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Pandemic Influenza Surveillance: The Local Perspective

Caveats...



Caveats...



Los Angeles County (LAC) is very large.

- Largest population of any US county (about 10 million).
- Spread over 4,000 square miles; >80 hospitals.
- Exceeded in size by only 8 states.

complex demographics

- Multiple primary languages.
- SES ranges from abject poverty to extreme wealth.

major port for international travel

- LAX, 3rd busiest airport, 15 million international flights/year.

...LAC often functions like a state within a state.

Seasonal Flu Surveillance





Importance of seasonal flu surveillance

Surveillance for **pandemic flu** will only be as successful as an area's surveillance for **seasonal flu**.

Any problems that exist with surveillance for **seasonal flu** will be magnified when attempting surveillance for **pandemic flu**.

Ultimate impact of next flu **pandemic** is unknown; but even **seasonal** strains of influenza have significant public health impact (1998 in LAC).



Complications of seasonal flu surveillance

Mandatory reporting is not feasible.

-- too many are affected.

If mild season 10% ill, in LAC 1 million would be ill;
pandemic 50-150,000 hospitalized; 15-30,000 dead.

-- illness is not specific; most will not see a doctor

We discourage doctor visits (especially ERs)
unless medically necessary.

Many basic assessments of seasonal flu remain unknown; and if
unknown for seasonal flu, will be unknown for pandemic flu.



How do we monitor seasonal flu in LA County?

Direct methods = viral isolates and community outbreaks

Indirect methods = secondary consequences (e.g., ER diversions)

Comparisons to state and national findings

I. Standard surveillance

II. Special surveillance projects

III. BT-associated syndromic surveillance



How do we monitor seasonal flu in LA County?

Examples...

I. Standard surveillance

- viral isolate collection and analysis
- responding to outbreaks
- Kaiser OP and inpatient ILI data

II. Special surveillance projects

- university health ctr. surveillance (8 campuses)
- coroner project
- pediatric ICU and deaths- 1/3 state's cases



How do we monitor seasonal flu in LA County?

Examples...

III. BT-associated syndromic surveillance

- ED surveillance (16 hospitals; reported daily, chief complaints including ILI illness)
- Retail pharmaceutical sales (e.g., analgesics)
- Reddinet (60 hospitals; capacity data, ER admits, DOAs)



How do we monitor seasonal flu in LA County?

Mortality rates for influenza are problematic.

- Only estimates (P&I) since testing typically not performed.
- Inherently delayed due to both natural disease progression and reporting/processing issues. Always 3 months behind.

Better for retrospective than immediate surveillance.

Community partners and BT activities increasing.

- Constantly improving and expanding partnerships & surveillance.

BT surveillance = pandemic flu surveillance.

Pandemic Flu Surveillance



WHO Pandemic Phases

Phase 1: Interpandemic Period
No new human viruses.
Low risk of human cases.

Phase 2: Interpandemic Period
New virus in animals, no human cases.
Increased, still low risk of human cases.

Phase 3: **PANDEMIC ALERT PERIOD**
Human infections with a new subtype;
But no (or very rare) human-to-human spread.

Phase 4: Pandemic Alert Period
Small clusters of human-to-human transmission;
Virus adapted to human, but spread is localized.

Phase 5: Pandemic Alert Period
LARGE clusters of human-to-human transmission;
But spread is still localized.

Phase 6: **PANDEMIC**
Increased and sustained transmsission;
Throughout the general population.

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Now



During



Pandemic Flu Surveillance: Pre-Pandemic

Phase 3

Pandemic Flu Surveillance: Pre-Pandemic

Phase 3



Enhanced
Awareness



Improved
Reporting

Pandemic Flu Surveillance: Pre-Pandemic

Phase 3



Enhanced
Awareness

Pandemic Flu Surveillance: Pre-Pandemic

Phase 3



Enhanced
Awareness

ILI is very common.

Must distinguish by epi factors:

- travel history
- exposure history

Or distinguish by unusual presentation:

- ILI in summer
- severe ill in typically healthy
- outbreaks

Pandemic Flu Surveillance: Pre-Pandemic

Phase 3



Enhanced
Awareness

How keep this salient?

- Health Alerts (HANs)
- publications
- posters (for MDs and their patients)
- presentations

Stress facts not fear.

Rely on PH for identification.

Call us for anything suspicious.

Pandemic Flu Surveillance: Pre-Pandemic

Phase 3



Improved
Reporting

Pandemic Flu Surveillance: Pre-Pandemic

Phase 3

Prompt reporting is essential.

Delay impedes...

...diagnosis

...infection control

And, must report to the
correct agency.

Call local first!

ACDC has tested our reporting system to analyze and improve our response to calls of critical illness (RAND study).



Improved
Reporting

Pandemic Flu Surveillance: During the Pandemic

PANDEMIC

Pandemic Flu Surveillance: During the Pandemic

PANDEMIC

Would differ from surveillance prior to this crisis period.

- Must be practical.
- PH and the reporting agencies likely will be overworked and understaffed.
- Ideal are automated electronic reporting systems.

Must establish and test these systems NOW!
We plan a “hospitalization for ILI” pilot this winter.

Pandemic Flu Surveillance: During the Pandemic

PANDEMIC

Possible assessments include:

- increased viral isolates from sentinel sites
- ER & hosp diversions, capacity & admits (Reddinet)
- isolated death counts from sentinel sources
- coroner data; for additional data resources

Pandemic Flu Surveillance: During the Pandemic

PANDEMIC

At first...

- Lab confirmed cases reportable; outbreaks etc.
- Make pandemic flu reportable? By labs?
- After first few 100, downgrade to hospitalized cases of ILI illness & deaths (currently used for peds cases).
- Have HOU team work with hospitals. Expand!
- Summarize data biweekly... for a while, on web.
- Systems with electronic transfer of admit data (ILI) are needed.

Pandemic Flu Surveillance: During the Pandemic

PANDEMIC

What we wouldn't do...

- Make non- hospitalized cases reportable.
- Routine disease investigations, i.e. norovirus, others with low PH importance.
- Interfere with hospitals saving lives to report cases.
- Break under political or media pressure.

Pandemic Flu Surveillance: During the Pandemic

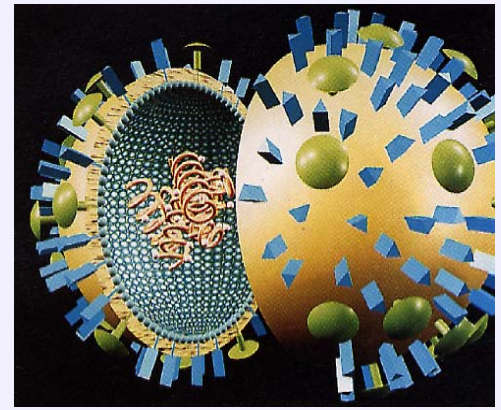
PANDEMIC

Pandemic Surveillance Summary Points:

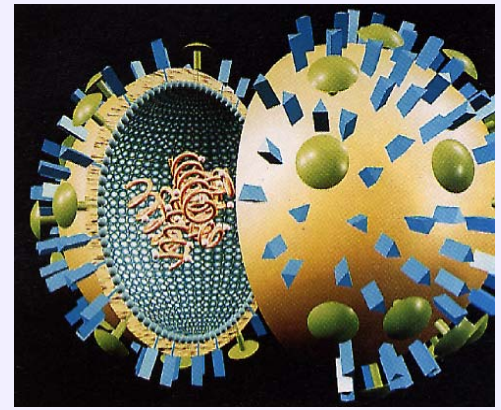
1. Because data will be limited and problematic, must educate stakeholders NOW so they can adjust their expectations.
2. Data should be automated/electronic to improve timeliness and offset staffing issues.

Should enact, test and improve systems NOW!

Conclusion



Conclusion



Pandemic influenza surveillance...

... is not an isolated responsibility.

exists amid the larger picture of seasonal & BT surveillance

... is not now — *nor will it ever be* — perfect.

will always be faulty & imperfect

must educate to adjust expectations now

... does — *and should* — constantly change.

epi factors constantly changing

thus, education and community partners must change

...implementation should occur NOW with
seasonal assessments.

QUESTIONS AND ANSWERS????

