

## OCTOBER UPDATE

# Statewide High-Level Analysis of Forecasted Behavioral Health Impacts from COVID-19

### Purpose

This document provides a brief overview of the potential statewide behavioral health impacts from the COVID-19 pandemic. The intent of this document is to communicate potential behavioral health impacts to response planners and organizations or individuals who are responding to or helping to mitigate the behavioral health impacts of the COVID-19 pandemic.

### Bottom Line Up Front

- The COVID-19 pandemic strongly influences behavioral health symptoms and behaviors across the state due to far-reaching medical, economic, social, and political consequences. This forecast is heavily informed by disaster research and the latest data and findings specific to this pandemic. Updates will be made monthly to reflect changes in baseline data.
- For adults, areas of focus for the fourth quarter of 2021 include concerns about additional COVID-19 variants, in addition to what is typically respiratory illness and flu season. As the holiday season approaches, there may be hardening of opinions and positions on vaccines and mandates, and significant economic and occupational changes for some. These concerns may serve to tax already limited emotional, mental, and behavioral resources needed to regulate behavior and contribute to well-being. These also typify a secondary disillusionment phase in the context of a disaster cascade for many individuals and families.
- Within the general population, return-to-workplace issues and expectations around social participation and reconnecting remain areas of heightened emotion as well. Clear, transparent and consistent communication about workplace expectations is recommended. Doing so will reduce anxiety, resentment, and other emotions that may have built up as a result of unknowns as it relates to their work environment, changing goals, and perceptions around expectations.



DOH 821-103-19 October 2021  
To request this document in another format, call 1-800-525-0127. Deaf or hard of hearing customers, please call 711 (Washington Relay) or email [civil.rights@doh.wa.gov](mailto:civil.rights@doh.wa.gov).

- “Us/Them” or “in-group” and “out-group” thinking behaviors, may also continue to worsen and divide families and co-workers. This has the potential to result in more social aggression or “acting out” against others who are perceived as being part of the “out-group.” As a result, there is a significant need to monitor and carefully weigh choices and behaviors in a social context, so that decision-making is thoughtful and not impulsive or rash.
- There are several areas of behavioral health focus for children and families moving into November and December 2021. These include academic and social stressors related to risks of periodic quarantine, uncertainties about vaccine availability for children under 12, and the potential for additional waves of infection.
- See the [October Youth Behavioral Health Impact Situation Report<sup>a</sup>](#) for more information on behavioral health impacts to youth in Washington. Professional psychological services for youth may also become harder to find in coming months, based on seasonal patterns.<sup>1,2,3</sup>
- Increases in pediatric cases of COVID have been linked to increases in anxiety for parents as well as older siblings.<sup>4</sup> The need for full family behavioral health supports will remain high for the remainder of 2021.
- Seasonal affective conditions begin to become a contributing risk factor towards the mental wellbeing of many individuals this month as the hours of daylight begin to decrease.<sup>1,2,3</sup>
- As more data become available about the long-term effects of COVID-19 on survivors, it is clear there are significant behavioral health impacts associated with this virus, including cognitive difficulties and increases in anxiety and depression, even among those with a mild course of illness.<sup>5,6</sup>
- [Vaccine mandates in Washington<sup>b</sup>](#) for healthcare workers and state employees, in addition to educators, may contribute to a strong sense of relief for some and a significant source of anxiety, stress or anger for others. Responses to the mandates expressed on-line in social media, as well as during direct interpersonal interactions, may be correspondingly strong and intense. The potential for violence and aggression may increase as deadlines pass and action is taken by some to separate from employees who choose to remain unvaccinated.
- As many employers and employees make occupational and staffing changes, behavioral health risks associated with functional unemployment (i.e., when an individual wants full-time work but can only find part-time work or works full-time but earns too little to climb above the poverty line) may rise. Individuals in Washington who are experiencing functional unemployment are at higher risk of facing the conditions associated with a disaster cascade. There may also be a paradoxical impact on businesses who are struggling with staffing changes and trying to find workers. Please see more in the section on Unemployment and Economic Changes.

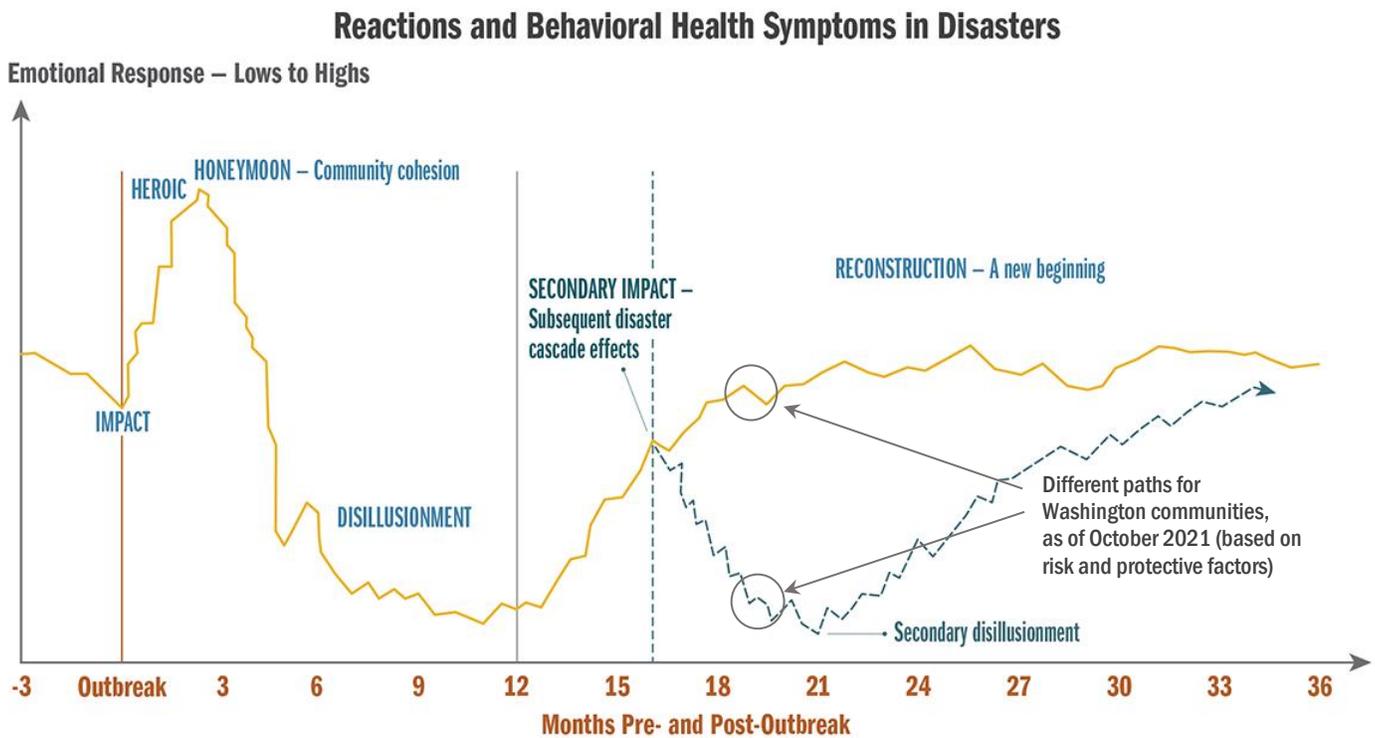
---

<sup>a</sup> <https://www.doh.wa.gov/Portals/1/Documents/1600/coronavirus/821-135-YouthBehavioralHealthSitRep-October2021.pdf>

<sup>b</sup> <https://www.governor.wa.gov/sites/default/files/proclamations/21-14.1%20-%20COVID-19%20Vax%20Washington%20Amendment.pdf>

## Phase-Related Behavioral Health Considerations

**Behavioral health symptoms will continue to present in phases.**<sup>7,8</sup> The unique characteristics of this pandemic trend towards anxiety and depression as a significant behavioral health outcome for many in Washington. These outcomes have been shown throughout the Behavioral Health Impact Situation Reports published by DOH, which are available on the [Behavioral Health Resources & Recommendations webpage](#)<sup>c</sup> under the “Situation Reports” dropdown. Behavioral health symptoms of anxiety, impulsivity, reduced frustration tolerance, anger, depression, and post-traumatic stress disorder (PTSD) are likely to increase with any significant increases in infection and hospitalization rates.<sup>9,10</sup>



**Figure 1: Phases of reactions and behavioral health symptoms in disasters.** The dotted graph line represents the response and recovery pattern that may occur if the full force of a disaster cascade is experienced by a majority of the population (i.e., the disaster cascade pathway). Protective factors are characteristics, conditions, or behaviors that reduce the effects of stressful life events. They also increase a person’s ability to avoid risks or hazards, recover, and grow stronger. Adapted from the Substance Abuse and Mental Health Services Administration (SAMHSA).<sup>11</sup>

## Phase Divergence within Washington

As we move further along, through various waves of the pandemic, some communities, families, and individuals in Washington will diverge more distinctly from each other in terms of behavioral health experiences. Factors, such as economic security, social marginalization, and race and ethnicity continue to play a role in the experience of both physical and behavioral health risks and symptoms throughout the pandemic.<sup>12,13,14,15</sup> Disparities throughout the last 18 months will continue to be magnified and potentially worsened.

<sup>c</sup> <https://www.doh.wa.gov/Emergencies/COVID19/HealthcareProviders/BehavioralHealthResources>

October Update: Statewide High-Level Analysis of Forecasted Behavioral Health Impacts from COVID-19

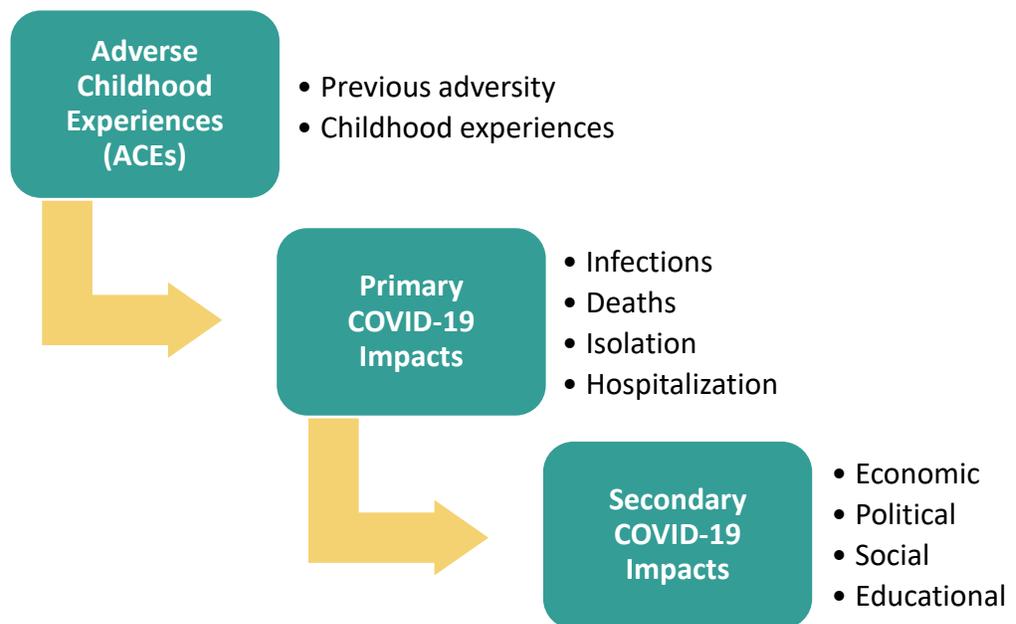
Those who have had more economic, social, educational, and occupational opportunities so far in 2021 will tend to climb more rapidly into recovery, while those who have experienced more direct primary and secondary impacts from the pandemic (e.g., illness, hospitalization, job loss, eviction) (Figure 2) will likely endure a repetition of the recovery cycle as is consistent with the disaster cascade pathway (Figure 1). Healthcare workers are at specific risks associated with a disaster cascade as a function of the severity of the Delta variant and subsequent fifth wave.

### COVID-19 Variants

The concerns about a **disaster cascade** have been previously discussed in this forecast, and the Delta variant seems to have triggered several behavioral health disaster cascade effects for certain groups, healthcare workers among them. Secondary impacts may be a result of the pandemic itself (infections and hospitalizations) or an indirect impact of the pandemic (economic hardship, social and political unrest, new or ongoing restrictions, etc.). For healthcare workers of all kinds, there are significant risks related to burnout, compassion fatigue, additional stress, and the potential for diagnostic level behavioral health concerns as a function of a disaster cascade and the experiences associated with the Delta variant. In addition to exceptionally challenging working conditions in many clinics and hospitals, current case and hospitalization rates have resulted in more discussion about **Crisis Standards of Care**.

Crisis Care happens when there are not enough healthcare staff, space, or supplies to provide conventional care to patients. Usually this is related to an event where there is a large number of people needing care, such as COVID-19 and the current Delta variant driven fifth wave. When we experience circumstances, such as a catastrophic incident or a disaster, and the entire healthcare system becomes overwhelmed, we have the potential to enter “Crisis Care”.

Impact of changes in care and particularly Crisis Care, on healthcare staff who are already exhausted and who may be experiencing burn out or compassion fatigue, can create risk for psychological and moral injury. These types of injury occur when someone is put in a position where they are exposed to too many serious illnesses and patient deaths, when they have to change the care they are trained and expected to do, and when they must make decisions that result in some patients not getting all the care they would normally be offered. These may violate the healthcare providers’ expectations of themselves and their values, creating risk for moral distress and injury, as well as new psychological disorders. Healthcare organizations should consider planning and support for impacted workers.<sup>16</sup>



**Figure 2: Disaster and Trauma Cascade Potential.** The figure displays the range of factors (ACEs),<sup>d</sup> primary COVID-19 impacts, and secondary COVID-19 impacts) which may alter the *reconstruction phase* and recovery for individuals based on their experiences.

## Areas of Focus during September and October 2021

### Children and Families

The three significant issues for children and families in the fall months of 2021 are:

- 1) The return to back-to-classroom education for K-12 and many colleges across the state, and the corresponding behavioral (acting out, developmental regression, emotional outbursts, etc.) and academic considerations (i.e. delays in achievement, falling behind).
- 2) An extension of the behavioral health crisis that was addressed in the Governor’s [emergency proclamation](#) on March 15, 2021 and the likelihood of an acute additional wave of behavioral health needs for children and youth occurring after school begins.
- 3) Anxiety and uncertainty experienced by children and parents related to the potential for return to online vs. in-person school as a result of the increase in COVID-19 cases associated with the Delta variant. Parents may face needing to balance in-home instruction with work requirements once again. There are fears related to increases in pediatric illness and case numbers<sup>4</sup> Children may potentially experience more months of an atypical academic environment and isolation from peers.

### Back-to-Classroom Considerations & Academics

Studies indicate that there can be significant long term developmental, social and academic impacts on children who miss a large amount of school. Better-educated individuals have a much longer life expectancy even after accounting for various background factors, such as family income, patterns of family formation, and access to healthcare.<sup>17</sup> In addition to the striking mortality differences between individuals with low and high levels of education, lower

<sup>d</sup> Adverse childhood experience (ACE): A traumatic experience in a person’s life occurring before the age of 18 that the person remembers as an adult.

levels of education are associated with health-related comorbidities, such as cognitive, social, and psychological impairment. Educational attainment is also associated with access to healthcare, which can affect lifetime physical and psychological health.<sup>18</sup> Washington students in grades 9 – 12 surveyed this year identified concerns about academic losses at extremely high rates. For students in high school, 67% felt they had learned less in 2020.<sup>19</sup>

Many children will be returning to in-person instruction after more than a year of school absence, and there are some with nearly two years absence. In addition, an unknown number of children will have had school experiences with less than optimal virtual instruction or family situations where parents were not available to monitor and track learning and attendance, leading to deficiencies in academic skills, social issues, and capacity to learn new things. Parents, caregivers, and educators may need to modify expectations and focus on helping children re-engage by first learning how to be a successful student again by socializing and participating with peers in a classroom context before focusing on academic success. Some children may need intensive tutoring to catch up on missed academic skills. Resources for parents, caregivers, educators, and other school staff can be found in the [COVID-19 Back-to-Classroom THINK Toolbox: Teaching with Healthcare Informed Neurological Strategies for Kids](#)

Many questions and concerns have come up related to mask wearing and the potential effects this may have from a behavioral health perspective, including the social, developmental, and emotional experiences of children. Although there are a shortage of studies that have specifically addressed mandated mask wearing and pediatric effects,<sup>20</sup> these questions have been addressed in some recent studies and reviews.<sup>20,20.21,22,23,24</sup> Some conclusions can be gathered from this work that help inform our sense of understanding about the impact of mask wearing for K-12 students.

Studies have found young children’s adherence to masking is possible, but requires effort to achieve. “Adverse experiences” reported were typically related to irritability and discomfort, and also involved young children who experienced frustration over wearing the mask or being asked to wear it properly.<sup>21,22,22</sup> Adaptation is needed to adjust masking requirements for children with speech and language challenges, and hearing impairments.<sup>22,22</sup> Evaluating the ongoing risks and benefits is needed to determine the best course of action.<sup>23,23</sup>

Other studies have evaluated the impact of mask wearing on emotional perception for children. Results have shown that children (ages 7 – 13)<sup>24,24</sup> were still able to make accurate inferences about the emotions of others when part of the face was covered by a mask. Although it may be more challenging for some children, masks are “unlikely to dramatically impair children’s social interactions in their everyday lives.”<sup>24,24</sup> For children ages 3 – 5, masks may impair recognition of emotional states a bit more, which is a consideration for children who already have deficits in social and emotional recognition and processing.<sup>24,24</sup> Adaptations for the children in this group are something that can and should be addressed by educators and caregivers.

It should also be noted that there is an important and meaningful clinical distinction between discomfort on the part of a child and a traumatic incident. To date that we are aware of, no peer-reviewed research has been published that indicates a relationship between mask wearing (for children) and the experience of psychological trauma in the context of COVID-19.

There are typical behavioral health considerations in the classroom environment as any new school year begins. However, this year with the return to in-person school for the first time in nearly two years for some, it should be noted that there are a large number of potentially at-

risk youth who will now have access to mandated reporters (those required by law to report suspected abuse or neglect) in a way that they have not for the previous academic year. As a result, it is possible, and even likely, that there will be an increase in child abuse, neglect or other mandated reports made to Child Protective Services in Washington State in the next several months. School districts should make efforts through ongoing professional education to remind educators and other mandated reporters about economic, social, and cultural differences that should not be confused or mistaken for abuse or neglect in youth who are otherwise at risk.

### Fall Behavioral Health Surge

Behavioral health concerns for children and youth have remained high in our state throughout the summer months, which is atypical during most years. This year, the typical “summer slump” in demand for behavioral health services in children did not happen. The number of children and teens needing behavioral health services, particularly crisis services, has remained high. Information gathered by the Northwest Healthcare Response Network has found that the average number of days for families to access behavioral health care through Washington’s Mental Health Referral Service at Seattle Children’s Hospital’s has increased from **6.2 days in July 2020 to 19.1 days in July 2021**, indicating the difficulty accessing outpatient behavioral health care for children.<sup>25</sup> There has been a steady rate of increase in time from contact with parents to connection with services, increasing from 12.1 days in October 2020 to 11.3 days in January 2021, and to 12.8 days in April 2021. At Mary Bridge Children’s Hospital, behavioral health-related chief complaints presenting to the emergency department were **71 in June of 2019, 111 in June of 2020, and 106 in June of 2021**, indicating ongoing elevated numbers of children in crisis presenting to emergency departments for behavioral health issues.<sup>25,25</sup>

Traditionally, most years have seasonal increases in behavioral health symptoms and the need for behavioral health services in the fall and winter. For children and youth, this tends to coincide with the increase in academic demands related to the shift from review to learning new material, in addition to the newness of being back with friends having worn off and interpersonal issues taking focus<sup>1,2,3</sup> It is anticipated that the combination of the high acuity experienced this spring, the lack of a “summer slump,” and the typical increase in symptoms for many children and youth in the fall months will negatively and disproportionately impact this population. This is likely to additionally tax an overstressed health care and educational system throughout the academic year 2021-2022.

Many children and adolescents have struggled with increased social isolation, disruption in school, and loss of connection to teachers and peers. However, if there are concerns about safety, seek professional support and assistance. For more detailed information on this topic, see the [Behavioral Health Toolbox for Families: Supporting Children and Teens During the COVID-19 Pandemic](#).<sup>e</sup> This resource provides general information about common emotional reactions of children, teens, and families during disasters. It also has suggestions on how to help children, teens, and families recover from disasters and grow stronger. Parents and caregivers can also use the [National Parent Helpline](#)<sup>f</sup> to access telephone support (1-855-427-2736) and additional resources.

---

<sup>e</sup> <https://www.doh.wa.gov/Portals/1/Documents/1600/coronavirus/BHG-COVID19-FamilyToolbox.pdf>

<sup>f</sup> <https://www.nationalparenthelpline.org/>

Parental stress remains elevated. Almost 30% of parents are experiencing negative mood and poor sleep quality, with a 122% increase in reported work disruption. Additionally, 86% of families are experiencing hardships, such as loss of income, job loss, increased caregiving burden, and household illness.<sup>26</sup>

## Depression and Suicide

Depression is a common response throughout the disaster recovery cycle. Many children, teens, and young adults are experiencing significant symptoms of depression during the pandemic.<sup>27</sup> Nationally, emergency department visits for suspected suicide increased dramatically in the spring of 2021, particularly among adolescent girls whose rate increased 50.6% from the rate in 2020. Among boys, those rates increased by 3.7% during the same time period.<sup>28</sup> In Washington, trends indicate that emergency department visits for suicidal ideation and attempts may be increasing, and this is data that we will continue to monitor as emergency department visits are increasing generally.

Active suicide prevention should be promoted through sharing information on recognizing [warning signs](#)<sup>g</sup> and other related resources, and checking in with colleagues, friends, family members, and neighbors. When someone is expressing thoughts of self-harm, [access to dangerous means of harm should be removed](#),<sup>h</sup> and medications, poisons, and firearms should be stored safely. Suicides consistently account for approximately 75% of all firearm-related fatalities in Washington.<sup>29</sup> [Storing firearms safely](#) and [temporarily removing them from the home](#) of an at-risk person during a crisis can save lives.

### Additional Resources:

- Anyone concerned about depression or other behavioral health symptoms should talk with their **healthcare provider**.
- [Washington Listens](#)<sup>i</sup>: Call 833-681-0211 to talk to a support specialist who will listen and help you cope with the stress of COVID-19.
- **Health Care Authority: [Mental health crisis lines](#)**<sup>j</sup>
- [National Suicide Prevention Lifeline](#):<sup>k</sup> Call 800-273-8255 (English) or 1-888-628-9454 (Español).
- [Crisis Connections](#):<sup>l</sup> Call 866-427-4747.
- [Crisis Text Line](#):<sup>m</sup> Text HEAL to 741741.
- **Department of Health: [Crisis lines for specific groups](#)**<sup>n</sup>
- [TeenLink](#):<sup>o</sup> Call or text 866-833-6546

---

<sup>g</sup> <https://www.doh.wa.gov/YouandYourFamily/InjuryandViolencePrevention/SuicidePrevention/HelpSomeoneElse#common>

<sup>h</sup> <https://www.seattlechildrens.org/health-safety/keeping-kids-healthy/prevention/home-checklist/>

<sup>i</sup> <https://www.walistens.org/>

<sup>j</sup> <https://www.hca.wa.gov/health-care-services-supports/behavioral-health-recovery/mental-health-crisis-lines>

<sup>k</sup> <https://suicidepreventionlifeline.org/>

<sup>l</sup> <https://www.crisisconnections.org/24-hour-crisis-line/>

<sup>m</sup> <https://www.crisistextline.org/>

<sup>n</sup> <https://www.doh.wa.gov/YouandYourFamily/InjuryandViolencePrevention/SuicidePrevention/HotlinesTextandChatResources>

<sup>o</sup> <https://www.crisisconnections.org/teen-link/>

- **A Mindful State**<sup>p</sup>: <https://amindfulstate.org/>
- **Washington Warm Line**:<sup>q</sup> Call 877-500-9276
- **Washington State COVID-19 Response**: [Mental and emotional well-being webpage](#)<sup>r</sup>

### Social Marginalization, Racism & Discrimination

There are several groups and communities that have experienced significant social marginalization throughout the pandemic. Risks related to underlying social or systemic factors are exacerbated by historical trauma and anxiety related to discrimination and prejudice.<sup>30</sup> These risks can result in higher levels of post-traumatic stress disorder (PTSD), as well as a variety of other mental health concerns, including substance use issues. There has been a significant increase in crimes against members of Asian communities related to COVID-19 as a result of misconceptions and misinformation about the source of the virus that causes COVID-19, and the tendency to seek a source of blame for the pandemic.<sup>31,32,33</sup> There have been reports of hate crimes directly associated with racism, such as harassment and discrimination, with Asian Americans being shunned, verbally abused, coughed and spat on, and physically assaulted. These experiences have significant negative impacts to behavioral health, as social isolation and perceived separation from the community escalates.<sup>33</sup>

### Socioeconomic Status

Disasters may affect all people, but those of lower socioeconomic status are usually much more negatively impacted than other groups.<sup>34</sup> For example, individuals and families in lower socioeconomic groups are 52% more likely to lose their job or experience a significant reduction in their income than individuals in middle or upper socioeconomic group.<sup>35</sup> Individuals in lower socioeconomic groups are at higher risk for having their mental health negatively impacted due to COVID-19.<sup>35,36</sup> For example, 26% of individuals with an annual income of less than \$40,000 report experiencing a significant negative mental health impact, compared to 17% of those with an annual income between \$40,000 and \$89,000, and 14% of those with an annual income of \$90,000 or more. Individuals in lower socioeconomic groups are also at a higher risk for developing PTSD after a disaster.<sup>37,38</sup> Recently, discussion in the news media about the ending of and then extension related to eviction moratoriums at the federal, state, and local levels could also serve to contribute to anxiety and depression or other behavioral health symptoms for individuals and families experiencing economic hardship.

### Unemployment and Economic Changes

Suicide and drug overdose death rates are both highly influenced by unemployment.<sup>39,40,41,42,43,44</sup> For every 1% increase in the unemployment rate, there is a corresponding 1.6% increase in the suicide rate,<sup>42</sup> and an increase of one drug overdose death per 300,000 people.<sup>41</sup> In Washington, approximately 1,231 people die from suicide annually, and 1,173 people die from drug overdose annually.<sup>45</sup> The unemployment rate in Washington was 5.1% in August 2021, 4 percentage points lower than August 2020.<sup>46,47</sup>

Additionally, a recent study from the National Bureau of Economic Research reported, “the size of COVID- 19-related unemployment to be between 2 and 5 times larger than the typical unemployment

---

<sup>p</sup> <https://amindfulstate.org/>

<sup>q</sup> <https://www.crisisconnections.org/wa-warm-line/>

<sup>r</sup> [coronavirus.wa.gov/wellbeing](https://coronavirus.wa.gov/wellbeing)

shock, depending on race [and] gender, resulting in a 3.0% increase in mortality rate and a 0.5% drop in life expectancy over the next 15 years for the overall American population. We also predict that the shock will disproportionately affect African Americans and women [in the short term] while white men might suffer large consequences [in the long term]. These figures translate in a staggering 0.89 million additional deaths [nationally] over the next 15 years.”<sup>42</sup>

The U.S. Bureau of Labor Statistics (BLS) regularly reports unemployment data, which is based on labor market activity, working conditions, and price changes in the U.S. economy. BLS measured the national unemployment rate to be 5.2% in August 2021. After a significant amount of research, the Ludwig Institute for Shared Economic Prosperity (LISEP) began using a new measure to calculate what is called the True Rate of Unemployment (TRU).<sup>48,49</sup> This rate is defined as the percentage of the U.S. labor force that is *functionally unemployed*.<sup>50</sup> TRU uses data from BLS and also tracks the percentage of the U.S. labor force that does not have a full-time job (35+ hours a week) but wants one, has no job, or does not earn a living wage (which is marked at \$20,000 annually before taxes). Thus, any individual who wants full-time work but can only find part-time work, as well as those working full-time but earning too little to climb above the poverty line, are considered *functionally unemployed*. Based on the inclusion of these additional factors related to unemployment, the TRU in August 2021 was 22.8% nationally. Further analysis shows significant disparities related to race and sex. Specifically, in August 2021 the TRU for Black Americans was 28.7%, compared to 25.1% for Hispanic Americans and 21.2% for white Americans. This disparity is also significant when evaluated by sex. The TRU for female Americans was 27.9%, compared to 18.2% for male Americans in the same month.

The greatest disparity, however, emerges when the TRU is viewed across levels of education. In August 2021, 47.7% individuals without a high school education were functionally unemployed; comparatively, 25.8% of individuals with a high school diploma, 25.1% of individuals who had completed some college, 16.1% of individuals with a college degree, and 10.4% of individuals with an advanced degree were functionally unemployed.<sup>51</sup> According to the National Bureau of Economic Research, the rising Deaths of despair, morbidity and emotional distress are disproportionately experienced by those without a four-year college degree, which is the majority of American adults.<sup>51</sup>

Individuals in Washington who are experiencing functional unemployment are at higher risk of facing a disaster cascade.

### Potential for Violence and Aggression

Opinions and viewpoints are ‘hardening’ about COVID related issues like masking, social distancing, quarantining, and vaccine mandates, leading to the increased potential for violence and aggression between individuals whose stances are far apart and equally strong. The likelihood of a large-scale event rooted in violence or extremist behavior may increase in coming months amongst certain groups within the population if there is the perception of being threatened when it comes to economic, employment, housing, and even social and entertainment options. Stressors for many families may increase as vaccine mandate deadlines pass, and realities about employment, unemployment, and financial options or limitations become more tangible. Such stressors may include perceptions of or actual increases in workloads for employees in organizations who may have lost staff due to mandate deadlines passing. For others, stressors may be related to finding new employment and maintaining

economic stability as the holidays approach. The end of rent moratoriums and other housing challenges also create more pressure as financial pressures increase. All of these stressors may contribute to an increase in risks associated with aggressive behaviors, and “acting out” behaviors that seem uncharacteristic for many people. These behaviors can be the direct result of a combination of factors that include:

- Strongly held beliefs and opinions.
- Deep sense of anger and / or exhaustion related to the ongoing and long-term nature of the pandemic.
- Less impulse control.
- The potential for stronger emotional reactions as regular social contact increase after over a year of limited and restricted social contact.

### Workplace Changes

As many employers move forward with return-to-workplace plans, hybrid models, and the development of new COVID-19-related policies and expectations, many employees across the state could experience strong emotional responses that range from excitement and happiness to anxiety and fear. Employers should be mindful about making sure their communication regarding workplace return expectations are free from intimidation, harassment, or shaming. Examples of this that should be avoided may include suggesting that some team members are “letting others down” if they are choosing not to come back physically to the office space, or that the “professional reputation” of workers may be influenced by their choices about returning to the office.

Within teams, *active listening*, a form of healthy communication that can support team building, is recommended as an intervention that can help address workplace issues that may arise during these transitions. It may be common for employees to experience *cognitive dissonance* during this time, which is an experience where people struggle to navigate their own inconsistent beliefs and attitudes about things like workplace relationships, as well as rules, policies, and expectations. For example, some employees may have colleagues with whom they like and get along very well, but who have different views and opinions about the end of the pandemic, vaccine mandates, or return to the office/workplace, in general. Sometimes the discrepancies between liking other people and disagreeing with their opinions on sensitive topics may contribute to more emotional exhaustion in the context of professional engagement. Managing strong *cognitive dissonance* is likely to be an important consideration for supervisors and managers in the return-to-workplace transition over the next several months.

### Behavioral Health Outcomes Associated With COVID-19

As the number of people infected with the virus continues to increase nationally, so does the number of survivors. Concerning research, provider bulletins, anecdotal accounts, and case studies have documented specific behavioral health symptoms and diagnoses which seem to occur in those who have survived COVID-19.<sup>52,53</sup> Treatment providers and behavioral health systems should be aware of these findings, which include new instances of anxiety disorders and PTSD, risks related to a **decline in cognitive functioning**, as well as a new diagnosis identified as **post-COVID-19 psychosis**<sup>54</sup> and a syndrome recognized as **long COVID-19**.<sup>40</sup>

In addition to increased risks for a *new* psychological disorder after a positive COVID-19 diagnosis, research shows that individuals who had a pre-COVID-19 psychiatric diagnosis were associated with a much higher (65% in one study) increased risk of confirmed COVID-19 infection, compared to individuals who only had a pre-COVID-19 diagnosis of a physical health issue and no psychiatric history.<sup>41,55</sup> Additional research has also found an increased risk for first-time experiences of psychotic symptoms in individuals that tested positive for COVID-19.<sup>40,46</sup> The individuals who had a new onset of psychosis related to COVID-19 infections tended to have features of disorganized thinking and confusion and were less likely to experience paranoia and delusions as part of their psychosis. The individuals who developed this post-COVID-19 psychosis are also less likely to have a family history of psychosis and more likely to present with mild to moderate (i.e., less severe) symptoms of psychosis. Individuals experiencing this type of post-COVID-19 psychosis are typically recovering quickly with the use of low-dose antipsychotic medications.<sup>46</sup>

Research has identified a post-COVID-19 group that are referred to as “long-haulers” or as experiencing *long COVID-19*, in which individuals experience symptoms related to COVID-19 for more than six weeks. Many of these individuals only experienced mild respiratory symptoms and never developed pneumonia or hypoxemia (having a below-normal level of oxygen in the blood), requiring hospitalization. It is estimated that 87% of hospitalized COVID-19 patients continue to have symptoms 60 days after COVID-19 onset, and app-based symptom trackers estimate that 4.5% of patients have mild COVID-19 symptoms lasting more than 8 weeks. Accordingly, several million people in the world may already suffer from *long COVID-19*. The ten most common neurologic symptoms experienced by long-COVID are *brain fog* (81%), *headache* (68%), *numbness/tingling* (60%), *dysgeusia* (loss of taste) (59%), *anosmia* (loss of smell) (55%), *myalgia* (muscle pain) (55%), *dizziness* (47%), *pain* (43%), *blurred vision* (30%), and *tinnitus* (ringing in the ears) (29%). The most frequent non-neurologic symptoms include *fatigue* (85%), *depression/anxiety* (47%), *shortness of breath* (46%), *chest pain* (37%), *insomnia* (33%), *variation of heart rate and blood pressure* (30%), and *gastrointestinal symptoms* (29%). The constellation of long-COVID symptoms, particularly fatigue and a sense of cognitive dysfunction (e.g., memory impairment and problems with attention and concentration), in patients resembles the prominent fatigue and cognitive complaints seen in those after mild traumatic brain injury (TBI).<sup>5,41</sup>

A review of 66 studies of long-COVID survivors found that psychiatric and neuropsychiatric symptoms are an *essential* part of the syndrome, and that related factors included severity of the acute infection, duration of symptoms, and female gender. The studies highlight neuroinflammation as a potential contributor. The authors also found that there was a tendency toward symptom improvement over time.<sup>41</sup>

For adults over 65 years, there seems to be a slight increase in diagnoses of dementia in the first 14 – 90 days after a COVID-19 diagnosis.<sup>56</sup> Research indicates that individuals who have been hospitalized for COVID-19 or developed encephalopathy (any brain disease that impacts brain function) due to their illness are more likely to experience neurological complications, a psychotic disorder, mood disorder, anxiety disorder, substance use disorder, and insomnia.<sup>57</sup> Although the estimated incidence is modest in the whole COVID-19 cohort (0.67%), 1.46% of hospitalized cases and 4.72% of those who had neurological symptoms related to their COVID-19 infection received a first diagnosis of dementia within six months.

**Individuals with even mild cases of COVID-19 are at higher risk for depression and anxiety, as well as cognitive dysfunction**<sup>40,42,43,44,45,58</sup> This research is congruent with earlier research on COVID-19 which demonstrated evidence that survivors are at increased risk for mood and anxiety disorders and dementia in the three months following infection.

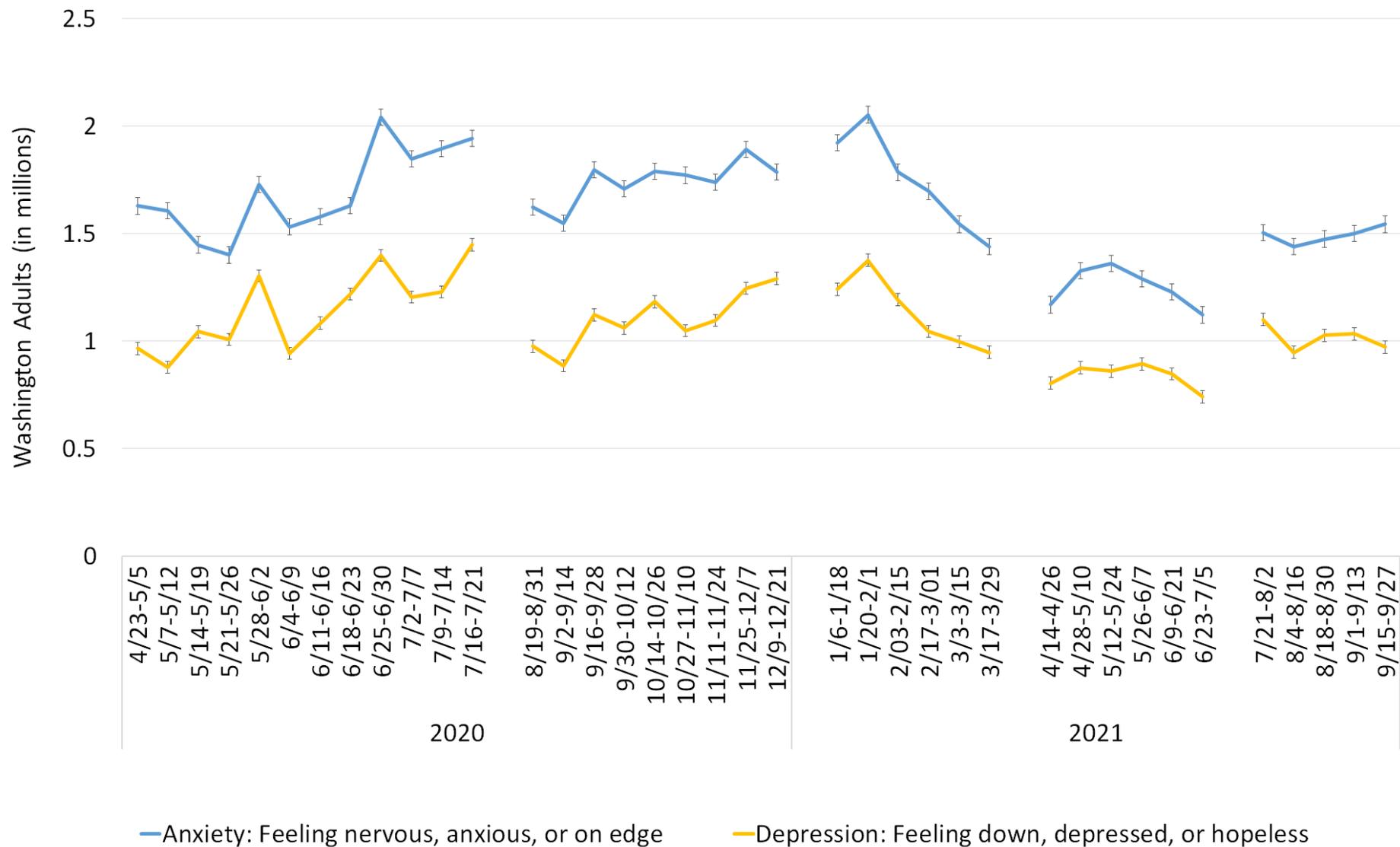
New research has also shown that there seems to be some improvement in mental health symptoms, specifically depression for individuals, who received at least one dose of the vaccine between December 2020 and March 2021.<sup>59</sup>

## Takeaways

- Behavioral health supports for children, adolescents, and teens will need to be in place as we move into the remainder of the fourth quarter of 2021. For more information on specific behavioral health strategies and interventions to assist with this process, please see the [COVID-19 Back-to-Classroom THINK Toolbox: Teaching with Healthcare Informed Neurological Strategies for Kids](#)<sup>5</sup>.
- Ambiguity, tension, and even anger related to workplace and social contexts will remain high throughout remaining months of 2021. Feeling overwhelmed and anxious and experiencing interpersonal challenges and generalized discomfort may remain high as well.
- Bi-weekly survey data suggest that approximately 1.54million Washington adults are experiencing symptoms of anxiety on at least most days and approximately 970,000 are experiencing symptoms of depression on at least most days (Figure 3).<sup>13</sup> Those who indicated female sex at birth have an increased symptom reporting rate for anxiety (36% for females, compared to 24% for males) and depression (22% for females, compared to 16% for males). For these measures, the standard error suggests that the inaccuracy of estimates may be 8.3% above or below the numbers previously mentioned.
- Survey data collected by the U.S. Census Bureau for August 19, 2020 – September 27, 2021 show the number of adults in Washington who received counseling and the number who delayed or did not receive care (Figure 4).<sup>13</sup> Among those who responded to the survey, those ages 30 – 39 were the most likely to report they needed counseling or therapy, but did not receive it (20%), and those ages 18 – 29 were the second most likely (17%). Survey respondents were not asked why they did not receive behavioral healthcare. For these measures, the standard error suggests that the inaccuracy of estimates may be around 6.9% above or below the numbers previously mentioned.

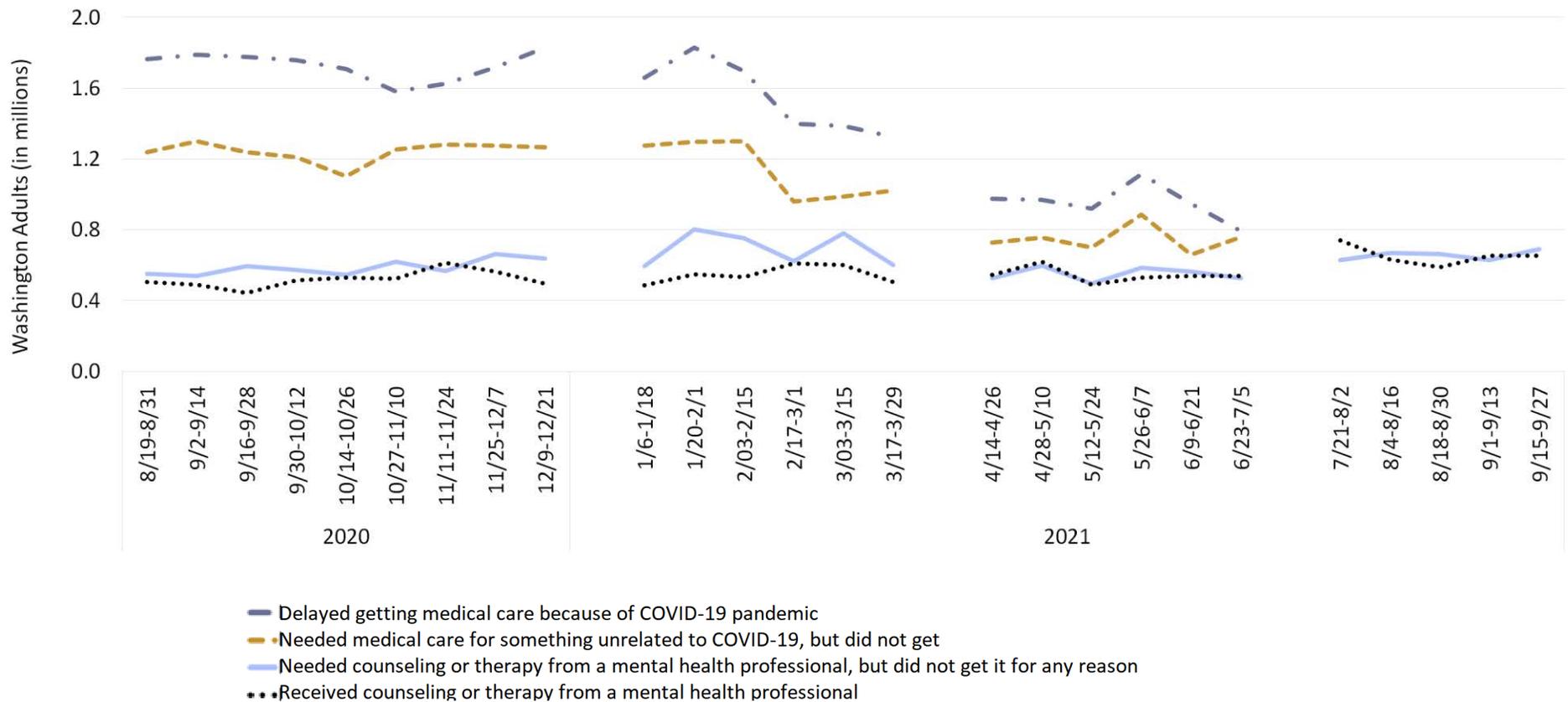
---

<sup>5</sup> <https://www.doh.wa.gov/Portals/1/Documents/1600/coronavirus/821-148-BackToClassroomToolbox.pdf>



**Figure 3: Estimated Washington adults experiencing symptoms of anxiety and depression at least most days, by week: April 23, 2020 – September 27, 2021 (Source: U.S. Census Bureau)**

Note: Census data is unavailable for the periods of July 22 – August 18, 2020, December 21, 2020 – January 6, 2021, and March 30 – April 14, 2021.



**Figure 4: Estimated Washington adults who received or delayed medical care or counseling, by week: August 19, 2020 – September 27, 2021 (Source: U.S. Census Bureau)**

Note: The U.S. Census Bureau began this data collection in August 2020 and paused briefly for the period of December 23, 2020 – January 3, 2021, March 30 – April 14, 2021, and July 6 – 18, 2021.

## Acknowledgements

This document was developed by the Washington State Department of Health’s Behavioral Health Strike Team for the COVID-19 response. The strike team is a group of clinical psychologists, psychiatrists, and therapists who are professionals in disaster relief and behavioral health. Lead authors from the Behavioral Health Strike Team are Kira Mauseth, Ph.D., Tona McGuire, Ph.D., and Stacy Cecchet, Ph.D., ABPP. Research support for this report was provided by undergraduate psychology students at Seattle University.

## References

1. Eastwood, M., & Peacocke, J. (1976). Seasonal Patterns of Suicide, Depression and Electroconvulsive Therapy. *British Journal of Psychiatry*, 129(5), 472-475. Doi:10.1192/bjp.129.5.472
2. Ayers, J. W., Althouse, B. M., Allem, J.-p., Rosenquist, J. N., & Ford, D. E. (2-13). Seasonality in Seeking Mental Health Information on Google. *American Journal of Preventive Medicine*, 44(5) 520-525. <https://doi.org.proxy.seattleu.edu/10.1016/j.amepre/2013.01.012>
3. Sullivan, B., & Payne, T. W. (2007). Affective Disorders and Cognitive Failures: A Comparison of Seasonal and Nonseasonal Depression. *American Journal of Psychiatry*, 164(11), 1663-1667. <https://doi.org.proxy.seattleu.edu/10.1176/appi.ajp.2007.016111792>
4. Center for Disease Control. (2021, September 10) *Trends in COVID-19 Cases, Emergency Department Visits, and Hospital Admissions Among Children and Adolescents Aged 0-17 Years – United States, August 2020 – August 2021*. Morbidity and Mortality Weekly Report (MMWR). [https://www.cdc.gov/mmwr/volumes/70/wr/mm7036e1.htm?s\\_cid=mm7036e1\\_w](https://www.cdc.gov/mmwr/volumes/70/wr/mm7036e1.htm?s_cid=mm7036e1_w)
5. Nakamura, Z.M., et al., (2021) Neuropsychiatric Complications of COVID-19. *Curr Psychiatry Rep* 23(25) <https://doi.org/10.1007/s11920-021-01237-9>
6. Thomas, S. P. (2021). Psychosis Related to COVID-19: Reports of a Disturbing New Complication. *Issues in Mental Health Nursing*, 42(2), 1111. <https://doi.org/10.1080/01612840.2021.1873054>
7. Substance Abuse and Mental Health Services Administration. (2015). *Supplemental research bulletin - Issue 5: Traumatic stress and suicide after disasters*. SAMHSA. [https://www.samhsa.gov/sites/default/files/dtac/srb\\_sept2015.pdf](https://www.samhsa.gov/sites/default/files/dtac/srb_sept2015.pdf)
8. Centers for Disease Control and Prevention. (2018). The continuum of pandemic phases. CDC. <https://www.cdc.gov/flu/pandemic-resources/planning-preparedness/global-planning-508.html>
9. Anesi, G. L. & Manaker, S. (2020). *Coronavirus disease 2019 (COVID-19): Critical care issues*. <https://www.uptodate.com/contents/coronavirus-disease-2019-covid-19-critical-care-issues>
10. Bhatraju, P. K., Ghassemieh, B. J., Nichols, M., Kim, R., Jerome, K. R., Nalla, A. K., Greninger, A. L., Pipavath, S., Wurfel, M. M., Evans, L., Kritek, P. A., West, R. E., et al. (2020). Covid-19 in Critically Ill Patients in the Seattle Region. *New England Journal of Medicine*. 10.1056/NEJMoa2004500
11. Substance Abuse and Mental Health Services Administration. (2020). *Phases of Disaster*. SAMHSA. <https://www.samhsa.gov/dtac/recovering-disasters/phases-disaster>
12. Washington State Department of Health. *Behavioral Health Impact Situation Report: Week of March 15, 2021*. 821-102-32.
13. U.S. Census Bureau. *Household Pulse Survey Data Tables*. <https://www.census.gov/programs-surveys/household-pulse-survey/data.html>
14. Centers for Disease Control and Prevention. (2021). *Health Equity Considerations and Racial and Ethnic Minority Groups*. <https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html>
15. Tai, D., Shah, A., Doubeni, C. A., Sia, I. G., & Wieland, M. L. (2021). The Disproportionate Impact of COVID-19 on Racial and Ethnic Minorities in the United States. *Clinical infectious diseases: an official publication of the Infectious Diseases Society of America*, 72(4), 703–706. <https://doi.org/10.1093/cid/ciaa815>
16. Hossain, F., Clatty, A., (2021). Self-care strategies in response to nurses' moral injury during COVID-19 pandemic. *Nursing Ethics*, 2021 Feb; 28(1): 23-32. Published online Oct 30 2020. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7694672/doi:10.1177/0969733020961825>
17. Hummer, R.A. & Hernandez, E.M. (2015). *The Effect of Educational Attainment on Adult Mortality in the United States*. *Popul Bull.*, 68(1): 1–16. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC45622/>
18. Kwakye, I. & Kibort-Crocker, E. (March, 2021). *Facing Learning Disruption: Examining the Effects of the COVID-19 Pandemic on K-12 Students*. Washington Student Achievement Council.
19. COVID-19 Student Survey. Retrieved September 20, 2021 from <https://csswashington.org>
20. Eberhart, M., Orthaber, S., & Kerbl, R. (2021). The impact of face masks on children—A mini review. *Acta Paediatrica*, 110(6), 1778-1783. <https://doi.org/10.1111/apa.15784>
21. Nobrega, M., Opice, R., Lauletta, M. M., & Nobrega, C. A. (2020). How face masks can affect school performance. *International Journal of Pediatric Otorhinolaryngology*, 138, 110328. <https://doi.org/10.1016/j.ijporl.2020.110328>

22. Scharz, S., Jenetzky, E., Krafft, H., Maurer, T., Martin, D. (n.d., preprint?). Corona children studies "Co-Ki": First results of a Germany-wide registry on mouth and nose covering (mask) in children. *Research Square*. 10.21203/rs.3.rs-124394/v4 (link here: <https://assets.researchsquare.com/files/rs-124394/v2/bdeb04c9-7a3e-4bb4-997a-0dce53145ac7.pdf?c=1614364619>)
23. Ruba, A. & Pollak, S. (2020). Children's emotional inferences from masked faces: Implications for social interactions during COVID-19. *PLOS ONE*. <https://doi.org/10.1371/journal.pone.0243708> (discusses impact to social interaction in children + emotional recognition)
24. Gori, M., Schiatti, L., & Amadeo, M. (2021). Masking emotions: Face masks impair how we read emotions. *Frontier Psychology*, <https://doi.org/10.3389/fpsyg.2021.669432>
25. Northwest Healthcare Response Network. (n.d.) <https://nwhrn.org>
26. Gassman-Pines, A., Oltmans Ananat, E., & Fitz-Henley, J. (2020). COVID-19 and Parent-Child Psychological Well-being. *Pediatrics*, 146(4), e2020007294. doi: 10.1542/peds.2020-007294
27. Czeisler, M. É., Lane, R. I., Petrosky, E., et al. (2020). Mental Health, Substance Use, and Suicidal Ideation During the COVID-19 Pandemic — United States, June 24–30, 2020. *MMWR Morb Mortal Wkly Rep*, 69, 1049–1057. <http://dx.doi.org/10.15585/mmwr.mm6932a1>
28. Center for Disease Control. (2021, June 18) *Emergency Department Visits for Suspected Suicide Attempts Among Persons Aged 12-25 Years Before and During the COVID-19 Pandemic – United States, January 2019 – May 2021*. Morbidity and Mortality Weekly Report (MMWR). <https://www.cdc.gov/mmwr/volumes/70/wr/mm7024e1.htm>
29. Washington State Department of Health. (2019). *Annual Report: Firearm Fatality and Suicide Prevention – A Public Health Approach*. <https://www.doh.wa.gov/Portals/1/Documents/8390/346-087-SuicideFirearmPrevention.pdf>
30. Rodriguez-Seijas, C., Stohl, M., Hasin, D. S., Eaton, N. R. (2015). Transdiagnostic Factors and Mediation of the Relationship Between Perceived Racial Discrimination and Mental Disorders. *JAMA Psychiatry*, 72(7), 706–713. doi:10.1001/jamapsychiatry.2015.0148
31. Wen, J., Aston, J., Liu, X. & Ying, T. (2020) Effects of misleading media coverage on public health crisis: a case of the 2019 novel coronavirus outbreak in China. *Anatolia*, 31(2), 331-336. <https://doi.org/10.1080/13032917.2020.1730621>
32. Gover, Angela R., Harper, Shannon B., Langton, Lynn. (July 2020). *Anti-Asian Hate Crime During the COVID-19 Pandemic: Exploring the Reproduction of Inequality*. National Center for Biotechnology Information, U.S. National Library of Medicine. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7364747/>
33. Choi, Cynthia, Kulkarni, Manjusha P. (March 2020). *Asian American Pacific Islander (AAPI) Civil Rights Organizations Establishes STOP AAPI HATE Reporting Center*. Asian Pacific Planning and Policy Council (A3PCON). <http://www.asianpacificpolicyandplanningcouncil.org/asian-american-pacific-islander-aapi-civil-rights-organizations-establishes-stop-aapi-hate-reporting-center/>
34. SAMHSA. (2017, July). *Greater Impact: How Disasters Affect People of Low Socioeconomic Status*. Disaster Technical Assistance Center Supplemental Research Bulletin. [https://www.samhsa.gov/sites/default/files/dtac/srb-low-ses\\_2.pdf](https://www.samhsa.gov/sites/default/files/dtac/srb-low-ses_2.pdf)
35. Parker, K., Horowitz, J., Brown, A. (2020, April 21). *About Half of Lower-Income Americans Report Household Job or Wage Loss Due to COVID-19*. Pew Research Center Social and Demographic Trends
36. Chidambaram, P. (2020, August 21). *The Implications of COVID-19 for Mental Health and Substance Use*. Kaiser Family Foundation. <https://www.kff.org/health-reform/issue-brief/the-implications-of-covid-19-for-mental-health-and-substance-use/>
37. North, C. S., Oliver, J., & Pandya, A. (2012). Examining a comprehensive model of disaster-related posttraumatic stress disorder in systematically studied survivors of 10 disasters. *American Journal of Public Health*, 102(10), e40–e48. 10.2105/AJPH.2012.300689
38. Kessler, R. C., Galea, S., Gruber, M. J., Sampson, N. A., Ursano, R. J., & Wessely, S. (2008). Trends in mental illness and suicidality after Hurricane Katrina. *Molecular Psychiatry*, 13, 374–384.
39. Brown, E., & Wehby, G. L. (2019). Economic conditions and drug and opioid overdose deaths. *Medical Care Research and Review*, 76(4), 462–477.
40. Phillips, J. A. (2014). Suicide and the Great Recession of 2007–2009: The Role of Economic Factors in the 50 U.S. States. *Social Science & Medicine*, 116, 22-31.
41. Meadows Mental Health Policy Institute (2020). *COVID-19 Response Briefing: Mental Health and Substance Use Disorder Impacts of a COVID-19 Economic Recession*. <https://www.texasstateofmind.org/uploads/whitepapers/COVID-MHSUDIImpacts.pdf>

42. Bianchi, F., Bianchi, G., & Song, D. (2020). *The long-term impact of the covid-19 unemployment shock on life expectancy and mortality rates*. National Bureau of Economic Research Working Paper Series, Working Paper 28304. [https://www.nber.org/papers/w28304?utm\\_campaign=ntwh&utm\\_medium=email&utm\\_source=ntwg6](https://www.nber.org/papers/w28304?utm_campaign=ntwh&utm_medium=email&utm_source=ntwg6)
43. Ludwig Institute for Shared Economic Prosperity (2020). *Measuring Better: Development of 'True Rate of Unemployment' Data as the Basis for Social and Economic Policy*. White Paper. [https://assets.website-files.com/5f67c16a6ca3251ecc11eca7/5fd77b946b8ccc555b8cc6e5\\_November%20White%20Paper%201220.pdf](https://assets.website-files.com/5f67c16a6ca3251ecc11eca7/5fd77b946b8ccc555b8cc6e5_November%20White%20Paper%201220.pdf)
44. Ludwig, E. (2021). *Unemployment Is Much Worse Than You Think—Here's Why*. Politico. <https://www.politico.com/news/agenda/2021/01/25/unemployment-worse-than-you-think-462218>
45. Czeisler, M. É., Lane, R. I., Petrosky, E., et al. (2020). Mental Health, Substance Use, and Suicidal Ideation During the COVID-19 Pandemic — United States, June 24–30, 2020. *MMWR Morb Mortal Wkly Rep*, 69, 1049–1057. <http://dx.doi.org/10.15585/mmwr.mm6932a1>
46. Monthly employee report. (2021, August). Retrieved October 8, 2021, from <https://esd.wa.gov/labormarketinfo/monthly-employment-report>.
47. The Monthly Employment Report. (2021, August). Retrieved October 8, 2021, from <https://media.esd.wa.gov/esdwa/Default/ESDWAGOV/labor-market-info/Libraries/Economic-reports/MER/MER%202020/MER-2021-08.pdf>.
48. Ludwig Institute for Shared Economic Prosperity (2021). *The True Rate of Unemployment*. <https://www.lisep.org>
49. Washington State Department of Health, Center for Health Statistics, Death Certificate Data, 1990–2018, Community Health Assessment Tool (CHAT), October 2019.
50. Washington State Employment Security Department. *Facts and Figures Report—June 2020*. <https://esd.wa.gov/labormarketinfo/facts-and-figures-report>
51. Washington State Employment Security Department. *Facts and Figures Report—June 2020*. <https://esd.wa.gov/labormarketinfo/facts-and-figures-report>
52. Taquet, M., Luciano, S., Geddes, J. R., & Harrison, P. J. (2021). Bidirectional associations between COVID-19 and psychiatric disorder: retrospective cohort studies of 62,354 COVID-19 cases in the USA. *The Lancet. Psychiatry*, 8(2), 130–140. [https://doi.org/10.1016/S2215-0366\(20\)30462-4](https://doi.org/10.1016/S2215-0366(20)30462-4)
53. Graham E., et al., (2021). Persistent neurologic symptoms and cognitive dysfunction in non-hospitalized Covid-19 “long haulers” *Annals of clinical and translational neurology*, 8(5) 1073-1085. <https://doi.org/10.1002/acn3.51350>
54. Chacko, M., Job, A., Caston, F., 3rd, George, P., Yacoub, A., & Cáceda, R. (2020). COVID-19-Induced Psychosis and Suicidal Behavior: Case Report. *SN comprehensive clinical medicine*, 1–5. Advance online publication. <https://doi.org/10.1007/s42399-020-00530-7>
55. Schou, T. M., Joca, S., Gregers W., & Bay-Richter, C. (2021) Psychiatric and neuropsychiatric sequelae of COVID-19 – a systematic review, *Brain, Behavior, and Immunity*. ISSN 0889-1591, <https://doi.org/10.1016/j.bbi.2021.07.018>.
56. A. Hampshire et al., Cognitive deficits in people who have recovered from COVID-19, *EclinicalMedicine* (2021), <https://doi.org/10.1016/j.eclinm.2021.101044>
57. Taquet, M., Geddes, J. R., Husain, M., Luciano, S., & Harrison, P. J. (2021). 6-month neurological and psychiatric outcomes in 236 379 survivors of COVID-19: a retrospective cohort study using electronic health records. *The Lancet. Psychiatry*, 8(5), 416–427. [https://doi.org/10.1016/S2215-0366\(21\)00084-5](https://doi.org/10.1016/S2215-0366(21)00084-5)
58. Center for Disease Control. (2021, July 1). *Underlying Medical Conditions and Severe Illness Among 540,667 Adults Hospitalized With COVID-19, March 2020 – March 2021*. [https://www.cdc.gov/pcd/issues/2021/21\\_0123.htm](https://www.cdc.gov/pcd/issues/2021/21_0123.htm)
59. PLOS ONE. (2021, September 8). *COVID-19 vaccines and mental distress*. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0256406>