

Public Health Update

March 2005

Notifiable Diseases 2004: A Year in Review

By Tri-County Health Department Epidemiology Staff

This Public Health Update includes brief descriptions of many of the disease outbreaks and large communicable disease control efforts that occurred in the jurisdiction that Tri-County Health Department (TCHD) serves. In addition, summary numbers for notifiable diseases in 2004 are presented in a table. A list of notifiable disease in Colorado and a case report form are included at the end of this update.

Pertussis

There were a record number of pertussis cases in 2004 with 1,214 reported in the state of Colorado. The Tri-County region of Adams, Arapahoe and Douglas Counties had a total of 273 cases, a 2.7-fold increase in the number of cases compared to 2003 and the 5-year median. Of these 273 cases, 128 (47%) were residents of **Adams County**, 102 (37%) of **Arapahoe County**, and 43 (16%) of **Douglas County**. Cases were 56% female and were fairly evenly split among three age groups: under 10 years (35%), 11-20 years (31%), and 21 years and over (34%). While symptoms of pertussis have been thought to be less severe in adults, cases 21 years and over reported whoop (46%), apnea (63%) and postussive vomiting (48%). Improvements in vaccination could reduce the burden of disease in Colorado. TCHD has increased our childhood immunization services to help increase vaccination rates among children. In 2002, we gave 38,656 immunizations to children, which was increased in the last two years to 49,107 in 2003 and 44,246 in 2004; a 21% average increase. Please evaluate your clients to determine who are not up-to-date with their vaccinations!

Pertussis Clinic

During a routine case investigation, TCHD discovered that a 15-month old confirmed case of pertussis attended childcare for several weeks while infectious. Since pertussis is highly communicable among close contacts and illness can be quite severe among young children, TCHD held a prophylaxis clinic at the childcare center in **Adams County** to prevent secondary illness among close contacts. The clinic was held on two days to provide antibiotics to 22 children and 5 staff who were exposed to the case. In addition, public health nursing staff was present at the clinic to review immunization records for enrolled children to ensure adequate record keeping and that children were up-to-date on their immunizations. Follow-up with families of under-immunized children is in process.

West Nile Virus

Thankfully, in 2004 Colorado had many fewer human cases of West Nile virus infection than in 2003. There were a total of 292 human cases throughout the state and 3 deaths (substantially fewer than the 2,947 cases and 63 deaths in 2003). Many of the cases in the state were located in Mesa County (43%). In the Tri-County region, we had a total of 17 cases: 16 in **Adams County** and 1 in **Douglas County**; and no deaths. We expect and are prepared for West Nile virus to be endemic in Colorado in the future.



Tri-County Health Department • Serving Adams, Arapahoe and Douglas Counties
7000 E. Belleview Avenue #301 • Greenwood Village, CO 80111 303-220-9200
Richard L. Vogt, M.D., Executive Director

Vibrio

Eating raw or undercooked shellfish or other seafood carrying *Vibrio* bacteria can cause serious illness or even death. *Vibrio* infections are usually very rare in Colorado, with a median of two cases per year in the Tri-County area. However, between July and December 2004, six cases of *Vibrio* infections were reported to TCHD; one in **Adams County**, four in **Arapahoe County**, and one in **Douglas County**; one of these cases was fatal. Statewide, two cases had eaten raw oysters in Colorado restaurants. TCHD conducted environmental investigations and oyster tracebacks at these restaurants in cooperation with state and federal agencies. In order to address this sudden increase in *Vibrio* illnesses, TCHD issued a press release in December to notify the public. In addition, we developed a standardized survey and educational materials for the 159 retail food establishments in the Tri-County area that were most likely to serve or sell raw shellfish. These establishments were inspected for compliance with shellfish regulations and safe food handling practices. Results of the survey will be used to develop environmental health recommendations, including voluntary consumer advisory notices warning consumers of the dangers of eating raw shellfish and health conditions that can increase susceptibility to *Vibrio* infections.

Influenza Surveillance

As of 2004, only hospitalized and fatal cases of influenza are notifiable in the state of Colorado. Therefore, Tri-County Health Department implemented its own, active surveillance system for influenza at the local level. Designated persons were called in select hospitals and labs on a weekly basis, beginning Oct 1, 2004 and ending Dec 31, 2004, to inquire about any positive influenza test results. A total of 48 cases were reported through this system: 21 in **Adams County**, 16 in **Arapahoe County**, and 7 in **Douglas County**. The goal was to enable rapid identification of influenza's entry into the community and take appropriate control measures as early as possible. The information gathered allowed TCHD to identify the specific influenza strains circulating in different cities and physicians were notified of these strains. Hopefully, this surveillance assisted in prescribing appropriate anti-influenza medications during the influenza vaccine shortage.

Norovirus

Norovirus is one of the leading causes of acute gastrointestinal illness. Symptoms usually last 1-2 days and include vomiting and/or diarrhea and abdominal cramping, with occasional complaints of muscle aches, headache and low-grade fever. Norovirus is primarily spread through fecal-oral transmission, with possible spread through aerosols (generated with vomiting). It is extremely infectious, and highly concentrated in the stool and/or vomit of infected people.

TCHD investigated numerous outbreaks due to norovirus this year. Upon receiving notice of a foodborne illness outbreak, TCHD immediately conducts an inspection of the facility in order to implement appropriate control measures. In addition, TCHD provides training of restaurant and/or facility staff to ensure proper food preparation techniques. A short summary of the epidemiologic data from each outbreak follows:

Foodborne Illness Outbreak #1

Two separate groups (total of 20 people) became ill after eating catered boxed lunches from an **Adams County** caterer, with an illness rate of 67%. Six stool specimens were submitted for laboratory testing and five (including 2 employees) were positive for norovirus. The two employees who tested positive for norovirus worked in non-food handling capacities at the catering facility. Statistical analysis of the foods showed that those who ate the fruit salad were 2.5 times more likely to become ill. Several critical items of concern were discovered during the environmental investigation (improper hand washing, improper glove usage, and touching ready-to-eat products). Although food handlers at the catering facility denied illness, it is possible for some people to be asymptomatic yet still shed the virus in the stool.

Foodborne Illness Outbreak #2

Of 23 women who attended a baby shower in a home, 14 (61%) became ill with gastrointestinal symptoms. Food at the baby shower was prepared by the host and was also purchased from three separate food establishments in **Adams County**. All attendees of the event were interviewed, including assessing symptoms and food history. TCHD submitted four stool specimens for lab testing and the results came back positive for norovirus. Data analysis indicated that the sandwiches purchased from a local restaurant were the likely cause of illness.

Foodborne Illness Outbreak #3

Attendees of a wedding in **Douglas County** became ill subsequent to several group events. There were 106 people identified as being invited to the wedding and a dinner reception and 48% of attendees became ill. Five stool samples were submitted for laboratory testing and all were positive for norovirus. Statistical analysis indicated that those who ate the chicken breast at the wedding reception dinner were 2.8 times more likely to become ill.

Foodborne Illness Outbreak #4

A group of 19 persons ate at a restaurant in **Adams County** and 58% became ill with gastrointestinal symptoms. Seven stool specimens (three from patrons and four from restaurant staff) were submitted for laboratory testing and all three patrons and two staff were positive for norovirus. Statistical analysis indicated a common source outbreak associated with eating salad at the restaurant. Staff who tested positive did work while symptomatic, however, the source of illness is unknown. Environmental investigation of the restaurant revealed a number of problems with food handling, storage temperatures, sanitization, and illness policies.

Youth Detention Center Outbreak

Many children became ill with diarrhea, vomiting and/or abdominal pain at an all-male youth detention center and school in **Arapahoe County**. Over 400 people were surveyed about symptoms and exposures and a total of 159 students (44%) and 19 staff members (15%) became ill. Lab testing confirmed that five of six stool specimens were positive for norovirus. Although the outbreak appeared to be common source, no single food or water source was identified in the statistical analysis. One food-worker who admitted to working while ill and handling nearly all foods prepared at the center was suspected as the potential cause of this outbreak.

Outbreaks in Long-Term Care Facilities

Norovirus is a frequent cause of outbreaks of gastrointestinal illness in long-term care facilities, particularly in the winter and early spring. Because these outbreaks can quickly become quite large, affecting both residents and staff, rapid investigation and implementation of infection control measures are very important. There were seven separate gastrointestinal outbreaks in long-term care facilities in the Tri-County area during 2004. One of these outbreaks was in **Adams County**, five were in **Arapahoe County**, and 1 was in **Douglas County**. Three of the outbreaks were confirmed norovirus, two were suspect norovirus, and two had unknown agent. Six of the outbreaks were spread through person-to-person contact and one was a point source exposure with subsequent person-to-person transmission. Control measures were implemented and included the following: no common or group activities for residents, restriction of ill patients to their rooms, requiring ill staff to stay home until 48 hours after the cessation of symptoms, and increased hand washing and sanitizing.

Summary numbers for notifiable diseases in 2004 are presented in Table 1. A list of notifiable disease in Colorado and a case report form are included at the end of this update. You can also visit <http://www.cdphe.state.co.us/dc/Medlist.pdf> for a list of notifiable diseases in Colorado.

Please be reminded:

All outbreaks from any cause are notifiable conditions and should be reported to the local or state health department within 24 hours of identification. The health department can facilitate testing for pathogens, and can provide guidance/assistance for outbreak investigation and infection control measures.

Thank you!

***Comments or questions, please call Tri-County Health Department at:
(303) 220-9200***

Epidemiology staff at Tri-County Health Department includes:

Nisha Budhiraja, MPH

Laura Dippold, MPH

Tista Ghosh, MD, MPH

Katya Ledin, PhD, MPH

Jenna Patnaik, MHS

Robyn Spittle, MSPH

Anita Watkins, MPH

Table 1. Reported Cases of Notifiable Disease in Adams, Arapahoe and Douglas Counties, 2004.

Diagnosis	Adams	Arapahoe	Douglas	Total
<i>AIDS</i>	17	41	4	62
<i>Amebiasis</i>	0	1	1	2
<i>Campylobacter</i>	61	108	39	208
<i>Chlamydia</i>	1,455	1,427	154	3,036
<i>Cryptosporidiosis</i>	4	1	2	7
<i>Cyclosporiasis</i>	1	0	0	1
<i>E. coli O157:H7</i>	8	3	0	11
<i>Encephalitis Other</i>	0	2	0	2
<i>Giardiasis</i>	30	69	31	130
<i>Gonorrhea</i>	291	413	51	755
<i>Group A Strep Invasive</i>	16	18	8	42
<i>Group B Strep Invasive</i>	23	33	14	70
<i>Haemophilus influenzae</i>	7	6	1	14
<i>Hantavirus</i>	0	1	1	2
<i>Hemolytic Uremic Syndrome</i>	0	2	0	2
<i>Hepatitis A</i>	1	3	5	9
<i>Hepatitis B, Acute</i>	5	5	0	10
<i>Hepatitis B, Chronic</i>	60	124	27	211
<i>Hepatitis C, Acute</i>	1	3	0	4
<i>Hepatitis C, Chronic</i>	343	428	73	844
<i>HIV</i>	12	36	8	56
<i>Influenza</i>	50	53	10	113
<i>Kawasaki Syndrome</i>	6	8	0	14
<i>Legionnaires Disease</i>	3	5	0	8
<i>Listeriosis</i>	0	3	0	3
<i>Malaria</i>	2	3	1	6
<i>Meningitis Aseptic</i>	20	75	27	122
<i>Meningococcal Disease</i>	4	0	1	5
<i>MRSA Invasive</i>	1	3	1	5
<i>Mumps</i>	1	0	0	1
<i>Pertussis Syndrome</i>	128	102	43	273
<i>Q Fever</i>	1	0	0	1
<i>Rocky Mountain Spotted Fever</i>	0	0	1	1
<i>Salmonellosis</i>	40	67	25	132
<i>Shigellosis</i>	14	23	8	45
<i>Strep, Pneumo Invasive</i>	41	38	11	90
<i>Syphilis</i>	7	9	0	16
<i>Toxic Shock-Strep</i>	0	1	0	1
<i>Toxic Shock-Other</i>	1	1	0	2
<i>Tuberculosis</i>	13	18	3	34
<i>Typhoid Fever</i>	1	0	0	1
<i>Varicella</i>	163	290	158	611
<i>Vibrio parahaemolyticus</i>	1	1	1	3
<i>Vibrio spp. (non-cholera)</i>	0	2	0	2
<i>Vibrio vulnificus</i>	0	1	0	1
<i>West Nile Virus Infection</i>	16	0	1	17
<i>Yersiniosis</i>	1	0	0	1
Total	2,849	3,427	710	6,986

**TRI-COUNTY HEALTH DEPARTMENT
REPORTABLE DISEASE NOTIFICATION FORM
FOR PHYSICIANS AND OTHER HEALTH CARE PROVIDERS**

Case Information

Case's Name: _____ **Parent's Name:** _____
Age: _____ **Date of Birth:** _____ **Sex:** () Male () Female **Race:** _____
Home Phone(s): _____ **Work Phone(s):** _____
Address: _____ **City:** _____ **Zip:** _____
County of Residence: () Adams () Arapahoe () Douglas
If another county, please specify: _____ **School/Employer:** _____

Medical Information

Disease: _____ **Onset Date:** _____ **Specimen:** _____
Specimen Collect Date: _____ **Lab Tests Performed:** _____
Lab Confirmed: () Yes () No **Name of Lab Used:** _____
Other Relevant Medical/Rx/Immunization Info: _____

Doctor's Information

Doctor's Name: _____ **Doctor's Phone:** _____
Doctor's Address: _____ **City:** _____ **Zip:** _____
Report Submitted By: _____ **Phone:** _____
Organization: _____ **Date Reported:** _____

For your convenience, you may report diseases by phone Monday through Friday, 8:00 A.M. to 5:00 P.M. at (303) 220-9200 or you may complete this form and fax it 24 hours a day to (303) 220-9208.

For after hour and weekend emergencies:

Contact the Tri-County Health Department at (303) 461-2342

or the Colorado Department of Public Health and Environment at (303) 370-9395

For Internal Use:

Date Report Received: _____ **Received By:** _____