System (NACRS) (Emergency Department Visits), Canadian Institute for Health Information Discharge Abstract Database (CIHI-DAD) (hospitalizations to non-MHA beds) and Ontario Mental Health Reporting System (OMHRS) (Hospitalizations to MHA beds)
Mental Health or Addiction (MHA) Severity Index	MHA severity was defined using a gradient with 4-levels: no psychiatric utilization; outpatient psychiatric care (physician office visits); emergency department (ED) visit for psychiatric care; and hospital admission for psychiatric care [4, 5]. Each patient was assigned only to the highest level of psychiatric utilization during a 5-year period prior to the vaccination outcome observation period. This intensity gradient for psychiatric utilization serves as a surrogate for psychiatric disease severity, with the assumption that, on average, individuals who have experienced psychiatric hospitalizations have a greater psychiatric illness severity than those with lower levels of psychiatric utilization intensity.	Covariate	OHIP, NACRS, CIHI-DAD and OMHRS
Homelessness	Homelessness status (i.e., any health care record indicating homelessness in the last 5 years) is captured from a variety of data sources held at ICES. The homelessness variable has low sensitivity and high specificity[1]. Homelessness poses challenges to accessing health services that would result in vaccination. 1. Richard L, Hwang SW, Forchuk C, Nisenbaum R, Clemens K, Wiens K, Booth R, Azimaee M, Shariff SZ. Validation study of health administrative data algorithms to identify individuals experiencing homelessness and estimate population prevalence of homelessness in Ontario, Canada. BMJ open. 2019 Oct 1;9(10):e030221	Potential confounder	NACRS, CIHI-DAD, OMHRS, RPDB, Same Day Surgery (SDS) (Surgeries not requiring hospitalization)
Urban	Community size is less than 10,000 people	Potential confounder	RPDB, PCCF
Collapsed Aggregated	Medical comorbidity is characterized using the John Hopkins ADGs, which examines all diagnoses associated with hospital and outpatient visits to generate 32 diagnostic clusters referred to as ADGs.	Potential confounder	CIHI-DAD, OHIP

Diagnosis Groups (ADGs)	These 32 ADGs were combined into 12 collapsed ADGs which groups several clusters together. We did not use the psychosocial ADG given it is highly correlated with the main exposure. Collapsed ADGs were added together to form a count prior to modelling.		