Subnational models

<Location>
<Date>
Why create a subnational projection?

- Not every district/sub-area is the same as the national average in terms of MNCH
  - Coverage of health interventions
  - Cause of death structure
  - Mortality rates
- Can be used multiple times for different projections

Subnational can mean:
- Geographic region
- Wealth quintile
- Urban vs. rural
- Any additional sub-group for which you have data
Necessary data for a national projection

- What data is necessary for a projection?
  - Population
  - Total fertility rate
  - HIV prevalence
  - Contraceptive prevalence rate (if using FamPlan)
  - Coverage of MNCH&N interventions
  - Cause of death profile
  - Mortality rates

- Generally available from household surveys and population census
- Should be from the base year of the projection (or as close as possible)
Necessary data for a national projection

- Population
- Total fertility rate
- HIV prevalence
- Contraceptive prevalence rate (if using FamPlan)
- Coverage of MNCH&N interventions
  - Cause of death profile
  - Mortality rates

Imported directly using the subnational wizard

Can estimate using LiST
Purposes of the subnational wizard

- To transfer user-entered **health status** data to the final subnational projection

- To use any **coverage changes** that were user-entered or extracted from the subnational database in the wizard to **calculate any health status** data that the user did NOT put in the wizard
Subnational wizard conceptual walkthrough

DemProj estimates ➔ AIM estimates ➔ LiST estimates ➔ FamPlan estimates ➔ Subnational projection
Subnational wizard conceptual walkthrough

DemProj estimates
- First year population
- Total fertility rate (TFR)

AIM estimates
- HIV incidence
- PMTCT
- Cotrimoxazole
- Adult ART

LiST estimates
- Percent vitamin A deficient
- Percent zinc deficient
- Stunting distribution
- Wasting distribution
- Neonatal, infant and under 5 mortality

FamPlan estimates
- Contraceptive prevalence rate

- Neonatal and postnatal causes of death
- Stillbirth rate
- Still birth causes
- Maternal mortality ratio
- Maternal causes of death
- Intervention coverage

Subnational projection
Gathering data

- Blank template comparing national/subnational available for use

**Note on creating ratios:** Necessary where your data source (household survey) is different from LiST default data source
  - AIM, FamPlan, DemProj data
  - Vaccines (including TT vaccine)
  - Vitamin A supplementation
  - 3 WASH indicators
A note of caution...

All those who need a service or intervention who actually receive it

Many programs collect this

All those who need a service or intervention.

Few programs/groups collect this
When has LiST been used for subnational analyses?

- Strategic planning at the Bill and Melinda Gates Foundation
  - State level modeling in India and Nigeria

- Countdown to 2015 case studies
  - District level modeling in Malawi

- Program evaluation at World Vision
  - Area development program (ADP) level modeling in Tanzania, Malawi, Zambia, and other countries in Africa

- Province-level planning in DR Congo
  - List of most impactful interventions in each of 26 provinces for USAID Mission and MOH
Subnational modeling issues
Attribution

- Multiple known programs co-exist in subnational area
- Multiple unknown programs which can have an impact on health
- Program-based or funding based attribution?
- How to get at composite coverage of all known programs?

Program data

- How are interventions defined?
- What assumptions to make to use program data as coverage of interventions?
- Data quality?
- Data availability?
What subnational level?

- Rural areas?
- Composite intervention and composite comparison areas?
- Regions?
- State?
- District?
- Program level?
Emergency situations

- Estimate the number of additional deaths due to disruption to routine health services
  - Floods in Pakistan in 2010
  - Ebola in Africa in 2014