



Washed away? Not yet

The media spotlight is gone but norovirus remains a threat.

Anne Kalosh examines how ships are combating it.

Remember when norovirus grabbed headlines? The illness hasn't gone away. But today, norovirus seldom pops into the news. That's because the cruise industry is controlling it better than ever through an aggressive, multi-pronged approach.

'The cruise lines have been extremely responsive in dealing with this illness,' according to Dave Forney, chief of the US Centers for Disease Control and Prevention's Vessel Sanitation Program. He credits crew training, faster identification and response to the illness, a bigger arsenal of sanitizers and more public education about the importance of hand washing.

'Three years ago, the typical scenario in a big outbreak on a ship was that despite their best efforts, there were outbreaks on a second and a third cruise,' Forney relates. 'The ship was taken out of service, and when it came back into service, still some people became ill. Today, when there's an outbreak the second or third day of the cruise, the problem is identified and they initiate protocols. By the end of the cruise, there are no new cases and very little carry over to the next cruise.'

Norovirus strikes suddenly, causing diarrhea and vomiting. It typically lasts one to two days and leaves no lasting health effects. After recovery, carriers can continue shedding the virus for weeks.

Cruise ships remain the only sector of the travel and lodging industry required to report all gastrointestinal illnesses. That is why, Forney notes, ships tend to get singled out.

'Norovirus remains the most common cause of gastrointestinal illness in the United States,' the VSP chief says. 'There will continue to be outbreaks in the population in general and it's virtually impossible to



Forney - 'lines extremely responsive'

identify the carriers before their symptoms appear. The cruise line approach now is that every time you bring on new passengers, you have to assume someone is a carrier.'

On many vessels today, passengers are greeted at the gangway with an alcohol hand sanitizer. Sanitizers are also found at the entrance to buffet lines. Cabin literature includes reminders that soap and water hand washing can prevent disease transmission, and signs in public WCs remind passengers to wash up. Crew get the same messages.

Why is hand hygiene vital? The highly contagious norovirus spreads by fecal-oral transmission. A carrier gets fecal matter on his or her hands, even microscopic traces, which is ingested when a person touches his mouth or food that he eats. Proper hand washing can get rid of 99% of the virus, says Dr. Robert Wheeler, an Amherst, N.H.-based emergency physician who is recognized as an expert in strategies for norovirus control. The current chairperson for the American College of Emergency Physicians' Section of Cruise Ship and Maritime Medicine, he also established Voyager Medical Seminars to develop continuing education programs for cruise ship medicine.

The CDC advises vigorous hand washing for 20 seconds with soap and water, followed by rinsing and drying. A disposable towel should be used to turn off faucets and open the door.

The Vessel Sanitation Program's updated Shipbuilding Construction Guidelines — expected to take effect by January 1 — will require more hand washing facilities in crew areas, such as the laundry, mess and housekeeping stations.

Alcohol-based hand sanitizers have been shown to be an effective adjunct to hand washing, but they don't replace soap and water, public health officials caution. And hand sanitizers are costly. The bill for equipping one large US-based fleet was put at \$2m.

Nobody can estimate all the incremental costs of controlling norovirus. Angela Plott, vp of the International Council of Cruise

Lines, says all members report additional manpower hours and costs including additional cleaning staff at turnaround ports, extending homeporting hours for cleaning, the purchase of more disinfectants and extra crew training. 'All these items add up to substantial costs,' Plott notes. 'We've invested a lot of time, effort and money.'

Norovirus spreads mainly by contact with environmental surfaces — an infected person touches a light switch, door knob, handrail, playing card, poker chip — leaving microbes. Or, when someone vomits, the virus is aerosolized, contaminating nearby surfaces. Direct person-to-person contact is also possible.

'If a surface can be touched, it can be contaminated,' Wheeler warns. Transmission by contaminated water or food is extremely rare on cruise ships because of strict controls regulated by the CDC.

When it comes to disinfecting surfaces, bleach remains the gold standard. The problem for cruise ships is that bleach can't be safely used on all surfaces, so other products are emerging. Main ones include Mikro-Bac (EcoLab), Accelerated Hydrogen Peroxide (Virox Technologies), EcoTru (EnviroSystems) and Virkon (Antec International).

Wheeler has conducted extensive reviews of disinfectants, studying only those that provide scientific evidence to support their marketing pitches. He claims no association to any product or provider.

Pluses and minuses emerged for each product in Wheeler's analysis (available by writing to vms@adelphia.net). One phenol-based compound is highly effective but drawbacks include toxicity to humans if ingested. Another product is non-corrosive but must be left on surfaces for 30 minutes to be fully effective and is relatively costly.

Another has been used successfully shoreside for years, recently in Europe to disinfect against foot and mouth disease transmission, but it can corrode some soft surfaces.

'There really is no consensus in the industry about these products,' Wheeler points out. In a recent straw poll, he found cruise lines using a variety of disinfectants. Personally, he favours Accelerated Hydrogen Peroxide because 'it meets all criteria I look for, is versatile, priced affordably and safe to use.' Widely used shoreside in Canada, AHP is highly effective against norovirus and is expected to gain approval as a disinfectant by the US Environmental Protection Agency in 2005. Cost per liter as used is 12 cents, compared to bleach at 1 cent.

In the battle against gastrointestinal illnesses, some companies are developing new hand hygiene technology. Meritech, Inc. supplies automated hand washing systems to major land-based food suppliers and is trying to break into the cruise market with its CleanTech products. Users insert their hands into two open cylinders and a photo-eye initiates the wash cycle. Studies suggest a 300% increase in hand washing compliance and more thorough cleaning than manual washing.

Two such systems are in use in the galley on Fred. Olsen Cruise Lines' Black Watch, says Michele Colbert, Meritech's director of sales and marketing. A new model, the CleanTech 500EZ was designed to be smaller and more cost-effective — 'ideal for cruise ships,' in Colbert's words. For a limited time, Meritech is promoting the system, one case of soap and no freight

charges (US deliveries), for \$2,795.

Why aren't more cruise lines buying such systems?

'The cruise industry is a tough market to break into with any technology, particularly when it requires retrofitting ships because it's just too expensive,' Wheeler surmises. 'It's hard to convince people. Is the cost worth it or is it better to teach better hand washing?'

Norovirus is blamed for an estimated two-thirds of acute gastroenteritis cases in the US. In 2002, when outbreaks on ships were widely reported, there were an estimated 23m-25m cases ashore in the US, according to Wheeler. That means 8% of the population or one in 12 people were affected. Incidents on cruise ships affected .025% of passengers or one in 4,000.

Estimates of norovirus in the general population are just estimates, Forney notes, because it's not a reportable illness anywhere except on cruise ships.

Nevertheless, as ICCL's Plott observes, 'If you look at statistics, you're probably more likely to get this landside than on a vessel.' Besides better mechanisms for controlling shipboard outbreaks, the public is hearing a lot less about norovirus today because of a concerted effort to educate the media.

'Since 2002, the industry has been proactive in explaining or trying to educate the press on the nature of norovirus and that it's not inherent on cruise ships but second to the common cold in frequency,' Plott says. 'As we educate reporters and they talk to the CDC, we're seeing more balanced reporting. We don't see the headline "Cruise Ship Virus" quite so much.' □



Meritech - new technology

Lines have introduced rigorous procedures