# TB EPIDEMIOLOGY AND SURVEILLANCE UPDATES

Laura R. Young, MPH, CIC

2024 Biennial TB & Newcomer Health Nurse Meeting

November 20, 2024





#### **TB and LTBI Reporting Requirements**

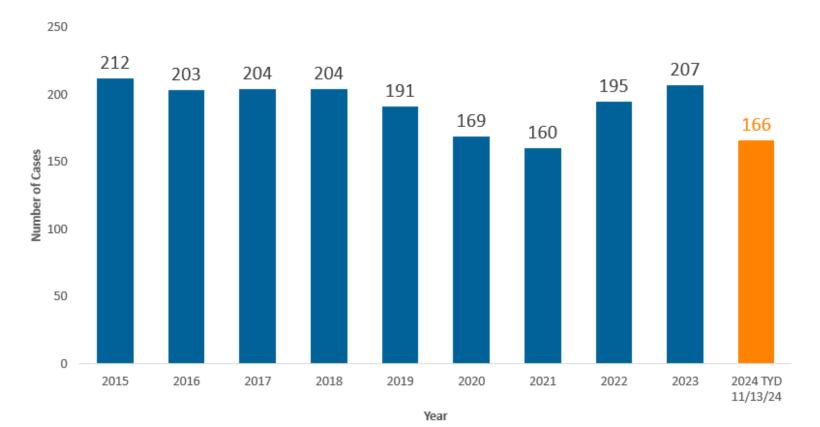
specimen. **Tuberculosis infection** 

- Presumptive or confirmed active TB disease reportable by providers and laboratories
- LTBI reportable by providers and positive tests for infection reportable by laboratories
- AFB reportable by laboratories



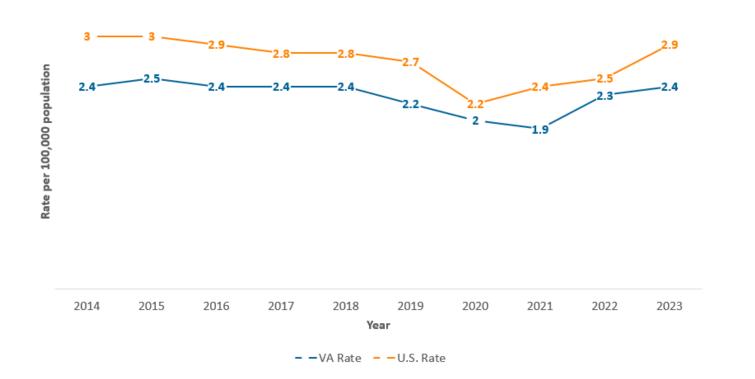


#### **Tuberculosis in Virginia, 2015-2024**



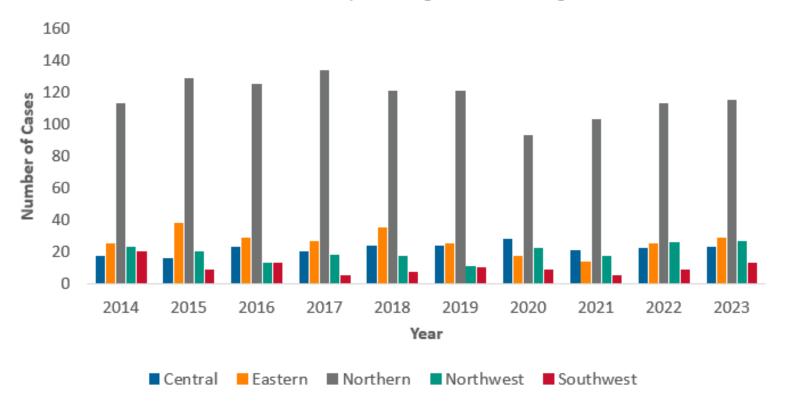


### TB Incidence Rate, Virginia and the United States, 2014-2023



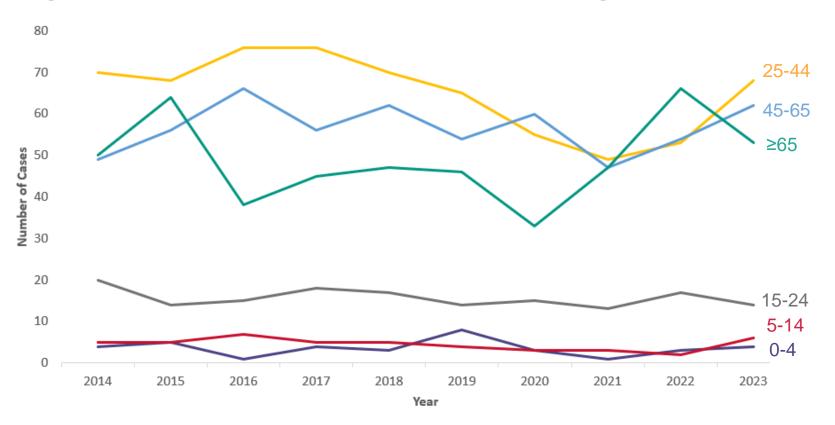


#### TB Case Distribution by Region, Virginia, 2014-2023





#### Age Group of TB Cases in Years, Virginia, 2014-2023

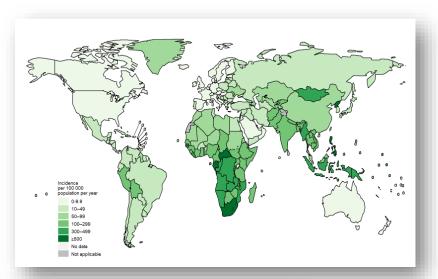








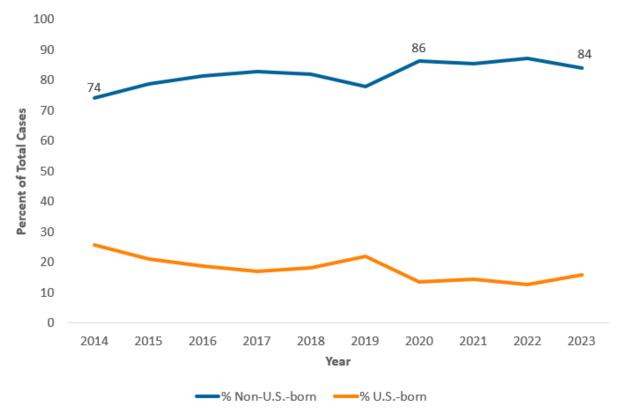






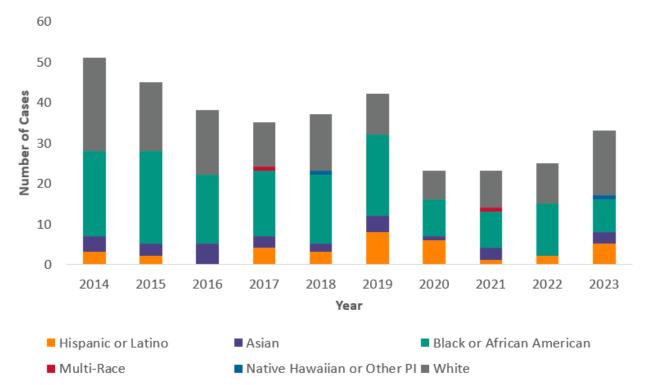


#### Percent of Total TB Cases by Nativity, Virginia, 2014-2023



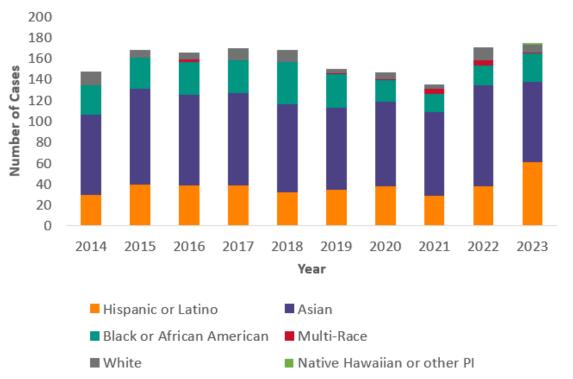


### Race and Ethnicity of U.S.-Born TB Cases, Virginia, 2014-2023



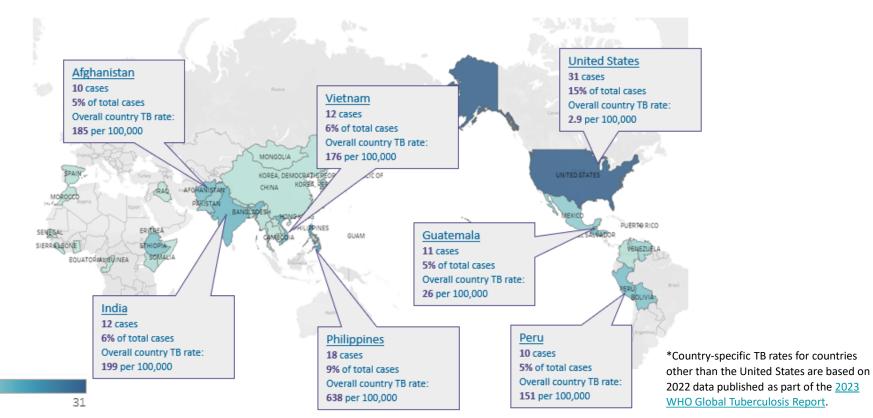


### Race and Ethnicity of Non-U.S.-Born TB Cases, Virginia, 2014-2023



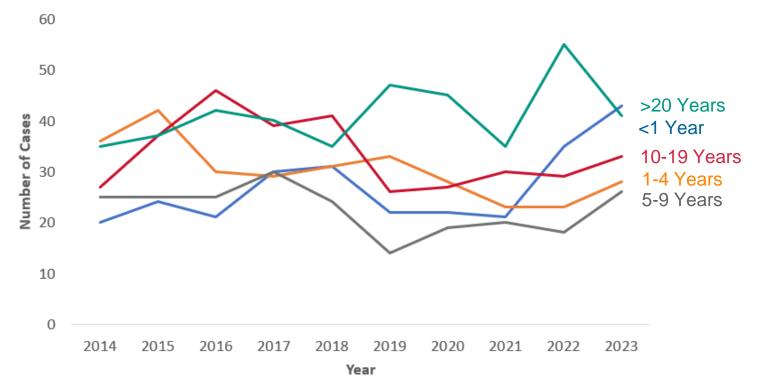


#### TB Cases by Country of Birth\*, Virginia, 2023



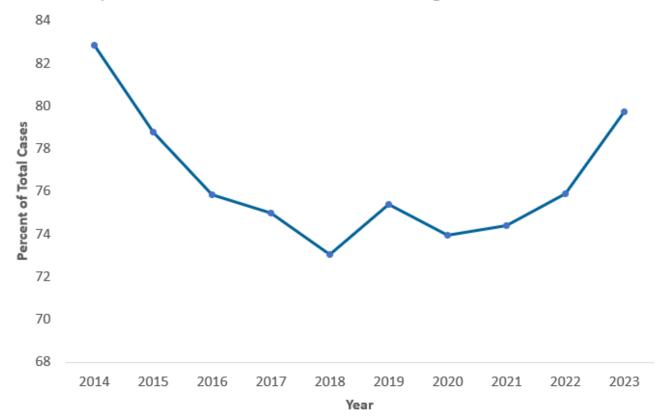


### Time in the United States at TB Diagnosis, Virginia, 2014-2023



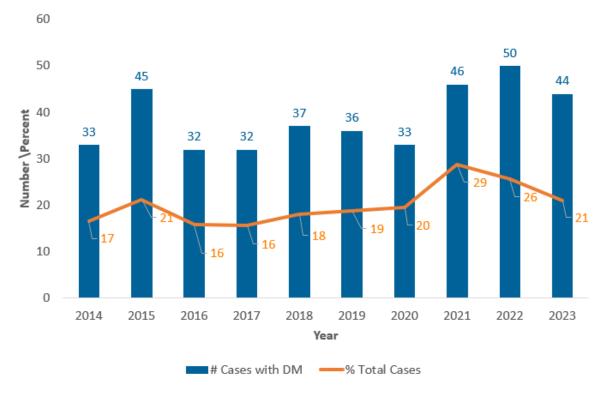


#### **Pulmonary Site of Disease, Virginia, 2014-2023**



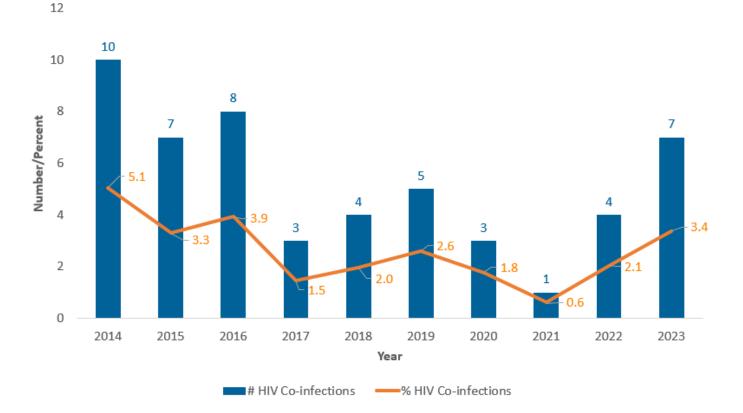


### Number and Percent of TB Cases with Diabetes, Virginia, 2014-2023



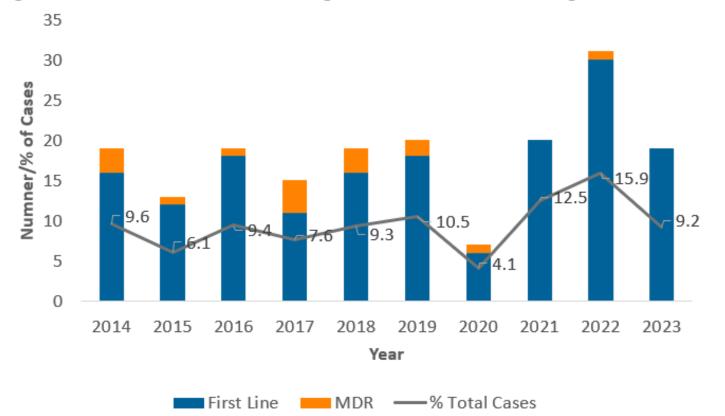


#### TB Cases with HIV Co-infection, Virginia, 2014-2023





#### **Drug Resistance Among TB Cases, Virginia, 2014-2023**







December 14, 2023

Dear DST Reference Center Submitters,

Effective immediately, the CDPH Microbial Diseases Laboratory (MDL) will temporarily suspend pyrazinamide (PZA) phenotypic drug susceptibility testing (DST). MDL and other laboratories around the country have experienced an issue with recent lots of PZA DST reagents used in the BD MGIT testing system. This issue has resulted in delayed PZA reporting due to intermittent QC failures and increases in false resistant or indeterminate PZA DST results that require additional remost testing. This dalay does not impost any other DCT or my accounting

requests.

VDH-tuberculosis

To: VDH-tuberculosis Cc: TBNurse (VDH); TBControl (VDH); Milloy, Kathleen (DGS); Craiq, Emily (DGS); Mehr, Rana (DGS); Turner, Lauren (DGS); nursmgr (VDH)

\*\*This email was sent to the tbnurse and nursmar listservs. Please forward as needed. \*\*

Dear district TB partners.

The VDH TB Program was notified by our colleagues at the Division of Consolidated Laboratory Services (DCLS) about issues with phenoty; failures in quality control (QC) testing that is used to confirm test results on patient samples. As a result, DCLS is not able to reliably report estimate on when it will be determined that testing results can be finalized. DCLS will be communicating with local programs if PZA resistar

Staff at DCLS shared their findings with other public health laboratorians at a recent conference and realized that the issue with PZA DST to from the Centers for Disease Control and Prevention (CDC) and the Association of Public Health Laboratories (APHL) to discuss the issue an

If you have questions or concerns about PZA DST and clinical management of your TB patients, please contact the VDH TB Program at 804-864-7906 or tuberculosis@vdh.virginia.gov.

DCLS has determined that recent PZA DST results that have been reported out should be considered valid. Moving forward, DCLS will continue to conduct DST on all other first line medications (rifampin, isoniazid, and ethambutol) and moxifloxacin and will report those results as tests are completed.

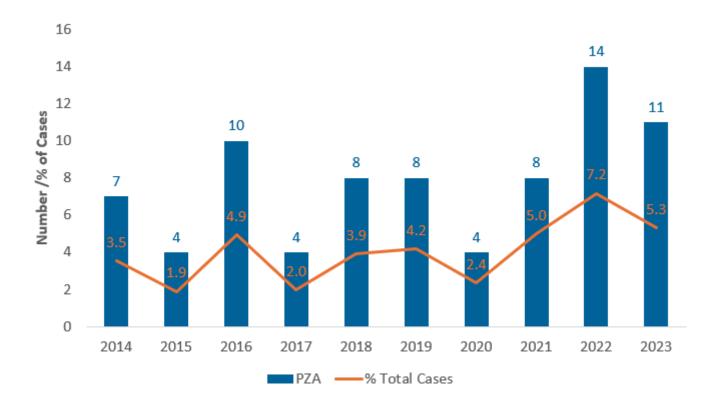
Thank you,

VDH TB Program and DCLS TB Laboratory staff





#### PZA Resistance Among TB Cases, Virginia, 2014-2023



January 5, 2024



#### Other TB Changes and Challenges

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

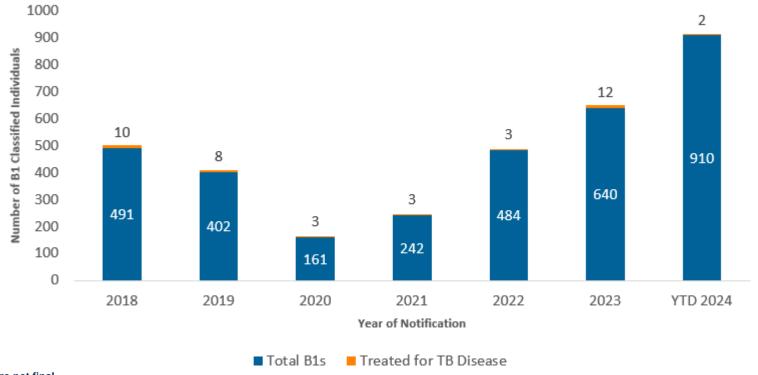




#### "Hidden" Work

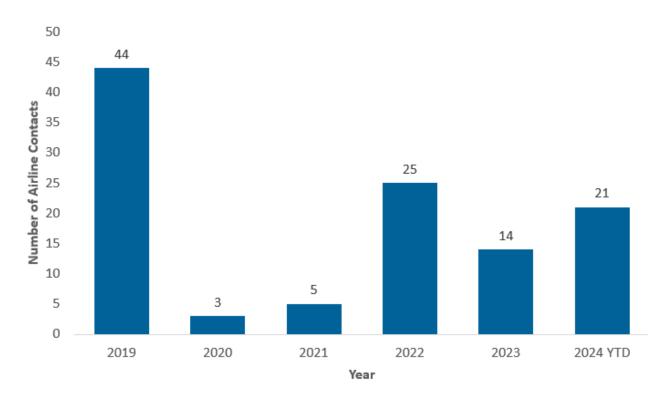


#### **B1 Evaluations, Virginia, 2018-2024 YTD**



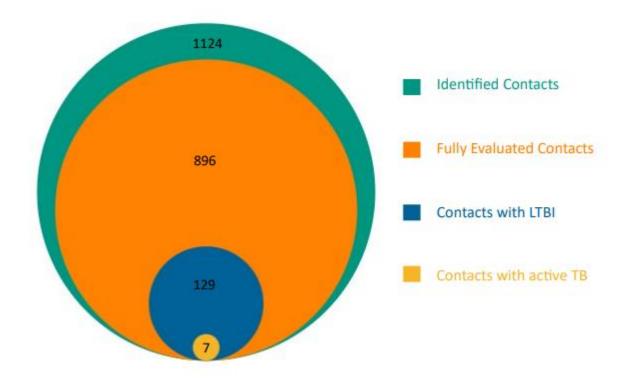


#### Airline Contacts, Virginia, 2019-2024 YTD





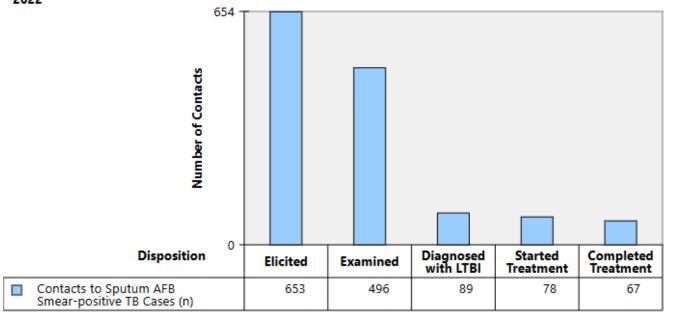
#### **Contact Investigations, Virginia, 2022**





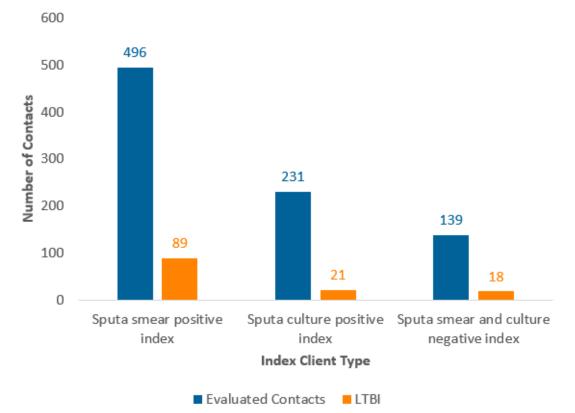
#### **Contact Investigations, Virginia, 2022**

Number of Contacts to Sputum Acid-Fast Bacillus (AFB) Smear-Positive TB Cases, by Examination and Treatment Disposition
Virginia
2022





#### LTBI from Contact Investigations, Virginia, 2022





## Active TB from Contact Investigations, Virginia, 2022





Interjurisdictional Notifications, Virginia, 2022-

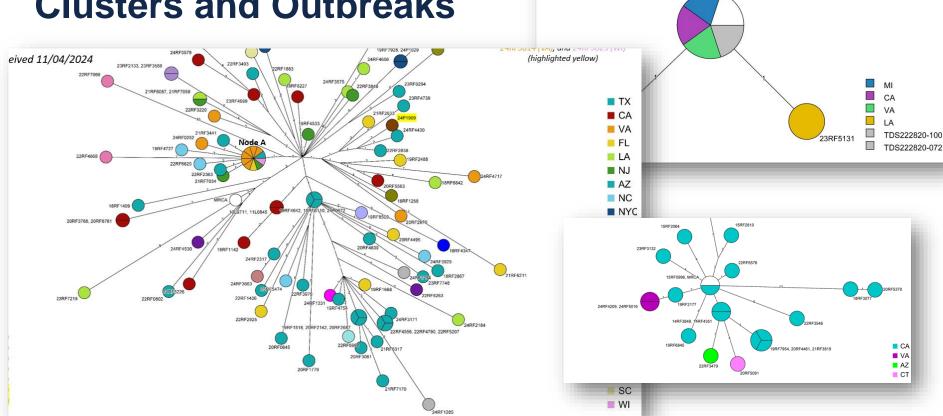
**2024 YTD** 

2022	2023	2024 YTD
203	218	160

		Interjurisdictional TB Notification
CureTB Transnational Notification  Deletion of Citibal Migration Health [6 enails curethinate.go.u) Telephone 619-542-4913  Web address: managed.com/citer[7]	OMB APPROVED CONTROL NO 0920-1186 EXP DATE: 5/31/2027	Active/Evaluation for Possible TB Disease PAGE 10F 2
Referring Jurisdiction: City County State	'Date sent:	Referred for: TB disease continued care  Cal receiving state or local jurisdiction within 1  Date of Expected Arrive  business day and custimi information in received
Country State  Contact person: Telephone: Ext:	Fax:	TB disease evaluation business day and confirm information is received
Referring Agency:E-Mail Address:		Client Information  Last Name: First Name: Middle Name:
Verified TB: □RVCT: G digits/latters or □Not reported		Date of Birth: Sex at Birth: Gender Race: Ethnicity:
Year Reported State (9 dight/letters)    ICE AR:   ROP#: -		Country of Birth: Primary Language: Interpreter Needed?
□ Suspected TB □ Clinical History request (specify year): □ Immunocompromised (specify): □		New Address: Cby.
A. Patient		State/Province-Region: Zip Code: County:
<sup>1</sup> Name: Printed Meters		Phone 1: Phone 2 Email:   Immigrant/Refuser Classification   EDN AF   Transfer Complete in EDN
Flor		
Ser: M F Alias:	D08:	Alternate Contact Name: Relationship: Phone:
Email 1: Email 2:		Additional Contact Information:
☐ Check if patient/parent not currently at home. Current location:	Telephone:	
B. Info in U.S.	- Committee	Diagnosis Verified by: Site of Disease: Specify extrapulmonary:
Address:		#Pulmonary: Cavitary Spotum culture conversion documented Date of first negative sputum culture:
Street Apt. Home Phone:	Cely Cell:	Isolation: Discontinued Continued Co
County State Zipcode  Contact person in the U.S.	Cdi.	
Name: Home Phone:	Cells	RVCT (Case Report) Attached (required if counted):
Relationship: Email:		Tests/Results:  TSTAGRA: Rediology Smearisk NAAE
C. Destination Country		Most recent results are attached (If not attached, please provide mason)  Culture(s): Susceptibilities (if culture positive):
Address:		
Street		Treatment Summary: MAROOT Log Attached:
Apt City	County	Drug Dosage Therapy Admir: Date Storped: Date Stopped:  Drug Dosage Therapy Admir: Date Storped: Date Stopped:
State Zip code (	Country	Drug: Dosage Therapy Admir: Date Started: Date Stepped:
Name: Home Phone:	Cell:	Drug Dosage: Therapy Admir: Date Started: Date Stopped:
Relationship: Email:		Drug: Dosage: Therapy Admirc: Date Started: Date Stopped:
D. Clinical Information		Drug: Dosage: Therapy Admir: Date Started: Date Stapped:
Information for: Othis referred patient Other, specify:		Current Medication Administration Method: DDT eDOT SAT
Site(s) of disease: Pulmonary Other(s), specify:		Side Effects, Adherence, or Administration Problems:
☐ HIV ☐ Diabetes ☐ No Symptoms ☐ Symptoms, specify:		Estimated Treatment Duration: Last DOT dose administered on:  Date medication given for travel: Prescription Given:
		Comments;
*Falch anglands to initiate the network process  *Falch angland to initiate the network process  *Falce and initiate part initiate properties a state brevets  *Falce and the ability one initiate process of the ability of the abilit	CS347315-A 06/07/2024	VALUE LANGE
Pablic reporting function of this collection of information is entitled to arrange 10 minutes per response, including the time for reviewing information, such largest contract to a many 10 minutes per response, including of the time for reviewing information unless at displays accurredly will deliberate includes any other any open and per of the individual varieties and individual varieties an	IR Control Number Send comments resording this	INTERJURISDICTIONAL TB NOTIFICATION (IJN)   www.tbcontrollers.org/resources/interjurisdictional-transfers  NOTE: This form contains confidential patient information. Please comply with HIPAA regulations when sending this form.   Rev. 3/202
		The state of the s







Results received 9/21/2023

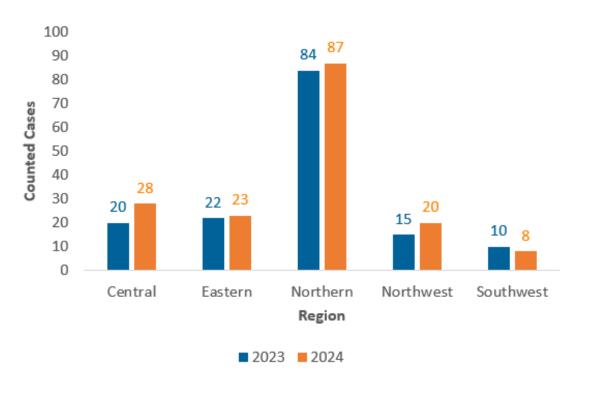
23RF4432, 23RF5053, 23RF5105, 23RF5605, MRCA



#### 2024 so far



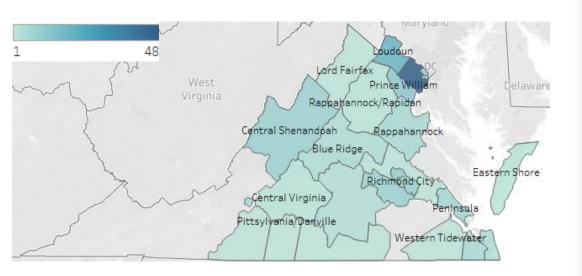
#### TB Cases by Region, Virginia, YTD 2023 vs. 2024\*



- 60% male
- 2% HIV positive
- 17% DM
- 83% pulmonary involvement
- 37 countries of birth



#### TB Cases by District, Virginia, YTD 2023 vs. 2024\*



#### TB Counts to Date

Case Rpt Mmwr Yr / Inv Case Status							
	2023	2024					
District 2+ ▼	Confirmed	Confirmed					
Blue Ridge	6	4					
Central Shenandoah	1	8					
Central Virginia	1	2					
Chesapeake	3	5					
Chesterfield	5	8					
Chickahominy	2	1					
Crater	3						
Eastern Shore		2					
Fairfax	50	42					
Henrico	7	8					
Lord Fairfax	1	1					
Loudoun	9	19					
Mount Rogers	1						
New River	1						
Norfolk City	3	3					
Peninsula	6	6					
Piedmont	1	3					
Pittsylvania/Danville	1	1					
Portsmouth		2					
Prince William	13	11					
Rappahannock	3	5					
Rappahannock/Rapidan	4	2					
Richmond City	2	7					
Roanoke City	4	4					
Southside		1					
Virginia Beach	9	4					
West Piedmont		1					
Western Tidewater	1	1					
Grand Total	151	166					



### Nontuberculosis Mycobacteria (NTM)



#### Nontuberculosis Mycobacteria (NTM)

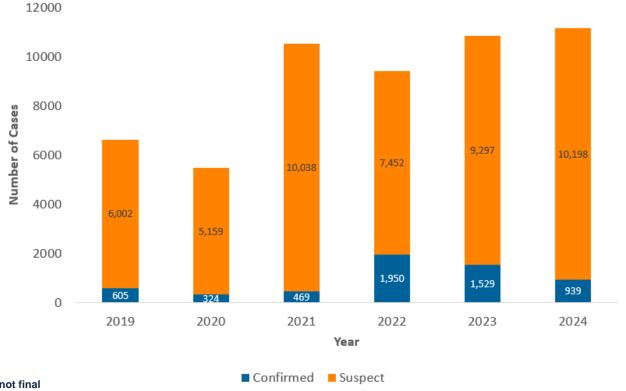
EMERGING INFECTIOUS DISEASES®	ISSN:	N: 10
EID Journal > Volume 30 > Number 3—March 2024 > Main Article		
Volume 30, Number 3—March 2024		
Research		
Geographic Variation and Environmental Predictors of Nontuberculous Mycobacteria Surveillance, Virginia, USA, 2021–2023 <sup>1</sup>	in Laboratory	У
Brendan Mullen, Eric R. Houpt, Josh Colston, Lea Becker, Sharon Johnson, Laura Young, Jasie Hearn, Joe Falkinham, and Scott K. Heysell	On This Page	
uthor affiliations: University of Virginia, Charlottesville, Virginia, USA (B. Mullen, E.R. Houpt, J. Colston, L. Becker, S. Johnson, S.K. Heysell); irginia Department of Health, Richmond, Virginia, USA (L. Young, J. Hearn); Virginia Polytechnic Institute and State University, Blacksburg,	Methods	
irginia, USA (J. Falkinham III) ite This Article	Results	
	Discussion	
Abstract	Cite This Article	
Because epidemiologic and environmental risk factors for nontuberculous mycobacteria (NTM) have been reported only infrequently, little information exists about those factors. The state of Virginia, USA, requires certain ecologic features to be included in reports to	Figures	
the Virginia Department of Health, presenting a unique opportunity to study those variables. We analyzed laboratory reports of Mycobacterium avium complex (MAC) and M. abscessus infections in Virginia during 2021–2023. MAC/M. abscessus was isolated from	Figure 1	
6.19/100,000 persons, and 2.37/100,000 persons had MAC/ <i>M. abscessus</i> lung disease. <i>M. abscessus</i> accounted for 17.4% and MAC for	Figure 2	
82.6% of cases. Saturated vapor pressure was associated with MAC/ <i>M. abscessus</i> prevalence (prevalence ratio 1.414, 95% Cl 1.011–1.980; p = 0.043). Self-supplied water use was a protective factor (incidence rate ratio 0.304, 95% Cl 0.098–0.950; p = 0.041). Our findings suggest that a better understanding of geographic clustering and environmental water exposures could help develop future	Tables	
targeted prevention and control efforts.	Table 1	



#### **Latent TB Infection**

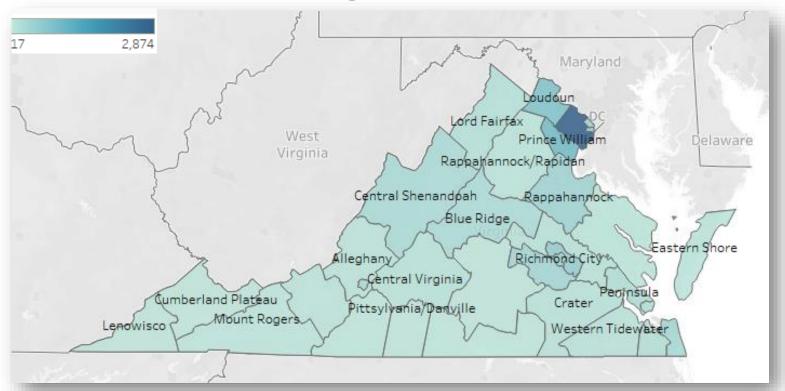


#### **Latent TB Infection, Virginia, 2019-2024\***





#### **Latent TB Infection, Virginia, 2024\***





#### **Surveillance Changes and Updates**

- eCR (electronic case reporting) is coming, but TB and LTBI are in later waves
- Updated flow for documents requiring review (DRR) queue in VEDSS
- Terminology
  - Burden case → non-countable case
- EMR/EHR

Initial close out for 2024 cases is coming soon!

- Outreach for missing data
- Count reconciliation via line lists
- Counting clinical and other cases diagnosed later in 2024

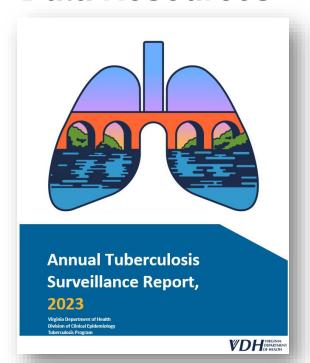


#### How can we help?

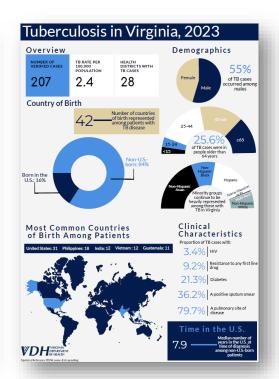
- Dashboards or reports for new LTBI reports?
- Reports for AFBs?
- More VEDSS/RVCT training?
  - Planning one live session for December
- Data abstraction/chart review visits?
- Specific tools?



#### **Data Resources**



CENTRAL REGION		2019		2020		2024		2022		2023	
CENTRAL REGION			_	2020		2021		2022			_
City/County	2022 Pop*	Cases	Rate								
Chesterfield County	378,408	3	0.9	7	2.0	3	0.8	2	0.5	5	1.3
Colonial Heights City	18,294	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Powhatan County	31,489	0	0.0	0	0.0	0	0.0	0	0.0	1	3.2
CHESTERFIELD DISTRICT	428,191	3	0.8	7	1.8	3	0.7	2	0.5	6	1.4
Charles City County	6,605	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Goochland County	26,109	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hanover County	112,938	0	0.0	0	0.0	0	0.0	2	1.8	2	1.8
New Kent County	24,986	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
CHICKAHOMINY DISTRICT	170,638	0	0.0	0	0.0	0	0.0	2	1.2	2	1.2
Dinwiddie County	28,161	0	0.0	1	3.5	0	0.0	0	0.0	1	3.6
Emporia City	5,481	1	19.5	1	18.7	0	0.0	1	17.8	1	18.2
Greensville County	11,226	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hopewell City	22,962	0	0.0	0	0.0	1	4.5	0	0.0	1	4.4
Petersburg City	33,394	2	6.3	0	0.0	2	6.6	1	3.0	0	0.0
Prince George County	43,134	0	0.0	0	0.0	0	0.0	1	2.3	0	0.0
Surry County	6,527	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sussex County	10,680	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
CRATER DISTRICT	161,565	3	1.9	2	1.3	3	1.9	3	1.9	3	1.9
HENRICO DISTRICT	333,962	14	4.3	12	3.6	5	1.5	8	2.4	9	2.7
Amelia County	13,455	1	7.7	0	0.0	0	0.0	0	0.0	1	7.4
Buckingham County	16,982	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Charlotte County	11,475	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Cumberland County	9,746	0	0.0	0	0.0	0	0.0	1	10.3	0	0.0
Lunenburg County	12,031	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Nottoway County	15,559	0	0.0	0	0.0	7	46.2	2	12.8	0	0.0
Prince Edward County	21,927	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
PIEDMONT DISTRICT	101,175	1	1.0	0	0.0	7	6.8	3	3.0	1	1.0
RICHMOND CITY DISTRICT	229,395	3	1.3	6	2.6	2	0.9	4	1.8	2	0.9
Brunswick County	15,921	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Halifax County	33,644	0	0.0	0	0.0	1	3.0	0	0.0	0	0.0
Mecklenburg County	30,508	0	0.0	1	3.3	0	0.0	0	0.0	0	0.0
SOUTHSIDE DISTRICT	80,073	0	0.0	1	1.2	1	1.2	0	0.0	0	0.0
CENTRAL REGION	1,504,999	24	1.7	28	1.9	21	1.4	22	1.5	23	1.5
VIRGINIA	8.683.619	191	2.2	169	2.0	160	1.9	195	2.3	207	2.4



## QUESTIONS AND DATA REQUESTS

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