DEPARTMENT OF HEALTH

Water and Virus Evaluation (WAVE) Study

FREQUENTLY ASKED QUESTIONS

What is the WAVE Study?

The Minnesota Department of Health (MDH) conducted the WAVE Study to see if there is an association between the presence of viruses in drinking water sources and acute gastrointestinal illness (AGI) in a community. To do this, MDH worked with six Minnesota community water utilities to test the drinking water source for viruses weekly from May 2015-April 2016. We also asked people in the six communities to complete weekly surveys about any illness they may have had the week before.

Why did you conduct the WAVE Study?

The 2013 Minnesota Legislature directed MDH to conduct a groundwater virus monitoring project using funding from the state's Clean Water Fund. The project has two components: a monitoring study and the WAVE Study.

Who participated in the WAVE Study?

Overall, 351 people from six communities participated in the WAVE Study; 157 people participated for an entire year and 194 participated for 6 months. Of the 351 participants, 55% were female. The average age of our participants was 41 years (range, 1 to 89 years). Of the 351 participants who enrolled in the study, 338 (96%) completed the study.

Did people report getting sick during the study?

As we would expect in any community, we did have reports of AGI during the study. Symptoms of AGI include vomiting, diarrhea, and stomach cramps. It is important to remember that people can get AGI from a number of sources besides drinking water (for example, food, recreational water, or person-to-person contact).

Are people getting sick from their drinking water?

During the weeks we detected viruses in the drinking water source, we found higher rates of reported AGI. However, we cannot draw firm conclusions because this finding was not statistically significant. This means the finding could have been due to chance or that the association is real, but that our study was too small to show statistical significance. Finding higher rates of reported AGI during the weeks we detected viruses in the drinking water source could be due to a variety of reasons. This could be because people were exposed to viruses in their drinking water and became sick, people were already sick in the community and the viruses then traveled into the drinking water source, or a combination of the two.

Did you find viruses in the drinking water samples?

Of the 306 drinking water source samples collected (51 from each community), 33 (10.8%) tested positive for a virus. However, only 9 (2.9%) tested positive for a virus that could cause AGI in people. Very low levels of viruses were found in the few drinking water samples that tested positive. Finding low levels of viruses does not necessarily mean that people consuming water from these systems would become ill, but it does indicate that a potential pathway for drinking water contamination may exist. Also, the virus detections were infrequent and sporadic. The sporadic nature of the detections shows that water contamination can come and go very quickly.

How are viruses getting into drinking water?

We do not know exactly how viruses might be getting into the drinking water source. We will use information from the WAVE Study and the monitoring study to get a better understanding of how the contamination is occurring and what can be done about it.

What about home water treatment options?

We found higher rates of illness among people who had a water filter or softener at home. All home water treatment units require regular maintenance to work properly. Regular maintenance can include changing filters, disinfecting the unit, or cleaning scale buildup. You should always follow the manufacturer's recommendations for installing, cleaning, and maintaining a treatment unit. Additional information on home water treatment options is available on the MDH website: http://www.health.state.mn.us/divs/eh/water/factsheet/com/pou.html.

What are the next steps?

We are continuing to look at all of the data from the WAVE Study and monitoring study to better understand the impact of viruses found in groundwater.

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