### Basic and translational science

- **1.1 Mechanisms and biomarkers of protection**
- **1.2 New approaches to vaccine discovery**
- **1.3 Improved vaccine formulation and delivery**
- **1.4 Controlled human infection model**

### Animal models

- **2.1 Optimised animal models**
- **2.2 Comparison of vaccine candidates within and across animal models**

### Clinical trials

- **3.1 Trial endpoints**
- **3.2 Correlates of protection**
- **3.3 Trial harmonisation and design**
- **3.4 Trial site capacity**

### Epidemiology and modelling

- **4.1 Country-specific data and projections**
- **4.2 Post-licensure studies**

### Research to ensure optimal implementation

- **5.1 Health system conditions for vaccine introduction**
- **5.2 Barriers and enablers of vaccine uptake**

### Ensuring public health impact

### Diversifying the pipeline

### Accelerating clinical development

### Funding

- **A1 Attract new investments in TB vaccine R&D**
  - Develop a comprehensive global value proposition for TB vaccines
  - Broaden the funding base with governments, philanthropy and donors
  - Attract new entrants

### Open science

- **B1 Promote timely and open access of data, specimens and results**
  - Promote open-access publication and open-access databases
  - Promote sharing of biospecimens
  - Establish publicly searchable patent databases

### Stakeholder engagement

- **C1 Create a supportive environment for TB vaccines**
  - Increase political commitment
  - Advocate for development and uptake
  - Harmonise and fast-track regulatory review
  - Create innovative incentives

### Accelerating clinical development

- **A2 Develop innovative financing mechanisms for TB vaccine R&D**
  - Establish partnerships for joint funding of trials
  - Customise calls to the clinical development pathway

### Stakeholder engagement

- **C2 Overcome barriers to delivery and uptake**
  - Engage with end-user communities
  - Develop approaches for community-level delivery

### Ensuring public health impact

- **A3 Create mechanisms that attract investment in early stages of development**
  - Market shaping to reduce commercial uncertainty
  - Manage intellectual property

### Stakeholder engagement

- **C3 Promote TB vaccine and research literacy**
  - Create a global programme for community engagement and training
  - Foster strategic and reciprocal partnerships

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**Tuberculosis vaccine R&D roadmap**

**The European & Developing Countries Clinical Trials Partnership**

Supported by the European Union