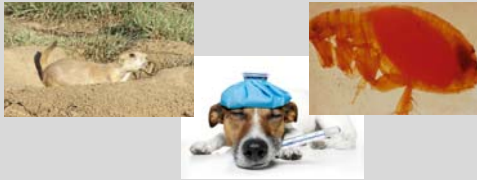


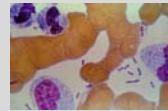
Outbreak of Pneumonic Plague, Colorado, 2014



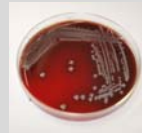
Jennifer House, DVM, MPH, DACVPM
State Public Health Veterinarian
Colorado Department of Public Health and Environment

What is Plague?

- *Yersinia pestis*
- Nonmotile, gram-negative bacillus
- Colonies are small
- Often misdiagnosed by automated systems



CDC photo



CDC photo



Routes of Transmission

- Flea bite
 - Majority of cases exposed this route
 - Infected fleas - dead rodents
- Direct contact with blood/tissue
 - Ground Squirrels
 - Domestic Cats
- Droplet inhalation
 - Wildlife
 - Human-to-Human



Forms of Disease

1. Bubonic
 - Fever, headache, chills
 - Swollen, tender, and painful lymph nodes (bubo)
2. Septicemic
 - Fever, chills, weakness, abd pain, shock
 - Tissues may turn black and die
3. Pneumonic
 - Fever, headache, weakness,
 - Rapidly developing pneumonia,
 - SOB, chest pain, cough, and bloody mucous

Other less typical forms are possible



Summer 2014

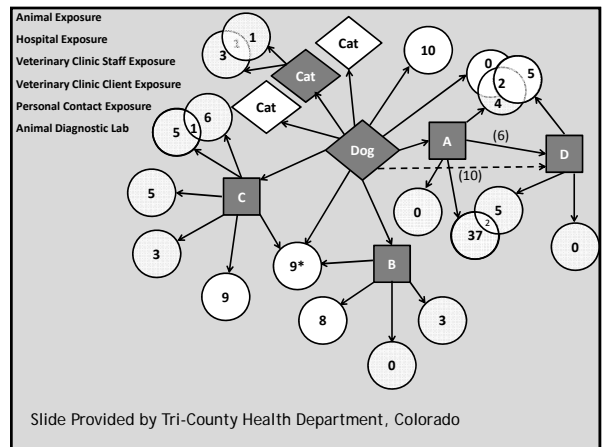
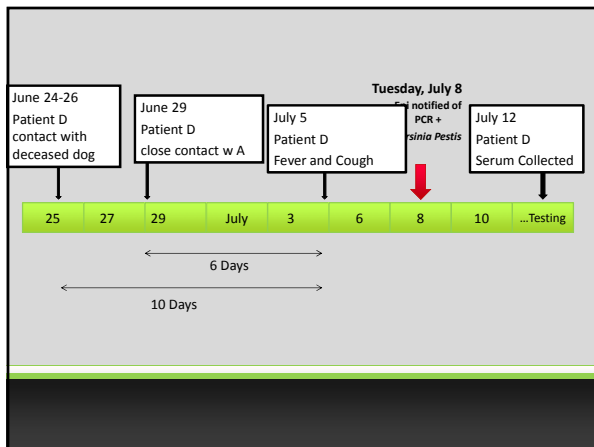
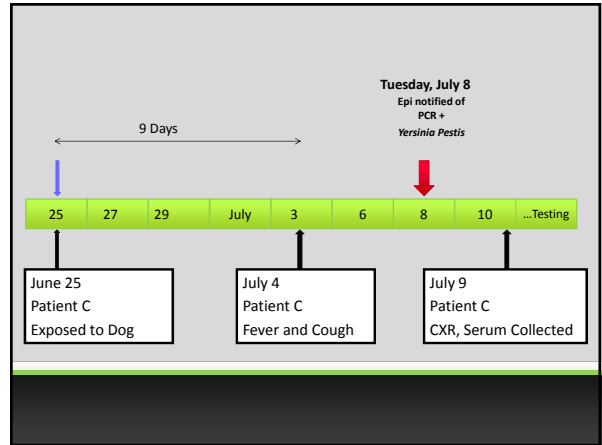
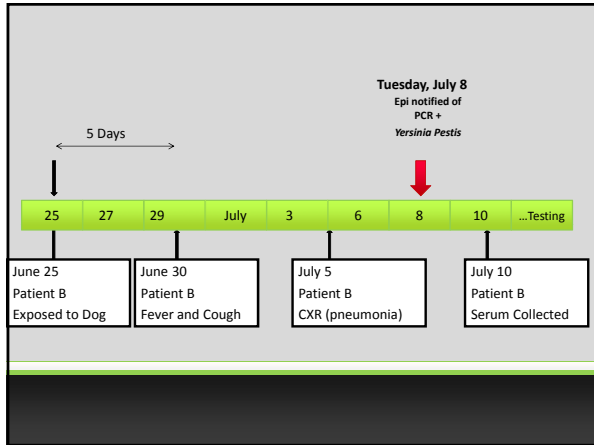
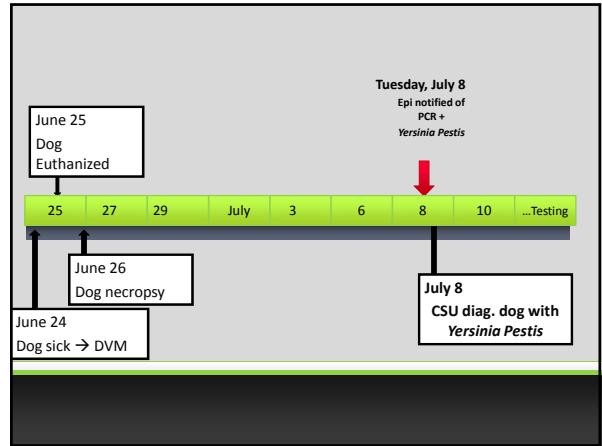
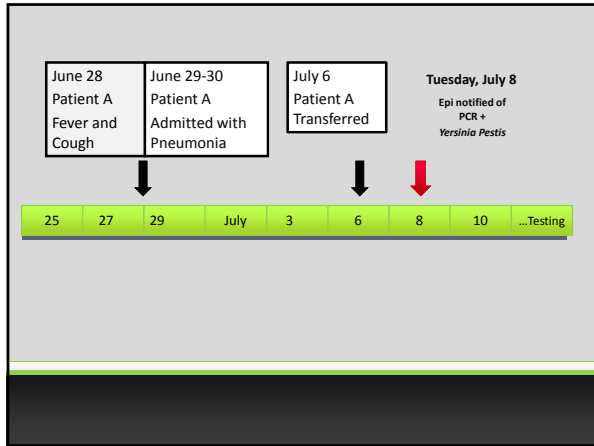
Tuesday, July 8
Epi notified of PCR +
Yersinia Pestis



Investigation Objectives

- Identify sources of exposure
- Identify persons at risk of infection
- Identify additional cases
- Prevention and control measures
- Environmental assessment





Delayed Diagnosis

- Mis-diagnosis
 - Automated lab systems
- Plague was not suspected initially
 - Uncommon route of exposure (family dog)
 - Unusual history that lead to confirmation of misdiagnosis



Additional 2014 Plague Cases

5. August 1st—Bubonic
Automated system ID *Pseudomonas luteola*
6. August 26th—Septicemic
Automated system ID *Yersinia pestis*
7. October 28th—Bubonic →Septicemic
Automated system was not used
8. December 26th—Bubonic
Automated system ID *Yersinia pseudotuberculosis*



Thank You!

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 - Gary Mason
 - Infection Prevention and Control Team



Plague Resources

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Human Plague, CO, 1975-2014

