Department of State Health Services
Health Service Region 1
Epidemiology Response Team

EPI Tōme
Newsletter

ISSUE
03
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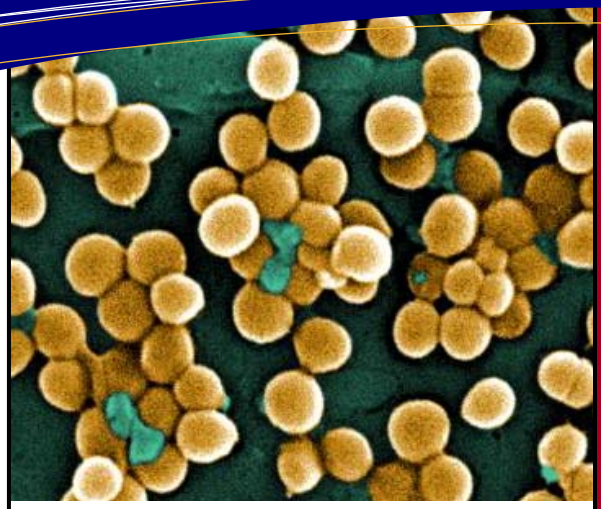
"Please be kind…report on time!"



Scanning electron micrograph of Methicillin resistant *Staphylococcus aureus* (MRSA)

Courtesy: CDC/Janice Haney Carr/Jeff Hageman, M.H.S, 2005

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REPORTERS CORNER:

Approval of Senate Bill 203

Healthcare Associated Infections

Senate Bill 203 (SB 203) passed during the 81st legislative regular session. It mandates the reporting of specific Healthcare-associated infections (HAI) and Preventable Adverse Events (PAE). The Department of State Health Services (DSHS) received funding and some staffing to implement the reporting requirements. Under recent developments, the advisory panel is unsure if DSHS will require the use of the National Healthcare Safety Network (NHSN) for reporting. NSHN is a secure web-based reporting system operated and maintained by the Centers for Disease Control and Prevention. Another mechanism for the reporting of PAE must be developed by the department as NHSN will not support this reporting at this time. It is anticipated HAI reporting will begin 1/1/11 and PAE reporting may be mandated earlier. The following is an excerpt from SB 203:

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS:
SECTION 1. Section 98.103(c), Health and Safety Code, as added by Chapter 359 (S.B. 288), Acts of the 80th Legislature, Regular Session, 2007, is amended to read as follows:

(c) A general hospital shall report the following to the department:

(1) the incidence of laboratory-confirmed central line-associated primary bloodstream infections occurring in any special care setting in the hospital; [and]

(2) the incidence of respiratory syncytial virus occurring in any pediatric inpatient unit in the hospital; and

(3) the incidence of methicillin-resistant Staphylococcus aureus (MRSA) infections in any unit in the hospital.

As this mandate may effect infection control practitioners or other identified individuals within hospitals, please be sure to stay informed on this issue. You may find continual updates at www.haitexas.org as the law moves toward implementation. For more information concerning the approval of SB 203 you can send an email to: feedback.idcu@dshs.state.tx.us or call 512-458-7676.

Source:
www.dshs.state.tx.us/idcu/health/infection_control/hai/Plan/

'A BUG'S LIFE':
Streptococcus pneumoniae

Streptococcus pneumoniae is one of the most common bacterial causes of invasive bacterial infections. *Streptococcus pneumoniae* also is a common cause of acute otitis media, sinusitis, community-acquired pneumonia, empyema, and conjunctivitis. It often colonizes the human nasopharynx, where it can be carried asymptomatically.

Etiology

Strep. pneumoniae organisms (pneumococci) are lancet-shaped, gram-positive, catalase-negative, diplococci. At least 90 pneumococcal serotypes have been identified on the basis of the polysaccharide capsule.

Epidemiology

Pneumococci are ubiquitous (found everywhere), with many people having transient colonization of their upper respiratory tract. Nasopharyngeal carriage rates range from 21% to 59%. Transmission is from person to person by respiratory droplet contact. The period of communicability is unknown and may be as long as the organism is present in respiratory tract secretions but probably is less than 24 hours after effective antimicrobial therapy is initiated. Pneumococcal infections are most prevalent during winter months. The incidence and severity of infections are increased in people with congenital or acquired humoral immunodeficiency, human immunodeficiency virus (HIV) infection, absent or deficient splenic function (e.g., sickle cell disease, congenital or surgical asplenia), or abnormal innate immune responses.

Influenza and Pneumococcal Infections

Viral upper respiratory tract infections, including influenza, can predispose to pneumococcal infections. Secondary pneumococcal pneumonia is often observed in the vulnerable population and among previously healthy individuals, following other respiratory infections (e.g., influenza, RSV), with severe outcomes.

Incubation Period

The incubation period varies by type of infection and can be as short as 1 to 3 days.

Diagnostic Tests

Blood cultures should be performed for all patients with suspected invasive pneumococcal disease; cultures of cerebrospinal fluid (CSF) and other specimens (e.g., pleural fluid) also may be indicated. Recovery of pneumococci from an upper respiratory tract culture is not indicative of the etiologic diagnosis of pneumococcal disease in the middle ear, lower respiratory tract, or sinus.

Isolation

Standard precautions are recommended, including for patients with infections caused by drug-resistant *Strep. pneumoniae.*

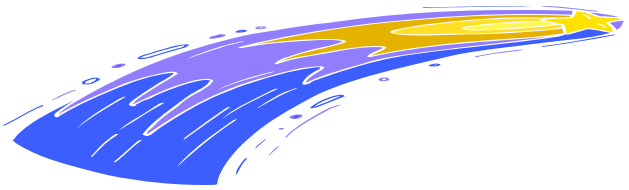
Control Measures

Immunization: Two pneumococcal vaccines are available for use:

PCV7 (Prevnar), which is recommended for all children from 2 through 59 months of age.

PPSV23 (Pneumovax), which is recommended to high risk persons (individuals 65 and older and those with anatomic or functional asplenia, sickle cell disease, HIV infection and a variety of chronic systemic illnesses, including heart and lung disease, cirrhosis of the liver, renal insufficiency and diabetes mellitus).

Source: Red Book: 2009 Report of the Committee on Infectious Diseases - 28th Edition.; Heymann DL. Control of Communicable Disease Manual- 18th Edition



SYRIS STAR REPORTER

The SYRIS Star Reporter recognizes individuals who are effectively utilizing SYRIS. This issue we would like to acknowledge all school nurses who have provided school absenteeism data during the Novel 2009 Influenza A H1N1 pandemic. Your participation in syndromic reporting has greatly enhanced our surveillance capacity!

Interpretation of Hepatitis B Serologic Test Results

In some cases it is difficult to analyze a hepatitis panel lab result and develop precise interpretation of the laboratory findings. In hopes of making reporting easier, please observe the chart below to understand the identifying markers associated with hepatitis B virus. The Texas Department of State Health Services requires: HBV (acute), HBV (acute & chronic) prenatally or at delivery, HBV perinatal (HBsAg+ < 24 mos.) to be reported. Hepatitis A, C, D, E and unspecified are also reportable to the state of Texas.

Hepatitis B serologic testing involves measurement of several hepatitis B virus (HBV)-specific antigens and antibodies. Different serologic "markers" or combinations of markers are used to identify different phases of HBV infection and to determine whether a patient has acute or chronic HBV infection, is immune to HBV as a result of prior infection or vaccination, or is susceptible to infection.

Hepatitis B surface Antigen (HBsAg):
A protein on the surface of hepatitis B virus; it can be detected in high levels in serum during acute or chronic hepatitis B virus infection. The presence of HBsAg indicates that the person is infectious. The body normally produces antibodies to HBsAg as part of the normal immune response to infection. HbsAg is the antigen used to make hepatitis B vaccine.

IgM antibody to hepatitis B core antigen (IgM anti-HBc):
Positively indicates recent infection with hepatits B virus (≤6 mos). Its presence indicates acute infection.

Source: www.cdc.gov/hepatits

HBsAg **anti-HBc** **anti-HBs**	Negative Negative Negative	Susceptible
HBsAg **anti-HBc** **anti-HBs**	Negative Positive Positive	Immune due to natural infection
HBsAg **anti-HBc** **anti-HBs**	Negative Negative Positive	Immune due to hepatitis B vaccination
HBsAg **anti-HBc** **IgM anti-HBc** **anti-HBs**	Positive Positive Positive Negative	Acutely infected
HBsAg **anti-HBc** **IgM anti-HBc** **anti-HBs**	Positive Positive Negative Negative	Chronically infected
HBsAg **anti-HBc** **anti-HBs**	Negative Positive Negative	Interpretation unclear; 4 possibilities: 1. Resolved infection (most common) 2. False-positive anti-HBc, thus susceptible 3. "Low-level" chronic infection 4. Resolving acute infection

Hepatitis B surface Antibody (anti-HBs):
The presence of anti—HBs is generally interpreted as indicating recovery and immunity from hepatitis B virus infection. Anti-HBs also develops in a person who has been successfully vaccinated against hepatitis B.

Total hepatitis B core antibody (anti-HBc):
Appears at the onset of symptoms in acute hepatitis B and persists for life. The presence of anti-HBc indicates previous or ongoing infection with hepatitis B virus in an undefined time frame.
Source: www.cdc.gov/hepatits

Did you know?

The Texas Department of State Health Services state lab requires 12 notifiable conditions to be submitted to the state lab for confirmation. On the Texas notifiable conditions list the conditions are identified with a footnote (4-Lab isolate must be sent to DSHS lab). You can obtain a current list at www.dshs.state.tx.us/idcu/investigation/conditions/. We have included a list of the twelve notifiable conditions that require isolates to be submitted to Austin state lab. For specific specimen submission information please call, **512-458-7598**.

Anthrax

Botulism, foodborne

Botulism, infant, wound, and other

Brucellosis

Escherichia coli, enterohemorrhagic

Listeriosis

Meningococcal infections, invasive

Plague (Yersinia pestis)

Staph. aureus, vancomycin resistant

TB (includes all M. tuberculosis complex)

Tularemia

Vibrio Infection, including cholera

Table 1: Select reportable conditions (probable and confirmed), DSHS HSR 1, all public health jurisdictions, Semi-Annual / Annual Comparison, January 01, 2007 through December 31, 2009
Data source: Texas NEDSS Database. 2009 data is preliminary and is subject to change.

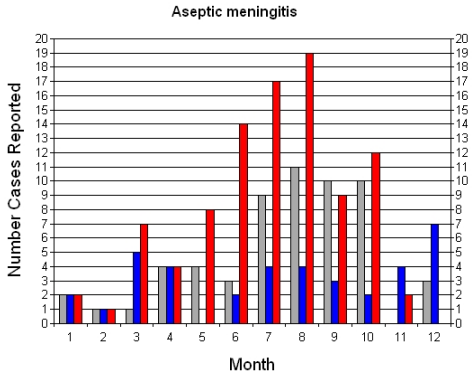
Condition	2007 - 2nd Six Months							2008 - 2nd Six Months							2009 - Second Six Months							2009 Total	2008 Total	2007 Total
	Jul	Aug	Sep	Oct	Nov	Dec	Total	Jul	Aug	Sep	Oct	Nov	Dec	Total	Jul	Aug	Sep	Oct	Nov	Dec	Total			
Aseptic meningitis	9	11	10	10		3	43	4	4	3	2	4	7	24	17	19	9	12	2		59	95	38	58
Bacterial meningitis, other	1		1			2	4	1					3	4	3	1	1	2		2	9	13	5	8
Botulism, foodborne	1						1							0							0			3
Campylobacteriosis	26	22	19	18	7	3	95	13	14	15	18	16	5	81	20	17	18	6	3	3	67	122	121	141
Cryptosporidiosis	1	3	7	5	1		17	8	18	27	12	6	5	76	55	69	18	6			148	164	79	19
Escherichia coli, Shiga toxin-producing							0	1	2	2	1	1		7	1	3					4	6	10	4
Group A Streptococcus, invasive		3	1		3	2	9	1			1	1	3	6	1	1	2	1		2	7	20	25	19
Hepatitis A, acute		2	1				3		1			1	2	4		1			1	3	5	10	6	4
Hepatitis B, acute		3	1	1	2	2	9	1		1		1		3		1			1	1	3	4	7	13
Hepatitis C, acute	1	2					3		1	1		1		3						1	1	5	5	12
Legionellosis				1			1						1	1	1			1			2	2	1	2
Listeriosis							0							0							0		2	
Lyme disease				1			1					1		1		1					1	5	1	6
Malaria	1						1							0			1				1	2		2
Neisseria meningitidis, invasive							0							0							0		1	
Pertussis	4	2	2	8	2	2	20				1			1	4	4	8	2	5	1	24	36	3	45
Q fever, Acute							0							0							0		8	
Rocky Mountain spotted fever							0		1			1		2							0		3	1
Salmonellosis	10	17	8	4	6	8	53	31	21	56	12	25	12	157	32	12	9	4	11	7	75	129	323	94
Shigellosis	3	2	4	3	2	3	17	4	19	56	299	298	141	817	9	2		1	1	7	20	264	829	30
Strep pneumoniae, invasive	1	5	3	2	16	23	50	1	6	8	9	16	25	65	2	3	4	9	10	7	35	119	138	103
Varicella (Chickenpox)	6	7	38	22	45	26	144	1	1	5	15	20	8	50		5	18	8	6	10	47	157	252	946
Yersiniosis							0							0							0	1		

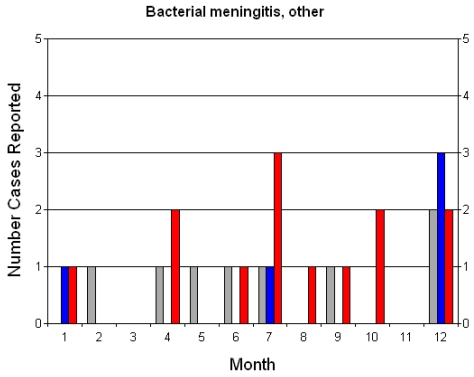
Chart 1: Select reportable conditions (probable and confirmed, DSHS HSR 1, all public health jurisdictions
January 01 2007 through December 31, 2009, by Month.
Data source: Texas NEDSS Database. 2009 data is preliminary and subject to change.

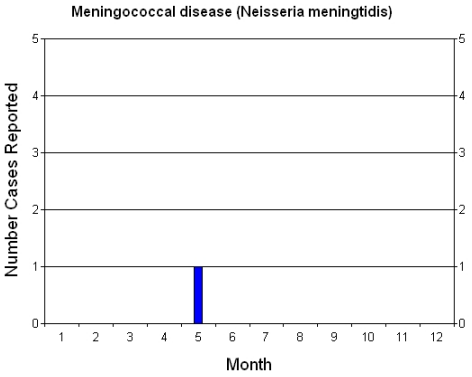
Legend

2007 2008 2009

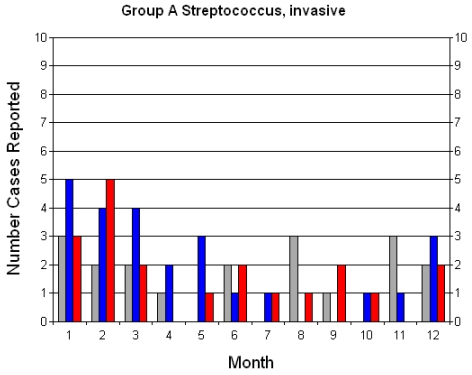
Meningitis

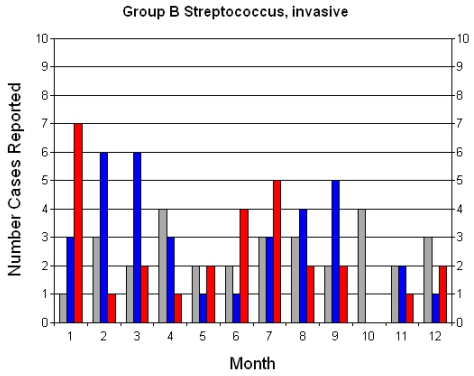


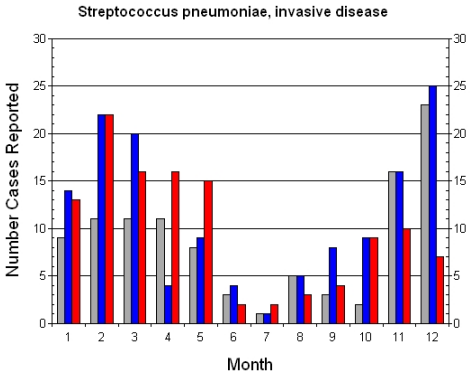




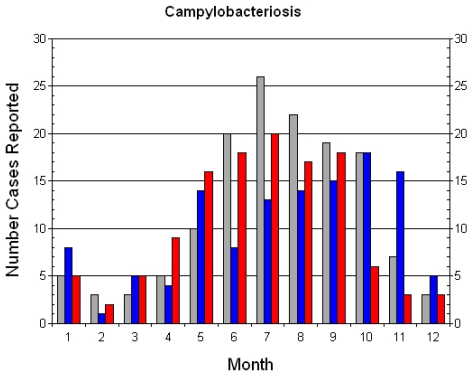
Invasive Streptococcal Disease

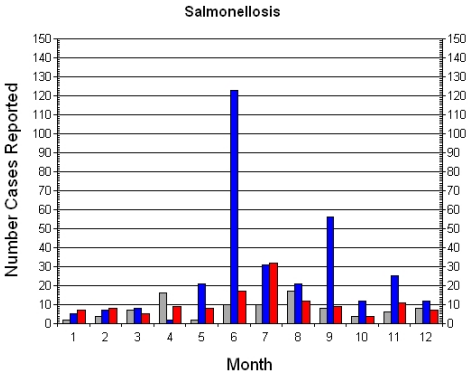


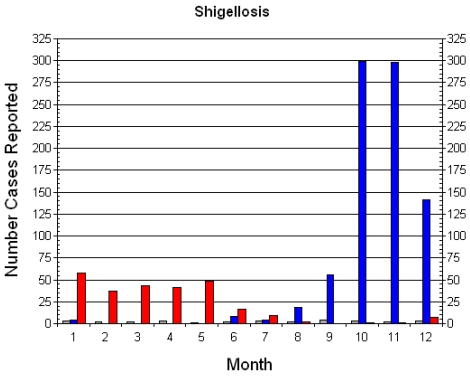




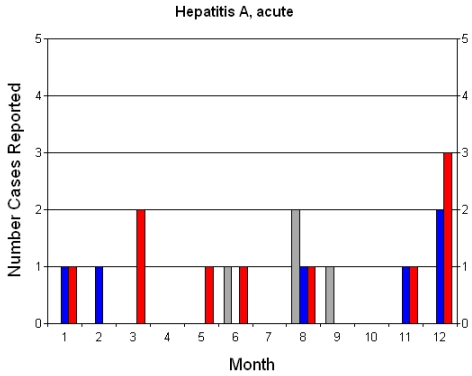
Gastrointestinal Disease

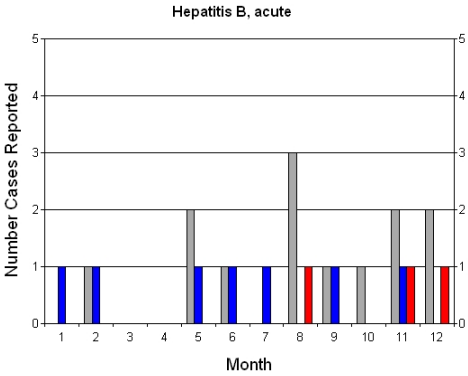


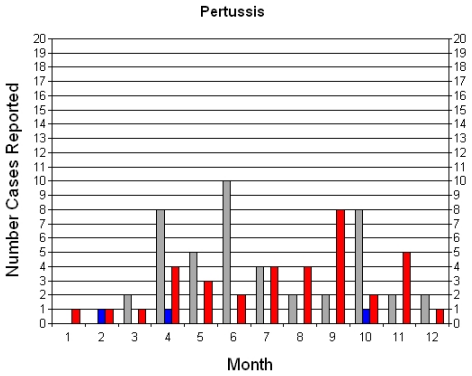




Vaccine Preventable Disease







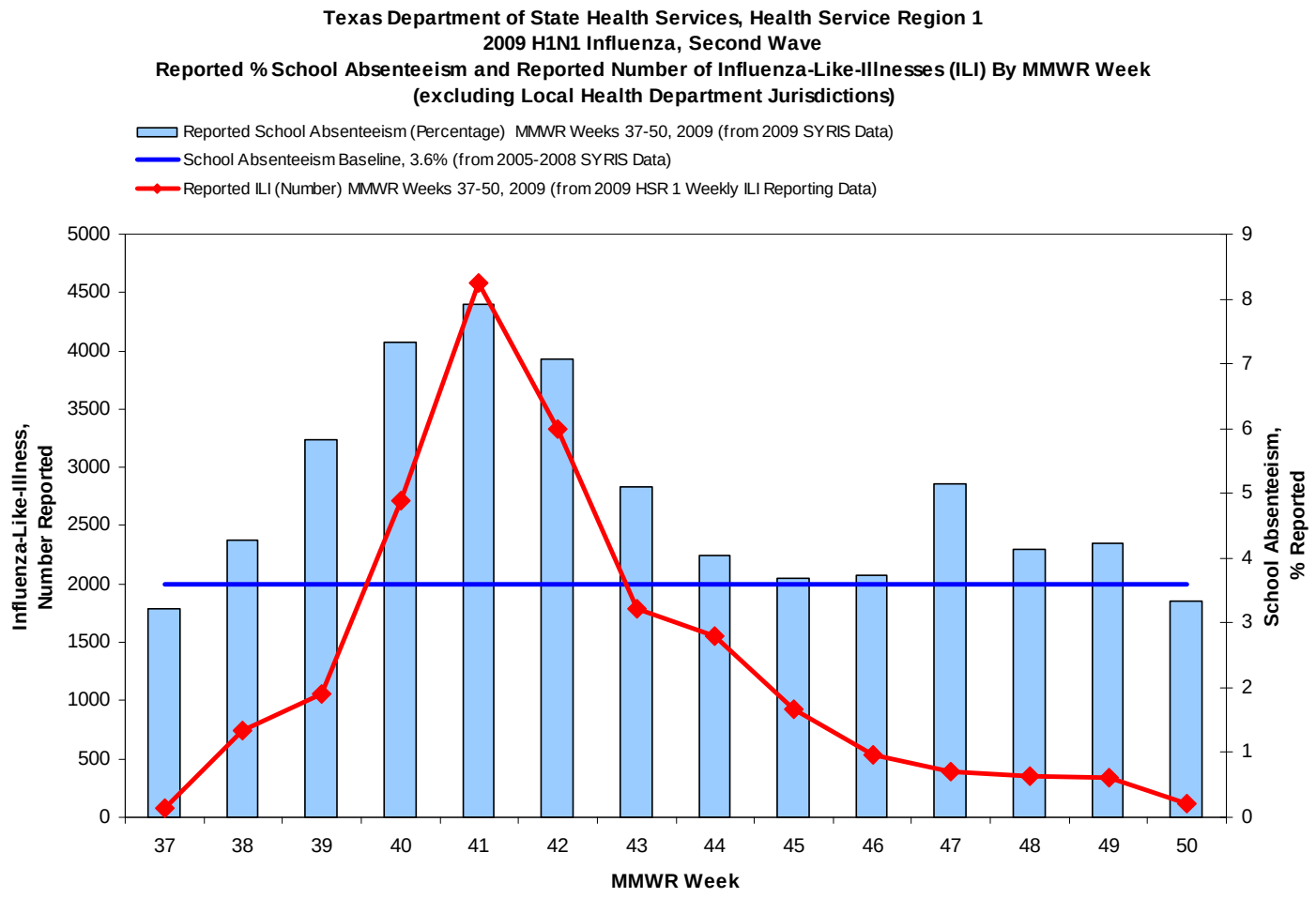
Reported Influenza-Like-Illness and School Absenteeism Rates During the 2nd Wave of the 2009 Novel Influenza A H1N1 Pandemic

In the Texas Department of State Health Services, Health Service Region 1, as across the state and nation, the second wave of the 2009 Novel Influenza A H1N1 pandemic peaked around mid October. The graph below reflects reported school absenteeism rates in school districts within DSHS HSR 1 jurisdiction (not including local health department jurisdictions within the region) as compared to Influenza-Like-Illness (ILI) reported by sentinel flu surveillance sites. As expected, the peak school absenteeism rate coincided with the peak number of reported ILIs in MMWR Week 41. School absenteeism along with current school enrollments are reported on a daily basis by participating school campuses within the region, utilizing the DSHS HSR 1's web based Syndromic Surveillance System (SYRIS). On the adjacent page (pg.7) is a series of maps illustrating the rise and fall of school absenteeism rates around the time of the peak of the pandemic's second wave.

Both reporting of ILI and school absenteeism to DSHS HSR 1 are voluntary and are used for surveillance purposes rather than to determine actual occurrence of illness. The data represented in the graph and maps does not reflect true numbers of ILI illness or school absenteeisms, but serve as a sampling used to monitor extent and spread of this current public health threat.

The DSHS HSR 1 Epidemiology Response Team gives a big "Thank You!" to infection control nurses and laboratory managers for providing ILI numbers to us on a weekly basis. "Kudos!" to the school nurses that enter school absenteeisms on a daily basis! Your participation in these surveillance activities help us keep a bird's eye view on potential public health threats in our region. **Please, continue reporting as we are currently in the seasonal flu period.**

If your school district is not participating in SYRIS, please do! As you can see from the maps, we have a fairly good geographic distribution of school districts reporting, but the more participation, the more data we can collect for a better picture of what's going on in the region.



Texas Department of State Health Services
Health Service Region 1

2009 Novel H1N1 Influenza Pandemic, Second Wave School Absenteeism Rates by School District, by School Week*

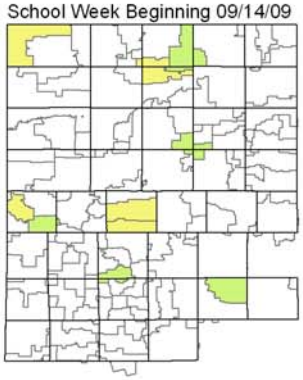
Legend

- Not participating or not reporting for time period
- 0 - 4.9
- 5.0 - 9.9
- 10.0 - 14.9
- 15.0 - 19.9
- 20.0 - 24.9
- 25.0 - 29.9

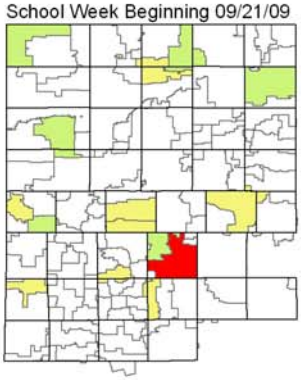
*Maximum observed daily absenteeism percentage during time period, calculated from aggregate absenteeism data reported by SYRIS participating school campuses within school districts in DSHS HSR 1 jurisdiction.

Intent of this cartographic representation of % school absenteeism in a time series is to visually represent geographic extent and increase of school absenteeism in school districts within HSR 1 jurisdiction; at the time of peak influenza-like-illness activity during the second wave of the 2009 Novel H1N1 Influenza Pandemic.
Not all school campuses within school districts report (or report consistently) school absenteeisms via SYRIS. Therefore, actual absenteeism rates for school districts will vary from what is represented in these maps.

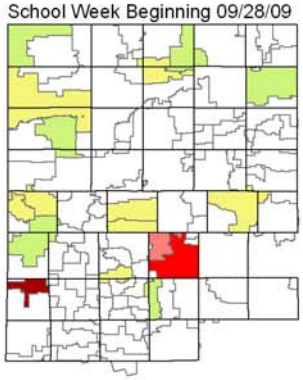
School Week Beginning 09/14/09



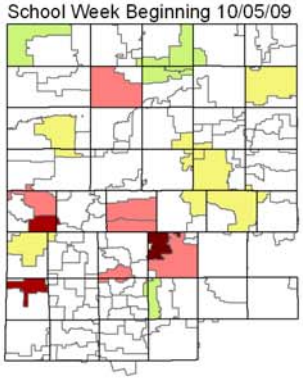
School Week Beginning 09/21/09



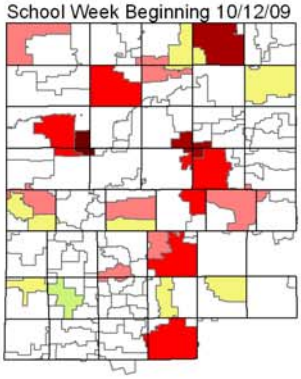
School Week Beginning 09/28/09



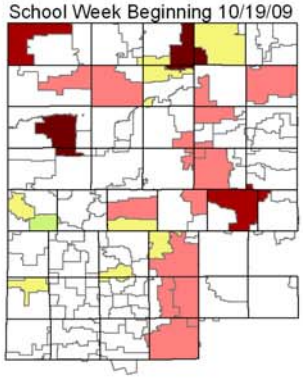
School Week Beginning 10/05/09



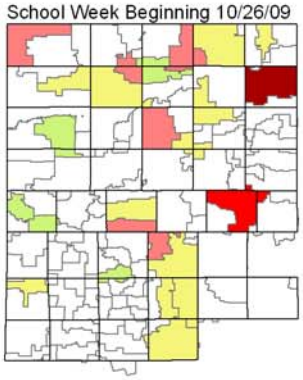
School Week Beginning 10/12/09



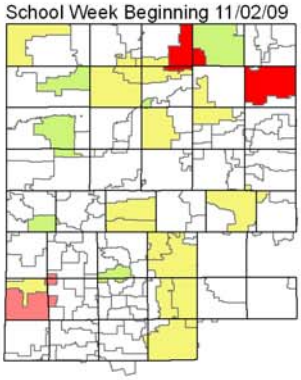
School Week Beginning 10/19/09



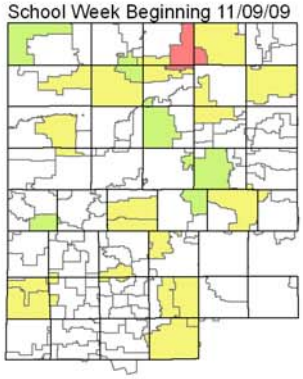
School Week Beginning 10/26/09



School Week Beginning 11/02/09



School Week Beginning 11/09/09



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