BACKGROUND

• Giardiasis is a diarrheal illness caused by the parasite Giardia intestinalis. Swallowing as few as 10 cysts may cause illness.
• The infected can be asymptomatic or symptoms can last 1-2 weeks, including: diarrhea, abdominal cramps, gas, nausea/vomiting, fatigue and dehydration.
• Transmission risks: child care settings, recreational water or swimming, drinking contaminated or untreated water, travel to giardia-endemic countries, oral-anal sexual practices.

OBJECTIVES

• Surveillance system: Monitor trends of giardia incidence among Maine (ME) residents as part of state surveillance efforts.
• Currently unable to differentiate between cases identified through refugee screenings vs. those ill due to a ME exposure.
• Evaluation: Assess effectiveness and efficiency of the surveillance system to guide public health action, considering resource and capacity limitations.
• e.g. assess burden of disease, incidence, identify clusters, control potential outbreaks.

RESULTS

Usefulness: Effective at enumerating reported cases; unable to identify outbreaks or sources of transmission, no risk factor data to inform prevention activities.

Simplicity: Limited time spent on using and maintaining system, no mid-level reporting or transfer (e.g. county or regional level), cases not investigated.

Flexibility: Cannot accommodate increased information needs without significant impact to time or personnel even though few components must be modified to adapt system changes.

Data Quality: High levels of completeness (Table 1), but of limited functional fields with varying levels of utility for disease analysis.

Acceptability: Highly acceptable due to legal mandate, elevated incidence; however, acceptability by system users is based on the current process of no investigations (passive lab reports only).

Representativeness: Without clinical component of case definition, limited by differential testing rates in foreign-born populations; mandatory reporting of giardia offers continuity of reports.

Timeliness: Limited steps (i.e. entry-only) allow for quick processing of reports from receipt by the state to federal CDC notification (Figure 4, Table 1).

Stability: Extensive backup available as system is housed within ME NBS; limited time spent on using and maintaining system, no mid-level reporting or transfer.

CONCLUSIONS

• The unexpected nature of this system and the department’s limited resources have allowed giardia to lose priority amongst other reportable conditions despite its high incidence.
• Although Maine’s system is effective at enumerating reported cases, there is little effect on policy decisions or disease control interventions.
• Tracking at the most basic level does not allow for characterization of state-specific risk factors.
• Identified need to clearly define objectives for giardia surveillance in order to adapt the system requirements and business processes.

NEXT STEPS

1. Initiated enhanced surveillance project in June 2014 to assess feasibility of implementing 2011 CSTE case definition change— including clinical aspect.
2. Partner with Maine Drinking Water Program to GIS map geospatial and temporal variation in reported cases.
3. Evaluation identified possible discrepancies between ordered test and indicated lab result (e.g. order and result labelled O&P, but tested antigen); to investigate further.

SOURCES

3. ME hosted 2.7+ million visitors in 2012; the resident population is ~1.3 million.
4. Seasonality: highest incidence August-October in ME, while July-September for the US (Figure 2).