TB Nurse Network Meeting

Wednesday, January 17, 2018

10:00-11:30 AM ET

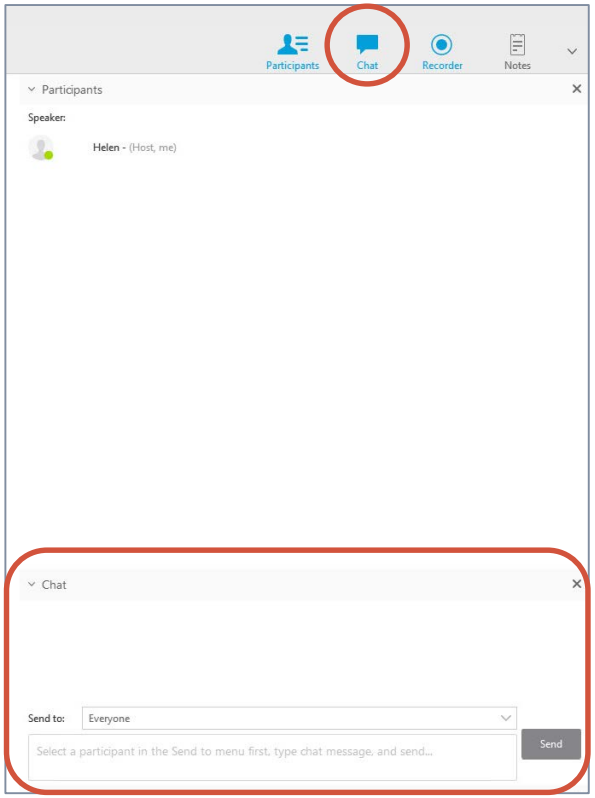
Conference call in number: 1-888-557-8511

Access Code: 254-487-3 #

Please Remember to Mute Your Phones

Do Not Put Us on Hold

Enter your name and facility into the chat box for attendance



Announcements

Next meeting Wednesday, July 18th, 2018

- Topic: TBD. Suggestions? Contact mcguirkh@michigan.gov

2018 World TB Day Conference

- Resources
- Evaluation for CEs: https://www.surveymonkey.com/r/18WTBDeval

Cohort Reviews

- Review 53 cases from 6 health departments and Detroit (3/1/17 – 8/31/17)
- Week of May 14th.
- Listen via conference call
- Email if interested: mcguirkh@Michigan.gov

Upcoming Conferences and Trainings

2018 TB Nursing Certification Course

- Date: TBD, possibly October ‘18
- Okemos
- Audience: Public health nurses, target those newer to the field of TB
- Want to join the planning committee? Email mcguirkh@Michigan.gov

www.Michigan.gov/TB → Training & Education → Educational Events & Presentations

Upcoming Conferences and Trainings

Tri-State TB Intensive Workshop

- Date: September 25-27, 2018
- Time: 8:30 AM – 4:30 PM
- Location: 1980 West Broad Street, Columbus, OHIO, 43224
- Flyer: https://www.michigan.gov/documents/mdhhs/Save_the_date_620193_7.pdf
- More information: Amy Lewis lewisa1@Rutgers.edu

Day 1: LTBI Focus

- Diagnosis and treatment of LTBI
- Use of TST vs IGRA
- Strategies to improve treatment completion and patient education
- B1/B2 immigrants

Days 2-3: TB Disease Focus

- Epidemiology, transmission & path, chest radiography, lab methods for diagnosis, treatment, managing adverse drug reactions, extra-pulm TB, drug resistant TB, role of TB nurse case management, TB and diabetes, substance abuse, case studies.

Upcoming Webinars

Sunstrum Seminar

- Friday 4/20/18; 8:15 – 9:30 AM
- Wayne County TB Clinic, 2001 S. Merriman Rd, Suite 300, Westland, MI 48186
- Attend in-person or online (same call-in and website info as this webinar)
- Last one until September: 5/18/18

Heartland National TB Center

- Human Trafficking in the TB Care Setting: Identifying and Responding to Victims Along the U.S./Mexico Border
- Webinar, 5/1/18, 1-2:15 PM ET
- Register here

Rutgers Global TB Institute

- TB Nurse Case Webinar
- Friday June 22nd, 12-1:30 PM ET
- Rutgers will send link to view and number to call

TB in the News

CDC MMWR: Tuberculosis – United States, 2017: 9,093 new cases of TB in 2017

- National Center for HIV/AIDS, Viral Hep, STD, and TB Prevention Newsroom: "Tuberculosis continues to decline in the U.S., but progress toward elimination is slowing"

Opinion: In Canada, tuberculosis exists as a symptom of social inequity

- "The rate of tuberculosis among the Inuit is 300 times higher than among Canadian-born non-Indigenous Canadians not because they are more susceptible to illness, but because they lack adequate housing, malnutrition is commonplace due to a lack of affordable food and scant employment opportunities mean too many families have trouble making ends meet."
- "TB is a symptom of social inequity. It is also an opportunity to demonstrate what reconciliation means in practical terms. The litmus test for success will not be if the bacterium stops spreading, but whether the conditions that have allowed it to spread for so long disappear."

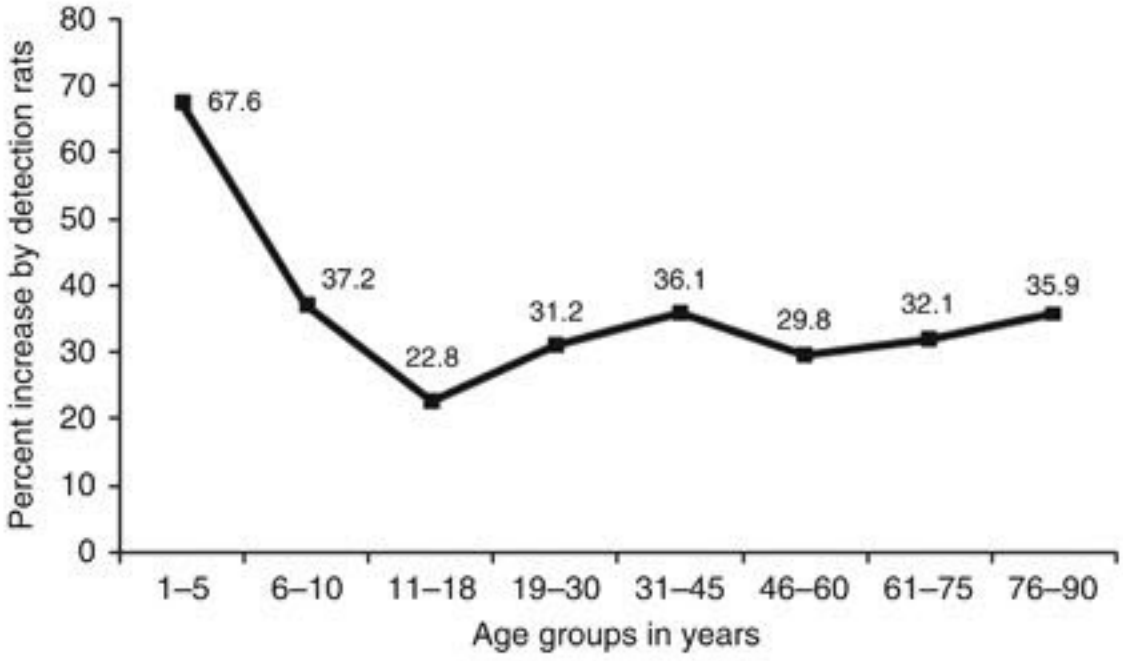
Interesting Publications

- Four-gene Pan-African Blood Signature Predicts Progression to Tuberculosis
  - Case-controlled, HIV-negative African cohort of exposed household contacts
  - 79 progressors who developed TB matched with 328 non-progressors
  - RNA sequencing, PCR, and the Pair Ratio algorithm in a training/test set approach
  - Identified a single gene pair that would consistent predict TB progression in household contacts from multiple African sites
  - Developed a simple, whole blood-based PCR test to predict TB in household contacts from diverse African populations

A rat learns to smell TB in patient samples.
Jonathan Kalan for NPR

Interesting Publications

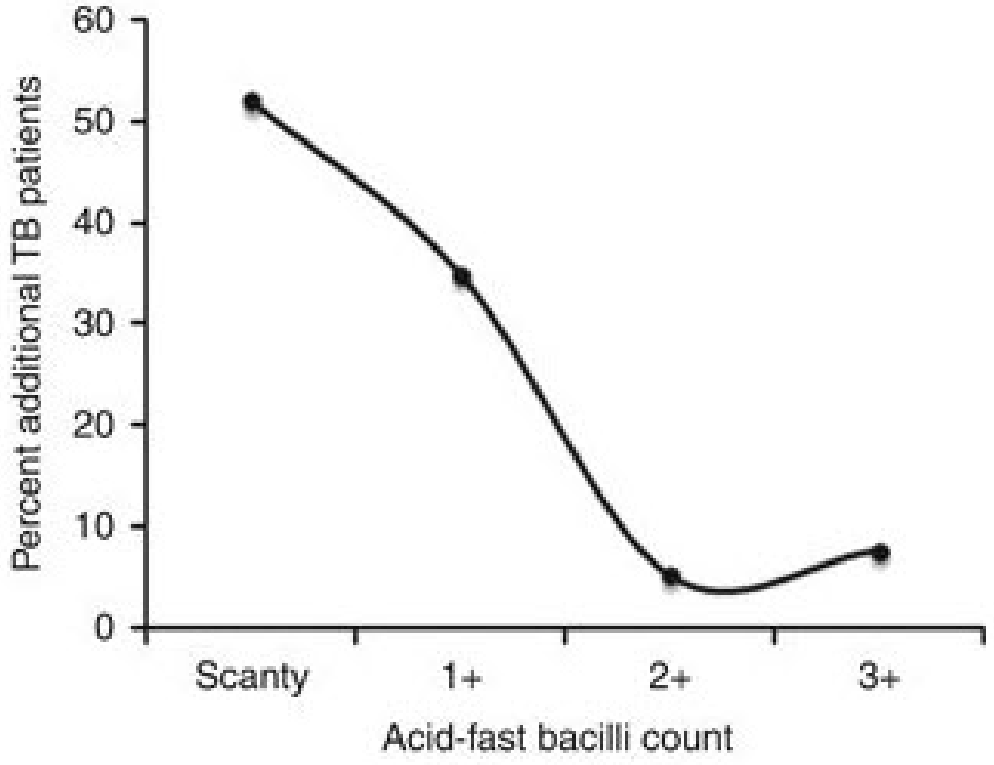
- Pediatric tuberculosis detection using trained African giant pouched rats
  - Sputum samples from 55,148 presumptive TB patients in 24 TB clinics in Tanzania were tested. 1.8% were children between 1 and 5 years.
  - Trained rats increased pediatric TB detection by **67.6%**.
  - The TB yield by detection rats was higher in younger children (ages 1-5) and decreased with increase in age ($P<0.0001$).



TB detection by age group.

Interesting Publications

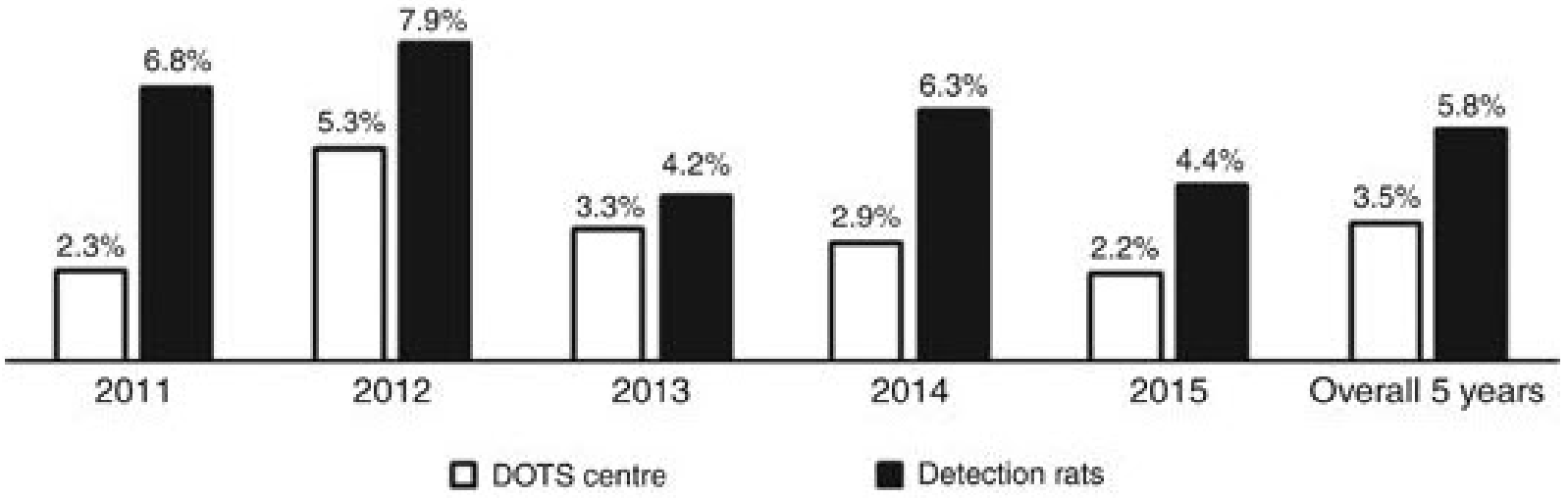
- Pediatric tuberculosis detection using trained African giant pouched rats
  - The additional TB yield by rats was higher in sputum with scanty bacilli than in sputum with more bacilli (1+, 2+, and 3+)



Proportion of additional children detected by rats by smear microscopy grading.

Interesting Publications

- Pediatric tuberculosis detection using trained African giant pouched rats
  - Over the 5-year period, the detection rats detected more TB patients in children aged 1–5 years. The difference in TB yield by rats and TB clinics was statistically significant (P=0.0155, χ^2=5.855, and DF=1).



TB yields by DOTS (clinics) smear microscopy and detection rats for children (1-5 years) in 5-year period.

Interesting Publications

Chewa the lab rat has a great job, good retirement benefits (3/24/16)

Who can identify TB faster: lab technicians for APOPO such as Karim Chang'a, Rehema Kondo, Eustachian Sezary, or a rat like Chewa? No contest — it's the rat.
Maarten Boersema/APOPO

AAP 2018 Red Book Tuberculosis: IGRAs and Treatment of TB Infection

Jeffrey R. Starke, M.D.
Professor of Pediatrics
Baylor College of Medicine

Texas Children's Hospital

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Disclosures

Dr. Starke is a member of the Data Safety Monitoring Board of Otsuka Pharmaceuticals for the pediatric studies of delamanid, a new drug for MDR-TB.

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Objective

To review important changes in the 2018 American Academy of Pediatrics Report of the Committee on Infectious Diseases [the “Red Book”] about childhood tuberculosis

- Use of IGRAs
- Treatment regimens for tuberculosis infection
- Rifampin dosing

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A Case

- 12 yr. old girl from Mexico with IBD needs infliximab
- TST is 0 mm; she is started on infliximab
- She is lost to follow up, but shows up about a year later with worsening IBD
- The GI folks want to put her back on infliximab
- A TST is done and there are 3 notes in the chart about the results:

1. Nurse #1: “Negative”
2. Nurse #2: “Some induration, likely positive”
3. Pedi Resident: “Only redness, negative result”

- Infliximab is started; 2 months later she presents with fever, cough and cavitary tuberculosis
- **Number of positive TSTs previously seen by the resident = 0**

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TB Epidemiology Studies Consortium Research Update on Latent Tuberculosis Infection

Christine S. Ho, M.D., M.P.H.
CDC TBESC Project Officer

ACET Meeting

December 12, 2016

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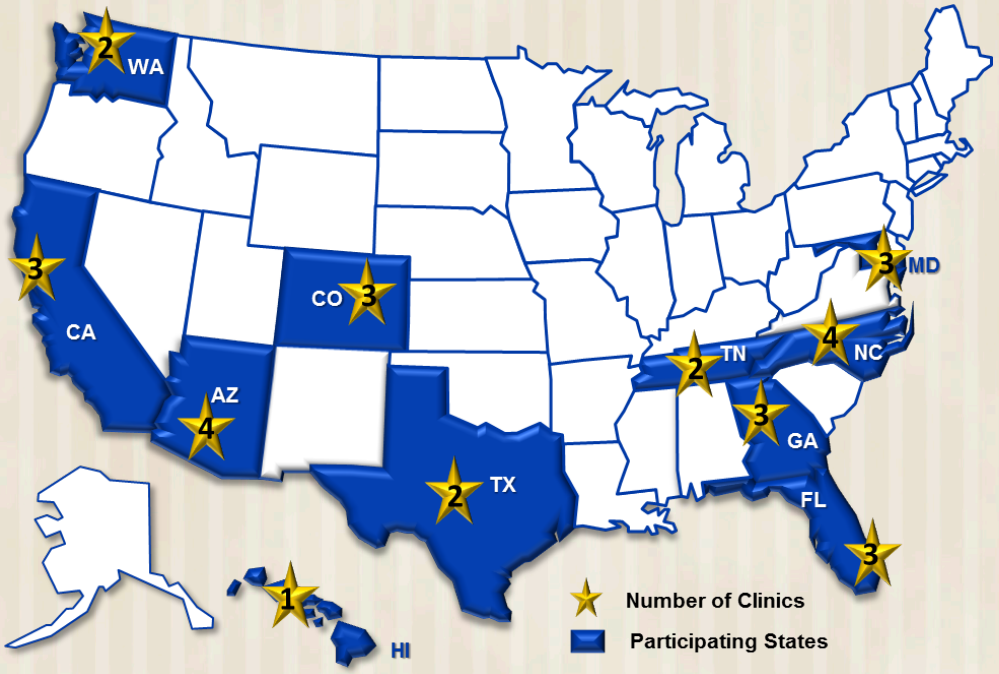
TBESC TUBERCULOSIS EPIDEMIOLOGIC STUDIES CONSORTIUM-II

TBESC-II Collaborators

CDC-funded collaboration with health departments, academic institutions, and CDC



1. California Department of Public Health
2. Denver Health and Hospitals Authority
3. Duke University, North Carolina
4. Emory University, Atlanta
5. Hawaii Department of Health
6. Seattle-King County Health Department
7. Maricopa County Health Department
8. Maryland Department of Health
9. University of Florida
10. University of North Texas Health Science Center

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TBESC
TUBERCULOSIS EPIDEMIOLOGIC STUDIES CONSORTIUM-II

Research Questions

- Which tests or test combinations can best identify LTBI in specific high-risk populations in the U.S.?
- Can test characteristics be improved
  - By changing cutoff values?
  - By testing sequentially?
- Which test best predicts progression to TB?

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Study Design

- Prospective cohort study
- Enrolled from populations at high risk of LTBI
- Each enrollee tested for LTBI with 3 FDA-approved tests:
  - QuantiFERON (QFT) blood test
  - T-SPOT.TB (T-SPOT) blood test
  - Tuberculin skin test (TST)

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Study Eligibility Criteria

- Close contact of a person with pulmonary TB
- Foreign-born from a high incidence country
- Foreign-born from a medium incidence country who moved to the U.S. within the past 5 years
- Spent ≥ 30 days in a high incidence country within the last 5 years
- Belongs to a population with a local LTBI prevalence ≥25% (e.g., homeless)

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Analytic Approach

- Examine LTBI prevalence in our high risk groups using single and combination test results
- Use latent class analysis (LCA) to estimate the “true” prevalence of LTBI in our study population, as well as test sensitivities and specificities
- Analysis on clean data from July 2012-September 2014 dataset

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Cut Points for Positive Tests

- **TST :**
  - **5mm for HIV-infected persons, close contacts**
  - **10 mm for recent immigrants, <5 years of age, injection drug users**
- **QFT : ≥ 0.35 IU/ml**
- **TSPOT:**
  - **International: Positive: ≥ 6 spots**
  - **U.S.: Positive: ≥ 8 spots, borderline: 5-7 spots**

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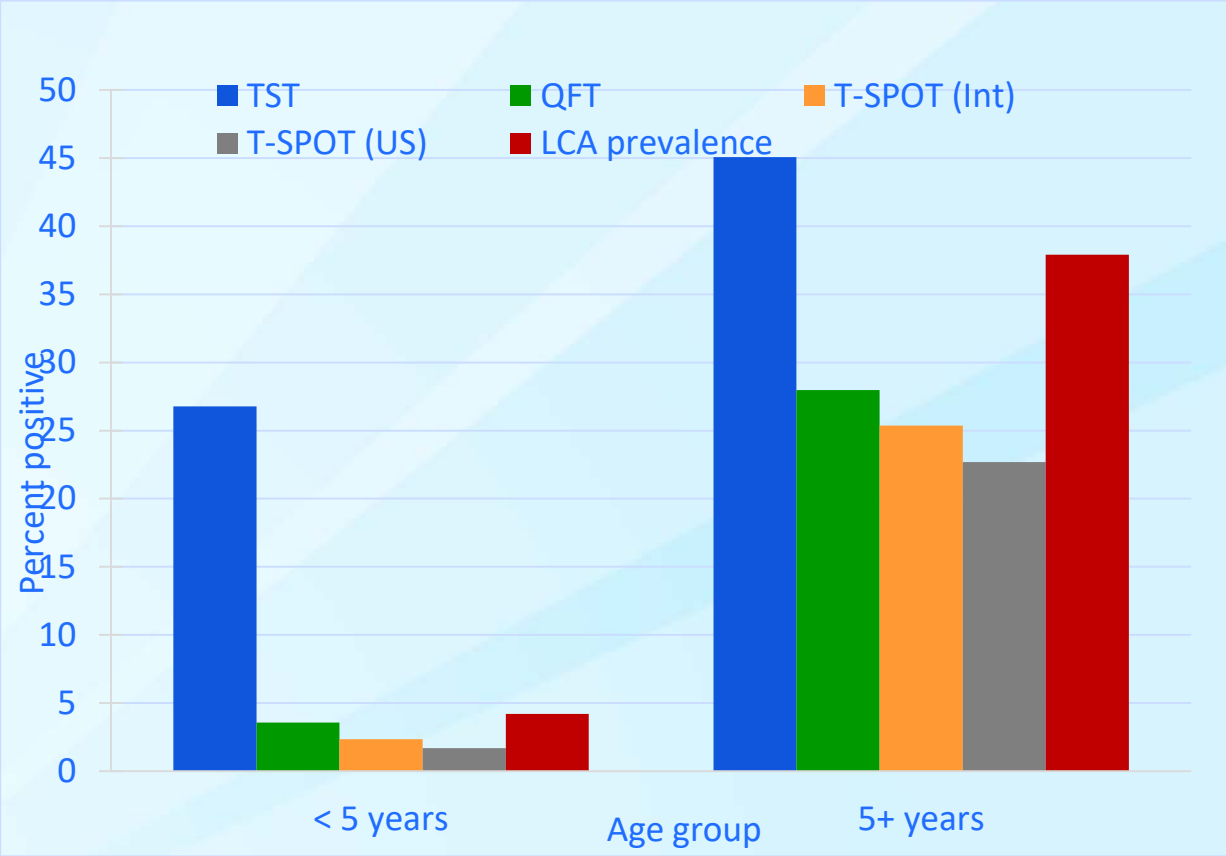
Characteristics of 11,962 TBESC Participants
July 2012-September 2014

	N	%
Male	6,284	53
Foreign-born	9,643	81
BCG vaccination	6,332	53
HIV infection	1,460	12
Children < 5 years old	516	4.3
Median age (years, IQR)	31 (19, 46)	

TBESC
TUBERCULOSIS EPIDEMIOLOGIC STUDIES CONSORTIUM-II

Single Test Prevalence for Foreign-Born, HIV-negative Persons, by Age Group



Test Characteristics by LCA for Foreign-Born Participants >5 years (n=8,018)

LTBI prevalence	37.9% (32.6-42.9)		
Sensitivity		**PPV**	
TST	74.8% (67.2-82.4)	TST	60.0% (56.4-62.7)
QFT	71.6% (63.3-79.9)	QFT	97.6% (94.0-99.6)
T-SPOT*	70.3% (61.4-79.1)	T-SPOT*	98.6% (95.8-99.8)
Specificity		**NPV**	
TST	69.6% (67.7-71.4)	TST	81.8% (78.5-91.1)
QFT	98.9% (97.8-99.9)	QFT	85.0% (73.8-89.3)
T-SPOT*	99.4% (98.6-100)	T-SPOT*	84.5% (77.8-91.0)

PPV = positive predictive value, true positive /true positive + false positive;
NPV= negative predictive value, true negative/true negative + false negative

* For LCA we used ≥5 spots as a positive T-SPOT result

What This Means for the Clinician: Population ≥5 Years at High Risk for LTBI

Hypothetical cohort of 1000 foreign-born patients ≥5 years (38% LTBI prevalence)

	LTBI	No LTBI	
TST +	285	186	471
TST -	95	434	529
	380	620	1000

- Sensitivity of 75%
- Specificity of 70%

Of 1000 people—

- **39% (186/471) with TST+ don't have LTBI**
- Positive predictive value (PPV) is 61%
- 25% (95/380) of LTBI missed

	LTBI	No LTBI	
IGRA+	270	6	276
IGRA-	110	614	724
	380	620	1000

- Sensitivity of 71%
- Specificity of 99%

Of 1000 people—

- **2% (6/276) with IGRA+ don't have LTBI**
- PPV is 98%
- 29% (110/380) of LTBI missed

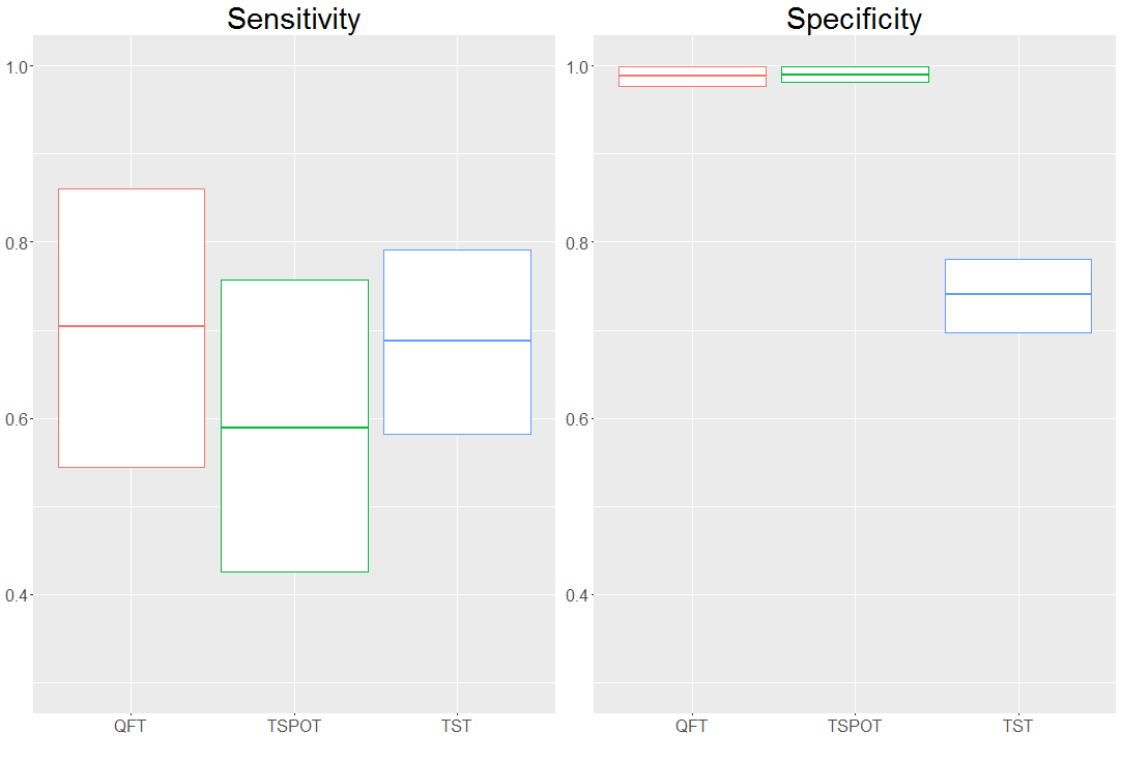
LTBI Test Characteristics by LCA for Foreign-Born Children <5 Years (n=463)

LTBI prevalence	4.2% (1.9-6.7)		
Sensitivity		**PPV***	
TST	74.8% (67.2-82.4)	TST	10.2% (5.0-16.9)
QFT	70.4% (54.4-86.1)	QFT	73.8% (43.3-95.5)
T-SPOT*	58.9% (42.5-75.7)	T-SPOT	71.9% (45.4-93.2)
Specificity		**NPV***	
TST	74.0% (69.7-78.0)	TST	98.3% (96.7-99.3)
QFT	98.9% (97.7-99.9)	QFT	98.7% (97.3-99.6)
T-SPOT**	99.0% (98.1-99.9)	T-SPOT	98.2% (96.5-99.4)

PPV = positive predictive value, true positive /true positive + false positive;
NPV= negative predictive value, true negative/true negative + false negative

** For LCA we used ≥5 spots as a positive T-SPOT result

LTBI Test Characteristics by LCA in Foreign-Born Children <5 Years (n=463)



* For LCA we used ≥5 spots as a positive T-SPOT result

What This Means for the Clinician: Population < 5 Years at High Risk for LTBI

Hypothetical cohort of 1000 foreign-born children < 5 yrs (4% LTBI prevalence)

	LTBI	No LTBI	
TST+	30	284	314
TST-	10	676	686
	40	960	1000

- Sensitivity of 74.8%
- Specificity of 74.0%

Of 1000 people—

- **90% (284/314) with TST+ don't have LTBI**
- Positive predictive value (PPV) is ~10% (30/314)
- 25% (10/40) LTBI missed

QFT

- Sensitivity of 70.4%
- Specificity of 98.9%

Of 1000 people—

- **26% (10/38) with positive QFT don't have LTBI**
- PPV is 74% (28/38)
- 30% (12/40) LTBI missed

T-SPOT

- Sensitivity of 58.9%
- Specificity of 99.0%

Of 1000 people—

- **29% (10/34) with positive T-SPOT don't have LTBI**
- PPV is 71% (24/34)
- 40% (16/40) LTBI missed

Summary

Foreign-born persons ≥5 years

- TST was little better than a coin flip in predicting who had LTBI
- Both the QFT and TSPOT had high positive predictive values of 97.6 and 98.6

Foreign-born persons <5 years

- LTBI prevalence by LCA was 4%
- For TST ≥ 10 mm as positive, the PPV was 10%; almost all positive TST results were false positives
- Our data support recommendations preferring either serial testing (TST followed by a QFT/T-SPOT) or use QFT/T-SPOT as the initial screening test in foreign-born persons < 5 years

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T-Spot.*TB* Data From Oxford Imm.

Anna Mandalakas and Heather Highsmith

- Anonymous data from ~ 44,000 T-Spot.*TB* results
- No epidemiologic data available – cannot validate sensitivity, specificity, PPV or NPV
- Most invalid results from high nil response – higher in spring!
- 1.3% could not perform due to low lymphocyte counts

Age (Years)	N	Positive (%)	Negative (%)	Borderline (%)	Invalid (%)
<1	455	11 (2.4)	433 (95.2)	3 (0.7)	8 (1.8)
1 to <2	964	13 (1.3)	937 (97.2)	7 (0.7)	7 (0.7)
2 to <3	1047	31 (3.0)	1000 (95.5)	7 (0.7)	9 (0.9)
3 to <5	2591	106 (4.1)	2453 (94.7)	19 (0.7)	13 (0.5)
5 to <10	10746	463 (4.3)	10101 (94.0)	112 (1.0)	70 (0.7)

Question

If the IGRAs had come first, and we were now considering whether and how to use the TST, what would we say?

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American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

FROM THE AMERICAN ACADEMY OF PEDIATRICS

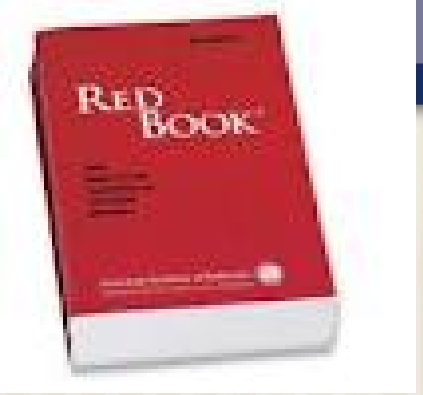
TECHNICAL REPORT

Interferon-γ Release Assays for Diagnosis of Tuberculosis Infection and Disease in Children

TABLE 1 Comparison of the TST and IGRAs

Characteristic	TST	IGRA
Antigens used	Many; PPD	3 (QFT) or 2 (T-SPOT)
Sample	Intradermal injection	Blood draw
Patient visits required	2	1
Distinguish between LTBI and TB disease	No	No
Cross-reactivity with BCG	Yes	No
Cross-reactivity with NTM	Yes	Only rare species[a]
Differing positive values by risk	Yes (5-10-15)	No
Causes boosting	Yes	No
Subject to boosting by previous TST	Yes	Possible
Durability over time (stays positive with or without treatment)	Yes	Unknown
Difficulties with test reproducibility	Yes	Yes
Relative cost	Lower	Higher
Location of need for trained staff	"Bedside"	Laboratory
Estimated specificity in BCG-unvaccinated children	95% to 100%	90% to 95%
Estimated specificity in BCG-vaccinated children	49% to 65%	89% to 100%
Estimated sensitivity (confirmed TB disease)	75% to 85%	80% to 85%
Estimated sensitivity (clinical TB disease)	50% to 70%	60% to 80%

[a] *M marinum*, *M kansasii*, *M szulgai*, and *M flavescens*.



IGRAs AND THE 2018 AAP "RED BOOK"

- Can use IGRAs in immunocompetent children ≥ 2 years of age [previously ≥ 5 years of age] in all situations when a TST would be used; some experts down to 1 year of age
- Particularly useful/preferred for children who have received a BCG vaccination
- Same recommendations as TST for risk factors and frequency of testing
- Use with caution in immunocompromised children
- Neither IGRAs nor the TST are perfect; always need clinical judgment!

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TABLE 2 Suggested Uses of TST and IGRA in Children

TST preferred

- Children younger than 5 y[a]

Change 5 y to 2 y in this table

IGRA preferred, TST acceptable

- Children 5 y or older who have received BCG vaccine
- Children 5 y or older who are unlikely to return for the TST reading

Both the TST and an IGRA should be considered when:

- The initial and repeat IGRA results are indeterminate/invalid
- The initial test (TST or IGRA) result is *negative* and:
  - There is clinical suspicion of TB disease[b]
  - The child has a TB risk factor and is at high risk of progression and poor outcome (especially therapy with an immunomodulating biologic agent, such as a TNF-α antagonist)[b]
- The initial TST is *positive* and:
  - The patient is 5 years or older and has a history of BCG vaccination
  - Additional evidence is needed to increase adherence with therapy

TNF-α, tumor necrosis factor α.

[a] Some experts will use an IGRA in children 2 to 4 years of age, especially if they have received a BCG vaccine but have no other significant risk factors. Most experts do not use an IGRA for children younger than 2 years because of lack of data for this age group and the high risk of progression to disease.

[b] A positive result of either test is considered significant in these groups.

IGRAs IN CHILDREN – SOME CLINICAL ISSUES

BCG-vaccinated child

- **Strategy 1**: TST: if negative, no more testing; if positive, follow with an IGRA
- **Strategy 2**: Do only the IGRA
- **Note**: If TB exposure, child should be considered infected if either test is positive

Child about to be immune compromised

- No TB risk factor: do either a TST or an IGRA
- TB risk factor: do both a TST and an IGRA and evaluate and treat if either test result is positive [RISK and BENEFIT]

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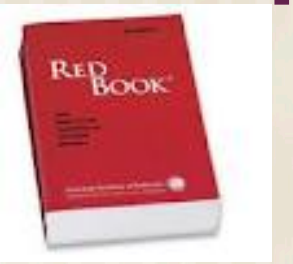
Treatment of Tuberculosis Infection in Children: 2015 Red Book



- 9H the *preferred* regimen
- 4R to be used only when there is isoniazid resistance or intolerance; "some experts would chose to treat children younger than 12 years with 6R."
- 3HP "should not be used routinely for children younger than 12 years of age but can be considered when the likelihood of completing another regimen is low."

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Original Investigation

Treatment for Preventing Tuberculosis in Children and Adolescents

A Randomized Clinical Trial of a 3-Month, 12-Dose Regimen of a Combination of Rifapentine and Isoniazid

Villarino et al. *JAMA Pediatr* 2015; doi:10:1001/jamapediatrics.2014.3158

- Part of a larger trial of ~7,800 patients
- Included children ages 2 to 17 years
- 905 children evaluable for effectiveness
- 12 weekly doses of 3HP vs. 9 months daily doses of INH
- Completion rates: 3HP – 88% 9INH – 91%
- Development of TB: 3HP – 0/471 9INH – 3/434
- No child experienced hepatotoxicity, Grade 4 adverse event
- Grade 3 Adverse Effect: 3HP – 3 of 539 9INH – 1 of 493

Conclusion: 3HP was at least as effective, safe and had a higher completion rate than 9 months of INH

Cruz and Starke. Completion rate and safety of tuberculosis infection treatment with shorter regimens. *Pediatrics* 2018; 141: e20172838

- Retrospective review of actual practice: N = 667
- 3HP: 283 4R: 132 9H: 252
- Completion rates: 3HP: **97%** 4R: **88%**
- 9H completion: SAT: **53%** ESAT: **76%** DOPT: **89%**
- Multivariate analysis: completion associated with DOPT, increasing age, absence of any AE
- AEs were more common with 9H, including 2 children with significant hepatotoxicity [none with 3HP or 4R]
- One case of TB disease: 16 year old developed culture confirmed pulmonary TB 7 months after completing 3HP; great concern that she “cheeked” and spit out the medications after the HCW left the house

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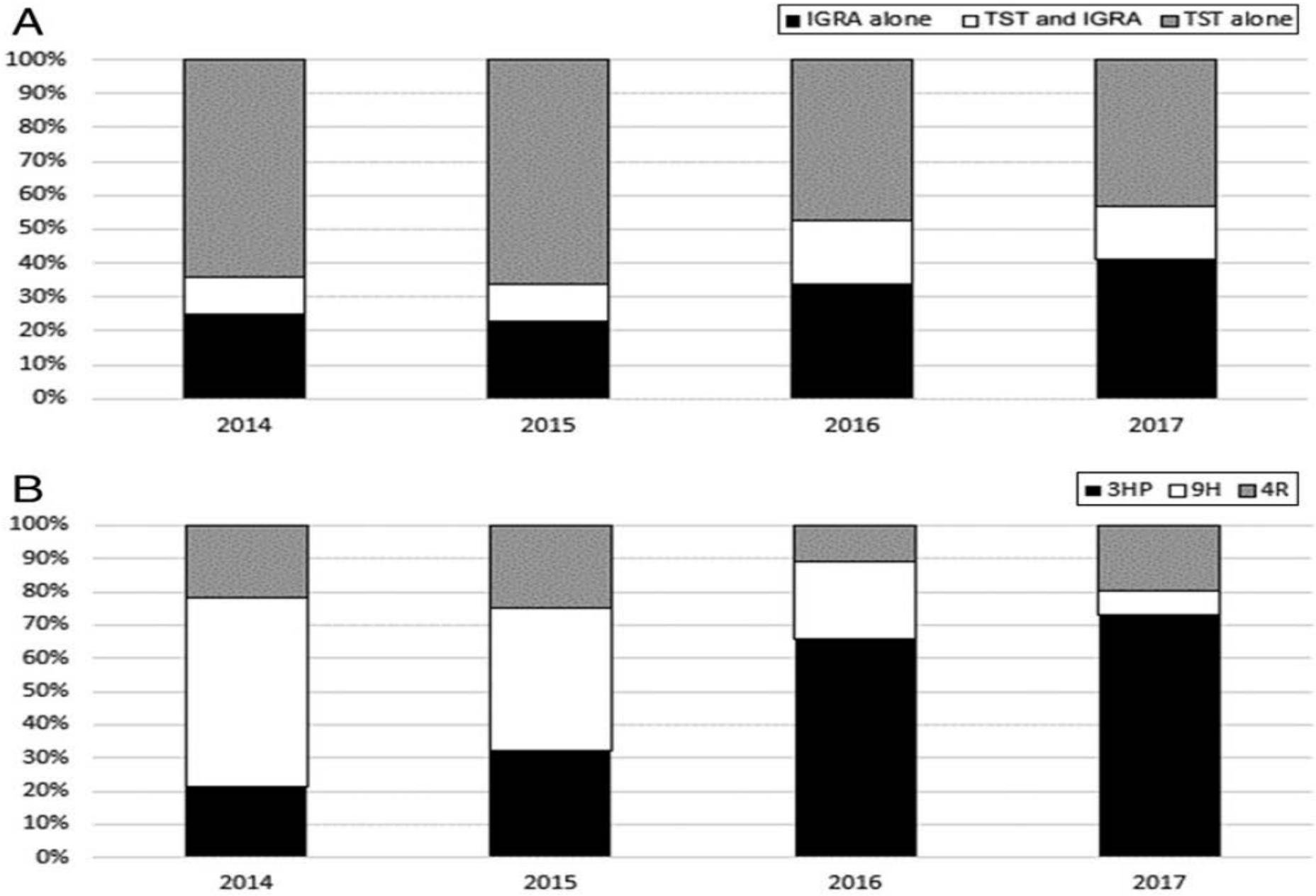

FIGURE 1
Shift in practice patterns, 2014–2017. A, Shift in use of tests of TB Infection. B, Shift in use of treatment regimens.

Gaensbauer et al. Pediatr Infect Dis J 2018; 37:224

- 4R [N=395] vs. 9H [N=779] from 2016 to 2015 in children
- Retrospective, nonrandomized observational study
- Drug toxicity [all dermatologic]: 4R – 1.5%, 9H-0.7% [NS]
- No known treatment failures
- Completion rates were higher when IGRA was used and when known contact with a TB case was present

Table 2. LTBI Treatment Completion Rates Stratified by Demographic and Clinical Characteristics

	Treatment Regimen[α] Completion (proportion, %)				p-value[µ]
	4R (n=395)	%	9H (n=779)	%	
All patients	330/395	83.5	536/779	68.8	<0.001
Age Range (years)					
0-1	29/38	76.3	19/37	51.4	0.024
2-4	17/26	65.4	75/102	75.5	0.41
5-9	58/65	89.2	116/153	75.8	0.024
10-14	99/113	87.6	222/305	72.8	0.001
15-17	127/153	83	104/182	57.1	<0.001

Gaensbauer et al. Pediatr Infect Dis J 2018; 37:224

TABLE 2. Impact on LTBI Treatment Completion: Multivariable Logistic Regression

Variable	OR of Treatment Completion	95% CI	*P**
Contact with active case	1.82	1.13–2.93	0.013
4-month rifampin regimen	1.64	1.07–2.52	0.023
Speaking any of common languages†	1.58	1.02–2.45	0.040
IGRA‡ tested	1.39	0.91–2.11	0.129
Nepali language	1.20	0.60–2.37	0.606
Age	0.97	0.95–1.00	0.073
Region of origin			
Southeast Asia	1.28	0.79–2.06	0.315
Africa	0.99	0.60–1.63	0.968
Other global region	0.56	0.29–1.06	0.075

*Comparator is variable/characteristic not present.
†Any language spoken by >5% of patients.
‡Interferon-gamma releasing assay used to diagnose LTBI.

4R Data from Dick Menzies' Study

- The AAP Red Book Committee was shown the data but I am not allowed to show it to you as it is, as yet, unpublished and remains blinded
- ~ 400 children in 4R and 9H groups
- 4R well tolerated and higher completion rates than 9H

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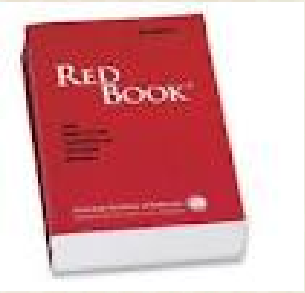
Treatment of Tuberculosis Infection in Children: 2018 Red Book



- Order in the book and in the Table will be 3HP, 4R, and 9H
- Only limitation stated is that 3HP cannot be used in children under 2 years of age because of lack of pK data for rifapentine
- Will not state a specific preference but will say that “some experts” think that 3HP is the preferred regimen

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Rifampin Dosing

- Target serum concentration of 8µg/ml
- CSF to serum ratio: 0.04-0.11
- Schaaf et al, *BMC Med*, 2009: only 9% of children achieved this level at 2 hrs post dose [South Africa]
- Verhagen et al, *Trop Med Int Health*, 2012: only 23% of children achieved this level [Venezuela]
- Savic et al, *Clin Pharm Ther*, 2015: study of pK of rifampin and levofloxacin in adults and children with TBM [Indonesia]

* Takes at least an oral dose of 30 mg/kg and an IV dose of 15 mg/kg of rifampin to reach the target AUC of 92 mg*h/L; even higher doses required to ensure that every child reaches this exposure

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Pullen et al: Pharmacokinetics of intravenous rifampin in neonates. Ther Drug Monit 2006; 5:654

21 neonates treated for *Staphylococcus aureus* infections

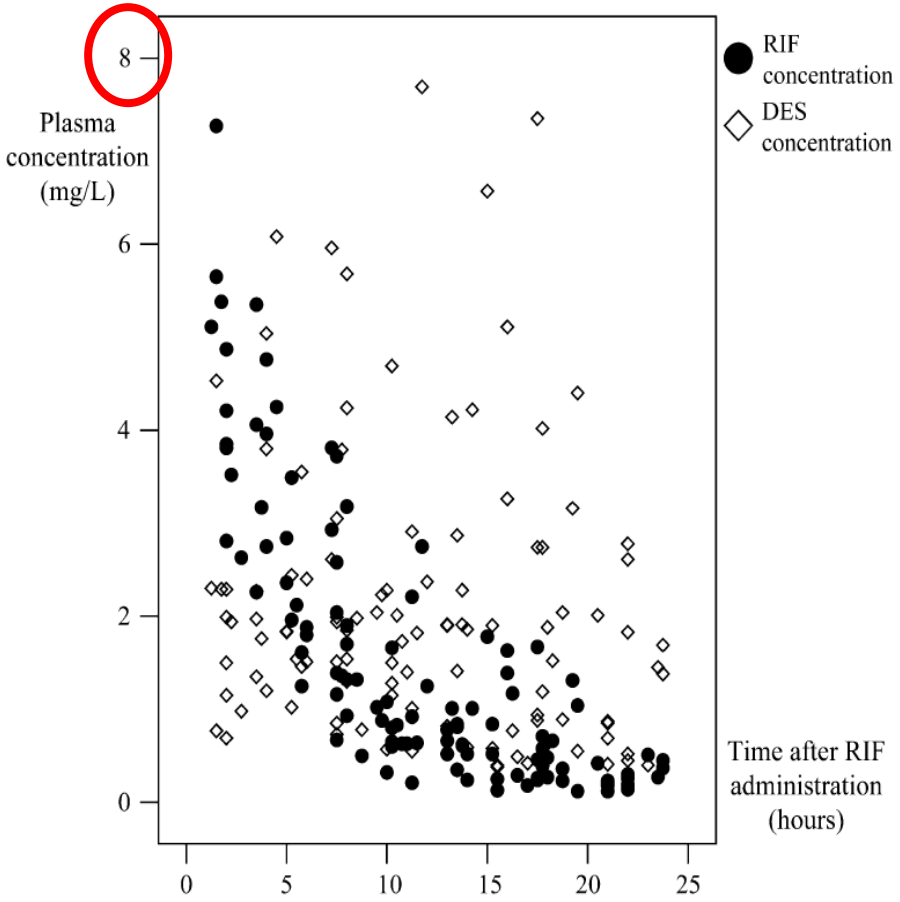

FIGURE 1. Plasma concentrations of rifampicin (RIF) and 25-*O*-desacetylrifampicin (DES) plotted against the time after rifampicin administration.

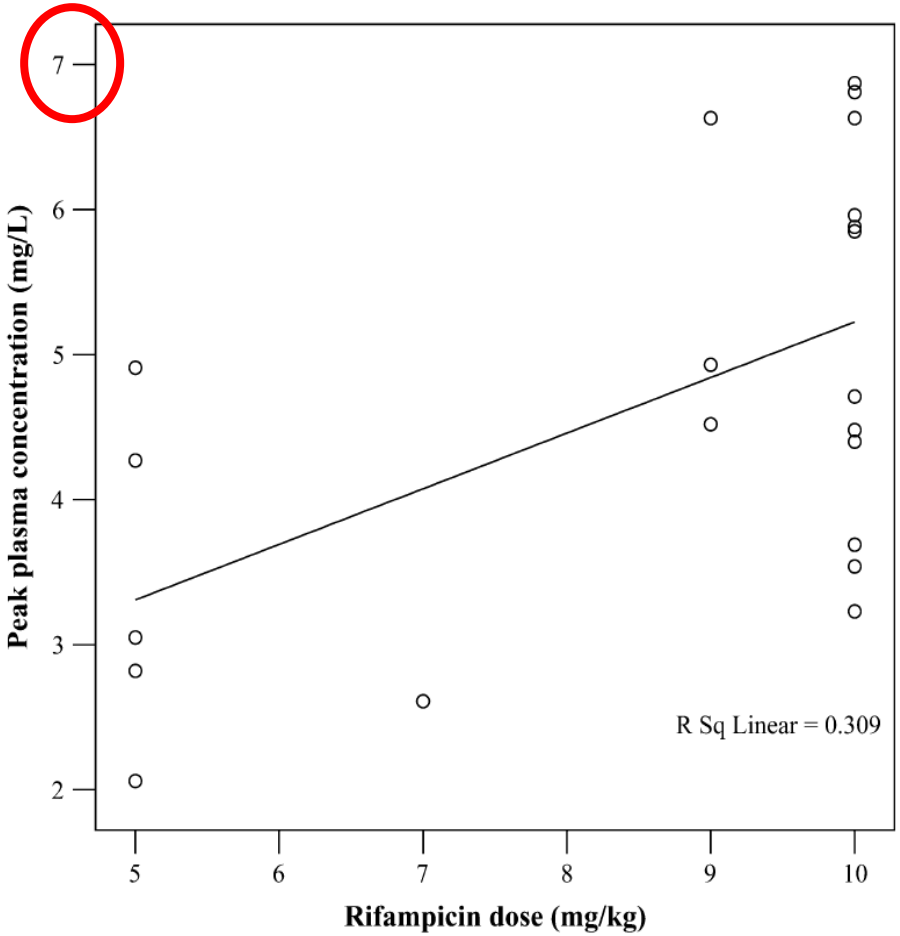

FIGURE 2. Rifampicin peak plasma concentrations after the second dose plotted against the rifampicin dose.

Pullen et al: Pharmacokinetics of intravenous rifampin in neonates. Ther Drug Monit 2006; 5:654

21 neonates treated for *Staphylococcus aureus* infections

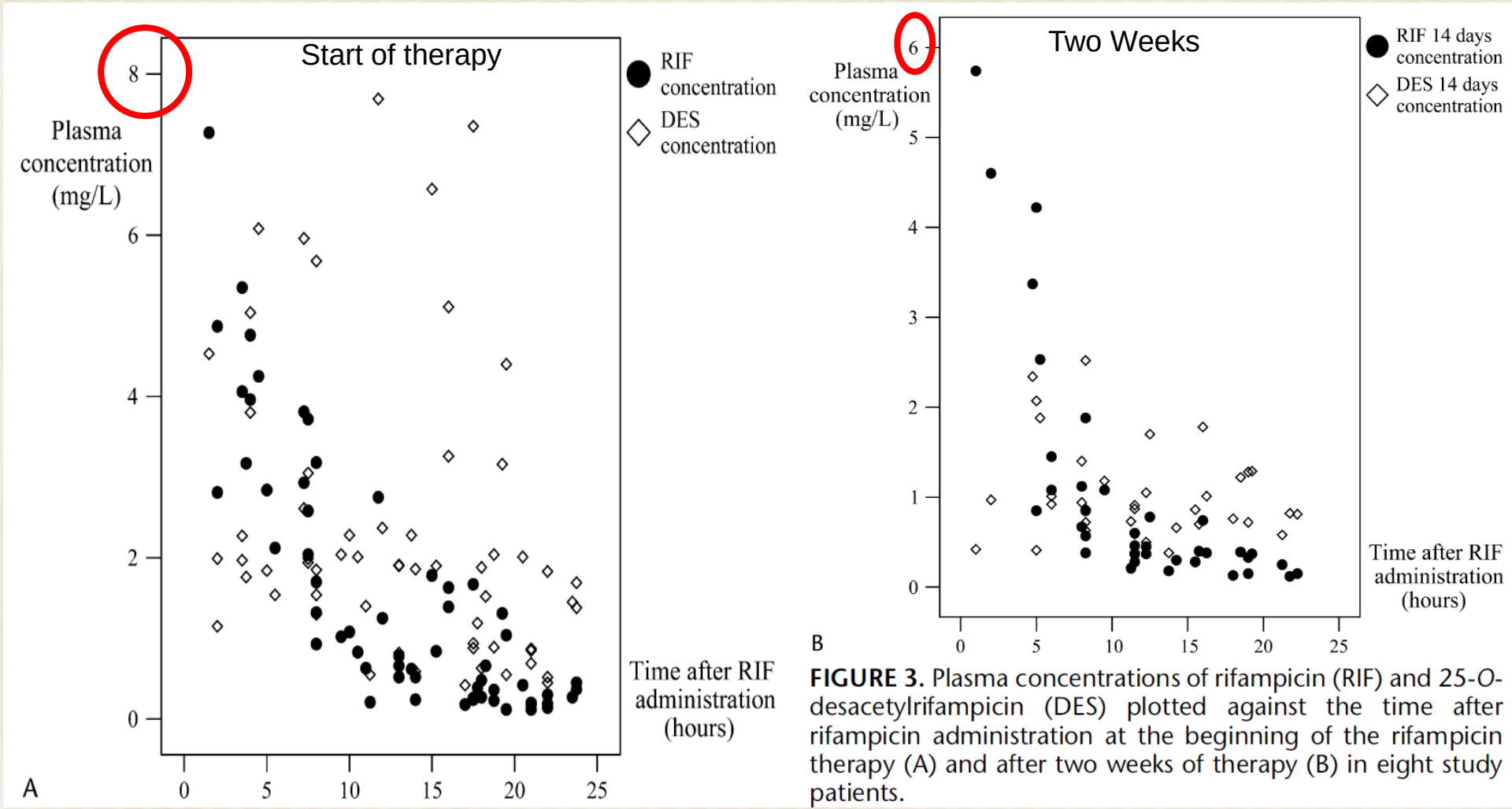

FIGURE 3. Plasma concentrations of rifampicin (RIF) and 25-*O*-desacetylrifampicin (DES) plotted against the time after rifampicin administration at the beginning of the rifampicin therapy (A) and after two weeks of therapy (B) in eight study patients.

Treatment of Tuberculosis Infection in Children: 2018 Red Book: Rifampin Dosing

Standard Treatment

2015: 10-20 mg/kg/day

2018: 15-20 mg/kg/day

Infants, Toddlers and TBM [any age]

2015: 10-20 mg/kg/day

2018: 20-30 mg/kg/day

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Summary

1. IGRAs routinely age 2 years and above; some experts down to 1 year
2. 3HP [age 2 years and above], 4R and 9H all acceptable regimens for treatment of tuberculosis infection in children
3. Increases in recommended rifampin doses: Routine: 15-20 mg/kg/d
   Young Children: 20-30 mg/kg/d
   TB Meningitis: 20-30 mg/kg/d

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Thank you!

Meeting notes and presentations will be sent to everyone on the TB Nurse Network list and posted on our website.

Next TBNN meeting

Wednesday, July 18th, 2018

10-11:30 AM ET

Please contact Helen McGuirk with questions, comments, or suggestions for presentations and content:

mcguirkh@michigan.gov

517-284-4957