

The 'IncidencePrevalence' R package enables flexible and reproducible analyses of incidence and prevalence in data mapped to the OMOP CDM

IncidencePrevalence: An R package to calculate population-level incidence and prevalence rates using the OMOP Common Data Model

Background: Real world data offers a valuable resource for informing population-level disease epidemiology metrics.

Result 1: Steps to use IncidencePrevalence

- 1 Define and instantiate strata and outcome cohorts.
- 2 Identify denominator populations based on stratification constraints (dates, age, sex, prior history, strata cohorts).
- 3 Compute incidence rates of first-ever or repeated events. Outcome washout periods can be specified.
- 4 Compute point and period point and period-prevalence.



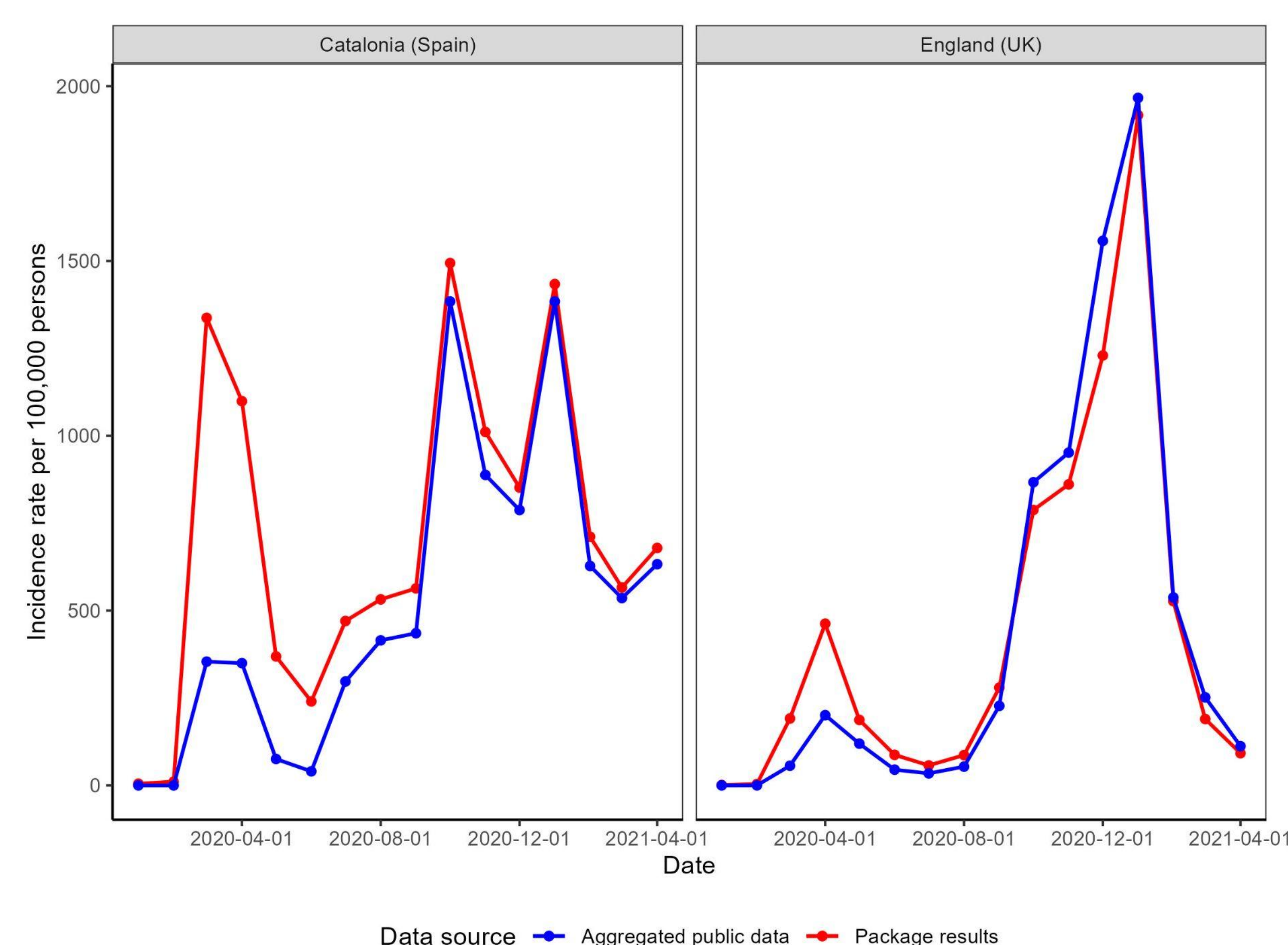
Available on CRAN
with full details for setup and use

Result 2: Unit testing

>99 % Test coverage (>500 tests)

Result 3: Face validity of IncidencePrevalence.

Discrepancies can be attributed to the COVID-19 definitions used.



Methods

1 Development approach

- Built using a test-driven development approach,
- Rigorous unit testing on mock OMOP CDM data
- User interface designed with epidemiologists
- It can connect to several database management systems through the DBI R package.

2 Face validity of IncidencePrevalence

- Compute incidence rates of COVID-19 (positive tests or diagnostic codes) using IncidencePrevalence and compare results to COVID-19 public data (positive tests)
- Data sources: CPRD Aurum (England, UK) and SIDIAP (Catalonia, Spain).

Conclusion: The IncidencePrevalence R package enables reliable estimation of incidence and prevalence from data mapped to the OMOP CDM.

