

## 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).

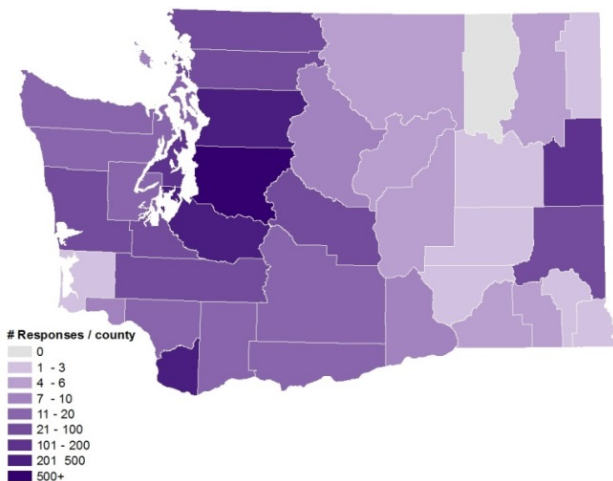


Figure 1. WAFOOD respondents by county

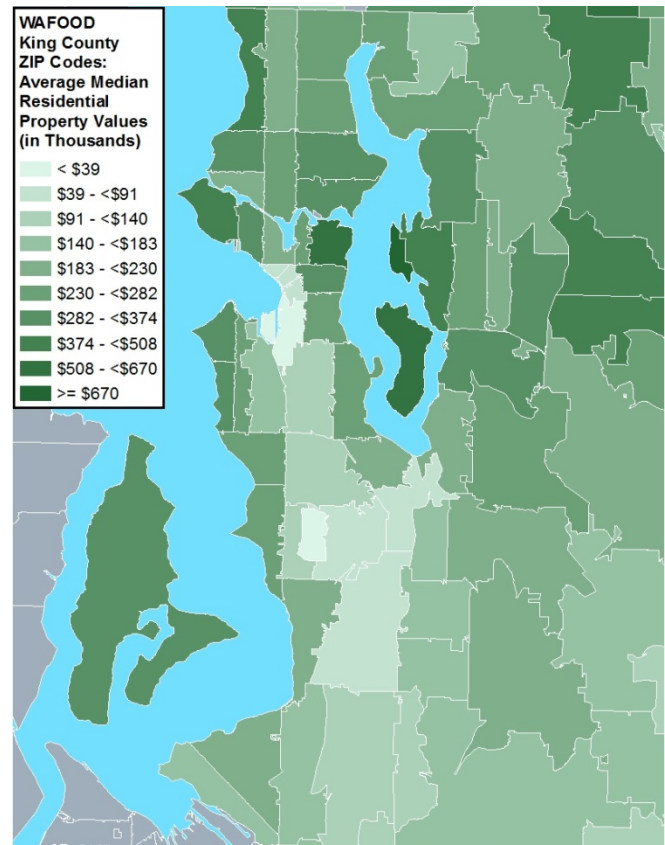


Figure 2. Median property values by KC ZIP codes

### 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.

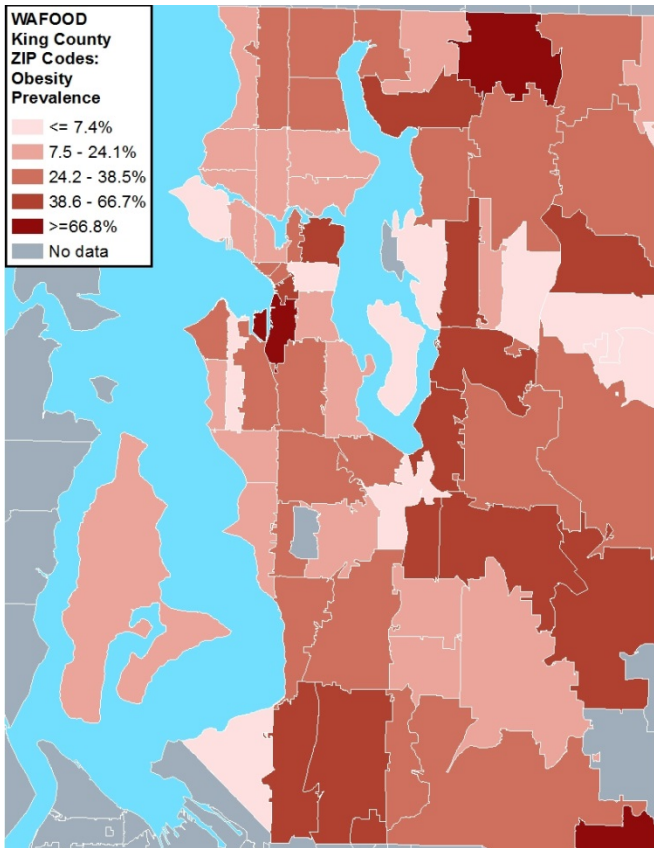


Figure 3. Obesity by King County ZIP codes.

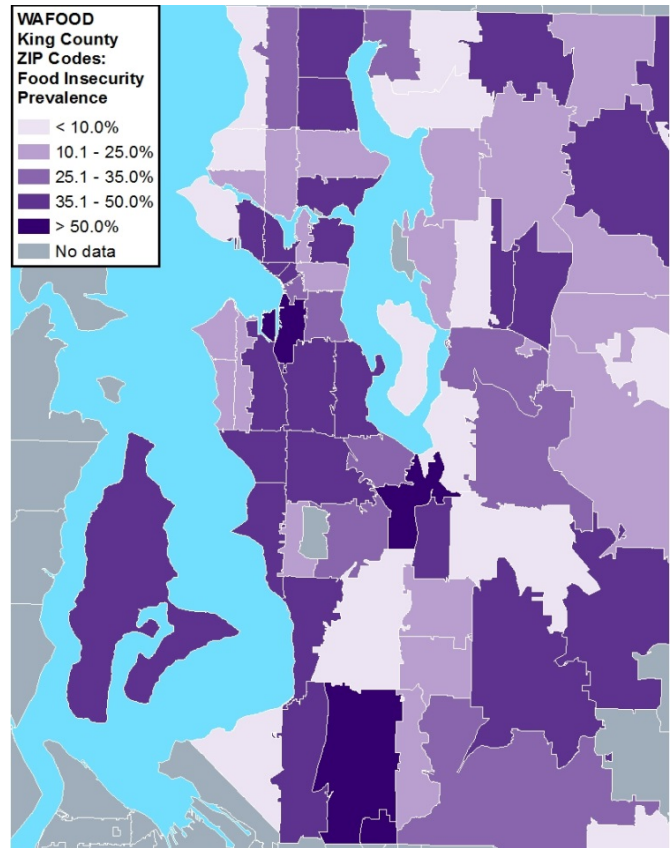


Figure 4. Food insecurity by King County ZIP codes.

### 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).

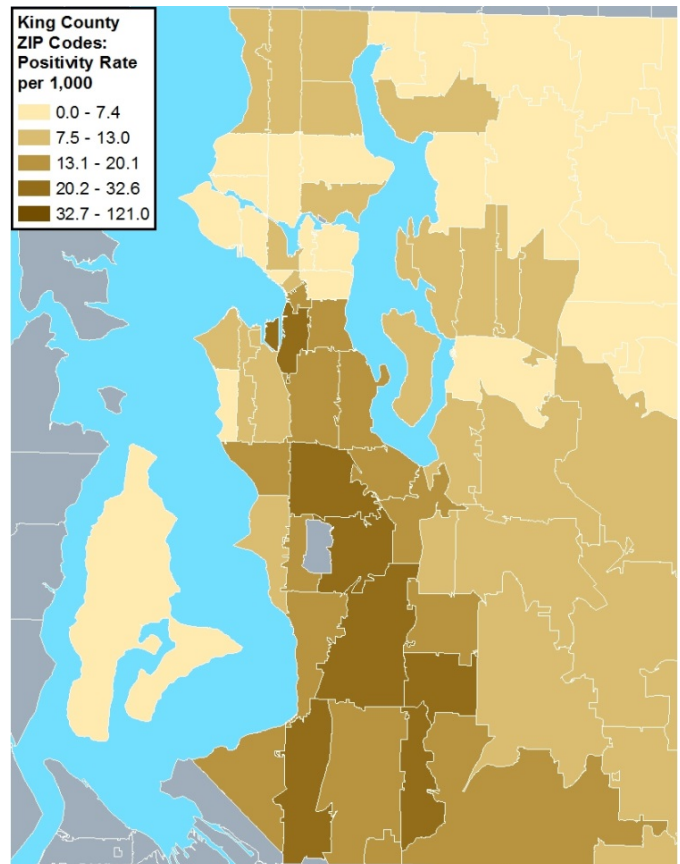


Figure 5. COVID-19 positivity by King County ZIP codes. Source: PH S-KC (10/19/2020)

## 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.

## 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 to 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.

## Suggested Citation

Drewnowski, Adam; Otten, Jennifer J.; Lewis, Laura R.; Collier, Sarah M.; Sivaramakrishnan, Brinda; Rose, Chelsea M.; Ismach, Alan; Nguyen, Esther; Buszkiewicz, James, "Mapping COVID-19 risk factors by King County ZIP codes, June to July 2020, Research Brief 6" (October 2020). Washington State Food Security Survey. <https://nutr.uw.edu/cphn/wafood/brief-6>

## Acknowledgements

The WAFOOD team thanks the UW PHI, the UW School of Public Health, and the Department of Epidemiology for their support. We also wish to thank numerous community partners and stakeholders, including the WA Department of Health, WA Department of Agriculture, WA Anti-Hunger & Nutrition Coalition, WA SNAP-Ed, KC Local Food Initiative, Northwest Harvest, Washington State University (WSU) Extension, United Way of WA, and numerous food banks, food pantries, charitable organizations, county health departments, and local health jurisdictions.

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

## For More Information Please Visit

<https://nutr.uw.edu/cphn/>

<https://www.nfactresearch.org/washingtonstate>

## About the WAFOOD Team

The WAFOOD survey was a joint effort between the UW and WSU with collaboration from Tacoma Community College (TCC). Adam Drewnowski is the Director of the Center for Public Health Nutrition and a Professor in Epidemiology at UWSPH. Jennifer J. Otten is the Food Systems Director and an Associate Professor in Nutritional Sciences and Environmental and Occupational Health Sciences (DEOHS) at UWSPH. Laura R. Lewis is the Director of the Food Systems Program and an Associate Professor in Community and Economic Development at WSU. Sarah M. Collier is an Assistant Professor in Nutritional Sciences and DEOHS at UWSPH. Brinda Sivaramakrishnan is a Professor of Community Health at TCC. Chelsea M. Rose is a Research Coordinator in Epidemiology at UWSPH. Alan Ismach is a Research Coordinator in Health Services at UWSPH. Esther Nguyen is a Research Assistant at UWSPH. James Buszkiewicz is a Research Scientist in Epidemiology at UWSPH.

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