

Kilimanjaro Clinical Research Institute (KCRI)

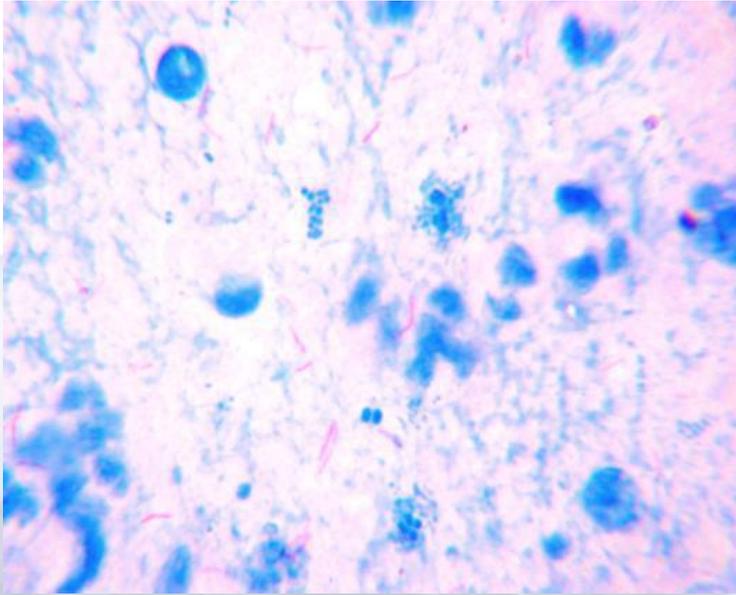


Davis Kuchaka BSc., MSc.
Monday, July 8, 2019

Outline

- AFB microscopy
- Smear preparation
- The cell wall
- Staining
- Reporting

AFB Microscopy



Acid fast Bacilli – resist decolorization
with acid alcohol

Microscopes

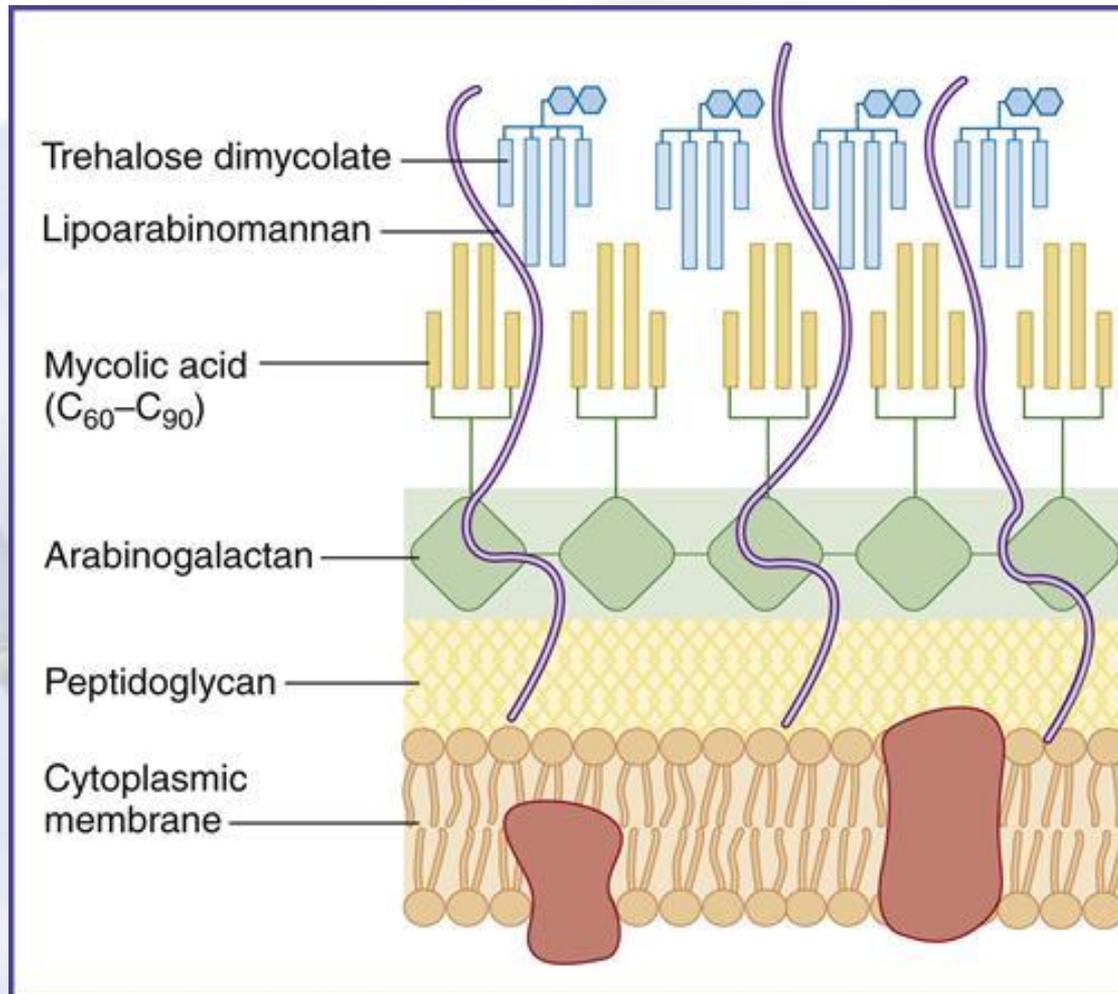
- Bright field
- Fluorescent



Smear preparation

- Direct smear
 - Sputum
- Concentrated
 - Decontaminated sputum
- Culture
 - MGIT
 - Solid

The Cell wall



Staining



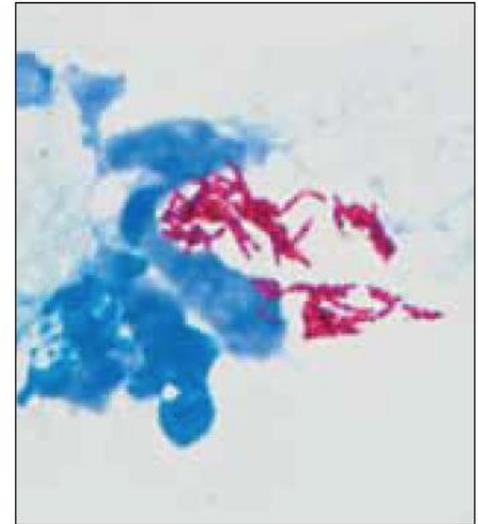
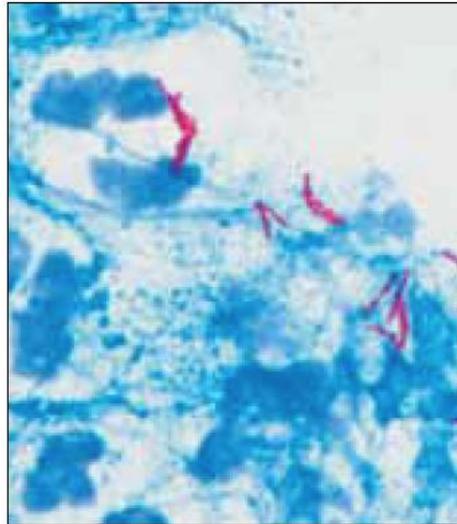
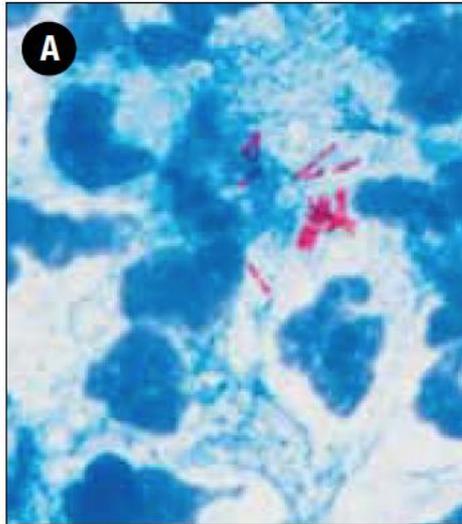
Ziehl-Neelsen

Auramine

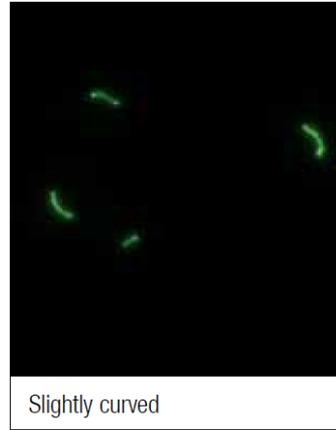


ZN stained smear

Correctly stained slides



Auramine stained smear



Reporting

Reporting How to report

Fluorescence Microscopy Method **B**

The number of AFB indicates how infectious the patient is. It is important to record exactly what you see.

1

What you see (200x)	What you see (400x)	What to report
No AFB in one length	No AFB in one length	No AFB observed
1-4 AFB in one length	1-2 AFB in one length	Confirmation required*
5-49 AFB in one length	3-24 AFB in one length	Scanty
3-24 AFB in one field	1-6 AFB in one field	1+
25-250 AFB in one field	7-60 AFB in one field	2+
>250 AFB in one field	>60 AFB in one field	3+

* Confirmation required by another technician or prepare another smear, stain and read

RESULT SECTION – AURAMINE STAIN OR ZIEHL-NEELSEN		<input type="checkbox"/> Not Done (add comment)
What type of smear microscopy?	<input checked="" type="checkbox"/> Auramine <input type="checkbox"/> Ziehl-Neelsen	
Date read	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">23</div> <div style="border: 1px solid black; padding: 2px;">JAN</div> <div style="border: 1px solid black; padding: 2px;">2019</div> </div> <small>day month year</small>	Tech initials <u>MLS</u>
Smear result	<input type="checkbox"/> No AFB seen <input type="checkbox"/> Scanty <input type="checkbox"/> 1+ <input type="checkbox"/> 2+ <input checked="" type="checkbox"/> 3+	
Comments (Include the average number of AFBs per field)	<u>> 60 AFB PER FIELD AT 400X.</u>	

Reporting

Reporting How to report

Brightfield Microscopy Method **A**

The number of AFB indicates how infectious the patient is. It is important to record exactly what you see.

1

What you see	What to report
No AFB in 100 fields	No AFB observed
1 – 9 AFB in 100 fields	Record exact number of bacilli
10 – 99 AFB in 100 fields	1+
1 – 10 AFB per field, check 50 fields	2+
More than 10 AFB per field, check 20 fields	3+

If instrument positive, **Ziehl-Neelsen (ZN) smear:**

Not Done (add comment)

Date read

MAR 2019
 day month year

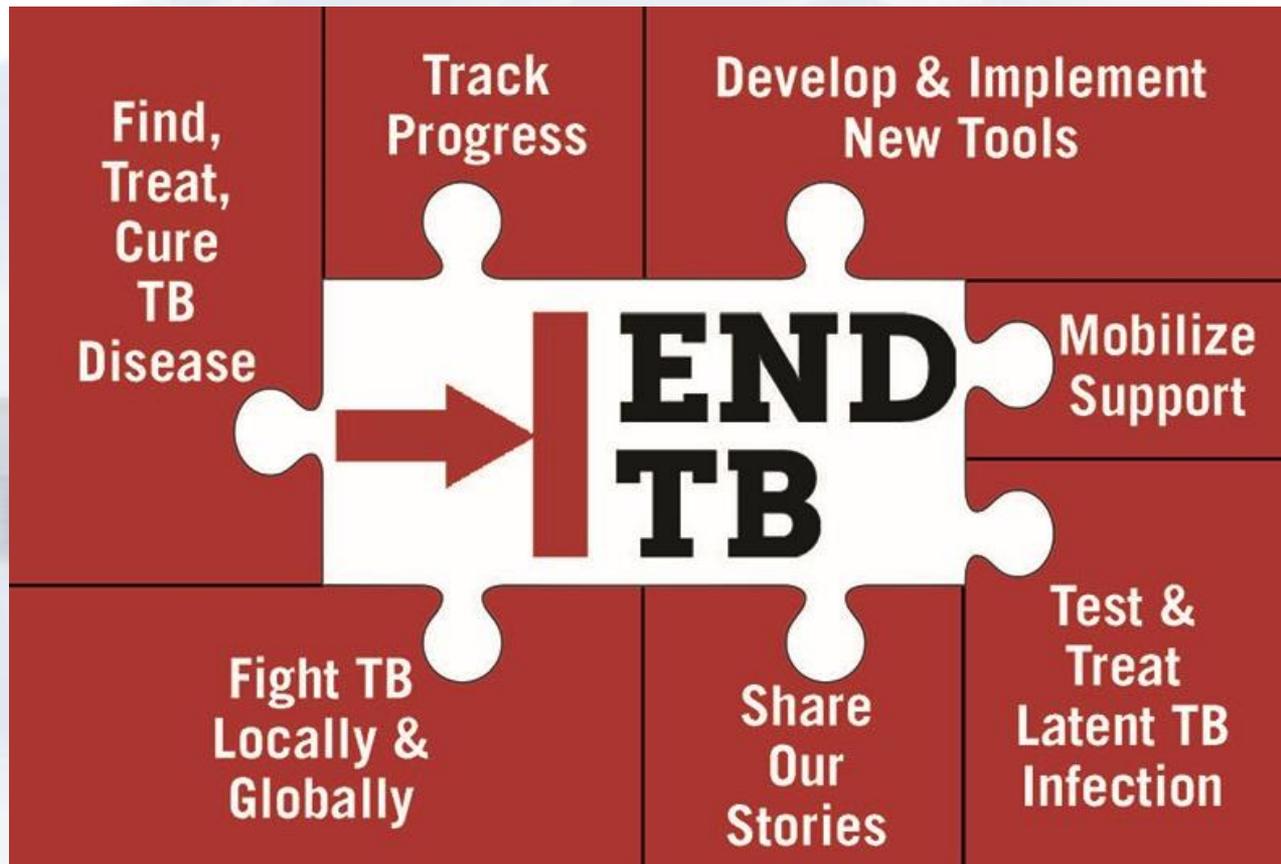
Result

pos. neg.
 cording atypical typical

Comments

Tech initials WKF

Which piece of the puzzle?



Resources used

- https://www.chemonics.com/wp-content/uploads/2016/03/2016_03.24_Kankadze_WorldTBDay_2.jpg
- NC008 Mycobacteriology Lab Manual
- http://stoptb.org/wg/gli/assets/documents/TB%20MICROSCOPY%20HANDBOOK_FINAL.pdf