



A country perspective - Modelling as a useful tool to help think about elimination

October 2017 – UNION Conference



Demography, Health systems and TB epidemiology in Indonesia

- Population of 250 million people
- The country consists of 34 provinces and 514 districts, each with a governor/districts leader and legislature
 - TB budget made at district level
- Roll out a national health insurance system since 2014 (step-wise)
- 9,671 primary health centres and 1,892 hospitals to provide TB services



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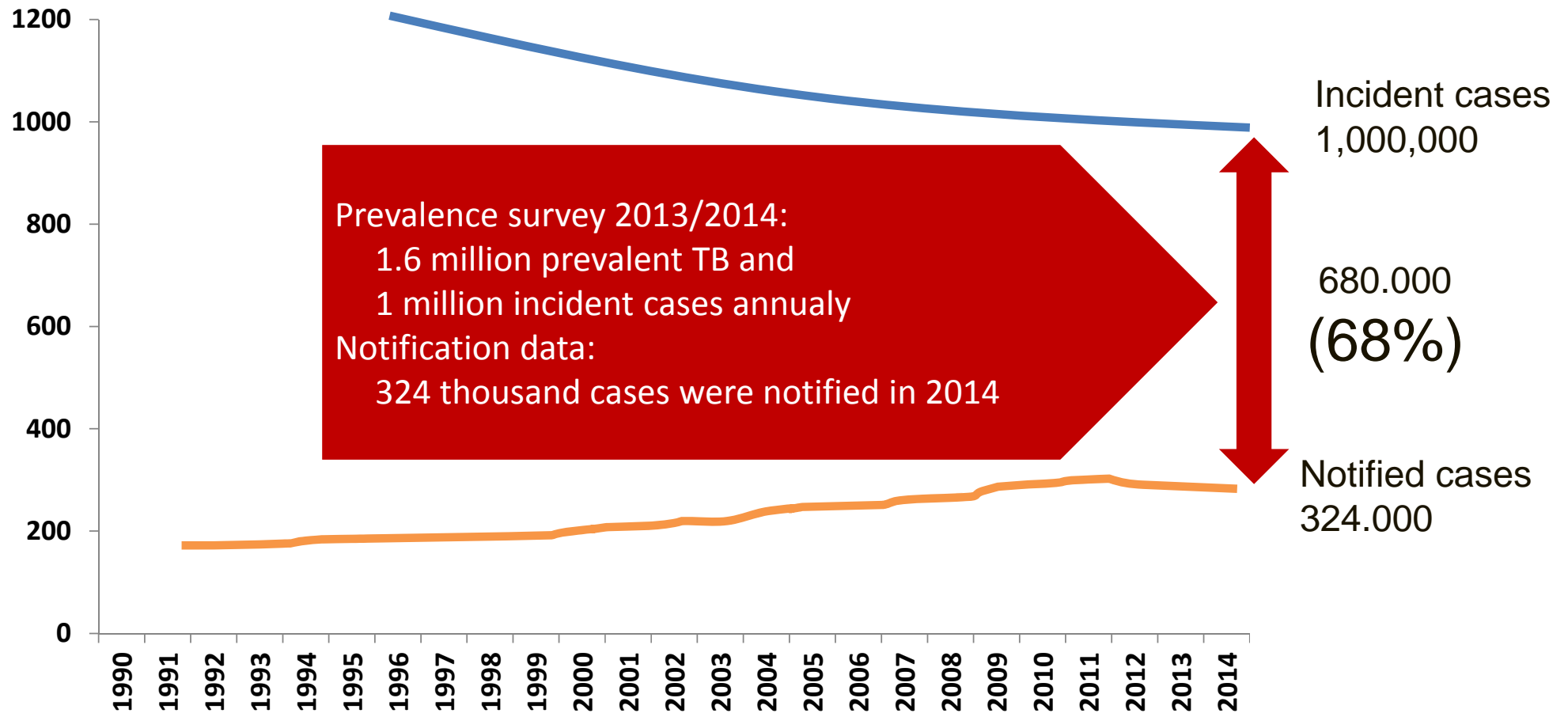
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CHALLENGE TB

Missing cases (2014)



Elimination Target

- **Vision:** Indonesia free of TB
- **Goal:** Indonesia TB elimination in 2035

2016

Launched TOSS-TB strategy:

- TB Elimination roadmap
- Case finding: Intensif, Active, Massive
- Partnership and social mobilisation

2020

Impact target in 2020:

- 20% reduction in TB incidence rate compared with 2014
- 40% reduction in number of TB deaths compared with 2014

2025

Impact target in 2025:

- 50% reduction in TB incidence rate compared with 2014
- 70% reduction in number of TB deaths compared with 2014

2030

Impact target in 2030:

- 80% reduction in TB incidence rate compared with 2014
- 90% reduction in number of TB deaths compared with 2014

2035

Impact target in 2035:

- 90% reduction in TB incidence rate compared with 2014
- 95% reduction in number of TB deaths compared with 2014

TB epidemic modelling in Indonesia

District burden

- Simple district incidence estimates for district TB action planning and monitoring

TIME

- National level modelling for justification of major investments, estimation of epidemiological impact
- Potential for cost effectiveness modelling in the future



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Aims and principles of district TB burden tool

BACKGROUND AND CHALLENGE

- TB policy and budget is 100% set at district level in Indonesia
- TB case notification is one of 12 Presidential Indicators for district performance
- No district-level estimate of burden of TB (incidence) to inform case notification targets

MODEL AIMS

- Generate district-level estimates for TB incidence
- Map current district-level health system performance (e.g. Case Detection Rate)
- Enable to set district-level targets for TB case notification and related topics

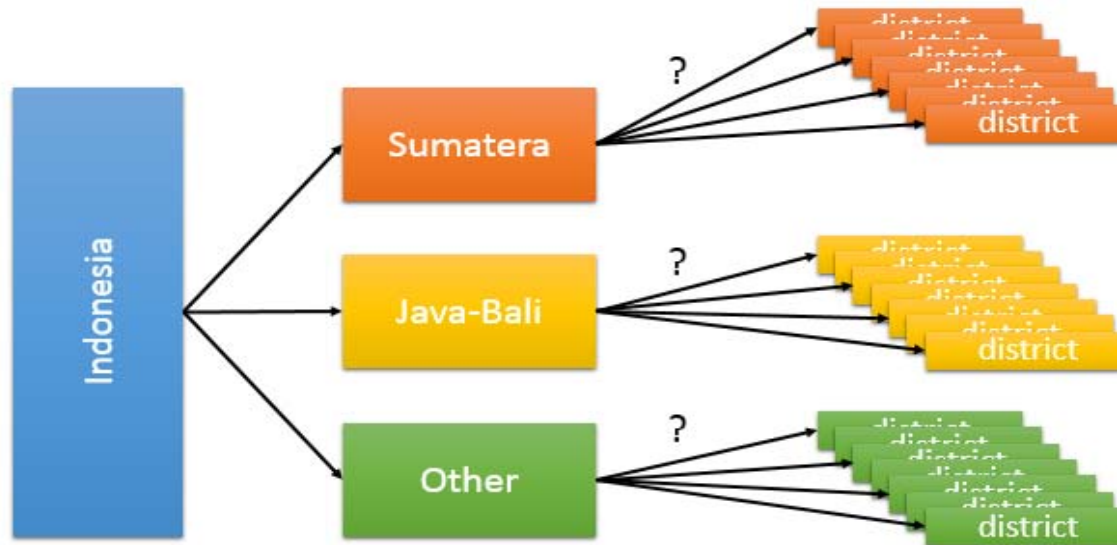
PRINCIPLES

- Evidence based distribution of estimated incidence across districts
- Build on results from prevalence survey (2013/2014) and National Socio-Economic Survey 2015
- Keep as simple as possible
- Tool to be disseminated and used in-country



District TB burden estimations

Challenge to address



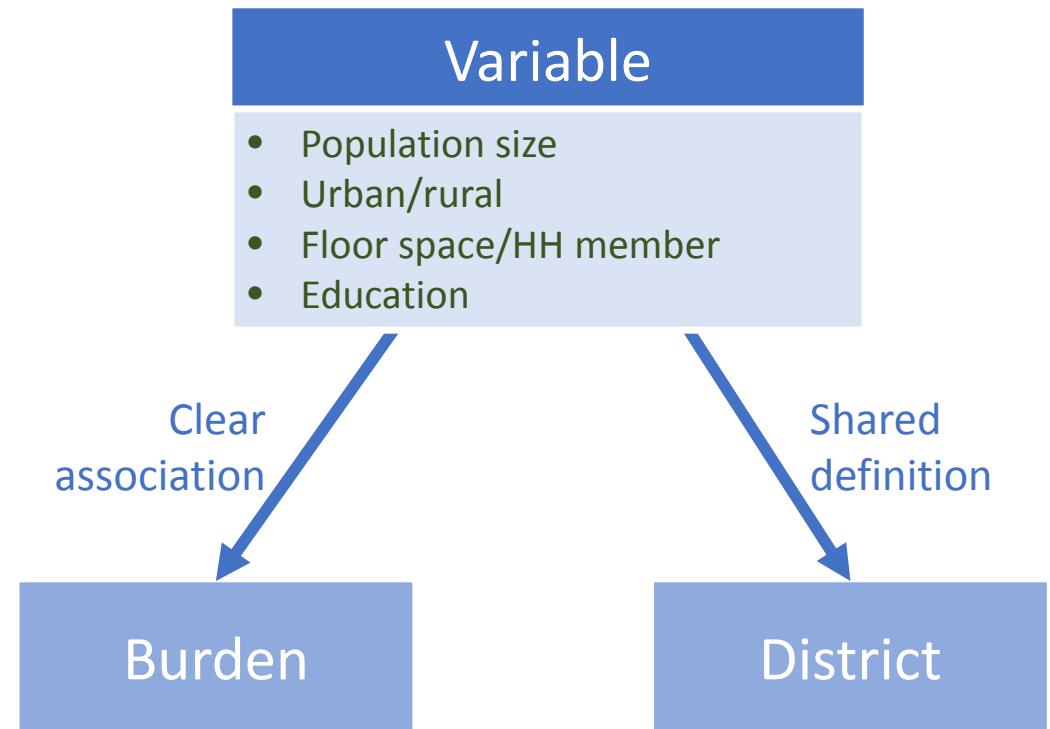
- Generate district level estimates for TB burden
- Set district level targets for TB control

District TB burden estimations

Method: Data and variables for model

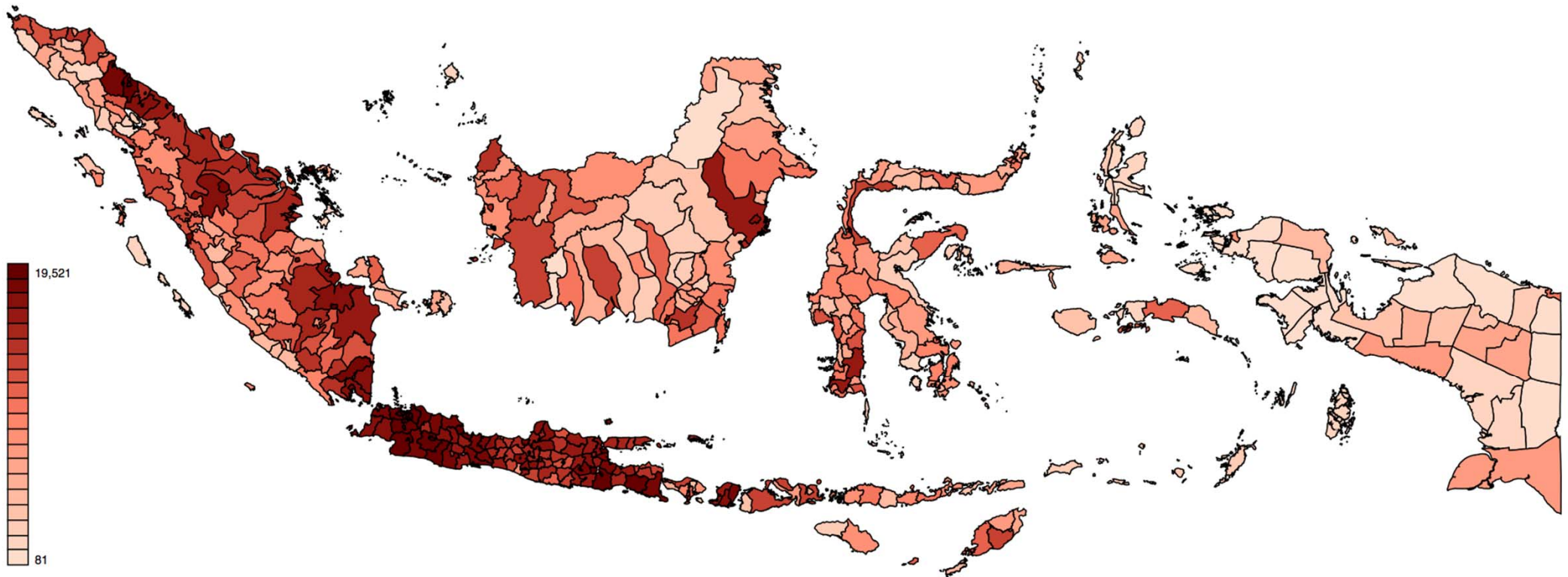
What data should we use?

- Prevalence survey: WHO estimates of incidence and risk factors-TB association
- National Socio-Economic survey data: household level data, aggregated per district
- Only variables having the same definitions in the PS and the Census and are available for all districts are used to distribute the incidence across districts



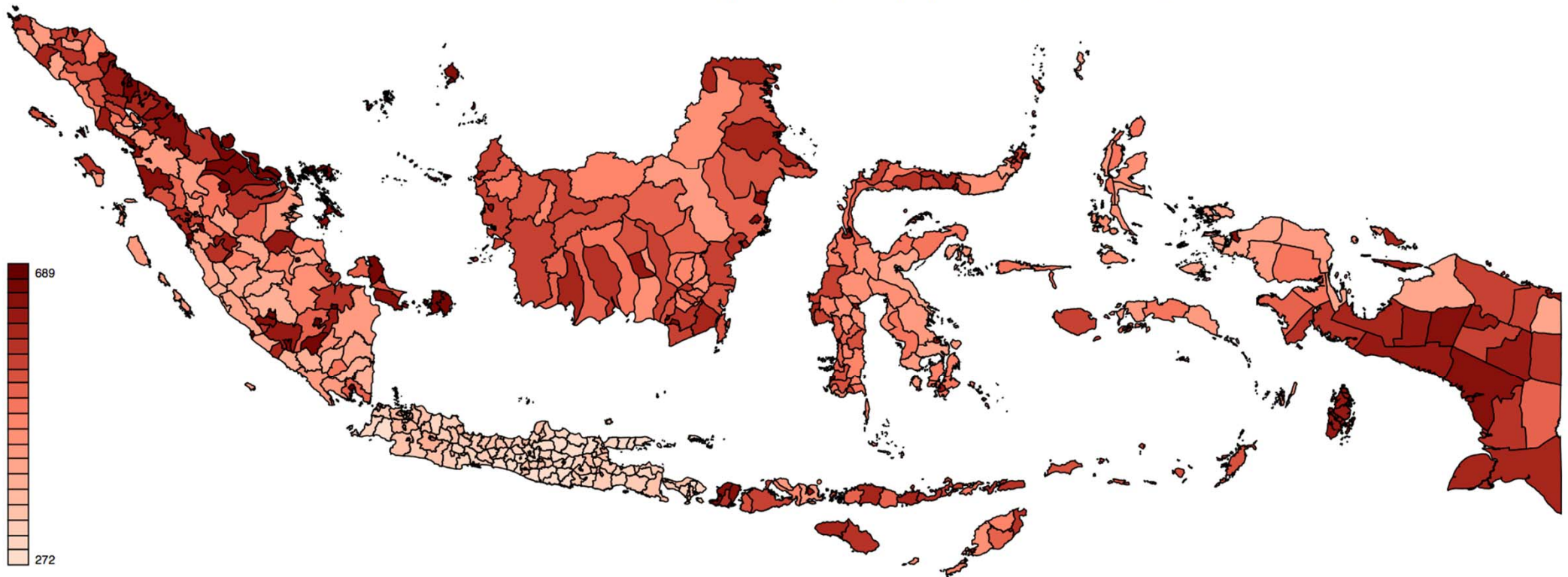
District estimates of incidence (absolute number)

The estimated number of TB incident cases in 2017 by district



District estimates of incidence (rate per 100k pop)

The estimated TB incidence rate (per 100,000 population) in 2017 by district



Application to estimate performance: CDR per district

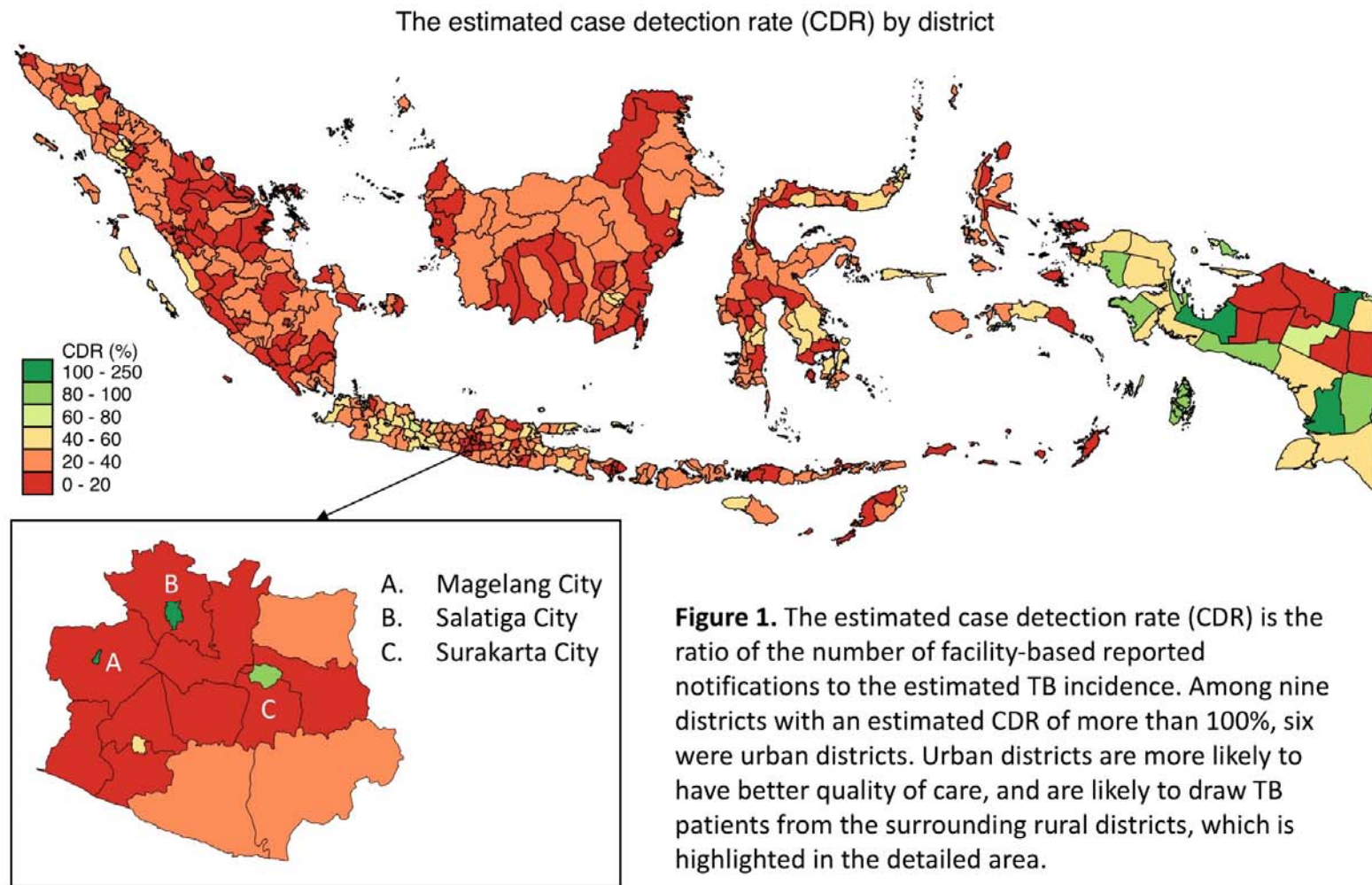


Figure 1. The estimated case detection rate (CDR) is the ratio of the number of facility-based reported notifications to the estimated TB incidence. Among nine districts with an estimated CDR of more than 100%, six were urban districts. Urban districts are more likely to have better quality of care, and are likely to draw TB patients from the surrounding rural districts, which is highlighted in the detailed area.

TIME

Global Fund funding request 2018 – 2020 application

- Introduction of modelling through 2 series of workshop

Aim:

1st – general introduction of TIME model

2nd – technical skills to continue learning process towards independent users of TIME

- Capacity building:
 - Develop a full TIME Impact calibration for Indonesia
 - Construct baseline projections



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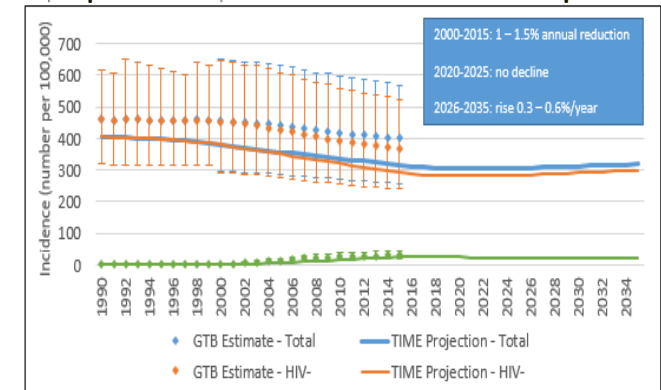
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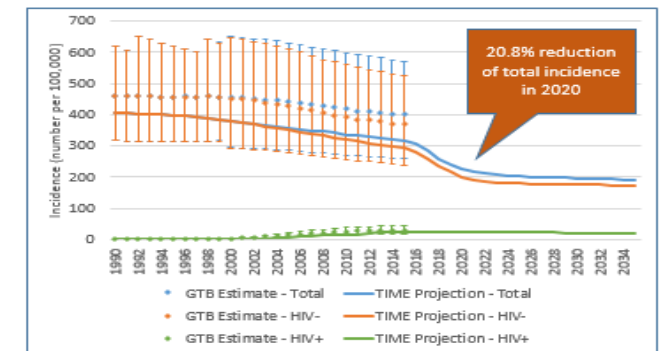
TIME and the Global Fund funding request 2018 – 2020

- Identify key programmatic areas/interventions of interest for Indonesia
 - Improving treatment outcome
 - Xpert expansion & increased linkage to care
 - HIV & IPT intervention
- Modelling of epidemic with and without the interventions
- Informed Global Fund funding request application

Graph 1. TB incidence – status quo



Graph 2. TB incidence – combined interventions



Future modelling plans

- Link a financial module (One Health) to TIME modelling to inform TB National Strategic Plan
- TIME modelling at subnational level
- Revision of TB burden estimates based on upcoming results of inventory study and DRS
- Expansion of TB burden estimation:
Estimation the burden of MDR-TB, Paediatric-TB, TB-HIV, TB-DM, etc for subnational level



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