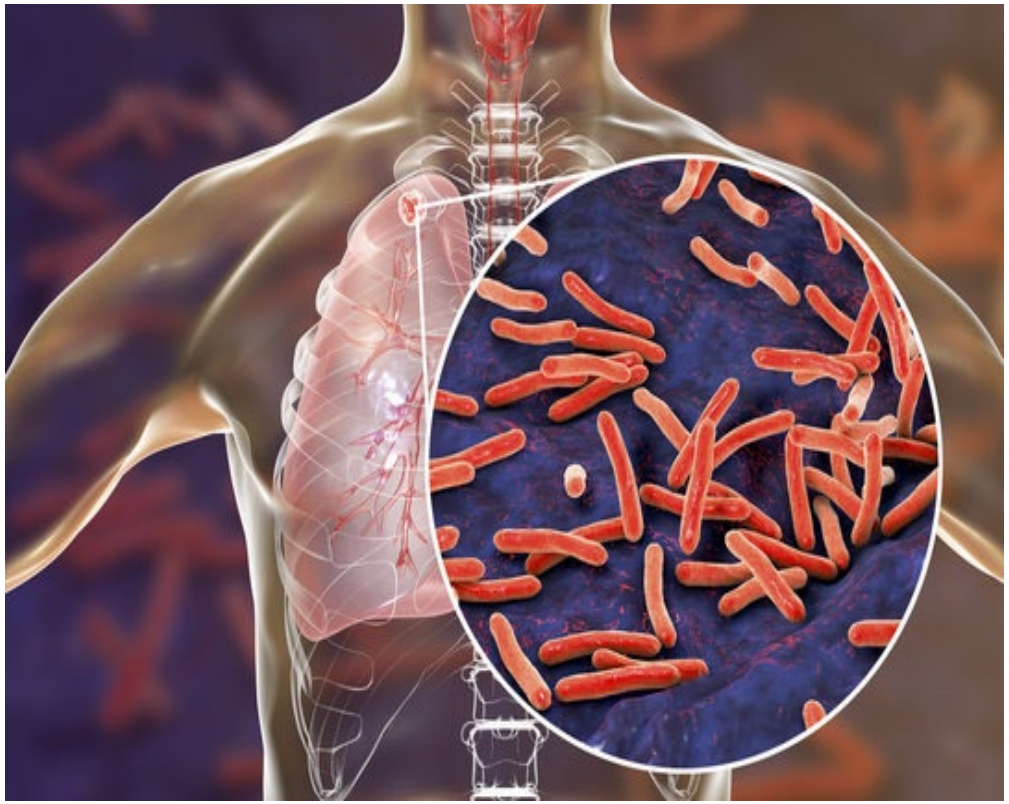
Let’s Get Comfortable with BPaLM. Management of DR TB



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25 March 2026, 09:30a-10:15a
2026 World TB Day Celebration

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Disclaimer Statement

I HAVE NO CONFLICTS OF INTEREST

I have no financial interests or other relationships with the manufacturers of commercial products, suppliers of commercial services, or commercial supporters

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Learning Objectives

IDENTIFY WHAT IS BPALM

IDENTIFY INDICATIONS & CONTRAINDICATIONS FOR BPALM

WHAT EVALUATION & MONITORING IS NEEDED

DESCRIBE TWO WAYS IN WHICH CASE MANAGEMENT IS DIFFERENT FROM THAT OF DRUG –SUSC TB

IDENTIFY POSSIBLE ADVERSE EVENTS

NAME AT LEAST 1 PROGRAMMATIC CONSIDERATION

KNOW WHEN TO CONSULT WITH TB EXPERTS

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INTRODUCTION & DEFINITIONS

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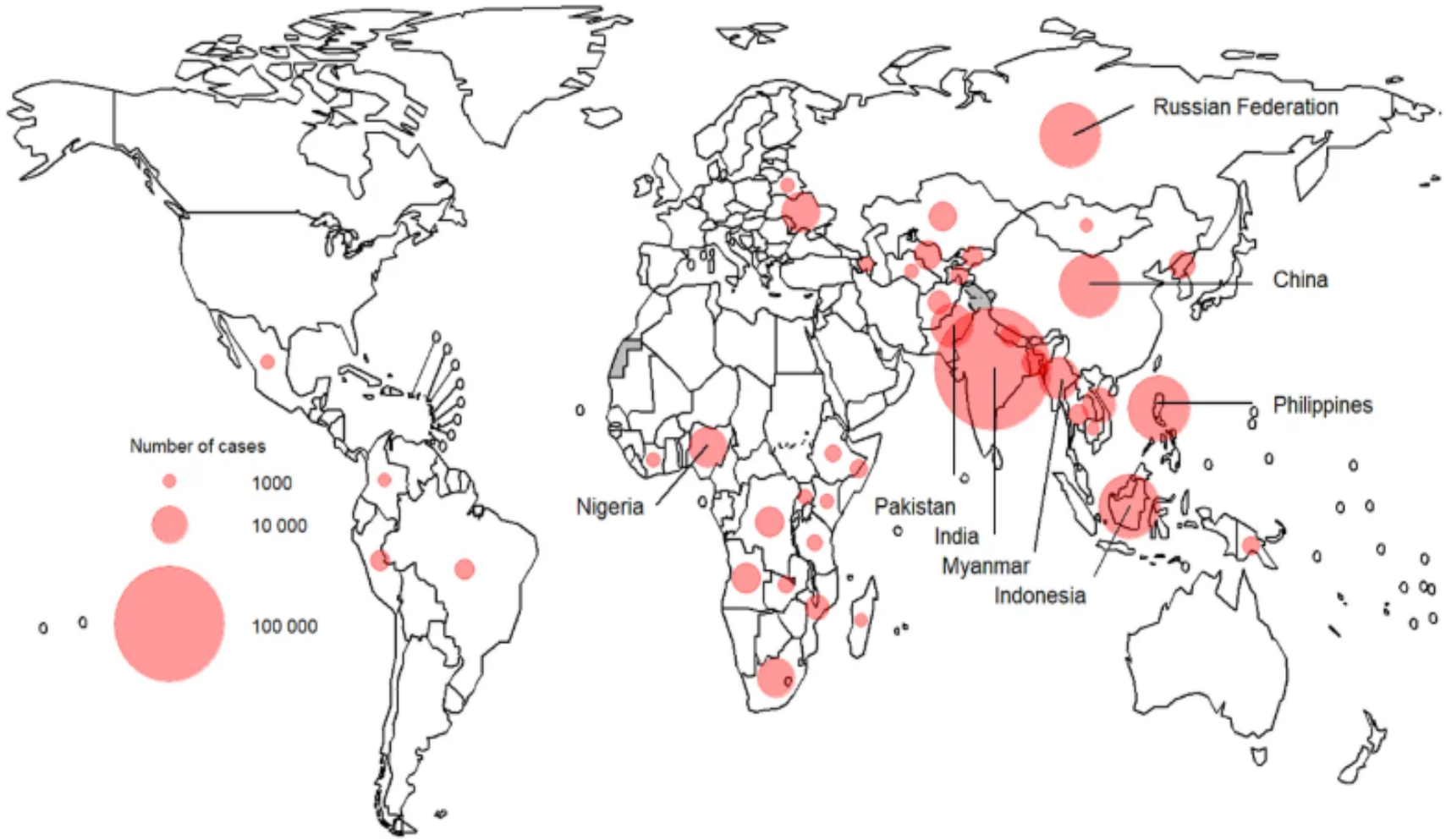
Defining Drug resistant TB

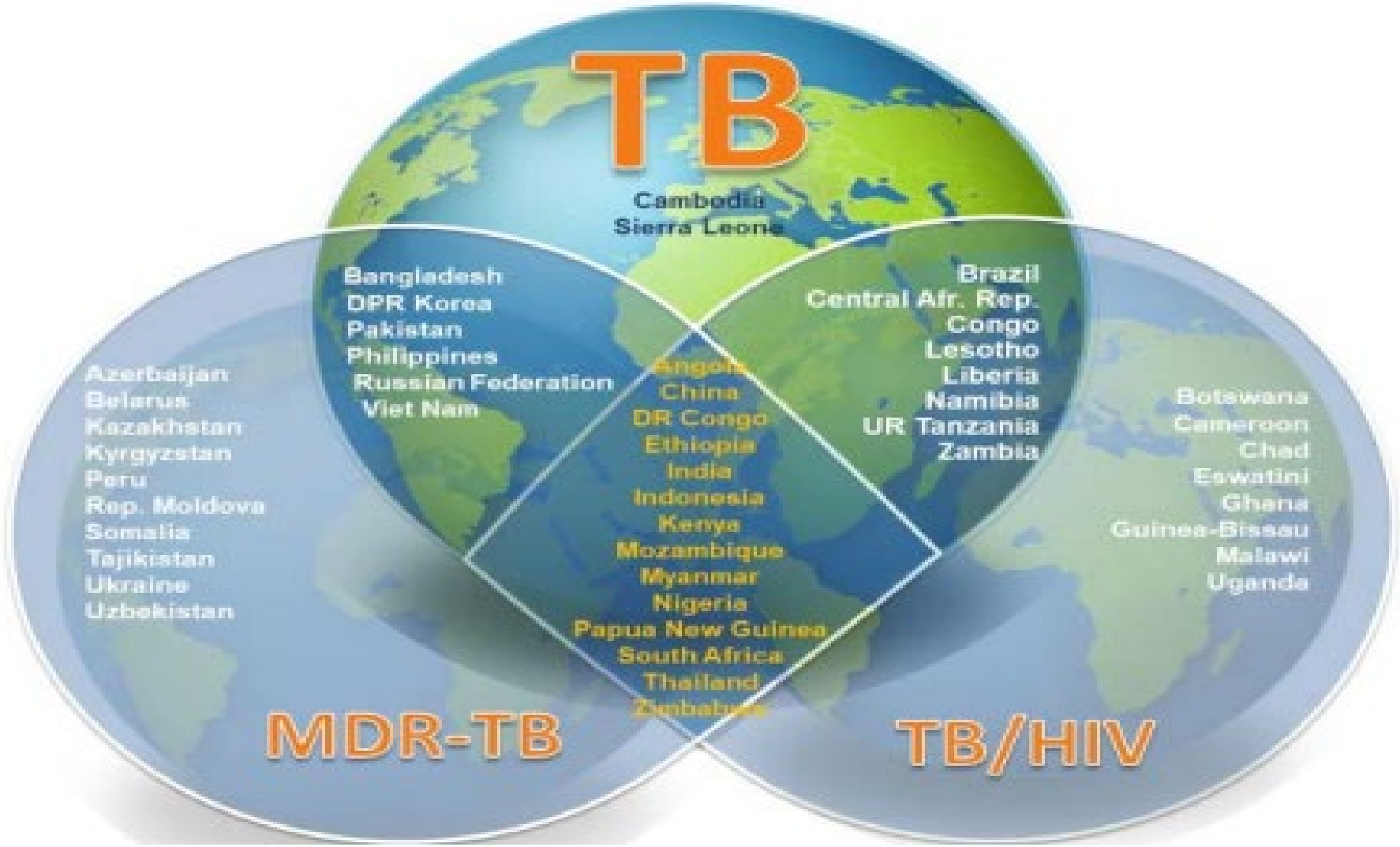
DS-TB	Mono-R-TB	MDR-TB	Pre-XDR-TB	XDR-TB
RIF	✗ RIF	✗ RIF	✗ RIF	✗ RIF
INH	✗ INH	✗ INH	✗ INH	✗ INH
PZA	✗ PZA		✗ Quinolones	✗ Quinolones
EMB	✗ EMB			✗ Group A drugs (Bedaquiline,Linezolid)

Fig. 1.3.5 Estimated number of people who developed MDR/RR-TB (incident cases) in 2022, for countries with at least 1000 incident cases[a]



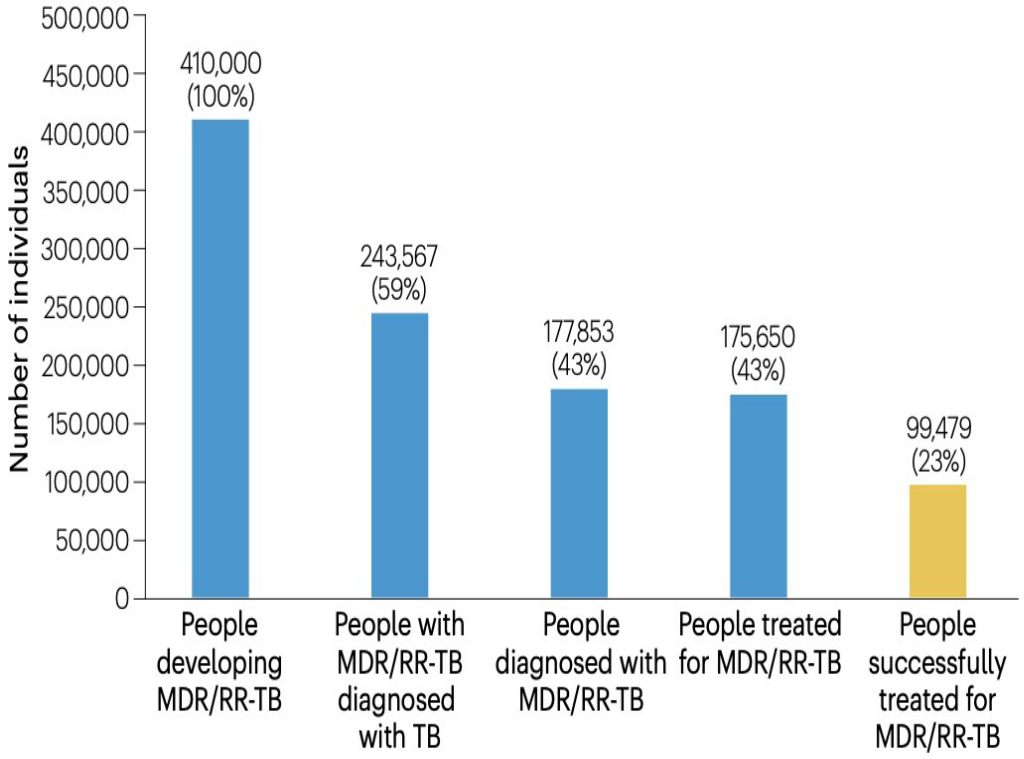
[a] The eight countries ranked in descending order of their total number of MDR/RR-TB incident cases in 2022 are India, the Philippines, the Russian Federation, Indonesia, China, Pakistan, Myanmar and Nigeria.

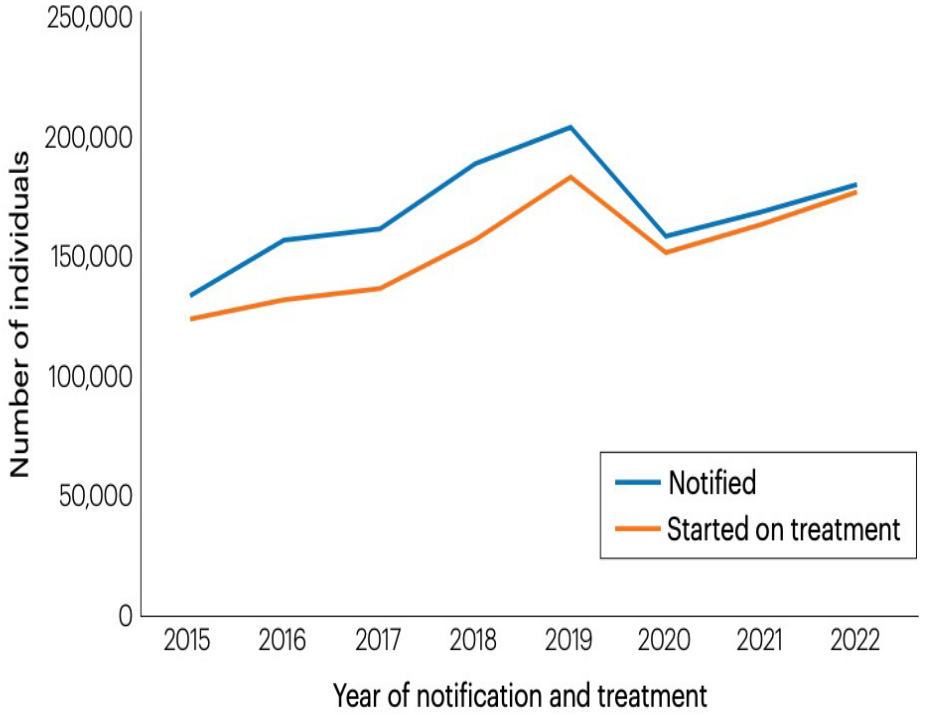
Fig. 1: The three global HBC lists for TB, TB/HIV and MDR-TB used by WHO during the period 2016–2020, and their areas of overlap



[4] See the report of the STAG-TB meeting in 2015 (pp8), available at https://www.who.int/tb/advisory_bodies/stag_tb_report_2015.pdf?ua=1

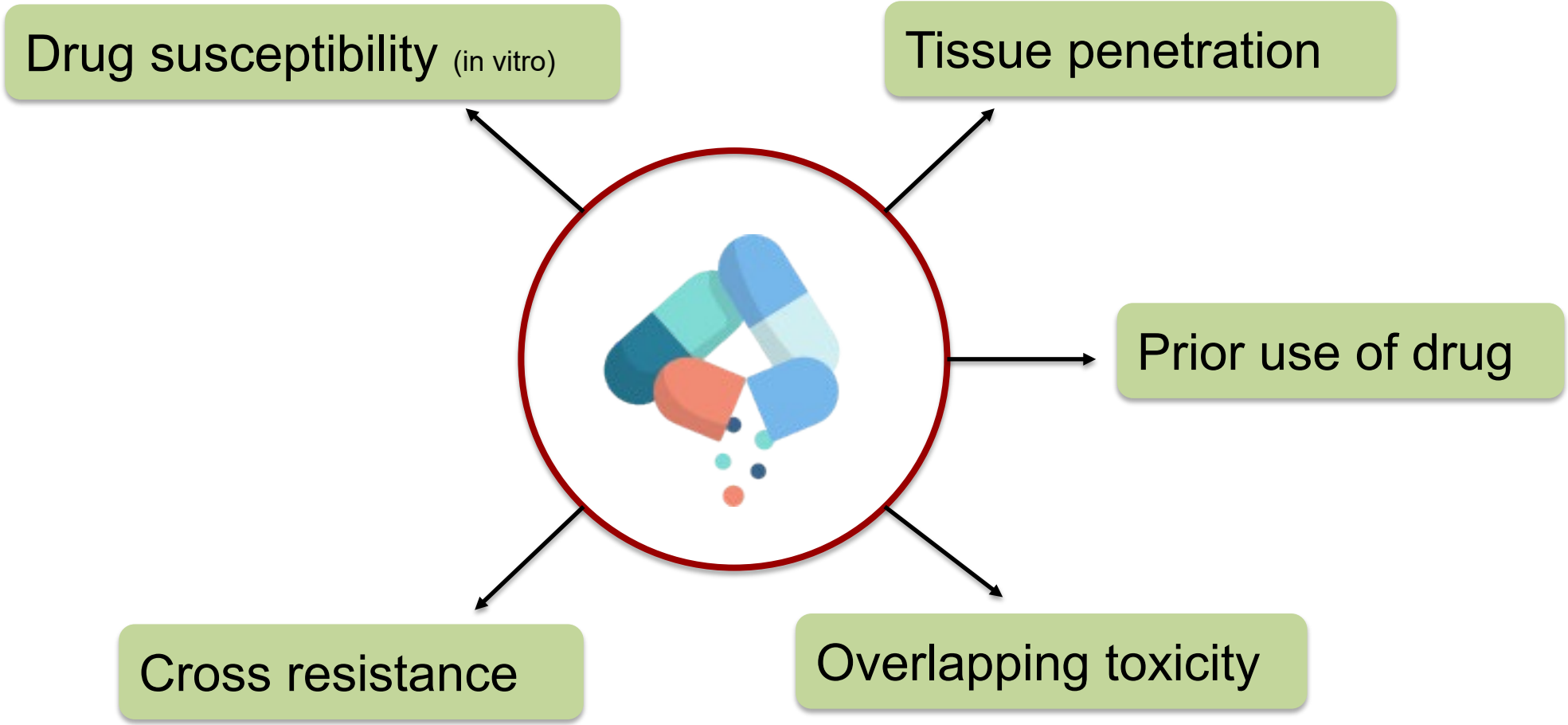
GAPS IN THE CASCADE OF CARE FOR DRUG-RESISTANT TB



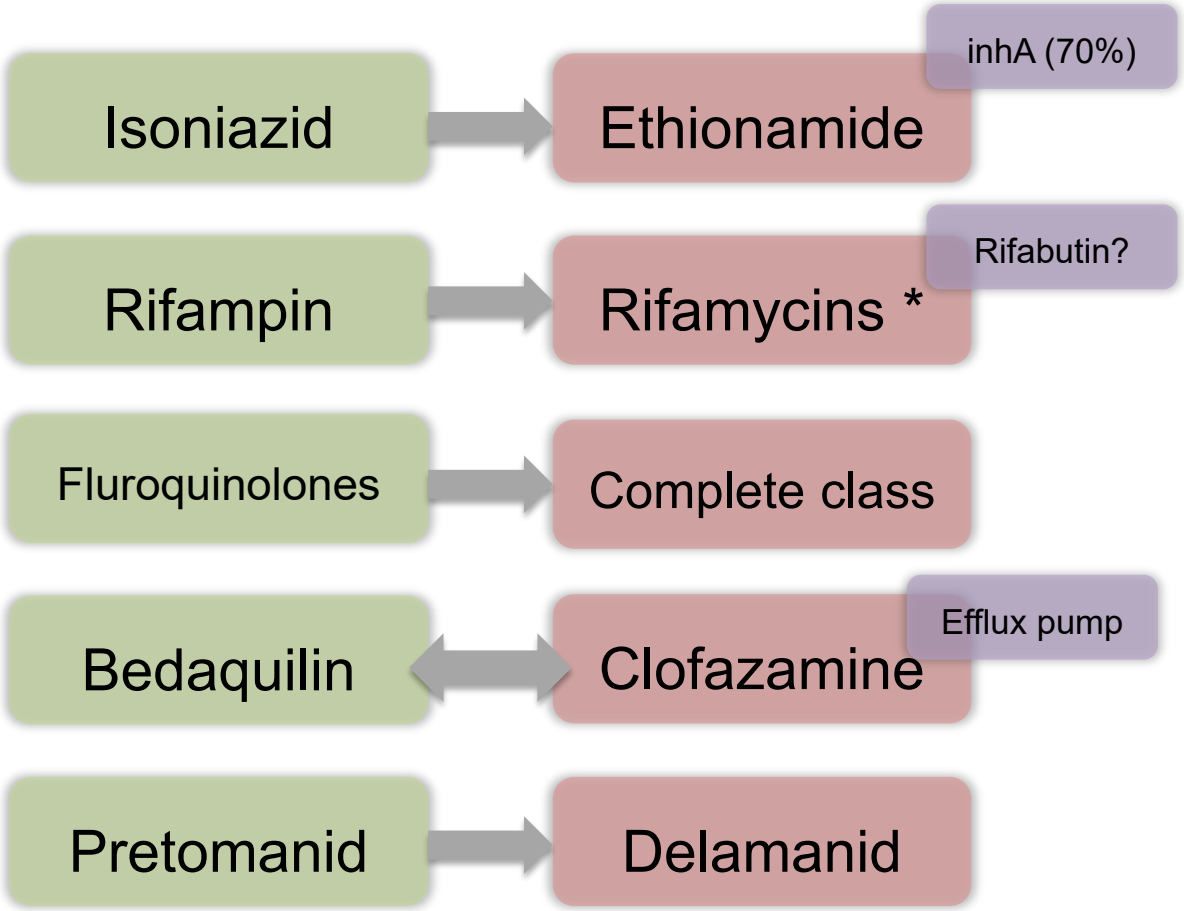


Farhat et al. Nat Rev Microbiol (2024)

Building a regimen for MDR-TB



Cross Resistance



- ✓ Ethambutol
- ✓ Pyrazinamide
- ✓ Linezolid
- ✓ Cycloserine

DR-TB Treatment Evolution

- Long regimens → All-oral → Short regimens → BPaL/BPaLM

What is BPaLM & why should I get comfortable with it?

BPALM REGIMEN OVERVIEW

What it is

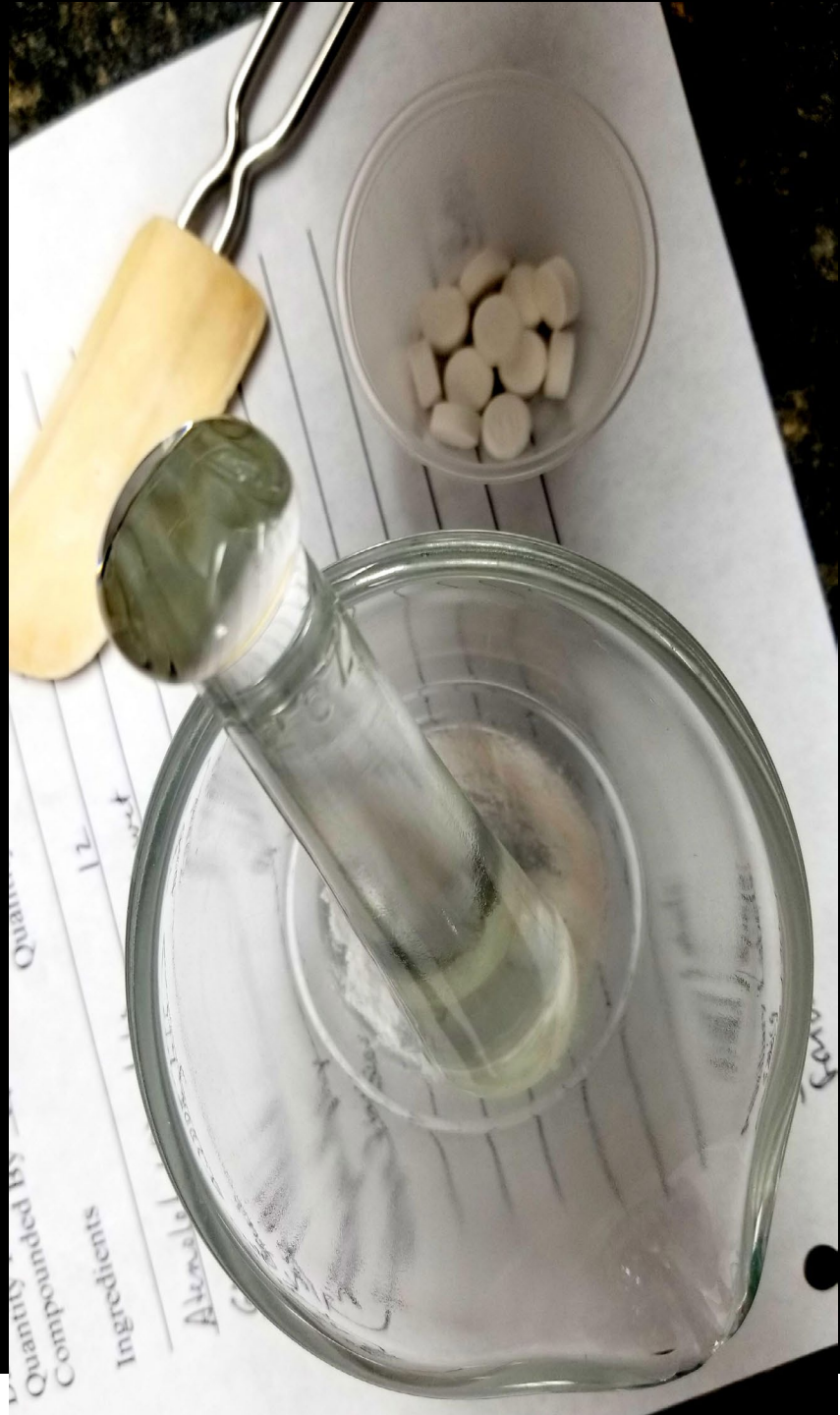
A 6-month, all-oral DR-TB regimen: bedaquiline + pretomanid + linezolid + moxifloxacin.

Origins and rationale

Built on Nix-TB/ZeNix evidence for BPaL efficacy; adds moxifloxacin to boost bactericidal activity when FQ-susceptible.

Clinical positioning

Targeted option (not universal): requires careful selection, expert oversight, and monitoring for linezolid toxicity and QT prolongation.



BPaL and BPaLM 6-month regimens

Expert consensus dosing recommendations (combining WHO and CDC):

For ages ≥ 15 years:

BPaL*

- **Bedaquiline** 400 mg once daily x 2 weeks (load), then 200 mg 3x/week x 24 weeks
- **Pretomanid** 200 mg once daily x 26 weeks
- **Linezolid** 600 mg once daily x 26 weeks

BPaLM* — same as above and add:

- **Moxifloxacin** 400 mg once daily x 26 weeks

Extend either regimen to 9 months (39 weeks) if evidence for delayed response to treatment (> 8 weeks per CDC criteria below).

One day of typical BPaL regimen
6 months / <750 pills

One day of typical XDR-TB treatment
18+ months / 14,000+ pills

INDICATIONS FOR BPaLM

BPaLM INDICATIONS

- Pulmonary TB
- Age at least 15yrs old
- MDR TB OR RR-TB
- ? Severe Rifampin intolerance (only expert opinion for now)
- *No data are available in children, pregnant people, or for the use of the 6-month regimens against extra pulmonary TB (like TB meningitis).*

LIFE BEFORE BPALM

Very long regimens with toxic medications

Number of Drugs

2019 IDSA/CDC/ERS/ATS Guidelines

Intensive: At least **5 drugs** 

Continuation: At least **4 drugs** 

ATS / CDC / ERS / IDSA				WHO
1.	Choose one FQ	Levofloxcin **or** Moxifloxacin	**LFX** **MFX**	**WHO Group A:** Include all three
2.	Use BDQ and LZD	Bedaquiline	**BDQ**	
		Linezolid	**LZD**	
3.	Use CFZ and CS	Clofazimine	**CFZ**	**WHO Group B:** Add one or both
		Cycloserine	**CS**	
4.	Add inj. as needed	Amikacin (**or** Streptomycin[1])	**AK** **(SM)**	**WHO Group C:** Add to complete the regimen WHO rank order: **EMB** **DLM** **PZA** **IMP/MPM** with **CLV** **AK (SM)** **ETA** or **prothionamide** **PAS**
5.	Add as needed	Delamanid[2]	**DLM**	
		Ethambutol	**EMB**	
		Pyrazinamide	**PZA**	
6.	Add as needed	Ethionamide	**ETA**	
		Imipenem-cilastatin **or** Meropenem (**plus** clavulanate)	**IPM** **MPM** **(+CLV)**	
		p-aminosalicylic acid	**PAS**	
		High-dose Isoniazid	**INH**[HD]	

Pretomanid not yet included

Capreomycin, kanamycin, macrolides amox/clav

Duration of therapy

2019 IDSA/CDC/ERS/ATS Guidelines

Intensive: **5-7 months** after culture conversion

Continuation: **15-21 months** after culture conversion

15-24 months for pre-XDR and XDR

Summary of Studies that led to BPaLM

Evidence Base

- Nix-TB
- ZeNix
- TB PRACTECAL

A CLOSER LOOK: Nix-TB

109

participants enrolled

6BPaL
1200mg

After 6 months of follow-up…

The 6BPaL regimen cured 90% of participants but 57% of participants experienced at least one adverse event.

81% of participants reported peripheral neuropathy (nerve pain) and 48% experienced myelosuppression (blood disorders). Because of these adverse effects, only 34% of participants were able to complete six months of linezolid without interruption

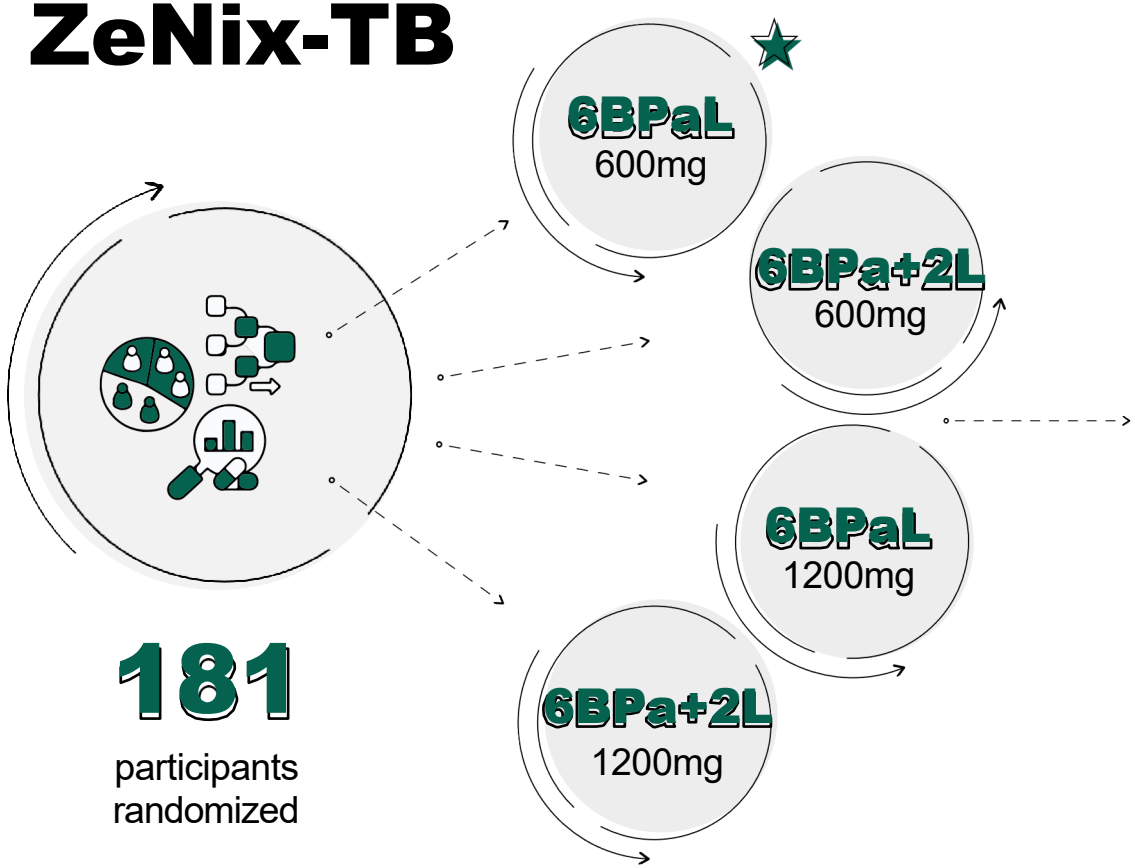
- Nix-TB enrolled participants from 3 sites in South Africa
- Mostly adults but also adolescents as young as 14 years old; and
- 56 PLHIV with a CD4 T-cell count of at least 50 cells/mm^3

B = bedaquiline | Pa = pretomanid | L = linezolid

Nix-TB Trial

- High efficacy with BPaL
- 6-month regimen
- High culture conversion
- Linezolid toxicity noted

A CLOSER LOOK: ZeNix-TB



After 6 months of follow-up…

The 6BPaL(600mg) regimen had the best balance of efficacy and safety – 91% cured and 24% experiencing at least one adverse event.

Dosing linezolid at 600 mg is meant to help to balance the power/potency of linezolid against TB with some of its challenging side effects (e.g., nerve pain and blood disorders).

- ZeNix-TB enrolled participants from 4 countries (South Africa Georgia, Moldova, and Russia)
- Mostly adults but also adolescents as young as 14 years old; and
- 36 PLHIV with a CD4 T-cell count of at least 100 cells/mm^3

B = bedaquiline | Pa = pretomanid | L = linezolid

ZeNix Trial

- Optimized linezolid dosing
- Lower toxicity
- Maintained efficacy

6-month regimen RR-TB (TB-PRACTECAL)

Stage 1

SOC

Bedaquiline
Pretomanid
Linezolid
Moxifloxacin

Bedaquiline
Pretomanid
Linezolid
Clofazamine

Bedaquiline
Pretomanid
Linezolid

Safety and Efficacy

✓Culture conversion at 8 weeks 

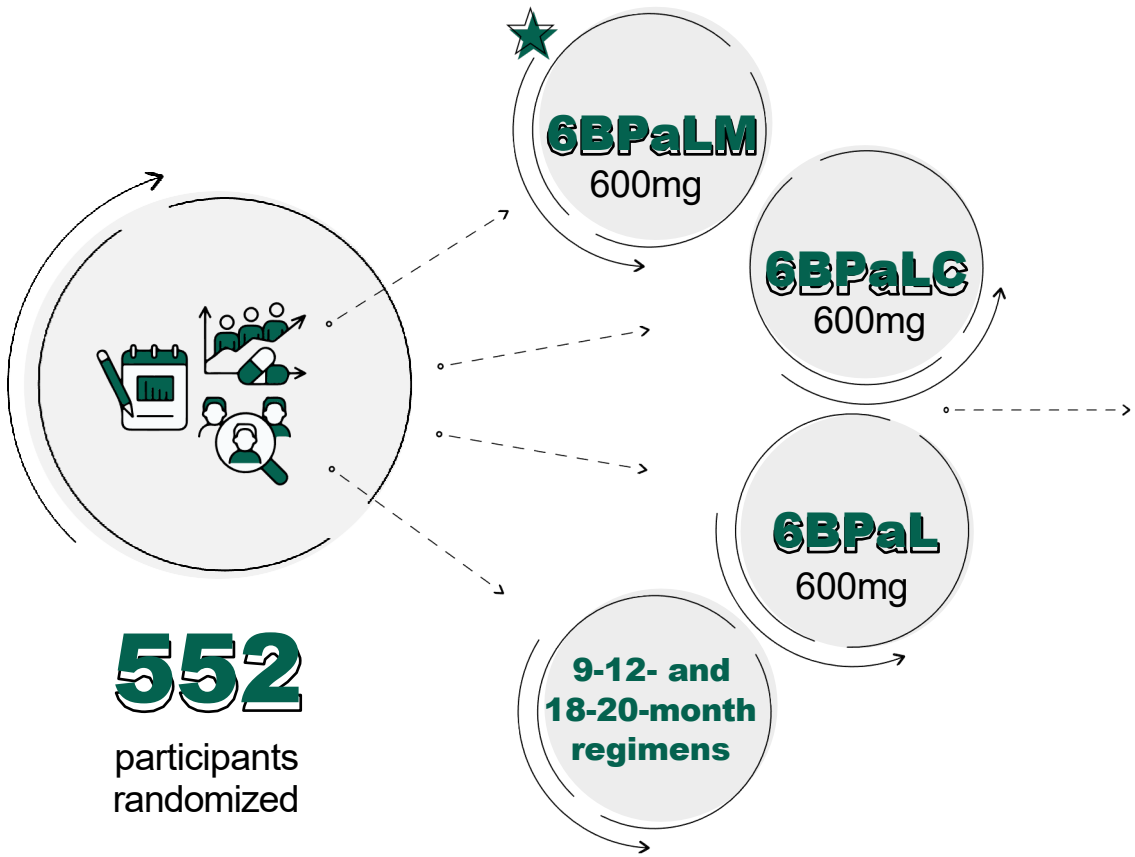
Stage 2

SOC

Bedaquiline
Pretomanid
Linezolid
Moxifloxacin

Unfavorable status (Death, tx failure, discontinuation, lost to follow-up, recurrence)

A CLOSER LOOK: TB-PRACTECAL



After 1 year of follow-up…

The six-month BPaLM regimen showed favorable efficacy compared to the longer regimens in the control arm – 89% vs. 52% cure rate.

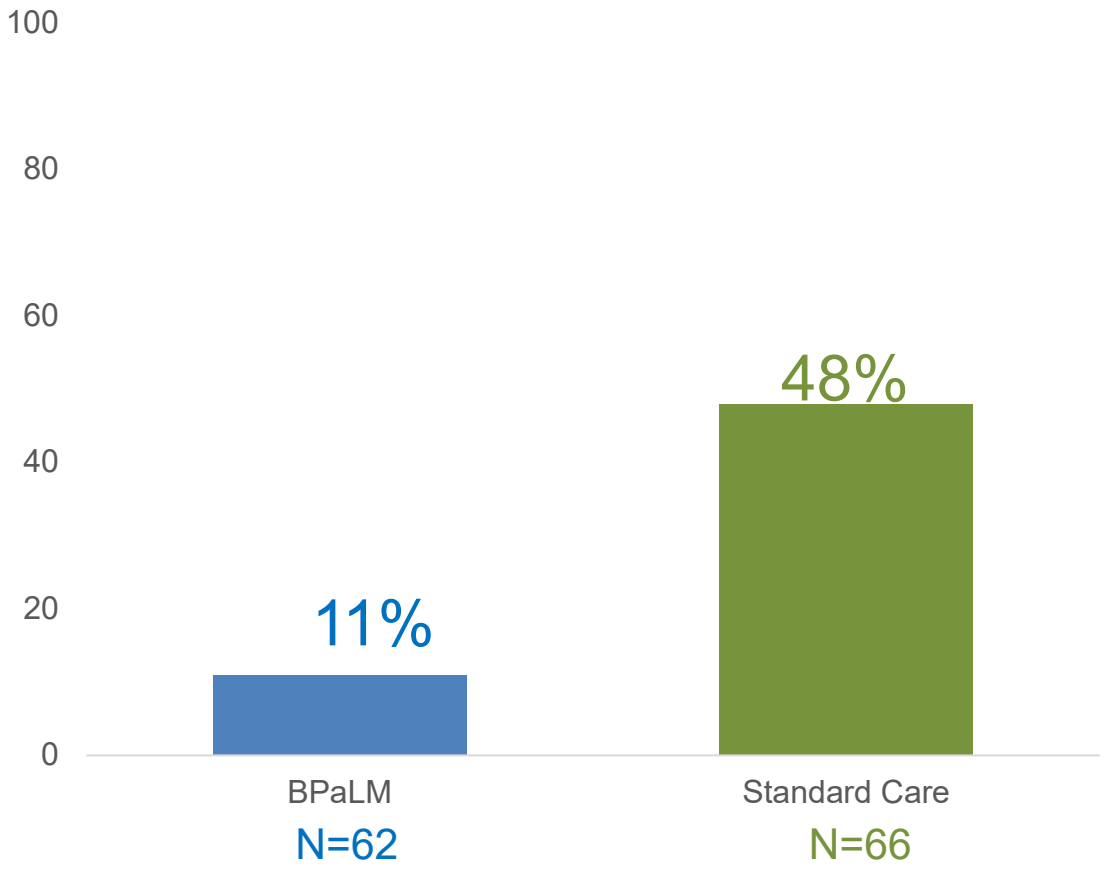
The six-month regimen also showed favorable safety – 80% of participants avoided any major side effects in the BPaLM arm compared to 40% in the control group.

- TB-PRACTECAL enrolled participants from 3 countries (Belarus, South Africa, and Uzbekistan)
- Mostly adults but also adolescents as young as 15 years old; and
- 112 PLHIV irrespective of CD4 T-cell count (median was 250-330 cells/mm^3)

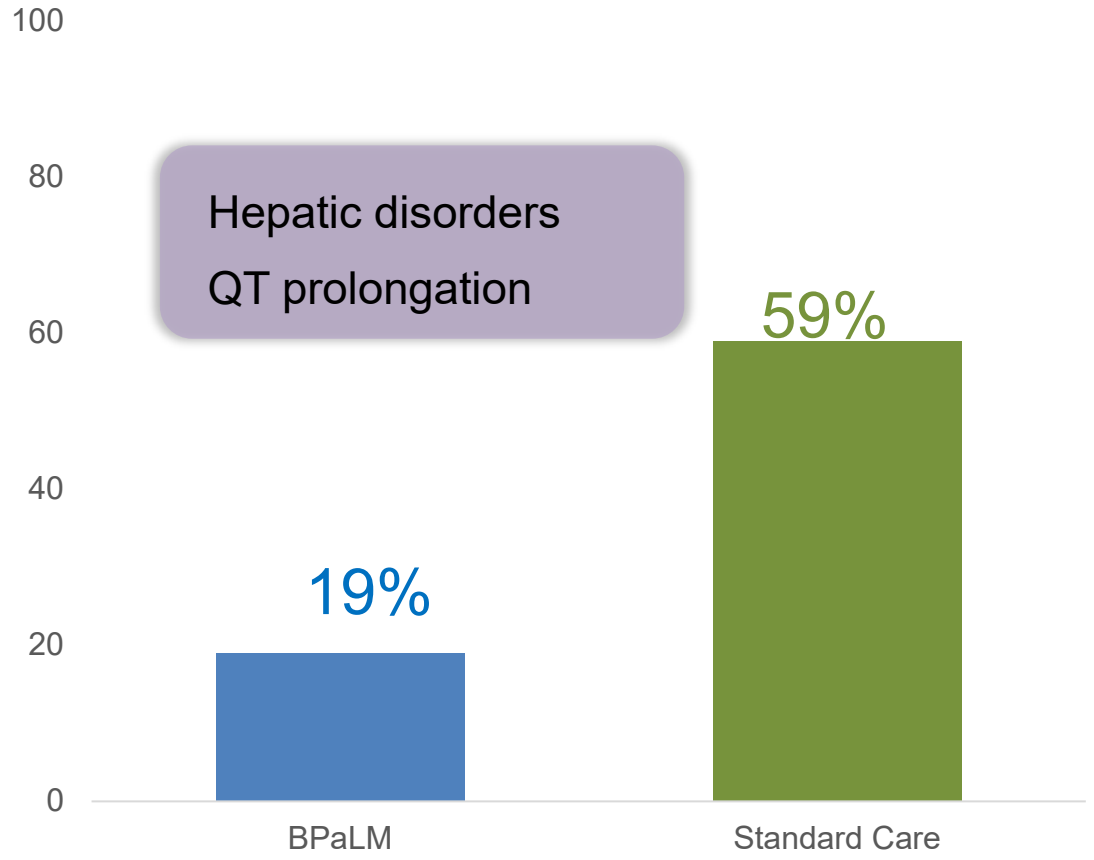
B = bedaquiline | Pa = pretomanid | L = linezolid | M = moxifloxacin | C = clofazimine

Modified ITT analysis

Unfavorable Status



Serious Adverse Events (Grade ≥ 3)



6-month regimen RR-TB (TB-PRACTECAL)

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

A 24-Week, All-Oral Regimen for Rifampin-Resistant Tuberculosis

Bern-Thomas Nyang'wa, M.B., B.S., Catherine Berry, B.Med., Emil Kazounis, M.Med.Sci., Ilaria Motta, Ph.D., Nargiza Parpieva, Sc.D., Zinaida Tigay, M.D., Varvara Solodovnikova, M.D., Irina Liverko, Sc.D., Ronelle Moodliar, M.B., B.S., Matthew Dodd, M.Sc., Nosipho Ngubane, M.B., B.Ch., Mohammed Rassool, M.B., B.Ch., Timothy D. McHugh, Ph.D., Melvin Spigelman, M.D., David A.J. Moore, M.D., Koert Ritmeijer, Ph.D., Philipp du Cros, M.B., B.S., and Katherine Fielding, Ph.D., for the TB-PRACTECAL Study Collaborators*

ABSTRACT

BACKGROUND

In patients with rifampin-resistant tuberculosis, all-oral treatment regimens that are more effective, shorter, and have a more acceptable side-effect profile than current regimens are needed.

METHODS

We conducted an open-label, phase 2–3, multicenter, randomized, controlled, noninferiority trial to evaluate the efficacy and safety of three 24-week, all-oral regimens for the treatment of rifampin-resistant tuberculosis. Patients in Belarus, South Africa, and Uzbekistan who were 15 years of age or older and had rifampin-resistant pulmonary tuberculosis were enrolled. In stage 2 of the trial, a 24-week regimen of bedaquiline, pretomanid, linezolid, and moxifloxacin (BPaLM) was compared with a 9-to-20-month standard-care regimen. The primary outcome was an unfavorable status (a composite of death, treatment failure, treatment discontinuation, loss to follow-up, or recurrence of tuberculosis) at 72 weeks after ran-

- ✓ Phase 2-3
- ✓ Multinational
- ✓ Randomized
- ✓ Open-label
- ✓ Controlled
- ✓ Non-inferiority

6-month regimen RR-TB (TB-PRACTECAL)

BPaLM was non-inferior and superior to standard of care

*Per protocol analysis showed no statistically significant difference

TB PRACTECAL Trial

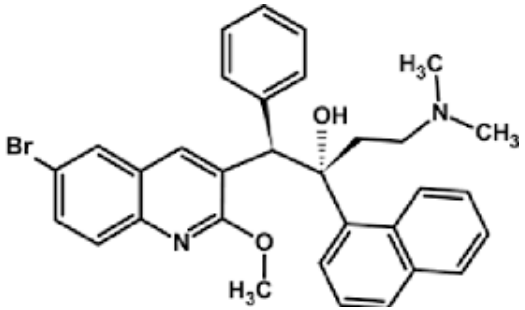
- Randomized controlled trial
- BPaLM superior to standard care
- Strong safety and efficacy

BPaLM: Review side effects of each drug.

Bedaquiline (BDQ)

Diarylquinoline

Approved in 2012



<u>MOA</u>

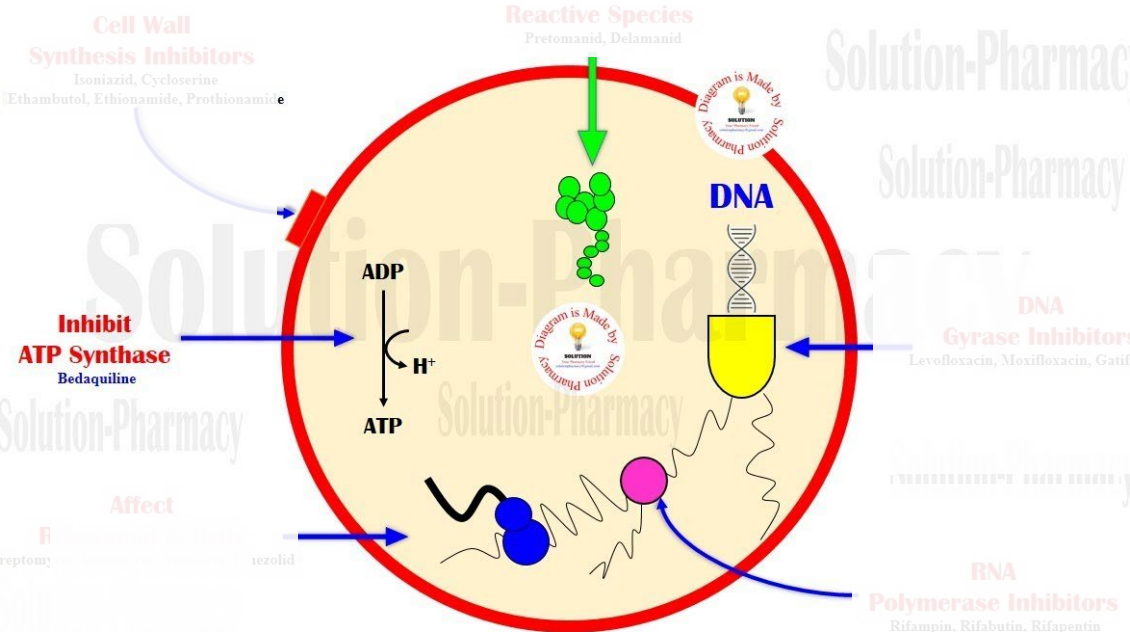
ATP Synthase ⊖

$T_{½}$ = 5.5 months

<u>Side effects</u>

QT prolongation

EKG 2-12-24 weeks



Cross reacts: Clofazimine

BEDAQUILINE (SIRTURO) ADVERSE REACTIONS

- **QTc Prolongation** (stop if >500 confirmed 30 mins later)
- Hepatitis
- Elevated amylase
- Hemoptysis
- Joint pain
- Headache

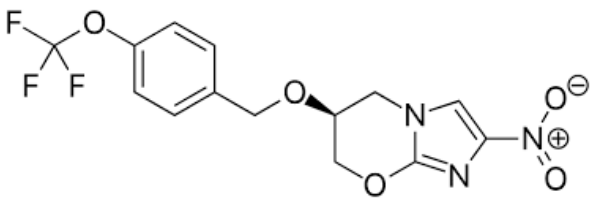
Pretomanid (Pa)

Nitroimidazole

Approved in 2019

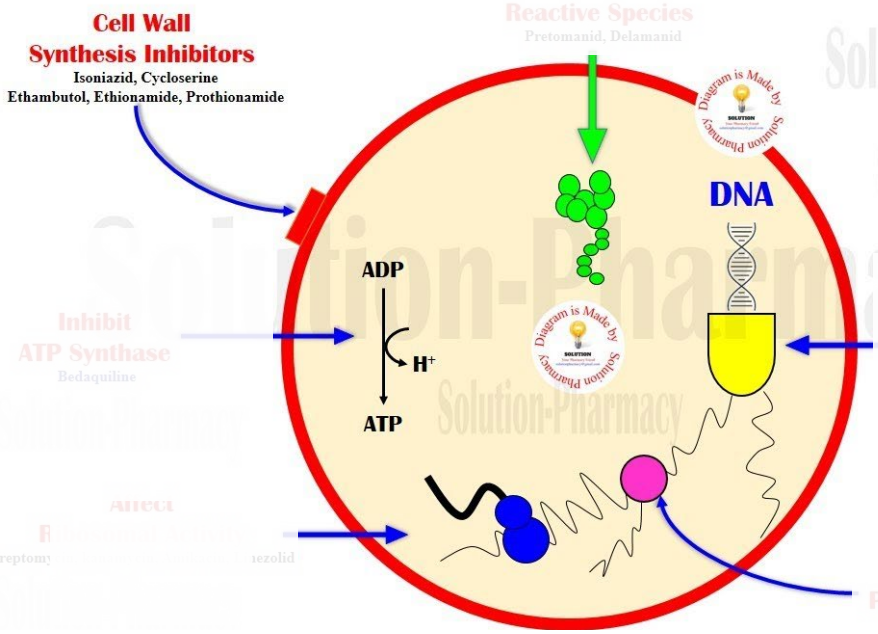
MOA
Cell wall synthesis ⊖
Nitric oxide release

Male infertility?



Side effects?

QT prolongation



Cross reacts: Delamanid

PRETOMANID ADVERSE REACTIONS

- **Peripheral neuropathy**
- Anemia
- GI Upset
- Elevated liver enzymes
- Testicular toxicity (in mice but not in non-human primates or humans to date

LINEZOLID (ZYVOX) ADVERSE REACTIONS

- **Myelosuppression:** low plt, anemia. leukopenia
- **Optic and peripheral neuropathy** – most resolve but can be irreversible
- Serotonin syndrome
- Diarrhea (including C. diff colitis)

MOXIFLOXACIN (AVELOX) ADVERSE REACTIONS

- **Rare** tendon rupture, arthralgia
- **QTc prolongation:** low plt, anemia. leukopenia
- Antibiotic-associated diarrhea or C.difficile colitis

BPALM ELIGIBILITY CRITERIA

Indication (Microbiologic)

Adults with RR/MDR-TB and confirmed fluoroquinolone susceptibility; requires timely molecular/phenotypic DST.

Patient Assessment

Baseline ECG/QT risk (bedaquiline + moxifloxacin) and hematologic/neurologic status (linezolid toxicity).

Program Readiness

Use only where labs, ECG monitoring, adverse-event management, and adherence support are reliably available.

BPALM DOSING & DURATION

Duration & delivery

Curry 2022: fixed 6-month BPaLM (vs. historical MDR-TB courses up to 2 years). All four drugs are oral, typically daily—no injectables, fewer visit barriers.

Dosing approach

Linezolid often starts at 600 mg daily with planned reductions guided by tolerance and labs. Bedaquiline follows standard loading then maintenance; pretomanid and moxifloxacin are daily fixed doses.

Regimen flexibility

Adjust doses or pause temporarily for adverse events—ideally with TB expert input. Document changes clearly and counsel patients to protect adherence.

LET'S WALK THROUGH A CLINICAL SCENARIO

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Drug Resistant TB

- 27yof Burmese Refugee: C/o cough x 3m. CXR: Cavitary ASD. Sputum:4+ AFB. On RIPE, HIV negative. No features of EP TB
- GeneXpert: **Rif resistance**: **What do you do now?**
  - IDOH (verify + **INH**) was on RIPE
- Pyrosequencing: **rpoB** & **KatG** mutations found
- **What is your diagnosis?**
- **What do you do now?**
  - **Consider holding meds if clinically stable. Why?**
  - **Order pyrosequencing for 2nd line drugs**
- Build a regimen based on pyrosequencing results
  - Pulmonary disease : BPaLM or BPaL
  - EP disease:
    - How many drugs do you need?
    - 5 in intensive phase, 4 in continuation phase

Building A Regimen for EP MDR TB

- Pyrosequencing results: Only INH & Rif resistance: Build your regimen:
  a) Later generation FQ (levo 750 to 1000mg or Moxi)
  b) Bedaquiline 400mg po qd x 14d then 200mg po 3x/week. **Adv rxns?**
     a) (QT prolongation, hepatotoxicity)
  c) Linezolid . **What's the dose?**
     a) 600mg po QD (CBC with diff q monthly)
  d) Clofazimine 100mg po qd. **Adverse reactions**.
     a) hyperpigmentation, EUA
  e) Cycloserine: 250-750mg (levels: serum 20-35mg/L in plasma)
  f) Amikacin (15mg/kg daily) or Streptomycin
  g) Delamanid (Not FDA approved)
  h) Pyrazinamide
  i) Ethambutol
  j) Ethionamide
  k) PAS
  l) High dose Isoniazid

MONITORING, SAFETY, IMPLEMENTATION & NURSE CASE MANAGEMENT

CLINICAL MONITORING

Baseline and ongoing safety checks

Baseline (pre-treatment)

ECG (QT), CBC, liver function tests, and focused neurologic exam as a toxicity reference.

During therapy

Repeat ECG early and after regimen changes; monthly (or more) CBC for linezolid cytopenias.

Clinical follow-up

Routine neuropathy screening, symptom review, adherence checks, and education to enable timely interventions.

Activity	Baseline	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7-9
Request and review medical records	Medical/social history, physical exam	Physician assessment every 1-2 weeks	Physician assessment minimum monthly	→	→	→	→	⋯→
Drug susceptibility testing (DST)	Review DST results; request 2nd-line DST/MDDR	N/A	N/A	Repeat DST **if culture remains (+)** after 2M	Repeat as indicated	Repeat as indicated	Repeat as indicated	
Imaging	**PA chest** [other view(s) if indicated]	N/A	N/A	Consider repeat imaging	N/A	N/A	End of treatment imaging	
Height and weight	**Calculate BMI**/LBW. Obtain weight monthly	→	→	→	→	→	→	⋯→
Vision screening	Assess **visual acuity and color vision** monthly	Monthly while taking Linezolid	→	→	→	→	→	⋯→
Peripheral neuropathy screening	Assess at baseline and monthly	→	→	→	→	→	→	⋯→
CBC with differential	Obtain at baseline	Obtain every 1-2 weeks	Obtain every 1-2 weeks	Monthly (or more frequently as indicated while on Linezolid)	→	→	→	⋯→
Metabolic panel (CMP)	**CMP to include:** K, Ca, Mg, creatinine, bicarbonate, (amylase and lipase)*	Listed components of CMP monthly	→	→	→	→	→	⋯→
Liver function (LFTs)	**LFTs to include:** ALT, AST, total bilirubin, and alkaline phosphatase	**LFTs** (at week 2)*, **monthly** (if symptomatic, consider more frequent monitoring)	→	→	→	→	→	⋯→
Other lab testing	**Obtain HIV test;** consider hep serology, A1C when risk factor(s) present; TSH* when indicated	Repeat only if indicated ⋯→					→	
Electrocardiogram (ECG)	Obtain baseline ECG **(check QTcF)**	**Week 2 following treatment start** (check QTcF)	Repeat as indicated	**Week 12 ECG** (check QTcF)	Repeat as indicated	Repeat as indicated	**Week 24 ECG** (check QTcF)	
Sputum monitoring (pulmonary TB)	Sputum x 3 (one early morning) for AFB smear & TB culture	Consider at least 1 sputum 1x/wk until Sm(-) then one every 2 wk until culture conversion	Monthly sputum for TB culture following culture conversion	→	→	→	Extend 3 months **if sputum remains culture (+) after M2**	⋯→
Airborne isolation precautions	Continue until deemed non-infectious per local/state guidelines	⋯→	⋯→	⋯→				
Therapeutic drug monitoring	Not performed at baseline	Obtain **Linezolid peak** (2hr & 6hr) **and trough 1-2wks following treatment start**	Repeat peak/trough drug levels if needed until targets achieved	⋯→				
Treatment monitoring	Directly observed therapy (DOT)/patient education	→	→	→	→	→	→	⋯→
Nutritional assessment	→	→	→	→	→	→	→	⋯→
Assess overall health, mental, emotional needs	→	→	→	→	→	→	→	⋯→

Are there Drug-Drug Interactions?

DRUG RISKS & POPULATIONS

Drug-drug interactions

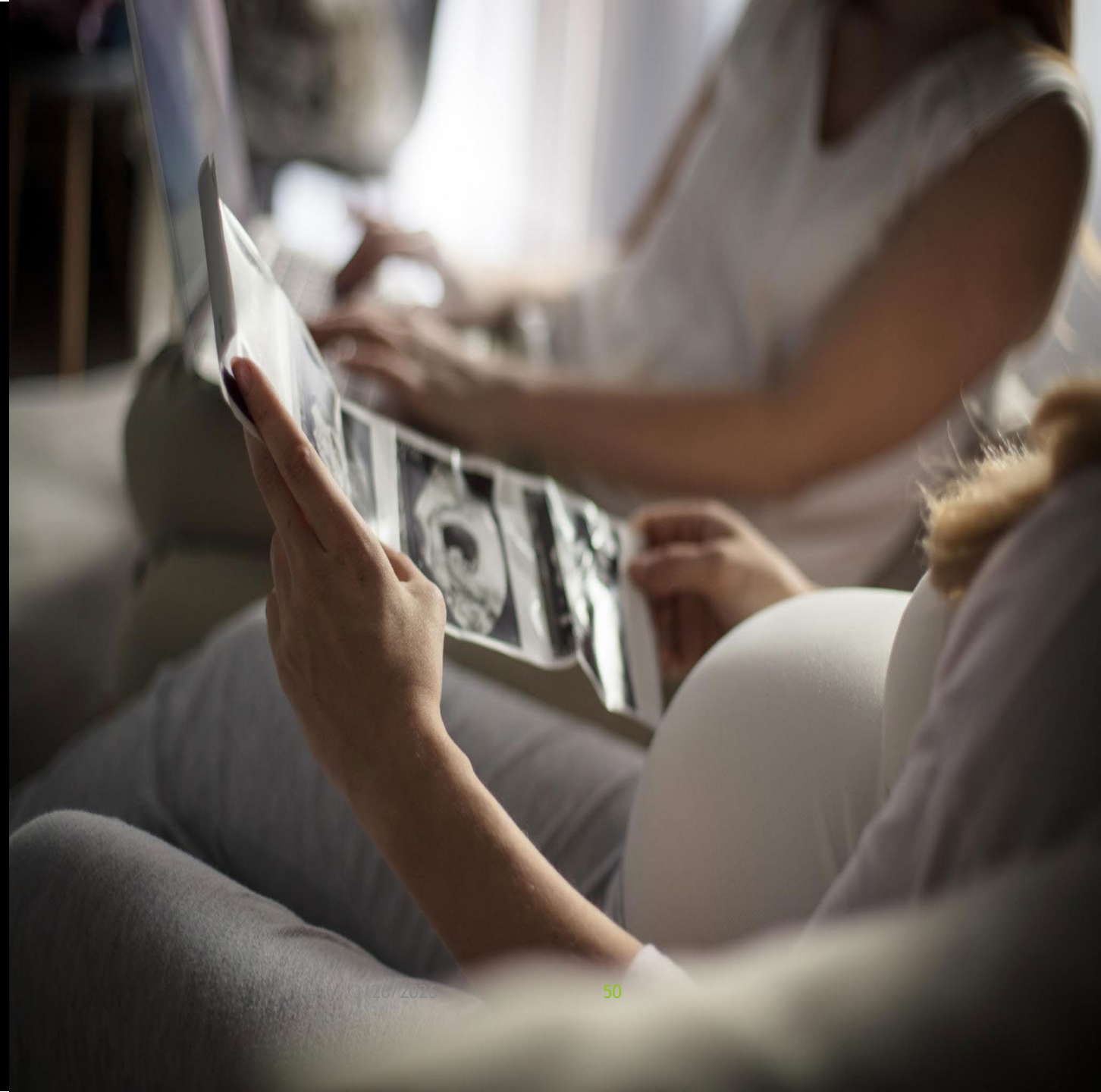
Bedaquiline (CYP450 metabolism) can interact with antiretrovirals, anticonvulsants, and other common meds; reconcile medications at baseline and whenever therapy changes.

Special populations

HIV: select ART to reduce interactions and overlapping toxicities. Pregnancy and pediatrics: limited data—seek expert consultation before use.

Individualized implementation

Pre-existing cardiac disease, anemia, or neuropathy may raise risk; tailor regimen choice to anticipate complications and protect treatment success.



ADVERSE EVENTS

LINEZOLID TOXICITY

Most common clinically significant issue: cytopenias and peripheral/optic neuropathy. Prioritize early recognition and proactive dose adjustment.

QT PROLONGATION

Bedaquiline + moxifloxacin can increase QTc. Use thresholds to guide monitoring frequency, electrolyte correction, and temporary interruption when needed.

KEEP THE REGIMEN

Most toxicities are manageable without stopping BPaLM when response is prompt and systematic. Multidisciplinary care improves safety and outcomes.

SOURCING & EXPERT SUPPORT

Structured sourcing pathways

Coordinate with public health programs, specialty pharmacies, and—when needed—national TB authorities. Bedaquiline and pretomanid may require specific access and regulatory steps.

Engage TB programs early

Early coordination helps prevent treatment delays and supports uninterrupted medication supply across the full regimen course.

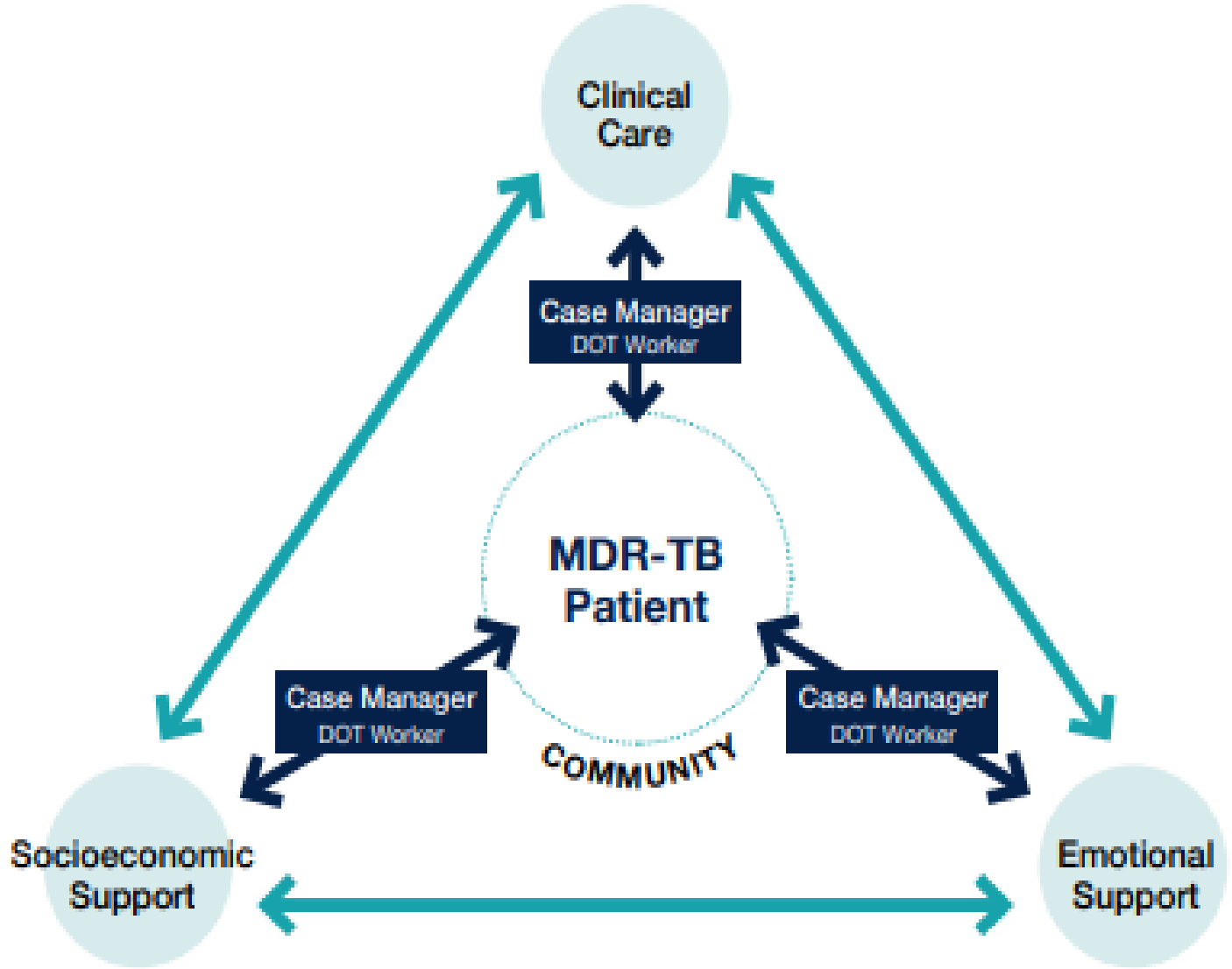
Expert consultation is essential

Partner with experienced TB clinicians and consultation services for eligibility, dosing, adverse event management, and sourcing logistics to translate guidance into outcomes.

POST-TREATMENT MONITORING

- End of treatment **sputum** culture and **CXR**
- Post-treatment monitoring for a minimum of 2 years (to monitor for relapse)
- At **3, 6, 12** and **18** months get:
  - Symptom review
  - Medical evaluation
  - Sputum for AFB and culture
  - CXR

FIGURE 1. **Community-Based Model of DR-TB Treatment**



Adapted with permission from *The Community Based Model of Multidrug-Resistant Tuberculosis Treatment*, Jaime Bayona, MD, MPH, Socios En Salud Sucursal, Peru

PERSON-CENTERED CARE

STAFF

Healthcare & community workers to conduct clinic and community based active case finding; to conduct TB treatment literacy & to support people requiring treatment.

STUFF

Bedaquiline, pretomanid, linezolid, and moxifloxacin; TB tests to diagnose TB and drug-resistance and to monitor treatment and test for adverse effects of medicines.

SPACE

A place for people undergoing TB testing; to collect treatment regimens; to meet with healthcare providers.

SYSTEMS

Updated national guidelines, medicines lists, and healthcare worker trainings; drug registration or waivers via National Regulatory Authorities; updated tenders to procure “stuff” to support treatment.

SUPPORT

Patient-centered models for administering TB treatment, including nutritional, psychosocial and other packages that ensure a holistic approach to treatment support.

For diagnosis, treatment decisions and response monitoring: rapid molecular and phenotypic diagnostics and DST; smear and culture for monitoring

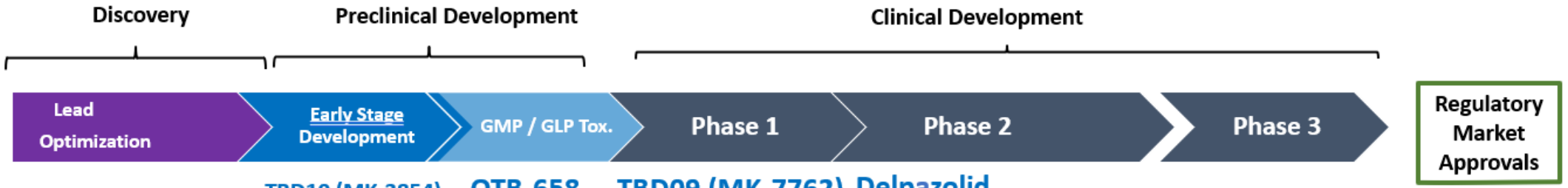
For safety monitoring: psychosocial assessment, peripheral neuropathy screening, visual acuity and color discrimination screening, chest X-ray, ECG, full blood count, liver function tests

Social protection / material support: meals, food baskets, food supplements, food vouchers, transport subsidies, living allowances, housing incentives or financial bonuses

REFERENCES

1. DRUG-RESISTANT TUBERCULOSIS: A SURVIVAL GUIDE FOR CLINICIANS 3RD EDITION / 2022 UPDATES .
2. Updates on the treatment of Drug-Susceptible and Drug Resistant Tuberculosis. An official ATS/CDC/ERS/IDSA Clinical Practice Guideline
3. Treatment of Drug-Resistant Tuberculosis https://www.cdc.gov/tb/publications/guidelines/pdf/Nahid_et_al-2019-American_Journal_of_Respiratory_and_Critical_Care_Medicine.pdf
4. Provisional CDC Guidance for the Use of Pretomanid as part of a Regimen [Bedaquiline, Pretomanid, and Linezolid (BPaL)] to Treat Drug-Resistant Tuberculosis Disease. Updated February 2, 2022

2024 Global New TB Drug Pipeline[1]



Lead Optimization

- Indazole sulfonamides
- Diarylthiazoles
- DprE1 Inhibitors
- Direct InhA Inhibitors
- Mtb energy metabolism
- Gyrase Inhibitors
- Arylsulfonamides
- Inhibitors of MmpL3, Translocase-1, ClpC1, ClpP1P2, PKS13, F-ATP synthase, RNAP
- Oxazolidinones
- DnaE1 / Nargenicin analogs

Early Stage Development

- TBD10 (MK-3854)
- FIM-3002*
- CMZ523*
- MPL-447*
- JSF-3285*
- CPZEN-45*
- NTB-3119*
- MBX-4888A (1810)*
- FNDR-20364*

GMP / GLP Tox.

- OTB-658
- TBD11 (CLB-073)*
- GSK-839*

Phase 1

- TBD09 (MK-7762)
- TBI-223
- TBAJ-587
- GSK-286*
- Macozinone* (PBTZ-169)

Phase 2

- Delpazolid
- Sutezolid, Tedizolid
- TBAJ-876
- Sanfetrinem
- BTZ-043*
- TBA-7371*
- Quabodepistat (OPC-167832*)
- Alpibectir (BVL-GSK098)*
- Ganfeborole (GSK-656*)
- Telacebec* (Q203)
- Pyrifazimine (TBI-166)
- SQ-109*

Phase 3

- Sudapyridine (WX-081)

Regulatory Market Approvals

- Bedaquiline*
- Delamanid*
- Pretomanid*

*New chemical class. Known chemical classes for any indication are color coded: rifamycin, oxazolidinone, nitroimidazole, diarylquinoline, benzothiazinone, imidazopyridine amide, beta-lactam.

[1] New Molecular Entities not yet approved, being developed for TB or only conditionally approved for TB. Showing most advanced stage reported for each. Details for projects listed can be found at http://www.newtbdrugs.org/pipeline/clinical

Ongoing projects without a lead compound identified: http://www.newtbdrugs.org/pipeline/discovery

Underline = updates since November 2024

WORKING GROUP ON NEW TB DRUGS

www.newtbdrugs.org

Updated: November 2024

ANY QUESTIONS?