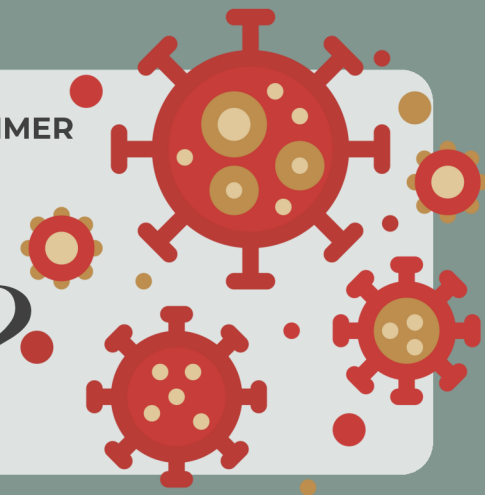




WASTEWATER-BASED EPIDEMIOLOGY PRIMER

WHAT IS PMMoV?



PMMoV is used to normalize pathogen quantities measured in wastewater samples for the number of people that are contributing to the sample. It helps contextualize a measured amount of pathogen, in a similar way that reporting disease rates as “cases per 100,000 population” does.

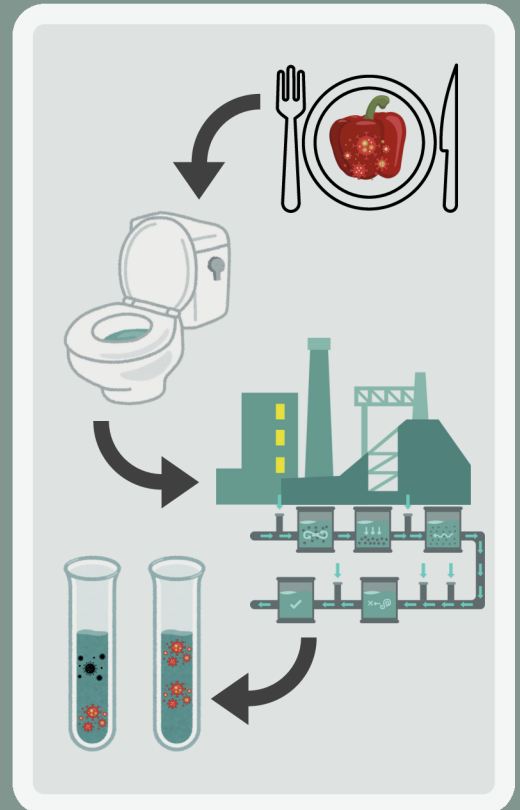
There are two ways that PMMoV helps the measured pathogen values better reflect the number of infections in a community:

1. Adjusts for the changing amounts of human fecal matter in wastewater over time. For example, wastewater tends to be more dilute (i.e. have less fecal material) at certain times of the day or after storms. Consequently, a change in measured viral pathogen values may reflect changes in the amount of fecal matter present in the wastewater rather than a change in the number of individuals who are infected with an illness. Normalizing by PMMoV helps address this and minimize the impact of fecal matter dilution.

2. Addresses how well the laboratory tests are working. There are multiple steps conducted in wastewater pathogen measurements, including concentrating the viral pathogen in the sample and recovering its nucleic acids from the sample. Using PMMoV (a virus) as a control when testing for pathogenic viruses corrects for the overall recovery of viral nucleic acids through the various steps.

PEPPER MILD MOTTLE VIRUS (PMMoV):

A virus that infects peppers and is not harmful to humans when ingested. It does get shed in human waste after digestion.



Have more questions about wastewater-based epidemiology and laboratory testing? Contact us at help.um.wastewatermonitoring@umich.edu