Once Upon a Time…

(Pertussis in Alamance County)

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So much for Public Health Fairy Tales…

- December 14, 2011
  - Notification of positive pertussis PCR in an 8-year-old girl who lived in Alamance County (AC) and attended an AC public school.
  - Child had been ill since November 22
  - Attended school throughout her illness.
  - Low suspicion for pertussis at time of MD visit (so no school exclusion).

The Odyssey Begins

- December 15, 2011 (the next day)
- ACHD worked with the Alamance Schools and the NC Immunization Branch to create a strategy
- We contacted classroom and bus rider parents
  - Interviews revealed new suspect cases
  - These new suspects also had siblings or other close contacts with classic sxs/signs
- We prophylaxed close contacts (per CDC guidelines)

Prophylaxis Decisions

- If two or more probable or confirmed cases in a classroom (or bus), then prophylaxed the entire classroom or bus (per CDC guidelines).
- Decisions on whether to prophylax on a case-by-case basis is time intensive but reduces the volume of antibiotics dispensed. (i.e., reduces risk of antibiotic resistance & reduces risk of side effects in individuals).
- Less antibiotics is (almost) always best.

December 24, 2011

- Should we prophylax the entire school or not?
- About half of classrooms already prophylaxed based on above system.
- Case findings (siblings in classrooms/buses with classic sxs) were ongoing.
- Decided to prophylax remaining classrooms.

Pertussis Summary in 1st School

- More than 700 children/adults screened and/or prophylaxed
- 4 PCR positive cases (1 was also culture positive)
- 21 epi-linked cases
- 20 probable cases

- We thought we were done.
- We were wrong.

January 11, 2012

- Case identified at a 2nd public school . . . .
- Within the next 1 ½ months countless hours were spent working with 28 schools
  - Obtaining lists of bus riders
  - Obtaining lists of school children in classrooms
  - Calling parents
  - Assessing symptoms
  - Calling in prescriptions
  - Talking to media
  - Talking to commissioners, principals
  - Entering data, and more data, and more data

What were we accomplishing?

- We were pretty sure we were going crazy.
- We weren't sure if we were making any difference in terms of impacting pertussis
- And then we had a household contact who developed pertussis (PCR confirmed) after they completed prophylaxis.

- We asked for consultation from the CD branch. They checked in with the CDC.

February 2012

- CDC recommended that ACHD change their approach: prophylaxis only high-risk contacts
  - Prophylax contacts with weakened immune systems, chronic lung diseases, a contact who lives with a woman who is more than 20 weeks pregnant, or a contact who lives with an infant less than 12 months old.
- This dramatically reduced the amount of prophylaxis we had to prescribe and overall phone calls/work the nurses had to do

Why did the CDC recommend we make a change?

- CDC is in process of updating the guidelines to shift prevention and control strategies to place emphasis on protecting those at highest risk (including < 12 month olds)
- Evidence for old strategy of broad scale prophy limiting transmission is weak
- Concerns about increasing antibiotic prophylaxis are real

(Summary of School Cases)

- Schools:
  - 12 elementary schools
  - 6 middle schools
  - 2 high schools
  - 3 private schools
  - 3 child care centers
  - 2 colleges
- 110 (74.3%) of the total148 cases were affiliated with a school.

Key Points About Our Cases

- The median age of cases is 9 yo (consistent with what the CDC is seeing nationally)
- 7 cases less than 1 year of age
- 2 hospitalizations, no deaths.
- 100% of AC cases between age 3 and 12 appropriately immunized (i.e. this outbreak is not because of parent resistance to immunization)
- Approximately 4 new cases per month over past 4 months (now increasing again?)

Where We Struggled

Communications

- School System:
  - The Christmas Eve Recipe Box
  - (School System communication was great after a few weeks.)
- Media:
  - Have key media messages each operational period: have PIO set these and communicate clearly to anyone who will be talking to the media
  - Ensure media training (ideally ahead of time) for CD and immunization staff who will speak to media

Communications (cont.)

- ICS: Use it early!!
  - ACHD needed to acknowledge the need earlier on and set up the systems.
  - Once ICS was engaged in early January, things improved significantly.
- Physician/provider
  - Provider communication was challenging
  - Provider buy-in: challenging

Communications (cont.)

- CD/IB/LHD:
  - IB: Very helpful in gaining clarity on CDC guidelines and making decisions on testing for public health verification of disease.
  - Challenges emerge on both sides (LHD and IB) when most local pediatricians expect local public health to do all the testing and decision-making. The shift in thinking is big and the systems aren't in place at the state lab, so that was difficult.
  - Human resource support the few days before Christmas to help ACHD get through an awful lot of phone calls was limited.
  - Need to ensure smooth linkages between LHD, IB, and CD. Figuring out when there are sharp lines and when the lines are less distinct is helpful.
    - Review medical decision making strategies– turns out literature on pertussis sxs is old and CDC algorithms were old. Be ready to question when things are not making sense

Human Resources

- Pretty thin when the workload was thick
- LHD needs to be aware of needs and request assistance from regional/state as soon as need is recognized. (Many thanks to Nicole Lee and her staff!)

Etc.

- Shifting community away from the "Who dunnit?" question.
  - There were efforts on the part of media, commissioners, and other community members to find out who was the single member who brought pertussis to our community. (There was also some focus on which ethnic/racial community was primarily responsible.)

Strengths

- Staff demonstrated patience, flexibility, and willingness to lend a hand with work through a long season of communicable disease investigation and ramped-up vaccination effort
- We have a thoughtful, calm, patient, organized public health preparedness officer: a major strength
- Strengthened community relationships
  - public & private schools, child care centers
  - Hospitals, long term care facilities
  - local obstetricians & pediatricians, child care centers
  - EMS workers
  - Media

Strengths

- ACHD and IB maintained close coordination on individual cases and local clusters. IB staff were consistently available throughout many <u>months</u> of questions.
- Immunization Branch made Tdap available for free to all eligible patients, quite a morale boost!
- ACHD demonstrated proficiency operating 16 off-site local point-of-dispensing clinics in the community, with attention to protecting infants & other populations at special risk. More than 3,000 Tdaps given.
  - Partners for major off site clinic: IB nurses, Media, EMS, School System Nurses, Environmental Health Staff

Strengths (Cont.)

- Communication with Pharmacies. (especially important over the Christmas Holiday)

Quandaries

- Are our phone screenings sensitive enough to capture sick children? Close contacts?
- Does prophylaxis impact transmission in a community setting?
- Does this vaccine hold up to the public health standards of a "good" vaccine for all ages? Should we provide any additional counseling with this vaccine (so people don't feel duped)?

Quandaries

- Did we do more good than harm in treating all these kids?
  - What was the cost benefit in terms of antibiotic resistance?
  - How to maintain faith in vaccines when 7-9 year olds (who are UTD on vaccines) are getting pertussis?
  - Treatment and isolation of kids for pertussis means:
    - Kids out of school for 5 days and may mean:
      - Parents out of work or child in an unsafe childcare environment
      - Reduced income – and sometimes then reduced food in the home (parents told us these concerns)

Wish list

- Tighter linkages between public schools and public health?
- How about an Ad hoc ethics committee (to address multiple PH ethics dilemmas)?
- Can we develop Strike teams?
- What about more refined vaccine messaging?

The pertussis vaccine dilemma

- It's not a great vaccine but it's the best prevention tool we've got
- It's better to bathe the community in that then in boatloads of antibiotics
- Of the 50% of infants with pertussis with a know source, 80% are infected from a household contact.
- So let's systematize Tdaps. Especially for pregnant moms (and family members) antepartum or immediately pp (without an outbreak first)

Pertussis Outbreaks

Take the First Step for Your Baby...

Car seat...check! Stroller...check!

Baby clothes and blanket...check! Tdap...???

Yes, Tdap! All caregivers of infants should be immunized against pertussis to protect themselves and the baby. The Tdap vaccine includes a tetanus and diphtheria booster and also protects against pertussis.

Pertussis commonly known as whooping cough, can cause serious illness, hospitalization and death — especially in infants who are too young to be fully vaccinated. This vaccine became available in 2005; if you have not received Tdap it is especially important for parents, grandparents, and all caregivers of infants to be vaccinated to protect against pertussis as well as tetanus and diphtheria.

For a limited time only the Alamance County Health Department is offering FREE Tdap vaccine.

Monday - Friday

8am—11am

and

1pm—4pm

For additional information please call the Alamance County Health Department at (336) 227-0101.