Close contacts of persons diagnosed with TB disease: What primary care providers need to know

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Over the past 5 years, Maine has identified an average of 16 new cases of tuberculosis disease per year. In 2023 so far, we have identified **24 new cases*,** representing a **50% increase in** cases over the 5-year average.

*data for 2023 are preliminary as of 11/30/23

Agenda

The goal of today's webinar is for providers in Maine to feel equipped to assess, evaluate, and treat contacts of TB disease.

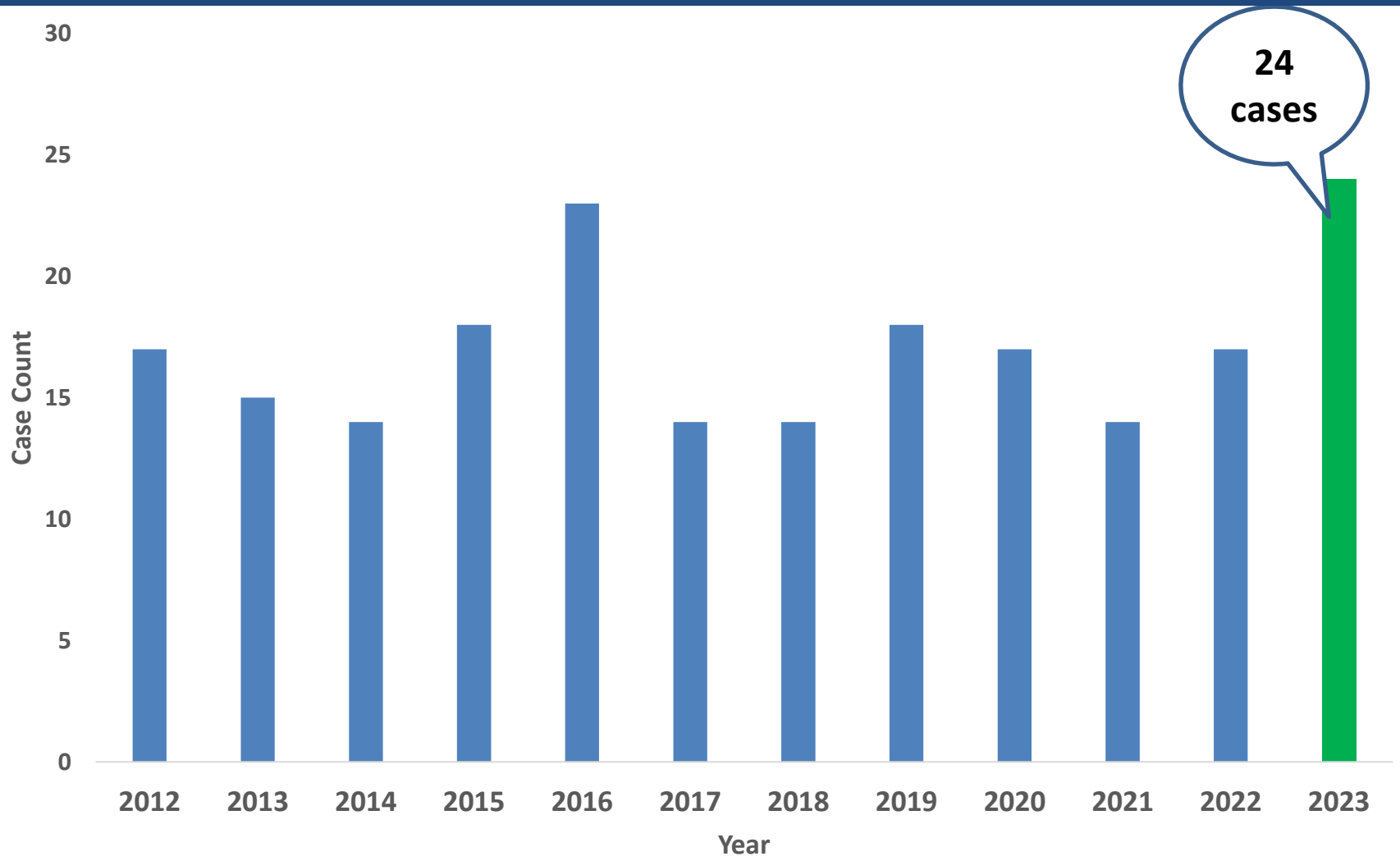
- TB Epidemiology
- Maine CDC role in tuberculosis disease and latent tuberculosis infection care
- Assessing adult contacts
- Assessing pediatric contacts
- Questions

Terminology

- **TB Disease:** Infection with *Mycobacterium tuberculosis*. Symptomatic, infectious; most often pulmonary but can occur in any part of the body. Also called “active TB”.

- **Latent Tuberculosis Infection (LTBI):** Infection with *Mycobacterium tuberculosis*. Asymptomatic, noninfectious, can develop into TB disease.

To date, Maine has identified 24 new cases of TB disease in 2023*.



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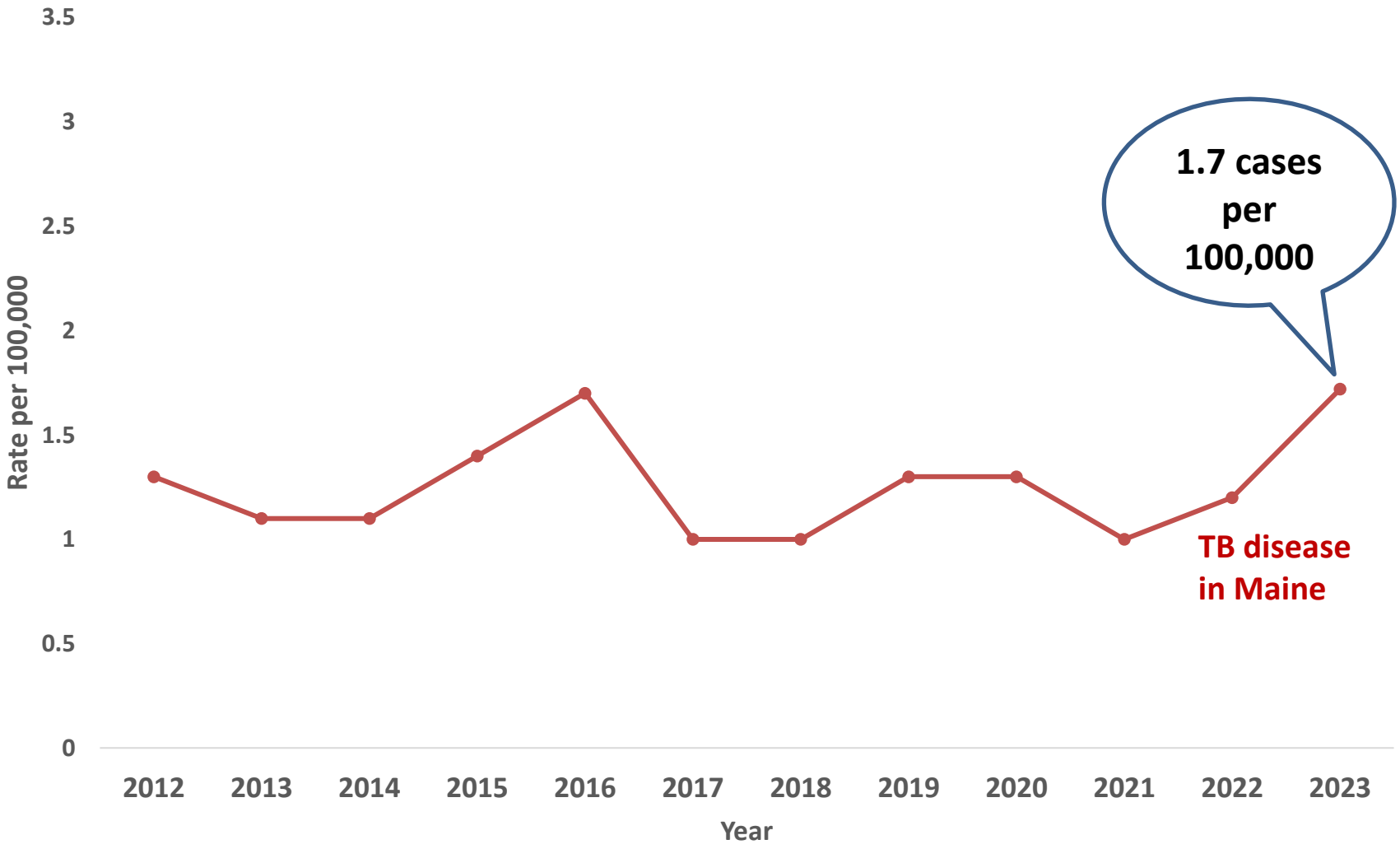
The rate of TB disease per 100,000 has also increased in Maine this year*



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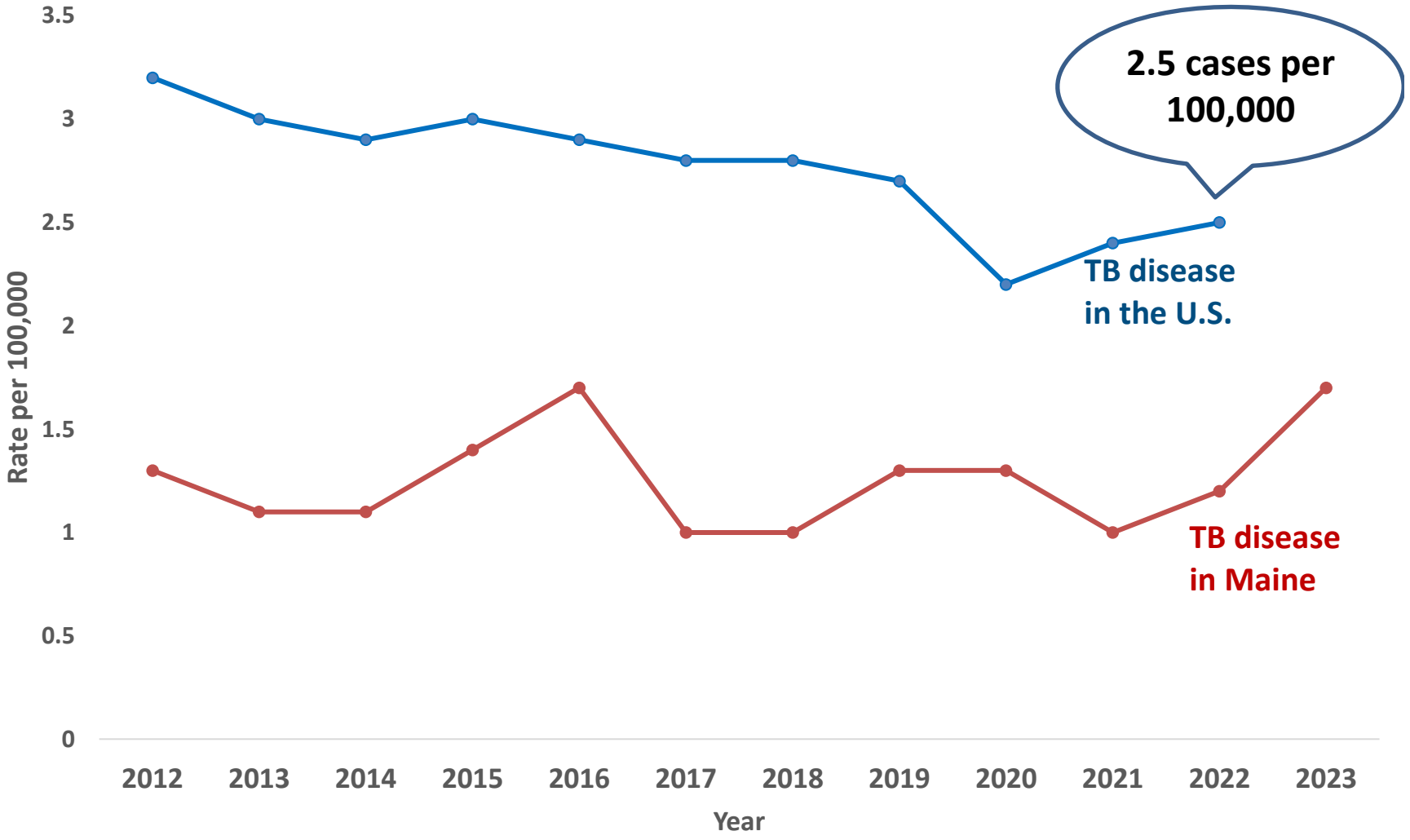
Though Maine's rate is still below the U.S. rate of TB disease per 100,000



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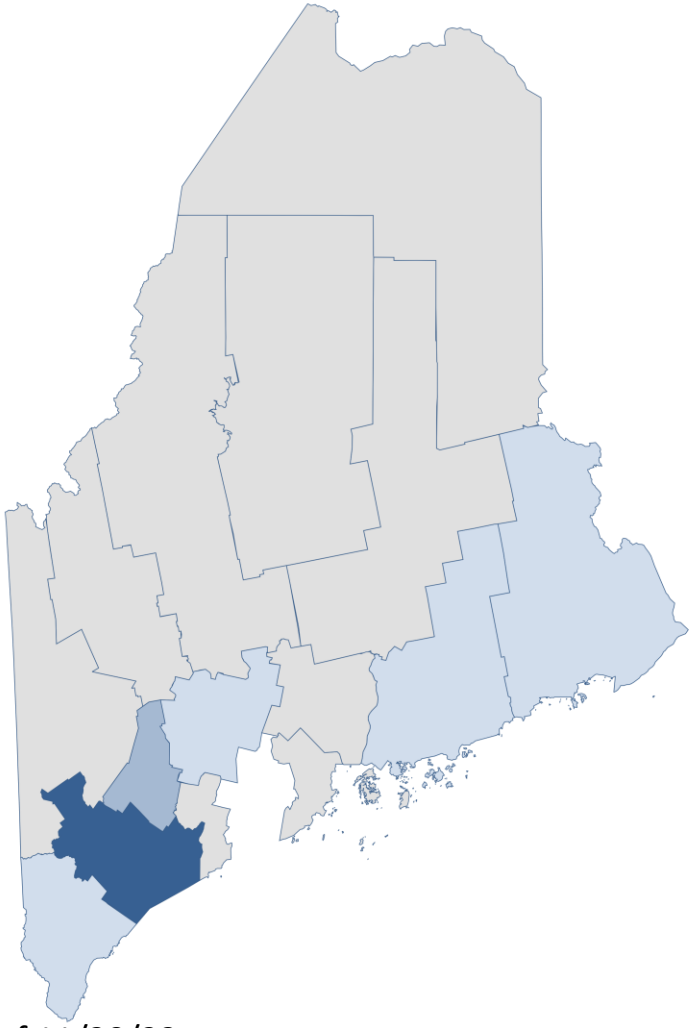
Persons with TB disease were diagnosed in 6 counties in Maine in 2023*



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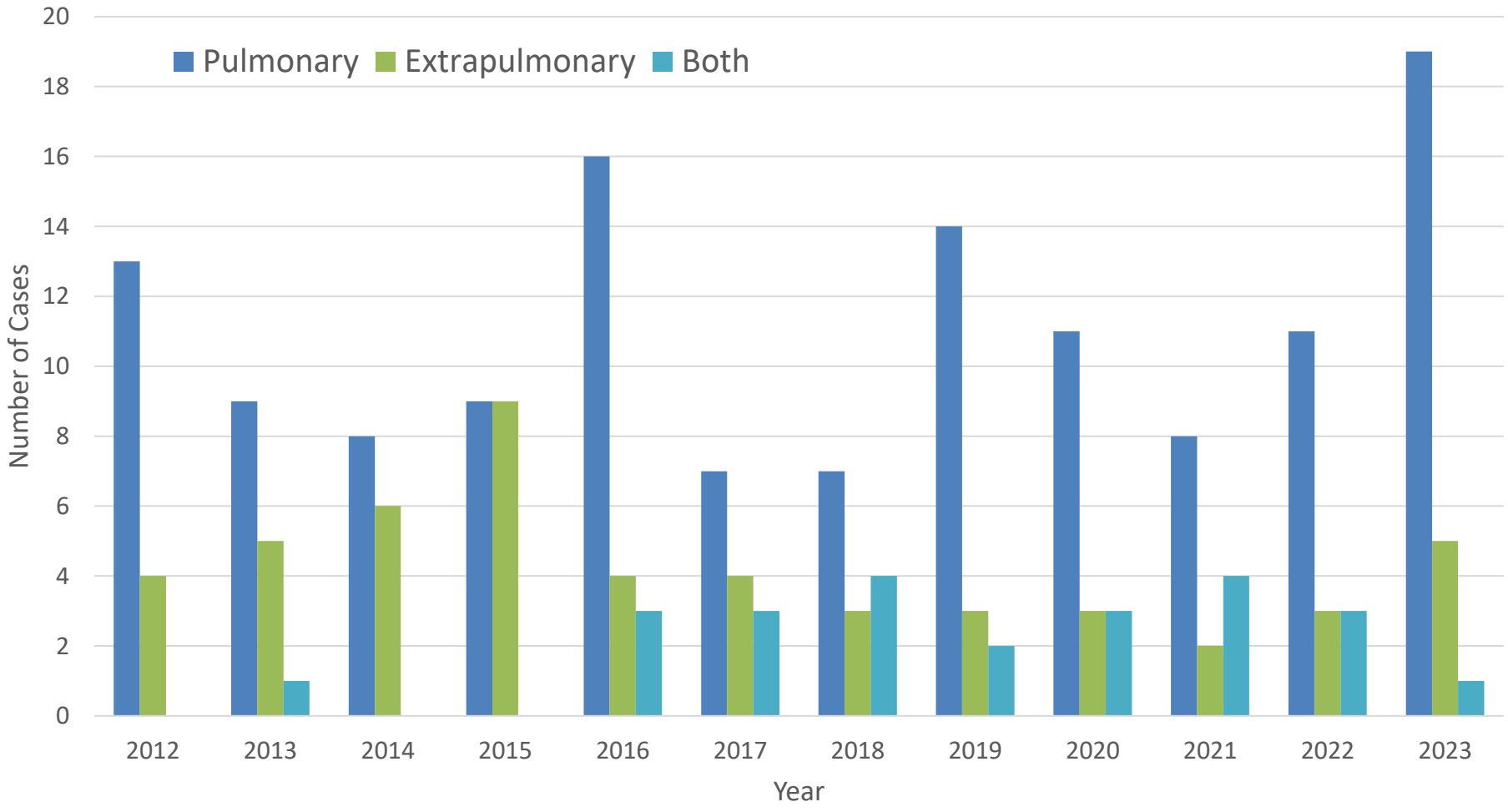
Most TB in Maine is pulmonary TB*



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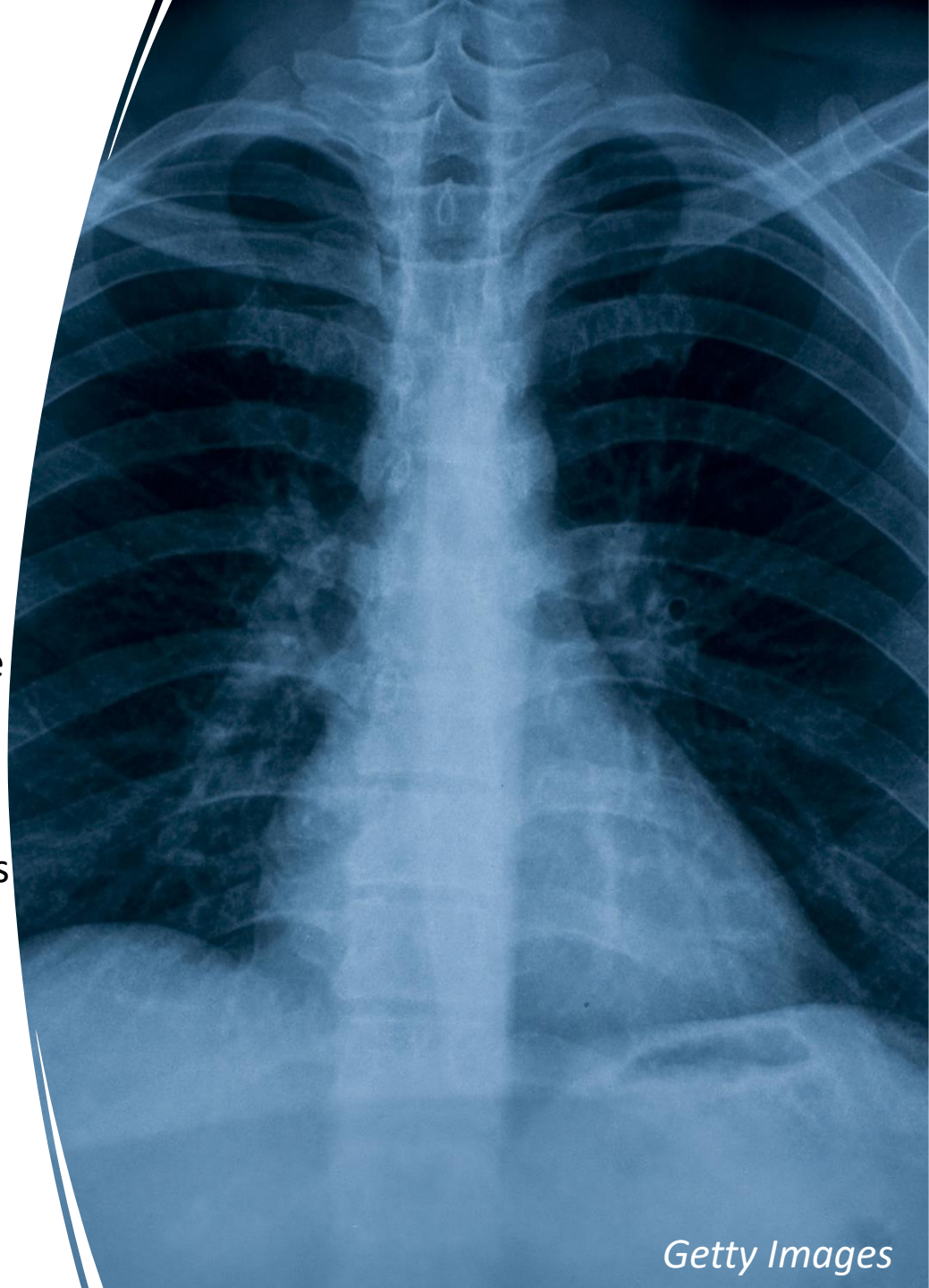
Maine CDC Role in TB Investigations

- TB disease
  - Reportable Condition

- Maine CDC investigates all cases of TB
  - Conducts contact investigations, as appropriate
  - Assists with payment for treatment
  - Helps remove barriers that impede treatment adherence

Confirmed TB Disease

- Receive test results from lab
- Inform IP/provider
- Coordinate with pharmacy and manage payments
- Refer to PHN for directly observed therapy (DOT)
  - Required for all pulmonary patients
  - Requested for extrapulmonary patients
  - Providers not requesting DOT are responsible for their patient's compliance
- Case management
- Contact investigations



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Key Terms

- Case – A particular instance of a TB disease. A case is detected, documented, and reported.

- Contact – Someone who has been exposed to *M. tuberculosis* by sharing air space with a person with TB disease during their infectious period.

Determining the Infectious Period

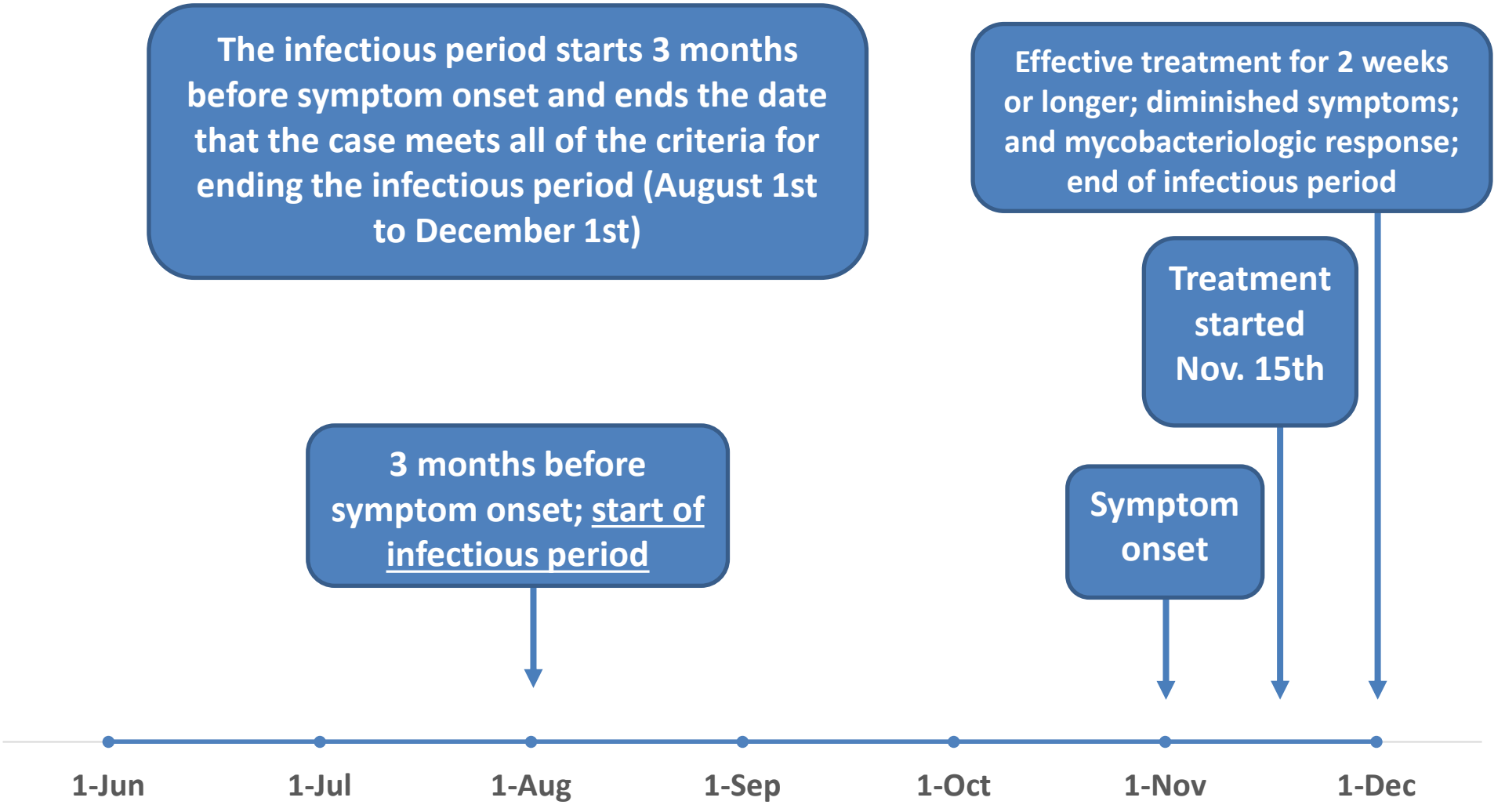
- Focuses investigation on contacts most likely to be at risk for infection
- Sets time frame for testing contacts
- Information to assist with determining infectious period
  - Approximate dates TB symptoms were noticed
  - Bacteriologic results
  - Extent of disease

Estimating the Beginning of the Infectious Period

Characteristic of Index Case			
TB symptoms	AFB sputum smear positive	Cavitary chest radiograph	Likely period of infectiousness
Yes	No	No	3 months before symptom onset or 1st positive finding consistent with TB disease, whichever is longer
Yes	Yes	Yes	3 months before symptom onset or 1st positive finding consistent with TB disease, whichever is longer
No	No	No	4 weeks before date of suspected diagnosis
No	Yes	Yes	3 months before positive finding consistent with TB

SOURCE: California Department of Health Services Tuberculosis Control Branch; California Tuberculosis Controllers Association. Contact Investigation Guidelines. Berkley, CA: California Department of Health Services; 1998.

Infectious Period Estimate for a Smear Positive Case with TB Symptoms



Factors that Predict Transmission of TB

- Anatomical site of the disease (pulmonary or laryngeal)
- Positive sputum bacteriology
- Radiographic findings (cavitary disease)
- Behaviors that increase aerosolization of respiratory secretions (singing, sociability)
- Age (transmission from children <10 is unusual)
- HIV infection
- Administration of effective treatment

Close Contact Identification

- Close contacts are persons who have shared airspace (within 6 feet) with a person with TB disease during their infectious period for a cumulative 8 or more hours.

- These persons may include household members, friends, coworkers, classmates, and others.

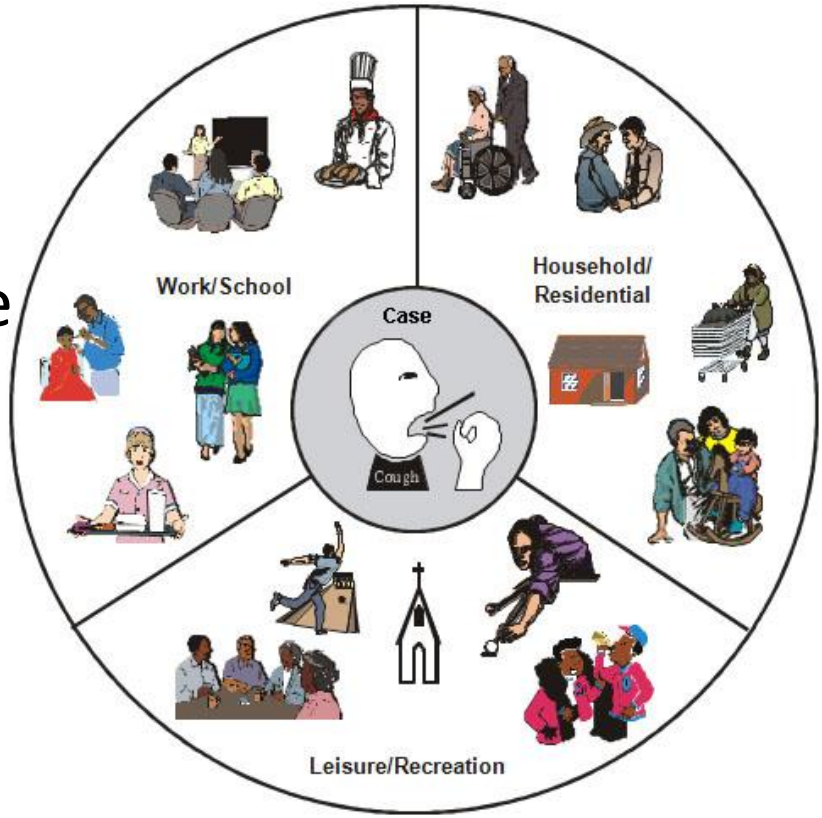


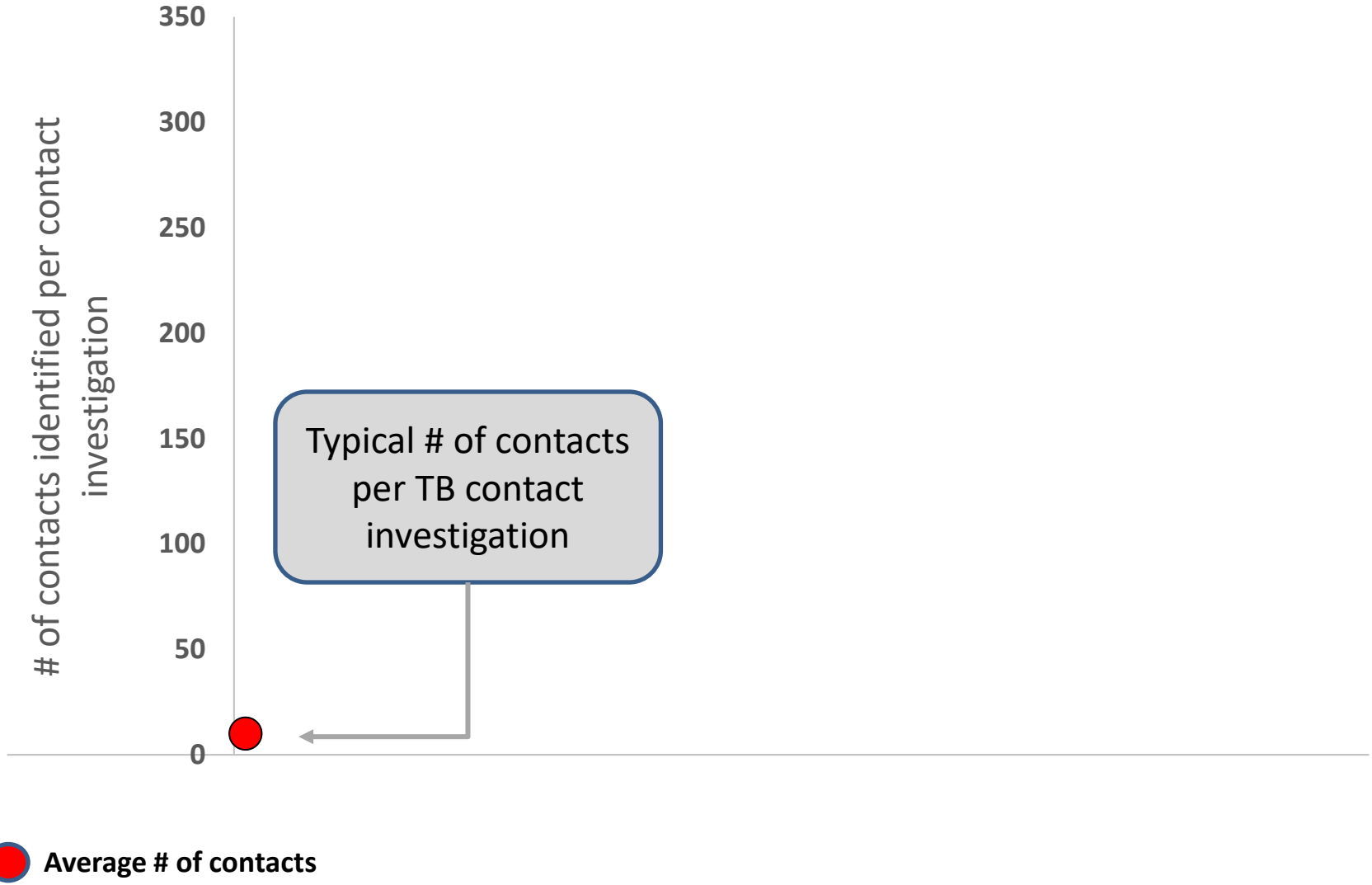
Image: https://www.cdc.gov/tb/education/skillscourse/default.htm

Contact Investigation – A Crucial Prevention Strategy

- On average, 10 contacts are identified for each person with TB disease in the U.S.
- 20%–30% of all contacts have LTBI
- 1% of contacts have TB disease
- Of contacts who will ultimately have TB disease, approximately one-half develop disease in the first year after exposure

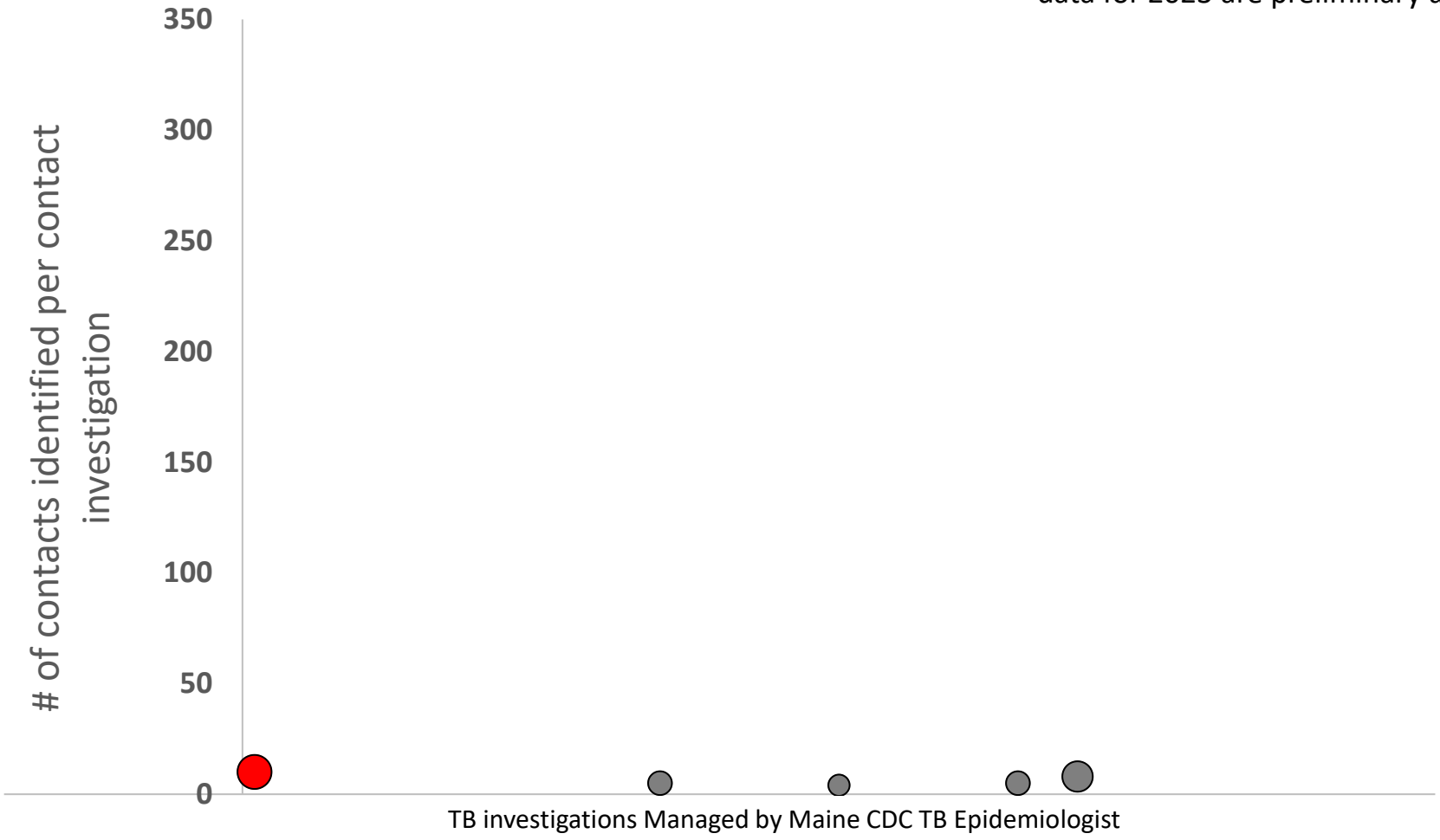
Guidelines for the Investigation of Contacts of Persons with Infectious Tuberculosis, December 16, 2005: https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5415a1.htm

Average TB contact investigations identify 10 contacts



Selected Results of Contact Investigations, Maine 2023*

*data for 2023 are preliminary as of 11/30/23



In 2023, 8 contact investigations in Maine have identified over the average of 10 contacts*

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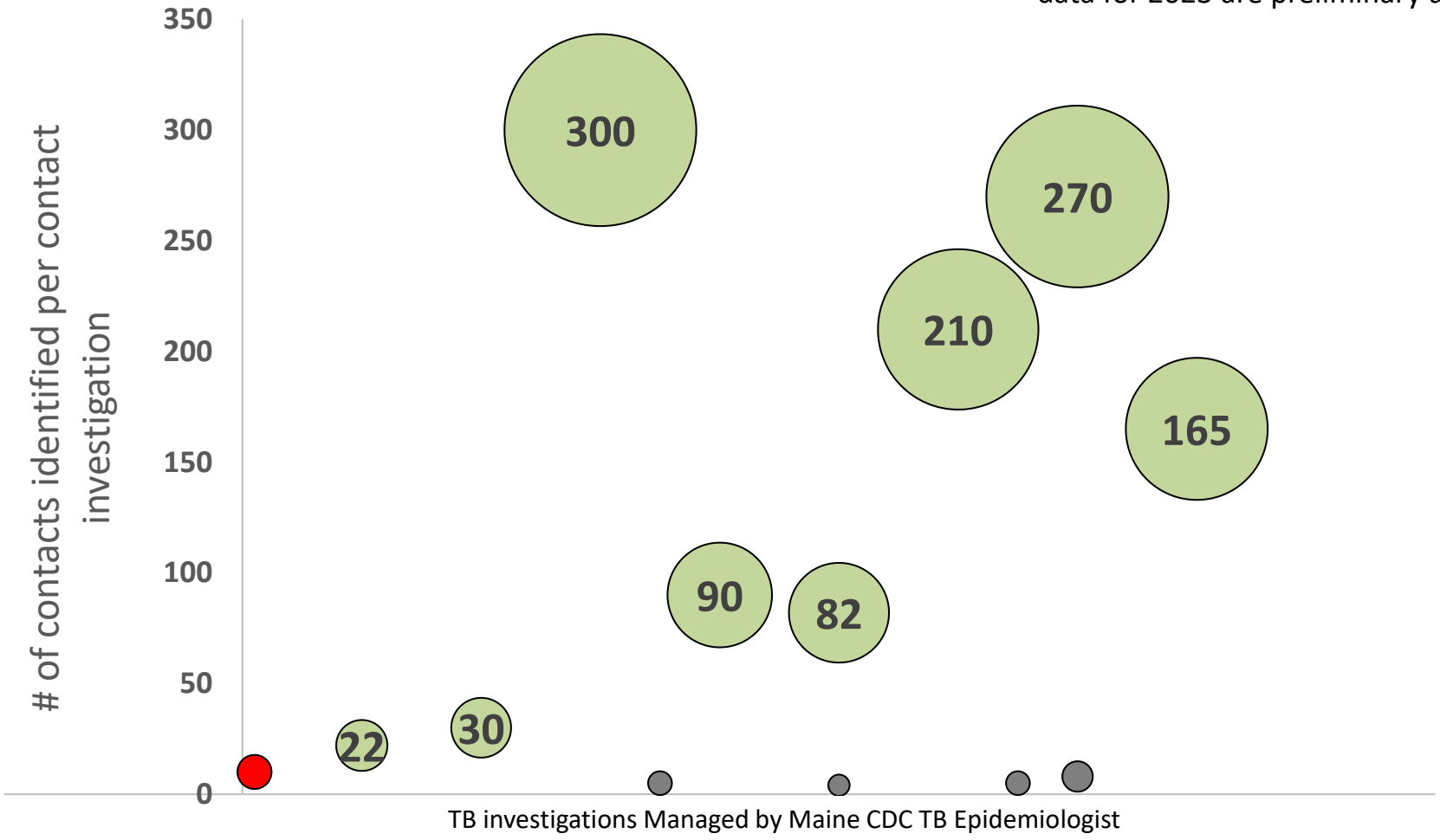

Average # of contacts **Maine investigations below 10 contacts** **Maine investigations above 10 contacts**

Contact Investigation Roles

- **Maine CDC:**
  - **Public Health Nurses:** perform contact investigations for smaller investigations, plant and read tuberculin skin test, connect contacts to care when evaluation is needed
  - **TB Control/epidemiology:** oversees contact investigations and assists in larger contact investigations, provide exposure letter for large investigations, collaborates with healthcare partners to provide education and consultation, works with organizations lead/contact to track test results of contact, provide up-to-date recommendations for providers (i.e. drug resistance)
- **Organizational lead/contact** (i.e., school nurse, HR rep, infection preventionist): identifies contacts in larger investigations, distributes exposure letter to contacts
- **Primary Care Providers:** evaluate contacts for *M. tuberculosis* infection and TB disease, administer treatment for LTBI
- **TB Consultants:** Provide expert consultation as needed, care for patients with TB disease

Maine CDC can pay for costs associated with screening close contacts and LTBI treatment.

- For costs associated with screening close contacts who are uninsured or underinsured, please contact Maine CDC at 1-800-821-5821.

- For costs associated for LTBI treatment, the treating provider should fill out Maine CDC's LTBI referral form and send to Maine CDC.

Reporting TB Disease to Maine CDC

- **TB Disease:** Reportable immediately upon suspicion or confirmation calling 1-800-821-5821.
- **LTBI** is not reportable

- For TST/IGRA results related to contact investigations, Maine CDC would like to receive results by electronic laboratory reporting, fax 1-800-293-7534, or by calling 1-800-821-5821.

Resources and References

- Maine CDC health advisory: Think. Test. Treat Tuberculosis (TB) in Maine (March 24, 2023)
- Maine CDC LTBI Treatment Referral https://www.maine.gov/dhhs/mecdc/infectious-disease/epi/tuberculosis/documents/LTBI-Treatment-Referral.pdf
- Maine CDC TB resources for Healthcare Providers https://www.maine.gov/dhhs/mecdc/infectious-disease/epi/tuberculosis/health-care.shtml
- Webinar: Latent Tuberculosis for the Primary Care Clinician (Northern Light Health in collaboration with Maine CDC): https://www.youtube.com/watch?v=_LAYFpqLbHY
- U.S. CDC Guidelines for the Investigation of Contacts of Persons with Infectious Tuberculosis https://www.cdc.gov/mmwr/pdf/rr/rr5415.pdf
- U.S. CDC Treatment Regimens for Latent TB Infection https://www.cdc.gov/tb/topic/treatment/ltbi.htm
- U.S. CDC Latent Tuberculosis Infection: a guide for primary health https://www.cdc.gov/tb/publications/ltbi/pdf/LTBIbooklet508.pdf
- U.S. CDC Deciding When to Treat Latent TB Infection https://www.cdc.gov/tb/topic/treatment/decideltbi.htm
- U.S. CDC Guidelines for the Treatment of Latent Tuberculosis Infection: Recommendations from the National Tuberculosis Controllers Association and CDC, 2020 https://www.cdc.gov/mmwr/volumes/69/rr/rr6901a1.htm?s_cid=rr6901a1_w
- U.S. CDC Tuberculin Skin Testing Fact Sheet https://www.cdc.gov/tb/publications/factsheets/testing/skintesting.htm
- Extrapulmonary tuberculosis: an old but resurgent problem. https://pubmed.ncbi.nlm.nih.gov/35254534/
- US CDC Core Curriculum on Tuberculosis: what the clinician should know https://www.cdc.gov/tb/education/corecurr/index.htm
- QuantiFERON-TB Gold+ for the Diagnosis of Mycobacterium tuberculosis Infection. https://www.aafp.org/pubs/afp/issues/2021/0201/p177.html

Questions?

For a list of Maine CDC and U.S. CDC resources, scan here: