Influenza/Respiratory Surveillance

Healthcare & Public Health Partners
General Provider Call
November 9, 2023

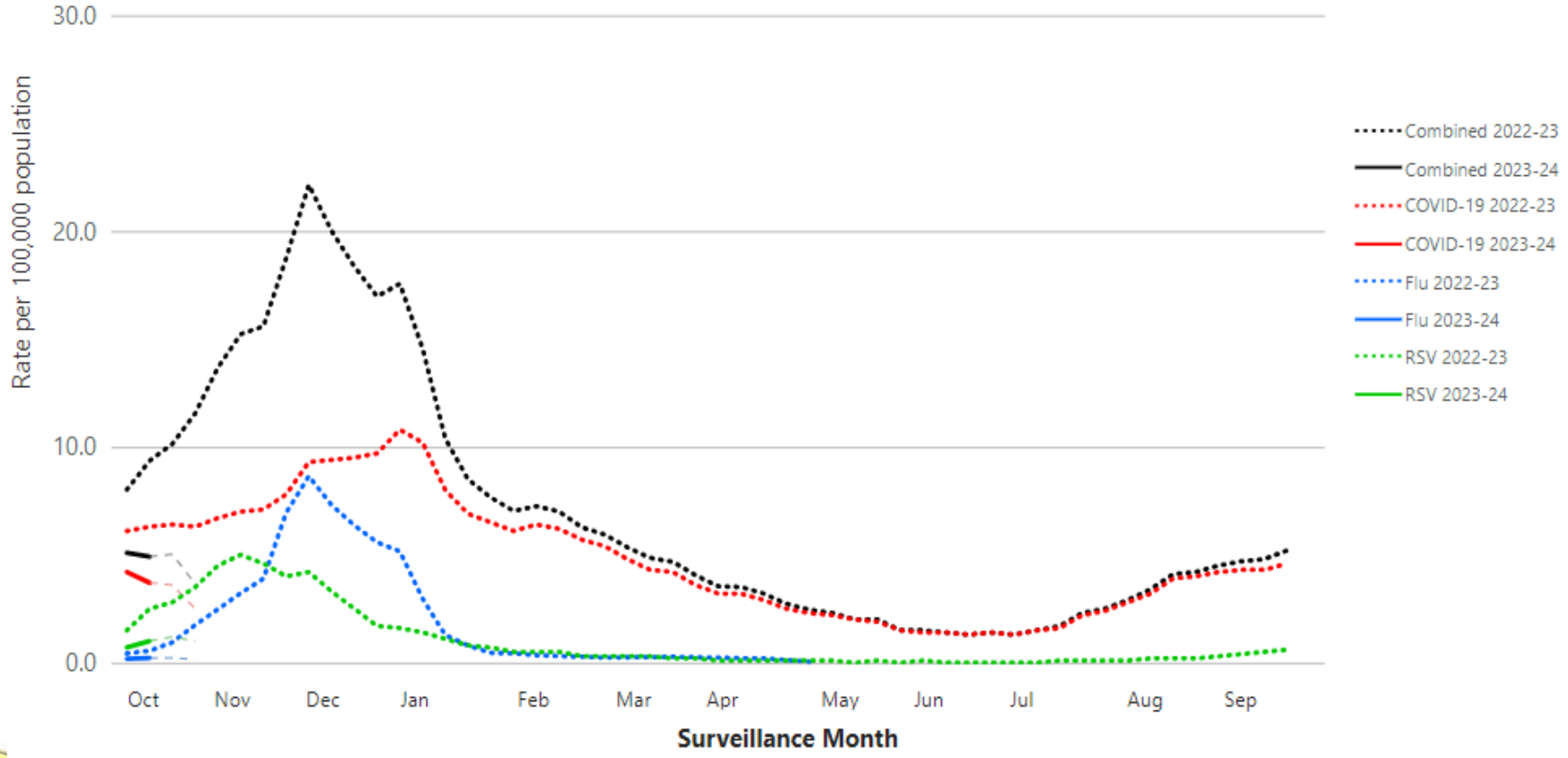
NH DIVISION OF
Public Health Services
Department of Health and Human Services

Pan-respiratory approach

- CDC and states moving towards a ‘pan-respiratory’ approach to monitor a variety of illnesses.
- RESP-NET, an relatively new interactive dashboard, brings together three networks that conduct population based surveillance for laboratory confirmed hospitalizations associated with COVID, Flu and RSV.
- The rates presented on the RESP-NET interactive dashboard can be used to follow trends and compare COVID-19, influenza, and RSV-associated hospitalization rates in different demographic groups.

Pan-Respiratory Virus Surveillance

RESP-NET - Weekly Rates of Covid-19, RSV, & Influenza Hospitalizations in the U.S. (All Ages)

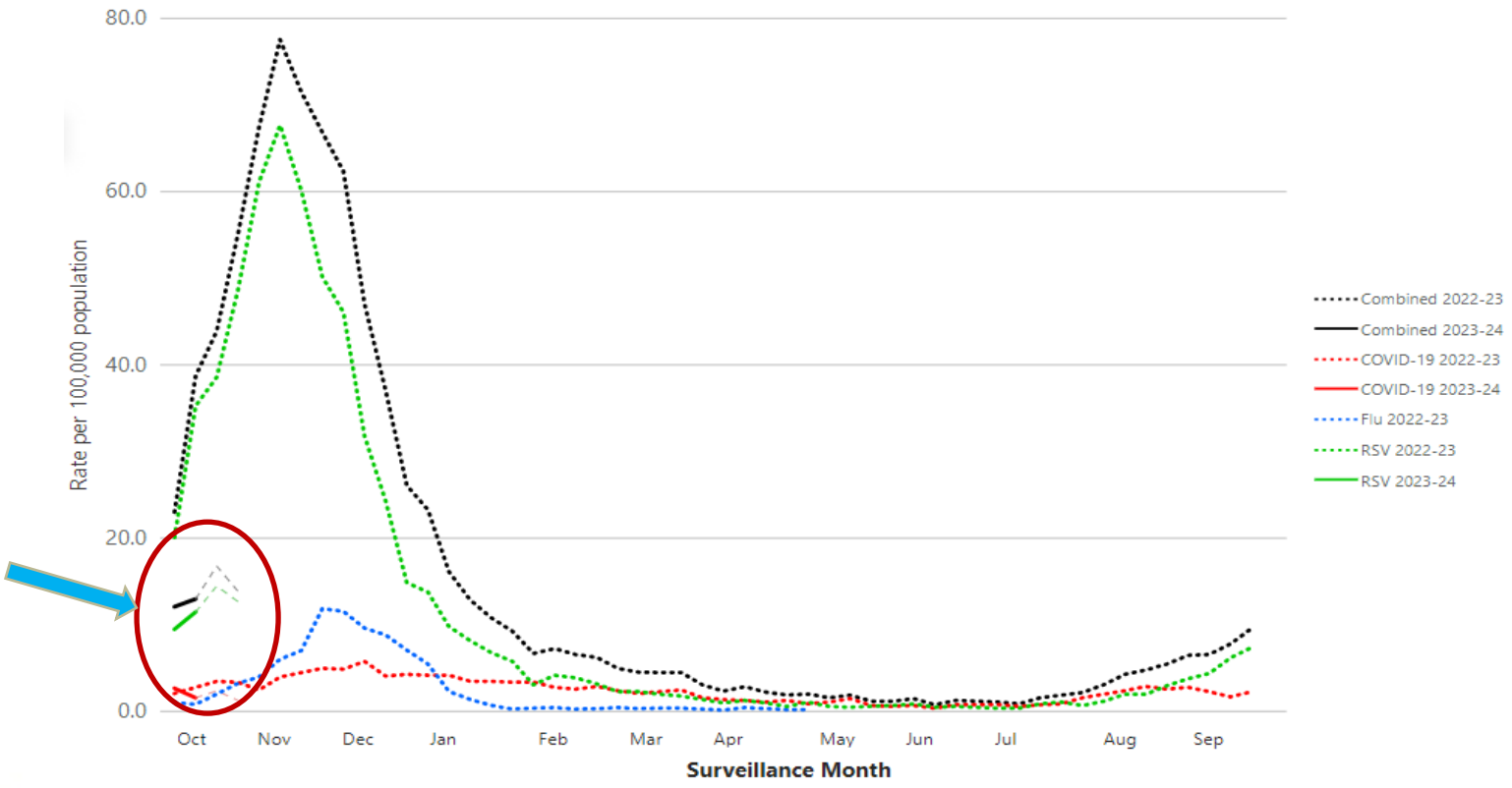


Data last updated: November 3, 2023. | **Accessibility:** Right click on the graph area to display options such as show data as table and copy visual.

[RESP-NET Interactive Dashboard | CDC]

Pan-Respiratory Virus Surveillance

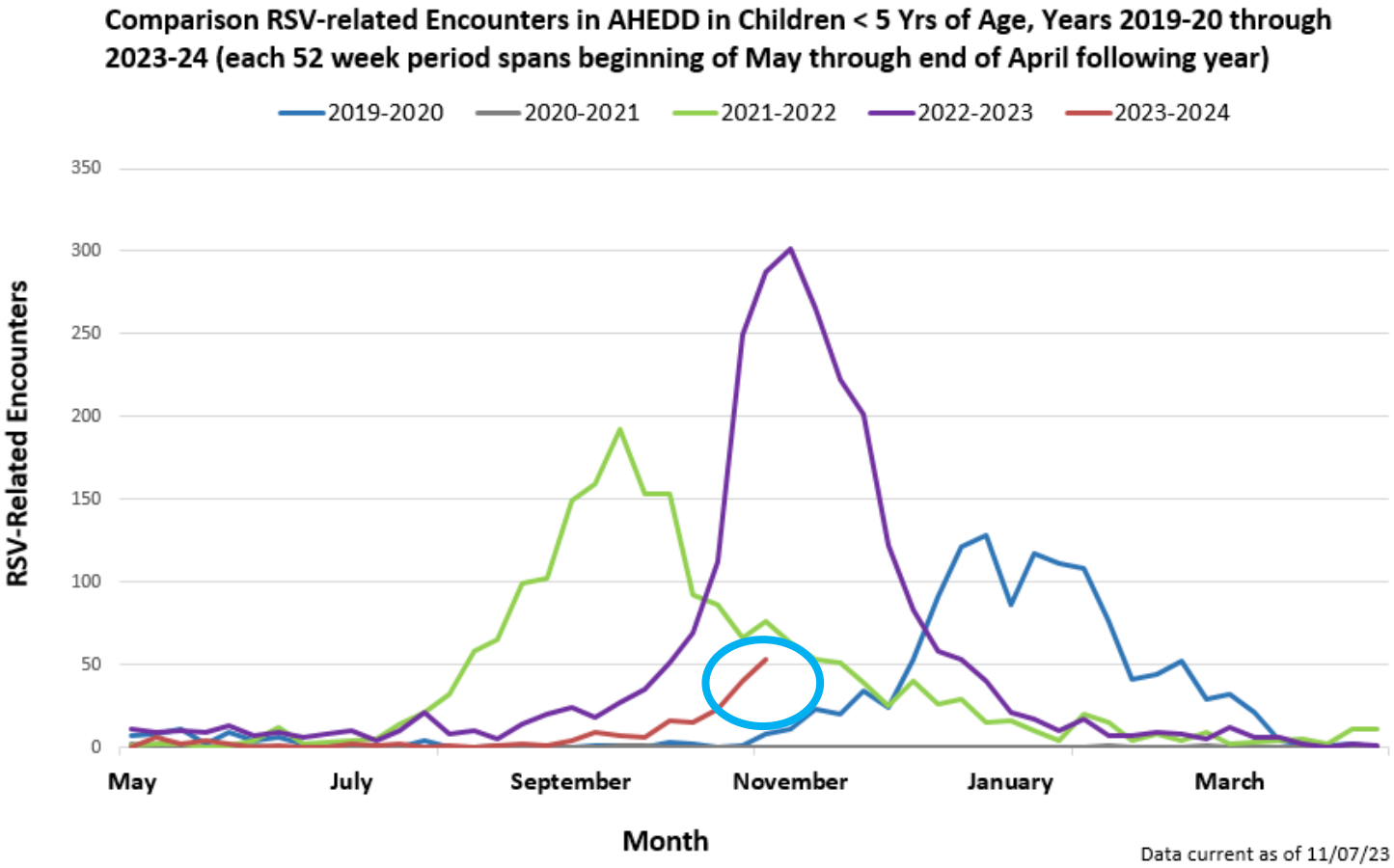
RESP-NET - Weekly Rates of Covid-19, RSV, & Influenza Hospitalizations in the U.S. (0-4 Yrs of Age)



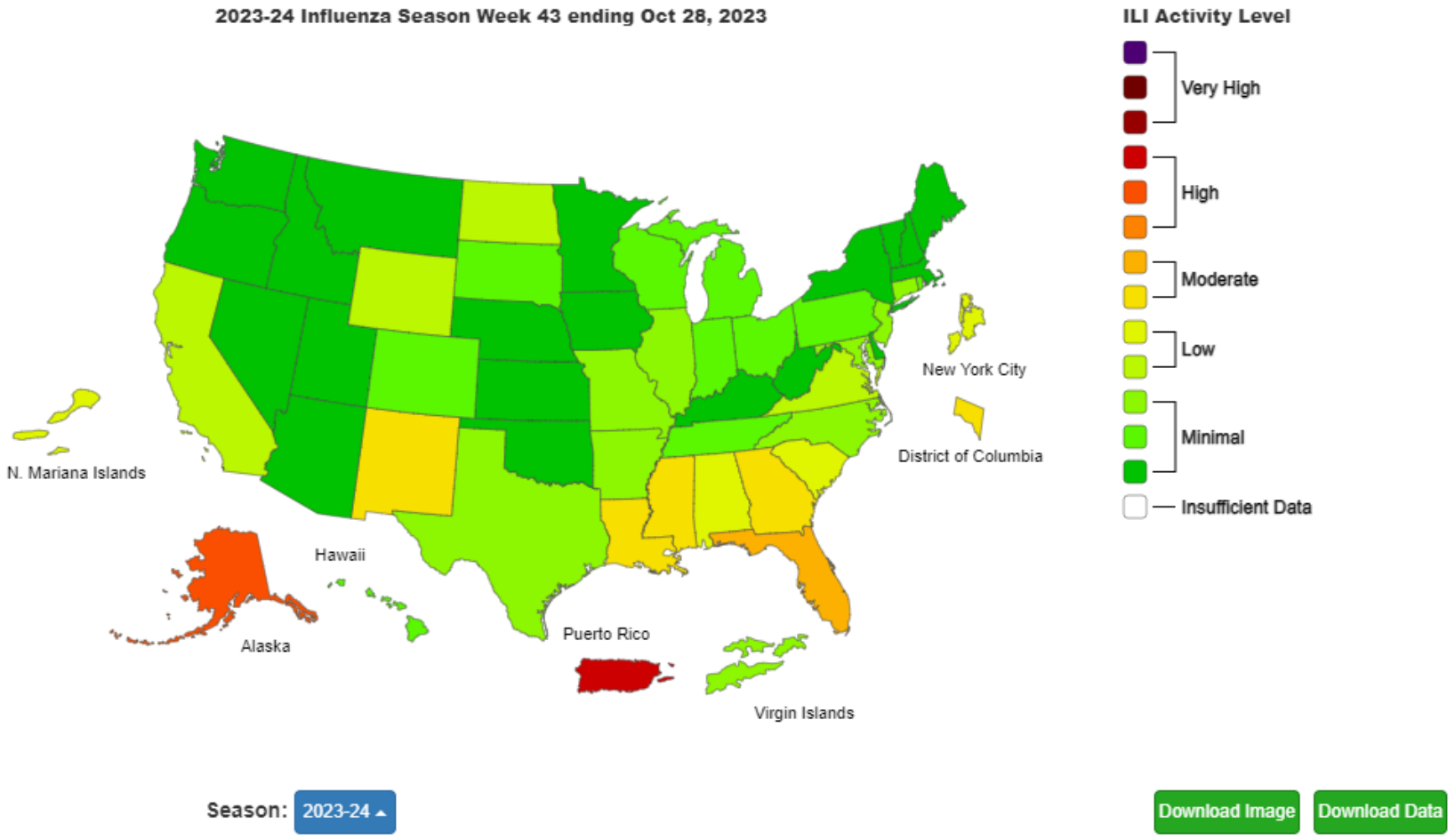
2023-24 Season

Data last updated: November 3, 2023. | **Accessibility:** Right click on the graph area to display options such as show data as table and copy visual.

RSV Activity in NH, Emergency Department Data in Children <5 years of age

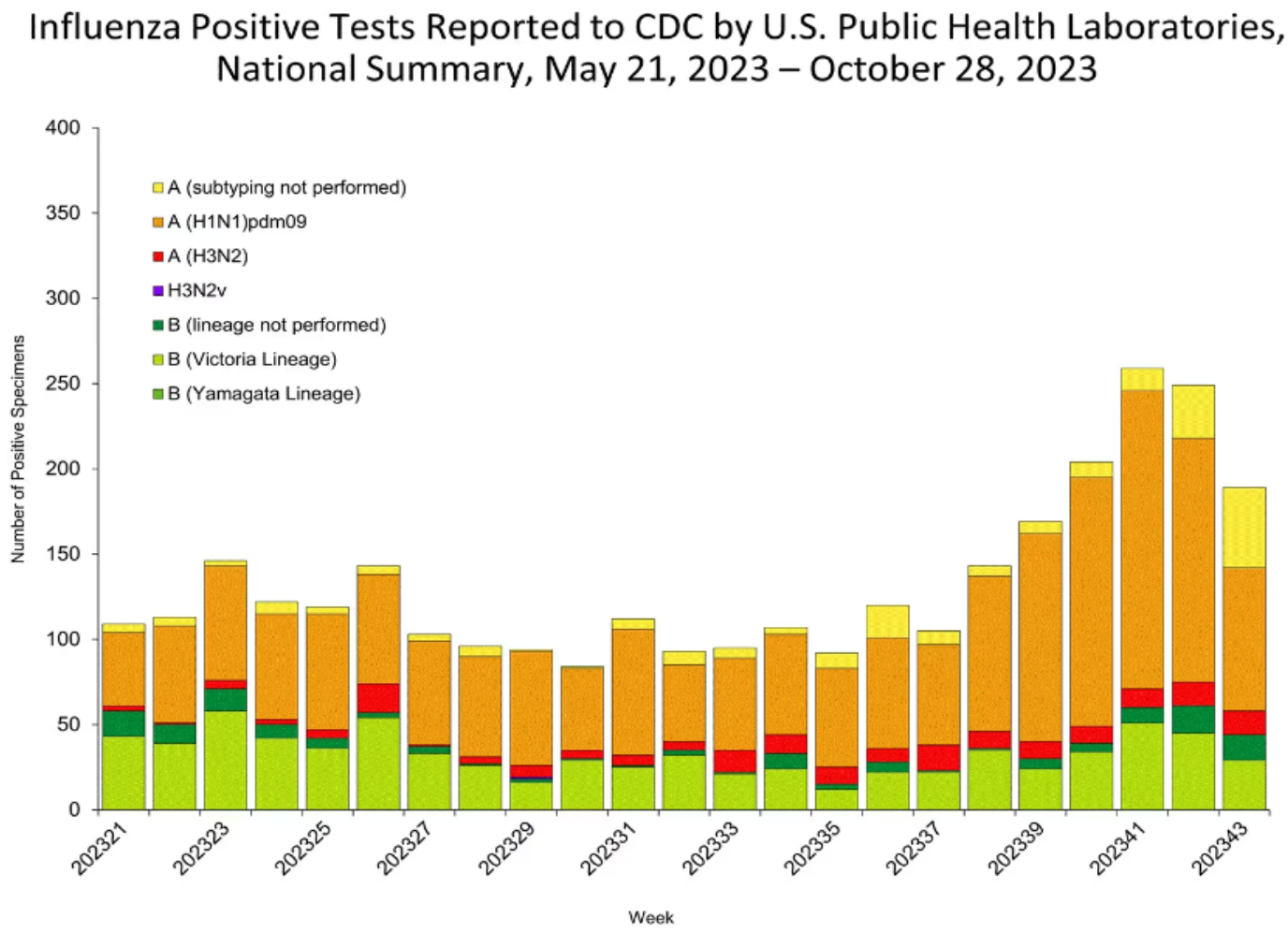


Fluview – ILI Activity Week 43, 2023



FluView Interactive | CDC

Fluview – U.S. PHL Influenza Results for Wk 21 through Wk 43, 2023



[FluView Interactive | CDC]

Influenza Update, 2023-24 season

Results of Specimens Received by the PHL and Cumulative Totals for the 2023-24 Influenza Season				
	Week 43 (10/22/23–10/28/23)		YTD (10/01/23–11/04/23)	
Results	# specimens	% of total positive	# specimens	% of total positive
Influenza A (H1)	0	0	0	0
Influenza A (H3)	1	50.0	2	11.1
Influenza A (H1N1)pdm09	1	50.0	14	77.8
Influenza A, subtyping not completed$^{\Omega}$	0	0	1 $^{\Psi}$	5.6
Influenza B/Victoria	0	0	1	5.6
Negative for influenza	35		88	
Total	37		106	

Ω Subtyping at PHL was either not performed or unsuccessful.

Ψ *Specimen shipped to CDC laboratory for further characterization, and the result reported as positive for influenza A, but subtype was inconclusive. Results suggest the potential for this to be an influenza A variant, however, a more definitive result could not be determined due to low viral titer.*

Influenza Activity | New Hampshire Department of Health and Human Services (nh.gov)

At a Glance: 2011-12 to 2022-23 Seasons

Influenza Season	Total Number of Influenza Related Deaths	Number of Pediatric Related Deaths	Predominate Flu Type Circulating
2011–2012	5	0	A(H3N2)
2012–2013	44	3	A(H3N2)
2013–2014	14	0	A (H1N1)pdm09
2014–2015	49	0	A(H3N2)
2015–2016	19	1	A (H1N1)pdm09
2016–2017	47	2	A(H3N2)
2017–2018	64	0	A(H3N2)
2018–2019	48	0	A (H1N1)pdm09
2019–2020	33	0	A (H1N1)pdm09 & B/Victoria
2020–2021	2	0	–
2021–2022	19	0	A(H3N2)
2022–2023	45	0	A(H3N2)
2023–2024	**2**	**0**	**A(H1N1)pdm09**

NH Data in ILINet in Need of Upgrade

TIME
TO
UPGRADE

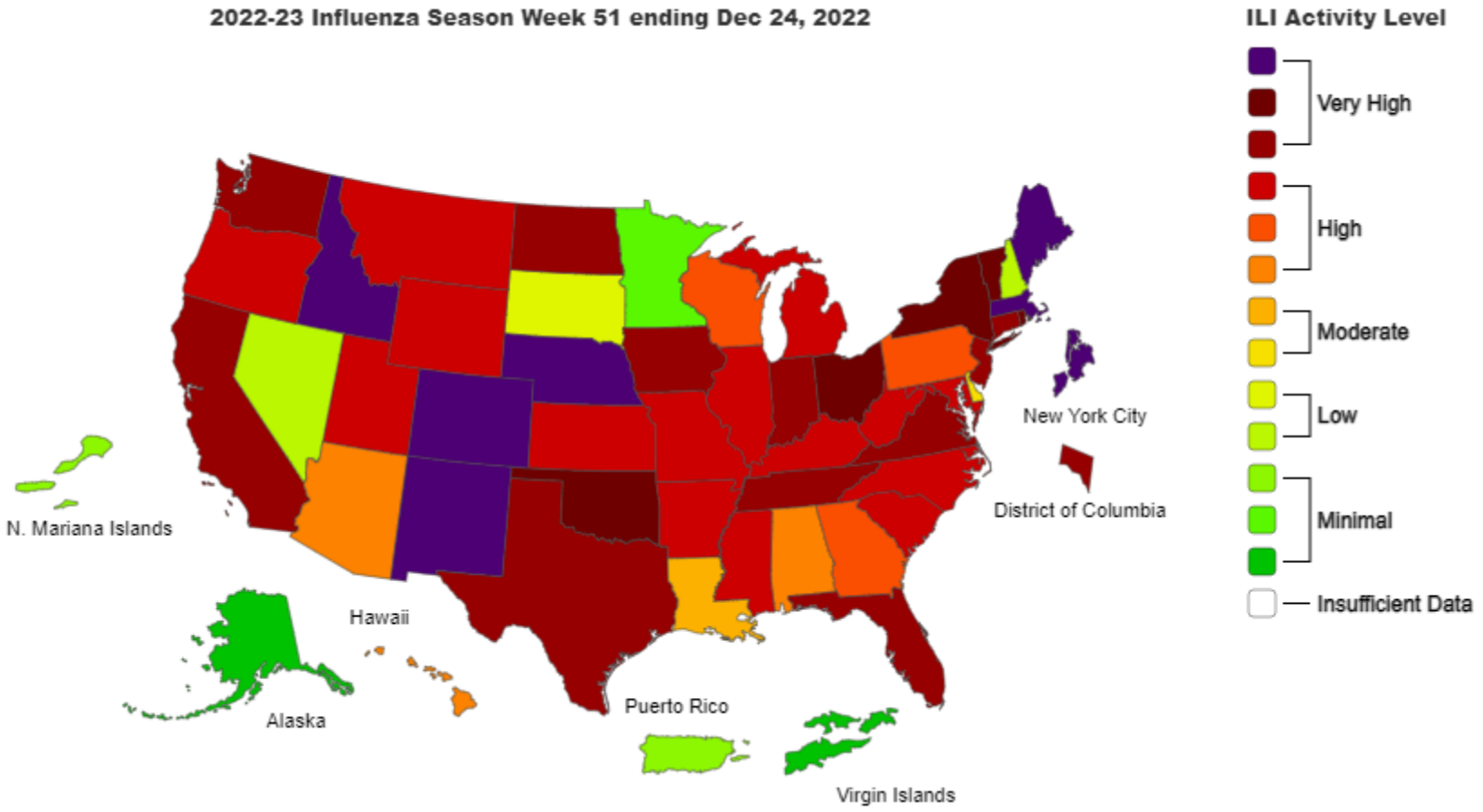
Influenza Like Illness Surveillance Network (ILINet)

- ILInet:
  - Is a collaborative effort between the CDC, healthcare providers, and public health departments.
  - Tracks influenza like syndrome, but not necessarily influenza disease.
  - Publishes ILI activity for each state in FluView reports.
- Purpose of ILInet:
  - Provides timely lab results to track circulating strains of influenza, aid in detection of novel influenza, and can rapidly detect changes in severity during the season.
  - It can also:
    - Help DPHS and CDC to track antigenic changes in these viruses and determine how well they match the strains in the seasonal vaccine.
    - Estimate age-distribution of people with influenza.
    - Detect respiratory outbreaks in the community.

Influenza Like Illness Surveillance Network (ILINet), continued

- Approx. 3,000 providers participate in ILINet across the country
  - Providers report on:
    - Total number of patient visits each week
    - Total number of patient visits due to ILI by age group (ILI defined as fever of 100 or more and cough and/or sore throat)
  - Specimen collection:
    - Specimens are collected from subset throughout season and submitted to public health laboratories.
    - Testing is free of charge for providers.

Fluview – ILI Activity Week 51, 2022



NH revisiting ILINet surveillance

- Updating methods to ensure data more representative for NH and influenza activity
  - Including aggregate emergency department encounters via the National Syndromic Surveillance Program (NSSP)
  - Looking to expand and include more ILINet providers in NH

We cannot conduct this important work without your help!

If you are interested in serving as an ILINET provider, please contact John.J.Dreisig@dhhs.nh.gov

Questions?

John Dreisig, MPH
Influenza Surveillance Coordinator
John.J.Dreisig@dhhs.nh.gov
603-271-6585

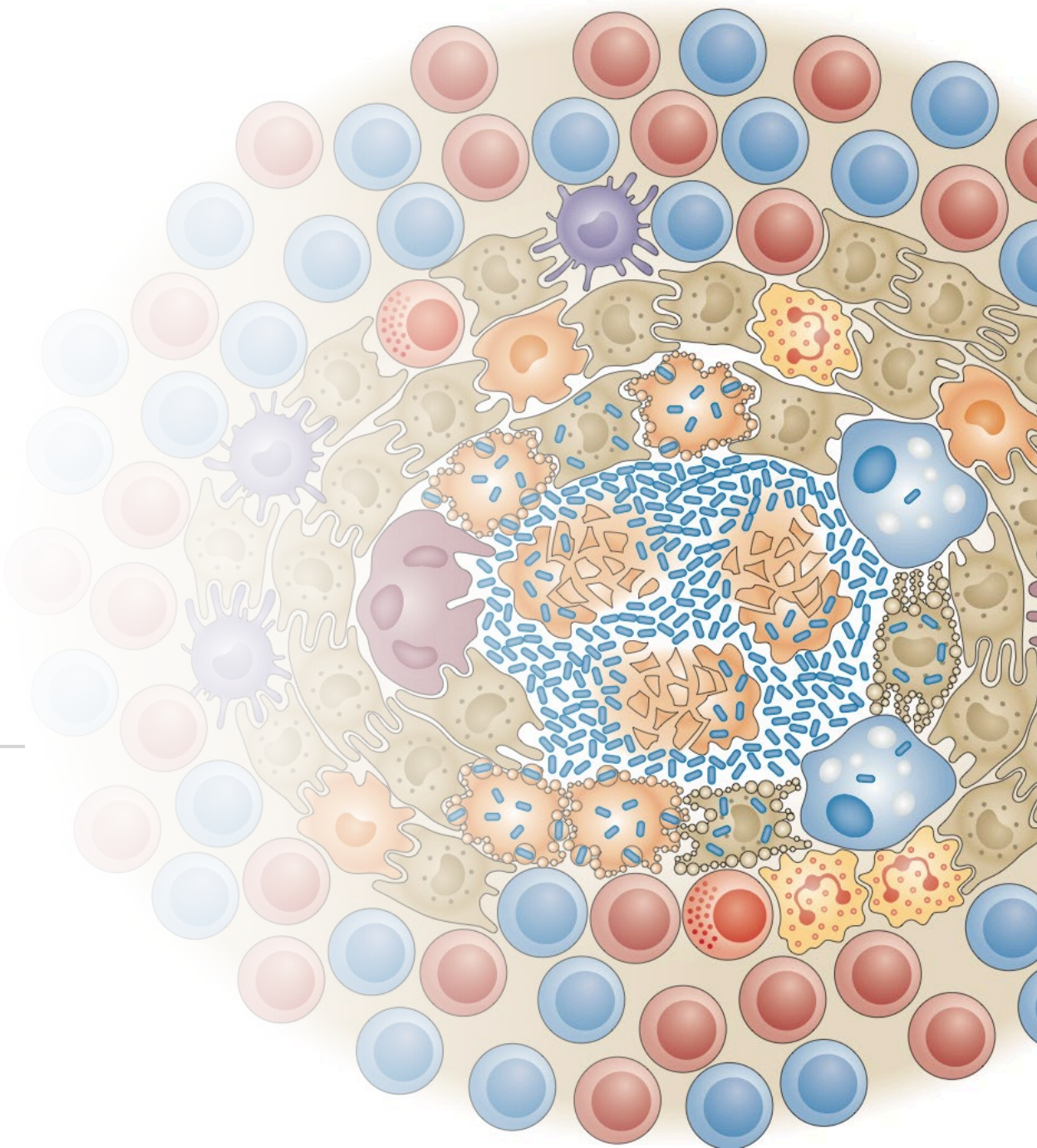
Katrina Hansen, MPH, CPS/CPM
Chief, Infectious Disease Surveillance Section
Katrina.e.Hansen@dhhs.nh.gov
603-271-8325

TB Update

Elizabeth A. Talbot, MD

Professor, Infectious Diseases & International Health

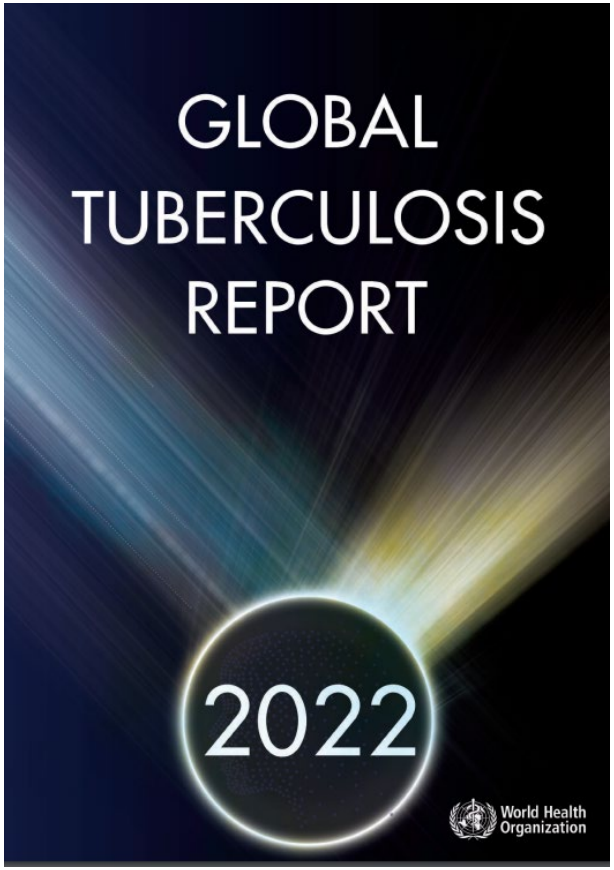
Deputy State Epidemiologist, New Hampshire



TB Vignette

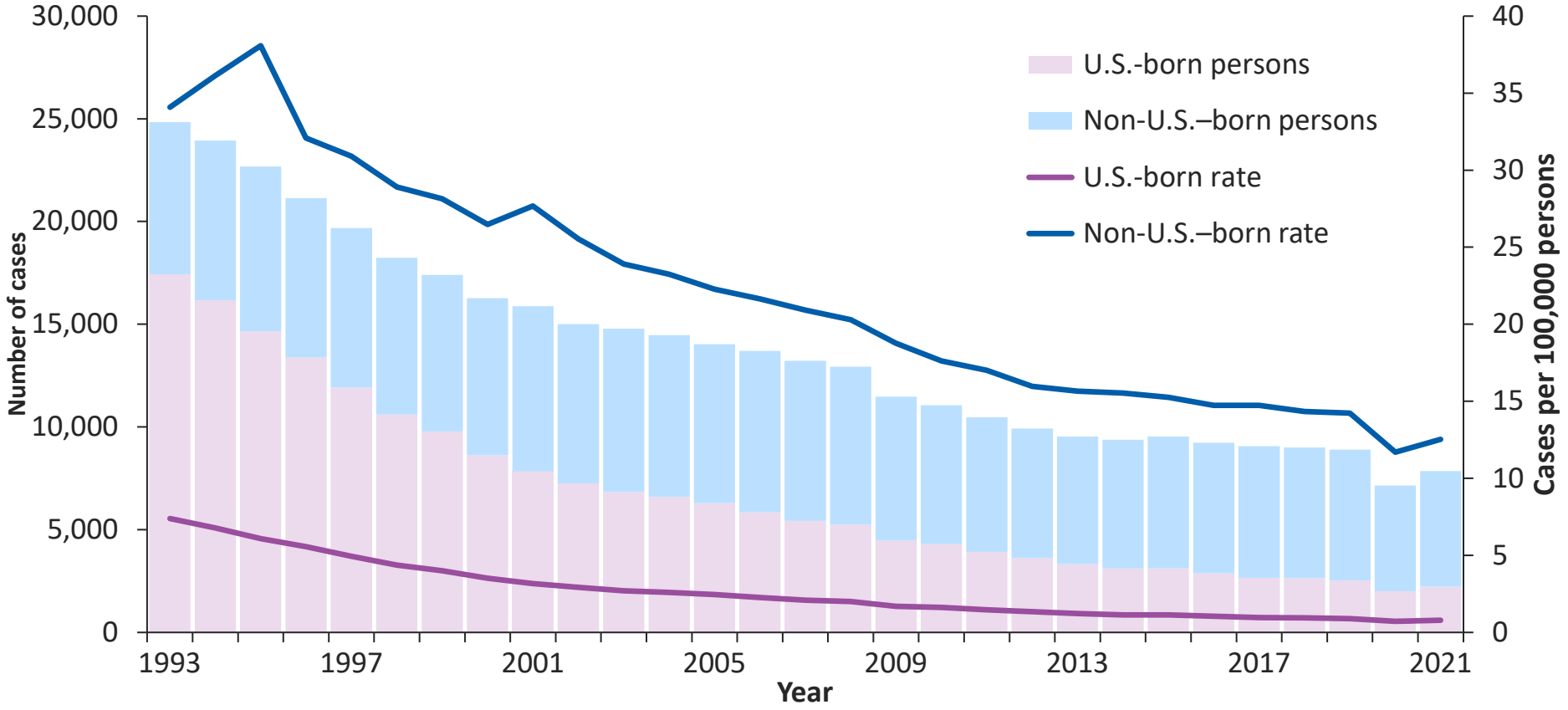
- Sept: ~50 M PLWH from TB endemic setting 20 years ago reports to urgent care for productive cough >2 months, F, >25# WL and fatigue
- Diagnosed with atypical pneumonia and treated with Z-pack
- Think TB?

2021 Global TB Epidemiology



- Estimated 10.6M people developed TB
  - 4.5% increase from 2020
- 1.6M died from TB
  - Estimated deaths are increasing since 2020

US TB Cases and Incidence Rates by Origin of Birth,* 1993–2021



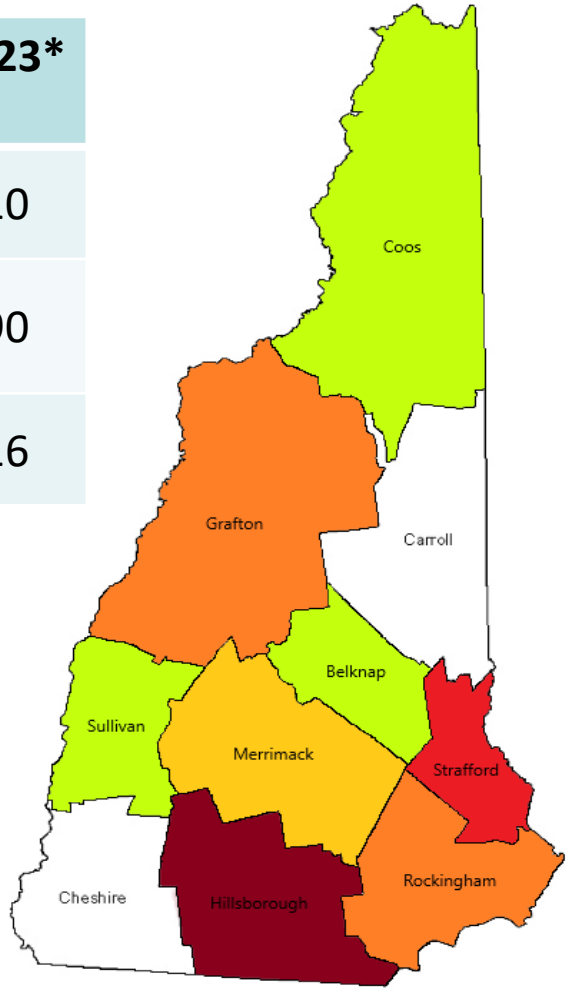
*Persons born in the United States, certain U.S. territories, or elsewhere to at least one U.S. citizen parent are categorized as U.S.-born. All other persons are categorized as non-U.S.–born.

CDC Slide Set

TB in New Hampshire

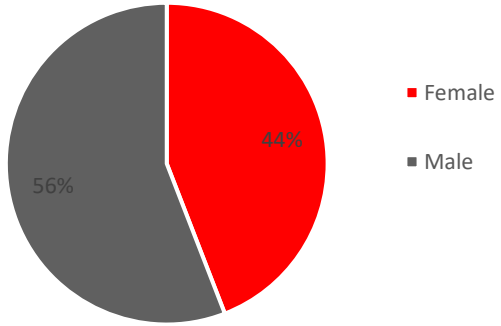
	2018	2019	2020	2021	2022	2023*
Active TB	12	6	12	12	11	10
Proportion FB (%)	83	100	92	75	91	90
Contacts	66	14	56	167	97	16

*Includes Q1&Q2 of 2023

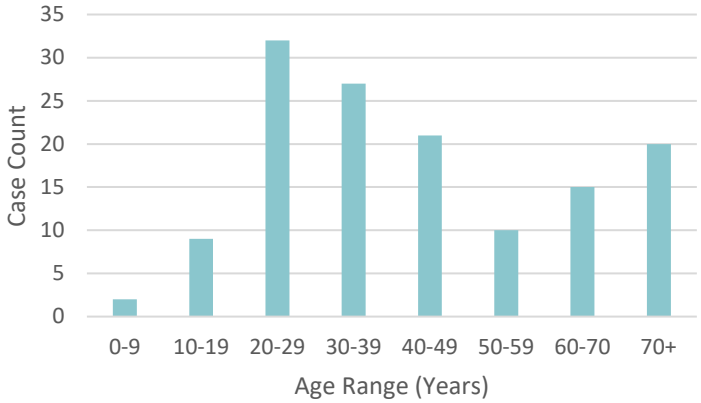


NH Demographic Breakdown

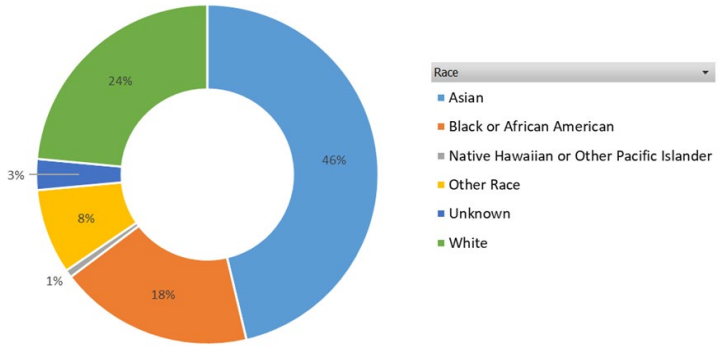
TB Cases by Gender (2013-2023)

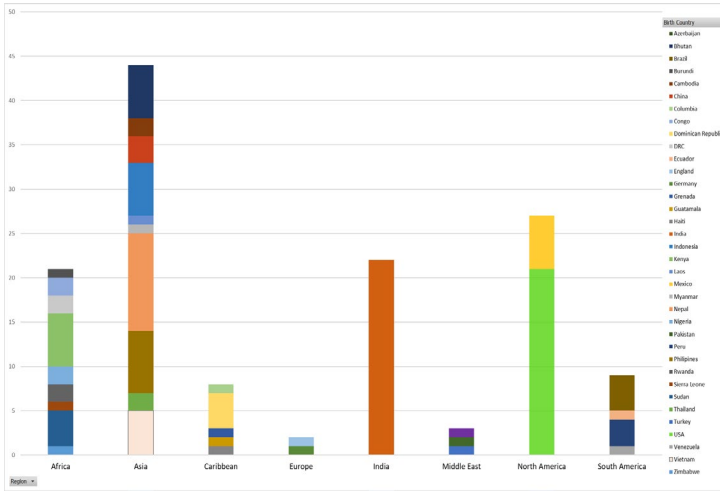


TB Cases by Age Range (2013-2023)

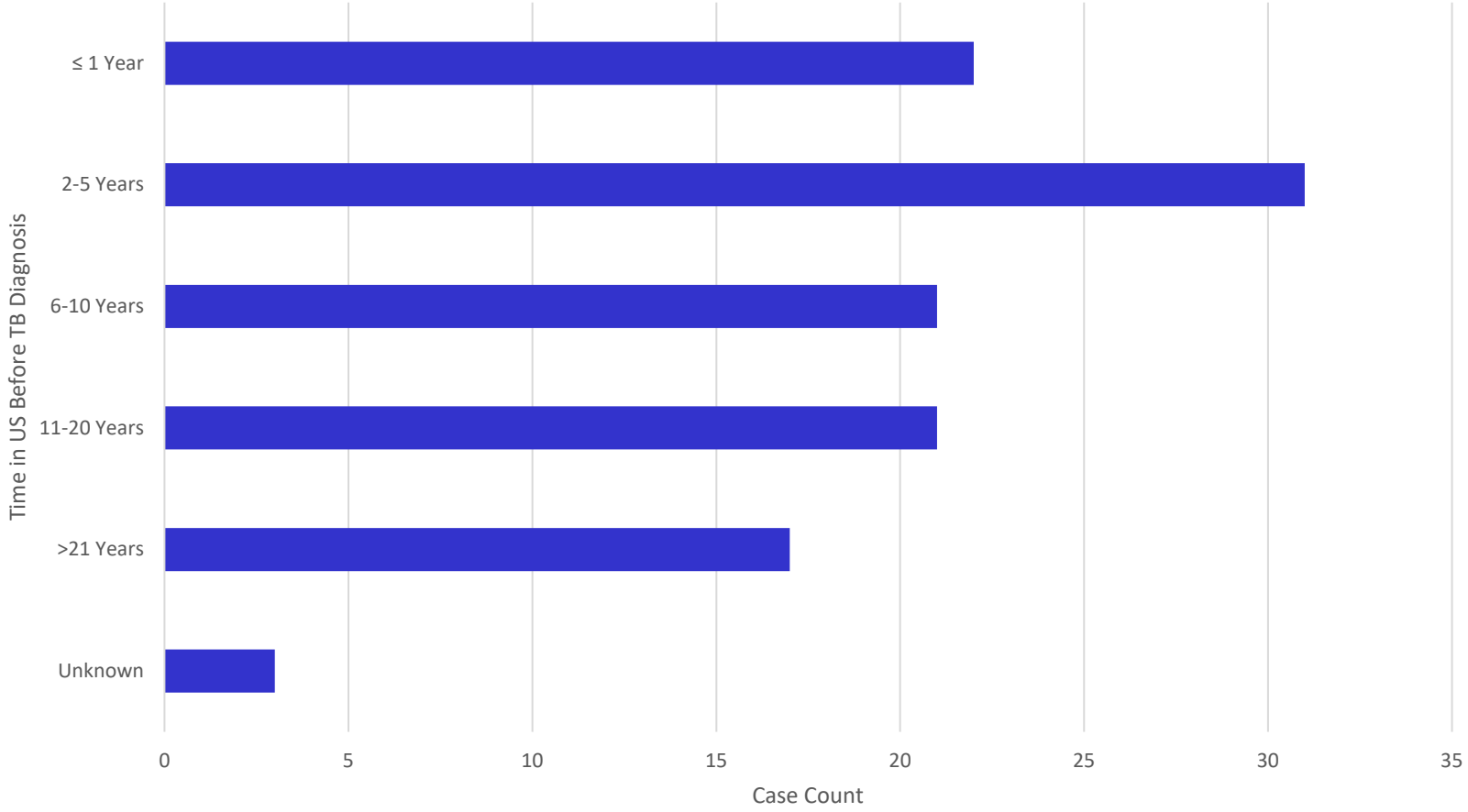


TB Cases by Race (2013-2023)



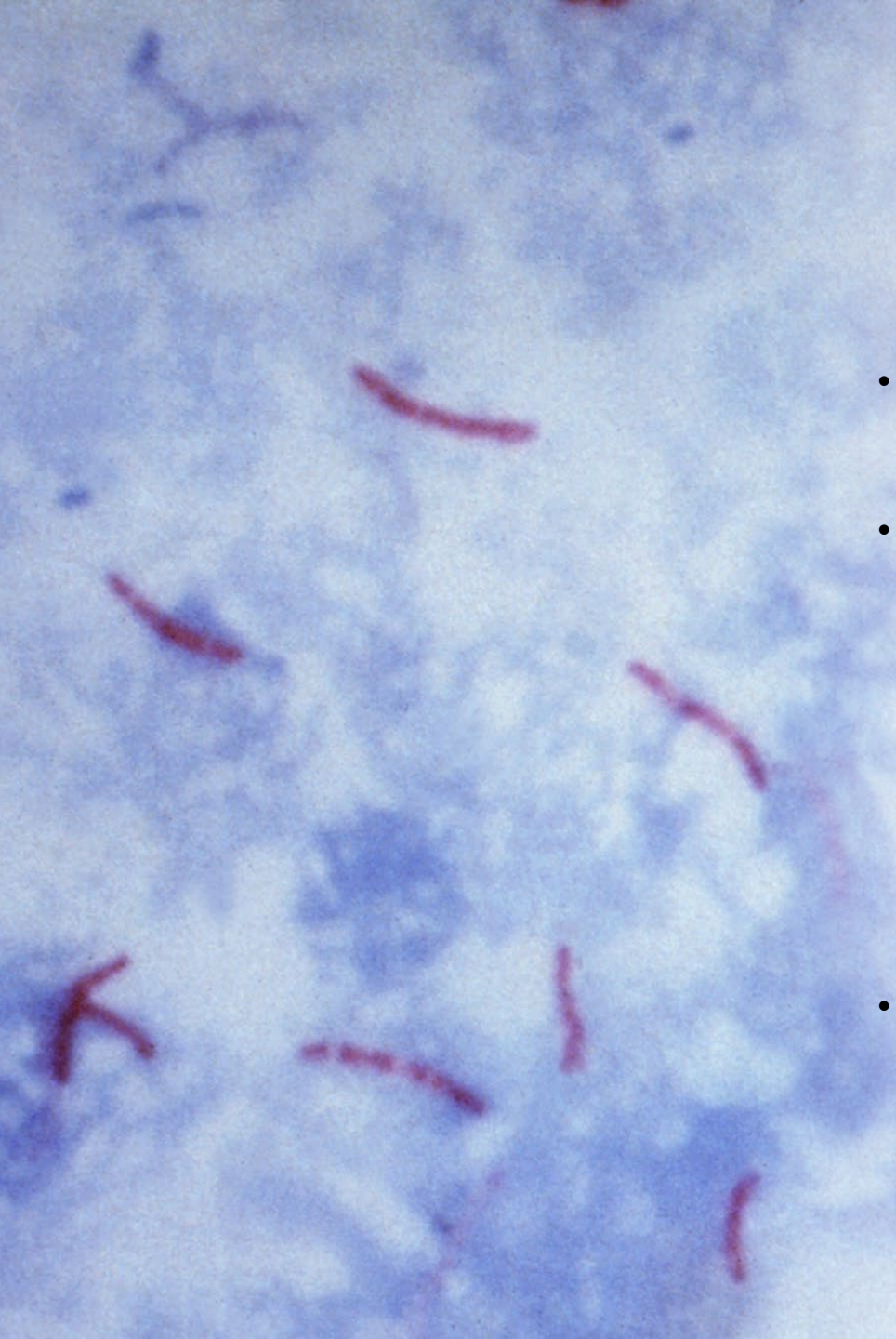


How Long are NH TB Patients in the US Before Diagnosis (2013-2023)?



TB Vignette (2)

- Mid-Oct: reports to PCP with worsening symptoms
  - CXR extensive, bilateral, confluent nodular infiltrates with upper lobe predominance
  - IGRA ordered
- Late-Oct: returns to PCP; admitted to hospital
  - IGRA noted to be positive
  - Chest CT: multilobar bronchopneumonia most extensive in upper lobes with areas of cavitation, axillary and mediastinal LAD
  - 3 AFB collected: 2-3+ smear, culture pending



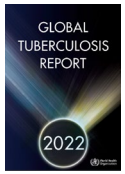
NH TB Program

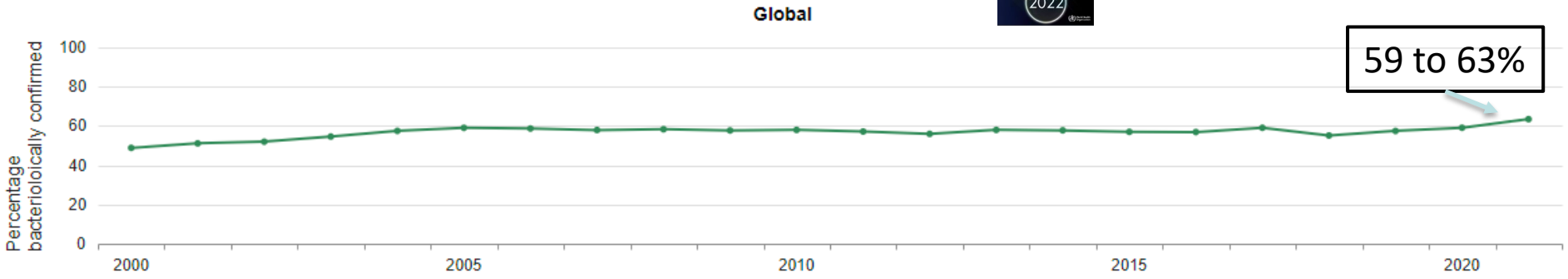
- TB/LTBI-related support and guidance for clinicians including navigating medication shortages, screening, diagnosis and treatment
- For those with suspected or confirmed active TB and high risk LTBI
  - Expert consultation
  - Case management services: ongoing education and support, assisting with adherence through directly observed therapy (DOT, vDOT), and navigating assistance programs
    - TB Financial Assistance Program (TBFA) for eligible patients supports testing, TB meds and monitoring
  - Specimen collection and testing
    - Best, fastest approaches to resistance testing
- For those exposed to TB
  - Community contact investigations and supports screening, testing and treatment
  - If there is exposure in a facility (e.g., medical facility, congregate setting), collaborative

TB Diagnosis

Breakthroughs at last

Lack of Diagnostics Threatens Global TB Control

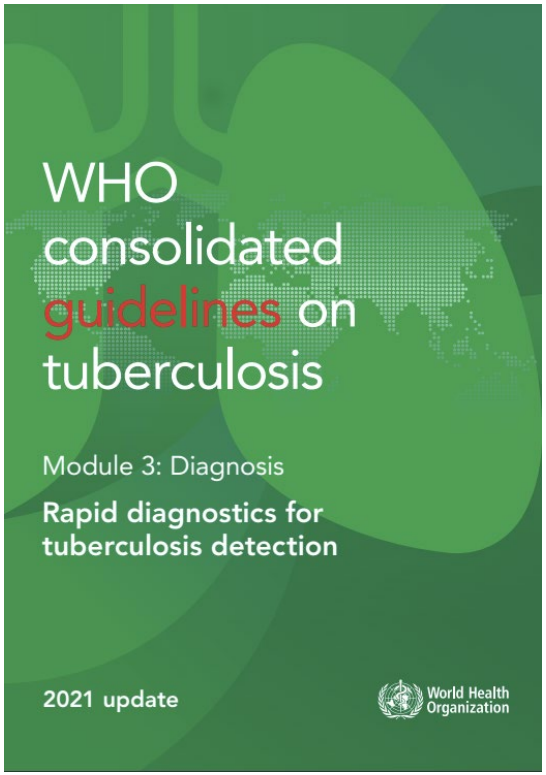




People diagnosed with TB using culture, rapid molecular tests recommended by WHO, lateral flow urine LAM or sputum smear microscopy

Of 10.6M estimated global TB cases in 2021, only 6.4M were reported so 4.1M are 'missing': combo of not diagnosed and not reported. Of those reported:

- 1 in 3 are bacteriologically-confirmed
- 1 in 5 diagnosed with recommended PCR (also known as NAAT or molecular) diagnostic test
- 1 in 3 with DR-TB are tested and appropriately treated



What is in our tool box – in NH, US and global?

DIAGNOSTIC TOOLS CURRENTLY AVAILABLE

Currently Recommended Diagnostic Tests For Pulmonary TB

ATS/CDC/IDSA 2017

Sputum smear microscopy	Strong recommendation
Liquid AND solid culture	Strong recommendation
Molecular test	Conditional recommendation
Molecular test for RIF +/- INH resistance	Strong recommendation

LTBI Tests for Presumptive TB??

 **Person with Latent TB Infection**	 **Person with TB Disease**
Few TB bacteria that are alive but inactive	Have more TB bacteria that are alive and active
Cannot spread TB bacteria to others	May spread TB to others
Does not feel sick in any way referable to infection	May feel sick and may have symptoms such as a cough, fever, and/or weight loss
Usually has a positive TB skin test (TST) or TB blood test (IGRA)	Usually has a positive TST or IGRA indicating TB infection predated disease
Should consider TB preventive treatment (TPT)	Needs treatment for TB disease
AFB smear - / culture - / NAAT -	AFB smear +/-, culture probably positive, NAAT positive

Xpert MTB/RIF (Cepheid)

here

- Automated, real-time PCR
  - 100 minutes to TB and rifampin resistance
    - Sensitivity for TB diagnosis higher than culture
    - 98% sensitivity for rifampin resistance
- Simple, modular system
  - Cartridges for other diseases

http://www.cdc.gov/mmwr/pdf/wk/mm6241.pdf

WHO/HTM/TB/2013.14

Currently Available Diagnostic Tests For Pulmonary TB

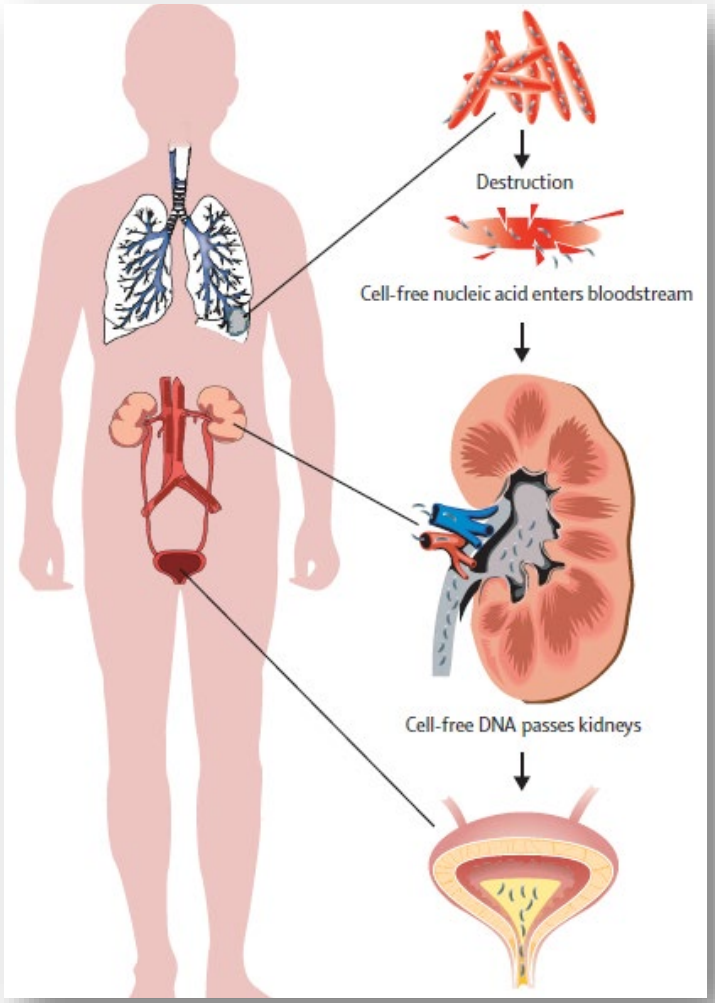
ATS/CDC/IDSA 2017

Sputum smear microscopy	Strong recommendation
Liquid AND solid culture	Strong recommendation
Molecular test	Conditional recommendation
Molecular test for RIF +/- INH resistance	Strong recommendation

WHO 2021

Rapid molecular test as first line	Strong recommendation
Universal testing for RIF +/- INH resistance	Strong recommendation
Urine LAM for HIV+ inpatients	Strong recommendation
Urine LAM for HIV outpatients	Strong recommendation

TB Diagnosis: Urine Lateral Flow Lipoarabinomannan (LF-LAM)



- Point of care, non-sputum sample
- Simple, 30m to results
- Alere Determine™ TB LAM Ag, USA is only commercially available urinary LAM test
  - Only recommended for PLWH under certain circumstances

Pipeline Report » 2022

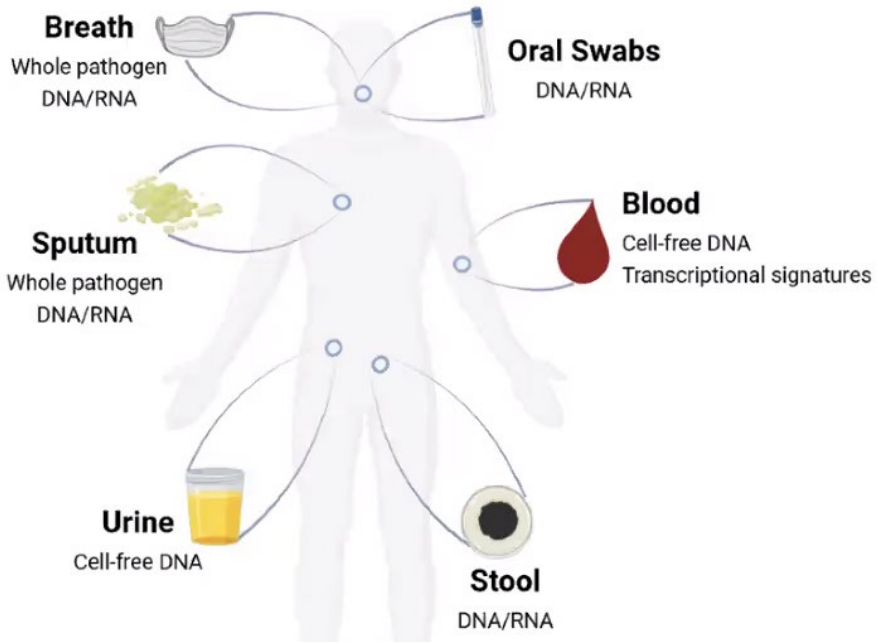
Tuberculosis Diagnostics

Test/Tool (Instrument)	Manufacturer (Country)	Type: Use case	Specimen type: Performance*	Intended level of use	Time to results	Price**	Stage of development
SILVAMP TB LAM	**Fujifilm** (Japan)	**Lateral flow:** Diagnosis for PLHIV (Evaluation among HIV-negative people and children ongoing for expanded indication)	**Urine:** PLHIV SE: 70.7% SP: 90.9%[88] HIV-negative SE: 53.2% SP: 98.9%[89] Children (irrespective of HIV status) SE: 60.0% SP: 95.0%[90]	**Community/ Primary care setting**	1 hour	Estimated price per test: $6[91]	Late-stage development (Optimization of production for quality stabilization is ongoing) **Projected ERPD review:** late 2023/early 2024 **Projected WHO review:** late 2024/early
Flow-TB	**Salus Discovery** (USA)	**Lateral flow, urine concentration:** Diagnosis for all people being evaluated for TB	**Urine:** Target sensitivity (irrespective of HIV status): 90.0–95.0%[93]	**Community/ Primary care setting**	1.5 hours[94] (including urin…	Not yet…	…ge …ent
High-sensitivity TB LAM	**Abbott** (USA)	**Lateral flow:** Diagnosis for all people being evaluated for TB	**Urine:** Not yet availabl…			Not yet available	Early-stage development **Projected ERPD and WHO review:** 2025[95]
Third-generation LAM	**Bodi…**	…ll people …g evaluated for TB	**Urine:** Not yet available	**Community/ Primary care setting**	Not yet available	Not yet available	Early-stage develop-ment[96]
Third-g… LAM	…mic (Sweden)	**Lateral flow:** Diagnosis for all people being evaluated for TB	**Urine:** Not yet available	**Community/ Primary care setting**	Not yet available	Not yet available	Early-stage develop-ment[97]

"Potential Game Changers" for POC TB Diagnosis?

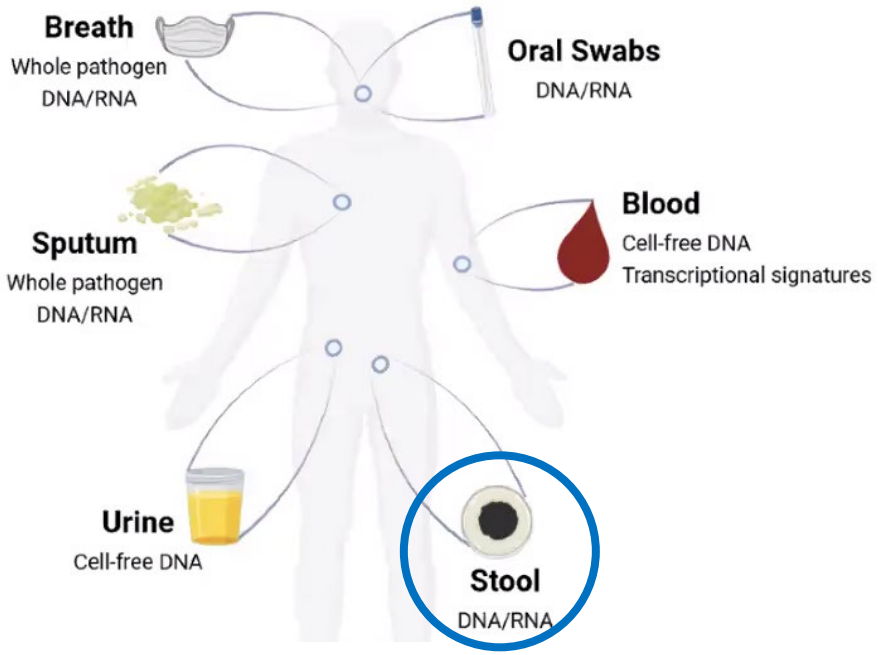
[WHO Operational Handbook on TB: Screening]

[TAG Pipeline Report]



For persons with presumptive TB who cannot produce sputum

NONSPUTUM SAMPLES FOR MOLECULAR DETECTION



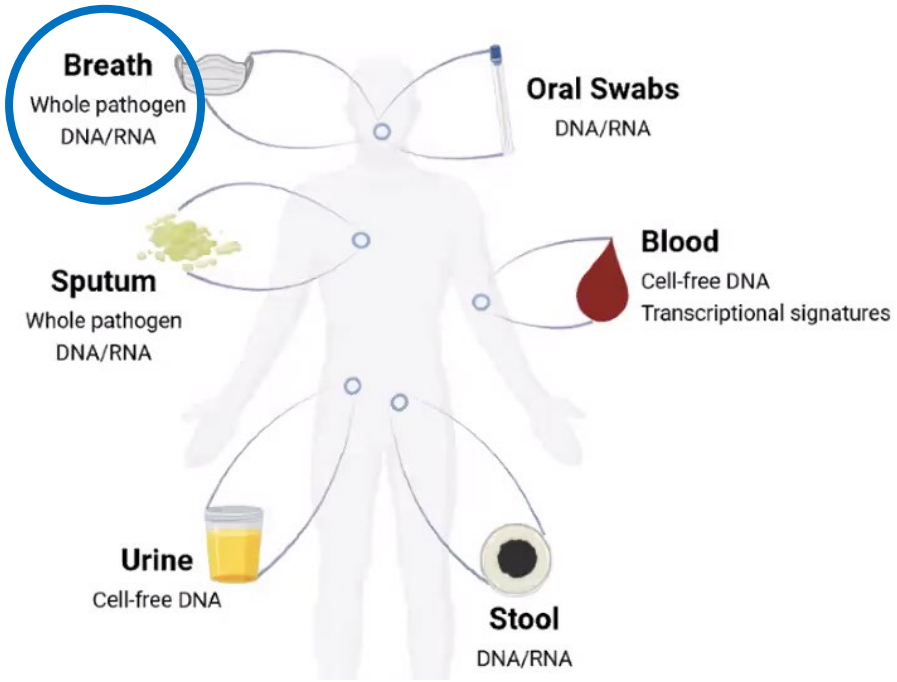
For persons with presumptive TB who cannot produce sputum

NONSPUTUM SAMPLES FOR MOLECULAR DETECTION

Stool Sample Processed for Xpert

- MTB DNA can be detected in stool specimens because sputum is coughed up and swallowed
- Systematic review and meta-analysis of Xpert Ultra data found heterogeneity by processing:
  - Sensitivity 53% (95% CI: 35–70)
  - Specificity of 98% (95% CI: 93–99)
- 2021: WHO recommended stool for Xpert MTB/RIF and Ultra as initial diagnostic test TB and detection of rif resistance in children <10y with signs/symptoms of pTB
- Practical manual for processing stool
  - Optimized Sucrose Flotation
  - Simple One Step method

Kay AW, et al. Diagnostic accuracy of Xpert MTB/RIF Ultra using different sample types in children: a systematic review and meta-analysis. 2021. Available at STOPTB

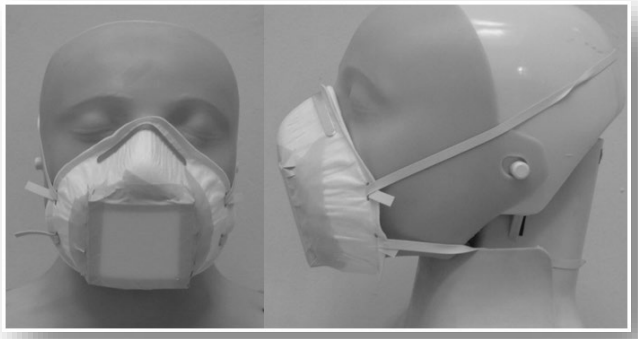


For persons with presumptive TB who cannot produce sputum

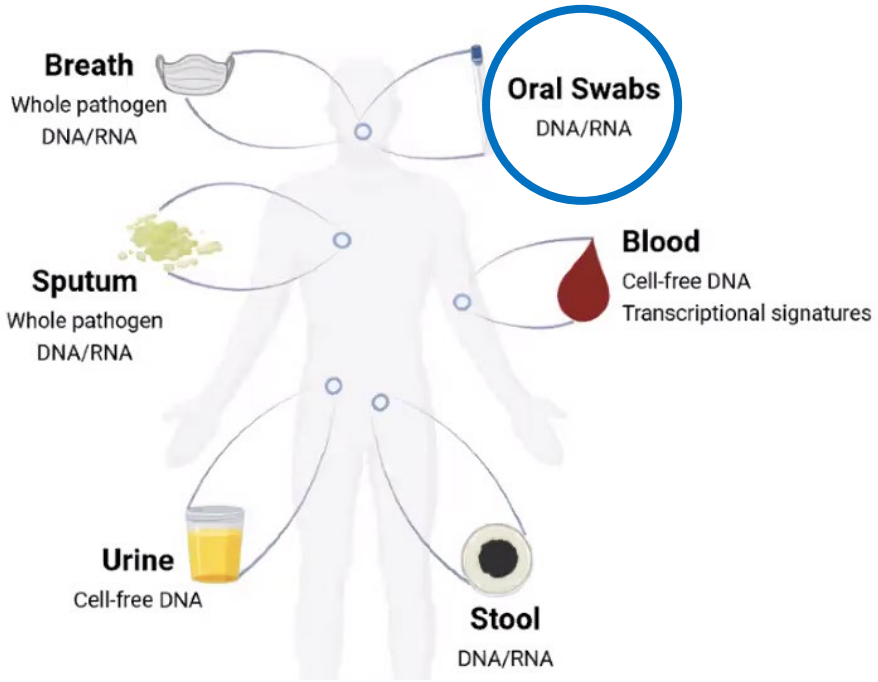
NONSPUTUM SAMPLES FOR MOLECULAR DETECTION

Advances in Sampling Methods:
Face Mask Sampling

- Presumptive TB patient wears mask for 30-60 min to capture breath aerosols containing DNA or pathogens, dissolve embedded strip, and test using Xpert
- "Exhaled *M tuberculosis* output showed no diurnal pattern and did not associate with cough frequency, sputum bacillary content, or chest radiographic disease severity"
- Early performance results promising: sensitivity<culture but perfect specificity



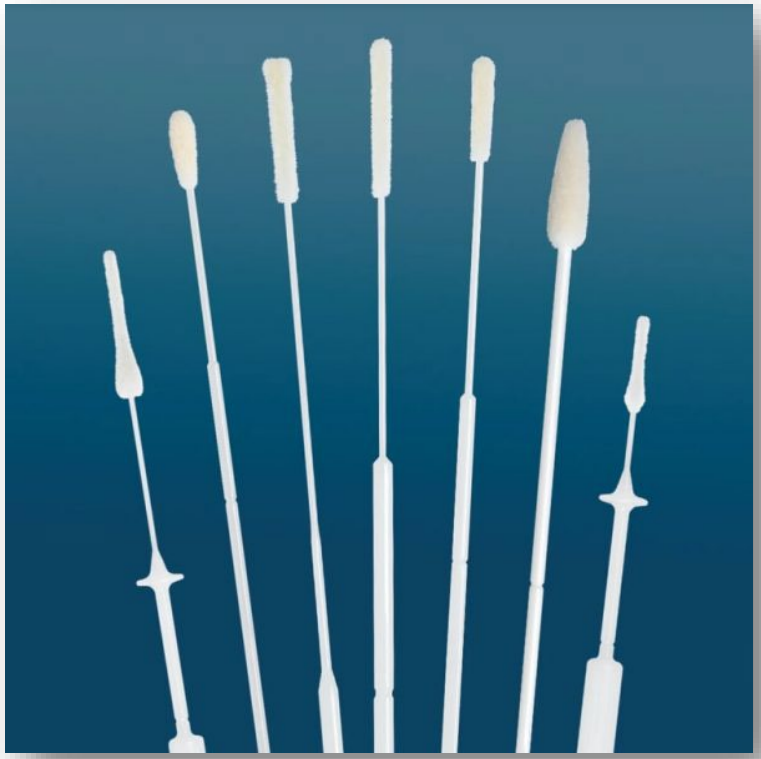
Williams C, Lancet ID 2020



For persons with presumptive TB who cannot produce sputum

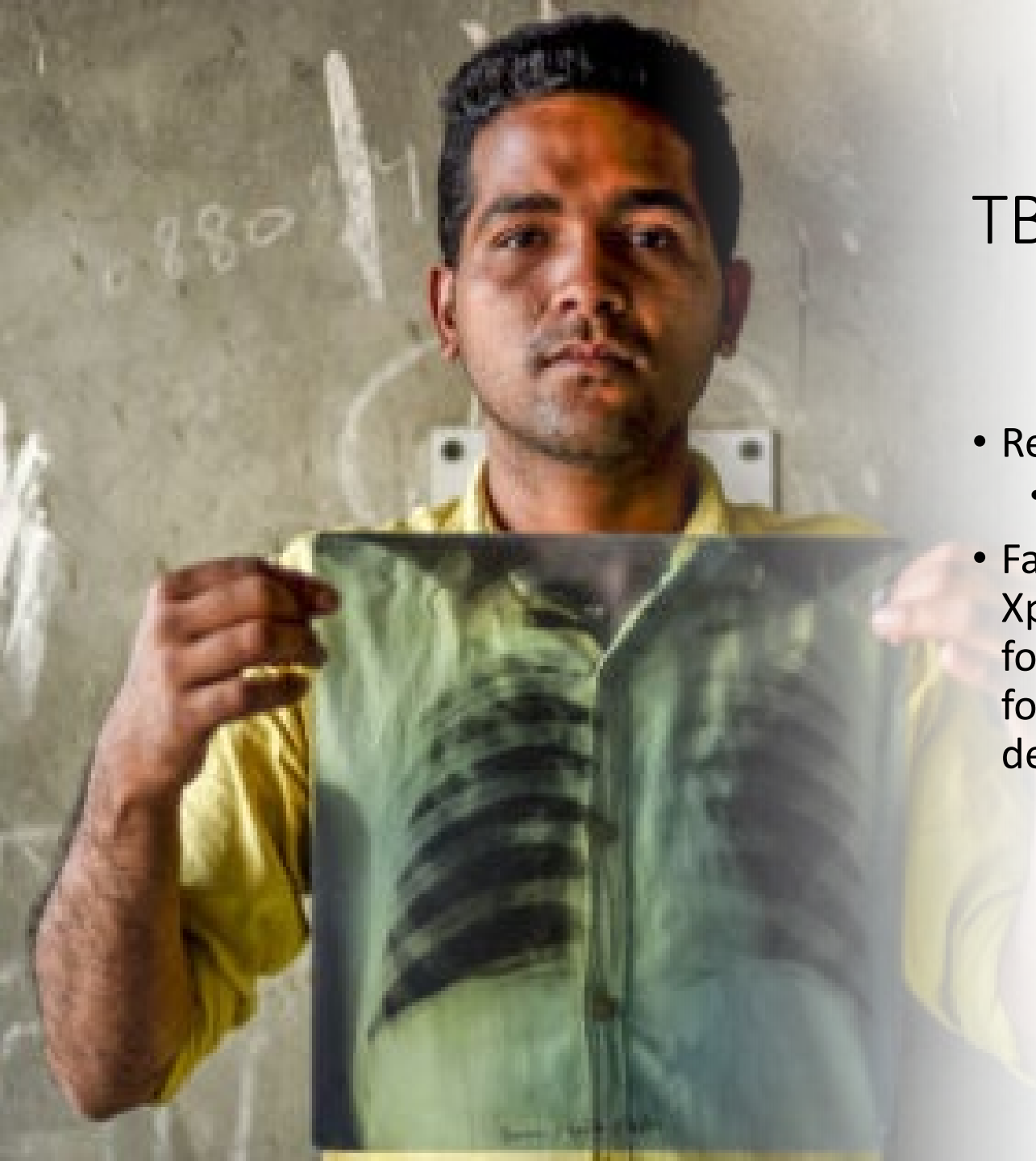
NONSPUTUM SAMPLES FOR MOLECULAR DETECTION

Advances in Sampling Methods: Tongue Swabs (Oral Swab Analysis)



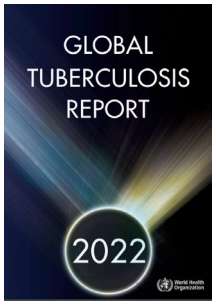
- Optimized processing for Xpert Ultra
  - Self-swabs tongue dorsum for 10 seconds using Copan FLOQSwabs
  - 1 or 2 swabs with usual sample reagent per cartridge
  - 1 swab boiled, incubated, mixed without Cepheid sample reagent
- Early promising results approaching sensitivity of sputum Xpert and perfect specificity among 183 adults with cough >2w in 2 clinics in Kampala

Andama et al J Clin Microbiol 2022
Steadman et al, medRxiv 2023



TB Vignette (3)

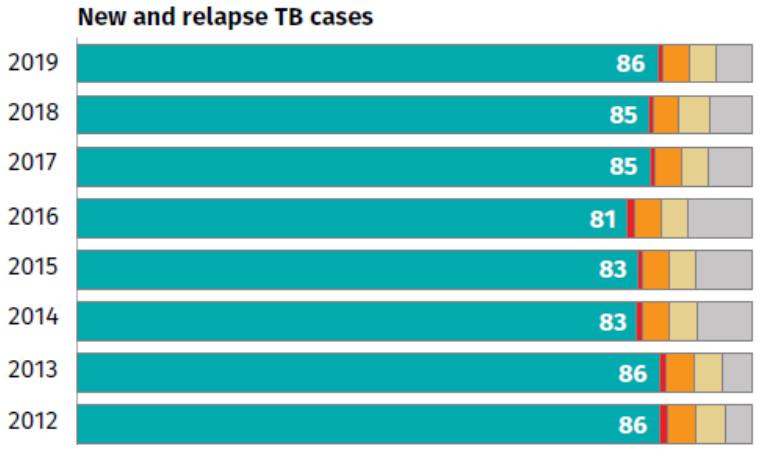
- Report to NH DHHS
  - 603-271-4496
- Facilitates sputum for Xpert which is positive for TB, with no mutations for rifampin resistance detected



Global TB Treatment Outcomes 2012-2019

Stagnation of drug susceptible TB treatment success at ~85%

- 77% among PLWHIV



WHO Global TB Report 2022

TB Treatment

Breakthroughs at last

Traditional TB Treatment

Drug	Properties	Usual Dose	Common Side Effects
Isoniazid (INH or I)	Cidal	300mg/d	Hepatitis, neuropathy
Rifampin (RMP or R)	Cidal	600mg/d	Hepatitis, flu reaction, drug interactions
Pyrazinamide (PZA or P)	Cidal for intracellular organisms	15-30mg/kg/d	Hepatitis, GI, rash, myalgias
Ethambutol (EMB or E)	Static, used to prevent resistance	15mg/kg/d	Ocular toxicity

- RIPE 2m (intensive phase)
- INH+RMP 4m (continuation phase)
- Administer by directly observed therapy (DOT)

2023 Global New TB Drug Pipeline[1] Updated 7/14/2023

Discovery | Preclinical Development | Clinical Development

Lead Optimization | Early Stage Development | GMP / GLP Tox. | Phase 1 | Phase 2 | Phase 3 | Regulatory Market Approvals

Lead Optimization

- Indazole sulfonamides
- Diarylthiazoles
- DprE1 Inhibitors
- Direct InhA Inhibitors
- Mtb energy metabolism
- Gyrase Inhibitors
- Arylsulfonamides
- Inhibitors of MmpL3, Translocase-1, ClpC1, ClpP1P2, PKS13, F-ATP synthase, RNAP
- Oxazolidinones
- DnaE1 / Nargenicin analogs

Early Stage Development

- TBD10 (MK-3854)
- CLB-073*
- SPR720*
- MPL-447*
- JSF-3285*
- CPZEN-45*
- NTB-3119*
- MBX-4888A (1810)*
- FNDR-10045*, FNDR-20364*

GMP / GLP Tox.

- GSK-839*
- OTB-658

Phase 1

- TBD09 (MK-7762)
- GSK-286*
- TBAJ-876
- TBAJ-587
- TBI-223
- Macozinone* (PBTZ-169)

Phase 2

- Telacebec* (Q203)
- Alpibectir* (BVL-GSK098)
- Sanfetrinem
- Delpazolid
- Sutezolid
- Sudapyridine (WX-081)
- BTZ-043*
- TBA-7371*
- Quabodepistat (OPC-167832*)
- Ganfeborole (GSK-656*/070)
- Pyrifazimine (TBI-166)
- SQ-109*

Phase 3

- Bedaquiline*
- Delamanid*
- Pretomanid*

Underline = updates since November 2022

*New chemical class. Known chemical classes for any indication are color coded: rifamycin, oxazolidinone, nitroimidazole, diarylquinoline, benzothiazinone, imidazopyridine amide, beta-lactam.

[1] New Molecular Entities not yet approved, being developed for TB or only conditionally approved for TB. Showing most advanced stage reported for each. Details for projects listed can be found at http://www.newtbdrugs.org/pipeline/clinical

Ongoing projects without a lead compound identified: http://www.newtbdrugs.org/pipeline/discovery

WORKING GROUP ON NEW TB DRUGS

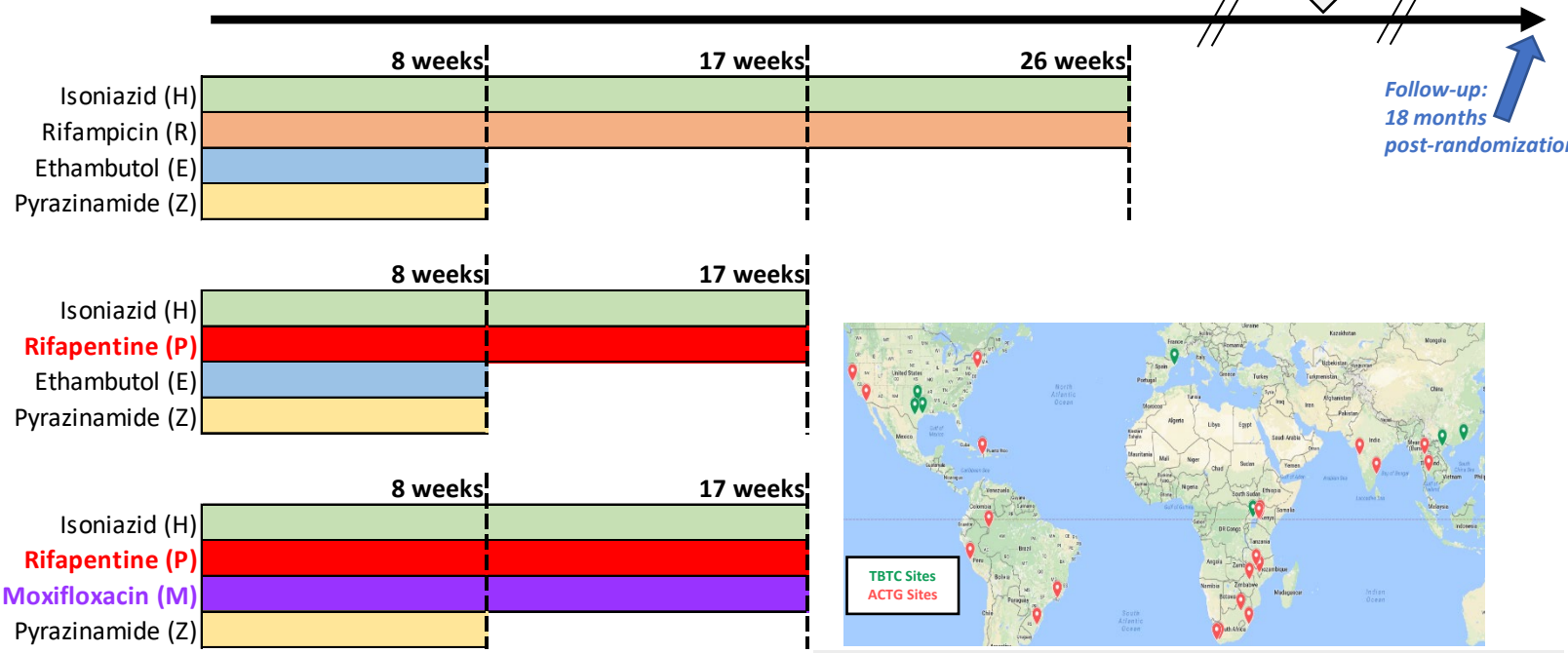
www.newtbdrugs.org

Updated: July 2023

Study 31/ACTG5349
Phase 3 Non-Inferiority Trial

Primary efficacy endpoint: outcome at 12-months post-randomization

3 arms randomization 1:1:1



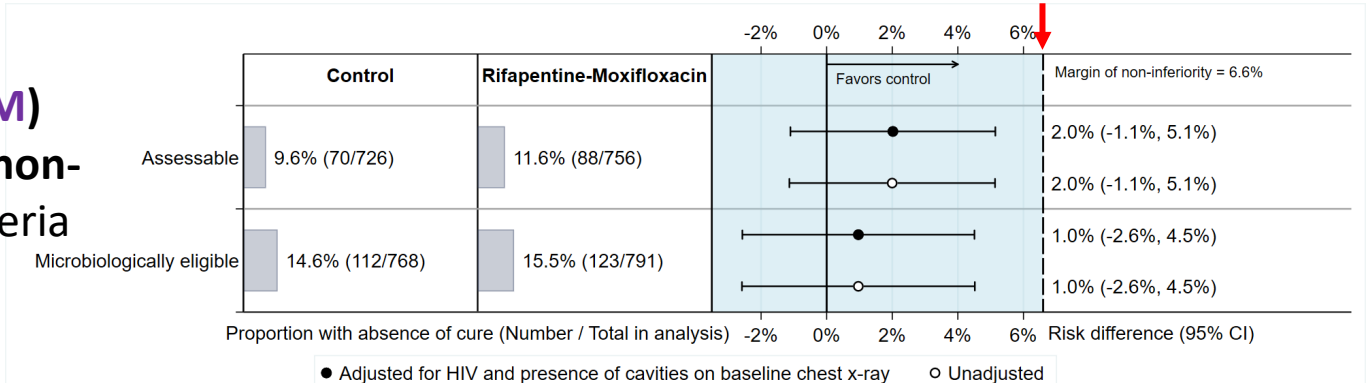
- 2516 adolescents (≥12 y.o.) and adults enrolled
- HIV-infected (CD4≥100) and HIV-uninfected
- All treatment: daily 7/7, **DOT 5/7**
- Flat RPT dose of 1200 mg; MOX dose of 400 mg
- Open label: food with RPT, no food with RIF

Sputum, safety labs & AE checks: Weeks 2, 4, 8, 12, 17, 22, 26
Post-tx completion f/u visits Months 9, 12, 15, 18

Courtesy of Payam Nahid, UCSF, TBTC/ACTG

Study 31/A5349: Primary Efficacy Results

RPT-MOX (2HPZM/2HPM) regimen met non-inferiority criteria for efficacy in <u>both</u> analyses



Courtesy of Payam Nahid, UCSF, TBTC/ACTG

N Engl J Med. 2021 May 6;384(18):1705-1718

here

Morbidity and Mortality Weekly Report (*MMWR*)

Interim Guidance: 4-Month Rifapentine-Moxifloxacin Regimen for the Treatment of Drug-Susceptible Pulmonary Tuberculosis — United States, 2022

Weekly / February 25, 2022 / 71(8);285–289

Wendy Carr, PhD[1]; Ekaterina Kurbatova, MD[1]; Angela Starks, PhD[1]; Neela Goswami, MD[1]; Leeanna Allen, MPH[1]; Carla Winston, PhD[1] (VIEW AUTHOR AFFILIATIONS)

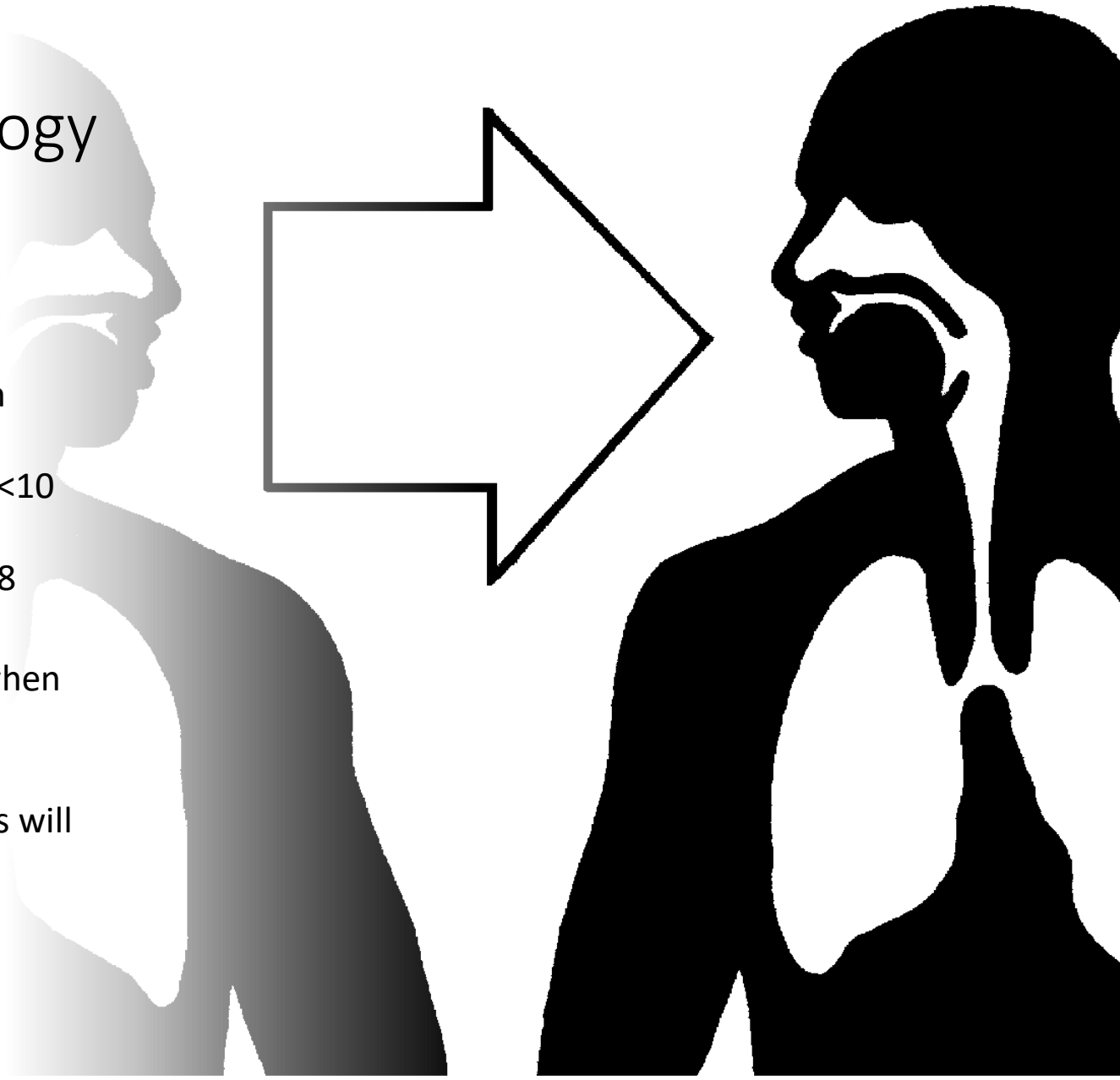
"CDC recommends the 4-month regimen as a treatment option for U.S. patients aged ≥12 years with drug-susceptible pulmonary TB and provides implementation considerations for this treatment regimen."

TB Vignette (4)

- Collaboration with NH DHHS toward contact investigation reveals patient has multiple household, occupational and nosocomial contacts during his infectious period

Pathophysiology of TB

- Bacteria aerosolized in "droplet nuclei"
  - Each may contain <10 bacilli
  - Linger in air up to 8 hours
- Transmission occurs when share airspace with infectious TB patient
- ~30% of close contacts will be infected



Progression From LTBI to TB

Risk of progressing is highest first 2 years after infection and for those with immunocompromise, but progression possible over lifespan of someone with LTBI

10% lifetime if HIV-

10% annual if HIV+

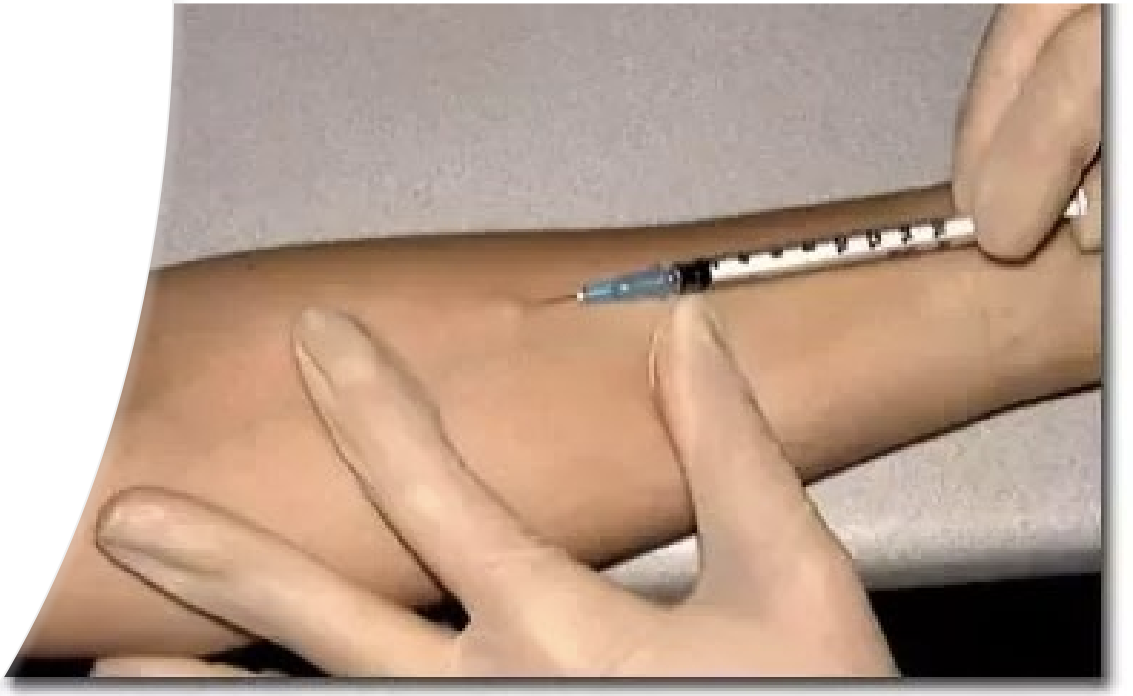
Increased Risk for Progressing to TB

It's all about host factors that allow progression

- People infected with *M. tuberculosis* within past 2 years
- People living with HIV
- People with medical conditions known to increase the risk for TB
- Infants and children <4 years old
- People who inject drugs

Two Types of Tests for LTBI

- Tuberculin skin test (TST)
- Interferon gamma release assays (IGRA)
  - T-SPOT.*TB* test (Quest Diagnostics)
  - QuantiFERON-TB Gold Plus (Qiagen)



IGRAs Compared to TST

Advantages

Single patient visit

No booster phenomenon

Less likely to have incorrect reading

Not affected by prior BCG vaccination and most nontuberculous mycobacteria (NTMs)

Disadvantages

More expensive up front (1.5x at DHMC)

Time constraints to process blood samples

Limited data on children < age 2

TST and IGRA Similarities

Both cost money: cost effectiveness analyses show equivalence

Both have compromised sensitivity in immunocompromised

Specificity issues

- TST: NTM or BCG history
- IGRA: especially in low LTBI incidence populations

Quantitative results important for both

Neither differentiates between LTBI and active TB

Neither predicts risk for progression to active TB

Altet et al. Ann Am Thor Soc 2015; 12(5):680; Andrews J et al. Serial QFT . . . Lancet 2017.

New LTBI Tests Coming

- TB Ag-based skin tests (TBST) accurate (76%se/98%sp), acceptable, feasible and cost-effective
  - Alternative to TST and IGRAs
- Globally available products:
  - C-Tb (Serum Institute of India, India)
  - C-TST (Anhui Zhifei Longcom, China)
  - Diaskintest (Generium, Russian Federation)

Latent Tuberculosis Infection Treatment Regimens

Treatment regimens for latent TB infection (LTBI) use isoniazid (INH), rifapentine (RPT), or rifampin (RIF). **CDC and the National Tuberculosis Controllers Association preferentially recommend short-course, rifamycin-based, 3- or 4-month latent TB infection treatment regimens over 6- or 9-month isoniazid monotherapy.**

Clinicians should choose the appropriate treatment regimen based on drug susceptibility results of the presumed source case (if known), coexisting medical conditions (e.g., HIV*), and potential for drug–drug interactions.

https://www.cdc.gov/mmwr/volumes/69/rr/rr6901a1.htm?s_cid=rr6901a1_w

	DRUG	DURATION	FREQUENCY	TOTAL DOSES	DOSE AND AGE GROUP
Preferred	**ISONIAZID† AND RIFAPENTINE†† (3HP)**	3 months	Once weekly	12	**Adults and children aged ≥12 yrs** INH: 15 mg/kg rounded up to the nearest 50 or 100 mg; 900 mg maximum RPT: 10–14.0 kg; 300 mg 14.1–25.0 kg; 450 mg 25.1–32.0 kg; 600 mg 32.1–49.9 kg; 750 mg ≥50.0 kg; 900 mg maximum
					Children aged 2–11 yrs INH†: 25 mg/kg; 900 mg maximum RPT††: See above
	RIFAMPIN§ (4R)	4 months	Daily	120	**Adults:** 10 mg/kg; 600 mg maximum
					Children: 15–20 mg/kg‖; 600 mg maximum
	ISONIAZID† AND RIFAMPIN§ (3HR)	3 months	Daily	90	**Adults** INH†: 5 mg/kg; 300 mg maximum RIF§: 10 mg/kg; 600 mg maximum
					Children INH†: 10-20 mg/kg#; 300 mg maximum RIF§: 15-20 mg/kg; 600 mg maximum
Alternative	**ISONIAZID† (6H/9H)**	6 months	Daily	180	**Adults** Daily: 5 mg/kg; 300 mg maximum Twice weekly: 15 mg/kg; 900 mg maximum
			Twice weekly¶	52	
		9 months	Daily	270	**Children** Daily: 10–20 mg/kg#; 300 mg maximum Twice weekly: 20–40 mg/kg#; 900 mg maximum
			Twice weekly¶	76	

*For persons with HIV/AIDS, see Guidelines for the Use of Antiretroviral Agents in Adults and Adolescents Living with HIV available at: https://aidsinfo.nih.gov/guidelines/html/1/adult-and-adolescent-arv/367/overview.
†Isoniazid is formulated as 100-mg and 300-mg tablets.
††Rifapentine is formulated as 150-mg tablets in blister packs that should be kept sealed until use.
¶Intermittent regimens must be provided via directly observed therapy (i.e., a health care worker observes the ingestion of medication).
§Rifampin (rifampicin) is formulated as 150-mg and 300-mg capsules.
‖The American Academy of Pediatrics acknowledges that some experts use rifampin at 20–30 mg/kg for the daily regimen when prescribing for infants and toddlers (**Source**: American Academy of Pediatrics. Tuberculosis. In: Kimberlin DW, Brady MT, Jackson MA, Long SS, eds. Red Book: 2018 Report of the Committee on Infectious Diseases. 31st ed. Itasca, IL: American Academy of Pediatrics; 2018:829–53).
#The American Academy of Pediatrics recommends an INH dosage of 10–15 mg/kg for the daily regimen and 20–30 mg/kg for the twice weekly regimen.

CDC

CDC and the National TB Controllers Association
LTBI Treatment Guidelines

Morbidity and Mortality Weekly Report (*MMWR*)

Tuberculosis Testing and Latent Tuberculosis Infection Treatment Practices Among Health Care Providers — United States, 2020–2022

Weekly / November 3, 2023 / 72(44);1183–1189

- CDC recommends testing persons at increased risk for LTBI routinely, using IGRAs, and, if a diagnosis of LTBI is made, prescribe short-course regimen
- Among 3,647 primary health care providers
  - 53% reported routinely testing non–USB patients
    - 35.7% used IGRAs, 44.2% used TSTs and 20.2% used both
  - >Half (59%) reported prescribing any LTBI treatment
    - 33% reported prescribing short-course regimens
  - 41% referred patients to a health department

Summary

- TB causes massive global morbidity and mortality
- Think TB and partner with NH DHHS
- Imperfect diagnostic tests
  - Xpert a major breakthrough for active TB
  - IGRAs becoming mainstay for LTBI
- Treatments are also improving
  - DS TB treatment is 2m of RIPE, 4m of RI
    - New 4 month regimen
  - MDR TB treatment all oral, short course via BPaL
  - LTBI favored regimen is rif-based 3 or 4m