


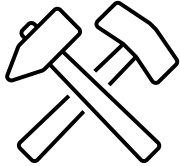
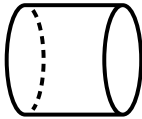
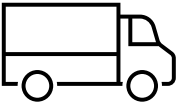

New tools and diagnostics Getting to malaria elimination

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What will I present?

- What is Medicines for Malaria Venture (MMV)?
- Malaria in the Asia Pacific region 
- What are the current tools we have available? 
- What is in, and through, the development pipeline? 
- What are new ways to deliver tools to make sure patients get them?  
- What are the key challenges we need to tackle?

What is Medicines for Malaria Venture (MMV)?

Antimalarials to save lives

MMV *discover, develop and deliver* malaria medicines tailored to the populations they serve



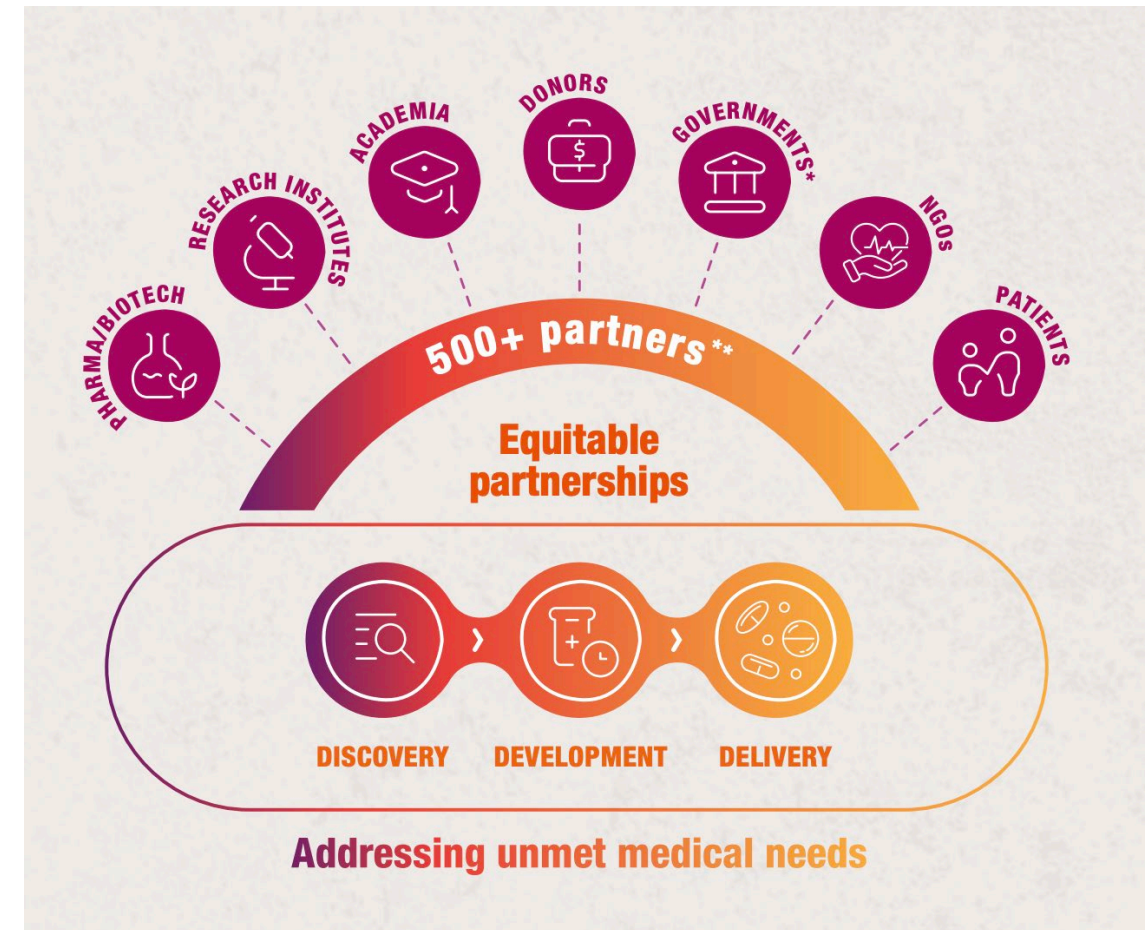
medicines
...



million treated
patients
...



billion courses of
prevention
...



Global and National strategy aims: To eliminate malaria by 2030/2035

Population at malaria risk:

- > 2 billion people across the region
- 4 human species + 1 zoonotic
- falciparum, vivax, knowlesi
- Variable success across the region

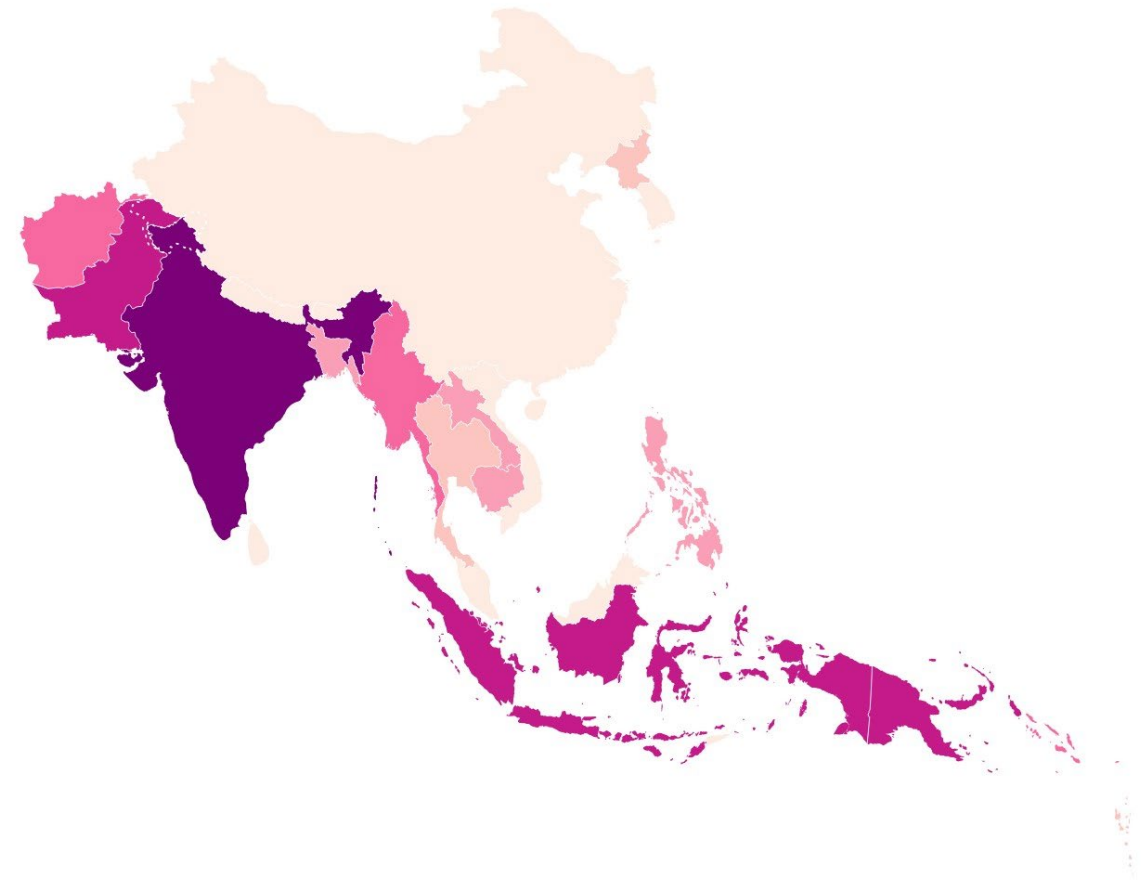
Key issues:

- Tackling hidden vivax malaria
- Emerging Artemisinin resistance
- Climate change & insecurity

Malaria distribution Asia Pacific

Malaria point estimates, WMR, 2022

< 501 501–5001 5001–50001 50001–500001 500001–1500000 ≥ 1500000



What tools have we got now?

- **To confirm malaria:**

- Rapid Diagnostic tests Pf & Pv
- Microscopy

Pv sensitivity

Time-consuming

- **To screen for G6PD**

- Semi quantitative Point-of-Care test - SD Biosensor (vivax)

Complex & costly

What tools have we got now?

- **To treat blood-stage parasites:**

- Artemisinin-based Combination Therapies
- Chloroquine

ACT resistance SSA & GMS

Only for *P vivax*

- **To treat liver-stage parasites (vivax)**

- Primaquine

G6PD & Adherence
issues

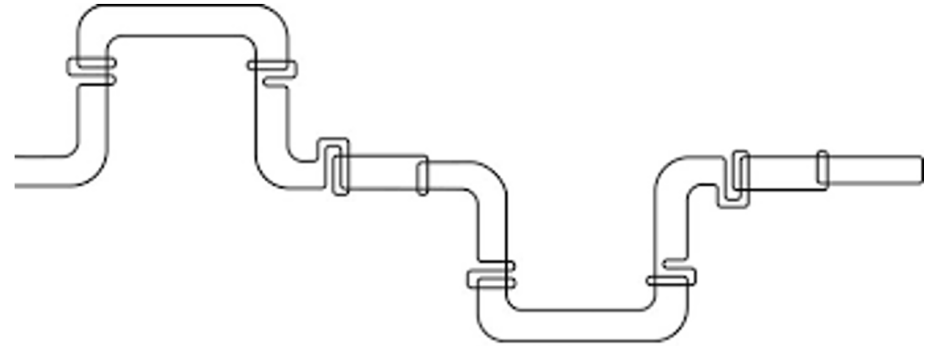
- **To prevent falciparum malaria**

- RTS,S/AS01 (Mosquirix™) and R21/Matrix-M™

Protection wanes
quickly

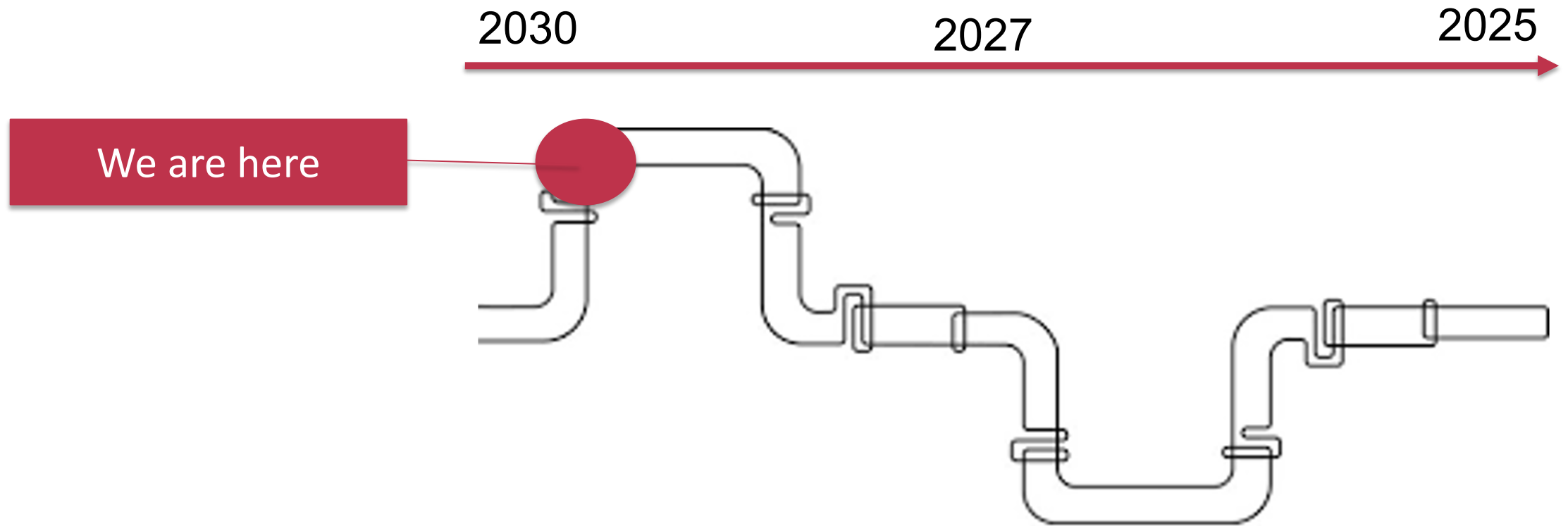
Today's pipeline of new tools

- **Pipeline for new medicines**
 - Available in 3-5 years
 - Nearly available
 - Newly available e.g. tafenoquine



- **Diagnostics & screening tools becoming available**

Tools 3- >5 years down the pipe



What might be available 2028 - >2030

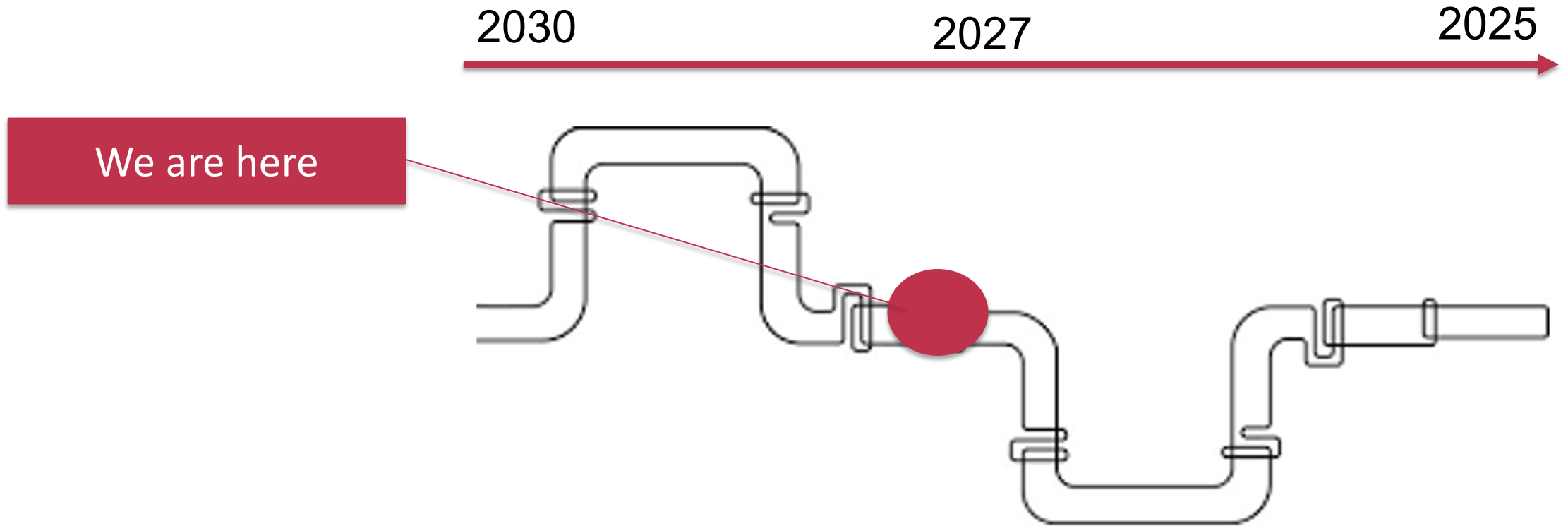
Treatment

- **Non-lumefantrine combinations** – Most common ACT = Artemether-Lumefantrine. ACT alternatives to combat growing resistance

Prevention

- **Monoclonal antibodies (~3 candidates)** – Injectable protection for ~ 6 months. Most advanced are in phase 2 trials
- **Long-acting injectables (LAIs)** – "Malaria protection in a shot" – simplified seasonal protection
- **RH5, mRNA based vaccines & combination vaccines**

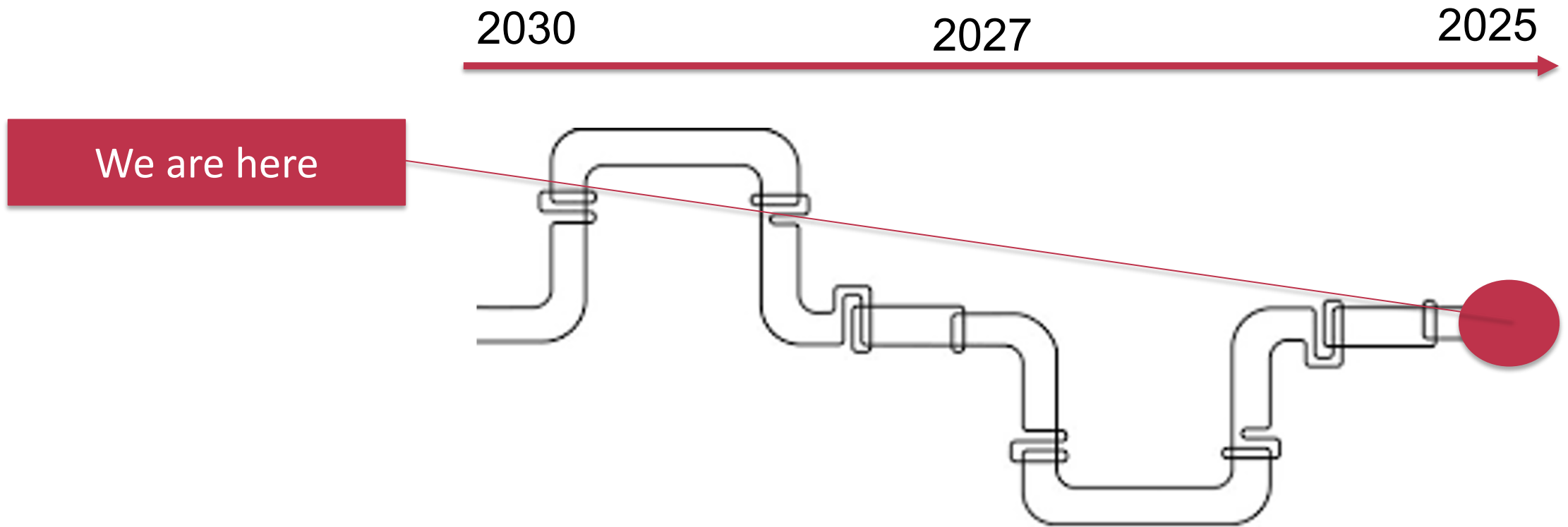
Tools 3-5 years down the pipe



Available in the next 5 years

- **Non-Artemisinin combinations** – first steps away from artemisinin reliance
- **Triple ACT** (Artemether-Lumefantrine-Amodiaquine) – Fixed Dose Combination

Tools 3-5 years down the pipe



What is becoming available 2025 – 2026?

New tool

Paediatric primaquine - 2.5 mg & 5 mg tablets. Scored tablets for vivax
Global Fund – Expert Review Panel approved

Single Low Dose Primaquine - A single 0.25 mg/kg dose of primaquine added to an ACT

How is it useful?

- Vivax anti relapse therapy
- Standard primaquine dosing (15 mg adult tablet) is **difficult to adjust for children**
- New low-dose tablets make **weight-based dosing safer and more feasible.**
- Helps reduce onward falciparum transmission — especially important in **elimination settings.**
- **No need for G6PD testing** at this low dose in most populations.

What is available now?

New tool

Adult tafenoquine (≥ 35 kg)

300 mg (2 tabs x 150mg) Single dose
WHO prequalified

Paediatric tafenoquine ($\geq 20 - 35$ kg 200 mg and 10-20kg 100 mg)

Single dose, dispersible formulation, weight-based dosing. WHO prequalified

Rectal artesunate (≤ 6 years)

100 mg suppository
WHO prequalified

How is it useful?

- Vivax malaria
- Where adherence is poor
- Where G6PD testing is available

- Pre-referral treatment given when injectable is not available or feasible
- Can reduce death and disability where falciparum is more prevalent
- Enables community – level action before reaching facility

Emerging diagnostic tools

- **Higher sensitivity Rapid Diagnostic Tests for vivax**
 - RDTs have been Pf-biased and less sensitive for vivax
 - Some new RDTs better at detecting vivax (as well as falciparum)
- **PvseroTAT (*under development – WEHI & VISPA*)**
 - A novel serological diagnostic that detects IgG antibodies to vivax antigens. Used to identify people who have had a *P. vivax* infection in the past ~9 months.
 - Could capture hypnozoite (vivax sleeping stage) carriers
 - Useful in low transmission settings

**Are there new or different ways to
deliver prevention or treatment of
malaria?**

Is there a way to reduce seasonality of malaria?

- **Seasonal (& Perennial) Malaria Chemoprophylaxis**
 - Provide one dose of Sulfadoxine-Pyrimethamine & Amodiaquine (or SP alone for PMC) to children once/month over 3-6 months
 - West Africa
 - Reduce morbidity and mortality
 - Cost-effective where there is *strong seasonality*
 - WHO recommended

Is there a way to mitigate resistance?

- **Multiple First Line Therapies**
 - ‘Mosaic’ treatment to stay ahead of the parasite evolution
 - Rotation of treatments over time, or between locations
 - Aimed at delaying parasites becoming resistant to drugs

Can we improve Intermittent Preventive Treatment in pregnancy?

- **Community Intermittent Preventive Treatment in Pregnancy (IPTp)**
 - Intermittent Presumptive Treatment = Provision of 3 monthly doses of sulfadoxine-pyrimethamine after 1st trimester
 - Reduce maternal mortality, reduce low birth weight
 - Community delivery improves coverage
 - WHO recommended approach

How can we ensure mobile and migrant populations receive treatment?

- **Malakit – self-testing & treating kit**
 - Provided to mobile forest-goers, miners, or others who regularly travel
 - Test contains 3 x RDT + ACT + vivax liver-stage treatment (e.g. Primaquine)
 - G6PD testing necessary when giving the kit
 - Being tested as an approach in Latin America (Suriname)



Challenges

- **New tools through ‘old’ processes**
 - Global approvals → National approvals → Implementation quality
- **Possible solutions?**
 - Regional reliance mechanisms for regulatory approvals e.g. ASEAN Joint Assessment mechanism
 - Novel ways to improve health system quality
 - Innovative delivery of new tools e.g. Seasonal Malaria Chemoprophylaxis, Community-level care, Malakit, others?

Conclusions

- New and exciting tools are available and more in the pipeline
- *Technically*, malaria elimination is possible in many Asia Pacific countries
- **Are there new processes to match our new tools?**



Thank you



Please get in touch for any links/resources