



Vaccine Preventable Diseases

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IOM Prevention Task Force
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Vaccine Preventable Diseases

(* currently not reportable in NC)

Anthrax
Diphtheria
Hepatitis A
Hepatitis B, acute
Haemophilus influenzae type b
(Hib) – all invasive disease
*Human Papillomavirus (HPV)
*Influenza (Flu) – only peds
deaths
Japanese Encephalitis (JE)
Lyme Disease
Measles
Meningococcal
Monkeypox
Mumps

Pertussis (Whooping Cough)
*Pneumococcal – other than
meningitis
Poliomyelitis (Polio)
Rabies
*Rotavirus
Rubella (German Measles)
and rubella congenital
syndrome
*Shingles (Herpes Zoster)
Smallpox
Tetanus (Lockjaw)
Tuberculosis
Typhoid Fever, acute
*Varicella (Chickenpox)
Yellow Fever

A Process: Report, Investigate and Control

- Case definitions
- Disease report forms
- LHD investigation steps (contacts)
- Treatment and/or isolation



VPD Surveillance



- Since 2008 entered in NC Electronic Disease Surveillance System
- Statewide outbreak management and tracking capability
- Better tracking of lab results and stores lab data with case data from State Lab and Lab Corp
- Analysis of morbidity patterns across diseases possible



Morbidity with VPD's

Influenza

Rotavirus

Pertussis



Mortality Related to VPD's

Pneumococcal meningitis

Meningococcal

Influenza

Influenza



Influenza Like Illness (ILI) Surveillance

Sentinel Physicians Surveillance Network

- report ILI to CDC and collect representative samples to test for different strains of flu
- helps to control outbreaks, determine appropriate treatment, and determine effectiveness of vaccines

Also use NCDETECT for ER visits



Influenza

- Watch for peaks of occurrence and novel virus infection
- Low vaccination rates
- Resistance to anti-viral medications



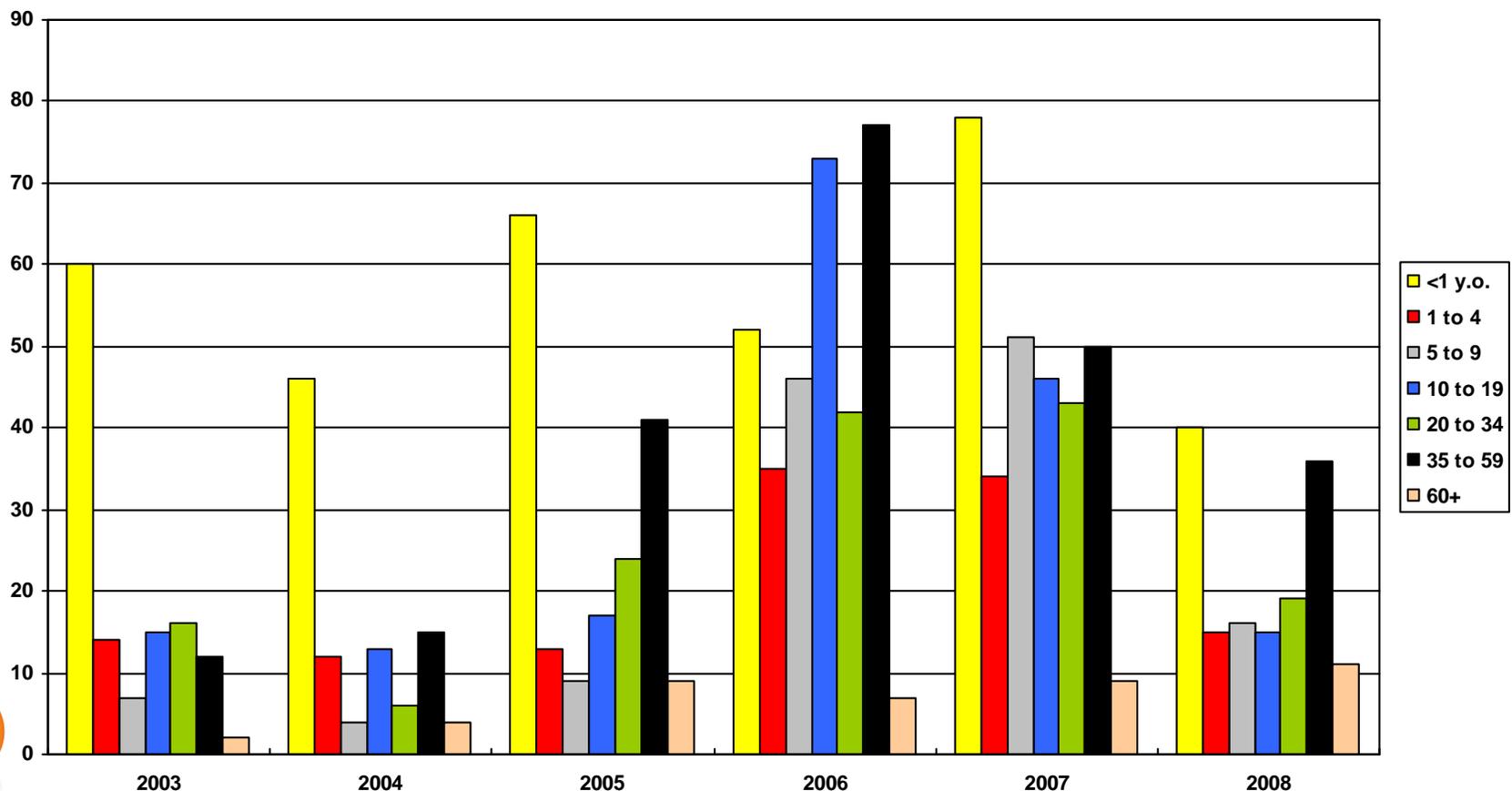
Pertussis



Pertussis Reported Cases, by Age

Cases with onset in 2003-2008

(Reported through 3/13/2009; N=1,200)



Case Definition

Clinical Case Definition

A cough illness lasting at least 2 weeks with one of the following: paroxysms of coughing, inspiratory “whoop,” or post-tussive vomiting, and without other apparent cause (as reported by a health professional).

Laboratory Criteria for Diagnosis

Isolation of *B. pertussis* from a clinical specimen,
or

Positive polymerase chain (PCR) reaction assay for *B. pertussis*.

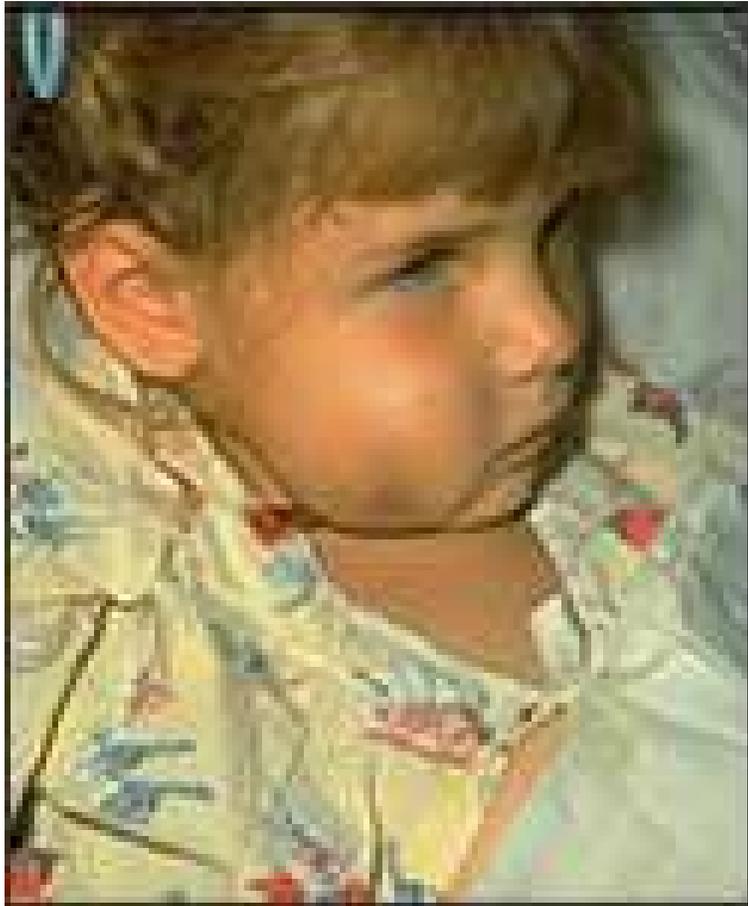
Initial steps for a case

- Test
- **Notify the LHD**
- Start antibiotic treatment
- Isolate at home for 5 days
- Identify and recommend chemoprophylaxis to close contacts and high-risk contacts

Obstacles/Misconceptions in Outbreaks in NC

- Providers not notifying LHD as soon as pertussis is suspected
- Providers ordering serologies instead of NP swab
- Providers that refuse to treat contacts because they are up to date on vaccine
- Providers that do not want to treat asymptomatic contacts
- Providers not acting until lab results are back
- Misunderstanding of isolation
- Parents believing that this childhood illness no longer occurs
- Belief that administration of a Tdap after exposure eliminates need for PEP treatment for close contacts.

Haemophilus influenzae type b



Haemophilus Influenza Type b

- 17 cases YON 2004-2008
- 4 deaths in > 65 yo
- Vaccine shortage 2007 (5 cases in 2008)
- Increased cases in other states
- Increased asymptomatic carriage



Measles, Mumps and Meningococcus Cases With Year of Onset 2004-2008

- 6 total cases of measles (4 in youngest)
- 98 cases of mumps
- 138 cases of meningococcal disease
- No measles or mumps deaths
- 13 meningococcal deaths

Vaccines

- Access – universal for required vaccines
- Supply, distribution, and administration
- Safety
- Public distrust
- Financing/funding



Exemptions

- National Immunization Survey quotes that 18% of parents of young children delay or refuse some vaccines
- NC has two categories allowable by law: religious and medical contraindications

Recommendation # 1

Increase influenza vaccination rates.

- expand coverage with state supplied flu vaccine for all children 6 months to 18 years of age

- develop and fund ongoing school influenza vaccination programs



Recommendation #2

Implement an outreach campaign to increase Tdap immunization rates.

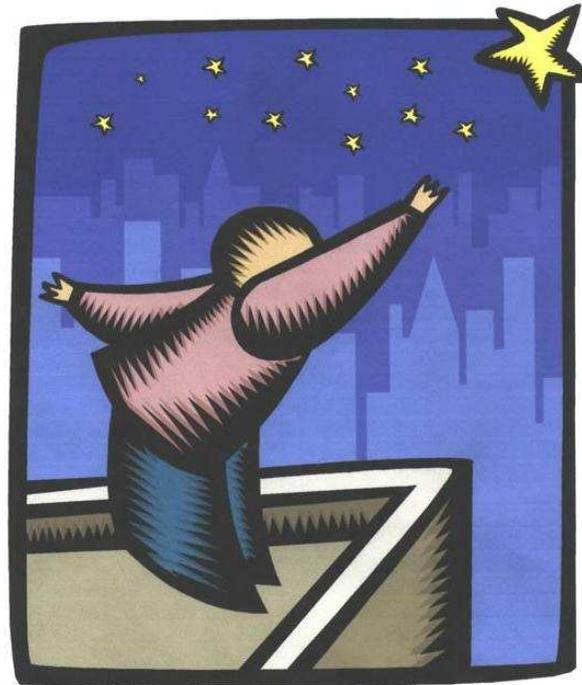
- target ER's
- target newborn contacts



Recommendation #3

Restore universal coverage for all CDC recommended vaccines for children.

\$35 million dollars





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