

IOWA DEPARTMENT OF PUBLIC HEALTH

DIVISION OF ACUTE DISEASE PREVENTION AND EMERGENCY RESPONSE

Center for Acute Disease Epidemiology

Iowa Surveillance of Notifiable and Other Diseases

Annual Report 2006



Iowa Department of Public Health
Promoting and Protecting the Health of Iowans

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PURPOSE

The purpose of this report is to provide an overall snapshot of the types and trends of diseases that occur in Iowa. When possible, details specific to the disease are provided including information on which serotypes or groups were prevalent, which strains caused outbreaks, etc. County-level data is provided in a table at the end of the report. The sections in this report are grouped with those that have similar etiology, are prevented by universal means (e.g. vaccination) or that occur rarely in Iowa and the U.S. The report is intended for general public, media, public health, and health care use at all levels.

HIV/AIDS, *chlamydia*, syphilis, gonorrhea, tuberculosis, and hepatitis C are excluded from this report because they are tracked by other bureaus within the department.

INTRODUCTION

In 2006 there were 5,517 cases of infectious disease reported to the Center for Acute Disease Epidemiology (CADE) within the Iowa Department of Public Health (Figure 1). Specific disease conditions are reportable to the department per the Iowa Administrative Code 641, chapter 1. The urgency tied to reporting varies by disease.

CADE’s primary functions are to track disease incidence and prevalence, monitor and manage outbreaks, and develop prevention methods with the goal of reducing illness in Iowa. Disease reports are submitted to CADE via phone, fax or e-mail. Reports are tracked in a DOS-based surveillance system called NETSS (National Electronic Telecommunication System for Surveillance) that enables direct transfer of

disease activity information to the Centers for Disease Control and Prevention (CDC). Some diseases within CADE are reported using ArboNET and include diseases like West Nile virus. ArboNET, is an electronic-based surveillance and reporting system used to track and report arboviral activity by the state health departments and CDC. ArboNET captures laboratory-confirmed positive cases in humans, horses, other mammals, birds and mosquitoes across the United States. Arboviruses include Culicoides-Borne viral fevers, Dengue fever, Eastern Equine encephalitis, Japanese encephalitis, LaCrosse encephalitis, Non-LaCrosse California serogroup, Powassan, St. Louis encephalitis, Venezuelan Equine encephalitis, West Nile virus, Western Equine encephalitis, Yellow fever, other Arbovirus,

Surveillance reports are generated daily, weekly, annually and on an as-needed basis.

Funding and support for the initiatives of CADE stem from collaboration within the Division of Acute Disease Prevention and Emergency Response.

SUMMARY

Last year was the busiest year for CADE since its inception in 1998. A nation-wide mumps epidemic began in January and Iowa was the center of the epidemic. Over 2,000 mumps case reports were submitted to CADE in a 6-month period; of those, 1,963 were confirmed or probable cases. This excessive number of cases was in addition to the approximately 15 cases of routine disease processed daily.

This past year was also the year of the nation-wide spinach outbreak that was traced back to California, *E. coli* outbreak associated with a fast-food chain, and a statewide outbreak of cryptosporidiosis at the end of the summer.

There were significant decreases in hepatitis A and pertussis cases. The most significant overall increase in disease was cryptosporidiosis (Table 1).

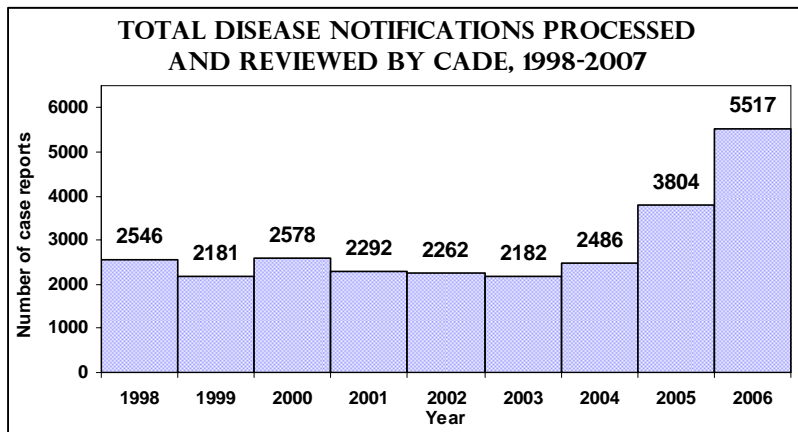


Figure 1. Total disease notifications by year

TABLE 1. SUMMARY OF COMMON, NOTIFIABLE DISEASES, 2003-2006 AND PERCENT CHANGE IN NUMBER OF CASES REPORTED COMPARED TO 3-YEAR AVERAGE†

	2003	2004	2005	3-yr average 2003-2005	2006	Percent change‡
	Number of cases			Cases		
Campylobacter	460	558	534	517	449	-13.2%
Cryptosporidiosis	122	90	122	111	230	106.6%
<i>E. coli</i> and other shiga-toxin producing	103	119	100	107	161	50.5%
Giardia	273	305	280	286	302	5.6%
Hepatitis A	37	50	22	36	13	-64.2%
Hepatitis B, acute	14	17	33	21	21	-1.6%
Hepatitis B, chronic	0	0	0	0	35	N/A*
Legionellosis	11	8	8	9	13	44.4%
Listeriosis	1	4	7	4	6	50.0%
Lyme disease	54	53	91	66	97	47.0%
Menningococcal invasive disease	27	17	19	21	20	-4.8%
Mumps	2	2	6	3	1963	N/A**
Pertussis (whooping cough)	158	481	968	536	342	-36.2%
Salmonellosis	391	442	410	414	475	14.6%
Shigellosis	91	69	103	88	134	52.9%

*Hepatitis B, chronic disease was not reported separately from hepatitis B acute disease until 2006.

**Increase is beyond interpretable levels.

†The percent change is calculated by subtracting the 3-year average from the total cases for 2006 and dividing by the absolute value of the 3-year average.

‡Table includes all confirmed and probable cases.

METHODS

Rates were calculated using the 2006 estimated census population for the state of Iowa or the appropriate estimated census year. Threshold values used in the graphs in the summary of enteric disease were calculating by taking the 3-year moving average and adding two standard deviations to the average. Outbreak cases were removed when calculating the 3-year averages and outbreak cases were kept in 2006 case counts.

Calculations were performed with SPSS and Excel programs. Maps were generated using ARC GIS.

CADE uses the most recent Council of State and Territorial Epidemiologists (CSTE) and Centers for Disease Control and Prevention (CDC) case definitions found at

http://www.cdc.gov/epo/dphsi/casedef/case_definitions.htm. The outbreak definition was used to classify cases of pertussis in 2006. Case status assigned by using the CSTE/CDC definitions is used to classify the case as confirmed, probable,

suspect, not a case, awaiting more information, or chronic hepatitis B reported in a past year. Confirmed and probable cases meet the CSTE/CDC definition and are reported to CDC weekly. All other case classifications are for CADE use and reports other than confirmed and probable are not reported to CDC.

All case counts and Iowa-specific case demographics were attained from the National Electronic Telecommunications System for Surveillance (NETSS) maintained within CADE. The specific file used for this report was created in July, 2007. Case reports or additional case information that was received after this date was excluded from this report.

SUMMARY OF VACCINE-PREVENTABLE DISEASES

HAEMOPHILUS INFLUENZAE B

Cases of *Haemophilus influenzae* type B (HiB) are rare in Iowa and the U.S. In 1991, HiB vaccine was recommended for all infants after age 2 months. Since then, the incidence of HiB in children <5 years of age has declined >99%. The two cases reported in Iowa occurred in a 1-year-old child and 64-year-old adult.

The University Hygienic Laboratory (UHL) routinely types HiB isolates submitted to them. Forty-two isolates were submitted to UHL in 2006. Of those, two were type C, four were type E, two were type F and 34 were non-typeable (Table 2)¹.

Table 2 *Haemophilus influenzae* types

<i>Haemophilus influenzae</i> types, 2006				
B	C	E	F	Unk
2	2	4	2	34

HEPATITIS A

See Summary of Enteric Disease Section.

HEPATITIS B (ACUTE AND CHRONIC)

A total of 0.7 cases of acute hepatitis B for every 100,000 persons were reported to CADE in 2006. Eighty percent of these 21 cases were Caucasian males.

The Centers for Disease Control and Prevention (CDC) estimates there are 51,000 new hepatitis B infections each year in the U.S. National case incidence for acute disease is approximately 2.4 for every 100,000 persons². Based on this rate Iowa should have nearly 70 new cases every year. Based on the 2006 rate of 0.7, it is likely that hepatitis B is underreported in Iowa.

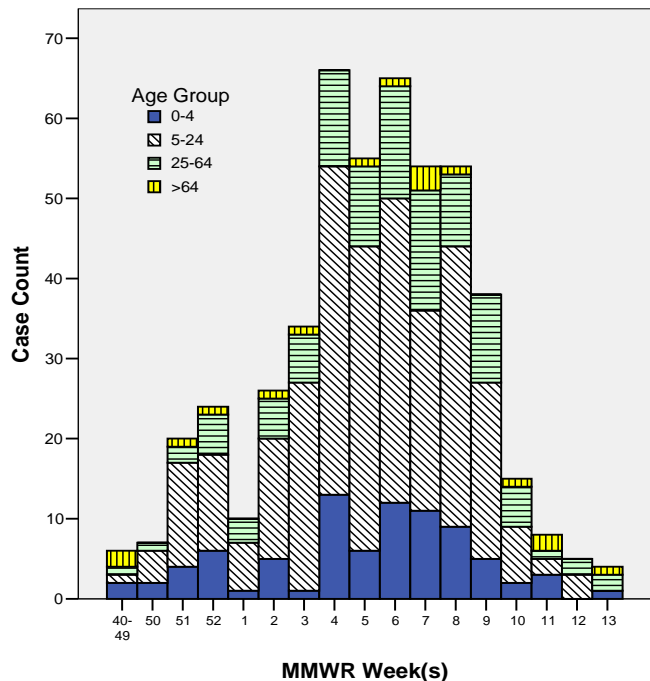
CADE began distinguishing between acute and chronic cases in 2006. Chronic cases newly reported to the state were counted as chronic hepatitis cases for 2006. There were 35 cases that met the chronic case definition in 2006³. In addition, 37 cases did not meet either the acute or chronic case definition and will be classified once additional laboratory information is received.

INFLUENZA

The Iowa Influenza Surveillance Network (IISN) tracks influenza activity, age groups impacted, outbreaks, virus type and strain, and severity of seasonal influenza. In the 2006-2007 season, the network had more than 90 reporting sites that included physicians, clinics, hospitals, schools and long term care facilities. Other non-network reporters who contributed influenza data included medical clinics, hospitals, laboratories, local public health departments and neighboring state health departments.

The 2006-2007 influenza season in Iowa began earlier than any previously recorded data indicates; however, the season's peak occurred much later in the season. In addition to early cases, this season was also unusual in that all three anticipated strains (AH1N1, AH3N2, and B) were reported by the first of December. The first laboratory-confirmed case in the 2005-2006 season was identified December 5, 2005; the first case for the 2006-2007 season was on November 2, 2006. The predominant strain for 2005-2006 was influenza AH3, but for 2006-2007 both influenza AH1 and B dominated

Laboratory-confirmed* cases by age group, Iowa 06-07



*Laboratory-confirmed cases include only DFA, culture or PCR confirmed cases. There are no rapid influenza tests results included in this graph.

Figure 2. Influenza cases

influenza infections⁴. An increase in the number of influenza specimens submitted to the University Hygienic Laboratory may have also played a role in early detection and overall case detection.

In summary, all influenza activity indicators show a peak between the MMWR weeks 4 and 9 (i.e. January 27 to March 3) (Figure 2). Children from five years to eight years of age were impacted more than other age groups (Figure 2). There were few influenza hospitalizations and fatalities in all age groups.

MEASLES

No cases of measles were reported in Iowa in 2006. Measles is not endemic in the U.S.

MENINGOCOCCAL INVASIVE DISEASE

In 2006, there were 0.7 confirmed and probable cases meningococcal invasive disease for every 100,000 persons or 19 confirmed and 1 probable case.

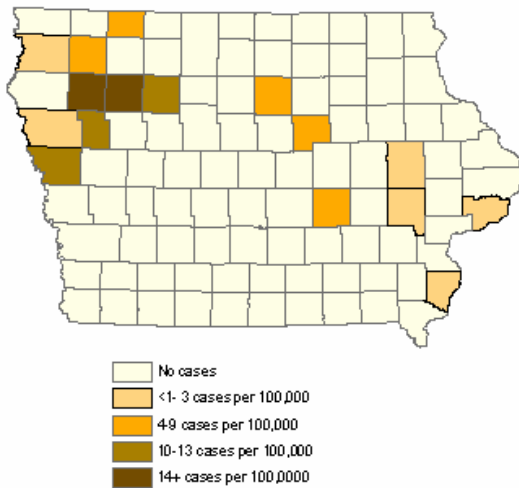


Figure 3. Cases of meningococcal invasive disease per 100,000 population by county

The age of cases ranged from 1 to 88 years old with the median age of 21 years.

Of the confirmed and probable cases, nine were group C, four were group Y; three were group B, one was W135, and three were undetermined (Table 3).

Table 3. Meningococcal serogroups

Meningococcal Serogroups reported, 2006					
A	B*	C	W135	Y	Unk
0	3	9	1	4	3

*Serogroup B is not covered by the meningococcal vaccine

The 3-year moving average number of cases reported in Iowa is 23.7. A higher incidence of cases was reported in northwest Iowa. CDC defines a community-based outbreak as the occurrence of three or more confirmed or probable cases during a period of ≤ 3 months among persons residing in the same area who are not close contacts of each other and who do not share a common affiliation, with a primary attack rate of at least 10 cases per 100,000 population⁵. The cases in northwest Iowa did not meet these criteria in 2006 (Figure 3).

Meningococcal invasive disease is fatal in 10-14 percent of cases. There are two vaccines currently licensed for use in the U.S.; one vaccine is commonly used for people 11-55 years old. The other is used in people aged 2-11 and over 55 years⁶.

MUMPS

A total of 1,963 confirmed and probable cases of mumps were reported in 2006. Iowa was at the center of the largest mumps outbreak in the U.S.

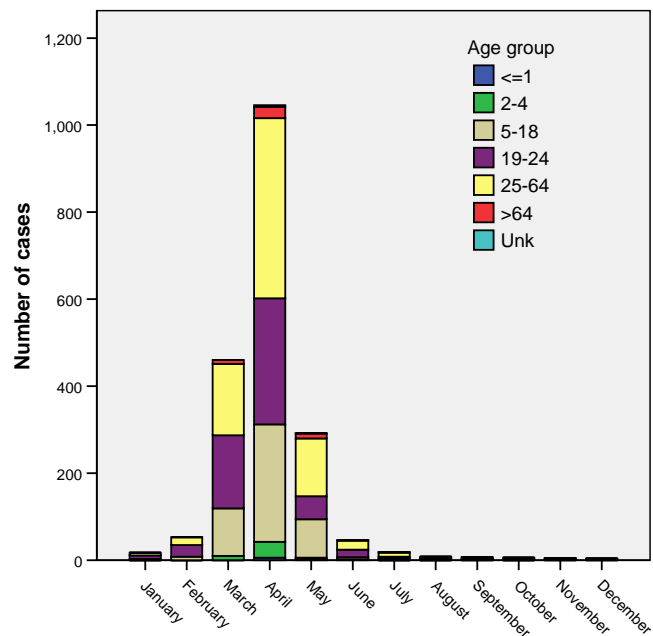


Figure 4. Mumps cases by month and age group

in over twenty years. In the three years prior, there were an average of 3.33 cases/year reported in Iowa. Cases reported in prior years

were typically imported from countries with endemic disease.

The epidemic peaked in April and cases significantly declined after May (Figure 4. Mumps cases by month and age group).

Epidemic cases were 67 percent female, and 25 percent were students at a post-secondary institution. Vaccination rates among cases were high with 49 percent reporting 2 or more doses of MMR, 14 percent with 1 dose, and only 7 percent with no known doses.

Iowa comprised over one-third of the 5,780 mumps cases reported by 45 states and the District of Columbia in 2006. Of the 5,780 cases, 3,113 (54%) were confirmed, and 2,612 (45%) were probable; for 58 cases (1%), classification was unknown. Six states reported 84% of the cases: Iowa (1,963), Kansas (904), Wisconsin (750), Illinois (591), Nebraska (357), and South Dakota (288)⁷.

Twenty-nine (1.5%) Iowa cases were hospitalized due to mumps. Of those, three had viral encephalitis. Short-term unilateral or bilateral deafness was reported in five cases.

epidemic years, annual incidence in Iowa ranged from 168-481 cases. Since the outbreak in 2005, IDPH has used the outbreak case definition in order to increase the sensitivity of the case definition.

The highest numbers of cases were reported in Scott and Polk counties, with rates of 92.25 and 8.07 for every 100,000 persons respectively.

TETANUS

No cases of tetanus were reported in Iowa in 2006.

PERTUSSIS (WHOOPIING COUGH)

Pertussis is caused by *Bordetella pertussis* and causes epidemics every three to four years. The last significant state-wide increase in pertussis occurred in 2005. There were 342 confirmed and probable cases reported to IDPH in 2006 or 11.5 cases for every 100,000 persons. In non-

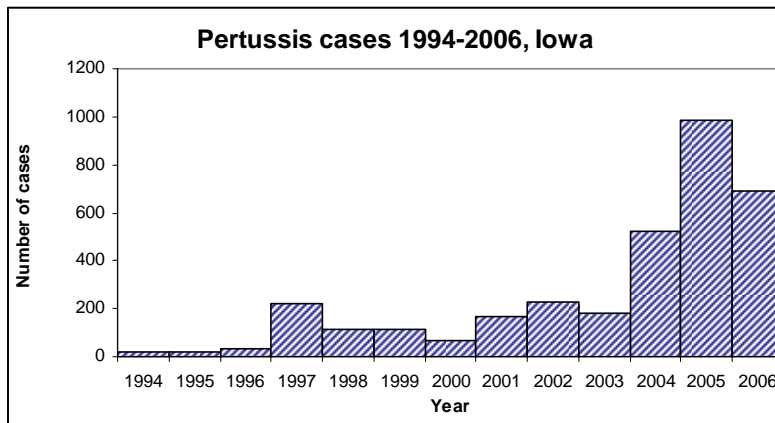


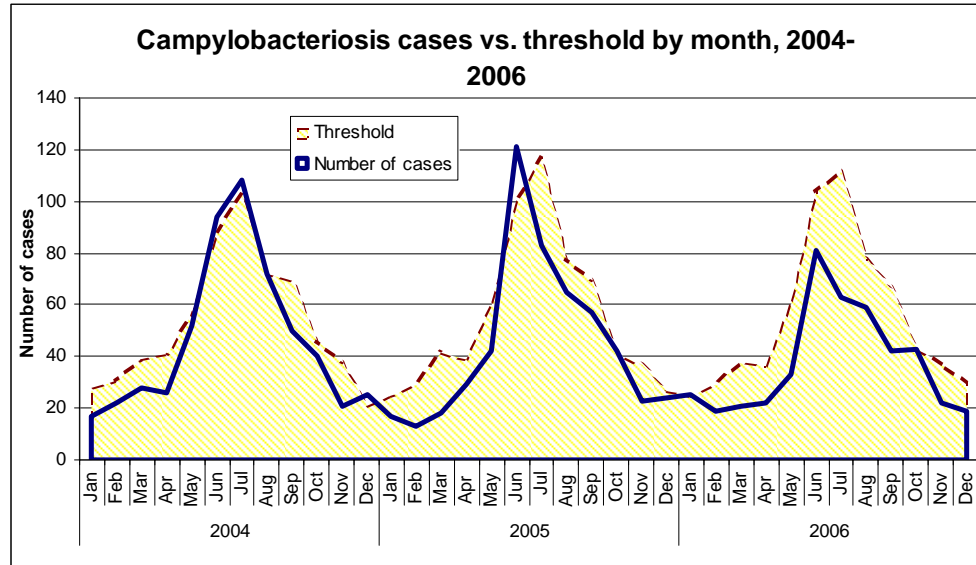
Figure 5. Pertussis cases 1994-2006, Iowa

SUMMARY OF ENTERIC DISEASES

CAMPYLOBACTERIOSIS

The total number of campylobacteriosis cases reported in 2006 was slightly lower than in the previous three years. The average number of cases reported for 2003-2005 was 517 and only 449 cases were reported in 2006. Campylobacteriosis incidence per 100,000 in 2006 was 15.3 cases, down from 18.3 cases for every 100,000 persons reported in 2005.

Figure 6



Campylobacteriosis activity typically peaks in early summer. Consumption of raw or undercooked meat or raw milk, contact with infected animals and contaminated water are common sources of campylobacter infection.

CRYPTOSPORIDIOSIS

Cryptosporidiosis case counts were significantly higher than in previous years. There were 7.7 cases for every 100,000 Iowans as opposed to 4.1/100,000 reported in 2005.

CADE identified a state-wide outbreak at the end of August and beginning of September. A source of the outbreak was never identified. Iowa did collaborate with surrounding states that also reported increases in activity, particularly South Dakota.

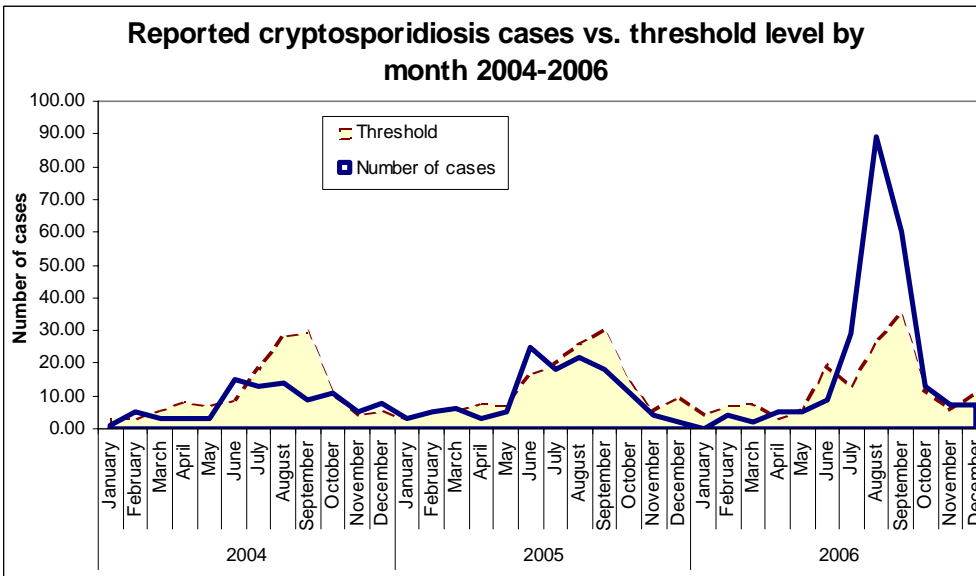


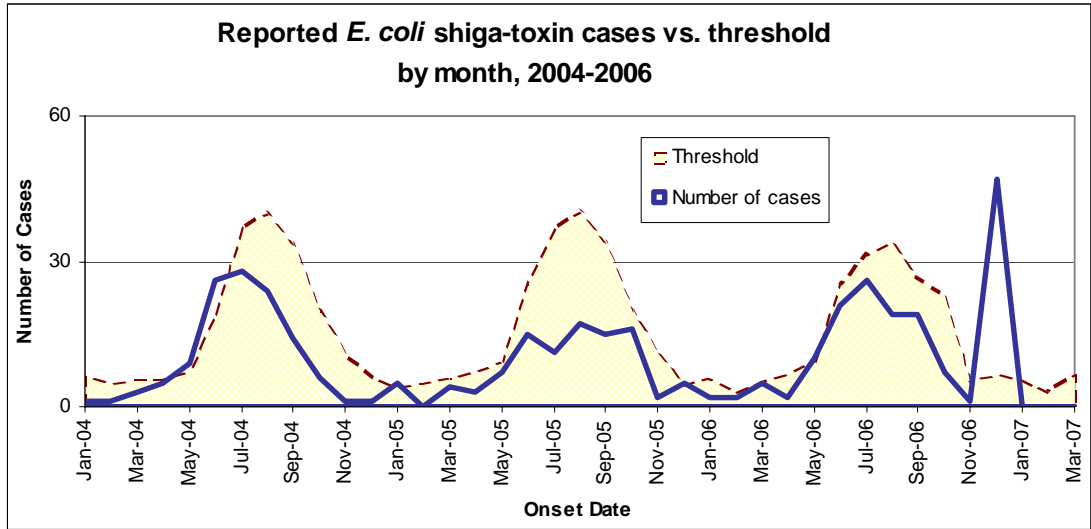
Figure 7

The distribution of gender was nearly equal and case ages ranged from 1 to 92 years, with the largest number of cases reported in the age group of 19-55 years.

***E. COLI*O157:H7 AND OTHER SHIGA-TOXIN PRODUCING STRAINS**

The incidence of *E. coli* shiga-toxin cases in Iowa rose to 5.4 cases/100,000 persons in 2006 from 3.4 cases/100,000 persons in 2005. The increase in cases can be attributed to a multi-state fast food restaurant outbreak in northeast Iowa that occurred in early December. Forty-seven cases were identified as part of this outbreak which was caused by contaminated lettuce. The graph below shows the increase in cases in December 2006 and the yearly seasonal cyclic trend of cases which peaks in the summer months.

Figure 8



GIARDIASIS

Giardiasis is one of the leading waterborne diseases that typically peaks in late summer or early fall. There were 10.3 cases for every 100,000 Iowans compared to 9.6/100,000 in the previous year.

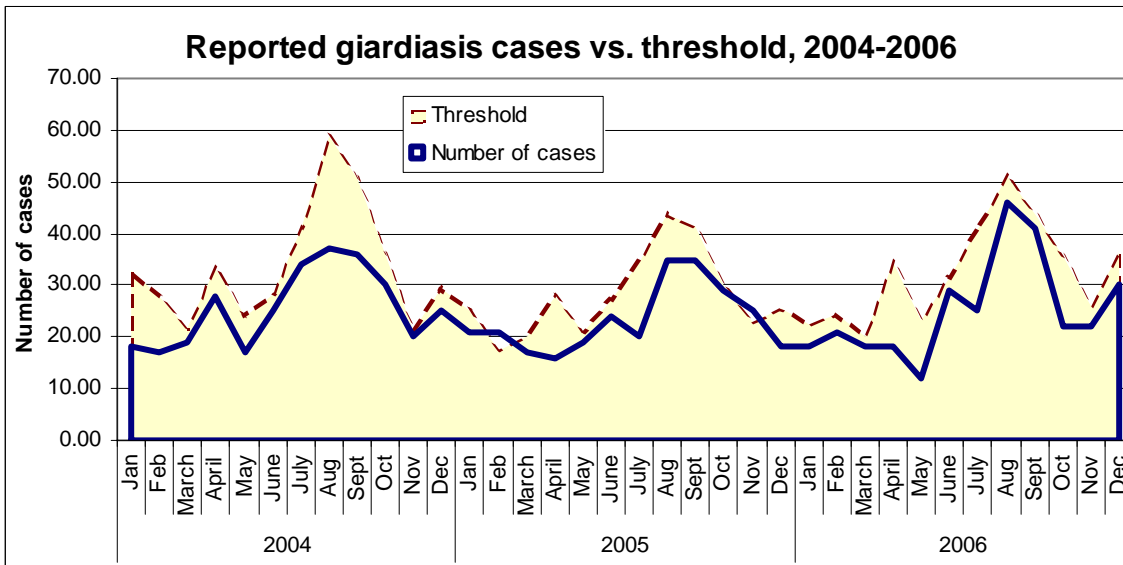
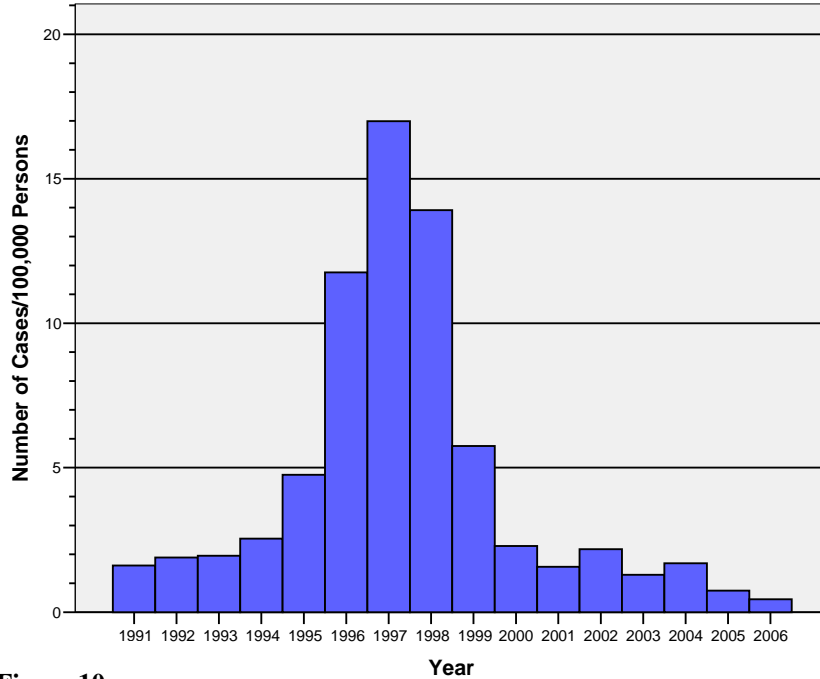


Figure 9

HEPATITIS A

During the years of 1995 through 1998, Iowa had ongoing outbreaks/clusters of hepatitis A, with significantly higher numbers in Polk and Woodbury counties. During this outbreak those at highest risk

Hepatitis A Cases Reported to the Iowa Department of Public Health, 1991-2006



were methamphetamine users, but other routes of transmission included transmission from infected food handlers. Outbreaks in the western part of the state peaked in February of 1996 but gained ground in central Iowa through 1997 to 1998. At the end of the 1990s, hepatitis A vaccine was more widely used and the number of cases reached historic lows⁸. It is estimated that one-third of Americans have evidence of past infection (immunity). In 2006, Iowa had only 13 cases of hepatitis A reported with an incidence of 0.4 cases per 100,000 Iowans. This is the lowest incidence of hepatitis A that Iowa has reported in 15 years.

Figure 10

LISTERIOSIS

There were six cases of *Listeria montocytogenes* infection reported in 2006. Of these six, four were male and two were female with ages ranging from 5-75. None of the cases were associated with any known *Listeria* outbreaks. All appear to be sporadic cases, and the specific exposure that caused illness was not identified.

SALMONELLOSIS

Salmonellosis incidence in 2006 rose slightly to 15.9 cases per 100,000 persons from 13.8 cases per 100,000 persons in 2005.

The graph below shows the number of salmonellosis cases reported for the past 3 years along with the calculated threshold for each month. The expected number of cases was exceeded two times in 2006 and both times *Salmonella* outbreaks were identified. In

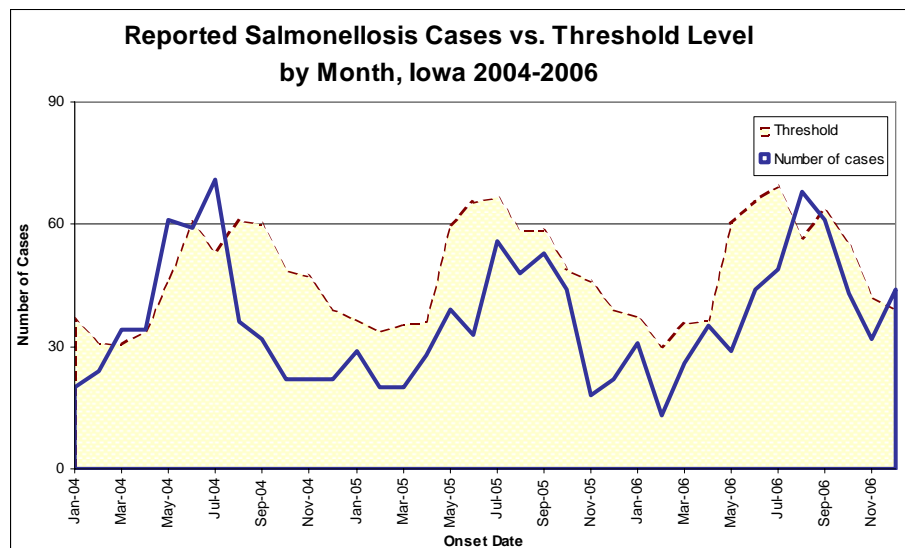


Figure 11

September, a *Salmonella* I 4,[5],12:i:- outbreak associated with a wedding in southern Iowa occurred. Epidemiological evidence suggested a pasta salad as the cause. This same *Salmonella* serotype was involved in a Johnson County outbreak in December of 2006, but no food vehicle was identified. Iowa *Salmonella* cases were also linked to several multi-state clusters/outbreaks including *Salmonella* Enteritidis and raw stuffed chicken products, *Salmonella* Montevideo and contact with baby chicks, and the start of the outbreak of *Salmonella* Tennessee linked to contaminated peanut butter.

SHIGELLOSIS

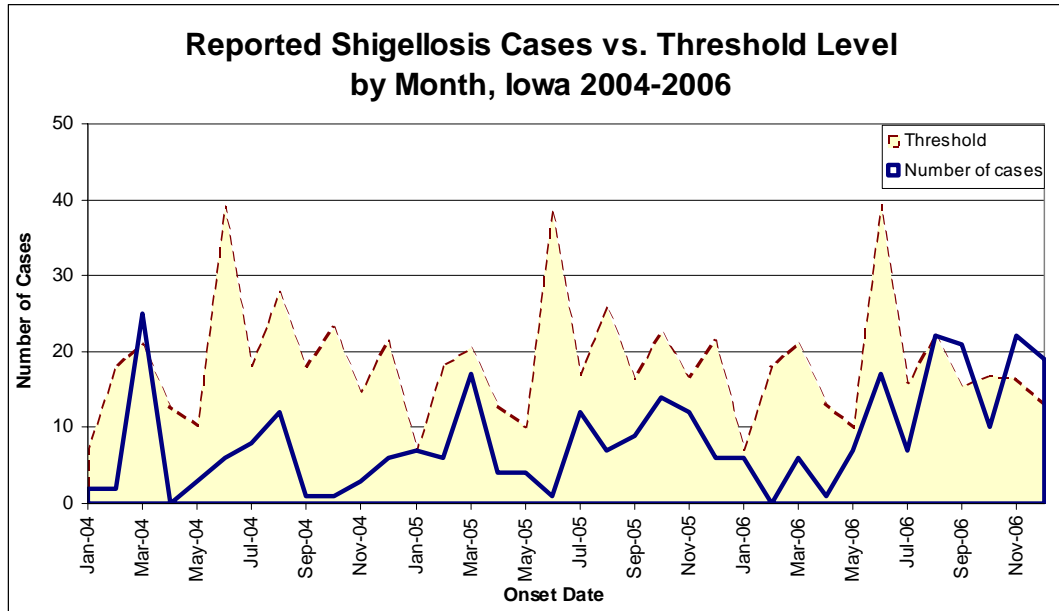


Figure 12

The above graph shows the shigellosis trend in Iowa for the past three years. Both times the number of cases exceeded the expected threshold, outbreaks were identified. In August 2006, 15 shigellosis cases were associated with a school trip with travel to Mexico. In December 2006, when the number of cases exceeded the threshold for the second time of the year, a community wide outbreak resulting in 20 reported *Shigella* cases was identified in northeast Iowa. The 2006 Iowa incidence of *Shigella* was 4.5 cases/100,000 persons which was a slight increase from 2005.

SUMMARY OF ZOO NOTIC DISEASES

DENGUE FEVER

One case of Dengue fever was reported in a person with recent travel to Mexico. Outbreaks are common in Asia and the Americas.

EHRlichIOSIS

Ehrlichiosis is a disease transmitted to humans by ticks. Human ehrlichioses in the U.S., Europe and Asia are caused by three distinct organisms: *Ehrlichia chaffeensis* known as human monocytic ehrlichiosis (HME), *Ehrlichia muris* (detected in Japan and Russia), and *Anaplasma phagocytophilum* known as human granulocytotropic ehrlichiosis (HGE).

There were eight cases of ehrlichiosis reported in Iowa in 2006. Of those, seven were reported as HME and one case reported having both HME and HGE.

HANTAVIRUS

There were no cases of hantavirus reported in Iowa in 2006.

LYME DISEASE

The 2006 Iowa case rate for Lyme disease is 3 cases/100,000 persons. Cases ranged from age 2 to 82 with a median age of 41.

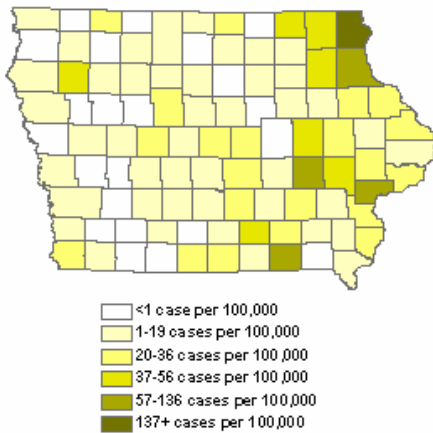


Figure 13 Lyme disease cases by county per 100,000 population

MALARIA

Two cases of malaria were identified in Iowa in 2006. Both cases had recently immigrated to the United States. One case was determined to have

Plasmodium falciparum infection; the species of the parasite in the second infection was undetermined.

OTHER ARBOVIRAL DISEASES

In addition to West Nile virus, two other mosquito-borne viruses were detected in Iowa in 2006. As part of the state’s arboviral surveillance program, St. Louis encephalitis virus was identified in a sentinel chicken in Polk County. There was also one human La Crosse encephalitis case which occurred in a child in Clayton County.

RABIES, ANIMAL

A total of 57 cases of animal rabies were reported in Iowa during 2006. Forty-one reported animal cases were wildlife species: 28 bats and 13 skunks. The remaining 15 were domestic animal species including cats, dogs, horses and cattle. These data reflect tested animals that might have exposed humans or other domestic animals to rabies, and does not represent all rabid animals in Iowa.

ROCKY MOUNTAIN SPOTTED FEVER (RMSF)

In 2006, there were five cases of Rocky Mountain Spotted Fever (RMSF) reported in Iowa. American dog ticks are carriers of *Rickettsia rickettsii*, the bacterium that causes RMSF. The American dog tick is the most common species of tick in Iowa and can be found in every county in Iowa. The tick is active late March through August⁹. Iowa RMSF cases in 2006 had symptom onset dates from mid-May to September 1, 2006. Cases ranged from age 25-52 with a median age of 26.

WEST NILE VIRUS

In 2006, 37 human cases of West Nile virus were reported to IDPH. Fifty-seven percent (n=21) were classified as neuroinvasive disease (encephalitis, meningitis, meningoencephalitis). Forty percent had mild illness usually termed West Nile fever. One case reported a Guillain-Bárre Syndrome. Of the 37 cases, 76% were male. The median age was 56 years with a range of 15-89 years. Eighty-one percent (n=30) of Iowa cases occurred in persons over the age of 40. Ten cases were hospitalized and no deaths

were reported. The number one public health prevention message is to wear a mosquito repellent containing DEET while outdoors; 59% (n=22) of our cases reported they never use a mosquito repellent.

All West Nile virus activity peaked in week 34 which was week ending August 26, 2006. Human activity peaked one week earlier in week 33.

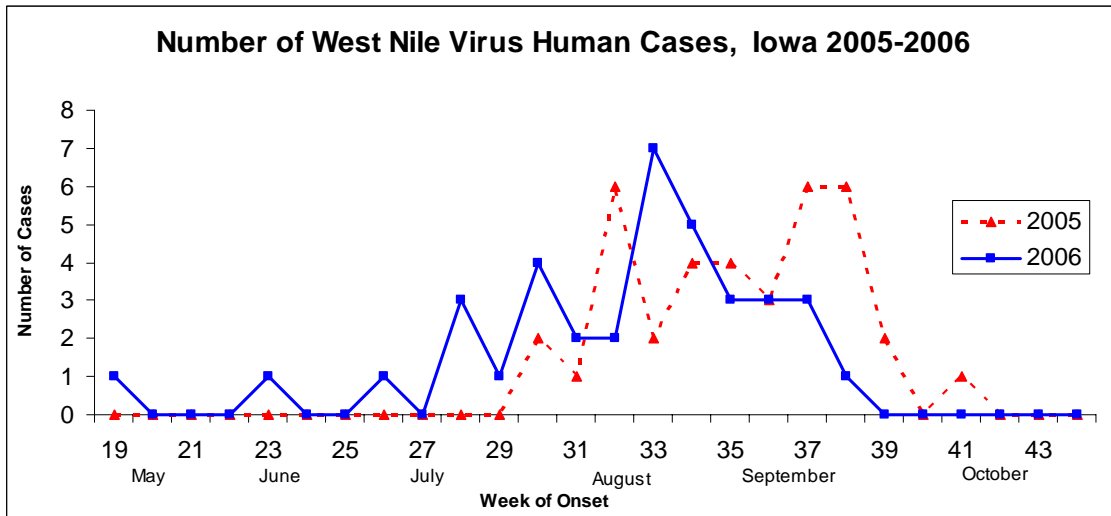


Figure 14

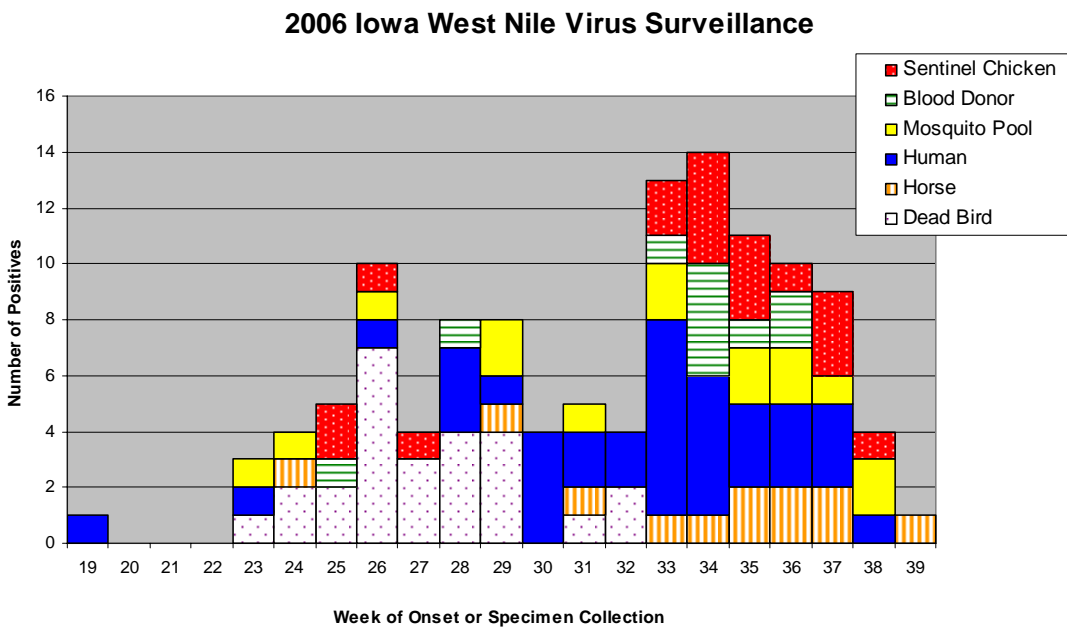


Figure 15

SUMMARY OF RARE AND UNUSUAL DISEASES

BOTULISM

One case of infant botulism was reported in Iowa in 2006. The case occurred in a 4-day-old infant. The infant tested positive for *Clostridium botulinum* toxin F.

BRUCELLOSIS

There were two cases of *Brucellosis* reported in 2006. Both cases were imported from countries where the disease is endemic. One case was assumed to have acquired disease in Rwanda and the other in Mexico. Though sporadic cases do occur in the U.S., *Brucellosis* is endemic in both Mexico and Rwanda and the cases resided in those countries at the time that exposure would have occurred. The cases reported contact with animals known to carry *Brucellosis*. Animals known to carry *Brucellosis* include cattle, swine, goats and sheep.

Both cases were found to have *Brucellosis melitensis*. *B. melitensis* infections are often the result of contact with an infected sheep or goat.

HANSEN'S DISEASE

One case of Hansen's disease, also known as leprosy, was reported in Iowa. The case was assumed to have acquired disease in Micronesia. Hansen's disease is not endemic in the U.S.

HEPATITIS D

One case of hepatitis D was reported in a person co-infected with hepatitis B.

LEGIONELLOSIS

There were 13 cases of legionellosis reported in 2006.

There were no cases of human illness reported for the following diseases:

PSITTACOSIS

TOXIC SHOCK SYNDROME

OUTBREAK SUMMARIES
FOODBORNE OUTBREAKS

Type	Nature of Episode	Event	Location of Food Preparation	Location of Food Consumption	Region	Month	Number Affected	Food Vehicle of Transmission	Agent Involved
Foodborne	Diarrhea, vomiting	Free-will donation barbeque	Home	Park	4	Spring	16/51	Pork through epi and environmental	Suspect Bacterial Intoxication
Foodborne	Diarrhea	Wedding	Home	Legion Hall	4	Fall	19/69	Pasta salad and potato salad through epi	<i>Salmonella</i> I 4,[5],12:i:-
Foodborne	Diarrhea	Employee Group Dinner	Hotel Restaurant	Hotel Restaurant	6	Fall	20/29	Unknown (county investigated)	Unknown
Foodborne	Diarrhea, vomiting	Luncheon	Restaurant	Restaurant	1	Winter	30	Ham and Lettuce Wrap through epi	Norovirus
Foodborne	Bloody Diarrhea	Fast-food restaurant chain	Fast-food restaurant	Fast-food restaurant and home	6	Winter	47	Lettuce through epi and environmental	<i>E. coli</i> O157:H7
Foodborne	Diarrhea, vomiting	Restaurant	Restaurant	Restaurant	1	Winter	97	Salad through epi	Norovirus
Foodborne	Diarrhea	Party	Home	Banquet Facility	6	Winter	20	Unknown	<i>Salmonella</i> I 4,[5],12:i:-

NON-FOODBORNE OR UNKNOWN CAUSE OUTBREAKS

Type	Nature of Episode	Event/Place	Region	Month	Number Affected	Vehicle of Transmission	Agent Involved
Unknown	Vomiting, Diarrhea	School	6	Winter	115/290	Unknown	Norovirus
Person-to-Person	Vomiting, Diarrhea	Sports Event	1	Summer	242	Person-to-Person	Norovirus
Person-to-Person	Diarrhea, Abdominal Cramps	Daycare Program	1	Summer	24	Person-to-Person	Norovirus suspect
Person-to-Person	Diarrhea, Vomiting	School	6	Spring	25/32	Person-to-Person	Norovirus
Person-to-Person	Diarrhea, Abdominal Cramps	Wedding	6	Fall	24/29	Person-to-Person	Norovirus
Person-to-Person	Diarrhea, Vomiting	Wedding	5	Summer	Unknown	Person-to-Person	Norovirus suspect
Person-to-Person	Diarrhea, Vomiting	LTC Unit	6	Spring	20/35	Person-to-Person	Norovirus
Person-to-Person	Diarrhea, Vomiting	Wedding	6	Spring	11	Person-to-Person	Norovirus
Person-to-Person	Diarrhea, Vomiting	School	6	Spring	29	Person-to-Person	Norovirus
Person-to-Person	Diarrhea, Vomiting	Mother's Day Lunch	6	Spring	15	Person-to-Person	Norovirus suspect
Unknown	Diarrhea	Birthday Party/Restaurant	3	Spring	37	Unknown	Norovirus suspect
Person-to-Person	Diarrhea, Vomiting	Daycare	6	Summer	17/28	Person-to-Person	Norovirus suspect
Person-to-Person	Diarrhea	Restaurant	6	Fall	7/13	Unknown	Norovirus suspect
Person-to-Person	Diarrhea	Church Group/Camp	5	Spring	47/186	Person-to-Person	Norovirus suspect
Unknown	Diarrhea	School Trip to Mexico	2	Summer	15/19	Unknown	<i>Shigella sonnei</i> <i>Salmonella</i> Reading
Person-to-Person	Diarrhea, Vomiting	Long-term care facility	4	Winter	82/159	Person-to-Person	Norovirus
Person-to-person	Diarrhea, Vomiting	Long-term care facility	2	Winter	40/75	Person-to-Person	Norovirus suspect
Person-to-	Diarrhea, Vomiting	Casino	6	Fall	UK	Person-to-	Norovirus

CENTER FOR ACUTE DISEASE EPIDEMIOLOGY

Type	Nature of Episode	Event/Place	Region	Month	Number Affected	Vehicle of Transmission	Agent Involved
Person						Person	
Person-to-Person	Diarrhea, Vomiting	School	5	Winter	132/529	Person-to-Person	Norovirus
Person-to-Person	Diarrhea	Community of Decorah	2	Winter	20	Person-to-Person	<i>Shigella sonnei</i>
Unknown	Diarrhea, Vomiting	Birthday Party	1	Winter	Unknown	Unknown	Norovirus suspect
Person-to-Person	Diarrhea, Vomiting	Family gathering	2	Winter	20/36	Person-to-Person	Norovirus
Person-to-Person	Diarrhea, Vomiting	Assisted Living	1	Winter	22/88	Person-to-Person	Norovirus suspect
Person-to-Person	Diarrhea, Vomiting	Assisted Living	1	Winter	20/30	Person-to-Person	Norovirus suspect
Person-to-person	Diarrhea, Vomiting,	School	4	Winter	95/540	Person-to-Person	Norovirus suspect
Person-to-person	Diarrhea, Vomiting	Hospital	3	Winter	73	Person-to-Person	Norovirus suspect
Person-to-person	Diarrhea, Vomiting	Long-term care facility	1	Winter	20/75	Person-to-Person	Norovirus suspect
Person-to-person	Diarrhea, Vomiting	Long-term care facility	3	Winter	23	Person-to-Person	Norovirus
Person-to-person	Diarrhea, Vomiting	School	3	Winter	19	Person-to-Person	Norovirus
Person-to-Person	Diarrhea, Vomiting	School	6	Winter	172/556	Person-to-Person	Norovirus
Person-to-Person	Diarrhea, vomiting	Restaurant at Country Club	1	Winter	14/21	Person-to-Person	Norovirus
Person-to-person	Diarrhea, Vomiting	Long-term care facility	6	Winter	48/90	Person-to-Person	Norovirus
Person-to-person	Diarrhea, Vomiting	Hospital Unit	6	Winter	15/30	Person-to-Person	Norovirus
Person-to-person	Diarrhea, Vomiting	Long-term care facility	6	Winter	26/50	Person-to-Person	Norovirus
Person-to-person	Diarrhea, Vomiting	Long-term care facility	6	Winter	10	Person-to-Person	Norovirus suspect

IOWA DEPARTMENT OF PUBLIC HEALTH

Type	Nature of Episode	Event/Place	Region	Month	Number Affected	Vehicle of Transmission	Agent Involved
Person-to-person	Diarrhea, Vomiting	Long-term care facility	6	Winter	25/60	Person-to-Person	Norovirus
Person-to-person	Diarrhea, Vomiting	Long-term care facility	6	Winter	Unknown	Person-to-Person	Norovirus
Person-to-person	Diarrhea, Vomiting	Long-term care facility	6	Winter	Unknown	Person-to-Person	Norovirus
Person-to-person	Diarrhea, Vomiting	Long-term care facility	6	Winter	Unknown	Person-to-Person	Norovirus
Person-to-person	Diarrhea, Vomiting	Long-term care facility	6	Winter	Unknown	Person-to-Person	Norovirus
Person-to-person	Diarrhea, Vomiting	Long-term care facility	6	Winter	Unknown	Person-to-Person	Norovirus
Person-to-person	Diarrhea, Vomiting	Long-term care facility	6	Winter	Unknown	Person-to-Person	Norovirus
Person-to-person	Diarrhea, Vomiting	Long-term care facility	6	Winter	Unknown	Person-to-Person	Norovirus
Person-to-person	Diarrhea, Vomiting	Hospital Unit	6	Winter	Unknown	Person-to-Person	Norovirus
Person-to-person	Diarrhea, Vomiting	Long-term care facility	6	Winter	Unknown	Person-to-Person	Norovirus
Person-to-person	Diarrhea, Vomiting	School	6	Winter	Unknown	Person-to-Person	Norovirus

PFGE (PULSE-FIELD GEL ELECTROPHORESIS) CLUSTERS

Type	Nature of Episode	Event/Place	Region	Month	Number Affected	Vehicle of Transmission	Agent Involved
Person-to-Person	Bloody diarrhea, HUS	Unknown	1	Summer	6	Person-to-Person	<i>E. coli</i> O157:H7
Foodborne	Diarrhea, abdominal cramps	No one event- ongoing contaminated product	Multi-county	November 05- June 2006	4	Raw stuffed chicken products	<i>Salmonella</i> Enteritidis
Animal-Person	Diarrhea	Multi-state	Multi-County	February-March	2	Contact with baby chicks	<i>Salmonella</i> Montevideo
Unknown	Bloody Diarrhea, vomiting	Spring Break – Puerto Vallarta, Mexico Multi-state	Multi-County	March	2	Unknown	<i>E. coli</i> O157:H7
Foodborne	Bloody Diarrhea, vomiting	Multi-state	Multi-County	September	1 confirmed 2 suspect	Spinach	<i>E. coli</i> O157:H7
Foodborne	Diarrhea	Multi-State	Multi-County	Sept 2006-July 2007	11 confirmed	Peanut Butter	<i>Salmonella</i> Tennessee

TABLE 4. CASES AND RATES PER 100,000 POPULATION IN 2006- ALL DISEASES

Event (Disease)	Cases	Rate
AIDS	84	2.8
Anthrax	0	0.0
Botulism	1	0.0
Brucellosis (Undulant Fever)	2	0.1
Campylobacteriosis	449	15.1
Cholera	0	0.0
Cryptosporidiosis	230	7.7
Cyclospora	0	0.0
Dengue Fever	1	0.0
Diphtheria	0	0.0
Ehrlichiosis	7	0.2
Encephalitis (arboviral except WNV)	1	0.0
Escherichia coli 0157:H7 (includes HUS & Shiga-toxin producing)	163	5.5
Giardiasis	302	10.2
Hansen's Disease (Leprosy)	1	0.0
Hantavirus Syndromes	0	0.0
Hepatitis A (Viral, infectious)	13	0.4
Hepatitis B Acute	21	0.7
Hepatitis B Chronic	35	1.2
Hepatitis E	0	0.0
<i>Haemophilus Influenzae</i> Type B Inv Disease	2	0.1
HIV (Diagnosis)	98	3.3
Legionellosis	13	0.4
<i>Listeria Monocytogenes</i> Inv. Dis	6	0.2
Lyme Disease	97	3.3
Malaria	2	0.1
Measles (Rubeola)	0	0.0
Meningococcal Inv. Disease	20	0.7
Mumps	1,964	65.9
Pertussis (Whooping Cough)	342	11.6
Plague	0	0.0
Poliomyelitis	0	0.0
Psittacosis	0	0.0
Rabies (Animal)	57	1.9
Rabies (Human)	0	0.0
Rocky Mountain Spotted Fever	5	0.2
Rubella (German Measles)	0	0.0
Salmonellosis	476	16.0
Shigellosis	134	4.6
Tetanus	0	0.0
Toxic Shock Syndrome	0	0.0
Trichinosis	0	0.0
Tuberculosis	36	1.2
Typhoid Fever	0	0.0
West Nile Virus	37	1.2
Yellow Fever	0	0.0

TABLE 5. CASES AND RATES PER 100,000 POPULATION FOR 2006 BY AGE GROUP

Disease	Age group														Total
	<=1		2 to 4		5 to 18		19 to 24		25 to 64		>64		Unk		
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases		
Campylobacteriosis	20	0.7	28	0.9	82	2.7	43	1.4	227	7.6	49	1.6	1	449	15.1
Cryptosporidiosis	23	0.8	25	0.8	67	2.2	11	0.4	86	2.9	18	0.6	5	230	7.7
E. coli and other shiga-toxin producing	13	0.4	19	0.6	46	1.5	29	1.0	44	1.5	10	0.3	2	161	5.4
Giardiasis	20	0.7	34	1.1	61	2.0	25	0.8	137	4.6	25	0.8	4	302	10.1
Hemolytic uremic syndrome	2	-	2	-	3	-	0	-	2	-	0	-	0	9	0.3
Hepatitis A	0	-	1	-	1	-	1	-	9	0.3	1	-	0	13	0.4
Hepatitis B, acute	0	-	0	-	1	-	1	-	17	0.6	2	-	0	21	0.7
Hepatitis B, chronic	1	-	0	-	2	-	2	-	25	0.8	5	0.2	0	35	1.2
Legionellosis	0	-	0	-	0	-	0	-	7	0.2	6	0.2	0	13	0.4
Listeriosis	0	-	0	-	1	-	0	-	1	-	4	-	0	6	0.2
Lyme disease	0	-	3	-	17	0.6	7	0.2	57	1.9	13	0.4	0	97	3.3
Meningococcal invasive disease	1	-	3	-	4	-	3	-	6	0.2	3	-	0	20	0.7
Mumps	11	0.4	54	1.8	494	16.6	573	19.2	776	26.0	55	1.8	5	1963	65.8
Pertussis (whooping cough)	17	0.6	34	1.1	199	6.7	15	0.5	73	2.4	4	-	0	342	11.5
Q fever	0	-	0	-	0	-	1	-	15	0.5	0	-	0	16	0.5
Rocky Mountain Spotted Fever	0	-	0	-	0	-	0	-	5	0.2	0	-	0	5	0.2
Salmonellosis	31	1.0	49	1.6	90	3.0	34	1.1	197	6.6	74	2.5	2	475	15.9
Shigellosis	5	0.2	23	0.8	48	1.6	9	0.3	45	1.5	4	-	0	134	4.5

*Diseases with fewer than 3 cases in 2006 were excluded from this table.

**Rates were not calculated for diseases with fewer than 5 cases in a cell.

TABLE 6. CASES AND RATES PER 100,000 POPULATION FOR 2006 BY SEX

Disease	Sex							
	Female		Male		Unknown		Total	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Campylobacteriosis	185	6.2	263	8.8	1	-	449	15.1
Cryptosporidiosis	113	3.8	116	3.9	1	-	230	7.7
E. coli and other shiga-toxin producing	85	2.9	76	2.5	0	-	161	5.4
Erhlichiosis (HME)	2	-	5	0.2	0	-	7	0.2
Giardia	148	5.0	153	5.1	1	-	302	10.1
Hemolytic uremic syndrome	4	-	5	0.2	0	-	9	0.3
Hepatitis A	6	0.2	7	0.2	0	-	13	0.4
Hepatitis B, acute	5	0.2	16	0.5	0	-	21	0.7
Hepatitis B, chronic	10	0.3	25	0.8	0	-	35	1.2
Legionellosis	5	0.2	8	0.3	0	-	13	0.4
Listeriosis	2	-	4	-	0	-	6	0.2
Lyme disease	36	1.2	61	2.0	0	-	97	3.3
Menningococcal invasive disease	8	0.3	12	0.4	0	-	20	0.7
Mumps	1319	44.2	639	21.4	5	0.2	1963	65.8
Pertussis (whooping cough)	166	5.6	176	5.9	0	-	342	11.5
Q fever	1	-	15	0.5	0	-	16	0.5
Rocky Mountain Spotted Fever	2	-	3	-	0	-	5	0.2
Salmonellosis	227	7.6	247	8.3	1	-	475	15.9
Shigellosis	64	2.1	70	2.3	0	-	134	4.5

*Diseases with fewer than 3 cases in 2006 were excluded from this table.

**Rates were not calculated for diseases with fewer than 5 cases in a cell.

TABLE 7. NOTIFIABLE DISEASES BY YEAR, 1991-2006

NOTIFIABLE DISEASES	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Anthrax																	
Botulism										1					1		1
Brucellosis (Undulant Fever)	3	1	1	2	1	2	4	4	1	6		2	1			1	2
Campylobacteriosis	388	333	260	292	280	274	339	425	455	467	499	467	427	458	559	537	449
Cholera					1					1							
Cryptosporidiosis					71	21	75	71	66	56	77	82	49	122	90	122	230
Cyclospora							3	1	3			1					
Dengue Fever																1	1
Diphtheria																	
Ehrlichiosis													1	1		4	7
Encephalitis (arboviral except WNV)	7	4	3	4	1	13	19	3	3	3	4	3	3		2		1
Escherichia coli O157:H7 (includes HUS & Shiga-toxin producing)	0	15	20	27	54	64	123	114	93	114	180	81	122	103	124	108	161
Giardiasis	435	422	351	340	339	391	410	358	429	377	420	345	315	277	301	280	302
Haemophilus Influenzae Type B Infection	23	15	7	5	6	3	4	6	5	2					1		2
Hansen's Disease (Leprosy)		1							1		2	1				1	1
Hantavirus Syndromes								2	1	2				1			
Hepatitis A (Viral, infectious)	277	48	53	58	64	106	346	490	400	161	67	41	72	40	50	22	13
Hepatitis B (Serum) Acute / Chronic	54	42	33	36	27	46	74	44	54	44	38	24	20	27	17	32	21/35
Hepatitis B (Perinatal)																	1
Hepatitis C or unspecified	17	14	12	12	25	1	43						1	1			
Hepatitis E																	1
HIV (Diagnosis)									76	88	95	99	108	92	107	114	98
Legionellosis	4	12	18	19	34	21	11	12	11	17	15	8	13	12	8	8	13
Listeria Monocytogenes Infection	6						1		2	6	2	3	5		3	7	6
Lyme Disease	16	22	33	8	17	16	19	8	27	24	34	36	42	58	56	91	97
Malaria	2	7	5	5	5	3	3	10	8	11	2	9	4	6	5	9	2
Measles (Rubeola)	26	17	1		7		1								3		
Meningococcal Infection	7	15	18	28	25	31	56	47	46	42	37	32	29	28	17	19	20
Mumps	22	23	13	11	16	11	3	10	11	8	8	1	1	2	2	6	1,963
Pertussis (Whooping Cough)	20	26	11	38	23	11	32	207	78	111	67	167	230	182	1066	1106	342
Plague																	
Poliomyelitis		1															
Psittacosis		3	2	2								3				1	
Rabies (Animal)	215	155	175	78	90	141	237	160	153	159	81	83	74	105	100	108	57
Rabies (Human)													1				
Rocky Mountain Spotted Fever	2	1	3	7	1		1	2	2	1	2	5	7	3	2	7	5
Rubella (German Measles)	4	6	3							30		1					
Salmonellosis	314	304	339	242	404	433	335	296	375	260	373	339	509	413	435	410	475
Shigellosis	51	33	46	68	338	351	151	90	69	74	569	367	122	93	64	103	134
Tetanus			1	1	1			1	1		1		1			1	
Toxic Shock Syndrome	10	7	7	7	8	5	4	3	4	4	4	1	3	5	5	5	
Trichinosis	79	1			1	6						3					1
Tuberculosis	72	71	49	58	66	67	70	74	55	58	37	42	31	40	47	55	36
Tularemia																	
Typhoid Fever	1		1				1	1		1				2			
West Nile Virus													52	147	23	37	37
Yellow Fever																	

TABLE 8. SALMONELLA SEROTYPES REPORTED 1991-2006

2006 IOWA <i>SALMONELLA</i> SEROTYPES BY FREQUENCY					
	Serotype	Cases		Serotype	Cases
<i>Salmonella</i>	Enteritidis	74	<i>Salmonella</i>	Dublin	2
<i>Salmonella</i>	Typhimurium	56	<i>Salmonella</i>	Panama	2
<i>Salmonella</i>	14,[5],12:-	34	<i>Salmonella</i>	Senftenberg	2
<i>Salmonella</i>	Newport	31	<i>Salmonella</i>	Virchow	2
<i>Salmonella</i>	Typhimurium Var Copenhagen	28	<i>Salmonella</i>	Amoutive	1
<i>Salmonella</i>	Monophasic	25	<i>Salmonella</i>	Bardo	1
<i>Salmonella</i>	Agona	23	<i>Salmonella</i>	Berta	1
<i>Salmonella</i>	Montevideo	17	<i>Salmonella</i>	Drypool	1
<i>Salmonella</i>	Braenderup	9	<i>Salmonella</i>	Gaminara	1
<i>Salmonella</i>	Subspecies IIIb	9	<i>Salmonella</i>	Group C2	1
<i>Salmonella</i>	Tennessee	9	<i>Salmonella</i>	Havana	1
<i>Salmonella</i>	Anatum	8	<i>Salmonella</i>	Hindmarsh	1
<i>Salmonella</i>	Group B	7	<i>Salmonella</i>	Indiana	1
<i>Salmonella</i>	Heidelberg	7	<i>Salmonella</i>	Javiana	1
<i>Salmonella</i>	Infantis	7	<i>Salmonella</i>	Litchfield	1
<i>Salmonella</i>	Paratyphi B var Java	7	<i>Salmonella</i>	Mbandaka	1
<i>Salmonella</i>	Bovismorbificans	6	<i>Salmonella</i>	Meleagridis	1
<i>Salmonella</i>	Group C	5	<i>Salmonella</i>	Norwich	1
<i>Salmonella</i>	Muenchen	5	<i>Salmonella</i>	Ohio	1
<i>Salmonella</i>	Thompson	5	<i>Salmonella</i>	Paratyphi A	1
<i>Salmonella</i>	Hadar	4	<i>Salmonella</i>	Poano	1
<i>Salmonella</i>	Hartford	4	<i>Salmonella</i>	Poona	1
<i>Salmonella</i>	Muenster	4	<i>Salmonella</i>	Reading	1
<i>Salmonella</i>	Subspecies IV	4	<i>Salmonella</i>	Schwarzengrund	1
<i>Salmonella</i>	Uganda	4	<i>Salmonella</i>	Stanleyville	1
<i>Salmonella</i>	Group D	3	<i>Salmonella</i>	Telelkebir	1
<i>Salmonella</i>	Oranienburg	3	<i>Salmonella</i>	Urbana	1
<i>Salmonella</i>	Saintpaul	3		Unknown	38
<i>Salmonella</i>	Sandiego	3		Total	475
<i>Salmonella</i>	Derby	2			

TABLE 9. SHIGELLA SEROGROUPS 1991-2006

<i>Shigella</i> Serogroups	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<i>Boydii</i>		1			1	1				4	6	2		3	1	1
<i>Dysenteriae</i>	1	1				1										1
<i>Flexneri</i>	8	8	8		3	13	12	6	7	10	7	11	5	8	7	15
Group B						3		1	1						3	
Group C				1												
Group D		1		4	3	5		1					1			
<i>Sonnei</i>	24	33	50	199	119	116	62	44	55	514	306	63	62	41	58	110
Unknown										41	46	46	25	12	7	7
TOTAL CASES	33	46	68	338	351	151	90	69	74	569	365	122	93	64	78	134

TABLE 10. COMMON NOTIFIABLE DISEASES BY COUNTY, 2006

County	Disease																	
	Campylobacter	Cryptosporidiosis	E. coli STX-producing	Giardia	Hemolytic uremic syndrome	Hepatitis A	Hepatitis B, acute	Hepatitis B, chronic	Legionellosis	Listeriosis	Lyme	Meningococcal invasive disease	Mumps	Pertussis	Rocky Mountain Spotted Fever	Salmonella	Shigellosis	Total
ADAIR	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	9	0	13
ADAMS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
ALLAMAKEE	10	2	1	0	0	0	0	0	0	0	4	0	1	1	0	2	0	21
APPANOOSE	0	0	0	0	0	0	0	0	0	0	1	0	6	3	0	1	0	11
AUDUBON	0	0	1	0	0	0	0	0	0	0	0	0	1	2	0	2	0	6
BENTON	4	0	10	1	0	0	0	0	0	0	2	0	10	4	0	4	0	36
BLACK HAWK	13	2	38	11	1	0	1	0	1	1	3	0	278	4	1	21	3	378
BOONE	3	3	0	3	0	0	0	0	0	0	1	0	6	0	0	3	0	19
BREMER	3	0	1	2	0	0	1	0	0	0	1	0	30	0	0	6	17	61
BUCHANAN	4	1	2	2	0	0	0	0	0	1	2	0	51	0	0	4	0	67
BUENA VISTA	9	0	1	3	0	0	1	1	0	0	0	4	1	0	0	3	0	23
BUTLER	1	0	0	1	0	0	0	0	0	0	0	0	20	3	0	1	0	27
CALHOUN	3	0	3	2	0	0	0	0	0	0	0	0	3	0	0	0	0	11
CARROLL	4	3	0	0	0	0	0	0	0	0	0	0	3	0	0	2	0	12
CASS	4	0	3	0	1	0	1	0	0	0	0	0	0	0	0	0	0	9
CEDAR	3	0	2	0	0	0	0	0	0	0	1	0	11	0	0	2	0	19
CERRO GORDO	13	1	0	4	0	0	1	2	0	0	0	0	4	2	0	10	2	39
CHEROKEE	4	0	0	0	0	0	0	0	0	0	2	2	2	0	0	3	0	13
CHICKASAW	5	0	2	1	0	0	0	0	0	0	0	0	8	1	0	0	0	17
CLARKE	1	1	0	0	0	0	0	0	0	0	0	0	3	0	0	4	0	9
CLAY	6	2	1	1	0	0	0	0	0	0	0	0	12	0	0	2	0	24
CLAYTON	3	4	1	2	0	0	0	0	0	1	5	0	22	3	0	1	0	42
CLINTON	4	3	0	3	0	0	0	2	1	1	0	0	20	3	0	5	0	42
CRAWFORD	3	0	1	2	1	0	0	0	0	0	0	0	23	0	0	2	1	33
DALLAS	4	5	0	5	0	0	0	0	0	0	1	0	17	0	0	6	0	38
DAVIS	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	3	0	6
DECATUR	1	1	1	2	0	0	0	0	0	0	1	0	0	0	0	0	0	6
DELAWARE	5	1	1	0	0	0	0	0	0	0	2	0	19	0	0	4	0	32
DES MOINES	7	1	0	3	0	0	1	1	0	0	0	1	15	0	0	12	0	41
DICKINSON	4	1	0	0	0	0	0	0	0	0	1	1	5	0	0	3	0	15
DUBUQUE	29	32	10	14	0	1	0	2	0	0	7	0	458	6	0	13	1	574
EMMET	2	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	6
FAYETTE	4	2	7	3	0	0	0	1	0	0	3	0	15	9	0	1	0	45
FLOYD	3	1	0	0	0	0	0	0	0	0	0	0	3	2	0	5	0	14
FRANKLIN	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	3
FREMONT	3	0	1	0	0	0	1	0	0	0	0	0	3	0	1	1	0	10
GREENE	3	1	0	1	0	0	0	0	0	0	0	0	25	5	0	1	0	36
GRUNDY	3	1	2	0	0	0	1	0	0	0	0	1	19	1	0	0	0	28
GUTHRIE	2	0	0	0	0	0	0	0	0	0	0	0	6	1	0	3	0	12

CENTER FOR ACUTE DISEASE EPIDEMIOLOGY

	Campylobacter	Cryptosporidiosis	E. coli STX-producing	Giardia	Hemolytic uremic syndrome	Hepatitis A	Hepatitis B, acute	Hepatitis B, chronic	Legionellosis	Listeriosis	Lyme	Meningococcal invasive disease	Mumps	Pertussis	Rocky Mountain Spotted Fever	Salmonella	Shigellosis	Total
HAMILTON	2	2	0	1	0	0	1	0	0	0	2	0	8	0	0	2	0	18
HANCOCK	2	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2	0	6
HARDIN	4	0	0	1	0	0	0	0	1	0	0	0	3	0	0	4	0	13
HARRISON	2	2	0	1	0	0	0	0	0	0	0	0	3	0	0	3	0	11
HENRY	5	1	0	1	0	0	0	0	0	0	1	0	15	1	0	1	0	25
HOWARD	5	1	3	2	0	0	0	0	0	0	3	0	1	2	0	1	0	18
HUMBOLDT	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	1	1	5
IDA	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	4
IOWA	4	3	2	3	0	0	0	0	0	0	2	0	11	0	0	2	1	29
JACKSON	3	8	0	2	0	0	0	0	0	0	1	0	11	0	0	0	1	26
JASPER	6	0	7	5	0	0	0	0	1	0	2	0	12	0	0	2	0	35
JEFFERSON	0	0	0	1	0	0	0	0	0	0	0	0	9	0	0	0	1	12
JOHNSON	19	8	4	15	2	0	0	4	1	0	11	1	223	13	0	30	1	334
JONES	9	1	1	0	0	0	0	0	0	0	0	0	3	0	0	10	0	24
KEOKUK	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	1	0	5
KOSSUTH	3	0	0	0	0	0	0	0	0	0	0	0	7	0	0	2	0	12
LEE	3	0	0	1	0	0	0	0	0	0	0	0	14	0	0	4	0	23
LINN	15	1	5	22	1	0	1	1	1	1	10	1	102	11	0	21	2	195
LOUISA	4	1	0	3	0	0	0	0	0	0	2	0	15	0	0	9	0	34
LUCAS	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4
LYON	6	1	1	3	0	0	0	0	0	0	0	0	0	0	0	3	0	14
MADISON	1	0	1	1	0	0	0	0	0	0	0	0	9	10	0	1	1	25
MAHASKA	2	0	0	1	0	0	0	0	1	0	1	0	3	0	0	0	0	8
MARION	4	0	3	2	0	0	0	0	0	0	0	0	6	0	0	5	0	20
MARSHALL	7	1	1	7	0	6	0	2	0	0	1	0	29	10	0	15	0	79
MILLS	4	1	0	1	0	0	0	1	0	0	1	0	3	0	1	1	0	14
MITCHELL	3	2	1	5	1	0	0	0	0	0	0	0	4	1	0	0	2	19
MONONA	1	0	1	1	0	0	0	0	0	0	0	1	1	0	0	5	2	12
MONROE	0	0	0	1	0	0	0	0	0	0	0	0	4	0	0	0	0	5
MONTGOMERY	2	0	0	0	0	1	0	0	0	1	0	0	3	0	0	0	0	7
MUSCATINE	4	0	1	2	0	0	0	0	2	0	2	0	29	2	0	2	3	47
O'BRIEN	6	0	2	2	0	0	0	0	0	0	0	1	4	1	0	1	0	17
OSCEOLA	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3
PAGE	2	1	0	0	0	0	0	0	0	0	0	0	12	0	0	2	0	18
PALO ALTO	1	0	0	0	0	0	0	0	0	0	0	0	23	0	0	1	0	25
PLYMOUTH	3	1	4	3	0	0	0	0	0	0	1	0	3	1	0	8	1	26
POCAHONTAS	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
POLK	29	70	10	77	0	1	4	8	2	0	8	0	71	33	1	58	23	396
POTTAWATTAMIE	18	8	1	13	0	0	4	2	0	0	2	0	14	2	0	19	1	85
POWESHIEK	2	0	0	1	0	0	0	0	0	0	0	1	15	1	0	5	0	25
RINGGOLD	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	7	1	9
SAC	2	0	0	3	0	0	0	0	0	0	0	0	2	4	0	0	0	11
SCOTT	24	5	1	8	0	0	1	2	0	0	6	1	87	150	1	12	5	303

IOWA DEPARTMENT OF PUBLIC HEALTH

	Campylobacter	Cryptosporidiosis	E. coli STX-producing	Giardia	Hemolytic uremic syndrome	Hepatitis A	Hepatitis B, acute	Hepatitis B, chronic	Legionellosis	Listeriosis	Lyme	Meningococcal invasive disease	Mumps	Pertussis	Rocky Mountain Spotted Fever	Salmonella	Shigellosis	Total
SHELBY	1	0	0	2	0	0	0	0	1	0	0	0	13	0	0	4	0	21
SIoux	13	17	8	10	2	0	0	0	0	0	0	1	2	0	0	16	0	69
STORY	11	9	4	6	0	0	0	1	0	0	0	0	13	2	0	16	1	63
TAMA	3	1	2	1	0	0	0	0	0	0	0	0	9	2	0	1	0	19
TAYLOR	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
UNION	2	0	0	0	0	0	0	0	0	0	0	0	4	1	0	3	0	10
VAN BUREN	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	4
WAPELLO	3	0	1	6	0	0	0	1	0	0	1	0	5	0	0	7	0	24
WARREN	1	5	0	4	0	0	1	1	0	0	1	0	4	0	0	8	0	25
WASHINGTON	6	2	0	1	0	1	0	0	0	0	0	0	16	33	0	6	0	65
WAYNE	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
WEBSTER	3	3	0	1	0	1	1	1	0	0	0	0	4	0	0	4	4	22
WINNEBAGO	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	4
WINNESHIEK	3	2	0	7	0	0	0	0	0	0	1	0	9	1	0	2	30	56
WOODBURY	10	3	4	2	0	1	0	1	0	0	0	1	7	10	0	14	29	84
WORTH	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4
WRIGHT	3	1	0	2	0	0	0	0	0	0	0	0	4	0	0	5	0	15
	449	230	161	302	9	13	21	35	13	6	97	20	1963	342	5	475	134	4293

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