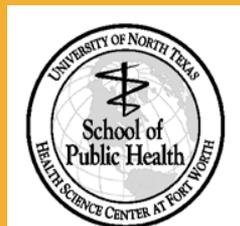


From Prevention to Early Detection and Timely Response

School & Child Health Surveillance



07-19-10



Presenter

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School of Public Health

University of North Texas Health Science Center



Presentation outline

- Surveillance definitions, purposes ←
- Tarrant County's approach & data
- System evaluation & conclusions
- Replicability & Guidance Kit



What is surveillance?

Ongoing systematic collection, analysis, and interpretation of health data in the process of describing and monitoring a health event or events



www.cdc.gov/ncphi/diss/nndss/syndromic.htm



Syndromic surveillance

- Uses health data ***preceding diagnosis***
- Facilitates public health response:
 - Signals if case/outbreak is significant
 - Allows ongoing tracking of outbreak
 - Supports collaboration with providers



www.cdc.gov/ncphi/diss/nndss/syndromic.htm



Influenza-Like Illness symptoms

Two key symptoms:

- Temperature $>100^{\circ}$
- Cough / sore throat*

Other symptoms:

- Malaise and muscle aches
- Runny nose, chills or headache



* With no other known cause



Why focus on youth?

- Accelerate flu transmission
- Biologically more susceptible
- One of 3 high-risk groups
- Impact rest of household
- Flu-friendly environment



ILI data's importance

- Aggregated data can mask trends
- Total absenteeism is insufficient
- Reveals reasons for absenteeism
- More precisely characterizes flu
- Provides actionable information



All-cause “total” absenteeism

- Heterogeneity within this category
- Diminishes “effects” across these collapsed categories through aggregation
- May still provide some indication but ILI may serve as a better indicator of flu because...



Homogeneity within categories

- Consider ILI as a subcategory of all-cause absences
- Want categories to be homogeneous (similar risks or definitions of reasons for absence)
- May not always be appropriate to use collapsed category (i.e. total absences) to detect trends



Why school surveillance?

- Absences may precede visits to providers or ED
- Source of data from those who do not seek medical care
 - Mild illness
 - Barriers to access to care



Child health surveillance

Helps:

- Monitor flu activity across region
- Assess impact of disease on youth
- Detect pandemic/epidemic early
- Slow flu with increased awareness
- PH appropriately allocate resources



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Pilot project objectives

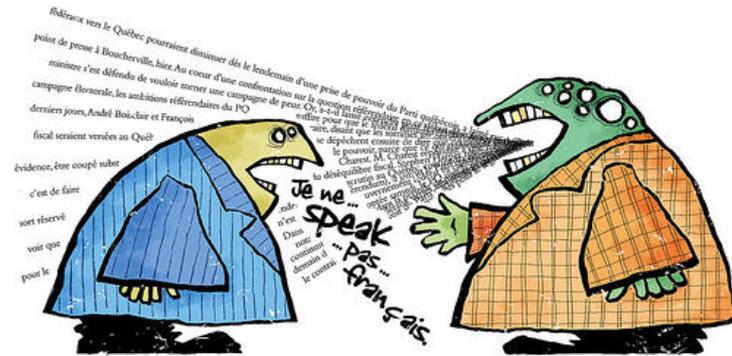


1. Apply biosurveillance to ph practice
2. Respond to surveillance clues
3. Target flu shots, specimen sampling
4. Campus data, not just district data
5. Daily rather than weekly data
6. No vacuum cleaner approach



Project, technical requirements

- Web-based for easy data sharing
- Role-based security for personalization
- Easy to use CMS and custom modules
- Open source software
- Scalable for expansion
- Jargon-free content



System elements

- Electronic reporting via Web portal
 - Student absences, flu-related absences
 - Nurse perception of ILI
 - School closure and reasons, when relevant
 - Faculty absences and ILI
 - Comment box and feedback support
- Maps, resources and data for nurses
 - Appropriate for a flu prevention campaign



Flu prevention resources

- Prompt use of preventive measures
- Identify, post useful content for:
 - School nurses
 - Students and parents
 - Childcare facilities and clients
 - Physicians
 - Media



Flu prevention resources

From authoritative sources:

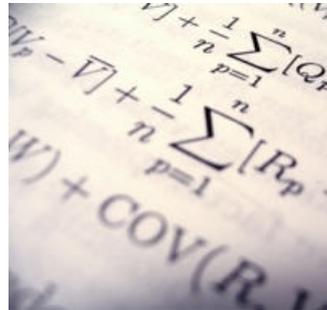
- CDC: www.cdc.gov/flu/school/
- Cough Safe: www.coughsafe.com/index.html
- Families Fighting Flu: www.familiesfightingflu.org/
- Say Boo to the Flu: www.sayboototheflu.com/
- Faces of Influenza: www.facesofinfluenza.org/
- Prevent Influenza: www.preventinfluenza.org/



CIDRAP: Promising Practice - Pandemic Flu Preparedness

ESSENCE integration

- Used to create ILI maps
- Accepts DotNetNuke (DNN) data
 - But transfer process is homegrown
 - And it only analyzes total absences



Share Your School's Health Data

ISD School Enrollment

Reporting date (month-day-year)

For the fields below, please provide the **DAILY** totals ...

Student absenteeism data

Absent

Absent due to ILI

Seen in nurse's office

Seen with ILI by nurse

Your perception of flu activity

The number of students in your school with flu-like illness is:

Increasing
 Decreasing
 Not changing

School closure

Did your school close? Yes No

If yes, was flu the reason? Yes No

Supplemental data

Number of faculty absent

Faculty absent with ILI

Other findings / comments?

ILI is defined as a student or faculty member with:

temp > 100°F

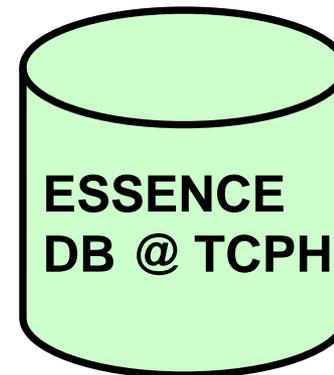
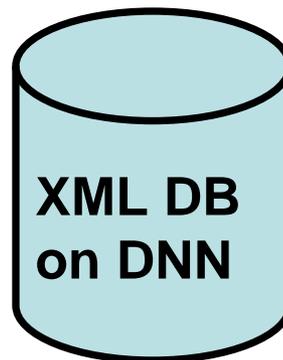
cough and/or sore throat

Other symptoms include: malaise, muscle aches, runny nose, chills, and/or headache

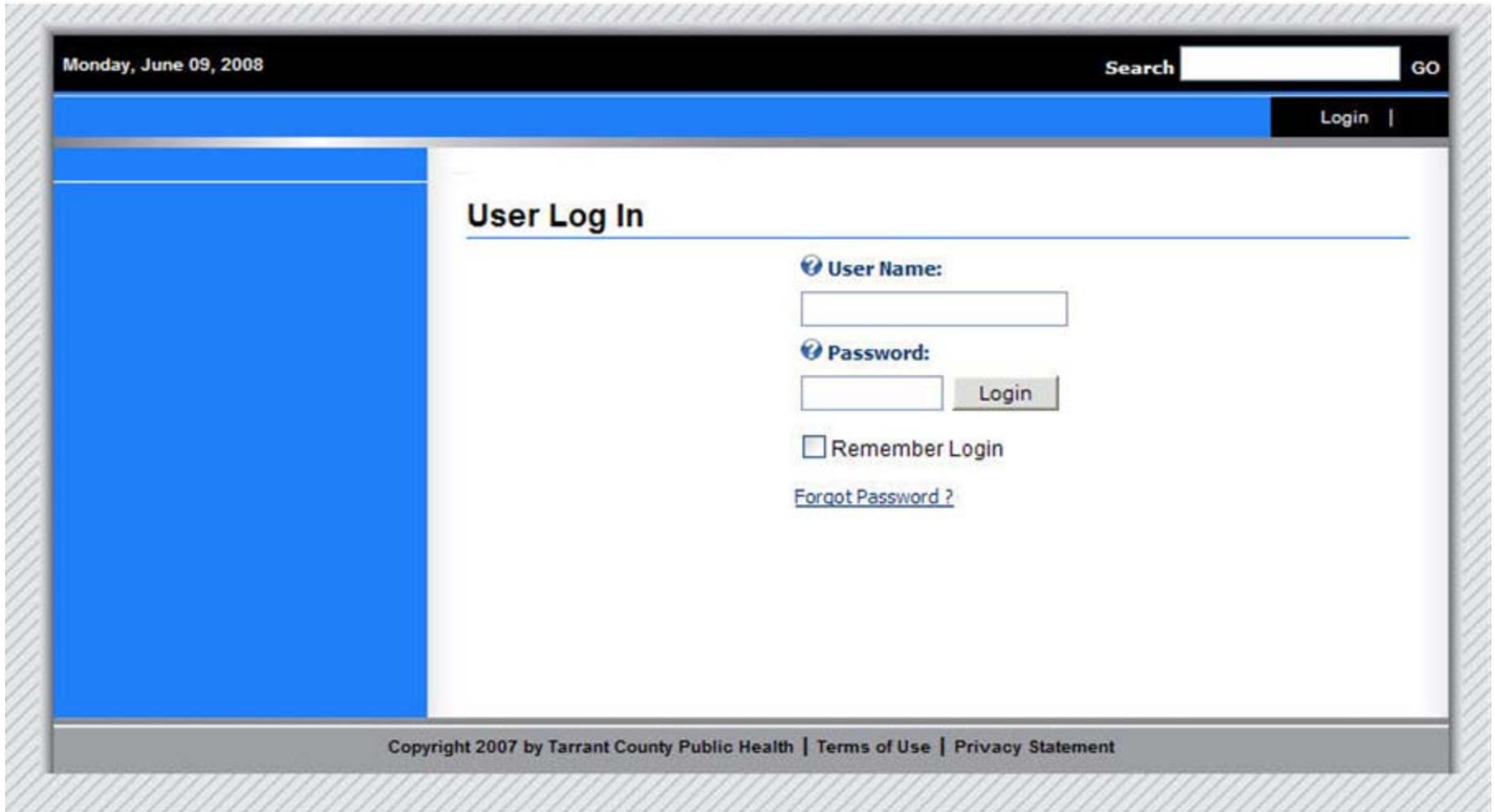
[Submit](#)

Data entry form on open source portal (DNN)

SHSS data flow



Efficient, affordable, replicable method



Secure log in with no registration link to ease account management and avoid duplication



Tarrant County Public Health School Health Surveillance



Alice Carson Applied Learning Center
Logoff

Share Your Health Data

- Flu and ILI Outbreak Maps
- Flu Prevention Resources
- Report MRSA Cases
- About ESSENCE

Action Items

Please continue sharing your school's health data (see instructions). **Thank you!**



Landing page offers simple menu, data form, action items, news (not shown)

Share Your School's Health Data

School	<input type="text" value="Alice Carson Applied"/>	Enrollment	<input type="text" value="397"/>
Reporting date (month-day-year)	<input type="text" value="06-09-2010"/>		
Please provide daily absenteeism totals and your perception of flu activity:			
Absent	<input type="text"/>	Absent with ILI	<input type="text"/>
Seen by nurse	<input type="text"/>	Seen with ILI by nurse	<input type="text"/>
The number of students with ILI in your school is:		<input type="radio"/> Increasing <input type="radio"/> Decreasing <input type="radio"/> Not changing	
Did your school close?	<input type="radio"/> Yes <input type="radio"/> No	Was flu the reason?	<input type="radio"/> Yes <input type="radio"/> No
Faculty absent	<input type="text"/>	Faculty with ILI	<input type="text"/>
Please share any other		<input type="text"/>	



Tarrant County Public Health Child Health Surveillance



Logoff | Children's Academy CEA

Share Your Health Data

Flu and ILI Outbreak Maps

Flu Prevention Resources

About ESSENCE

Action Items

Encourage enrollees and parents to get flu vaccinations. Paste text from a suggested letter about flu prevention and second letter targeting parents or guardians of kids exposed to other children with flu onto your facility's letterhead and distribute appropriately. Review our guidance document. Clients can enter sleeves as user-id and password at <http://hidport.taho.org/schoolportal> to view "Why Don't We Do It in Our Sleeves?" in several funny versions, including Spanish. Continue sharing your facility's health data (see Instructions). Thank you!

Edit Text



Share Your Facility's Health Data

Facility	<input type="text" value="Children's Academy CEA"/>	Enrollment	<input type="text" value="126"/>
Reporting date (month-day-year)	<input type="text" value="06-09-2010"/>		
Please provide daily absenteeism totals and your perception of flu activity:			
Absent	<input type="text"/>	Absent due to ILI	<input type="text"/>
Left early due to illness	<input type="text"/>	Left early due to ILI	<input type="text"/>
The number of children in your facility with ILI is:	<input type="radio"/> Increasing <input type="radio"/> Decreasing <input type="radio"/> Not changing		
Did your facility close?	<input type="radio"/> Yes <input type="radio"/> No	Was flu the reason?	<input type="radio"/> Yes <input type="radio"/> No
Facility absent	<input type="text"/>	Facility with ILI	<input type="text"/>
Please share any other findings or comments you may have:		<input type="text"/>	
<i>ILI is defined as:</i> a child or facility member with temperature of 100 degrees or greater, cough and/or sore throat. Other symptoms include: malaise, muscle aches, runny nose, chills, and/or headache.			
<input type="button" value="Submit"/>			

With DNN, role-based security allows a different set of users to see similar functions on the same easy-to-administer site.

Share Your School's Health Data

School	<input type="text" value="Alice Carson Applied"/>	Enrollment	<input type="text" value="397"/>
Reporting date (month-day-year)	<input type="text" value="06-09-2010"/>		
Please provide daily absenteeism totals and your perception of flu activity:			
Absent	<input type="text"/>	Absent with ILI	<input type="text"/>
Seen by nurse	<input type="text"/>	Seen with ILI by nurse	<input type="text"/>
The number of students with ILI in your school is:	<input type="radio"/> Increasing <input type="radio"/> Decreasing <input type="radio"/> Not changing		
Did your school close?	<input type="radio"/> Yes <input type="radio"/> No	Was flu the reason?	<input type="radio"/> Yes <input type="radio"/> No
Faculty absent	<input type="text"/>	Faculty with ILI	<input type="text"/>
Please share any other findings or comments you may have:	<input type="text"/>		
<i>ILI is defined as</i> a student or faculty member with temperature of 100 degrees Fahrenheit or greater, cough and/or sore throat. Other symptoms include: malaise, muscle aches, runny nose, chills, and/or headache.			
Submit			

Form takes < 5 min to complete

Some fields are pre-filled for ease of completion.

Some fields are optional.

The CDC definition of ILI is given.

- Fort Worth ISD
- Share Your School's Health Data
- Flu and ILI Outbreak Maps**
- Flu Prevention Resources
- Access ESSENCE
- About ESSENCE

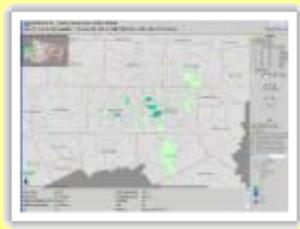
ESSENCE maps of flu and ILI patterns by region. You can click on each image to see a larger view.

Regional Outbreak Maps for Influenza-Like Illness

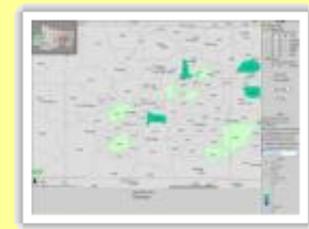
All Albums » Regional Outbreak Maps for Flu and ILI, 11-6-07

Tags 

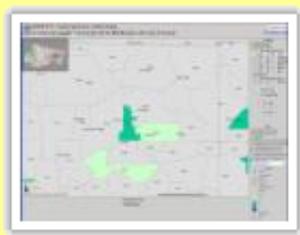
Regional Outbreak Maps for Flu and ILI, 11-6-07



1-DFW_Region_11-6-07



2-Tarrant_County_11-6-07



3-Northeast_Tarrant_County_11-6-07



4-Southeast_Tarrant_County_11-6-07



5-Southwest_Tarrant_County_11-6-07



6-Northwest_Tarrant_County_11-6-07

All resources listed alphabetically:

A Horror Story

Resources in Spanish

For Immediate Use:

Be a Germ Stopper

Tools to Share with Your Teachers

PK - 2

Be a Germ Stopper

Grades 3 - 5

Be a Germ Stopper

Grades 6 - 8

Cover Your Cough

Grades 9 - 12

Cover Your Cough

This page provides access to flu prevention resources school nurses can use.

More resources or topics can be added easily.

RSS is supported and applied

Data management



- Daily data extraction w/ weekly analysis*
 - Total schools reporting & students (adjusted for # participating)
 - Total % absent & % absent for ILI
 - Average daily % absent for week
 - Average daily % ILI absent for week



* TCPH's current practice is for weekly analysis, but the system allows more frequent analysis.



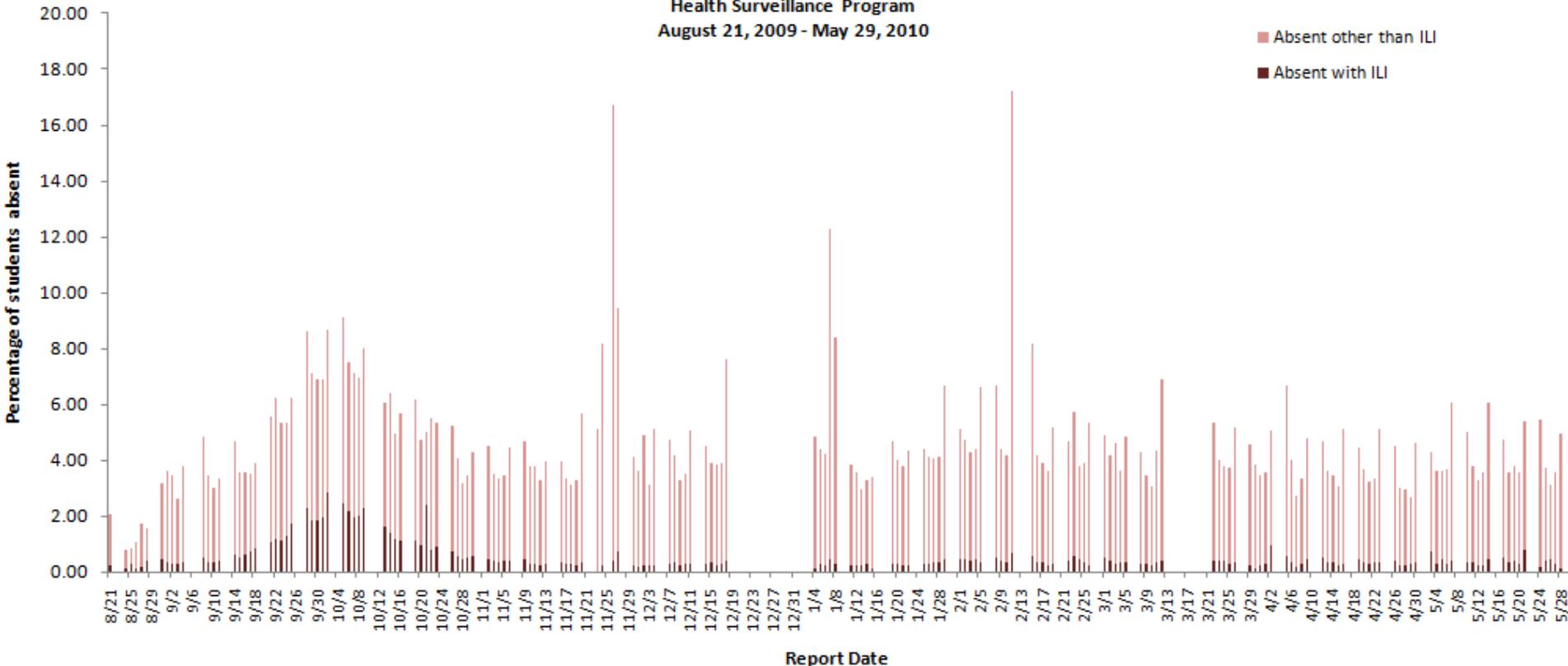
Program participation

Schools					
Date range	05/23-05/29	05/16-05/22			
MMWR	21	20	Cumulative*		
			2009-2010	2008-2009	2007-2008
Total # reports	147	182	11207	4821	4217
Total # of schools	37	45	177	168	159
Total # Districts (% of Tarrant County districts)	7 (43.8)	8 (50.0)	9 (56.3)	10 (62.5)	7 (43.8)
Private	0	0	1	1	1
Charter schools	0	0	2	0	0
*cumulative totals are based on academic school year					
Everman ISD has discontinued reporting					



Time series: school ILI data

Time trend of percentage of student absences due to influenza-like illness (ILI) and causes other than ILI in Tarrant County schools participating in the School Health Surveillance Program
August 21, 2009 - May 29, 2010



Childcare facility strategy

- No prior data from childcare centers
- Discussed feasibility via focus groups
- Results: true partnership needed first
- Action plan developed by TCPH
- Students engaged in implementation
- Collaborating with CampFire USA



Childcare facility strategy

- Trainings start in July, go all year
- Cover various public health topics
- Fit CampFire's schedule, approach
 - Child Dev. Associate classes (7-8 & 10)
 - Kindergarten readiness program (10)
 - Community training workshop (11)



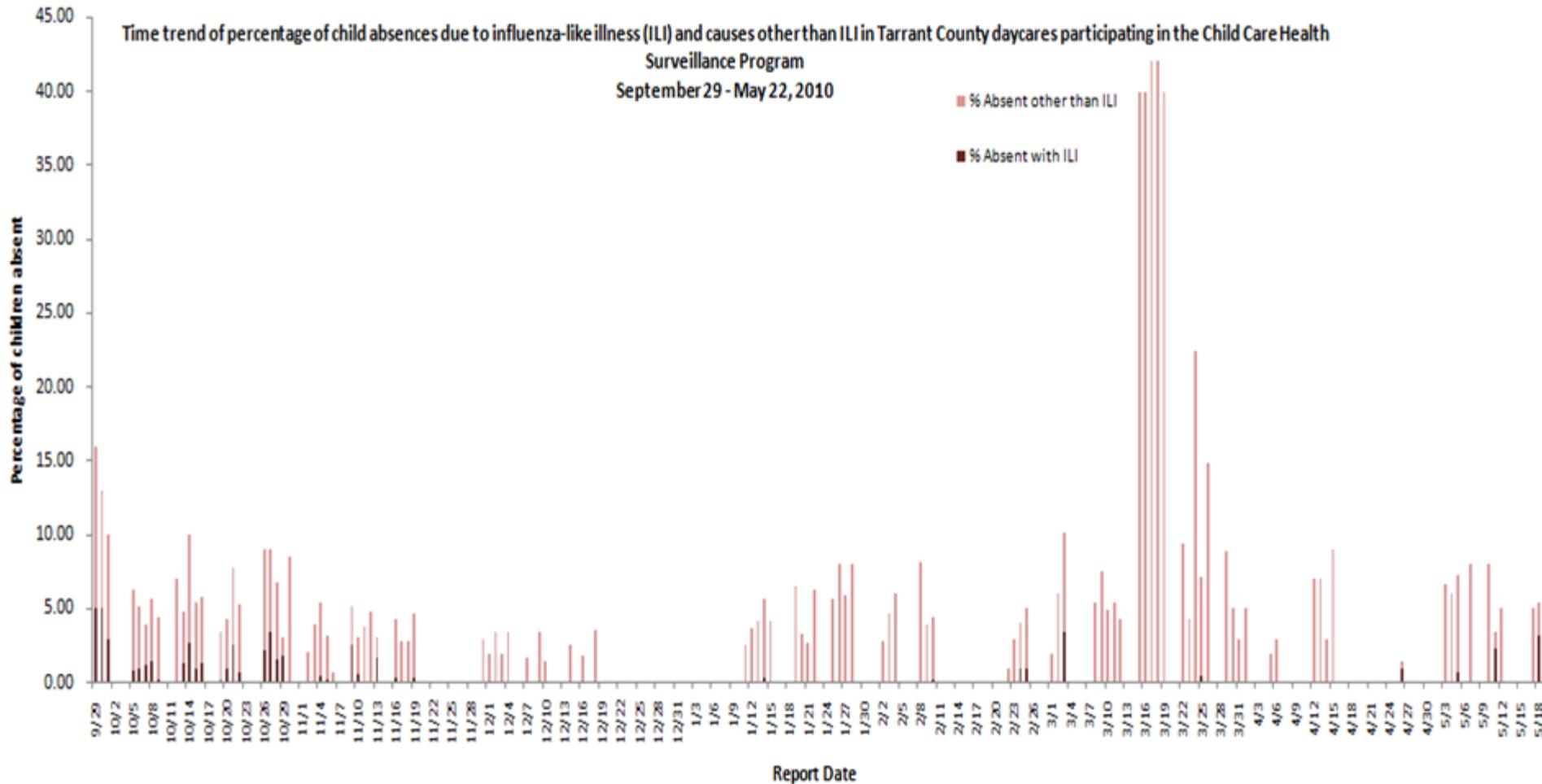
Current participation

- Limited but expected to increase
- 100+ user accounts of 550 centers

Child Care Centers				
Date range	05/23-05/29	05/16-05/22		
MMWR	21	20	Cumulative*	
			2009-2010	2008-2009
Total # reports	0	6	313	30
Total # of centers	0	3	14	5
*cumulative totals are based on academic school year				



Time series: childcare ILI data



Presentation outline

- Surveillance definitions, purposes
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- System evaluation & conclusions 
- Replicability & Guidance Kit



System evaluation approach

- Followed CDC guidance*
- Applied a logic model
- Used a process outcomes focus
 - Have not focused on impact
- Complied with IRB rules
 - Confidentiality via summary data
 - Security via TCPH best practices

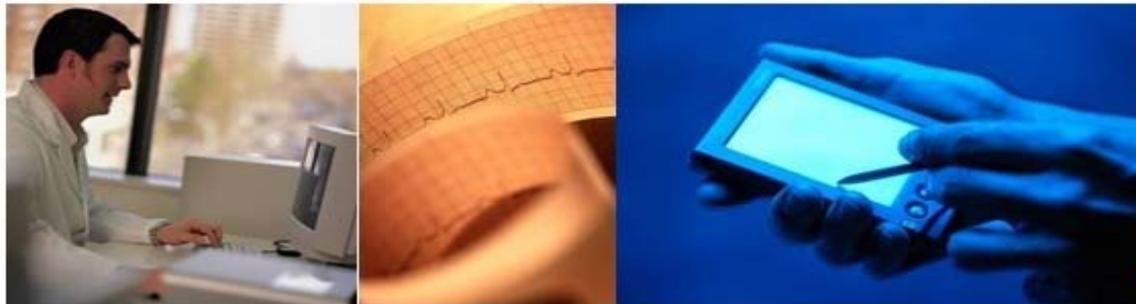


* Updated Guidelines for Evaluating Public Health Surveillance Systems



Evaluation methodology

- Surveys of system users
- Key informant interviews
- System logs and reports
- Report form data



Some evaluation findings

- Simple design, minimal data worked
 - Collected in < 30 min., sent in < 5 min.
- Difficulty with “reason for absence”
- Participation steadily growing
 - Now 177 schools, 9 ISD, 11,000+ reports
- TCPH responsive to user inputs
 - MRSA form added w/ mutual benefits



Summary evaluation findings

- System has been largely successful
- H1N1 pandemic resulted in more use
- Complements other surveillance data
- Continuous enhancements needed
- Child health system more challenging
- Child health feasible with action plan



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Replicability demonstrated

Agencies copying Tarrant – work done:

- Sedgwick County, KS (Wichita area)
- Hamilton County, OH (Cincinnati area)

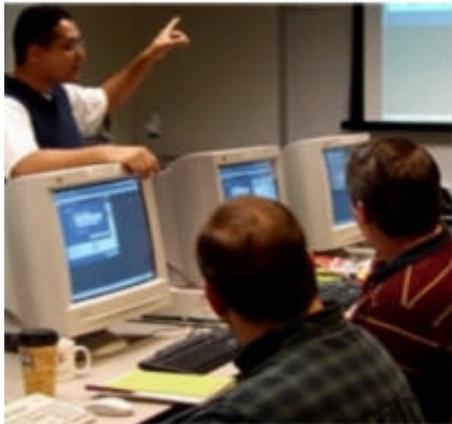
Agencies copying Tarrant – nearly done:

- Harris County, TX (Houston area)
- Texas Assoc. of Local Health Officials

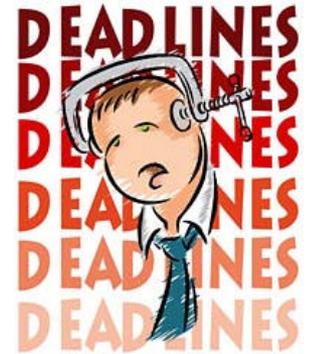


Replicability considerations

Variables that influence replicability:



- Agency size
- Experience
- IT resources
- # of schools
- Time constraints
- School relationships
- Jurisdictional issues



Forthcoming Guidance Kit

- Overview: Turn-key solution for school/child health surveillance
- Partners: APC, Tabatha Powell, Ingen Systems, Texas DSHS
- Significance: Packages all insights and resources in single offering
- Deliverable: CD/DVD and Website



Forthcoming Guidance Kit

- Evaluation: APC-identified SMEs at sites that have similar systems
 - Taking additional reviewers*
- Delivery: October 1, 2010
- More information: www.texasapc.net

* We also seek agencies we can partner with to implement similar systems for our 2010-2011 grant work. Send suggestions to Dean Lampman: (817) 321-5372 or via e-mail: dflampman@tarrantcounty.com.



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Thank you very much for your participation and attention.

What questions may we answer?

