

Norwalk-like Virus

By Greg Schaffer, BA, EMT-P

I recently handled the infection control paperwork of a paramedic exposed on an incident. While there is nothing unusual about that, what is unusual is the fact that there was no suspicion of the exposure until over 36 hours later when the exposed paramedic became very sick and soon lost radial pulses, and had to call EMS his self. As he put it, "You know I had to be sick to do that".

On his previous shift at 2:00 am he had responded to a patient who was very sick with nausea, vomiting, and diarrhea. Working on a Paramedic Engine he provided primary treatment for the patient while waiting for a transport unit to arrive. He had also assisted the patient in and out of the bathroom, all this while wearing latex gloves, and safety glasses routine on all medical calls for the department. He said he even washed his hands while still on the scene, and immediately upon returning to the station.

So, what went wrong? What was the patient suffering from, and what was our paramedic exposed to? Most importantly what do you need to know to protect yourself?

First of all the patient and the paramedic were both suffering from Norwalk-like virus (NLV), a Norovirus. The answer to our other questions can be found in an in-depth look to the Noroviruses.

Noroviruses are a group of viruses that cause the "stomach flu," or gastroenteritis (GAS-tro-en-ter-i-tis), in people. The term norovirus was recently approved as the official name for this group of viruses. Several other names have been used for noroviruses, including Norwalk-like viruses (NLVs), caliciviruses, and small round structured viruses.

Noroviruses are named after the original strain "Norwalk virus," which caused an outbreak of gastroenteritis in a school in Norwalk, Ohio, in 1968. Currently, there are at least four norovirus genogroups (GI, GII, GIII and GIV), which in turn are divided into at least 20 genetic clusters.

Viruses are very different from bacteria and parasites, some of which can cause illnesses similar to norovirus infection. Viruses are much smaller, are not affected by treatment with antibiotics, and cannot grow outside of a person's body.

The symptoms of norovirus illness usually include nausea, vomiting, diarrhea, and some stomach cramping. Sometimes people additionally have a low-grade fever, chills, headache, muscle aches, and a general sense of tiredness. The illness often begins suddenly, and the infected person may feel very sick. The illness is usually brief, with symptoms lasting only about 1 or 2 days. In general, children experience more vomiting than adults. Most people with norovirus illness have both of these symptoms.

Illness caused by norovirus infection has several names, including:

- stomach flu – this "stomach flu" is not related to the flu (or influenza), which is a respiratory illness caused by influenza virus.
- viral gastroenteritis – the most common name for illness caused by norovirus. Gastroenteritis refers to an inflammation of the stomach and intestines.
- acute gastroenteritis
- non-bacterial gastroenteritis
- food poisoning (although there are other causes of food poisoning)
- calicivirus infection

Norovirus disease is usually not serious, (unless you are the one who has it) although people may feel very sick and vomit many times a day. Most people get better within 1 or 2 days, and they have no long-term health effects related to their illness. However, sometimes people are unable to drink enough liquids to replace the liquids they lost because of vomiting and diarrhea. These persons can become dehydrated and may need special medical attention. There is no evidence to suggest that an infected person can become a long-term carrier of norovirus.

Noroviruses are found in the stool or vomit of infected people. People can become infected with the virus in several ways, including:

- touching surfaces or objects contaminated with norovirus, and then placing their hand in their mouth;

- having direct contact with another person who is infected and showing symptoms (for example, when caring for someone with illness, or sharing foods or eating utensils with someone who is ill).
- eating food or drinking liquids that are contaminated with norovirus;

Symptoms of norovirus illness usually begin about 24 to 48 hours after ingestion of the virus, but they can appear as early as 12 hours after exposure.

Noroviruses are very contagious and can spread easily from person to person. Both stool and vomit are infectious.

People infected with norovirus are contagious from the moment they begin feeling ill to at least 3 days after recovery. Some people may be contagious for as long as 2 weeks after recovery. Therefore, it is particularly important for people to use good handwashing and other hygienic practices after they have recently recovered from norovirus illness.

Anyone can become infected with these viruses. There are many different strains of norovirus, which makes it difficult for a person's body to develop long-lasting immunity. Therefore, norovirus illness can recur throughout a person's lifetime. In addition, because of differences in genetic factors, some people are more likely to become infected and develop more severe illness than others.

Currently, there is no antiviral medication that works against norovirus and there is no vaccine to prevent infection. Norovirus infection cannot be treated with antibiotics. This is because antibiotics work to fight bacteria and not viruses.

Norovirus illness is usually brief in healthy individuals. When people are ill with vomiting and diarrhea, they should drink plenty of fluids to prevent dehydration. Dehydration among young children, the elderly, the sick, can be common, and it is the most serious health effect that can result from norovirus infection. By drinking oral rehydration fluids (ORF), juice, or water, people can reduce their chance of becoming dehydrated. Sports drinks do not replace the nutrients and minerals lost during this illness.

You can decrease your chance of coming in contact with noroviruses by following these preventive steps:

- Frequently wash your hands.
- Thoroughly clean and disinfect contaminated surfaces immediately after an episode of illness by using a bleach-based household cleaner.
- Immediately remove and wash clothing or linens that may be contaminated with virus after an episode of illness (use hot water and soap).
- Flush or discard any vomit and/or stool in the toilet and make sure that the surrounding area is cleaned.

At home or at the station persons who are infected with norovirus should not prepare food while they have symptoms and for 3 days after they recover from their illness. Food that may have been contaminated by an ill person should be disposed of properly.

As discussed in previous Infection Connection articles, proper hand washing is very important. You can wash your hands and still not be effective, but the key is "proper" handwashing, this includes washing hands for at least 10-15 seconds. See the Infection Connection article "Handwashing 101. Following you washing your hands, don't forget to watch what you touch, including yourself. For example, when you had gloves on, did you brush against you uniform, and now it is contaminated?

As this case shows you never know what is lurking on the next call. You can simply never be too careful. The good news is our paramedic is now healthy and back to work. Until next time, you be healthy too!

References:

www.cdc.gov

Schaffer G, "Handwashing 101" EMS Village, May 2004, www.emsvillage.com/village_library/articles/article.cfm?id=1569

July 2004