HealthPrism™

State of Missouri COVID-19 Response Vaccine Distribution Analysis

June 7, 2021
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This document includes data on COVID-19 vaccinations for the State of Missouri in support of their vaccine ordering and distribution process

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Executive Summary | Key Insights

STATEWIDE UPTAKE
- Across all ages, total vaccine initiations dropped from 66k to 38k week over week

REGIONAL & COUNTY TRENDS
- All regions experienced a decrease in vaccine initiations week over week
- Putnam (Region B), Livingston (Region H) and Linn (Region B) counties – where COVID-19 case rates are currently spiking – have 27.3, 45.7, and 37.1% of their 18+ population with at least one dose of vaccine, respectively
- Only 4 regions contain any of the Top 150 most vulnerable Census Tracts across Missouri (Regions C, A, E and D)

CENSUS TRACT ANALYSIS
- Increased vaccine uptake is tracking in the vulnerable Census Tracts immediately outside of the SE corner of the I-435 loop in Kansas City
- Vaccine uptake in the St. Louis metro region continues to change weekly throughout its most vulnerable communities based on the COVID-19 Vulnerability Index
- Vaccine uptake hotspots are still being dominated by suburban Census Tracts

12-17 POPULATION
- 8 of the 10 counties with the highest numerical vaccine initiation in the 12-17 population are within Regions A and C
- 12-17 vaccine initiation has accounted for over 25% of all vaccinations over the past 3 weeks

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 06/01/2021. Methodology, data sources, and limitations are available in the Appendix. Full data set provided in corresponding Excel file.

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Statewide Analysis (18+)
Region & County-Level
## 18+ Regional Overview

This table provides vaccination progress metrics at the regional level to understand how the share of vaccinations varies across the State.

<table>
<thead>
<tr>
<th>Regions</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>Statewide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaccination Gap (#)</td>
<td>666k</td>
<td>95K</td>
<td>1,015K</td>
<td>453K</td>
<td>160K</td>
<td>202K</td>
<td>71K</td>
<td>109K</td>
<td>93K</td>
<td>2,963K</td>
</tr>
<tr>
<td>% Unvaccinated Within Region</td>
<td>57.50%</td>
<td>64.94%</td>
<td>51.54%</td>
<td>62.65%</td>
<td>63.94%</td>
<td>51.50%</td>
<td>70.65%</td>
<td>58.56%</td>
<td>69.94%</td>
<td>56.61%</td>
</tr>
<tr>
<td>Share of Eligible Statewide Population</td>
<td>22.9%</td>
<td>2.9%</td>
<td>38.9%</td>
<td>14.3%</td>
<td>4.9%</td>
<td>7.7%</td>
<td>2.0%</td>
<td>3.7%</td>
<td>2.6%</td>
<td>100%</td>
</tr>
<tr>
<td>Share of Statewide Vaccinations</td>
<td>22.4%</td>
<td>2.4%</td>
<td>43.5%</td>
<td>12.3%</td>
<td>4.1%</td>
<td>8.7%</td>
<td>1.3%</td>
<td>3.50%</td>
<td>1.8%</td>
<td>100%</td>
</tr>
<tr>
<td>Share of Statewide Remaining Unvaccinated</td>
<td>23.27%</td>
<td>3.3%</td>
<td>35.4%</td>
<td>15.8%</td>
<td>5.6%</td>
<td>7.0%</td>
<td>2.5%</td>
<td>3.8%</td>
<td>3.3%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Note:** Data on vaccinated individuals are based on 1st round Moderna, Pfizer, and J&J vaccinations, based on the residence of the individual (18+) vaccinated, and as of 06/01/21. Methodology, data sources, and limitations are available in the Appendix. Cells outlined in green indicate a greater than 1 percentage point discrepancy between share of eligible statewide population and share of statewide vaccinations.
This visualization displays the weekly change in percent vaccinated in each region over the last 10 weeks for the over 18 population.

**18+ Additional Percent of Population Vaccinated by Region (SMV Week 13 to Week 22)**

**KEY OBSERVATIONS**

- After an increase in 18+ vaccinations last week, each region experienced a decrease in Week 22.
- All Regions vaccinated between 0.37% and 0.64% of their 18+ population in Week 22.
- 13 (11%) counties experienced an increase in week-over-week vaccinations.
- St. Louis County, Jackson County, and St. Charles saw the largest decrease week over week (accounting for 46% of the total decrease).

**Note:** All weeks are calendar weeks, defined by ShowMeVax (SMV), where Week 20 is 5/9 – 5/15. Data on vaccinated individuals are based on 1st round Moderna, Pfizer, and J&J vaccinations, based on the residence of the individual (18+) vaccinated, and as of 06/01/21. Methodology, data sources, and limitations are available in the Appendix. Negative vaccination changes were set to zero due to identified data quality issue that is being investigated.
Missouri counties were ranked by vaccination gap (how many residents are unvaccinated and estimated to be eligible) and percent unvaccinated (estimate of eligible residents that have not been vaccinated) for the over 18 population.

**TOP 5 COUNTIES BY VACCINATION GAP (#)**

1. **St. Louis**: 440,700 ▶️ -5.0k
2. **Jackson**: 324,800 ▶️ -3.4k
3. **St. Charles**: 174,600 ▶️ -2.1k
4. **St. Louis City**: 156,900 ▶️ -2.0k
5. **Jefferson**: 130,900 ▶️ -1.2k

**TOP 5 COUNTIES BY UNVACCINATED (%)**

1. **Pulaski***: 80.1% ▶️ -0.4%
2. **Newton**: 80.0% ▶️ -0.3%
3. **McDonald**: 79.3% ▶️ -0.3%
4. **Reynolds**: 76.9% ▶️ -0.7%
5. **Howell**: 75.9% ▶️ -0.3%

*Pulaski has the highest percent unvaccinated, likely due to the large military presence and missing federal vaccination data.

**Note**: Data on vaccinated individuals are based on 1st round Moderna, Pfizer, and J&J vaccinations, based on the residence of the individual (18+) vaccinated, and as of 06/01/21. Methodology, data sources, and limitations are available in the Appendix. Full data set provided in corresponding Excel file. Magnitude of change is a numerical difference between the 2 weeks for vaccination gap and a percentage point difference for percent unvaccinated. Blue indicates a county new to the list in comparison to last week. ▶️ indicates no change in rank since last week. ▲ ▼ indicates increase and decrease in rank since last week, respectively.

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Statewide Analysis (18+)
Census Tract Level
Darker shades on the map on the left indicate Census Tracts with larger vaccination gaps and higher percentages of unvaccinated on the right (for the 18+ population)

**VACCINATION GAP (#)**

Areas with the largest vaccination gaps continue to align with the urban areas of highest population across Missouri.

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

9 of the 12 Census Tracts in Linn, Livingston, and Putnam Counties – where COVID-19 cases have recently spiked – have % unvaccinated rates below the statewide CT average.

**PERCENT UNVACCINATED (%)**

Unvaccinated Quintiles (%)

- 0.0% - 46.2%
- 46.2% - 56.0%
- 56.1% - 62.2%
- 62.2% - 68.3%
- 68.3% - 94.3%

Note: Data on vaccinated individuals are based on 1st round Moderna, Pfizer, and J&J vaccinations, based on the residence of the individual (18+) vaccinated, and as of 06/01/21. Methodology, data sources, and limitations are available in the Appendix. Full data set provided in corresponding Excel file.
The graph below visually depicts the updated COVID-19 Vulnerability Index – focus areas are consolidated in urban, low socio-economic and minority-focused communities.

**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**
- The most vulnerable regions within the State of Missouri remain in the urban cores of Kansas City and St. Louis.
- Only 4 regions are represented in the Top 150 most vulnerable Census Tracts in Missouri – Regions C, A, E and D, respectively in order.

*Note:* Data on vaccinated individuals are based on 1st round Moderna, Pfizer, and J&J vaccinations, based on the residence of the individual (18+) vaccinated, and as of 06/01/21. Methodology, data sources, and limitations are available in the Appendix. Vaccination rates larger than 1 were set to 1 due to identified data quality issue that is being investigated.
## Statewide Top 10 Census Tracts by the COVID-19 Vulnerability Index

Below are the top 10 Census Tracts across Missouri with the highest COVID-19 Vulnerability Index scores – notably all in St. Louis and Kansas City.

<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 6/2/21 (%)</td>
<td>Cumulative COVID-19 Case Burden as of 6/4/21 (# per 100k)</td>
</tr>
<tr>
<td>1</td>
<td>29510106200</td>
<td>St. Louis City</td>
<td>980</td>
<td>74.29%</td>
<td>7,531</td>
</tr>
<tr>
<td>2</td>
<td>29189212002</td>
<td>St. Louis</td>
<td>2,196</td>
<td>69.76%</td>
<td>16,190</td>
</tr>
<tr>
<td>3</td>
<td>29095013203</td>
<td>Jackson</td>
<td>2,837</td>
<td>73.49%</td>
<td>9,686</td>
</tr>
<tr>
<td>4</td>
<td>29189212200</td>
<td>St. Louis</td>
<td>5,797</td>
<td>71.19%</td>
<td>5,234</td>
</tr>
<tr>
<td>5</td>
<td>29095005602</td>
<td>Jackson</td>
<td>1,321</td>
<td>70.70%</td>
<td>8,076</td>
</tr>
<tr>
<td>6</td>
<td>29189213900</td>
<td>St. Louis</td>
<td>1,389</td>
<td>74.95%</td>
<td>7,405</td>
</tr>
<tr>
<td>7</td>
<td>29189213800</td>
<td>St. Louis</td>
<td>4,763</td>
<td>70.96%</td>
<td>7,370</td>
</tr>
<tr>
<td>8</td>
<td>29189212102</td>
<td>St. Louis</td>
<td>2,286</td>
<td>76.60%</td>
<td>5,196</td>
</tr>
<tr>
<td>9</td>
<td>29510109700</td>
<td>St. Louis City</td>
<td>1,886</td>
<td>72.11%</td>
<td>7,685</td>
</tr>
<tr>
<td>10</td>
<td>29189213600</td>
<td>St. Louis</td>
<td>2,877</td>
<td>66.15%</td>
<td>6,885</td>
</tr>
</tbody>
</table>

**Statewide Census Tract Average**: 55.83% | 8,361 | 29.86% | 20.43% | 21.64% | 17.42% | 5.17% | 9.98%

**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 06/01/2021. COVID-19 case burden data as of 06/04/21. More information on methodology can be found in the Appendix.
Statewide Analysis (12-17)
The graph below depicts the total vaccinations administered over the past 5 weeks, comparing the share of vaccinations that have gone to the under 18 population versus the over 18 population.

**Share of Vaccinations Comparison Between 12-17 and Adult (18+) Population**

**KEY OBSERVATIONS**

- Vaccinations dropped in the most recent complete week of vaccination data for both the 12-17 and 18+ populations:
  - The 12-17 population experienced a drop of more than 50% (22,984 to 9,819) week over week.

- Vaccination share in the 12-17 group has exceeded 25% for the last 3 weeks.

**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 06/01/2021. Null counties were filtered out. All vaccinations tagged to the "<18" age group were assumed to be between ages 12-17. Methodology, data sources, and limitations are available in the Appendix. Full data set provided in corresponding Excel file.
Darker shades on the map on the left indicate counties with larger vaccination gaps and higher percentages of unvaccinated on the right (for the 12-17 population)

**VACCINATION GAP (#)**

**PERCENT UNVACCINATED (%)**

**Region C** has the **largest** 12-17 population (135,467) remaining eligible for vaccination, **St. Louis and Jackson** counties represent the only counties with more than **40k eligible** for vaccination

Although the 12-17 roll-out has just begun, similar to 18+ trends, **rural counties** are experiencing a **lower vaccine uptake** thus far

**Note:** Data on vaccinated individuals are based on 1st round Moderna, Pfizer, and J&J vaccinations, based on the residence of the individual (under 18) vaccinated, and as of 06/01/21. Null counties were filtered out. 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. Methodology, data sources, and limitations are available in the Appendix. Full data set provided in corresponding Excel file.
Darker shades on the map indicate counties with larger vaccination uptake (for the 12-17 population)

### VACCINATION UPTAKE (#)

**Darker shades on the map indicate counties with larger vaccination uptake (for the 12-17 population)**

**Vaccination Uptake Quartiles (#)**

- 20 – 35
- 37 – 90
- 91 – 226
- 230 – 24,122

### KEY OBSERVATIONS

- **Regions A & C** represent 8 of the Top 10 counties with the highest number of vaccinations for individuals aged 12-17
  - **St. Louis County** has ~14k more doses (24k total) administered than any other county
- 29 counties have vaccinated fewer than 20 individuals within the age 12-17 cohort – outlined in grey

**Note:** Data on vaccinated individuals are based on 1st round Moderna, Pfizer, and J&J vaccinations, based on the residence of the individual (under 18) vaccinated, and as of 06/01/21. Null counties were filtered out. 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. Methodology, data sources, and limitations are available in the Appendix. Full data set provided in corresponding Excel file.
Uptake Analysis

All Eligible Populations
Vaccination uptake hotspots are displayed in red for Week 22, indicating Census Tracts where vaccinations have been administered at rates significantly higher than State averages.

Vaccine uptake hotspots now have **limited occurrence** in the urban cores of Kansas City and St Louis. Vaccine uptake hotspots are extending out **further into the suburbs**.

**Note:** Data on vaccinated individuals includes under and over 18 year olds, is based on 1st round Moderna & Pfizer vaccinations and J&J vaccinations, and indicates the residence of the individual vaccinated. Data as of 06/01/2021. Methodology, data sources, and limitations are available in the Appendix.
Vaccination uptake deserts are displayed in blue for Week 21, indicating Census Tracts where vaccination uptake is significantly lower than State averages.

The Kansas City region experienced **increased vaccine uptake in vulnerable Census Tracts just outside the southeast corner of the I-435 loop** during Week 22, while the St. Louis region experienced **varying uptake** within its more vulnerable communities.

**Note:** Data on vaccinated individuals includes under and over 18 year olds, is based on 1st round Moderna & Pfizer vaccinations and J&J vaccinations, and indicates the residence of the individual vaccinated. Data as of 06/01/2021. Methodology, data sources, and limitations are available in the Appendix.

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Appendix
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