

Influenza Surveillance Systems in Texas 101

Carol Davis, MSPH, CPH Lesley Brannan Texas Department of State Health Services

Outline

- Overview of Influenza Surveillance
- Levels of Influenza Surveillance
- Components of Influenza Surveillance
- Supporting Influenza Surveillance

Key Terms

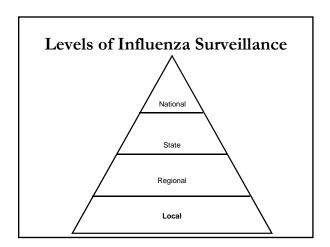
- Influenza Like Illness (ILI)
 - Fever ≥100°F, plus:
 - Cough and/or
 - Sore throat
 - In the absence of another known cause
- Influenza A
 - May include both seasonal and novel/variant strains
- Influenza B
- 2009 H1N1
 - Also referred to as swine flu, pandemic flu and pandemic H1N1

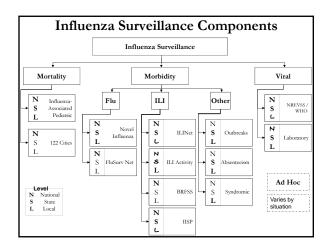
Influenza Surveillance

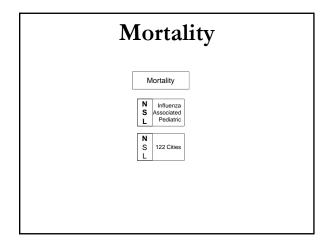
- The Influenza Surveillance System is a multicomponent surveillance network with local, regional, state and national activities.
- Data collection is based on a reporting week that starts on Sunday and ends on Saturday of each week.
 - Designated as Week 32 or week ending 9/05
 - aka CDC MMWR week
- Reporting is voluntary except where noted

Goals of Influenza Surveillance

- Find out when and where influenza activity is occurring,
- Determine what type of influenza viruses are circulating,
- Detect changes in the influenza viruses,
- Track influenza-related illness and
- Measure the impact influenza is having on deaths in the United States.







Influenza Pediatric Mortality

- Activity: Influenza-Associated Pediatric Mortality
- Level: National (2004); state, regional and local (2007)
- Who: As required by law in Texas
- What: Individual reports on influenza associated deaths in anyone <18 years old
- How: Individual report form faxed to health department within 1 work day

Year Round Reporting

Handbook section IVI

Influenza-Associated Pediatric Mortality

Report form available on the DSHS website at

http://www.dshs.state.tx.us /idcu/investigation/forms/ PedFlu.pdf



122 Cities

- Activity: 122 Cities Mortality Reporting System
- Level: National
- Who: Vital Statistics offices in 122 US cities (7 cities in Texas)
- What: total number of death certificates received by age group and the number citing influenza and/or pneumonia
- **How:** Weekly to CDC

Year Round Reporting

Other Potential Mechanisms

- Vital Statistics reports directly to health departments / state
- Reports of all influenza associated deaths
- Reports of select influenza associated deaths (pregnancy / post partum)

Morbidity - Influenza Morbidity Flu N Novel Influenza N S Flusury Net I. Flusury Net I.

Novel (Variant) Influenza

- Activity : Exotic disease reporting
- Level: State, regional and local
- Who: As required by law in Texas; typically laboratories
- What: Individual reports of any outbreak, exotic disease, or unusual group expression (Includes novel strains of influenza)
- How: Call to local health department

Year Round Reporting

Handb

Special Reporting

2009 H1N1

Discontinued at the

- Activity: Enhanced influenza surveillance
- Level: State, regional and local
- Who: Hospitals and/or healthcare providers
- What
 - Aggregate Reporting of Confirmed Cases
 - Hospitalized by age group and county
 - Individual Reports of Confirmed Cases
 - ICU
 - Deaths
- How: Faxed or emailed weekly to health department

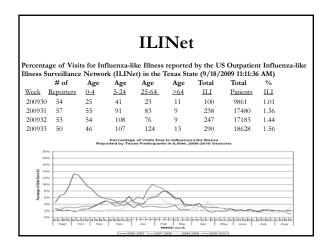
Special Reporting

Morbidity - ILI Morbidity ILI N S ILIActivity L N S BRFSS L N S IISP

ILINet

- Activity: US Outpatient Influenza-Like Illness Surveillance Network
- Level: National with a state level coordinator
- Who: ~ 2,500 providers were enrolled in this network during the 2007-08 influenza season nationwide; 130 were in Texas
- What: Aggregate count all patients seen and of ILI patients by age group
- How: Reported weekly through the CDC website

Year Round Reporting



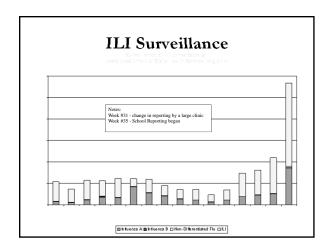
ILI Activity

- Activity: Health Department Seasonal Influenza Surveillance
- Level: Regional and local
- Who: private providers, clinics, hospitals and others
- What: Aggregate count of ILI and Flu (rapid tests: Flu A, Flu B and Undifferentiated Flu) by county
- How: Faxed or emailed weekly to health department

Conconal	Reporting
Seasonai	Reporting



FACSIMILE TRANSMITTAL INFERT								De	n each Mendey by 3 B	
Susii Hesky EN, CIC		FAX NOMBOT: 254-892-0-85			_	FACSIMILE TRANSMITTAL SHEET				
DMPANY:		TOTAL NO. OF P	AGES INCLUS	ING COVER	Ton				UMBER .	
Teus Department of State H HONE NUMBER	lesith Services	INFLUENCA REP			Sec.	di Hesity R	gar.		NO. OF PAGES INC.	
PATTRATAL		INFLUENCA REP	ORTINO						NO. OF PAGES INC.	COBING COVER
22477010141	200	19,2010				NUMBER	I CO SCHOOL THEM		ENZA REPORTING	
		I ILLELUEEPO			254	778-67-44				
Submit by 3.00 ends Monday for the week prior (Sunday – Saturday)						2009-2010 HOOL WEEKLY FL				
STEET OTAL NUMBER	OF PATIENTS SEE	IN FOR THE WE	EE:						PEROPT	
hane (Chais)					Theore	(School):_				
InnertEmerer					Dime	et Espons				
hon e Humber	DesiletEm	o merc			Bone	Busher:		Davil of Economer		
Unan of Emporer: Danilot Emporer: Week Ending:						WETE ENTING				
leer Ending : lefn kions :			(Bat Ba)	l Var Defficients to	Paga	merical defi	tel e:			
ben from: Finance confirmed by any Finance has the above active the description of the section of the sectio	d tet oudens antipo dy (III) III e define	n detection of FC R ol as ferezones 100	Faul cough	enal for ross throat in	Fig. sci.	orkym defi confirmed Fluid, Not I beans-hile a cough as	nel e: or e: Finoare ifficazioni el I liner estraty l'ir area fin	onfined by real tot fit and for (ILI) III's defined as t at in the	ordran, natipardo losa (haqeantan e decendarios delegado	4±100 F[375 C])
one Ending : Places confirmed by ago Places confirmed by ago Places of the liber active the absence of another the best ero map be either the lefter	d test outbus, antique by (III) III's define process. ing the number of fi	n detection of FCR older ference to 100 in and ILL cases se The observations. The	Faul ough	ender rese Greet in cility	Fluori Lat A.: Influence	reky is do fi confirmal FbiB. Not I buanchlo: a cough as conglete the	nel ar: oar e: Fin sare deficencia del 1 Ilmar acturity Liur areas din nicie fiction dine	confirmed by regal test. Su) and for, (ILI) III is defined as i	ordren, natipalde leve (Kanpen Fen e oler kom i diegen n in voer sokools. C	f∃00 F[D7S C])
ben from: Finance confirmed by any Finance has the above active the description of the section of the sectio	d test oubtract antique by (EL) EL's define process.	a detection of RCR of a ferror real 00 in and ILL cases se in modes to see	Faul cough	ender rose finost in cilky	Fluoring Add	rivey is do fi confirmed. Fluid. Her I beanswhile: a complise complete the	nel er: oer er Finnere Officentievel I Diner entrety List erens fün nicht fiction the r	confirmed by regal for the total or the things of the statement of the absences see	ordren, natipalde leve (Kanpen Fen e oler kom i diegen n in voer sokools. C	d ≥100 F[375 C]) (iv.) (iv.) (don't put in "absences eto 2000/E0"
cont Linking : efficient: Photomologische by anjoin fibro model or hithornochile allerer moter fibro model or fibro model or grander der less em anjoinethe tab le list Country	d to to others, analysis by (III) III's define process. ing the number of fit mobile for a	a detection of RCR of a ferror real 00 in and ILL cases se in modes to see	Faul cough	enlier rese Greet in coller motoristate zen urb Lines	Fluoring Add	rivey is do fi confirmed. Fluid. Her I beanswhile: a complise complete the	nol w: ow o Fire care inflorational li finer activity for a row the mide fixing the s frame pain the a	confirmed by rappal for the top of the top o	ordinas, razigando loras (Engenches e der laco a diagno a in year soboels. C ata rapo it of relacional	d ≥100 F[375 C]) (iv.) (iv.
one Linking : fin tions: Fino so confirmed by any confirmed by any confirmed by a confirmed by	d to to others, analysis by (III) III's define process. ing the number of fit mobile for a	a detection of RCR of a ferror real 00 in and ILL cases se in modes to see	Faul cough	enlier rese Greet in coller motoristate zen urb Lines	Fluoring Add	rivey is do fi confirmed. Fluid. Her I beanswhile: a complise complete the	nol w: ow o Fire care inflorational li finer activity for a row the mide fixing the s frame pain the a	confirmed by rappal for the top of the top o	ordinas, razigando loras (Engenches e der laco a diagno a in year soboels. C ata rapo it of relacional	d≥100 F[375 C]) All contra students dest partir "absences
cont Linking : efficient: Photomologische by anjoin fibro model or hithornochile allerer moter fibro model or fibro model or grander der less em anjoinethe tab le list Country	d to to others, analysis by (III) III's define process. ing the number of fit mobile for a	a detection of RCR of a ferror real 00 in and ILL cases se in modes to see	Faul cough	enlier rese Greet in coller motoristate zen urb Lines	Fluoring Add	rivey is do fi confirmed. Fluid. Her I beanswhile: a complise complete the	nol w: ow o Fire care inflorational li finer activity for a row the mide fixing the s frame pain the a	confirmed by rappal for the top of the top o	ordinas, razigando loras (Engenches e der laco a diagno a in year soboels. C ata rapo it of relacional	d≥100 F[375 C]) All contra students dest partir "absences etc parents!
one Linking : fin tions: Fino so confirmed by any confirmed by any confirmed by a confirmed by	d to to others, analysis by (III) III's define process. ing the number of fit mobile for a	a detection of RCR of a ferror real 00 in and ILL cases se in modes to see	Faul cough	enlier rese Greet in coller motoristate zen urb Lines	Fluoring Add	rivey is do fi confirmed. Fluid. Her I beanswhile: a complise complete the	nol w: ow o Fire care inflorational li finer activity for a row the mide fixing the s frame pain the a	confirmed by rappal for the top of the top o	ordinas, razigando loras (Engenches e der laco a diagno a in year soboels. C ata rapo it of relacional	d≥100 F[375 C]) All contra students dest partir "absences etc parents!
one Linking : fin tions: Fino so confirmed by any confirmed by any confirmed by a confirmed by	d to to others, analysis by (III) III's define process. ing the number of fit mobile for a	a detection of RCR of a ferror real 00 in and ILL cases se in modes to see	Faul cough	enlier rese Greet in coller motoristate zen urb Lines	Please Lab A.: Infl and Please abserce do not	contract to confine the confin	tel m: one of Fire one Office and a life one Misses with the or of the area for the	to affined by again to the first and for the first and for the first and for the first and for the first and first a	ordinas, natigandos ordinas, natigandos observados por soborbis. O ser apos del relacione del como del	d≥100 F[375 C]) All contra students dest partir "absences etc parents!
one Linking : fin tions: Fino so confirmed by any confirmed by any confirmed by a confirmed by	d to to others, analysis by (III) III's define process. ing the number of fit mobile for a	a detection of RCR of a ferror real 00 in and ILL cases se in modes to see	Faul cough	enlier rese Greet in coller motoristate zen urb Lines	Please Lab A.: Infl and Please abserce do not	contract to confine the confin	nol a: or o Privace Officialists of Inflorence of Privace Officialists of Inflorence of Inflorence of Inflorence Section Colored Section Colored Section Colored	to affirmed by respell for the condition of the condition	ordina, satisfaction from the state of the s	d _100 F[P70 C]) dd _100 F[P70 C]) dd _100 F[P70 C]) dd _100 F[P70 C] dd _100 F[P70 C] dd _100 F[P70 C])
bein tions: Phoses confirmed by any Phoses confirmed by any Phoses confirmed by any the three confirmed by any three confirmed by Country Country	d to to others, analysis by (III) III's define process. ing the number of fit mobile for a	a detection of RCR of a ferror real 00 in and ILL cases se in modes to see	Faul cough	enlier rese Greet in coller motoristate zen urb Lines	Please Lab A.: Infl and Please abserce do not	contract to confine the confin	tel m: one of Fire one Office and a life one Misses with the or of the area for the	to affined by again to the first and for the first and for the first and for the first and for the first and first a	ordinas, nadigas des locas (la supera fras e der la supera del del pro- nos report del del proportion del Abanicos del Abanicos del Abanicos del Abanicos del Abanicos del Abanicos del	d≥100 F[375 C]) All contra students dest partir "absences etc parents!
bein tions: Phoses confirmed by any Phoses confirmed by any Phoses confirmed by any the three confirmed by any three confirmed by Country Country	d to to others, analysis by (III) III's define process. ing the number of fit mobile for a	a detection of RCR of a ferror real 00 in and ILL cases se in modes to see	Faul cough	enlier rese Greet in coller motoristate zen urb Lines	Please Lab A.: Infl and Please abserce do not	contract to confine the confin	nol a: or o Privace Officialists of Inflorence of Privace Officialists of Inflorence of Inflorence of Inflorence Section Colored Section Colored Section Colored	to affirmed by respel for the condition of the condition	ordinas, nadigas des locas (la supera fras e der la supera del del pro- nos report del del proportion del Abanicos del Abanicos del Abanicos del Abanicos del Abanicos del Abanicos del	d ± 100 F[770 C])
one Linking : fin tions: Fino so confirmed by any confirmed by any confirmed by a confirmed by	d to to others, analysis by (III) III's define process. ing the number of fit mobile for a	a detection of RCR of a ferror real 00 in and ILL cases se in modes to see	Faul cough	enlier rese Greet in coller motoristate zen urb Lines	Please Lab A.: Infl and Please abserce do not	contract to confine the confin	nol a: or o Privace Officialists of Inflorence of Privace Officialists of Inflorence of Inflorence of Inflorence Section Colored Section Colored Section Colored	to affirmed by respel for the condition of the condition	ordinas, nadigas des locas (la supera fras e der la supera del del pro- nos report del del proportion del Abanicos del Abanicos del Abanicos del Abanicos del Abanicos del Abanicos del	del m F[775 C];



BRFSS

- Activity : Behavioral Risk Factor Surveillance System
- Level: National
- Who: General public
- What: Recent ILI
- How: ILI assessment questions added to the BRFSS survey. Survey conducted through random digit dialing.

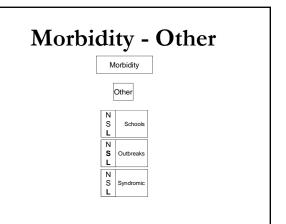
Special Reporting

IISP

- Activity : Influenza Incidence Surveillance Project
- Level: National with a state level coordinator
- Who: 12 awardees in the US including Texas; 5-6 providers in Texas
- What: Aggregate count by age group of all patients seen and of patients with ILI; specimens submitted on first 10 patients seen each week
- How: Reported weekly via fax or email to DSHS

Year Round Reporting





School Surveillance

- Activity : Varies
- Level: Regional and local
- Who: School nurses and/or attendance clerks
- What: number of students sent home with ILI and/or who called in sick with ILI or in general
- How: Faxed or emailed weekly to health department; some electronic systems are available

Seasonal Reporting



Outbreaks

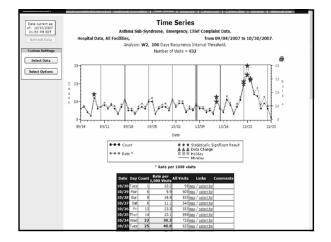
- Activity : Outbreak reporting
- Level: Local, regional, state
- Who: As required by law
- What: Report of suspected outbreak or cluster of illness
- How: Call to health department; Surveillance data analysis

Year Round Reporting

Syndromic Surveillance

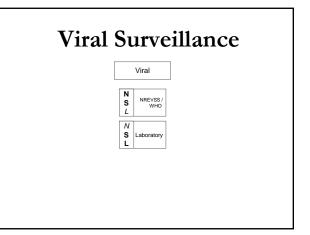
- Activity: Syndromic programs: ESSENCE, RODS, BioSense etc
- Level: Regional and local
- Who: Hospitals with emergency rooms
- What: emergency room visits categorized by syndrome, age, zip code, date (de-identified)
- How: Electronic data automatically sent from hospital to syndromic servers. Frequency of reports may occur hourly, daily or weekly.

Year Round Reporting



Other Possible Morbidity Mechanisms

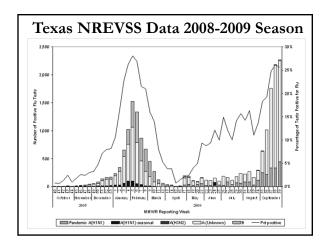
- Absenteeism / ILI surveillance with large businesses
- Absenteeism / ILI surveillance with first responders
- Pharmacy based surveillance
- Nurse call center surveillance
- Poison Control cough/cold medication overdose calls



NREVSS / WHO

- Activity: National Respiratory and Enteric Virus Surveillance System and WHO Collaborating Labs
- Level: National coordination
- Who: Volunteer public health and hospital laboratories
- What: Total number of respiratory specimens tested and number of positives
- How: Reported weekly to CDC
- Note: Tracks multiple respiratory pathogens. Not all labs report all pathogens.

Year Round Reporting



Laboratory Surveillance

- Activity: Influenza Laboratory Surveillance (PCR)
- Level: State, regional, and local coordination
- Who: Selected providers
 - Identified by health departments
 - May include ILINet providers
- What: Specimens from patients suspected of having influenza
- How: Specimens sent to the DSHS lab or LRNs
- Note: Subset of submitted specimens sent every two weeks to CDC for further testing

Year Round Reporting

Reporting

- Email for DSHS flu team
 - flutexas@dshs.state.tx.us
- Flu reports
 - DSHS flu reports and information:
 - www.TexasFlu.org
 - $\color{red} \blacksquare \, \underline{\text{http://www.dshs.state.tx.us/idcu/disease/influenza/}}$
 - CDC FluView: <u>www.cdc.gov/flu/weekly/</u>