Mapping COVID-19 Risk Factors by King County ZIP Codes

June to July 2020, Research Brief 6

About the WAFOOD Survey

The Washington (WA) State Food Security Survey (WAFOOD) was launched online in June-July 2020. A total of 2,621 WA residents in 38 of 39 counties responded (Figure 1). WAFOOD data on food insecurity were joined with King County data on area socio-economic status and COVID-19 positivity rate data from Public Health Seattle-King County. This brief points to underlying links between pre-existing economic disparities, obesity, food insecurity, and COVID-19 risk across King County (KC) ZIP codes.

Underlying Economic Disparities

- Residential property values, available from King County tax assessor, are one measure of area poverty or wealth.
- Property values are one component of area deprivation indexes.
- More deprived areas are concentrated in South Seattle, South King County and along the I-5 corridor (Figure 2).

Key Findings

- COVID-19 positivity rates vary by ZIP code and area deprivation.
- Obesity, comorbid conditions, and food insecurity also contribute.
- COVID-19 risk and severity may depend on area socio-demographic variables.

Figure 1. WAFOOD respondents by county

Figure 2. Median property values by KC ZIP codes
More Obesity in Deprived Areas

- WAFOOD used self-reported height and weight to determine obesity status (BMI > 30).
- Results were consistent with previous studies supported by National Institutes of Health.
- Obesity prevalence ranged from ≤7.4% to ≥66.8% depending on ZIP code (Figure 3).

Added Burden of Food Insecurity

- Using the USDA 6-item validated scale, 30% of KC households were food insecure.
- Estimates of food insecurity ranged from 4% to 59% depending on ZIP code.
- There was greater burden in those with lower education and income and respondents of color.
- While food assistance program participation change little, demand for food banks, city agency grocery vouchers or cash cards, mobile food boxes and summer school meal programs increased.
- More food insecurity was observed in South Seattle and South King County (Figure 4).
COVID-19 Risk by KC ZIP codes

- Data from Public Health Seattle-King County show that COVID-19 positivity rates range from 0 to 120 per 1,000 KC residents depending on ZIP code (Figure 5).
- Studies suggest that COVID-19 risk depends on underlying comorbid conditions such as obesity.
- The present data link area deprivation and potentially food insecurity to COVID-19 risk.
- More confirmed COVID-19 positive cases seen in South Seattle and South KC (Figure 5).
- Economic disparities contribute to the progression and severity of chronic conditions but also affect infectious disease.

Acknowledgements

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We would also like to thank Public Health Seattle King County for making their COVID-19 testing data available by ZIP code.

Forecasting COVID-19 Risks

- Residential property value maps from KC tax assessor point to existing economic inequities by area and help identify the potential areas of greater economic deprivation by ZIP codes.
- Obesity and chronic comorbid conditions are linked to socio-economic deprivation and are concentrated in some areas more than others.
- WAFOOD data on food insecurity document alarmingly high burden in areas of greater economic deprivation by ZIP code level.
- KC statistics on COVID-19 positivity have also identified ZIP codes at highest risk.
- More data is needed on frontline essential workers in the farming, food, social services, and healthcare sectors.
- Additional data on poverty, employment and economic recovery is also needed to accurately forecast COVID-19 risks for KC and WA as the pandemic continues.
- More data is needed to forecast the likely continued, widespread need for economic and food assistance at both the city and state level.
- WAFOOD Phase 2 survey would fill that need.

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About the WAFOOD Team

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