



TB in Pediatric Populations

Lisa Y Armitige, MD, PhD

Leigh Riggins, BSN, RN

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Has the following disclosures to make:

- No conflict of interests
- No relevant financial relationships with any commercial companies pertaining to this activity

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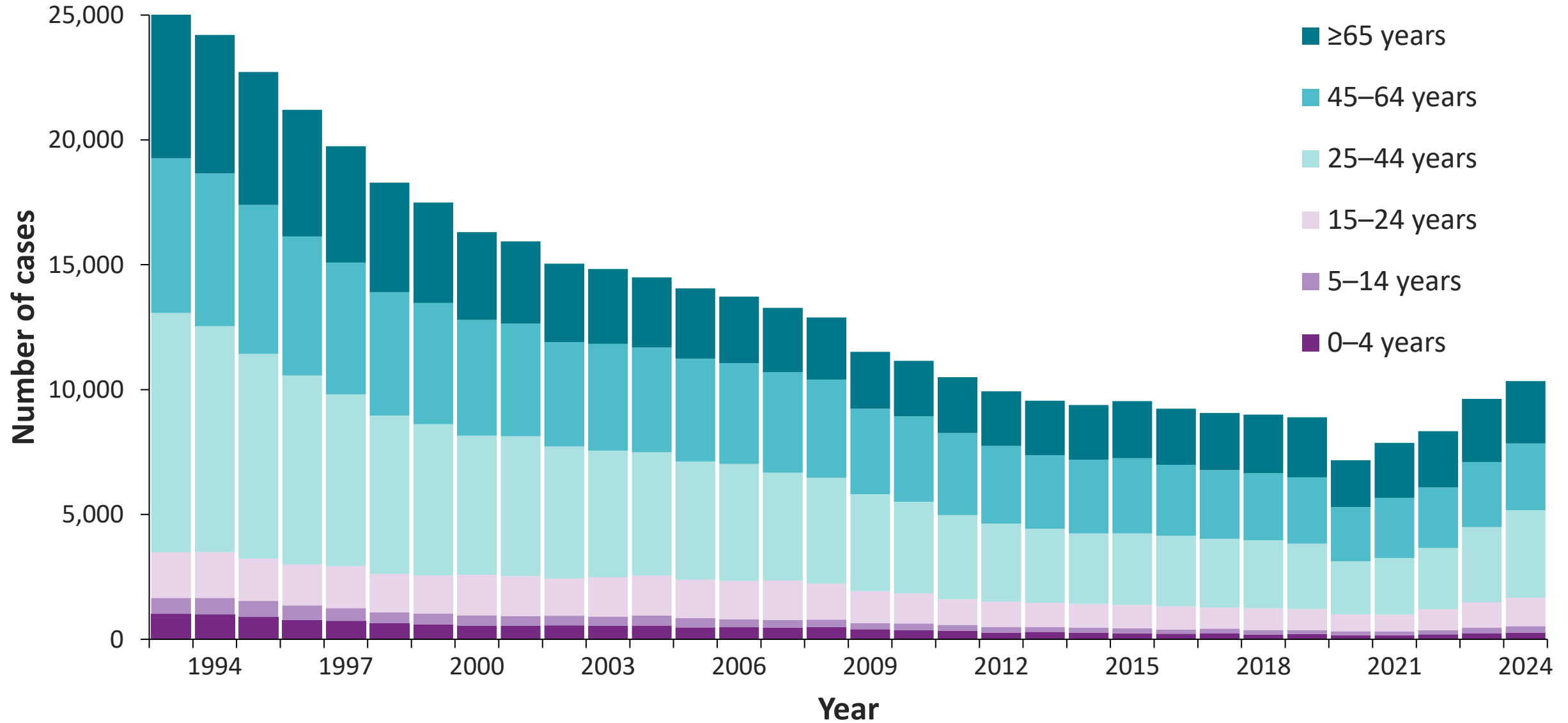
TB in Pediatric Populations

Lisa Y Armitige, MD, PhD

Professor, Medicine and Pediatrics
Division of Adult Infectious Diseases

Co-Medical Director
Heartland National TB Center

TB Cases by Age Group, United States, 1993–2024



US and Texas Pediatric Tuberculosis

- Definition of pediatric tuberculosis (TB):
 - TB disease in a person <15 years old

	US 2021	US 2025
Total cases	7882	10,260
0–4 years	160 (2%)	267 (3%)
5–14 years	157 (2%)	254 (2%)



Percent Risk of Disease by Age

Age at Infection	Risk of Active TB
Birth – 1 year*	43%
1 – 5 years*	24%
6 – 10 years*	2%
11 – 15 years*	16%
Healthy Adults	5-10% lifetime risk
HIV Infected Adults ⁺	30-50% lifetime

*Miller, Tuberculosis in Children Little Brown, Boston, 1963

⁺WHO, 2004



Common symptoms of TB disease in children

- Cough and/or respiratory distress
- Pulmonary findings on examination
- Lymphadenopathy or lymphadenitis
- S/Sx of meningitis including seizures
- Persistent fever (FUO)
- Weight loss or failure to thrive
- Up to 50% of children with TB disease have no symptoms

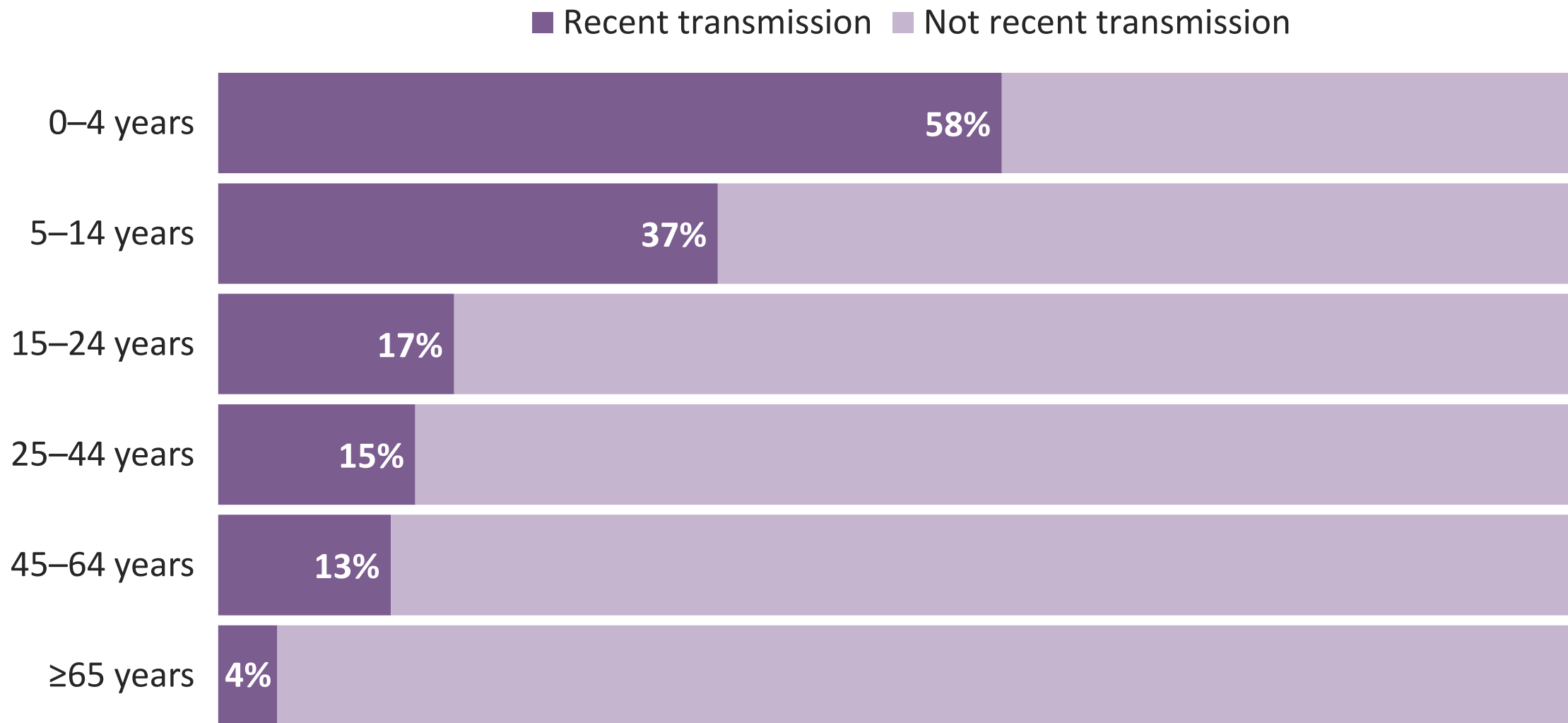


Unique Diagnostic Challenges of TB in Children

- More difficult diagnosis
- Nonspecific signs and symptoms
- Fewer mycobacteria
- Fewer positive bacteriologic tests
- Increases risk of progression to disease
- Higher risk of extrapulmonary and TB meningitis



Percentage of TB Cases Attributed to Recent Transmission* by Age Group, United States, 2023–2024



* A case is attributed to recent transmission if a plausible source case can be identified in a person who had an *M. tuberculosis* isolate with the same wgMLSType that differed by ≤ 5 single nucleotide polymorphisms, had an infectious form of TB, was 10 years of age or older, resided within 100 miles of the case, and was diagnosed within 2 years before the case.

TB Prevention After Exposure

- U.S. studies – 10% to 20% of childhood TB cases can be prevented if children **exposed** in a household receive treatment
- Children who should be considered for treatment after exposure:
 - Household contact with contagious person
 - Initial TST negative in the window period for conversion
 - CXR and physical exam normal
- **Window prophylaxis recommended:**
 - For children < 5 yrs of age
 - Immunosuppressed patients
 - Patients on tumor necrosis factor-alpha blockers
 - May prevent progression to disease during window period



Thank you for your attention and for
everything you do to watch over
our little ones every single day

Questions?

Lisa.Armitige@dshs.texas.gov

1-800-TEX-LUNG

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World TB Day 2026

Public Health Region 4/5 Case Studies

Leigh Riggins, BSN, RN



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Source Case- Grandfather

- 56 y/o male
- Came to US from Mexico in 2000, previously lived in California
- Hx of alcohol abuse
- June 2025- identified as a person with suspected TB while in hospital, IGRA positive, positive for TB symptoms (cough, wt loss, malaise).
- Sputum- AFB smear positive, M.TB positive NAAT/CX, Pan-susceptible
- Radiology- Cavitation, upper lobes bilaterally
- Symptoms- Cough, wt loss, malaise x 3 months.
- Treated with RIPE. Tolerance issues with po meds, brief hospitalization for IV therapy. Should complete therapy April 2026.

Contact Investigation: Household

- Environment: 2000 square foot mobile home
 - Poor ventilation, furniture consisted of mattresses, strong smell of marijuana, smoke detectors covered
- Household Composition:
 - 56 y/o father/grandfather (source)- TB disease, RIPE therapy x 9 mo
 - 29 y/o son- TB infected/no disease, declined therapy
 - 27 y/o daughter in law- TB infected/no disease, declined therapy
 - 4 y/o grandson- TB **disease**, parents initially refused IGRA testing
 - 3 y/o grandson- TB **disease**, parents initially refused IGRA testing
 - 24 y/o son- TB infected/no disease, treated w/RIF
 - 21 y/o son- TB **disease**- smear negative, final CX M.TB positive, non-cavitary CXR, treated w/RIPE, x 6 mo

Grandchildren- Case Studies

Grandson, 4 y/o

- Asymptomatic, normal wt
- Positive IGRA
- CXR- perihilar interstitial infiltrates w/peribronchial cuffing
- CT- 6.9mm nodule RUL, enlarged right suprahilar lymph nodes, enlarged tracheobronchial nodes

Grandson, 3 y/o

- Asymptomatic, normal wt
- Positive IGRA
- CXR- perihilar interstitial infiltrates w/peribronchial cuffing

Treatment: Rough Road

- Initial TX: RIPE therapy x 6 months, changed to SHINE therapy after Heartland Consultation
- Challenges encountered:
 - Inconsistent adherence to basic hygiene and clothing, complicating clinical interaction & assessment.
 - Significant eating patterns, children primarily engaged in unscheduled “grazing” behaviors.
 - Significant social isolation, little to no history of school, community, peer, and family interaction.
 - Active resistance to care, physical aggression during attempted med administration.
 - Missed clinic and home visits.

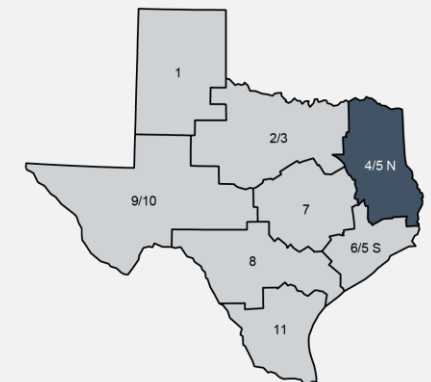
Treatment: Rough Road

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Interventions/Assistance:

- *Immediately involved social work team for assessment for assistance.
- *CPS involved- parenting classes recommended, assisted with application for Medicaid and other programs, safety changes made at home.
- *Heartland involved early when challenges in medication presented.
- *Multiple medication delivery items tried:
 - *Compounded medication
 - *Drinks- Hawaiian Punch, Tropicana, Soda
 - *Food- ice cream, pudding, Nutella, syrup, breakfast pastry, pizza
- *Innovative ideas- candy making with tempered chocolate, pharmacy team consulted to ensure temperature would not degrade medication.



Treatment: Rough Road

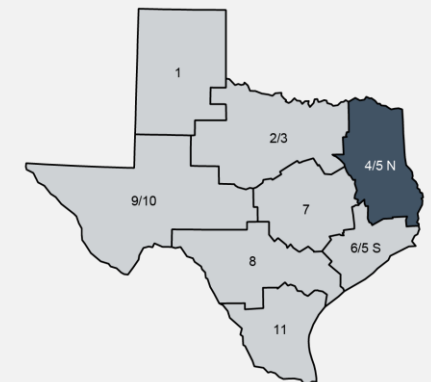
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Progress & Plan-

- *Initial treatment attempt- July 2025
- *One attempt successful with breakfast sandwich
- *4-5 attempts successful with tempered & molded chocolate
- *Continuing to monitor children for disease progression with regular visits with regional medical director and social work team.
- *Now enrolled in Medicaid, encouraging parents to get children to PCP for continued evaluation and follow-up.
- *Weekly weight, symptom assessment, and regular CXRs.
- *Consistent communication with Heartland, providing regular updates.
- *Just keep trying.

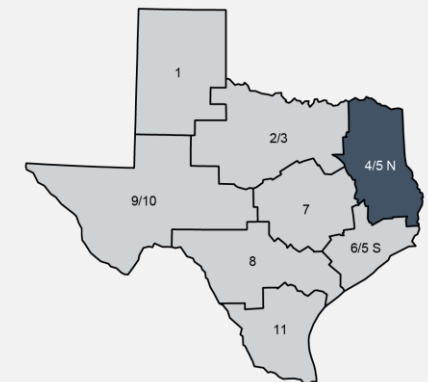
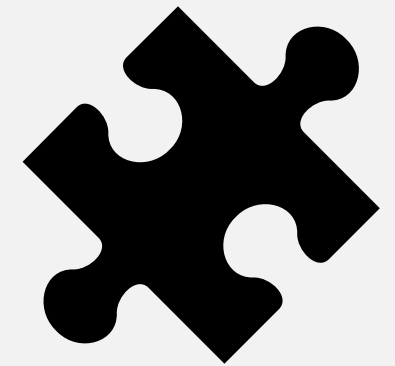


Epidemiology Puzzle Piece?

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- **Sept 2025-** received notification from DSHS TB Section that grandfather's genotype match that of a 2023 PHR 4/5 TB patient.
- **2023 patient** shared the same surname.
 - Died while in intensive care, shortly after providing information for CI.
- **Contact investigation in 2023** named four contacts- all were tested. None of the 2025 family were named.
 - 3- negative IGRA x 2
 - 1- borderline IGRA & loss to f/u
- **Grandfather continues to deny knowing anyone with TB, denies unnamed contacts. Repeatedly reports no unnamed family members with TB or illness.**



Considerations for Pediatric TB Care

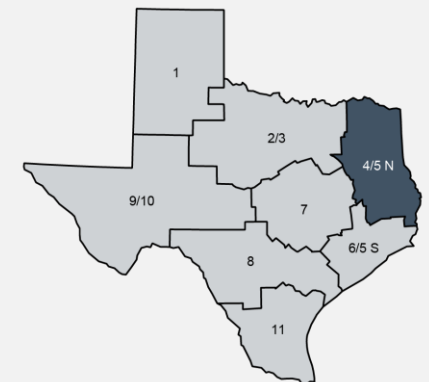
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Assessing and treating pediatric patients for TB infection and TB disease can be...*interesting*.

Tips for success:

- Allow for **extra time** during assessments and/or DOT visits.
- **Double the communication**- educate both your patient and parents/guardians.
- Interact with **patient on their level**, using age-appropriate and comprehension-based communication skills.
- Ensure environment is **calm** and decreases patient's fear.



Potential Challenges

- “Strangers are scary!”
 - Gaining the trust of the child and his/her guardian is paramount. Use consistent staff who can communicate in a positive way.
- “But I’m not sick.”
 - Child may have been asymptomatic at time of diagnosis. Provide both the child and guardian rationale for assessment/treatment.
- “Medicine tastes funny...”
 - Use food or drink that masks the taste of medication. May offer incentives or rewards for cooperation- be sure to get consent from guardians.
- “I’m all better now.”
 - If symptomatic at the time of diagnosis, the child and parents may have to be educated on the importance of medication adherence.

Food Items for Med Administration

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- Marshmallow cream/fluff
- Nutella
- Jello
- Oreos
- Sherbet/Ice cream
- Hershey chocolate syrup or Strawberry syrup
- Icing/Frosting
- Mashed Fruit
- Smoothies
- Whipped Cream
- Coke/ Pepsi/ Soda products



Thank you!

World TB Day 2026, PHR 4/5 Case Studies

Leigh Riggins, BSN, RN

leigh.riggins@dshs.texas.gov



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