

## ENHANCED EPIDEMIOLOGICAL SUMMARY

### COVID-19 Regional Incidence and Time to Case Notification in Ontario

The Enhanced Epidemiological Summary of the COVID-19 Regional Incidence and Time to Case Notification in Ontario will be discontinued after November 25, 2021. Related information will be found on [Ontario COVID-19 Data Tool](#) and the [COVID-19 in Ontario: Weekly Epidemiological Summary](#). For additional inquiries related to information in the discontinued report, please contact [EPIR@oahpp.ca](mailto:EPIR@oahpp.ca).

#### Contents

This report reflects cases that have been publicly reported up to 2021-11-25. Note that data from the CORES system were not available for cases from Toronto Public Health with a publicly reported date of 2020-08-13, and data from iPHIS were not available for cases from Algoma Public Health, Brant County Health Unit, Chatham-Kent Public Health, City of Hamilton Public Health Services, Niagara Region Public Health, Peterborough Public Health, Simcoe Muskoka District Health Unit, Southwestern Public Health, Public Health Sudbury & Districts, Timiskaming Health Unit, and Windsor-Essex County Health Unit with a publicly reported date of 2020-08-19; as such, estimates and figures reflecting or incorporating these health units will be impacted for these dates. Additionally, due to a discrepancy in data extract times, cases in Ontario with a publicly reported date of 2020-11-22 were over-estimated, leading to an under-estimate for those with a publicly reported date of 2020-11-23. Due to a data processing error, cases with a publicly reported date of 2020-12-03 were over-estimated for Middlesex-London Health Unit and cases with a publicly reported date of 2020-12-04 were over-estimated for Ottawa Public Health. As such, metrics based on the public reporting date of 2020-12-03 and 2020-12-04 should be interpreted with caution as they may have been over-estimated. Due to a data processing error, cases with a publicly reported date of 2021-01-08 were over-estimated for Toronto Public Health. Due to a data processing error, cases with a publicly reported date of 2021-01-19 were under-estimated for Toronto Public Health. Due to a data processing error, cases with a publicly reported date of 2021-01-21 were over-estimated for Toronto Public Health. Due to Toronto Public Health's data migration to CCM and subsequent identification of duplicate cases and data corrections, cases with a date of 2021-02-02 should be interpreted with caution. Due to issues with CCM, cases with a publicly reported date of 2021-03-25 were over-estimated (mainly affecting Toronto Public Health) and should be interpreted with caution. Due to a catch-up in processing laboratory data into CCM, counts with a public reporting date of 2021-04-28 for some health units in the Central West region were over-estimated and should be interpreted with caution. Due to a technical issue with the laboratory data feed, cases with a publicly reported date of 2021-05-06 may be underreported for the Central East, Central West and Toronto regions. Due to an error affecting cases publicly reported by Toronto Public Health, in December 2020 and earlier, cases were previously under-estimated. This under-estimation may have affected the total number of

**confirmed cases reported as of 2021-06-21. Toronto Public Health has conducted a data review and data re-mediation for some cases incorrectly reported as not meeting the case definition from December earlier. As of June 29, 2021, about 90 cases from 2020 have been included in Toronto Public Health's case count. Due to an ongoing data review and data cleaning initiative, about 80 cases from 2020 have been included in Toronto Public Health's case count as of July 5, 2021.**

**This report includes the most current information available from CCM.**

**Full French translation is available upon request.**

## Purpose

This report provides a summary of the regional case counts of COVID-19, likely source of acquisition, and the timeliness of testing and investigation in Ontario. These regional measures provide important information to support and monitor re-opening across Ontario.

A brief description of the measures included in this report are summarized below. Additional details are outlined in the Methods section, found toward the end of this document.

### Case count

The daily number of COVID-19 cases is based on the date a case was publicly reported (i.e., the date the public health unit [PHU] reported the case to Public Health Ontario [PHO] plus one day to account for the delay in public reporting). These daily numbers are used to produce an epidemic curve showing numbers of cases over time. These epidemic curves can be used to determine the current trajectory of the epidemic in each region.

### Reproduction number

The reproduction number is the average number of secondary cases of infection generated by each person infected with COVID-19. A reproduction number greater than one means that the overall number of new cases is growing in a region, while a reproduction number less than one means the overall number of new cases is decreasing and suggests that COVID-19 is coming under control in a region.

### Likely source of acquisition

COVID-19 cases have been examined to determine whether a case travelled, was associated with an outbreak, was a contact of a case, had no known epidemiological link (sporadic community transmission), or where information was pending or missing. Tracking the number of cases with no known epidemiologic link provides insight into how well we are able to ascertain where cases are coming from and may reflect the effectiveness and timeliness of the contact tracing process, as well as indicate adherence to public health guidance by individuals who are asked to isolate.

### Timeliness of case presentation, testing, and investigation

To halt transmission, it is crucial that potential cases are rapidly identified, tested, reported, and managed (which includes contact tracing). We examined three timeliness metrics. First, the proportion of cases that have a specimen collected for testing within 2 days of symptom onset. Second, the

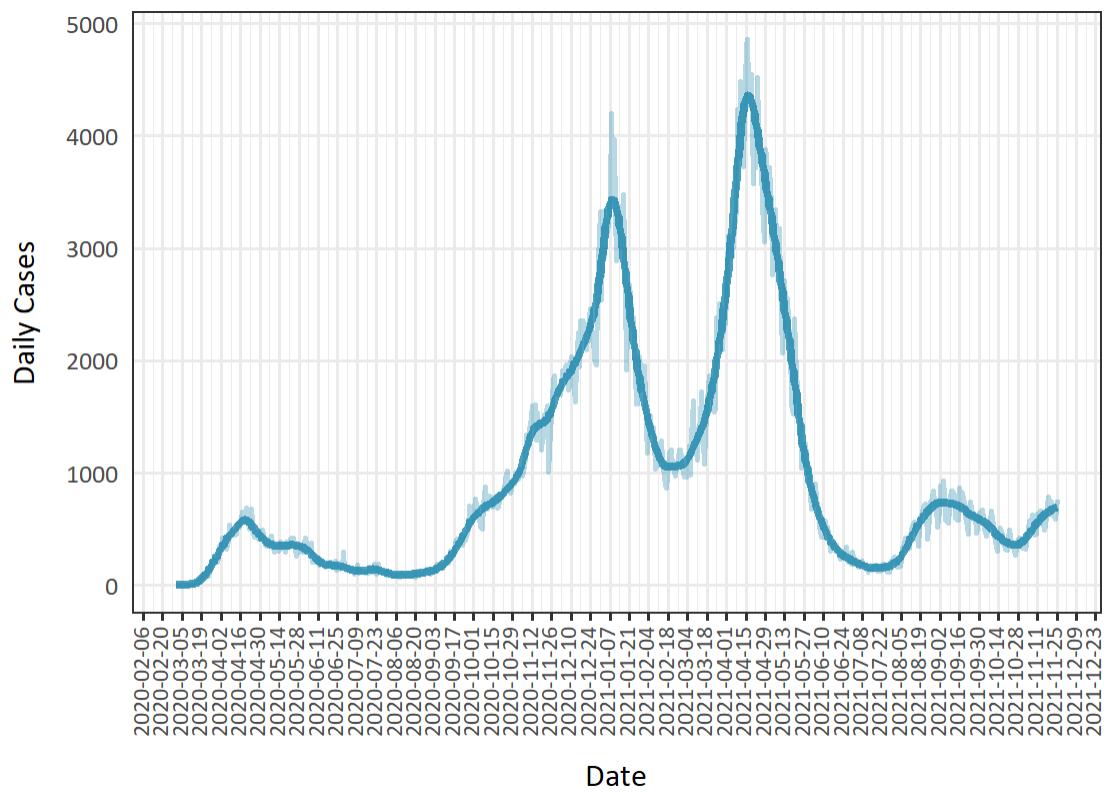
proportion of cases that had a positive result reported to the PHU within 1 day of specimen collection. Third, the proportion of cases for which case management began within 1 day of a positive result reported to the PHU.



Flow diagram of case presentation, testing, and investigation

# Ontario

## Epidemic Curve: Ontario

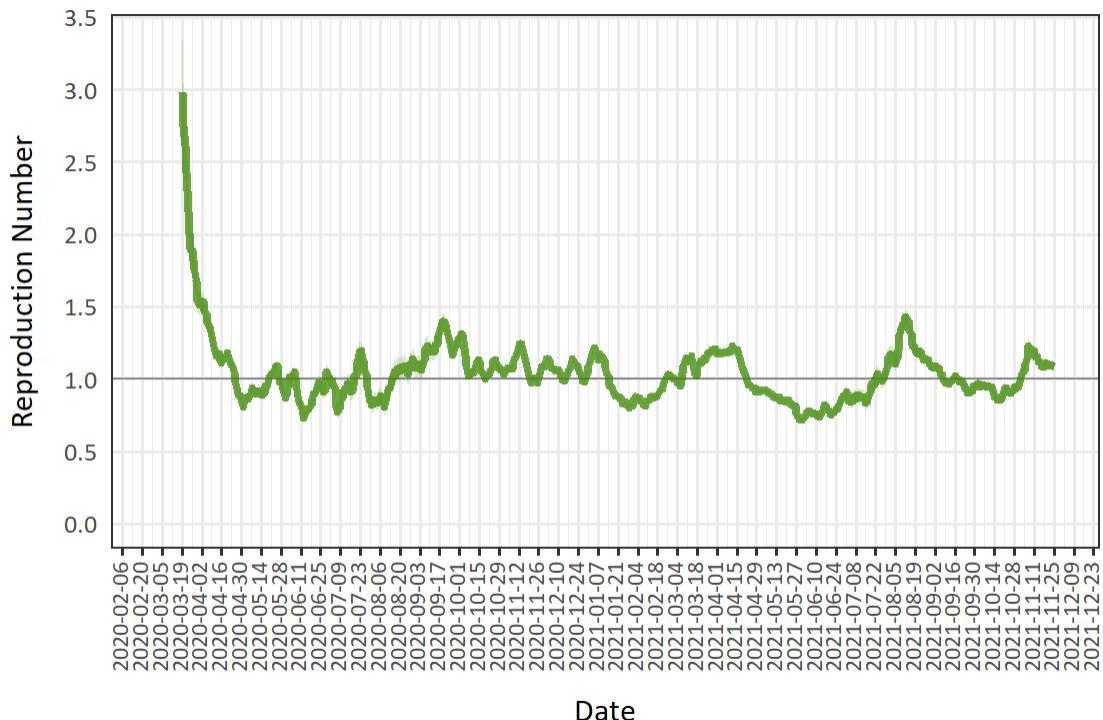


Note: the date used in this graph is the public reporting date

Data Source: CCM

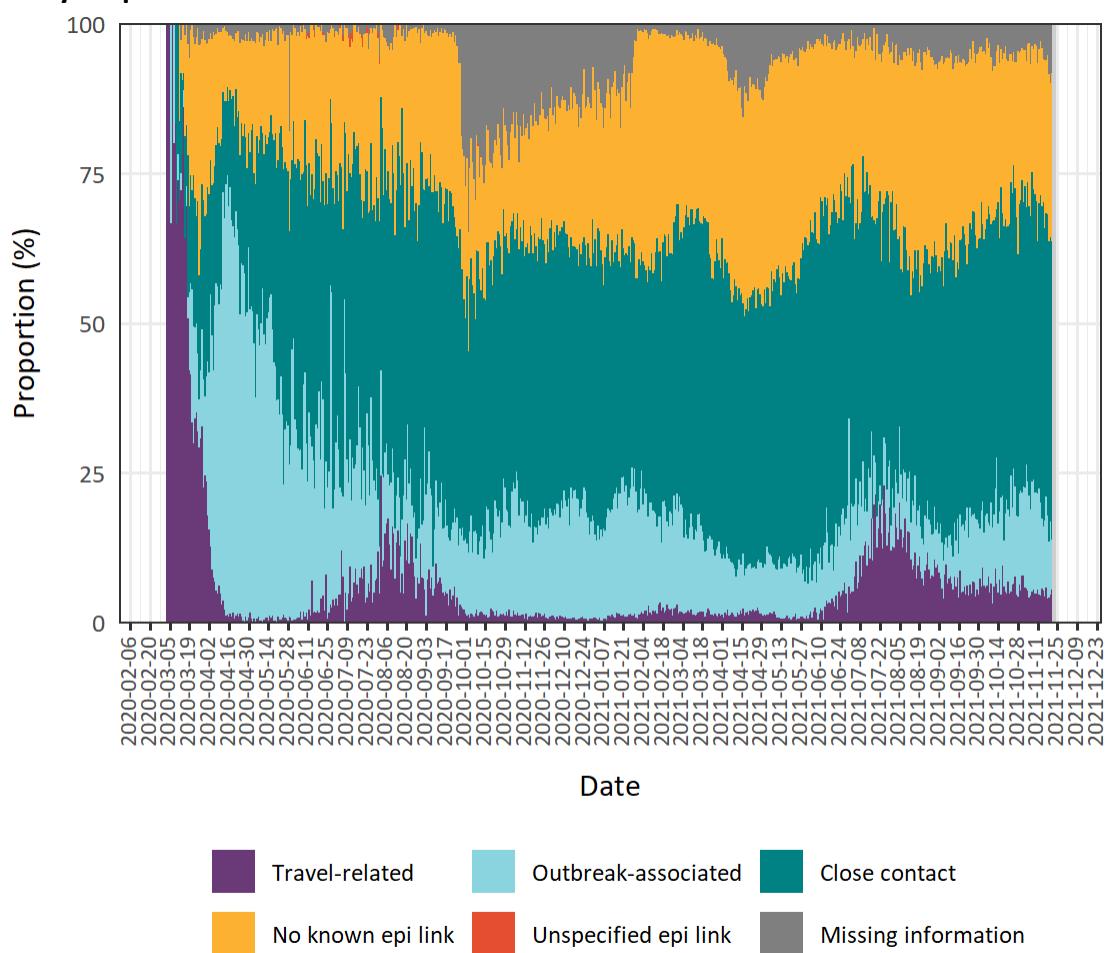
## Reproduction Number: Ontario

Nov 25 Re = 1.08, 95% CI: 1.05-1.11



Data Source: CCM

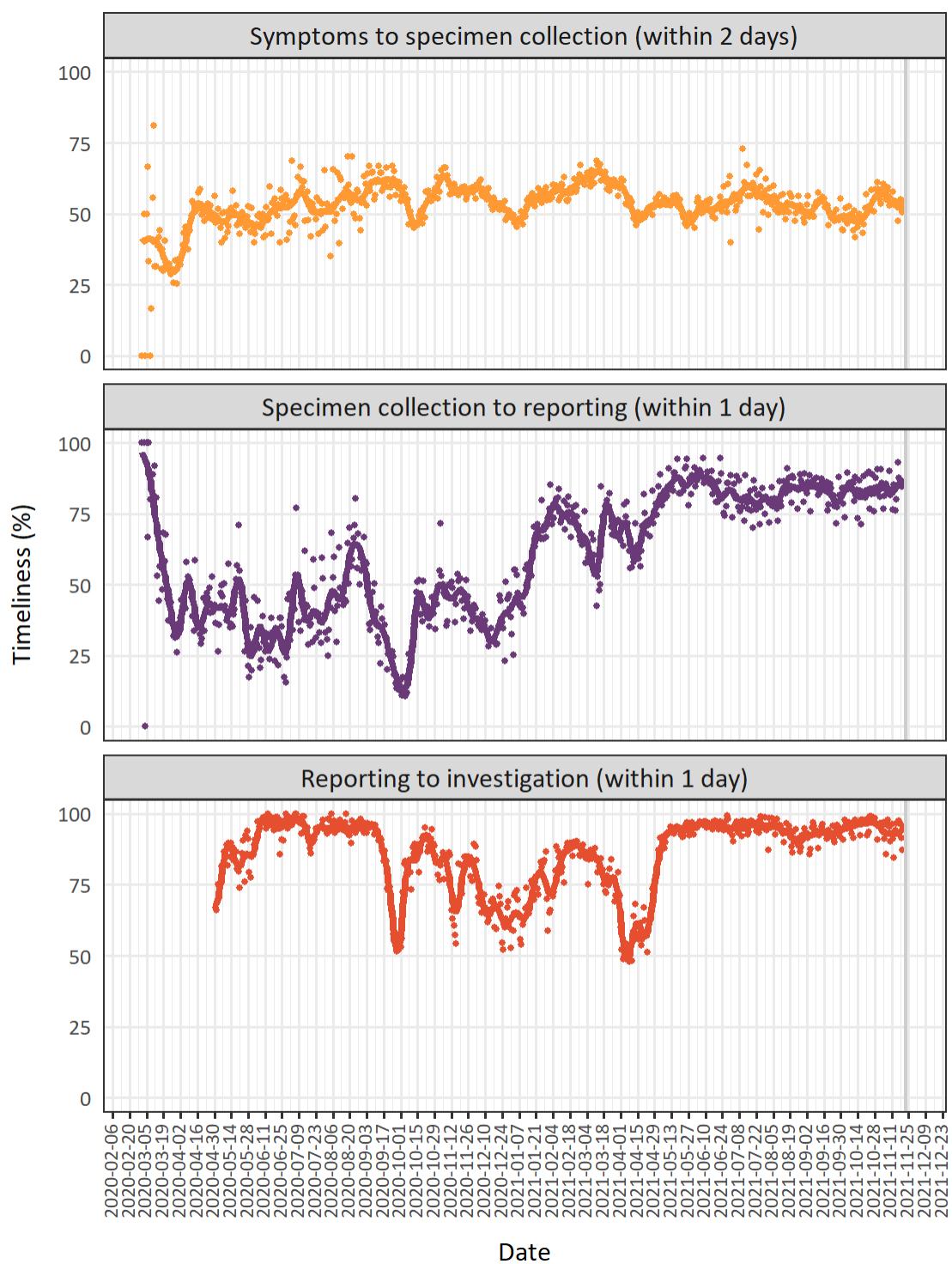
## Likely Acquisition: Ontario



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Ontario

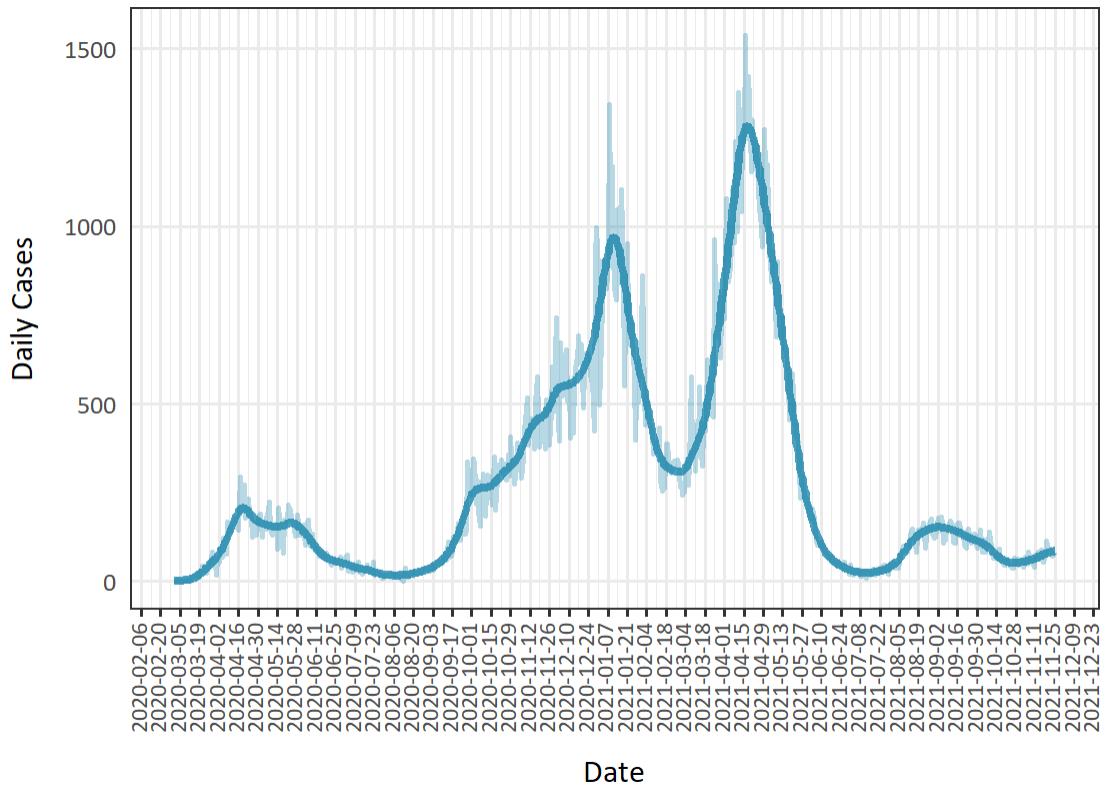


Note: the date used in this graph is the case reported date

Data Source: CCM

## Toronto

### Epidemic Curve: Toronto

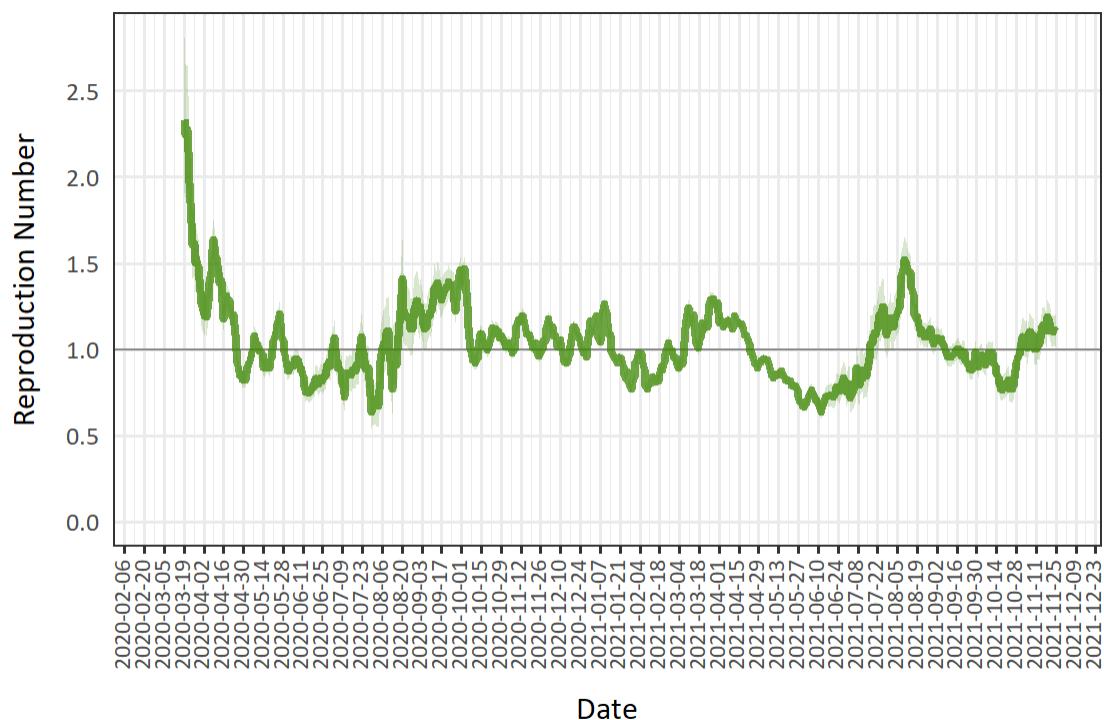


Note: the date used in this graph is the public reporting date

Data Source: CCM

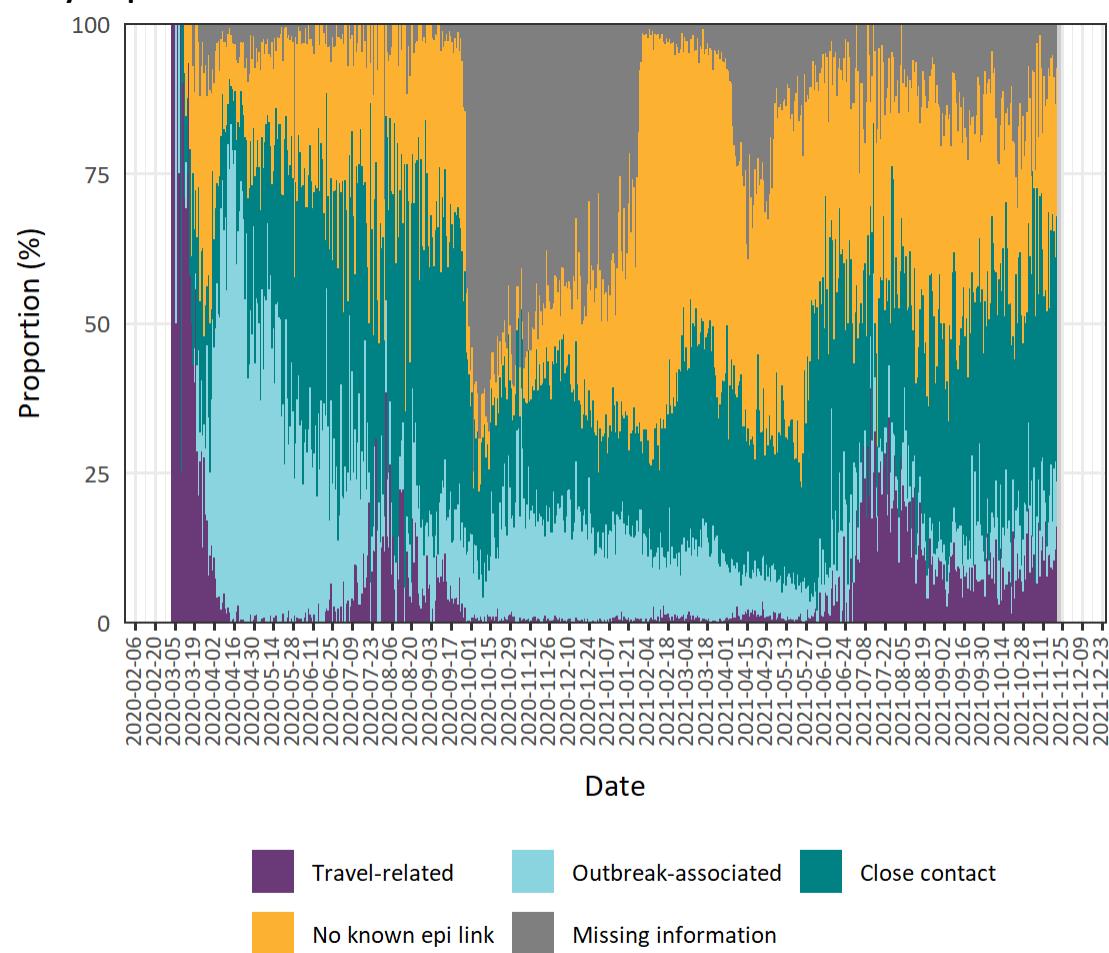
## Reproduction Number: Toronto

Nov 25 Re = 1.10, 95% CI: 1.02-1.19



Data Source: CCM

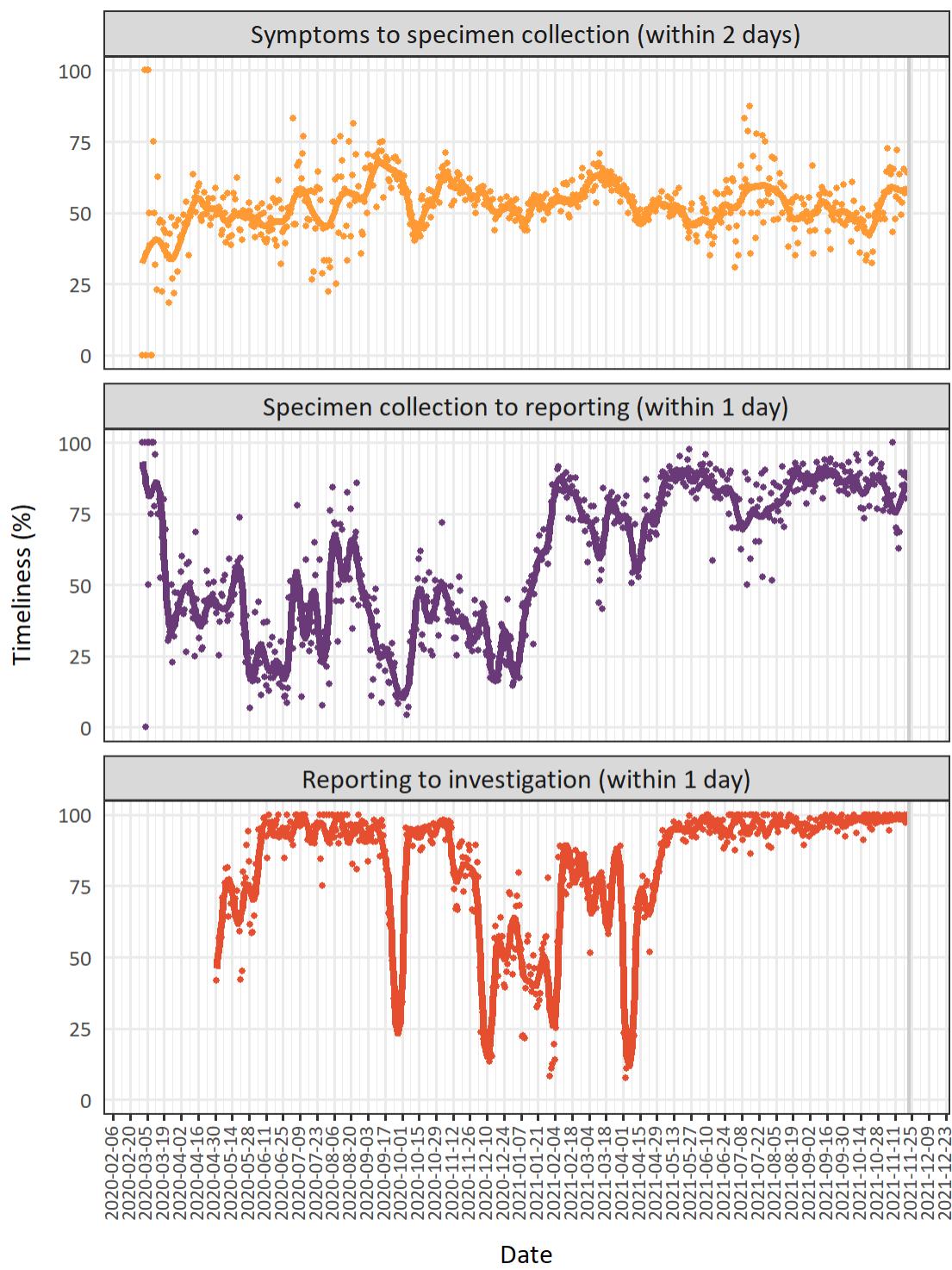
## Likely Acquisition: Toronto



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Toronto

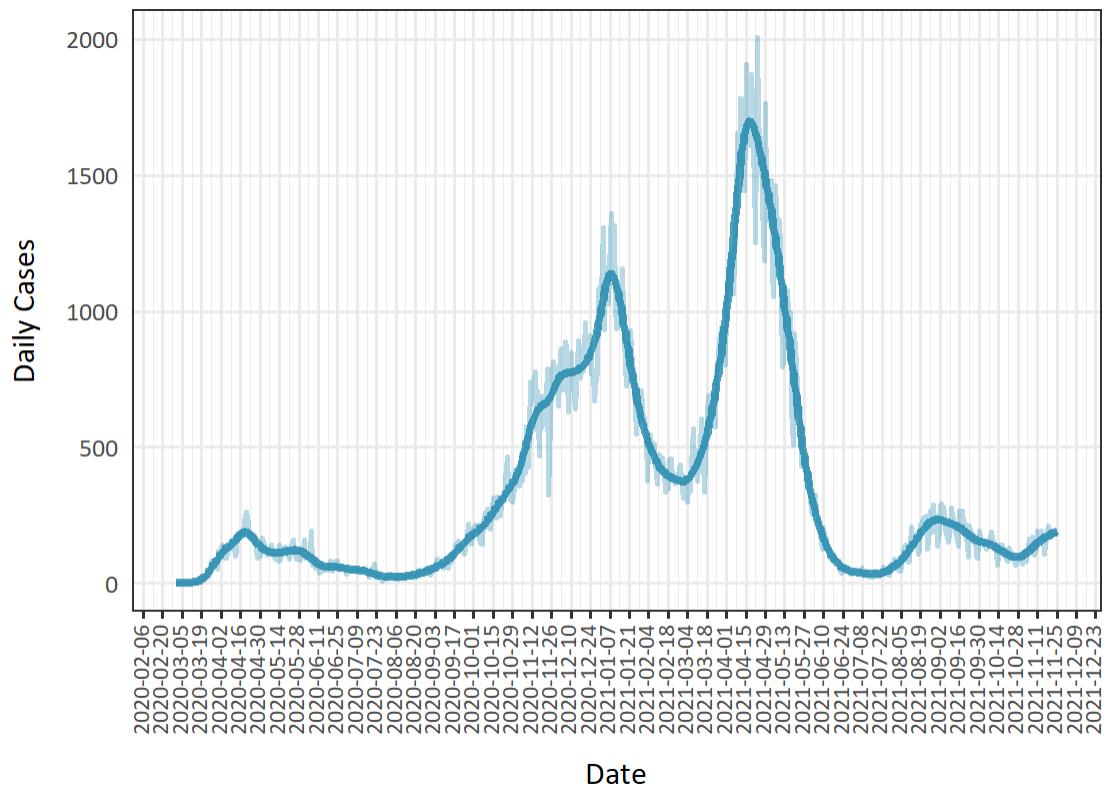


Note: the date used in this graph is the case reported date

Data Source: CCM

## Central East

### Epidemic Curve: Central East

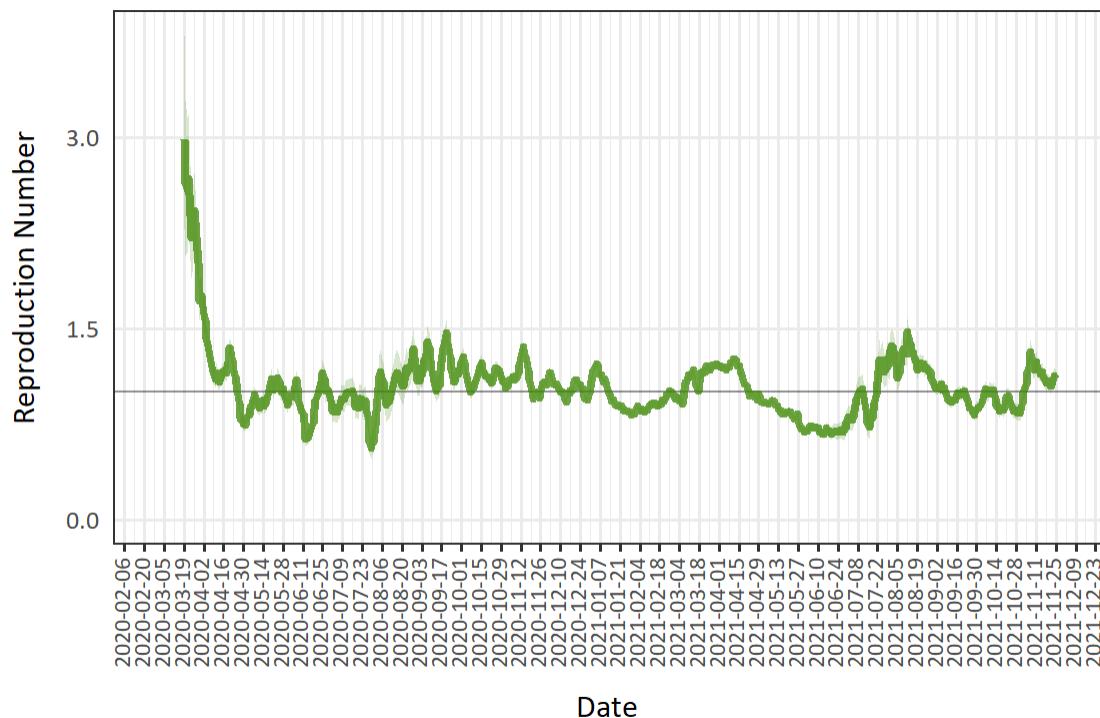


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Central East

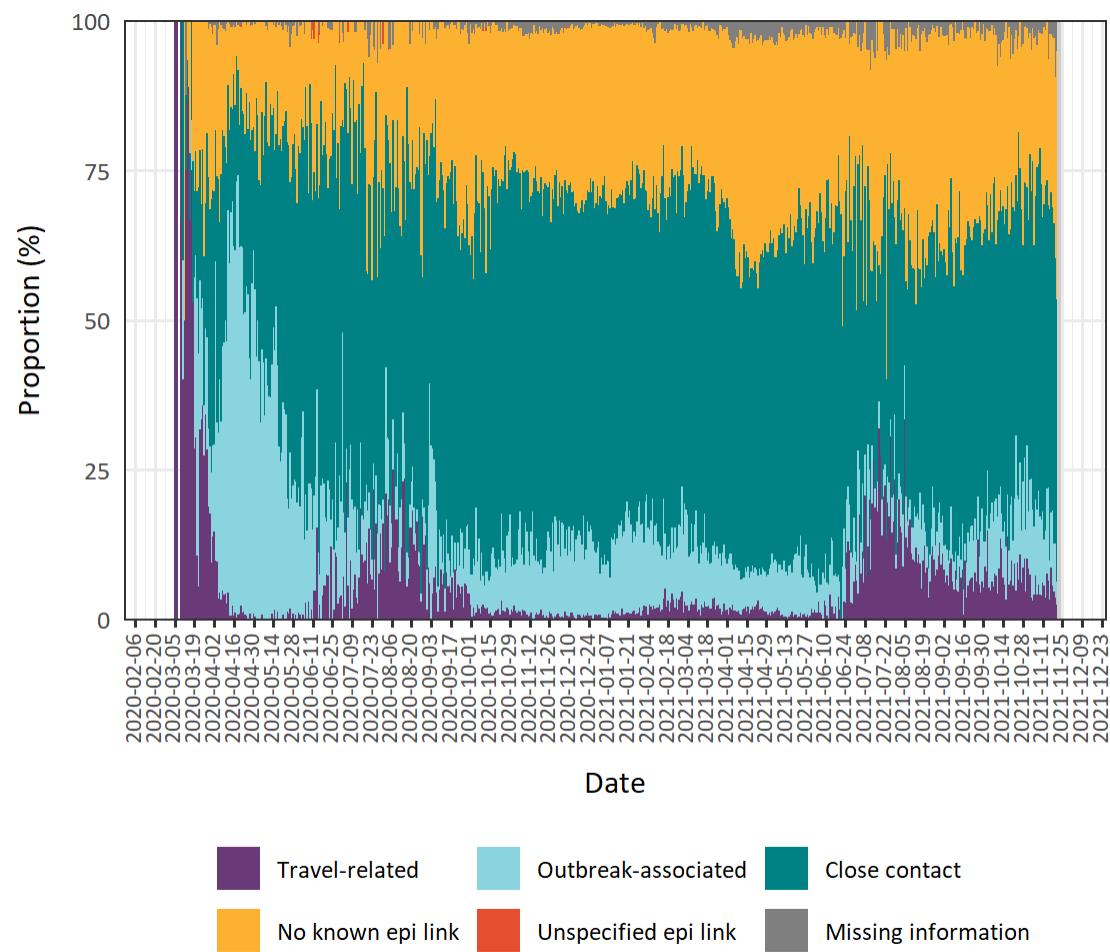
Nov 25 Re = 1.10, 95% CI: 1.04-1.16



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

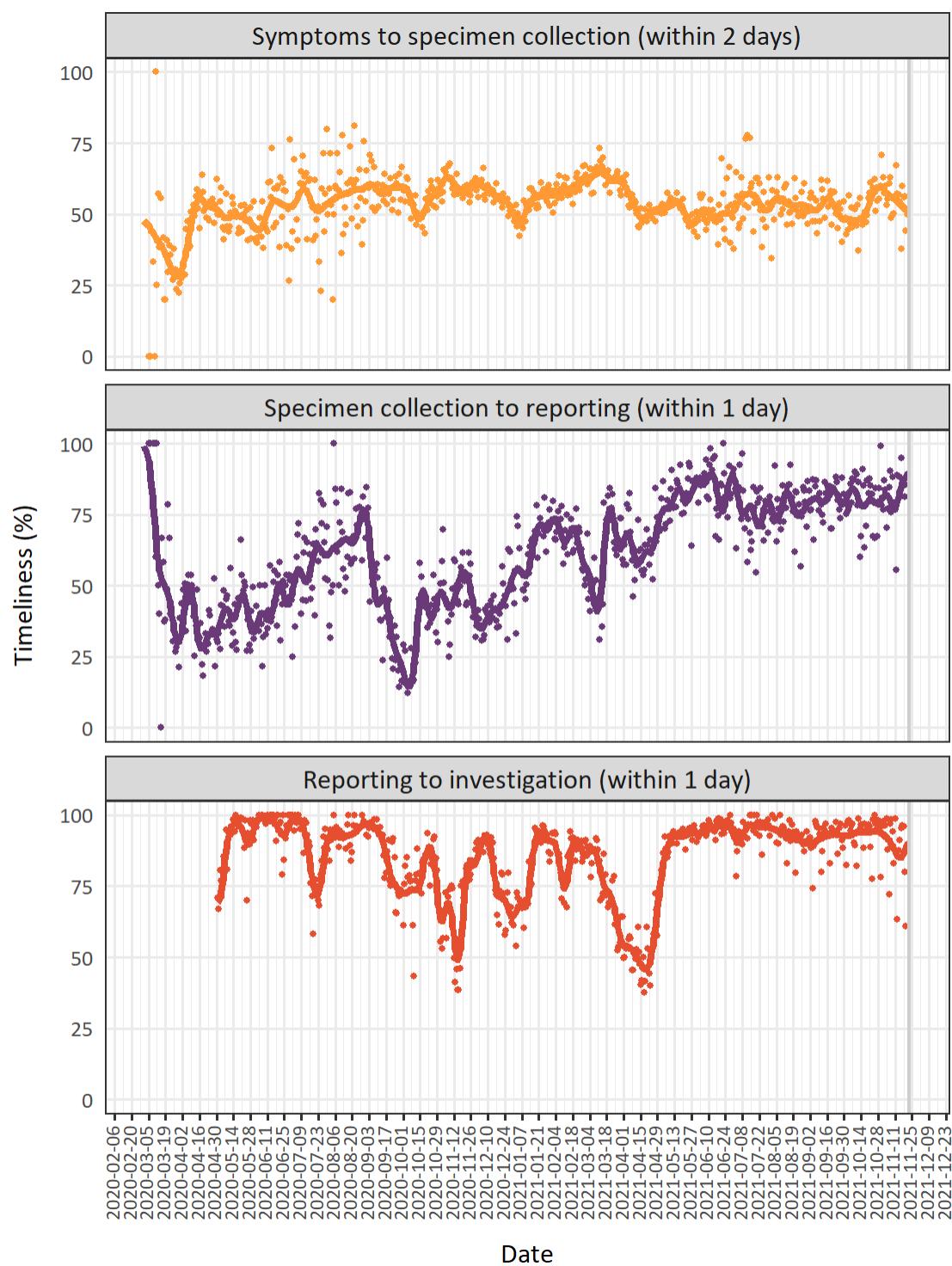
## Likely Acquisition: Central East



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Central East

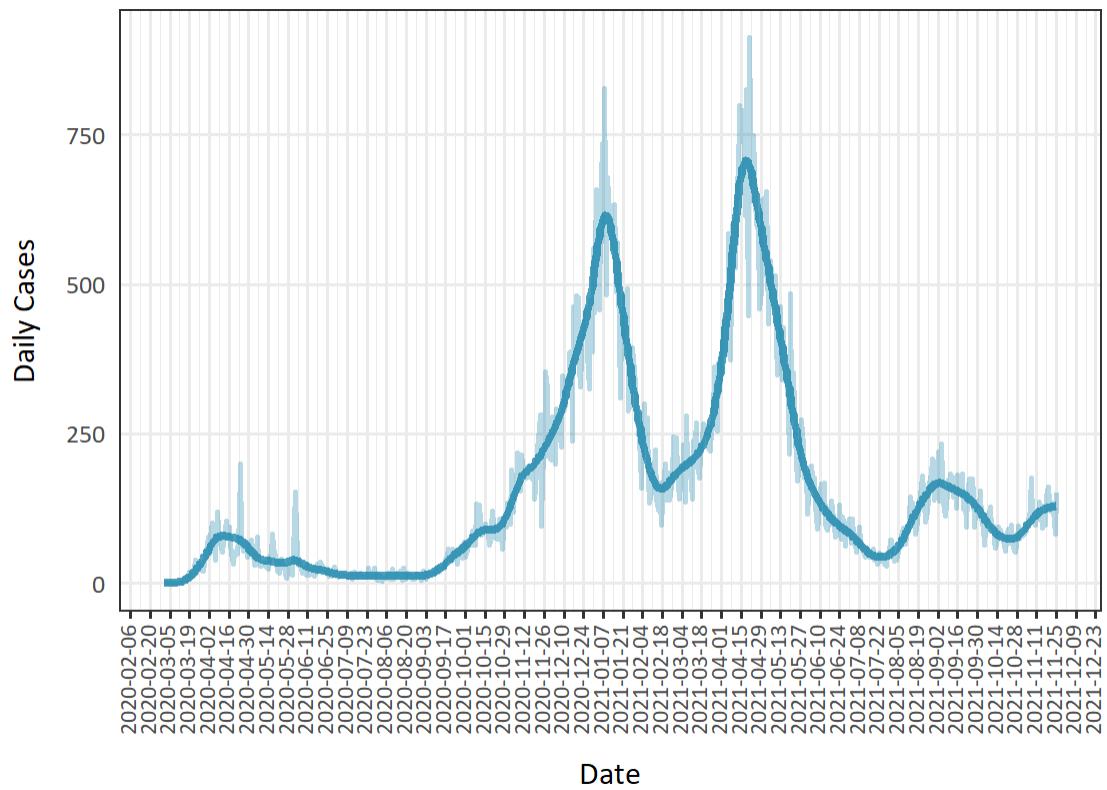


Note: the date used in this graph is the case reported date

Data Source: CCM

## Central West

### Epidemic Curve: Central West

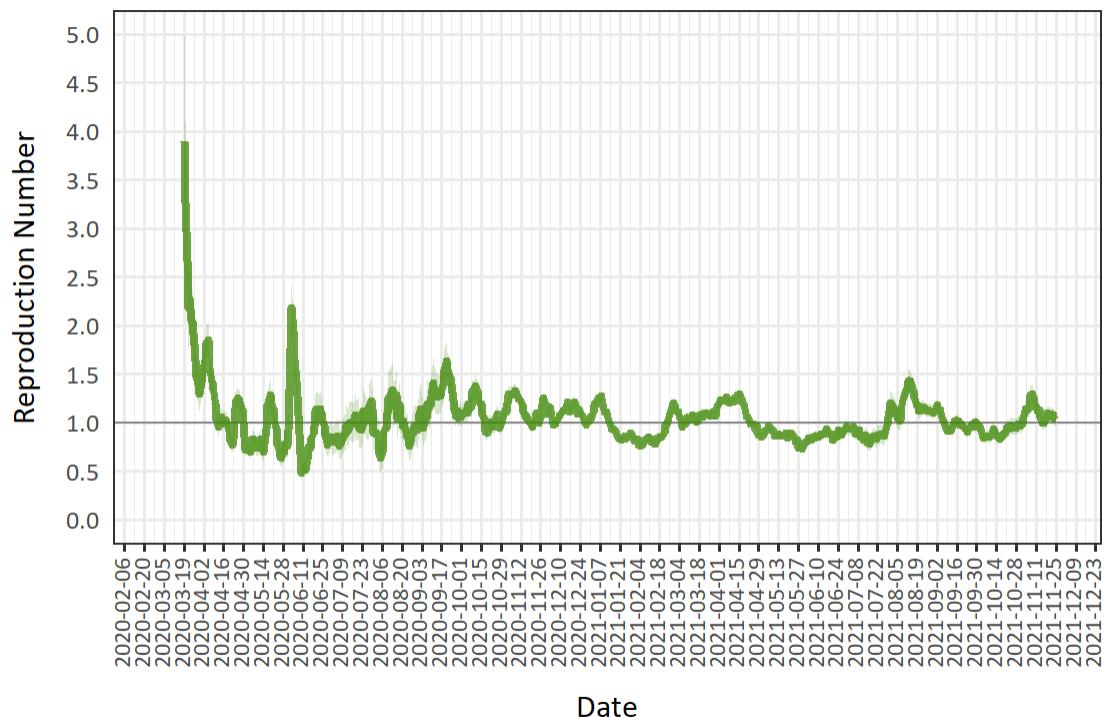


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Central West

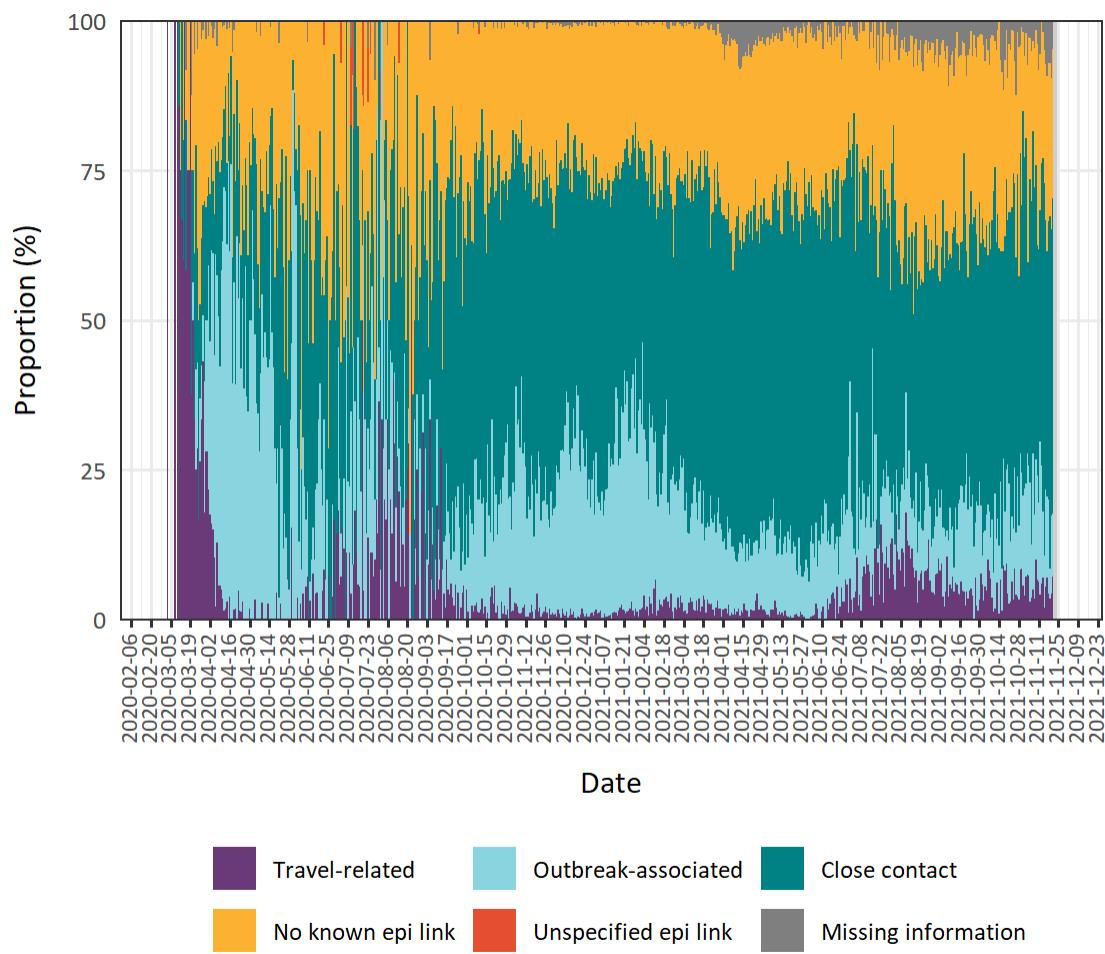
Nov 25 Re = 1.04, 95% CI: 0.97-1.10



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

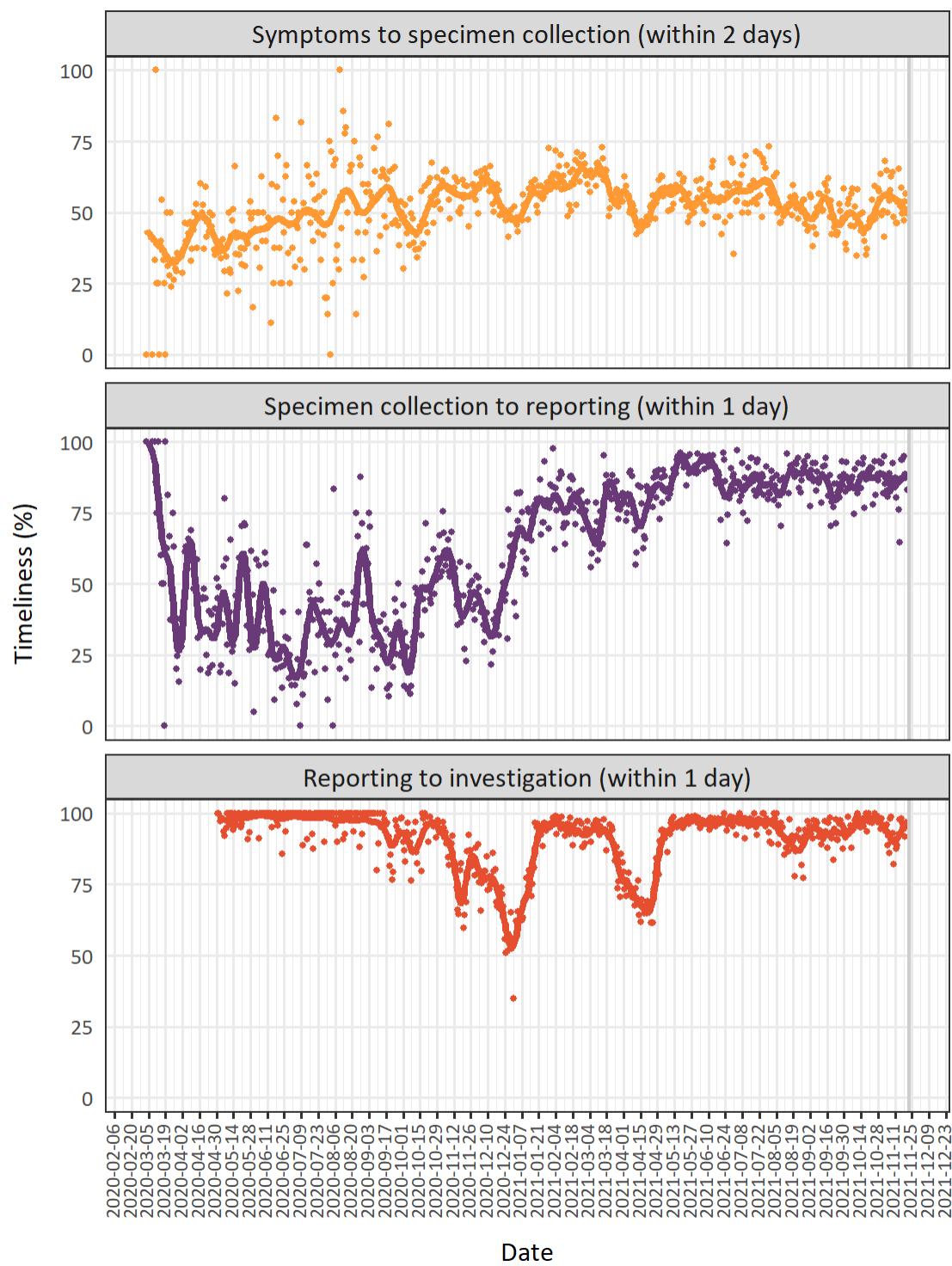
## Likely Acquisition: Central West



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Central West

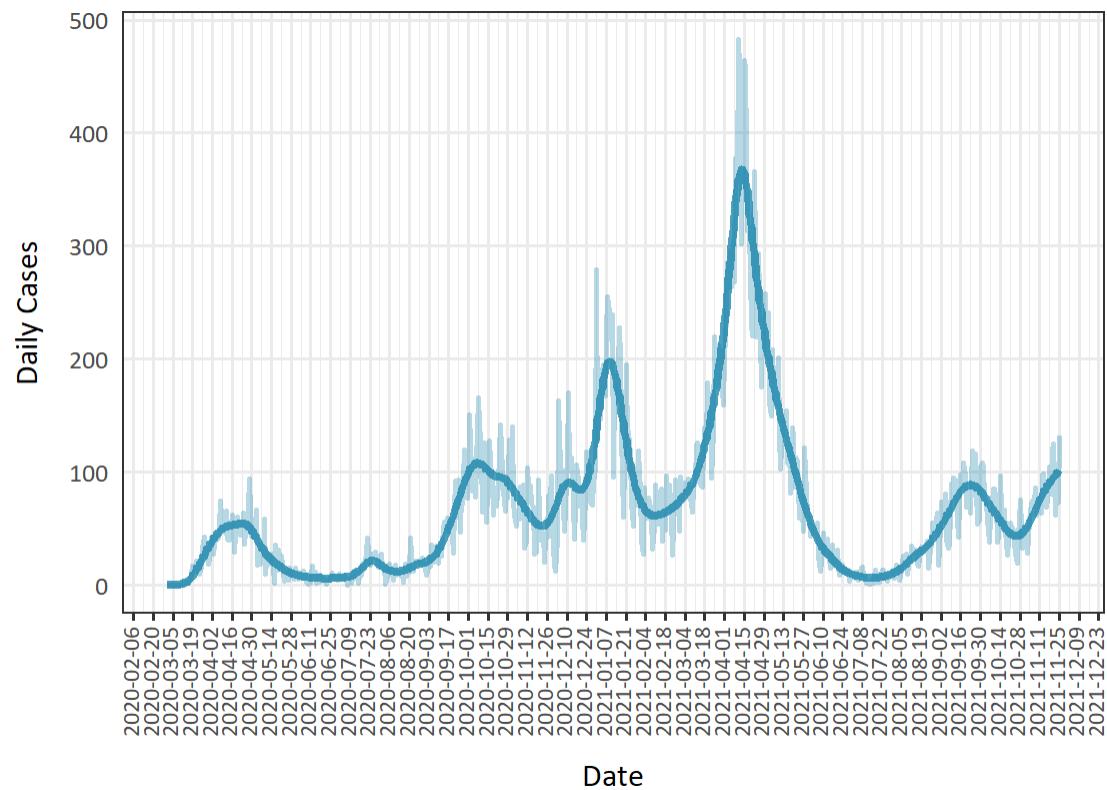


Note: the date used in this graph is the case reported date

Data Source: CCM

## Eastern

### Epidemic Curve: Eastern

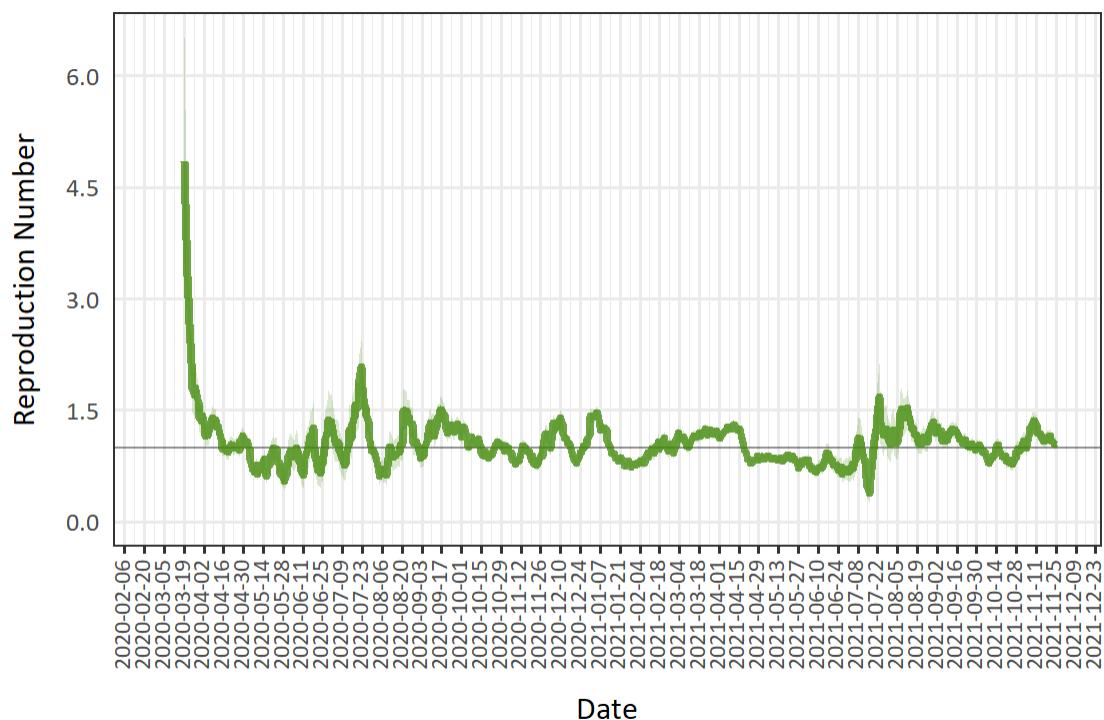


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Eastern

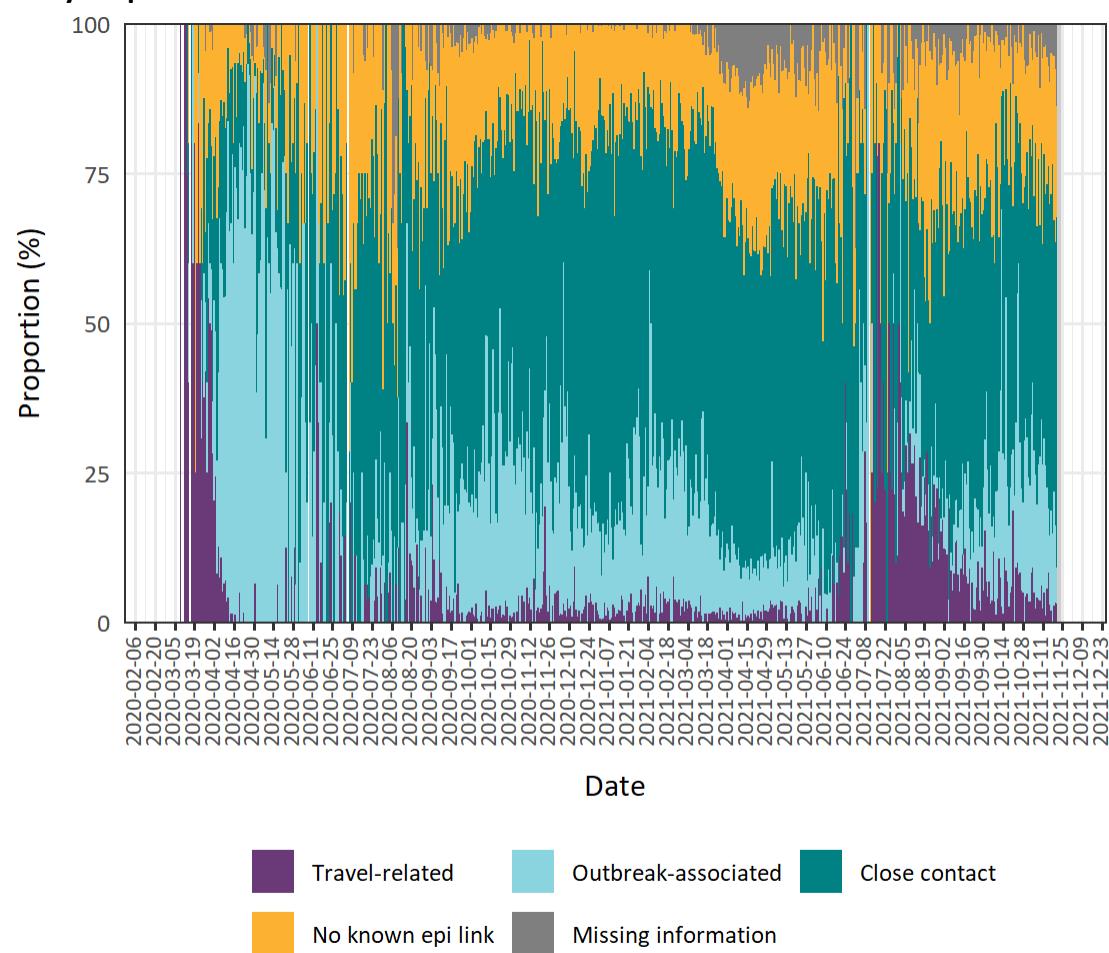
Nov 25 Re = 1.07, 95% CI: 0.99-1.15



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

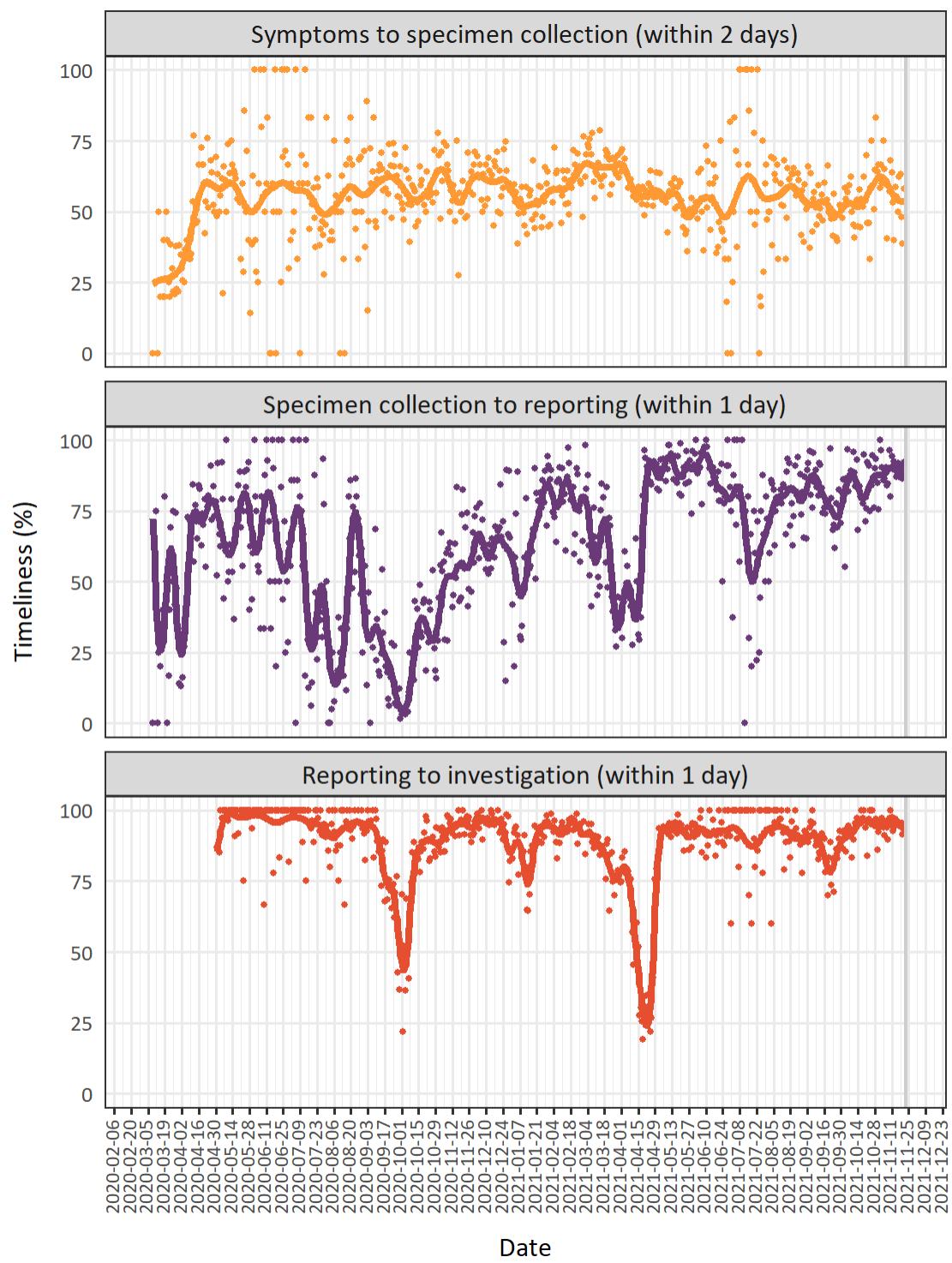
## Likely Acquisition: Eastern



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Eastern

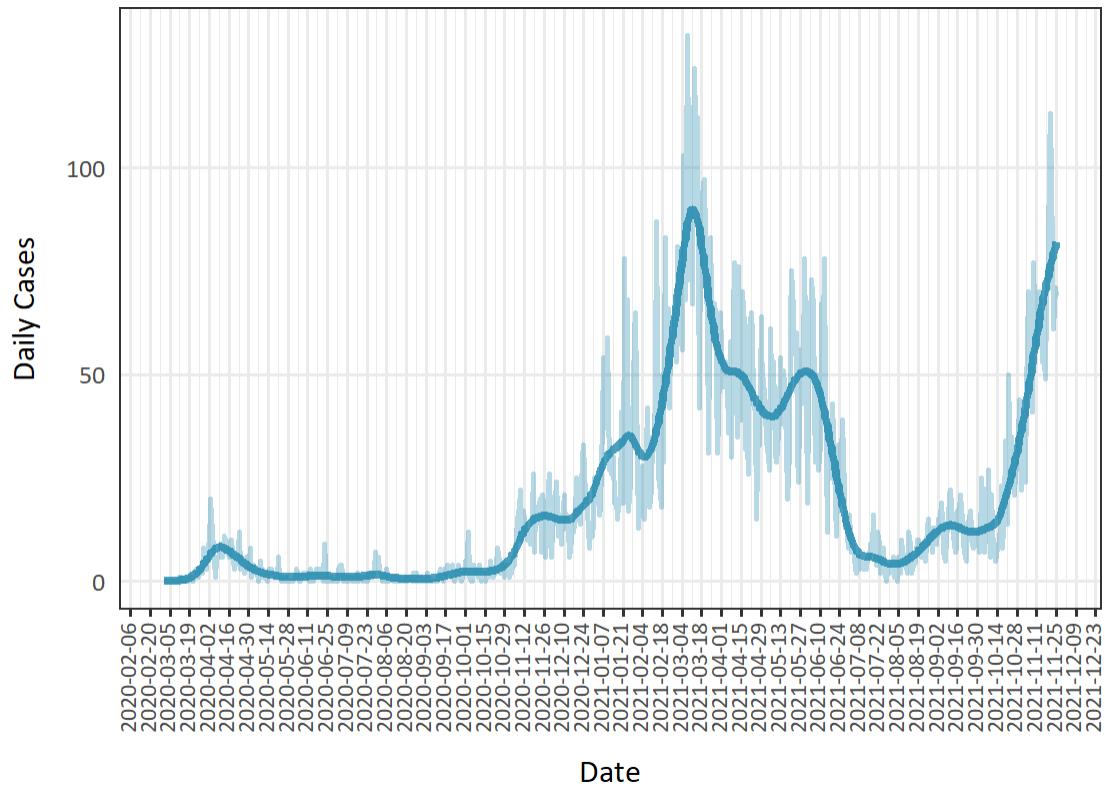


Note: the date used in this graph is the case reported date

Data Source: CCM

## North

### Epidemic Curve: North

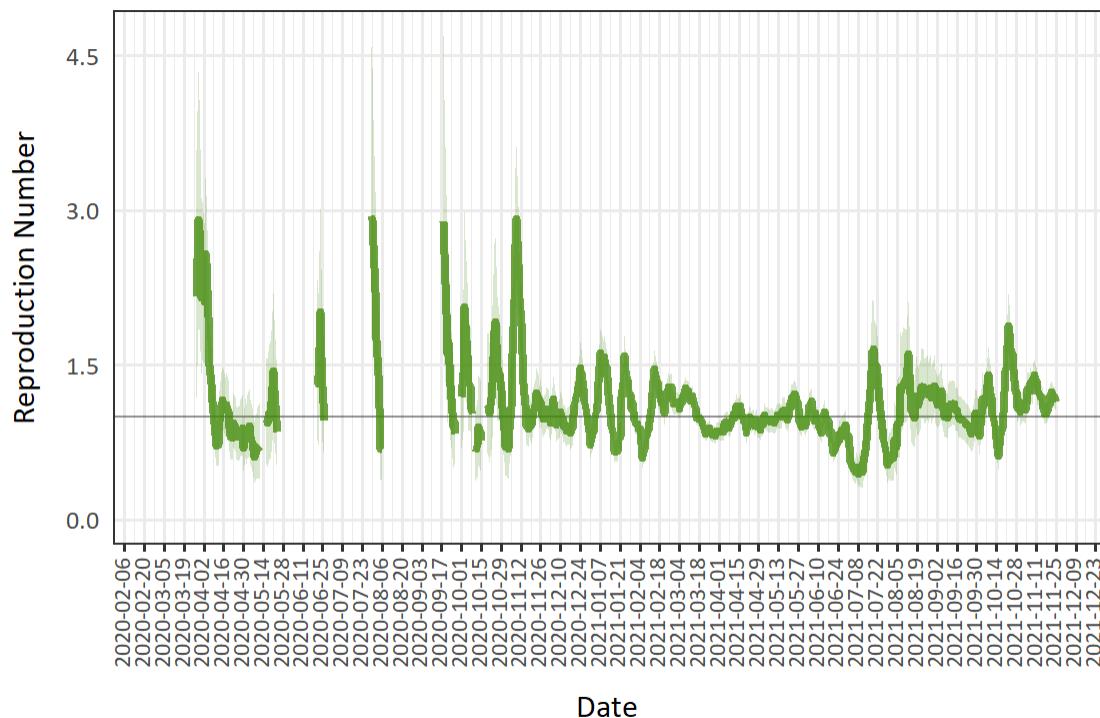


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: North

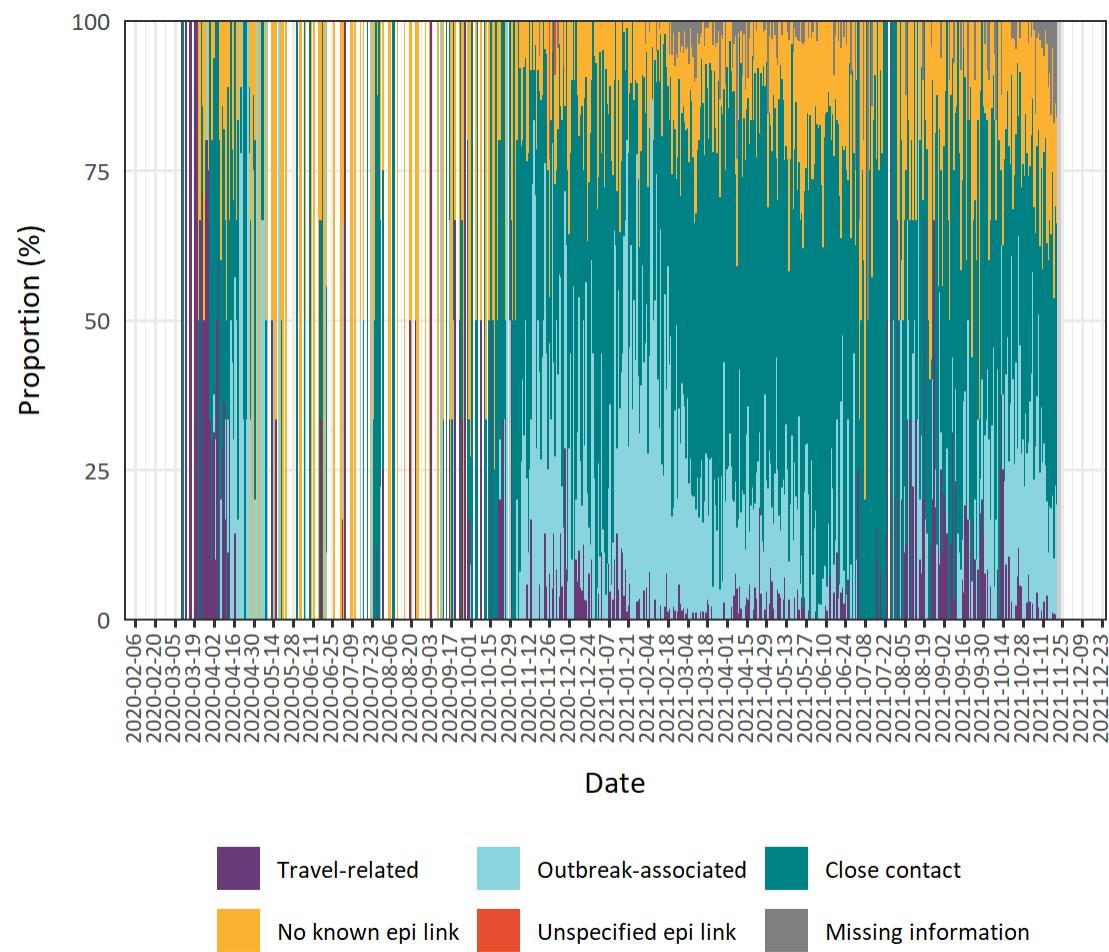
Nov 25 Re = 1.15, 95% CI: 1.06-1.24



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

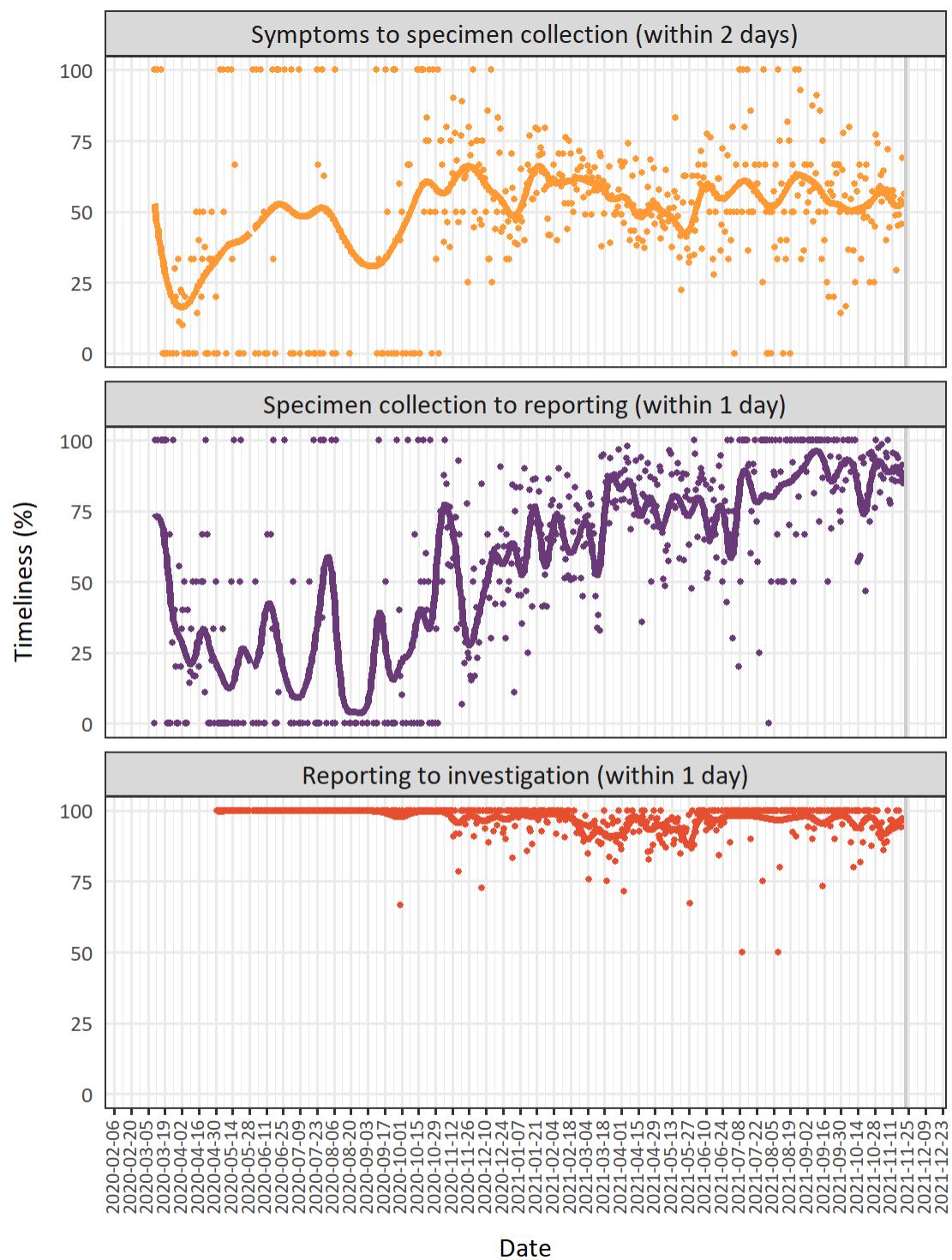
## Likely Acquisition: North



Note: the date used in this graph is the case reported date

Data Source: CCM

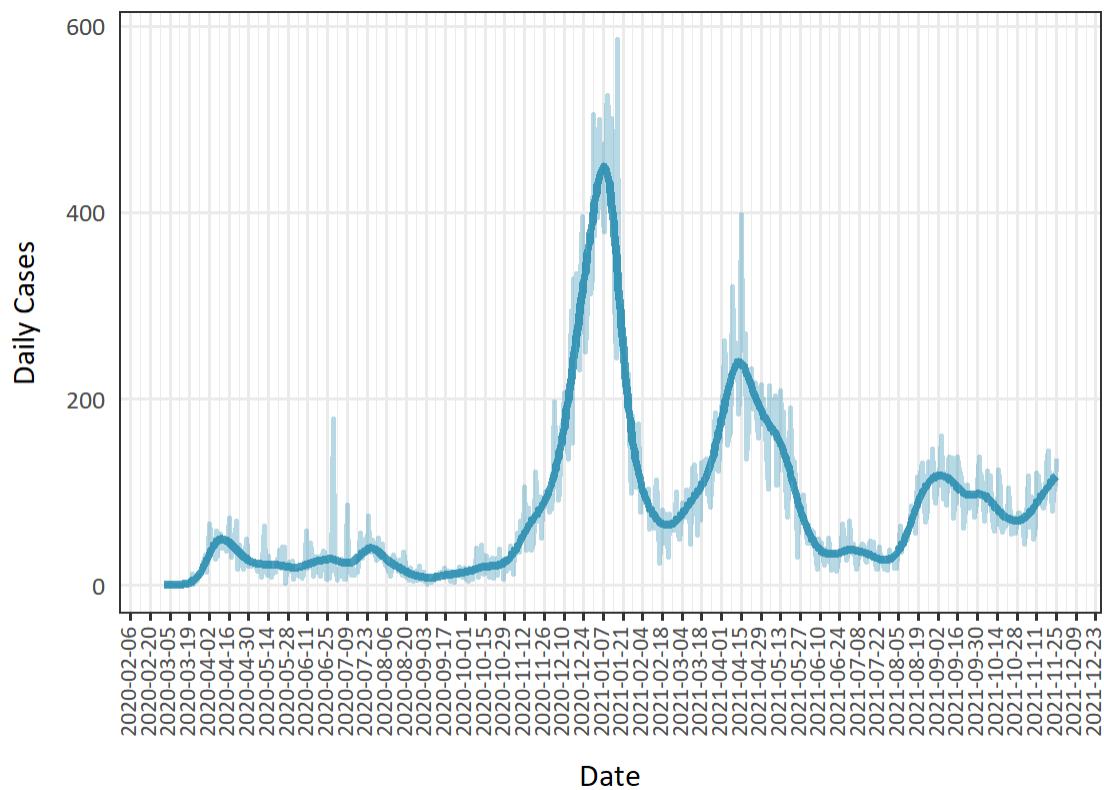
## Timeliness: North



Data Source: CCM

## South West

### Epidemic Curve: South West

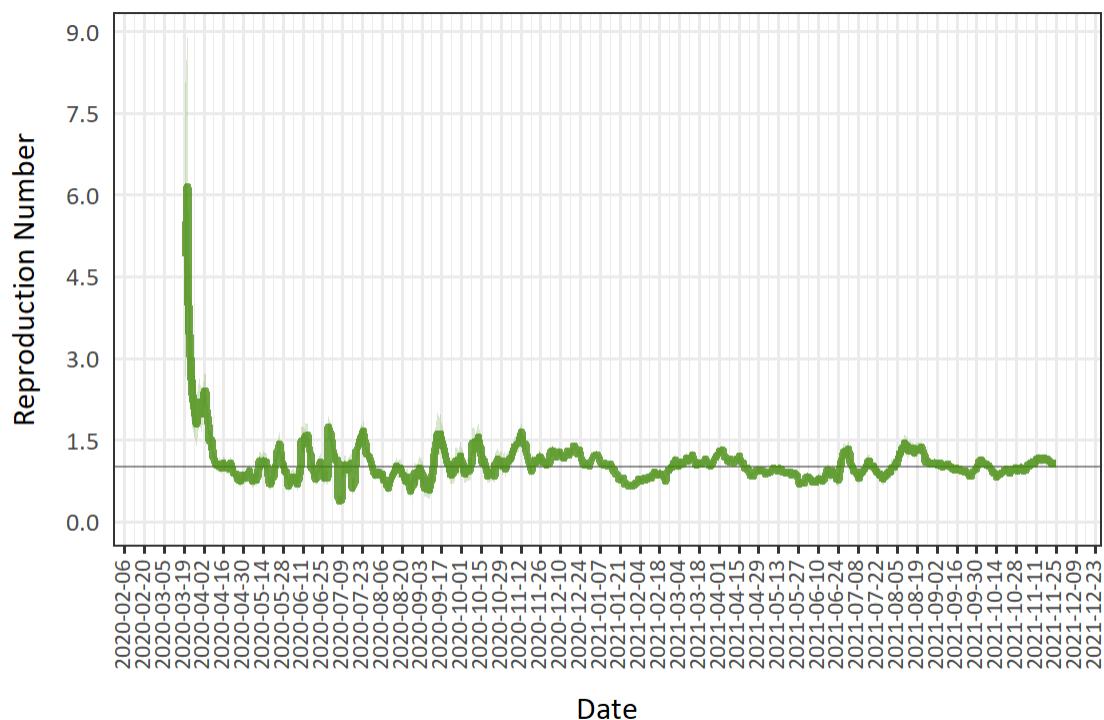


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: South West

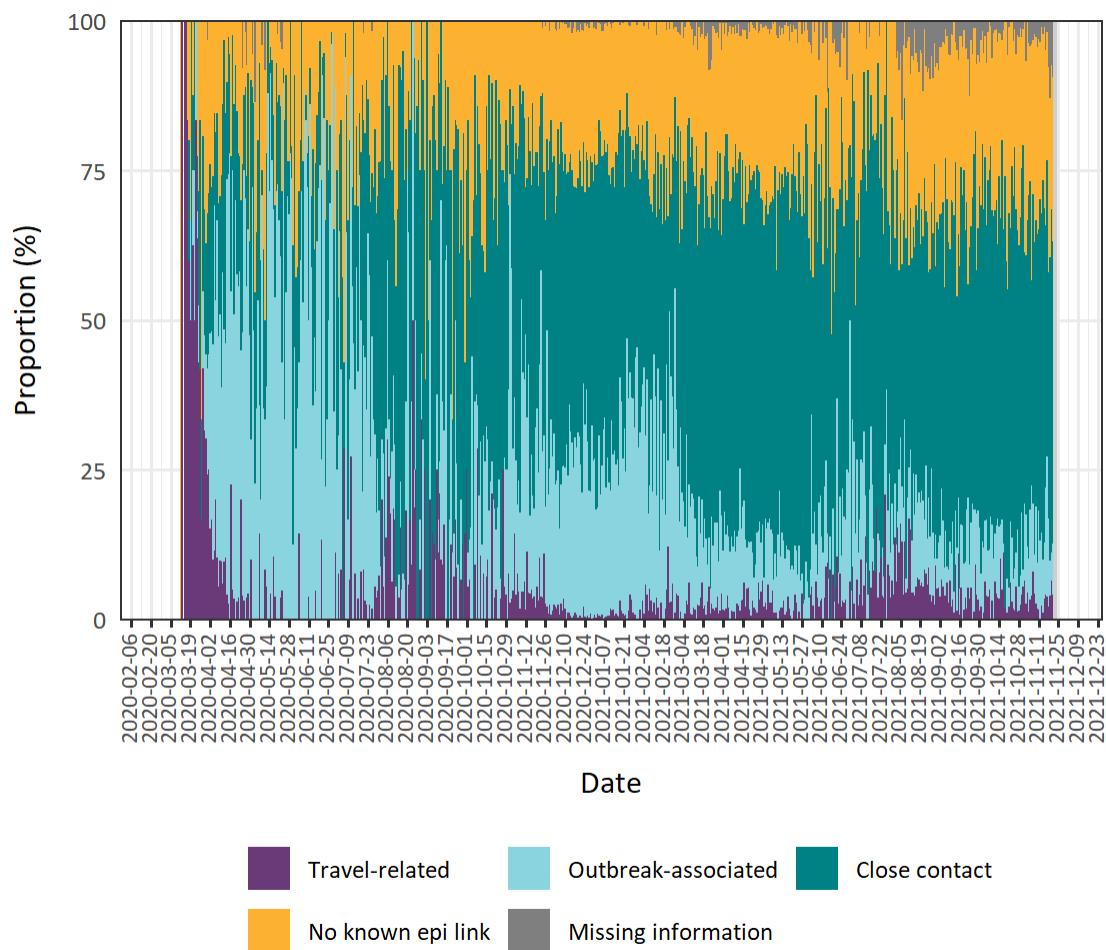
Nov 25 Re = 1.06, 95% CI: 0.99-1.14



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

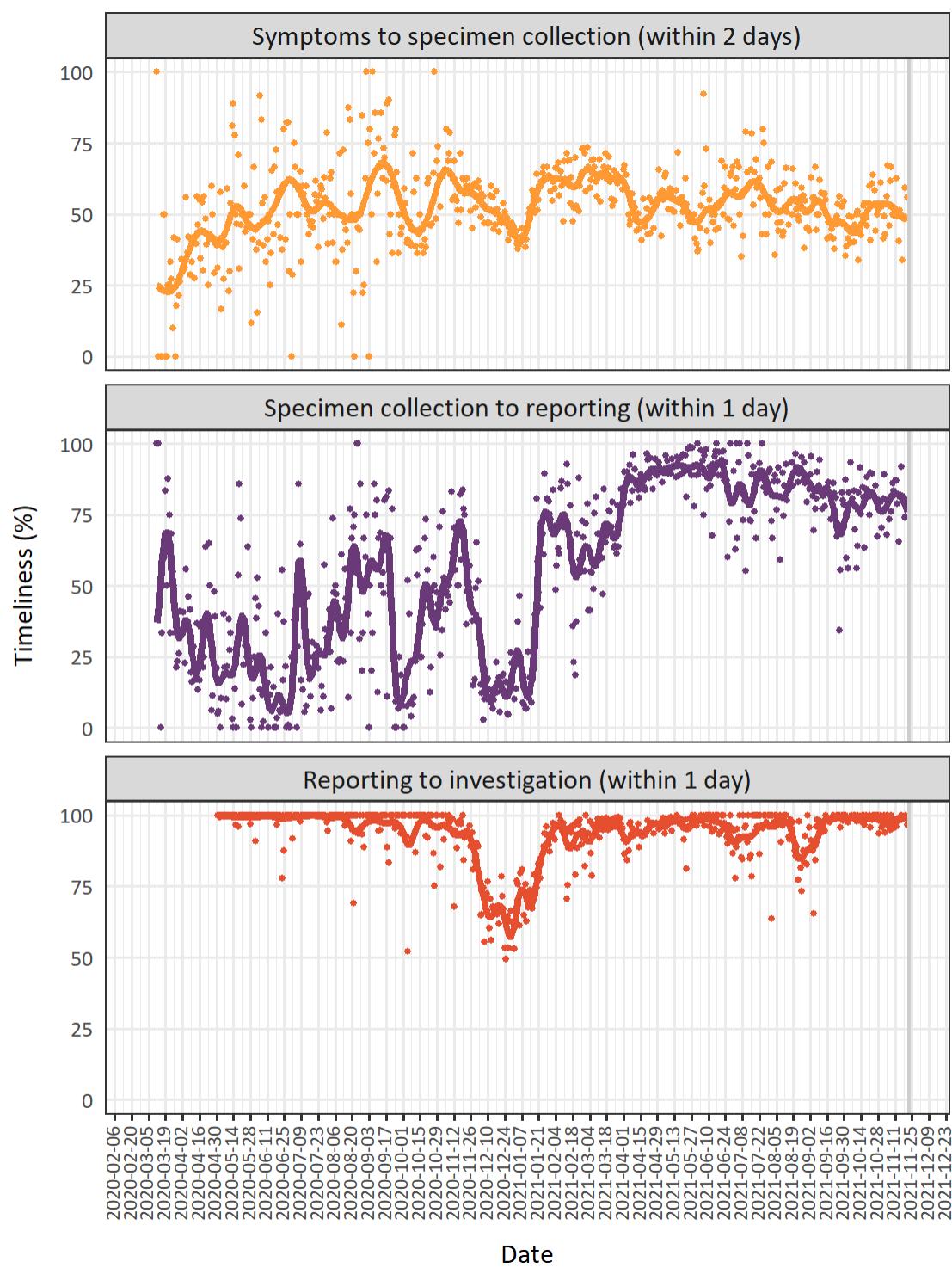
### Likely Acquisition: South West



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: South West

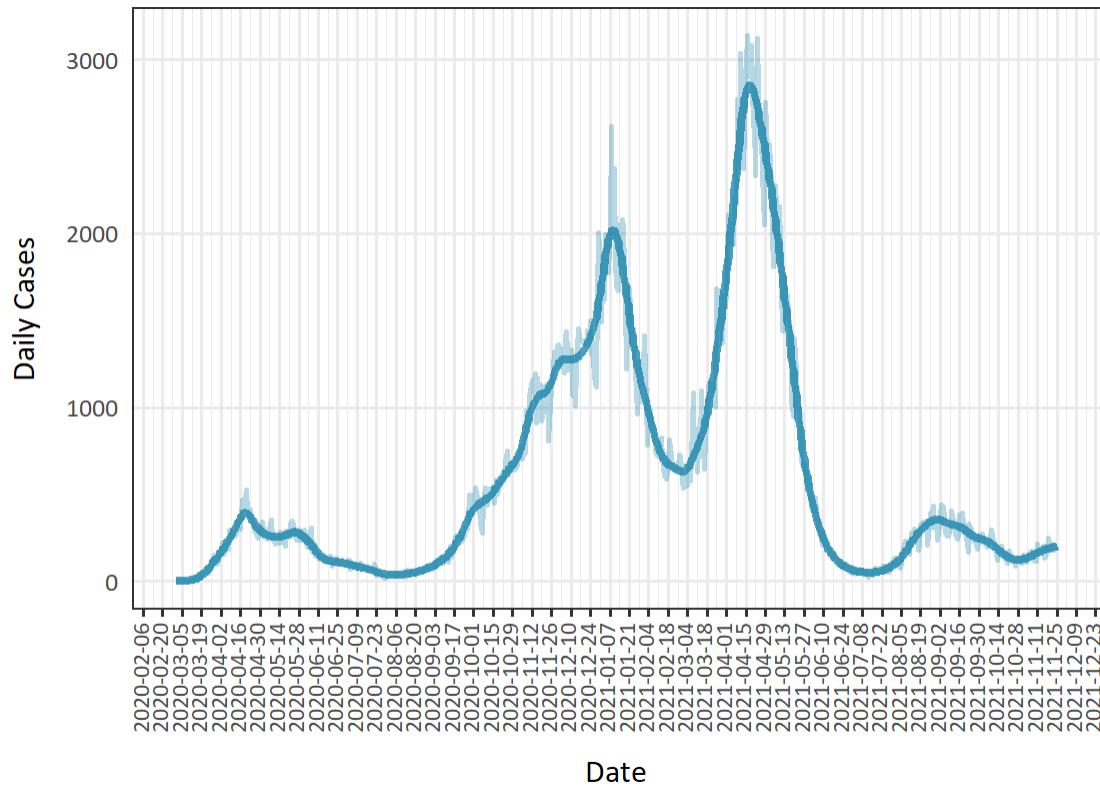


Note: the date used in this graph is the case reported date

Data Source: CCM

## GTA

### Epidemic Curve: GTA

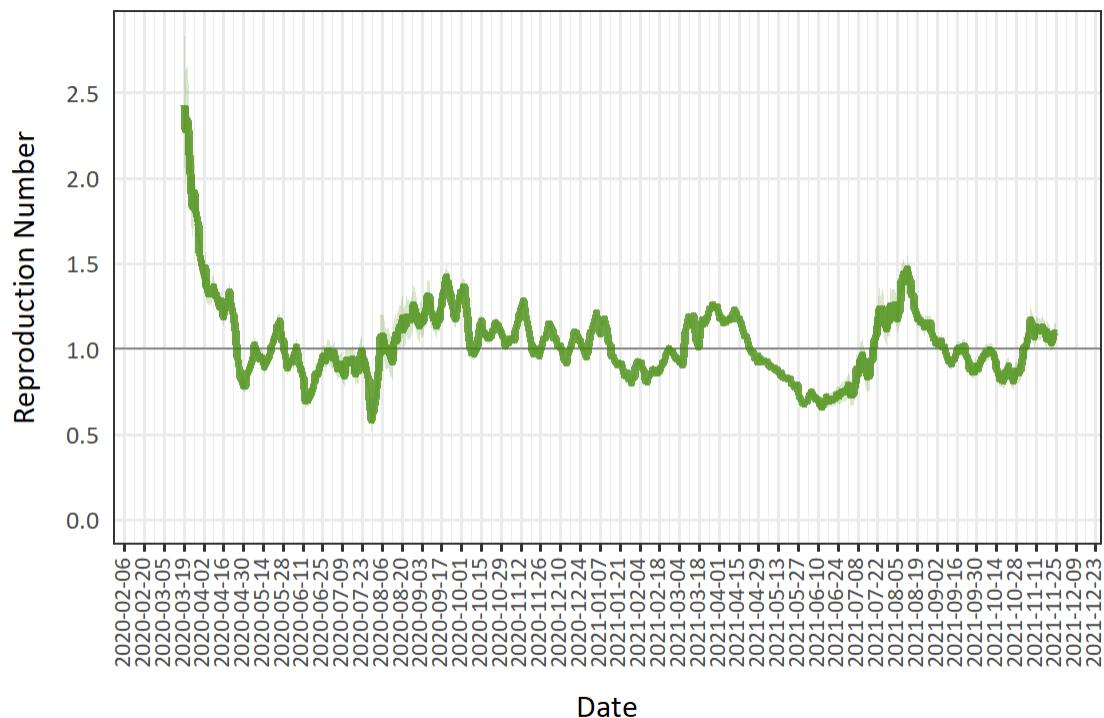


Note: the date used in this graph is the public reporting date

Data Source: CCM

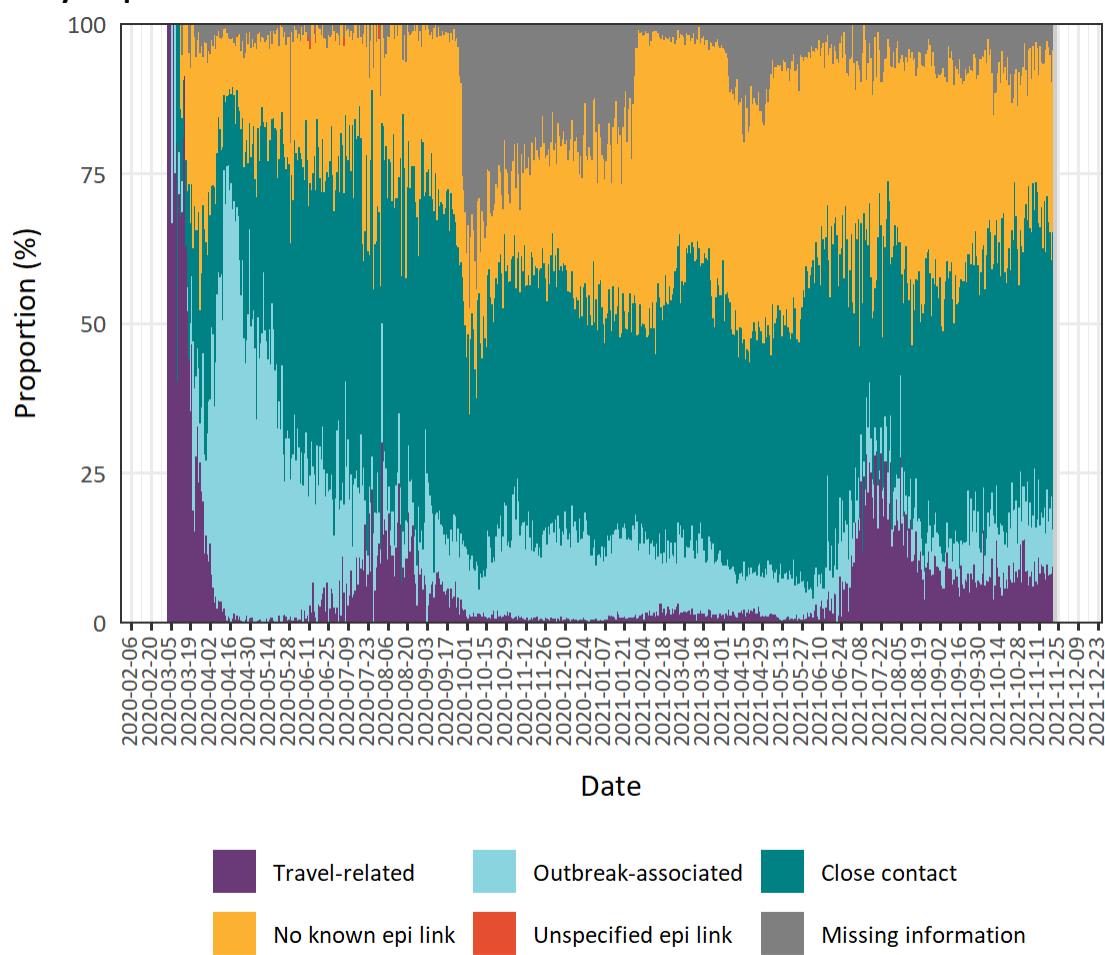
## Reproduction Number: GTA

Nov 25 Re = 1.09, 95% CI: 1.03-1.15



Data Source: CCM

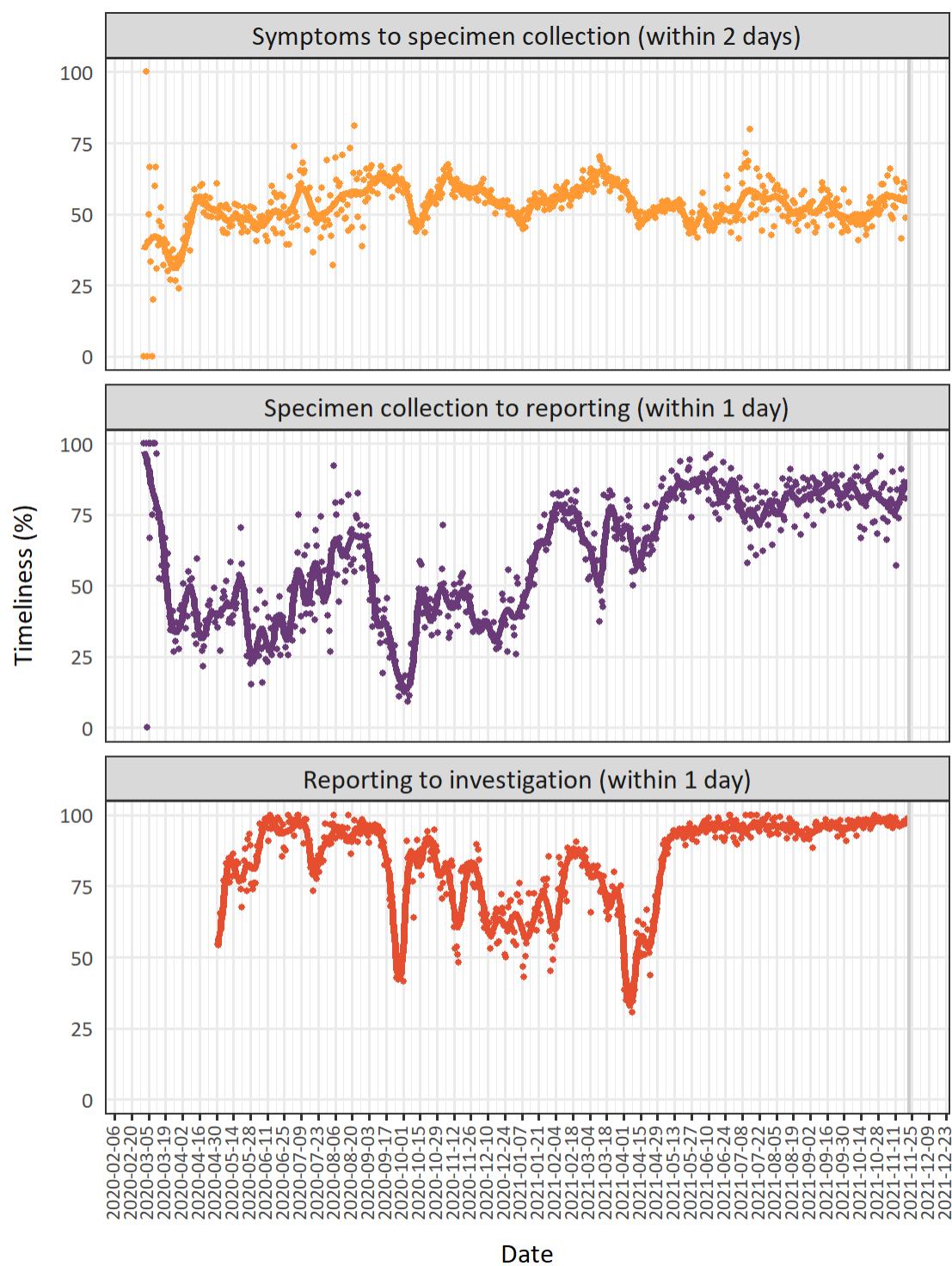
### Likely Acquisition: GTA



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: GTA

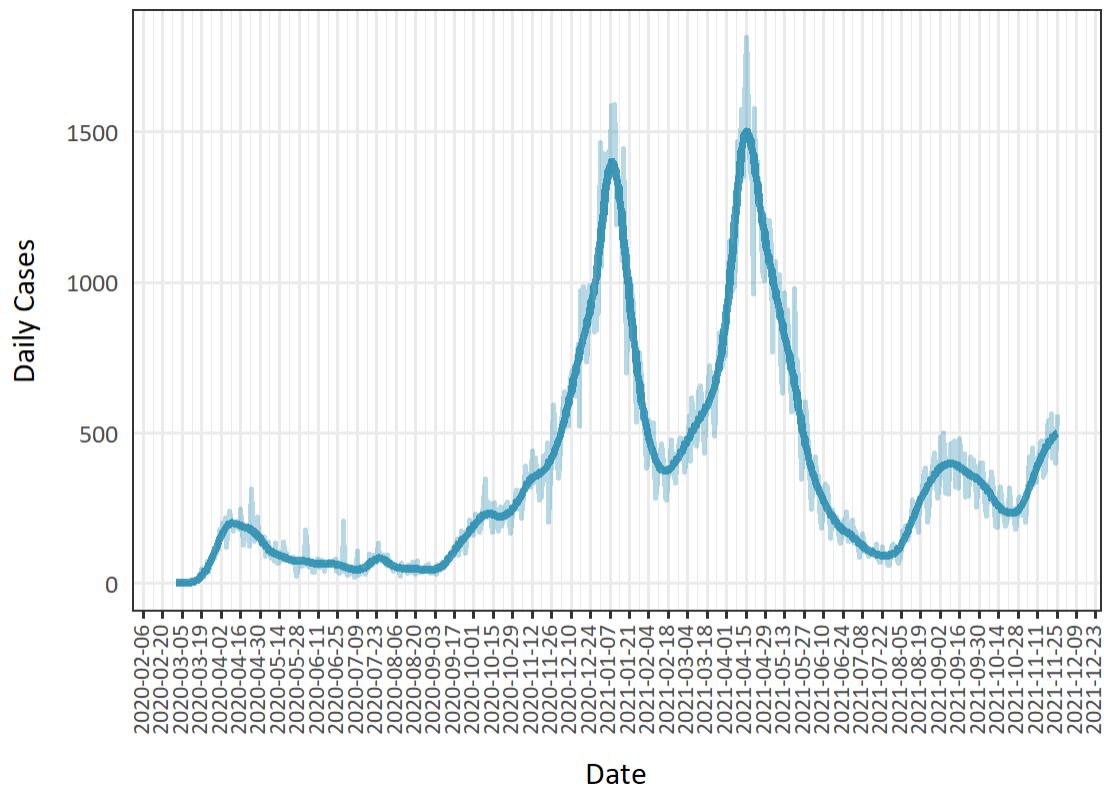


Note: the date used in this graph is the case reported date

Data Source: CCM

## Non-GTA

### Epidemic Curve: Non-GTA

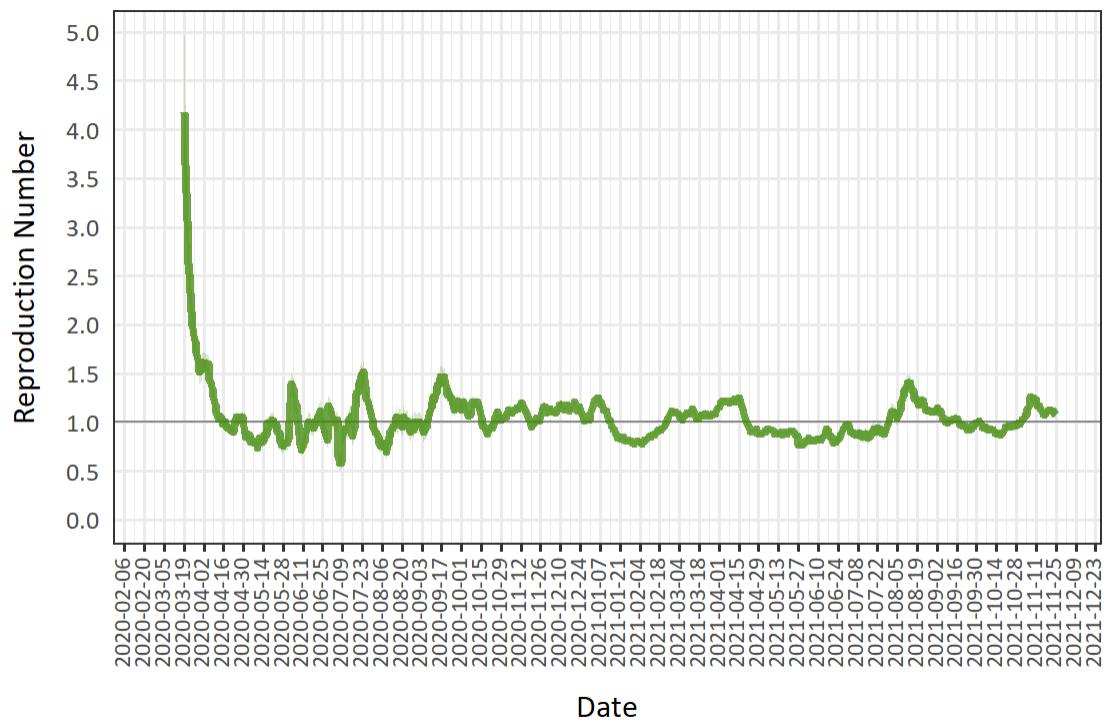


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Non-GTA

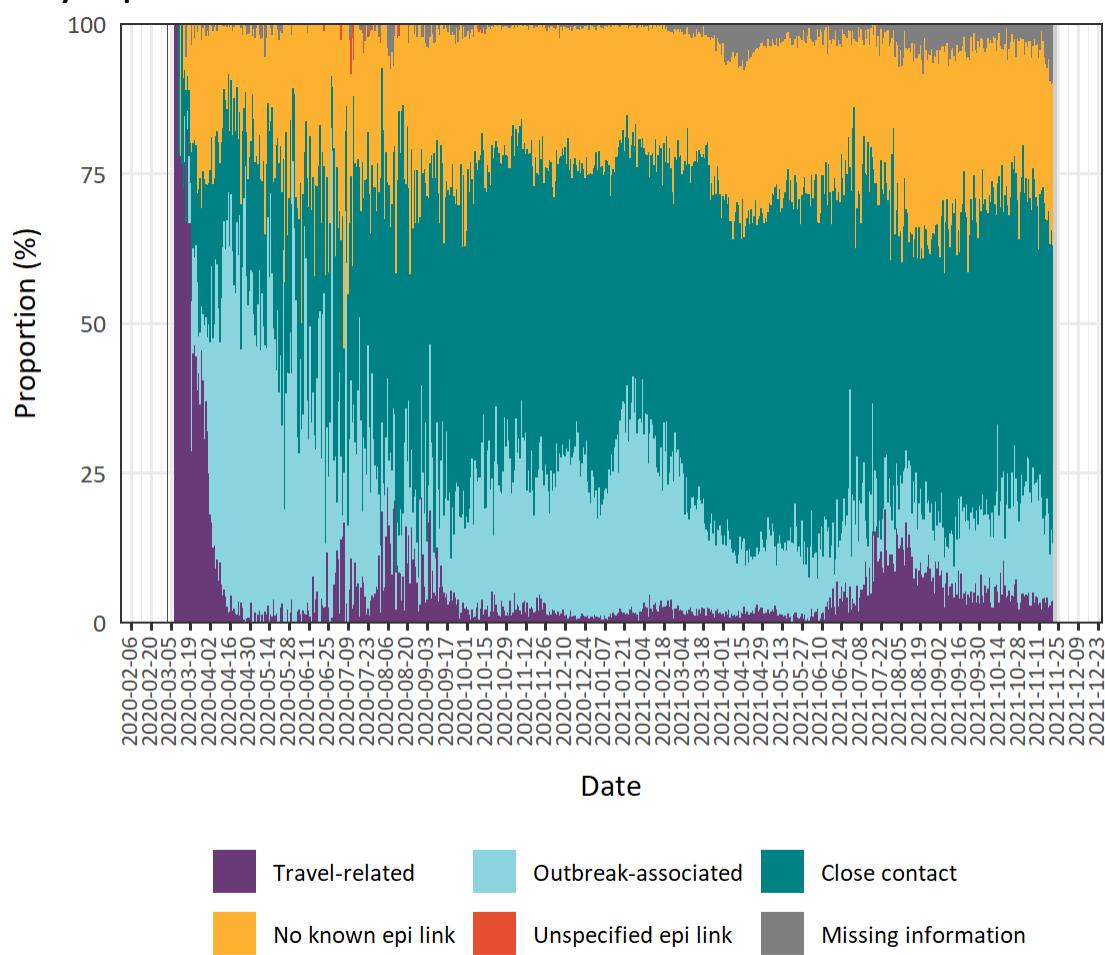
Nov 25 Re = 1.08, 95% CI: 1.04-1.12



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

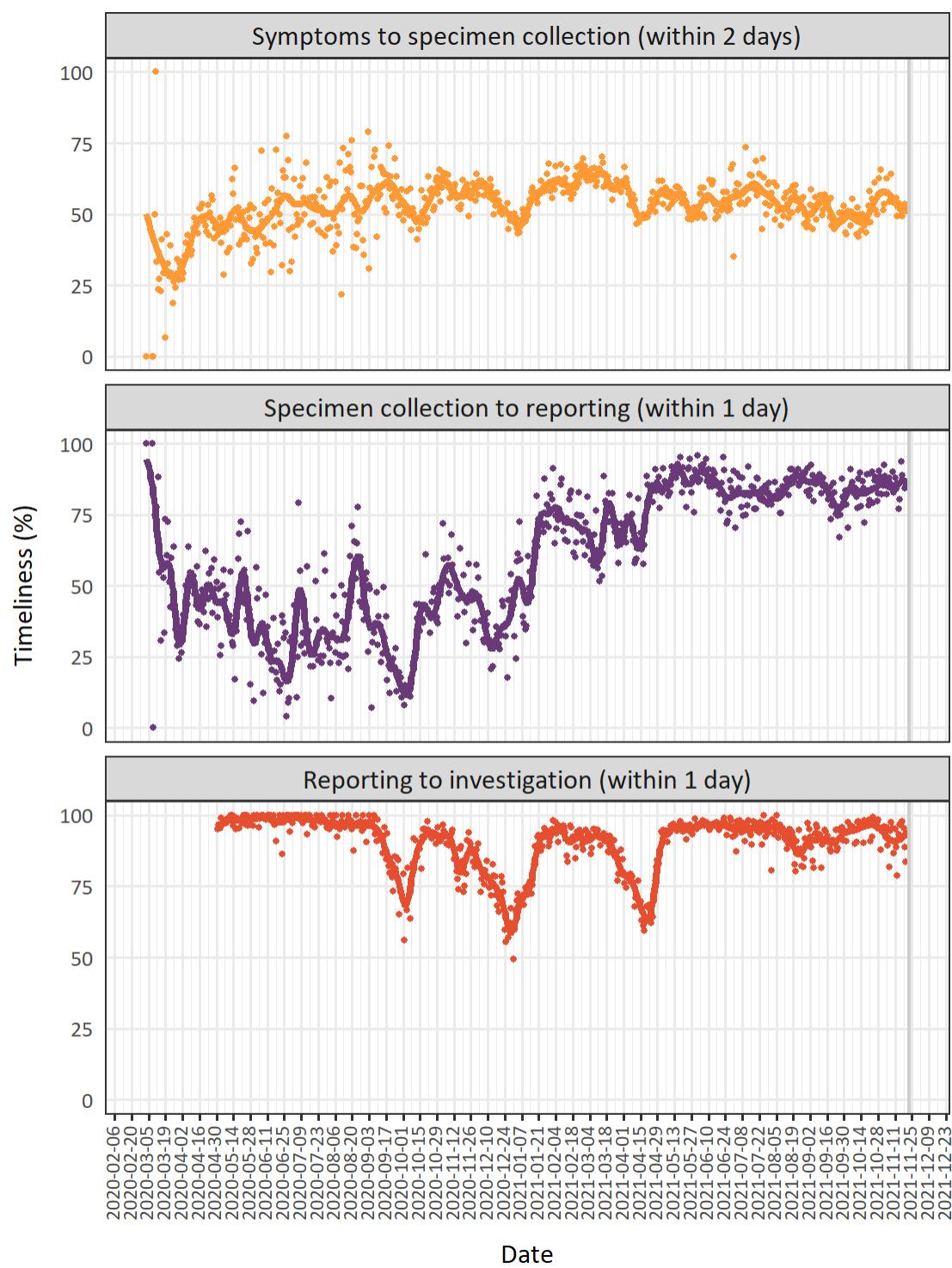
### Likely Acquisition: Non-GTA



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Non-GTA

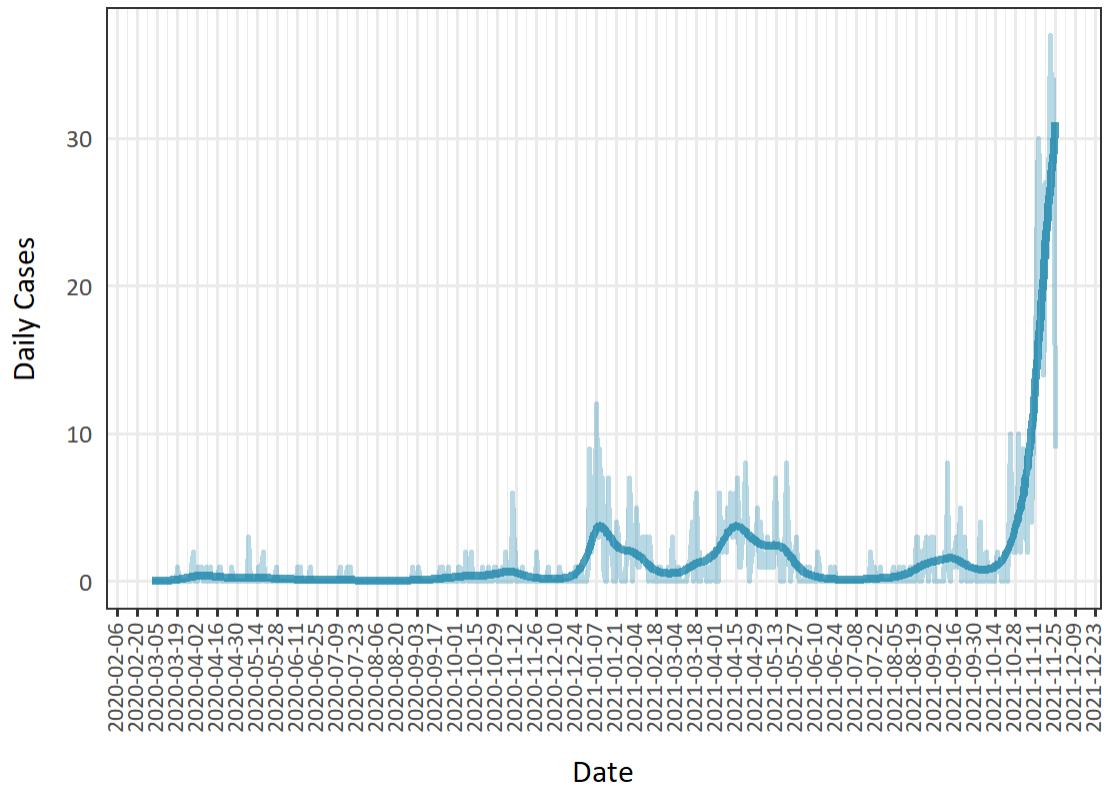


Note: the date used in this graph is the case reported date

Data Source: CCM

## Algoma Public Health

### Epidemic Curve: Algoma Public Health

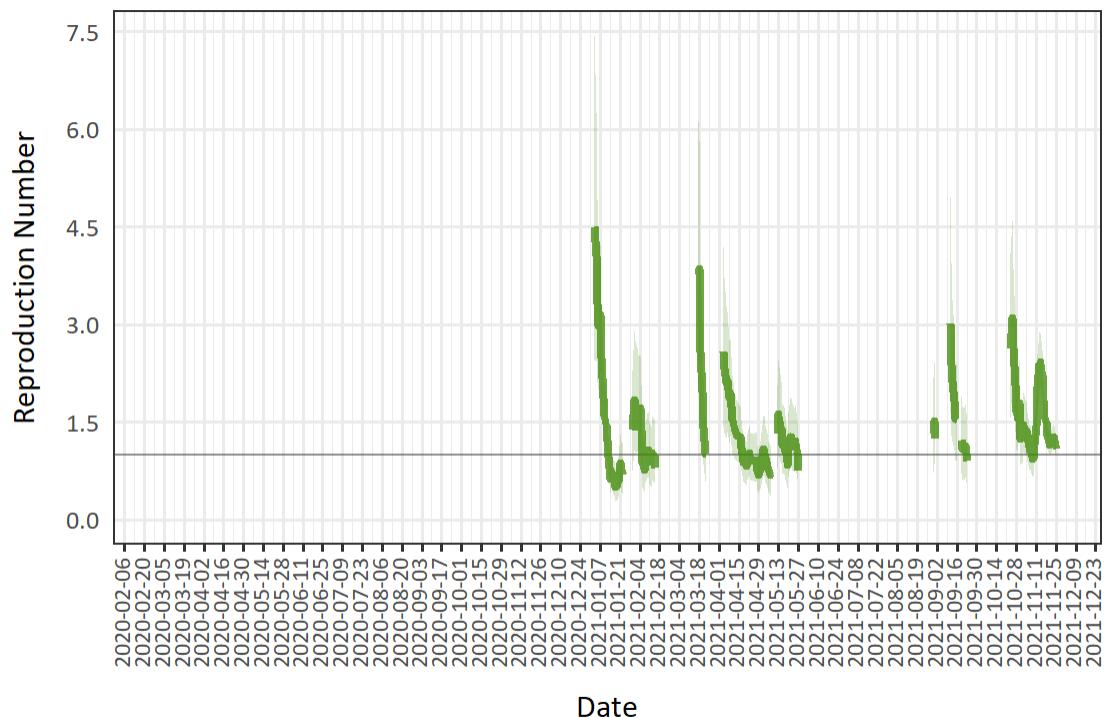


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Algoma Public Health

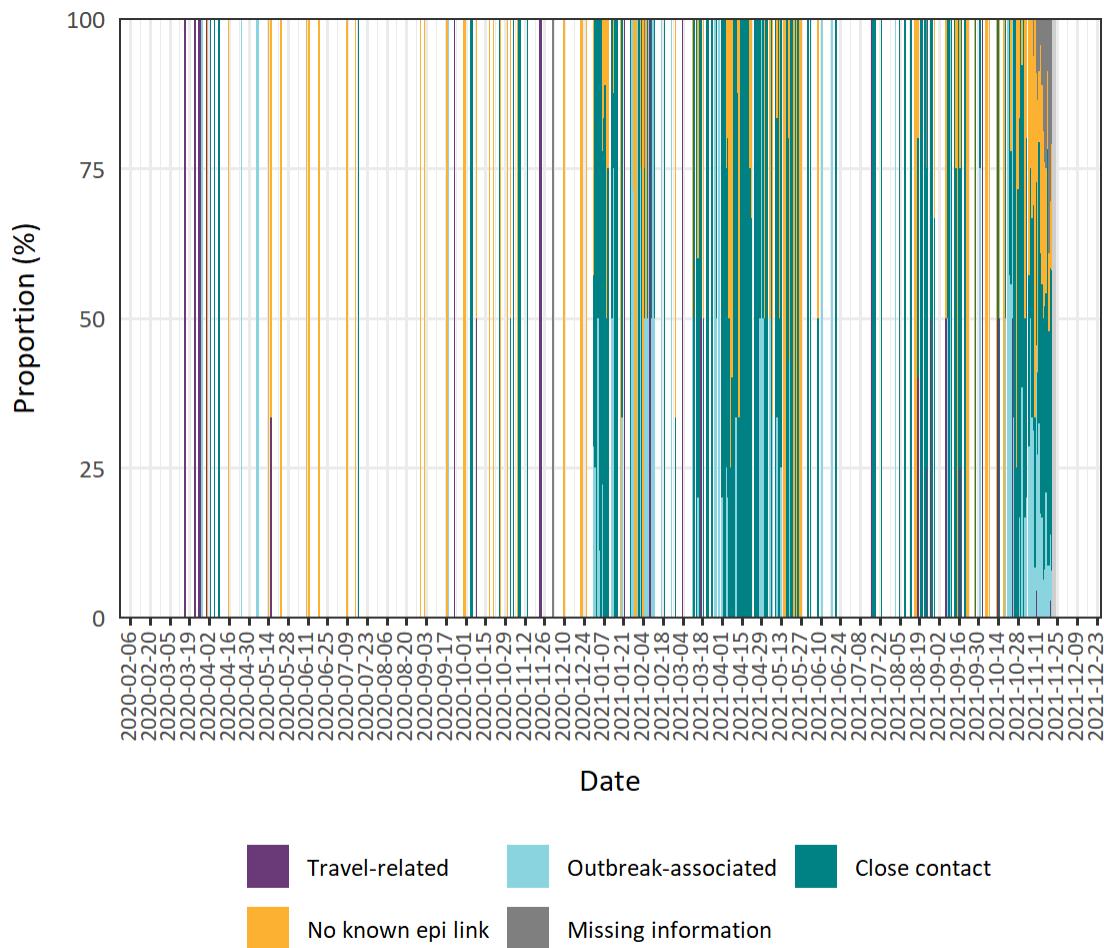
Nov 25 Re = 1.09, 95% CI: 0.94-1.26



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

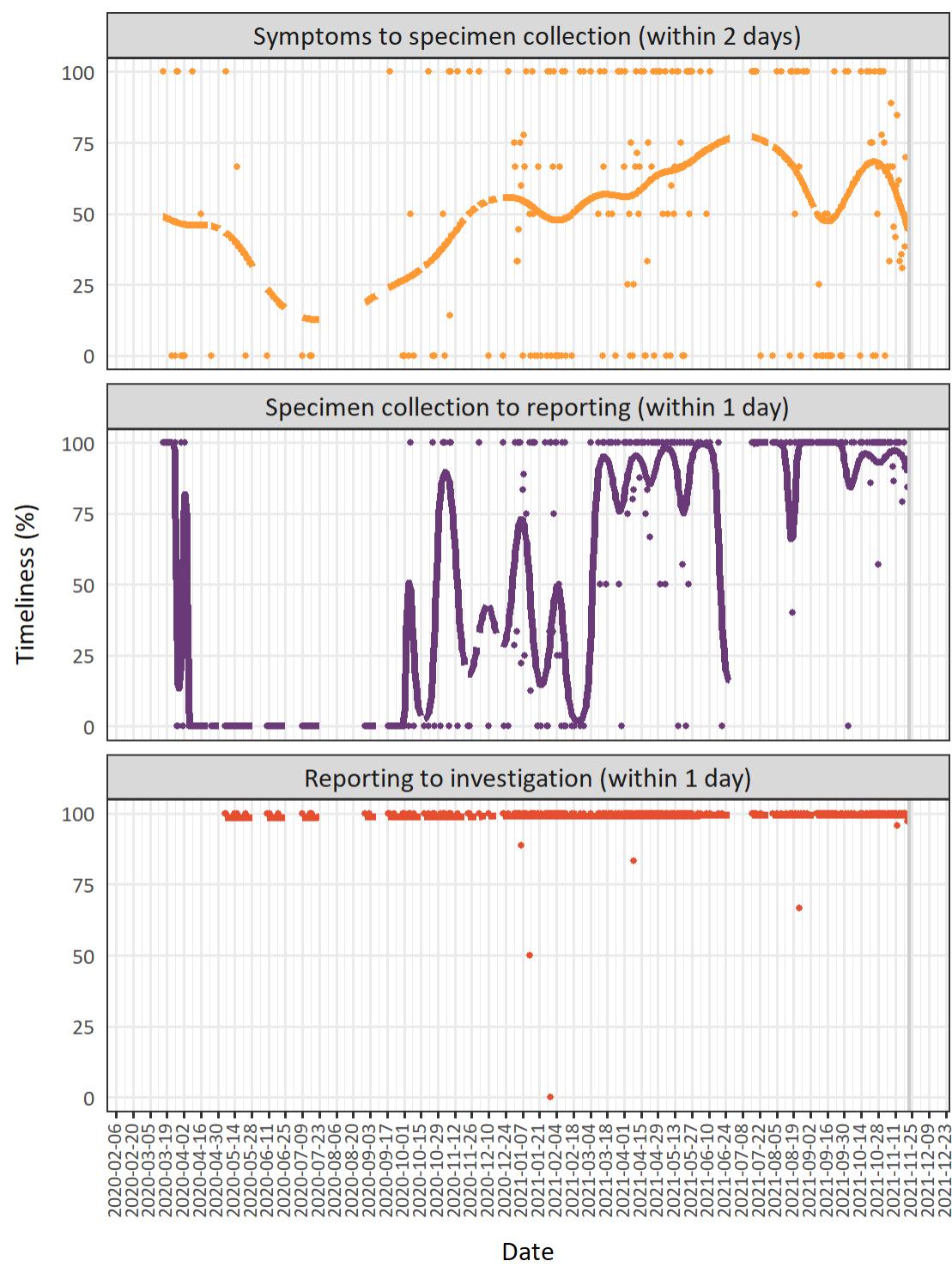
## Likely Acquisition: Algoma Public Health



Note: the date used in this graph is the case reported date

Data Source: CCM

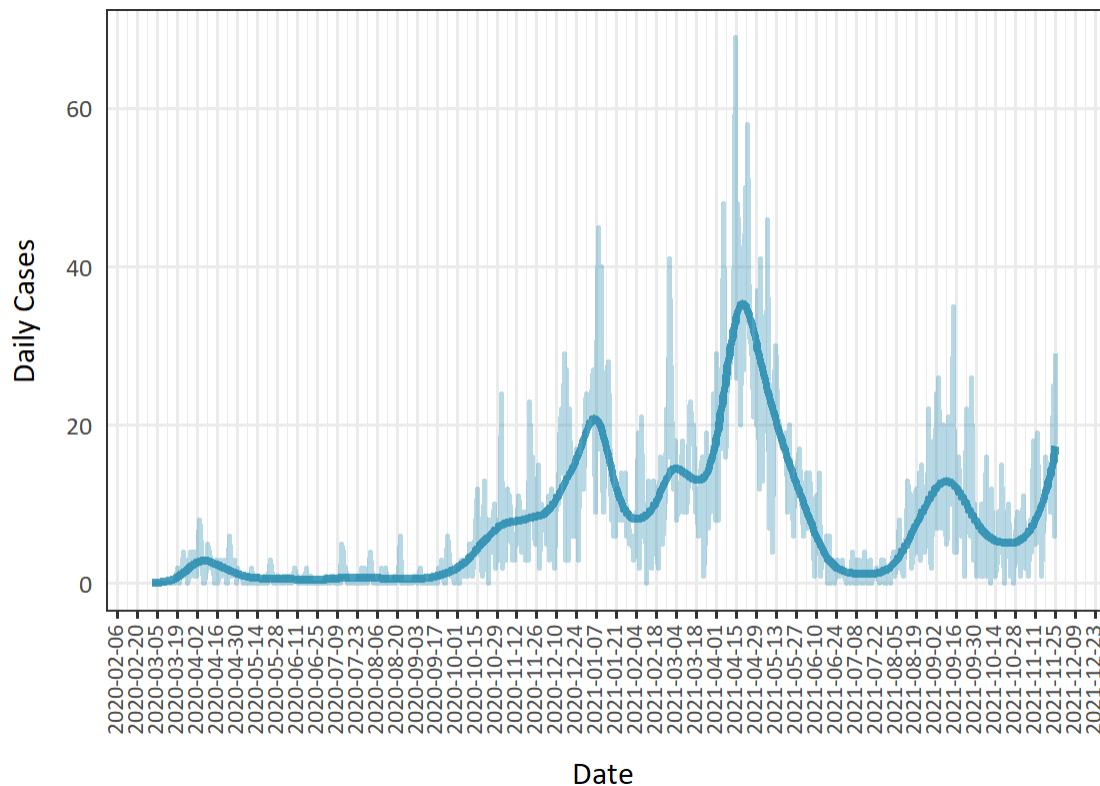
## Timeliness: Algoma Public Health



Data Source: CCM

## Brant County Health Unit

### Epidemic Curve: Brant County Health Unit

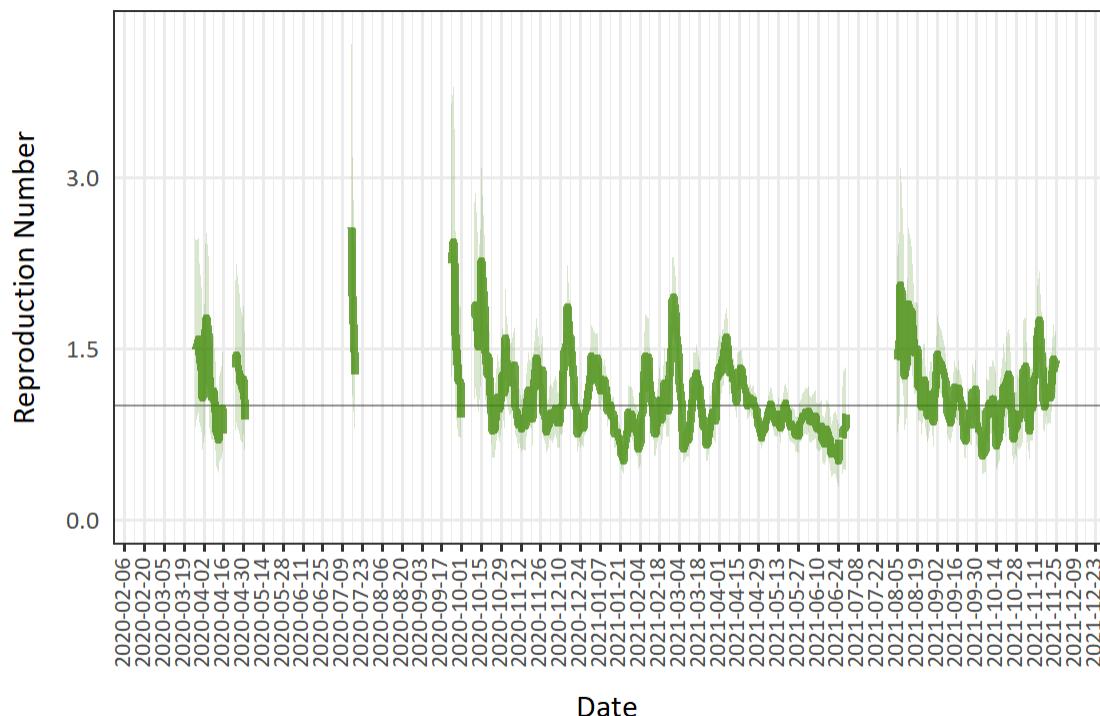


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Brant County Health Unit

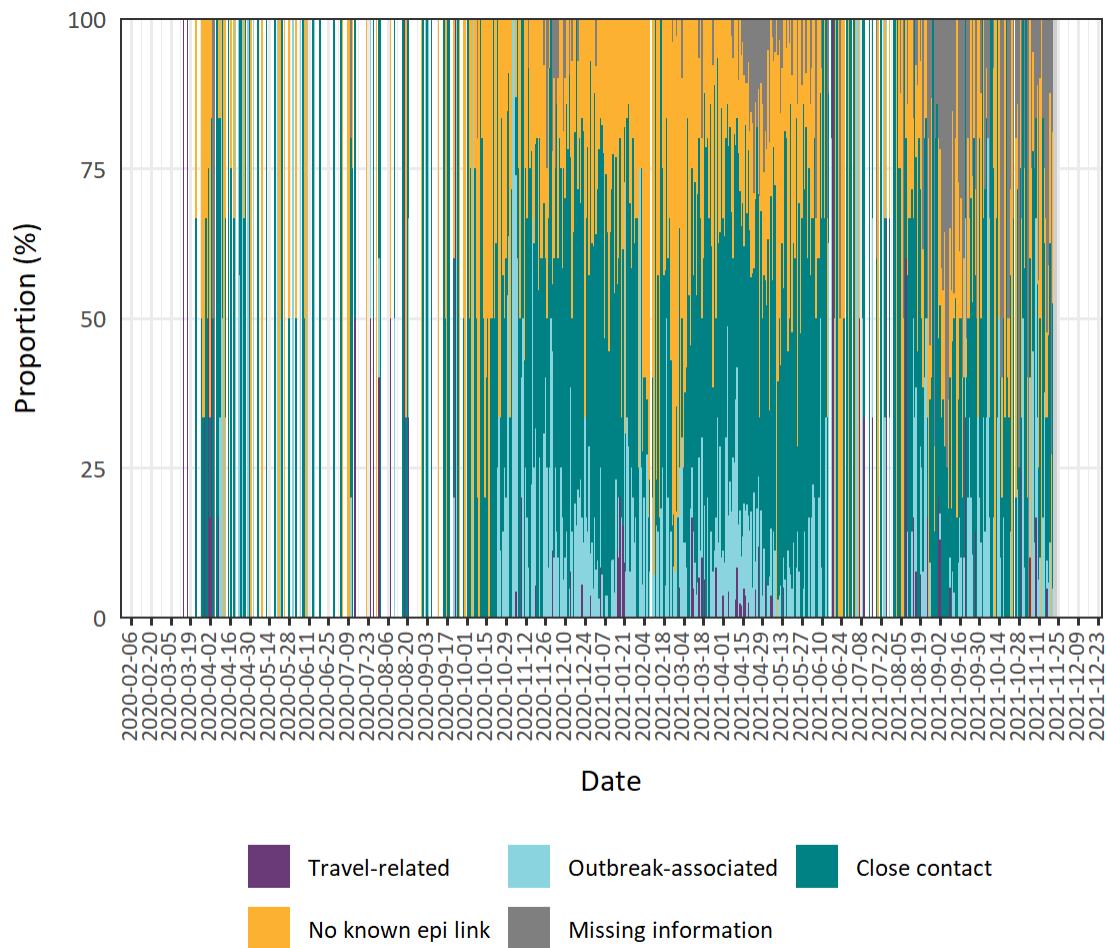
Nov 25 Re = 1.41, 95% CI: 1.16-1.69



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

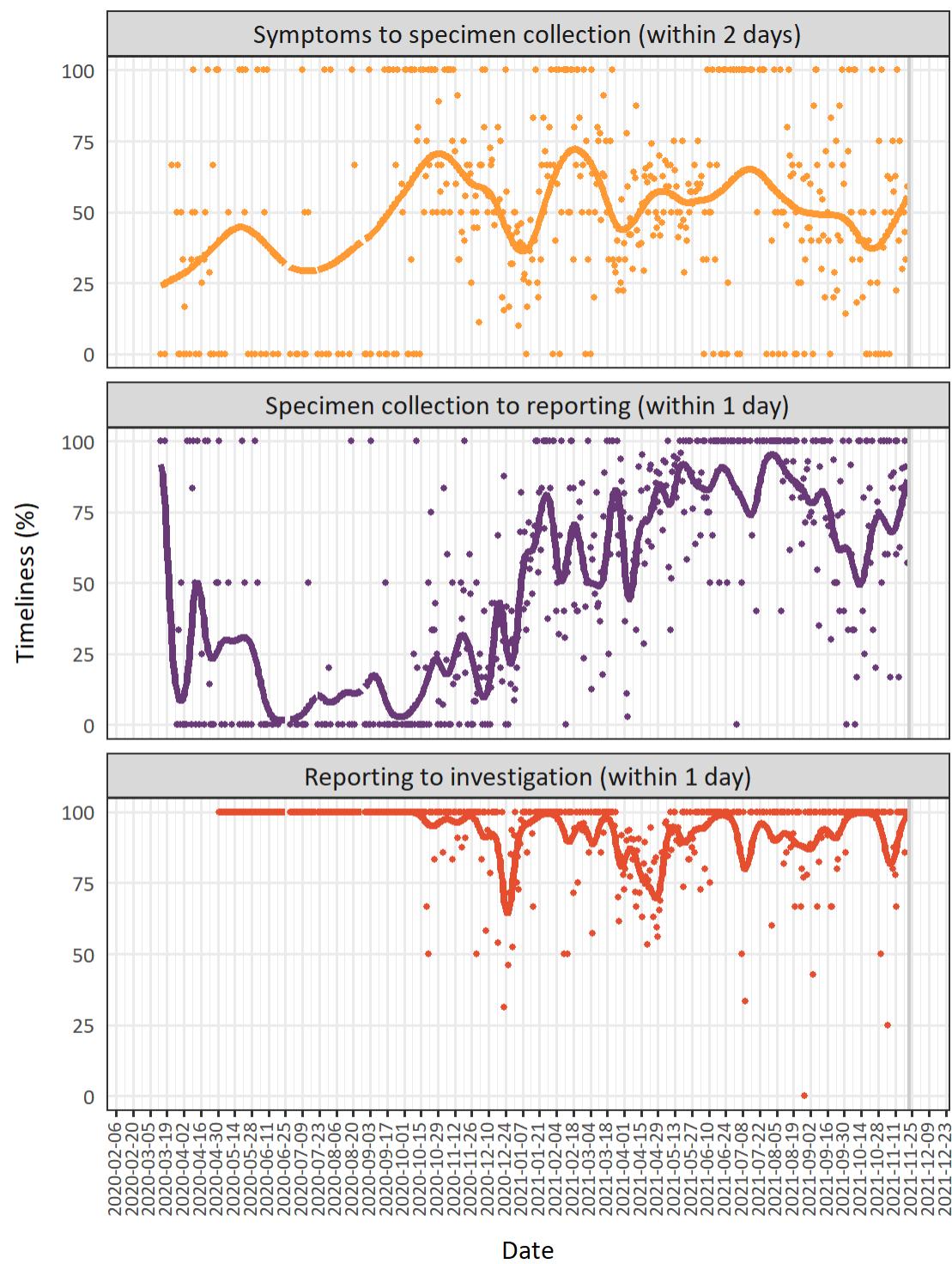
## Likely Acquisition: Brant County Health Unit



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Brant County Health Unit

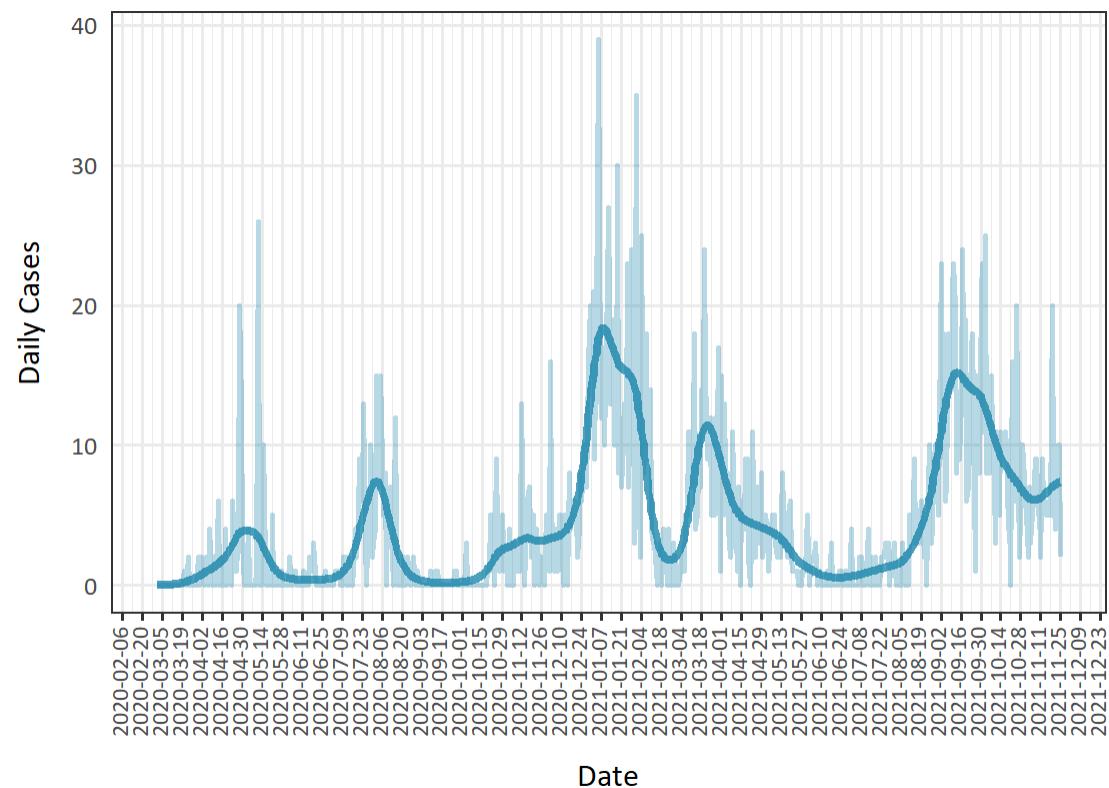


Note: the date used in this graph is the case reported date

Data Source: CCM

## Chatham-Kent Public Health

### Epidemic Curve: Chatham-Kent Public Health

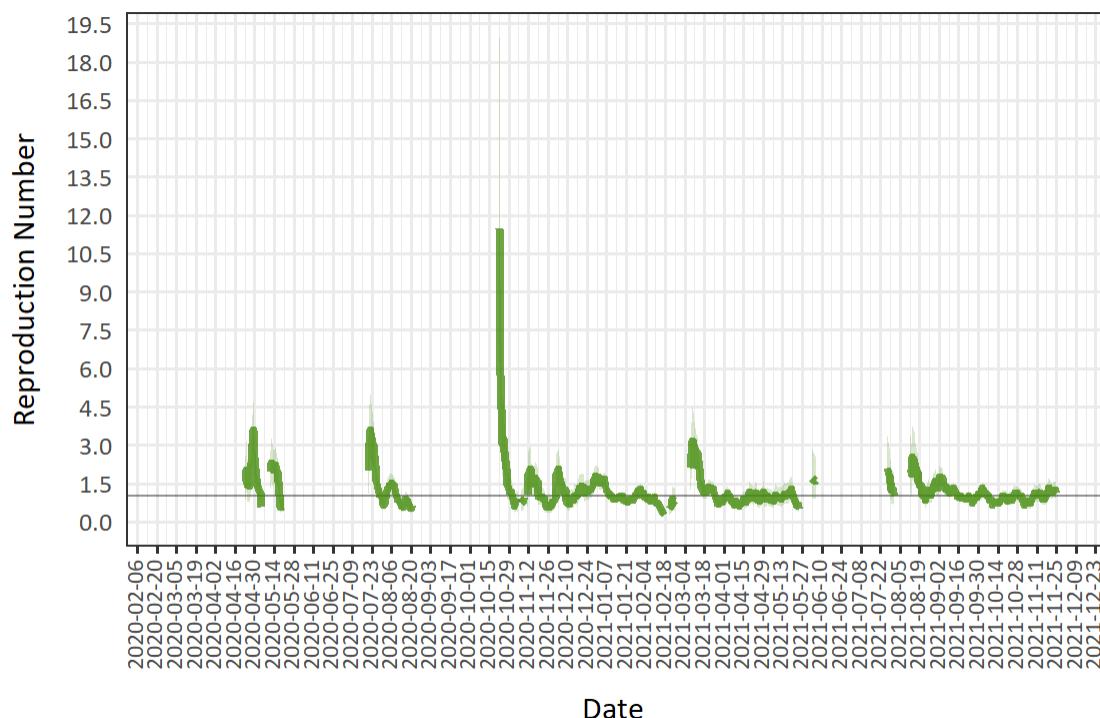


Note: the date used in this graph is the public reporting date

Data Source: CCM

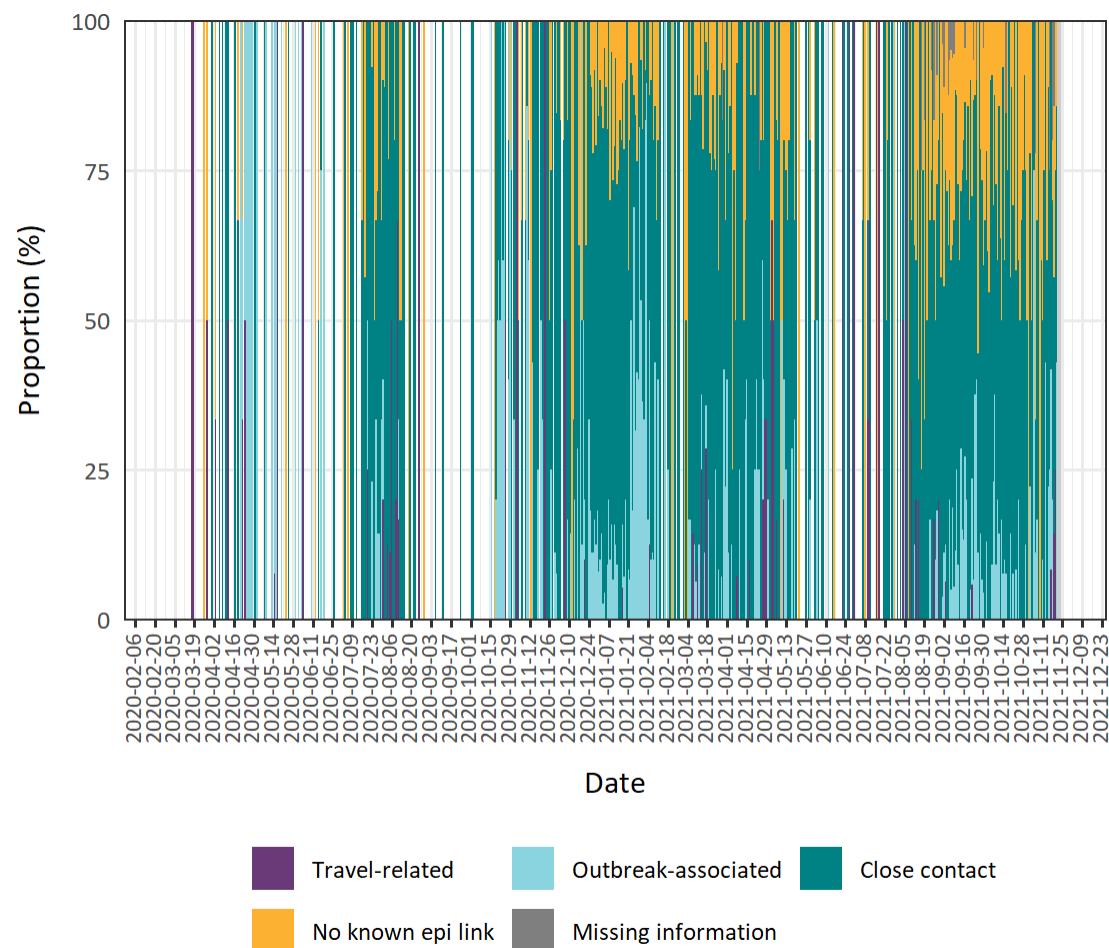
## Reproduction Number: Chatham-Kent Public Health

Nov 25 Re = 1.14, 95% CI: 0.88-1.46



Data Source: CCM

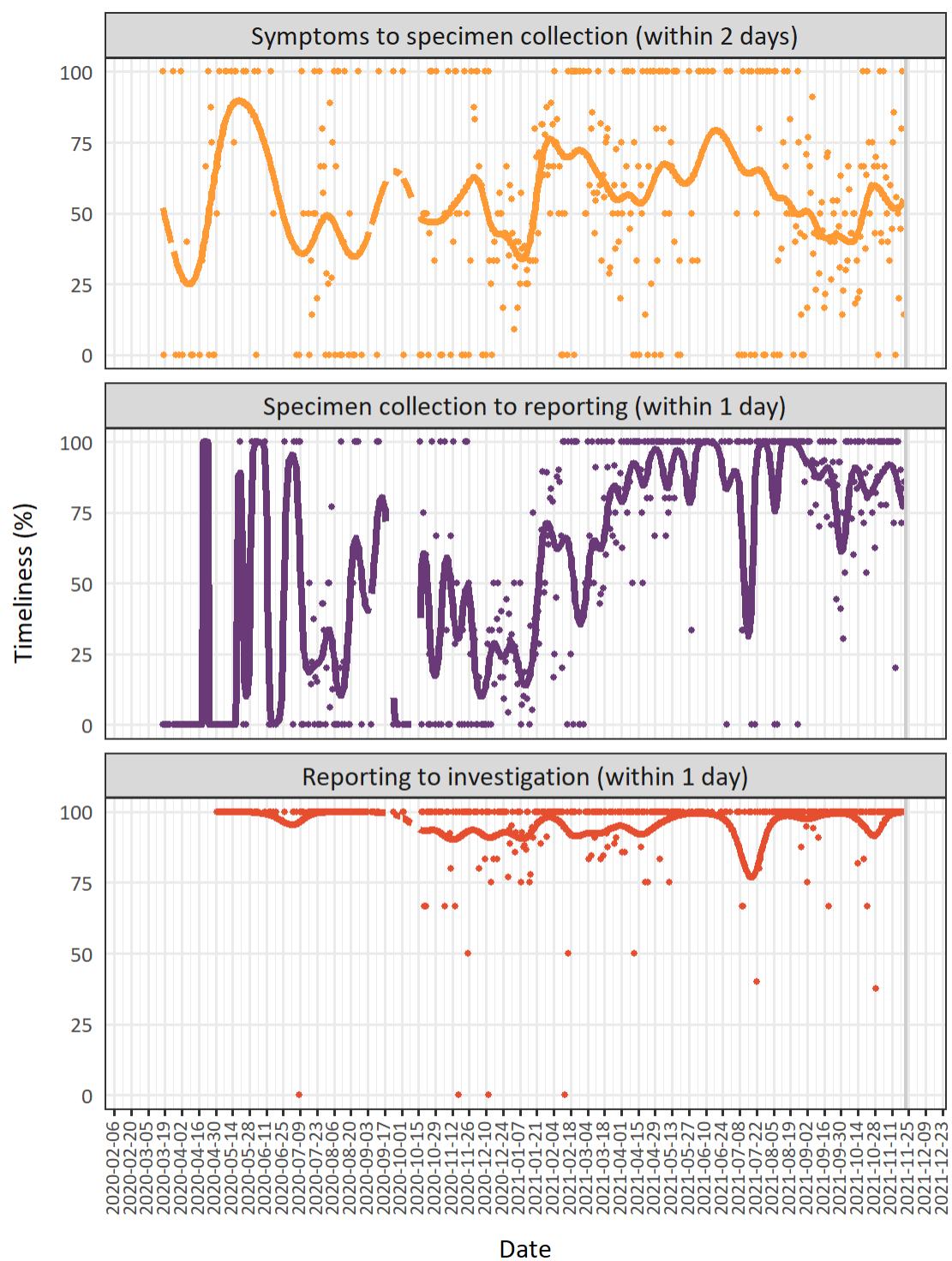
## Likely Acquisition: Chatham-Kent Public Health



Note: the date used in this graph is the case reported date

Data Source: CCM

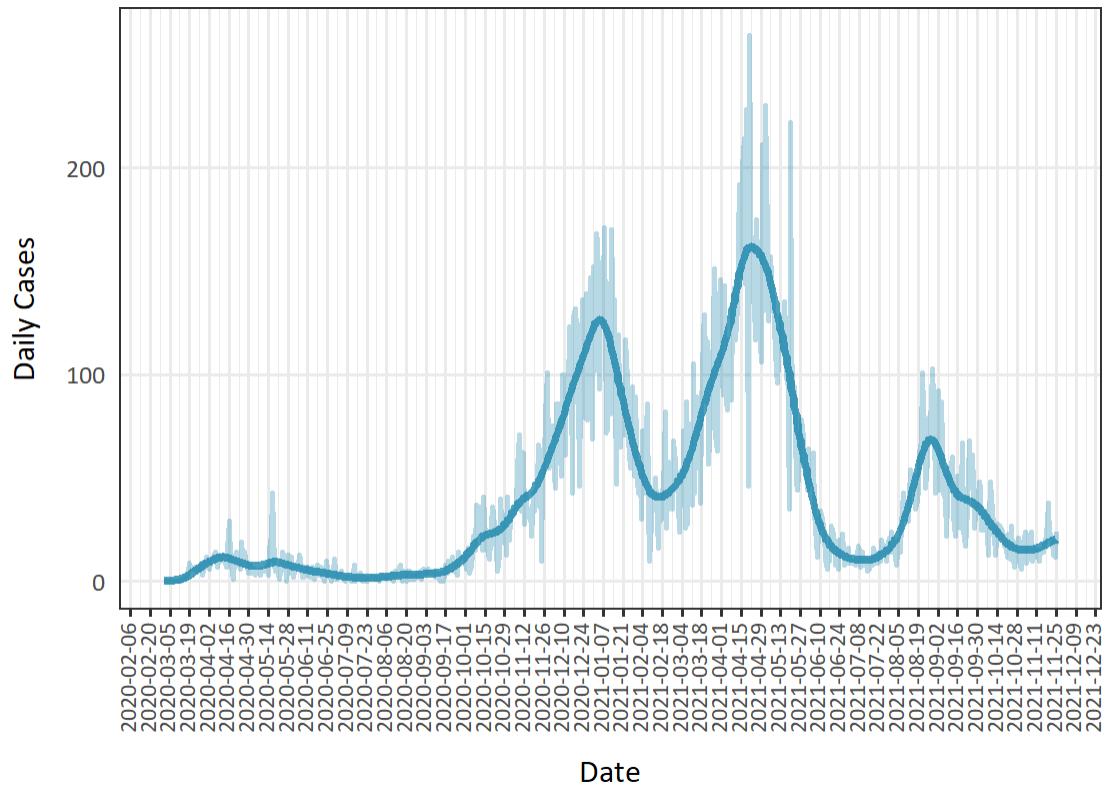
## Timeliness: Chatham-Kent Public Health



Data Source: CCM

## City of Hamilton Public Health Services

### Epidemic Curve: City of Hamilton Public Health Services

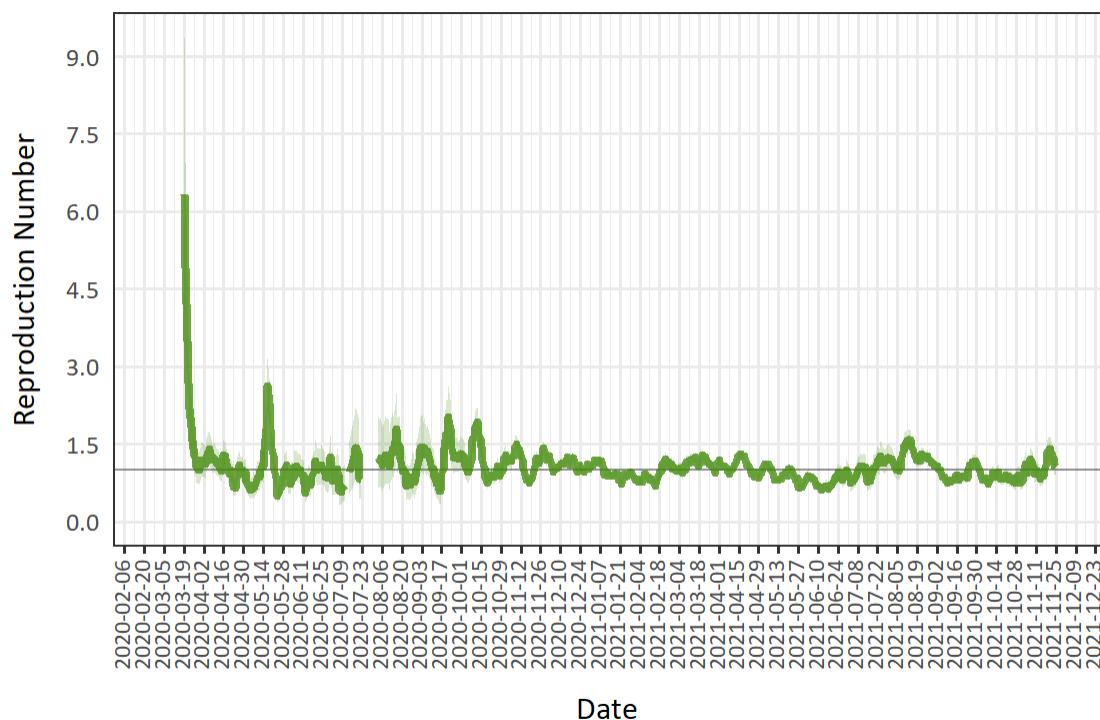


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: City of Hamilton Public Health Services

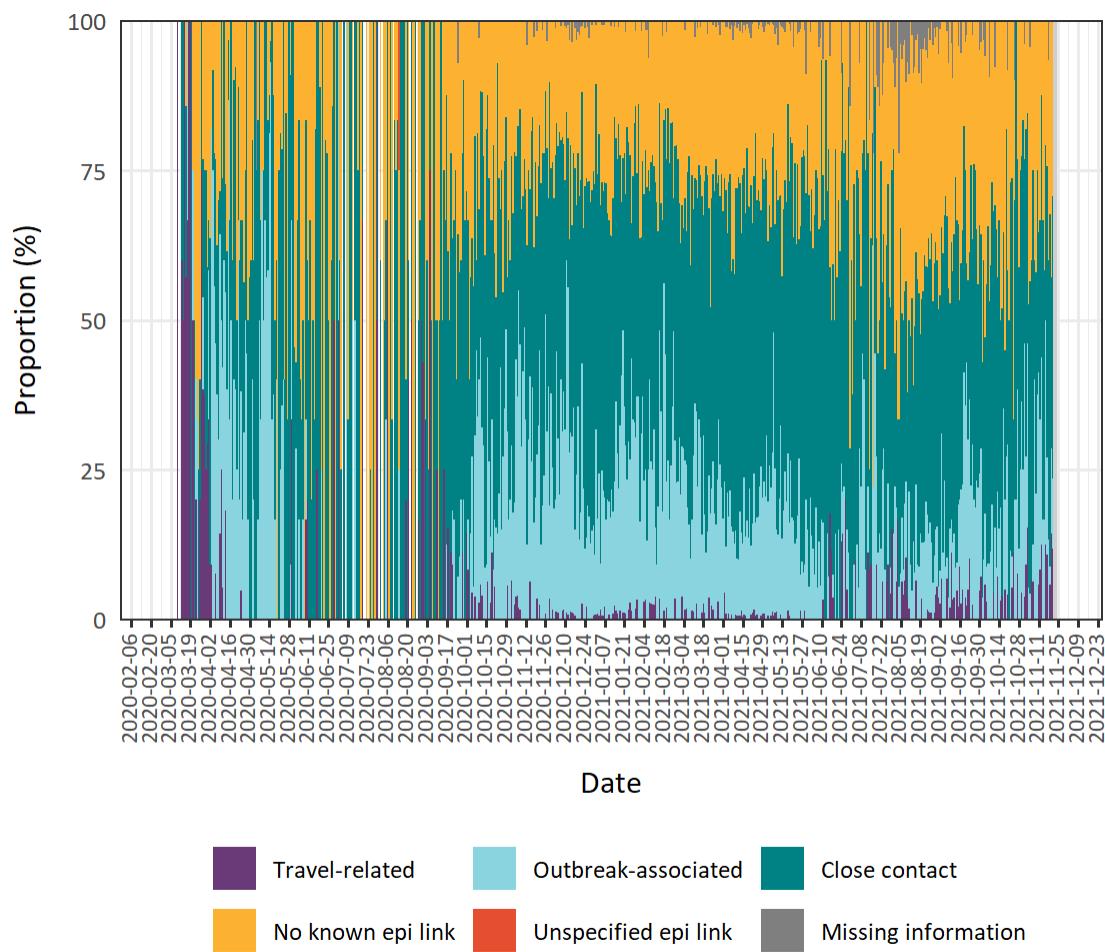
Nov 25 Re = 1.06, 95% CI: 0.90-1.24



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

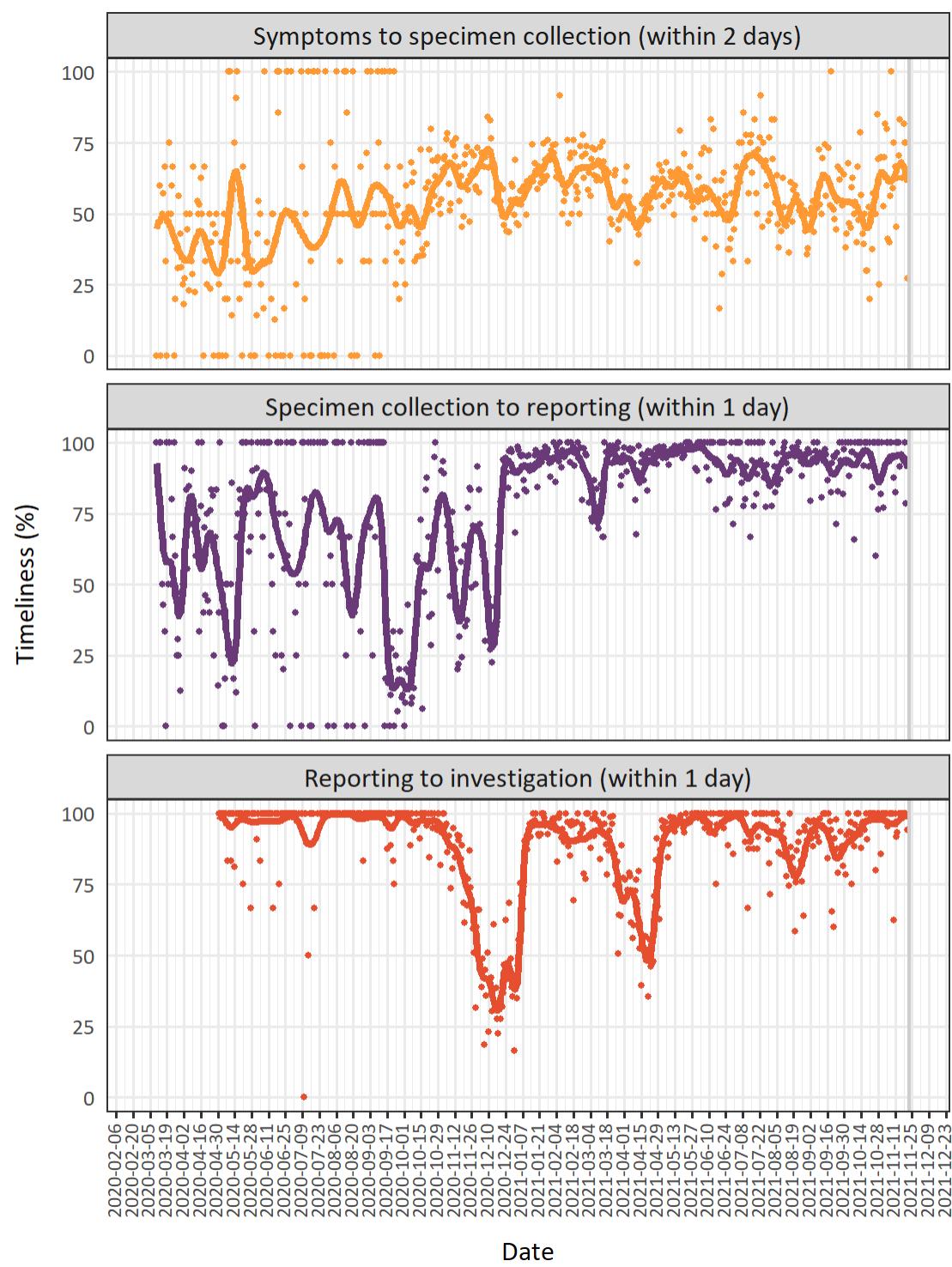
Data Source: CCM

## Likely Acquisition: City of Hamilton Public Health Services



Data Source: CCM

## Timeliness: City of Hamilton Public Health Services

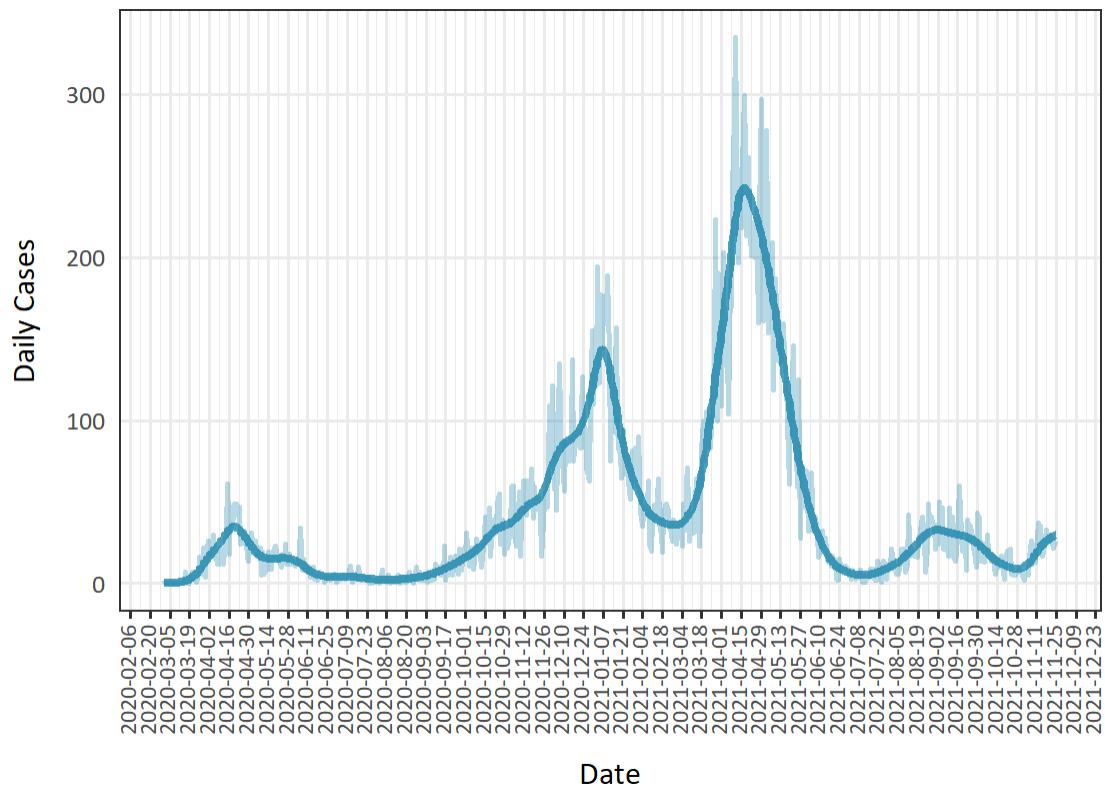


Note: the date used in this graph is the case reported date

Data Source: CCM

## Durham Region Health Department

### Epidemic Curve: Durham Region Health Department

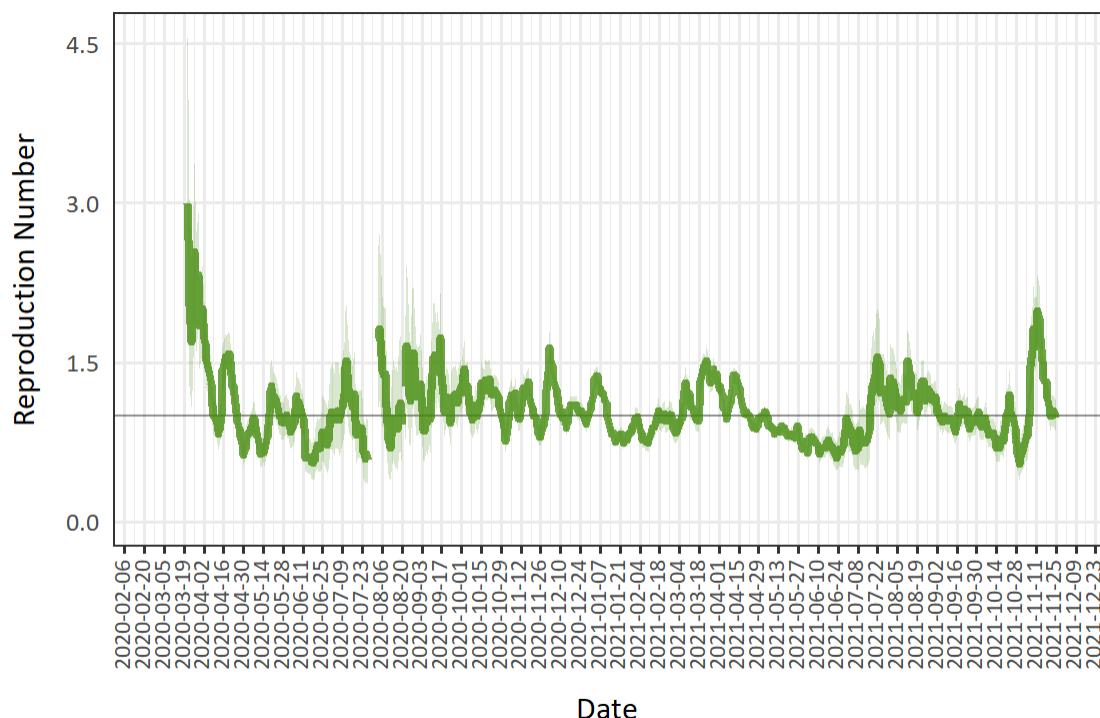


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Durham Region Health Department

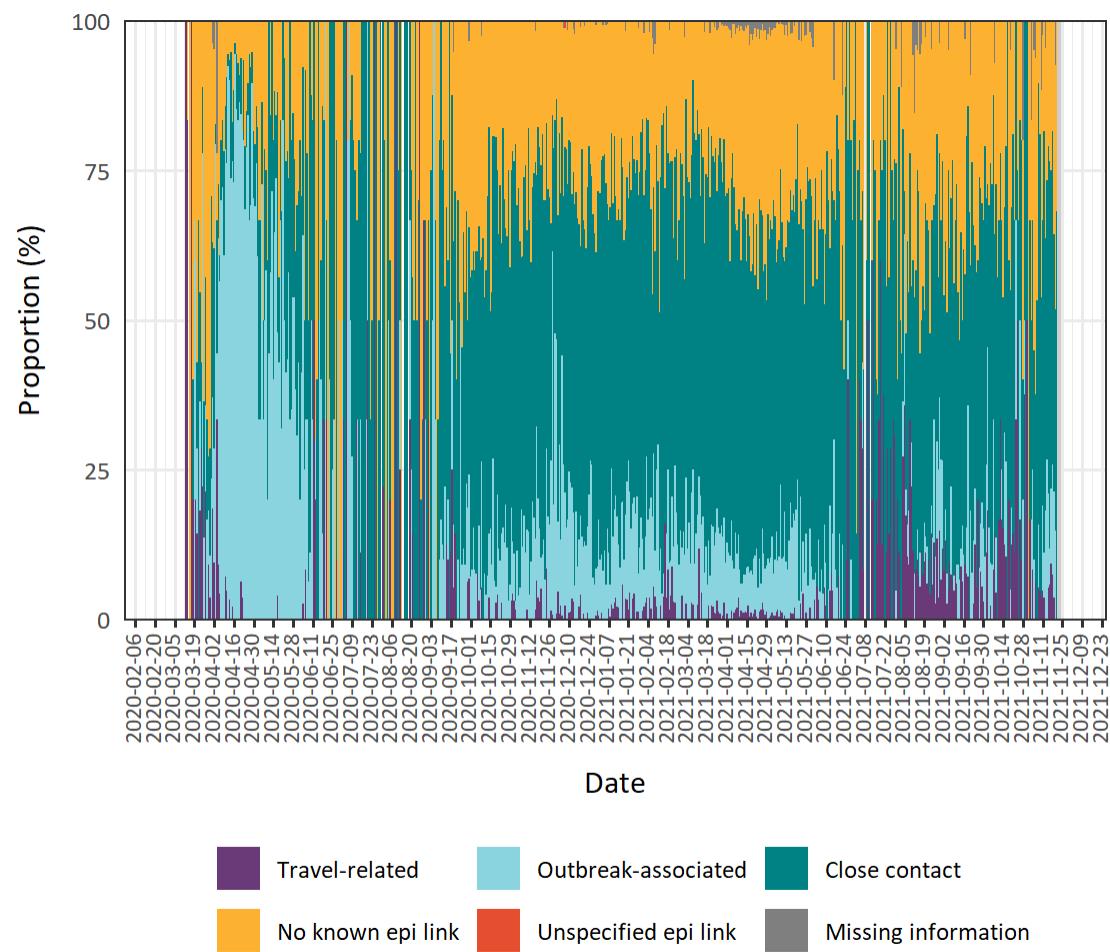
Nov 25 Re = 0.98, 95% CI: 0.85-1.13



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

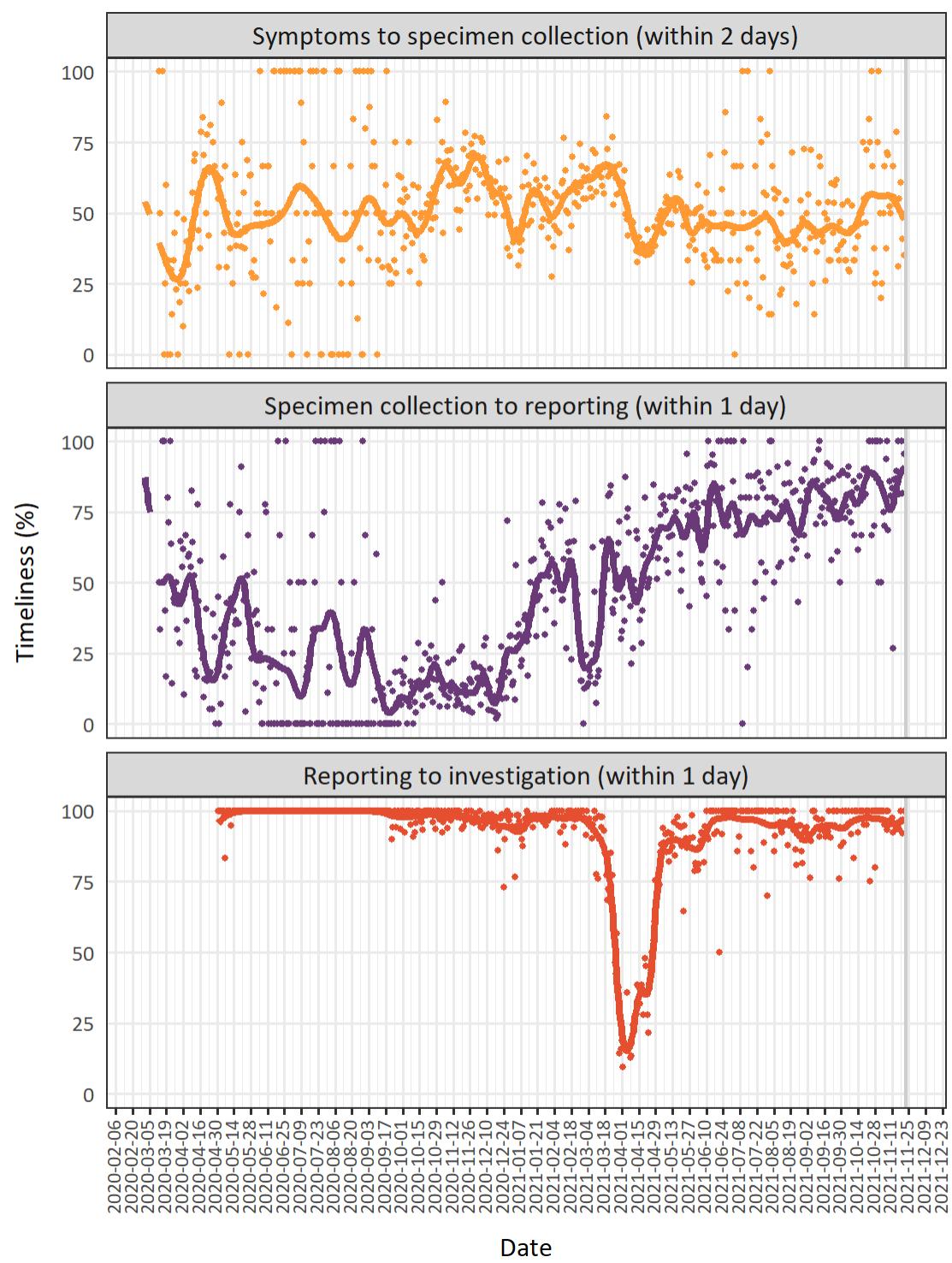
## Likely Acquisition: Durham Region Health Department



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Durham Region Health Department

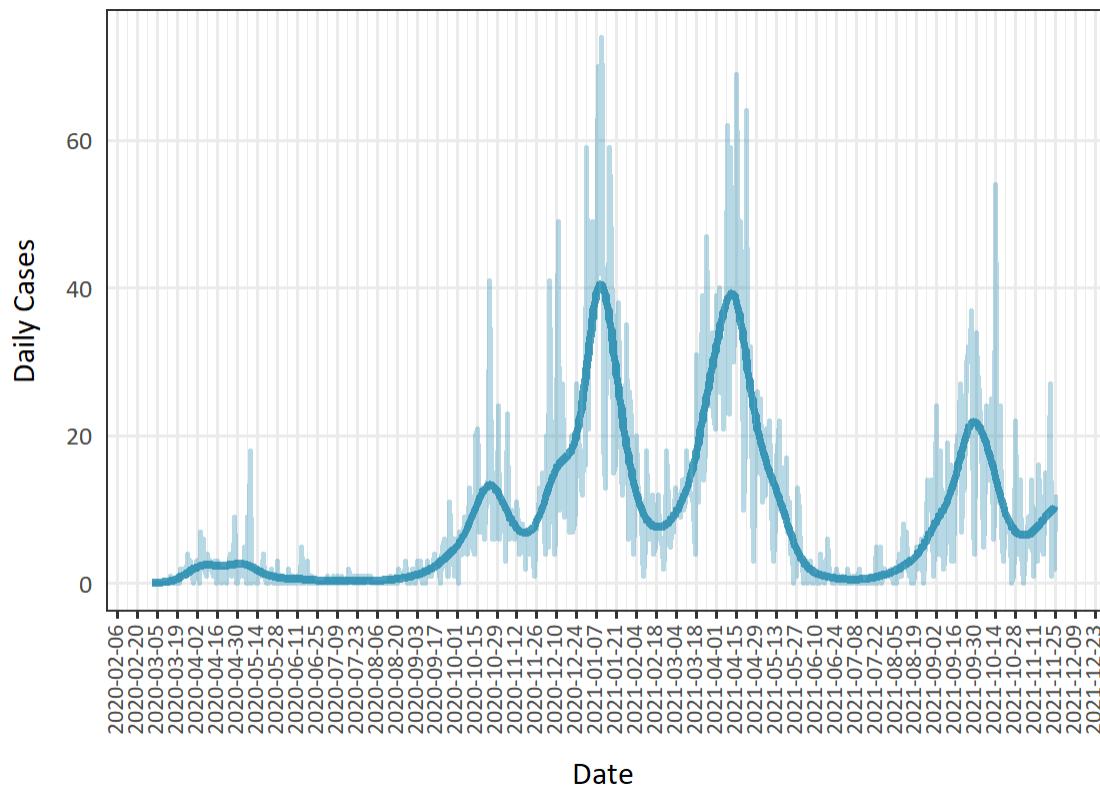


Note: the date used in this graph is the case reported date

Data Source: CCM

## Eastern Ontario Health Unit

### Epidemic Curve: Eastern Ontario Health Unit

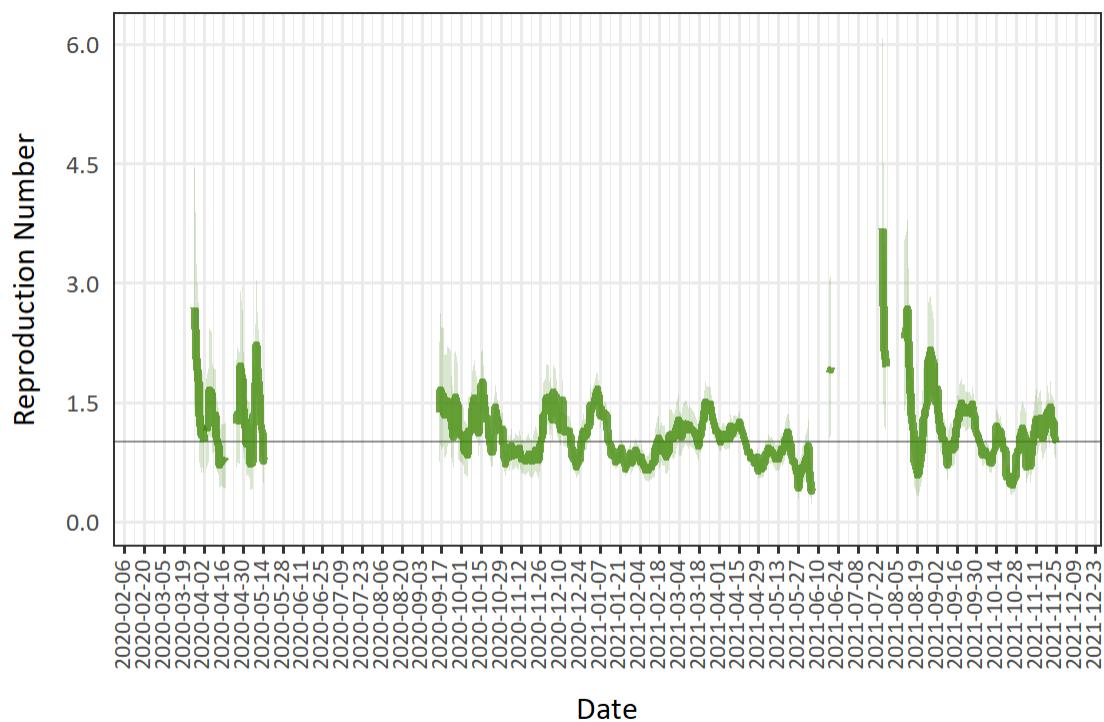


Note: the date used in this graph is the public reporting date

Data Source: CCM

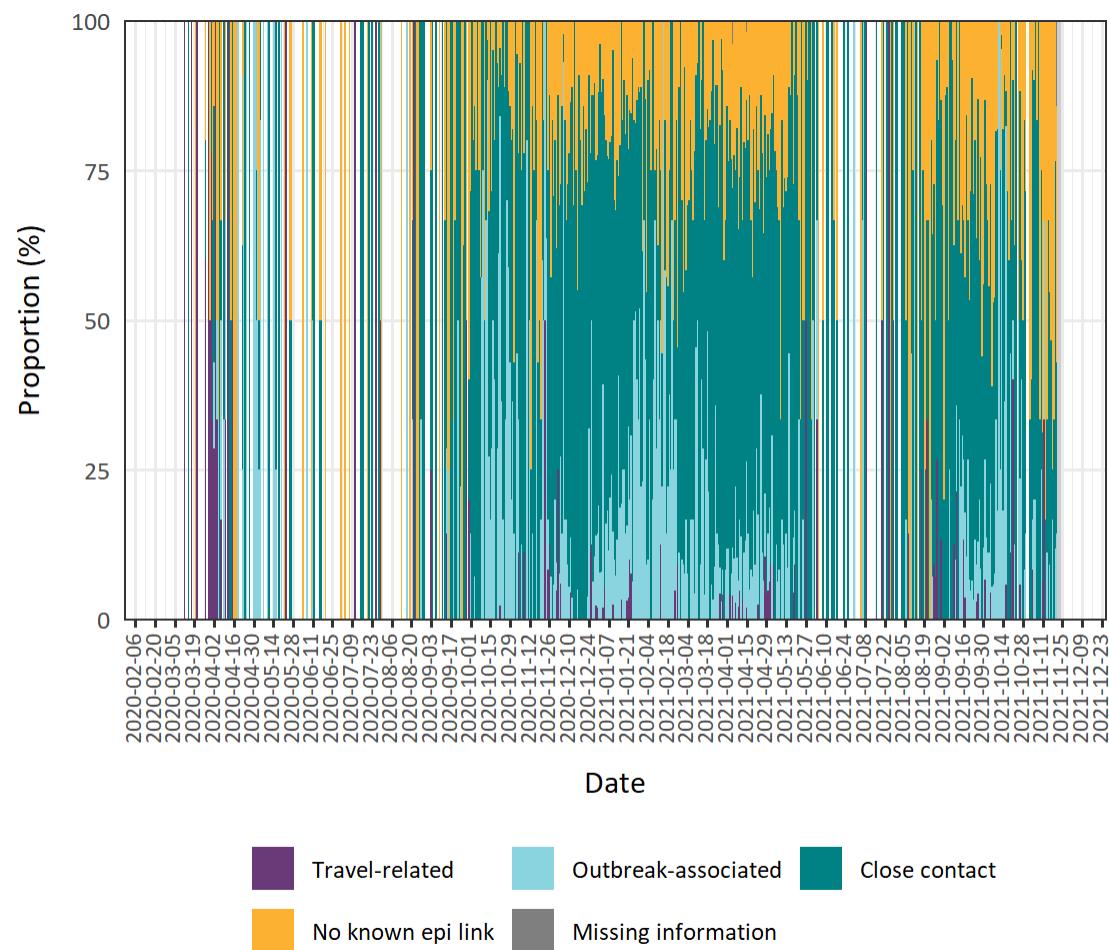
## Reproduction Number: Eastern Ontario Health Unit

Nov 25 Re = 0.99, 95% CI: 0.78-1.24



Data Source: CCM

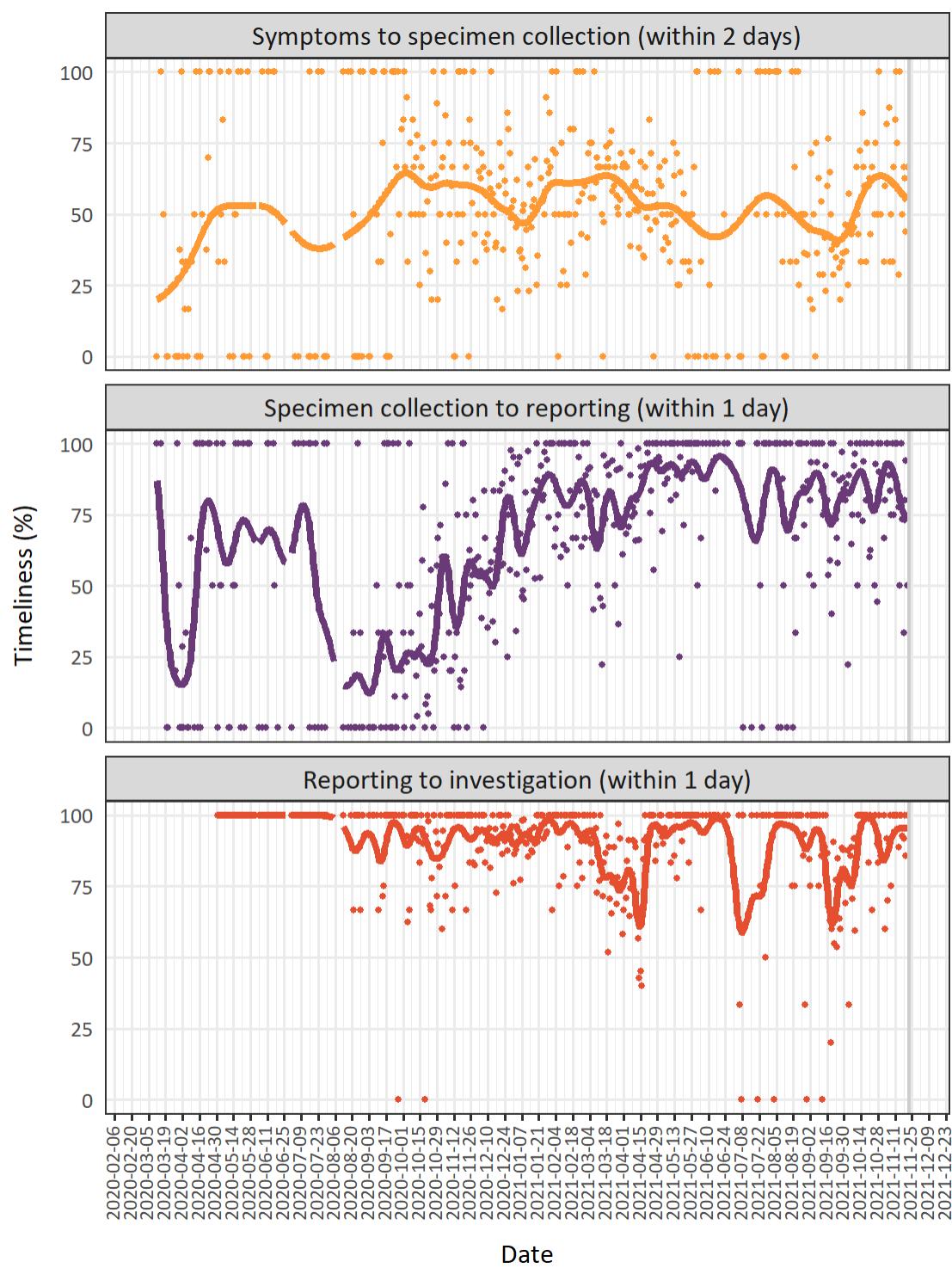
## Likely Acquisition: Eastern Ontario Health Unit



Note: the date used in this graph is the case reported date

Data Source: CCM

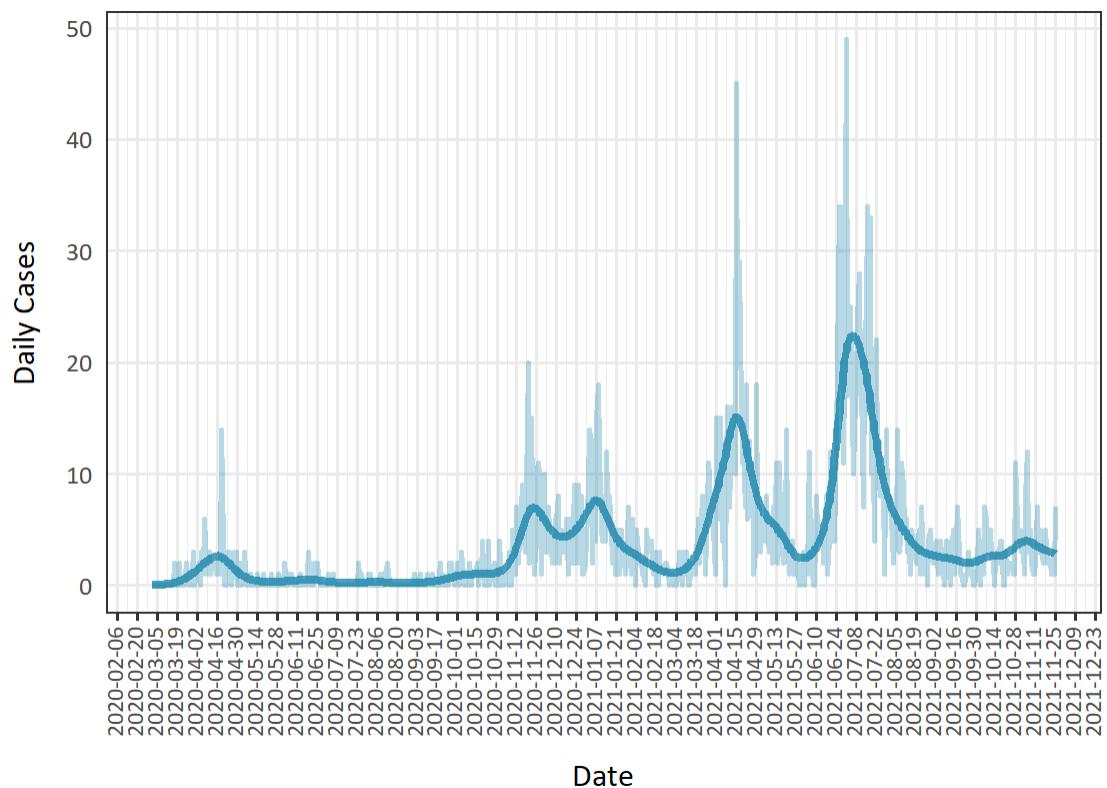
## Timeliness: Eastern Ontario Health Unit



Data Source: CCM

## Grey Bruce Health Unit

### Epidemic Curve: Grey Bruce Health Unit

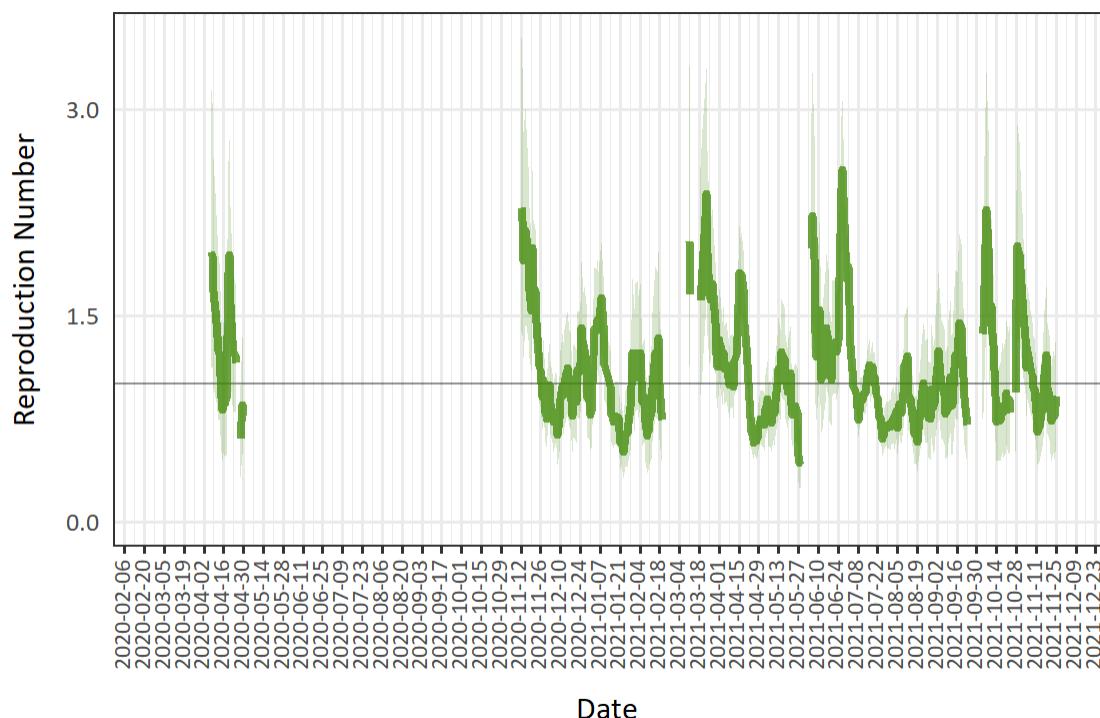


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Grey Bruce Health Unit

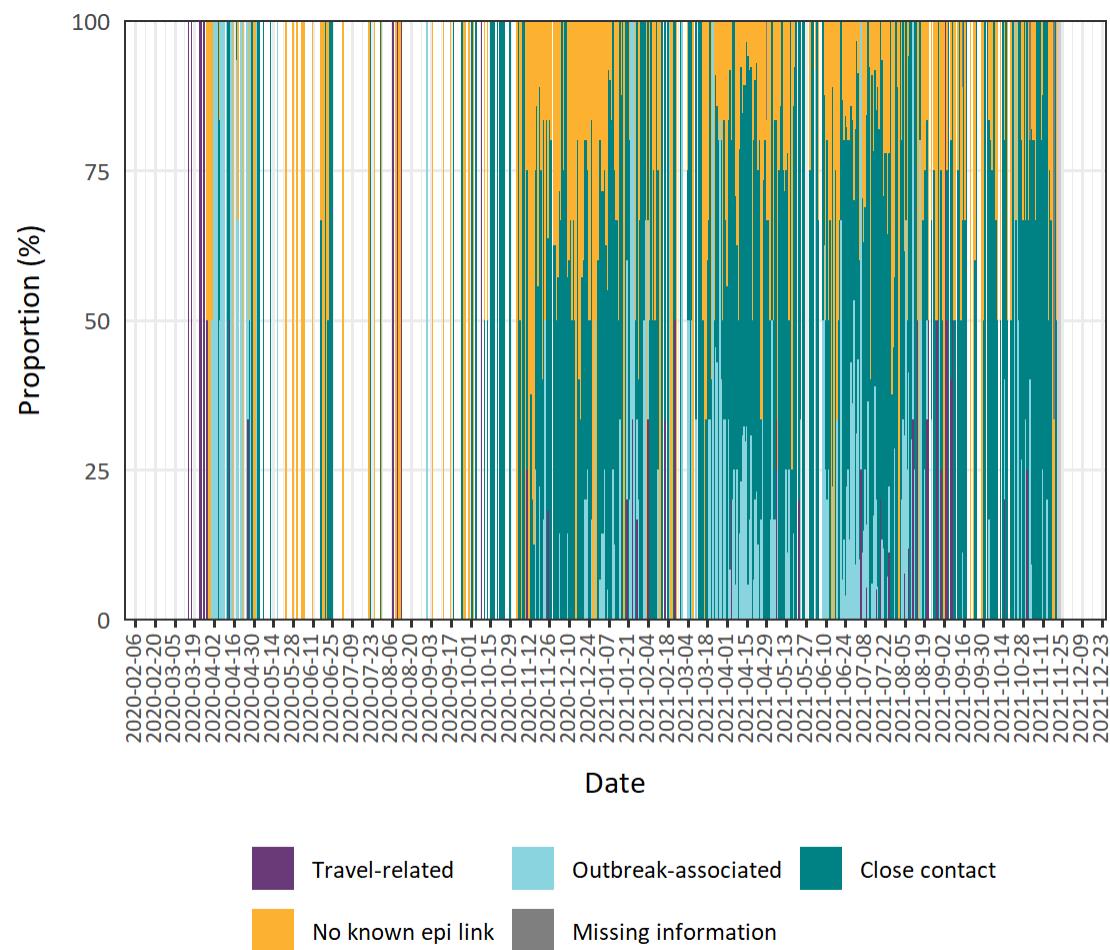
Nov 25 Re = 0.92, 95% CI: 0.56-1.40



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

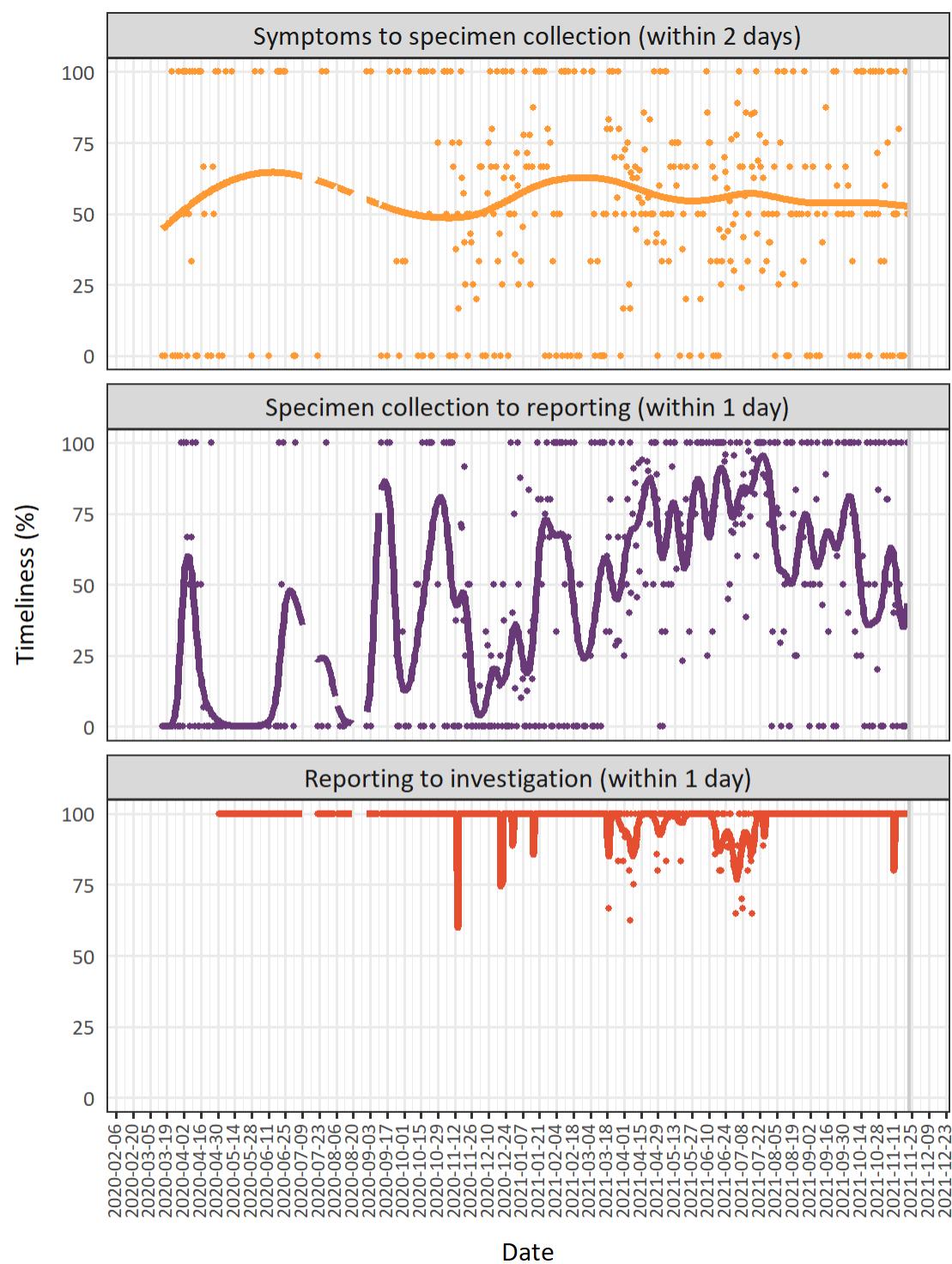
## Likely Acquisition: Grey Bruce Health Unit



Note: the date used in this graph is the case reported date

Data Source: CCM

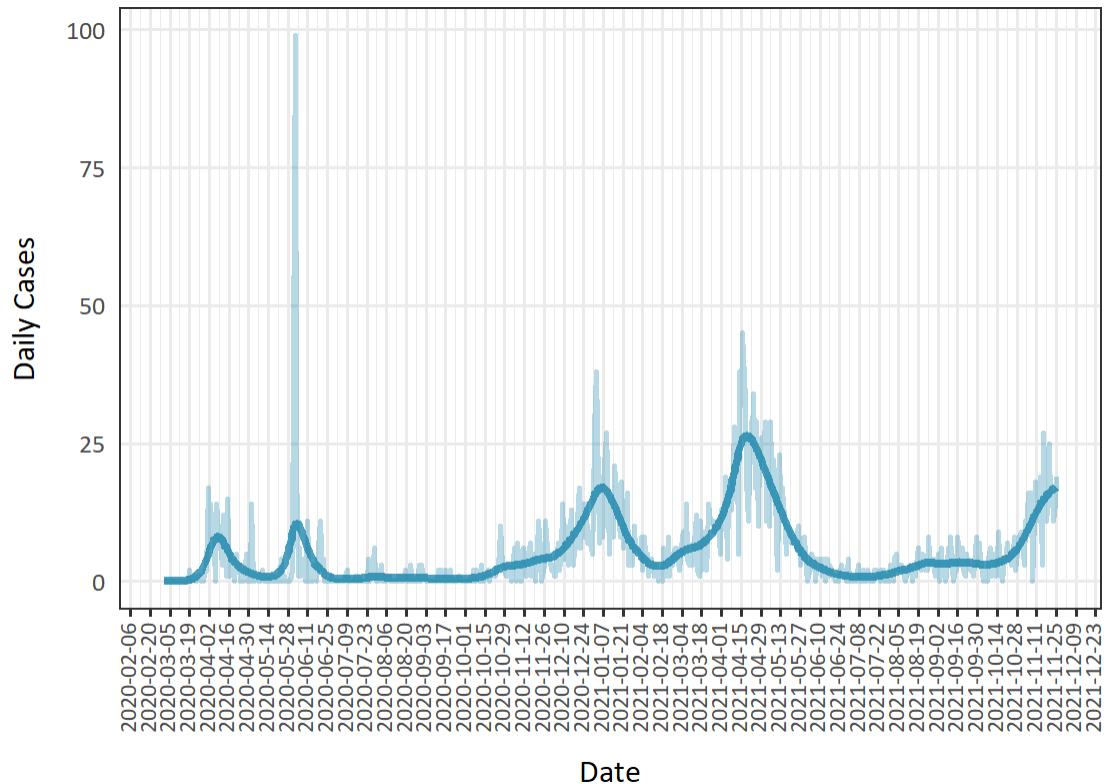
## Timeliness: Grey Bruce Health Unit



Data Source: CCM

## Haldimand-Norfolk Health Unit

### Epidemic Curve: Haldimand-Norfolk Health Unit

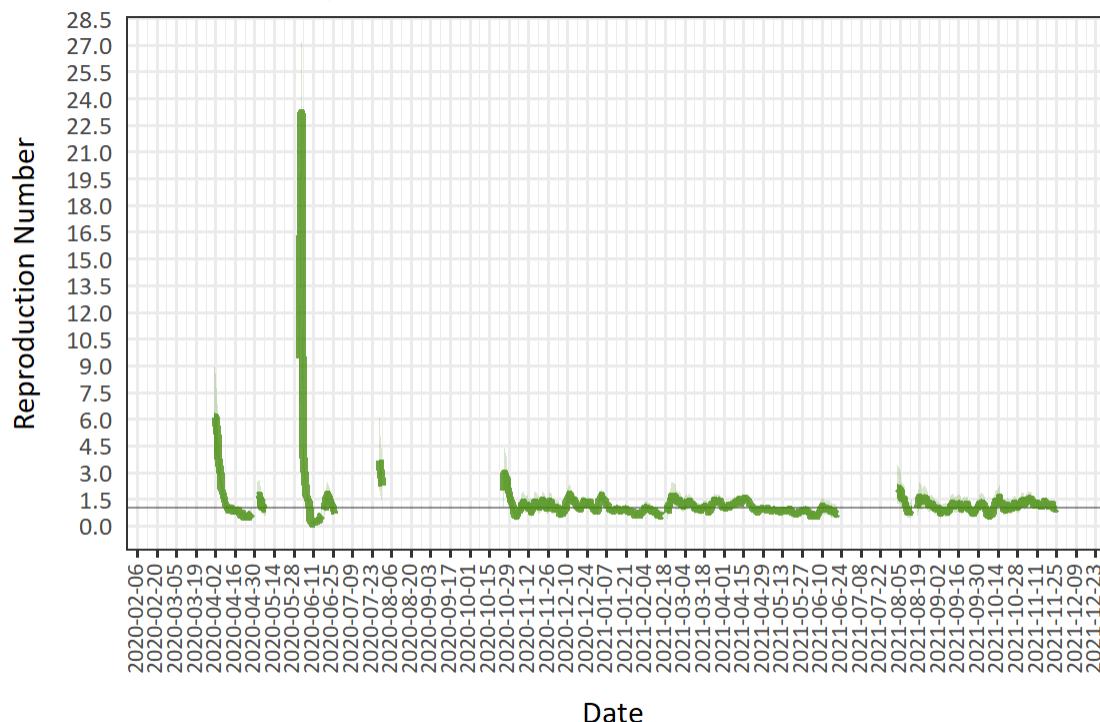


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Haldimand-Norfolk Health Unit

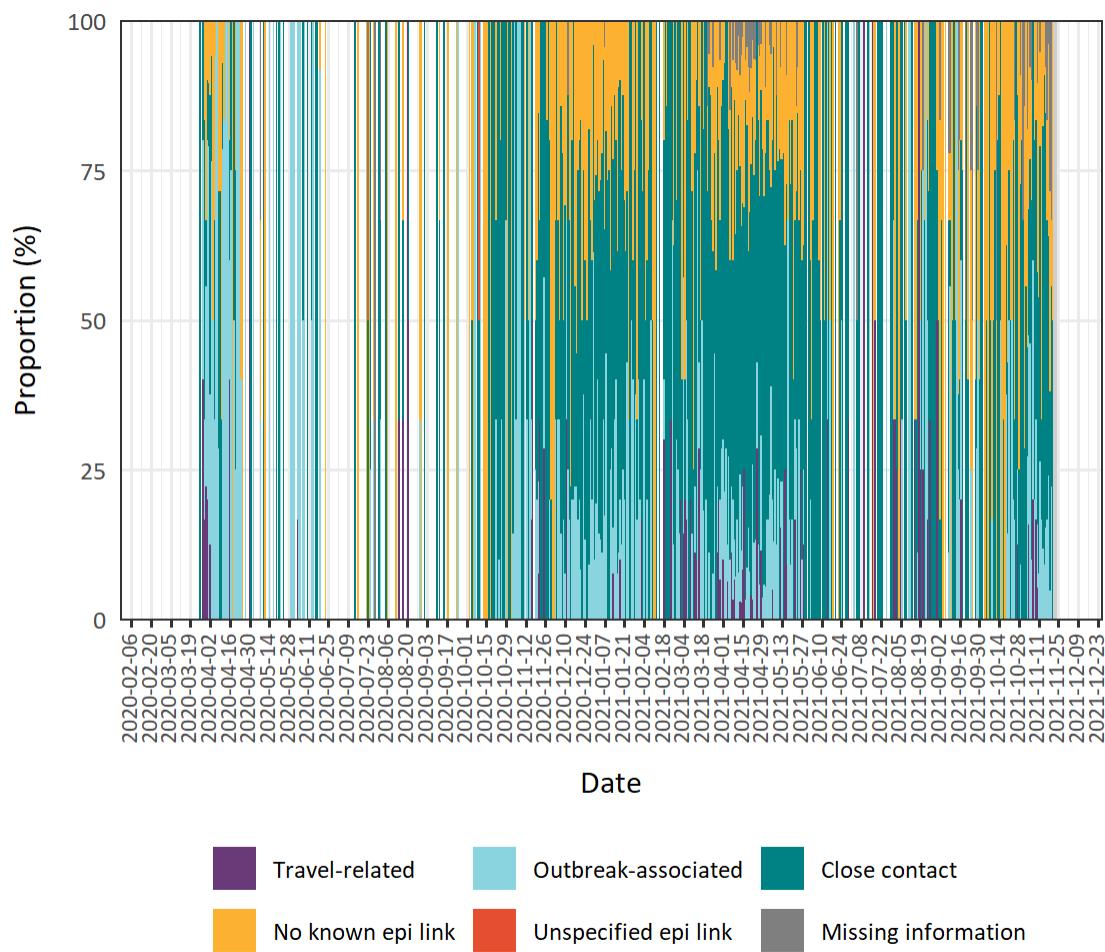
Nov 25 Re = 1.03, 95% CI: 0.85-1.23



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

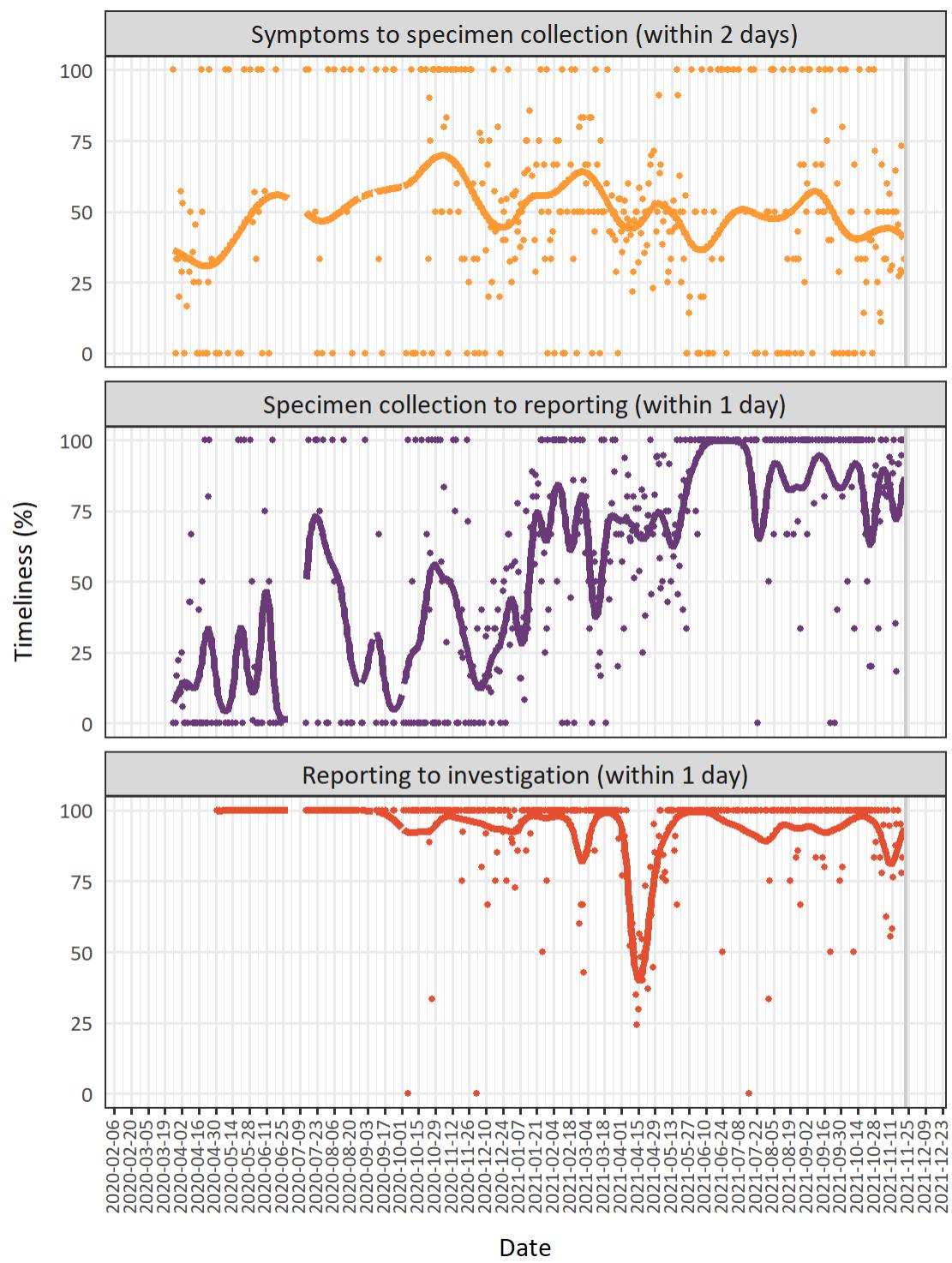
## Likely Acquisition: Haldimand-Norfolk Health Unit



Note: the date used in this graph is the case reported date

Data Source: CCM

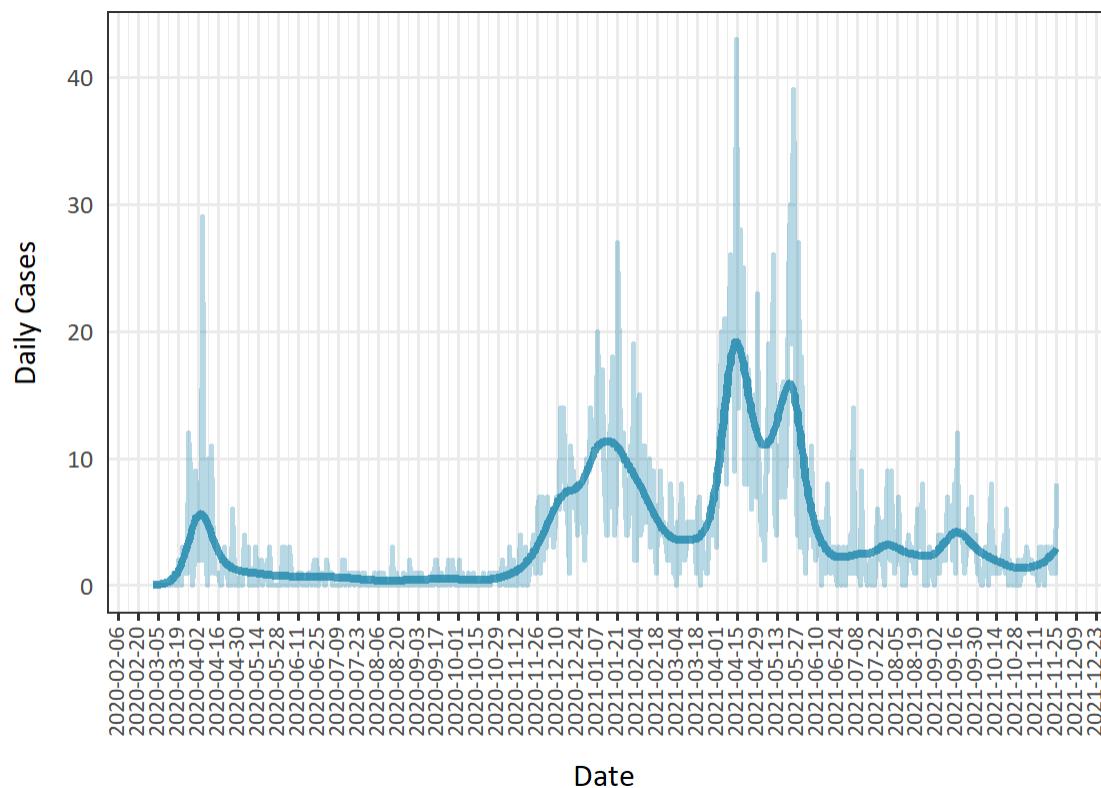
## Timeliness: Haldimand-Norfolk Health Unit



Data Source: CCM

## Haliburton, Kawartha, Pine Ridge District Health Unit

### Epidemic Curve: Haliburton, Kawartha, Pine Ridge District Health Unit

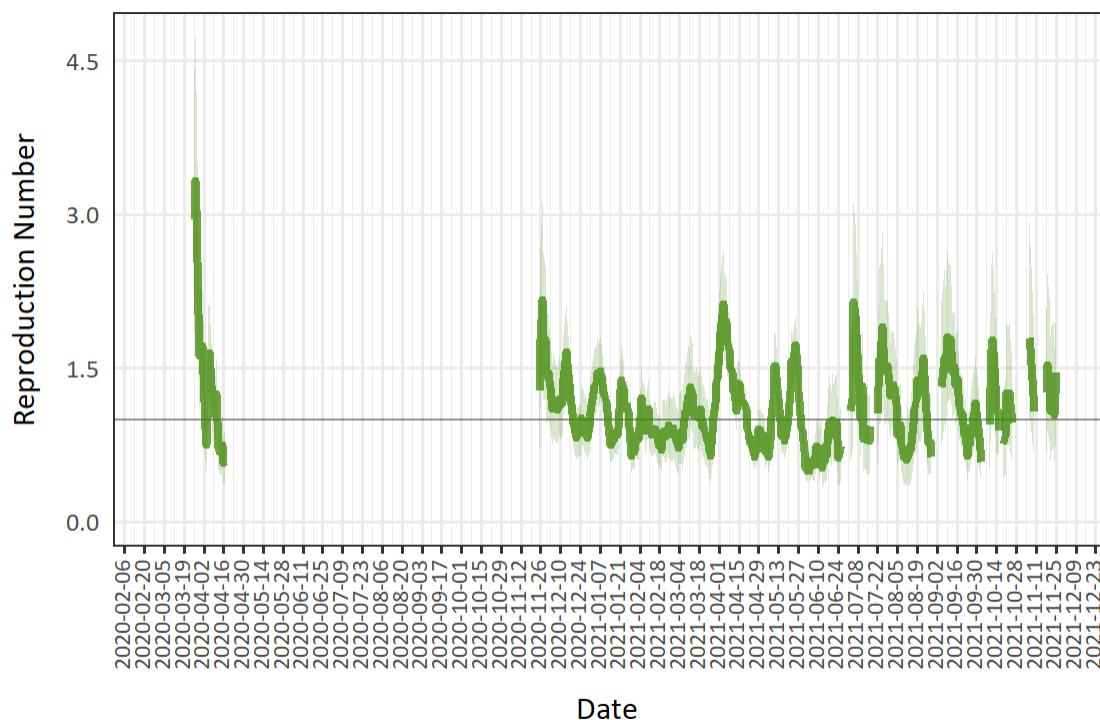


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Haliburton, Kawartha, Pine Ridge District Health Unit

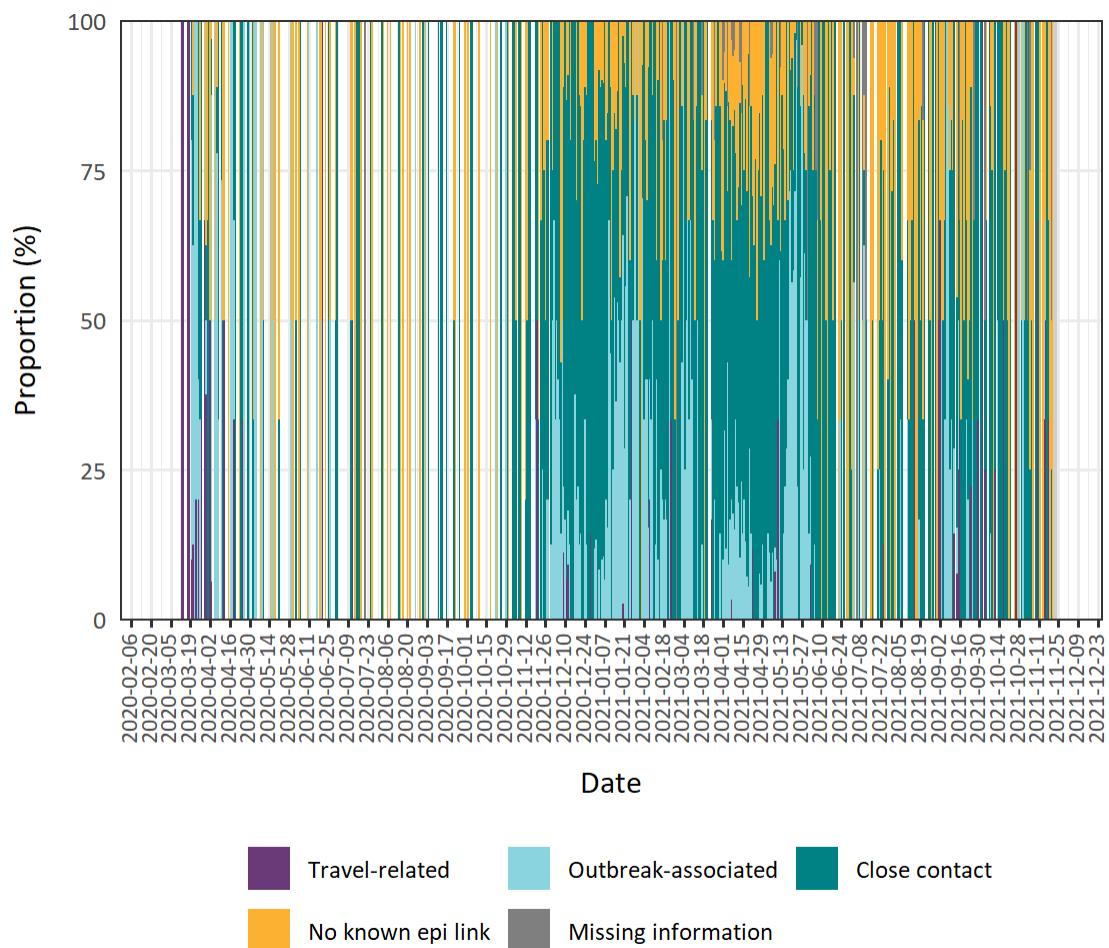
Nov 25 Re = 1.46, 95% CI: 0.91-2.20



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

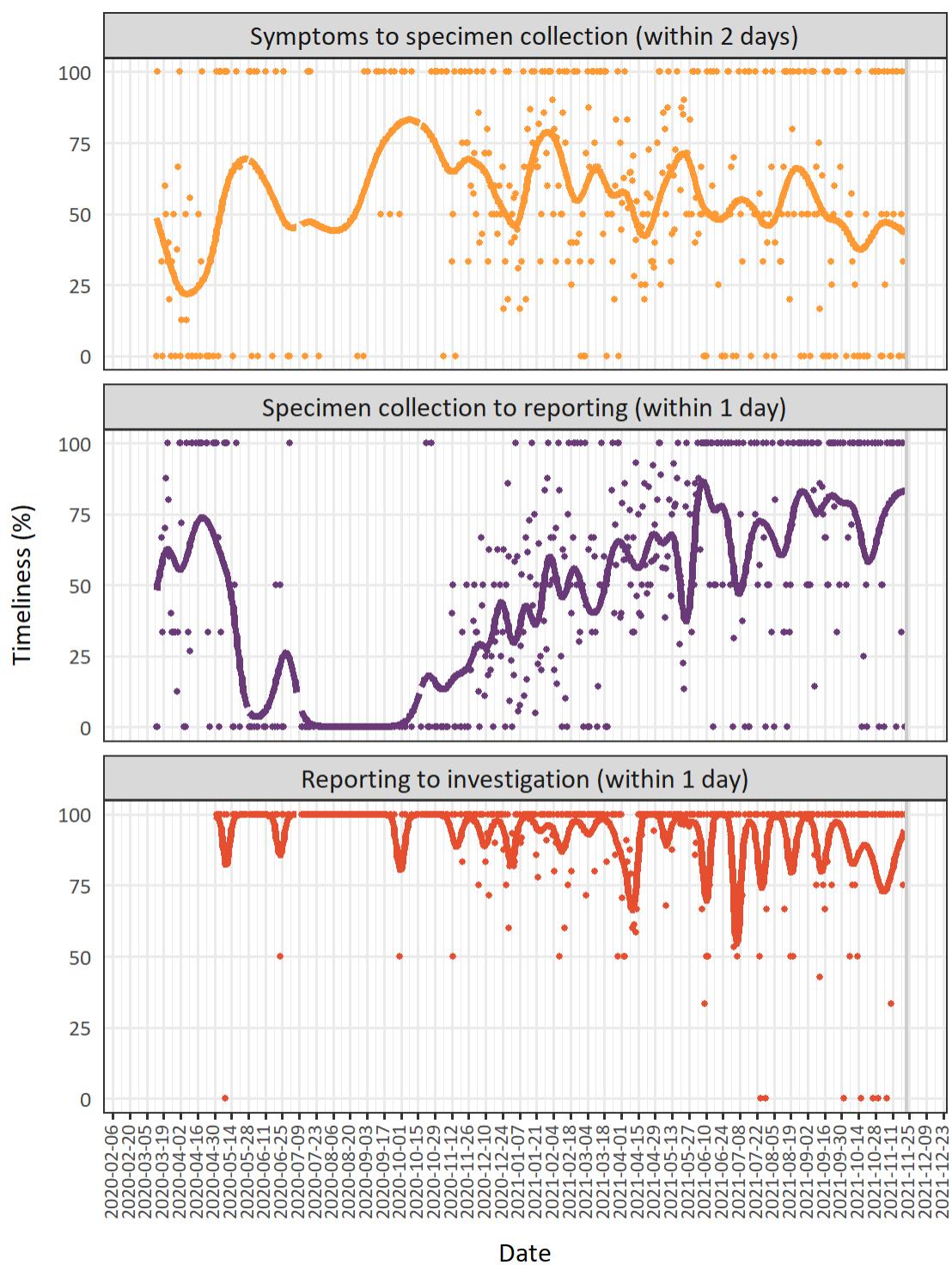
## Likely Acquisition: Haliburton, Kawartha, Pine Ridge District Health Unit



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Haliburton, Kawartha, Pine Ridge District Health Unit

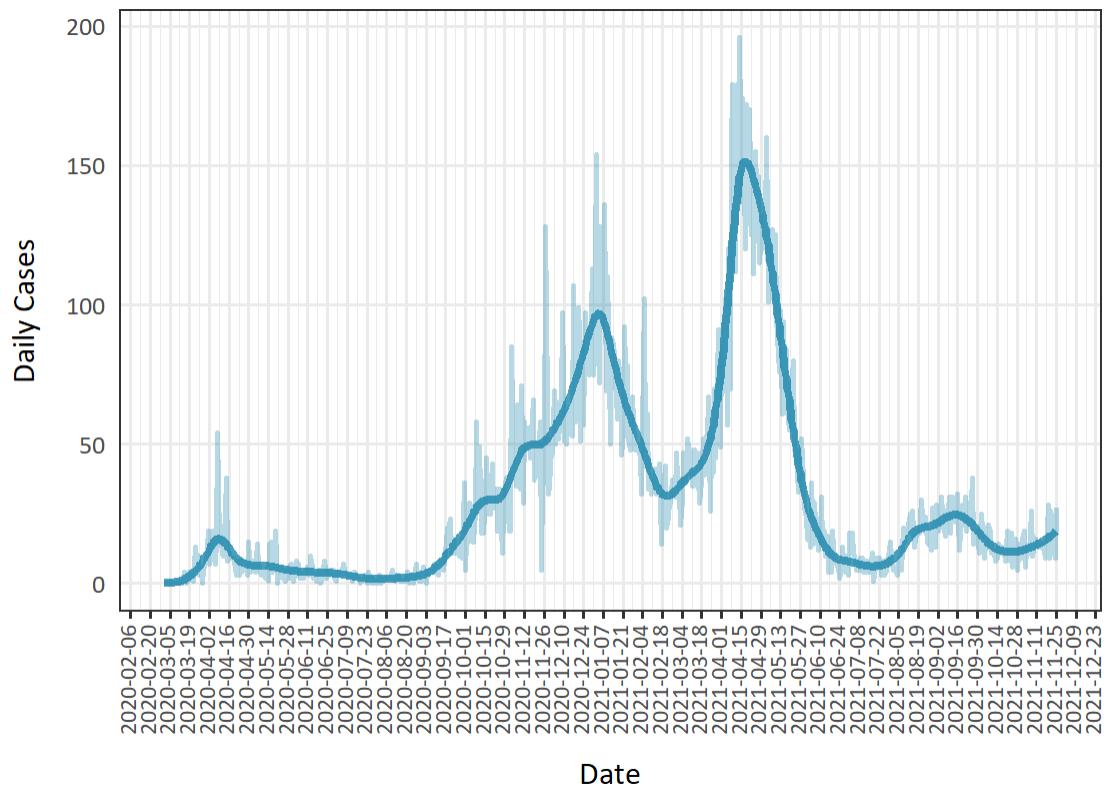


Note: the date used in this graph is the case reported date

Data Source: CCM

## Halton Region Public Health

### Epidemic Curve: Halton Region Public Health

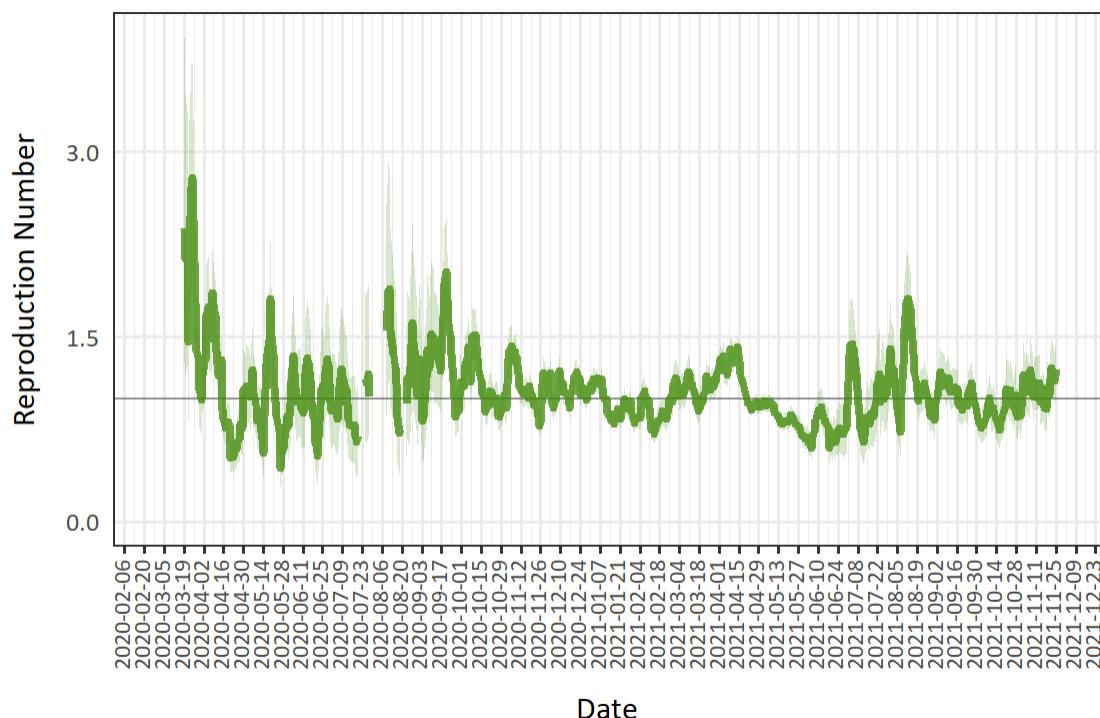


Note: the date used in this graph is the public reporting date

Data Source: CCM

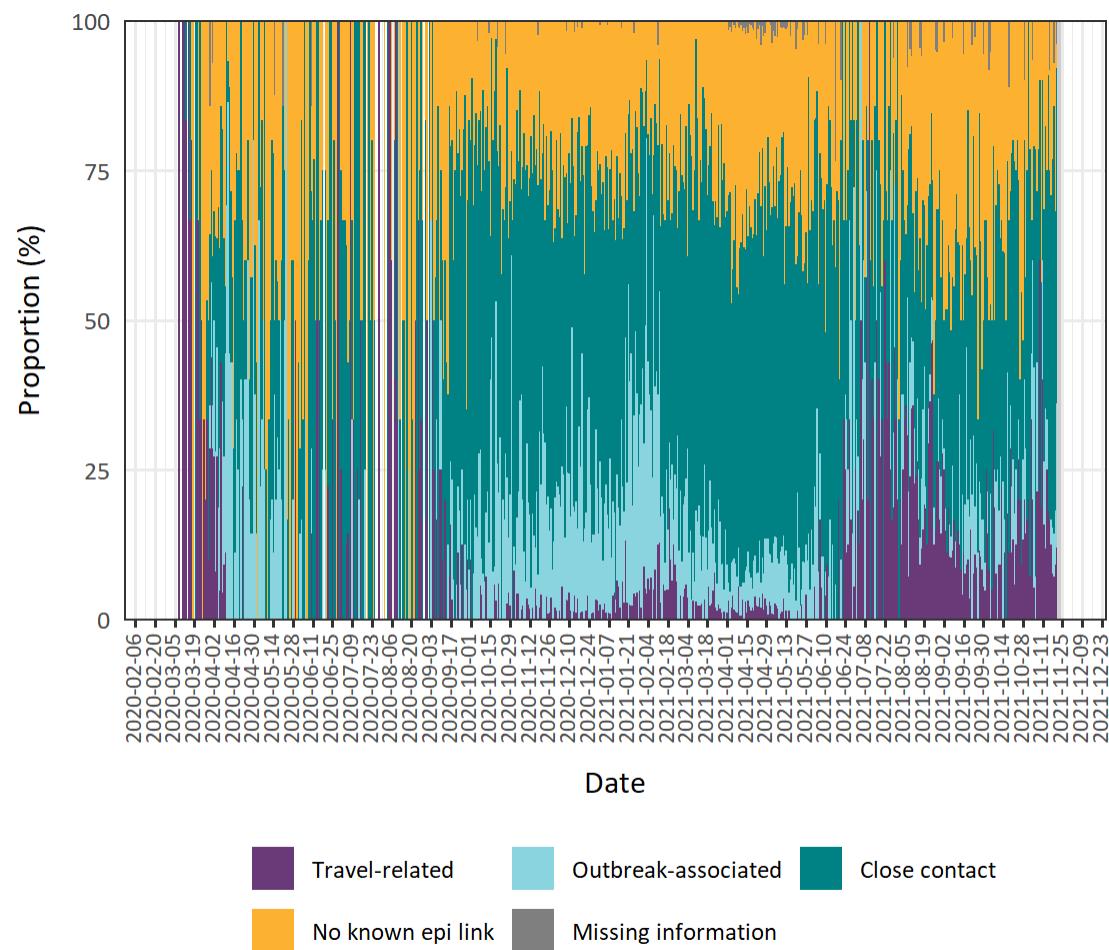
## Reproduction Number: Halton Region Public Health

Nov 25 Re = 1.24, 95% CI: 1.04-1.46



Data Source: CCM

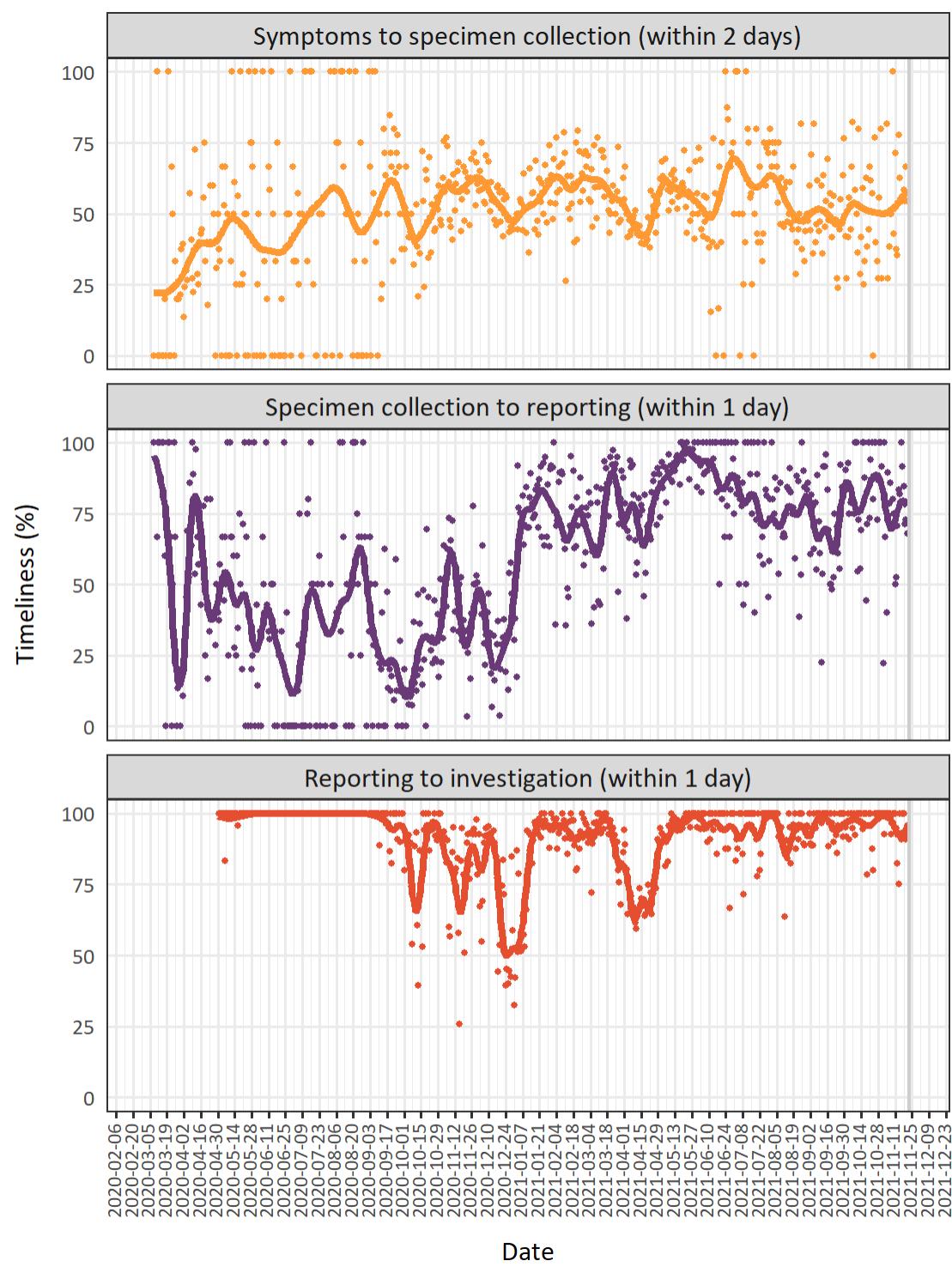
## Likely Acquisition: Halton Region Public Health



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Halton Region Public Health

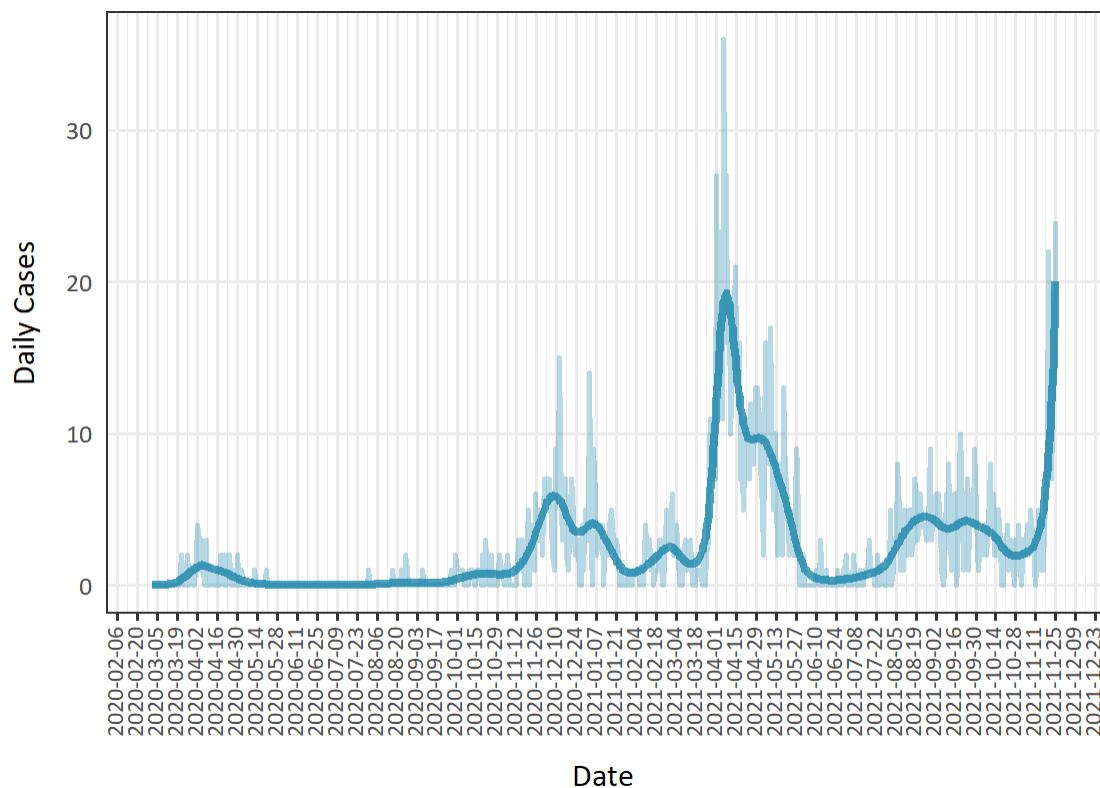


Note: the date used in this graph is the case reported date

Data Source: CCM

## Hastings Prince Edward Public Health

### Epidemic Curve: Hastings Prince Edward Public Health

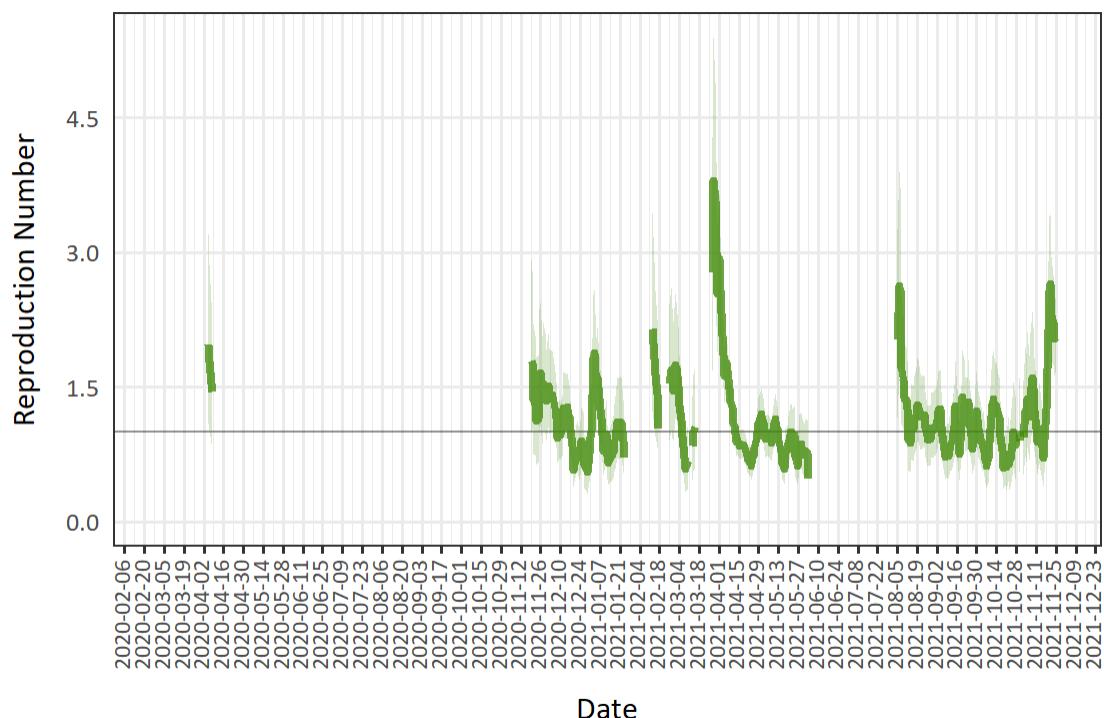


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Hastings Prince Edward Public Health

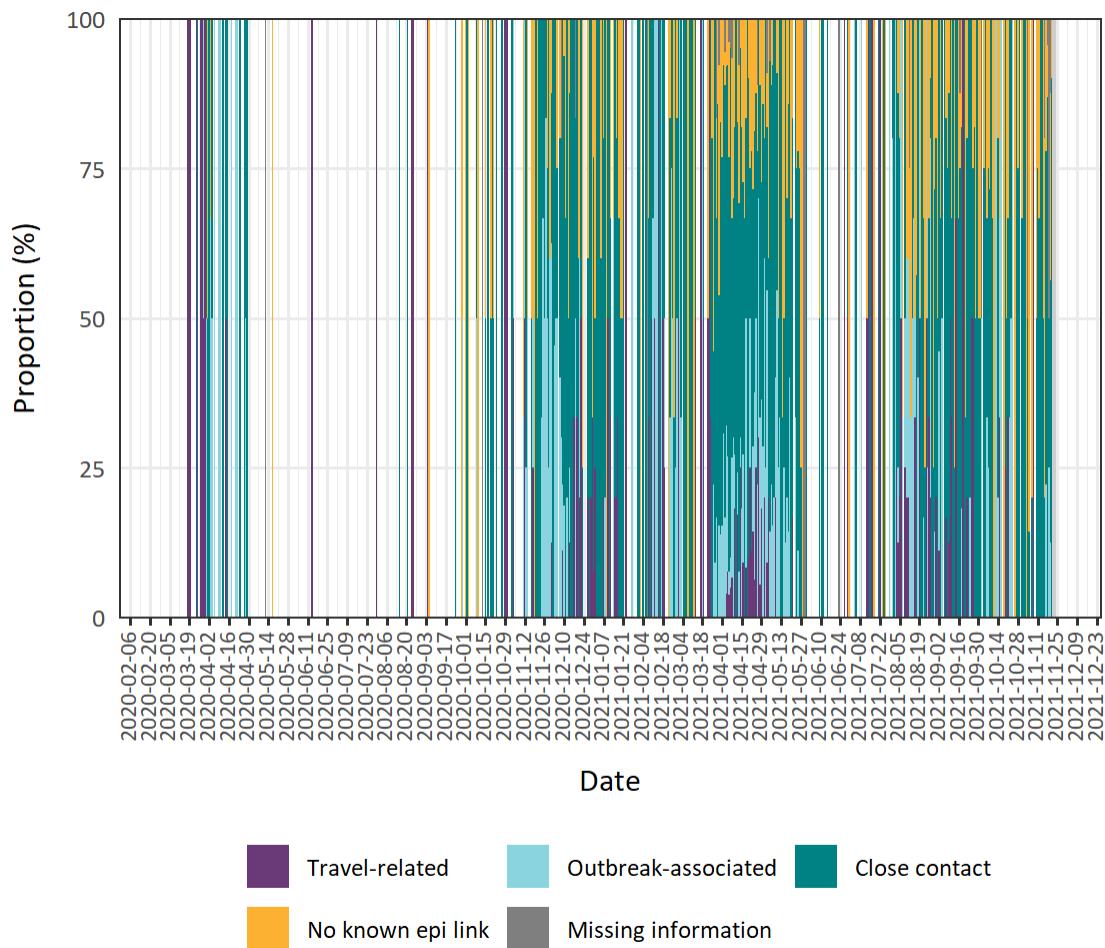
Nov 25 Re = 2.06, 95% CI: 1.69-2.49



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

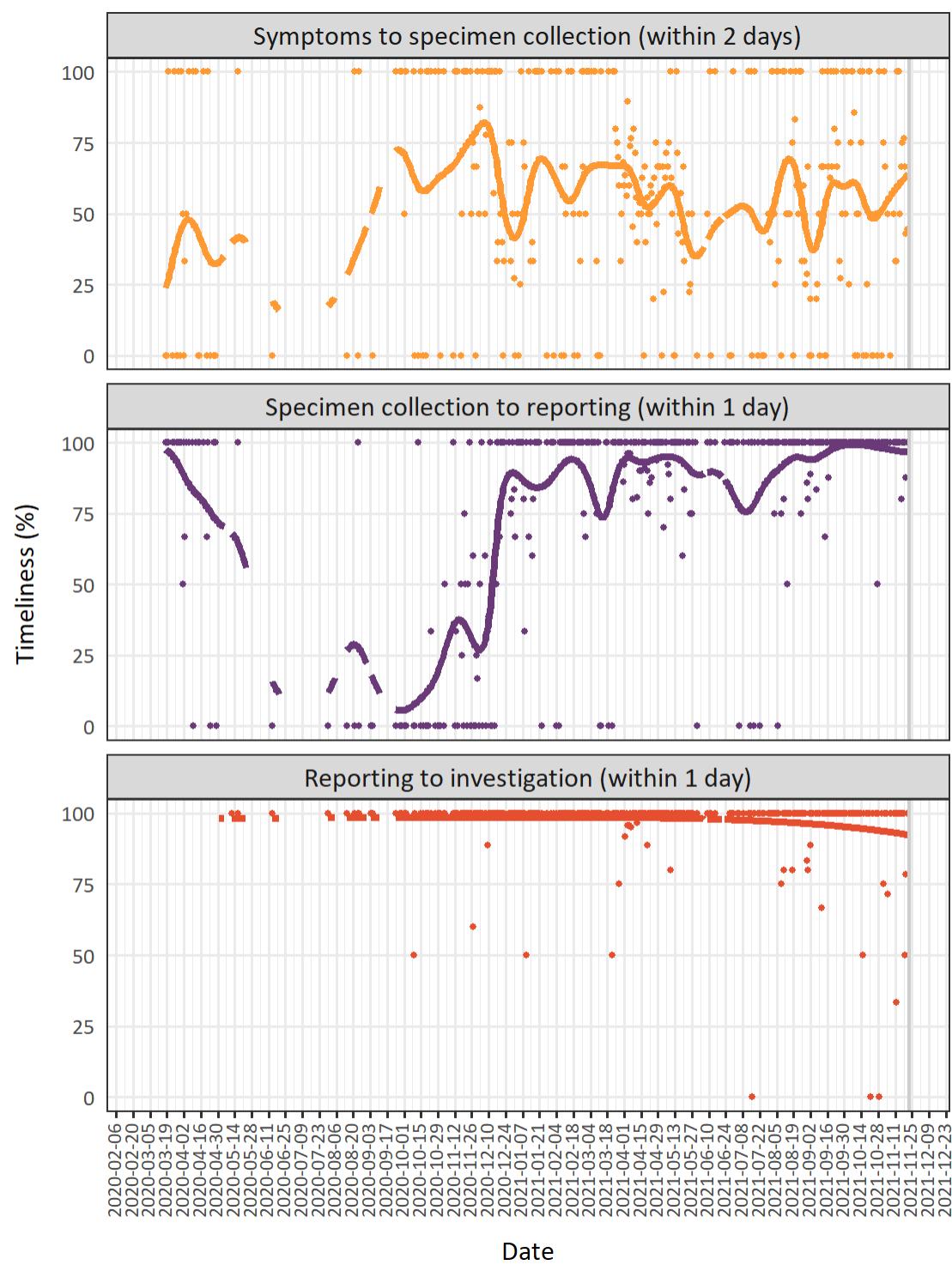
## Likely Acquisition: Hastings Prince Edward Public Health



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Hastings Prince Edward Public Health

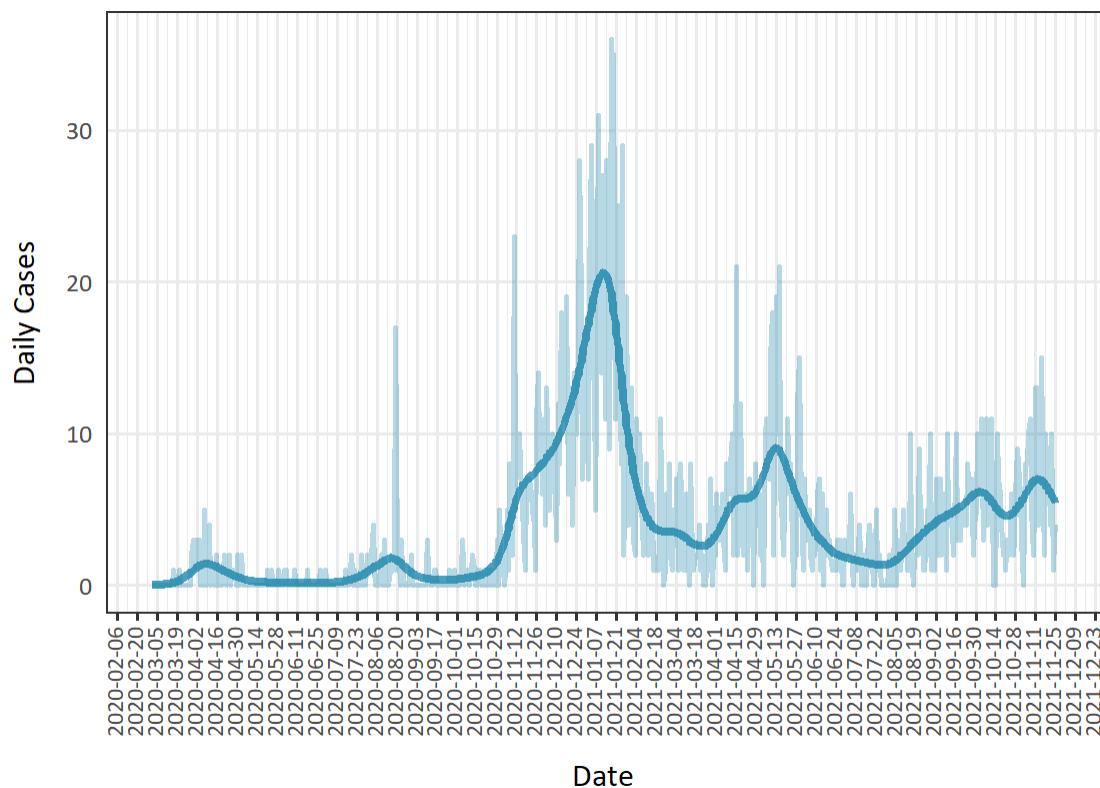


Note: the date used in this graph is the case reported date

Data Source: CCM

## Huron Perth Public Health

### Epidemic Curve: Huron Perth Public Health

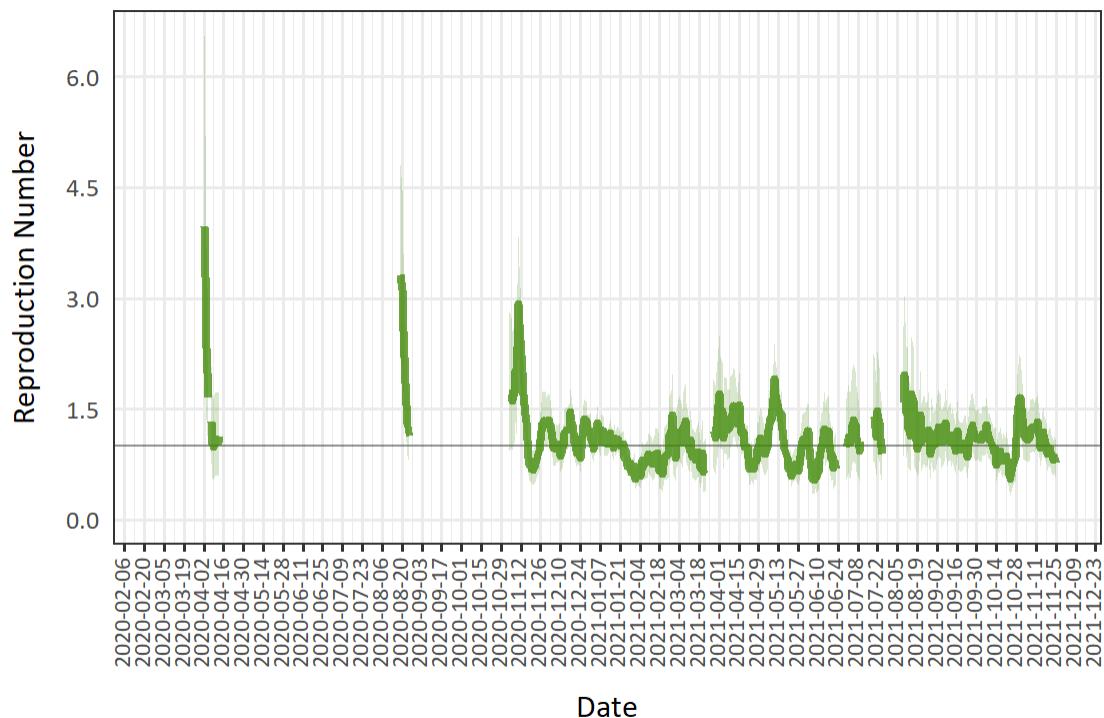


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Huron Perth Public Health

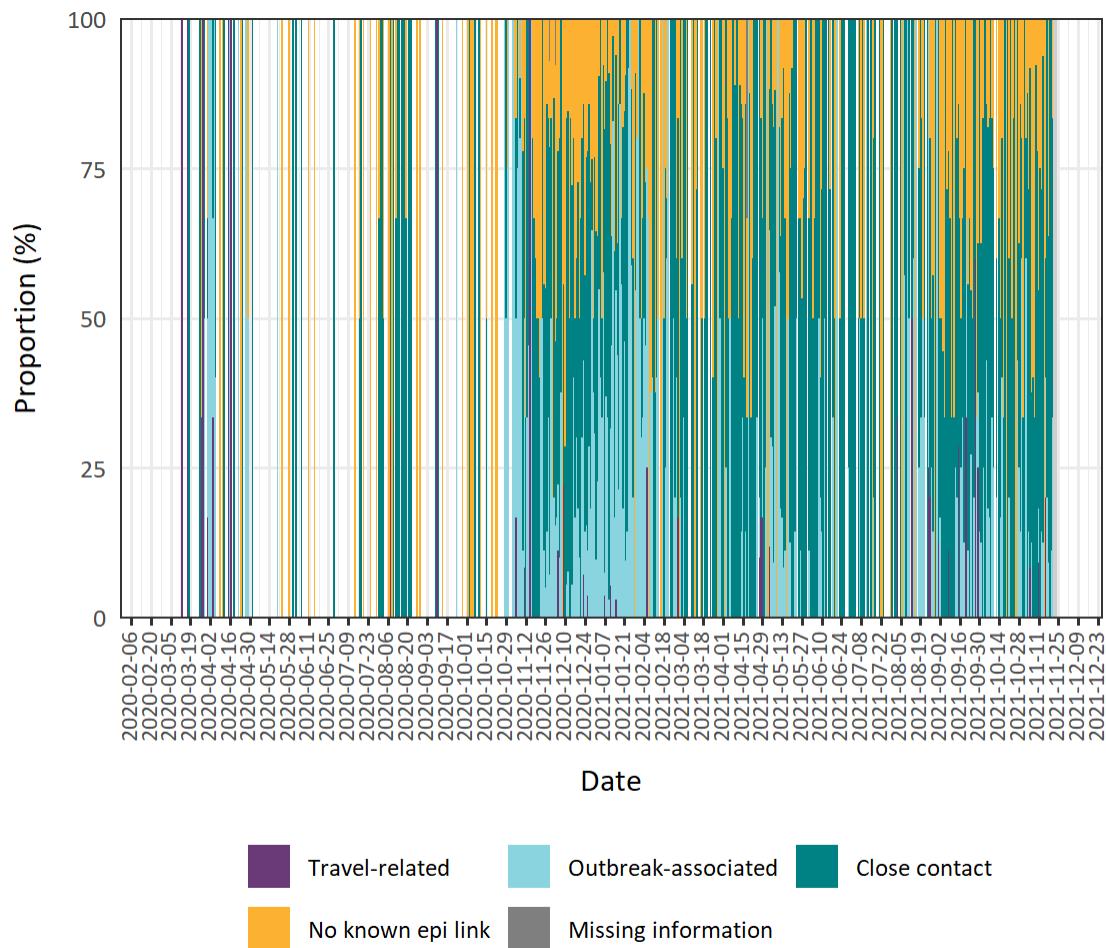
Nov 25 Re = 0.77, 95% CI: 0.55-1.04



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

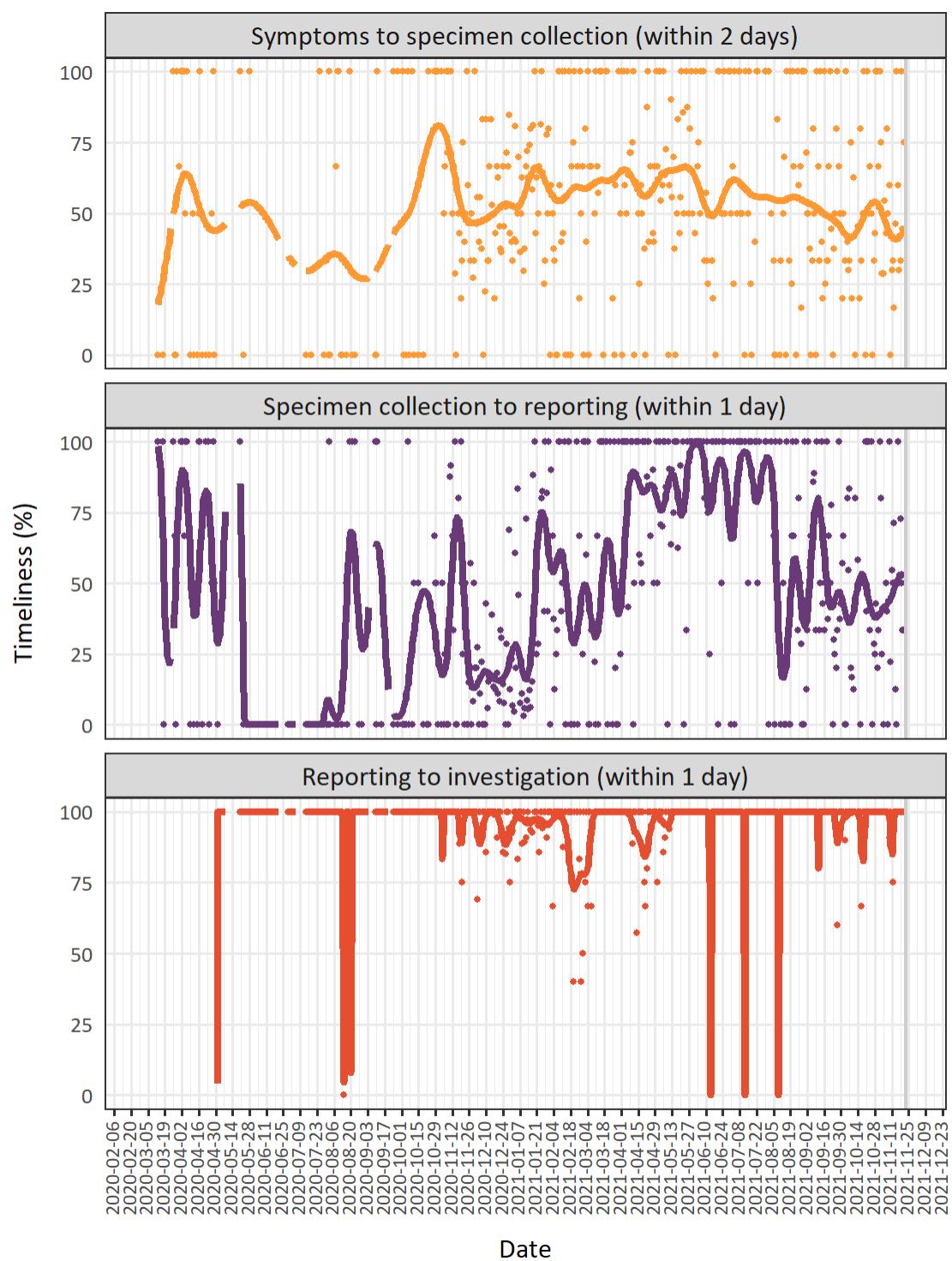
## Likely Acquisition: Huron Perth Public Health



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Huron Perth Public Health

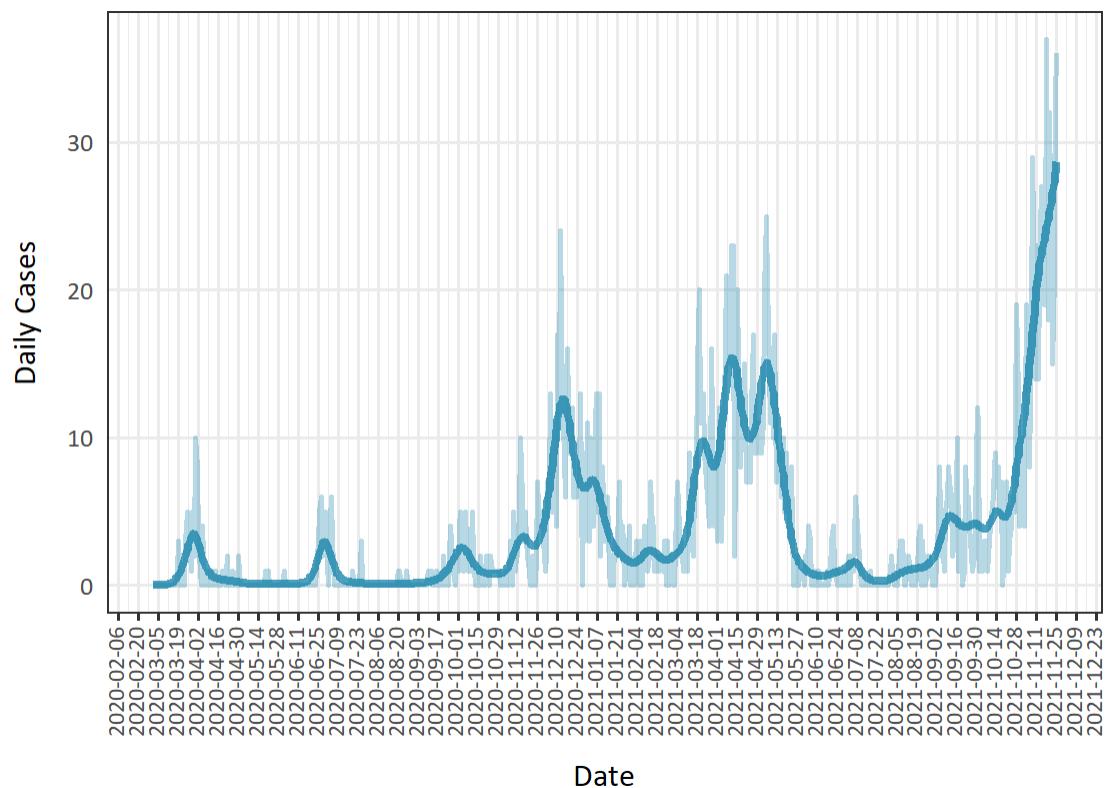


Note: the date used in this graph is the case reported date

Data Source: CCM

## Kingston, Frontenac and Lennox & Addington Public Health

### Epidemic Curve: Kingston, Frontenac and Lennox & Addington Public Health

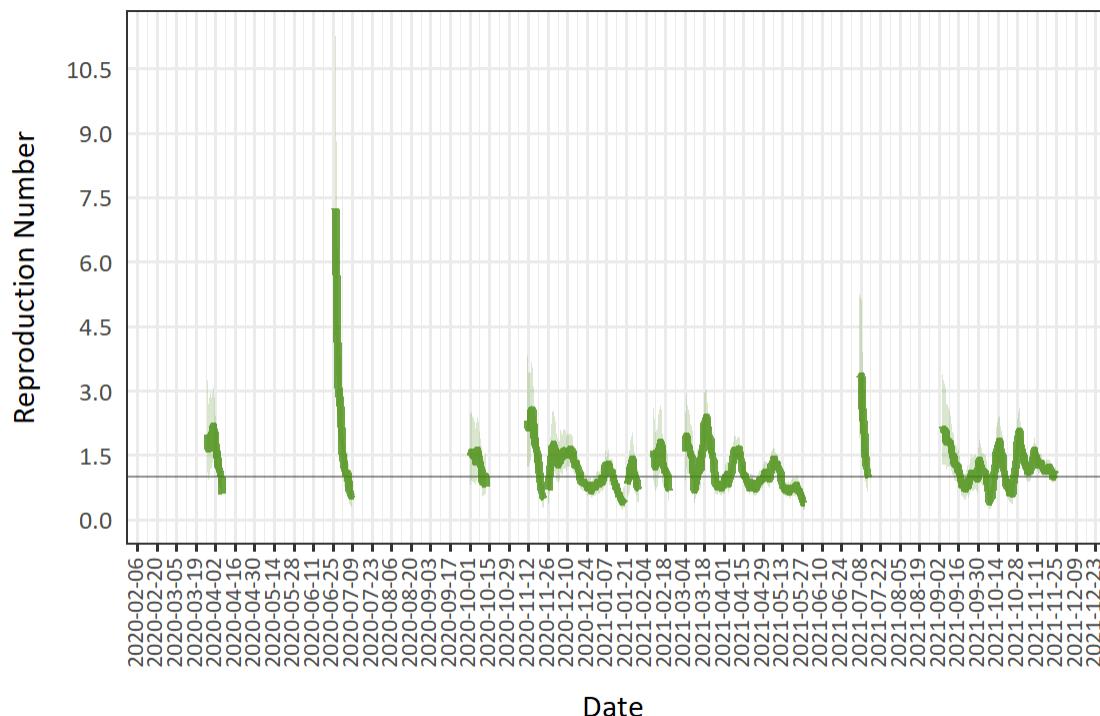


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Kingston, Frontenac and Lennox & Addington Public Health

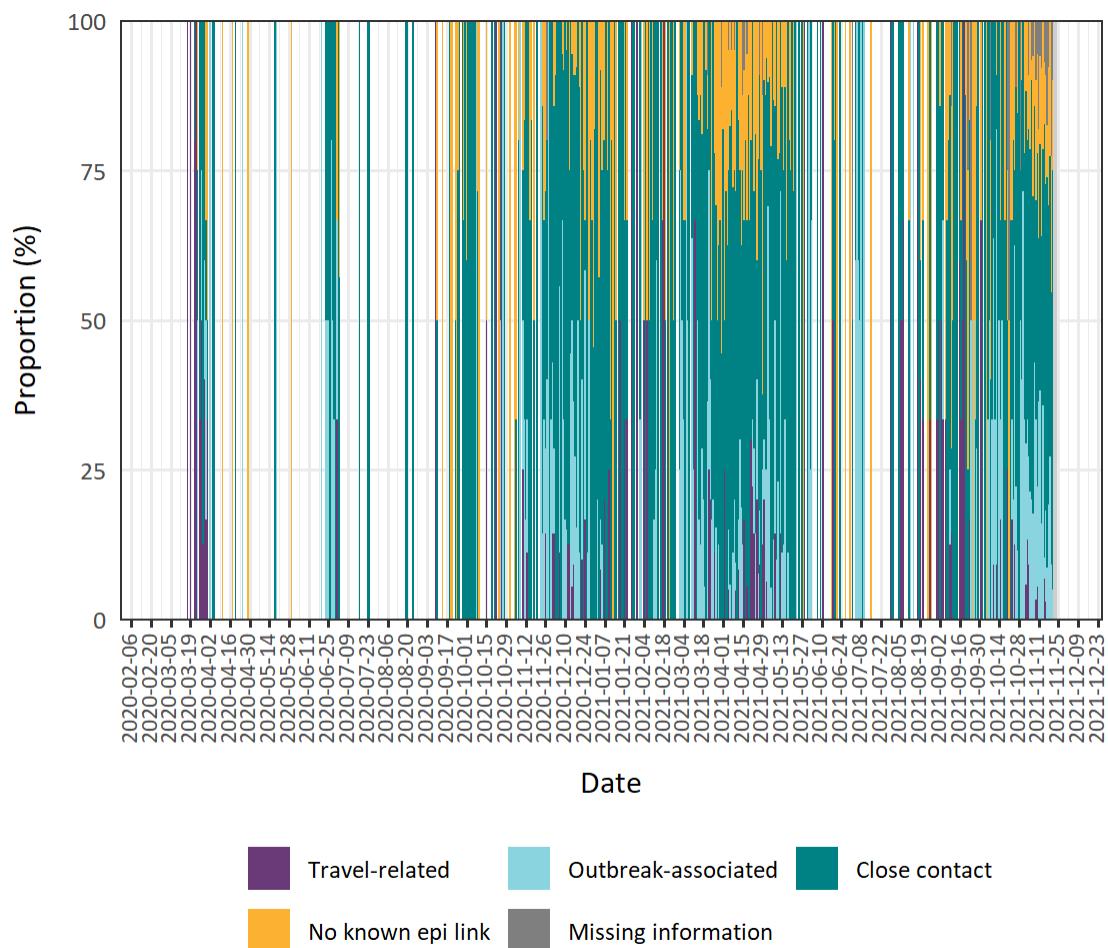
Nov 25 Re = 1.06, 95% CI: 0.91-1.22



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

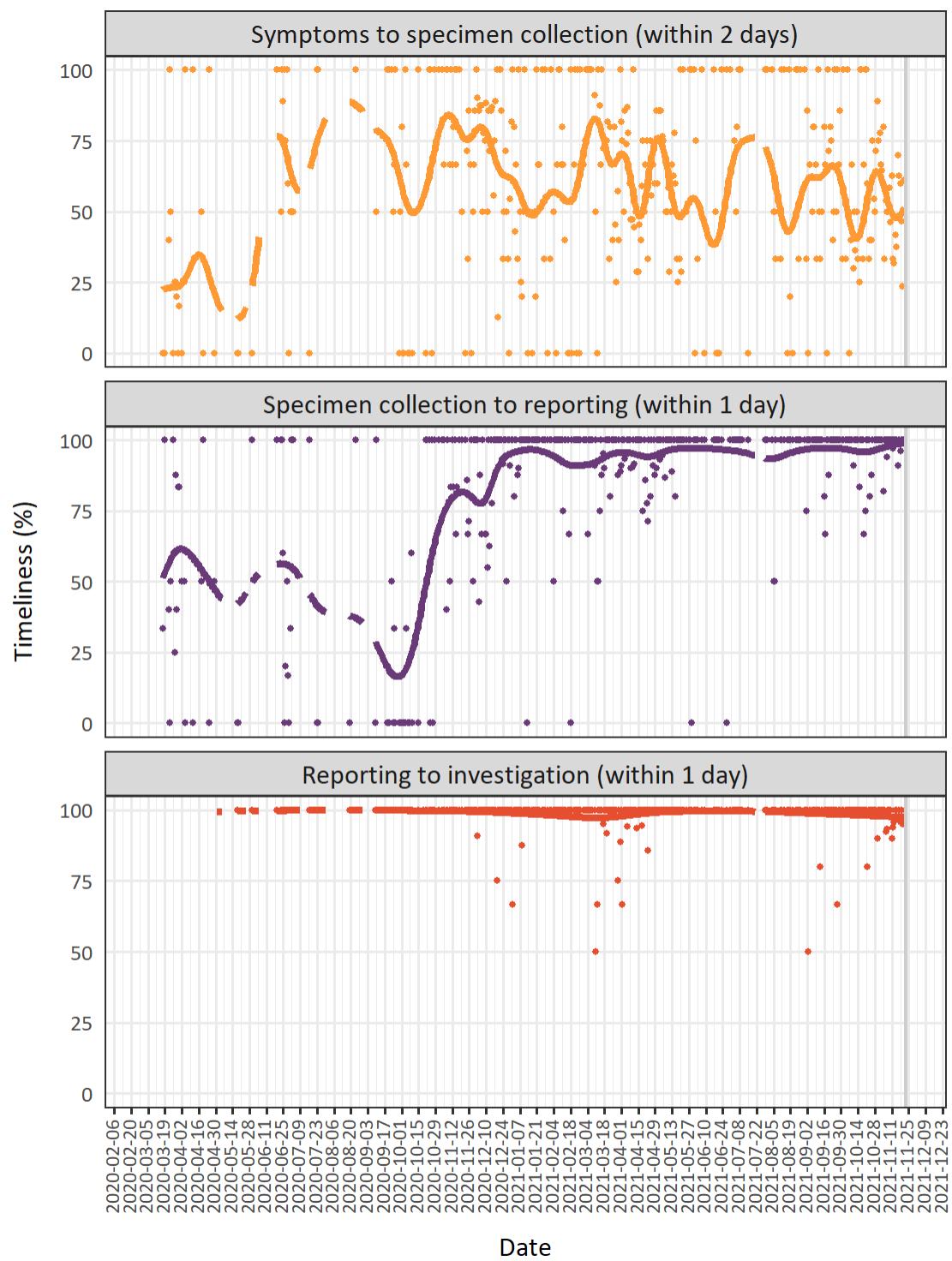
## Likely Acquisition: Kingston, Frontenac and Lennox & Addington Public Health



Note: the date used in this graph is the case reported date

Data Source: CCM

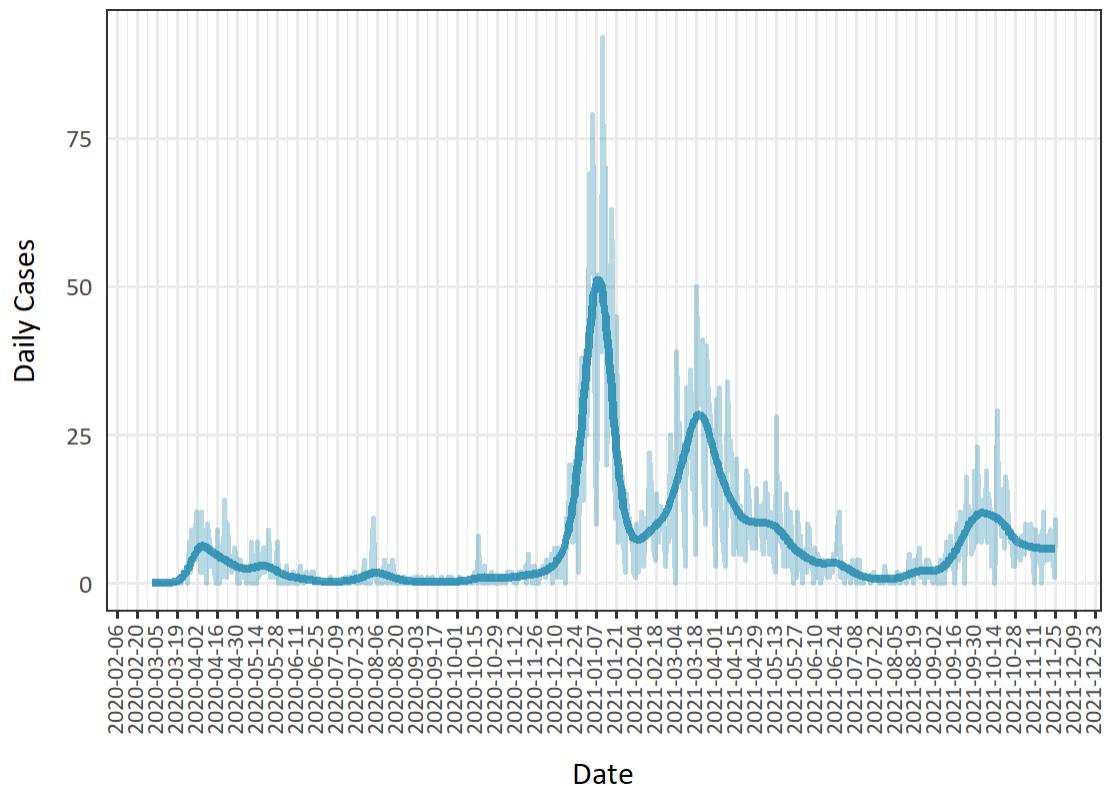
## Timeliness: Kingston, Frontenac and Lennox & Addington Public Health



Data Source: CCM

## Lambton Public Health

### Epidemic Curve: Lambton Public Health

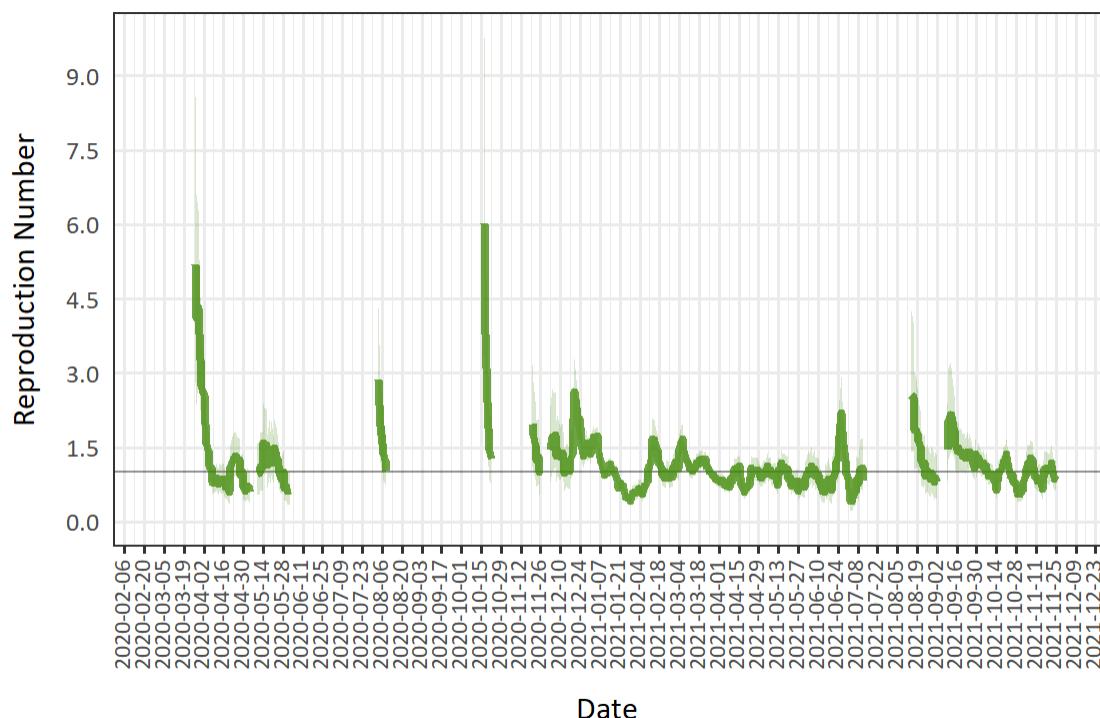


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Lambton Public Health

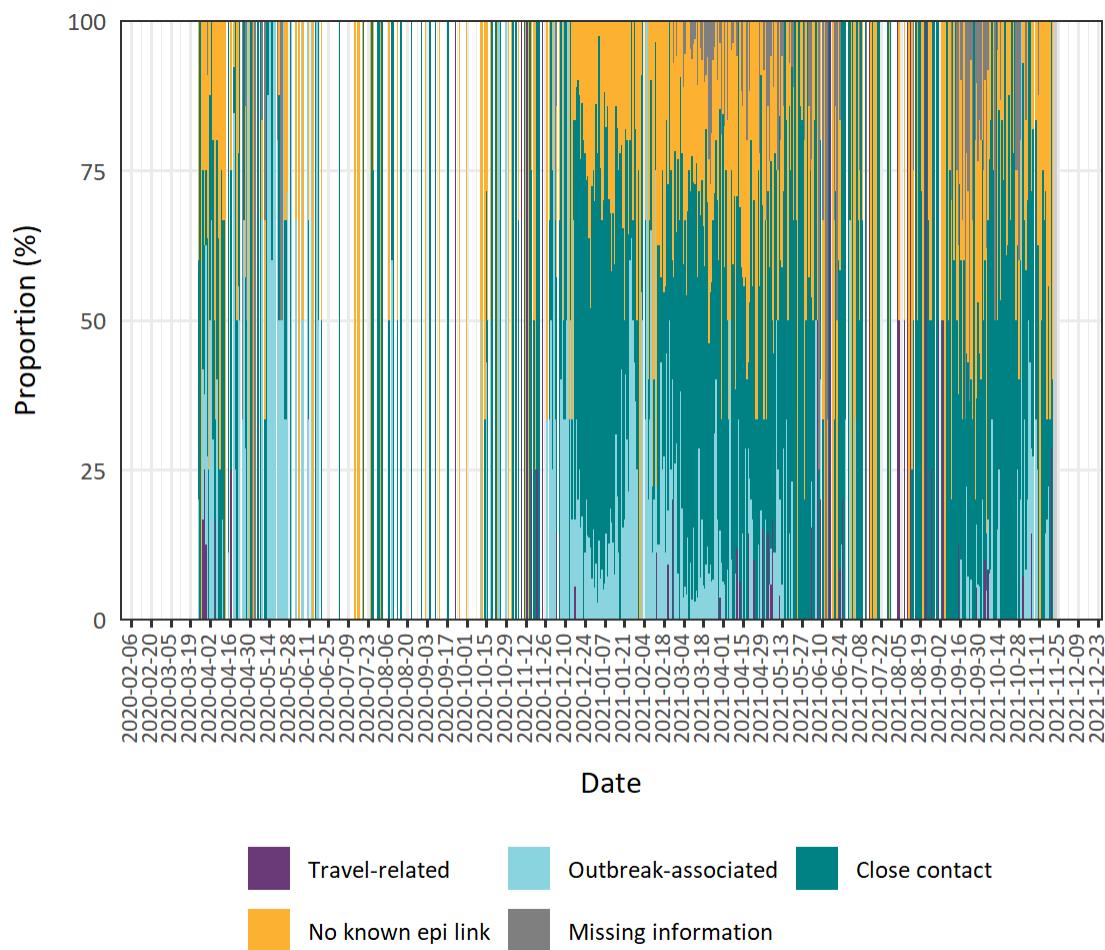
Nov 25 Re = 0.95, 95% CI: 0.69-1.27



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

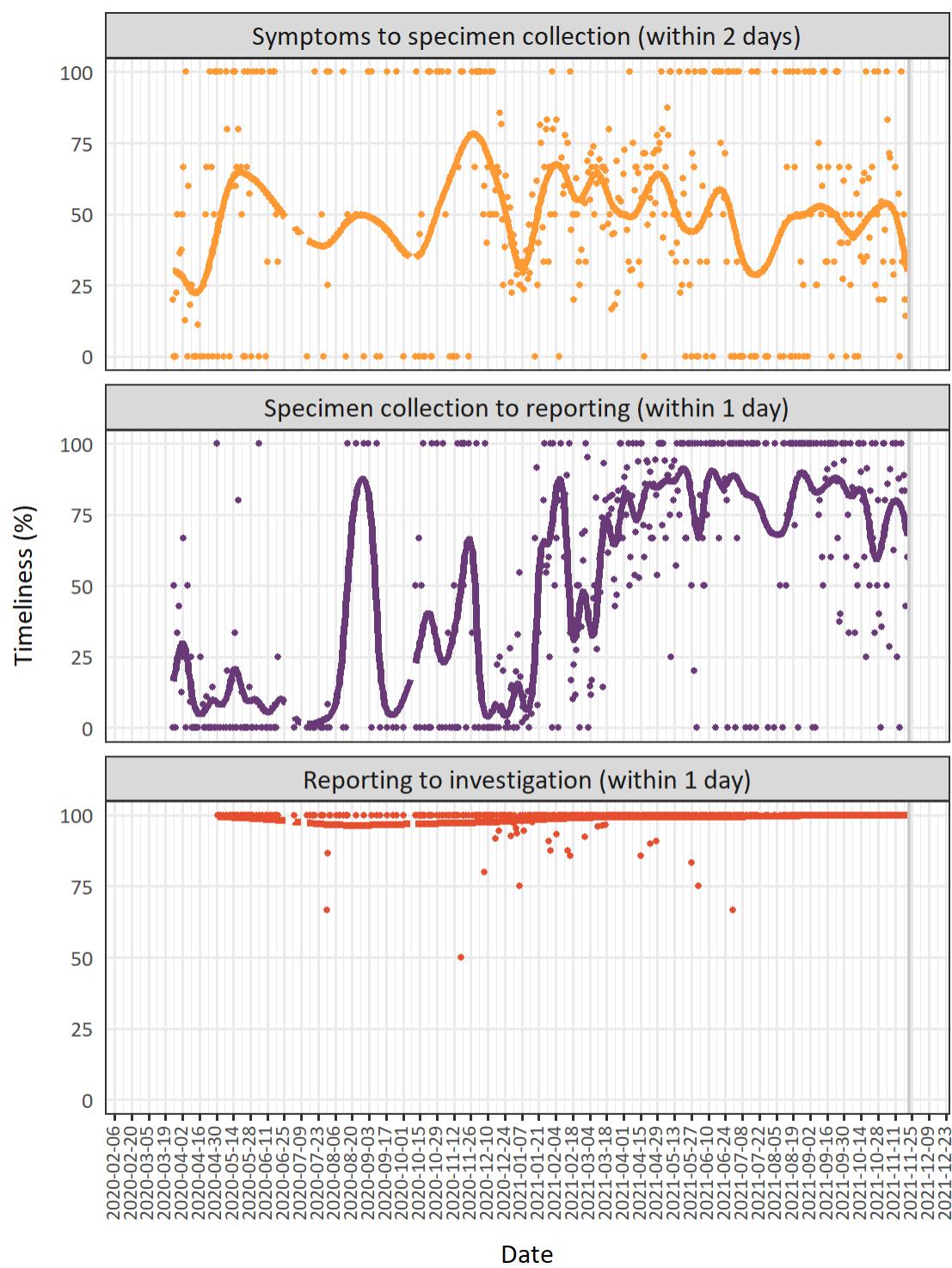
## Likely Acquisition: Lambton Public Health



Note: the date used in this graph is the case reported date

Data Source: CCM

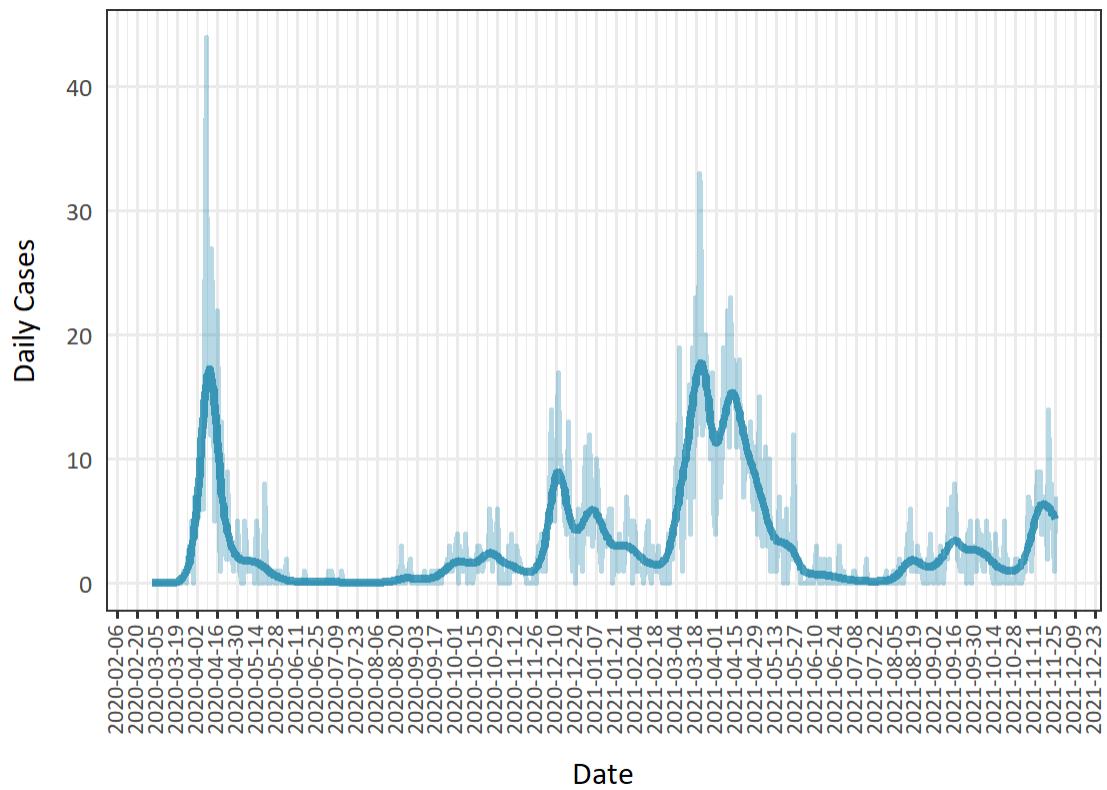
## Timeliness: Lambton Public Health



Data Source: CCM

## Leeds, Grenville & Lanark District Health Unit

### Epidemic Curve: Leeds, Grenville & Lanark District Health Unit

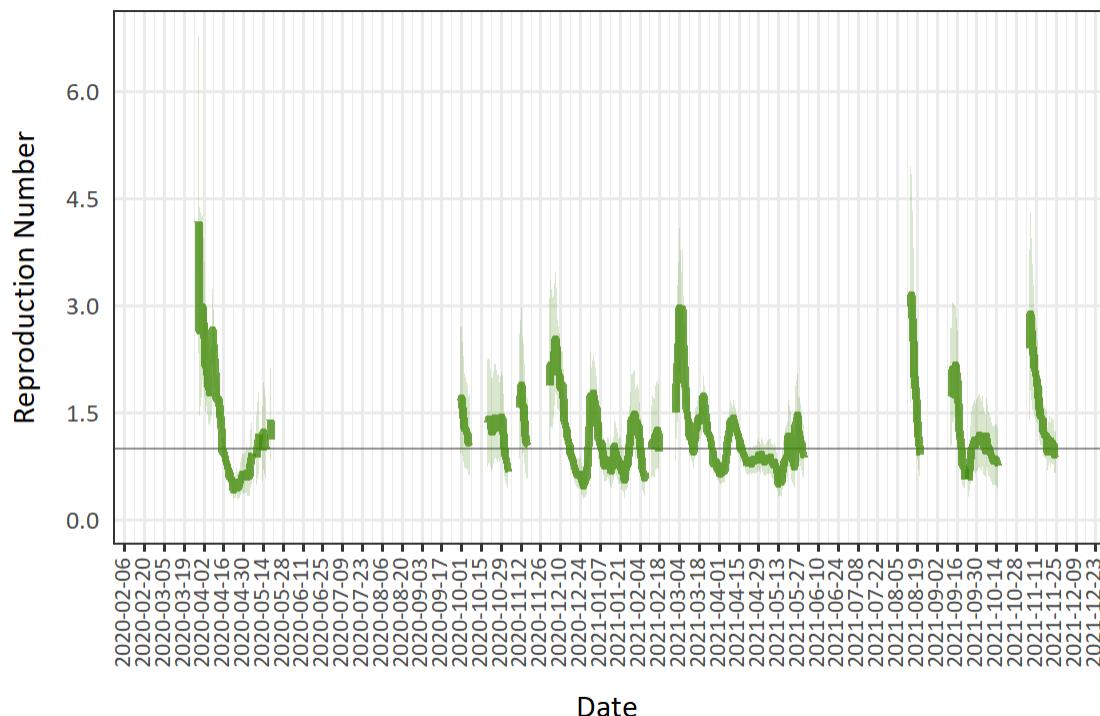


Note: the date used in this graph is the public reporting date

Data Source: CCM

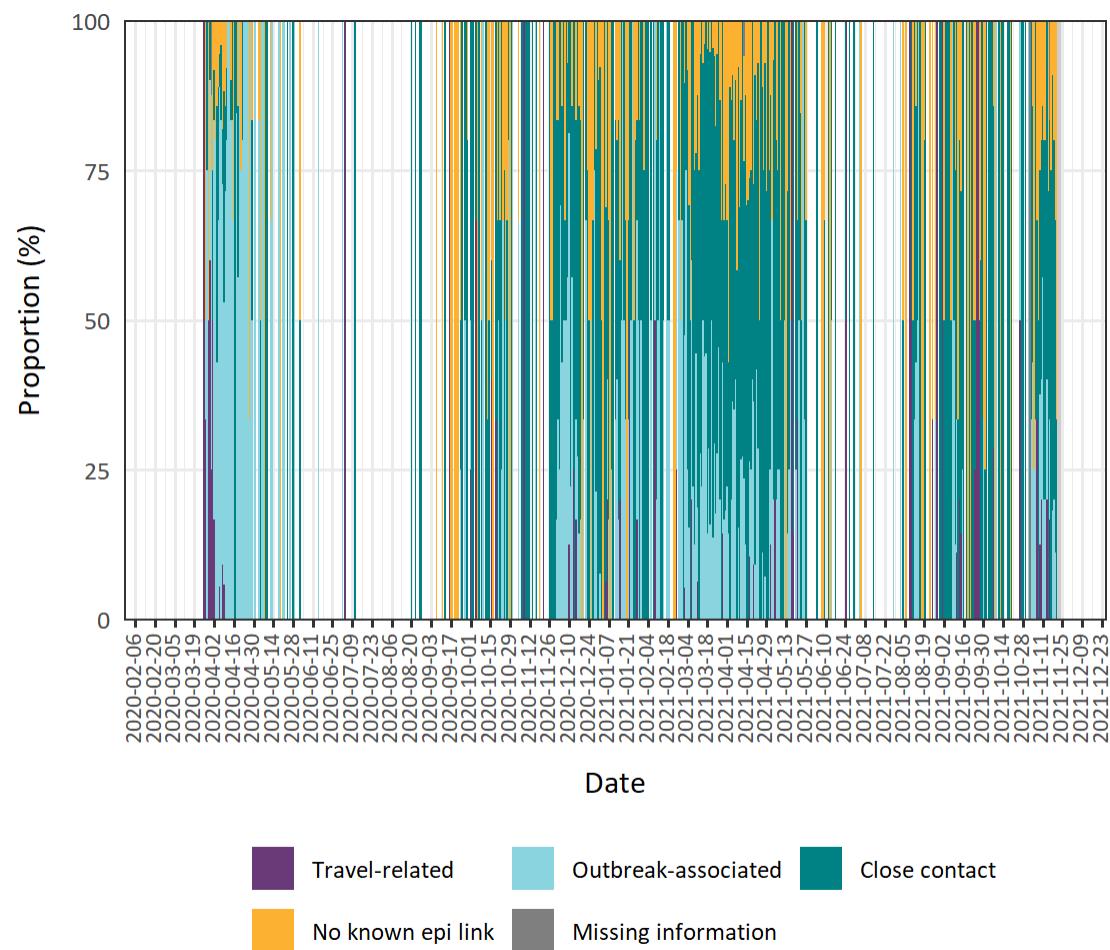
## Reproduction Number: Leeds, Grenville & Lanark District Health Unit

Nov 25 Re = 0.93, 95% CI: 0.67-1.25



Data Source: CCM

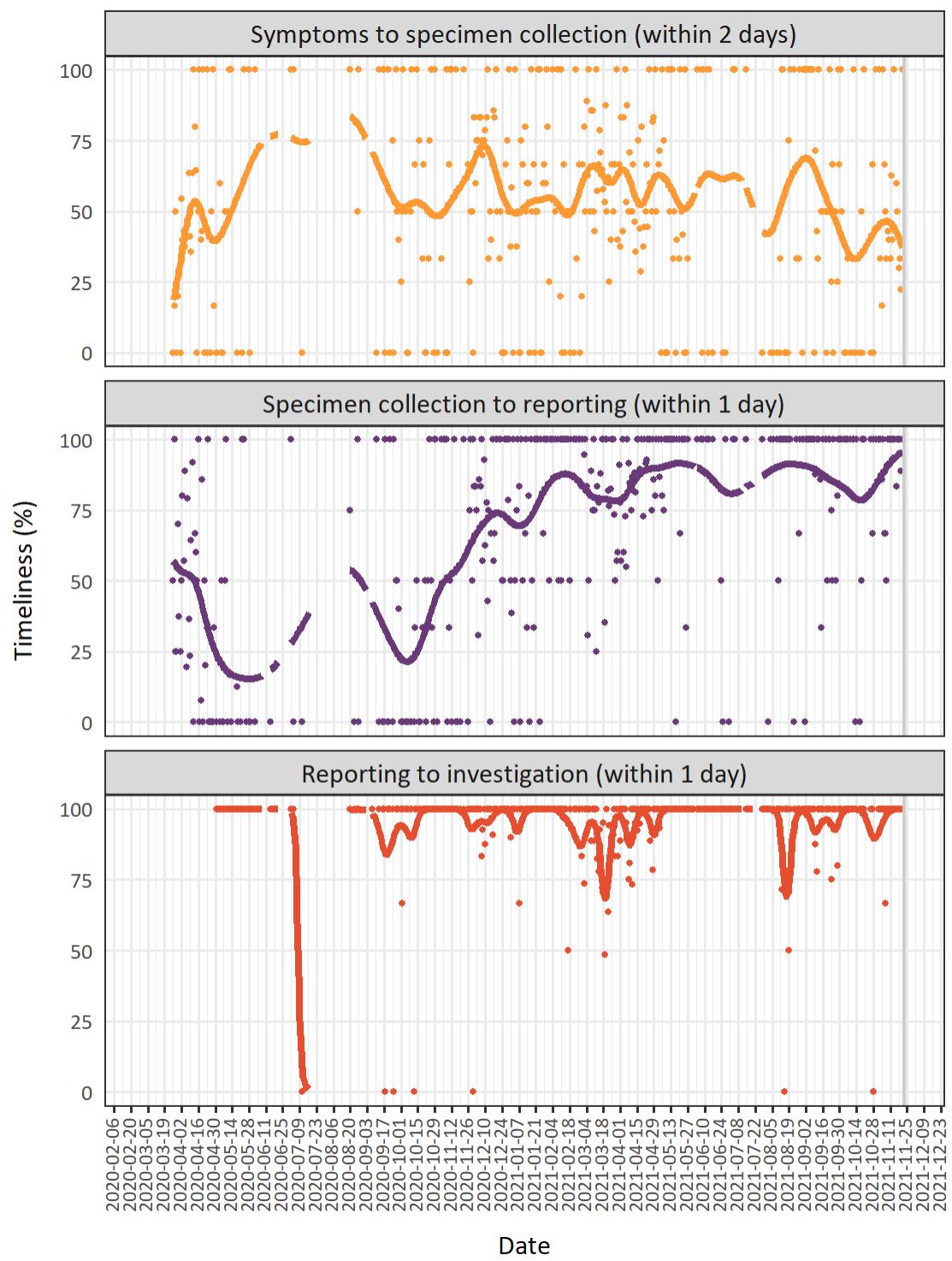
## Likely Acquisition: Leeds, Grenville & Lanark District Health Unit



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Leeds, Grenville & Lanark District Health Unit

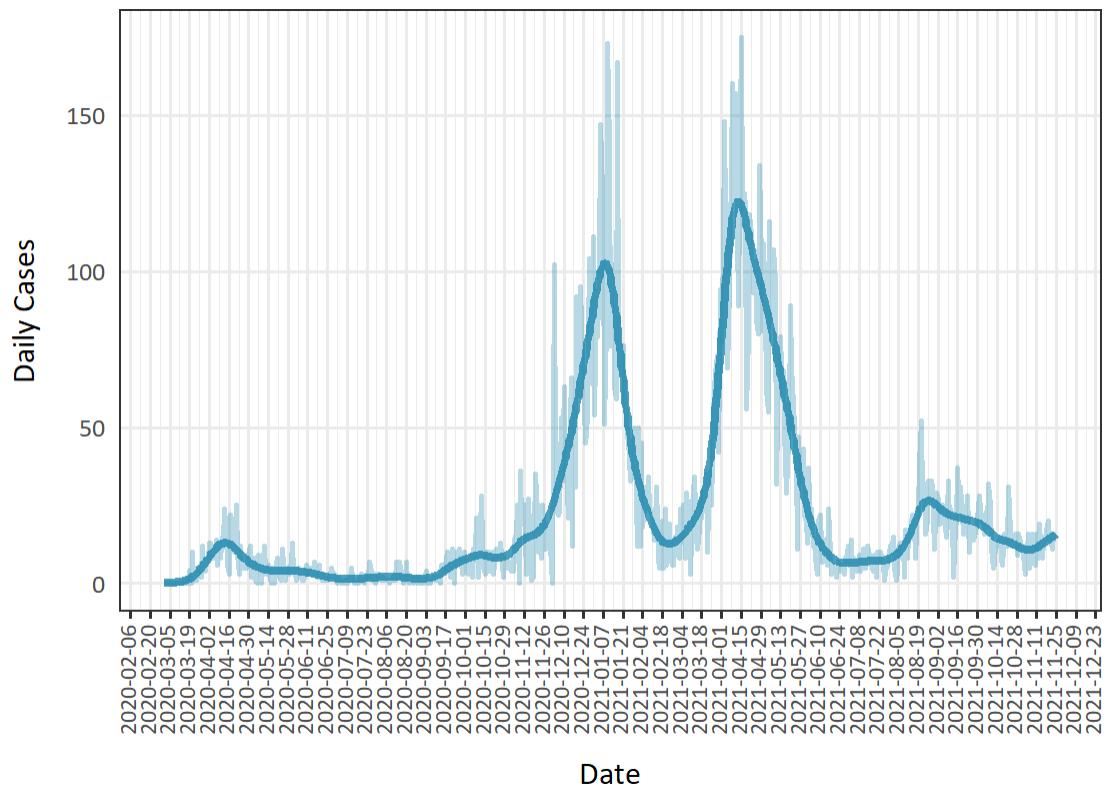


Note: the date used in this graph is the case reported date

Data Source: CCM

## Middlesex-London Health Unit

### Epidemic Curve: Middlesex-London Health Unit

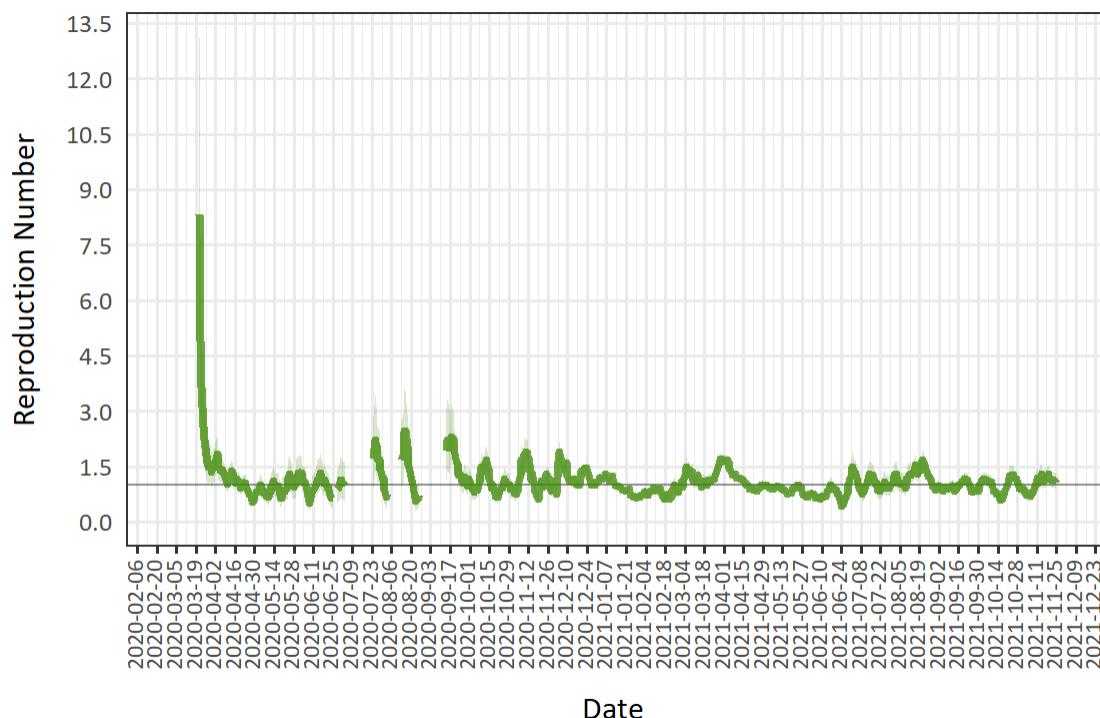


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Middlesex-London Health Unit

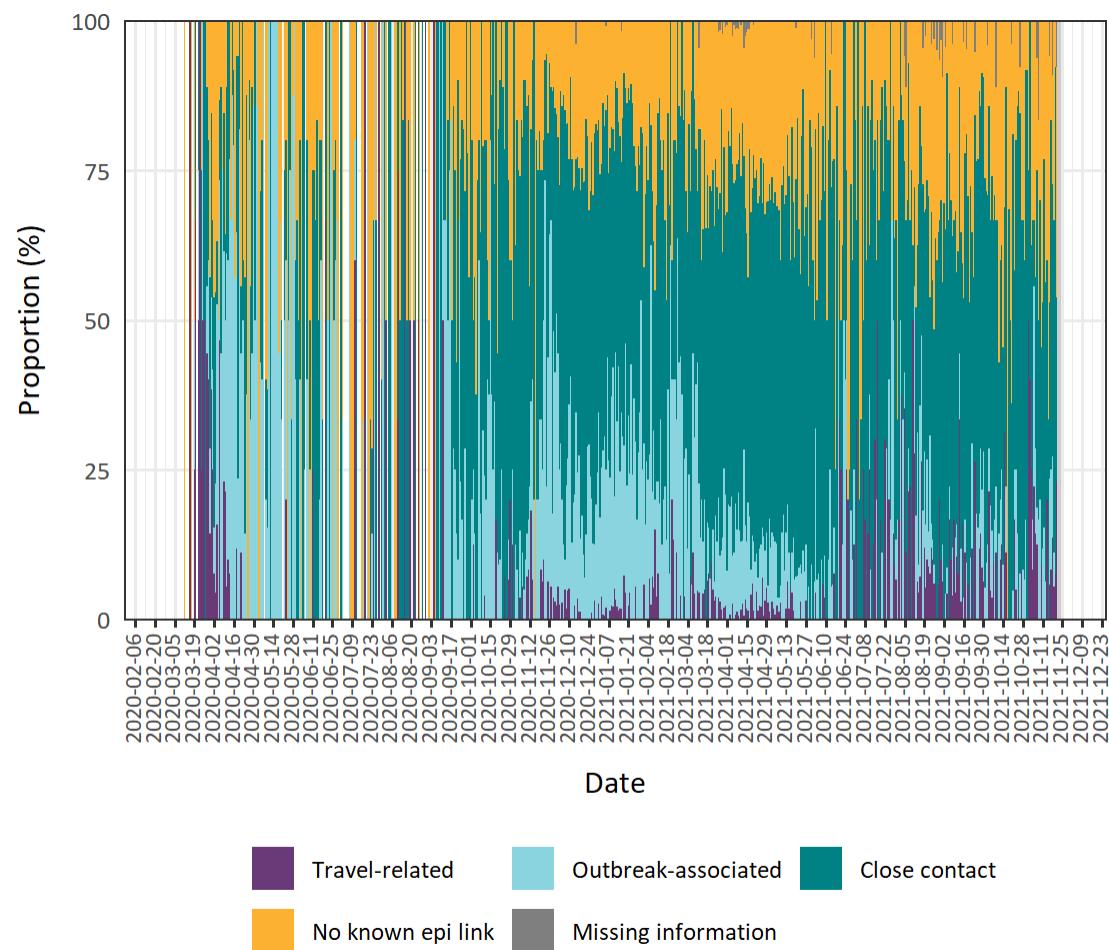
Nov 25 Re = 1.06, 95% CI: 0.87-1.27



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

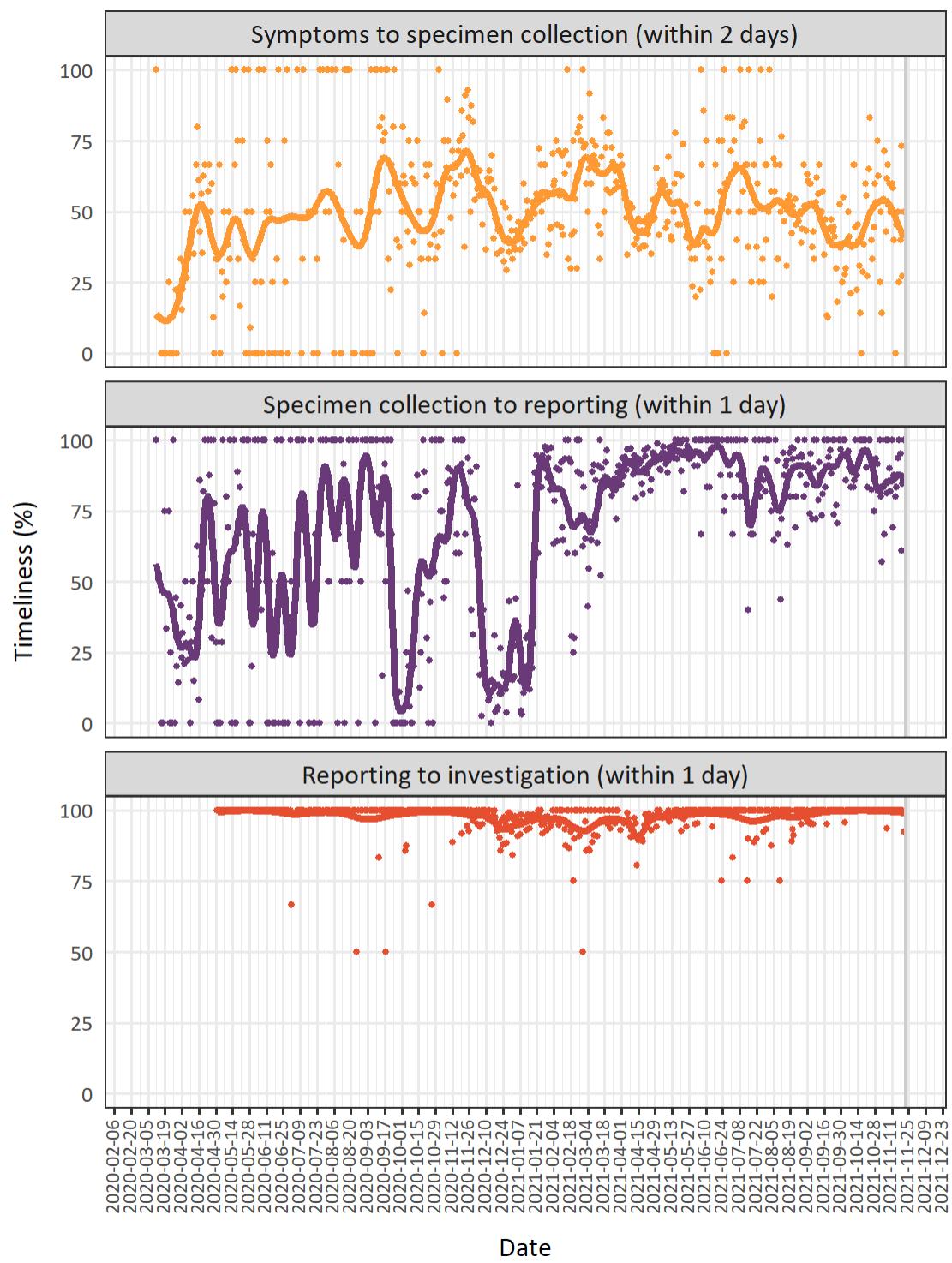
## Likely Acquisition: Middlesex-London Health Unit



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Middlesex-London Health Unit

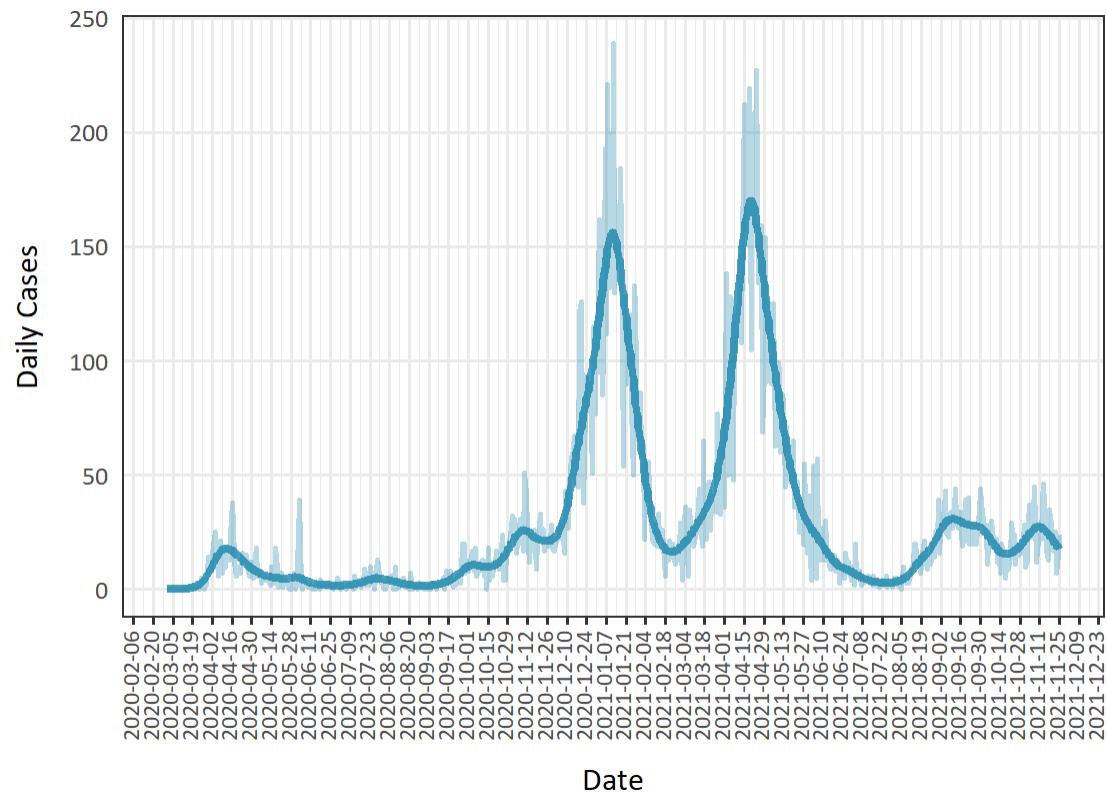


Note: the date used in this graph is the case reported date

Data Source: CCM

## Niagara Region Public Health

### Epidemic Curve: Niagara Region Public Health

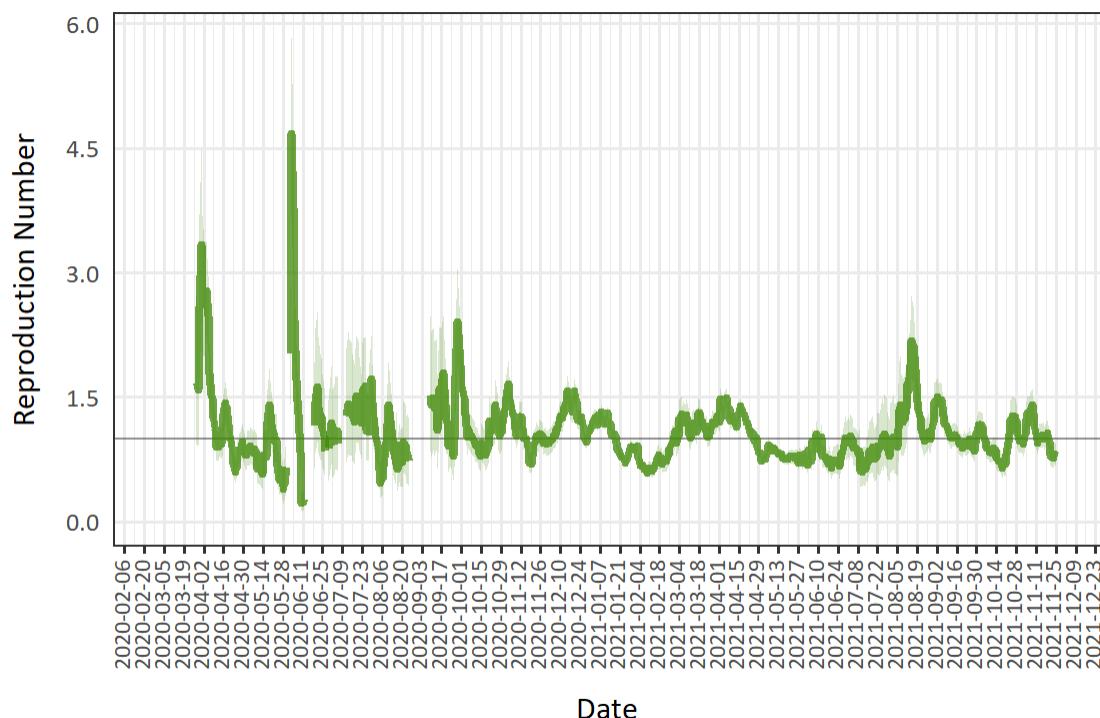


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Niagara Region Public Health

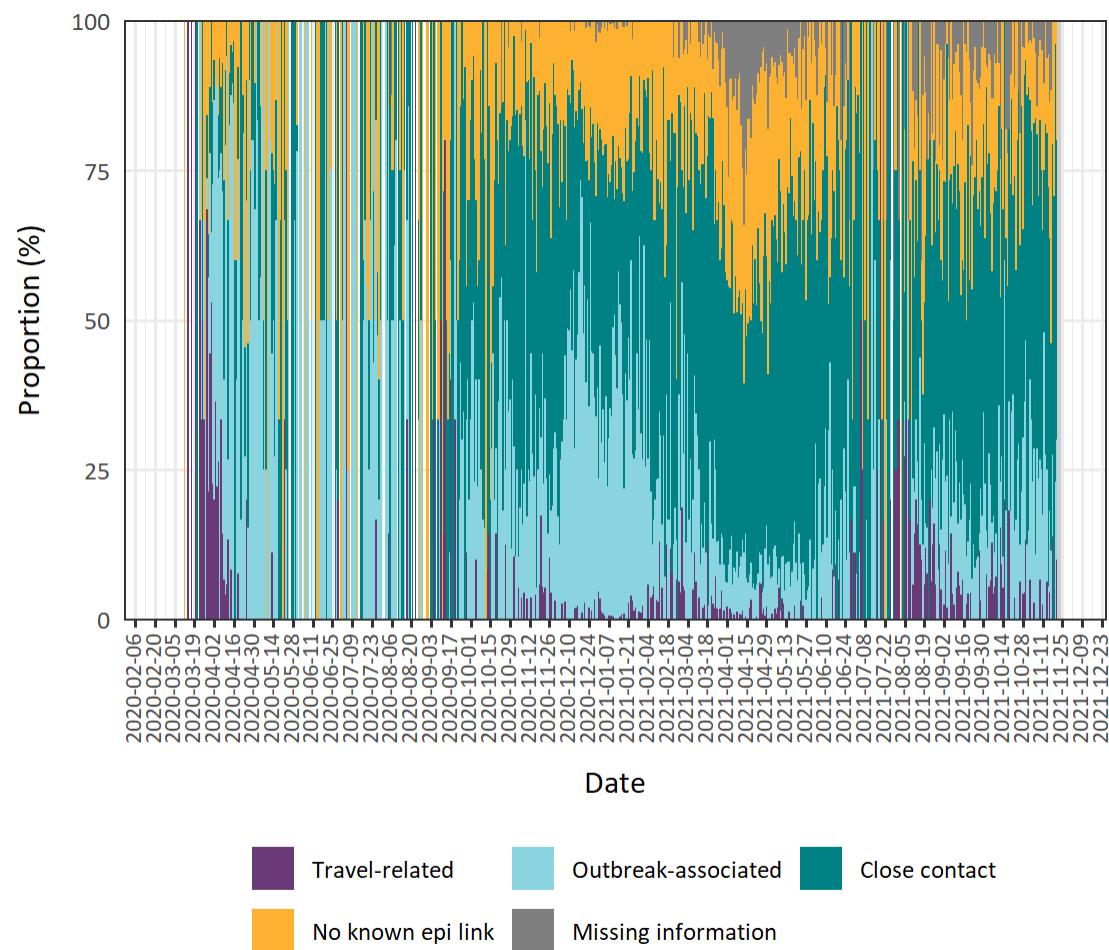
Nov 25 Re = 0.80, 95% CI: 0.67-0.94



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

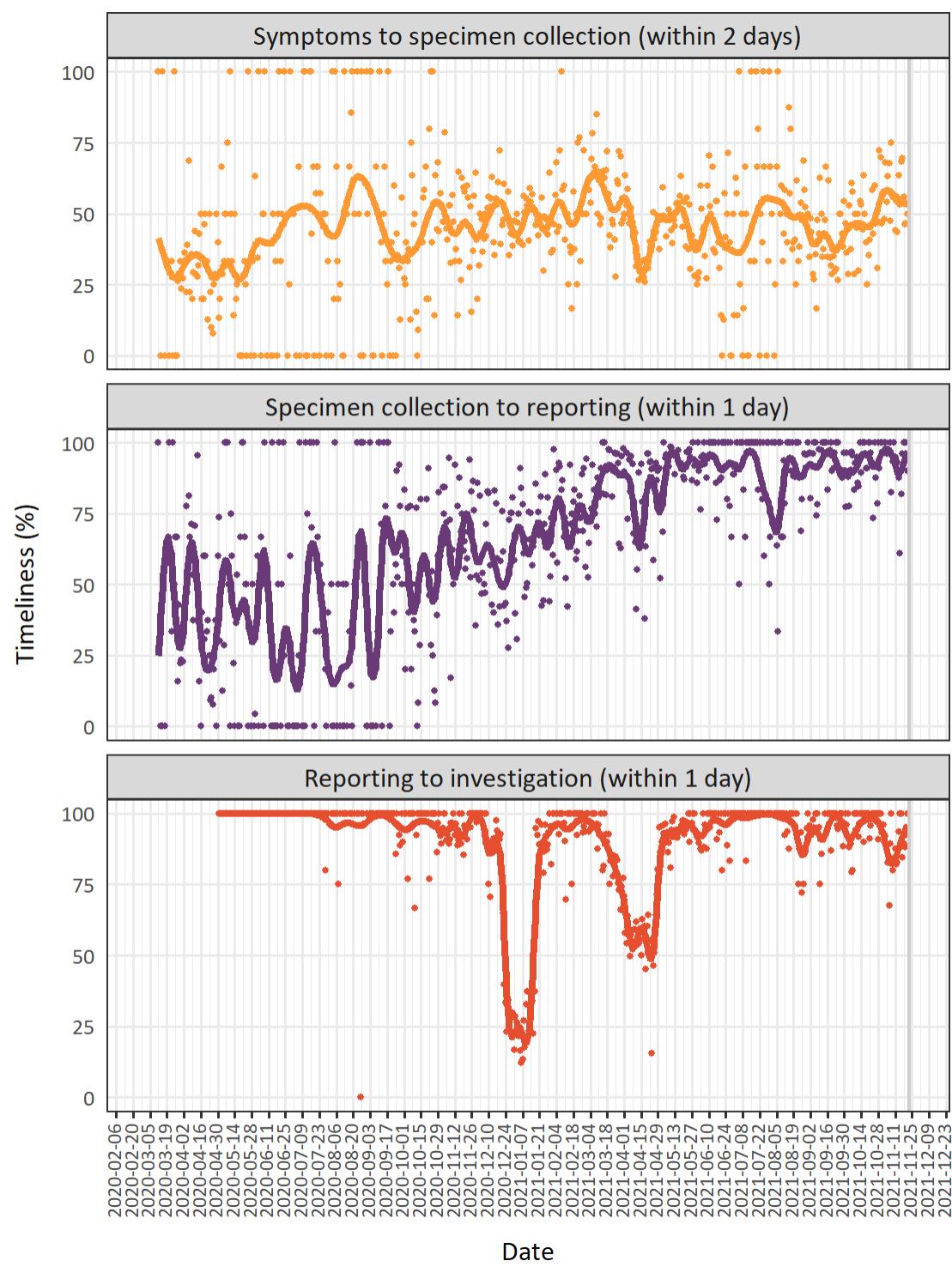
## Likely Acquisition: Niagara Region Public Health



Note: the date used in this graph is the case reported date

Data Source: CCM

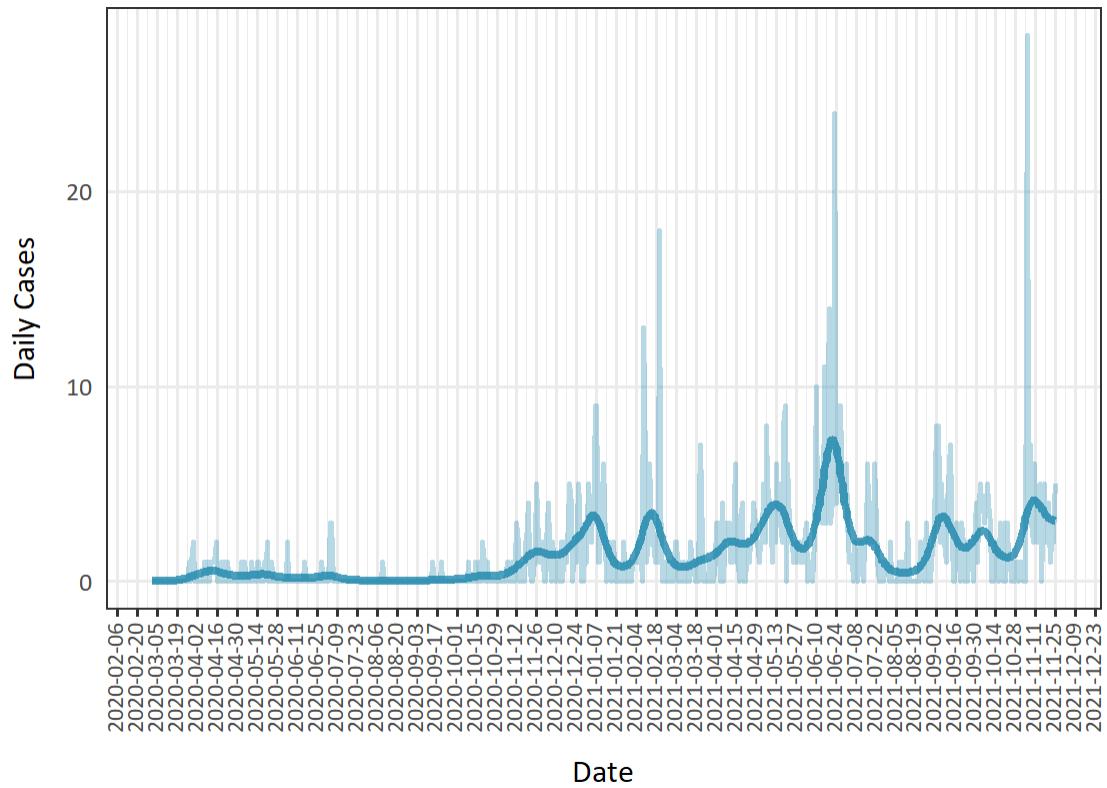
## Timeliness: Niagara Region Public Health



Data Source: CCM

## North Bay Parry Sound District Health Unit

### Epidemic Curve: North Bay Parry Sound District Health Unit

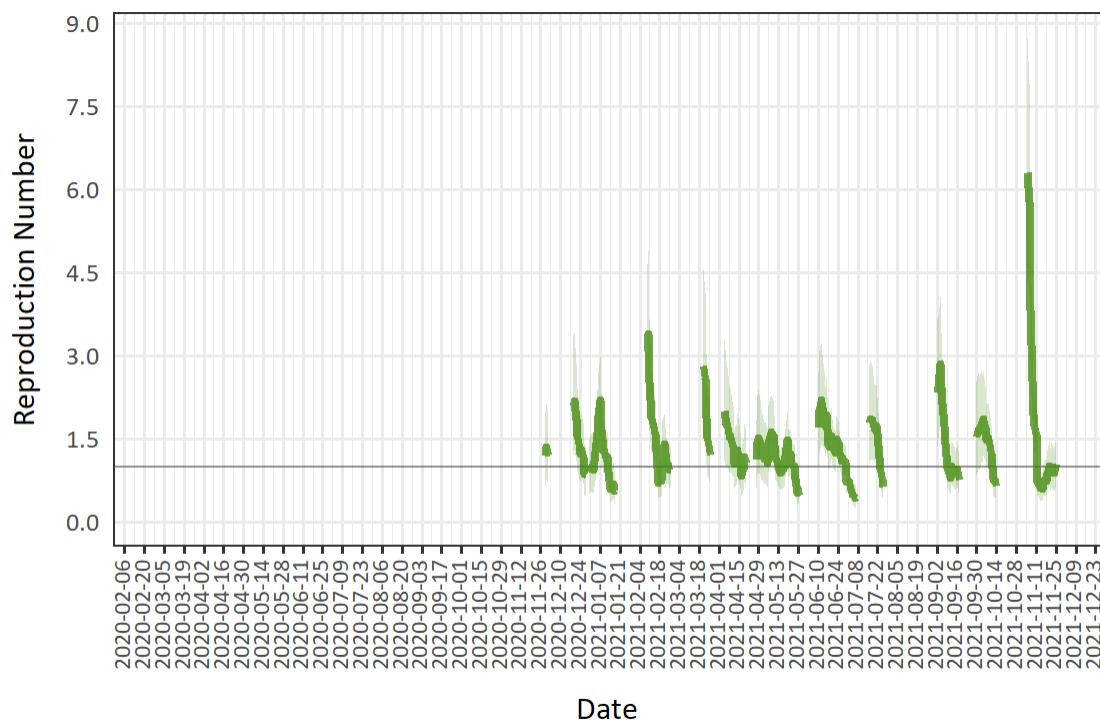


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: North Bay Parry Sound District Health Unit

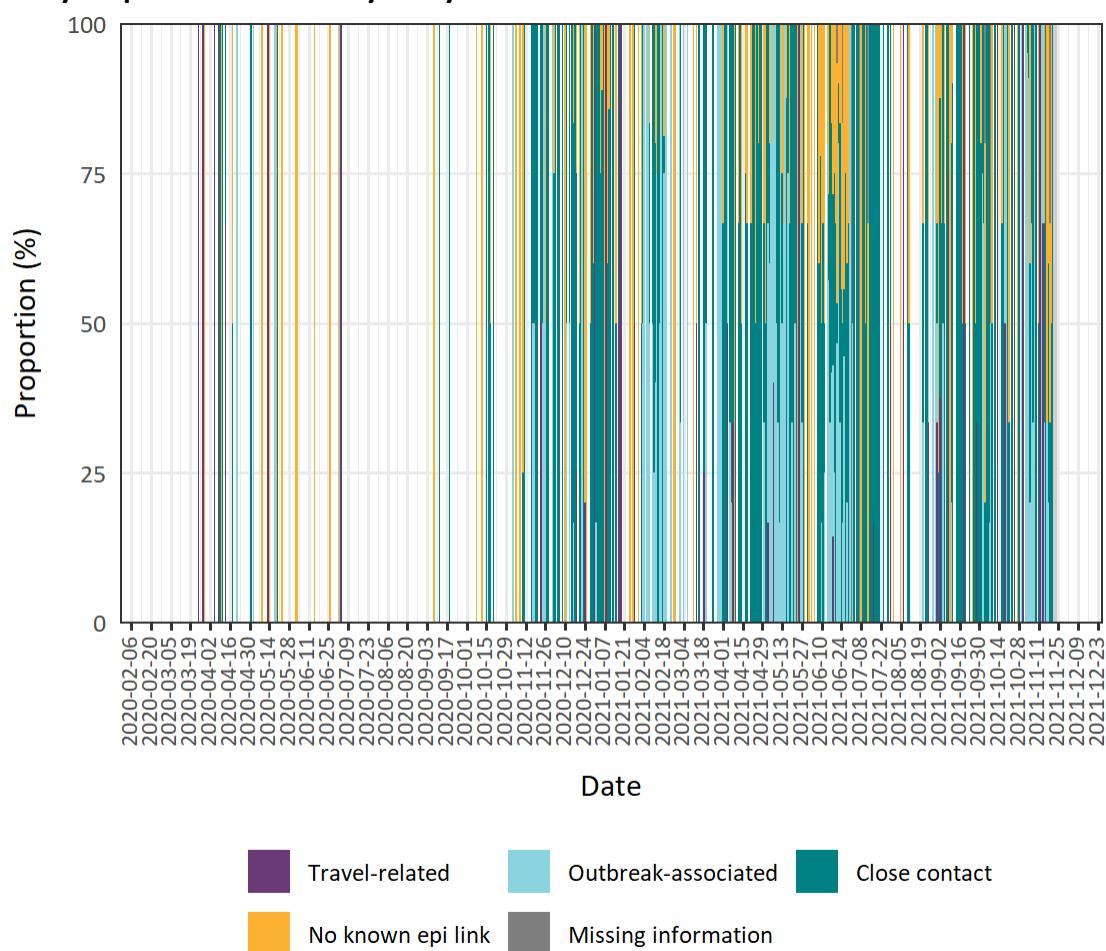
Nov 25 Re = 1.04, 95% CI: 0.67-1.53



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

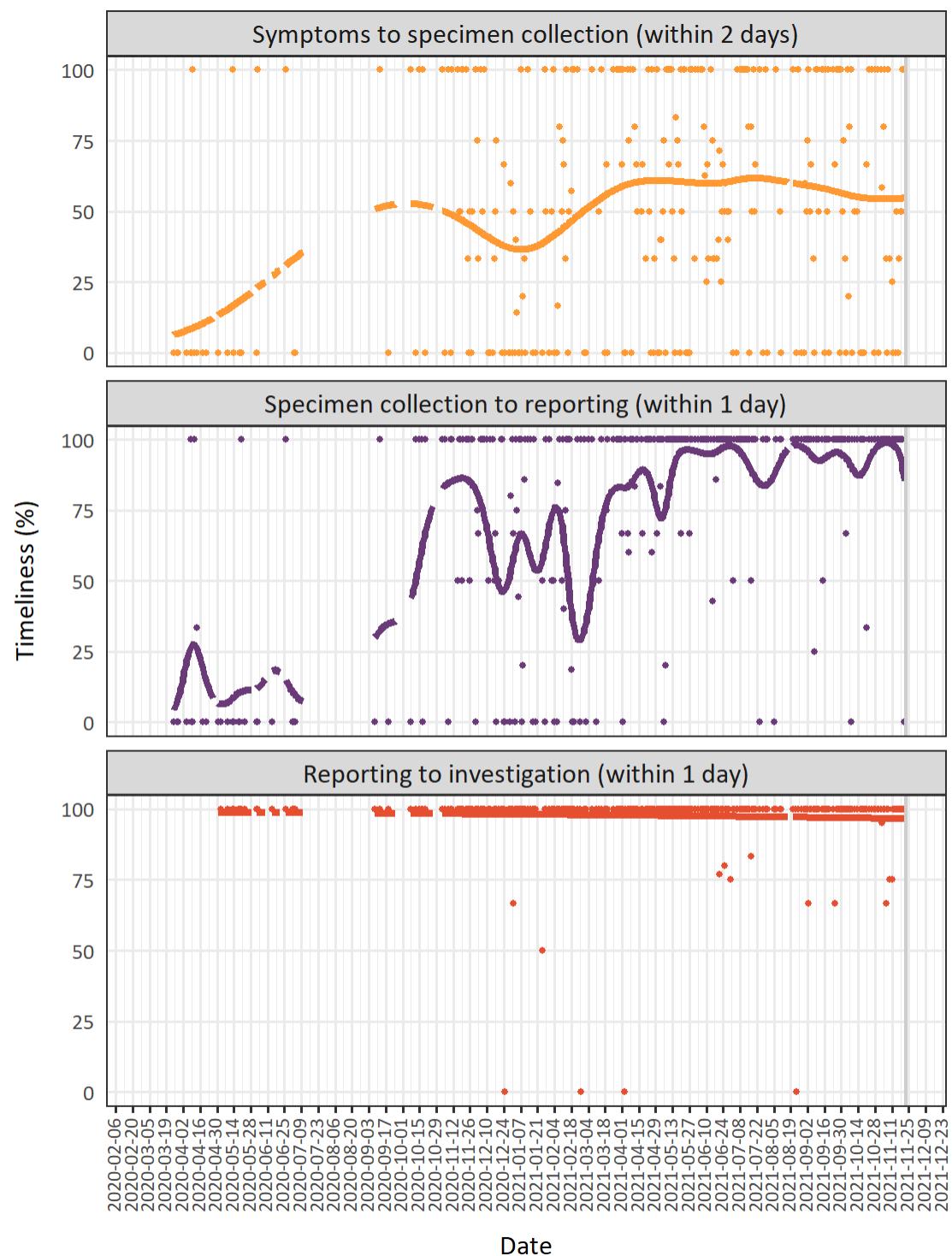
## Likely Acquisition: North Bay Parry Sound District Health Unit



Note: the date used in this graph is the case reported date

Data Source: CCM

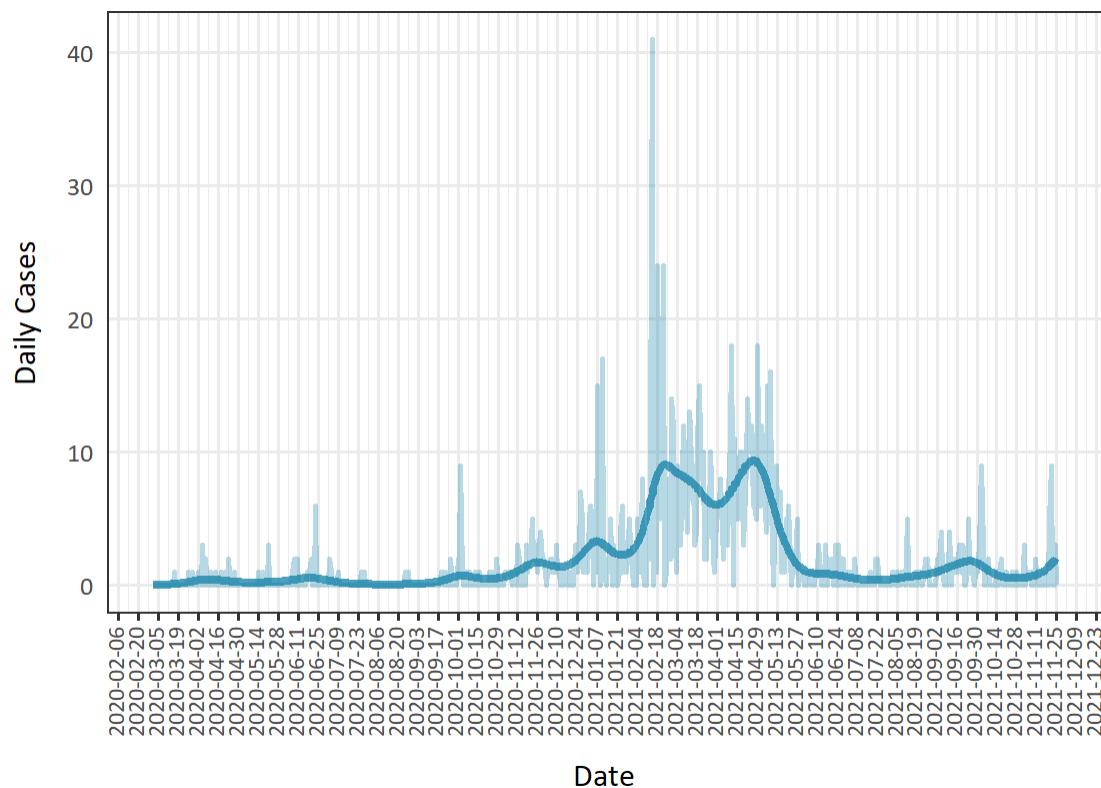
## Timeliness: North Bay Parry Sound District Health Unit



Data Source: CCM

## Northwestern Health Unit

### Epidemic Curve: Northwestern Health Unit

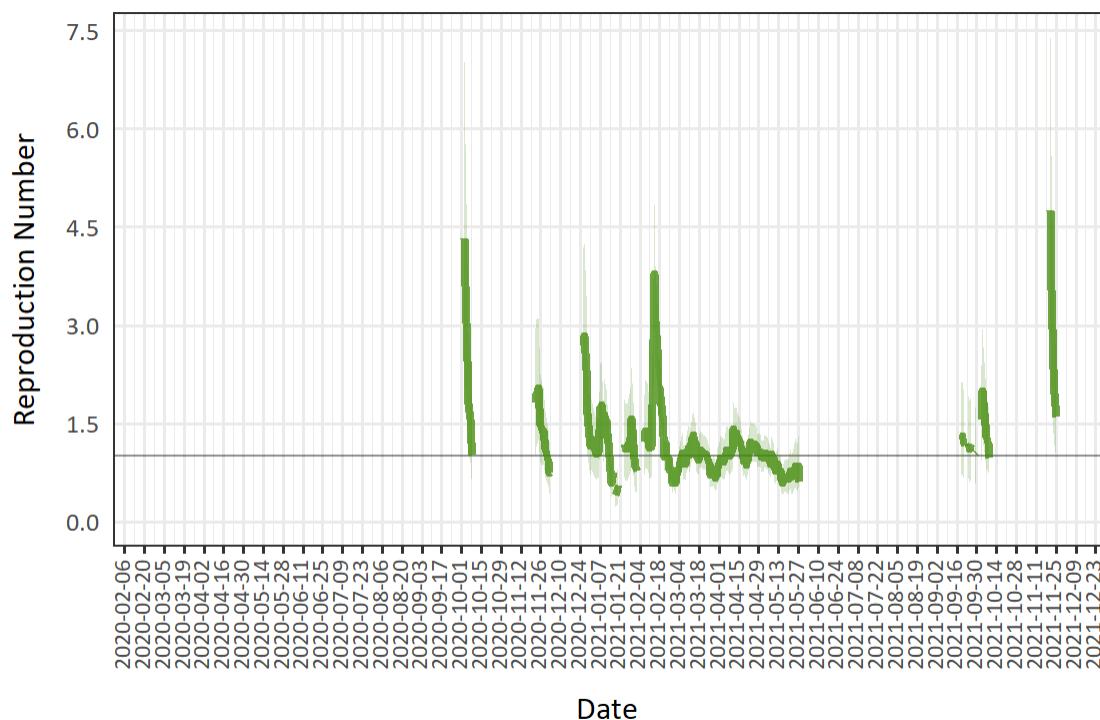


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Northwestern Health Unit

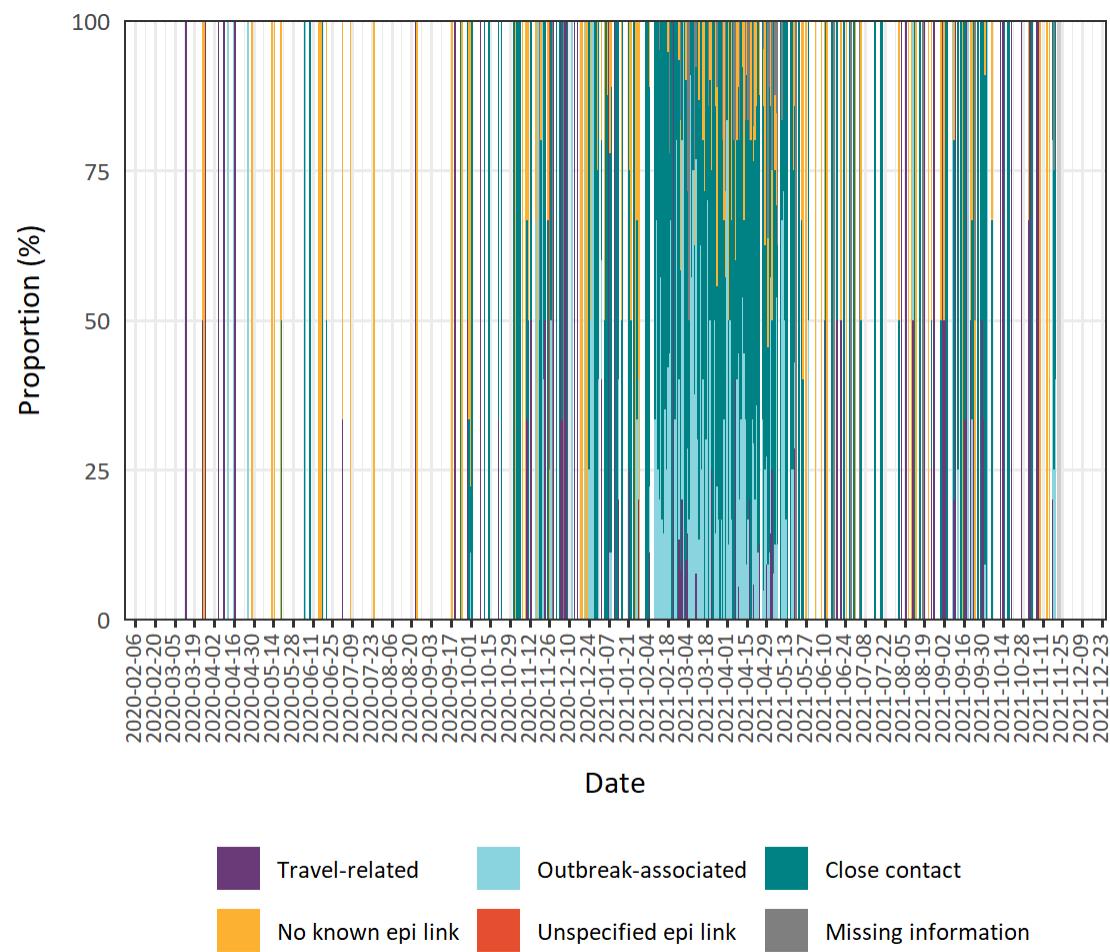
Nov 25 Re = 1.60, 95% CI: 0.97-2.47



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

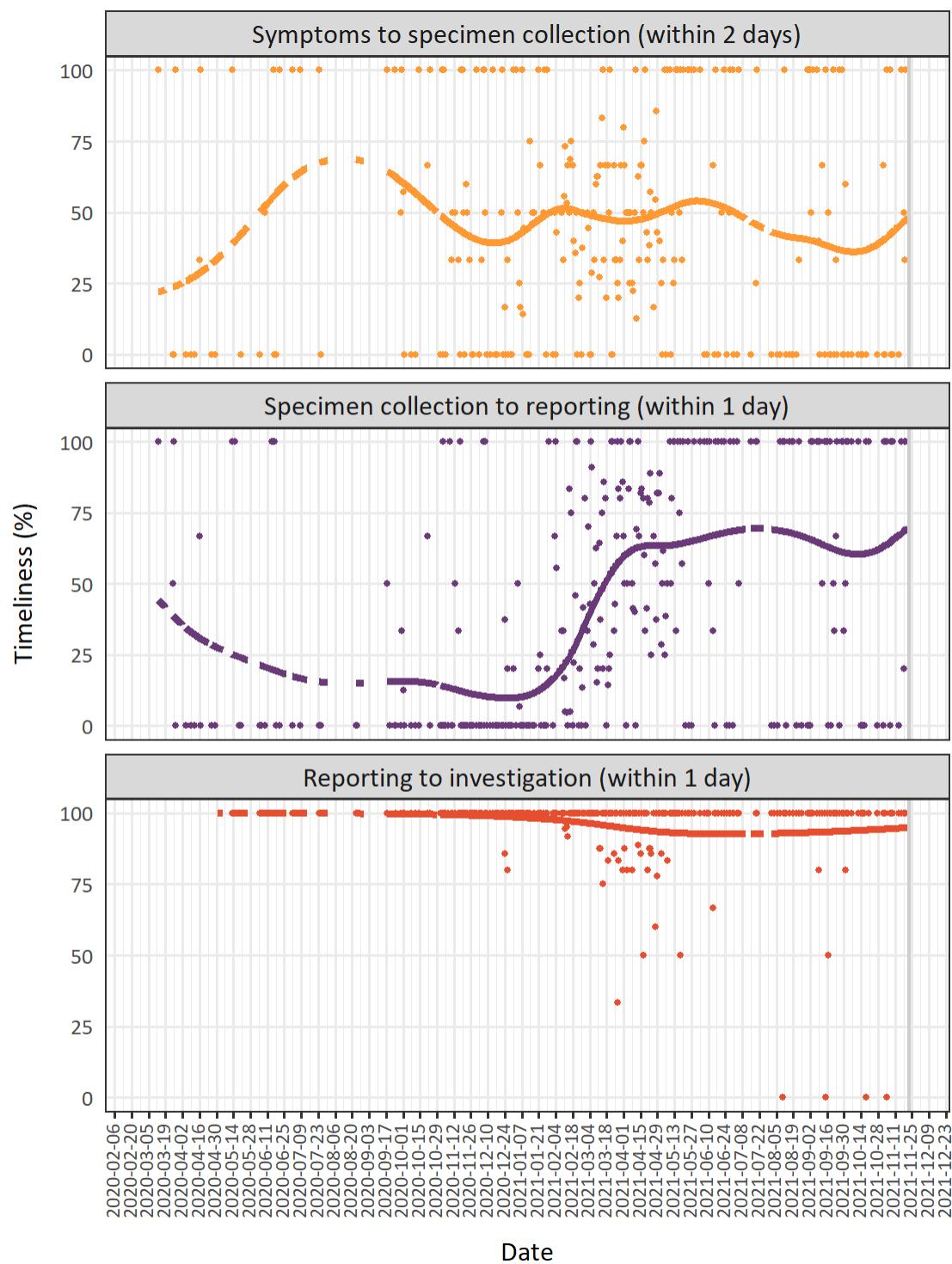
## Likely Acquisition: Northwestern Health Unit



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Northwestern Health Unit

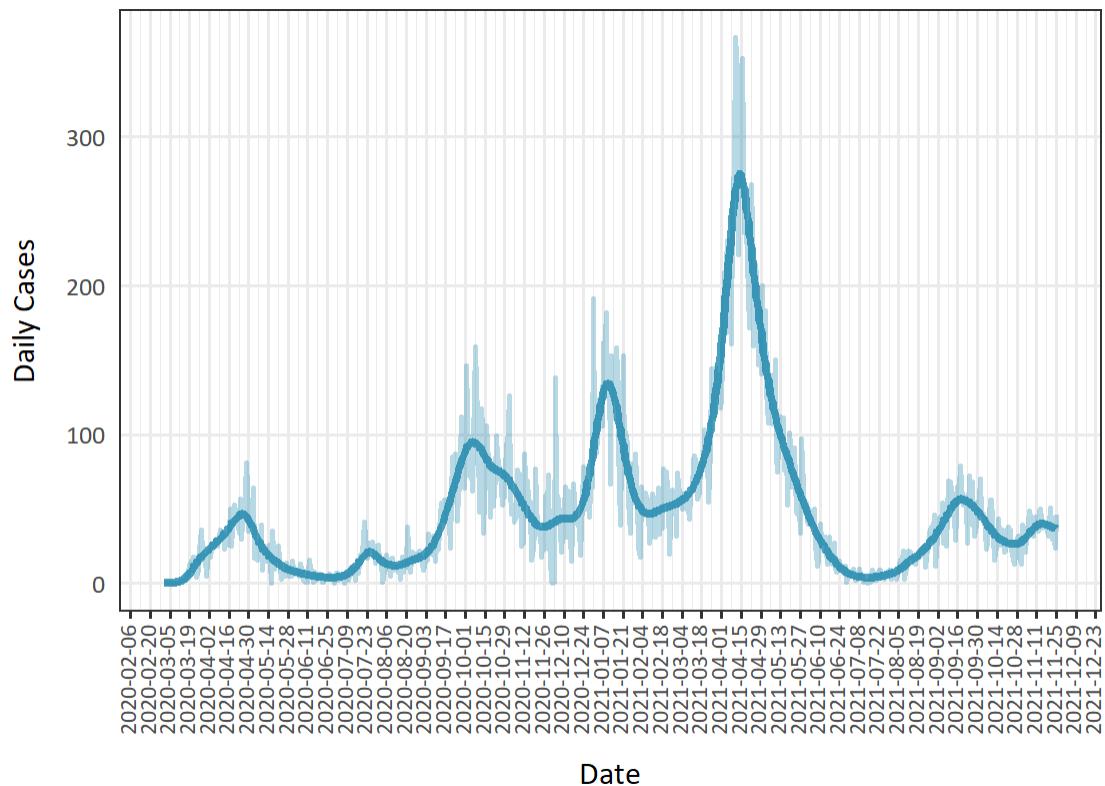


Note: the date used in this graph is the case reported date

Data Source: CCM

## Ottawa Public Health

### Epidemic Curve: Ottawa Public Health

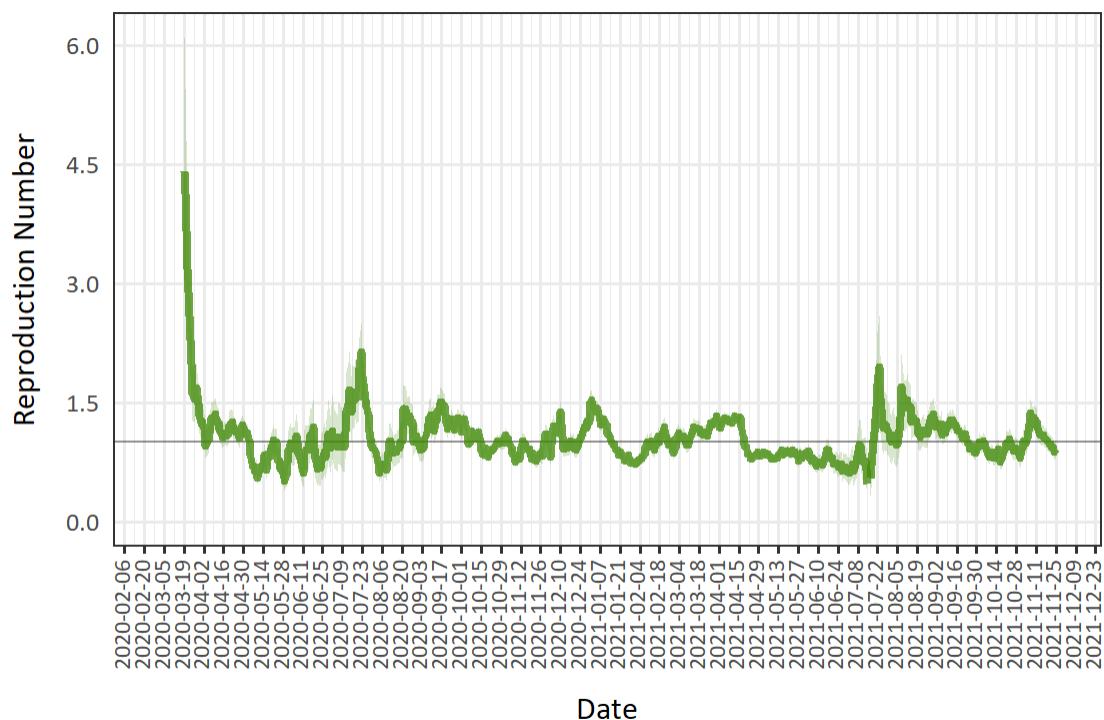


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Ottawa Public Health

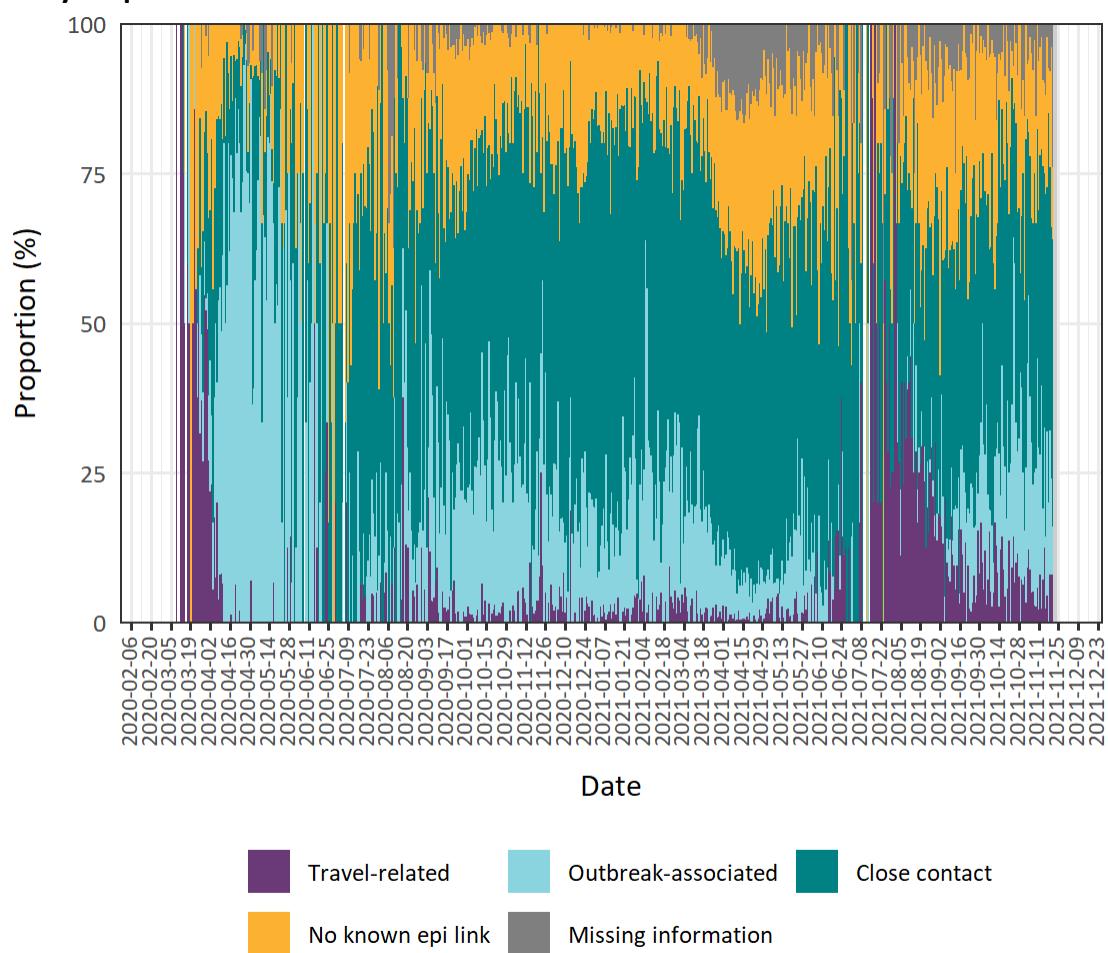
Nov 25 Re = 0.92, 95% CI: 0.81-1.04



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

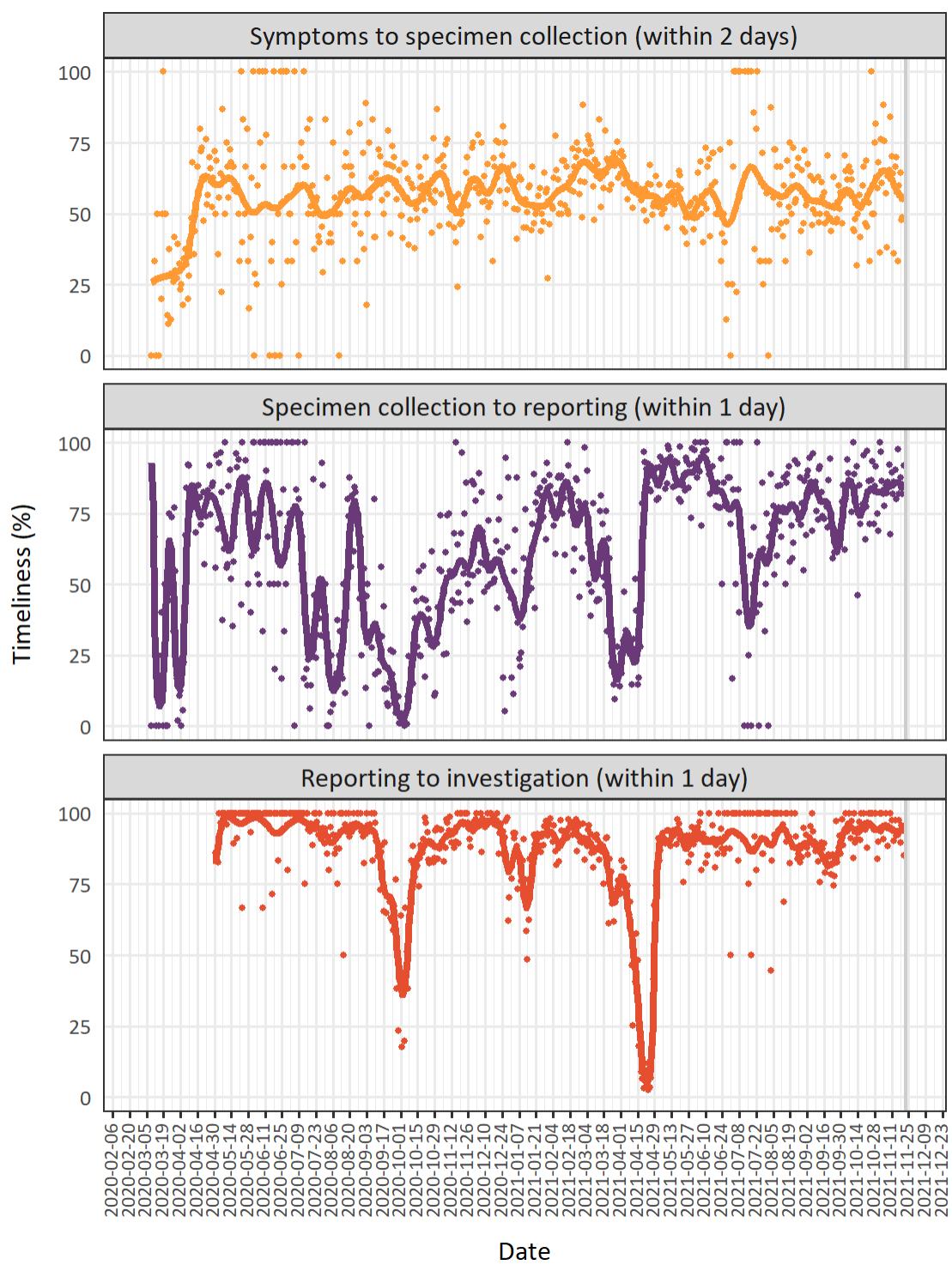
## Likely Acquisition: Ottawa Public Health



Note: the date used in this graph is the case reported date

Data Source: CCM

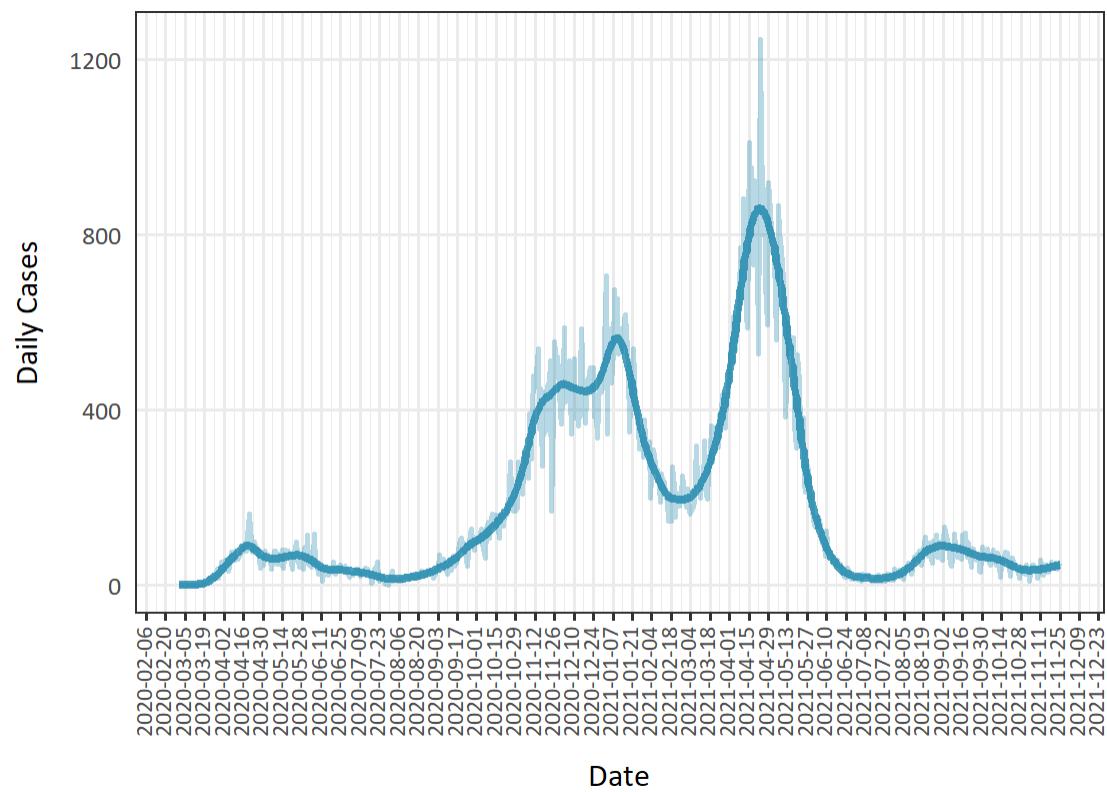
## Timeliness: Ottawa Public Health



Data Source: CCM

## Peel Public Health

### Epidemic Curve: Peel Public Health

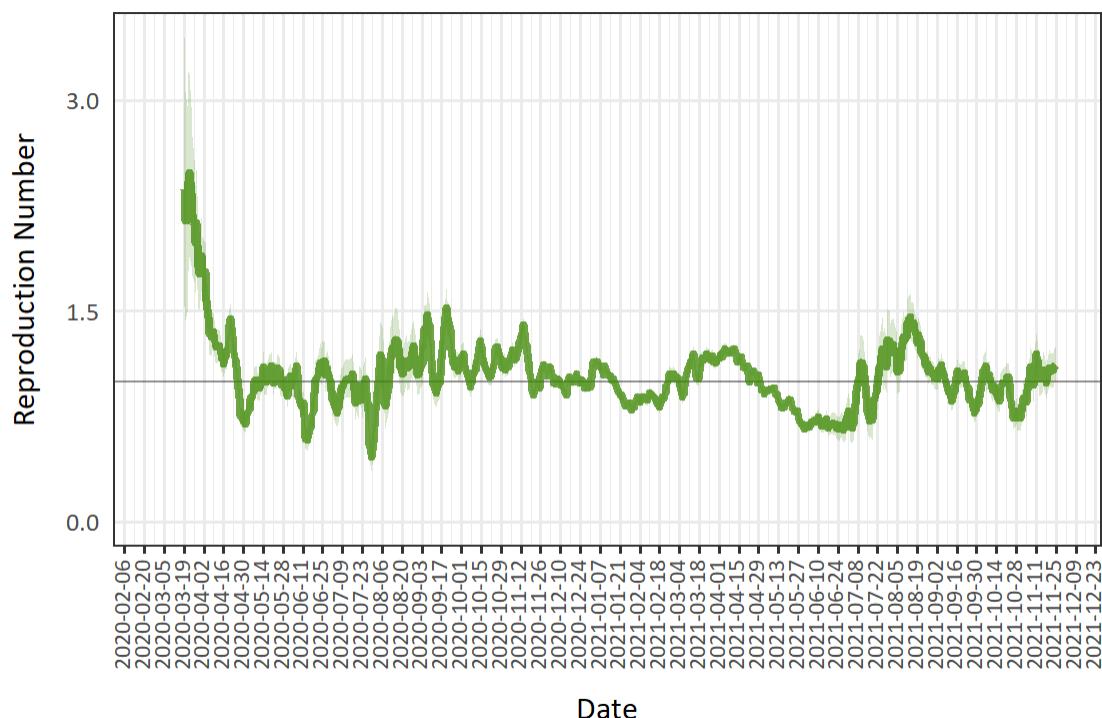


Note: the date used in this graph is the public reporting date

Data Source: CCM

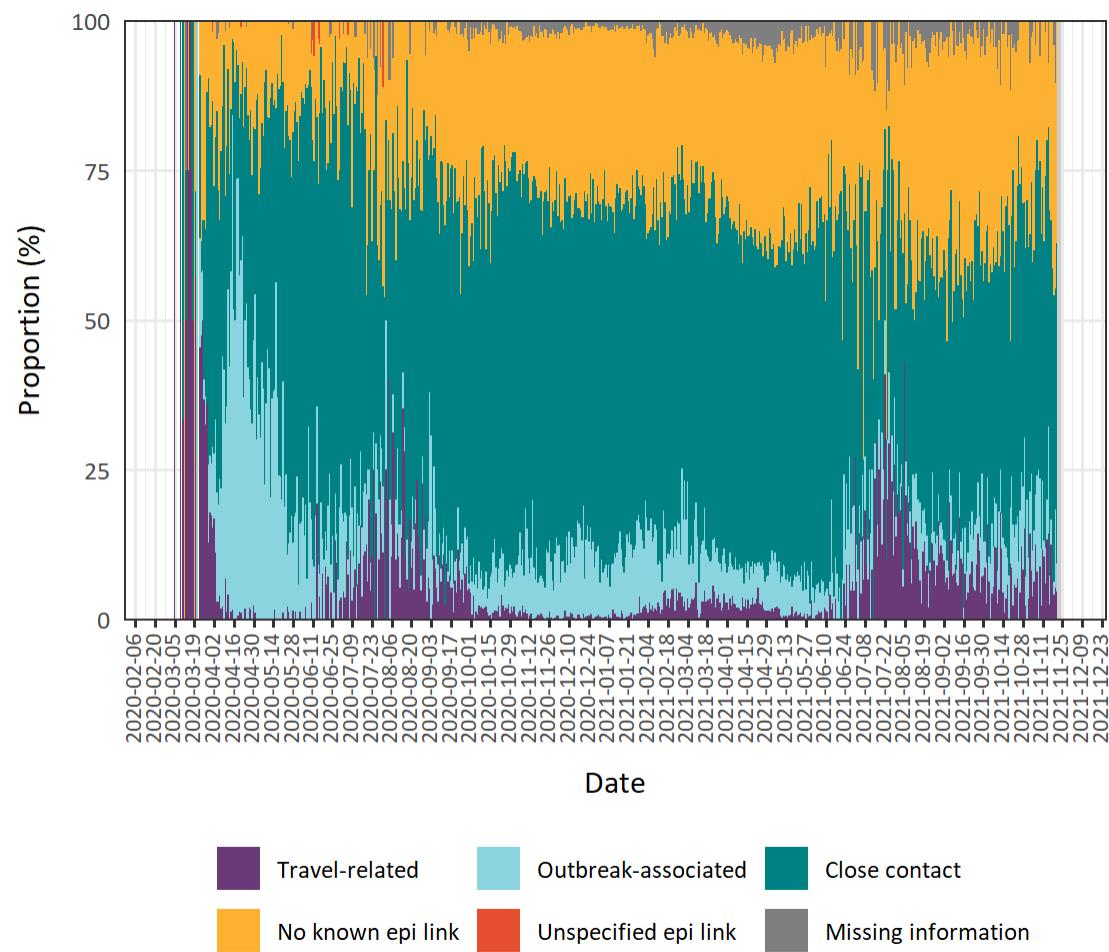
## Reproduction Number: Peel Public Health

Nov 25 Re = 1.12, 95% CI: 1.00-1.24



Data Source: CCM

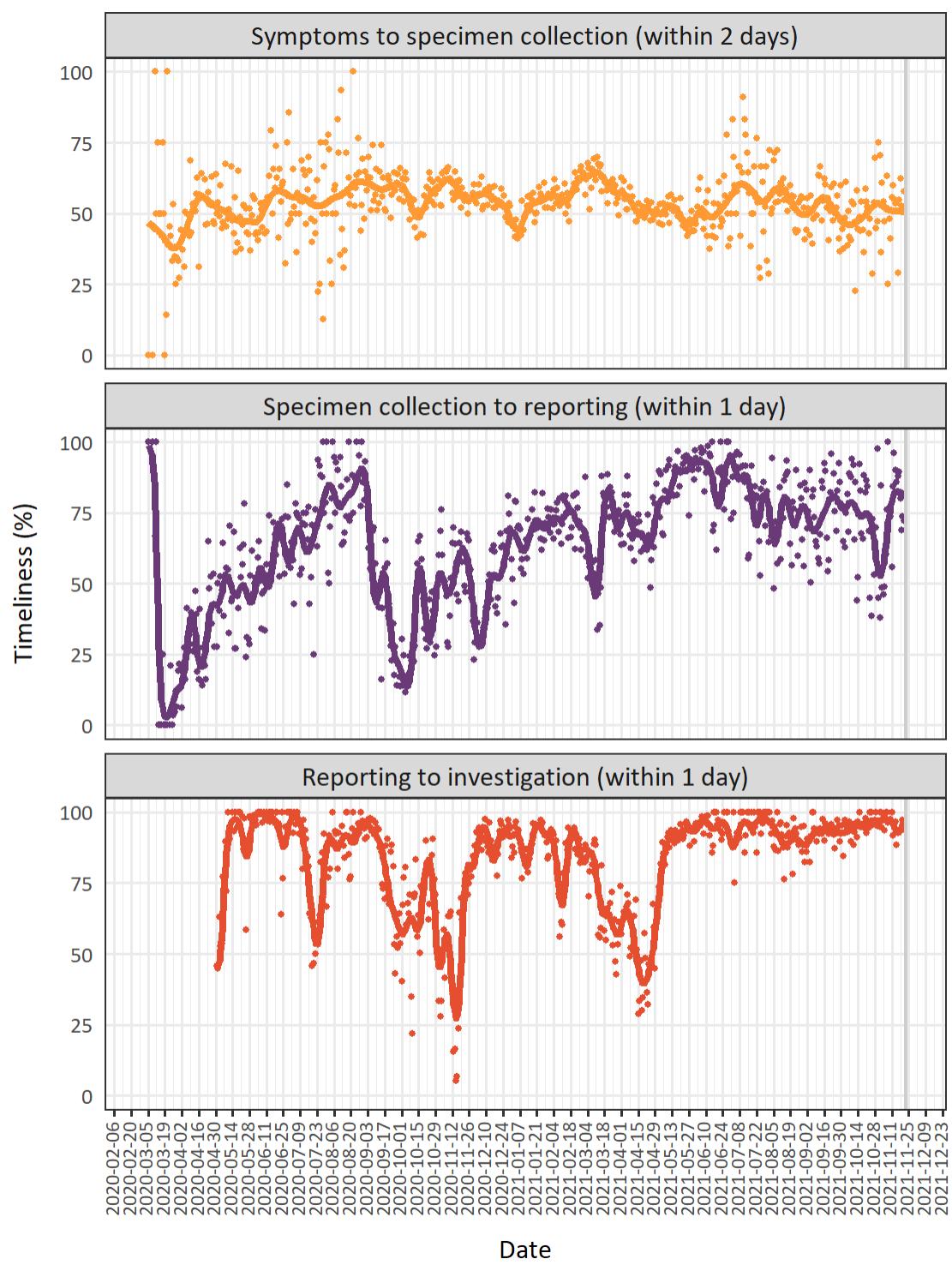
## Likely Acquisition: Peel Public Health



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Peel Public Health

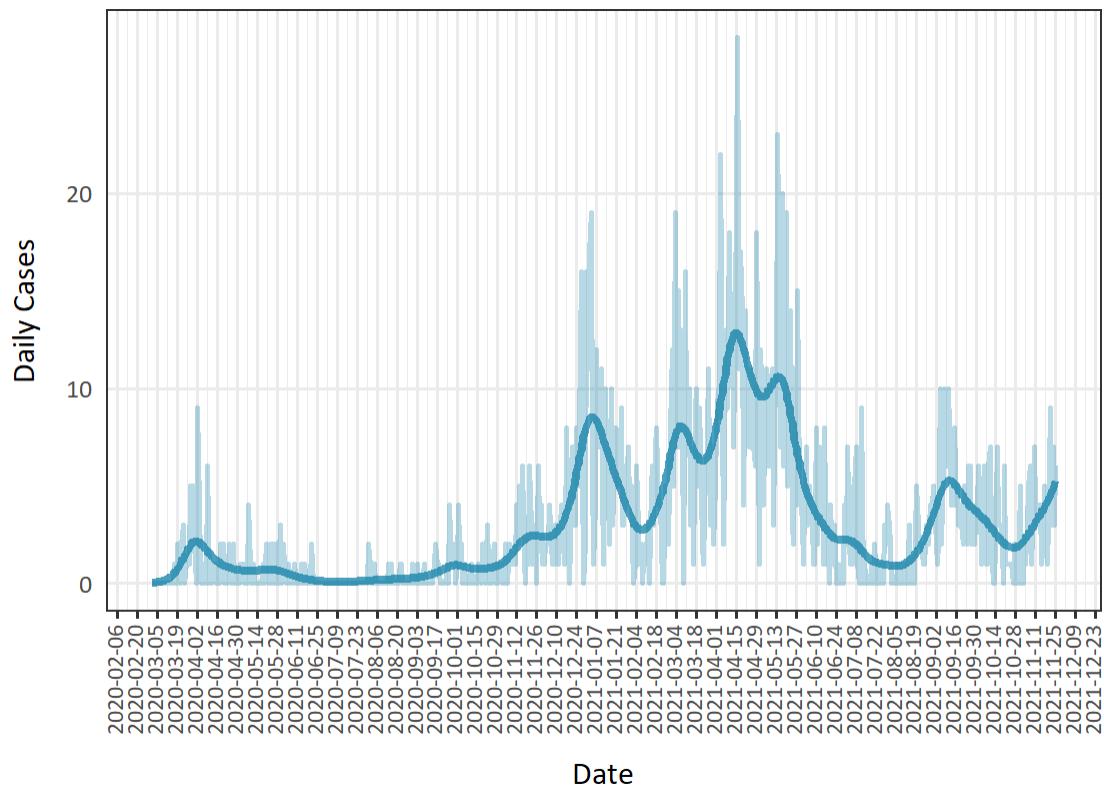


Note: the date used in this graph is the case reported date

Data Source: CCM

# Peterborough Public Health

## Epidemic Curve: Peterborough Public Health

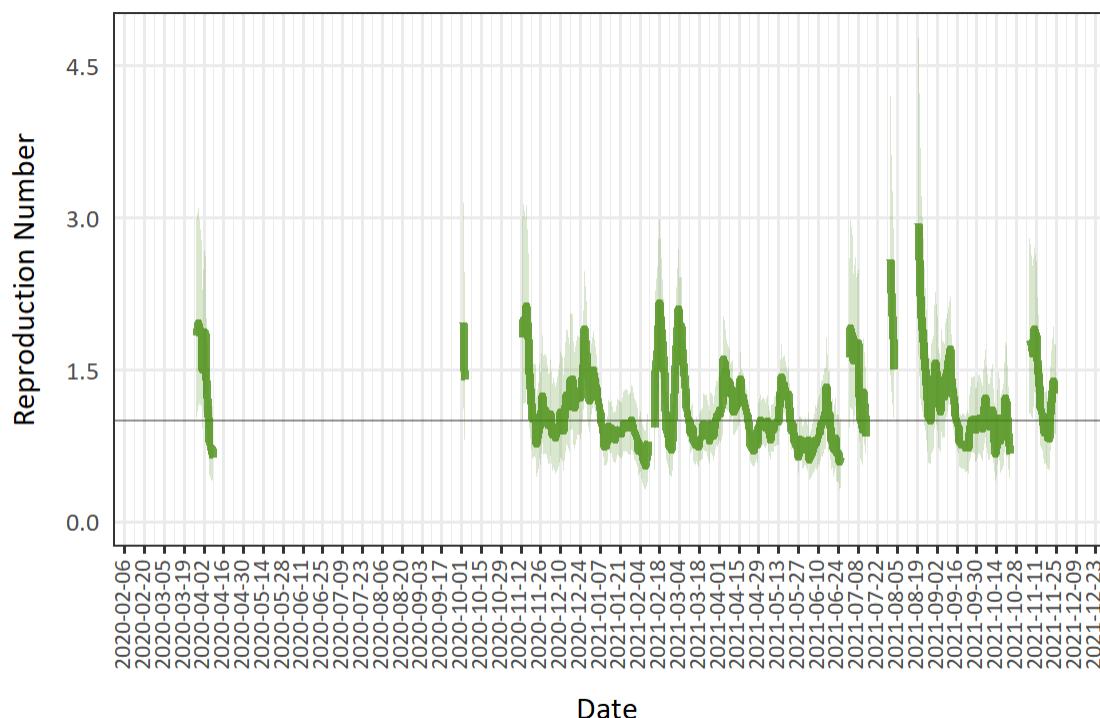


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Peterborough Public Health

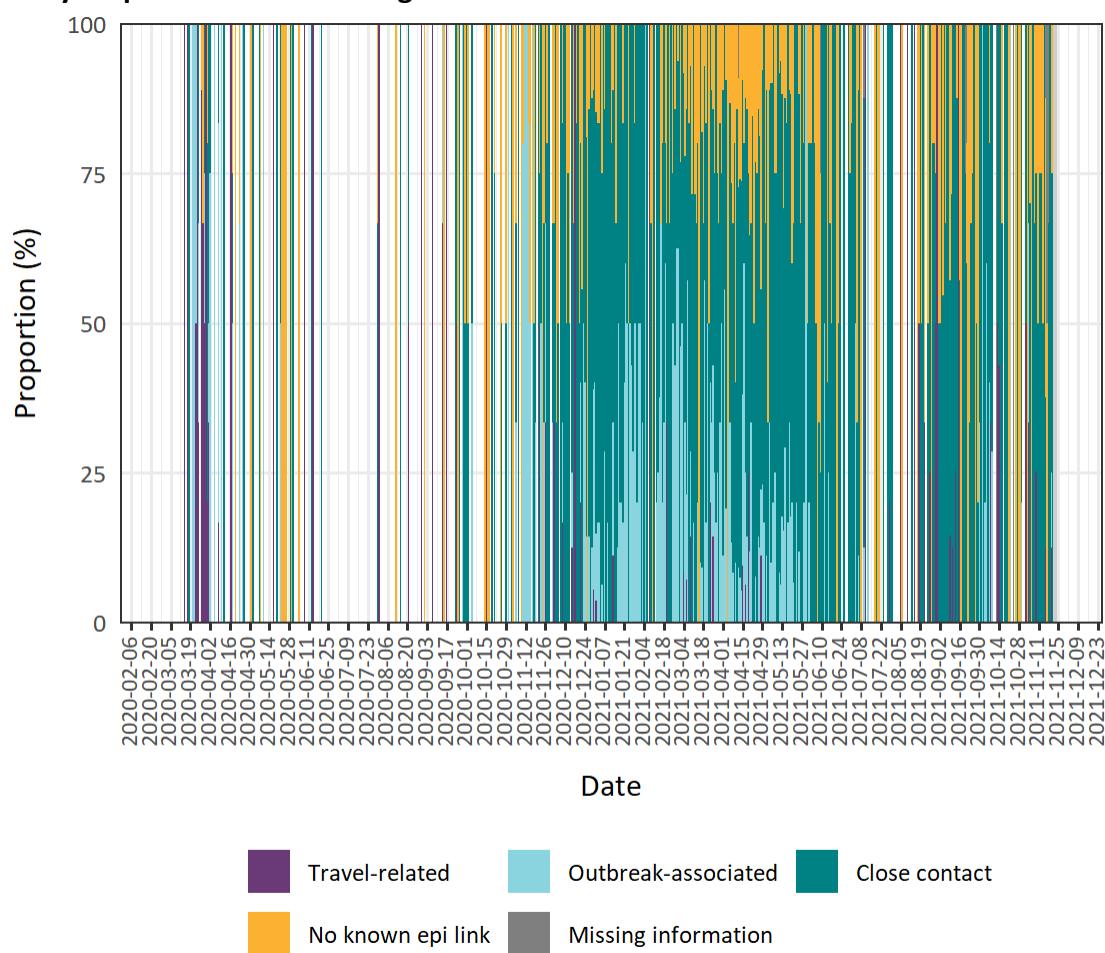
Nov 25 Re = 1.26, 95% CI: 0.88-1.74



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

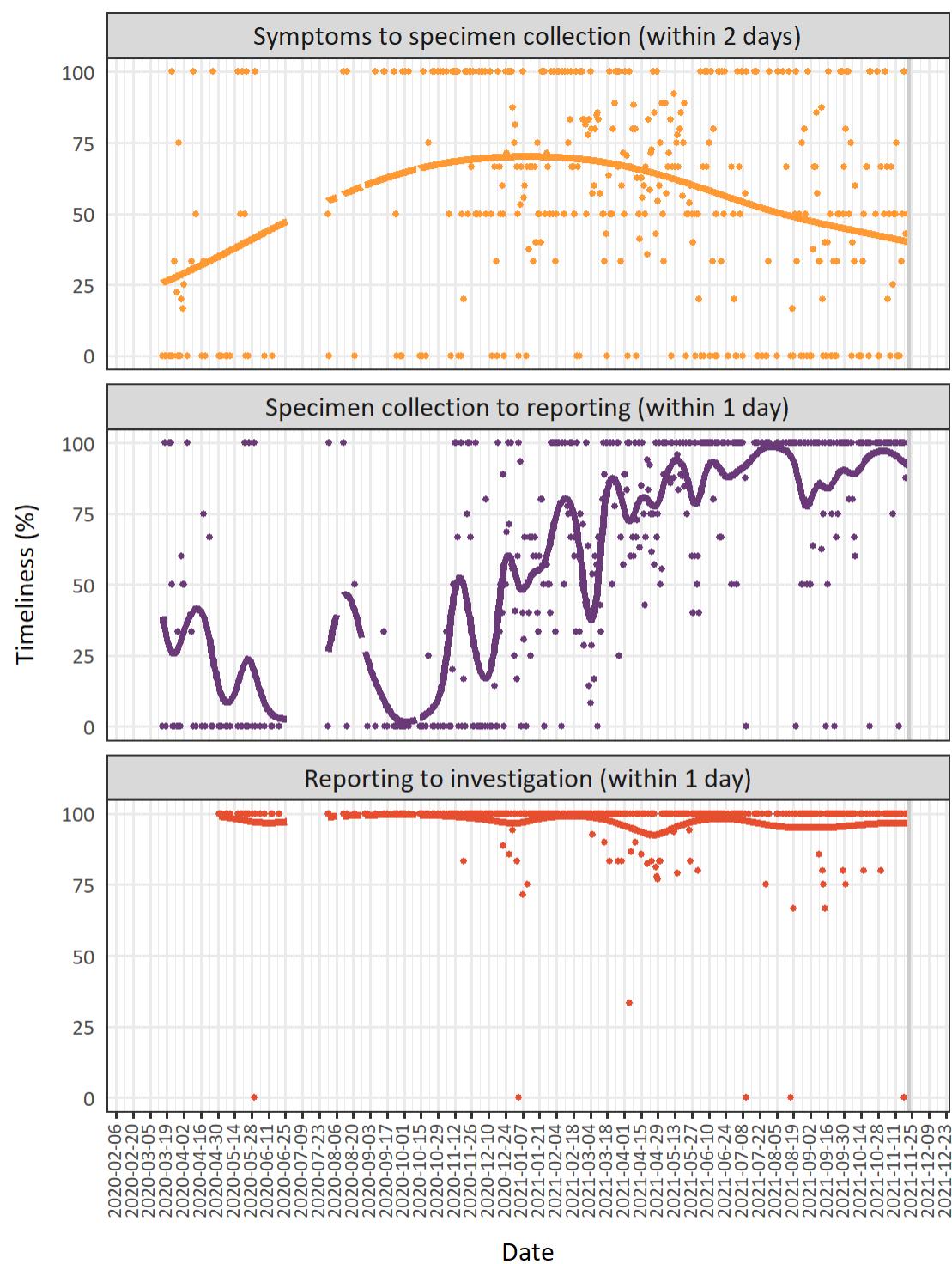
## Likely Acquisition: Peterborough Public Health



Note: the date used in this graph is the case reported date

Data Source: CCM

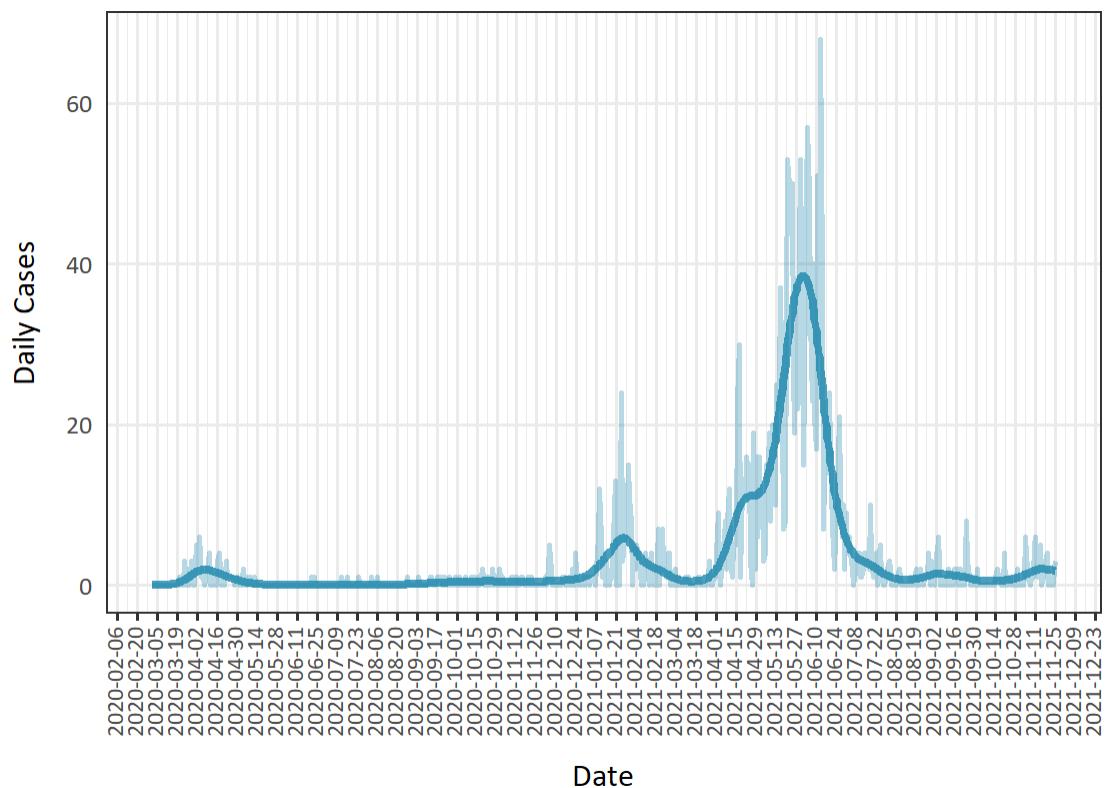
## Timeliness: Peterborough Public Health



Data Source: CCM

## Porcupine Health Unit

### Epidemic Curve: Porcupine Health Unit

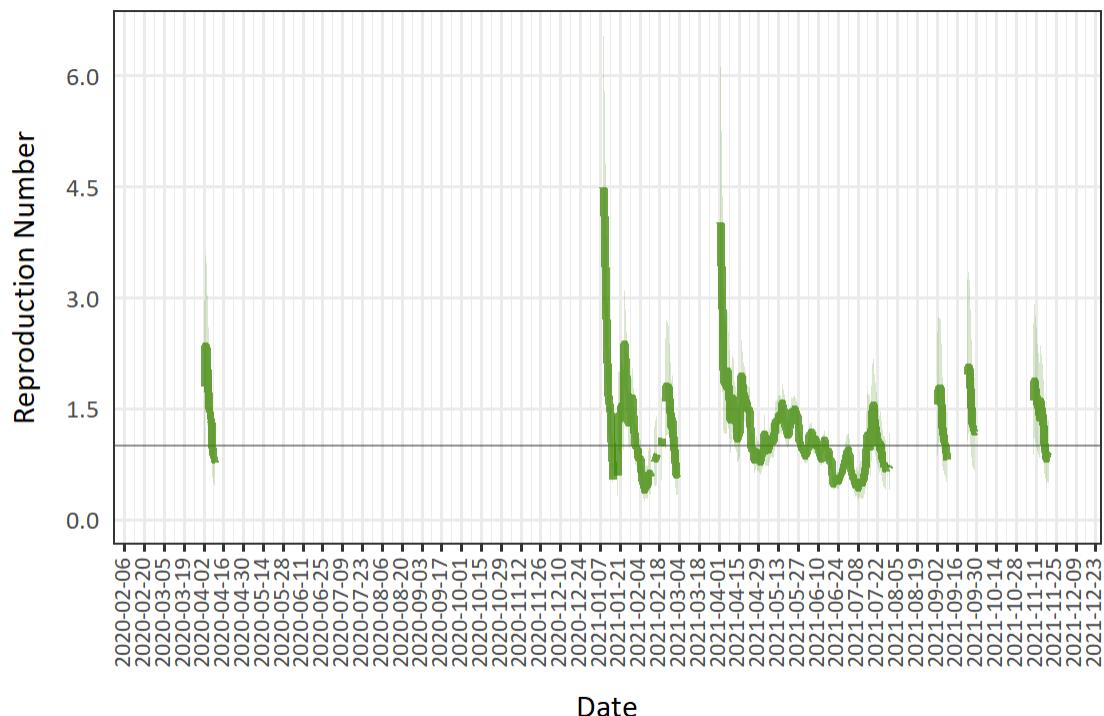


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Porcupine Health Unit

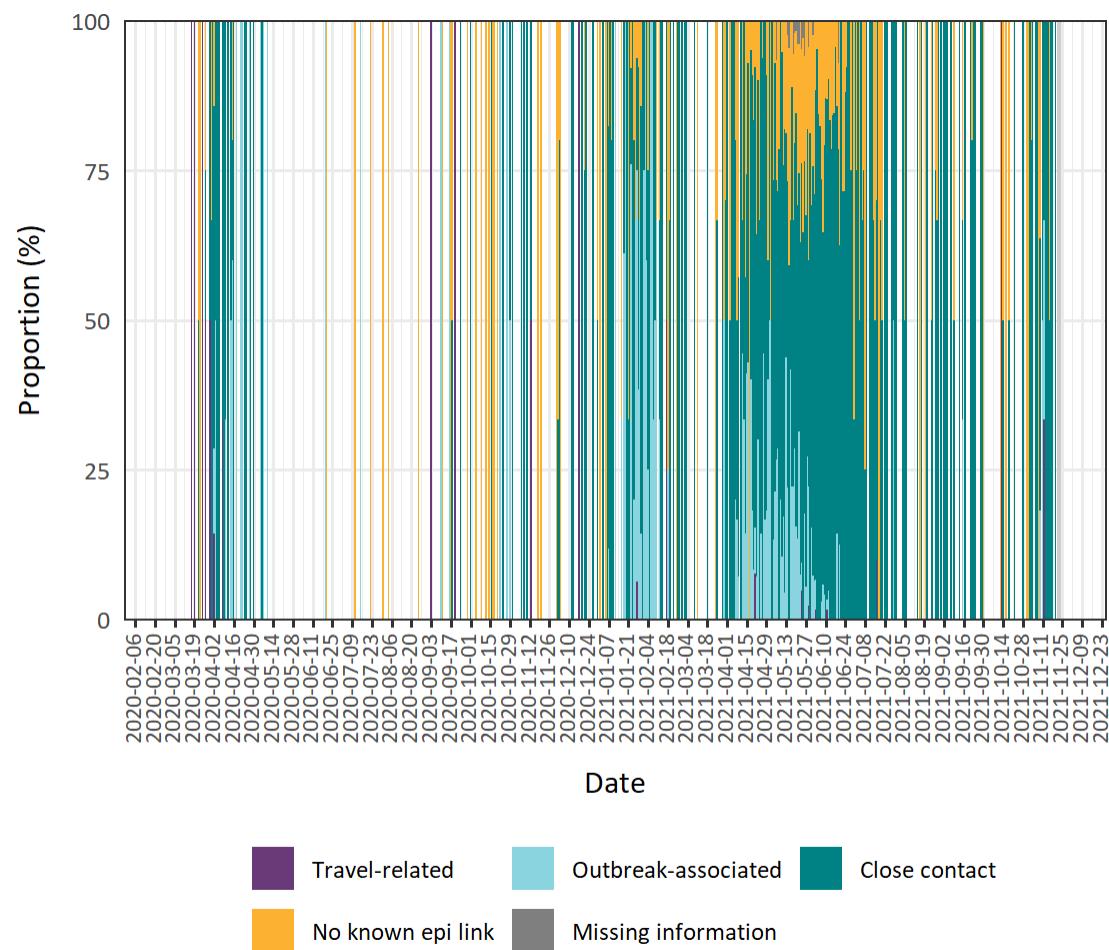
Nov 25 Re not provided: fewer than 12 cases in the 7 days prior to this date



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

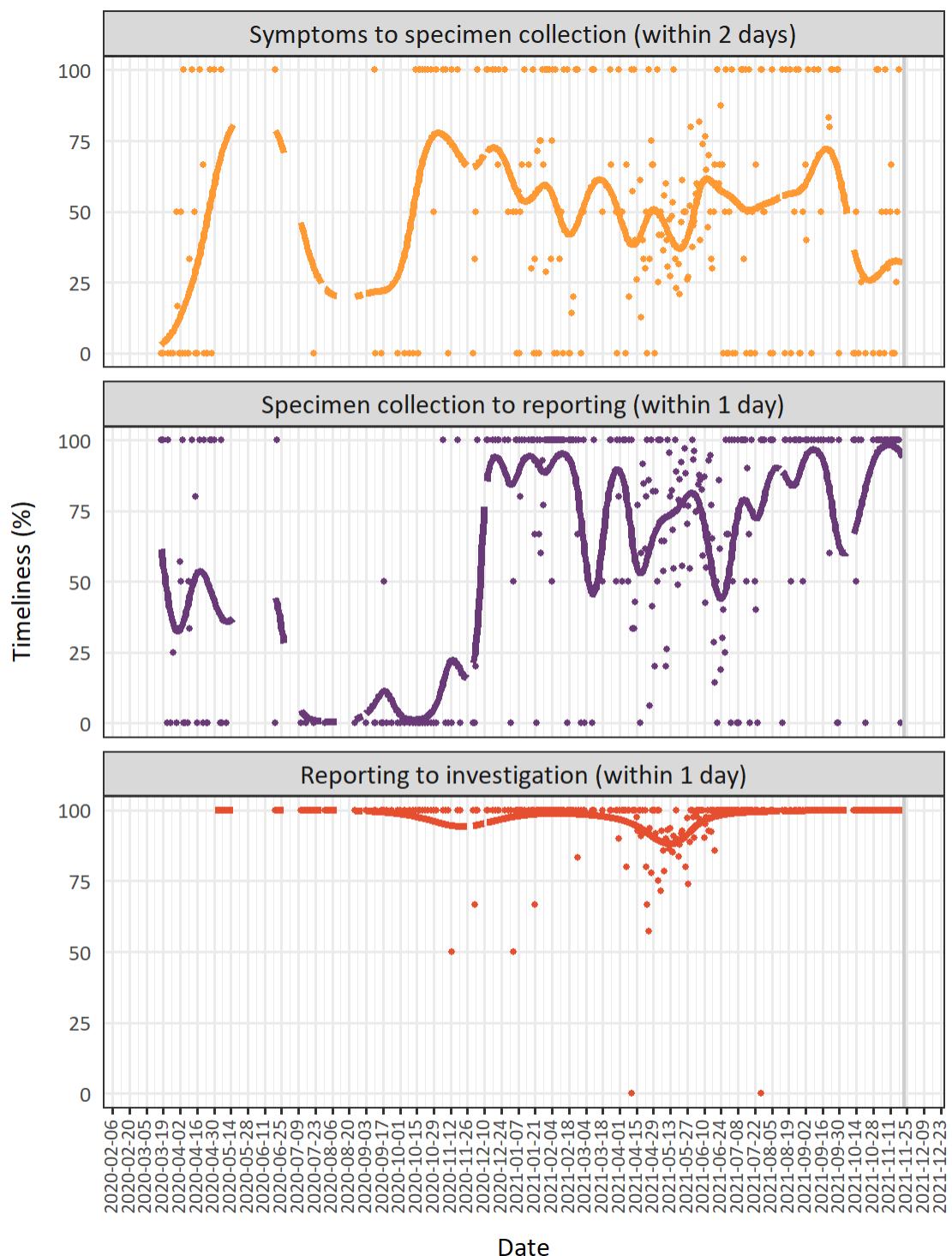
## Likely Acquisition: Porcupine Health Unit



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Porcupine Health Unit

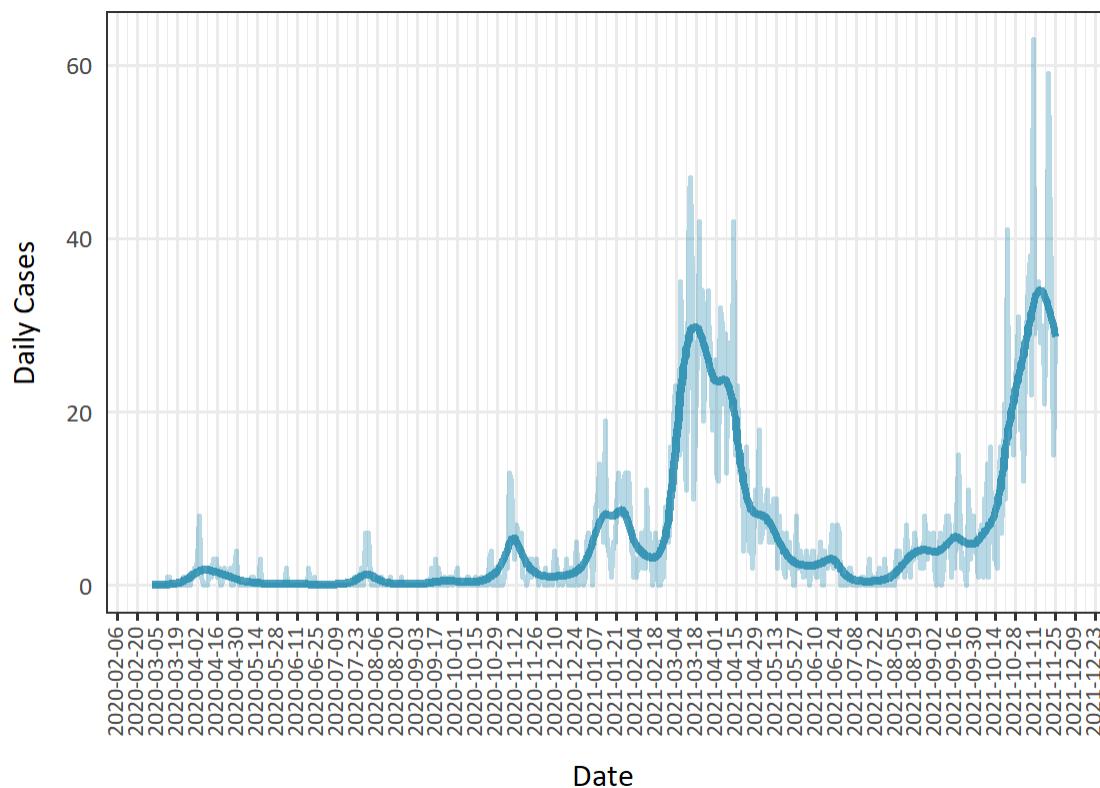


Note: the date used in this graph is the case reported date

Data Source: CCM

## Public Health Sudbury & Districts

### Epidemic Curve: Public Health Sudbury & Districts

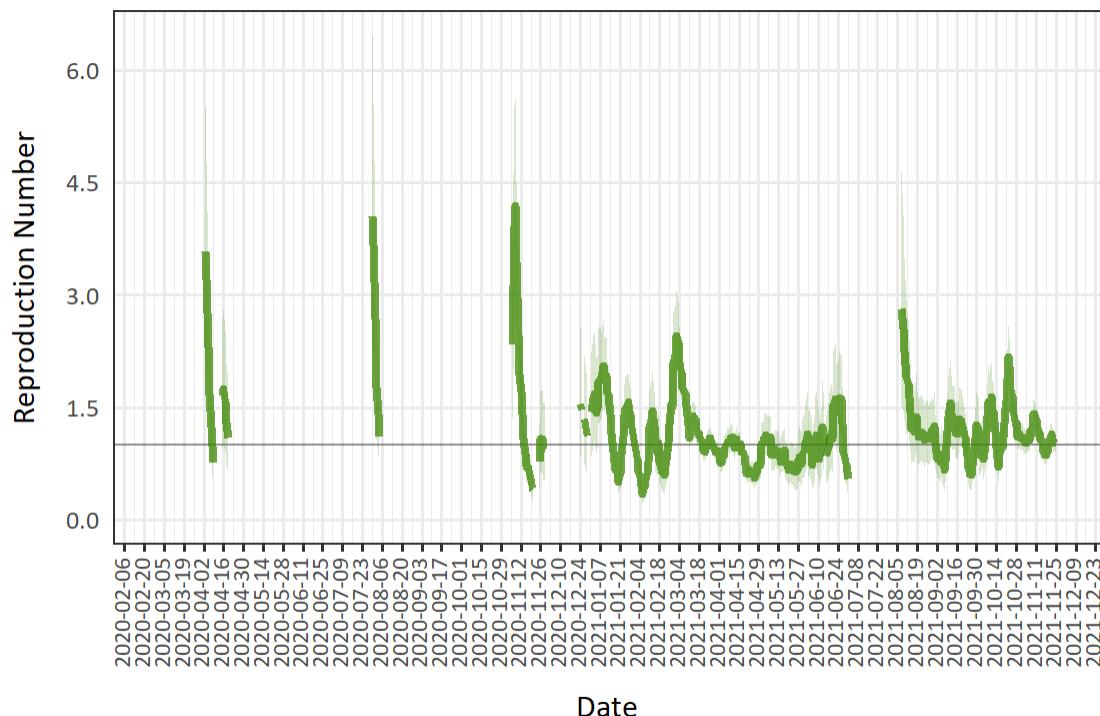


Note: the date used in this graph is the public reporting date

Data Source: CCM

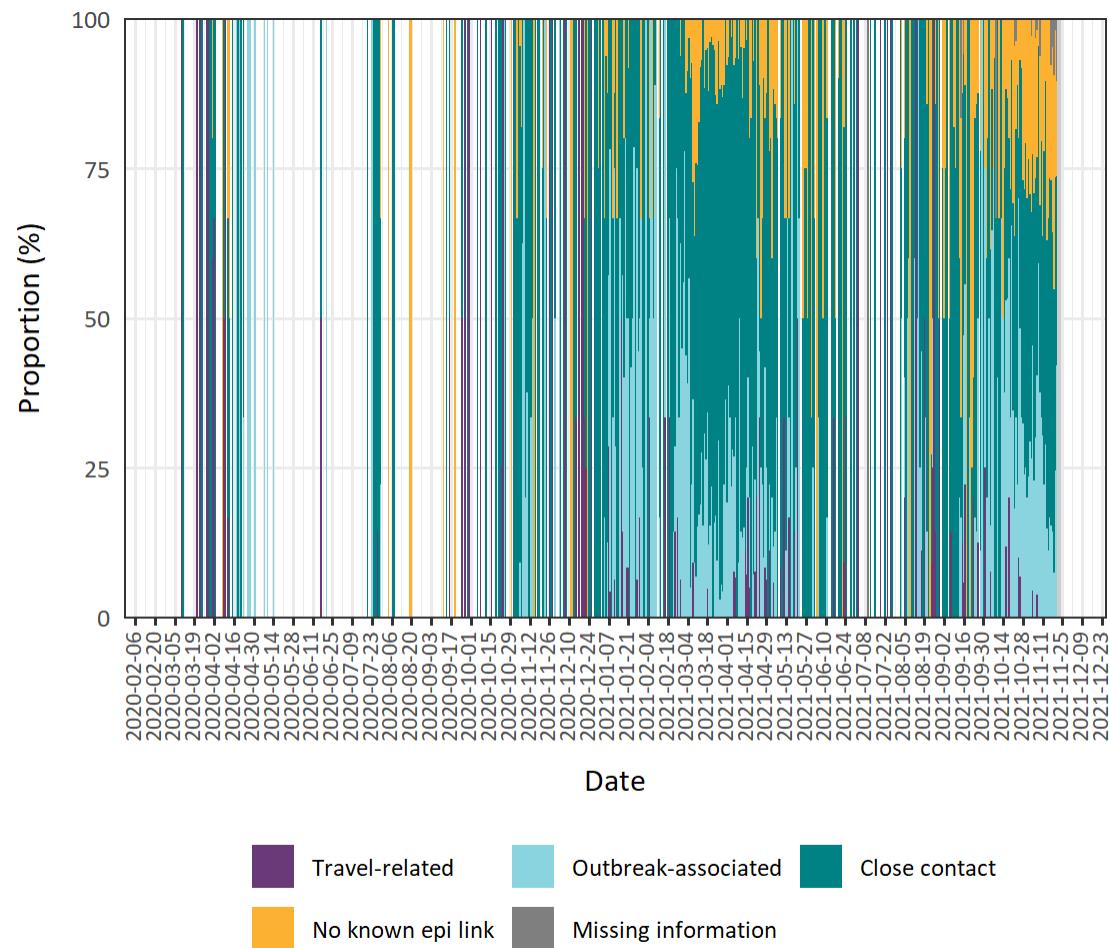
## Reproduction Number: Public Health Sudbury & Districts

Nov 25 Re = 1.02, 95% CI: 0.90-1.16



Data Source: CCM

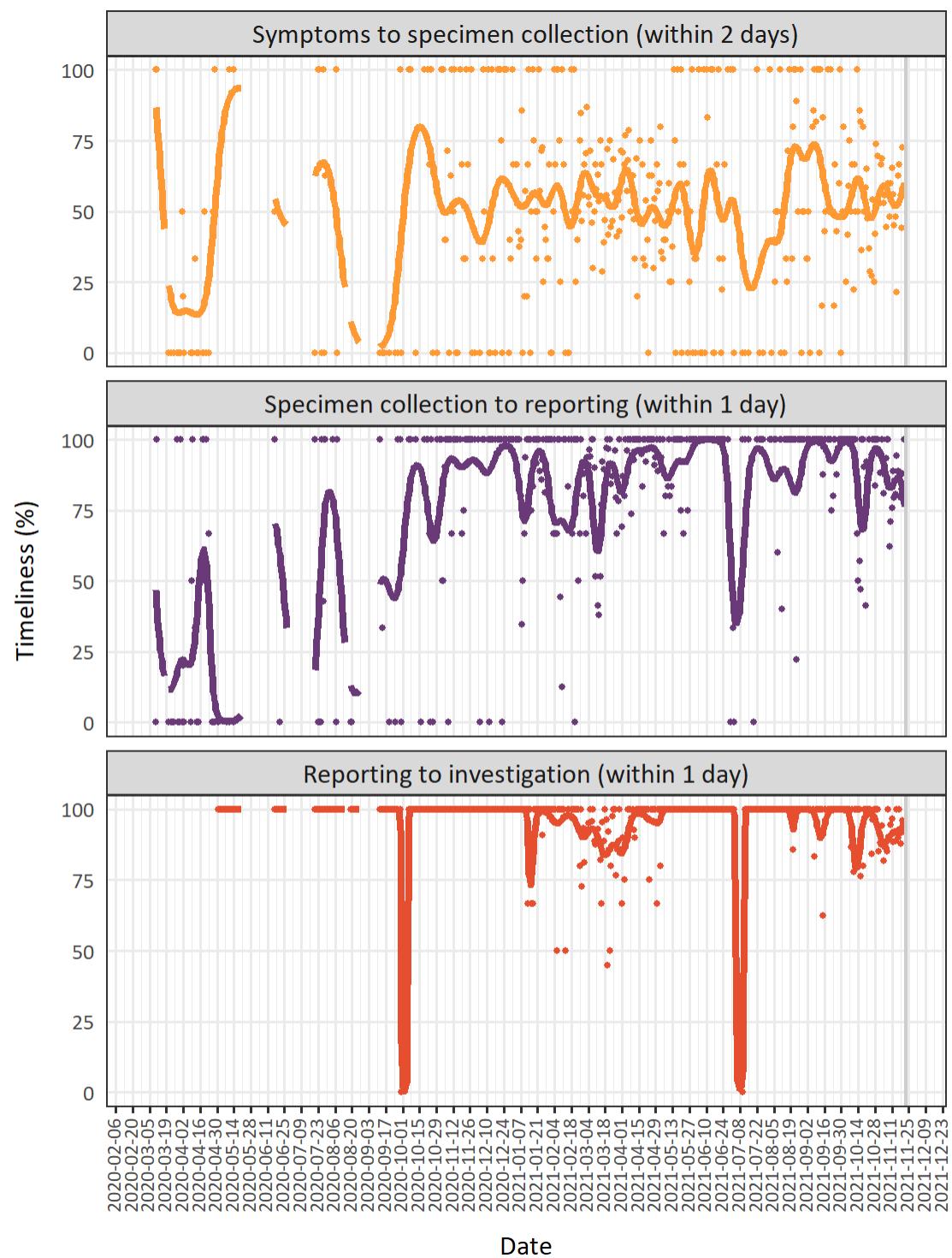
## Likely Acquisition: Public Health Sudbury & Districts



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Public Health Sudbury & Districts

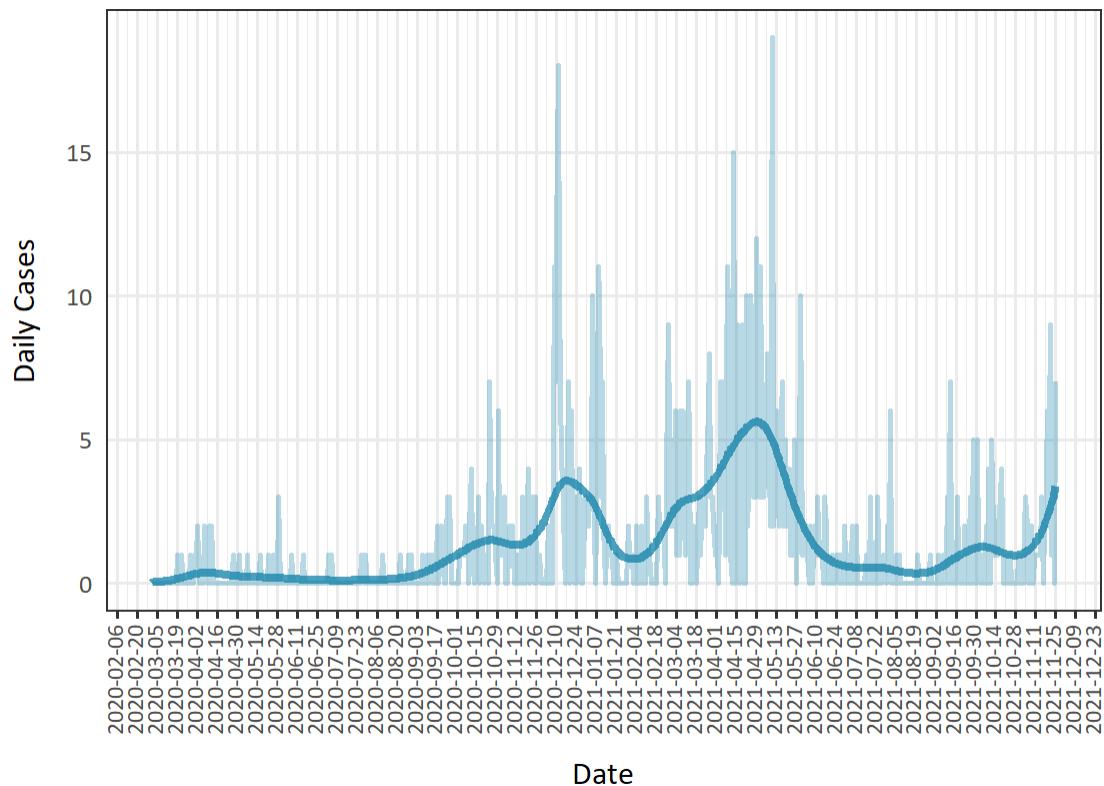


Note: the date used in this graph is the case reported date

Data Source: CCM

## Renfrew County and District Health Unit

### Epidemic Curve: Renfrew County and District Health Unit

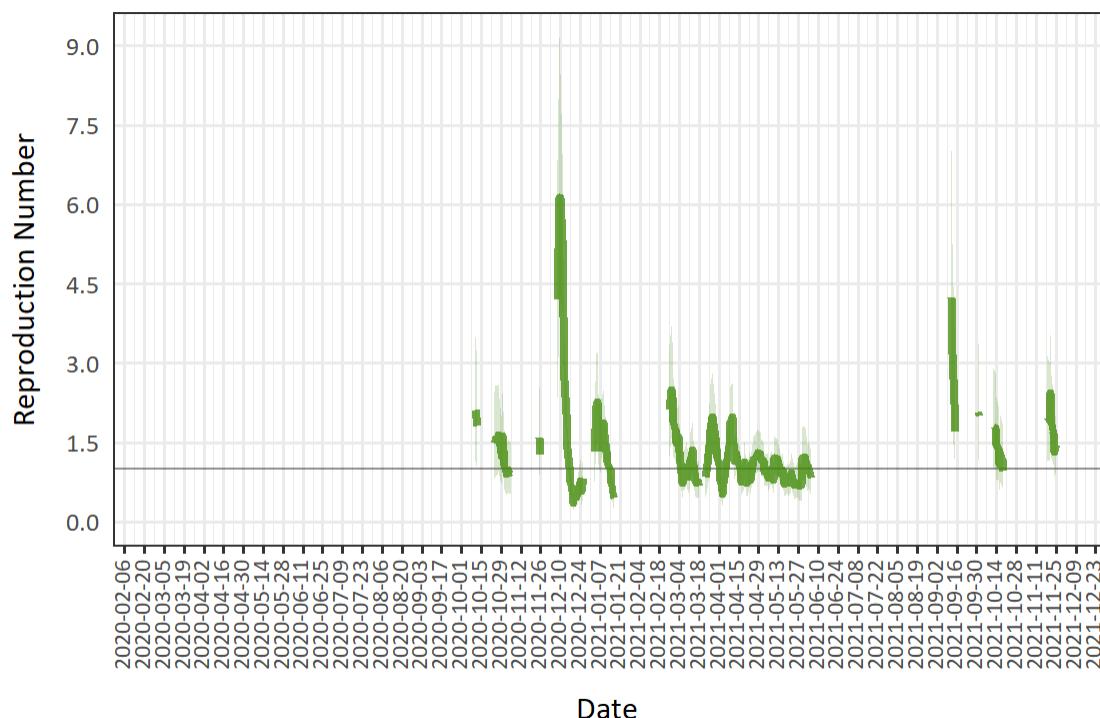


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Renfrew County and District Health Unit

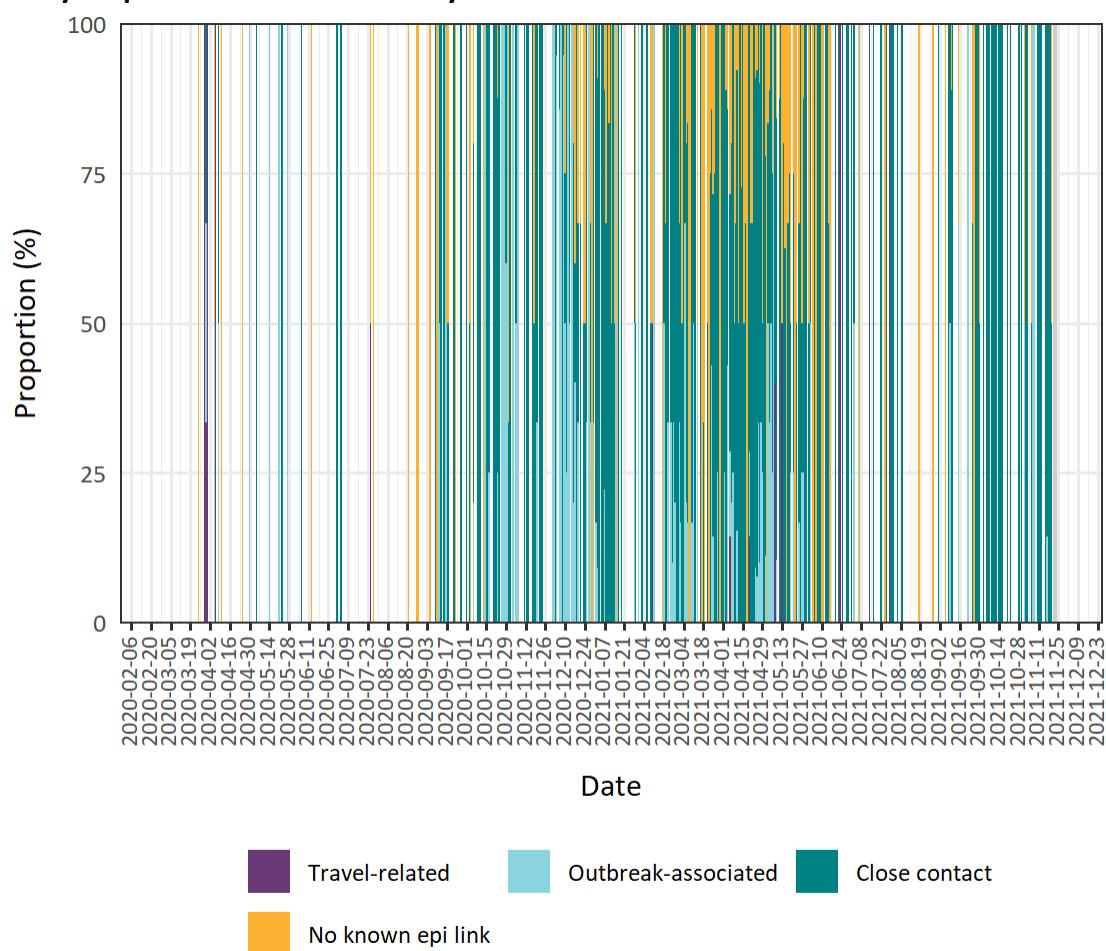
Nov 25 Re = 1.45, 95% CI: 0.98-2.06



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

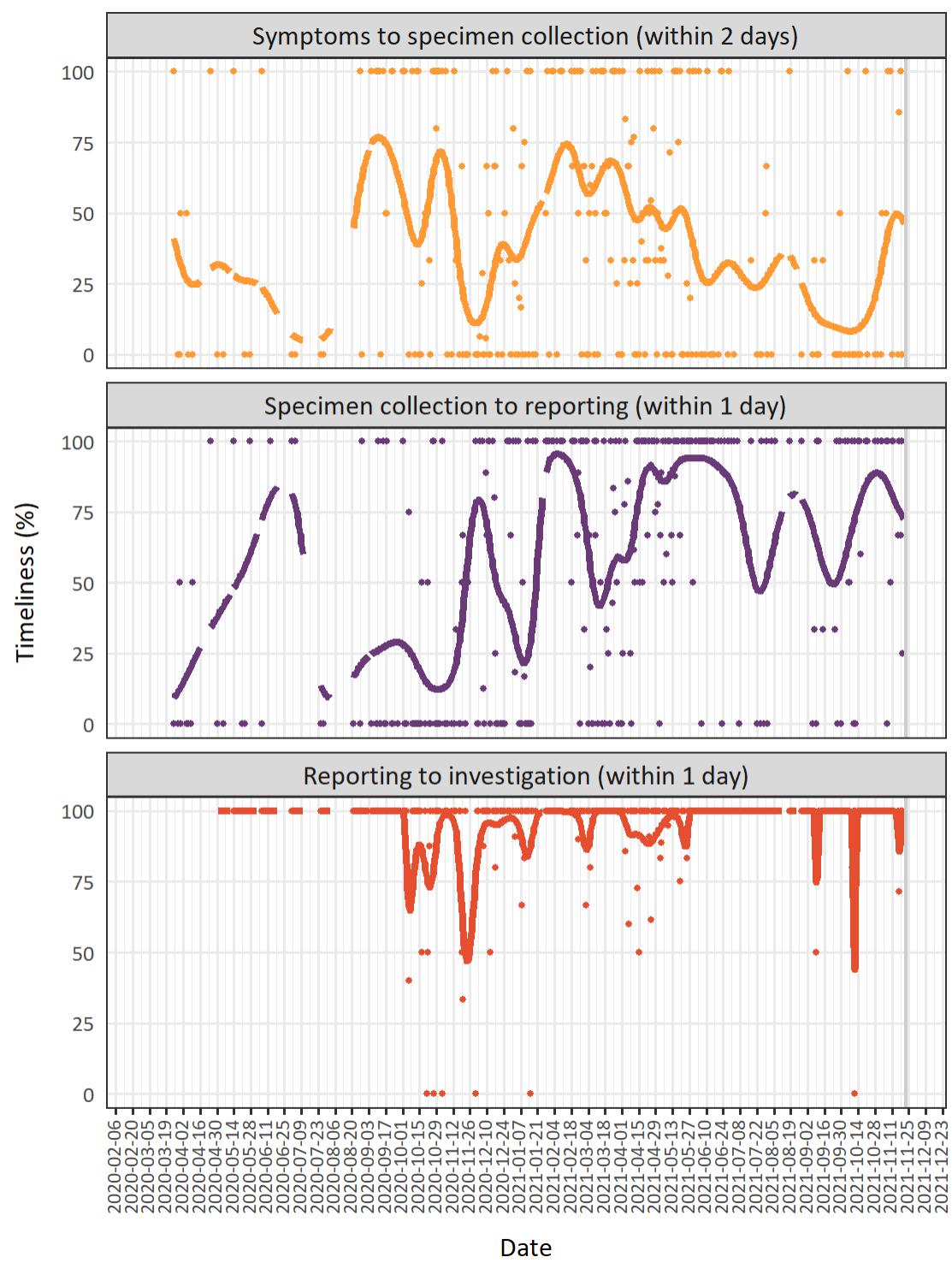
Data Source: CCM

## Likely Acquisition: Renfrew County and District Health Unit



Data Source: CCM

## Timeliness: Renfrew County and District Health Unit

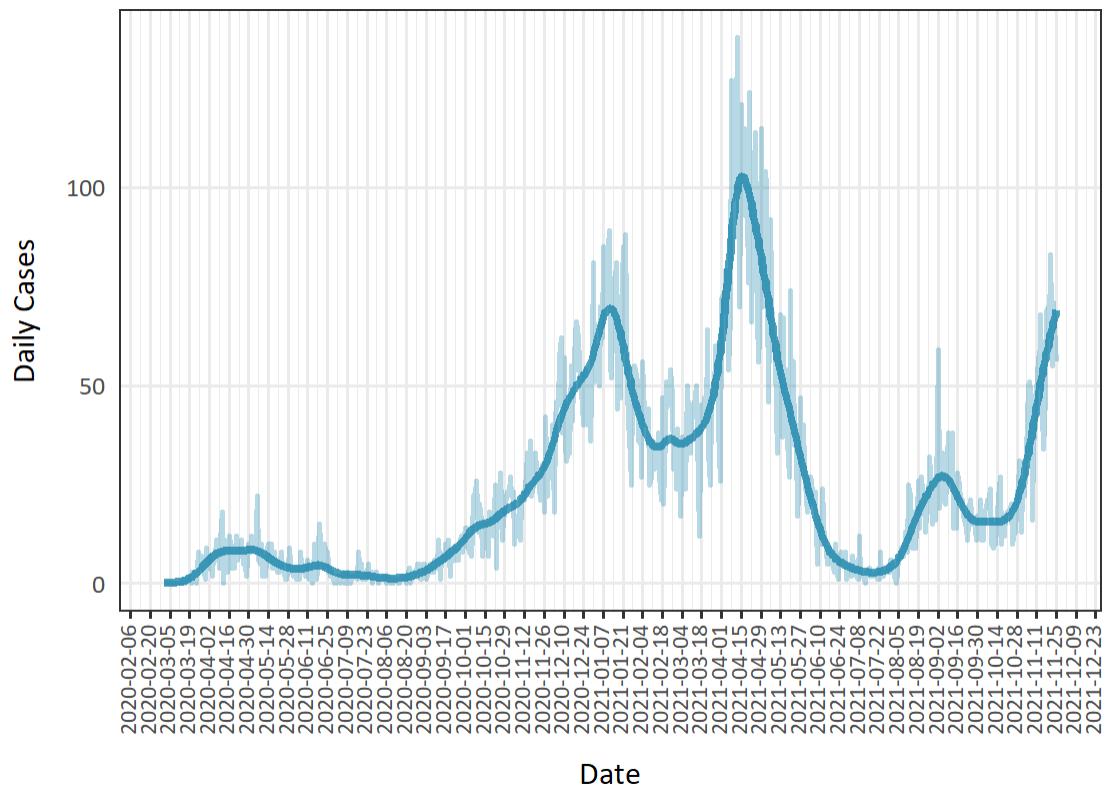


Note: the date used in this graph is the case reported date

Data Source: CCM

## Simcoe Muskoka District Health Unit

### Epidemic Curve: Simcoe Muskoka District Health Unit

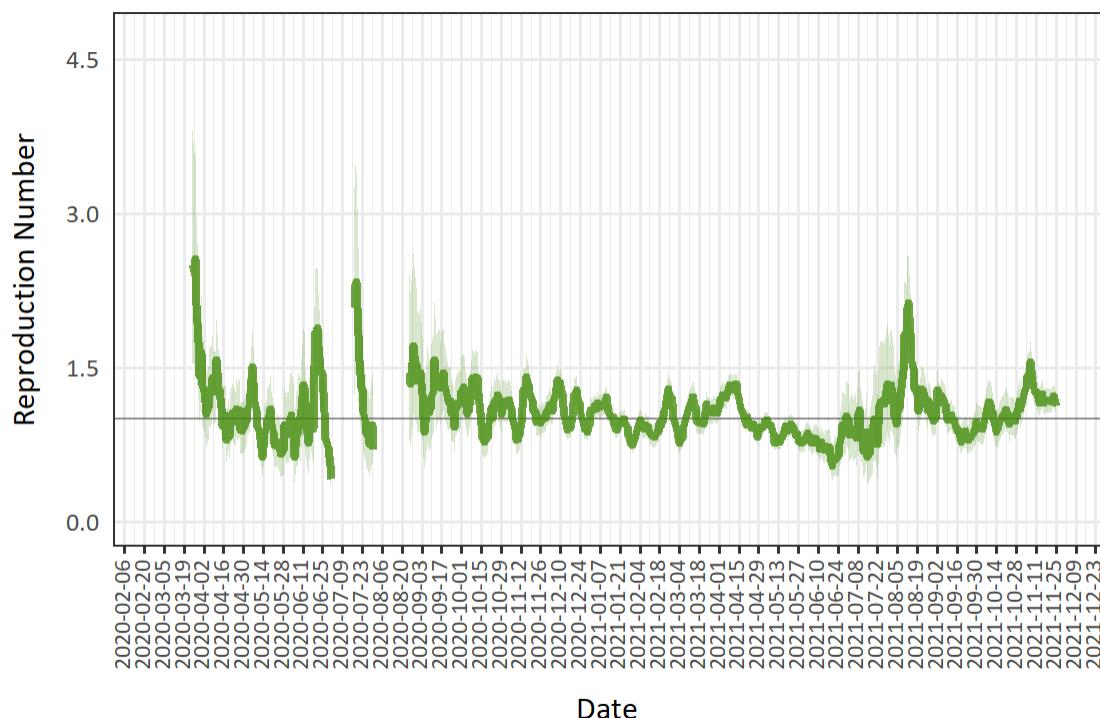


Note: the date used in this graph is the public reporting date

Data Source: CCM

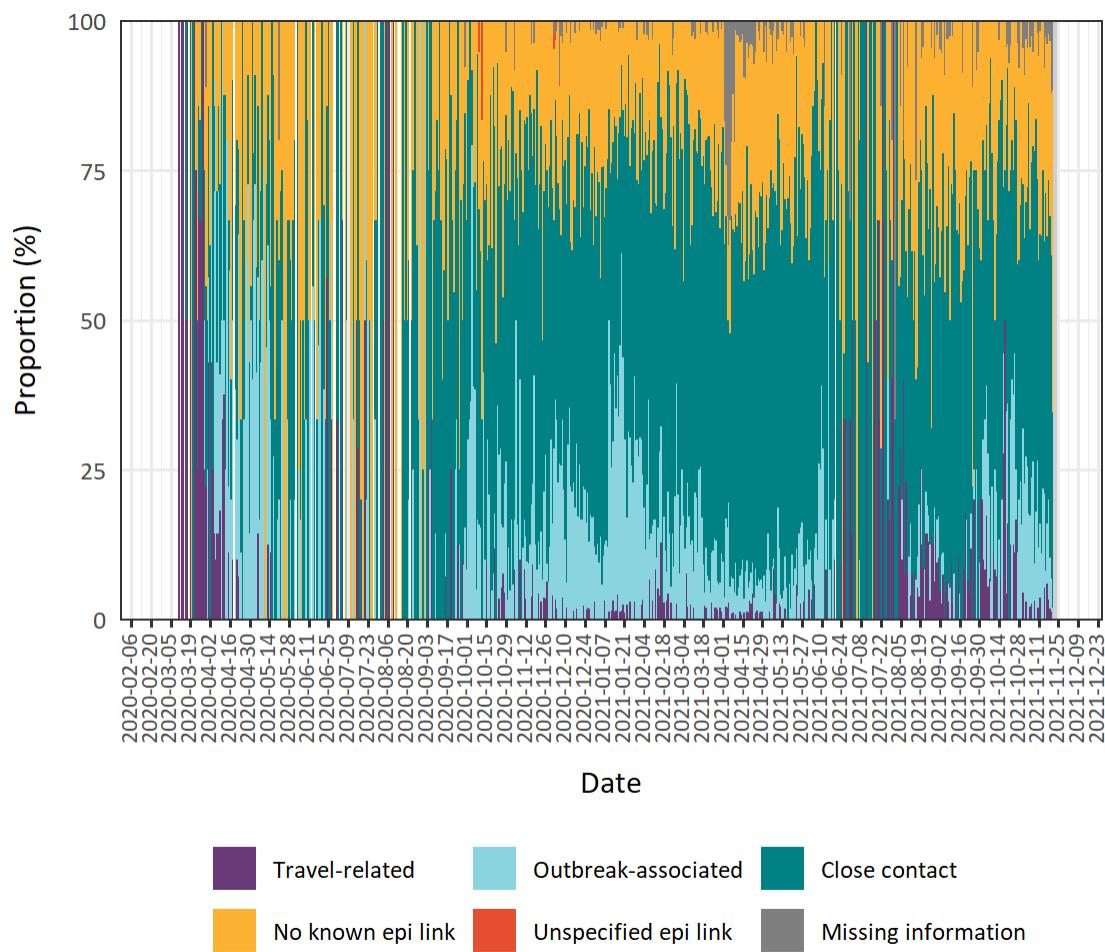
## Reproduction Number: Simcoe Muskoka District Health Unit

Nov 25 Re = 1.13, 95% CI: 1.03-1.23



Data Source: CCM

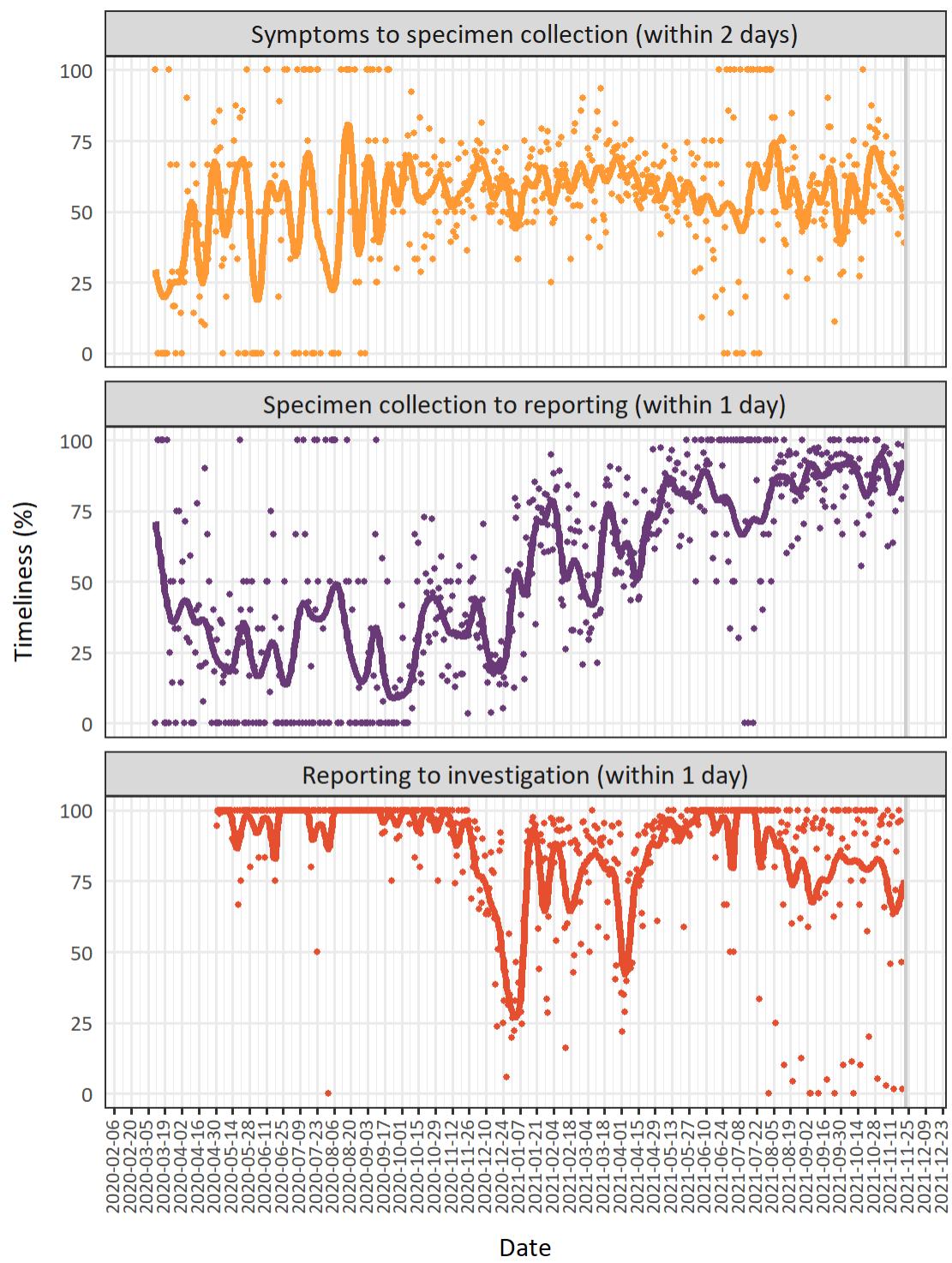
## Likely Acquisition: Simcoe Muskoka District Health Unit



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Simcoe Muskoka District Health Unit

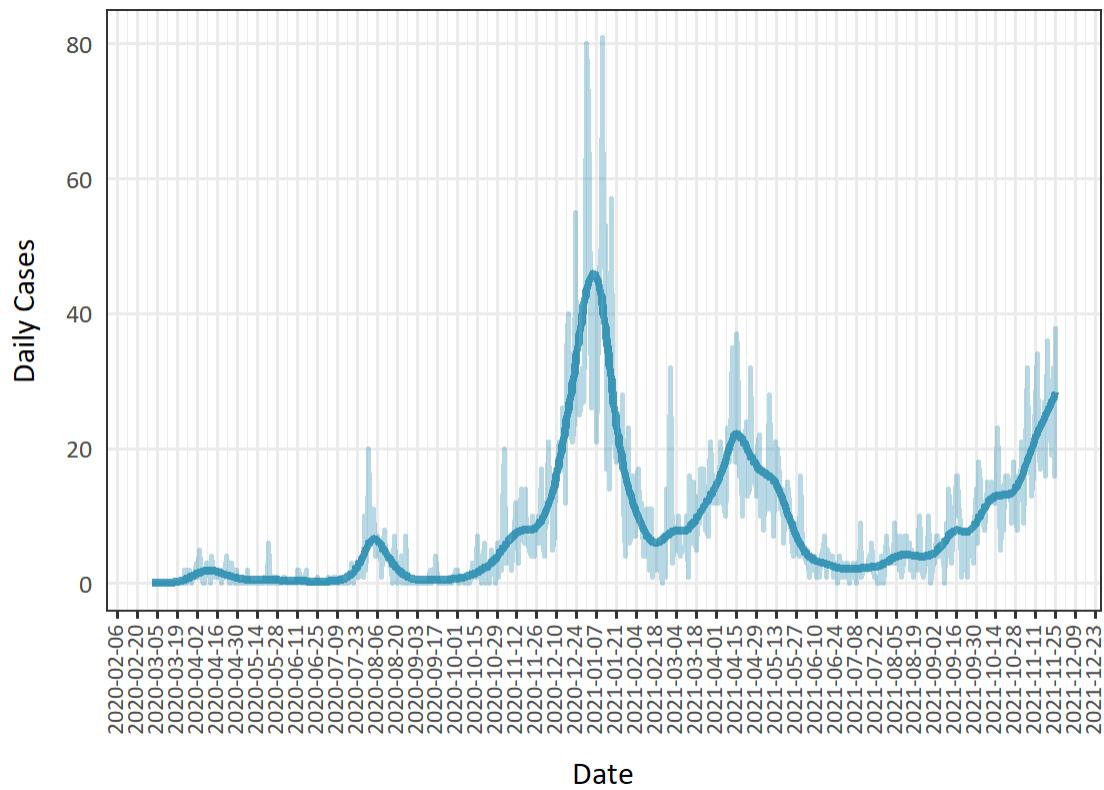


Note: the date used in this graph is the case reported date

Data Source: CCM

## Southwestern Public Health

### Epidemic Curve: Southwestern Public Health

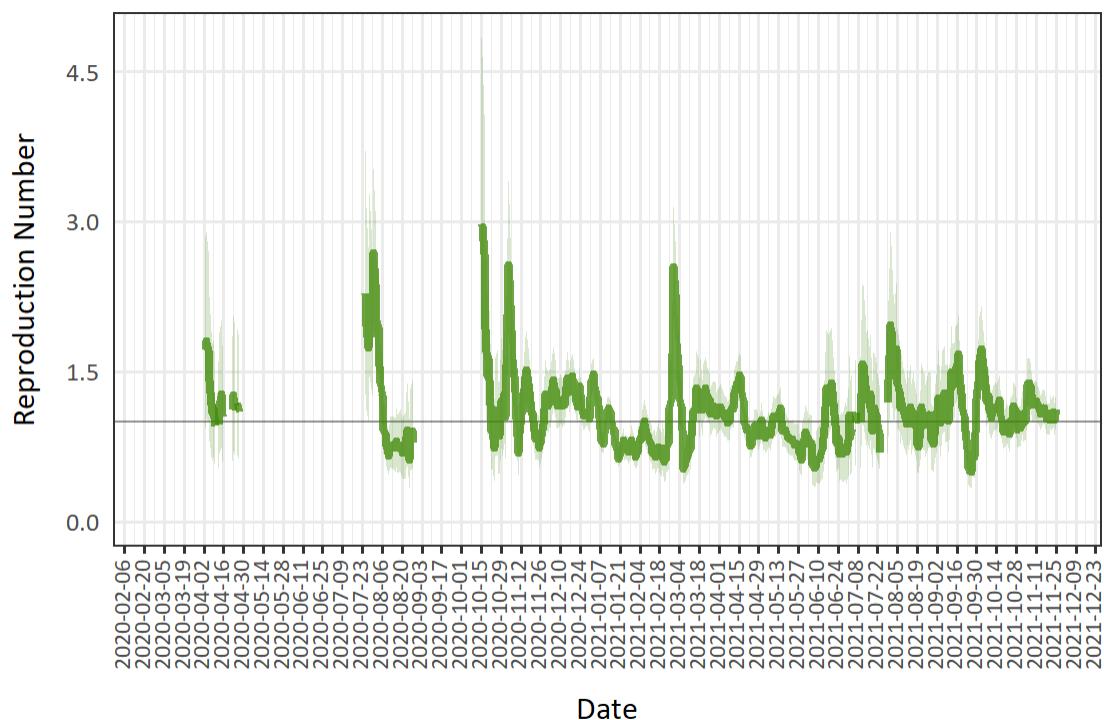


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Southwestern Public Health

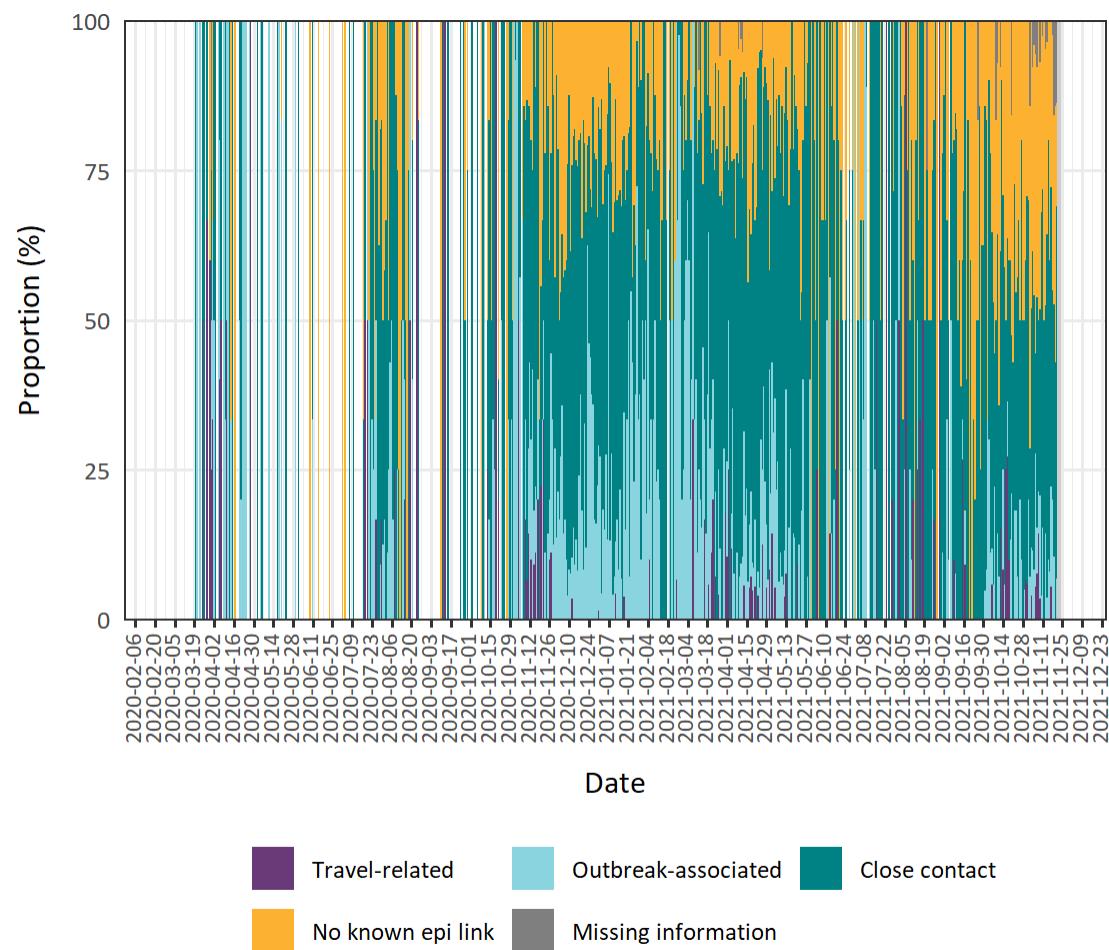
Nov 25 Re = 1.13, 95% CI: 0.98-1.30



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

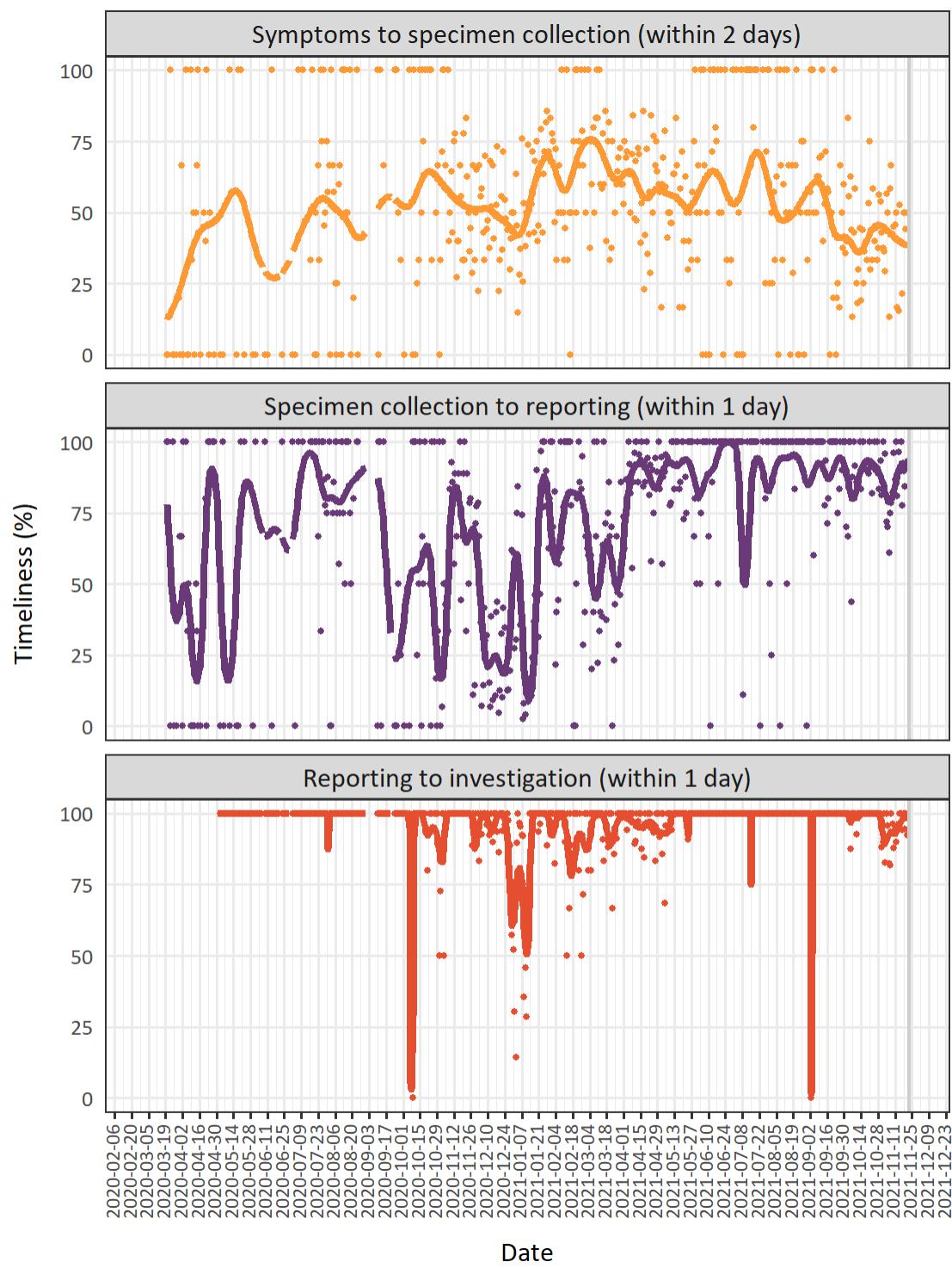
## Likely Acquisition: Southwestern Public Health



Note: the date used in this graph is the case reported date

Data Source: CCM

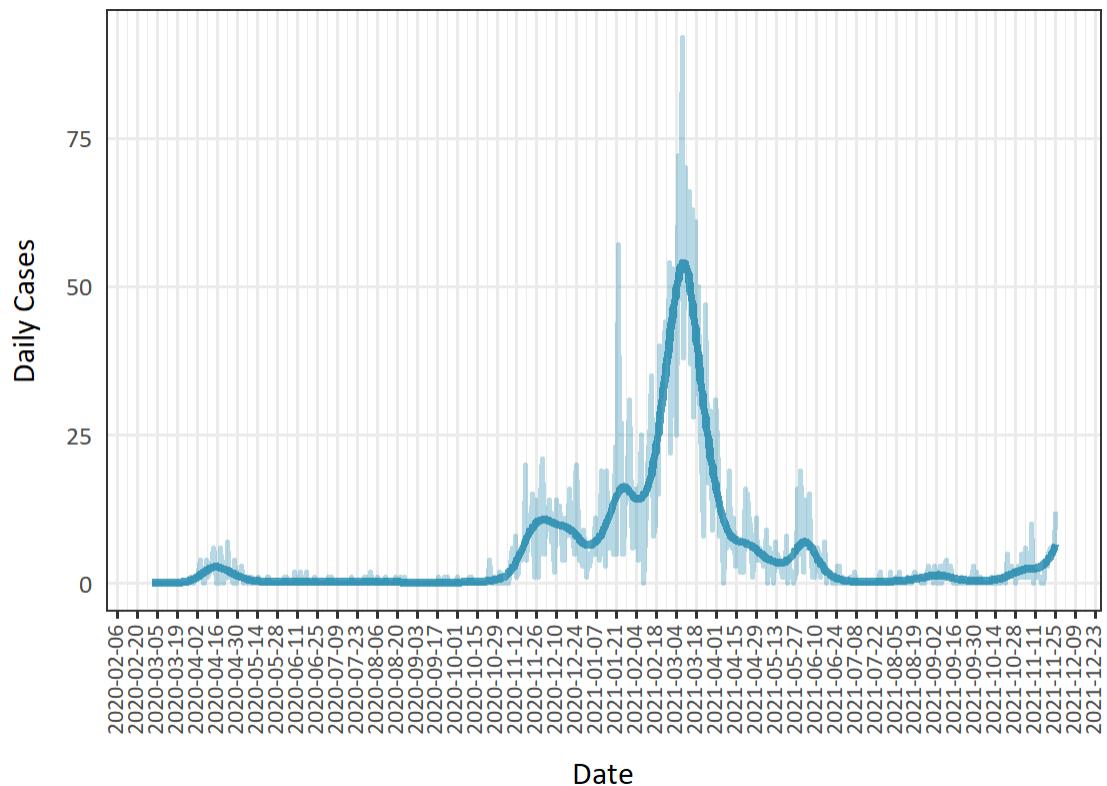
## Timeliness: Southwestern Public Health



Data Source: CCM

## Thunder Bay District Health Unit

### Epidemic Curve: Thunder Bay District Health Unit

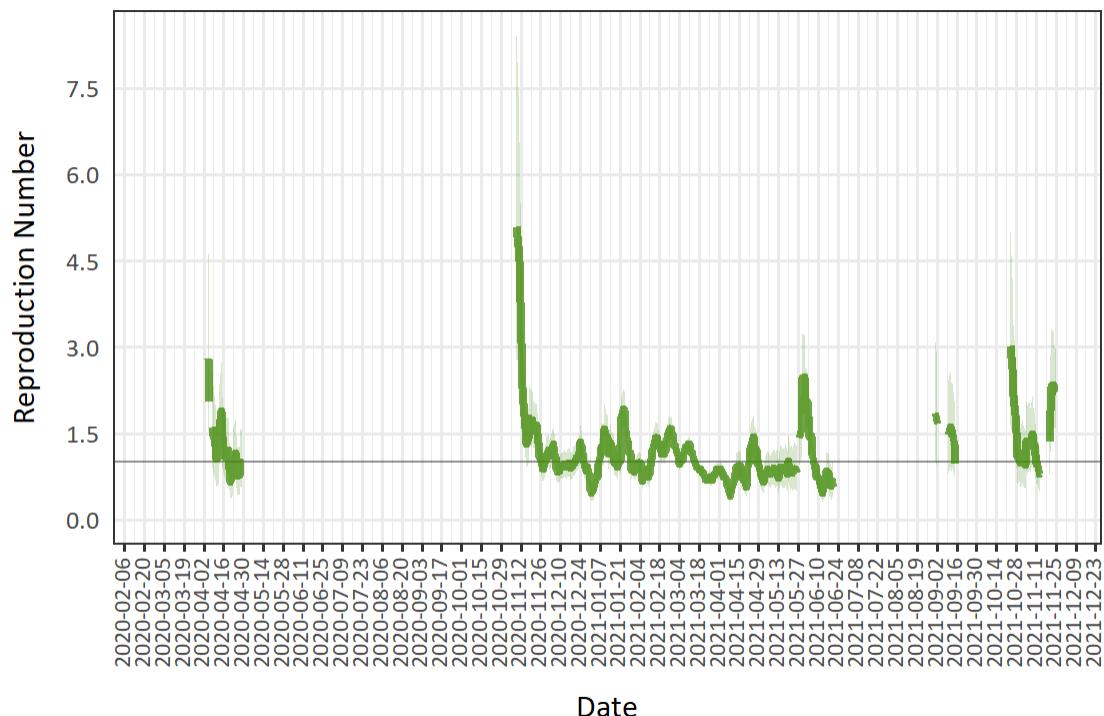


Note: the date used in this graph is the public reporting date

Data Source: CCM

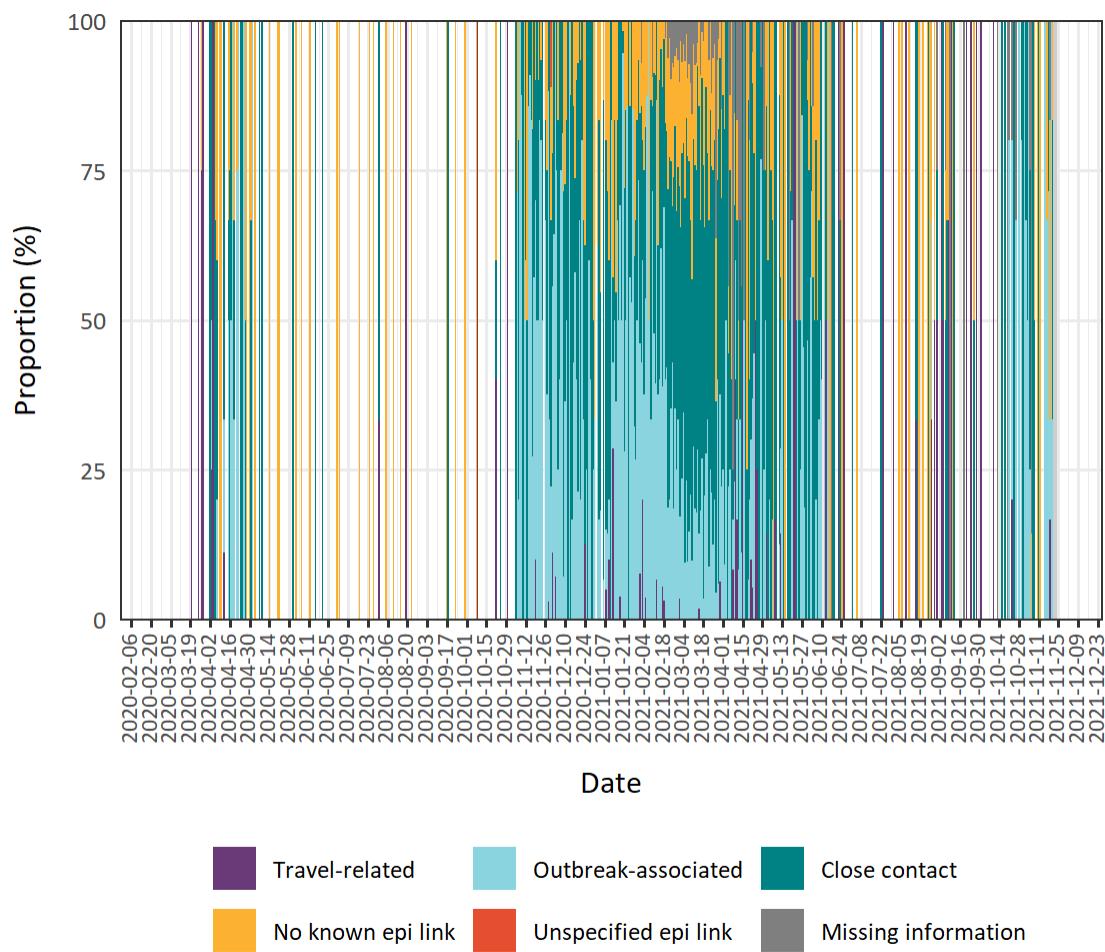
## Reproduction Number: Thunder Bay District Health Unit

Nov 25 Re = 2.21, 95% CI: 1.62-2.93



Data Source: CCM

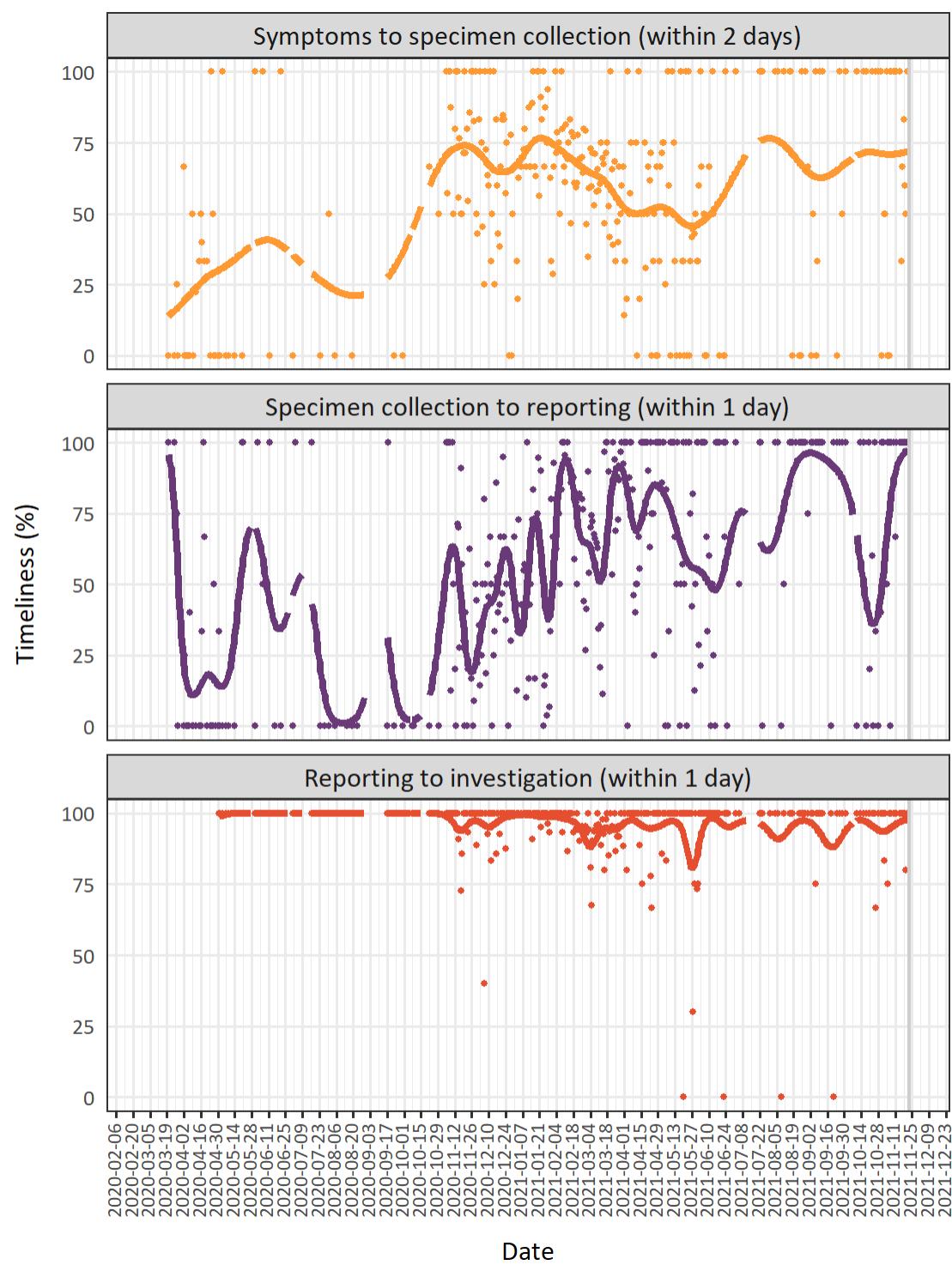
## Likely Acquisition: Thunder Bay District Health Unit



Note: the date used in this graph is the case reported date

Data Source: CCM

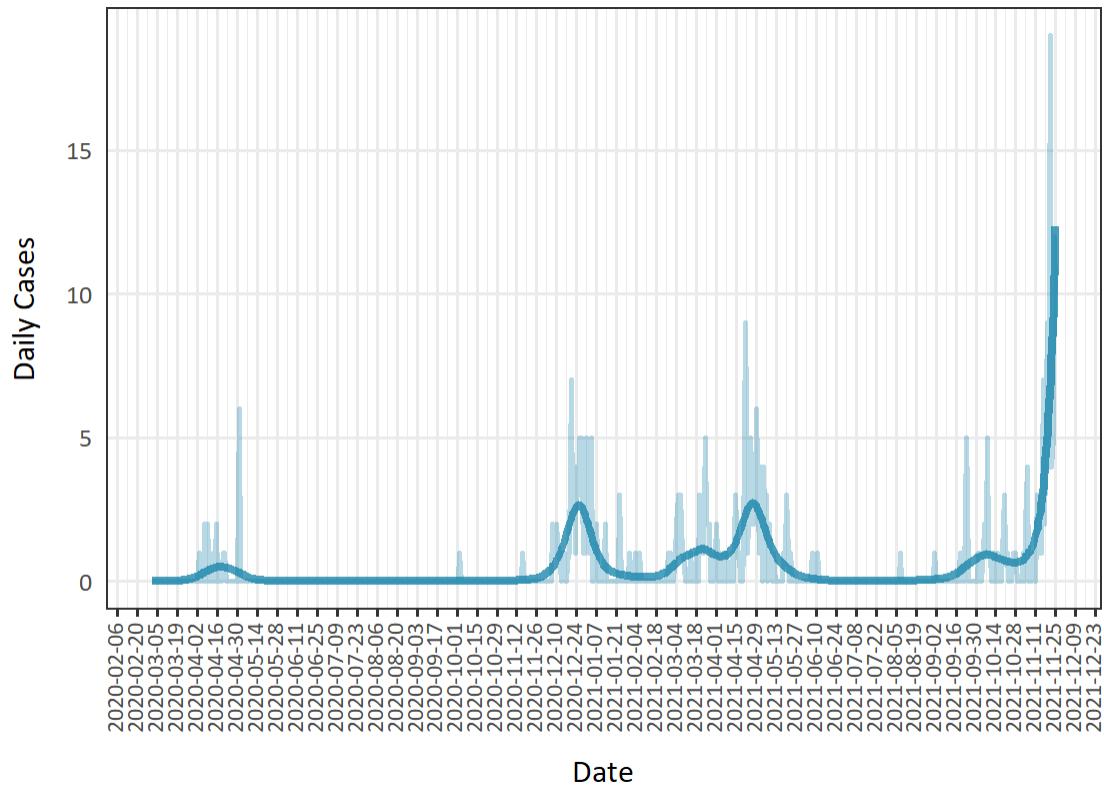
## Timeliness: Thunder Bay District Health Unit



Data Source: CCM

## Timiskaming Health Unit

### Epidemic Curve: Timiskaming Health Unit

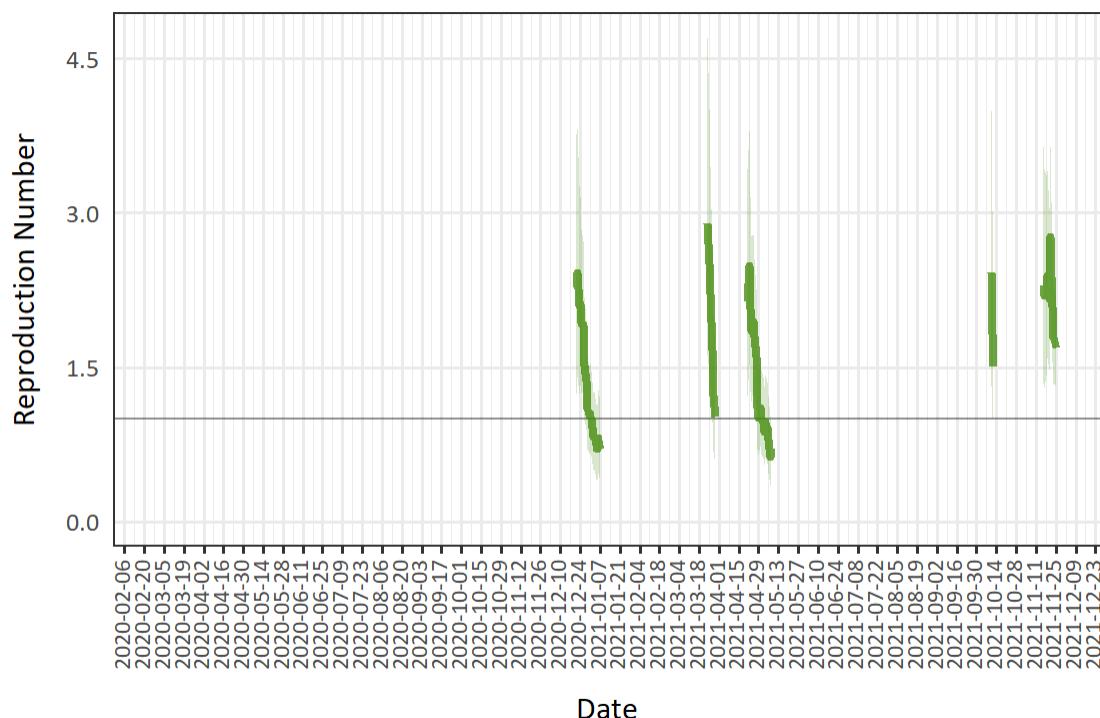


Note: the date used in this graph is the public reporting date

Data Source: CCM

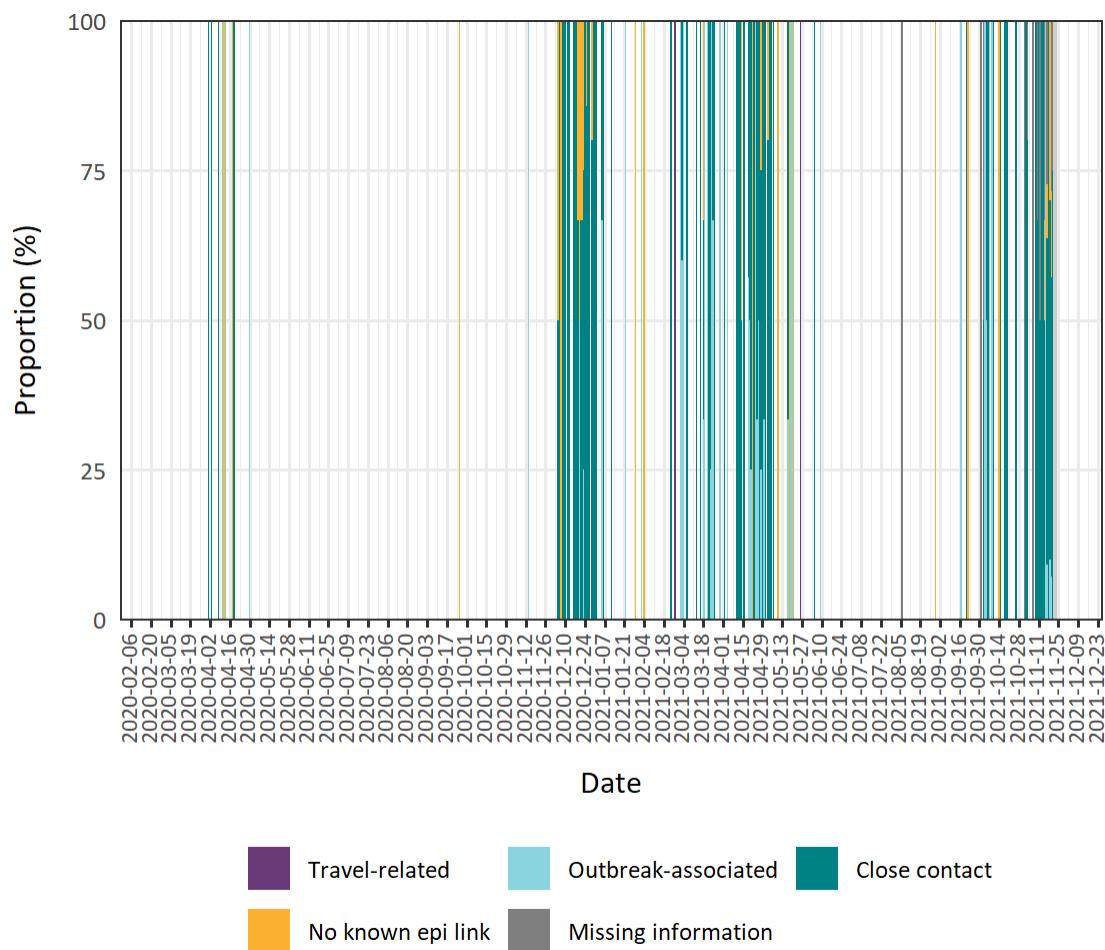
## Reproduction Number: Timiskaming Health Unit

Nov 25 Re = 1.69, 95% CI: 1.31-2.14



Data Source: CCM

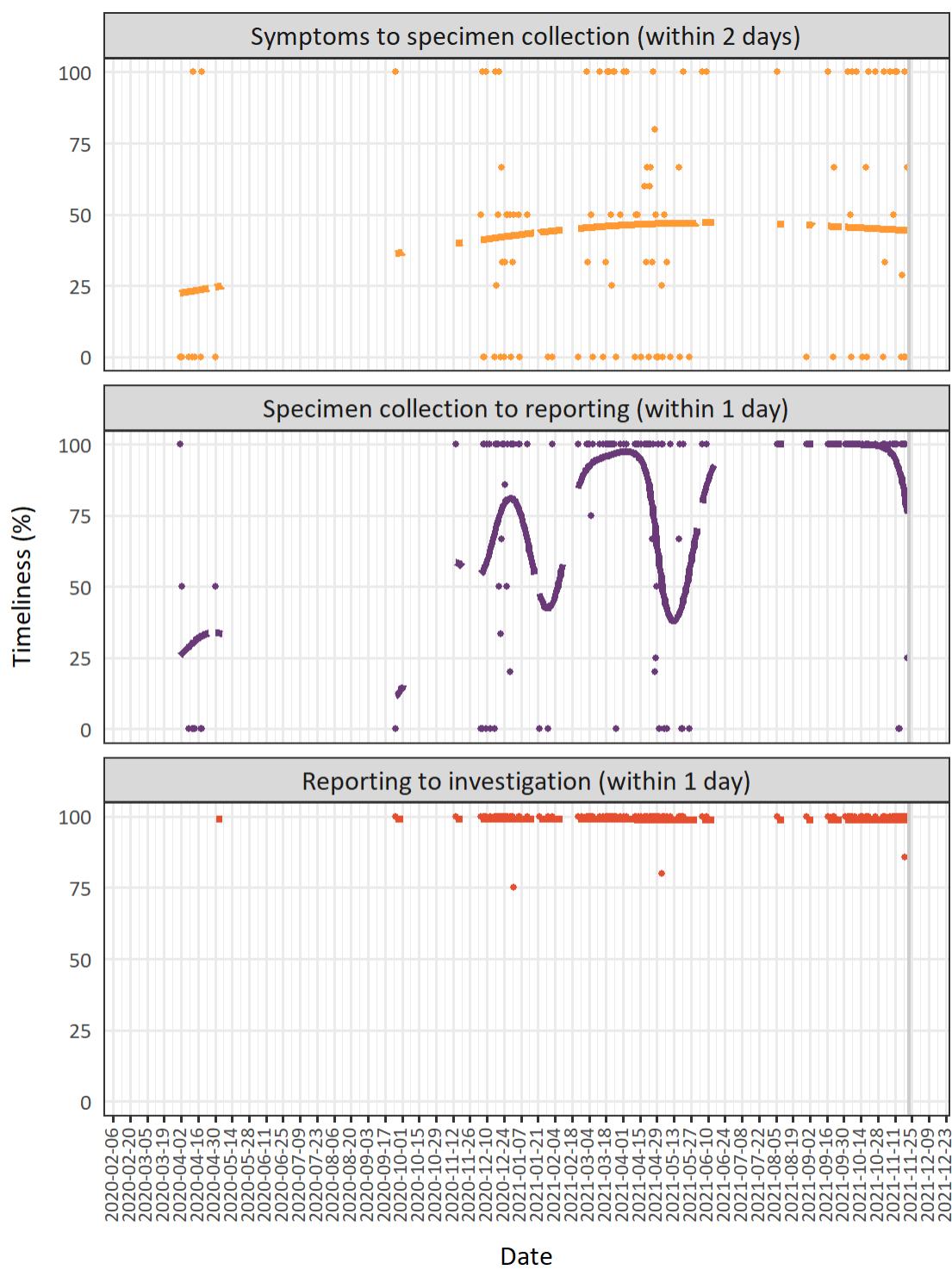
## Likely Acquisition: Timiskaming Health Unit



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Timiskaming Health Unit

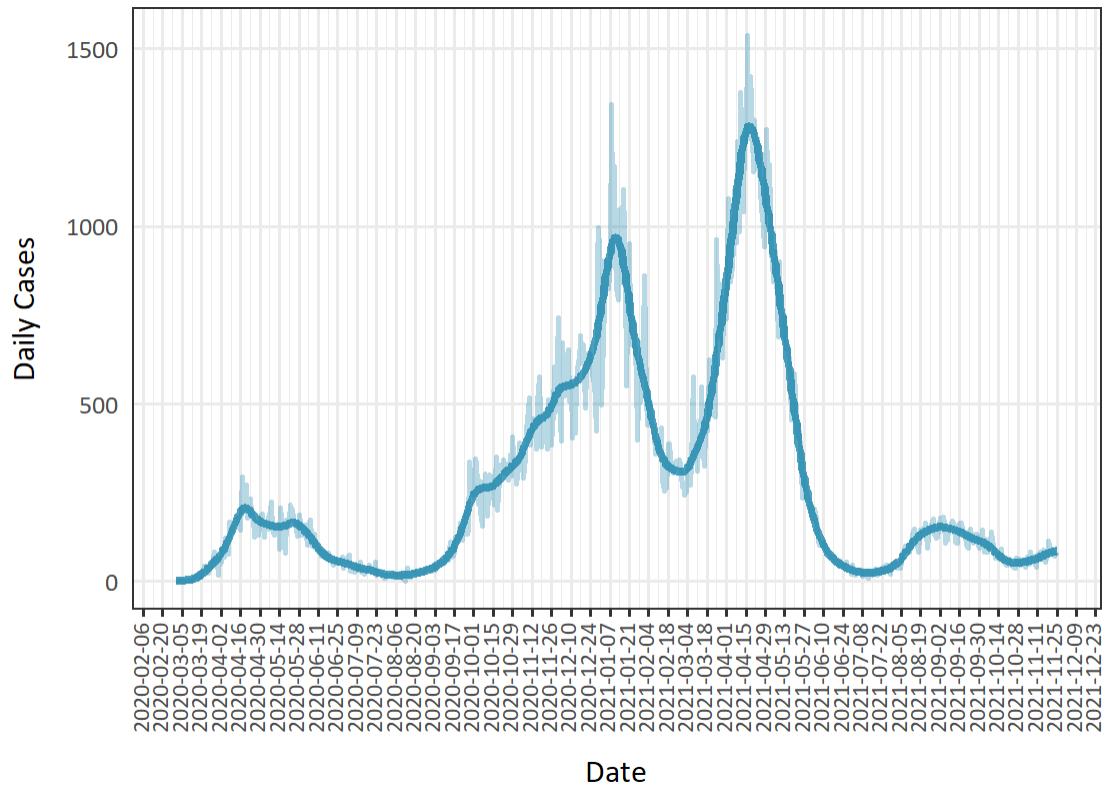


Note: the date used in this graph is the case reported date

Data Source: CCM

## Toronto Public Health

### Epidemic Curve: Toronto Public Health

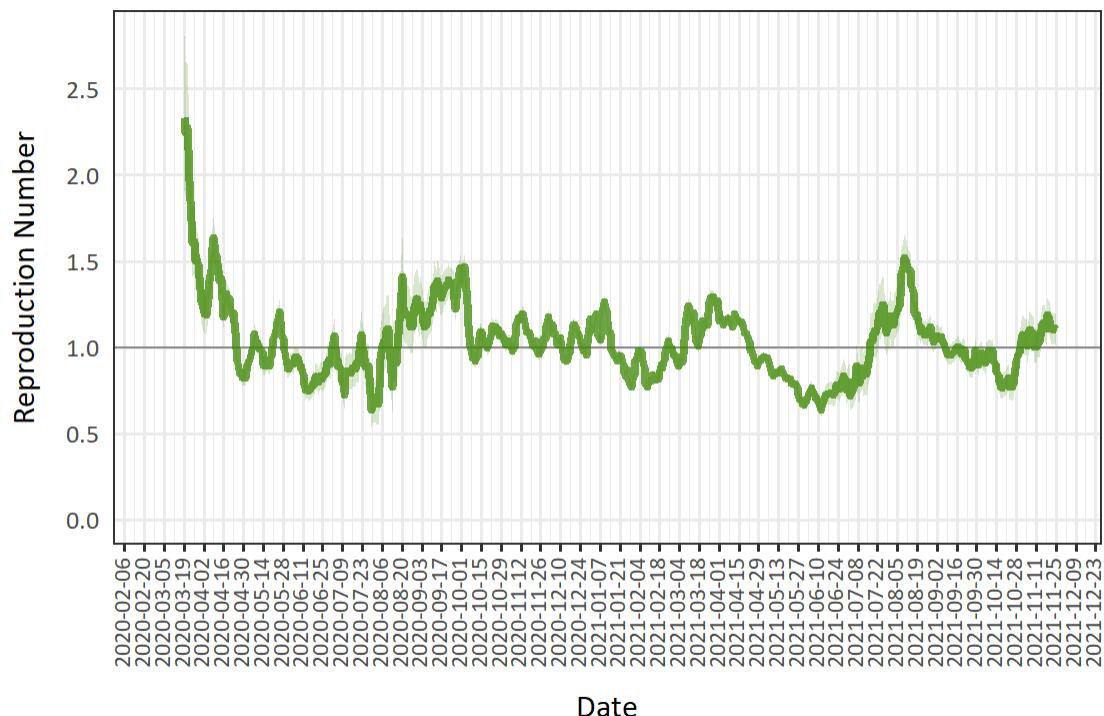


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Toronto Public Health

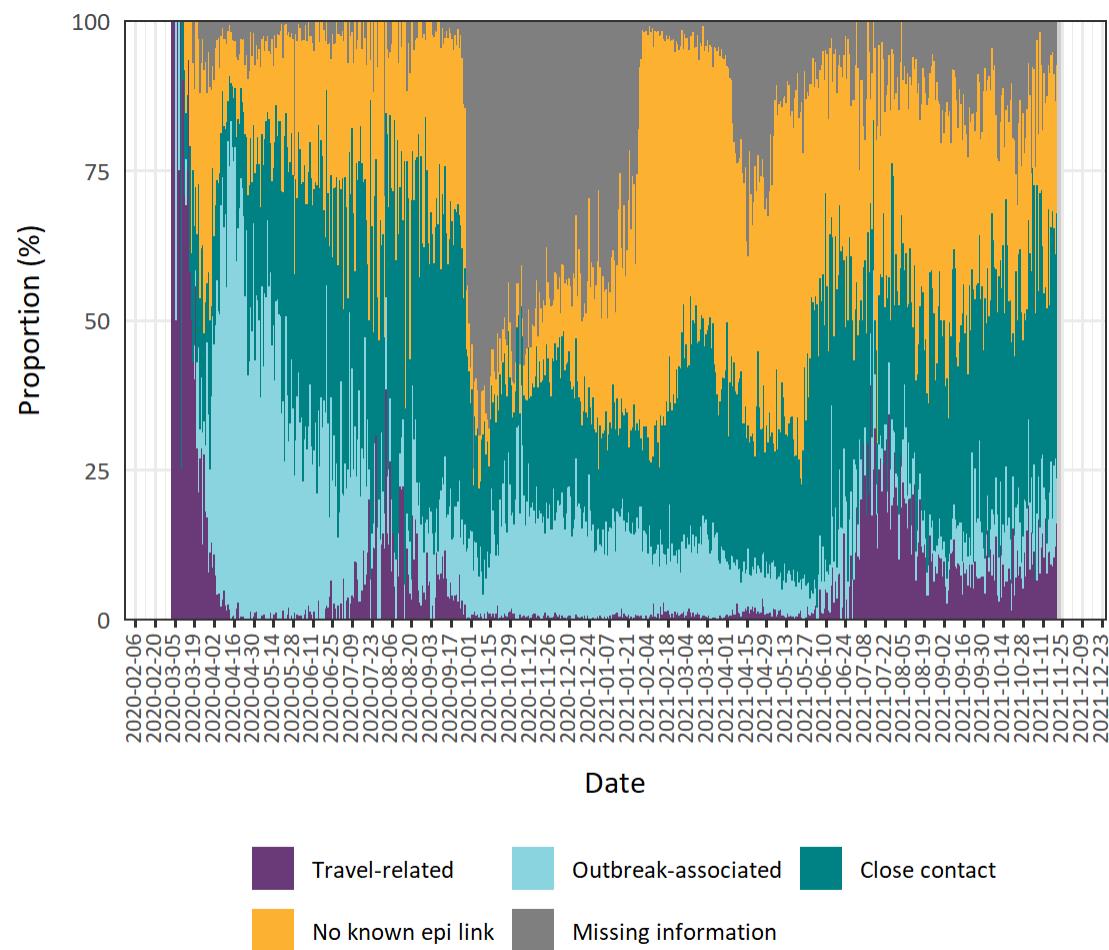
Nov 25 Re = 1.10, 95% CI: 1.02-1.19



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

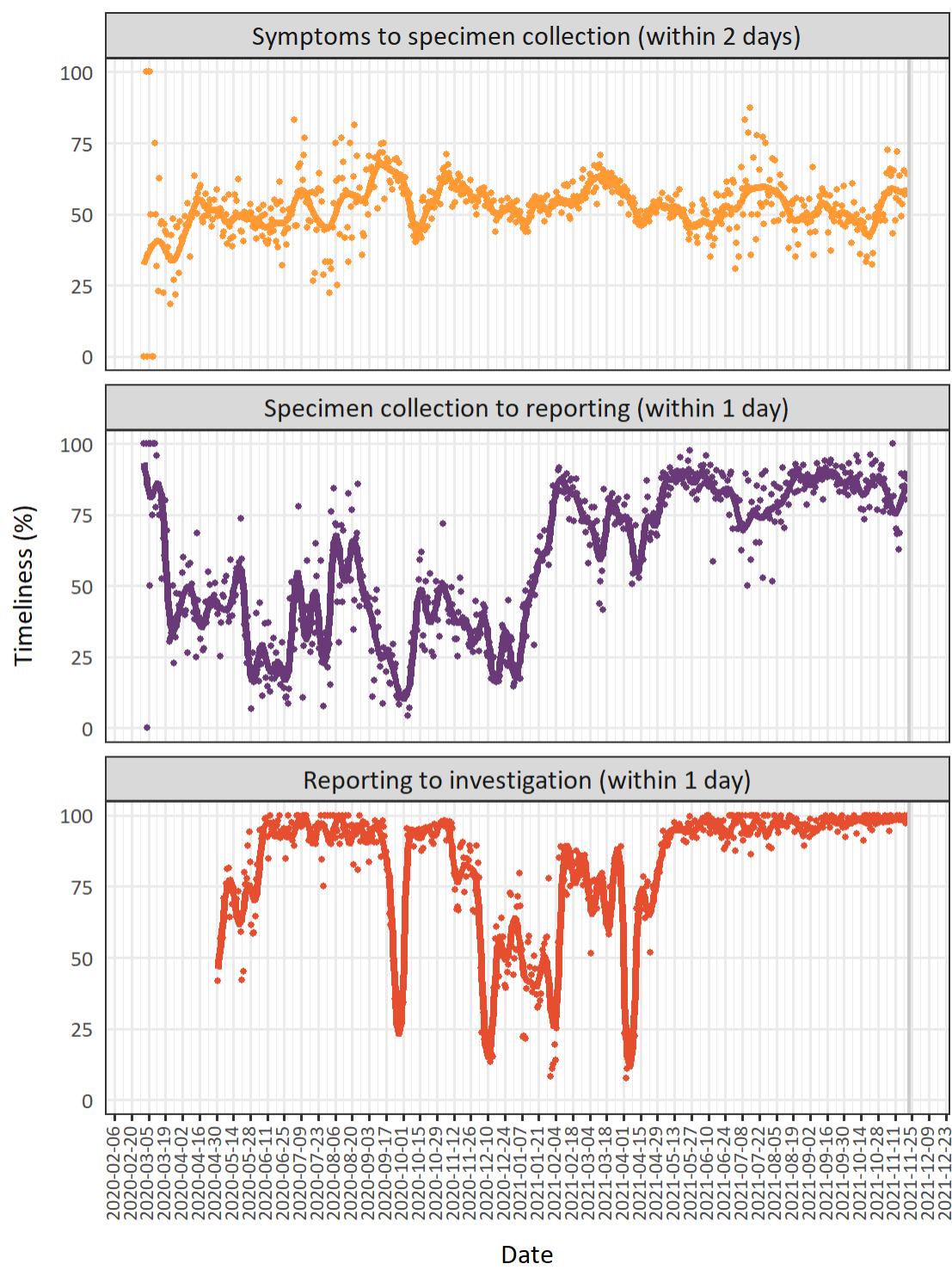
### Likely Acquisition: Toronto Public Health



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Toronto Public Health

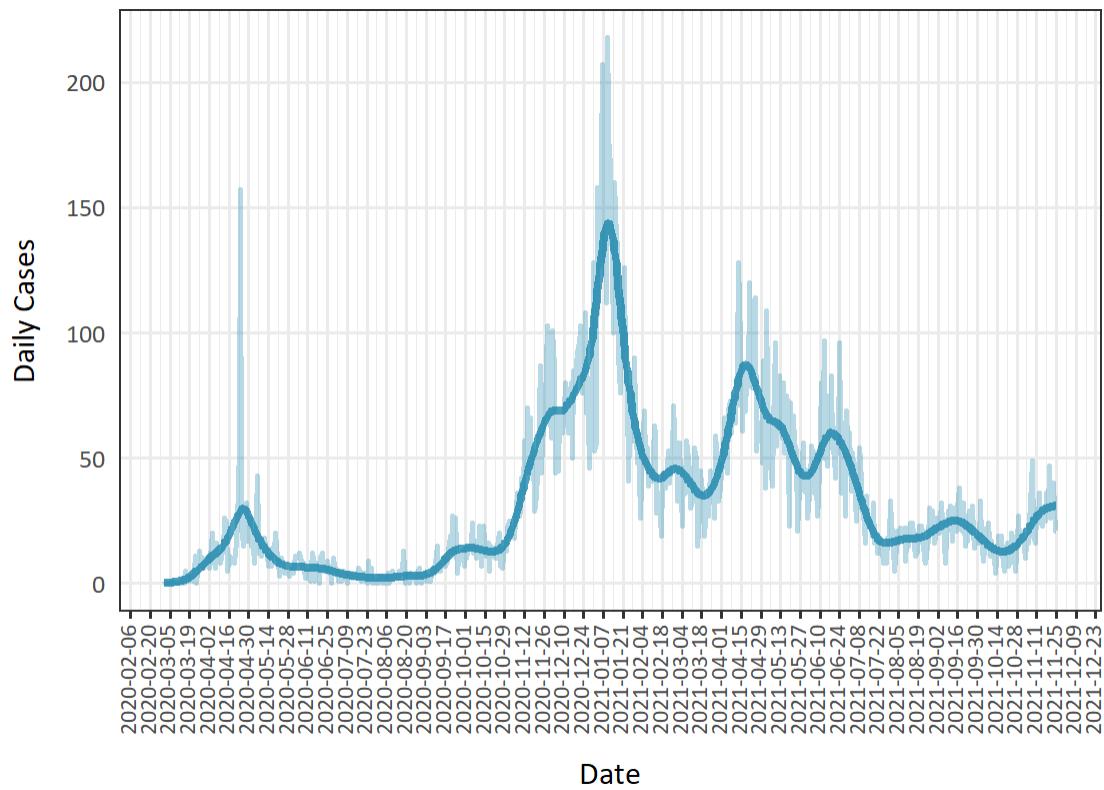


Note: the date used in this graph is the case reported date

Data Source: CCM

## Waterloo Public Health and Emergency Services

### Epidemic Curve: Waterloo Public Health and Emergency Services

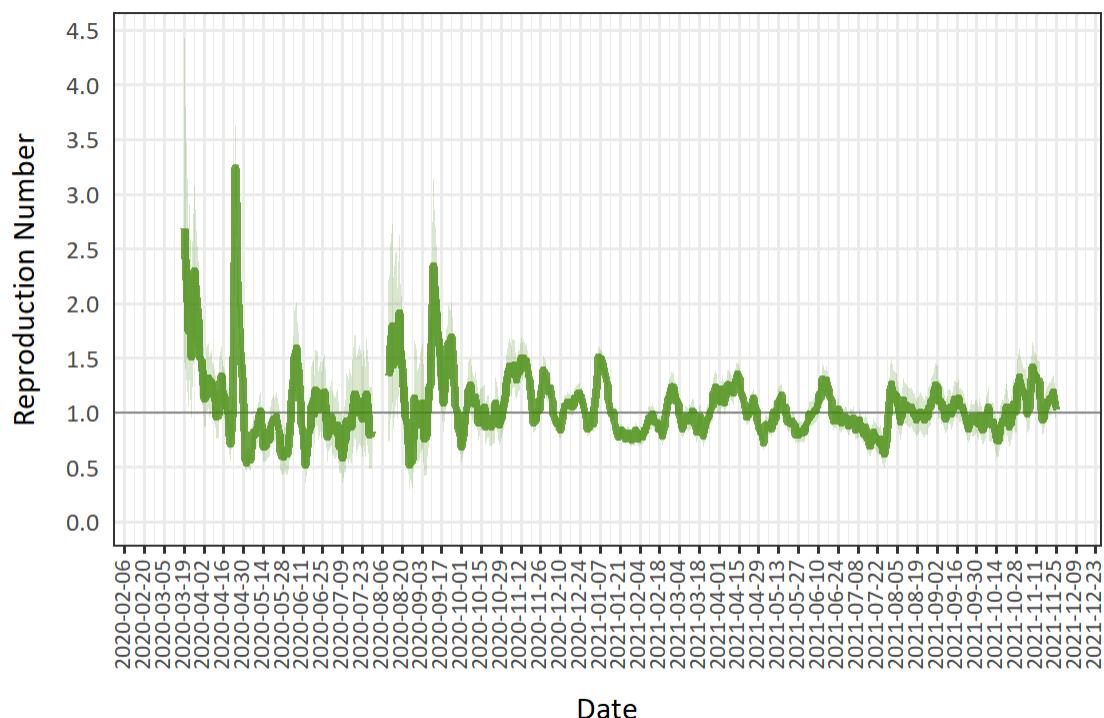


Note: the date used in this graph is the public reporting date

Data Source: CCM

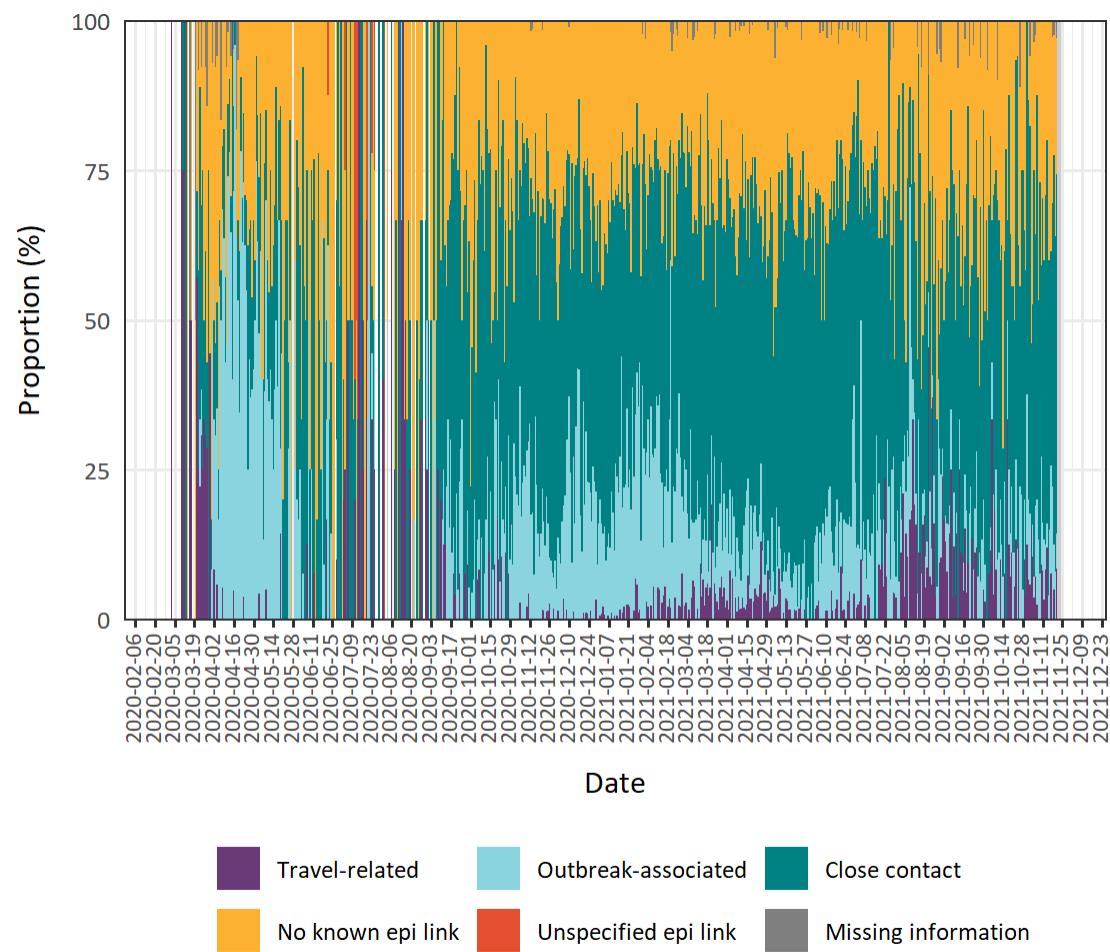
## Reproduction Number: Waterloo Public Health and Emergency Services

Nov 25 Re = 1.02, 95% CI: 0.89-1.17



Data Source: CCM

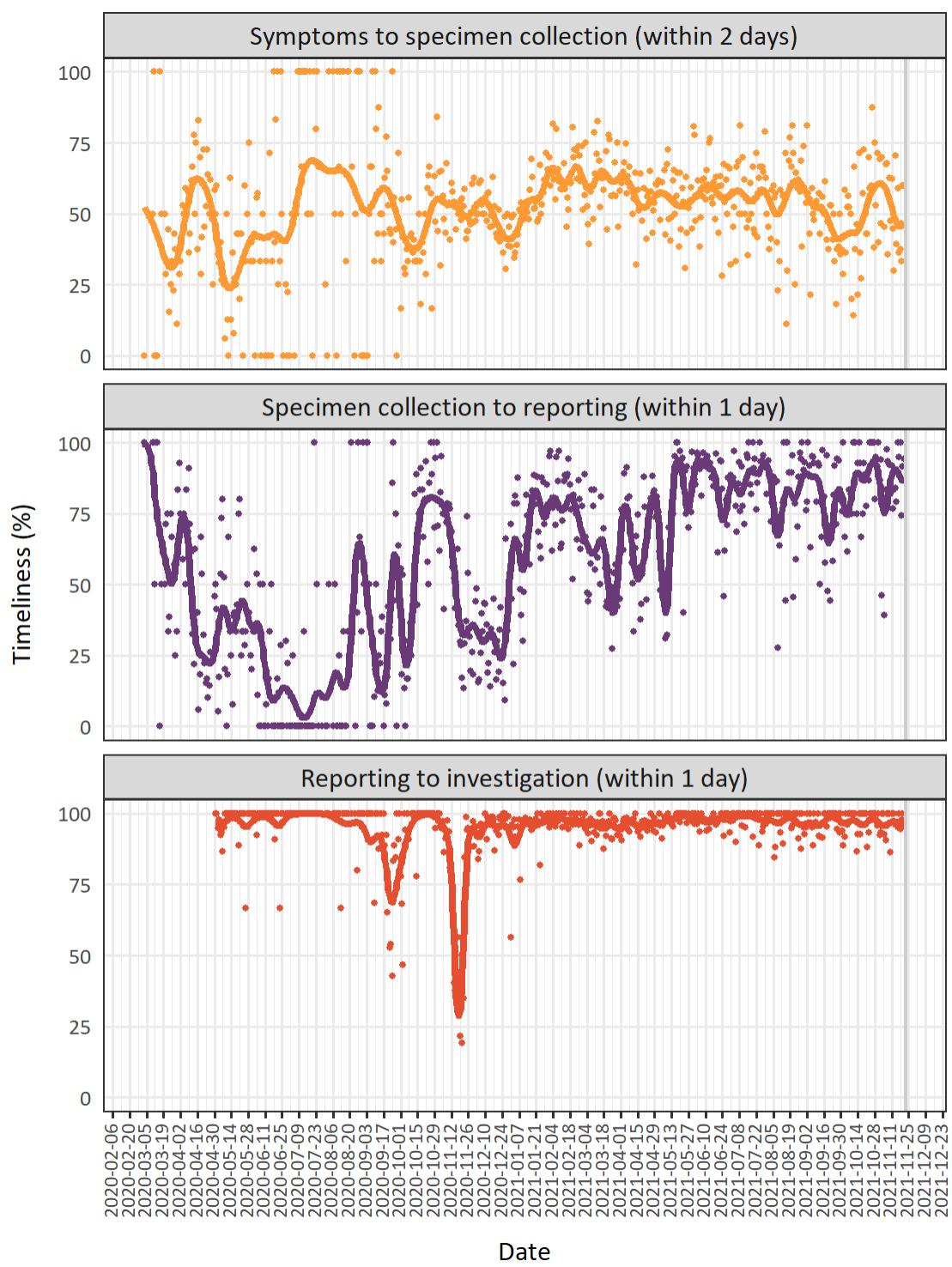
## Likely Acquisition: Waterloo Public Health and Emergency Services



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Waterloo Public Health and Emergency Services

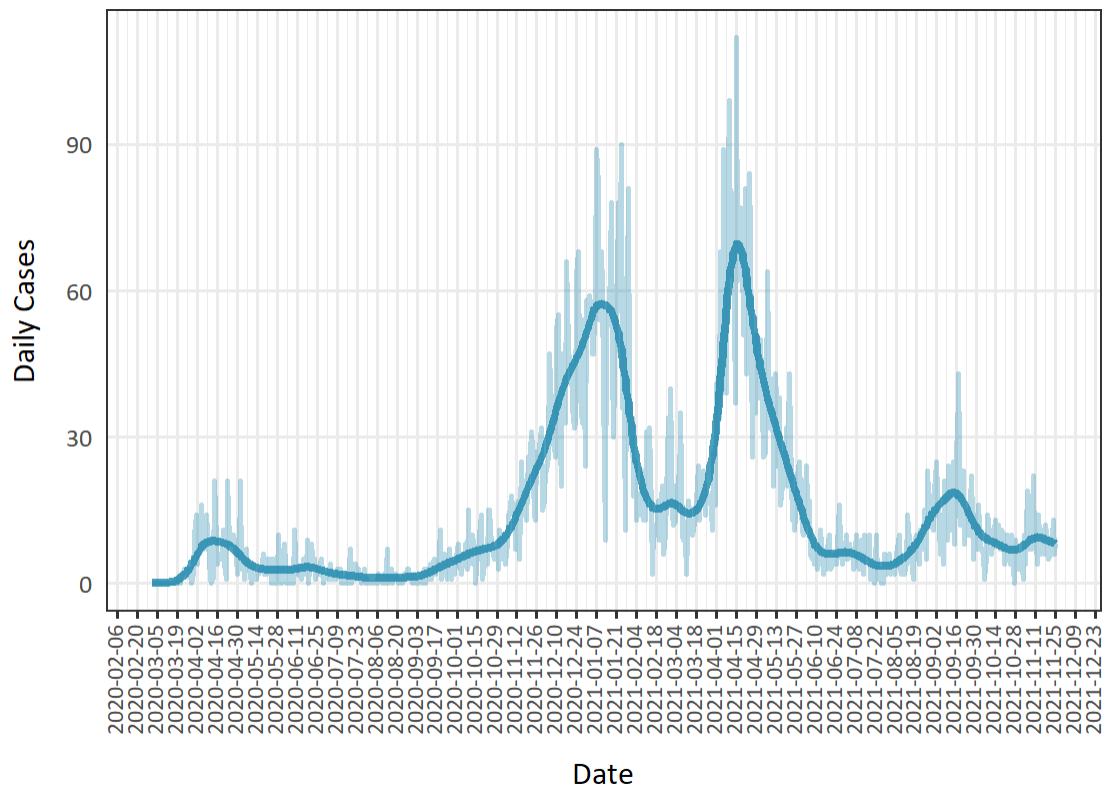


Note: the date used in this graph is the case reported date

Data Source: CCM

## Wellington-Dufferin-Guelph Public Health

### Epidemic Curve: Wellington-Dufferin-Guelph Public Health

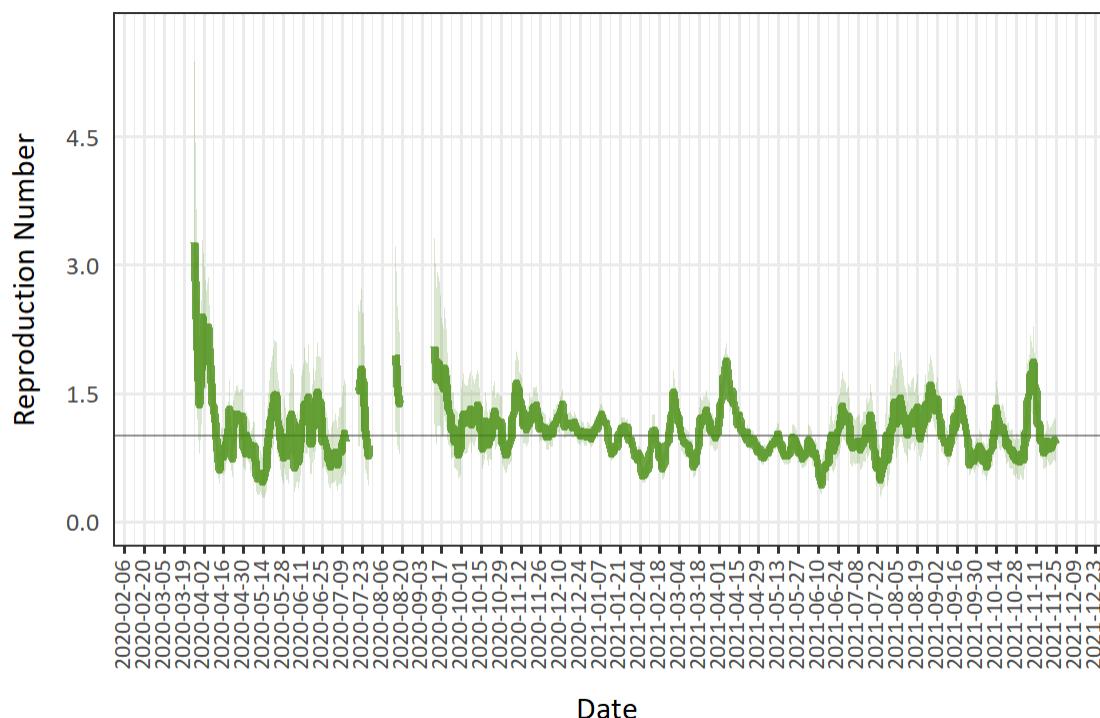


Note: the date used in this graph is the public reporting date

Data Source: CCM

## Reproduction Number: Wellington-Dufferin-Guelph Public Health

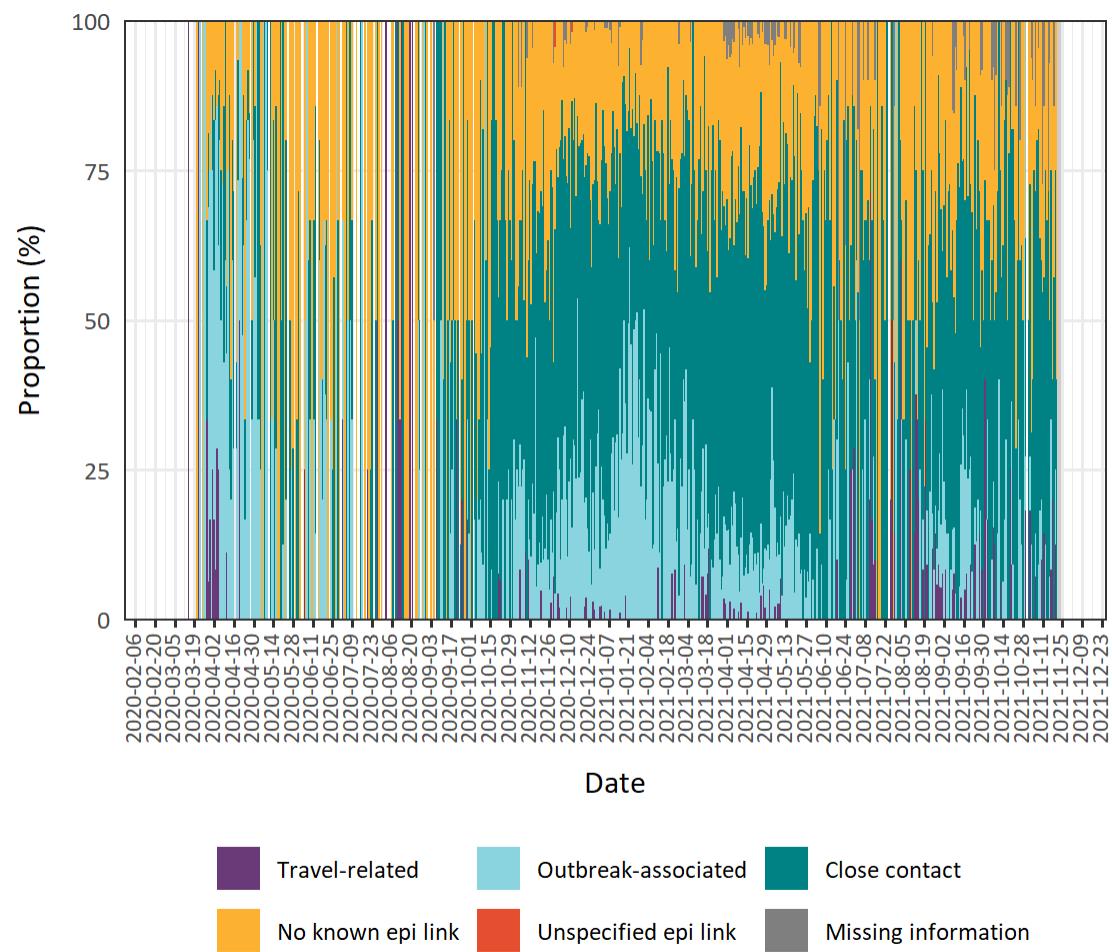
Nov 25 Re = 0.91, 95% CI: 0.69-1.17



Note: the date used in this graph is the public reporting date  
Shading represents 95% confidence interval around the estimate for Re

Data Source: CCM

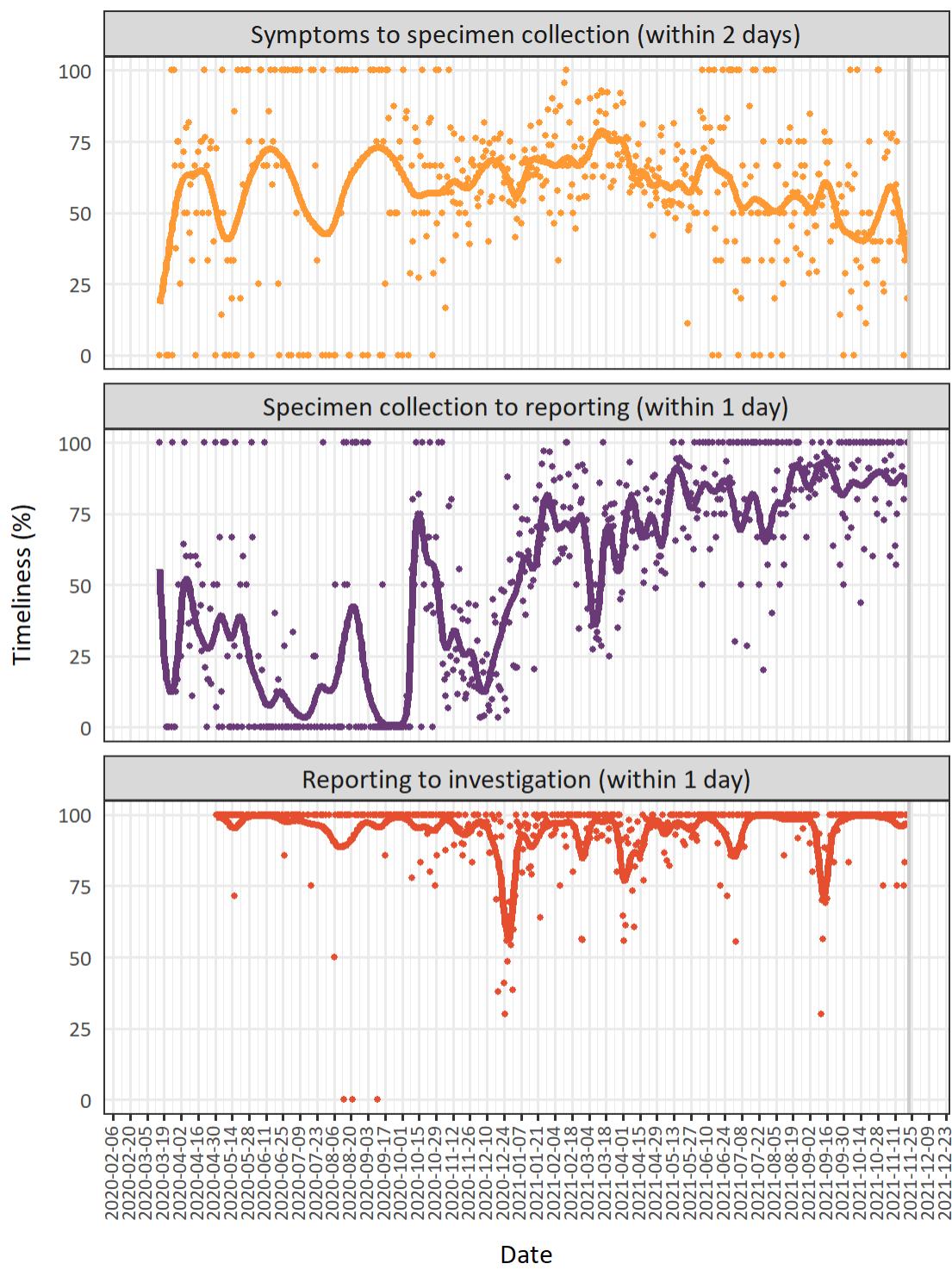
## Likely Acquisition: Wellington-Dufferin-Guelph Public Health



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Wellington-Dufferin-Guelph Public Health

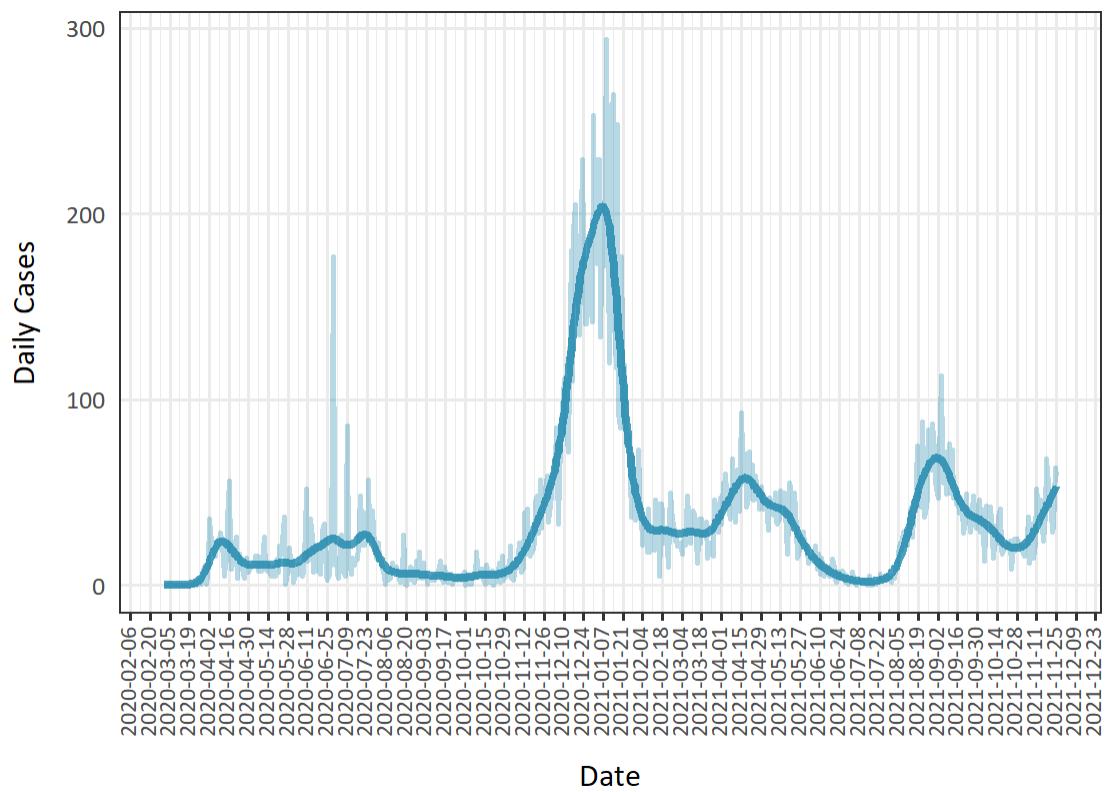


Note: the date used in this graph is the case reported date

Data Source: CCM

## Windsor-Essex County Health Unit

### Epidemic Curve: Windsor-Essex County Health Unit

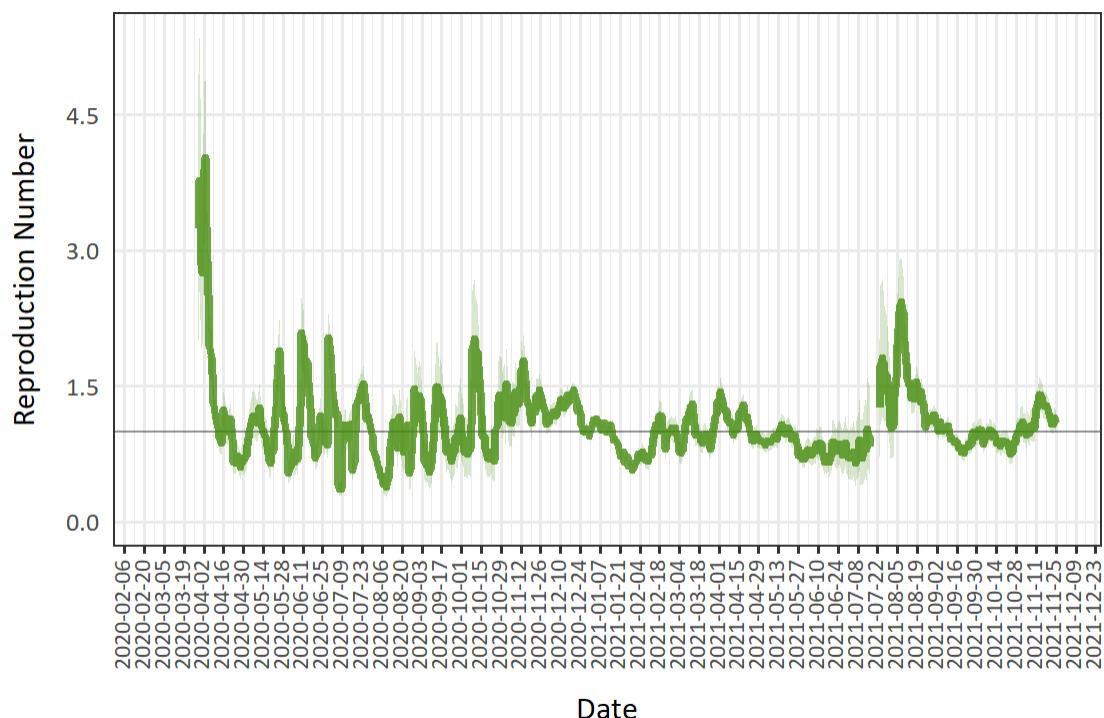


Note: the date used in this graph is the public reporting date

Data Source: CCM

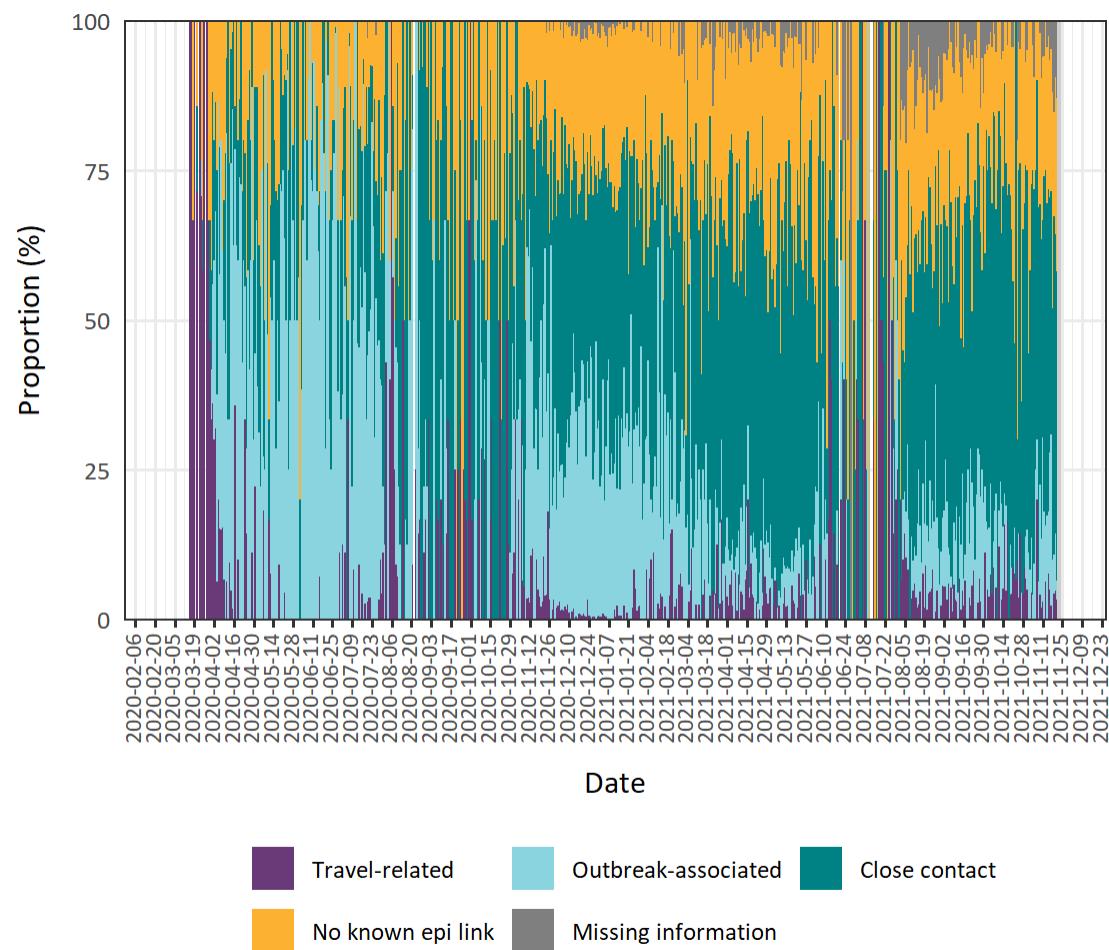
## Reproduction Number: Windsor-Essex County Health Unit

Nov 25 Re = 1.09, 95% CI: 0.98-1.22



Data Source: CCM

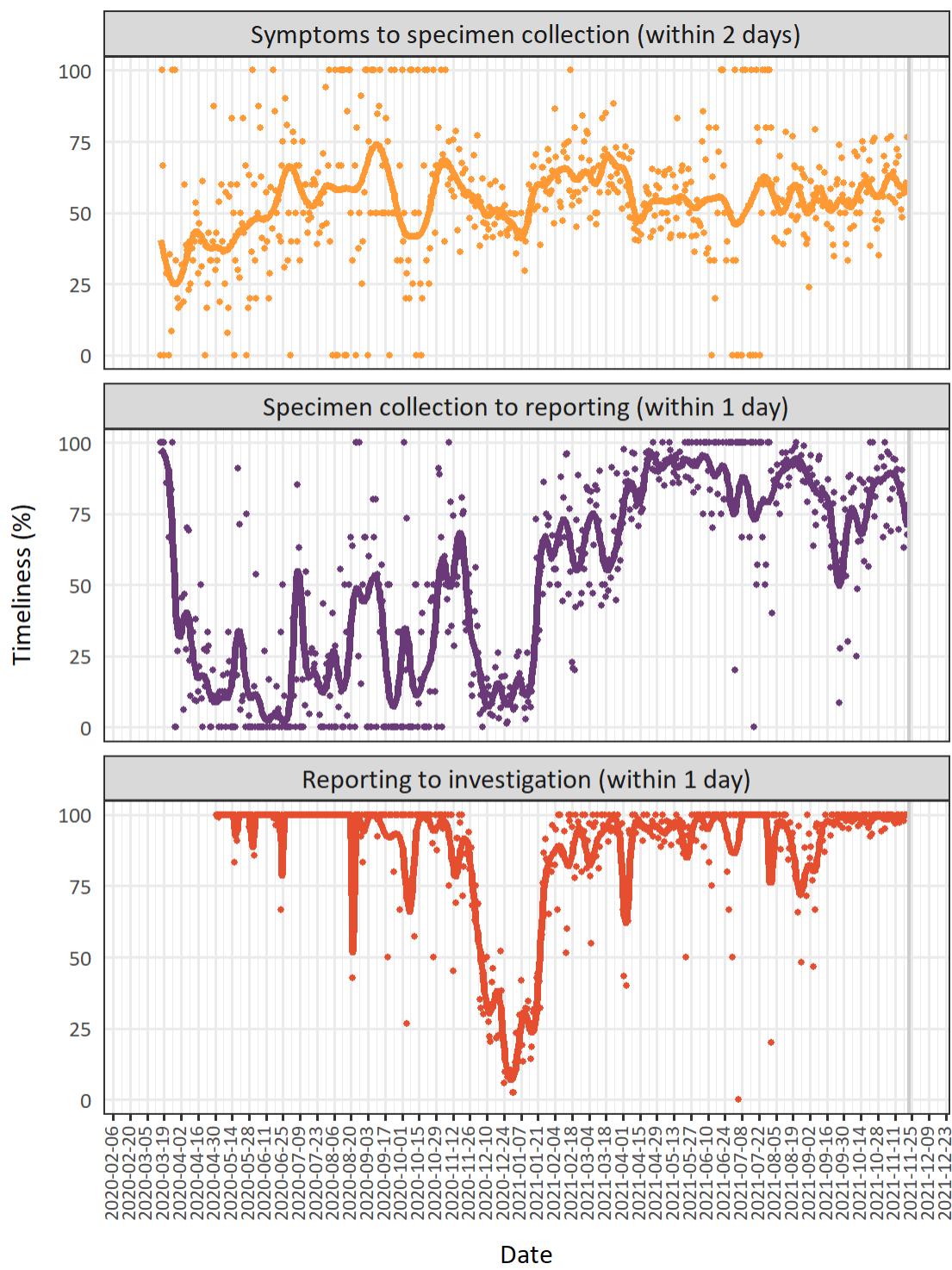
### Likely Acquisition: Windsor-Essex County Health Unit



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: Windsor-Essex County Health Unit

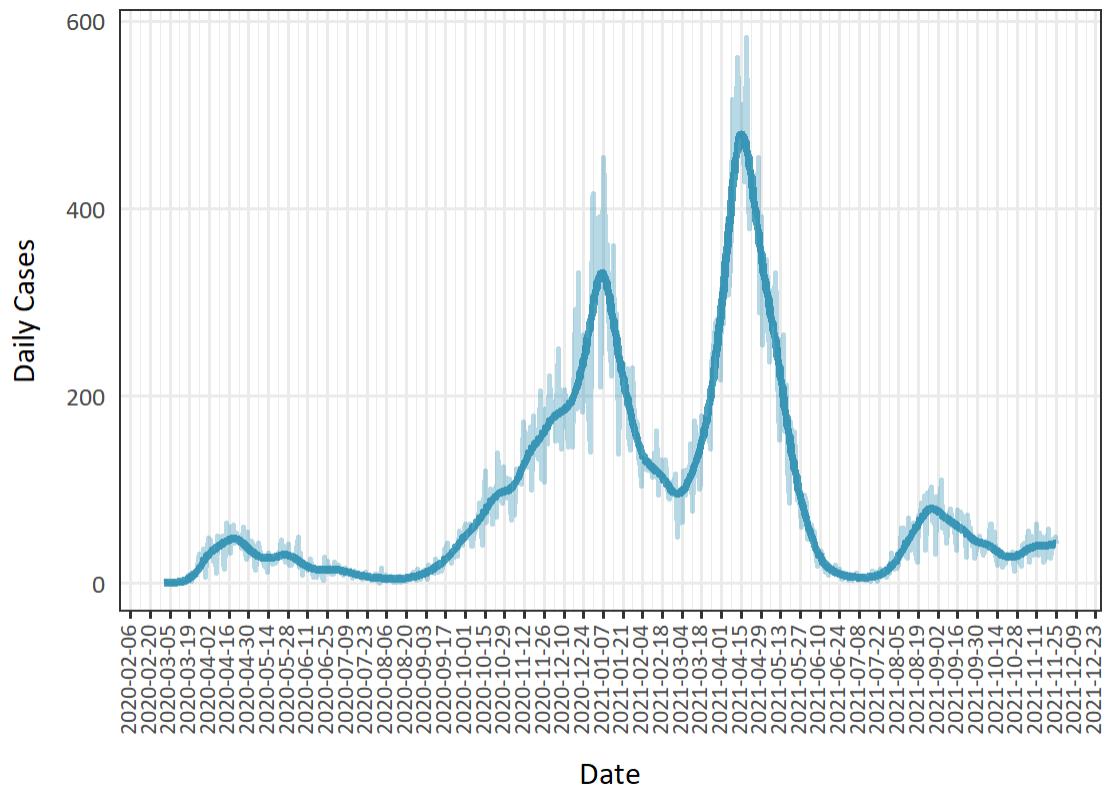


Note: the date used in this graph is the case reported date

Data Source: CCM

## York Region Public Health

### Epidemic Curve: York Region Public Health

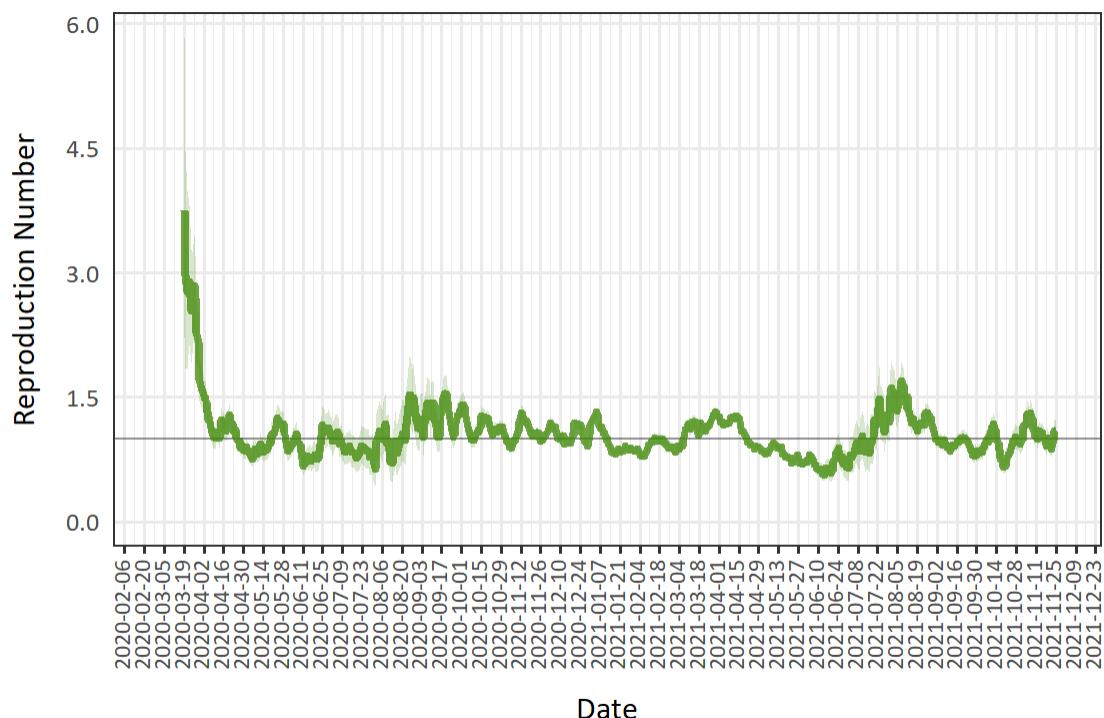


Note: the date used in this graph is the public reporting date

Data Source: CCM

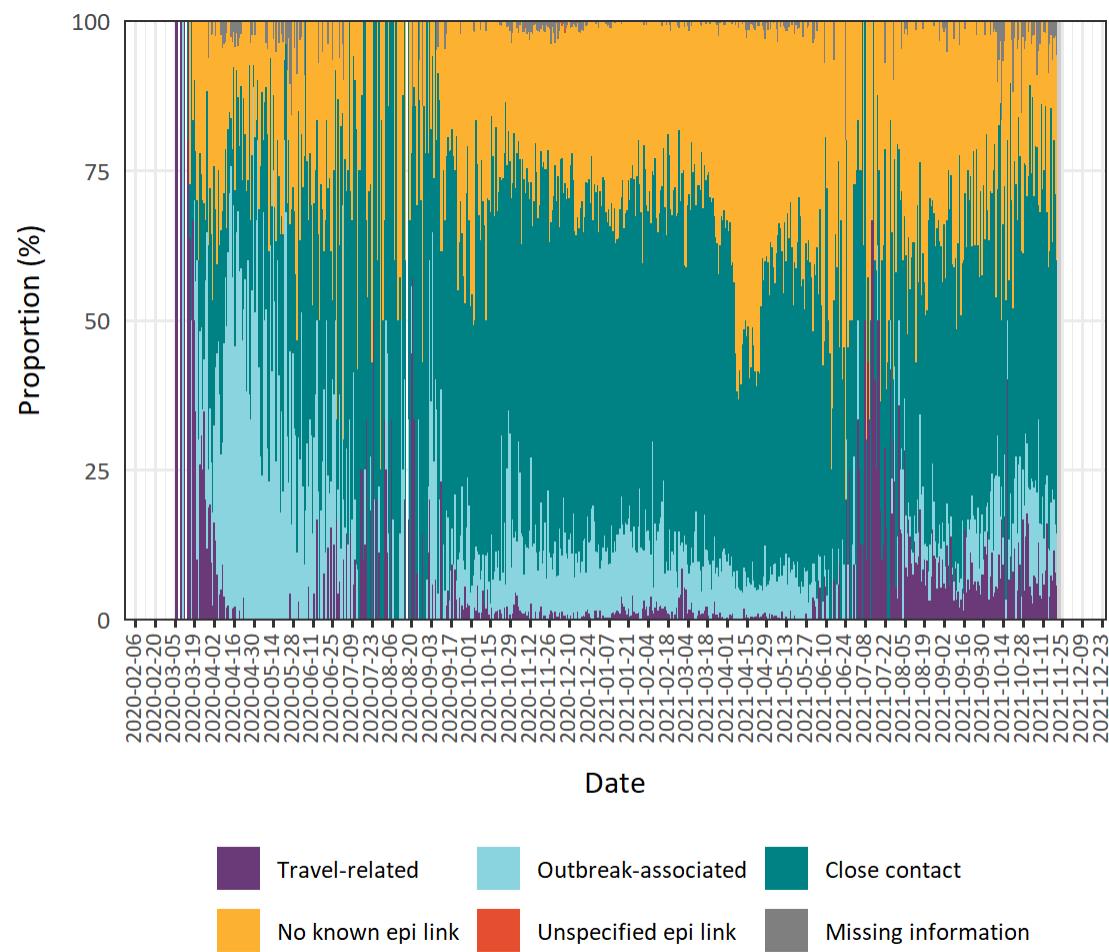
## Reproduction Number: York Region Public Health

Nov 25 Re = 1.11, 95% CI: 0.99-1.24



Data Source: CCM

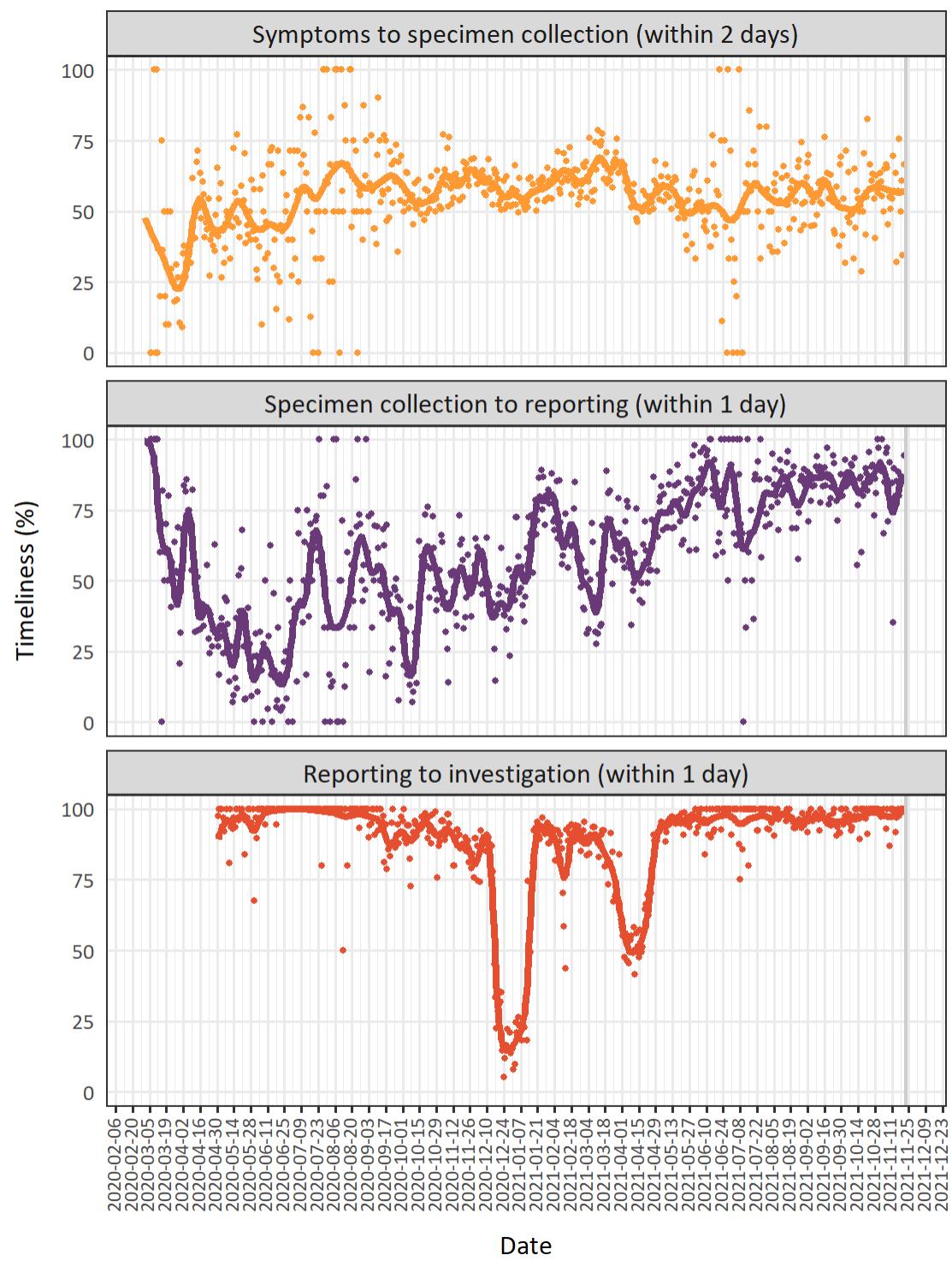
## Likely Acquisition: York Region Public Health



Note: the date used in this graph is the case reported date

Data Source: CCM

## Timeliness: York Region Public Health



Note: the date used in this graph is the case reported date

Data Source: CCM

## Methods

- The data for this report were based on:
  - Information successfully extracted from the Public Health Case and Contact Management Solution (CCM) for all PHUs by PHO as of November 24, 2021 at 1 p.m. for cases reported from February 1, 2021 onwards and as of November 22, 2021 at 9 a.m. for cases reported up to January 31, 2021.
- The date variable used in the figures for the epidemic curve and the reproduction number throughout this report refers to the date that a case first appeared in the compiled data set + 1 additional day. This corresponds to the “public reporting date” of each case at the provincial level.
  - In order to account for certain instances when there were long lags between when a case’s specimen was collected and when their data was entered into CCM, we replaced the public reporting date with the specimen collection date + 3 days (the mode of the distribution from specimen collection to public reporting date). This replacement was made for cases whose delay between specimen collection and case creation was between 7 and 90 days.
  - In rare circumstances when this delay was more than 90 days, we did not make the date replacement.
  - Due to de-duplication efforts, cases from Toronto Public Health first appearing on February 10 and 11 and with a case created date in January were assigned a public reporting date based on case created date + 1.
- The date variable used in the figures for the likely acquisition and the timeliness metrics refers to the case reported date, which is the date the case was reported to the public health unit.
- Due to smaller case counts, we have combined the North West and North East regions into a single region in this report.
- The PHUs were categorized into regions as follows:
  - Toronto: Toronto Public Health
  - Central East: Durham Region Health Department, Haliburton, Kawartha, Pine Ridge District Health Unit, Peel Public Health, Peterborough Public Health, Simcoe Muskoka District Health Unit, and York Region Public Health
  - Central West: Brant County Health Unit, City of Hamilton Public Health Services, Haldimand-Norfolk Health Unit, Halton Region Public Health, Niagara Region Public Health, Region of Waterloo Public Health and Emergency Services, and Wellington-Dufferin-Guelph Public Health
  - Eastern: Ottawa Public Health, Eastern Ontario Health Unit, Hastings Prince Edward Public Health, Kingston, Frontenac and Lennox & Addington Public Health, Leeds, Grenville & Lanark District Health Unit, and Renfrew County and District Health Unit

- Northern: Northwestern Health Unit, Thunder Bay District Health Unit, Algoma Public Health, North Bay Parry Sound District Health Unit, Porcupine Health Unit, Public Health Sudbury & Districts, and Timiskaming Health Unit
- South West: Chatham-Kent Public Health, Grey Bruce Health Unit, Huron Perth Public Health, Lambton Public Health, Middlesex-London Health Unit, Southwestern Public Health, and Windsor-Essex County Health Unit
- GTA health units include: Durham Region Health Department, Peel Public Health, Toronto Public Health, and York Region Public Health.
- With the exception of the time from case reported date to investigation start date, orientation of case counts by geography is based on the diagnosing health unit (DHU). DHU refers to the case's public health unit of residence at the time of illness onset and not necessarily the location of exposure. For the time from case reported date to investigation start date, responsible public health unit was used in order to align with the process for case management. Cases for which the responsible health unit was reported as the Ministry of Health (MOH) (to signify that the PHU is not responsible for case management, such as cases that are not residents of Ontario) have been excluded from the analyses.
- Epidemic curve: smoothed epidemic curves were estimated using generalized additive models of the daily number of cases.
- Reproduction number: the reproduction number was measured using the EpiEstim package in R.<sup>1</sup> The procedure uses daily reported case counts and a 7-day rolling window for estimation. The mean serial interval was set at 4.5 days with a standard deviation of 2.5 days, as adapted from published estimates.<sup>2,3</sup> EpiEstim uses a Markov Chain Monte Carlo sampling procedure, and the median represents the middle of the distribution of most probable values of the reproduction number. The reproduction number of a region was only calculated when there were at least 12 cases in that region in the last 7 days.
- Likely source of acquisition is determined by examining the epidemiologic link and epidemiologic link status fields in CCM and local systems. If no epidemiologic link is identified in those fields the risk factor fields are examined to determine whether a case travelled, was associated with an outbreak, was a contact of a case, had no known epidemiological link (sporadic community transmission) or was reported to have an unknown source/no information was reported. Some cases may have no information reported if the case is untraceable, was lost to follow-up or referred to FNIHB. Cases with multiple risk factors were assigned to a single likely acquisition source group which was determined hierarchically in the following order:
  - For cases with an episode date on or after April 1, 2020: Outbreak-associated > close contact of a confirmed case > travel > no known epidemiological link > information missing or unknown.
  - For cases with an episode date before April 1, 2020: Travel > outbreak-associated > close contact of a confirmed case > no known epidemiological link > information missing or unknown.

- Data for the three days prior to the extract date are not shown for this graph due to lags in data entry.
- Timeliness of reporting: smoothed curves were estimated using generalized additive models of the proportion of cases that were reported within the stated time frame. The dots in the graph represent the individual proportions for a given reported date. The duration elapsed from reporting to investigation was only measured from May 1st onwards, as this is the date that the directive to enter investigation start date was issued. Cases with missing or pending dates have been excluded from the denominator in this analysis.
  - For the time from case reported date to investigation start date, cases with a disposition status of referred to the First Nations and Inuit Health Branch (FNIHB), lost to follow up, or untraceable were excluded from the analyses.
  - If there were no cases within 7 days of the case reported date, the smoothed curve for the proportion meeting the target is not shown.
  - Data for the three days prior to the extract date are not shown for this graph due to lags in data entry.
  - When CCM's Virtual Assistant is the first point of contact with the client, the timing of a partially complete Virtual Assistant is considered to be the investigation start date for the purpose of reporting. The Virtual Assistant is considered partially complete if, at a minimum, the terms of use have been accepted, at which point the client will have read an introductory text that explains why public health is reaching out. The Virtual Assistant will auto-populate the investigation start date field with the date the client accepts the Terms of Use.

## Limitations

- This report includes confirmed cases of COVID-19 as per the Ontario Ministry of Health [case definition](#). However, this report excludes persons with a positive detection of serum/plasma immunoglobulin G (IgG) antibodies to SARS-CoV-2, which was added to the confirmed case definition on August 6, 2020. Case detection is strongly influenced by the provincial testing strategy, which may also influence the time elapsed between various steps in the testing and notification process.
- Cases of confirmed reinfection, i.e. where genome sequencing indicates the two episodes are caused by different viral lineages, added to the confirmed case definition on November 20, 2020, are counted as unique investigations.
- CCM is a dynamic disease reporting system, which allow ongoing updates to data previously entered. As a result, data extracted represent a snapshot at the time of extraction and may differ from previous or subsequent reports.
- The data only represent cases reported to public health units and recorded in CCM plus. As a result, all counts will be subject to varying degrees of underreporting due to a variety of factors, such as disease awareness and medical care seeking behaviours, which may depend on severity of illness, clinical practice, changes in laboratory testing, and reporting behaviours.

- The public reporting date lags the infection date; as such, public reporting dates likely represent infections that occurred approximately 10 days earlier.
- For reproduction number analyses, all cases since initial importation were presumed to be locally transmitted. Further, the estimates of the reproduction number are influenced by the choice of serial interval. As such, the reported estimates in the analysis are subject to change as additional data on the estimated serial interval are published.
- The epidemic curves in this report will not align with the curves provided in other reports due to the date chosen. In monitoring trends over time, the public reporting date was specifically chosen in order to identify early signals of increasing cases, which is challenging when using episode date or reported date due to lags in data entry and therefore the need for caution when reviewing case data for more recent days. As such, numbers from the epidemic curve should not be compared between this regional report and the daily/weekly epidemiologic summary.

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## Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). COVID-19 regional incidence and time to case notification in Ontario. Toronto, ON: Queen's Printer for Ontario; 2020.

## Disclaimer

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## For Further Information

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## Public Health Ontario

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