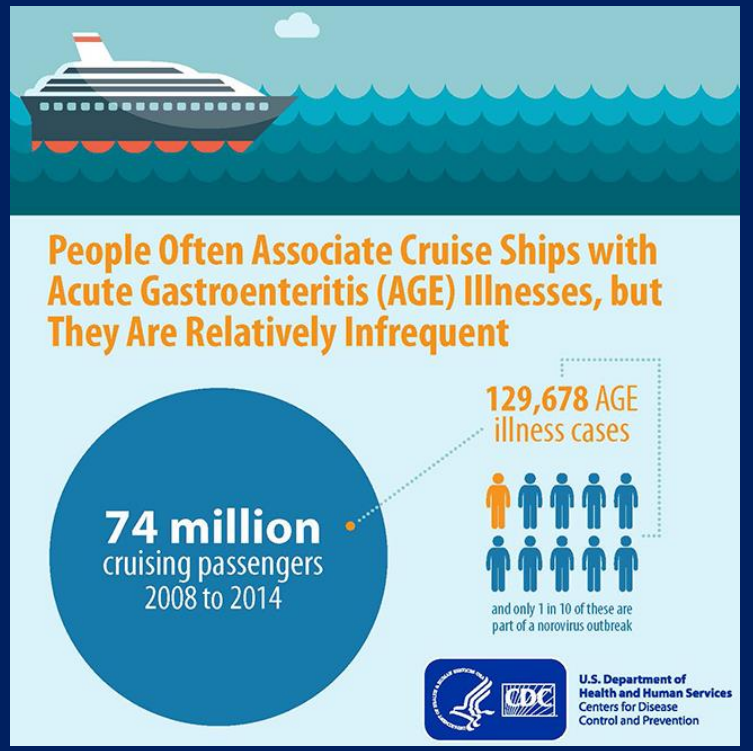
Cruise Ship Norovirus Control and Response *Really* Works!

- From 2008 to 2014, 74 million passengers sailed on cruise ships in VSP's jurisdiction.
- Only 129,678 passengers met the VSP case definition for AGE illness.
- And only 1 in 10 were part of a norovirus outbreak.
- The rate of AGE illness on cruise ships has decreased over time, as has the number and severity of outbreaks by year except 2012, when a new strain of norovirus emerged.



*Freeland AL, Vaughan GH Jr, Banerjee SN. Acute gastroenteritis on cruise ships—United States, 2008–2014. MMWR. 2016;65(1):1–5.

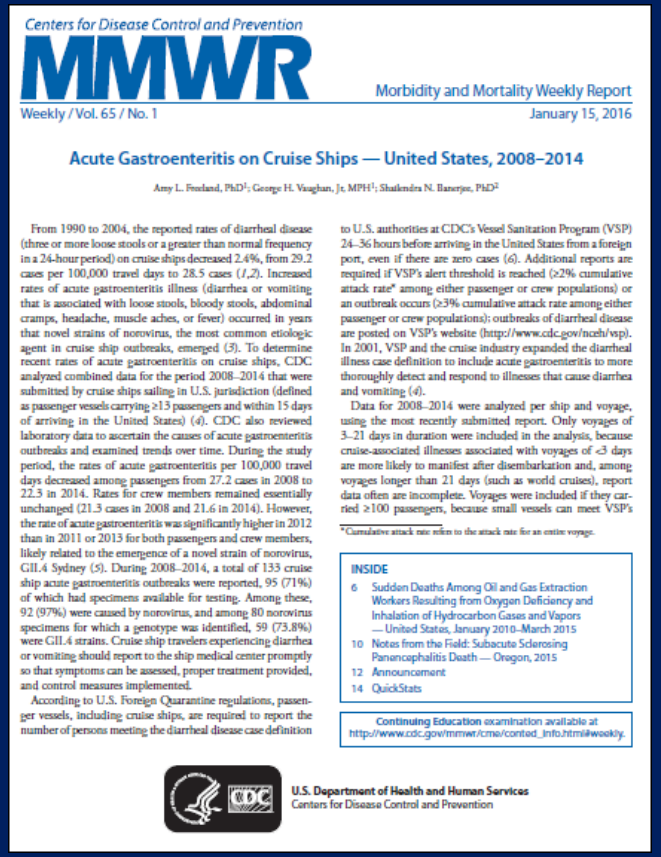
Linked

Outbreaks on Cruise Ships

Fewer and less-severe AGE outbreaks on cruise ships are likely a result of several factors:

- Earlier detection of illnesses.
- Cruise industry diligence in developing and implementing their Outbreak Prevention and Response Plans (OPRP).
- Using processes and disinfectants that <u>are effective</u> against a norovirus surrogate.
- Proactively looking for ways to use the most current science and limit AGE spread.

Cruise Ship Norovirus Control and Response *Really* Works!



Centers for Disease Control and Prevention

MMWR

Morbidity and Mortality Weekly Report

Weekly / Vol. 65 / No. 1 January 15, 2016

Acute Gastroenteritis on Cruise Ships — United States, 2008–2014

Amy L. Freeland, PhD[1]; George H. Vaughan, Jr, MPH[1]; Shailendra N. Banerjee, PhD[2]

From 1990 to 2004, the reported rates of diarrheal disease (three or more loose stools or a greater than normal frequency in a 24-hour period) on cruise ships decreased 2.4%, from 29.2 cases per 100,000 travel days to 28.5 cases (*1*,*2*). Increased rates of acute gastroenteritis illness (diarrhea or vomiting that is associated with loose stools, bloody stools, abdominal cramps, headache, muscle aches, or fever) occurred in years that novel strains of norovirus, the most common etiologic agent in cruise ship outbreaks, emerged (*3*). To determine recent rates of acute gastroenteritis on cruise ships, CDC analyzed combined data for the period 2008–2014 that were submitted by cruise ships sailing in U.S. jurisdiction (defined as passenger vessels carrying ≥13 passengers and within 15 days of arriving in the United States) (*4*). CDC also reviewed laboratory data to ascertain the causes of acute gastroenteritis outbreaks and examined trends over time. During the study period, the rates of acute gastroenteritis per 100,000 travel days decreased among passengers from 27.2 cases in 2008 to 22.3 in 2014. Rates for crew members remained essentially unchanged (21.3 cases in 2008 and 21.6 in 2014). However, the rate of acute gastroenteritis was significantly higher in 2012 than in 2011 or 2013 for both passengers and crew members, likely related to the emergence of a novel strain of norovirus, GII.4 Sydney (*5*). During 2008–2014, a total of 133 cruise ship acute gastroenteritis outbreaks were reported, 95 (71%) of which had specimens available for testing. Among these, 92 (97%) were caused by norovirus, and among 80 norovirus specimens for which a genotype was identified, 59 (73.8%) were GII.4 strains. Cruise ship travelers experiencing diarrhea or vomiting should report to the ship medical center promptly so that symptoms can be assessed, proper treatment provided, and control measures implemented.

According to U.S. Foreign Quarantine regulations, passenger vessels, including cruise ships, are required to report the number of persons meeting the diarrheal disease case definition to U.S. authorities at CDC's Vessel Sanitation Program (VSP) 24–36 hours before arriving in the United States from a foreign port, even if there are zero cases (*6*). Additional reports are required if VSP's alert threshold is reached (≥2% cumulative attack rate* among either passenger or crew populations) or an outbreak occurs (≥3% cumulative attack rate among either passenger or crew populations); outbreaks of diarrheal disease are posted on VSP's website (http://www.cdc.gov/nceh/vsp). In 2001, VSP and the cruise industry expanded the diarrheal illness case definition to include acute gastroenteritis to more thoroughly detect and respond to illnesses that cause diarrhea and vomiting (*4*).

Data for 2008–2014 were analyzed per ship and voyage, using the most recently submitted report. Only voyages of 3–21 days in duration were included in the analysis, because cruise-associated illnesses associated with voyages of <3 days are more likely to manifest after disembarkation and, among voyages longer than 21 days (such as world cruises), report data often are incomplete. Voyages were included if they carried ≥100 passengers, because small vessels can meet VSP's

*Cumulative attack rate refers to the attack rate for an entire voyage.

INSIDE

6 Sudden Deaths Among Oil and Gas Extraction Workers Resulting from Oxygen Deficiency and Inhalation of Hydrocarbon Gases and Vapors — United States, January 2010–March 2015
10 Notes from the Field: Subacute Sclerosing Panencephalitis Death — Oregon, 2015
12 Announcement
14 QuickStats

Continuing Education examination available at http://www.cdc.gov/mmwr/cme/conted_info.html#weekly.

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

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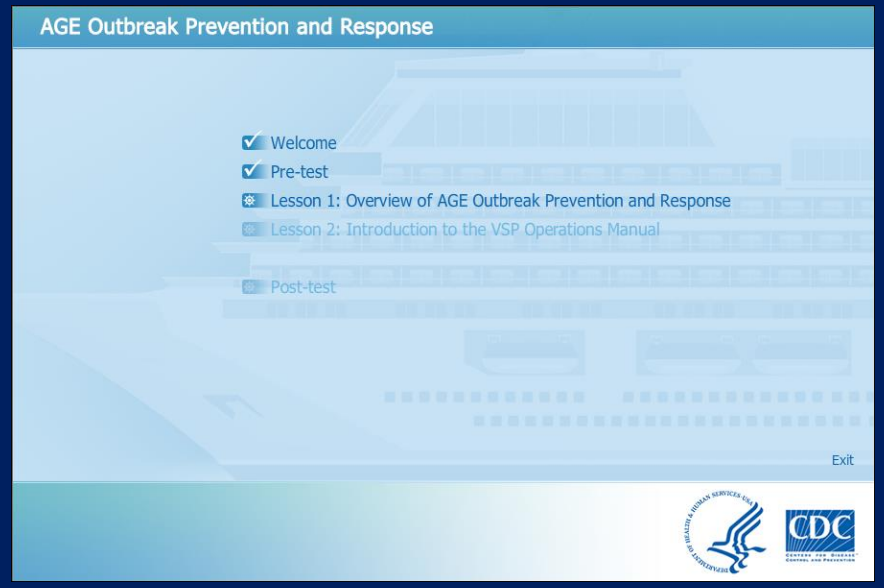
Linked

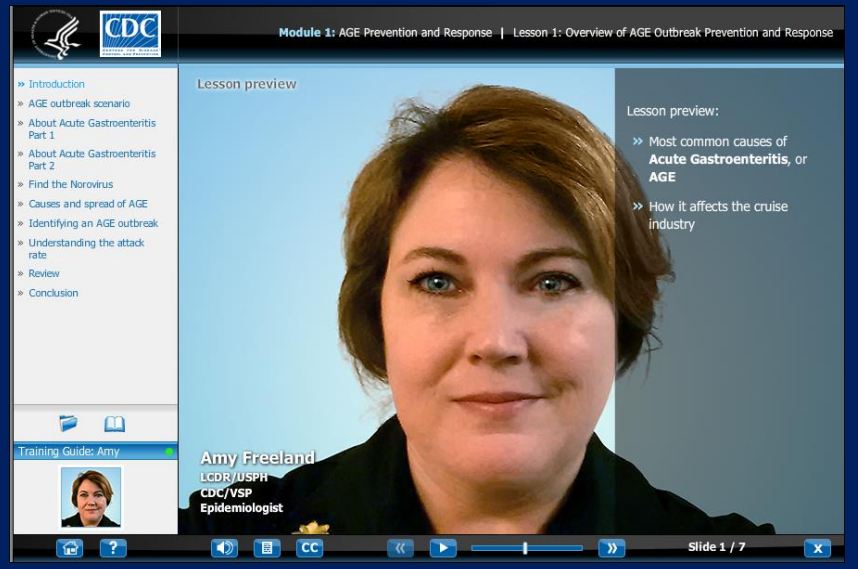
VSP's AGE Outbreak and Response Training



Distributed to Cruise Lines in 2016

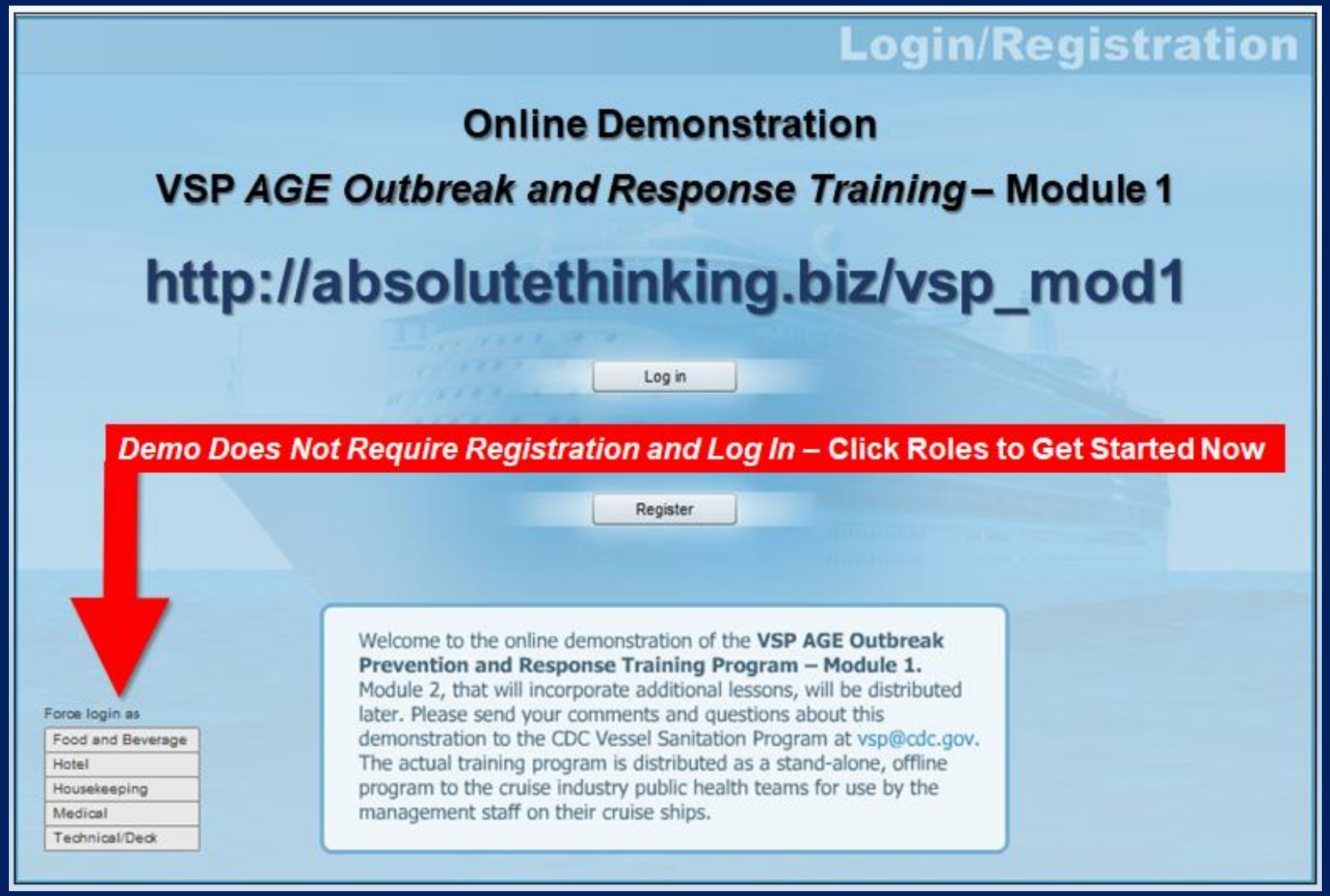
Targeted Training Run

<u>Offline</u> on Ships' Computers



Developed by the Same Producer as the EHS-Net Outbreak Training: *EATS Linked*

VSP's AGE Outbreak and Response Training



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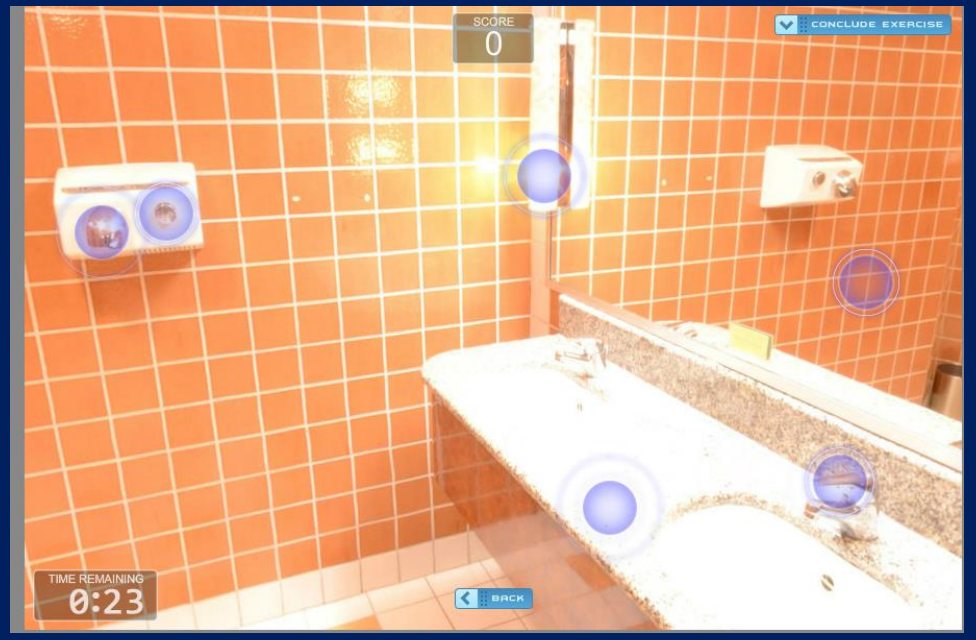
VSP's AGE Outbreak and Response Training



Can You Find The Norovirus and Beat the Outbreak Clock?

VSP's AGE Outbreak and Response Training
New Module 2

Login/Registration

Online Demonstration

VSP AGE Outbreak and Response Training - Module 2

http://absolutethinking.biz/vsp_mod2

Log in

Register

Force login as

- Food and Beverage
- Hotel
- Housekeeping
- Medical
- Technical/Deck

Demo Does Not Require Registration or Log In - Click A Role to Start Customized Training and Practical Exercises Based on That Role

- Lesson 1: Intro to OPRP
- Lesson 2: Critical Thinking
- Lesson 3: Virtual Voyage

- Introduction
- Outbreak Prevention and Response Plans
- Overview of OPRP Contents
- Recognizing an outbreak
- Outbreak responses
- Assessing the likely cause of illness
- Procedures for Returning to Normal Operations
- Outbreak Control Strategies for Food & Beverage Operations
- Conclusion

- Introduction
- About critical thinking
- Challenging assumptions
- Thinking critically about an AGE outbreak
- Applying critical thinking skills
- AGE outbreak scenario
- AGE outbreak scenario continued
- AGE Outbreak Scenario: "Suspicious Symptoms"
- AGE Outbreak Scenario: "Double Trouble"
- AGE Outbreak Scenario: "Turnaround Trials"
- Conclusion

- Introduction
- Day 0 Officers' Meeting
- Day 0 Continued
- Day 1 Officers' Meeting
- Day 1 Continued
- Day 2 Officers' Meeting
- Day 2 Continued
- Day 3 Officers' Meeting
- Day 3 Continued
- Day 4 Officers' Meeting

Linked

EAS Consulting Group / National Restaurant Association Webinar:

How to Take ACTIVE Control of Your Food Safety Management System

January 28, 2020

Charles S. Otto, III, REHS
EAS Independent Consultant
cotto@easconsultinggroup.com
571-447-5500

Brief Bio:

Charles begin his 45-year career in Alabama, serving 13 years in almost every area of environmental health. He was commissioned as an Environmental Health Officer in U.S. Public Health Service and served two tours at the Food and Drug Administration in Washington, DC. He worked on the first two editions of the modern FDA Food Code, creating the FDA PRIME Connection, launching the FDA Electronic Inspection System, and employing HACCP in retail food protection, milk safety, shellfish sanitation and interstate travel programs. He was next assigned to the National Park Service where he oversaw the implementation of FDA Food Code and its inspection system in venues that served over 100 million visitors each year.

He continued his 30-year USPHS career with three tours at the Centers for Disease Control Prevention, first serving in the Vessel Sanitation Program overseeing the first major upgrade to the cruise ship comprehensive environmental health rules. He then was assigned to the Environmental Health Services Branch heading the Innovation Team. His final USPHS tour was back at the VSP as the Deputy Chief.

In his retirement, Charles assists selected clients with their food safety and other environmental health projects. He graduated from Auburn University with a BS in Environmental Health, and from the University of South Alabama with an MPA. He and Linda have been married 45 years, enjoy traveling and visiting with their 4 children and 4 grandchildren.