

## Memorandum

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**To:** Metropolitan King County Council, Local Services Committee  
**From:** Nick Maue, Adam Porton, Hali Willis & Siming Xu, UW Evans School Graduate Consultants  
**Date:** May 20, 2021  
**RE:** Impact Analysis of King County's COVID-19 Isolation and Quarantine Sites

### Introduction

During the COVID-19 pandemic, King County operated four Isolation and Quarantine (I/Q) sites to provide a safe place to stay for individuals who had tested positive for COVID-19 or had been exposed to COVID-19, and who could not safely isolate or quarantine elsewhere. The majority of I/Q guests were experiencing homelessness at the time of their stay. In addition to basic COVID-related medical care, the sites provided guests with meals, amenities, and support for chronic health conditions, including behavioral and mental health support. The overarching goal of I/Q sites was to reduce the community spread of COVID-19 in King County.

At the request of the office of Metropolitan King County Councilmember Reagan Dunn, and in collaboration with the King County Department of Community and Human Services (DCHS) and Public Health Seattle & King County (PHSKC), we examined I/Q sites' operations, equity, and impact on public health in King County. We intend for this report to be used to inform similar responses to future public health crises.

Our research was guided by three questions:

1. How were I/Q sites developed and implemented, and how did they change over time?
2. Who did I/Q sites serve, and how do they compare to relevant comparison populations in King County?
3. How many COVID-19 cases, hospitalizations and deaths did I/Q sites prevent?

### How were I/Q sites developed and implemented, and how did they change over time?

We analyzed public and internal King County documents and conducted 12 interviews with key program staff. King County's I/Q sites were among the first of their kind in the U.S. and were rapidly developed and implemented in January-March of 2020. I/Q site policies iteratively evolved throughout the pandemic in response to updated CDC guidance and scientific

understanding of COVID-19. Partnerships between DCHS, PHSKC, other local governments and nonprofit organizations were critical to the program's creation and implementation.

### Key Successes

- Preventing an estimated 2,032 to 24,508 cases of COVID-19 in King County
- Providing more than 2,200 guests, primarily individuals experiencing homelessness, with a safe place to isolate or quarantine
- Providing guests with individualized care and wraparound services

### Key Challenges

- Nursing staff shortages, which I/Q sites addressed by redeploying Public Health nurses and hiring from nursing agencies
- Developing new policies and procedures to respond to changing CDC guidance, pandemic conditions, and scientific understanding of the virus
- Connecting people living unsheltered to I/Q services
- Accommodating large families
- Collecting guest demographic data

## Who did I/Q sites serve, and how did they compare to relevant comparison populations in King County?

We computed race, gender, and age descriptive statistics for all guests who stayed at I/Q sites between March 2020 and January 2021. We also compared the demographics of I/Q guests experiencing homelessness to housed I/Q guests.

- Around 80% of I/Q guests were experiencing homelessness at the time of their stay.
- The majority (70%) of housed I/Q guests were confirmed COVID-positive, while only 44% of guests experiencing homelessness were confirmed COVID-positive (guests not confirmed COVID-positive had a known exposure to COVID-19 or had symptoms of COVID-19 but had not yet been tested).

To assess whether communities in King County had equitable access to I/Q sites, we compared the demographics of COVID-positive housed I/Q guests to the demographics of all COVID-positive individuals in King County between March 2020 and January 2021.

- Among COVID-positive housed I/Q guests, individuals who identify as Black/African American were overrepresented at I/Q sites compared to the County population with COVID-19. This might indicate greater need for I/Q sites among Black/African American King County residents, who are more likely than Whites to experience socioeconomic conditions that preclude safe isolation or quarantine at home such as living in a multigenerational household.

- Housed female guests were underrepresented at I/Q sites, as were youth (under 20). Further research is needed to explore reasons for these trends, but it is possible that the limited space of I/Q rooms may have deterred women with children from coming to I/Q, especially if they were housed and not in need of shelter.
- Housed elderly guests (70 or older) were also underrepresented at I/Q sites. Since the elderly have a higher risk of severe illness due to COVID-19 than individuals under age 70, many elderly individuals with COVID-19 may have needed a more intensive level of care that is only available at hospitals.

Finally, we compared the demographics of COVID-19-positive I/Q site guests experiencing homelessness with the demographics of King County's COVID-19-positive homeless population.

- I/Q sites equitably served COVID-positive people experiencing homelessness on the basis of race and age.
- Female guests experiencing homelessness may have been underrepresented at I/Q sites, but missing gender data might affect this apparent disparity.

We note that data sets for both I/Q guests and King County populations had varying amounts of missing data for race (21%-30% of records) and gender (1%-11% of records).

## How Many COVID-19 Cases, Hospitalizations and Deaths Did I/Q Sites Prevent?

We estimated the number of additional COVID-19 cases that would have occurred in King County if I/Q sites had not been implemented. We ran four models using a variety of inputs and made highly conservative model assumptions wherever possible. Key model inputs included: The number of daily new I/Q site guests; estimates for the average number of people a COVID-positive individual infected; and estimates for the average number of days between a person becoming infected with COVID-19 and infecting others. Though the models only include guests who stayed at an I/Q site between March 2020 and December 2020, we estimated the cases those guests would have caused through March of 2021.

King County's I/Q sites at minimum prevented:

- Between 2,032 and 24,508 cases of COVID-19
- Between 93 and 1,319 COVID-19 hospitalizations
- Between 29 and 353 COVID-19 deaths

The spread of these ranges reflects uncertainty around several model inputs. Nevertheless, even the lower bounds of these results, which are very conservative estimates, suggest that I/Q

sites prevented thousands of COVID-19 cases and saved many lives, and therefore represent a substantial public health victory for King County.

## Recommendations

Based on our findings, we make the following recommendations to King County Council and relevant County departments:

### Improve the efficacy of I/Q sites in future pandemics

While I/Q sites successfully limited community spread of COVID-19, the following changes would improve I/Q site performance and would improve equity of service to marginalized communities.

- Improve access for people living unsheltered by reducing transport wait times.
- Provide more appropriate accommodations for families with multiple children by providing larger rooms or additional conjoined rooms.
- Improve I/Q site surge capacity by proactively forming staffing agreements with nursing agencies.
- Create a protocol to collect demographic data after intake to lower the rate of missing data and improve the measurement of I/Q sites' equity performance.
- Draw from lessons learned during COVID-19 to create an implementation plan for future pandemics.

### Permanently maintain an I/Q site to reduce the spread of other communicable diseases

Based on the success of I/Q sites in reducing community spread of COVID-19, we recommend that King County maintain a permanent I/Q site after the pandemic to help contain other communicable diseases like hepatitis A and tuberculosis. A permanent I/Q site of this nature would primarily serve individuals experiencing homelessness. Additional research, including a benefit-cost analysis, is needed to move forward with this proposal.