Indiana Epidemiology Newsletter

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Providing Schools Support Through Access to Resources: Maximizing Awareness and Utilization of the *Communicable Disease Reference Guide for School Personnel: 2011*

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An aspect of the Indiana State Department of Health (ISDH) Epidemiology Resource Center's (ERC) vision is to reduce the effects of communicable disease. This involves education, collaboration, and providing resources and consultation to professional partners, including local health department (LHD) nurses and environmentalists, hospital infection preventionists, and laboratory personnel. Valuable frontline partners responsible for health in schools include school nurses, principals, and administrators. As public health partners their focus is two-fold: prevent disease and mitigate disease if it is introduced into the school environment.

Tradition written resources include ISDH epidemiologists, the communicable disease reporting rule, and other publications such as the *Red Book* and *Control of Communicable Diseases Manual*. One resource particularly dedicated to schools is the ISDH *Communicable Disease Reference Guide for Schools: 2011 Edition*, available at http://www.in.gov/isdh/23291.htm.

A product of collaborative efforts between the ISDH and the Indiana Department of Education, this manual provides the most current information related to infectious diseases and guidance for communicating disease issues to student, parent, and staff. It serves as a vital resource that enables school personnel to distribute critical disease information and aids in development of initial response and mitigation strategies. The document is not a detailed procedural manual and does not supplant necessary medical follow-up. However, it does serve as a useful reference for school nurses and administrators, as it relates to a wide variety of conditions and illness with implications for school prevention and mitigation.

Specific topics are addressed in the "Access" section of the manual that includes information regarding a variety of diseases that the school nurse may have to address during the school year. All reportable diseases are identified, as are many other conditions for which schools are recommended to notify the ISDH or LHDs. This section includes links to disease specific ISDH Quick Fact sheets and materials from the Centers for Disease Control and Prevention. In addition, current resources are outlined on a resource page. A well-organized "Communicable Disease Summary Table" contains detailed disease-specific information, including incubation period, mode of transmission, period of communicability, exclusion/attendance, and prevention. It provides answers to important questions for many illnesses and conditions that may occur in a school.

The *Communicable Disease Reference Guide for Schools: 2011 Edition* is not a blueprint for total response, nor does it provide details regarding comprehensive medical treatment. It can, however, serve as a lifeline for a variety of school-related health issues, and school officials are encouraged to use the manual. It provides information regarding response to disease conditions and development and implementation of mitigation strategies. It also provides necessary information regarding follow-up for students and staff and answers some of the more immediate questions relevant to school health staff and administrators during a school outbreak.

Inadequate Sleep Among Adults: *Data from the 2010 Indiana BRFSS*

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National Sleep Awareness Week is March 5-11, 2012 according to an announcement in the March 2, 2012 *Morbidity and Mortality Weekly Report* published by the Centers for Disease Control and Prevention. Insufficient sleep has been linked to the onset of and correlates with a number of chronic conditions such as obesity, diabetes and cardiovascular disease. Insufficient sleep also contributes to motor vehicle crashes and machinery-related accidents, causing substantial injury and disability each year. According to the Centers for Disease Control and Prevention (CDC), causes of insufficient sleep include lifestyle and occupational factors (*e.g.*, access to technology and work hours).

Many health conditions and behaviors are not reportable; hence, prevalence data must be obtained from another source. The Behavioral Risk Factor Surveillance System (BRFSS) is an annual random digit-dial telephone survey of adults aged 18 years and older. The survey is conducted through a cooperative agreement with the CDC. All 50 states and the District of Columbia participate.

The BRFSS relies on self-reported data. This type of survey has certain limitations that should be understood when interpreting the data. Many times, respondents have the tendency to underreport some behaviors that may be considered socially unacceptable (*e.g.*, smoking, binge drinking). Conversely, respondents may overreport behaviors that are desirable (*e.g.*, physical activity, nutrition).

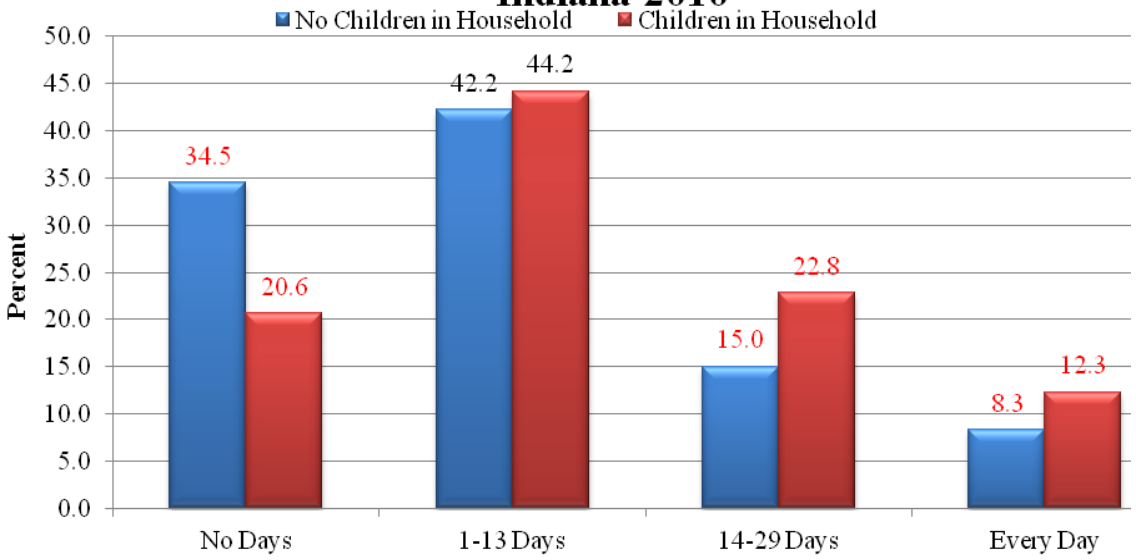
The information on insufficient sleep was obtained from the 2010 BRFSS landline survey. Respondents were asked the number of days in the past 30 they felt they did not get enough rest or sleep. The differences reported below are statistically significant ($p<0.05$) unless otherwise noted.

Characteristics of Adults with Insufficient Sleep

Overall, 28.5% of respondents reported not having any days where they did not get enough rest or sleep in the past month; 43.1% reported 1-13 days; 18.3% reported 14-29 days; and 10% reported not getting enough rest or sleep every day in the past month.

Adults with children under the age of 18 in the household were more likely than those without children to report 14 or more days in the past month without enough rest or sleep, and they were less likely to have no days without enough rest or sleep. (Figure 1)

Figure 1: Days of Inadequate Sleep by Children in Household Indiana 2010



Source: 2010 Indiana BRFSS. Data values in red indicate that the differences are significant.

Respondents aged 65 years and older had the highest prevalence of no days of insufficient rest/sleep and the lowest prevalence for days of not enough rest/sleep compared to those aged 18-64 years.

Respondents who were divorced, widowed or separated were more likely than those who are married and those who have never been married to report no days of insufficient rest/sleep (35.4% vs. 22.6% and 28.5%, respectively); however, married respondents were less likely than those who were divorced, widowed or separated to have 30 days of insufficient rest/sleep (9.5% vs. 12.5%, respectively). There was no difference between married and never married respondents for 30 days of insufficient rest/sleep.

Adults reporting good or better health status were less likely than those with fair or poor health status to report 14-29 days of not enough rest/sleep (16.9% vs. 25.2%, respectively) as well as 30 days (8.0% vs. 20.7%, respectively).

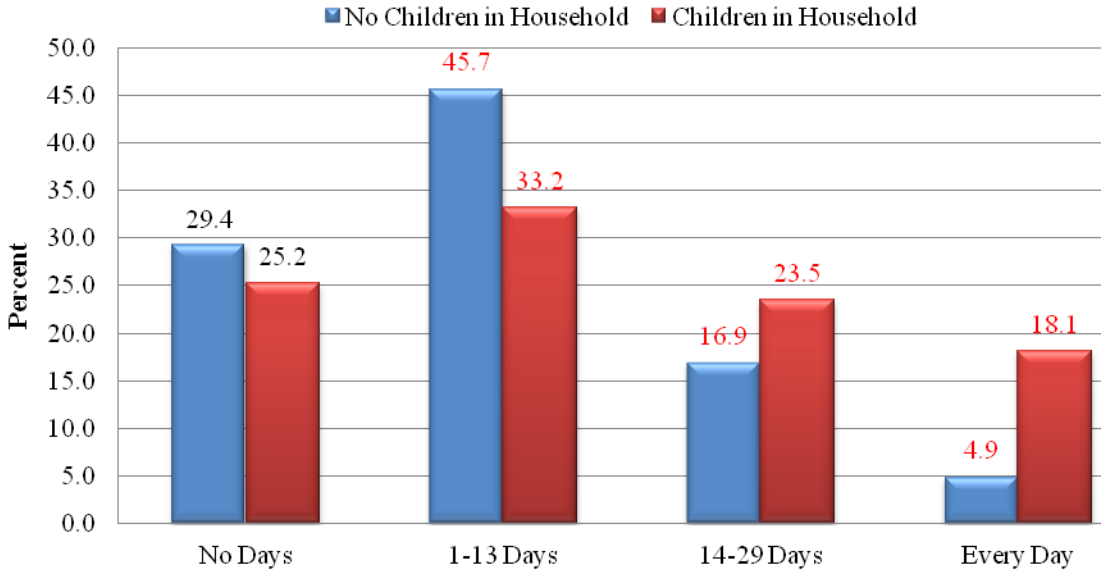
Compared to respondents who were employed for wages, those who were unable to work were more likely to report 14-29 days of not enough rest/sleep (27.4% vs. 19.6%,

respectively) and 30 days of not enough rest/sleep (26.4% vs. 9.3%, respectively). Respondents who were retired were the least likely to have any days of not enough rest/sleep. Those out of work were more likely than those employed for wages to report 30 days of not enough rest/sleep (14.9% vs. 9.3%, respectively). Adults considered to be obese based on self-reported height and weight were more likely than those not overweight/obese or overweight to report 14-29 days of not enough rest/sleep (23.3% vs. 17.0% and 15.7%, respectively).

Adults with certain chronic conditions were more likely than those without chronic conditions to report days of not enough rest/sleep. Adults with current asthma were more likely than those without to report 14-29 days of not enough rest/sleep (23.3% vs. 17.7%, respectively), and were almost twice as likely to report 30 days of not enough rest/sleep (17.2% vs. 9.2%, respectively). Adults who had ever had a heart attack were more likely than those without a heart attack to report 30 days of insufficient rest/sleep (16.2% vs. 9.6%, respectively) but were more likely to report not having any days of insufficient rest/sleep (39.5% vs. 27.9%, respectively). Respondents ever having had a stroke were more likely than those without a stroke for reporting 30 days of insufficient rest/sleep (17.2% vs. 9.8%, respectively), but were also more likely to not have any days of not enough rest/sleep (36.6% vs. 28.3%, respectively).

Current smokers were more likely than non-current smokers to report one or more days of insufficient sleep (Figure 2).

Figure 2: Days on Inadequate Sleep by Current Smoking Status Children Indiana 2010



Source: 2010 Indiana BRFSS. Data values in red indicate that the differences are significant

There were no significant differences by sex, race or ethnicity.
Sufficient sleep is a necessity, not a luxury. For information on sleep and sleep disorders, go to http://www.cdc.gov/sleep or the National Sleep Foundation (http://www.sleepfoundation.org) .

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Norovirus Infection in a Hamilton County Hospital Rehabilitation Care Unit

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Background
On January 23, 2012, the Hamilton County Health Department (HCHD) notified the Indiana State Department of Health (ISDH) that 4 of 16 patients (25%) of the facility population and one staff member at a Hamilton County hospital rehabilitation care unit experienced gastroenteritis symptoms of nausea, vomiting, and diarrhea.

Epidemiologic Investigation
The ISDH and the HCHD initiated a collaborative investigation to determine if there was an outbreak or if the disease was resolving. The hospital Infection Preventionist (IP) reported four patients in the rehabilitation care unit (RCU) became ill on January 22, and one health-care worker became ill approximately 24 hours later. The ill patients' rooms were adjacent to each other. By January 24 there were no additional symptomatic patients or staff, and all symptoms had resolved by January 30. The HCHD sent the ISDH Guidelines for Healthcare Facilities and Centers for Disease Control and Prevention *Norovirus* link[2] for healthcare acquired infections (see references).

The hospital RCU implemented the following infection control measures:

- Contact isolation for all patients on the unit
- Separation of healthy patients from ill patients
- Use of a 1:10 bleach solution and disinfectant wipes with bleach
- All patients ate in their rooms
- Only healthy patients wearing gown and gloves attended gymnasium facility where staff were gowned and gloved, and all equipment was cleaned with bleach disinfectants wipes between patients
- On-call health care staff working the weekend of January 21 and January 22 were notified of the outbreak
- Staff did not care for both ill patients and healthy patients
- No admissions or discharges were allowed effective January 23 for 72 hours.
- Families were notified not to visit patients
- Signs were posted regarding no visitors
- Phlebotomists did not take trays into rooms
- Increased sanitation and a hand washing in-service were performed

Environmental Assessment
A facility inspection was not conducted.

Laboratory Results
Three patient stool specimens were collected on January 23 and transported on January 24 to ISDH laboratory for analysis. All specimens were identified as positive for *Norovirus* GII by reverse transcription-polymerase chain reaction (RT-PCR).

Conclusions
The investigation confirmed an outbreak of *Norovirus* GII at a hospital rehabilitation care unit during January 22-23. There are five *norovirus* genogroups, of which GII genotype variants have been the most common cause of *norovirus* outbreaks.[3]

Hallmark *norovirus* symptoms include nausea, vomiting, nonbloody diarrhea, and stomach cramps, and may be accompanied by low-grade fever, chills, headache, muscle aches and malaise. The incubation period is 12-48 hours.[1] Dehydration can occur when lost body fluids due to vomiting and diarrhea are not replaced with liquids. Illness normally resolves in healthy persons within 1-3 days without complications, but can be as long as 4-6 days among young children, elderly, hospitalized, and immunosuppressed patients.[1]

Norovirus is responsible for over 50% of all foodborne gastroenteritis outbreaks in the United States.[2] Humans are the only known reservoir for human *Norovirus* infection.[1] The mode of transmission is fecal-oral, and persons are infected by ingesting contaminated food or water, close contact with an infected person, or contact with contaminated environmental surfaces and objects (fomites). *Norovirus* is highly contagious, and an infectious dose can be as low as 18 viral particles.[1] *Norovirus*, which is shed in stool for up to two weeks or longer, and can also be found in vomitus of infected persons. Interestingly, approximately 30% of persons infected with *Norovirus* are asymptomatic, yet still shed *Norovirus* in their stool. At this time scientific information regarding asymptomatic infection transmission remains unresolved.[1]

Health-care facilities, such as nursing homes and hospitals, are the most reported settings of *Norovirus* outbreaks where transmission occurs from incubating or infected patients upon admission, staff, visitors, and contaminated food products.[1]

Swift recommended infection control measures implemented by the hospital staff interrupted disease transmission in the RCU. This was likely a point source outbreak involving all four patients, with secondary person-to-person transmission to a health-care worker. The source of this *norovirus* outbreak is unknown.

Recommendations:
In general, most *norovirus* outbreaks can be prevented by strictly adhering to the following guidelines[4]:

- Practice good hygiene:
  - Thoroughly wash hands with soap and water after using the restroom; after changing diapers; after assisting someone with diarrhea and/or vomiting; after swimming; and before, during, and after food preparation (please refer to ISDH Quick Facts about Hand Washing).
  - Clean food preparation work surfaces, equipment, and utensils with soap and water before, during, and after food preparation.
- Eat safe foods and drink safe water (Remember: Contaminated foods may look and smell normal):
  - Wash all produce before eating raw or cooking.

- Use treated water for washing, cooking, and drinking.

- Protect others:
  - Persons with diarrhea and/or vomiting should not prepare food or provide health care for others and should limit direct contact with others as much as possible.
    - Persons with diarrhea and/or vomiting should not attend a child-care facility or school.
  - Persons with diarrhea and/or vomiting shall be excluded from employment involving food handling [Indiana Retail Food Establishment Sanitation Requirements, (410 IAC 7-24-122)].
    - Do not change diapers near recreational water.
    - Do not go swimming or use hot tubs if you have diarrhea and for at least two weeks after diarrhea stops.

Resources:

1. Updated Norovirus Outbreak Management and Disease Prevention Guidelines. Centers for Disease Control and Prevention. *MMWR* March 4, 2011.
2. Norovirus in Healthcare Settings. Centers for Disease Control and Prevention. http://www.cdc.gov/HAI/organisms/norovirus.html.
3. Norovirus: Technical Fact Sheet. August 24, 2011. Centers for Disease Control and Prevention. http://www.cdc.gov/ncidod/dvrd/revb/gastro/norovirus-factsheet.htm.
4. Gastrointestinal Virus Infection Control Measures in Health Care Facilities. Indiana State Department of Health. December 2007.

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**.**

Save the Date

2012 Public Health Nurse Conference
Partners in Public Health: Preventing, Promoting, Protecting

May 16-17, 2012
Hilton Indianapolis North Hotel
8181 North Shadeland Avenue
Indianapolis, IN 46250

Presented by:

Indiana State Department of Health

INDIANA IMMUNIZATION COALITION

St.Vincent

InSOPHE
Indiana Society for Public Health Education

During the one and a half day conference, attendees will be able to choose from eight 90-minute workshops and twelve 60-minute breakout sessions. On-line registration information is forthcoming. Parking during the conference is free. More information will be available in future issues of the Health Officer News, VacZine and on the LHD Resource SharePoint website.

For more information, contact:

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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.

Indiana Society for Public Health Education has submitted an application for Category I Continuing Education Contact Hours (CECH) to award Certified Health Education Specialists (CHES) and Master Certified Health Education Specialists (MCHES). SOPHE, including its chapters, is a designated multiple event provider of CECHs by the National Commission for Health Education Credentialing, Inc. Please note, a $3 per contact hour fee will be collected by Indiana SOPHE for non-InSOPHE members. The number of offered credits will be determined at a later date.

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/Viral Hepatitis Semi-Annual Report (June 2007- June 2011)	Indiana Mortality Report (1999-2008)
Indiana Cancer Report: Incidence; Mortality; Facts & Figures	Indiana Infant Mortality Report (1999, 2002, 1990-2003)
Indiana Health Behavior Risk Factors Report (1999-2010)	Indiana Natality Report (1998-2008)
Indiana Health Behavior Risk Factors (BRFSS) Newsletter (2003-2011)	Indiana Induced Termination of Pregnancy Report (1998-2009)
Indiana Hospital Consumer Guide (1996)	Indiana Marriage Report (1995, 1997-2004)
Public Hospital Discharge Data (1999-2010)	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, 1997-2006, 1998-2007)

HIV Disease Summary

Information as of December 31, 2011 **based on 2000 population of 6,080,485**

HIV - without AIDS to date:

324	New HIV cases from January 1 2011 thru December 31, 2011	12-month incidence	5.33 cases/100,000
4,628	Total HIV-positive, alive and without AIDS on December 31, 2011	Point prevalence	76.11 cases/100,000

AIDS cases to date:

364	New AIDS cases from January 1 2011 thru December 31, 2011	12-month incidence	5.99 cases/100,000
5,625	Total AIDS cases, alive on December 31, 2011	Point prevalence	92.51 cases/100,000
11,582	Total AIDS cases, cumulative (alive and dead) on December 31, 2011		

REPORTED CASES of selected notifiable diseases

Disease	Cases Reported in November - December *MMWR* Weeks 44-52		Cases Reported in January - December *MMWR* Weeks 1-52	
	2010	2011	2010	2011
Campylobacteriosis	73	89	742	640
Chlamydia	6,571*	5,517*	22,814*	29,195*
Cryptococcus	5	3	27	36
Cryptosporidiosis	32	5	285	76
E. coli, shiga toxin-producing	9	15	85	85
Giardiasis	54	42	396	320
Gonorrhea	1,940*	1,284*	6,494*	6,890*
Haemophilus influenzae, invasive	25	28	110	115
Hemolytic Uremic Syndrome (HUS)	0	1	7	13
Hepatitis A	1	7	12	24
Hepatitis B	12	12	75	70
Hepatitis C Acute	4	1	28	65
Histoplasmosis	35	23	129	126
Influenza Deaths (all ages)	1	0	4	24
Legionellosis	2	13	56	69
Listeriosis	1	0	15	11
Lyme Disease	0	5	62	81
Measles	0	0	0	14
Meningococcal, invasive	8	5	29	24
Mumps	0	1	4	3
Pertussis	146	85	744	335
Rocky Mountain Spotted Fever	0	0	1	3
Salmonellosis	100	63	750	617
Shigellosis	11	17	64	87

REPORTED CASES of selected notifiable diseases

Disease	Cases Reported in November – December *MMWR* Weeks 44-52		Cases Reported in January - December *MMWR* Weeks 1-52	
	2010	2011	2010	2011
Severe *Staphylococcous aureus* in Previously Healthy Person	3	3	26	14
Group A Streptococcus, (invasive)	32	29	150	194
Group B Streptococcus, (invasive, all ages)	59	64	352	335
Streptococcus pneumoniae (invasive, all ages)	197	170	788	799
Streptococcus pneumoniae (invasive, drug resistant)	43	48	230	219
Streptococcus pneumoniae (invasive, <5 years of age)	7	8	51	40
Syphilis (Primary and Secondary)	22*	30*	172*	168*
Tuberculosis	25	20	90	100
Vibriosis	0	0	6	2
Varicella	23	57	183	150
Yersiniosis	5	0	13	10
Animal Rabies	0 (Bats)	1 (Bats)	26 (Bats)	33 (Bats)

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

***Source: ISDH STD Prevention Program Database as of March 1st, 2012**

***NOTE: This information is preliminary data at this time**

Indiana State Department of Health
Epidemiology Resource Center
2 North Meridian Street, 5-K
Indianapolis, IN 46204
317/233-7125

Cover photo of Cryo-EM reconstruction of a norovirus capsid.courtesy of Dr. B.V.V. Prasad, Baylor College of Medicine, Houston, TX 77030

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.