Cabinet for Health and Family Services
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Division of Epidemiology and Health Planning

Kentucky Epidemiologic Notes & Reports

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Kentucky Influenza Surveillance 2004-2005

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This year's influenza season was unusual from a surveillance perspective compared to past seasons because long-term care facilities (LTCFs) reported a significant number of influenza-like illness (ILI) cases, laboratory confirmed cases, and outbreaks. An outbreak of influenza in an LTCF, which consists of two or more ILI cases within a one week period of time, is required to be reported immediately to the local health department. A laboratory confirmed case of influenza is also required to be reported to the local health department. The local health department contact will immediately report to the state influenza coordinator for consultation. Arrangements are made for recommended confirmation testing by rapid antigen and collection of specimens for cultures. If the rapid antigen test is positive, antiviral prophylaxis is recommended for all residents. To view the relevant regulation, go to the following Web site: http://www.lrc.ky.gov.

The peak incidence of influenza cases occurred around mid-February with a second smaller peak about a month later (see Figure 1). During the 2004-2005 season (October 2004 through May 2005), data collected by the Department for Public Health's Surveillance and Health Data Branch indicates 621 confirmed isolates/cultures were submitted by laboratories; type A 502; type B 119. Positive rapid diagnostic test results submitted totaled 3,910. In addition, the Division of Laboratory Services at the state laboratory reported the following influenza sub-types from 817 specimens submitted for culture confirmation from 81 counties: Type A 27; Type A/Wyoming-like H3N2 244; Type A H1N1 2; Type B Shanghai-like 31. Other viral results reported include adenovirus 10; coxsackievirus A21 1; parainfluenza 5; and herpes 4.

The Kentucky influenza surveillance network has four essential components that allow for collecting information and reporting to the Centers for Disease Control and Prevention (CDC):

- 122 Cities Mortality Reporting System. In Lexington, KY, one of the 122 cities reporting to the CDC during the 2003-2004 season, there were no deaths reported. Information is obtained from death certificates filed, indicating influenza/pneumonia as the cause of death.
- Sentinel Health Care Providers
- State Epidemiologist's Report- Sentinel Local Health Departments
- Laboratories

(The information contained in the last three bullets is reported to the state influenza surveillance coordinator and is used to determine weekly statewide influenza activity, which is reported to the CDC.)

CDC has broadened the laboratory confirmed case definition to include rapid diagnostic positive test results for the purpose of determining the state's activity status each week. However, only culture confirmed cases are reported to CDC for statistical data collection of cases.

CDC Terminology:

- Lab confirmed case = case confirmed by rapid diagnostic test, antigen detection, culture or polymerase chain reaction (PCR).
- Institution includes nursing home, hospital, prison, school, etc.
- Influenza-like illness: Fever greater than 100 degrees Fahrenheit and cough or sore throat with no other known cause.
- ILI activity can be assessed using a variety of data sources including sentinel providers, school/

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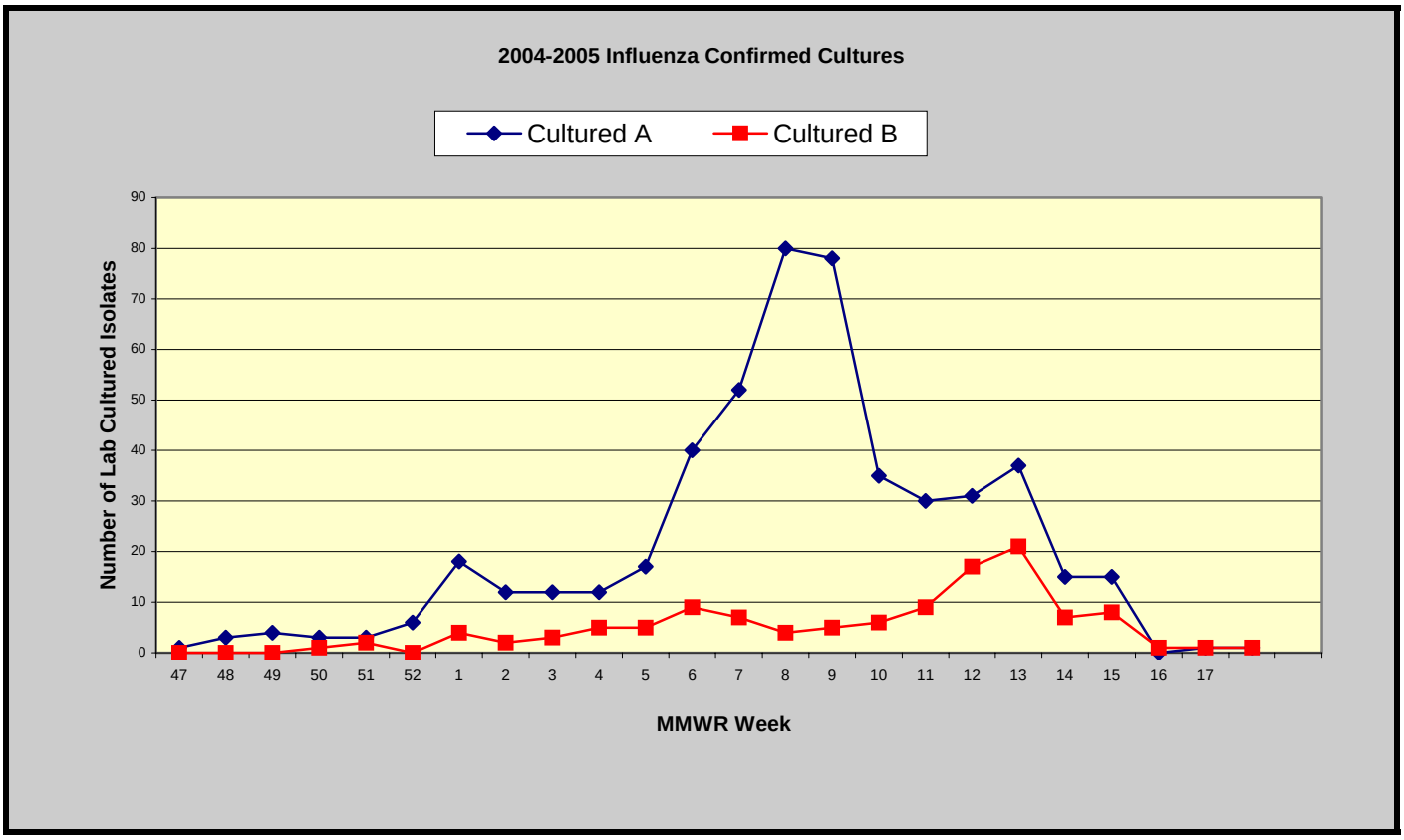
workplace absenteeism, and other syndromic surveillance systems that monitor ILI.
• Region is defined as a geographical subdivision of a state defined by the state Department of Health. (In Kentucky, we use Area Development Districts.)

CDC's Activity Levels and Definitions for Influenza Activity:

- No activity refers to no ILIs or lab confirmed cases.
- Sporadic is either isolated case of lab confirmed influenza in the state; ILI activity not increased, or lab confirmed outbreak in a single institution in the state; ILI activity is not increased.
- Local activity refers to: either increased ILI activity within a single region and recent (within the past 3 weeks) laboratory evidence of influenza in that region with no increase in ILI activity in other regions or two or more institutional outbreaks (ILI or lab confirmed) within a single regional and recent lab confirmed influenza.
- Regional activity is an outbreak of either ILIs or culture confirmed cases in less than 50% of the state's population.
- Widespread activity is an outbreak of either ILIs or culture confirmed cases in greater than 50% of the state's population.

In summary, since comprehensive diagnostic and report information is not available for influenza surveillance in Kentucky, a synthesis of information from various sources (hospitals and other institutions, medical providers, laboratories, local health departments, etc.) is used in order to provide an estimate of the statewide level of influenza activity each week. This past year's influenza season in Kentucky was notable for a significant number of influenza-like illness (ILI) cases, laboratory confirmed cases, and outbreaks.

FIGURE 1. 2004-2005 Influenza Confirmed Cultures



Perinatal Hepatitis B Prevention

Diane Chism, R.N., Perinatal Hepatitis B Nurse Consultant, Immunization Program, Division of Epidemiology and Health Planning, Department for Public Health

Hepatitis B is an inflammatory liver disease caused by the hepatitis B virus, which results in liver cell damage that can lead to cirrhosis and an increased risk of liver cancer. The goal of the Perinatal Hepatitis B Prevention Program (PHBPP) is to reduce the spread of the infection from the mother to her infant. Preventing hepatitis B infection in early childhood is very important. Infants who become infected at birth have a 90 percent risk of chronic infection and up to 25 percent will die of chronic liver disease as adults. More than 90 percent of these chronic infections can be prevented if a dose of hepatitis B immune globulin and hepatitis B vaccine is administered soon after birth.

Mandatory hepatitis B screening of all pregnant women and reporting of hepatitis B surface antigen (HBsAg)-positive pregnant women prior to delivery are important components of the Department for Public Health's Perinatal Hepatitis B Prevention Program (PHBPP). Since its inception in 1998, the goal of the PHBPP has been to prevent perinatal transmission of hepatitis B by assuring timely and appropriate post-exposure prophylaxis (PEP) for infants born to HBsAg-positive women in Kentucky.

Kentucky Administrative Regulation 902 2:020 *requires that a pregnant woman with diagnosed/ laboratory confirmed hepatitis B infection or a child born in or after 1992 be reported to the local health department or the state Department for Public Health within one (1) business day.*

Kentucky Administrative Regulation 902 2:060 *requires that a child receive three (3) vaccine doses of hepatitis B before entering school.*

As recommended by the Advisory Committee on Immunization Practices (ACIP), infants of mothers who are HBsAg-positive should receive hepatitis B immune globulin (HBIG) and hepatitis B vaccine within 12 hours of birth, or as soon as physiologically stable. The second dose of vaccine is recommended at 1 – 2 months of age and the third dose of vaccine must be separated from the second dose of vaccine by two (2) months and at least four (4) months from the first dose of vaccine. The vaccination series should be completed at six (6) months of age. Post-vaccination serological testing for hepatitis B, including HBsAg and hepatitis B surface antibody (anti-HBs), is recommended at 3-6 months after the final dose to monitor the success of the therapy.

Susceptible household, sexual and needle sharing contacts of HBsAg-positive women should be identified, counseled and tested for susceptibility. If susceptible, they should receive the hepatitis B vaccine.

Prompt reporting by health care providers that includes all necessary information for the appropriate follow-up of a HBsAg-positive woman will reduce the time it takes for everyone to ensure that infants do not contract hepatitis B at birth.

For more information, please contact Diane Chism, R.N., Perinatal Hepatitis B Nurse Consultant, Immunization Program, Division of Epidemiology and Health Planning at (502) 564-4478.

August Notes & Reports…..

Expansion of Newborn Screening in Kentucky

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Newborn screening is a significant public health activity in the U.S., with approximately four million infants being screened for a variety of genetic and other conditions to prevent significant morbidity and mortality. Newborn screening began in the early 1960's when Dr. Robert Guthrie introduced blood collection as a dried spot on filter paper along with a bacterial inhibition test for phenylketonuria. Six conditions currently included in the newborn metabolic screening in Kentucky are phenylketonuria, galactosemia, congenital hypothyroidism, sickle cell disease, hemoglobin SC disease and hemoglobin S/β-thalassemia. The last two conditions were added in July 2005.

The American College of Medical Genetics (ACMG) developed guiding principals for newborn screening and criteria for evaluating conditions. A number of potential conditions were evaluated by the following three criteria: 1) the extent to which the scientific evidence supports the availability of a test and a treatment; 2) whether the current understanding of the natural history of the condition is well understood; and 3) whether the information provided by testing indicates the possible presence of the condition or of a carrier state. Twenty-nine conditions were identified for inclusion in a core panel (listed in Table 1, page 6). Strongly supported by Governor Fletcher, the 2005 General Assembly passed Senate Bill 24 expanding Kentucky's newborn blood screening from four disorders prior to July 2005 to the twenty-eight recommended in September 2004 by the ACMG. The twenty-ninth condition hearing, already has legislation in place, and this program is organizationally located within the Commission for Children with Special Health Care Needs.

The newborn screening system includes six main components: patient and practitioner education, screening, follow-up, diagnosis, treatment and management, and evaluation. The fee of $53.50 charged for newborn screens supports all newborn screening process components. The State Public Health Laboratory will continue to perform expanded metabolic testing. The screening will not require any more blood spots than currently collected, but the quality of the specimen collection will have to be optimal, with all spots filled completely on the filter paper card. The conditions will be added to the newborn screening panel as laboratory equipment and validation of testing is completed by the State Lab. It is expected that all conditions will be included in the screen by December 31, 2005. State newborn screening staff will be providing education in the hospitals for laboratory and nursery staff.

It is imperative that birthing hospitals and attending physicians ensure that accurate demographic information be provided on the filter paper card, and that the primary care provider responsible for the child's care upon discharge is also identified on the card. The physician of record will be contacted via telephone by the newborn screening staff for any child identified with a presumptive positive screen. Specific instructions will be provided to the physician to coordinate testing for definitive diagnosis. Children identified with a condition included on the newborn screen may be referred to either the University of Kentucky or University of Louisville for appropriate treatment and management.

According to state statute, the attending physician is responsible for follow-up definitive diagnostic testing so it is essential that verifying results of the newborn screen is part of routine newborn care. Notification of results will occur by mail unless there is a presumptive positive result. Information about the expanded newborn screening program and expansion updates will be available on the Newborn Screening Program Web site at **http://chfs.ky.gov/dph/ach/newbornscreening.htm** during the six month roll out period. For further information about Kentucky's Newborn Screening Program contact Sandy Fawbush, R.N. at (502) 564-3756 x3761 or e-mail at sandy.fawbush@ky.gov.
References furnished upon request.

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Cases of Selected Reportable Diseases in Kentucky (YTD Through MAY for Each Year)

Disease	2005	2004	5-yr Median
AIDS	118	92	118
Chlamydia	4450	2235	3652
Gonorrhea	1396	946	1404
Syphilis (Primary & Secondary)	15	23	21
Group A Streptococcus	19	35	19
Meningococcal Infections	8	3	6
Haemophilus influenzae, invasive	4	0	2
Hepatitis A	4	9	11
Hepatitis B	29	21	21
E.coli O157H7	4	9	8
Salmonella	95	105	105
Shigella	43	31	47
Tuberculosis	40	31	40
Animal Rabies	6	11	10
Motor Vehicle Injury Deaths	338	335	334

Vaccine Preventable	2005 YTD	Total in 2004
Diphtheria	0	0
Measles	0	0
Mumps	0	0
Pertussis	49	98
Polio	0	0
Rubella	0	0
Streptococcus pneumoniae	14	32
Tetanus	0	2

Vector-Borne	2005 YTD	Total in 2004
Rocky Mountain Spotted Fever	0	3
Lyme Disease	0	15
Ehrlichiosis	1	2
Tularemia	0	5
Arboviral Encephalitis	0	1
Malaria	2	5

INFLUENZA STATISTICS FOR CONFIRMED ISOLATES
Influenza Season = Oct-May

TYPE	2004-2005 TOTAL	2003-2004 TOTAL
A	502	563
B	119	1
Unknown	0	1
TOTAL	**621**	565

INFLUENZA STATISTICS FOR PROBABLE CASES
Influenza Season = Oct-May

TYPE	2004-2005 TOTAL	2003-2004 TOTAL
Rapid Antigen Tests	**3881**	**2904**

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http://www.chfs.ky.gov/dph/epinotes.htm

RETURN SERVICE REQUESTED

Thank you for all who submitted the Reader's Survey in our last issue. The results are being compiled and will be shared with you shortly!

TABLE 1. Listing of 29 Conditions Included in Expanded Newborn Screening Core Panel

Disorders of Amino Acid Metabolism:
- Phenylketonuria
- Maple syrup urine disease (MSUD)
- Homocystinuria
- Citrullinemia
- Arginosuccinic acidemia
- Tyrosinemia type I

Disorders of Fatty Acid Metabolism:
- Medium chain acyl-CoA dehydrogenase deficiency (MCAD)
- Very long chain acyl-CoA dehydrogenase deficiency (VLCAD)
- Long chain acyl-CoA dehydrogenase deficiency (LCHAD)
- Trifunctional protein deficiency (TFP)
- Carnitine uptake defect (CUD)

Hemoglobinopathies:
- Sickle cell disease
- Hemoglobin S/β-thalassemia
- Hemoglobin S/C disease

Disorders of Organic Acid Metabolism:
- Isovaleric acidemia
- Glutaric acidemia type I
- 3-hydroxy-3-methyl glutaric aciduria
- Multiple carboxylase deficiency
- Methylmalonic acidemia mutase deficiency
- 3-methylcrotonyl-CoA carboxylase deficiency
- Methylmalonic acidemia (CblA, B)
- Propionic acidemia
- β-ketothiolase deficiency

Others:
- Congenital hypothyroidism
- Biotinidase deficiency
- Congenital adrenal hyperplasia
- Galactosemia
- Cystic fibrosis
- Hearing