

Welcome

Office for State, Tribal, Local and Territorial Support
presents . . .

CDC Vital Signs **Preventing Norovirus Outbreaks from Contaminated Food**

June 10, 2014
2:00–3:00 pm (EDT)



Centers for Disease Control and Prevention
Office for State, Tribal, Local and Territorial Support

Agenda

2:00 pm	Welcome & Introductions	Judith A. Monroe, MD Director, Office for State, Tribal, Local and Territorial Support Deputy Director, CDC
2:04 pm	Presentations	Aron Hall, DVM, MSPH, DACVPM Epidemiologist, Viral Gastroenteritis Team, National Center for Immunization and Respiratory Diseases, CDC Danny Ripley Food Inspector 2, Metro Public Health Department, Metro Government of Nashville and Davidson County Amy Saupe, MPH Epidemiologist, Foodborne Diseases Unit, Minnesota Department of Health
2:30 pm	Q&A and Discussion	Judith A. Monroe, MD
2:55 pm	Wrap-up	
3:00 pm	End of Call	



CDC Vital**signs**TM Teleconference

to support STLT efforts and build momentum around the monthly release of CDC *Vital Signs*



CDC *Vital Signs* Town Hall

Preventing Norovirus Outbreaks

Aron Hall, DVM, MSPH, DACVPM

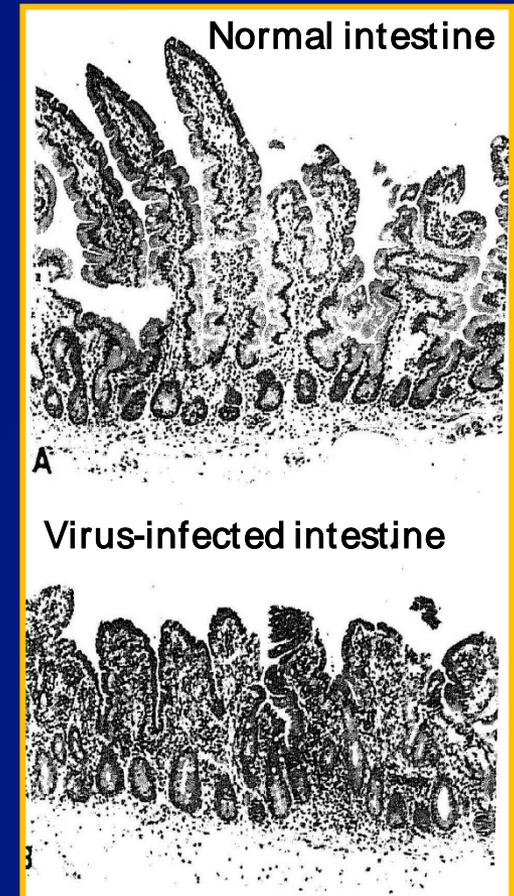
Epidemiologist, Division of Viral Diseases

National Center for Immunization and Respiratory Diseases

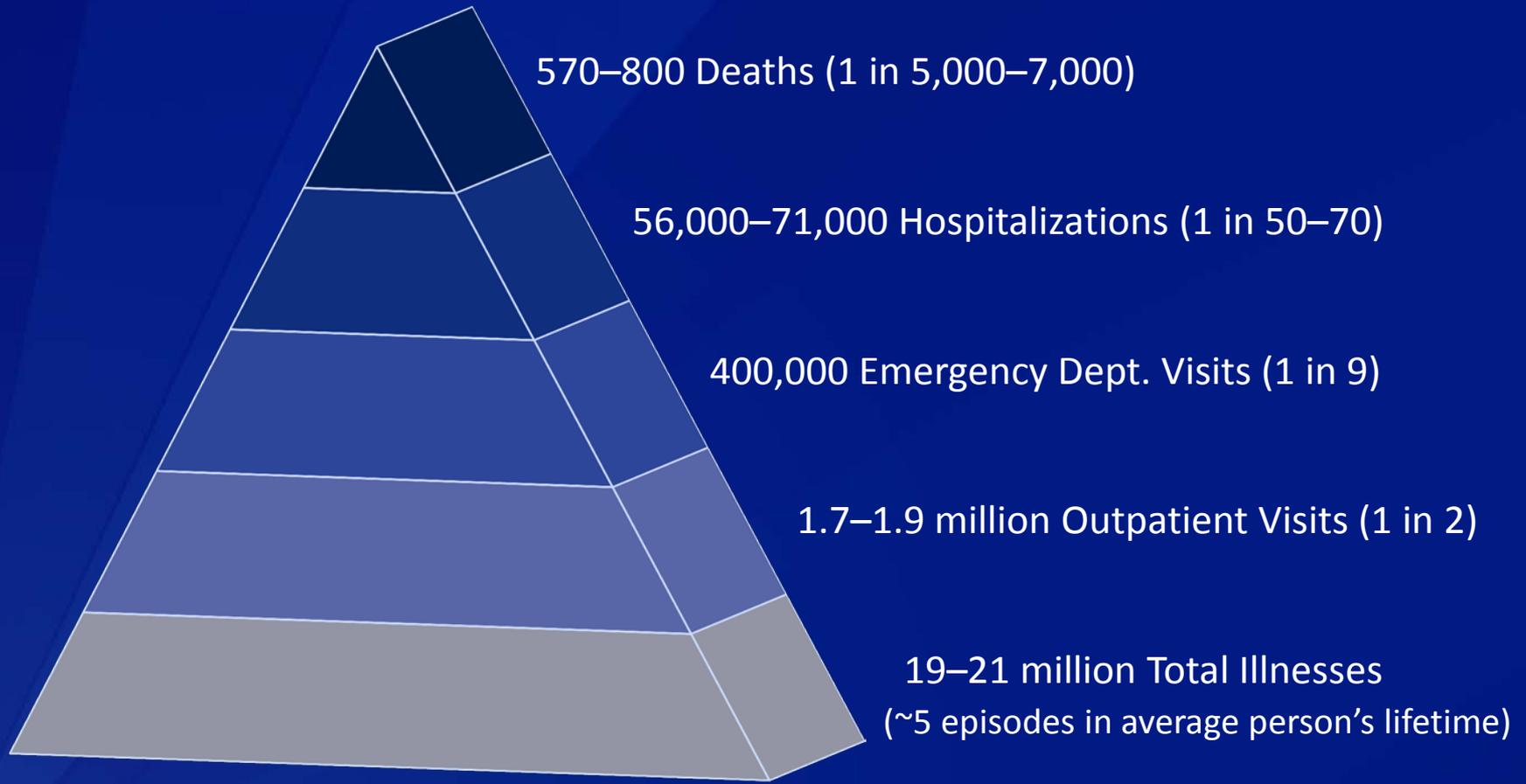
June 10, 2014

Norovirus Illness

- Incubation period: 12–48 hours
- Acute-onset vomiting and/or diarrhea
 - Watery, non-bloody stools
 - Abdominal cramps, nausea, low-grade fever
- Most recover after 12–72 hours
 - 10–12% seek medical attention; some require hospitalization and fluid therapy
 - More severe illness and death possible in elderly and those with other illnesses
- 30% of infections are asymptomatic



Annual US Burden of Norovirus Illness

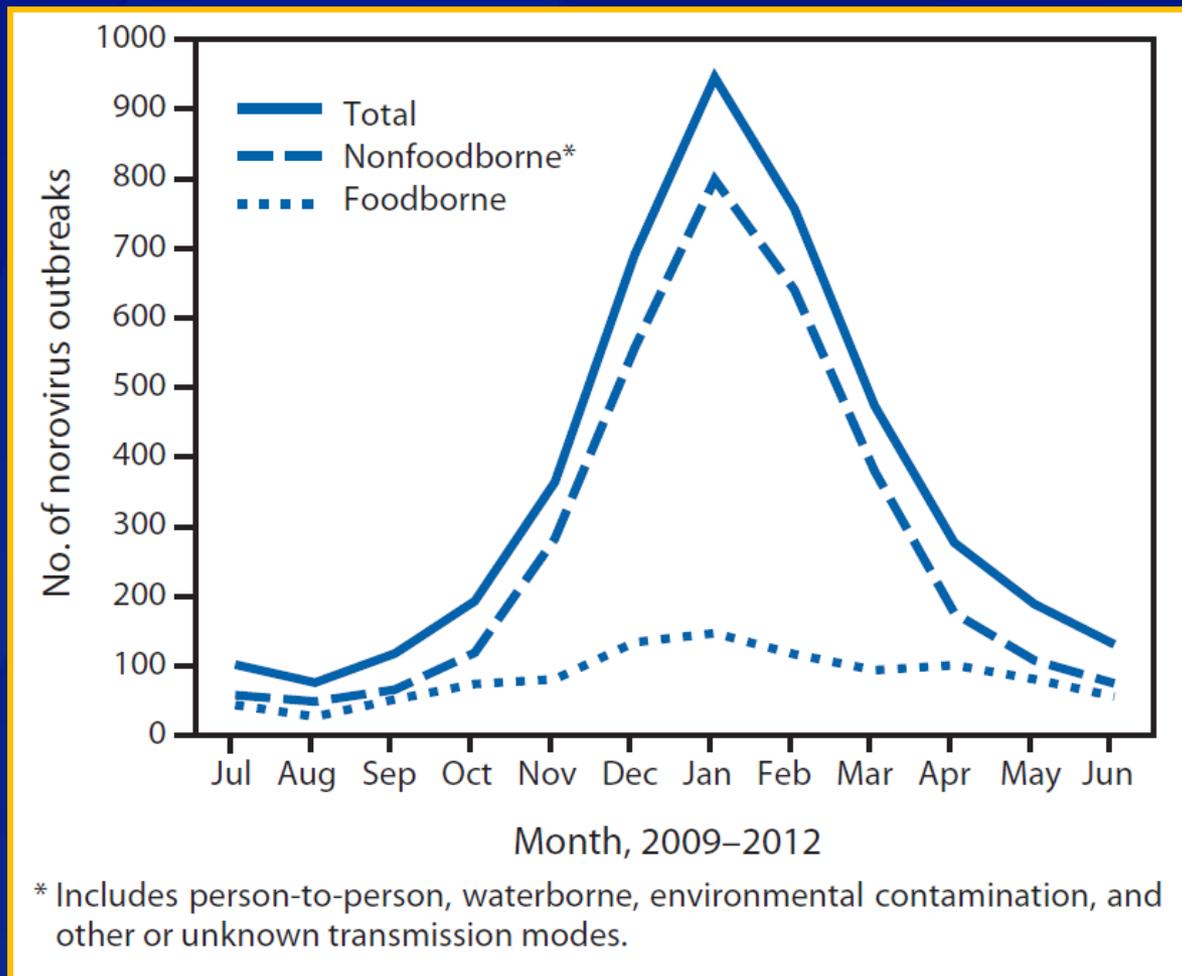


Source: Hall 2013 EID

Norovirus *Vital Signs* MMWR

- ❑ Norovirus outbreaks reported to CDC through the National Outbreak Reporting System (NORS) from 2009–2012
- ❑ 4,318 norovirus outbreaks reported
 - 161,253 illnesses, 2,512 hospitalizations, 304 deaths
- ❑ Primary transmission modes
 - 69% Person-to-person
 - 23% Foodborne
 - < 1% Environmental and waterborne
 - 7% Unknown routes
- ❑ 69% outbreaks were lab confirmed
- ❑ GII most common genogroup detected (2/3^{rds} GII.4)

Norovirus Outbreaks Reported to NORS, 2009–2012

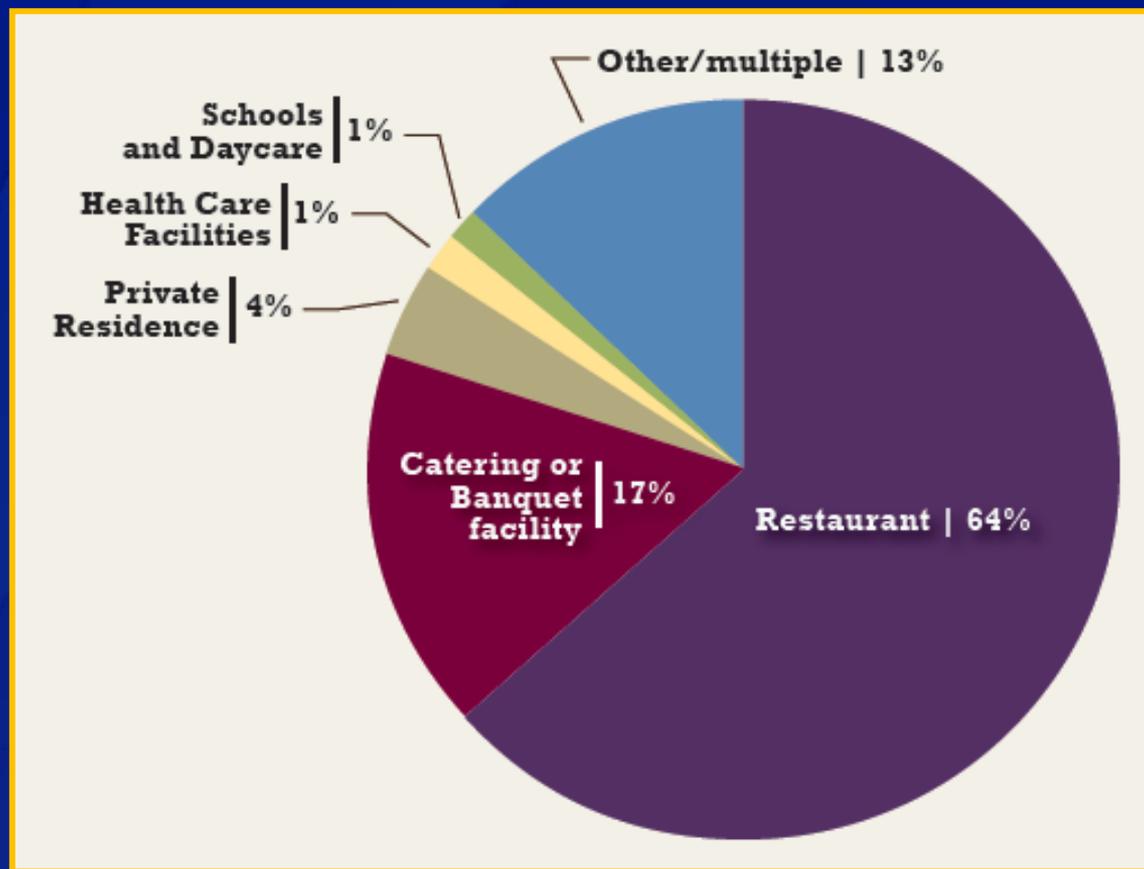


Source: Hall 2014 MMWR

Foodborne Norovirus Outbreaks Reported to NORS, 2009–2012 (N=1,008)

- ❑ 43 states reported, outbreaks occurred year round
- ❑ Less pronounced winter seasonality of foodborne outbreaks compared to non-foodborne outbreaks
- ❑ Secondary transmission through other modes reported for 16% outbreaks

Settings of Foodborne Norovirus Outbreaks Reported to NORS, 2009–2012



Source: Hall 2014 MMWR

Workers and Foods Implicated

- ❑ 520 (52%) foodborne norovirus outbreaks reported with factors contributing to contamination
 - Infectious food worker implicated as source in 70%
 - Bare-hand contact with ready-to-eat foods identified in 54%

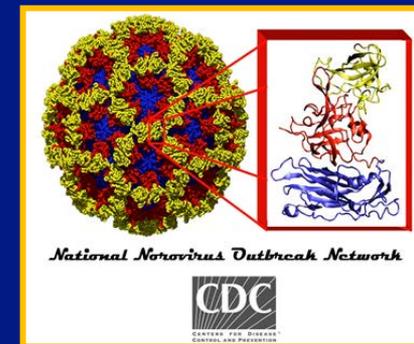
- ❑ Specific food item implicated in 324 (32%) foodborne norovirus outbreaks
 - 92% implicated foods contaminated during final preparation
 - 75% were foods eaten raw
 - Single food category identified in only 21%
 - Vegetable row crops (30%), fruits (21%), mollusks (19%)

Conclusions and Public Health Implications

- ❑ Noroviruses are the leading cause of reported foodborne disease outbreaks in the United States
- ❑ Infected food workers are the most common source of foodborne norovirus outbreaks, often by touching ready-to-eat foods in restaurants with their bare hands
- ❑ The food service industry can help foster an environment that promotes food safety and ensures that food service workers adhere to recommended practices

What can state and local governments do?

- ❑ Adopt and enforce all provisions of the FDA model Food Code to better safeguard food.
- ❑ Investigate norovirus outbreaks thoroughly to identify sources and causes and to improve control strategies.
- ❑ Participate in CDC-supported surveillance efforts to improve monitoring and evaluation of outbreaks.

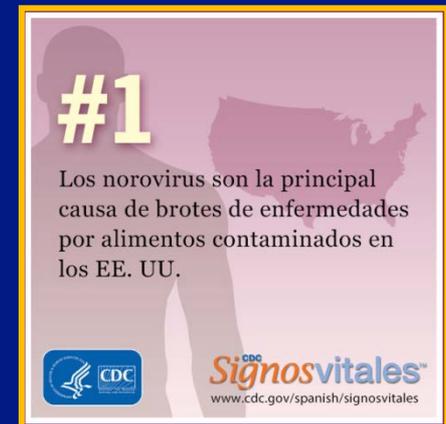
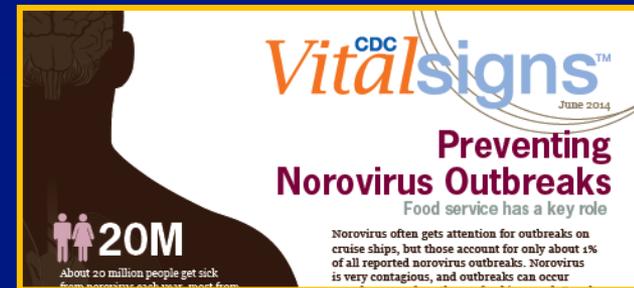
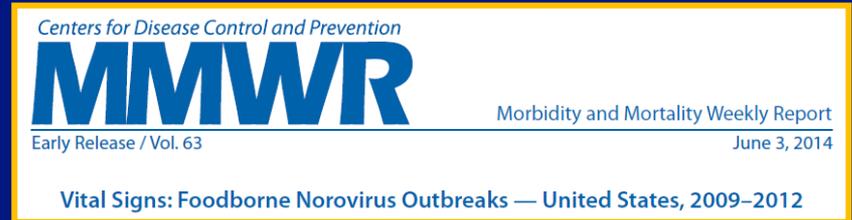


Norovirus Vital Signs Products

- ❑ *Morbidity and Mortality Weekly Report (MMWR)*
- ❑ *Vital Signs* fact sheet
- ❑ Social media activities
- ❑ Podcasts, graphics, and videos (also in Spanish)
- ❑ *Vital Signs* Town Hall Teleconference

<http://www.cdc.gov/vitalsigns/>

<http://www.cdc.gov/stltpublichealth/townhall/>





Aron Hall, DVM, MSPH, DACVPM
Epidemiologist, Division of Viral Diseases

National Center for Immunization
and Respiratory Diseases

AJHall@cdc.gov

For more information, please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333

Telephone: 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348

E-mail: cdcinfo@cdc.gov Web: <http://www.cdc.gov>

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.



Norovirus: Lessons Learned Through Local Outbreak Investigations

Danny Ripley

Food Inspector II

Environmental Health Specialist Network (EHS-Net) Representative

Metro Public Health Department

Nashville, TN

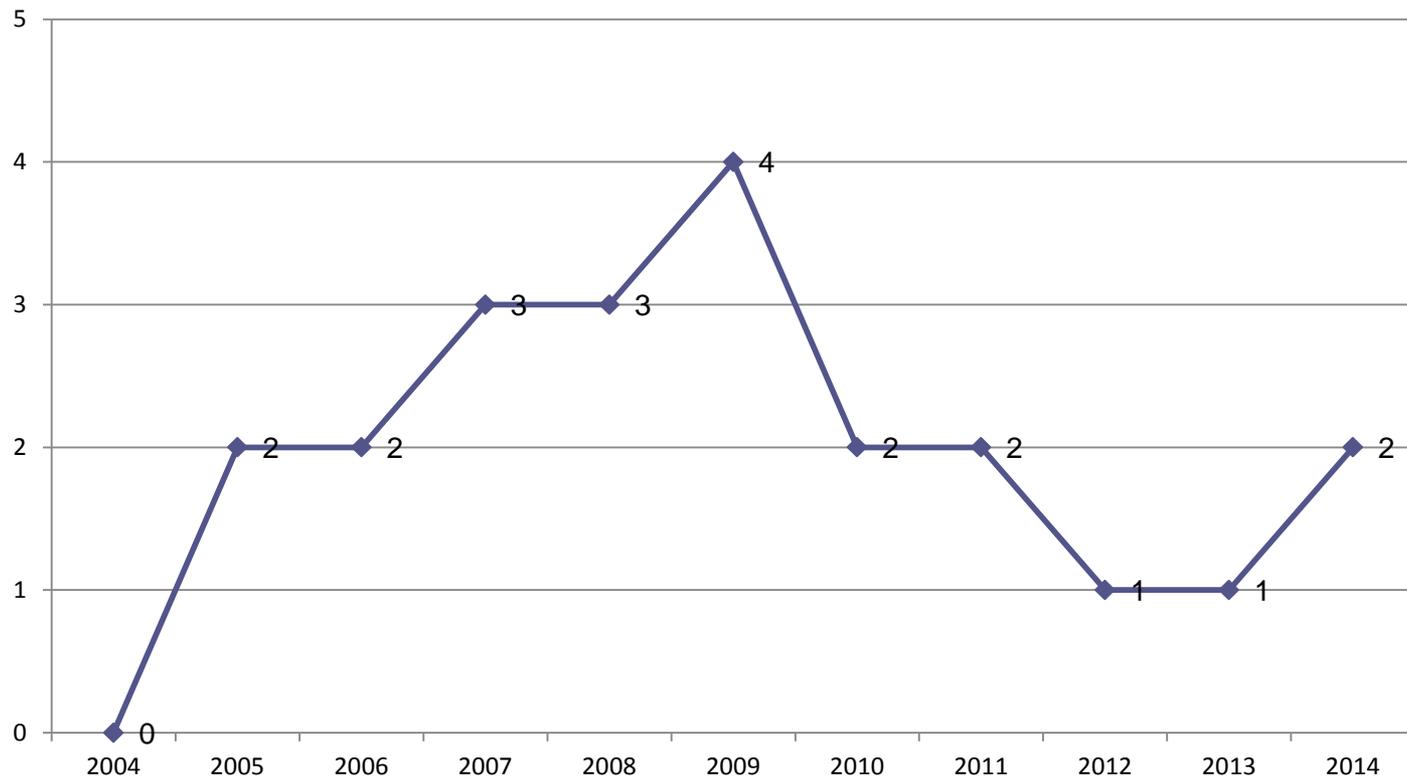
Metro Davidson County, TN

- Population 658K
- Permit/inspect 4,500 restaurants and markets
- Food inspection/investigation contracted through Tennessee Department of Health
- Annual foodborne complaints and outbreaks
 - ~ 160 isolated foodborne complaints
 - ~ 10 foodborne investigations
 - ~ 3 foodborne outbreaks confirmed

Foodborne Outbreaks Investigated from 2004 to Present

Total Outbreaks Investigated	35
Bacterial	11
Confirmed	9
Suspected	2
Norovirus	22
Confirmed	15
Suspected	7
Manager Certification	4 (20%)
Ill Worker Policy in Place	0
Other	2

Norovirus Outbreaks Nashville/Davidson County—2004 to Present



The Importance of Exclusion

- On December 5, 2007, a food handler experiences vomiting at 4:00 am
- Same food handler works from 11:00 am–12:00 pm the same day
 - Prepares sandwiches
 - Barriers (gloves and utensils) were used at all times
 - Reported hand washing before/during work
- Food handler left work early due to lethargy
 - No additional symptoms reported since 4:00 am, Dec. 5
 - Worker reportedly recovered within 24 hours
- Multiple cases identified with illness onsets of Dec. 6–7
- Stool cultures from both worker and customers were norovirus-positive
- No manager certification or ill worker policy in place prior to outbreak



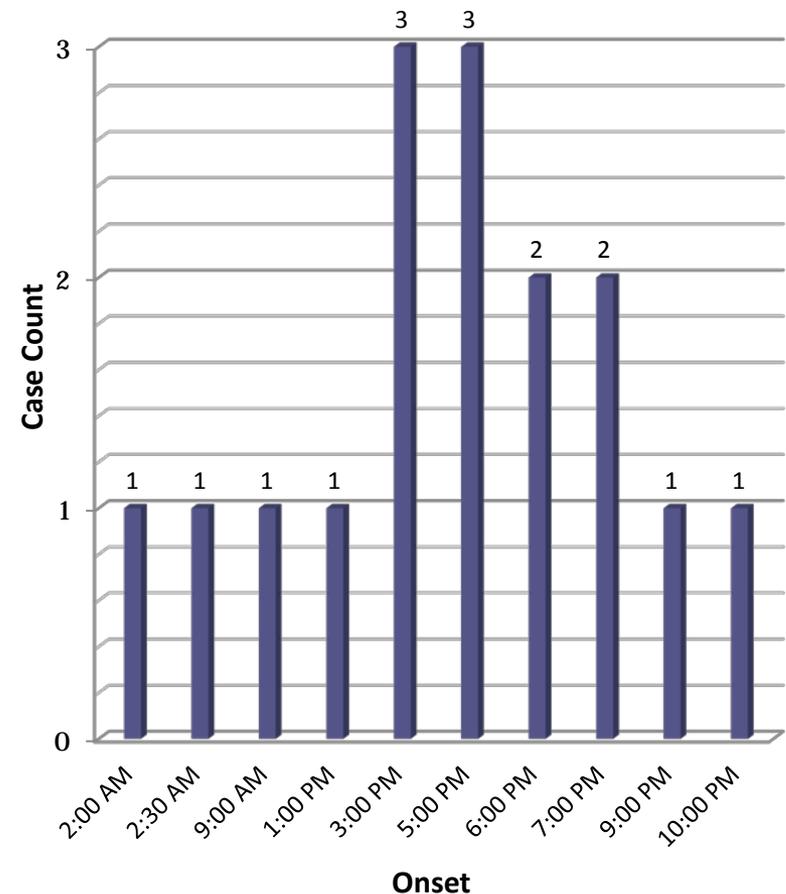
Norovirus Persistence in Host

- Cluster of eight cases confirmed with norovirus
- Common food establishment linked
- Employee interviews yielded one suspect case
- Employee stool sample collected **10 days** following last reported symptom
 - Norovirus positive
 - Helped link the outbreak to an infected worker
- No manager certification or ill worker policy in place prior to outbreak



Importance of Ill Worker Reporting

- Food worker becomes sick at work
- Between preparing ready-to-eat (RTE) foods, the worker exits kitchen four different times to vomit in nearby restroom
- Food worker later notifies manager, who sends worker home
- Foods prepared by sick worker were served during banquet
- Ill food worker reportedly washed hands and wore gloves following restroom visits
- 17 of 28 people at the banquet became sick
- Norovirus was suspected in both workers and customers
- No manager certification or ill worker policy in place prior to outbreak





Key Lessons Learned

- Exclusion may be the only sure way to prevent an infected food handler from spreading the norovirus
- Management awareness of employee illnesses is critical to help reduce the impact of an ill worker being present
 - Manager training and food safety certification
 - Ill worker reporting policy implementation



Norovirus Control Measures

- Identify and exclude ill workers
 - Ill worker reporting policy
- Establish strong hand-washing cultures
- Create conditions conducive to no bare-hand contact of RTE foods
 - Adequate barriers such as gloves or utensils
 - Proper use of barriers
- Develop protocols for proper sanitizing
 - Identify surfaces, chemicals, and persons responsible

Danny Ripley

danny.ripley@nashville.gov



Metro Public Health Dept

Nashville / Davidson County

Promoting and Protecting Health



Norovirus Outbreak Surveillance in Minnesota

Amy Saupe, MPH

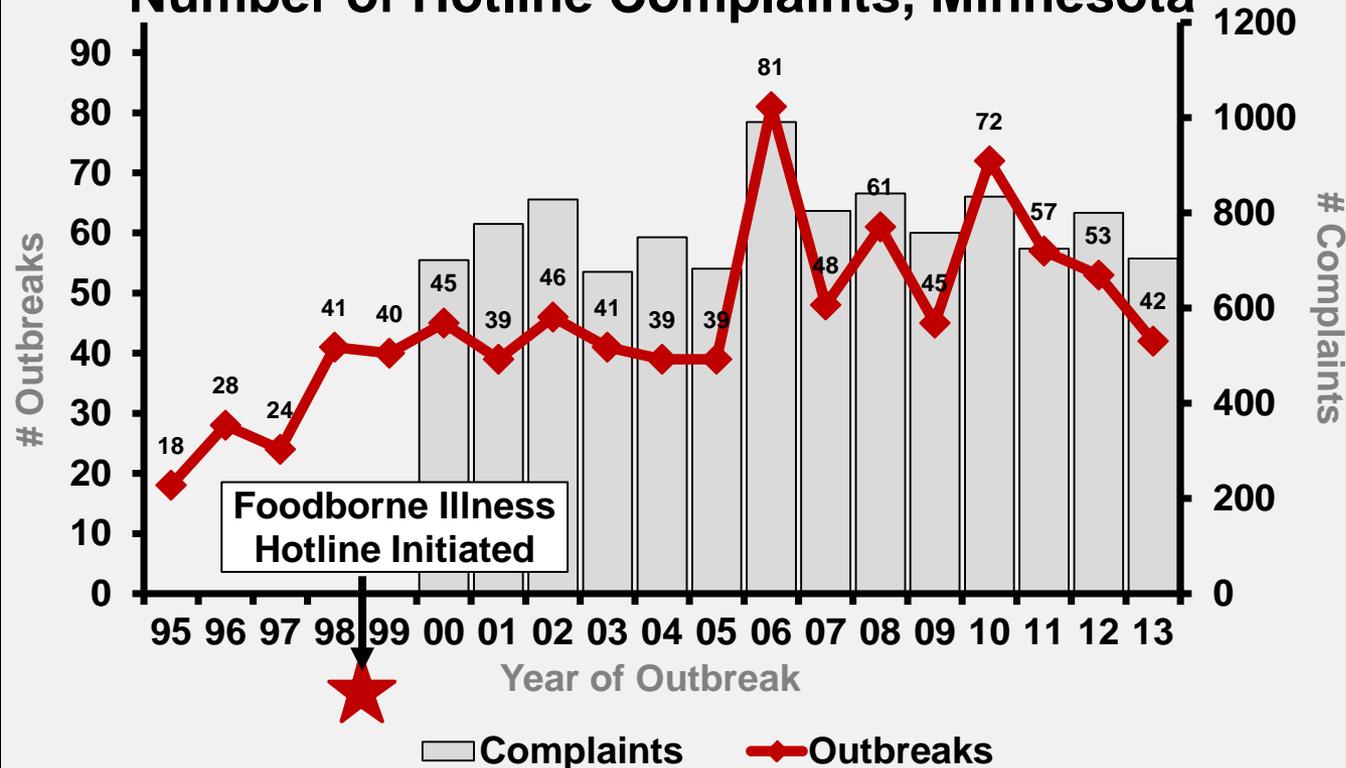
Epidemiologist

Foodborne Diseases Unit

Minnesota Department of Health

Foodborne Illness Complaint Hotline

Confirmed Foodborne Outbreaks and Number of Hotline Complaints, Minnesota



- Centralized at state
- Staffed by one person
- Complaints forwarded to local jurisdiction

**Minnesota
Foodborne
Illness
Hotline**

Call to report
foodborne illness:

(651) 201-5414

Toll free statewide:

1-877-366-3455

1-877-FOOD ILL



625 N Robert St.
St. Paul, MN 55155

www.health.state.mn.us

Norovirus Outbreak Investigations

≥ 2 ill with one common exposure

- Investigate all potential outbreaks without delay
 - True estimate of norovirus scope/burden
 - Investigation is never a waste of time (e.g., opportunity to educate)

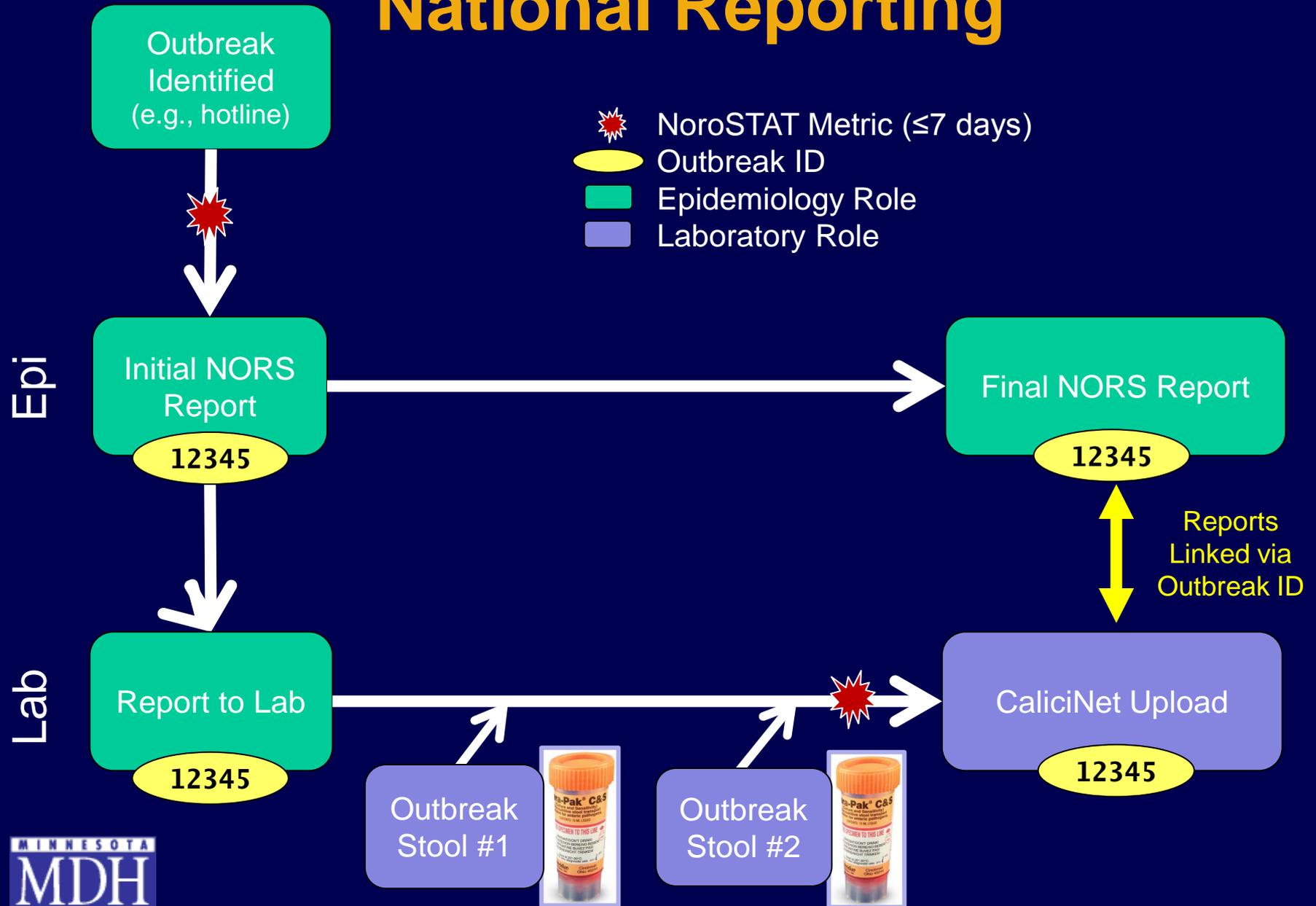
Immediate interventions (environmental health)

- Prevent immediate further transmission
 - Food worker illness
 - Clean/sanitize
 - Toss ready-to-eat foods/change prep practices

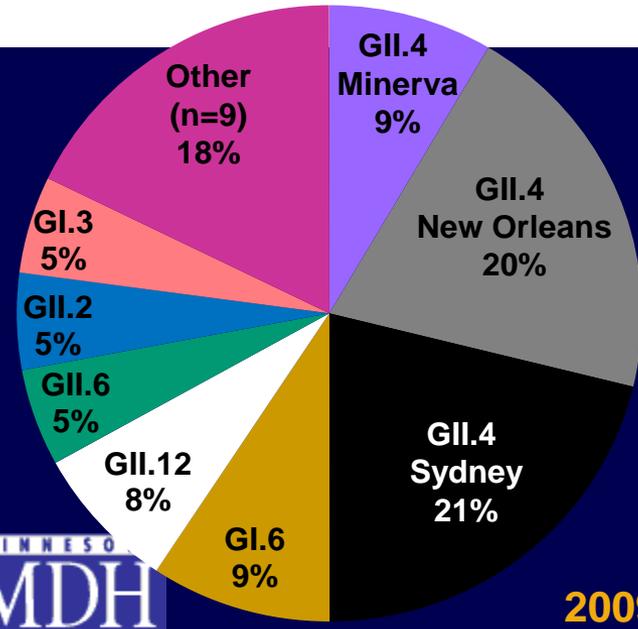
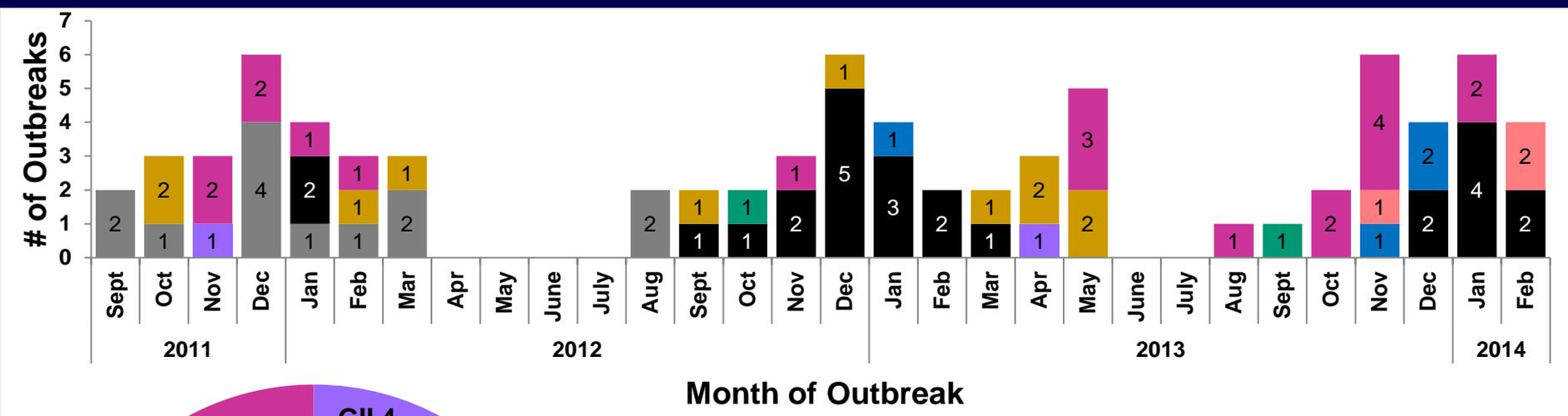
Statistical analysis/vehicle identification

- Prevent future outbreaks
 - Novel vehicles
 - Feedback to facility
 - Trends
 - Contributing factors

National Reporting



Norovirus Outbreak Genotypes, Minnesota



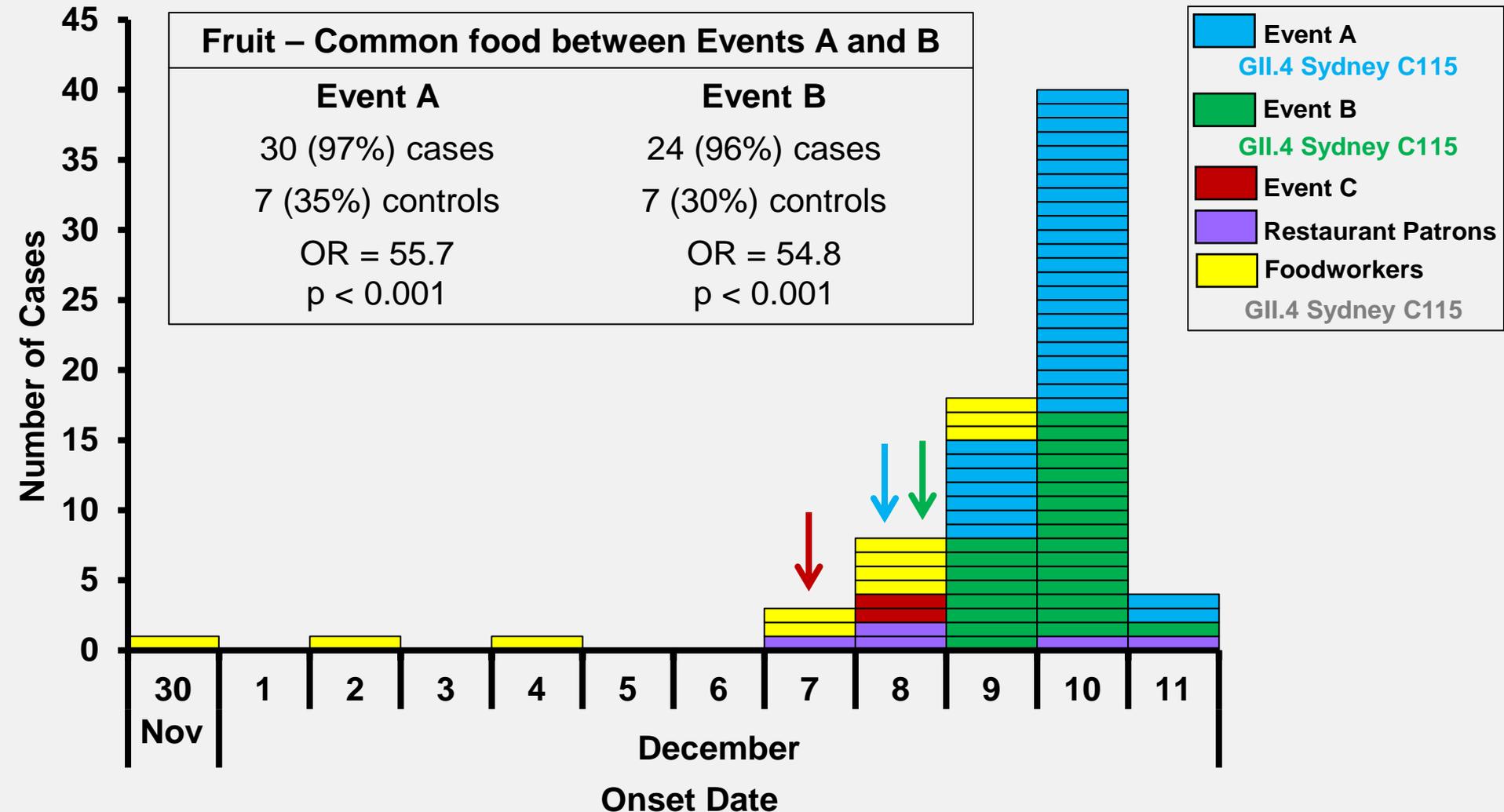
- Other
- GI.3
- GI.6
- GII.2
- GII.6
- GII.4 Sydney
- GII.4 New Orleans
- GII.4 Minerva (Den Haag)

2009–Feb 2014

Norovirus Outbreak Associated with a Catered Funeral, 2014

- Hotline call from physician—two patients with gastroenteritis attended a funeral lunch on Feb. 4
- All foods provided by restaurant caterer
- 13 (28%) interviewed attendees ill ← GII.3 (2 stools)
- 5 (56%) of 9 employees ill ← GII.4 Sydney (3 stools)
 - Onsets Jan. 30–Feb. 5
 - No bare-hand contact observed
 - Hand hygiene adequate
- 3 children vomited in restaurant in week prior

Foodborne Norovirus Outbreak Associated with Catered Events, 2013





Thank you!

Amy Saupe, MPH

Epidemiologist

Foodborne Diseases Unit

Minnesota Department of Health

amy.saupe@state.mn.us

CDC *Vital Signs* Electronic Media Resources

Become a fan on Facebook

www.facebook.com/cdc

Follow us on Twitter

twitter.com/CDCgov/

Syndicate *Vital Signs* on your website

<http://tools.cdc.gov/syndication/search.aspx?searchURL=www.cdc.gov%2fvitalsigns>

Vital Signs interactive buttons and banners

www.cdc.gov/vitalsigns/SocialMedia.html

Public Health Practice Stories from the Field

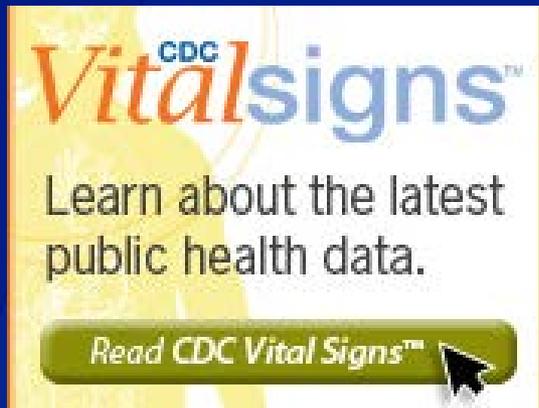
- Stories about the implementation of Public Health Practice Stories from the Field



www.cdc.gov/stltpublichealth/phpracticestories

Provide feedback on this teleconference:

OSTLTSFeedback@cdc.gov



Please mark your calendars for the next
Vital Signs Town Hall Teleconference

July 8, 2014

2:00–3:00 pm (EDT)

For more information, please contact Centers for Disease Control and Prevention.

1600 Clifton Road NE, Atlanta, GA 30333
Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
Email: cdcinfo@cdc.gov Web: www.cdc.gov

The findings and conclusions in this presentation are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

