

## Introduction

Chronic conditions and diseases in the United States did not disappear during the COVID-19 pandemic, but for many medical practices, the patients coming for treatment did. In the first months after the virus reached the US, 97% of physician practices reported a drop in care volume.<sup>1</sup> The drop correlates with a national survey indicating that 41% of adult Americans had delayed or avoided medical care, including emergency care (12%) and routine care (32%).<sup>2</sup> Another survey focused on the reasons behind deferred care reported that 87% of patients who skipped scheduled care cited safety concerns related to the pandemic as the reason, while 9% put off care due to job and/or insurance loss.<sup>3</sup>

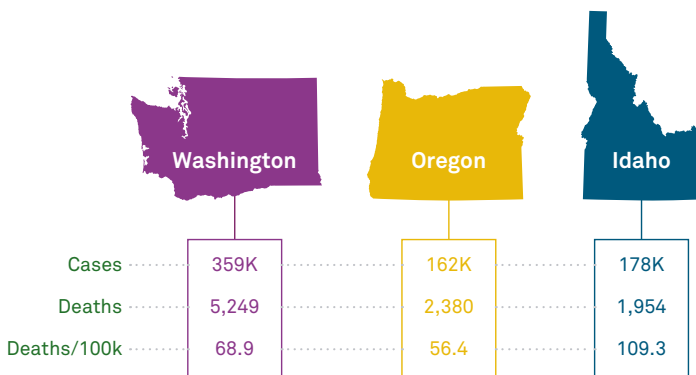
On the 1-year anniversary of the announcement of stay-at-home orders in the Pacific Northwest states of Washington, Oregon and Idaho, this paper takes a look at the impact COVID-19 has had, and is projected to have, on healthcare in the region.

## The COVID-19 experience in the Pacific Northwest

The first confirmed case relating to COVID-19 in the United States presented in Washington on January 21, 2020, with the first death announced shortly thereafter, just as the virus was confirmed to have reached Oregon. Governors Jay Inslee and Kate Brown issued a statewide stay-at-home order on March 23rd,<sup>4,5</sup> and 2 days later, Governor Brad Little joined suit on Idaho.

One year after the stay-at-home orders were announced, the combined 3-state Pacific Northwest region had seen nearly 700,000 cases and more than 9,500 deaths. The loss of life is substantial, with Idaho having experienced the highest death rate per 100,000 people (See Figure 1).

Figure 1. Snapshot of COVID impact as of March 23, 2021<sup>6-8</sup>



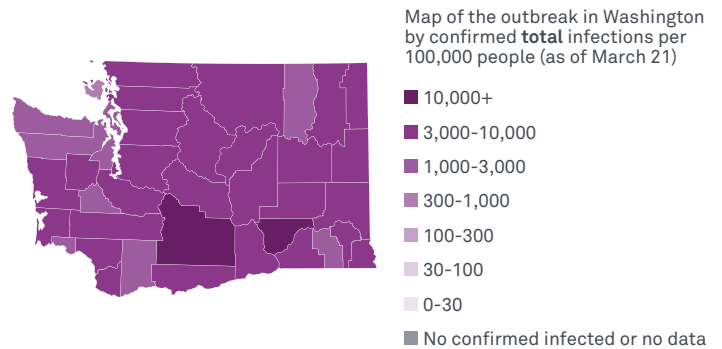
## Geographic distribution of COVID infections and population characteristics

People living close to the poverty line are likelier to have a chronic health condition, which has proven to make the coronavirus more deadly. Nationally, studies have shown that Hispanics and Latinos are 1.7 times more likely to contract COVID-19 than their non-Hispanic white counterparts, as well as 4.1 times more likely to be hospitalized from infection and 2.8 times more likely to die as a result.<sup>9</sup> These trends are evident in the Pacific Northwest.

### WASHINGTON

In Washington, the rate of COVID-19 cases is nearly 3 times higher for Black people, and nearly 7 times higher for Hispanic/Latino people, Native Hawaiian and Pacific Islanders as compared to white and Asian individuals.<sup>10</sup> Yakima and Franklin counties have experienced the highest infection rates per 100K population (See Figure 2). Yakima includes the Yakima Indian Reservation, comprising more than a third of the county's total area with a population last recorded as 31,799.<sup>11</sup> According to the 2000 US census, 50.2% of the county's population are Hispanic or Latino and about 17% of people live under the poverty line. Franklin County is 1 of 2 Washington counties with the highest per capita percentage of Latino residents in the state where 13.5% of the population lives below the poverty line.<sup>12</sup>

Figure 2. Washington Outbreak Map by confirmed infections per 100K people by county<sup>13</sup>

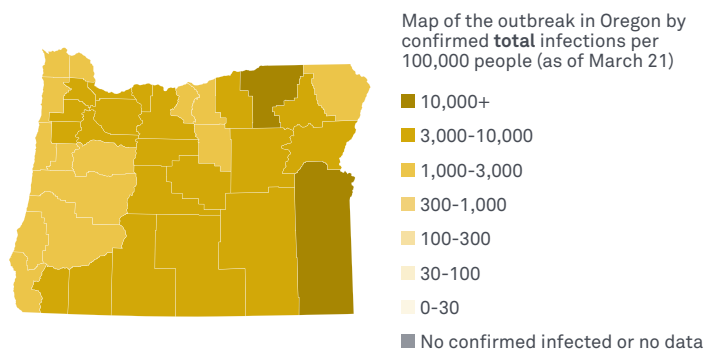


### OREGON

In Oregon, the western counties experienced relatively low rates of infection, while the sparsely populated eastern counties of Malheur and Umatilla had the highest rates of confirmed cases per 100K people (See Figure 3). In both counties, the Hispanic/Latino population is 34.6% of the total residents in Malheur and 27.6% in Umatilla, which is also home to the Umatilla

Indian Reservation. The percentage of families living below the poverty line in Malheur and Umatilla Counties is 21% and 14%, respectively.<sup>12</sup>

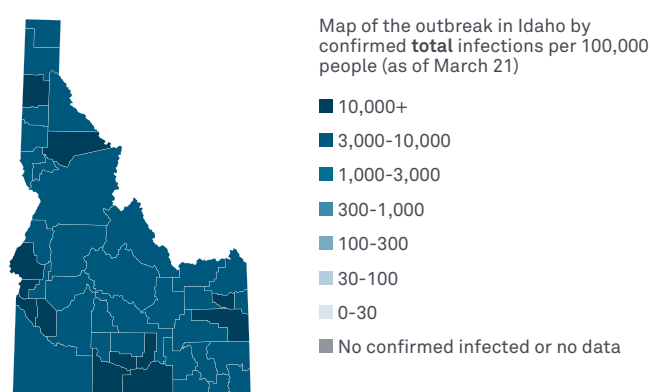
Figure 3. Oregon Outbreak Map by confirmed infections per 100K people by county<sup>14</sup>



## IDAHO

Idaho counties have sustained rates of 3,000-10,000 infections per 100K people with the exception of 4 clusters of counties that had rates above 10,000: In the north, Kootenai and Clearwater counties; in the west, Washington, Payette, Canyon and Ada counties; in the south, Twin Falls, Cassia, Jerome, and Minidoka counties; and in the east, Bonneville and Madison counties. These clusters closely align with the most population dense areas in the state: Coeur d'Alene in the north; Boise, Meridian, and Nampa in the west; Twin Falls in the south and Idaho Falls in the east. The only exception is sparsely populated Clearwater County, for which a high rate reflects an outbreak at the Idaho Correctional Institution at Orofino.<sup>15</sup>

Figure 4. Idaho Outbreak Map by confirmed infections per 100K people by county<sup>16</sup>



## Factors impacting COVID-19 risk and deferred care

The decision to defer medical care during the pandemic stemmed from public health efforts such as stay-at-

home orders, lack of access to care due to temporary closures, and general fear of exposure to the virus. However, some groups of people were more likely to defer care than others. Two factors that have been documented to contribute to higher rates of deferred care are the existence of chronic conditions and race.

As has been well substantiated in the medical literature, underlying medical conditions increase one's risk for severe COVID disease. A Centers for Disease Control and Prevention (CDC) survey documented a higher relative avoidance of urgent or emergency care during the pandemic among persons with underlying medical conditions and persons with disabilities, undoubtedly due to an abundance of caution to prevent contracting COVID-19.<sup>2</sup> Major co-morbidities that increase the risk for serious COVID-19 illness include heart disease, diabetes, and obesity. However, as compared to national rates, the states of the Pacific Northwest have relatively low deaths from cardiovascular disease, below average morbidity from diabetes and lower rates of obesity.<sup>17,18,19</sup>

However, this relative health may not extend to all populations in the Pacific Northwest. American Indians, for example, experience a high burden of mortality and other disparities compared with the general population.<sup>20</sup> Factors contributing to racial and ethnic disparities in COVID-19 exposure, illness, and death include long-standing systemic inequities that influence life expectancy, including: prevalence and underlying medical conditions; health insurance status; healthcare access and utilization; work and living circumstances; use of public transportation; and essential worker status. To understand the scale of health inequity and its impact on the Pacific Northwest during the pandemic, it is important to consider ethnicity. Large populations in Washington and Oregon of Hispanic, Latino, and Native American people, living at or below the poverty level, are at especially high risk, as evidenced by the county infection rates cited above. According to the CDC, this correlation carries through to deferred care patterns as well, finding that avoidance of urgent or emergency care was more prevalent in Black and Hispanic adults.<sup>13</sup>

## The hazards of deferred testing

In the pre-COVID era, healthcare systems were already faced with workforce shortages and budget constraints. Therefore, an explosion of needed medical interventions as we emerge from the pandemic could be disastrous to provider organizations. In the months to come,

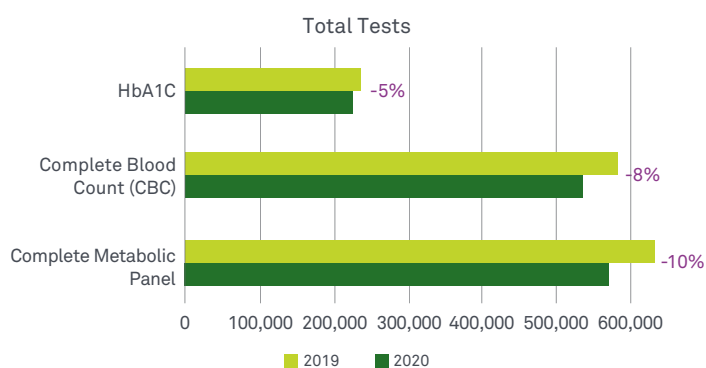
preventive care, including laboratory screening tests, will be critical to reducing the future need for intensive interventions to treat advanced disease among patients who put off care.

A stark example of the consequences of deferred care relates to cardiovascular health. Deaths from ischemic heart disease and hypertensive diseases in the US increased during the COVID-19 pandemic, while patients experienced significant disruptions in cardiovascular disease testing.<sup>21</sup> A study from 9 high-volume cardiac catheterization laboratories found a 38% decrease in patients treated for ST-elevation myocardial infarction, a life-threatening condition.<sup>22</sup> Indeed, advanced blood testing can help uncover the possible hidden risks to cardiovascular health and when used, can inform treatment plans to reduce overall cardiovascular risk. These laboratory tests include assessment of lipoprotein subfractionation, apolipoproteins, inflammatory markers, metabolic markers, cardiovascular genetics, and indicators of cardiac stress, such as NT-proBNP and the ST2 protein. The sooner patients reengage in routine testing, the sooner providers can establish effective care plans.

### Illustrations of regional gaps in care and potential impact

Analysis of data from Quest Diagnostics' extensive clinical laboratory database shows drops in important preventive routine testing and screening in the Pacific Northwest states. There was a decline in the monitoring of key baseline assessments and tests that support routine care and establish a view of patients' overall health. For example, complete blood count (CBC), comprehensive metabolic panel (CMP), and Hemoglobin A1c (HbA1c) are essential tools for assessing diabetes, kidney function, and overall health. In the Pacific Northwest, utilization of these tests fell during the pandemic (See Figure 5).

Figure 5. Reduction in essential routine testing.



Indeed it is concerning for patients to keep postponing routine care appointments and lab work, especially for individuals with cancer, heart failure, chronic lung and kidney diseases or diabetes — illnesses that can have serious complications if they're not managed closely. For example, the complications of diabetes may include eye disease, kidney disease, and nerve damage. Specifically, below are two examples of routine testing and screening that have experienced significant drops year-over-year from 2019 to 2020.

### Cancer screening

Patients with or at-risk of cancer may be disproportionately impacted by disruption in diagnosis and treatment. The volume of preventive cancer screenings dropped sharply during the onset of the pandemic, and despite a recent improvement, remain well below pre-pandemic levels. As the cumulative number of missed screenings climbs, the number of newly diagnosed cancers has fallen significantly.<sup>23</sup> These trends raise concern that many cancers will be detected at a more advanced stage, which may result in poorer prognoses. One study suggests a potential increase of 33,890 cancer deaths in the US due to this deferred care.<sup>24</sup>

The Pacific Northwest experienced a

## 23%

year-over-year drop in both colorectal screenings and cervical cancer screening from 2019 to 2020.

Immediately following the declaration of the COVID-19 national emergency, preventive colorectal cancer (CRC) screenings abruptly dropped 86% and cervical screenings fell 94%.<sup>25</sup> Between March 15 and June 16, 2020, an estimated 95,000 (CRC) and 40,000 (cervical) exams were missed nationwide.<sup>26</sup> Indeed, in the Pacific Northwest, year-over-year CRC screening test utilization fell 23%. Given that a delay in care by >9 months after a positive fecal immunochemical test (FIT) can lead to increased risk of CRC and advanced stage CRC,<sup>27,28</sup> this decline may have a serious consequences in the region. Likewise, cervical cancer screening fell 23%, accounting for roughly 98,000 fewer tests administered (See Figures 6 and 7).

Figure 6. Pacific Northwest (WA, OR, ID) Colorectal Cancer Screening testing year-over-year comparison

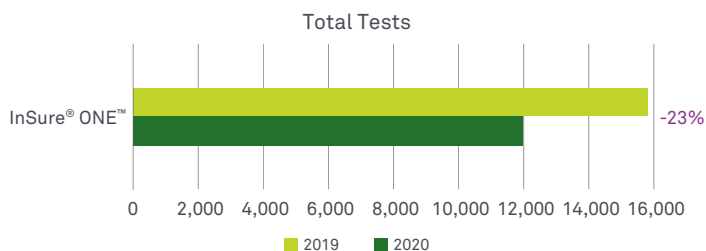
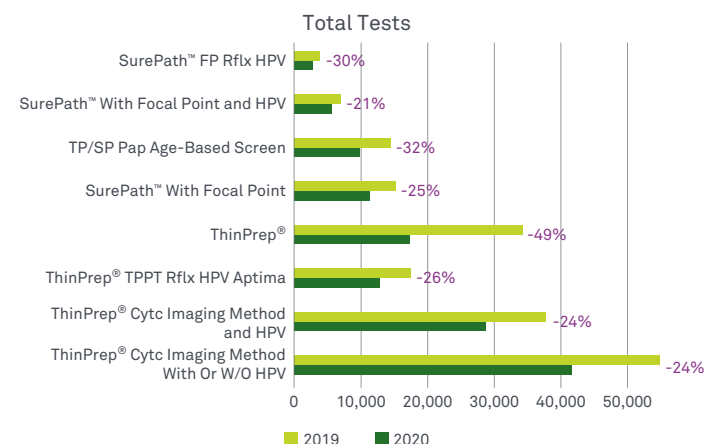


Figure 7. Pacific Northwest (WA, OR, ID) Cervical Cancer Screening testing year-over-year comparison



### Sexually-transmitted infection (STI) screening and testing

Rates of common STIs that were projected to hit record highs in the US, took an abrupt downturn during the pandemic. Far from good news, the drop is likely due to deferred screening. As compared to 2019, total testing volumes in the Pacific Northwest states fell an average of 9% for human papillomavirus (HPV), 35% for Hepatitis C and 33% for the herpes simplex virus. As a result, undiagnosed, and therefore untreated, cases of otherwise minimally harmful infections may lead to serious conditions such as pelvic inflammatory disease, chronic pain, infertility, and even blindness and death in newborns.

Combined, HIV, Chlamydia, and Gonorrhea testing fell

# 20%

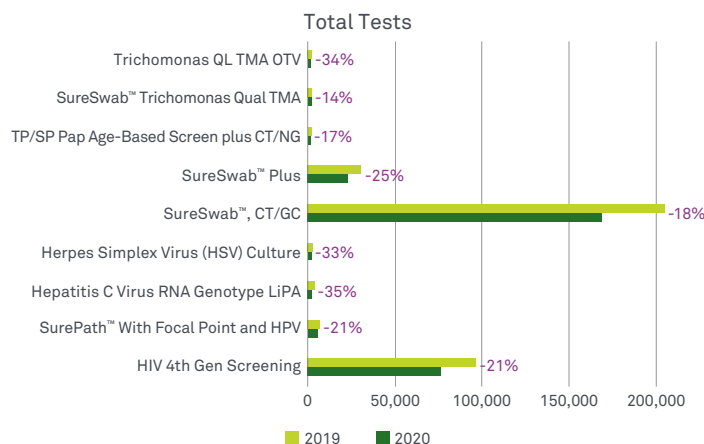
year-over-year in the Pacific Northwest from 2019 to 2020.

While there is reason to fear a post-pandemic STI epidemic, the CDC acknowledges that the risk to health of COVID-19 is greater than that of most STIs,

with a few exceptions. It is recommended that testing should continue only for symptomatic patients, women who are under 25 or pregnant, and people at high risk for STIs, including those with HIV. As of March 2021, it remains unadvised for asymptomatic patients to seek in-person STI testing.<sup>29</sup>

Testing for HIV is an exception. To the benefit of individual and public health, it is imperative that HIV is diagnosed early, treatment begins immediately, and an undetectable viral load is rapidly attained to prevent transmission.<sup>30</sup> Diagnosis of acute HIV requires a fourth-generation HIV test and/or a quantitative HIV RNA. However, the Pacific Northwest, which has relatively low rates of HIV per 100,000 people [Washington (6.7%), Oregon (5.5%), and Idaho (2.1%)<sup>31</sup>], has seen a 21% drop in HIV screening during COVID. Therefore it can be assumed that undiagnosed individuals may experience advancing disease and remain a transmission risk (See Figure 8).

Figure 8. Pacific Northwest (WA, OR, ID) STI testing year-over-year comparison



### Employing innovative solutions

Reinitiating preventative healthcare activities as soon as possible is essential, but not without challenges. Patient education has been found to reduce repeat hospitalizations and visits to emergency departments,<sup>32</sup> and to improve patient and caregiver quality of life.<sup>33</sup> COVID-19 created an immediate sense of urgency to integrate and deploy innovations in patient education into standard clinical care. Today, a combination of in-person and digital education techniques may increase access to education, reduce disparities, and ultimately quality of care. Furthermore, enhancing patient communication can

help to re-engage patients who have deferred care. From virtual visits to patient portals, automated appointment reminders, and online price transparency, the pandemic raised patient expectations surrounding the need for rapid and easy medical access, changing medical practices operations.

Patients remain fearful of exposure to COVID-19 while healthcare providers are facing pent-up demand for non-COVID-19 care. If there can be a silver lining, the pandemic has highlighted a critical need for effective alternatives to the standard-access model and laboratory screening methods for patients who cannot or prefer not to have in-person appointments. As providers begin to re-engage patients in preventative care, it is important for physicians to offer options that minimize risk for the patient. Preventive laboratory screening tests can be used in conjunction with telemedicine consultations so that people feel more comfortable returning to routine care. One such option, according to the CDC, is the use of rapid home tests, such as those for colorectal cancer screening, to improve access to care.<sup>34</sup>

With critical test results in hand, more and more physicians are able to leverage telemedicine technology to follow up with their patients and monitor chronic conditions. Where ordering and completing a lab test in a traditional setting can take days,

telehealth is making it possible to seamlessly connect a patient to a local testing center with a completed order request in minutes, and could even allow them to even order an in-home test. Thanks to recent policy changes during the pandemic, there are fewer barriers to telehealth access and it is growing as an effective way to deliver care.<sup>35</sup>

## Conclusion

As patients are vaccinated and emerge from stay-at-home orders there will be a pressing need to reinstate care, beginning with overdue testing to assess health status. To prepare and soften this surge, healthcare providers must understand where care gaps exist, and prioritize strategies to re-engage patients in routine care including laboratory testing. The Pacific Northwest states have seen significant reductions in essential screenings, which may have hindered treatment plans for existing conditions and prevented timely diagnosis of new conditions. Now is the time for physician practices to initiate or continue proactive outreach to patients. This engagement can be enhanced by offering telemedicine visits and safer, low-exposure laboratory testing options. Together, these methods will help physicians assess baseline health status and reestablish preventive health measures for patients who have deferred care throughout the pandemic.

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