

Kilimanjaro Clinical Research Institute (KCRI)

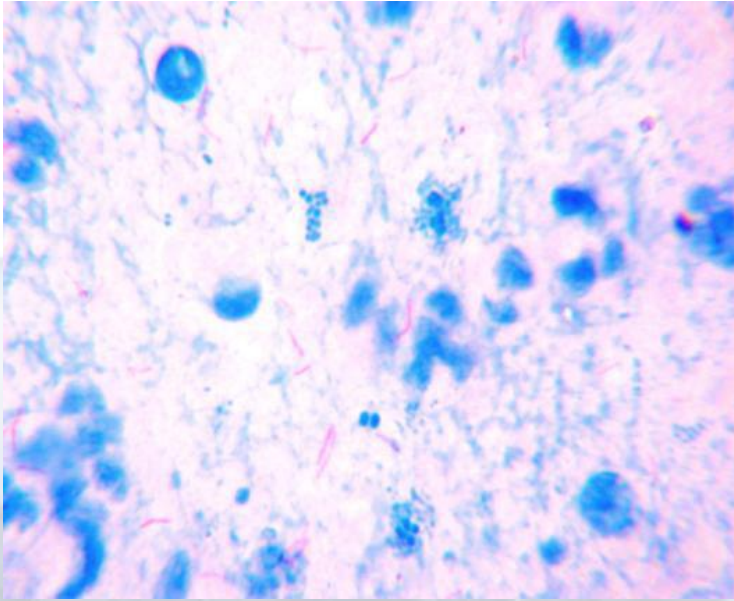


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Monday, July 8, 2019

Outline

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

AFB Microscopy



Acid fast Bacilli – resist decolorization
with acid alcohol

Microscopes

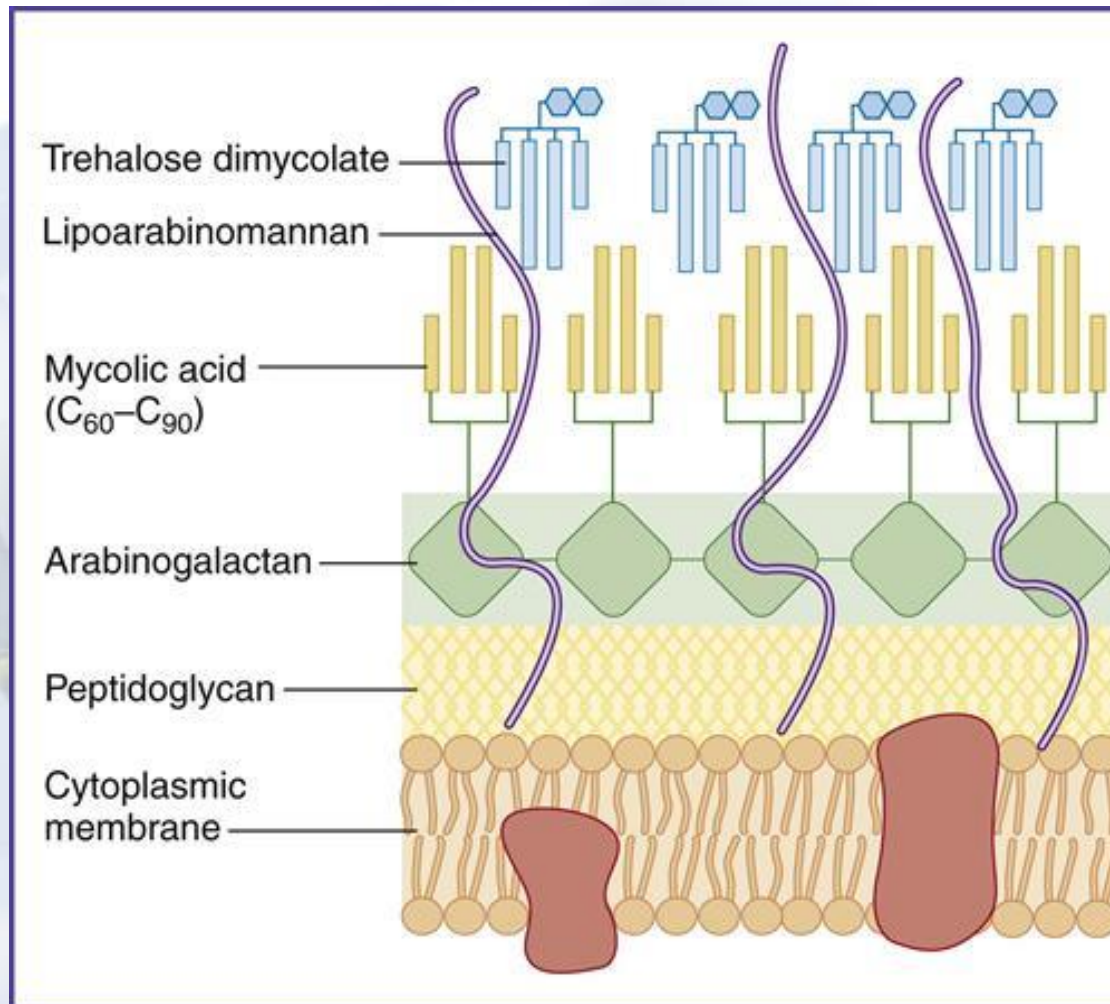
- Bright field
- Fluorescent



Smear preparation

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

The Cell wall



Staining



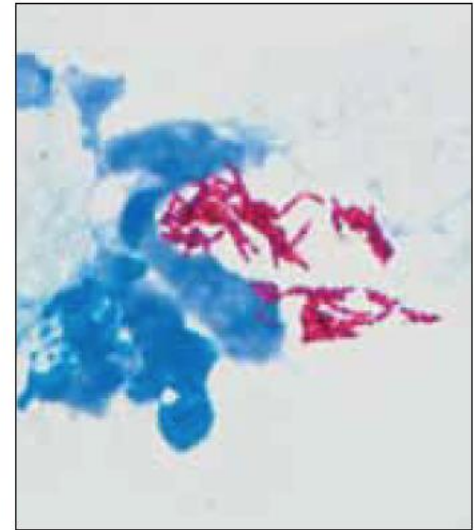
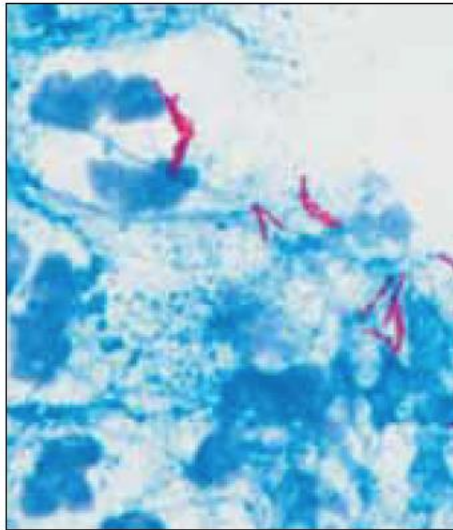
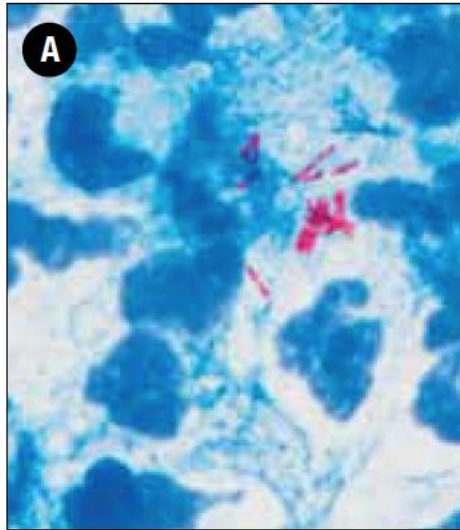
Ziehl-Neelsen

Auramine

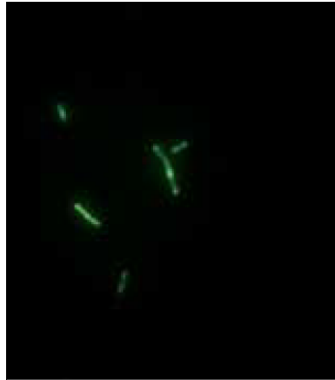


ZN stained smear

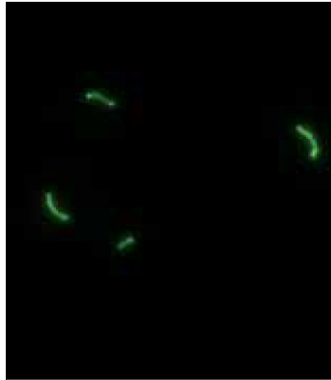
Correctly stained slides



Auramine stained smear



Long and slender



Slightly curved



Uniformly stained



One or more gaps



Granular

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-NEESEN		<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>23</div> day <div>JAN</div> month <div>2019</div> year	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

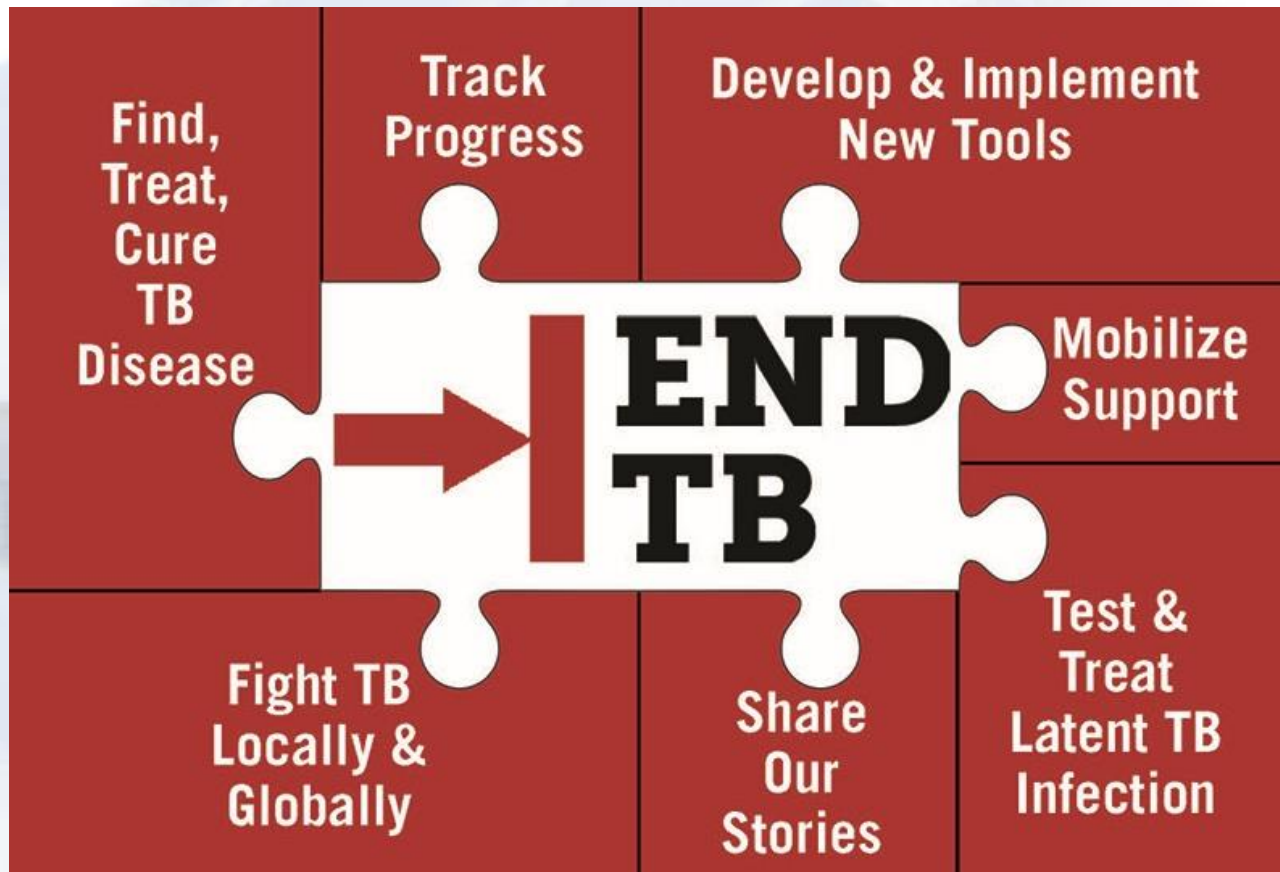
The number of AFB indicates how infectious the patient is. It is important to record exactly what you see.

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, <u>Ziehl-Neelsen (ZN) smear:</u>			<input type="checkbox"/> Not Done (add comment)	
Date read	<div>11</div> <div>MAR</div> <div>2019</div> <div>day</div> <div>month</div> <div>year</div>	Result	<input checked="" type="checkbox"/> pos. <input type="checkbox"/> neg.	<input checked="" type="checkbox"/> cording <input type="checkbox"/> typical <input type="checkbox"/> atypical
Comments			Tech initials <u>WKF</u>	

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