Disease Reporting and Surveillance: The Role of the School Nurse
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Jena Callen
Medical Investigator
Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment
“It’s tough to see your child in pain because of getting a shot, but it passes. To see him or her on a respirator, that’s really tough. But to have to plan a funeral for your child, that’s the worst thing in the world.”
– Rodney Throgmorton
Overview

- Background – Reportable Diseases
- Surveillance
- Statutes
- Regulations
- Outbreak control measures
  - Pertussis
  - Measles
  - Mumps
  - Rubella
  - Varicella
- Case Study
Reportable Diseases - History

• In 1878, Congress authorized the U.S. Marine Hospital Service to collect morbidity reports about cholera, smallpox, plague, and yellow fever cases from U.S. consuls overseas
Reportable Diseases – History

• Used for instituting quarantine measures to prevent the introduction and spread of these diseases into the United States.

• In 1879, a specific Congressional appropriation was made for the collection and publication of reports of these notifiable diseases.
Definition of a Reportable Disease

• Reportable diseases are diseases considered to be of great public health importance.

• Local, state, and national agencies require that such diseases be reported
Definition
Reportable Diseases

• This permits surveillance (i.e., the collection of statistics on the frequency with which the disease occurs), which in turn allows these agencies to identify trends in disease occurrence, as well as disease outbreaks.

• Outbreaks are reportable regardless of the organism

1-877-427-7317
EPI HOTLINE
Not Just Counting Cases

- Prevent Disease Spread
- Describe at Risk Groups
- Kansas Disease Surveillance
- Evaluate Vaccines
- Eradicate Disease
REPORTABLE DISEASES IN KANSAS for health care providers, hospitals, and laboratories

- Indicates that a telephone report is required by law within four hours of suspect or confirmed cases to KDHE toll-free at 877-427-7317

- Indicates that an isolates must be sent to:

  Division of Health and Environmental Laboratories
  Forbes Field, Building #740, Topeka, KS 66620-0001
  Phone: (785) 296-1653

Acquired Immune Deficiency Syndrome (AIDS)
Amebiasis
**Anthrax**
Arboviral disease (including West Nile virus, Western Equine encephalitis (WEE) and St. Louis encephalitis (SLE)) - indicate virus whenever possible
**Botulism**
Brucellosis
Campylobacter infections
Chancroid
*Chlamydia trachomatis* genital infection
**Cholera**
Cryptosporidiosis
Cyclospora infection
Diphtheria
Ehrlichiosis
*Escherichia coli* O157:H7 (and other shiga-toxin producing E. coli, also known as STEC) ⬤
Giardiasis
Gonorrhea
*Haemophilus influenzae*, invasive disease
Hantavirus Pulmonary Syndrome
Hemolytic uremic syndrome, postdiarheal
Hepatitis, viral (acute and chronic)
Hepatitis B during pregnancy
Human ImmunoDeficiency Virus (HIV) (includes Viral Load Tests)
Influenza deaths in children <18 years of age
Legionellosis
Leprosy (Hansen disease)
Listeriosis
Lyme disease
Malaria
Measles (rubella) ⬤
Meningitis, bacterial ⬤
Meningococcal meningitis ⬤
Mumps ⬤
Pertussis (whooping cough) ⬤
Plague (*Yersinia pestis*) ⬤
Poliomyelitis ⬤
Psittacosis
Q Fever (*Coxiella burnetii*) ⬤
Rabies, human and animal ⬤
Rocky Mountain Spotted Fever
Rubella, including congenital rubella syndrome ⬤
Salmonellosis, including typhoid fever ⬤
Severe Acute Respiratory Syndrome (SARS) ⬤
Shigellosis ⬤
Smallpox ⬤
Streptococcal invasive, drug-resistant disease from Group A *Streptococcus* or *Streptococcus pneumoniae* ⬤
Syphilis, including congenital syphilis
Tetanus
Toxic shock syndrome, streptococcal and staphylococcal
Transmissible Spongiform Encephalopathy (TSE) or prion disease (includes CJD)
Trichinosis
**Tuberculosis, active disease** ⬤
Tuberculosis, latent infection
Tularemia
Varicella (chickenpox)
**Viral hemorrhagic fever** ⬤
Yellow fever
Kansas Law (Statute)
Disease Reporting
(Infectious or Contagious Disease)
Kansas Reportable Diseases
( Infectious or Contagious)
It’s the Law

• Statute 65-118
  - Reporting to local authority
  - Persons who have to report
  - Immunity from liability
  - Confidentially of information
Kansas Reportable Diseases
(Infectious or Contagious)
It’s the Law

• Statute 65-128
  - Designate diseases that are infectious or contagious by adoption of rules and regulations
  - Adoption of rules and regulations for the isolation and quarantine of persons afflicted with or exposed to these diseases
Regulations
For Reporting Infectious and Contagious Disease
Reportable Diseases in Kansas
It’s the Law

- **K.A.R. 28-1-2**
  - Designates diseases as infectious or contagious and the time frame in which to report

- **K.A.R. 28-1-4**
  - Directs the hospital administrator to
    - report infectious or contagious disease
    - report results of positive lab tests for the specified infectious or contagious diseases
Reportable Diseases in Kansas
it’s the Law

• K.A.R. 28-1-18
  - Directs laboratories in Kansas to notify KDHE of positive laboratory results for reportable diseases within 48 hours
  - Diseases highlighted in “red” are to be reported within 4 hours
Kansas Law (Statute)
Isolation and Quarantine
(Infectious or Contagious Disease)
Kansas Law
Isolation and Quarantine
(Infectious or Contagious)

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Isolation and Quarantine
It’s the Law

- K.A.R. 28-1-5
  - Conditions of isolation and quarantine based on current medical knowledge of the infectious disease

- K.A.R. 28-1-6
  - Defines “susceptible person” and lists isolation/quarantine periods for infectious diseases
Isolation

- Separation of contagious persons from susceptible persons
- Trying to prevent infection & disease in susceptible persons
- Time varies by disease
Quarantine

- To remove exposed, **susceptible individuals** from the population
- To prevent spread of disease in the population
- To contain disease
“Susceptible Person”

- No history of disease documented by a licensed physician
  OR
- No laboratory evidence of immunity
  OR
- No documentation acceptable to the secretary that demonstrates current immunity against the disease; such as proof of vaccination.
Chain of Transmission

Breaking the Chain of Infection
Isolation and Quarantine
It’s the Law
Varicella (Chickenpox)

- **Transmission:** droplets, airborne, direct contact
  - spread by coughing & sneezing
  - by direct contact with the lesions
  - contagious 1 – 2 days before rash until lesions are crusted
  - short survival time in the environment
- **Highly infectious** – 90% of susceptible contacts infected
- **Signs/Symptoms:** pruritic skin rash
  - Usually on face, scalp, or trunk occurring in crops beginning with maculopapular lesions evolving into vesicles
Complications of Varicella

- Bacterial infection of skin lesions
- Pneumonia (viral or bacterial)
- CNS manifestations
- Congenital Varicella Syndrome
Congenital Varicella Syndrome

• Results from maternal infection during pregnancy
• Period of risk through first 20 weeks of pregnancy
• Characteristics:
  – Atrophy of extremities with skin scarring
  – Low birth weight
  – Neurological abnormalities
• Risk appears to be small (≤ 2%)
Effects of Congenital Varicella

The skin scars are depressed, pigmented and often have a zigzag configuration.

Neurological, ophthalmologic, skeletal, gastrointestinal abnormalities are also present.
# Varicella Reporting Form

**VARICELLA (Chickenpox) Reporting Form**  
Kansas Department of Health and Environment

<table>
<thead>
<tr>
<th>Patient Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Today’s Date:</strong></td>
</tr>
<tr>
<td><strong>Patient’s Name:</strong></td>
</tr>
<tr>
<td><strong>Day Phone:</strong></td>
</tr>
<tr>
<td><strong>Residential Address:</strong></td>
</tr>
<tr>
<td><strong>City:</strong></td>
</tr>
<tr>
<td><strong>Ethnicity: (circle one)</strong></td>
</tr>
<tr>
<td><strong>Race: (circle all that apply)</strong></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Sex:** M F  **Date of Birth:**   /   /   **Age if DOB unknown:** _______
Varicella Reporting Form

<table>
<thead>
<tr>
<th>Clinical Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Rash Onset:</td>
</tr>
<tr>
<td>1/1/1</td>
</tr>
<tr>
<td>Severity of Varicella:</td>
</tr>
<tr>
<td>Y</td>
</tr>
<tr>
<td>Hospitalized? (circle one)</td>
</tr>
<tr>
<td>Parent</td>
</tr>
<tr>
<td>Received previous varicella vaccine? (circle one)</td>
</tr>
<tr>
<td>If yes, dates:</td>
</tr>
<tr>
<td>1/1/1</td>
</tr>
</tbody>
</table>
### Varicella Reporting Form

<table>
<thead>
<tr>
<th>Laboratory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specimen Collection Date: _____ / _____ / _______</td>
</tr>
<tr>
<td>Type of Test Performed: _________________________</td>
</tr>
<tr>
<td>Name of Laboratory: ___________________________</td>
</tr>
</tbody>
</table>

| Name of person reporting: _______________________________ | Phone: ________________ |
| Agency/Organization Name: _______________________________ |
| Type: (circle one) School Pre-school/Childcare Physician Health Department Laboratory |
| Comments: ____________________________________________ |

**Mail or Fax reports to your local health department or to:**

BEDP – Disease Surveillance, 1000 SW Jackson, Suite 210, Topeka, KS 66612-1274

**FAX Toll-free to:** 1-877-427-7318

For additional Varicella Reporting forms and information: [http://www.kdhe.state.ks.us/chickenpox/index.html](http://www.kdhe.state.ks.us/chickenpox/index.html)

Kansas Varicella Reporting Form v1.0 revised 6/2004
Varicella Breakthrough Disease

- Vaccinated persons developing varicella more than 42 days after vaccination
- Milder than in unvaccinated persons
- Fewer than 50 skin lesions
- Shorter duration
- Rash atypical – maculopapular with few or no vesicles
Breakthrough Varicella Rash
Determine Case Severity
Measles (Rubeola)

- Transmission: droplets and airborne
  - Spread by coughing and sneezing
  - Contagious 4 days before until 4 days after rash
  - Survives on surfaces up to 2 hours
- 90% of susceptible contacts infected
- 20% have complications
- Signs/symptoms
  - Fever, cough, conjunctivitis, coryza
  - Maculopapular rash
  - Begins on face, spreads to body in 2-4 days
Complications of Measles

- Pneumonia
- Encephalitis
- Bronchitis
- Croup
- Ear infection
- Diarrhea
Rubella
German Measles
(3 Day Measles)

- **Transmission:** droplets and airborne
  - Spread by coughing & sneezing
- **Signs/symptoms:**
  - Maculopapular Rash
    - Appears on face, spreads to body
  - Fever
  - Arthralgia or arthritis,
  - Lymphadenopathy or conjunctivitis.
Complications

Congenital Rubella Syndrome

- Cataract
- Glaucoma
- Hearing Loss
- Heart Defects
- Neurological
Mumps
Mumps

- **Transmission:**
  - direct contact with respiratory secretions or saliva

- **Signs/Symptoms:** Non-specific
  - Fever
  - Headache
  - Muscle aches
  - Tiredness
  - Loss of appetite
  - Swelling of salivary glands
Complications of Mumps

- Inflammation of brain, tissue covering brain & spinal cord
- Inflammation of testicles
- Inflammation of ovaries and/or breasts
- Spontaneous abortion
- Deafness
Pertussis
(Whooping Cough)

- Transmission:
  - direct contact with discharges from respiratory mucous membranes of infected persons

- Signs/Symptoms:
  - Paroxysmal spasms of severe coughing
  - Whooping
  - Post-tussive vomiting
Complications Of Pertussis

- Pneumonia
- Encephalopathy
- Death
- Pulmonary complications
- Pressure-related complications
Video of Pertussis
MRSA
(Methicillin Resistant Staph Aureus)

• Individual cases of MRSA not reportable
• Outbreaks are reportable
  – 3 or more cases epidemiologically linked
  – http://www.cdc.gov/features/mrsainschools
  – http://epa.gov/oppad001/chemregindex.htm
Lice

• KDHE’s Bureau of Epidemiology and Public Health Informatics (BEPHI) has made changes to the Kansas Administrative Regulations (K.A.R. 28-1-6) relating to lice treatment. The regulation states “Each student infested with lice shall be excluded from school, child care facility or family day care home until treatment with an antiparasitic drug is initiated.”

• Kansas regulations no longer require children to be nit free before returning to school.
Lice Continued

- Etiology, diagnosis and treatment recommendations and K.A.R. can be found on the following web sites:
  - Centers for Disease Control and Prevention: [Head Lice Infestation](#)
  - American Academy of Pediatrics: [Head Lice Clinical Report](#)
  - K.A.R. 28-1-6 Requirements for Isolation and Quarantine of Specific Infectious and Contagious Diseases (.pdf)
REMEMBER….

• CONTACT YOUR LOCAL HEALTH DEPARTMENT
• DO NOT TRY TO DO THIS ON YOUR OWN

AND

REMEMBER “WHY” WE DO WHAT WE DO…..
Resources

• Centers of Disease Control  
  www.cdc.gov/nip

• Kansas Immunization Program  
  www.kdhe.state.ks.us/immunize

• Immunization Action Coalition  
  www.immunize.org

• Epidemiology and Prevention of Vaccine-Preventable Diseases, 11th Edition, May 2009

• Red Book Online  www.aapredbook.org
Resources

• Kansas Classroom Handbook of Communicable Diseases, Sept. 2004
• Bureau of Surveillance & Epidemiology
  www.kdheks.gov/epi
  OR
• Bureau of Disease Control & Prevention
  www.kdheks.gov/immunize
Resources

• 2007 Reportable Disease List
  www.kdheks.gov/epi/kids_reporting_tools

• Kansas Notifiable Disease Form
  www.kdheks.gov/epi/download/KANSAS_NOTIFIABLE_DISEASE_FORM.pdf

• Kansas Administrative Regulation 28-1-2, Designation of infectious or contagious
Resources

• Kansas Public Health Statute 62-118 Reporting to local health authority as to infectious or contagious diseases
  www.kslegislature.org/legsrv-statutes/getStatuteInfo.do
• Morbidity and Mortality Weekly Report, HIPAA Privacy Rule and Public Health:
  www.cdc.gov/mmwr/pdf/other/m2e411.pdf
• Forum Guide to The Privacy of Student Information
LET’S REVIEW....
Contact Information

Jena Callen
Medical Investigator
785-296-5588
jcallen@kdheks.gov
OR
Epi Hotline
877-427-7317
EPIhotline@kdheks.gov
QUESTIONS???
http://www.kdheks.gov/