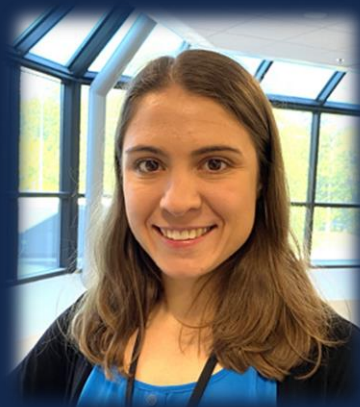


Cryptosporidiosis Outbreak Associated with Baby Calves at a State Prison Farm

Emilie Schweikert, MPH, CHES
District Epidemiologist
Chesterfield Health District

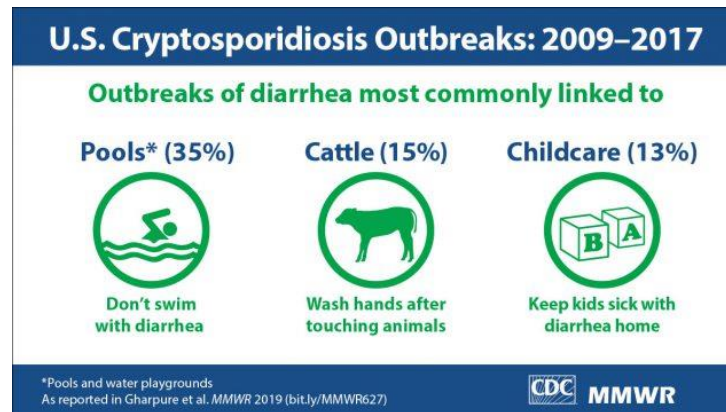


Background - Cryptosporidiosis

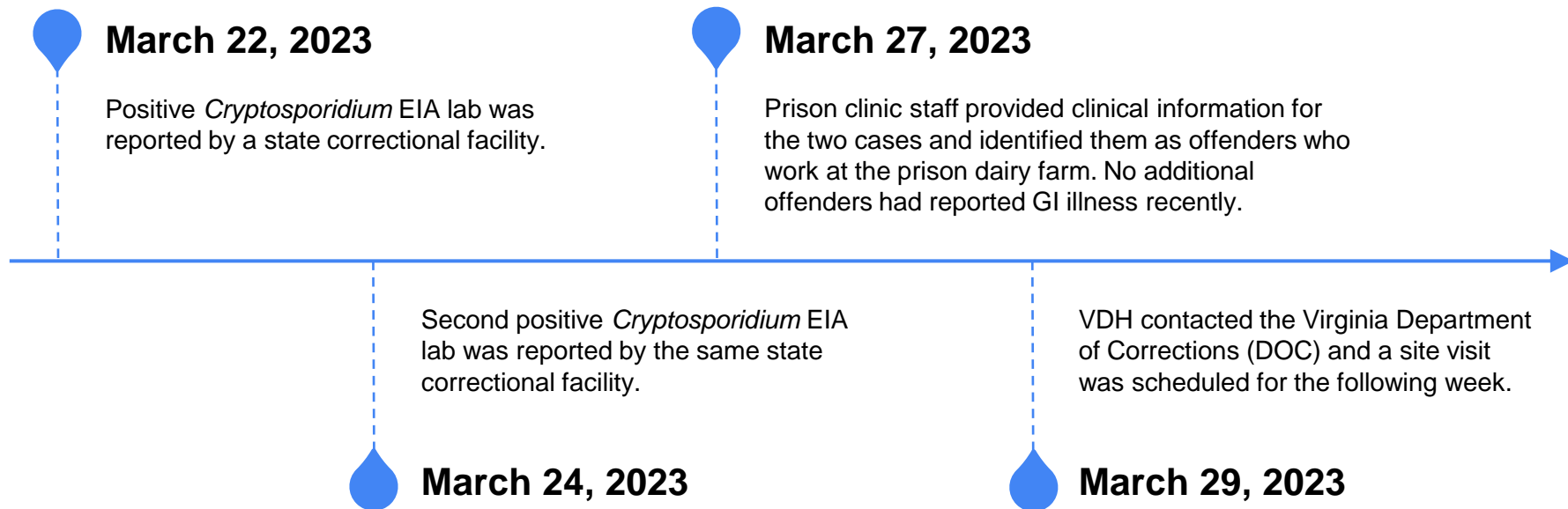
- Acute gastrointestinal illness in humans and animals caused by the protozoan parasite *Cryptosporidium*
- Profuse watery diarrhea and abdominal cramping
- Incubation period: 2 to 10 days (average 7)
- Illness duration: 7 to 14 days (up to 30)
- Infected hosts can continue to shed oocysts in stool for weeks after symptoms resolve

Background - Cryptosporidiosis (cont.)

- Fecal-oral transmission through ingestion of infectious oocysts
 - Person-to-person
 - Animal-to-person
 - Waterborne
 - Foodborne
- 3rd leading cause of diarrhea associated with animal contact in the United States
- Common among domestic ruminants



Outbreak Notification



Investigation Methods

- Investigation team
 - District Epidemiologist
 - Regional Epidemiologist
 - State Public Health Veterinarian
 - DOC Epidemiology Nurse
 - DOC Chief Medical Officer
- Joint VDH-DOC site visit to correctional facility and farm
 - Observed farm working conditions
 - Assessed herd health
 - Observed prison housing conditions
 - Interviewed positive cases
 - Discussed farm worker safety practices

Site Visit Observations

- Limited hand washing supplies available
- Water bottles frequently left on the ground
- Break house cleaned irregularly
- Lack of food storage and dishwashing supplies in the break house
- Recent increase in calves from winter calving season
- Calving area cleaned every 6 months
- Scours disease among a few of the baby calves



Case Interviews

- Farm workers very affectionate in caring for cows, especially ill calves
- Give lots of hugs and kisses to the cows and baby calves
- Perform water bottle and tube feeding and on at least one occasion drank from the same water bottle used to rehydrate a sick calf
- Frequently sit with the baby calves in their pens
- Gloves not always worn when feeding



Additional Observations

- No education provided to farm workers on risks of exposure to infectious diseases that could be acquired from working with farm animals or best practices for worker safety
- Farm workers not given opportunity to change soiled clothing before returning to living areas
- Offenders who report illness often get transferred to another facility

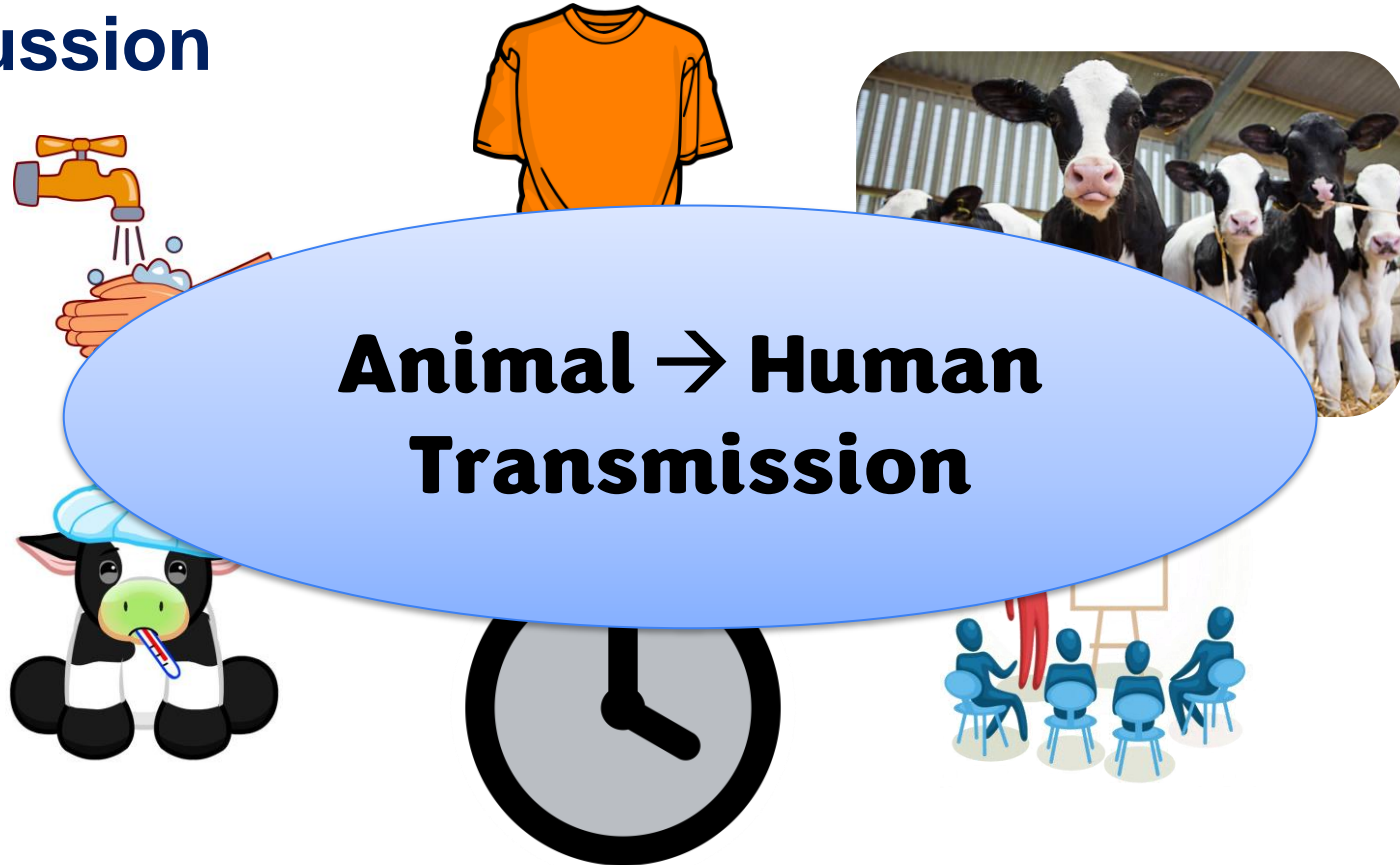


Lab Positive Cases

4 Cryptosporidium EIA positive farm workers

| Case | Symptom Onset | Specimen Collection Date | Illness Duration | Cattle |
|------|---------------|--------------------------|------------------|--------|
| 1 | 1/10/2023 | 1/13/2023 | 2-3 weeks | Beef |
| 2 | 3/10/2023 | 3/17/2023 | 2 weeks | Dairy |
| 3 | 3/20/2023 | 3/21/2023 | 1 week | Dairy |
| 4 | 4/1/2023 | 4/5/2023 | 1-2 weeks | Beef |

Discussion



Recommendations & Control Measures

- Provide farm workers comprehensive education on infectious diseases that could be acquired from farm animals and training on safety practices
- Install hand washing stations near calf penning area
- Allow farm workers to change clothing before returning to general living areas and leave working boots at the farm
- Establish a consistent cleaning schedule for calving areas
- Increase frequency of cleaning the break house and ensure availability of food storage and dishwashing supplies
- Encourage farm workers to report when they experience illness themselves or observe illness among the animals they care for

Limitations

- Missed opportunity for early intervention due to initial case being reported late
- Additional cases likely missed due to offenders not reporting illness
- Further laboratory testing could not be performed
- No environmental samples or specimens from cattle were collected
- Correctional facility housing and the farm where exposure occurred located in two different health districts



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- Alex Neal, Chickahominy Health District Epidemiologist

Virginia Department of Corrections

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- Dr. Paul Targonski, Chief Medical Officer

Thank you!

Any questions?

