

Supplemental Information

PART 1

Volunteer Time

Our model calculates volunteer time for 3 types of individuals: (1) staff of public health agencies other than CCPH, WADOH, PHSKC, and the CDC who worked on the outbreak response because of temporary reassignment or agency volunteer programs, (2) Medical Reserve Corps, and (3) community volunteers who were not affiliated with any public health agencies. For all types of volunteers, deidentified daily sign-in sheets for time in and time out were used to estimate the hours worked on the response. When possible, the individual's affiliated public health agency was also identified. Because the agency was not always identified, we used the Washington State mean hourly wage for "All Occupations"^{1,*}; if WADOH or the CDC was identified as an agency, these hours were removed because they are already captured in hours reported by WADOH and CDC.

Labor

All labor costs include premium pay (higher wages given to employees who work less desirable hours, such as holidays, weekends, or anything >8 hours a day), overtime, and fringe benefits. For all types of volunteers, deidentified daily sign-in sheets for time in and time out were used to estimate the hours worked on the response. To estimate wages

associated with volunteer time, May 2018 State Occupational Employment and Wage Estimates for Washington State were collected from the Bureau of Labor Statistics.³²

The hours and cost (inclusive of fringe benefits and overtime) for each employee participating in the response were provided by CCPH. CCPH employees participating included administrators, communication specialists, public health nurses, epidemiologists, and environmental specialists. WADOH provided the cost of labor (inclusive of fringe benefits and overtime) and a total number of hours worked over the duration of the outbreak. The hours and cost (inclusive of fringe benefits and overtime) for each employee participating in the response were provided by PHSKC. Employees participating included administrators, communication specialists, public health nurses, epidemiologists, information technology specialists, and environmental specialists. OHA provided the total labor laboratory costs (inclusive of fringe benefits and overtime) of testing both Washington and Oregon residents' specimens as well as administration time. They also provided the number of Washington (84) and Oregon (37) residents' specimens. The percentage of Washington residents' specimens (69%) was applied to the total labor costs to estimate OHA costs of the Clark County outbreak. The CDC provided hours worked on the outbreak for both response and laboratory testing. The actual or

a proxy annual salary (inclusive of fringe benefits) was taken from the FedsDataCenter or the US Office of Personnel Management and then converted to a daily cost to compute the total CDC cost of response.^{33,34}

Part 2

Productivity Losses: Cases

For weekdays (5 of 7 days), we used paid employment and nonmarket productivity estimates, and, for weekends, (2 of 7 days), we used only nonmarket productivity. For persons younger than the age of 15, we assumed zero productivity loss for the child with illness, but we assumed the productivity estimate for all ages (15–99) and both sexes as an estimate for caregiver time. For ages 15 to 99, if sex was not identified, we used the estimate for both sexes combined. If age or length of quarantine was not included in the data, productivity losses were not calculated.

Productivity Losses: Quarantined

If sex was not available (95 of 630), we used the combined estimate for both sexes. We multiplied these daily productivity estimates by the number of days these persons were quarantined (375 of 630 quarantined persons were aged ≥ 15 years) and, then, multiplied estimated productivity by 5 or 7 to account for working days.

*Fringe benefit costs were collected directly from the CCCPH, WADOH, PHSKC, and OHA. An estimated fringe benefit rate of .35 was used for volunteers.

SUPPLEMENTAL TABLE 3 Multivariate Sensitivity Analysis

	Base, \$	Low, \$	High, \$
Response	2 313 473	2 313 473	2 313 473
Productivity	1 029 378	1 002 654	1 097 580
Direct medical	75 672	15 037	136 308
Total	3 418 523	3 331 164	3 547 360

SUPPLEMENTAL REFERENCES

32. US Department of Labor, Bureau of Labor Statistics. May 2018 state occupational employment and wage estimates Washington. Available at: https://www.bls.gov/oes/2018/may/oes_wa.htm. Accessed October 28, 2020
33. Feds Data Center. Federal employee salaries. Available at: <https://www.fedsdatacenter.com/federal-pay-rates/>. Accessed October 28, 2019
34. US Office of Personnel Management. Salary table 2019-ATL. Available at: <https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/salary-tables/pdf/2019/ATL.pdf>. Accessed October 28, 2019