## Inputs for transmission models

Reconstructed incidence

Reporting delays (symptom onset to testing)

**Incubation period** 

Generation or serial interval

Basic reproduction number  $(R_0)$ 

Derived from SFS data External data source

Statistical analysis

## Pathogen transmissibility

Daily effective reproduction numbers (R<sub>t</sub>)

## Predictors of pathogen transmission

Cell phone mobility trends

Stringency of nonpharmaceutical interventions (NPIs)

Proportion of individuals masking in public

Meteorological data

## Main analyses

Mean change in R<sub>t</sub>, before and after:

- February 2019 snowstorm
- February 2020 State of Emergency declaration

Time series cross-correlations between  $R_{\rm t}$  and cell phone mobility, masking, and NPI stringency

Generalized additive models (GAMs) predicting R<sub>t</sub>:

 Covariates: smoothed temporal trend and up to 2 smoothed mobility metrics

Forecasting models of SARS-CoV-2, hRV, and AdV R<sub>t</sub>:

- Baseline model: 14 autoregressive terms (activity of the target virus during previous 2 weeks)
- Candidate predictors:
  - Mobility, masking, NPI stringency
  - Temperature, precipitation, humidity
  - Virus-virus interactions
  - Variant emergence, COVID-19 vaccination