Yakima Health District BULLETIN

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FOODBORNE ILLNESS

The Centers for Disease Control and Prevention estimates that 76 million cases of foodborne illness occur annually (including 300,000 hospitalizations and 5,000 deaths) with the vast majority (82%) having unknown etiology. YHD investigates suspected outbreaks of foodborne illness to interrupt transmission, identify and remedy causative factors, and gain knowledge for future prevention efforts. A suspected outbreak of foodborne disease is defined as two or more individuals in different households diagnosed with the same potentially foodborne illness who had exposure to a common food source within one incubation period prior to onset. Typical components of an outbreak investigation include laboratory evaluation of suspected cases, interview of all exposed individuals, and inspection of facilities involved in food preparation. Confirmation of foodborne disease outbreaks requires supportive laboratory, epidemiologic, and environmental data obtained through the formal investigation. Leading causes of foodborne disease outbreaks include inadequate cooking, inappropriate holding temperatures, and cross contamination during preparation (often involving bare hand contact, poor handwashing, and/or inadequate surface/utensil disinfection).

In addition to recognized and unrecognized outbreaks, foodborne illness can occur sporadically when individuals have an exposure that does not involve others (e.g., mishandled food ingested by only one person). Last, but certainly not least, many foodborne diseases can be transmitted by other routes (e.g., person-to-person, animal-to-person). This is particularly common in winter months when circulation of viral gastroenteritis is common in the community and food is not a dominant vehicle of transmission.

In collaboration with Children's Hospital and Regional Medical Center, YHD is participating in a multi-site study of the epidemiology of reported cases of bacterial gastroenteritis. Hopefully, this study will help better delineate modes of transmission and the proportion of cases that are truly foodborne.

YHD encourages you in your counseling and education of patients with gastroenteritis to explain the full spectrum of potential routes of exposure for the suspected pathogen, without focusing exclusively on foodborne routes. This helps to maintain objectivity and validity of follow-up interviews conducted both for disease control and research purposes. Too often, patients assume that the last commercial food establishment at which they ate was the source of their infection, making identification of other possible exposures difficult. Misattribution of gastrointestinal illness to foodborne routes can also generate litigious pursuits that may be false and misdirect patient, YHD, and food establishment resources.

YHD encourages you to ask patients with gastroenteritis about other ill persons in their home, work, or social network environments. When you do suspect an outbreak of any illness, foodborne or otherwise, please notify Allison Schletzbaum at (509) 249-6550 or Communicable Disease at (206) 249-6541 .

Please see the chart on page 3 for additional information on Agents of Foodborne Illness.

Inside this issue:

Acute Viral Gastroenteritis Outbreaks in Long-term Care Facilities

Viral gastroenteritis outbreaks can spread rapidly in congregate living settings. This report describes one of several recent outbreaks involving long term care facilities.

Over the course of 12 days, *Facility A* experienced an outbreak of acute gastrointestinal illness. A case was defined as the sudden onset of nausea,

(Continued on page 2)

(Continued from page 1)

vomiting and diarrhea preceded by 24 to 48 hours of increasing fatigue and lethargy. Acute symptoms lasted from 12 to 24 hours with total resolution of symptoms in 48 to 72 hours. Forty (49%) of 82 residents and 17 staff members were affected. None were hospitalized nor did any die. Stool samples from a sample of cases were negative for bacterial pathogens, but 3 of 5 specimens were positive for norovirus testing conducted by the Washington State Department of Health's Public Health Laboratory.

The earliest documented case was a nursing staff member who developed symptoms the evening after her shift. She had no known exposure to gastrointestinal illness offsite and did not work subsequent to the development of symptoms. The first patient noted to develop symptoms on the following day was described as having poor hygiene and was found wandering through the building. All but three of the ill patients ate in the common dining area. Of the 17 employees ill, seven were nursing assistants and three were registered nurses. All ten employees had direct contact with the ill patients. No facility foodworkers were ill.

Control measures instituted on day 6 of the outbreak included: exclusion of ill staff until 48 hours after resolution of symptoms; using contact precautions with cases; cohorting of cases separate from well residents; prohibiting cases from sharing bathrooms with well residents; developing an acute illness room for new cases; reinforcing the importance of handwashing; increasing environmental decontamination; and discontinuing admissions until 48 hours after the last case's onset. Case counts subsequently declined and cessation of transmission occurred within six days of institution of these measures.

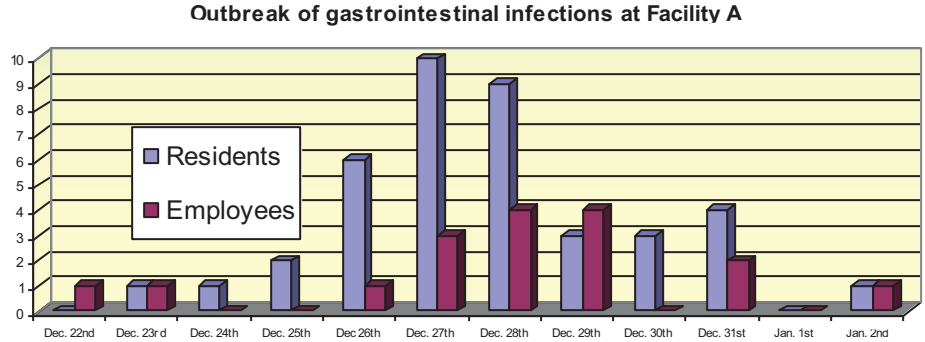
Editorial note:

This outbreak demonstrated typical features of a viral gastroenteritis outbreak caused by norovirus: rapid onset of nausea, vomiting and/or diarrhea, often with fever, during winter months; relatively short incubation period and duration of illness (24-48h each); rapid serial spread through the facility with both residents and staff affected; absence of recovery of bacterial pathogens from stool specimens from a sample of cases; and curtailment of transmission with institution of control measures. Rarely are these outbreaks foodborne; they are usually introduced to the facility by a new or returning resident, a visitor, or a staff member. In this instance the source of introduction was not determined. The absence of ill foodworkers and the serial transmission peaking several incubation periods after onset of the outbreak points away from this being a foodborne outbreak instigated by an affected foodworker.

In addition to ensuring appropriate medical management of affected residents (e.g., meeting hydration and caloric needs while ill; recognizing and transferring residents needing hospital care), facilities can limit the scope and duration of these outbreaks by carrying out the following measures:

Control Measures for Outbreaks of Acute Gastroenteritis in LTCFs

- Report the outbreak to YHD @ (509) 249-6541
- Cohort ill residents
- Collect samples for stool pathogen and viral testing (in consultation with YHD)
- Restrict ill residents to room unit 48 hrs after symptoms resolve
- Staff education
- Increase hand hygiene for staff and residents- add/increase alcohol gel **IN ADDITION** to hand washing
- Increase environmental cleaning
- Restrict ill employees from the facility until 48 hours after symptoms resolve*
- Halt group activities until 96 hours after the last onset
- Restrict self-service food bars or other shared food
- No rectal temperatures; use disposable thermometers
- Alert visitors (need for hand washing) and exclude ill visitors
- Staff assigned one group of residents per shift
- Halt new admissions until 96 hours after the last onset
- Kitchen inspection (in consultation with YHD); discard no food until YHD concurs
- Laundry inspection to verify proper handling and disinfection



Agents of Foodborne Illness

Class	Typical Organisms	Typical Incubation	Typical Symptoms	Common Vehicles
Bacterial (invasive)	*Salmonella* *Campylobacter* *Shigella* *Listeria* *Yersinia* EIEC[1] EPEC[1] EHEC[1] *Streptococcus*[2]	24-120 hrs	Fever, abdominal pain, diarrhea (sometimes bloody)	Contaminated or mishandled animal products Fecally contaminated vegetable/fruit products Other human cases Animal exposure (pets, livestock, farms)
Bacterial (toxigenic)	*Staphyloccus* *Clostridium (prefringens, botulinum)* *Bacillus cereus* ETEC[1] Vibrio	2-6 hrs	Nausea, vomiting, watery diarrhea, Botulism	Mishandled food
Viral	Norovirus Calicivirus Enterovirus Adenovirus Rotavirus Astrovirus	24-48 hrs	Nausea with vomiting and/ or diarrhea	Direct or fomite contact with other ill individuals Food contaminated by ill food handler
Parasitic	*Cryptosporidium* *Cyclospora* *Toxoplasma* *Trichinella* *Giardia*	Varies by organism	Varies by organism	Contaminated food or water Other ill individuals Contact with animals or their feces
Biologic toxins	Histamine/scombroid Ciguatera Shellfish	A few hours or less	Varies by toxin (flushing, gastrointestinal, neurologic)	Decomposed fish Reef fish Shellfish
Other toxins	Metals Preservatives Production catalysts	Usually minutes to hours	Abdominal pain, nausea, vomiting for metals. Varies for other substances.	Exogenously contaminated food (usually at production source)

[1]EIEC = enteroinvasive E. coli
[1]EPEC = enteropathogenic E. coli
[1]EHEC = enterohemorrhagic E. coli (e.g., E. coli 0157:H7)
[2]Streptococcal food poisoning usually presents as pharyngitis

YAKIMA HEALTH DISTRICT

104 N 1st Street, Suite 204
Yakima, WA 98901


Reporting Line: (509) 249-6541
After hours Emergency: (509) 575-4040 #1
Toll Free: (800) 535-5016 x 541


Confidential Fax: (509) 249-6628


http://www.yakimapublichealth.org

Notifiable Conditions Summary and Comparison Year-End, 2005

Condition	Cases Reported January-December			
	2005	2004	2003	2002
Campylobacteriosis	110	85	115	102
Cryptosporidiosis	6	2	0	0
Enterohemorrhagic E. coli	2	3	4	10
Giardiasis	28	29	26	32
Salmonellosis	49	29	55	54
Shigellosis	24	7	18	28
Hepatitis A acute	3	2	0	0
Hepatitis B acute	1	3	0	0
Hepatitis B chronic	14	22	22	17
Hepatitis C acute	1	2	0	0
Hepatitis C chronic	214	219	253	255
Meningococcal	1	3	0	0
Pertussis	179	58	17	89
Tuberculosis	14	12	8	8
HIV/AIDS	14	12	13	10
Chlamydia	973	1002	953	883
Genital Herpes—Initial	99	125	82	76
Gonorrhea	138	198	107	61
Primary and Secondary Syphilis	2	0	2	1