

A cluster of cryptosporidiosis cases due to unpasteurized milk consumption – Maine, 2014

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Maine Center for Disease Control and Prevention

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Maine Center for Disease
Control and Prevention

An Office of the
Department of Health and Human Services

Paul R. LePage, Governor

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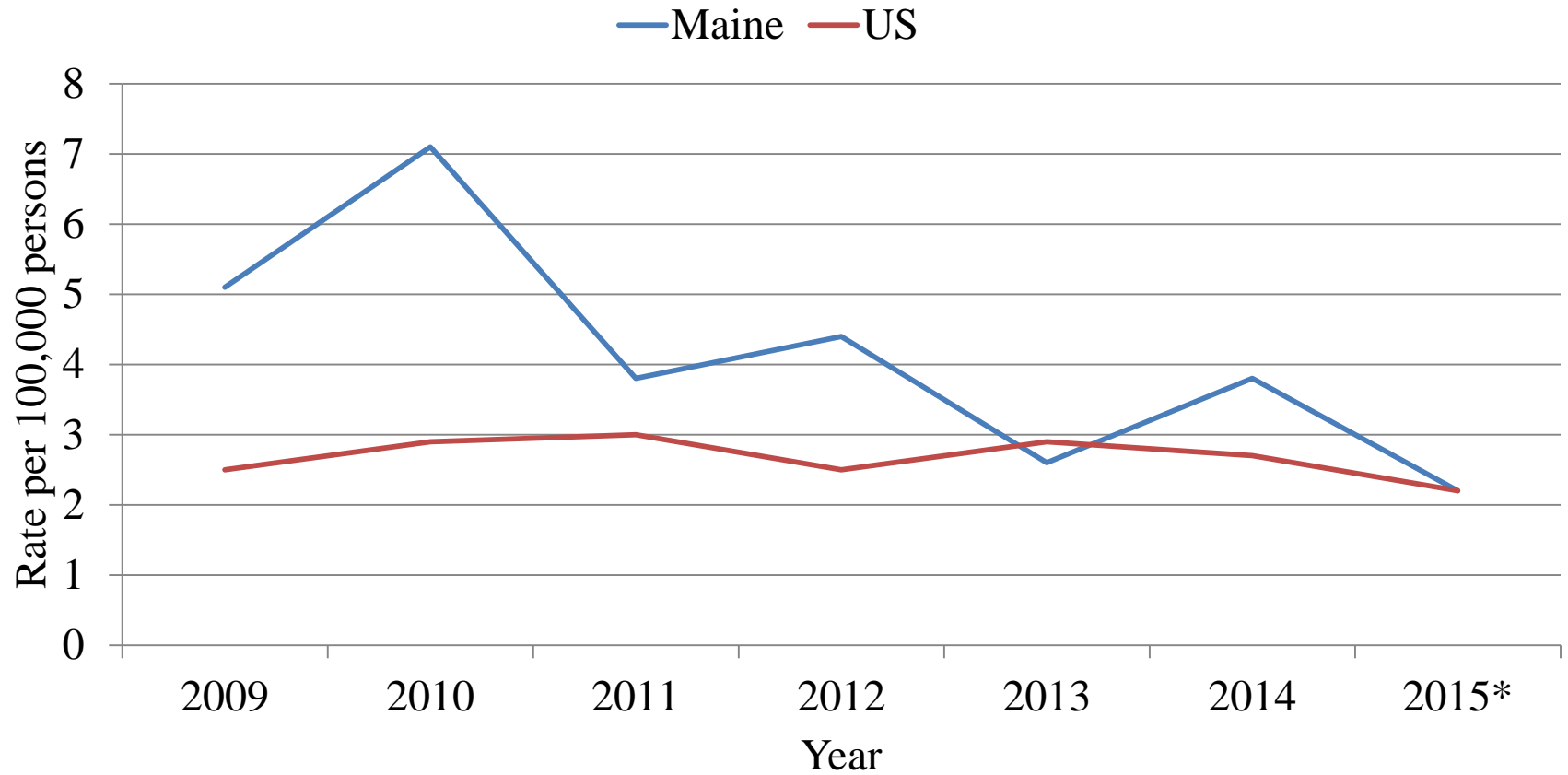
maine.gov/idepi
800-821-5821



Cryptosporidiosis

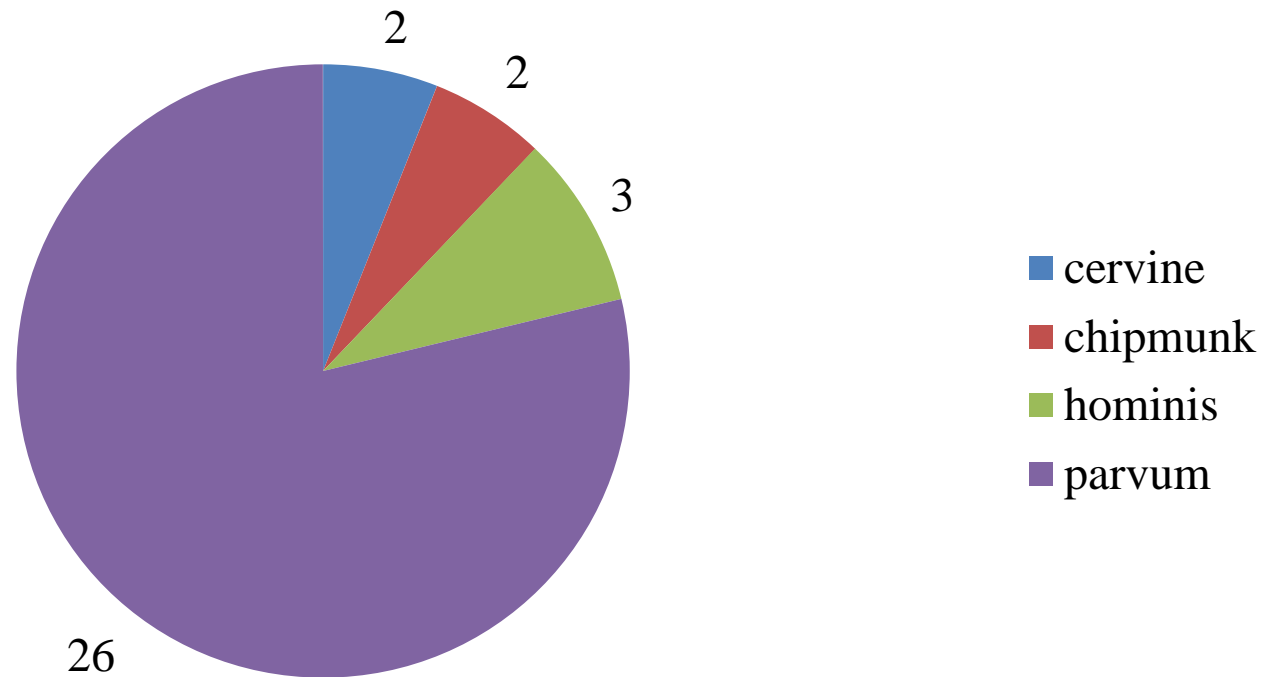
- Parasite
- *C. hominis* – human-to-human, often water exposure
- *C. parvum* – animal contact or animal-contaminated food and water
- Few studies showing association with raw milk

Cryptosporidiosis in Maine and US, 2009-2015*



*preliminary as of 11/9/15 for Maine, 10/31/15 for US

Cryptosporidium species detected in Maine, 2009-2015*



*preliminary as of 11/9/15



Unpasteurized milk in Maine

- Legal to sell in state of Maine
 - In any retail setting
 - Labeled as “not pasteurized”
 - Can not be served in restaurants, institutions, anywhere licensed by DHHS
- Must be licensed and tested
- 4 samples every 6 months (at milk lab)



Friday, January 31st, 2014

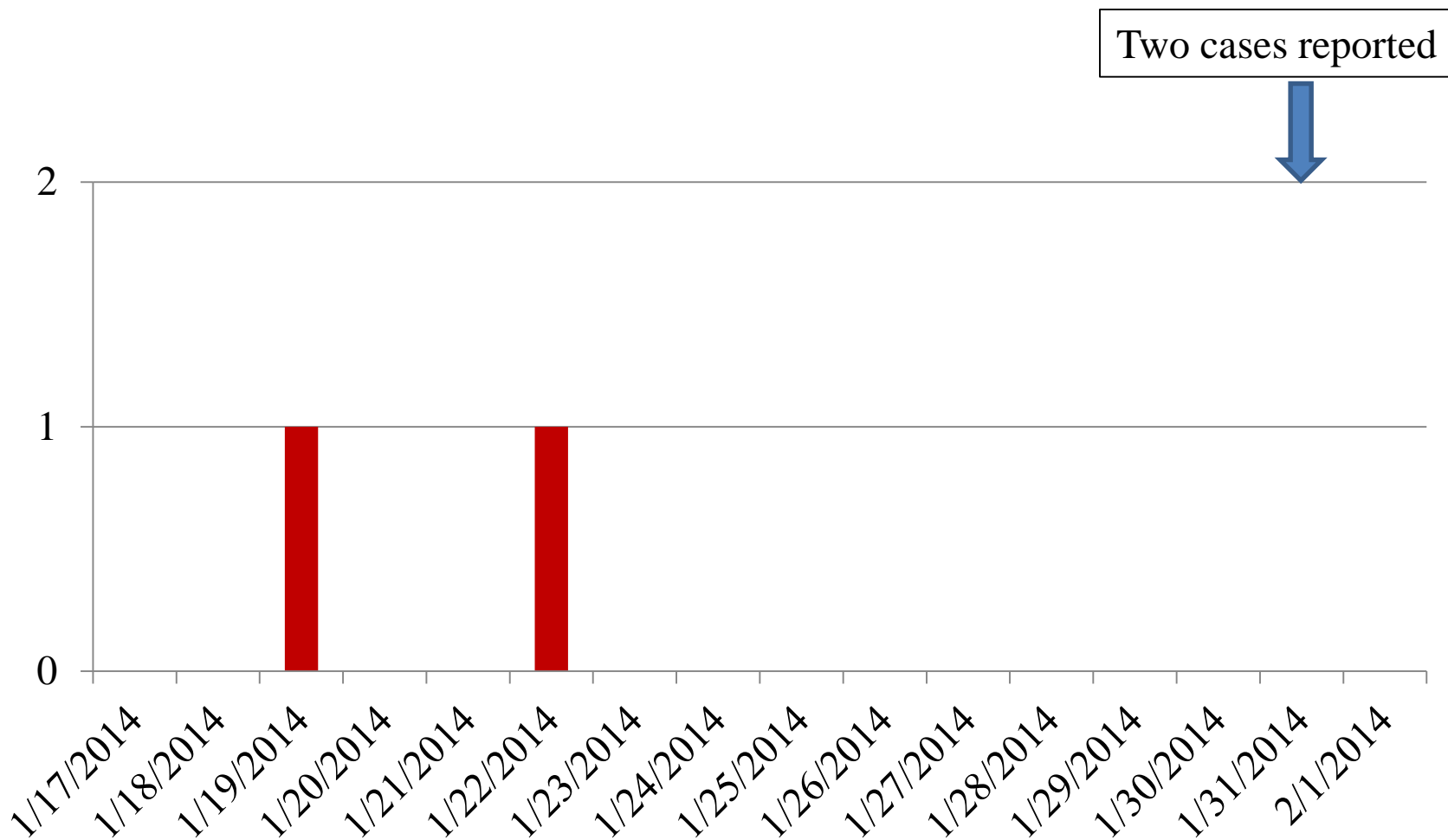
- Two cases of cryptosporidiosis reported from commercial lab
- EIA positive and confirmed via microscopy
- Reside two adjacent rural counties



Common exposures upon interview

- Consumed unpasteurized milk from Farm A
- Contacted raw milk work group (Department of Agriculture, Conservation, and Forestry (DACF) and University of Maine Cooperative Extension)

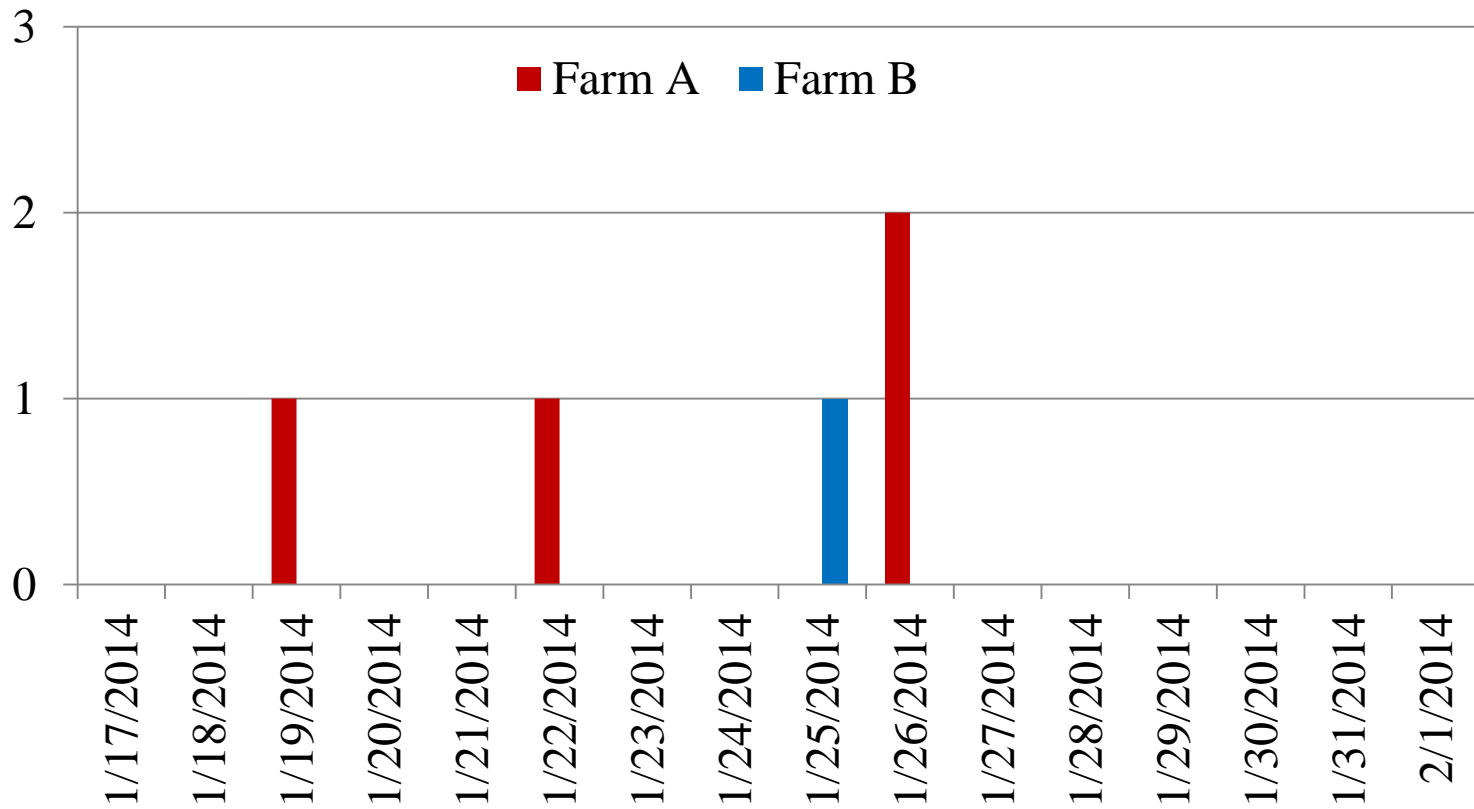
Onset of illness



Monday, February 3rd, 2014

- Two more cases reported
- Both consumed raw milk, Farms A and B
- One had friend also ill with no health insurance
 - Arranged for testing
 - Consumed raw milk from Farm A

Onset of illness



Four cases

- Ages range 27-69 years
- 3 (75%) female, one pregnant (9 months)
- 2 rural counties
- No hospitalizations
- 4 different households
- 3 cases confirmed via PCR in Maine
 - Confirmed at CDC as *C. parvum* IIaA15G2R1

Common milk exposure

- Milk purchased on January 14th and 21st
- Milk purchased at three different retail stores and a farm share
 - Farm A distributes ~200 gallons/week to multiple retail stores along the coast



Case definition

- **Confirmed:** An individual with diarrhea, laboratory confirmed stool specimen for cryptosporidiosis and consumption of unpasteurized milk from Farm A between January 1, 2014 – February 20, 2014
- **Probable:** An individual with diarrhea and either 1) linked to a confirmed case or 2) consumption of unpasteurized milk from Farm A between January 1, 2014 – February 20, 2014

Additional case finding

- Continued passive surveillance
 - No other cases with unpasteurized milk consumption from Farm A identified
- Enhanced communication with local health care providers
- Notified New Brunswick Canada as cases occurred in neighboring counties



Farm A inspection, February 10th

- Samples collected:
 - Calf feces
 - Milk parlor
 - Milk filters
 - Milk sample



Laboratory testing - environmental

- Maine: PCR positive
 - Calf feces (2/3)
 - Milk room (3/3)
- CDC:
 - Calf feces: *C. parvum* IIaA15G2R1
 - Milk room: *C. parvum* IIaA15G2R1

Farm visit - likely exposure

- Farmer admitted to bringing calves into milk parlor on cold nights in January



Farm visit

- 15 recommendations provided
 - Limit traffic in milk parlor
 - Thoroughly hose off boots
 - Cleaner milking parlor (reduce clutter, clean manure between cows)
 - Isolate sick calves (not in milking parlor), feed last, improve sanitation among calves
 - Improving milking process
 - Improving bottling procedure

Limitations

- Unknown numbers who purchased milk, unable to calculate attack rate
- Difficulty obtaining information about unpasteurized milk consumption
- Some patient specimens put in formalin; requested additional specimens
- Difficulty testing the milk specimens
- No milk from the batch causing illness available for testing



Conclusions

- *C. parvum* IIaA15G2R1 is common amongst dairy calves
- Quick response using raw milk investigation protocol
- Molecular testing available at CDC allowed environmental and patient specimens to be linked
- Guidance created for unpasteurized milk dealers available online (checklist format)
- Need for more public awareness of risks of raw milk

Acknowledgments

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Farm A

Questions?

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Unpasteurized milk guidance:

<http://extension.umaine.edu/publications/1030e/>



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