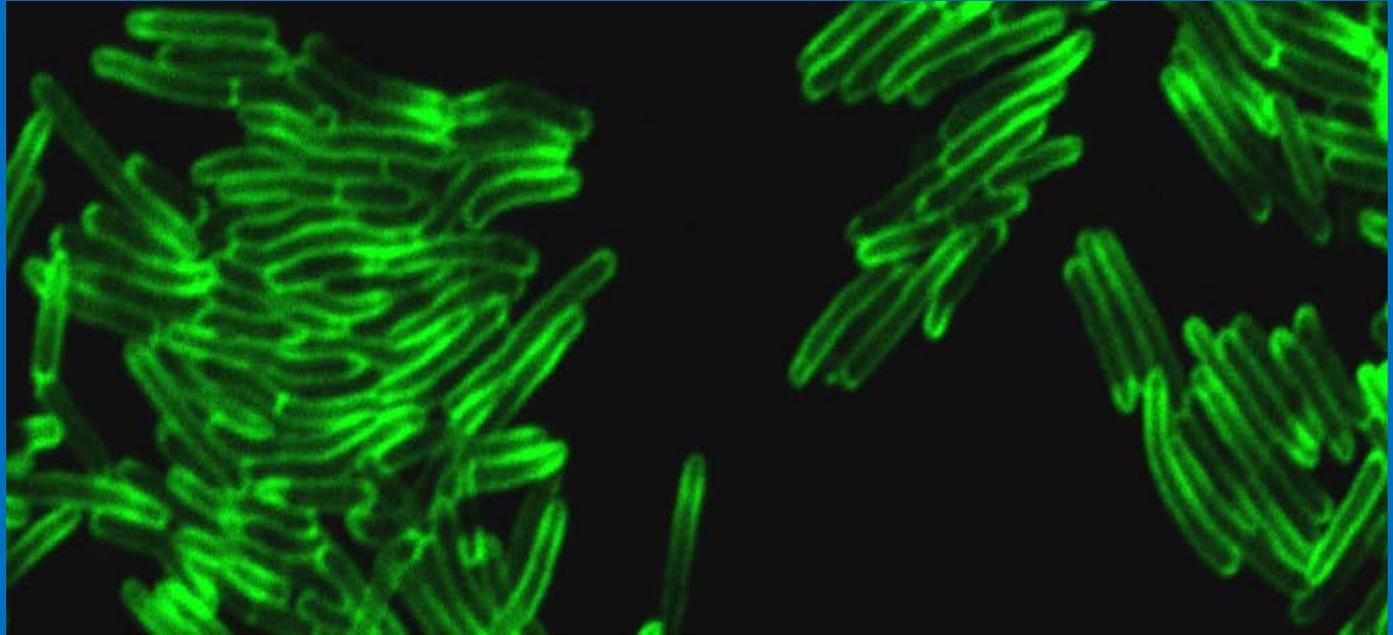


# The Role of the State TB Laboratory in Genotyping



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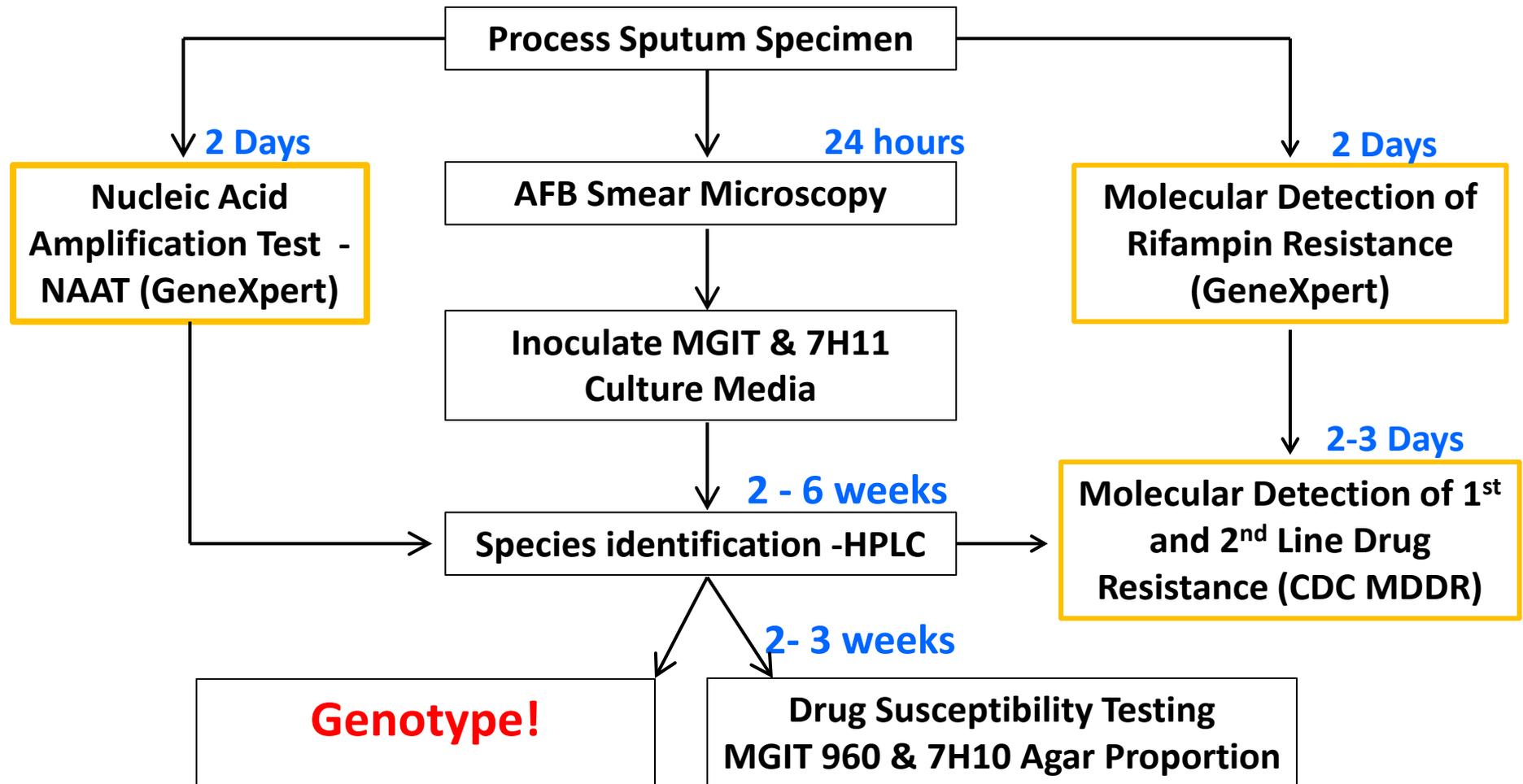
**August 15, 2014**

# TB Lab Terminology

- Specimen
  - Raw material from a patient, e.g. sputum
- Culture
  - A specimen that has been inoculated to a nutrient medium, e.g. MGIT
- Isolate
  - A culture with positive growth that has been identified as *Mycobacterium tuberculosis* complex (MTBC)



# DSHS-Austin TB Testing Algorithm



# *M. tuberculosis* complex (MTBC)

All positive by NAAT, AccuProbe, HPLC

<u>Species</u>	<u>No. of Texas isolates 2005-2014</u>
– <i>M. tuberculosis</i>	10,803 (98.3%)
– <i>M. bovis</i>	142 (1.3%)
– <i>M. bovis</i> BCG	34 (0.3%)
– <i>M. africanum</i>	14 (0.1%)
– <i>M. caprae</i>	
– <i>M. microti</i>	
– <i>M. canettii</i>	
– <i>M. pinnipedii</i>	

MTB Complex

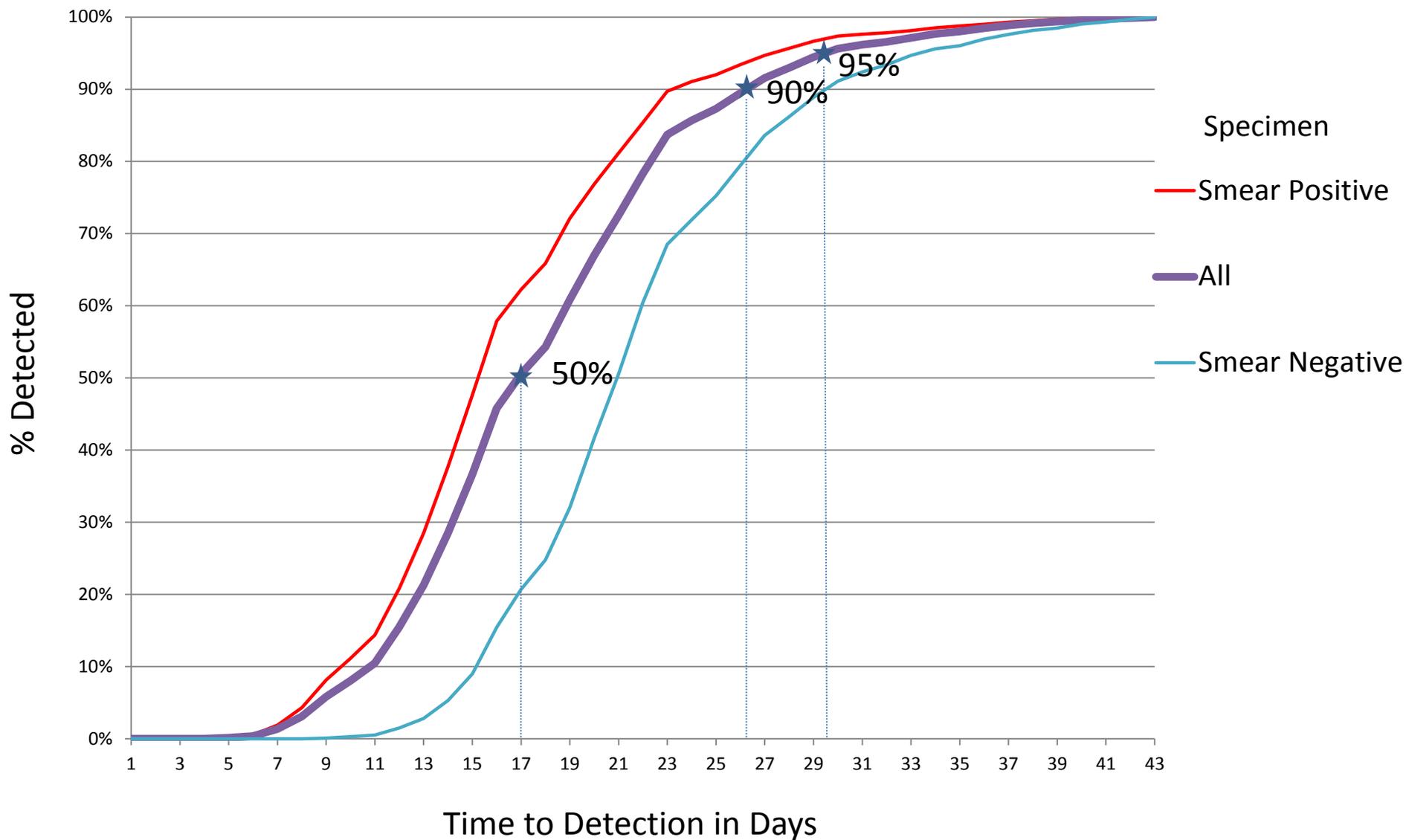
# What is the State Lab Role in Genotyping?

- Culture and ID MTBC from clinical specimens
- ID MTBC from referred isolates
- Ship initial MTBC isolate to the CDC-contract genotype lab in a timely manner
  - Receive and compile isolates from other labs
- How fast?  
**ASAP!**

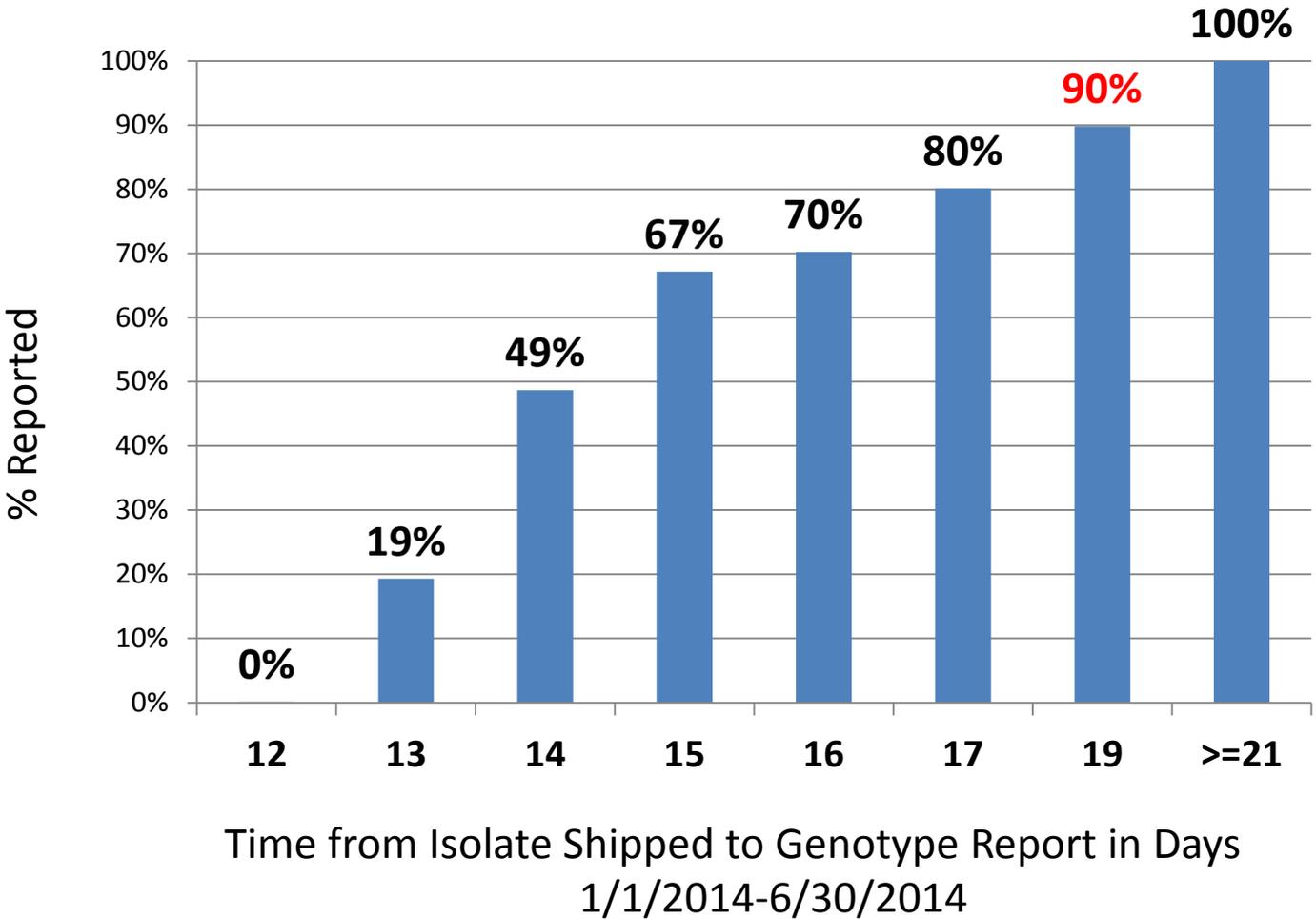
# How Long Does it Take to Get a Genotype?

- Time to grow/identify or receive the isolate
- Time to ship isolate to CDC contract lab
- Time to genotype analysis and report

# DSHS-Austin MTBC Culture Positive Time to Detection



# How Long Does it Take to Get a Genotype?



# How Long Does it Take to Get a Genotype?

- Time to receive and grow the isolate
  - DSHS-Austin: 90% by 25 days
- Time to ship to CDC-lab
  - Up to one week
- Time to Genotype analysis and report
  - 90% by 19 days
- **Total about 7 to 8 weeks**

# Texas Administrative Code (TAC)

- Requires that laboratories submit a pure culture of *M. tuberculosis* complex, including *M. bovis* and *M. bovis* BCG, to the DSHS Laboratory in Austin.

# Texas TB Laboratory Genotype Letter

- Mailed to 196 labs (including out of state labs)
  - Sent Nov 2011 & Feb 2013 by Assistant Commissioner Prevention and Preparedness Division
- Advises labs of TAC requirement for isolate
  - One isolate per patient
  - Recommends to send a portion of ***primary culture growth***, (e.g. MGIT broth) as soon as possible or no later than one month after identification
- Provides instructions for sending isolates to DSHS-Austin

# Summary

- State lab role in genotyping:
  - support programmatic TB control efforts by testing MTBC as quickly as possible
  - Provide technical assistance about lab systems and testing methodologies