

PATH to TB INNOVATION

TB was first identified in 460 BCE by Hippocrates and initially named "phthisis," which means "consumption" in Greek. Throughout history, TB has had many names, including "white plague." However, since Dr. Koch's discovery, "tuberculosis" became the more common medical term.

1882

Robert Koch discovered TB using the microscope

1895

Development of chest x-ray diagnostic

1907

Tuberculin skin test developed

1921

BCG vaccine introduced

1936

Solid culture first used to identify TB

1943

First anti-TB drug discovered: Streptomycin

1952

First anti-TB regimen used: Streptomycin, PAS, isoniazid

1963

Rifampin and Capreomycin discovered

1974

British Medical Research Council trials added Rifampin and Pyrazinamide

1980

Liquid culture developed

1994

Directly Observed Treatment, Short-course (DOTS)

USAID's Tuberculosis Program Began

1998

Rifapentine approved

Emergence of XDR-TB*

2009

iLED microscope, line probe assay developed

2010

Xpert MTB/RIF rapid test for TB receives CE IVD marketing

2011

New drug development approach: CPTR (critical path to TB [drug] regimens)

2012

FDA approves Bedaquiline, the first new anti-TB drug since Rifapentine in 1998

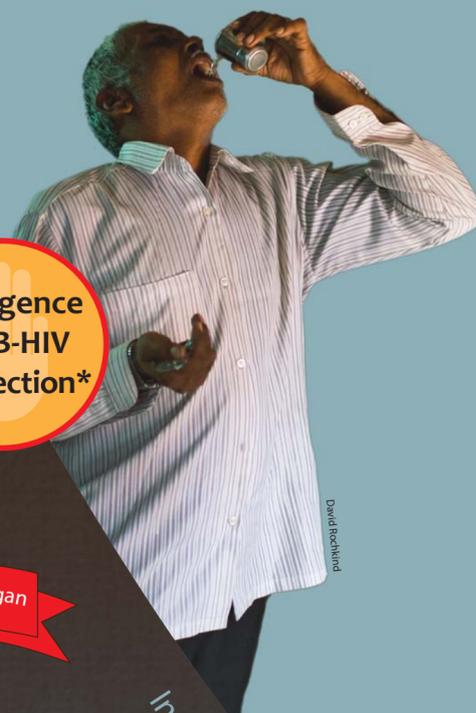
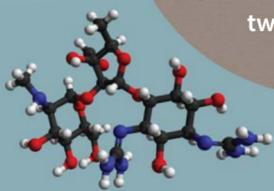
2014

Clinical trials begin on PaMZ, the 3-drug cocktail that could shorten treatment for TB, including MDR-TB



BCG initially proved a resounding success, reducing mortality from TB by **90%** in vaccinated children. However, BCG does not prevent primary infection or reactivation of latent TB.

Monotherapy (single-drug regimen) resistant mutations began to appear within a few months of the introduction of the drug Streptomycin. It was soon demonstrated that this problem could be overcome by treating TB with a **combination** of two or three drugs.



GeneXpert MTB/RIF® assay is a new molecular test that can detect TB and mutations associated with Rifampicin resistance in fewer than 2 hours with far greater accuracy than smear microscopy.

One Day We Hope to Have...

- ✓ A tool that can diagnose TB and MDR TB within 24 hours for children, adults, and HIV-infected individuals
- ✓ A shorter treatment regimen that can cure TB in 10 days or less that will also work with antiretroviral drugs
- ✓ A vaccine that can prevent new TB infections or recurrences of the disease

*NOTES: MDR-TB: Multidrug-resistant tuberculosis, TB-HIV: Tuberculosis and HIV Co-infection, XDR-TB: Extensively drug-resistant tuberculosis