Virginia COVID-19 Surveillance Data Update

September 23, 2021
National: Weekly COVID-19 Case Rate

Updated 09/23

Source: CDC COVID Data Tracker  Please note rate change comparisons are from the previous week's data.

US COVID-19: 7-Day Case Rate per 100,000, by State/Territory

<table>
<thead>
<tr>
<th>State/Territory</th>
<th>Cases in the Last 7 Days Per 100k Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virginia</td>
<td>286 (-3.9%)</td>
</tr>
<tr>
<td>U.S.</td>
<td>269.2 (-12.4%)</td>
</tr>
<tr>
<td>Alaska</td>
<td>800 (+15.3%)</td>
</tr>
<tr>
<td>West Virginia</td>
<td>702.7 (-2.2%)</td>
</tr>
<tr>
<td>Wyoming</td>
<td>620.1 (-9.6%)</td>
</tr>
</tbody>
</table>

Our Neighbors

Rates Higher than Virginia
- West Virginia, **702.7 (-2.2%)**
- Kentucky, **610.8 (+21.5%)**
- North Carolina, **405.7 (+4.2%)**
- Tennessee, **287.7 (-60.8%)**

Rates Lower than Virginia:
- District of Columbia, **209.9 (+9.7%)**
- Maryland, **139.4 (+.6%)**
New Admissions of Patients with Confirmed COVID-19 per 100k Population by Age Group

- **Total Admissions**: 2,979,210
- **Current 7-day Average of New Admissions**: 9882
- **% Change in 7-day Average**: -12.5%

Source: [CDC COVID Data Tracker](https://covid.cdc.gov/covid-data-tracker/)
Virginia: Weekly Case Rate

**BURDEN**
Total number of new cases per 100,000 persons within the last 7 days*

**CASES**
281.3

**TIME SERIES**

**TREND**
Cases have been decreasing for 12 days. This does not exceed the threshold of 14 days, so cases are considered to be fluctuating.
Virginia: Number of Cases by Age Group for Weeks August 15 – September 12

*Provisional data - excludes cases in which age group not yet assigned.

Source: [Weekly Health District Case Data – Coronavirus (virginia.gov)](https://virginia.gov)
Virginia: COVID-19 Hospitalizations

2,166
Current 7-day Average
Current Hospitalizations

+1.1%
% Change in 7-day Average

-31.2%
% Change from peak 7-day Average (Jan 2021)

Source: VHHA Hospitalizations – Coronavirus (virginia.gov)
Virginia: COVID-19 Hospital Admission Rate

Source: CDC COVID Data Tracker
Virginia: Regional Metric Summary

Updated 09/22

New cases per 100k within the last 7 days
- **Central**: 281.3
- **Eastern**: 286.8
- **Far Southwest**: 583.9
- **Near Southwest**: 450.1
- **Northern**: 131.4
- **Northwest**: 381.9

% Positivity 7-day moving average
- **Central**: 9.2%
- **Eastern**: 14.3%
- **Far Southwest**: 15%
- **Near Southwest**: 12.3%
- **Northern**: 4.8%
- **Northwest**: 11.7%

COVID-like ED visits rate per 100k
- **Central**: 29.9
- **Eastern**: 23.7
- **Far Southwest**: 29.8
- **Near Southwest**: 30.0
- **Northern**: 8.9
- **Northwest**: 20.3

Source: Region Metrics – Coronavirus

Data represents a 7-day moving average, trends compared to 1 week ago
ICU Beds Occupied by COVID Patients

### United States

<table>
<thead>
<tr>
<th>Category</th>
<th>United States</th>
<th>Virginia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Inpatient Beds</strong></td>
<td>724,609</td>
<td>17,491</td>
</tr>
<tr>
<td><strong>Percent Occupied with COVID Patients</strong></td>
<td>89,334 (12.3%)</td>
<td>2,101 (12%)</td>
</tr>
<tr>
<td><strong>Total ICU Beds</strong></td>
<td>84,458</td>
<td>1,946</td>
</tr>
<tr>
<td><strong>Percent Occupied with COVID Patients</strong></td>
<td>23,972 (28.3%)</td>
<td>484 (24.8%)</td>
</tr>
</tbody>
</table>

Source: Weekly Hospitalization Trends - Johns Hopkins Coronavirus Resource Center (jhu.edu)
Laboratory Testing Results for SARS-CoV-2 among Infants Born to Women with COVID-19

Laboratory Testing Information was available for 3,607 (13.1%)* infants.

*All positive SARS-CoV-2 results are reported, but negative results may not be reported or monitored in all jurisdictions.

Pregnant Women with COVID-19 by Trimester of Infection

54.9% of births (14,083 out of 25,649) were infected during the third trimester of pregnancy.

Information on timing of infection was available for 26,447 (97.0%) women.

Source: CDC COVID Data Tracker
The Differences in Clinical Presentation, Management, and Prognosis of Laboratory-Confirmed COVID-19 between Pregnant and Non-Pregnant Women

- Pregnant women are more likely to be asymptomatic
- Compared with non-pregnant women, pregnant women have a higher likelihood for ICU admission and to require invasive ventilation

Endogenous control of inflammation characterizes pregnant women with asymptomatic or paucisymptomatic SARS-CoV-2 infection

- Pregnant women diagnosed with COVID-19 infections are often asymptomatic or paucisymptomatic (having mild to no symptoms)
- COVID-19 is known for eliciting a “cytokine storm” in the body which leads to the inflammatory response seen with the disease, which can cause extensive tissue damage, organ failure, and even death
- Pregnant women’s bodies are less capable of controlling inflammation due the increased production of anti-inflammatory molecules protecting the fetus from an immune attack

Preliminary Findings of mRNA Covid-19 Vaccine Safety in Pregnant Persons: June 17, 2021

- In pregnant women who received an mRNA vaccine the most frequently reported side effect was injection site pain which was high compared to non-pregnant women; however, headache, myalgia, chills, and fever were reported less frequently
- Adverse neonatal outcomes were similar to incidents reported in pregnant women prior to COVID-19. 13.9% pregnancy losses, 86.1% live births, 3.2% neonate small for gestational age, 9.4% preterm births, and potential for spontaneous abortion
- Overall, these results are only preliminary and further longitudinal studies will need to be conducted for better results
Recent Studies on Vaccines and Boosters

Comparative Effectiveness of Moderna, Pfizer-BioNTech, and Janssen (Johnson & Johnson) Vaccines in Preventing COVID-19 Hospitalizations Among Adults Without Immunocompromising Conditions

- Vaccine effectiveness was highest for the Moderna vaccine (93%) compared to Pfizer mRNA vaccine (88%) against hospitalization due to COVID-19 infection
- Both mRNA vaccines had higher efficacy than the Johnson and Johnson vaccine (71%) against hospitalization due to a COVID-19 infection
- In antibody analysis, individuals with the Moderna vaccine had the greatest level of antigen protection and were at lower risk of COVID-19 infection

COVID vaccine immunity is waning — how much does that matter?

- COVID-19 vaccine efficacy wanes, neutralizing antibodies increase after vaccination but taper off over time
- In addition to an antibody response, vaccination also elicits a cellular immune response, which is longer lasting, that increases the cells' ability to deploy natural antibodies in the event of exposure and allows for the immune system to jump into action to fight against COVID-19 infection
- However, the longer duration since vaccination or infection one is the level of immune protection decreases so a booster shot maybe needed to safeguard from COVID-19 infection

COVID-vaccine booster shot shows promise in Israeli study

- Israel started administering booster shots to individuals ages 60 and older have found that those who received a booster dose compared to those who have only received 2 doses are:
  - 19.5 times less likely to have severe COVID-19
  - 11.5-fold reduction in COVID-19 infection

Updated 09/22
Virginia Vaccination by Age

- **78.5% (+2.2%)** of the Adult (18+) Population Vaccinated with at Least One Dose
- **69.0% (+3.1%)** of the Eligible (12+) Population Fully Vaccinated
- **89.0% (+0.8%)** of Virginians 65+ and **64.5% (+3.9%)** of 12 to 17 year olds have received at least one dose
- **59.0% (+3.0%)** of the Total Population has been Fully Vaccinated
- **87,605** Third Doses Administered since August 14th

Green percent represents percent increase from two weeks prior

Virginia: Vaccination across the Commonwealth by Geography

Percent of the Total Population with at Least One Dose by Locality

Federal doses not included in this number

Source: COVID-19 Vaccine Summary – Coronavirus (virginia.gov)

• 30 (+5 over 2 weeks) out of 133 Localities have a first dose vaccination rate below 40%

• There is a disparity across Urban and Rural areas by Age Groups, with Rural Adolescents the Lowest Vaccinated group
Virginia: Increased Vaccine Demand

Vaccinations per day have been declining since early August

• First Doses rates are declining and are at the lowest levels since early July, although the pace of decline is slowing somewhat

• 12 to 15 and 16 to 17 are seeing the largest decreases in first dose vaccination rates

Federal doses not included in this number
Source: COVID-19 Vaccine Summary – Coronavirus (virginia.gov)
Virginia and Neighbors: Vaccination Rates

At Least One Dose

<table>
<thead>
<tr>
<th></th>
<th>At Least One Dose*</th>
<th>Fully Vaccinated*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nationwide</strong></td>
<td>63.9% (+2.6%)</td>
<td>54.8% (+3.4%)</td>
</tr>
<tr>
<td>D.C.</td>
<td>69.7% (+2.3%)</td>
<td>59.3% (+2.6%)</td>
</tr>
<tr>
<td>Kentucky</td>
<td>59.8% (+3.5%)</td>
<td>51.2% (+4.3%)</td>
</tr>
<tr>
<td>Maryland</td>
<td>70.0% (+2.0%)</td>
<td>63.4% (+2.4%)</td>
</tr>
<tr>
<td>North Carolina</td>
<td>58.5% (+3.7%)</td>
<td>48.8% (+4.1%)</td>
</tr>
<tr>
<td>Tennessee</td>
<td>52.1% (+3.8%)</td>
<td>44.5% (+5.0%)</td>
</tr>
<tr>
<td><strong>Virginia</strong></td>
<td>67.7% (+2.9%)</td>
<td>59.8% (+3.6%)</td>
</tr>
<tr>
<td>West Virginia</td>
<td>47.9% (+1.3%)</td>
<td>40.2% (+1.0%)</td>
</tr>
</tbody>
</table>

*Total population, includes out-of-state vaccinations
**Differs from previous slide because all vaccination sources (e.g., federal) are included
*** Green percent represents percent increase from two weeks prior

Source: [https://covid.cdc.gov/covid-data-tracker/#vaccinations](https://covid.cdc.gov/covid-data-tracker/#vaccinations)
Virginia: Projected Booster Eligibility by Week

Vaccine Demand could be much higher than current Capacity, but depends on uptake, meaning a wide range of potential outcomes

- Pfizer would see the first wave of demand if all of Phase 1 is considered eligible
- Moderna is projected to be approved for boosters around October 24th, and would see an even greater number eligible
- 5- to 11-year-olds could also be eligible at the end of October; Assume uptake is similar to 12- to 15-year-olds
- Assume on-going shots continue as the vaccine mandates take effect

<table>
<thead>
<tr>
<th>Vaccination Eligibility</th>
<th>9/26</th>
<th>10/3</th>
<th>10/10</th>
<th>10/17</th>
<th>10/24</th>
<th>10/31</th>
<th>11/7</th>
<th>11/14</th>
<th>11/21</th>
<th>11/28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pfizer Eligibility</td>
<td>701,558</td>
<td>113,077</td>
<td>140,377</td>
<td>181,641</td>
<td>183,810</td>
<td>179,929</td>
<td>157,358</td>
<td>144,519</td>
<td>8,081</td>
<td>4,852</td>
</tr>
<tr>
<td>Moderna Eligibility</td>
<td>1,061,877</td>
<td>131,091</td>
<td>78,466</td>
<td>77,761</td>
<td>78,526</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 to 11 at 66% uptake</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>477,226</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-Going Shots</td>
<td>79,737</td>
<td>79,737</td>
<td>79,737</td>
<td>79,737</td>
<td>79,737</td>
<td>79,737</td>
<td>79,737</td>
<td>79,737</td>
<td>79,737</td>
<td>79,737</td>
</tr>
<tr>
<td>Total</td>
<td>781,295</td>
<td>192,814</td>
<td>220,114</td>
<td>261,378</td>
<td>1,325,424</td>
<td>867,983</td>
<td>315,561</td>
<td>302,017</td>
<td>166,344</td>
<td>90,559</td>
</tr>
<tr>
<td>Total at 90% uptake</td>
<td>711,139</td>
<td>181,506</td>
<td>206,076</td>
<td>243,214</td>
<td>1,200,855</td>
<td>836,811</td>
<td>291,979</td>
<td>279,789</td>
<td>157,683</td>
<td>89,477</td>
</tr>
<tr>
<td>Total at 75% uptake</td>
<td>605,906</td>
<td>164,545</td>
<td>185,020</td>
<td>215,968</td>
<td>1,014,002</td>
<td>790,228</td>
<td>256,605</td>
<td>246,447</td>
<td>144,692</td>
<td>87,854</td>
</tr>
<tr>
<td>Total at 50% uptake</td>
<td>430,516</td>
<td>136,276</td>
<td>149,926</td>
<td>170,558</td>
<td>702,581</td>
<td>712,473</td>
<td>197,649</td>
<td>190,877</td>
<td>123,041</td>
<td>85,148</td>
</tr>
<tr>
<td>Total at 25% uptake</td>
<td>255,127</td>
<td>108,006</td>
<td>114,831</td>
<td>125,147</td>
<td>391,159</td>
<td>634,718</td>
<td>138,693</td>
<td>135,307</td>
<td>101,389</td>
<td>82,443</td>
</tr>
</tbody>
</table>

Federal doses not included in this number
Source: COVID-19 Vaccine Summary – Coronavirus (virginia.gov)