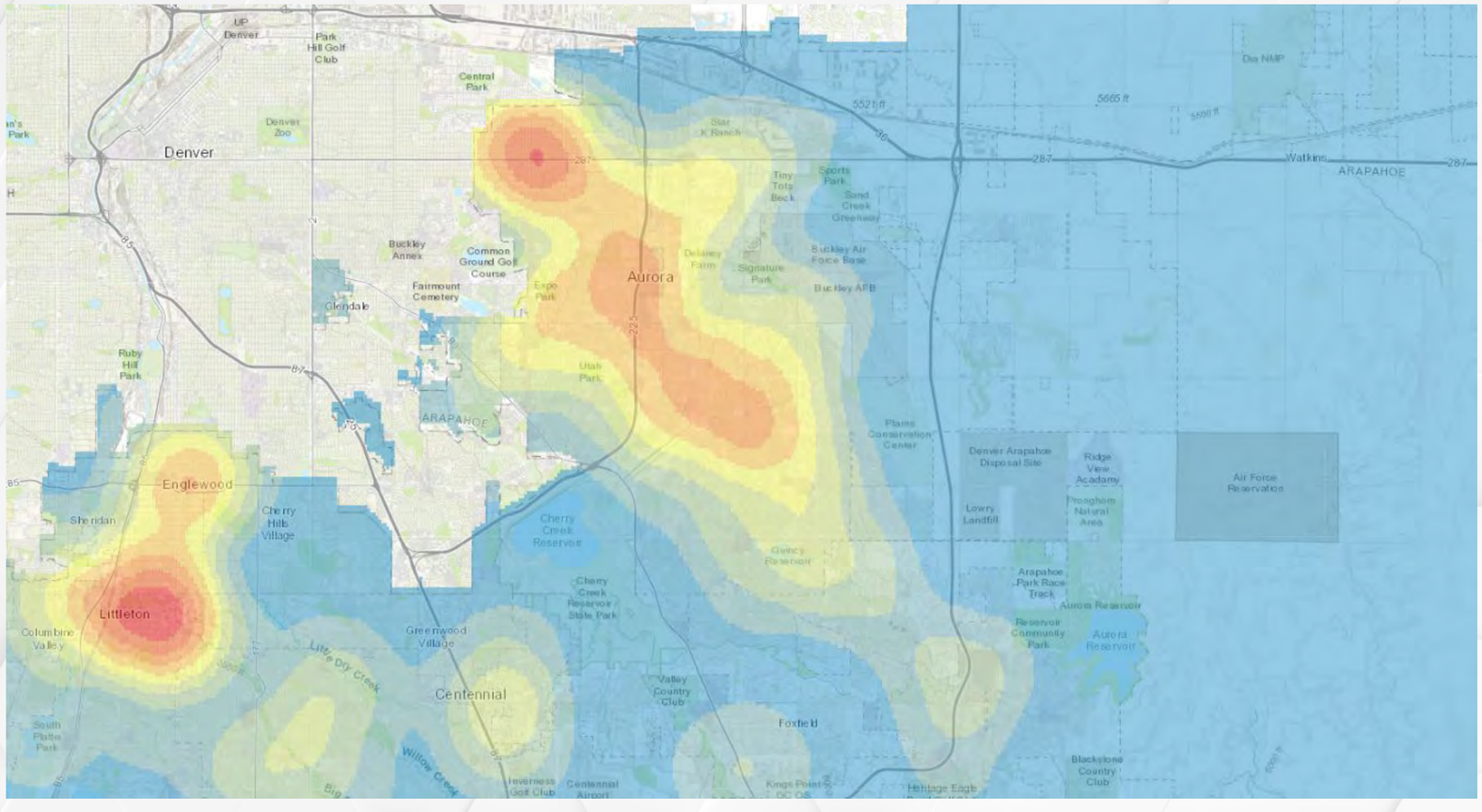
Using GIS for
Covid19 Case and Contact Investigations

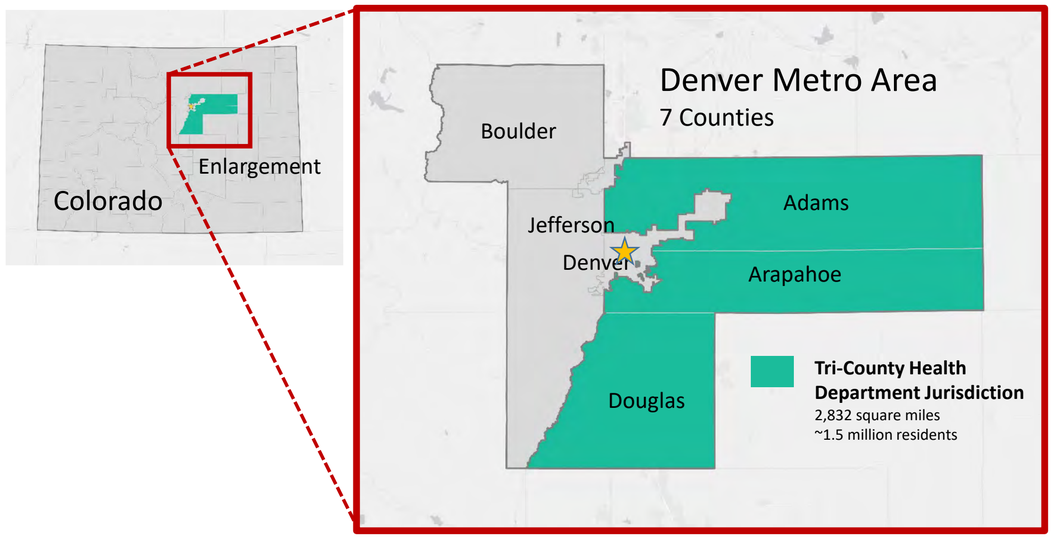


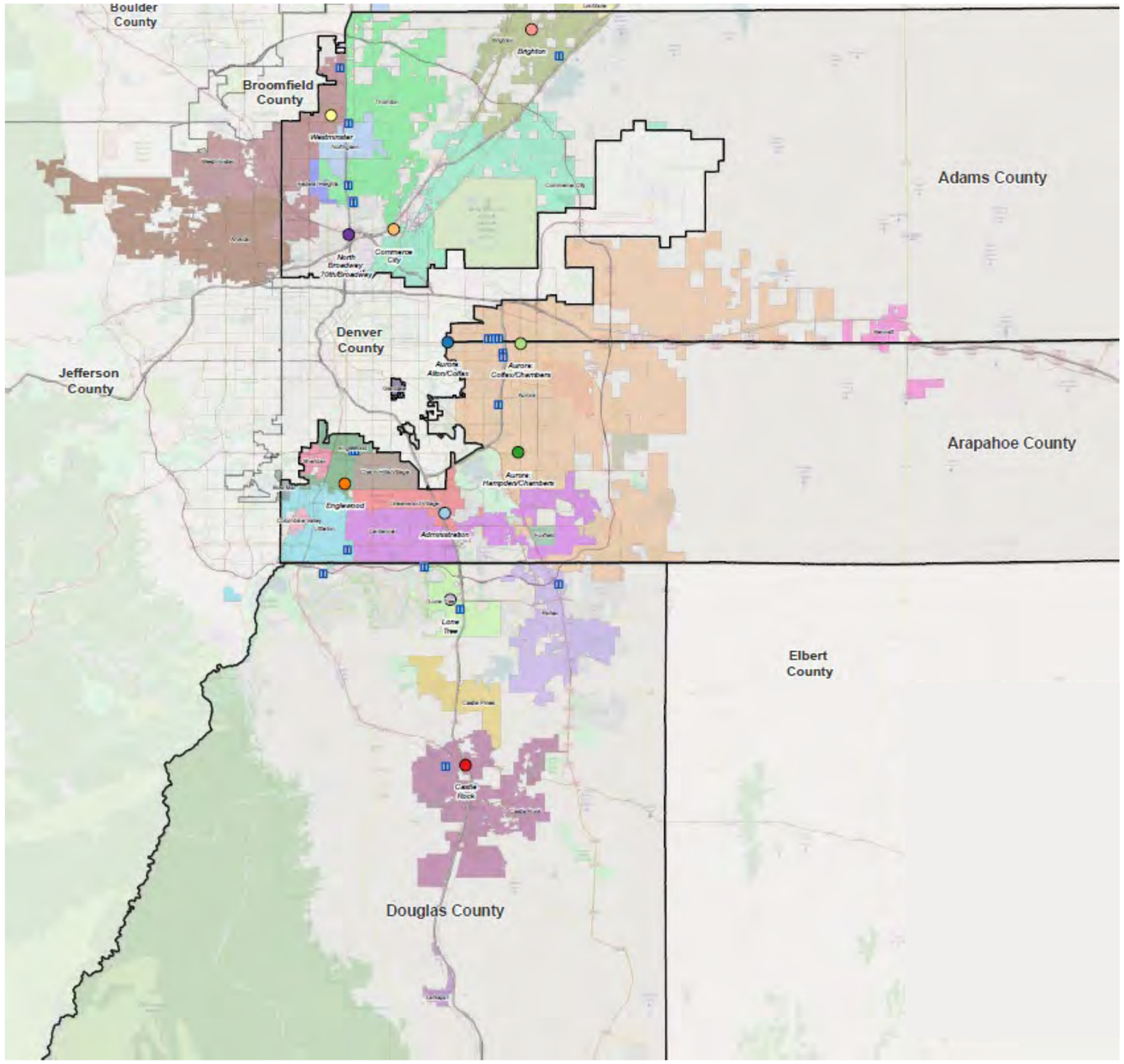
Adams, Arapahoe, Douglas Counties | Colorado

Tri-County Health Department

Tri-County Health Department

Adams, Arapahoe, Douglas Counties





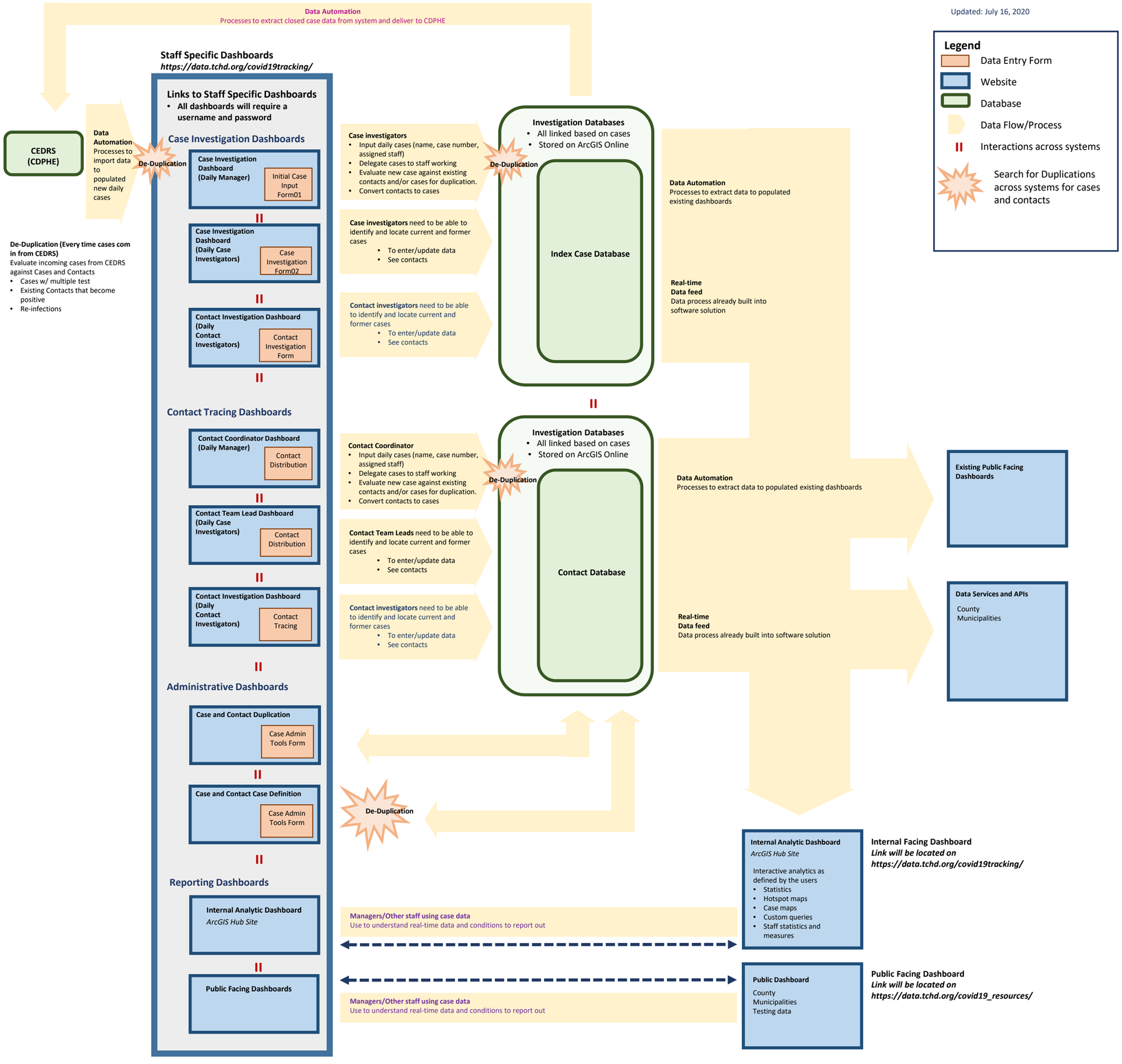
Tri-County Health Department (TCHD)

is the local public health agency for three (Adams, Arapahoe, Douglas) of the seven counties that make up the Denver metro region. TCHD serves approximately 1.5 million residents across 27 municipalities consisting of urban, suburban, and rural environments.

- ~ 425 employees
- 3 health data analysts
- 4 seats of ArcGIS Desktop
- 1 ArcGIS server license

COVID19 Case Investigation Main Dashboard

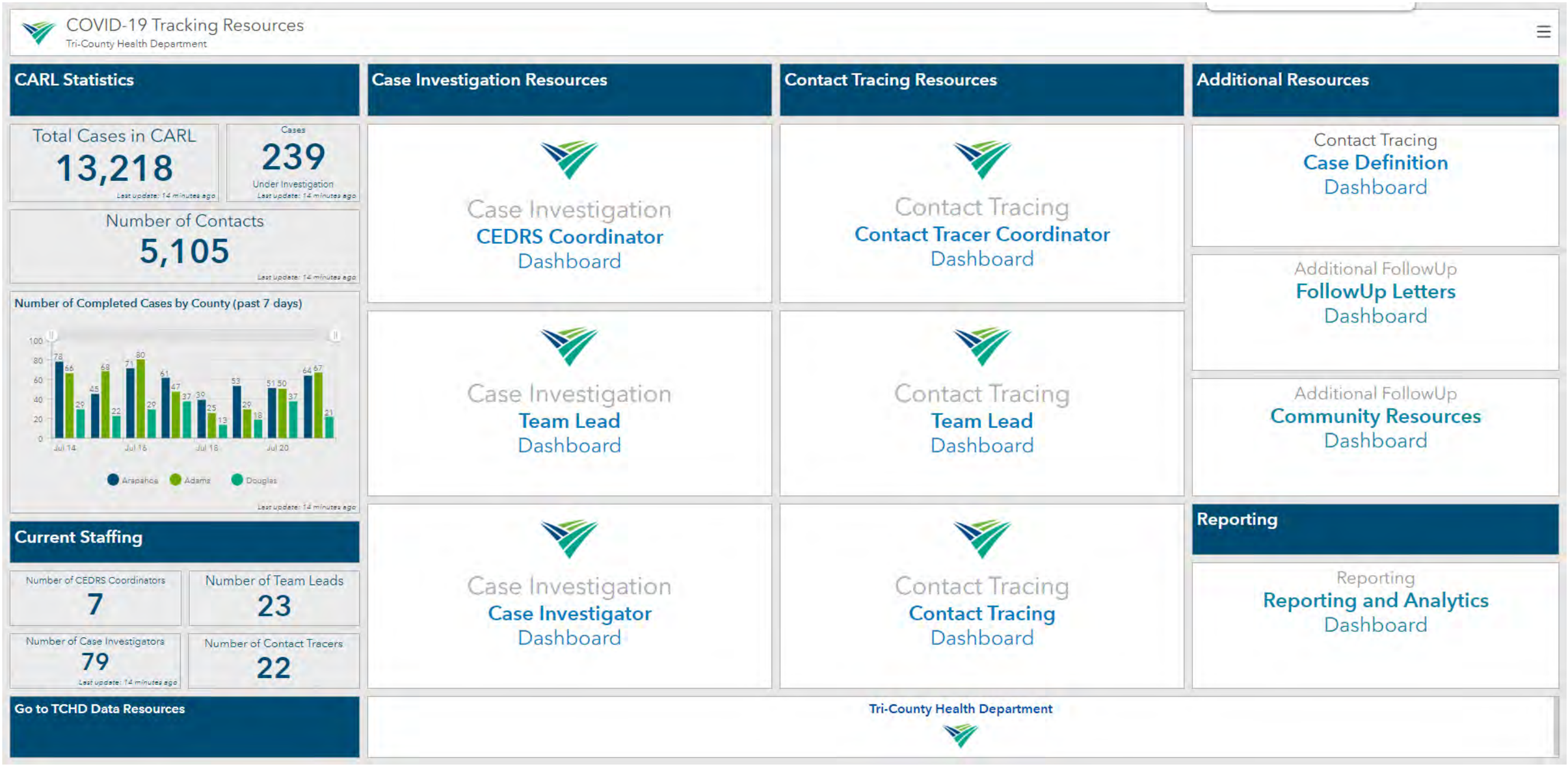
Using ESRI ArcGIS Online



Tri-County Health Department

COVID19 Case Investigation Main Dashboard

Using ESRI ArcGIS Online Dashboards



Real-time general statistics from CARL

Case investigation workflow dashboards

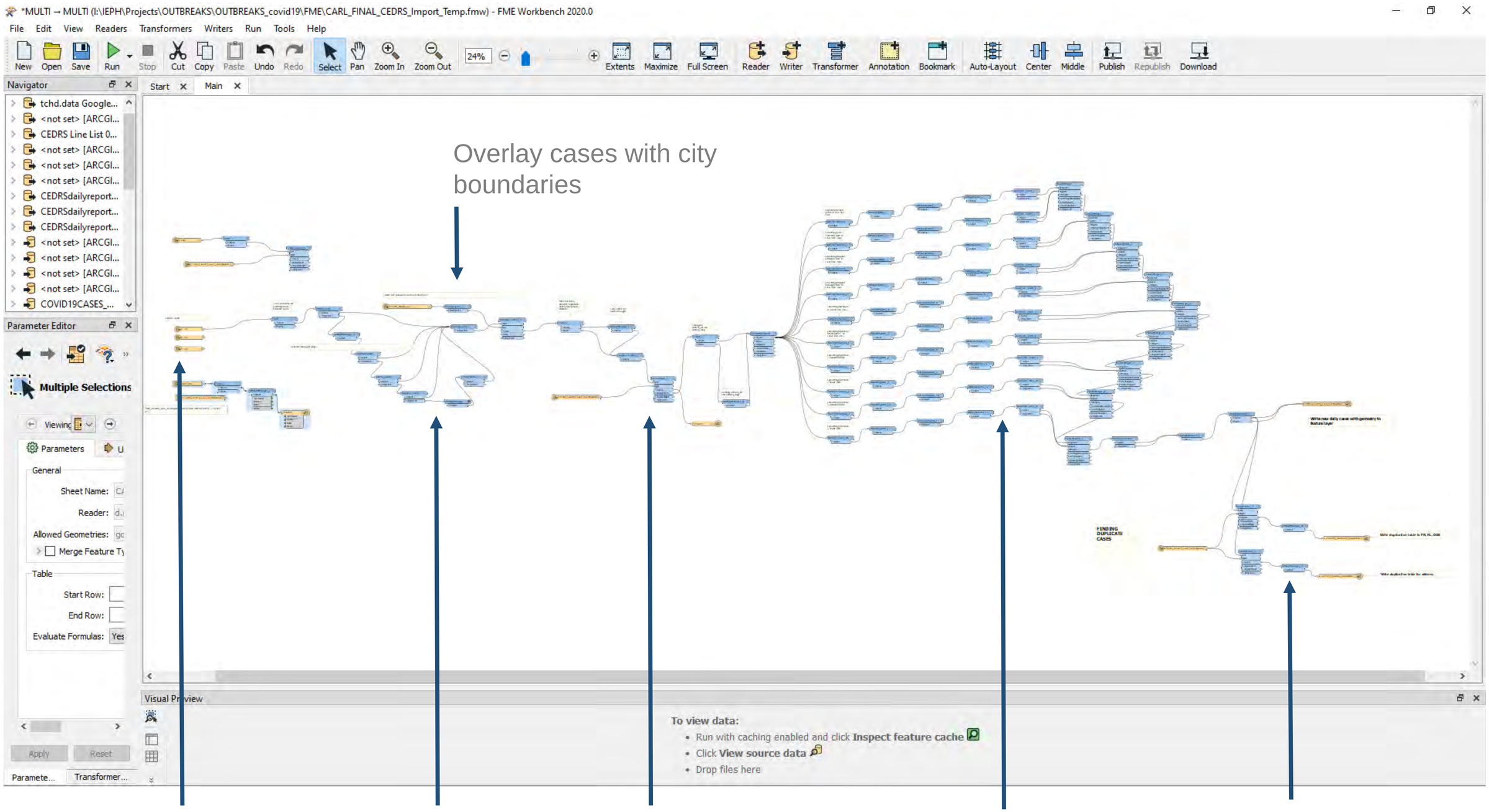
Contact tracing workflow dashboards

Case investigation follow-up dashboards

Tri-County Health Department

COVID19 Case Importing Process

Using FME Workbench



Import cases from State reportable disease database

Geocode addresses using each county's geocoding service

De-duplicate against existing records in CARL

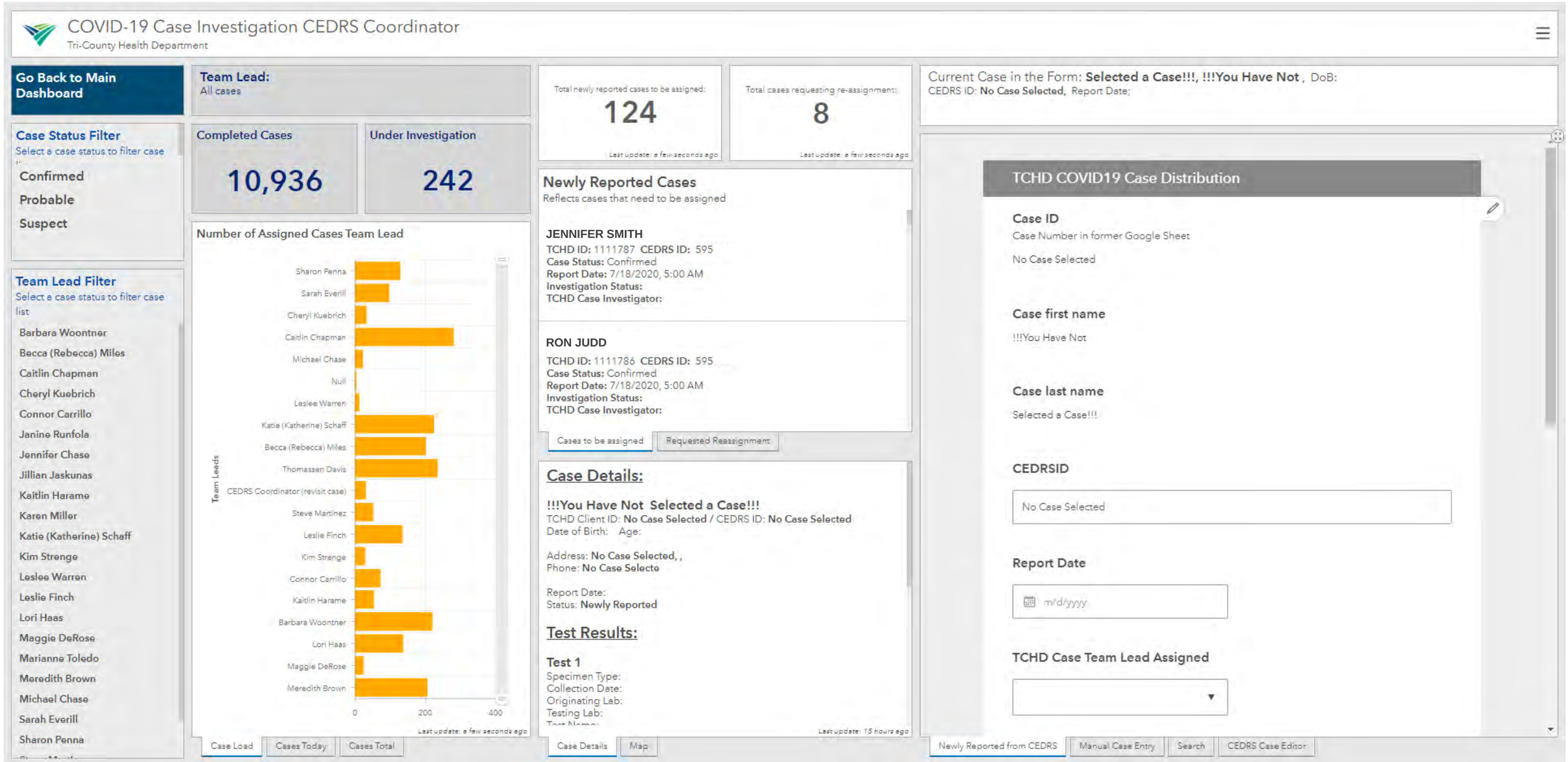
Format date fields

Write cases to feature service

Tri-County Health Department

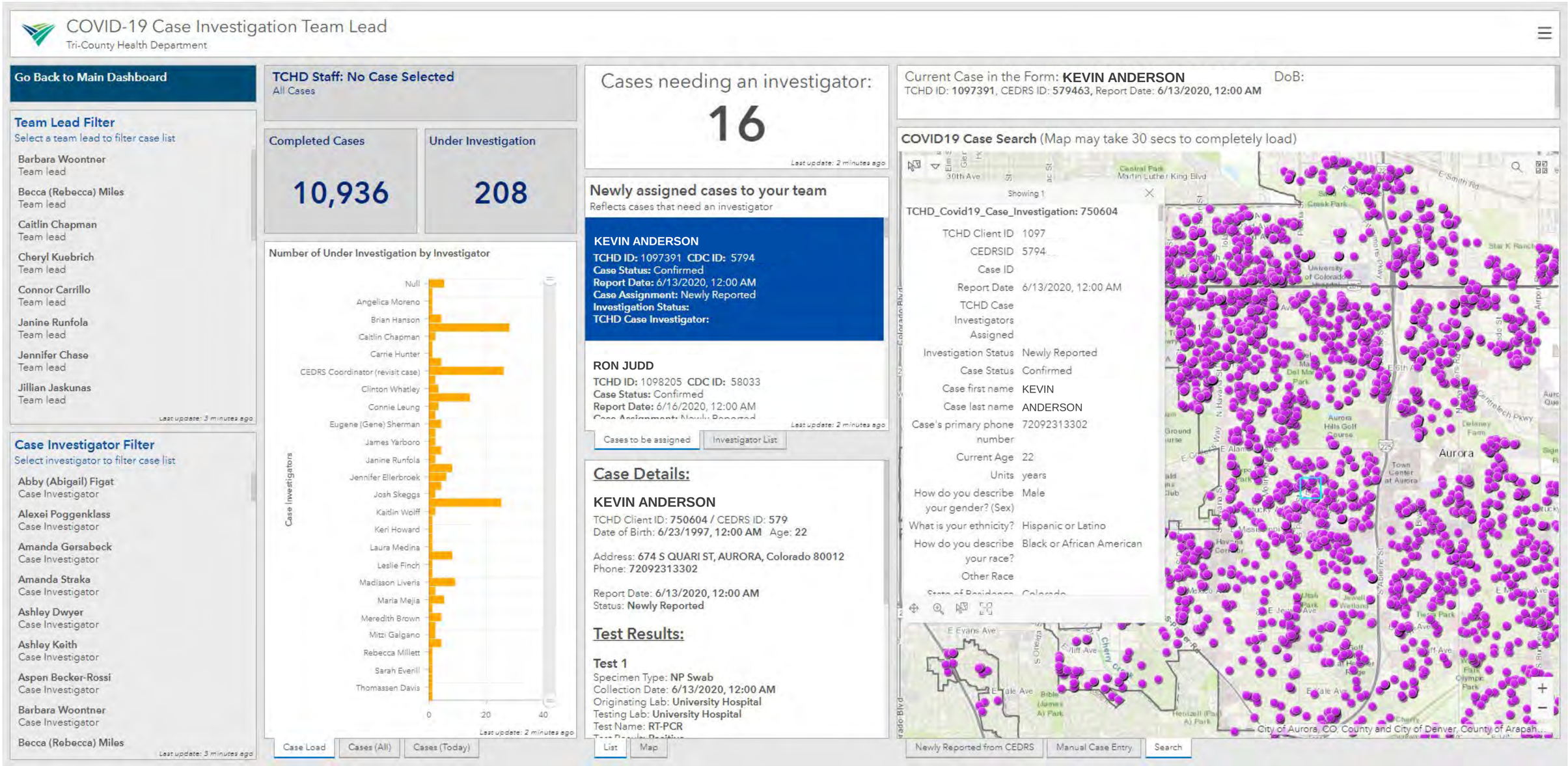
COVID19 Case Investigation Coordinator

ArcGIS Online Dashboard



COVID19 Case Investigation Team Lead

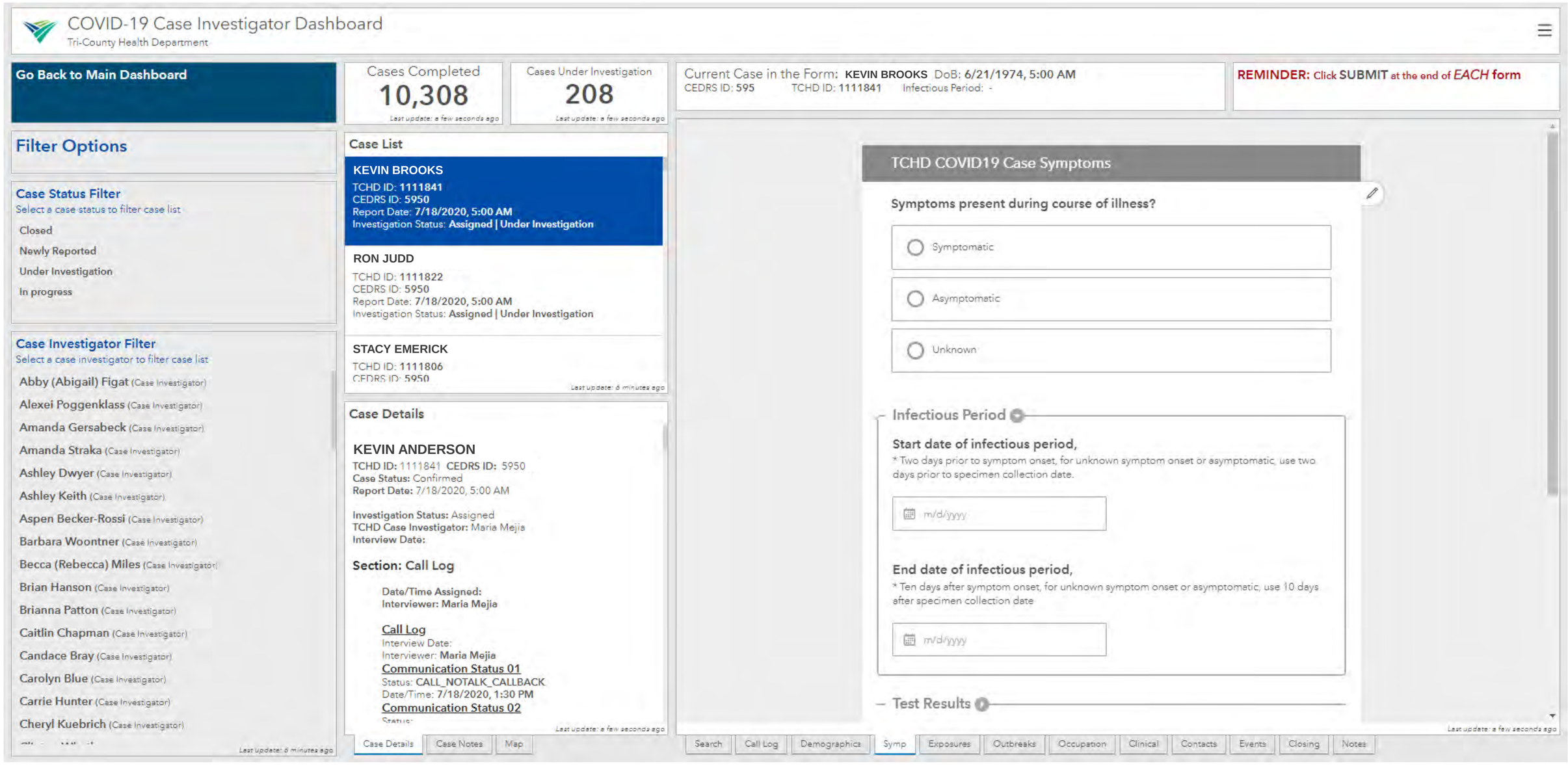
ArcGIS Online Dashboard



Tri-County Health Department

COVID19 Case Investigator

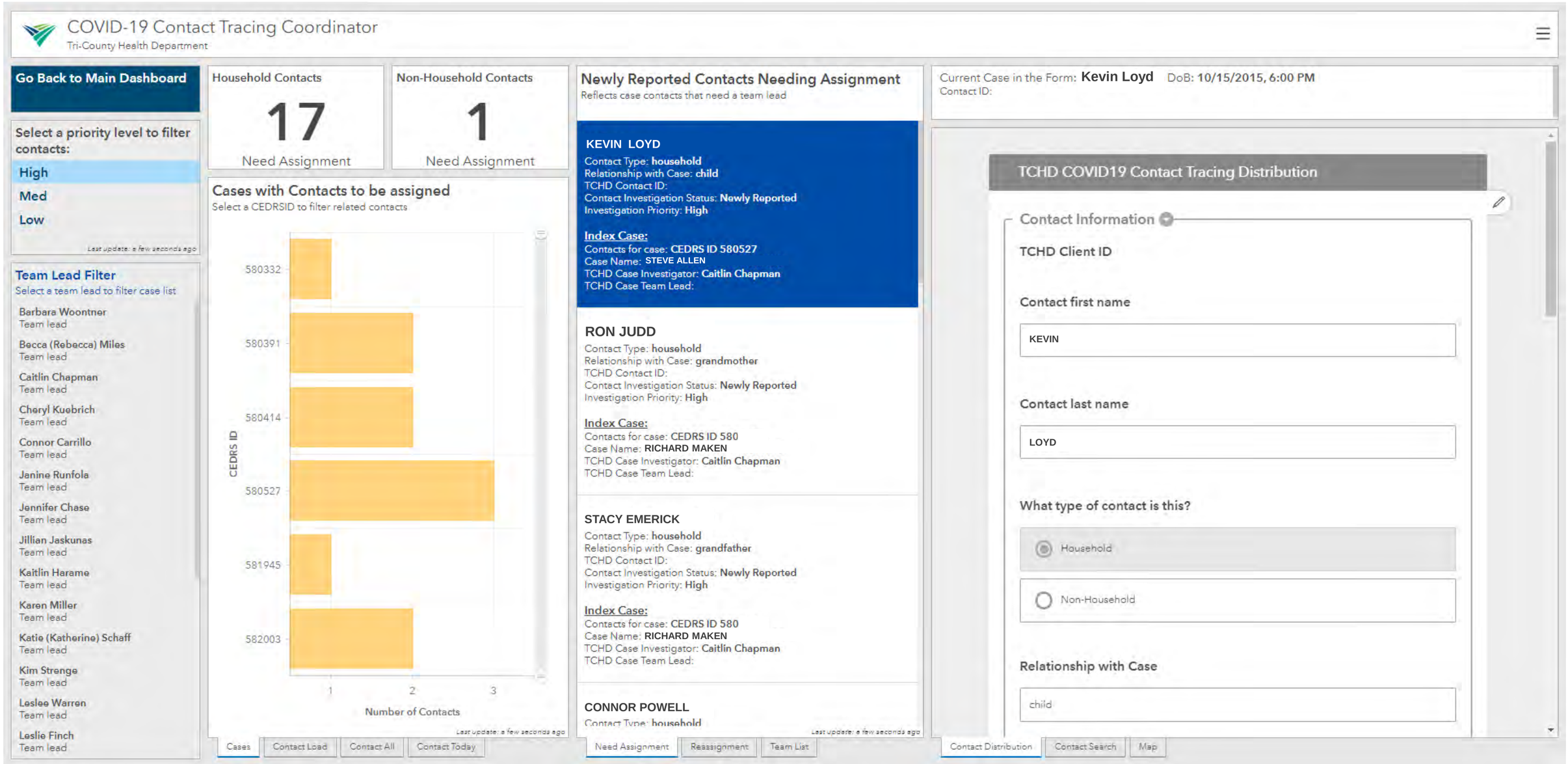
ArcGIS Online Dashboard



Tri-County Health Department

COVID19 Contact Tracing Coordinator

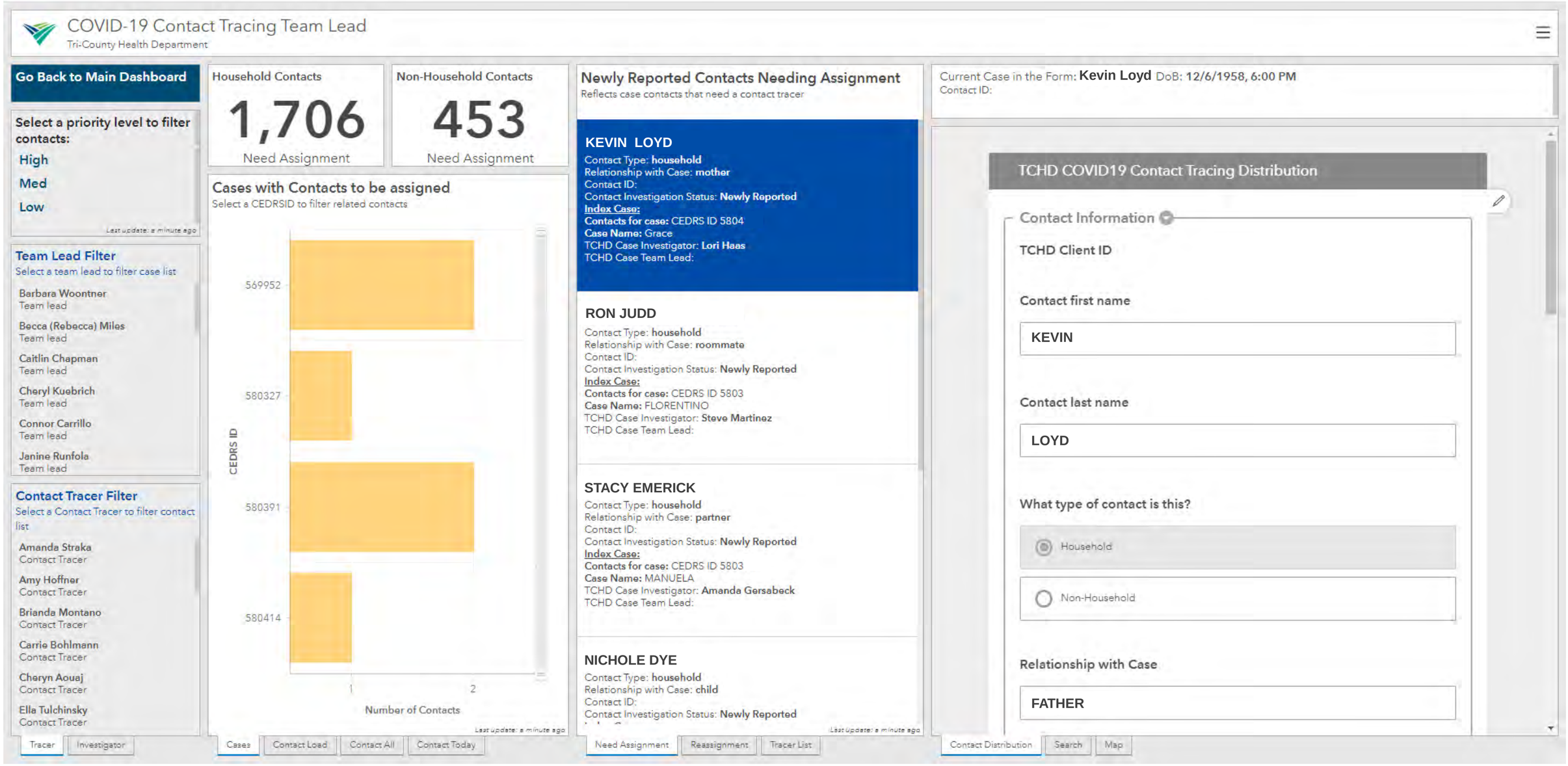
ArcGIS Online Dashboard



Tri-County Health Department

COVID19 Contact Tracing Team Lead

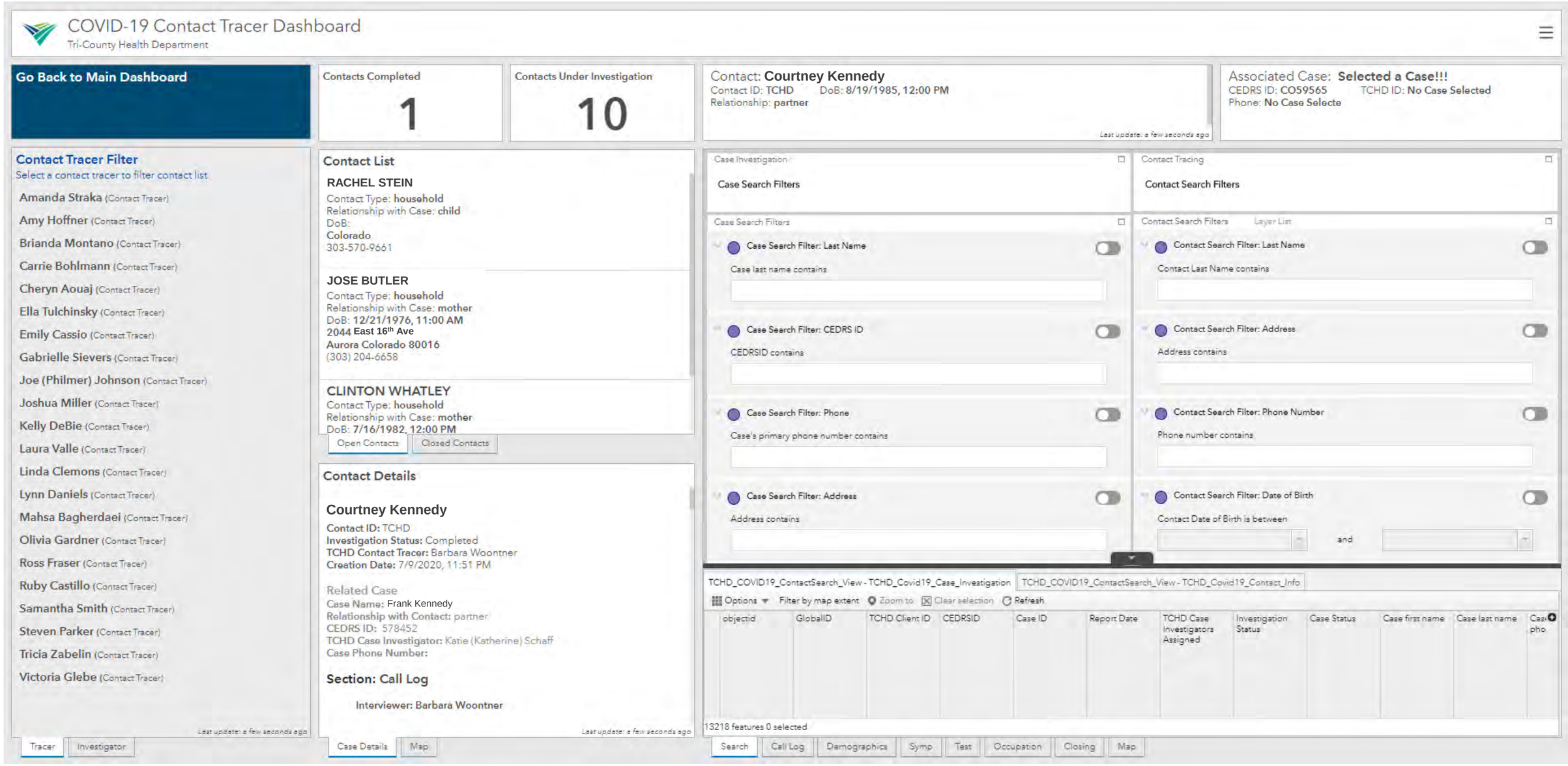
ArcGIS Online Dashboard



Tri-County Health Department

COVID19 Contact Tracer

ArcGIS Online Dashboard

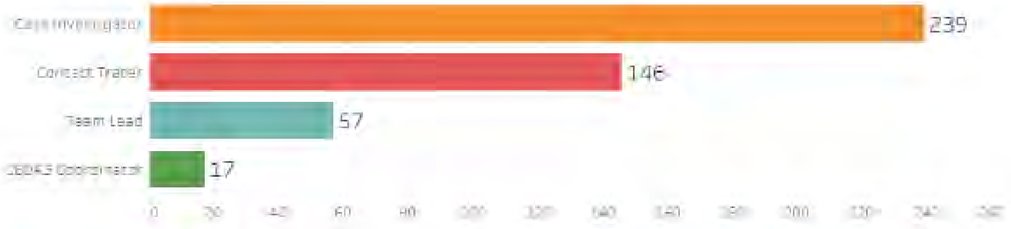


Tri-County Health Department

COVID19 Internal Dashboards

COVID-19 STAFFING

Staff engaged in CI/CT



County Filter

applies to all case and contact data

All

Case and Contact Date Filter

To view the past week, please slide the lower filter to the appropriate date.

9/24/2020 — 10/8/2020

COVID-19 CASE INVESTIGATION

Case Ethnicity Filter
- (All)
- Hispanic or Latino
- Not Hispanic or Latino
- Null
- Prefer not to answer
- Unknown

Case Race Filter
- (All)
- Null
- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- Other Race
- Prefer not to answer
- Unknown
- White

Total Confirmed and Probable COVID-19 cases

Total Confirmed and Probable COVID-19 cases

3,163

Average Days from COVID-19 Case Report to Interview

0.3504

Median Days from COVID-19 Case Report to Interview

0

Maximum Days from COVID-19 Case Report to Interview

18.00

Case Interviews Attempted

828

Case Interviews Completed

1,953

Cases Initiated within 24 hours of report

2,647

COVID-19 CONTACT INVESTIGATION

Contact Ethnicity
- (All)
- Null
- Hispanic or Latino
- No Answer
- Not Hispanic or Latino
- Unknown

Contact Race
- (All)
- Null
- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Isla...
- Other Race
- Prefer not to answer
- Unknown
- White

Total Contacts reported/ascertained

2,327

Average number of contacts identified per case

2.529

Median number of contacts identified per case

2

Average Days from COVID-19 Contact Report to Interview

0.3795

Median Days from COVID-19 Contact Report to Interview

0

Maximum Days from COVID-19 Contact Report to Interview

11.00

Contact Interviews Attempted

405

Contact Interviews Completed

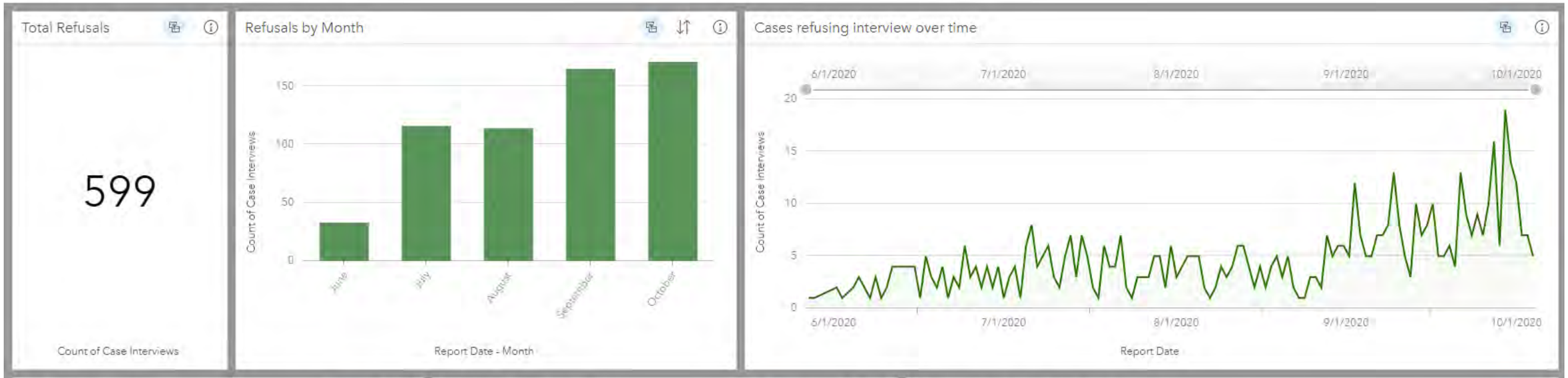
1,236

Contacts Initiated within 24 hours of report

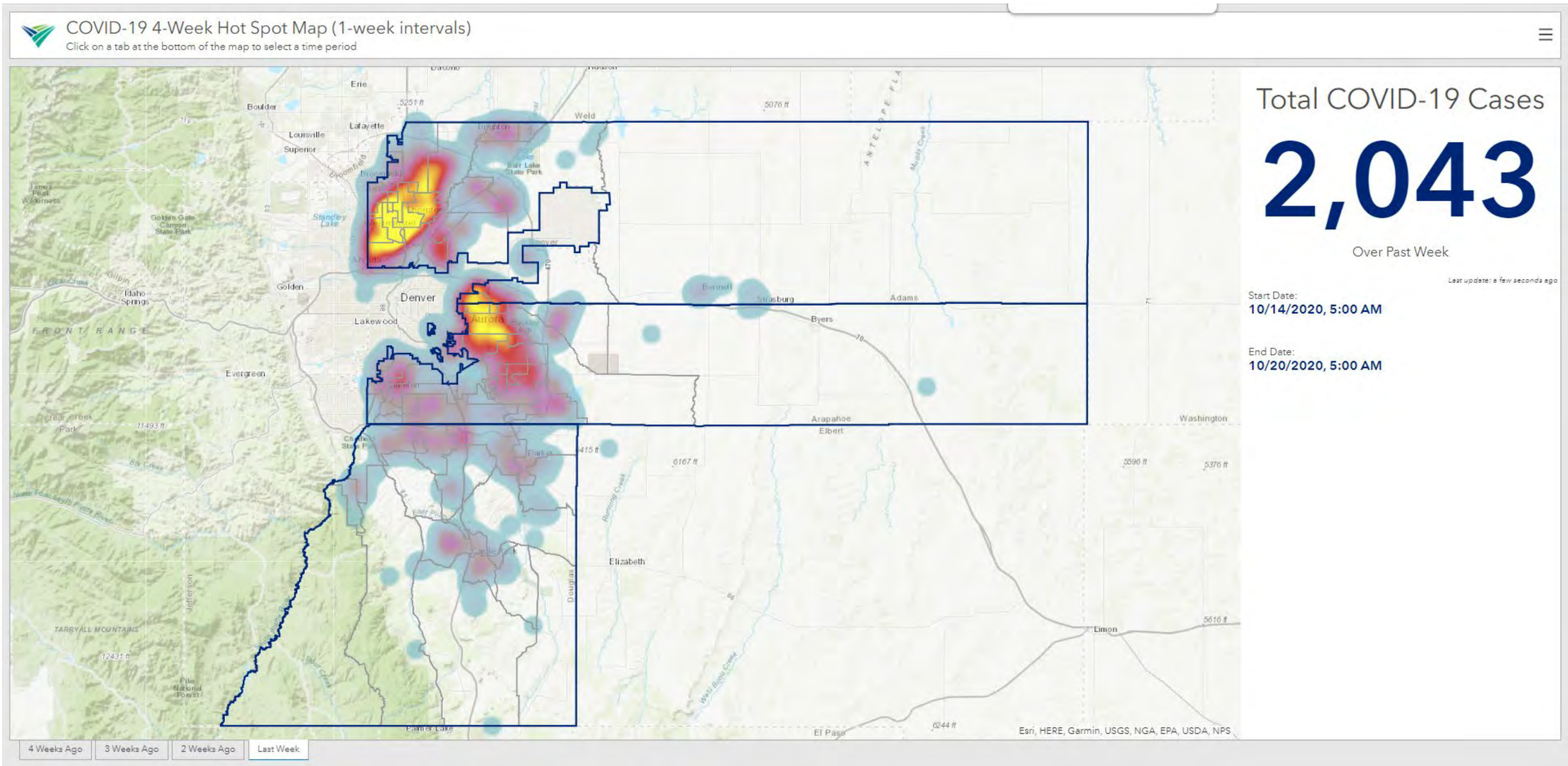
1,596

Tri-County Health Department

COVID19 Internal Dashboards



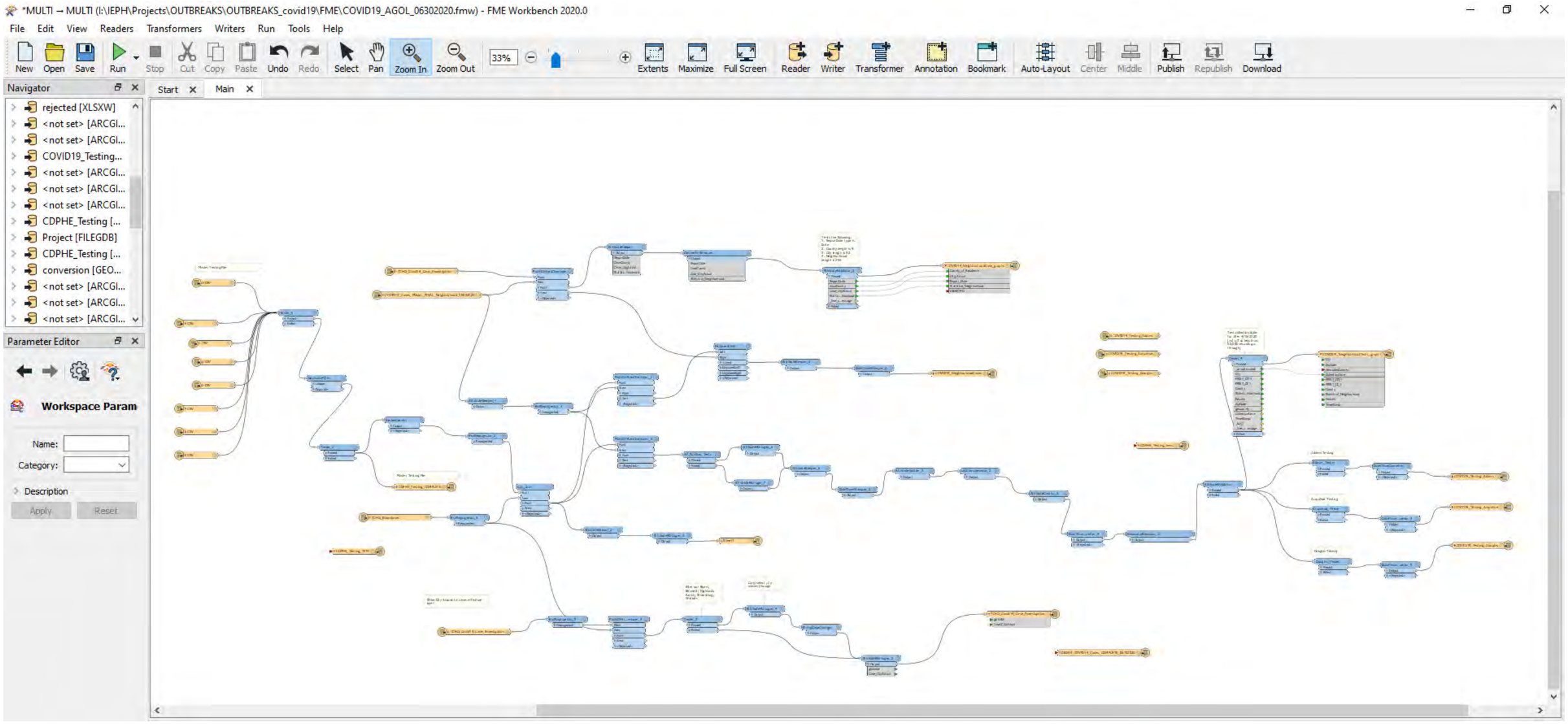
COVID19 Internal Dashboards



Tri-County Health Department

COVID19 Data Export to Public Dashboards

Using FME Workbench



COVID19 Public Dashboards

Tableau Dashboard

Tri-County Health Department
Serving Adams, Arapahoe and Douglas Counties

COVID-19 Case Reporting (updated October 20, 2020)

Representing cases in Adams, Arapahoe, and Douglas Counties | Colorado

These data are for monitoring and surveillance purposes, and may differ from official data from the Colorado Department of Public Health and Environment (CDPHE). These differences may be explained by case investigation findings, differences in timing of data uploads and updates, etc. All county variances will be evaluated based on official data from CDPHE. TCHD is providing these data to allow for the evaluation of general trends across a host of relevant indicators.

Positive COVID-19 Cases

Adams, Arapahoe and Douglas Counties

Cumulative Since 1/1/2020

26,897

COVID-19 Deaths

Adams, Arapahoe and Douglas Counties

Deaths among people with COVID

Cumulative Since 1/1/2020

May not represent all COVID-19-related deaths

704

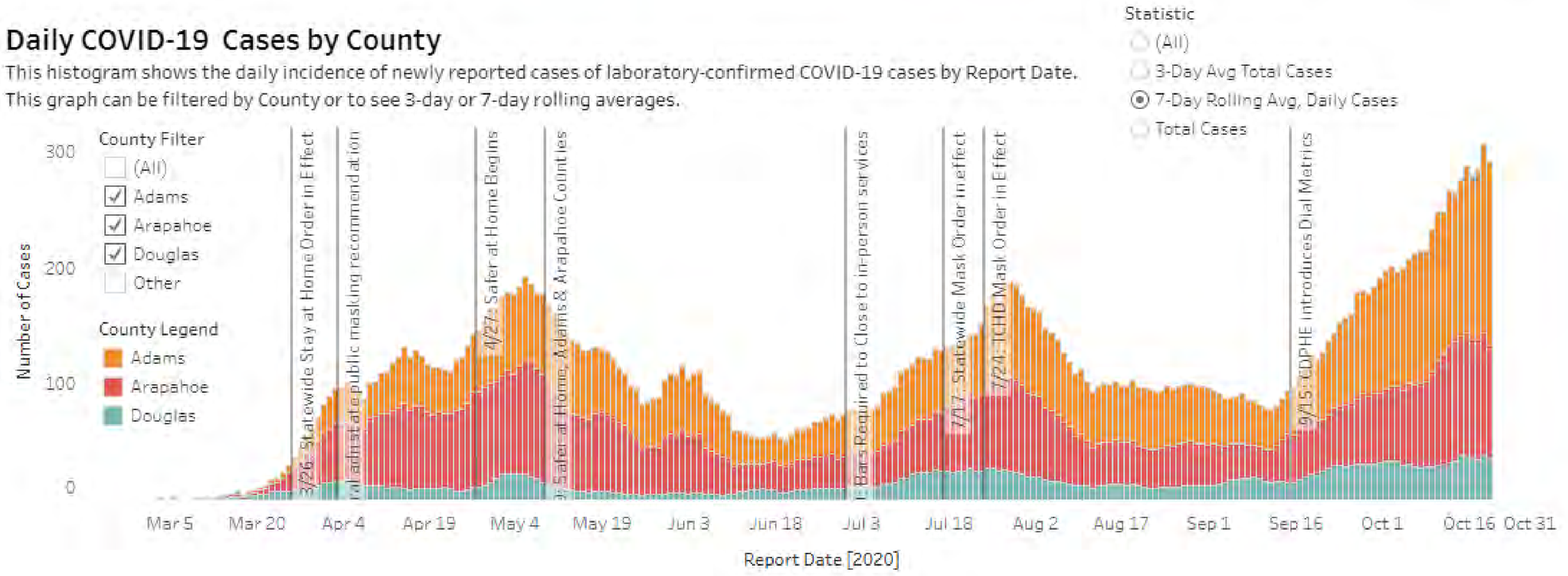
COVID-19 Cases by County

Cases currently reported to Tri-County Health Department. These totals may be higher that daily total case counts.

Cumulative Since 1/1/2020

Daily COVID-19 Cases by County

This histogram shows the daily incidence of newly reported cases of laboratory-confirmed COVID-19 cases by Report Date.
This graph can be filtered by County or to see 3-day or 7-day rolling averages.



https://data.tchd.org/covid19/

COVID19 Public Dashboards

Tableau Dashboard

Case Exposure Metrics - Data Since September 29

Adams, Arapahoe and Douglas Counties

Case County: (All) | Municipality: (All) | Statistical Neighborhood: (All) | Age Range: (All)

Report Date *(Data collected since 9/29/2020)*: 9/29/2020 – 10/19/2020

Total Cases with Completed Interview

Sep 29 - Oct 19

5,496

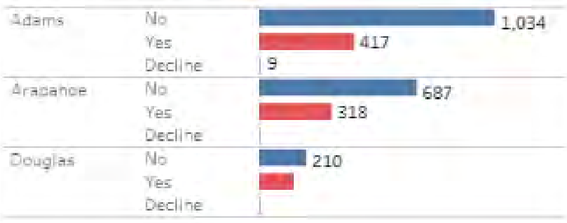
Cases with Interactions

Cases Interacting Prior to Illness Onset	889
Cases Interacting During Infectious Period	1,835

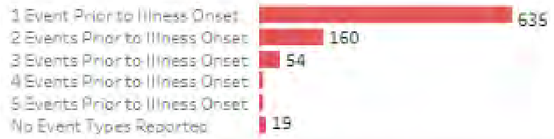
Interactions by Cases

Total Interactions	3,106
Interactions Prior	1,229
Interactions During	1,877

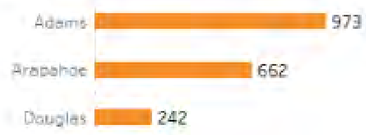
Cases Reporting Exposure Interactions in 14 Days Prior to Illness Onset



Number of Reported Interactions by Cases Prior to Illness Onset



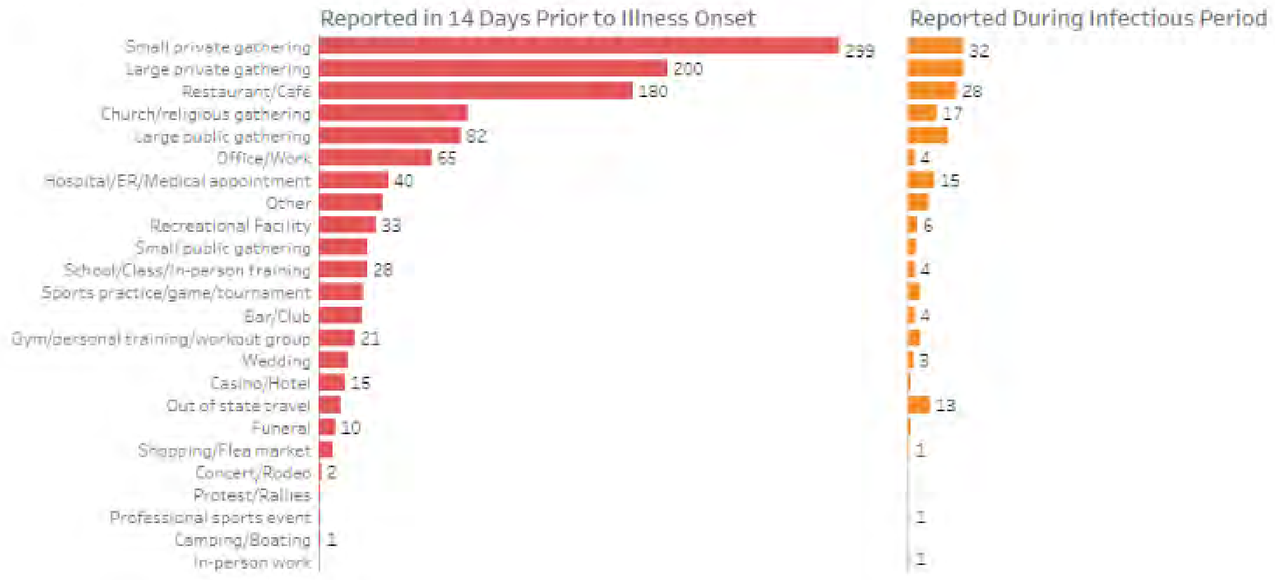
Interactions During Infectious Period Where Exposure Could Happen



Number of Reported Interactions by Cases During Infectious Period

Categories of Commonly Reported Places Cases Reported Going: Sep 29 - Oct 19

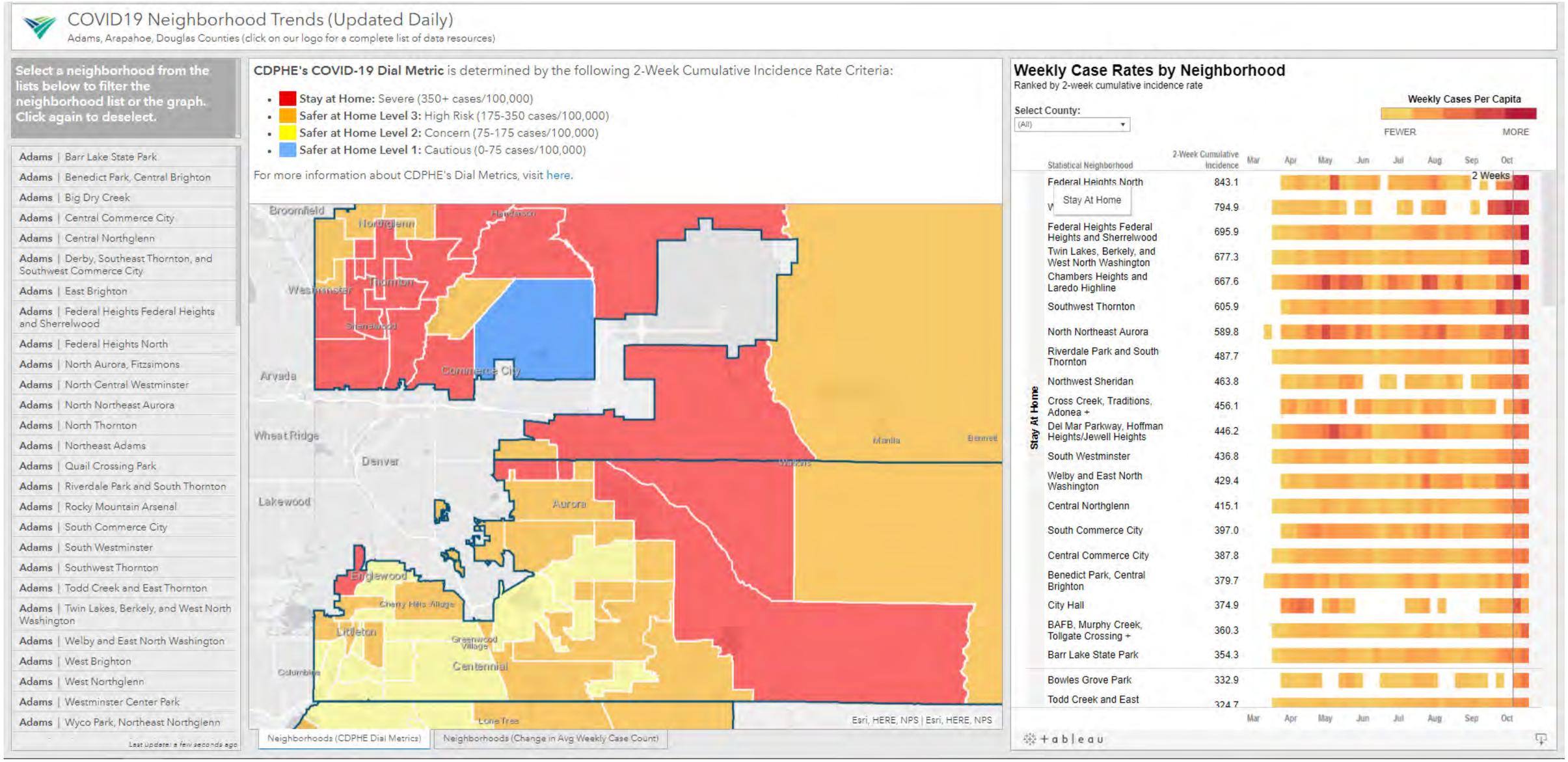
Note: Excludes interactions where no interaction type was supplied



https://data.tchd.org/covid19/

COVID19 Public Dashboards

ArcGIS Online Dashboard

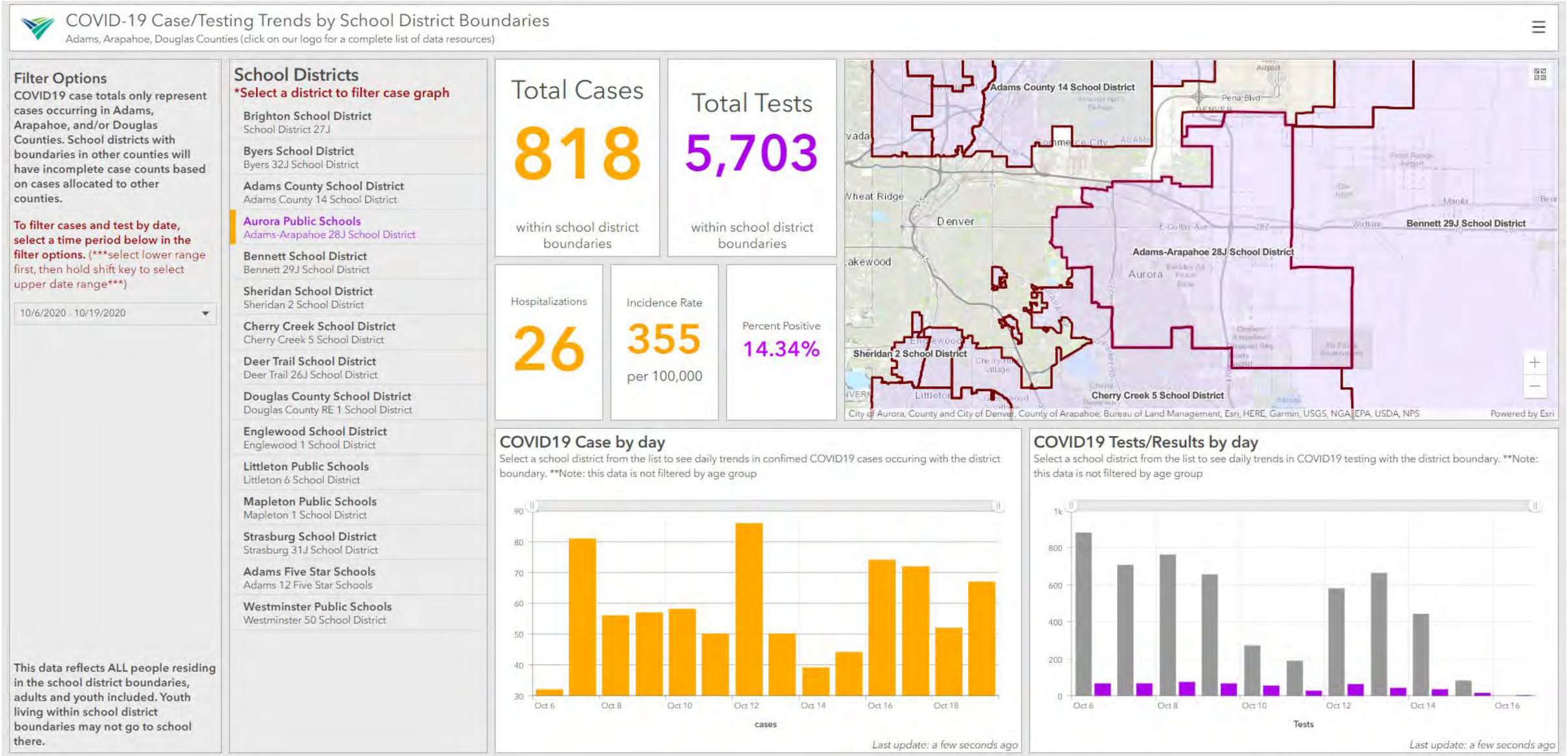


https://tchdgis.maps.arcgis.com/apps/opsdashboard/index.html#/944b0a5b55ba467cb146f7646a65bc8f

Tri-County Health Department

COVID19 Public Dashboards

ArcGIS Online Dashboard



https://tchdgis.maps.arcgis.com/apps/dashboards/acc52b381eed47219319864b3db95890

Tri-County Health Department

For questions contact:

Adam Anderson

aanderson@tchd.org

Informatics, Epidemiology, and Health Planning Manager

To see dashboards in this presentation:

https://data.tchd.org/covid19_resources/

Tri-County Health Department