Abstract

Rural Alaska residents without in-home piped water are at an increased risk of infections such as pneumonia and skin infections due to a lack of access to sufficient quantities of water for washing. Examining the quality of rainwater, a commonly used and inexpensive supplemental water source is necessary to determine if it is reasonable from a public health standpoint to promote rainwater as a supplemental source. Utilizing citizen science to recruit and train volunteers allowed for the collection of rainwater samples from difficult to reach rural villages across Alaska on a minimal budget.

In all, 21 rainwater samples were collected from catchments in 10 communities in rural Alaska. The most common findings included concentrations of manganese, sodium, and zinc, and one sample contained a result above the Environmental Protection Agency’s (EPA) primary Maximum Contamination Level (MCL) for drinking water quality. One of the primary recommendations is for the creation of non-potable water quality standards. The lack of guidelines for non-potable water utilization inhibits public health professionals from advocating for the use of water that could otherwise potentially reduce infection rates.