

COVID-19 Trends in St. Louis County

05/13/2021

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Key Findings

- The current rate of new COVID-19 cases – 8.4 new cases per 100,000 population per day, on average – remains high. While most indicators are trending in encouraging directions (new COVID-19 cases, new COVID-related hospital admissions, and the PCR positivity rate are all decreasing), COVID-19 is still spreading widely throughout the St. Louis County population and causing significant morbidity. As of 5/10, 250 people were currently admitted to St. Louis area hospitals with COVID-19. Seventy of them were in ICUs, and 29 were on ventilators.
- St. Louis County’s seven-day PCR positivity rate is currently 4.1 percent. However, analyses of positivity rates and testing volume stratified by region and age group elsewhere in this report suggest that the overall positivity rate may be skewed downward by 1–2 points by a local university conducting ongoing surveillance testing of its student population, which is concentrated in the Central region.
- In the two-week period covered by this report, students or staff of at least 92 schools were present at school during their infectious period, and a majority of case-patients interviewed by DPH investigators reported being at work while infectious in nearly every industry. Isolation of infected people and quarantine of their contacts are crucial for interrupting chains of COVID-19 transmission.

Overall Trends

	04/13–04/26	04/27–05/10
1. Rate of new cases	●	●
2. Trend in new cases	●	●
3. Contacts per case*	●	●
4. Test positivity rate	●	●
5. Hospital admissions	●	●
6. Deaths	●	●
7. Daily tests	●	●
8. ICU occupancy	●	●

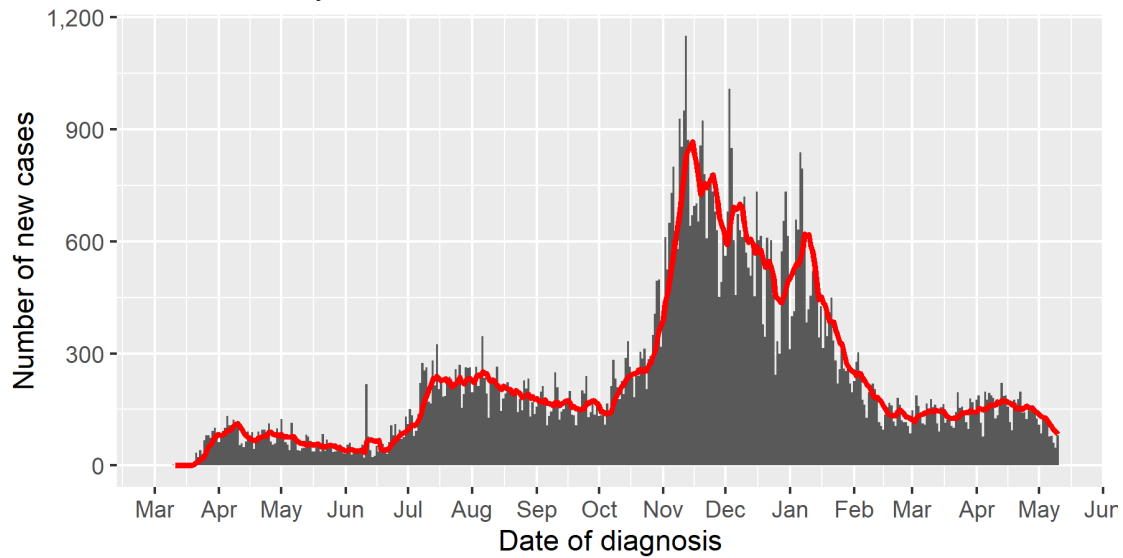
NOTE: To account for reporting and data entry delays, this report focuses on data about COVID-19 cases diagnosed through 05/10. Unless otherwise specified, all averages are seven-day rolling averages. Data are current as of 05/13.

New Cases ●●

Between 04/27 and 05/10, the average number of new COVID-19 cases diagnosed among St. Louis County residents decreased by 46 percent from 154.6 to 83.6 cases per day. Despite this decreasing trend, the current rate of daily COVID-19 diagnoses (8.4 cases per 100,000 residents per day) remains high.

Reported COVID-19 Cases Over Time

St. Louis County residents

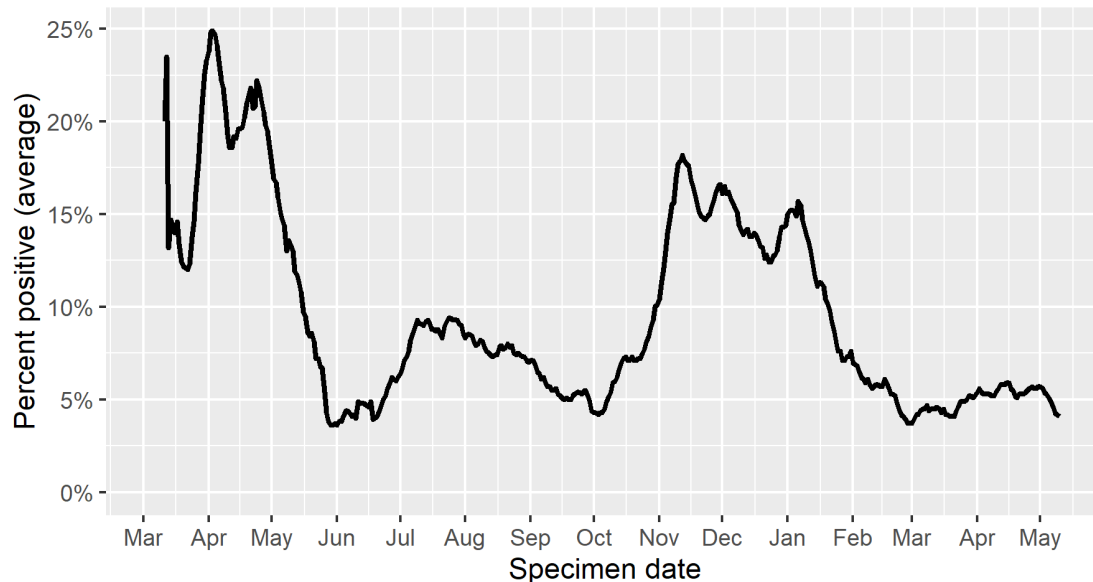


The red line is a rolling seven-day average.

Test Positivity Rate ●

As of 05/10, the seven-day positivity rate among St. Louis County residents receiving PCR testing for COVID-19 is 4.1 percent.

Proportion of Specimens Testing Positive for SARS-CoV-2 RNA St. Louis County residents



Hospital Admissions ●

Based on data released by the St. Louis Metropolitan Pandemic Task Force and [analyzed by Dr. Christopher Prener at St. Louis University](#), the number of average daily hospital admissions for COVID-19 at SSM, BJC, Mercy, and St. Luke's hospitals in the St. Louis metro area decreased by 13.6 percent from 04/27 (36.9 new patients per day) to 05/10 (31.9 new patients per day).

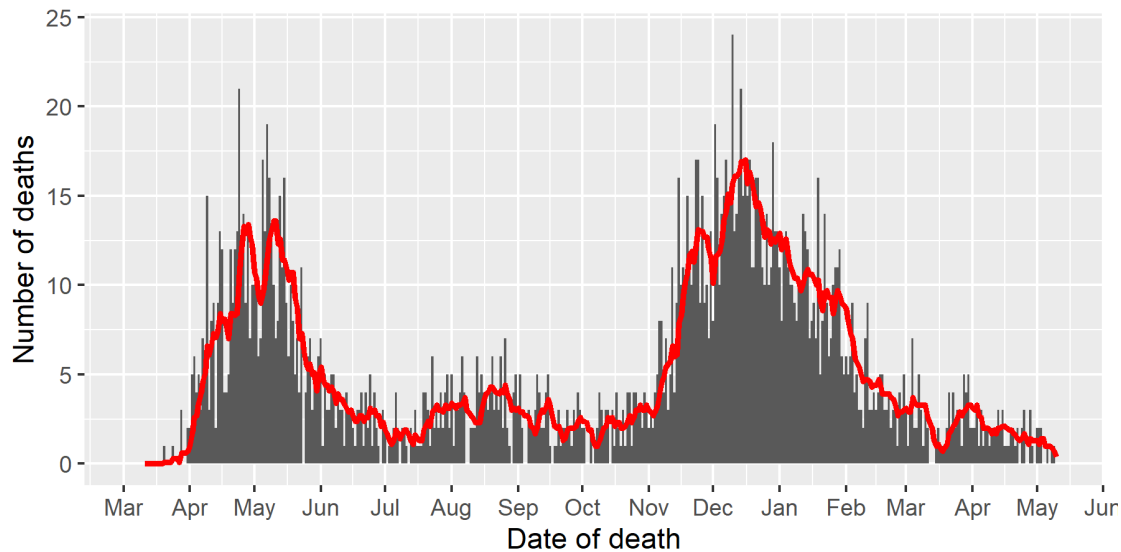
Deaths ●

As of 05/10, at least 1 in 453 St. Louis County residents has died of COVID-19 (2,206 total COVID-19 deaths). Between 04/27 and 05/10, reported COVID-19-associated deaths decreased by 64 percent from 1.1 to 0.4 deaths per day. However, this apparent improvement should be evaluated in context:

- Deaths are a lagging indicator of the severity of the COVID-19 pandemic. For people who die of COVID-19 infection, the time from onset of illness to death is often several weeks.
- St. Louis County DPH is almost certainly not yet aware of all COVID-related deaths that occurred between 04/27 and 05/10. We sometimes do not learn of a patient's death until their death certificate has been filed and the Missouri Department of Health and Senior Services matches death certificate data with COVID-19 surveillance data, which can take several weeks. For recent dates, we may be aware of fewer than half of the true number of COVID-19 deaths.

Reported COVID-19 Associated Deaths Over Time

St. Louis County residents



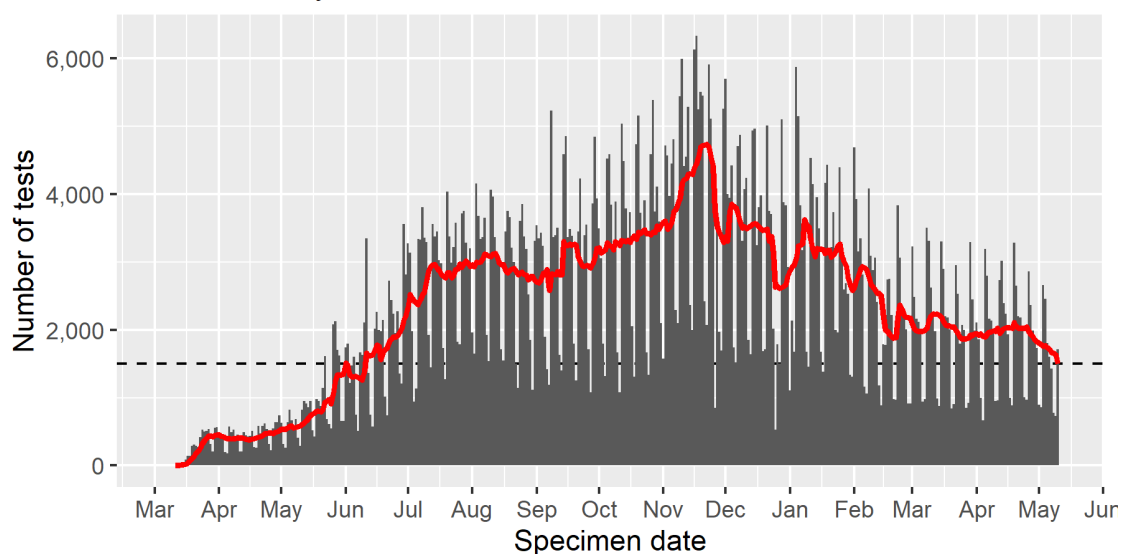
The red line is a rolling seven-day average.

Tests per Day ●

As of 05/10, an average of 1,499 specimens are being collected for confirmatory COVID-19 testing (i.e., PCR testing) per day from St. Louis County residents. This is roughly equal to (though nominally below) St. Louis County's target of 1,500 PCR tests per day. While the current positivity rate of 4.1 percent indicates that this volume is likely adequate for the current level of transmission occurring in the community, the declining rate of testing is notable.

COVID-19 Tests per Day

St. Louis County residents



The red line is a rolling seven-day average.

ICU Occupancy ●

According to data released by the Pandemic Task force, 70 intensive care unit (ICU) beds at SSM, BJC, Mercy, and St. Luke's hospitals in the St. Louis metro area were occupied by confirmed or suspected COVID-19 patients as of 05/10 – 8.0 percent of total ICU capacity, assuming a total capacity of 871 ICU beds. While COVID-related ICU occupancy is much lower than the extreme levels reached in November and December, local ICU resources remain somewhat constrained.

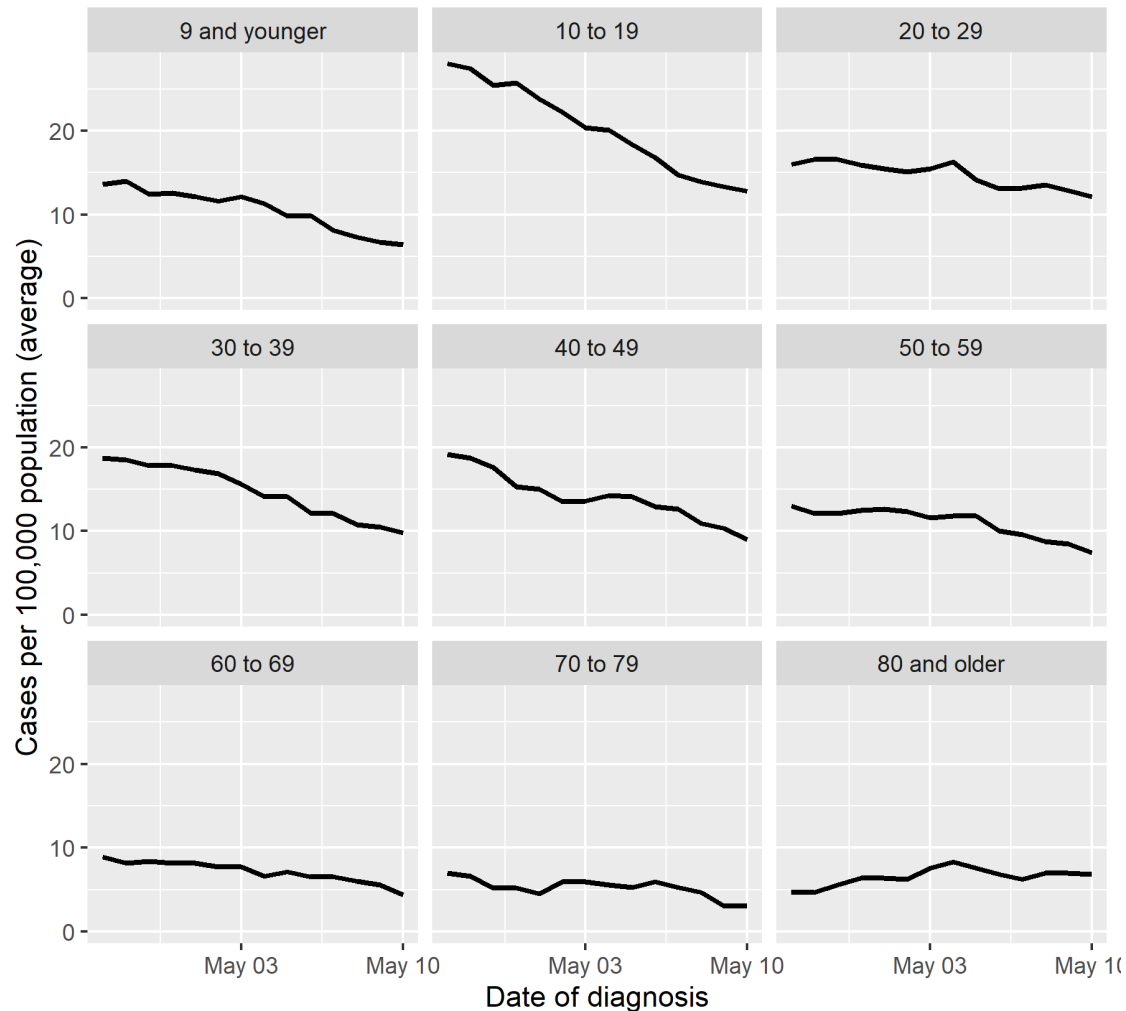
Demographic Trends

Age Groups

Average rates of new COVID-19 diagnoses decreased among all age groups except people aged 80 years and older between 04/27 and 05/10, with most groups seeing relative reductions of 50 percent or more. As of 05/10, the average rate is highest among 10–19 and 20–29 year-olds (12.8 and 12.1 cases per 100,000 per day, respectively) and lowest among 60–69 and 70–79 year-olds (4.4 and 3.0 cases per 100,000 per day).

Rate of New COVID-19 Diagnoses by Age Group

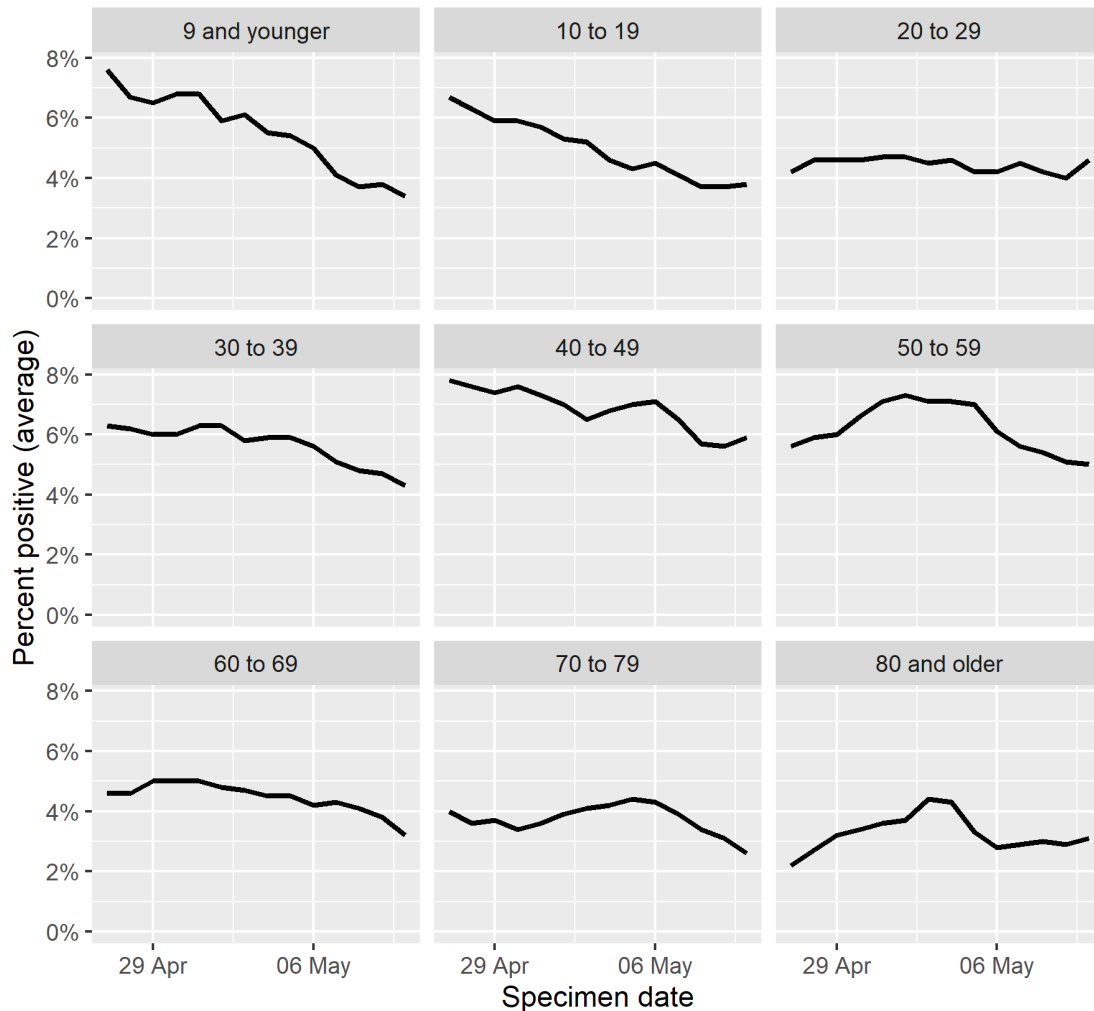
St. Louis County residents, 04/27 to 05/10



As of 05/10, positivity rates among those receiving PCR testing range from 2.6 percent among 70–79 year-olds to 5.9 percent among 40–49 year-olds. Age-stratified positivity rates either decreased or remained flat among all age groups between 04/27 and 05/10, with the largest decreases observed among 0–9 year-olds (-4.2 points) and 10–19 year-olds (-2.9 percent).

Percent Positive by Age Group

St. Louis County residents, 04/27 to 05/10

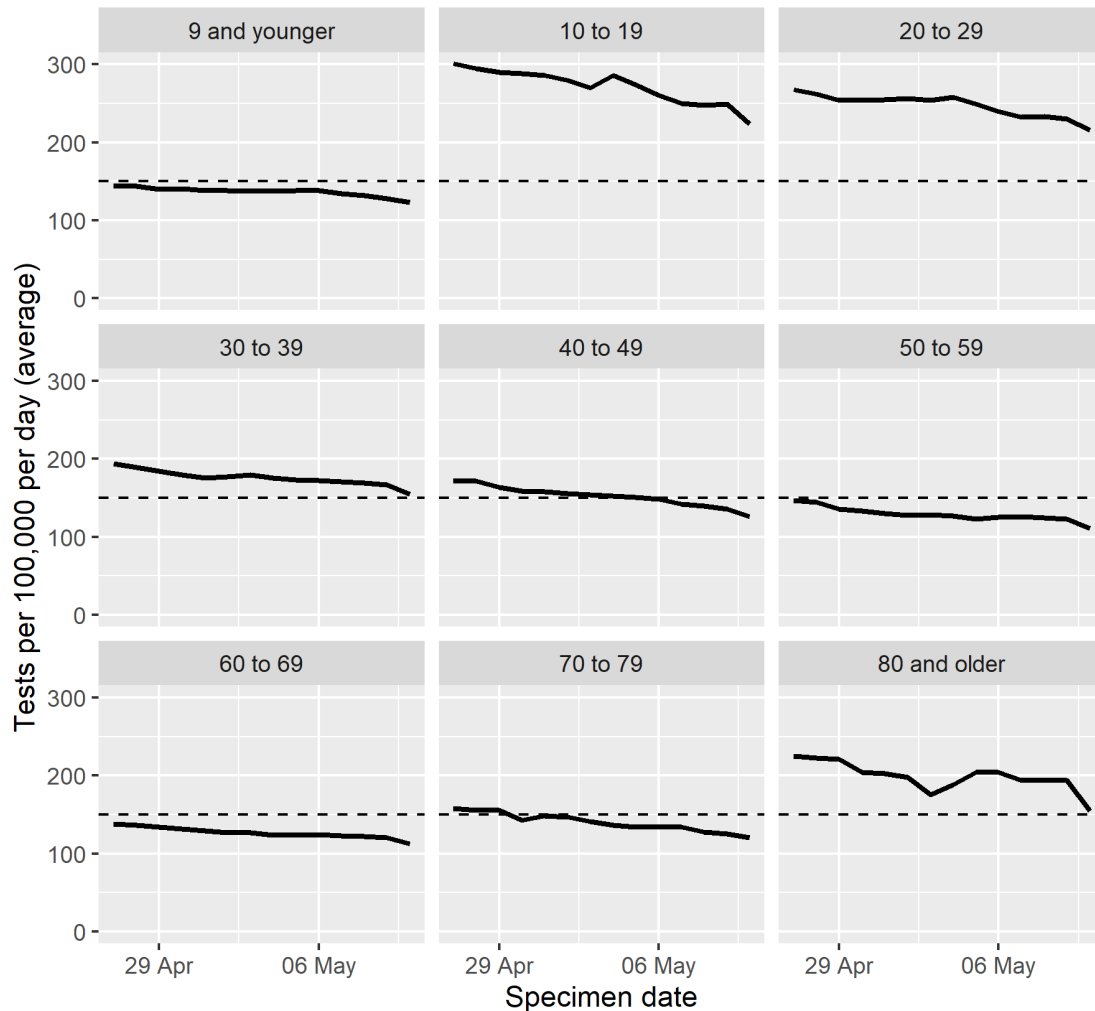


As of 05/10, PCR testing volume is at or above St. Louis County’s target of 150 PCR tests per 100,000 per day for 10–19 year-olds (224 tests), 20–29 year-olds (215 tests), 30–39 year-olds (155 tests), and people aged 80 years and older (155 tests), but all other age groups are below that testing threshold. More testing may be needed among 40–49 and 50–59 year-olds in particular, as these groups have the highest positivity rates (5.9 and 5.0 percent, respectively) of any age group in St. Louis County.

The particularly high rates of testing among 10–19 and 20–29 year-olds likely reflect exceptionally high rates of testing among students at a local university conducting surveillance testing of its own population, but not necessarily high rates of testing among all St. Louis County residents in those age groups.

Testing Volume by Age Group

St. Louis County residents, 04/27 to 05/10



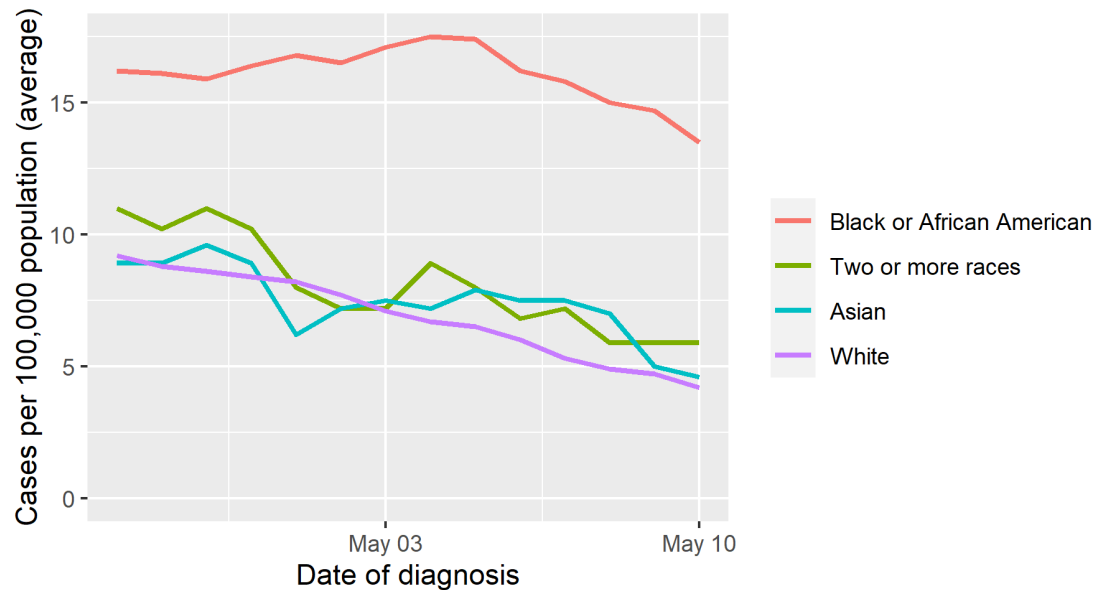
Race

Twenty-two percent of cases from the week ending 05/08 were reported without information about the case-patient's race, which complicates analysis of trends by racial group.

Nevertheless, between 04/27 and 05/10, for cases where race is known, the average rate of new COVID-19 diagnoses decreased by 48 percent among Asian residents of St. Louis County, by 17 percent among Black or African American residents, by 54 percent among white residents, and by 46 percent among multiracial residents. As of 05/10, the average rate of newly diagnosed infections among Black residents (13.5 cases per 100,000 per day) is 3.2 times the rate among white residents (4.2 cases per 100,000 per day).

Racial groups with fewer than one case diagnosed per day (American Indian/Alaska Native, Native Hawaiian/Other Pacific Islander, and "some other race") have been excluded from this analysis.

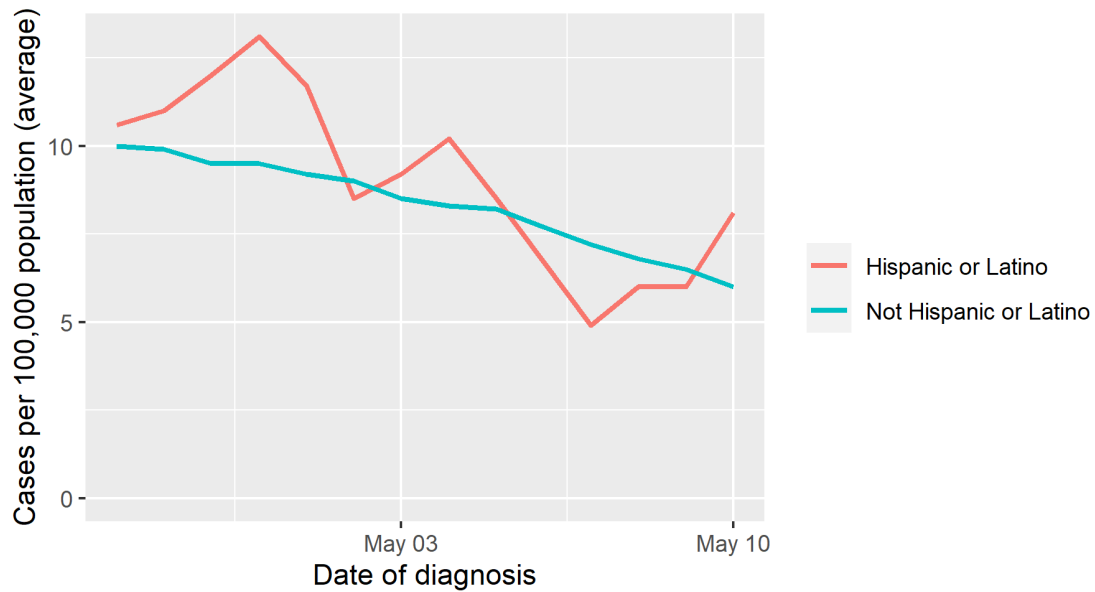
Rate of New COVID-19 Diagnoses by Race St. Louis County residents, 04/27 to 05/10



Ethnicity

Thirty percent of cases from the week ending 05/08 were reported without information about the case-patient's ethnicity, which complicates analysis of trends by ethnic group. Among cases where ethnicity is known, rates of new COVID-19 diagnoses decreased by 24 percent among Hispanic or Latino residents of St. Louis County and by 40 percent among non-Hispanic residents between 04/27 and 05/10. As of 05/10, the average rate among Hispanic residents (8.1 cases per 100,000 per day) is 35 percent higher than the rate among non-Hispanic residents (6.0 cases per 100,000 per day).

Rate of New COVID-19 Diagnoses by Ethnicity St. Louis County residents, 04/27 to 05/10



Region

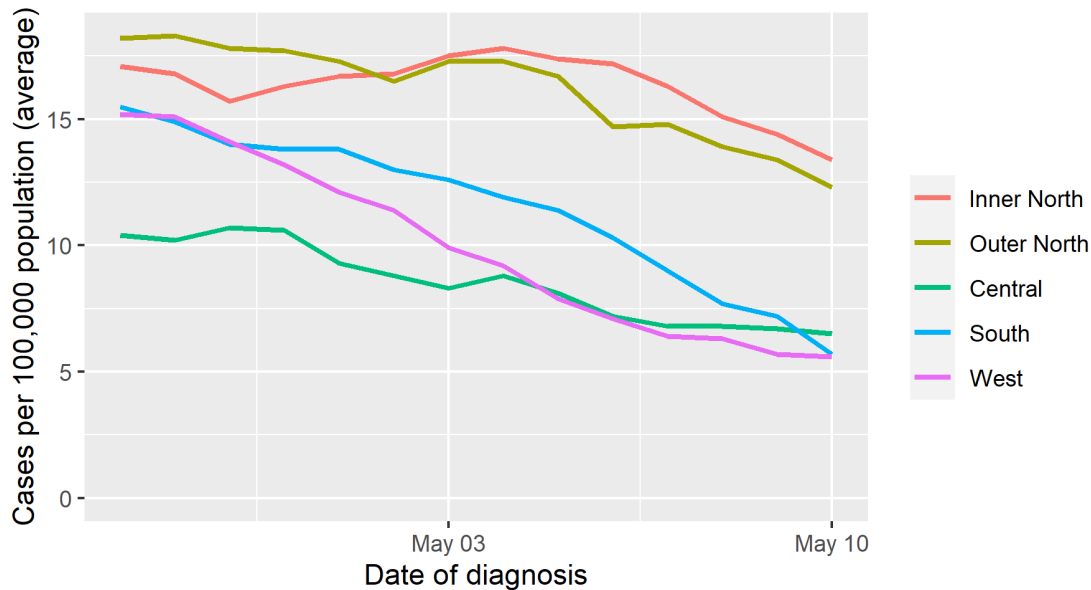
St. Louis County DPH often divides the county by ZIP Code into five regions, based on economic and demographic factors, for the purpose of measuring broad geographic trends below the county level.



Average rates of new COVID-19 diagnoses decreased in all five regions between 04/27 and 05/10. As of 05/10, the average rate of new COVID-19 diagnoses is highest in the Inner North region (13.4 cases per 100,000 per day), followed by the Outer North (12.3), Central (6.5), South (5.7), and West (5.6) regions.

Rate of New COVID-19 Diagnoses by Sub-County Region

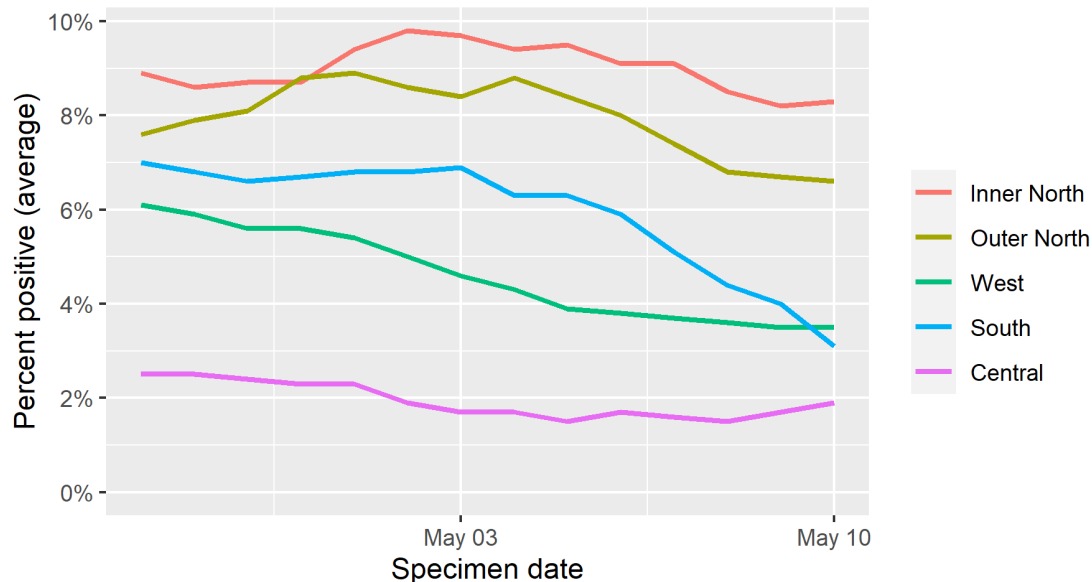
St. Louis County residents, 04/27 to 05/10



The seven-day positivity rate among those receiving PCR testing decreased in the South, West, and Outer North regions (by 3.9, 2.6, and 1.0 percentage points, respectively) between 04/27 and 05/10 and remained stable (a net change of less than 1 point) in the Central and Inner North regions. As of 05/10, the PCR positivity rate is highest among residents of the Inner North region (8.3 percent positive), followed by the the Outer North (6.6 percent), West (3.5 percent), South (3.1 percent), and Central (1.9 percent) regions.

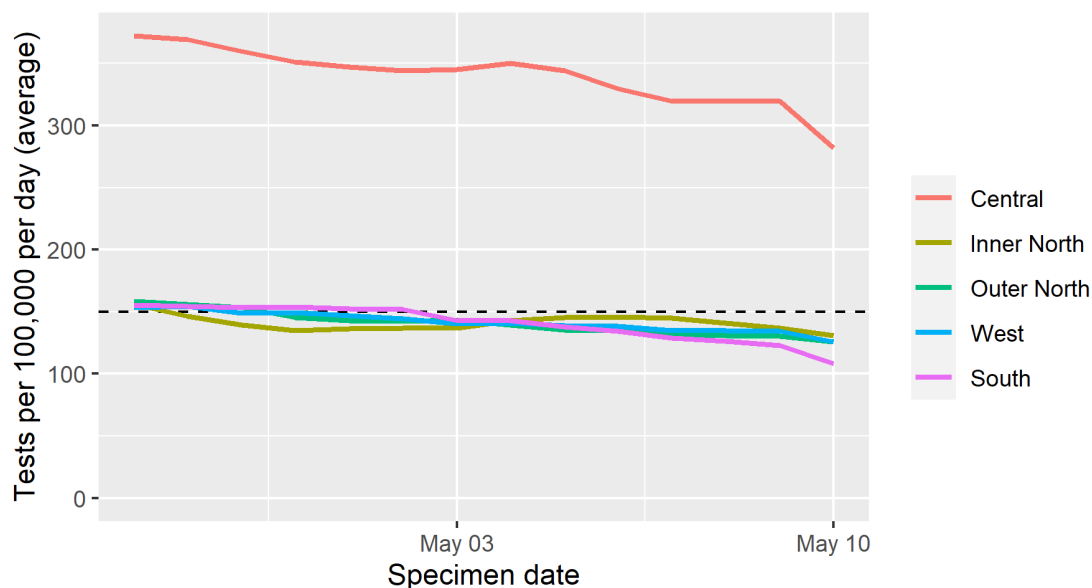
The especially low positivity rate in the Central region is partly attributable to a local university conducting a large-scale screening program among its own population. Markedly high testing volume and low pre-test probability among the university's population relative to the rest of the region are likely distorting the measurements for the rest of the region.

Percent Positive by Sub-County Region St. Louis County residents, 04/27 to 05/10



As of 05/10, the average rate of confirmatory COVID-19 testing ranges from 108 tests per 100,000 per day in the South region to 282 in the Central region. Reported PCR testing volume is below St. Louis County’s target of 150 tests per 100,000 per day in every region except for the Central region. Moreover, the exceptionally high testing volume among residents of the Central region is partly attributable to a local university conducting a large-scale screening program among its own population and likely does not reflect a high rate of testing among that region’s broader population.

Testing Volume by Sub-County Region St. Louis County residents, 04/27 to 05/10



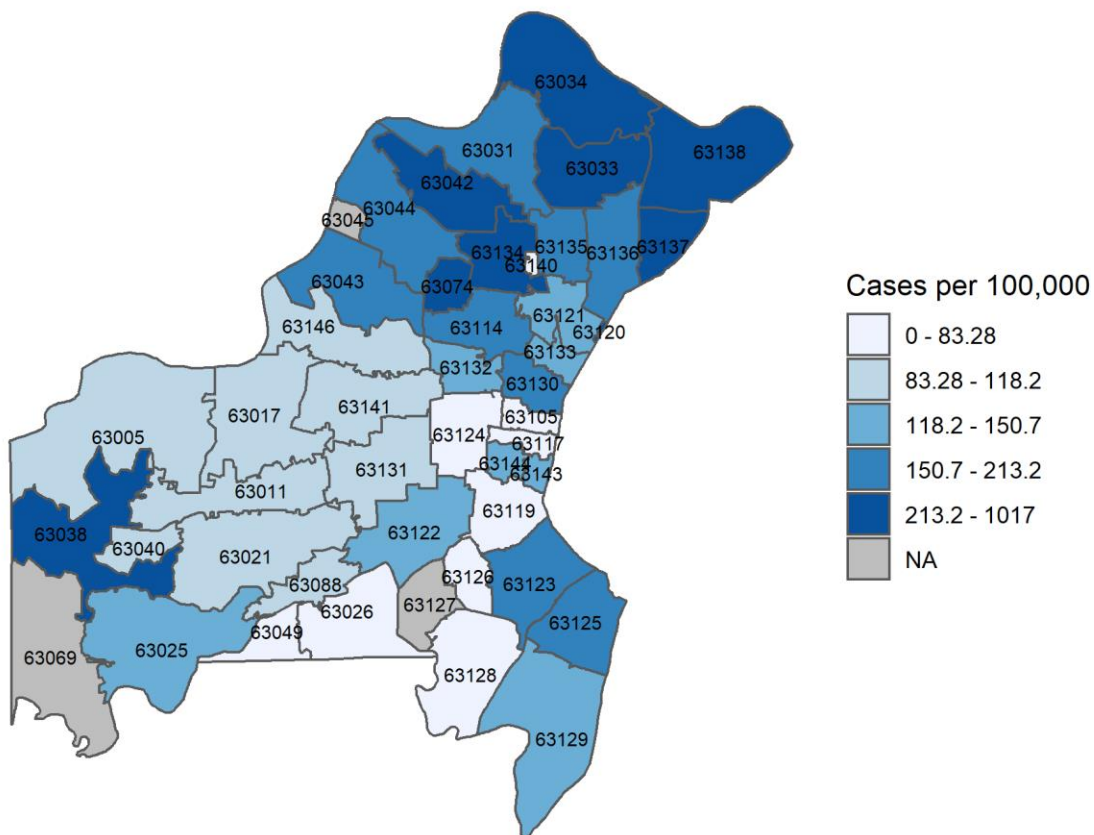
ZIP Code

Between 04/27 and 05/10, the 14-day rate of new diagnoses among St. Louis County residents ranged from 0 cases in several ZIP Code tabulation areas (ZCTAs) to 328 cases per 100,000 in the 63074 ZCTA and 1,017 cases per 100,000 in the St. Louis County portion of the 63120 ZCTA, with the latter being somewhat of an outlier due to the relatively small portion of that ZCTA that falls within St. Louis County.

See below for a map of COVID-19 rates by ZIP Code tabulation area (ZCTA) over a fourteen-day period. ZCTAs have been excluded from the analysis if they had between one and four cases diagnosed between 04/27 and 05/10 or if their residential population is less than 100 people. For counts and rates of new and cumulative COVID-19 cases by ZIP Code, please visit St. Louis County's [COVID-19 statistics dashboard](#) or [Open Government page](#).

Rate of New COVID-19 Diagnoses by ZIP Code

St. Louis County residents, 04/27 to 05/10



Youth Supplement

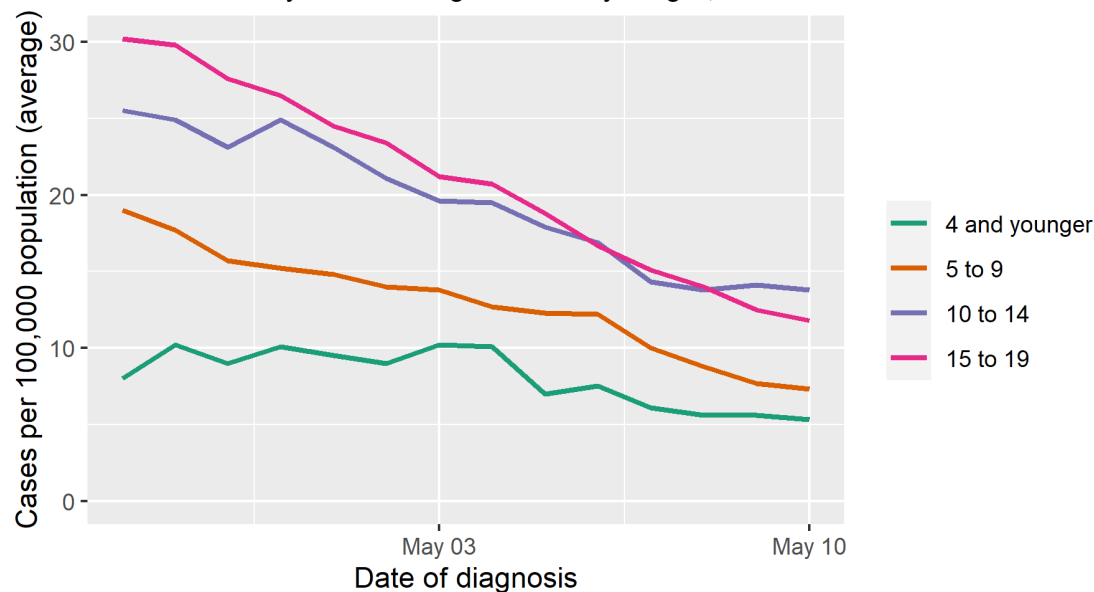
Given the close attention being paid to youth sports and the 2020–2021 school year, the following section takes a closer look at COVID-19 trends among St. Louis County residents aged 19 years and younger.

Cases by Age Group

Between 04/27 and 05/10, average rates of new COVID-19 diagnoses decreased among St. Louis County youth of all age groups. As of 05/10, average rates of new diagnoses among youth are highest among 10–14 year-olds (13.8 cases per 100,000 per day), followed by 15–19 year-olds (11.8), 5–9 year-olds (7.3), and 0–4 year-olds (5.3).

Rate of New COVID-19 Diagnoses by Age Group

St. Louis County residents aged 19 and younger, 04/27 to 05/10



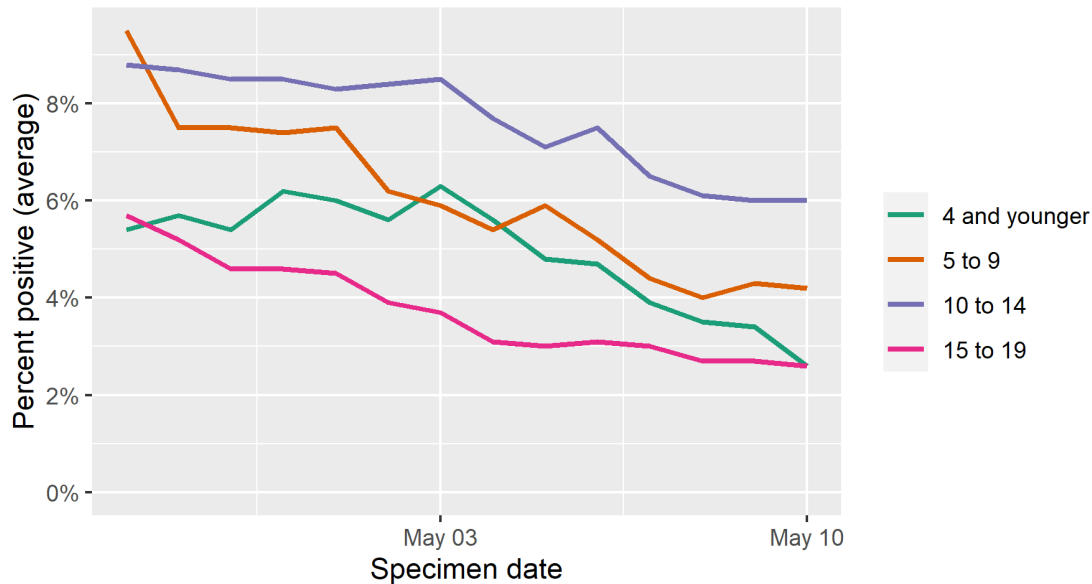
Positivity by Age Group

Between 04/27 and 05/10, SARS-CoV-2 positivity on PCR tests decreased by several points among all youth age groups. As of 05/10, positivity rates are highest among 10–14 year-olds (6.0 percent positive), followed by 5–9 year-olds (4.2 percent), followed by 0–4 and 15–19 year-olds (2.6 percent). These positivity rates indicate that a substantial proportion of infections among 10–14 year-olds is likely going undetected and that more testing is needed to identify those cases, inform isolation and quarantine decisions, and curtail transmission.

The low positivity rate measured among 15–19 year-olds is partly attributable to a local university conducting an ongoing large-scale screening program among its student population. A high volume of surveillance testing among that sub-population is almost certainly masking a higher positivity rate among the broader 15–19 year-old population, which is not being tested at such a high rate.

Percent Positive by Age Group

St. Louis County residents aged 19 and younger, 04/27 to 05/10

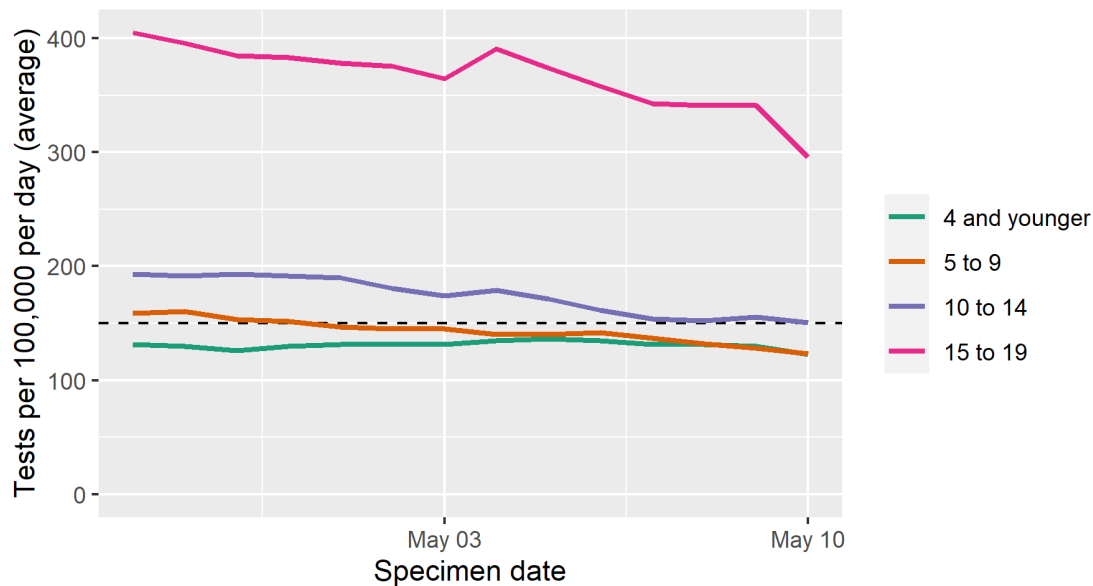


Testing Coverage by Age Group

As of 05/10, average PCR testing volume is at or below St. Louis County's target of 150 tests per 100,000 per day among 0–4 year-olds (123 tests per 100,000 per day), 5–9 year-olds (123 tests), and 10–14 year-olds (150 tests). Testing volume is very high among 15–19 year-olds (296 tests per 100,000 per day), though this is partly due to regular screening of students at a local university, which means that high testing volume among one sub-population of college students could be masking a lower volume of testing (and a greater prevalence of infection) among the broader population of older adolescents.

Testing Volume by Age Group

St. Louis County residents aged 19 and younger, 04/27 to 05/10



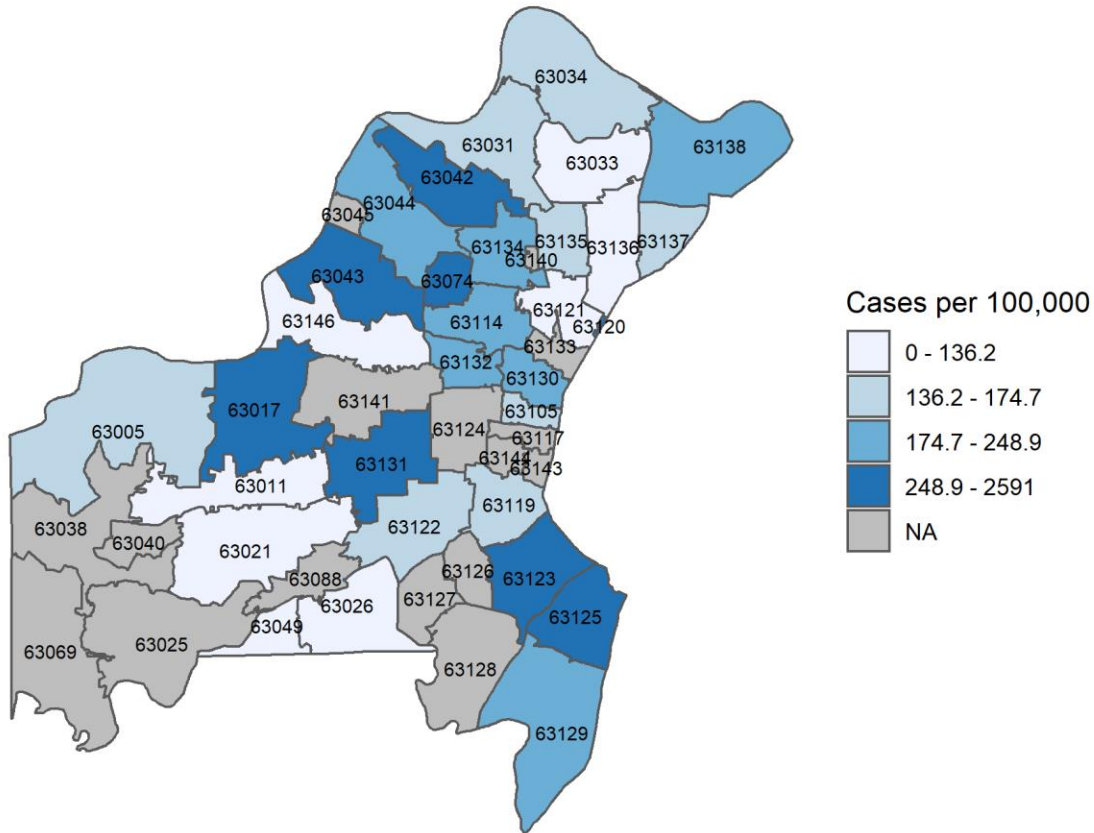
Cases by ZIP Code

Between 04/27 and 05/10, the 14-day rate of new COVID-19 diagnoses among St. Louis County youth ranged from 0 cases in the St. Louis County portion of the 63049 ZIP Code tabulation area (ZCTA) to 357 cases per 100,000 in the 63125 ZCTA and 2,591 cases per 100,000 in the St. Louis County portion of the 63120 ZCTA, with the latter being somewhat of an outlier due to the extremely small youth population of that area.

See below for a map and data table of COVID-19 case counts and rates among St. Louis County youth by ZIP Code tabulation area (ZCTA). ZCTAs have been excluded from the analysis if they had between one and four youth cases diagnosed between 04/27 and 05/10 or if their youth population is less than 100 people.

Rate of New COVID-19 Diagnoses by ZIP Code

St. Louis County residents aged 19 and younger, 04/27 to 05/10



ZIP Code	Youth cases, last 14 days	Youth population	Youth cases per 100,000 population, last 14 days
63120	5	193	2590.7
63125	27	7557	357.3
63074	14	4765	293.8
63123	29	10009	289.7
63017	28	9768	286.7
63042	14	4885	286.6
63131	14	5039	277.8
63043	12	4783	250.9
63132	10	4050	246.9
63130	15	6106	245.7
63134	10	4479	223.3
63129	25	12159	205.6

63138	12	6222	192.9
63114	18	9698	185.6
63044	5	2832	176.6
63137	7	4006	174.7
63105	7	4116	170.1
63034	7	4150	168.7
63031	23	14652	157.0
63122	17	11155	152.4
63135	10	6736	148.5
63005	8	5705	140.2
63119	13	9434	137.8
63146	8	5943	134.6
63011	14	10867	128.8
63033	15	12636	118.7
63026	7	6459	108.4
63136	15	13840	108.4
63021	14	15202	92.1
63121	5	6335	78.9
63049	0	1007	0.0

Industry and Schools

During the time period included in this report (04/27/2021 through 05/10/2021), DPH completed case interviews on 65.8% of eligible cases of all ages and 74.3% of eligible cases aged 5 to 18 years. Among the subset of cases for whom DPH completed case interviews, the following information was reported regarding workplace and school exposures:

- Cases reported attending or working at 92 different schools (K-12, public or private, located in Saint Louis County) while infectious (i.e., within 48 hours of symptoms onset for symptomatic cases or specimen collection for asymptomatic cases).
 - This number does not include schools outside of Saint Louis County that are attended/worked at by County residents. Additionally, a school would not be included if none of the student/staff cases were interviewed by a DPH case investigator, or if the cases were residents of a jurisdiction other than Saint Louis County.
- The healthcare industry had the most reported cases (64) and the largest number of reported cases who worked/were present while infectious (38).
- The proportion of case-patients who worked while infectious (i.e., within 48 hours of symptom onset for symptomatic cases or specimen collection for asymptomatic cases) ranged from 30.8% in the architecture/IT/engineering industry to 85.7% in the maintenance/repair industry.

Total number of cases and percent who worked while infectious, by industry type*, 04/27 through 05/10

Industry	Total cases	Cases present while infectious	Proportion who worked while infectious
Healthcare	64	38	59.4%
Business/finance/legal	52	16	30.8%
Transportation (people, materials, or supplies)	34	29	85.3%
Retail/sales (clothing, furniture, vehicles, electronics, grocery, etc.)	33	22	66.7%
Restaurant/bar	31	21	67.7%
Manufacturing/production (goods, food, or supplies)	26	21	80.8%
Education/childcare (school, university, daycare, library, etc.)	25	19	76.0%
Construction	15	11	73.3%
Maintenance/repair/installation (plumbing, electrical, flooring, etc.)	14	12	85.7%
Architecture/IT/engineering	13	<5	--

Military/government	12	7	58.3%
Entertainment/media/arts/design	9	7	77.8%
Janitorial/cleaning (home, business, industrial)	8	<5	--
Utilities (electric, gas, trash/recycling/waste, sewer, internet/cable, etc.)	8	6	75.0%
First responder (fire, police, EMS)	<5	<5	--
Personal care and services (barber, aesthetician, spa, nail, etc.)	<5	<5	--
Agriculture/farming/forestry/fishing/hunting/ mining	<5	<5	--
Community/social services	<5	<5	--
Lawn care/landscaping/tree service	<5	<5	--
Faith-based (religious affiliation)	<5	<5	--
Research	<5	<5	--

* Industries with fewer than five cases have been suppressed to protect the identity of individual cases.

Number of K–12 schools (public or private), by number of reported cases who attended or worked on-site while infectious, 04/27 through 05/10

Cases present while infectious	Number of Schools
1-2 cases	80
3-4 cases	7
5+ cases	5

Indicators and Thresholds

Indicator 1: Rate of new cases

Data are collected daily and include all new cases among St. Louis County residents. This is the rolling seven-day average of new confirmed or probable cases diagnosed among St. Louis County residents per 100,000 population.

- Red: Greater than 8 cases per 100,000 per day
- Yellow: Between 4 and 8 cases per 100,000 per day
- Green: Less than 4 cases per 100,000 per day

Indicator 2: Trend in new cases

Data are collected daily and include all new cases among St. Louis County residents. This is the change in the seven-day rolling average of new confirmed or probable COVID-19 cases over a fourteen-day period.

- Red: If cases are increasing (more than a 10% increase) during the fourteen-day period.
- Yellow: If cases are flat (less than a 10% change in either direction) during the fourteen-day period.
- Green: If cases are decreasing (more than a 10% decrease) during the fourteen-day period.

Indicator 3: Number of non-household contacts per case

This is an average of the total number of contacts divided by the total number of cases (using a 7-day moving average), where the number of cases and contacts is taken from our case investigation and contact tracing databases.

- Red: If the average number of non-household contacts is increasing (more than a 10% increase) during the fourteen-day period.
- Yellow: If the average number of non-household contacts is flat (less than a 10% change in either direction) during the fourteen-day period.
- Green: If the average number of non-household contacts is decreasing (more than a 10% decrease) during the fourteen-day period.

Indicator 4: Percent positivity

Data on the number of positive and negative PCR tests for COVID-19 are provided daily by the Missouri Department of Health and Senior Services. This metric is the proportion of SARS-CoV-2 PCR tests that were positive over a rolling seven-day period.

- Red: Greater than 10 percent positive
- Yellow: 5 percent to 10 percent positive
- Green: Less than 5 percent positive

Indicator 5: New hospital admissions

Data on the number of new hospital admissions provided daily by the regional pandemic task force across the four major hospital systems. This metric uses the 7-day moving average of new COVID-19 related hospital admissions.

- Red: If new hospital admissions are increasing (more than a 10% increase) during the fourteen-day period.
- Yellow: If new hospital admissions are flat (less than a 10% change in either direction) during the fourteen-day period.
- Green: If new hospital admissions are decreasing (more than a 10% decrease) during the fourteen-day period.

Indicator 6: Number of COVID-associated deaths

Data are collected daily and include all COVID-19 associated deaths among Saint Louis County residents. This is the change in the seven-day rolling average of COVID-19-associated deaths over a fourteen-day period.

- Red: If deaths are increasing (more than a 10% increase) during the fourteen-day period.
- Yellow: If deaths are flat (less than a 10% change in either direction) during the fourteen-day period.
- Green: If deaths are decreasing (more than a 10% decrease) during the fourteen-day period.

Indicator 7: Percent of test target

This is the rolling seven-day average of COVID-19 PCR tests conducted among St. Louis County residents, relative to St. Louis County's target of 150 tests per 100,000 population per day.

- Red: Less than 50 percent of the target
- Yellow: Between 50 and 99 percent of the target
- Green: 100 percent of the target or greater

Indicator 8: COVID-19-related ICU occupancy

Data about the total number of confirmed and suspected patients currently admitted to intensive care units (ICUs) across the four major hospital systems (BJC, Mercy, SSM, and St. Luke's) is provided daily by the St. Louis Metropolitan Pandemic Task Force.

- Red: More than 20 percent of ICU beds occupied by COVID-19 patients.
- Yellow: Between 10 and 20 percent of ICU beds occupied by COVID-19 patients.
- Green: Fewer than 10 percent of ICU beds occupied by COVID-19 patients.