# Timeliness of reporting of SARS-CoV-2 seroprevalence results and their utility for infectious disease surveillance.

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COVID-19 IMMUNITY TASK FORCE

## Introduction

**Timely communication of information about population immunity is critical for public health decision making.**

Seroprevalence estimates generated during the COVID-19 pandemic were primarily from standalone peer-reviewed research studies as opposed to ongoing surveillance, which has raised questions about their utility (1,2).

Platforms such as the media, government reports and preprints have attempted to expedite dissemination of seroprevalence results; however the validity of this research has been questioned (3,4).

## Objectives

Describe the timeliness of SARS-CoV-2 seroprevalence reporting by publication venue, study methods, and populations studied.

Identify whether more timely reporting compromises other facets of effective surveillance by examining relationships between timeliness, data quality and representativeness.

## Methods

*As part of the SeroTracker living systematic review (PROSPERO CRD42020183634), we completed a search of electronic databases, grey literature and news and media for cohort and cross-sectional studies reporting seroprevalence estimates.*

Serosurveys released between Jan 1, 2020 – Dec 31, 2021 (n = 1,844) were included (2,5).

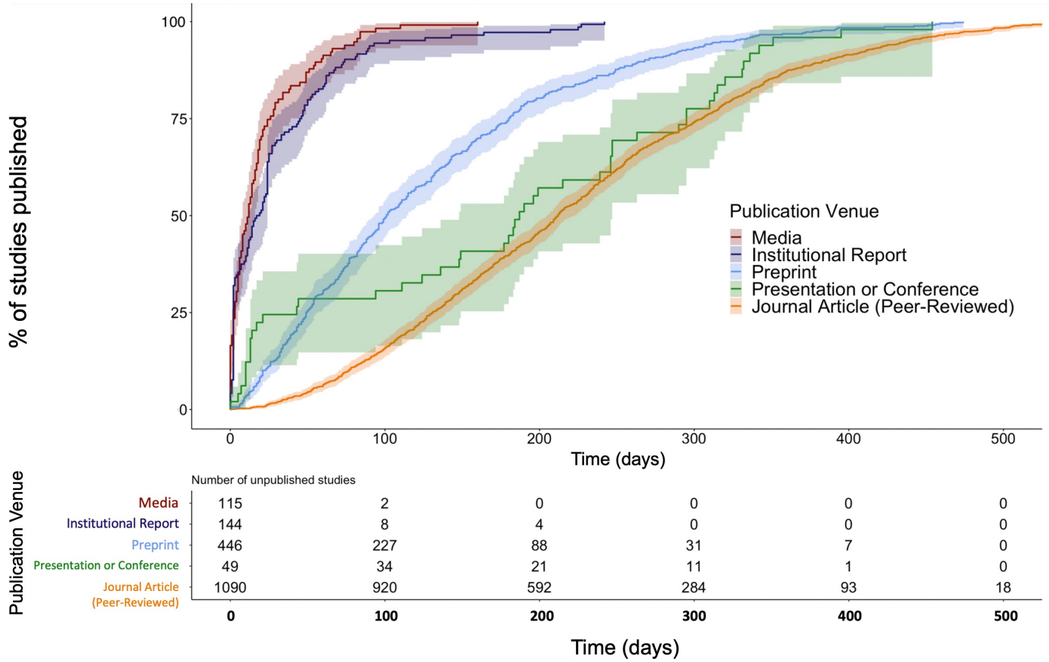
Timeliness was measured as publication date – study end date (end of data collection).

A modified Joanna Briggs Institute (JBI) tool was used to evaluate risk of bias, data validity and representativeness (6,7).

Descriptive statistics were calculated and stratified by publication venue. Univariate and multivariate Cox regressions were performed to determine study characteristics associated with timeliness. Predictors included in the multivariate Cox regression were all publication venues, sample frame, WHO region, and individual measures of data validity and representativeness.

## Results

**Figure 1. Kaplan-Meier curve and risk table for time-to-publication by publication venue.**




1. The majority of studies were first released as peer-reviewed journal articles (59%). Out of all publication venues, they were released the slowest (median: 212 days; IQR: 131-305).

2. Across all publication venues, the median time to publication was 154 days (IQR: 64-255). Timeliness varied significantly across venues. Both media and institutional reports were published significantly faster than studies released in all other publication venues (log-rank p < 2e-16).

3. Larger proportions of low or moderate risk of bias studies were reported in peer-reviewed journal articles (32%), preprints (42%), and institutional reports (51%).

4. In the multivariate analysis, there were no significant associations between timeliness and study representativeness or data validity, with the exception of the result that non-probability sampling methods/not performing a population adjustment was associated with faster publication (HR 1.2 [1.03–1.41], p = 0.02).

5. Compared to household and community samples, studies that sampled blood donors/residual sera did not differ in timeliness (p = 0.2). Studies of special populations like healthcare workers took longer to publish (HR 0.81 [0.70–0.94], p = 0.004).

## Conclusions

There are significant delays introduced by the academic writing and publishing process that make seroprevalence studies less useful for public health decision-making and impactful secondary analysis. Reporting through institutional reports are an example of how seroprevalence studies can be both timely and robust.

Delays in reporting for groups like healthcare workers are problematic considering the importance of seroprevalence to inform best practices in high risk settings, such as hospitals.

A global data repository that facilitates continuous and expedited dissemination of serosurveillance data for more timely use would address many of the challenges that this work identifies (8).

## References & Acknowledgments

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