State of Missouri COVID-19 Response Vaccine Distribution Analysis

August 16, 2021
For the first time in over a month, Springfield Census Tracts did not lead in statewide vaccination uptake levels. Hotspots continue to be linked to major transportation routes (I-44, I-70, I-35, I-55 and US 63). Regions B and H largely remain vaccine uptake deserts despite recent COVID-19 outbreaks. Vaccination initiations are occurring at a greater rate in St Louis than Kansas City for the 7-day period ending on 8/10/21.
For the time period between 08/06/21 and 8/12/21, the change in COVID-19 case rate (per 100,000) is displayed on the left and case rate hotspots (areas with statistically significant changes in case rates in comparison to surrounding areas) are displayed on the right.

Statistical hotspots further dissipated in Regions D and G as other regions caught up.

Hotspots are beginning to form in St. Louis (4 inside I-270) and expand in Kansas City (19 within I-435).

Case rate hotspots persisted in several of the outdoor recreation gateways into the Lake of the Ozarks and Mark Twain National Forest regions.

Note: Data normalized by population (per 100,000 residents) per Census Tract. COVID-19 case rate data provided by the State of Missouri as of 8/13/21. Previous 2-week change view provided in the Appendix, along with methodology, data sources, and limitations.
For the time period between 08/06/21 and 8/12/21, case rate hotspots (areas with statistically significant changes in case rates in comparison to surrounding areas) are displayed on the left with regional drill downs for Kansas City and St. Louis labeled to the right.

14-Day Case Rate Hotspots
State of Missouri - 08/12

Statistical Hotspots further dissipated in Regions D and G as other regions caught up.

Hotspots are beginning to form in St Louis (4 inside I-270) and expand in Kansas City (19 within I-435).

Case rate hotspots persisted in several of the outdoor recreation gateways into the Lake of the Ozarks and Mark Twain National Forest regions.

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18+ Year-olds | Remaining Unvaccinated

Darker shades on the map on the left indicate Census Tracts with larger vaccination gaps with regional drill downs for Kansas City and St. Louis labeled to the right.

Areas with the largest vaccination gaps continue to align with the more populated areas across Missouri.

**VACCINATION GAP (#)**

**KANSAS CITY**

**ST. LOUIS**

**Vaccination Gap Quintiles (#)**

- 0 – 982
- 983 – 1,420
- 1,421 – 1,924
- 1,929 – 2,534
- 2,541 – 6,587

**Note:** Data on vaccinations include 1st round Moderna & Pfizer vaccinations and J&J vaccinations, are based on residence of the 18+ individual vaccinated (unless otherwise stated) and are from 8/10/2021. Methodology, data sources, and limitations are available in the Appendix. Full data set provided in corresponding Excel file.
18+ Year-olds | Vaccinated Population

Darker shades on the map on the left indicate Census Tracts with higher percentages of vaccinated residents with regional drill downs for Kansas City and St. Louis labeled to the right.

**PERCENT VACCINATED (%)**

- **Vaccinated Categories (%)**
  - 0.0% - 29.9%
  - 30.0% - 39.9%
  - 40.0% - 49.9%
  - 50.0% - 69.9%
  - 70.0%+ (Highest)

Census Tracts with the highest **percentages of unvaccinated populations** are concentrated in more **rural areas** in Regions B, D, I, G, & E.

**Note:** Data on vaccinations include 1st round Moderna & Pfizer vaccinations and J&J vaccinations, are based on residence of the 18+ individual vaccinated (unless otherwise stated) and are from 8/10/2021. Methodology, data sources, and limitations are available in the Appendix. Full data set provided in corresponding Excel file.

For internal use only by State of Missouri. Output based on available data.
Darker shades on the map on the left indicate counties with larger vaccination gaps with regional drill downs for Kansas City and St. Louis labeled to the right.

**Vaccination Gap Quintiles (#)**
- 0 – 118
- 118 – 180
- 180 – 252
- 252 – 351
- 351 – 840

For the 12-17 population, **Region C** continues to have the **largest vaccination gap** (98,698)

Similar trends persist for the 12-17 population as with the 18+ population – rural areas tend to have larger % unvaccinated rates.

**Note:** Data on vaccinated individuals are based on 1st round Moderna & Pfizer vaccinations and J&J vaccinations, based on the residence of the individual vaccinated, and as of 8/10/2021. All vaccinations tagged to the “<18” age group were assumed to be between ages 12-17. Analysis ran at the county level due to several Census Tracts still with limited uptake thus far. Null counties were filtered out. Methodology, data sources, and limitations are available in the Appendix. Full data set provided in corresponding Excel file.

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Darker shades on the map on the left indicate counties with higher percentages of vaccinated residents with regional drill downs for Kansas City and St. Louis labeled to the right.

**Similar trends persist for the 12-17 population as with the 18+ population – urban areas tend to have larger % vaccinated rates**

**Region C** has the highest **percent vaccinated** (43.3%), while **Region G** has the lowest **percent vaccinated** (11.9%).

**Note:** Data on vaccinated individuals are based on 1st round Moderna & Pfizer vaccinations and J&J vaccinations, based on the residence of the individual vaccinated, and as of 8/10/2021. All vaccinations tagged to the “<18” age group were assumed to be between ages 12-17. Analysis ran at the county level due to several Census Tracts still with limited uptake thus far. Null counties were filtered out. Methodology, data sources, and limitations are available in the Appendix. Full data set provided in corresponding Excel file.
Regional Vaccination Rates Over Time

The visualization and table below display weekly and cumulative vaccination rates at the regional level.

5-Week Additional Percent of 18+ Population Vaccinated by Region

**Vaccination Summary**

<table>
<thead>
<tr>
<th>Region</th>
<th>18+ Cumulative % Vax</th>
<th>18+ % Vax Previous Week</th>
<th>12-17 Cumulative % Vax</th>
<th>12-17 % Vax Previous Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>50.1%</td>
<td>1.0%</td>
<td>36.8%</td>
<td>2.4%</td>
</tr>
<tr>
<td>B</td>
<td>41.4%</td>
<td>0.8%</td>
<td>12.8%</td>
<td>1.2%</td>
</tr>
<tr>
<td>C</td>
<td>56.5%</td>
<td>0.7%</td>
<td>43.5%</td>
<td>1.9%</td>
</tr>
<tr>
<td>D</td>
<td>47.0%</td>
<td>1.0%</td>
<td>25.3%</td>
<td>1.9%</td>
</tr>
<tr>
<td>E</td>
<td>43.0%</td>
<td>1.0%</td>
<td>12.8%</td>
<td>1.6%</td>
</tr>
<tr>
<td>F</td>
<td>43.0%</td>
<td>1.0%</td>
<td>12.8%</td>
<td>1.6%</td>
</tr>
<tr>
<td>G</td>
<td>46.5%</td>
<td>1.1%</td>
<td>30.8%</td>
<td>2.2%</td>
</tr>
<tr>
<td>H</td>
<td>40.0%</td>
<td>1.3%</td>
<td>11.8%</td>
<td>1.3%</td>
</tr>
<tr>
<td>I</td>
<td>48.7%</td>
<td>0.8%</td>
<td>20.6%</td>
<td>1.7%</td>
</tr>
<tr>
<td>J</td>
<td>37.7%</td>
<td>0.9%</td>
<td>16.3%</td>
<td>1.1%</td>
</tr>
</tbody>
</table>

**Initiations** decreased in both the 18+ and 12-17 population but remain higher than totals between Weeks 21 to 28.

Regions G and D had the sharpest decreases week over week leading to more homogeneity in additional percent vaccinated across Regions.

**Note:** All weeks are calendar weeks, defined by SMV using MMWR week, where Week 31 is 8/1 – 8/7. Data on vaccinations include 1st round Moderna & Pfizer vaccinations and J&J vaccinations, are based on residence of the 18+ individual vaccinated, and are from 8/10/2021. J&J vaccinations are coded as both dose 1 and dose 2. Methodology, data sources, and limitations are available in the Appendix.
Vaccination uptake hotspots for 08/04 - 08/10 are displayed below in red. These vaccine uptake hotspots represent the communities that far exceeded the State average for the dates indicated.

Uptake hotspots clustered around urban and regional county seat communities, notably St Louis, Columbia, Jefferson City, Joplin and the outskirts of Kansas City.

For the first time in over a month, Springfield Census Tracts did not lead in statewide vaccination uptake levels.

Hotspots continue to be linked to major transportation routes (I-44, I-70, I-35, I-55 and US 63).

Note: Data on vaccinated individuals is based on 1st round Moderna & Pfizer vaccinations and J&J vaccinations, includes all ages, and indicates the residence of the individual vaccinated, and is as of 8/10/2021. Methodology, data sources, and limitations are available in the Appendix.
Vaccination uptake deserts are displayed in shades of blue from 08/03 - 08/10, indicating Census Tracts where the weekly vaccine uptake is significantly lower than State and/or regional averages – a more sensitive test of differences in community-level uptake in comparison to the hotspot analysis.

Despite recent bouts of COVID-19 outbreak, Regions B and H largely remain vaccine uptake deserts. Vaccination initiations are occurring at a greater rate in St Louis than Kansas City for the 7-day period ending on 8/10/21.

Note: Data on vaccinated individuals is based on 1st round Moderna & Pfizer vaccinations and J&J vaccinations, includes all ages, and indicates the residence of the individual vaccinated, and is as of 8/10/2021. Methodology, data sources, and limitations are available in the Appendix.

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The graph below depicts the updated COVID-19 Vulnerability Index – focus areas are consolidated in urban, low socio-economic and minority-focused communities.

**Statewide Geospatial Visualization of COVID-19 Vulnerable Populations**

**FACTORS CONTRIBUTING TO VULNERABILITY**
- COVID-19 Case Burden
- Living below 138% of the Federal Poverty Level
- 1 or more medical comorbidity
- Minority populations
- Percent Unvaccinated

**KEY OBSERVATIONS**
- Most vulnerable Census Tracts (Darkest Red) in Missouri remain in 4 Main Regions – Regions C (83), A (48), E (7), and D (1)
- The top 10 all fall in the St. Louis and Kansas City areas with low rates of vaccination, significant minority populations, and high rates of low-income households.

**Note:** Data on vaccinated individuals are based on 1st round Moderna & Pfizer vaccinations and J&J vaccinations, based on the residence of the individual (18+) vaccinated, and as of 8/10/21. COVID-19 case rate provided by the State of Missouri as of 8/13/21. Methodology, data sources, and limitations are available in the Appendix.
For the time period between 7/23/21 and 8/6/21, the change in COVID-19 case rate (per 100,000) is displayed on the left and case rate hotspots (areas with statistically significant changes in case rates in comparison to surrounding areas) are displayed on the right.

**14-Day Case Rate Change**

**14-Day Case Rate Hotspots**

- **Hotspots remained in west and central Missouri** (Regions A, F and I, in blue); **new hotspots emerged** in north and northwest (regions B and H).
- COVID-19 case rates increased again statewide, although many Census Tracts with the highest rates last week experienced decreases.
- Case rates starting to **rise along US 61** (northeast state border, Regions B and C) and **around outdoor recreation centers** (e.g., Mark Twain NF, Lake of the Ozarks).

**Note:** Data normalized by population (per 100,000 residents) per Census Tract. COVID-19 case rate data provided by the State of Missouri as of 8/6/21. Previous 2-week change view provided in the Appendix, along with methodology, data sources, and limitations.
# Statewide Top 10 Census Tracts by the COVID-19 Vulnerability Index

Below are the 10 Census Tracts with the highest COVID-19 Vulnerability Index scores – notably all in the St. Louis and Kansas City areas with low rates of vaccination, significant minority populations, and high rates of low-income households.

<table>
<thead>
<tr>
<th>Vulnerability Index Rank</th>
<th>Census Tract</th>
<th>County</th>
<th>18+ Population</th>
<th>Variables Included in the CVI</th>
<th>Additional Demographic Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Unvaccinated as of 8/11/21 (%)</td>
<td>Cumulative COVID-19 Case Burden as of 8/12/21 (# per 100k)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statewide Census Tract Average</td>
<td></td>
<td></td>
<td></td>
<td>48.11%</td>
<td>9,751</td>
</tr>
<tr>
<td>1</td>
<td>29510106200</td>
<td>St. Louis city</td>
<td>980</td>
<td>60.71%</td>
<td>9,282</td>
</tr>
<tr>
<td>2</td>
<td>29095013203</td>
<td>Jackson County</td>
<td>2,837</td>
<td>63.62%</td>
<td>12,628</td>
</tr>
<tr>
<td>3</td>
<td>29218213002</td>
<td>St. Louis County</td>
<td>2,196</td>
<td>56.24%</td>
<td>20,164</td>
</tr>
<tr>
<td>4</td>
<td>29189212200</td>
<td>St. Louis County</td>
<td>5,797</td>
<td>62.46%</td>
<td>6,155</td>
</tr>
<tr>
<td>5</td>
<td>29095005602</td>
<td>Jackson County</td>
<td>1,321</td>
<td>61.77%</td>
<td>10,253</td>
</tr>
<tr>
<td>6</td>
<td>29189213900</td>
<td>St. Louis County</td>
<td>1,389</td>
<td>65.01%</td>
<td>8,575</td>
</tr>
<tr>
<td>7</td>
<td>29189213800</td>
<td>St. Louis County</td>
<td>4,763</td>
<td>62.92%</td>
<td>9,217</td>
</tr>
<tr>
<td>8</td>
<td>29189212102</td>
<td>St. Louis County</td>
<td>2,286</td>
<td>67.37%</td>
<td>6,209</td>
</tr>
<tr>
<td>9</td>
<td>29510107500</td>
<td>St. Louis city</td>
<td>2,287</td>
<td>65.63%</td>
<td>8,195</td>
</tr>
<tr>
<td>10</td>
<td>29510109700</td>
<td>St. Louis city</td>
<td>1,886</td>
<td>60.87%</td>
<td>8,333</td>
</tr>
</tbody>
</table>

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