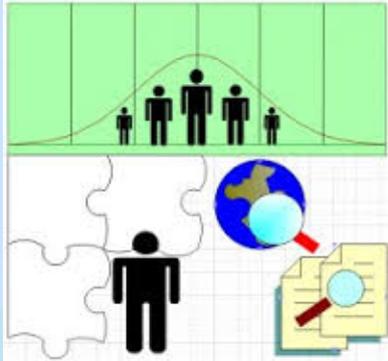




SURVIVING NOROVIRUS INVESTIGATIONS

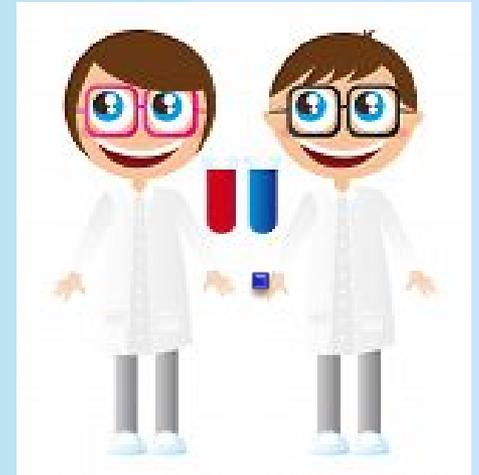
A Puking Primer

Norovirus Investigation Team



Epidemiologist

Laboratorian



**Environmental
Health**

A few days before Labor Day ...



Time to shop for all the essentials.





What are the typical norovirus symptoms?

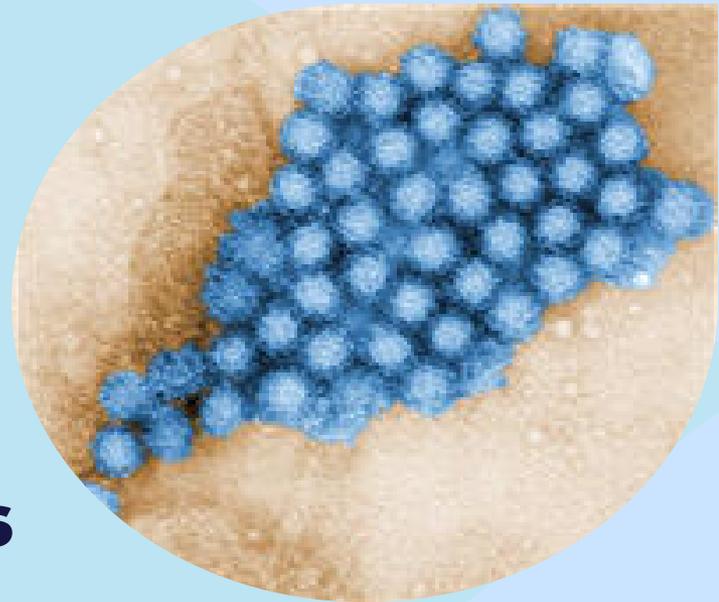
- A. Sneezing, coughing, headaches**
- B. Vomiting, diarrhea, nausea, and feeling like you are going to *die***
- C. Fever, skin rash, body and muscle aches**
- D. Fever, headache, stiff neck, nausea and vomiting**

Nausea sudden takes a nasty turn...



What is the infectious dose of norovirus?

- A. <20 particles**
- B. 50-100 particles**
- C. 100-1000 particles**
- D. >1000 particles**



Sick and embarrassed she leaves the store immediately

Sorry the Norovirus created a humiliating situation that will haunt you for the rest of your life.



your  cards
someecards.com

Store maintenance is paged to clean the mess





What should be in the mop bucket to clean up the vomit?

- A. Soap**
- B. Ammonia**
- C. Bleach**
- D. Hot Water**

Who has been exposed?



Who could be exposed?



How far can vomit travel?

- A. Up to 2 feet**
- B. Up to 8 feet**
- C. Up to 10 feet**
- D. Not as far as I can run**

Day before Labor Day



**preparing food for the
Homeless Holiday event**

Labor Day



And elected officials were there, too....





What is the incubation period for norovirus?

A. 12-48 hours

B. 3-5 days

C. 4-7 days

D. >7 days

Holiday Travel



LIVE

TAKING ACTION

**MASSIVE CROWDS AT SKY HARBOR AIRPORT
TRAVELERS MISSED FLIGHTS; STUCK IN LONG LINES**

#abc15

abc 15

5:01 80°

Two Days after Labor Day



Arizona
Department of
Health Services



How is the Health Department notified?



What is Kaplan's Criteria

- A. Incubation period of 24-48 hours**
- B. Illness lasting 12-60 hours**
- C. More than 50% of people with vomiting**
- D. All of the above**
- E. Who is Kaplan?**



When should samples be collected for norovirus testing?

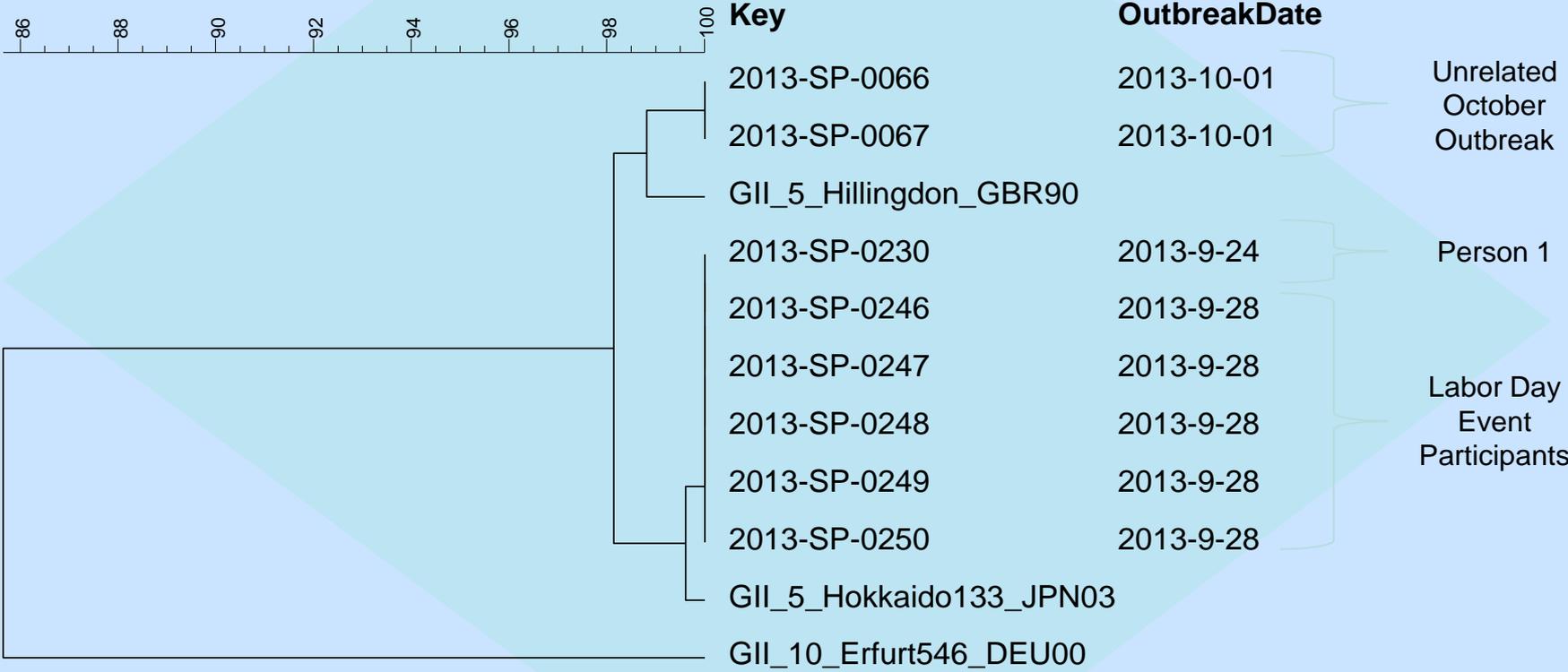
- A. 48-72 hours after onset**
- B. 5-7 days after onset**
- C. 10-14 days after onset**
- D. Never, who wants to collect stool or vomit samples**



Phylogenetic Tree

Pairwise (OG:100%,UG:0%) (FAST:2,10) Gapcost:0%

SEQ_RegC-GII





Grocery Store employee travels back home...

Crappiest flight ever: 26 passengers with gastroenteritis make 13 hour flight a living hell

From From NEWS.COM.AU

Last Updated: 3:33 PM, August 1, 2013

Posted: 10:57 AM, August 1, 2013

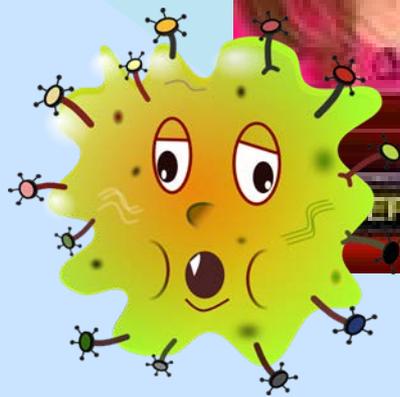
Thirteen hours in the air, eight toilets and 26 passengers violently ill with gastroenteritis.

That was the scene when an international flight became the trip from hell after 26 passengers fell sick during a Qantas flight.

How can Lab, Epi, EH Keep this outbreak from spreading?



When does the media get involved?



How does this shape response?

Options for preventing spread

Clean-up and Disinfection for Norovirus ("Stomach Bug")

THESE DIRECTIONS SHOULD BE USED TO RESPOND TO ANY VOMITING OR DIARRHEA ACCIDENT

Note: Anything that has been in contact with vomit and diarrhea should be discarded or disinfected.

1 Clean up

- Remove vomit or diarrhea right away!
 - Wearing protective clothing, such as disposable gloves, apron and/or mask, wipe up vomit or diarrhea with paper towels
 - Use kitty litter, baking soda or other absorbent material on carpets and upholstery to absorb liquid; do not vacuum material; pick up using paper towels
 - Dispose of paper towel/waste in a plastic trash bag or biohazard bag
- Use soapy water to wash surfaces that contacted vomit or diarrhea and all nearby high-touch surfaces, such as door knobs and toilet handles
- Rinse thoroughly with plain water
- Wipe dry with paper towels

DON'T STOP HERE: GERMS CAN REMAIN ON SURFACES EVEN AFTER CLEANING!

2 Disinfect surfaces by applying a chlorine bleach solution

Steam cleaning may be preferable for carpets and upholstery. Chlorine bleach could permanently stain these.

a. Prepare a chlorine bleach solution

Make bleach solutions fresh daily; keep out of reach of children; never mix bleach solution with other cleaners

IF HARD SURFACES ARE AFFECTED...
e.g., non-porous surfaces, vinyl, ceramic tile, sealed counter-tops, sinks, toilets

1/3 CUP BLEACH + 1 GALLON WATER
CONCENTRATION - 1000 ppm

IF POROUS SURFACES ARE AFFECTED...
e.g., wooden floors or unsealed concrete or natural stone surfaces

1 2/3 CUPS BLEACH + 1 GALLON WATER
CONCENTRATION - 5000 ppm

- Air dry surfaces unlikely to have food or mouth contact or
- Rinse all surfaces intended for food or mouth contact with plain water before use

3 Wash your hands thoroughly with soap and water

Hand sanitizers may not be effective against norovirus

Facts about Norovirus

Norovirus is the leading cause of outbreaks of diarrhea and vomiting in the US, and it spreads quickly.

Norovirus spreads by contact with an infected person or by touching a contaminated surface or using contaminated food or drinking contaminated water. Norovirus particles can even float through the air and then settle on surfaces, spreading contamination.

Norovirus particles are extremely small and billions of them are in the stool and vomit of infected people.

Any vomit or diarrhea may contain norovirus and should be treated as though it does.

People can transfer norovirus to others for at least three days after being sick.

IF CLOTHING OR OTHER FABRICS ARE AFFECTED

- Remove and wash all clothing or fabric that may have touched vomit or diarrhea
- Machine wash these items with detergent, hot water and bleach if recommended, choosing the longest wash cycle
- Machine dry

disinfect-for-health.org

Scientific experts from the U.S. Centers for Disease Control and Prevention (CDC) helped to develop this poster. For more information on norovirus prevention, please see <http://www.cdc.gov/norovirus/preventing-infection.html>.

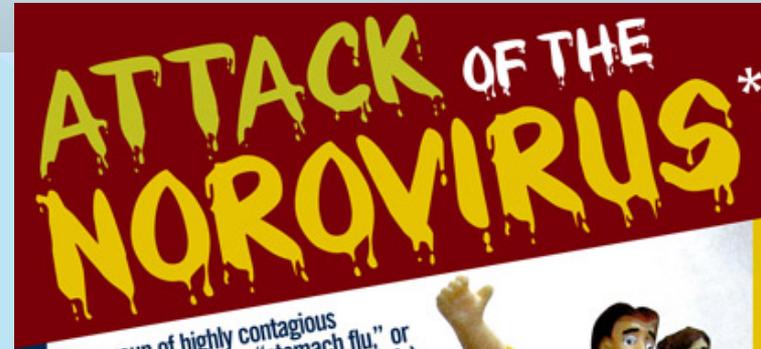


www.cdc.gov

neha.org

waterandhealth.org

americanchemistry.com



* a group of highly contagious viruses that cause "stomach flu," or gastroenteritis (GAS-tro-en-ter-I-tis)

Repel it by frequently:

- washing your hands with soap + water
- OR using an alcohol-based hand sanitizer. (especially after toilet visits and before eating and/or preparing food)
- AND avoiding sharing food, utensils and drinking containers.

Most individuals recover from norovirus in 1-2 days on their own by treating symptoms and staying hydrated.

Symptoms can begin suddenly, and may include:

- Nausea
- Vomiting
- Diarrhea
- Stomach cramping
- A low-grade fever
- Chills
- Muscle aches
- General sense of tiredness



www.health.arizona.edu

Norovirus in One Minute





Time to collaborate and “disinfect” the room

throw up



diarrhea



**Everyone reach down and pick up
one or two pom-poms... unless
you wish to take home a souvenir.**

With Grateful

Acknowledgement to:

Leslie Barclay

CDC

Julia Wolfe

Orange County, CA

Michéle Samarya-Timm

Somerset County, NJ

