



Second Pertussis Case in School Changes Parent Notification Content

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A case of laboratory confirmed pertussis was reported to the Indiana State Department of Health Surveillance Investigation Division (ISDH SID) on January 18, 2011 (Case 1). Case 1 cough onset was January 10, 2011, and after five days of antibiotic treatment was no longer considered infectious as of January 18. A letter was sent to parents of school students on February 16 to inform them about the case and provide information about the disease. A second laboratory confirmed pertussis case was reported to the ISDH SID on March 1 (Case 2) in the same grade as Case 1. A second letter was sent to parents on March 14. Case 2 cough onset was February 1, within the incubation period of 4-21 days of Case 1, and was no longer considered infectious as of February 27.

The mother of Case 2 reported she read the initial letter sent on February 16th regarding Case 1 and noted her child had pertussis symptoms mentioned in the letter. She called the child’s pediatrician on February 17, stating her child had pertussis symptoms including paroxysmal cough (intense coughing spell), whoop, and post-tussive vomiting (vomiting after an intense coughing spell). Although mother requested pertussis testing for her child, the doctor declined because the child was fully immunized and did not need to be tested or receive antibiotic prophylaxis for possible exposure. The child’s symptoms reportedly became worse, and on February 22, the child was tested (via nasopharyngeal swab) and confirmed PCR positive for pertussis.

Case 2’s mother told the ISDH Field Epidemiologist during the case investigation that if the first letter sent by the school had indicated *cases of Pertussis had been identified in fully immunized children in the past*, parents would have been more likely to pay attention to pertussis symptoms in their children and felt more comfortable advocating for their children with their doctors. The Field Epidemiologist had received similar feedback from other parents in past investigations. The Field Epidemiologist then discussed the situation with the School Nurse Coordinator. The School Nurse Coordinator informed the school administration, which consequently decided to include the statement *“The State of Indiana has seen pertussis cases in fully vaccinated children”* in the March 14 letter in place of the ISDH parent letter template statement *“Complete Pertussis immunization normally prevents this disease. Sometimes Pertussis will infect immunized children, but symptoms will usually be milder than in unimmunized children.”*

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Most schools and daycares use the ISDH parent letter template verbatim. Case 2's mother did not believe the initial dear parent letter template statement was strong enough to get most parents' attention, but thought the revised statement in the March 14 letter was more effective and convincing. As a result of this investigation, the ISDH SID is discussing changing the ISDH parent letter template to add the new statement or a similar statement. Since the letter template recommends that parents take the letter to their health care providers for reference, it also reinforces health care provider education. This experience also underscores the importance of participating in case investigations, which can provide critical information for the investigation at hand and also potentially improve public health processes.

Where's the Data?

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Every year about this time, the Indiana State Department of Health (ISDH) receives questions from local health departments (LHDs), media sources, and the public about the annual communicable disease data report. Why does it take a year to publish the annual report for the previous year? For example, the goal to publish the 2010 communicable disease data report is the end of 2011.

This is a complicated process that involves many agencies to accurately represent the burden of disease within the state. These agencies include the Centers for Disease Control and Prevention (CDC), the ISDH, LHDs, and the United States Census Bureau. Using a time line may help explain this process.

If a disease condition is diagnosed on December 31, 2010, it needs to be counted in the 2010 statistics. However, it may not get reported to the LHD for a couple of days, and then the LHD needs a couple of days to investigate. Once that investigation is complete, the LHD transmits the case report to the ISDH. ISDH epidemiologists review and categorize the report as a case or not. This process could take a couple of weeks, and for some conditions awaiting final testing, could take months to accurately determine whether the report truly is a case that needs to be counted. For some conditions cases may not be categorized until March or April. ISDH epidemiologists then close all cases, including those with incomplete investigations and categorize them either as a case by case definition or dismissing them as "not a case". In Indiana, there are 78 reportable conditions (79 counting outbreaks) and 93 LHDs reporting to the ISDH. This is a tremendous amount of data that needs to be reviewed and categorized.

Once all the case reports are completed and closed, the ISDH and the CDC begin "reconciling" the disease data. In other words, do the ISDH numbers match the CDC numbers for every condition? For example, if the CDC says Indiana reported 90 cases of salmonellosis in the previous year and the ISDH database has 85 cases, the ISDH and CDC must agree on the true number of cases for the year. Doing this for every condition can take weeks to months depending on discrepancies. This step is required to assure accurate, quality data for the 2010 Early Release Tables in the CDC *Morbidity and Mortality Weekly Report* (MMWR) in August.

Finally, when this is completed, ISDH epidemiologists write the annual report itself. The report includes rates and trends of reportable diseases in Indiana in addition to disease-specific epidemiology. The rates are an important measure since they provide a comparable number for differences in population size. A county with 90 cases of salmonellosis and with a population of 800,000 persons cannot be accurately compared to a county with 90 cases and 20,000 persons.

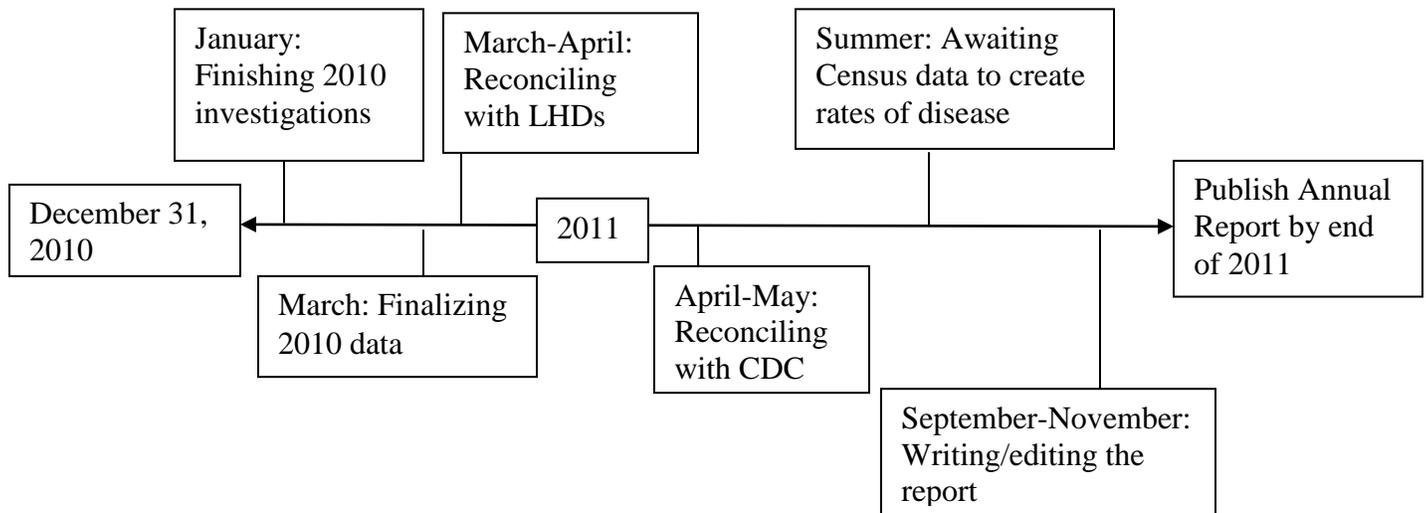
The rate establishes a comparison of disease as if the populations were the same (usually 100,000). For example the first rate is expressed as:

90 cases/200,000 population X 100,000 = 45 out of 100,000 are infected with salmonellosis compared to

90/20,000 population X 100,000 = 450 out 100,000 are infected with salmonellosis, obviously a much higher incidence of disease requiring additional investigation and resources to abate the condition.

One of the challenges in calculating rates so that the populations are comparable is waiting until mid- to late-summer until the U.S. Census Bureau finalizes the population results for each state, county, gender, age group, and race.

After the annual report is written, it has to be edited, checked for accuracy, and compiled into one large (130+ page) document before it can be published. The annual reports through 2009 are available on the ISDH website (<http://www.in.gov/isdh/20667.htm>). The 2010 annual report is expected to be published before the end of 2011.



National Program of Cancer Registries

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“A national system of cancer registries can help us understand the disease better and use our resources to the best effect in prevention and treatment.”

--Donna E. Shalala, PhD, Former Secretary, U.S. Department of Health and Human Services

Overview & History

The National Program of Cancer Registries (NPCR) supports the Indiana State Cancer Registry along with cancer registries in 44 other states, the District of Columbia, Puerto Rico, and the U.S. Pacific Island Jurisdictions, representing 96% of the U.S. population. The NPCR assesses the completeness and accuracy of data required to be collected by NPCR state registries, including data about race and ethnicity, stage at diagnosis, and treatment.

The NPCR was established by Congress through the Cancer Registries Amendment Act of 1992, and is currently administered and managed by the Centers for Disease Control (CDC). This

congressional mandate authorizes the CDC to provide funds to states and territories to improve existing cancer registries, plan and implement registries in states where they don't exist, develop model legislation and regulations for states to enhance the viability of registry operations, set standards for data completeness, quality, and timeliness, provide training for state cancer registry personnel, and help establish a computerized data reporting and processing system.

NPCR has been funding state cancer registries to collect population-based cancer incidence data since 1994. Before NPCR was established, 10 states were without cancer registries, and most states with registries lacked the resources and legislative support they needed to gather complete data. Together, NPCR and the National Cancer Institute Surveillance, Epidemiology and End Results program (SEER) collect data for the entire United States population.

Data Dissemination

A goal of NPCR is to release cancer-related data to public health planners and others to monitor the burden of disease and to implement cancer prevention and control programs. Starting in 2001, NPCR began receiving data annually from funded programs with the goals of establishing the quality of the data and eventually releasing the data for use in public health planning.

Currently, NPCR has three products for data release: United States Cancer Statistics (USCS); The U.S. County Cancer Incidence Dataset; and The USCS Expanded Dataset. The USCS is a web-based report that includes the official federal statistics on cancer incidence from state registries and cancer mortality statistics. Data from the report provide a basis for cancer prevention research, cancer control planning, health communications, and policy efforts. The U.S. County Cancer Incidence dataset consists of aggregate cancer incidence rates and counts for major cancer sites for selected counties in the United States. Examples of current users include state cancer control planners, state legislators and policymakers, and the American Cancer Society. The USCS Expanded Dataset is hosted on WONDER, an online database that is supported by the CDC, and is intended to allow greater flexibility in generating reports using NPCR data than was previously available. Epidemiologists and other skilled users can obtain reports containing age-adjusted rates, crude rates, and case counts that can be requested by state, large metropolitan statistical areas, year of diagnosis, sex, race, and age. Each year, these online databases are updated to include the most recent data available. Prior to public release, the data must meet quality standards and state cancer registries must indicate in writing their agreement to participate in each data release product.

Application

The ISCR and NPCR are valuable resources for cancer-related data, and are referenced on a regular basis by Indiana Tobacco Prevention and Cessation. We are especially interested in monitoring the Lung Cancer (incl. trachea, lung, and bronchitis) incidence and mortality rates in Indiana and nationally. Cancer-related data is incorporated into our 2015 strategic plan, fact sheets and annual reports. Lung Cancer remains the leading cause of cancer death in Indiana. Smoking accounts for 87% of lung cancer deaths and at least 30% of all cancer deaths, and exposure to secondhand smoke significantly increases one's risk of developing lung cancer. For information on work being done to reduce the burden of cancer in Indiana, the Indiana Cancer Control Plan is located at <http://indianacancer.org/indiana-cancer-control-plan/>. For more information related to tobacco use and secondhand smoke exposure in Indiana, visit <http://www.in.gov/itpc/>.

The Dangers of Mushroom Hunting

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Mushrooms are found everywhere. They have been hunted and eaten since ancient times. They provide good nutritional value and health benefits, and usually contain more digestible protein than any green vegetable and add flavor and texture to any dish. However, foraging for mushrooms or accidental ingestion of mushrooms can result in serious illness and death.



Approximately 1% of the mushrooms species are severely poisonous. Mushroom poisoning is caused mainly from ingestion by inexperienced collectors or children ingesting them from yards or natural areas. Many known edible mushrooms have poisonous look- a-likes. Even experienced collectors can misidentify a mushroom. Most poisonings occur when a toxic species is confused with an edible species.

Mushroom poisoning can occur by consuming raw or cooked mushrooms or toadstools. Most poisonous mushrooms cannot be made nontoxic by cooking, canning, freezing, or other processing methods. Poisoning usually occurs in the spring or fall when the mushrooms are in their fruiting stage. Most mushrooms fruit in the fall. In the Midwest the season for hunting mushrooms is in the spring when the popular morels are fruiting.

There are four categories of mushroom toxins: protoplasmic poisons, neurotoxins, gastrointestinal irritants, and disulfiram-like toxins. Amatoxins, hydrazines, and orellanine are the toxins grouped as **protoplasmic poisons**. These toxins cause extensive cellular damage followed by symptoms which appear after cellular damage has occurred and may be too late to treat. The fatality rate for amanitin poisoning can be 50-90% if prompt medical treatment does not occur. Patients may not associate their symptoms with ingestion of wild mushrooms due to late onset of symptoms. Consumption of *Amanita phalloides* (death angel) results in approximately 90% of the fatalities that occur from mushroom poisoning. Hydrazine poisoning usually occurs by consuming species of false morels. This toxin resembles amanitin toxin but causes less severe illness with a low fatality rate. The Sorrel Webcap mushroom and relatives produce orellanine toxin. Symptoms of orellanine poisoning appear 3-14 days after ingestion. Recovery may require several months in more severe cases.

Neurotoxins are divided in three groups based on type of symptoms and the toxin type: muscarine, ibotenic acid/muscimol, and psilocybin/psilocin. The toxins in this category affect the central nervous system with symptoms occurring soon after consumption. Onset of symptoms in this category occurs rapidly after ingestion. Symptoms can be similar to alcohol intoxication and can cause convulsions or coma. Neurotoxin poisoning is rarely fatal. There are several species that look similar to the species that contain psilocybin but are more poisonous than those? containing amatoxins. Muscarine poisoning symptoms include excessive perspiration, nausea, and vomiting. Muscimol symptoms mostly consist of drowsiness and disorientation but can be more severe. Ibotenic acid poisoning has similar symptoms but has a stronger affect and may include alteration of sensory perceptions. Ingestion of psilocybin/psilocin containing mushrooms

can cause hallucinations and a change in perceptions. Accidental ingestion can cause psychic distress due to the effect is not anticipated.

Gastrointestinal irritants are caused by numerous mushrooms with unidentified toxins. The onset of symptoms occurs as soon as they are consumed. Consumption of mushrooms in this category rarely causes fatality. Some that can cause severe stomach upset are *Tricholoma* species, *Lactarius* species, the Green-spored Lepiota, the Devil’s Boletus, and several other species.

Disulfiram-like poisoning is caused by the toxin coprine found in the mushroom species *Coprinus atramentarius* or Inky Cap Mushroom. A few other species have also been implicated. The mushrooms in this group are usually considered edible. Intoxication only occurs when alcohol is consumed with the mushrooms. Intoxications that occur with psychotropic mushrooms are usually not accidental.

Table 1. Preliminary diagnoses of mushroom intoxication.

Time of Onset	Type of Poisoning	Nature of Threat
Delayed (6-72 h)	Protoplasmic	Life threatening
Rapid (15 min-2 h)	G.I. irritant	Not life threatening*
	Neurological	Not life threatening*
	Disulfiram-like	Not life threatening*
*In most cases, however, the patient should be observed and appropriate support therapy provided if necessary.		

January 1992

For more information on symptoms, incubation period, etc see the Bad Bug Book at:

http://www.fda.gov/Food/FoodSafety/FoodborneIllness/FoodborneIllnessFoodbornePathogensNaturalToxins/BadBugBook/ucm071785.htm?sms_ss=email&at_xt=4cd2d135a814018b,0

References:

- http://www.namyco.org/toxicology/poison_syndromes.html
- <http://www.cdc.gov/mmwr/preview/mmwrhtml/00047808.htm>
- <http://www.fda.gov/Food/FoodSafety/FoodborneIllness/FoodborneIllnessFoodbornePathogensNaturalToxins/BadBugBook/ucm070853.htm>
- <http://mushroominfo.com/benefits/>
- <http://www.indianamushrooms.com/morels.html>

Pegler, David, & Spooner, Brian, 1992. *The Mushroom Identifier*. Smithmark, New York.

Satin, Morton, 1999. *Food Alert! The Ultimate Sourcebook for Food Safety*.

Checkmark Books.



Training Room

INDIANA STATE DEPARTMENT OF HEALTH IMMUNIZATION PROGRAM PRESENTS:

Immunizations from A to Z

Immunization Health Educators offer this FREE, one-day educational course that includes:

- Principles of Vaccination
- Childhood and Adolescent Vaccine-Preventable Diseases
- Adult Immunizations
 - Pandemic Influenza
- General Recommendations on Immunization
 - Timing and Spacing
 - Indiana Immunization Requirements
 - Administration Recommendations
 - Contraindications and Precautions to Vaccination
- Safe and Effective Vaccine Administration
- Vaccine Storage and Handling
- Vaccine Misconceptions
- Reliable Resources

This course is designed for all immunization providers and staff. Training manual, materials, and certificate of attendance are provided to all attendees. Please see the Training Calendar for presentations throughout Indiana. Registration is required. To attend, schedule/host a course in your area or for more information, please reference <http://www.in.gov/isdh/17193.htm>.

Purpose, Passion, and Perseverance in Public Health: 2011 Public Health Nurse Conference -- May 18th -19th, 2011

Registration for the 2011 Public Health Nurse Conference is now open. You may register online at <https://www.surveymonkey.com/s/2011LHDODPublicHealthConference>. Registration is on a first-come, first-serve basis.

There is no cost to attend the conference however, due to cuts in our federal grant funding, attendees will be responsible for paying for their parking and lunch.

Conference Location – IUPUI Campus Center

The IUPUI Campus Center is located at 420 University Blvd., Indianapolis, IN 46202. The conference will be held on the 3rd and 4th floor of the IUPUI Campus Center.

<http://life.iupui.edu/campus-center/>

Workshops and Sessions

Some of the sessions and workshops that will be offered:

- Cultural Competency
- How to Write an Abstract
- Educating Parent and Guardians on Vaccine Safety
- Case Investigations
- The Communicable Disease Rule and INEDSS
- Vaccines For Children for Beginners
- Setting Up Your Office to Bill Medicare and Medicaid
- Running an Effective Meeting
- Create an Effective Presentation
- Emerging Public Health Research

Parking

There are parking garages west of the IUPUI Campus Center. Drive west on Michigan Street. You will pass the IUPUI Campus Center on your left. Turn left at the light onto Barnhill Drive, then take an immediate left onto Vermont Street. Follow the “Visitor Parking” signs to the garage on your left.

<http://life.iupui.edu/campus-center/about/directions.html>

Dining

There are dining options in the IUPUI Campus Center. <http://life.iupui.edu/campus-center/dining/>

Hotel Information

There are many hotels in the downtown Indianapolis area. The Sheraton Indianapolis City Center (31 West Ohio Street, Indianapolis, IN 46204) is offering special pricing for conference attendees. Attendees will be able to book a hotel room (including overnight parking) for Wednesday, May 18th for \$91 plus tax. Please contact Sheraton City Center Reservations at 317-635-2000 with reference code “Indiana Department of Health” to book your reservation.

<http://www.starwoodhotels.com/sheraton/property/overview/index.html?propertyID=3054>

CNE

St. Vincent Hospital and Health Care Center, Inc., Indianapolis IN (ISNA No. CNEP 10-10, 12/1/2013) is an approved provider of continuing nursing education by the Indiana State Nurses Association, an accredited approver by the American Nurses Credentialing Center’s Commission on Accreditation. CNE contact hours will be provided.

Please contact [Jessica Trimble](#), [Sharon Griffin](#), or [Jodi Morgan](#) with additional questions.

ISDH Data Reports Available

The following data reports and the *Indiana Epidemiology Newsletter* are available on the ISDH Web Page:

<http://www.IN.gov/isdh/>

HIV/STD Spotlight Reports (June 2007, December 2007, June 2008, January 2009)	Indiana Mortality Report (1999-2007)
Indiana Cancer Report: Incidence; Mortality; Facts & Figures	Indiana Infant Mortality Report (1999, 2002, 1990-2003)
Indiana Health Behavior Risk Factors (1999-2008)	Indiana Natality Report (1998-2007)
Indiana Health Behavior Risk Factors (BRFSS) Newsletter (2003-2010)	Indiana Induced Termination of Pregnancy Report (1998-2007)
Indiana Hospital Consumer Guide (1996)	Indiana Marriage Report (1995, 1997, & 2000-2004)
Public Hospital Discharge Data (1999-2008)	Indiana Infectious Disease Report (1997-2009)
Assessment of Statewide Health Needs – 2007	Indiana Maternal & Child Health Outcomes & Performance Measures (1989-1998, 1990-1999, 1991-2000, 1992-2001, 1993-2002, 1994-2003, 1995-2004, 1996-2005)

HIV Disease Summary

Information as of February 28, 2011 based on 2000 population of 6,080,485)

HIV - without AIDS to date:

322	New HIV cases March 2010 thru February 28, 2011	12-month incidence	5.29 cases/100,000
4,466	Total HIV-positive, alive and without AIDS on February 28, 2011	Point prevalence	73.45 cases/100,000

AIDS cases to date:

305	New AIDS cases from March 2010 thru February 28, 2011	12-month incidence	5.02 cases/100,000
5,432	Total AIDS cases, alive on February 28, 2011	Point prevalence	89.33 cases/100,000
11,188	Total AIDS cases, cumulative (alive and dead) on February 28, 2011		

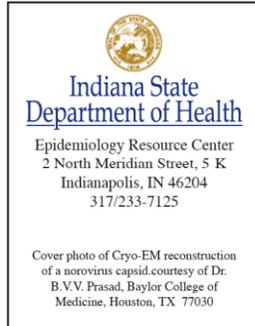
REPORTED CASES of selected notifiable diseases

Disease	Cases Reported in January - February MMWR Weeks 1-8	
	2010	2011
Campylobacteriosis	81	70
Chlamydia	2018	6336
Cryptococcus	3	4
Cryptosporidiosis	31	22
<i>E. coli</i> , shiga toxin-producing	3	4
Giardiasis	61	41
Gonorrhea	626	1761
<i>Haemophilus influenzae</i> , invasive	15	10
Hemolytic Uremic Syndrome (HUS)	0	0
Hepatitis A	2	6
Hepatitis B	12	6
Hepatitis C acute	3	13
Histoplasmosis	16	14
Influenza deaths (all ages)	1	14
Legionellosis	5	4
Listeriosis	1	0
Lyme Disease	6	0
Measles	0	0
Meningococcal, invasive	7	2
Mumps	2	0
Pertussis	40	59
Rocky Mountain Spotted Fever	0	0
Salmonellosis	55	37
Shigellosis	5	11

REPORTED CASES of selected notifiable diseases

Disease	Cases Reported in January - February MMWR Weeks 1-8	
	2010	2011
Severe <i>Staphylococcus aureus</i> in a previously healthy person	4	1
Group A Streptococcus, invasive	28	44
Group B, Streptococcus, Invasive (all ages)	58	55
<i>Streptococcus pneumoniae</i> (invasive, all ages)	149	116
<i>Streptococcus pneumoniae</i> (invasive, drug resistant)	51	35
<i>Streptococcus pneumoniae</i> (invasive, <5 years of age)	14	3
Syphilis (primary and secondary)	12	25
Tuberculosis	7	7
Vibriosis	1	0
Varicella	66	24
Yersiniosis	1	0
Animal Rabies	0	0

For information on reporting of communicable diseases in Indiana, call the *Surveillance and Investigation Division* at 317.233.7125.



The *Indiana Epidemiology Newsletter* is published bi-monthly by the Indiana State Department of Health to provide epidemiologic information to Indiana health care professionals, public health officials, and communities.

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