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Kansas Department of Health and Environment

# EPI UPDATES

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**Inside This Issue:**



**Kansas Department of Health & Environment**

Bureau of Epidemiology & Public Health Informatics

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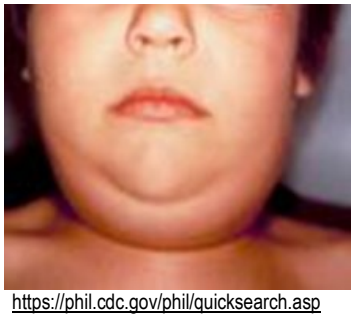
## Mumps Testing and Investigation Guidance

by Chelsea Raybern, MPH

Mumps cases have been reported in multiple counties in Kansas. The Kansas Department of Health Environment (KDHE) and affected local health departments are working closely together to identify cases and implement appropriate isolation and exclusion policies to prevent further spread of mumps. Many cases are associated with participating in sports, including wrestling and basketball, in Kansas. There are also associations with the University of Kansas, Kansas State University, and travel to other states that are currently experiencing large mumps outbreaks.



https://phil.cdc.gov/phil/quicksearch.asp

Mumps is an acute viral infection. Transmission occurs from person to person through coughing, sneezing, or talking; by sharing items such as cups or utensils with others; or by touching objects or surfaces freshly soiled by infected respiratory secretions. Symptoms typically begin with body aches, loss of appetite, fatigue, headache, and low grade fever, and may progress to parotitis (swollen parotid salivary gland/s). Parotitis can occur on one or both sides, or not be present at all. Earache on the side of parotitis and discomfort with eating acidic foods are common. Most persons with mumps will recover completely though serious complications can occur. Complications include orchitis (testicular inflammation in males), oorphritis (ovarian inflammation in females), aseptic meningitis (inflammation of the lining of the brain), and rarely encephalitis (inflammation of the brain), pancreatitis, deafness, and death.

Symptoms usually appear 16-18 days after being infected with the mumps virus, but can range from 12-25 days after being infected. Persons with mumps are considered contagious two days before through five days after parotitis onset. If parotitis is not present, persons are considered contagious for eight days following onset of first symptoms.

**Laboratory Testing for Mumps**

There are two types of laboratory tests available for mumps: 1) a polymerase chain reaction (PCR) test which tests for the presence of mumps viral RNA; and 2) serology (IgM and IgG) tests.

- PCR test requires a **buccal swab** that can be tested at the Kansas Health and Environmental Laboratories (KHEL) with approval from KDHE (877-427-7317).
  - Collect with a commercially supplied, sterile Dacron or polyester-tipped swab with a plastic or aluminum shaft that is placed in **Viral Transport Media (VTM)**.
  - If possible, collect within three days of parotitis onset.
  - Do not collect more than five days past parotitis onset.
  - Specimens are to be **refrigerated** and **shipped** in insulated boxes with **cold packs**.
  - Properly packaged and approved specimens should be mailed to:
    Kansas Health and Environmental Laboratories
    Attention: Virology/Serology Unit
    6810 SE Dwight Street
    Topeka, KS 66620
- **Serology specimens** should be sent to a commercial reference laboratory for IgM and IgG titers. KDHE recommends serology testing in persons that are **not vaccinated**. Serology

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results in vaccinated persons can be difficult to interpret.

- Collect 3-5 mL of blood in serum clot separator tubes, collected at two different times during illness (acute and convalescent).
  - Collect first specimen within three to seven days after parotitis onset.
    - If first specimen is collected less than or equal to three days after parotitis onset in an unvaccinated person and is negative, collect a second IgM specimen five to seven days after parotitis onset.

The epidemiologist on call at KDHE will notify local health departments of test results for mumps specimens tested at KHEL as soon as they are available.

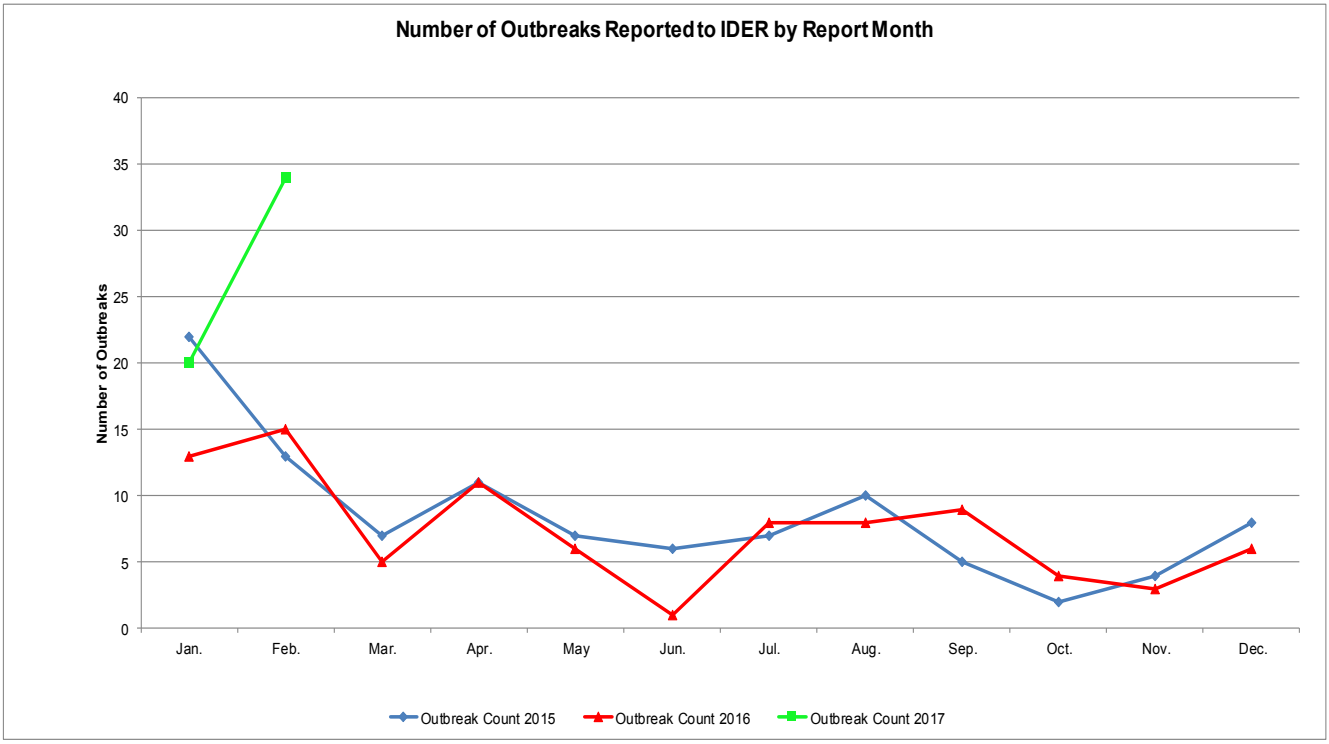
- Positive test results will be reported to the local health department on the same day KDHE receives them.
- Negative test results will be reported to the local health department no later than the next business day.
- Local health departments should report test results to the submitting healthcare provider.
  - KHEL will send a formal report of results to the facility that submitted the specimen for testing, specifically to the report recipient KHEL has on file for each facility.
  - Method of receipt for those results are determined by how the facility is set up to receive results from KHEL (via fax or mail). Fax delivery is the quicker method.

**Investigation of Mumps Cases**

Upon notification of a suspect mumps case, KDHE will enter the case into EpiTrax and notify the appropriate local health department to begin the investigation. KDHE will discuss level of suspicion for mumps with the local health department staff, which will determine the depth of initial investigation:

- If suspected mumps case has **direct epi-link** (documented close contact within appropriate incubation period) to a known probable or confirmed mumps case,
  - Ensure the case remains isolated for five days following onset of parotitis.*
  - Complete a **full case investigation**.
    - Complete the mumps exposure timeline, which can now be found under the "Exposure" tab in EpiTrax or if you prefer, complete the paper rapid assessment form located at http://www.kdheks.gov/epi/Worksheets/Mumps_Worksheet.pdf and then enter information under the "Exposure" tab in EpiTrax.
      - Document where case was 12-25 days prior to onset of parotitis* to determine place of exposure.
      - Document where case was two days prior through five days after parotitis onset* to determine where case could transmit mumps to others.
  - Complete a **full contact investigation** following up with close contacts the case was in contact with two days prior through five days after parotitis onset.*
    - Close contacts include those who had direct contact with respiratory secretions of a mumps case or those who shared a confined space (within three feet for an hour or more) with a mumps case.
    - Any susceptible close contacts in a school or daycare not vaccinated against mumps within 24 hours upon notification of the mumps case to KDHE shall be excluded for 26 days after onset of parotitis in the reported mumps case. (Note: Although this is currently a requirement per K.A.R. 28-1-6, post-exposure administration of mumps vaccine has not been shown to be effective in preventing infection. However, it may offer protection against future exposures.)
- If suspected mumps case has **no direct epi-link** (documented close contact within appropriate incubation period) to a known probable or confirmed mumps case,
  - Ensure the case remains isolated for five days following onset of parotitis*
  - Complete a **full case investigation**.
    - Complete the mumps exposure timeline, which can now be found under the "Exposure" tab in EpiTrax or if you prefer, complete the paper rapid assessment form located at http://www.kdheks.gov/epi/Worksheets/Mumps_Worksheet.pdf and then enter information under the "Exposure" tab in Epitrax.
      - Document where case was 12-25 days prior to onset of parotitis* to determine place of exposure.
      - Document where case was two days prior through five days after parotitis onset* to determine where case could transmit mumps to others.
  - Further investigation may be delayed until laboratory results are available.

*If parotitis is not present, persons are considered contagious for eight days following onset of first symptoms.




| Date Reported | Facility Type | Transmission | Disease | County |
|---|---|---|---|---|
| 2/1/2017 | School or college | Person-to-Person | Influenza | Kearny |
| 2/1/2017 | School or college | Person-to-Person | Influenza | Leavenworth |
| 2/2/2017 | School or college | Person-to-Person | Influenza | Stanton |
| 2/6/2017 | Adult care facility | Person-to-Person | Influenza | Cowley |
| 2/6/2017 | Travel/Party | Person-to-Person | Mumps | Crawford |
| 2/6/2017 | Adult care facility | Person-to-Person | Influenza | Marion |
| 2/8/2017 | School or college | Person-to-Person | Influenza | Logan |
| 2/8/2017 | Unknown | Indeterminate / Other / Unknown | Salmonellosis | Reno |
| 2/8/2017 | Adult care facility | Person-to-Person | Influenza | Sedgwick |
| 2/8/2017 | School or college | Person-to-Person | Influenza | Shawnee |
| 2/9/2017 | Restaurant - 'Fast food' | Food | Unknown Etiology | Rooks |
| 2/9/2017 | Adult care facility | Person-to-Person | Influenza | Saline |
| 2/9/2017 | Adult care facility | Person-to-Person | Influenza | Shawnee |
| 2/9/2017 | Adult care facility | Person-to-Person | Influenza | Shawnee |
| 2/10/2017 | School or college | Person-to-Person | Influenza | Reno |
| 2/13/2017 | Adult care facility | Person-to-Person | Influenza | Johnson |
| 2/14/2017 | Adult care facility | Person-to-Person | Influenza | Wyandotte |
| 2/15/2017 | Adult care facility | Person-to-Person | Influenza | Johnson |
| 2/15/2017 | Adult care facility | Person-to-Person | Influenza | Lyon |
| 2/15/2017 | Adult care facility | Person-to-Person | Norovirus | Lyon |
| 2/16/2017 | Child care center | Person-to-Person | Rotavirus | Sedgwick |
| 2/17/2017 | Adult care facility | Person-to-Person | Influenza | Mitchell |
| 2/17/2017 | Adult care facility | Person-to-Person | Influenza | Marion |
| 2/20/2017 | Adult care facility | Person-to-Person | Influenza | Johnson |
| 2/20/2017 | Adult care facility | Person-to-Person | Influenza | Johnson |
| 2/20/2017 | School or college | Person-to-Person | Mumps | Riley |
| 2/20/2017 | Prison or jail | Person-to-Person | Influenza | Reno |
| 2/20/2017 | School or college | Person-to-Person | Mumps | Thomas |
| 2/21/2017 | Adult care facility | Person-to-Person | Influenza | Barton |
| 2/21/2017 | Hospital | Person-to-Person | Influenza | Ellsworth |
| 2/22/2017 | Adult care facility | Person-to-Person | Influenza | Wyandotte |
| 2/23/2017 | Adult care facility | Person-to-Person | Influenza | Johnson |
| 2/24/2017 | Adult care facility | Person-to-Person | Influenza | Sedgwick |
| 2/28/2017 | Adult care facility | Person-to-Person | Influenza | Cowley |

# Vaccine-Preventable Disease Surveillance Indicators

by Mychal Davis, MPH

The completeness and quality of specific surveillance indicators for vaccine-preventable diseases (VPDs) reported to the Kansas Department of Health and Environment (KDHE) from February 1 to February 28, 2017 can be found in the table below. The bolded percentages represent the indicators that have less than 90% completion. The case counts presented in this report are preliminary numbers and are subject to change.

**Keep up the good work!** The indicators for date of birth, gender, and ethnicity were above the 90% benchmark of all VPDs reported from February 1 to February 28, 2017.

**Still room for improvement...**Varicella cases had six indicators fall below the 90% benchmark. *Haemophilus influenzae* cases had five indicators, pertussis cases had four indicators, and mumps and *Streptococcus pneumoniae* cases had two indicators fall below the benchmark. Indicators that did not meet the 90% completion benchmark are bolded in the chart below.

Please continue to focus on completing these fields in EpiTrax for all VPDs as the goal is to reach 90% or higher completion on all indicators. For questions regarding this data, please contact Mychal Davis at (785) 368-8208 or Mychal.Davis@ks.gov.

## VPD Indicators Reported from February 1 to February 28, 2017 in Kansas

| Indicators | *Haemophilus influenzae,* invasive | Mumps | Pertussis | *Streptococcus pneumoniae,* invasive | Varicella |
|---|---|---|---|---|---|
| **Number of reported cases** | 4 | 37 | 24 | 46 | 18 |
| **% of cases with date of birth** | 100% | 100% | 100% | 100% | 100% |
| **% of cases with gender** | 100% | 100% | 100% | 100% | 100% |
| **% of cases with race** | **75%** | 92% | 100% | 100% | 100% |
| **% of cases with ethnicity** | 100% | 95% | 92% | 98% | 94% |
| **% of cases with onset date‡** | **50%** | 100% | **71%** | **87%** | **83%** |
| **% of cases with hospitalized noted** | **0%** | 100% | 92% | 91% | **89%** |
| **% of cases with died noted** | **75%** | 100% | 96% | 91% | **83%** |
| **% of cases with vaccination status*** | **75%** | 100% | **83%** | **80%** | **89%** |
| **% of cases with transmission setting¶** | N/A** | **87%** | **67%** | N/A** | **39%** |
| **% of cases with completed symptom profiles** | N/A** | **54%** | **54%** | N/A** | **17%** |

*Excludes cases with a State Case Status of "Out of State" or "Not a Case."
‡Data is pulled from onset date field within the clinical tab, not the investigation tab.
*Unknown is considered a valid response if patient is older than 18 years of age.
**Indicator field is not included in supplemental disease form; *S. pneumoniae* and *H. influenzae* do not have clinical case definitions.
§Indicator considered complete if either polysaccharide or conjugate pneumococcal vaccine history is documented.
¶Unknown is considered a valid response for this indicator.

## Monthly Disease Counts

The Monthly Disease Counts Report will no longer be part of *Epi Updates*. Please refer to the Cumulative Case Reports of Diseases (http://www.kdheks.gov/epi/case_reports_by_county.htm) for current case count information.

en.wikipedia.org

# EpiTrax Data Quality Indicators

by Sheri Tubach, MPH, MS

BEPHI has implemented a set of monthly quality indicators and performance measures to encourage data quality improvement in EpiTrax and timeliness of investigations. The first column is the EpiTrax field the second column represents the number of cases with data in the field, and the third column, percent completed, represents the frequency of completion of the data field in EpiTrax. In order to align with preparedness targets for initiation of disease control measures and to set goals for case investigation completeness, targets for these measures are shown in the table below. We hope that these targets will help local health departments prioritize case investigations. County level indicators are now emailed to each local health department monthly. Most surveillance indicators have increased since last month except for one (noted in red). The goal is to have a majority of indicators and performance measures at or above 90%. While many of the indicators have improved since last month, there are still indicators that are below 90%. For questions, contact Sheri Tubach at Sheri.Tubach@ks.gov.

| **February 2017** | State's Total Number of Cases* = 301 | |
|---|---|---|
| **EpiTrax Indicators** | | |
| **EpiTrax Field** | **Number of Cases with Field Completed** | **Percent Completed** |
| Address City | 296 | 98 |
| Address County | 301 | 100 |
| Address Zip | 294 | 98 |
| Date of Birth | 300 | 100 |
| Died | 282 | 94 |
| Ethnicity† | 261 | 87 |
| Hospitalized | 283 | 94 |
| Occupation | 201 | 67 |
| Onset Date | 262 | 87 |
| Pregnancy†† | 119 | 84 |
| Race † | 274 | 91 |
| Sex † | 298 | 99 |
| Date LHD investigation Started | 265 | 88 |
| Date LHD investigation Completed | 248 | 82 |
| Persons Interviewed | 214 | 75 |
| Persons Lost to Follow-Up | 14 | 5 |
| Persons Refused Interview | 1 | 0 |
| Persons Not Interviewed | 58 | 20 |
| **Performance Measures** | | |
| | **Number of Cases** | **Percent of Cases** |
| Diseases were reported on time according to disease reporting regulations*** | 259 | 86 |
| Disease control measures began within the target for each disease^ | 216 | 72 |
| Case investigations were completed within the target for each disease^ | 156 | 52 |

* Calculations do not include Hepatitis B - chronic, Hepatitis C – chronic, or Rabies.
** Out-of-state, discarded, deleted, or those deemed to be not a case are not included in this calculation.
† Unknown considered incomplete.
†† Pregnancy completeness calculated on females only.
^ See the table on the following page for disease control and case investigation targets.

*continued on page 6*

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## Disease Targets

| Diseases | Disease Control (Days)* | Completed Case Investigation (Days)** |
|---|---|---|
| Anthrax; Botulism; Brucellosis; Cholera; Diphtheria; Hantavirus Pulmonary Syndrome; Hepatitis A; Influenza deaths in children <18 years of age; Measles; (Meningitis, bacterial); Meningococcemia; Mumps; Plague; Poliomyelitis; Q Fever; Rabies, human; Rubella; Severe acute respiratory syndrome (SARS); Smallpox; Tetanus; Tularemia; Viral hemorrhagic fever; Yellow fever | 1 | 3 |
| Varicella | 1 | 5 |
| Pertussis | 1 | 14 |
| Campylobacter infections; Cryptosporidiosis; Cyclospora infection; Giardiasis; Hemolytic uremic syndrome, post diarrheal; Hepatitis B, acute; Legionellosis; Listeriosis; Salmonellosis, including typhoid fever; Shigellosis; Shiga-toxin *Escherichia coli* (STEC); Trichinosis; Vibriosis (not cholera) | 3 | 5 |
| Arboviral disease (including West Nile virus, Chikungunya, and Dengue); *Haemophilus influenzae*, invasive disease; *Streptococcus pneumoniae*, invasive | 3 | 7 |
| Ehrlichiosis / Anaplasmosis; Lyme disease; Malaria; Spotted Fever Rickettsiosis | 3 | 14 |
| Hepatitis B, chronic; Hepatitis C, chronic; Hepatitis C, acute; Leprosy (Hansen disease); Psittacosis; Streptococcal invasive, drug-resistant disease from Group A Streptococcus; Toxic shock syndrome, streptococcal and staphylococcal; Transmissible spongioform encephalopathy (TSE) or prion disease | N/A | N/A |

***Disease Control:** Calculated by using EpiTrax Fields: **(Date LHD Investigation Started) OR (Call Attempt 1 date for Salmonellosis and STEC) - (Date Reported to Public Health)**

****Completed Case Investigation:** Calculated by using EpiTrax fields: **(Date LHD Investigation Completed) - (Date Reported to Public Heath)**

***** **Disease Reporting:** Calculated by using EpiTrax fields: **(Lab Test Date, Date Diagnosed - Presumptive, or Date Diagnosed whichever date is earlier) - (Date Reported to Public Health)** ≤ KDHE required disease reporting timeframe

## New DIG for Elevated Blood Lead Investigations

by Farah S. Ahmed, MPH, PhD

The Kansas Department of Health and Environment (KDHE) will release a new Disease Investigation Guideline for Elevated Blood Lead investigations in March. In 2012, the Centers for Disease Control and Prevention (CDC) changed its recommendation that children were identified as having a blood lead "level of concern" if the test result was 10 or more micrograms per deciliter of lead in blood. CDC is no longer using the term "level of concern" and is instead using the reference value of 5 µg/dL to identify children who have been exposed to lead and who require case management. In 2015, the National Institute for Occupational Safety and Health (NIOSH) designated 5 µg/dL in a venous blood sample as the reference value for blood lead in adults. KDHE has updated the Elevated Blood Lead Disease Investigation Guidelines to adopt these new federal guidelines. The new DIG includes scripts to conduct telephone and in-person interviews, directions on using new forms in EpiTrax, and new educational materials. KDHE is currently developing a training module to accompany the new DIG. If you have any questions about the new DIG or training, please contact Laurie Render at 785-296-4499 or laurie.render@ks.gov.