# COUNTDOWN WORKSHOP INTER-AGENCY ESTIMATES

- Immunization
- Vitamin A
- HIV AIDS
- Water and Sanitation
- Maternal Health
- Malaria

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# IMMUNIZATION COVERAGE

# Immunization Coverage

- Countdown indicators: MCV, DPT3, Hib3
- General formula for coverage:

$$Coverage\ rate = \frac{\#\ doses\ administered\ to\ target\ pop.}{\#\ children\ in\ target\ population} \times 100$$

- Sources for national-level data:
  - Government admin data (MoH, JRF)
  - Surveys (DHS, MICS, EPI coverage, other)
  - WHO/UNICEF coverage estimates
  - Occasional estimates by other agencies (IHME)
- Sources for subnational-level data:
  - Administrative data (MoH, in some cases JRF)
  - Surveys
- Important to distinguish between doses administered through routine systems and campaigns

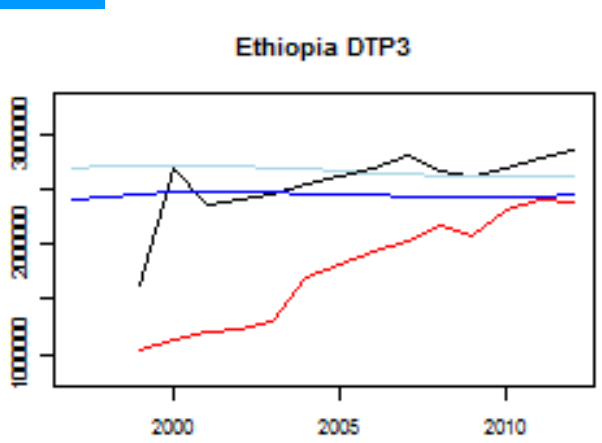
# Immunization Coverage (cont'd)

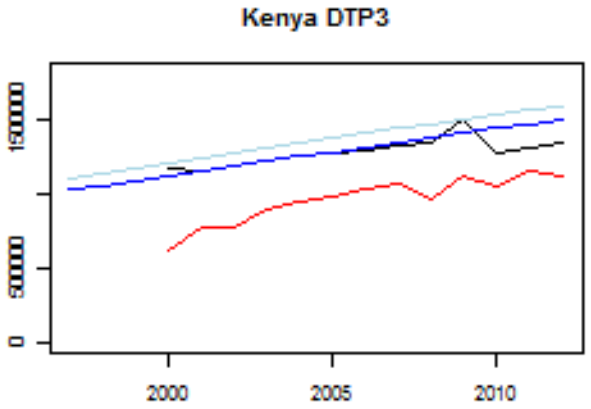
- **Numerator**: number of doses administered to children in the target population as recorded by health providers.
- **Denominator**: the total number of children in the target population; usually the number of live births (BCG; polio birth dose; HepB birth dose) or surviving infants.
  - Sources: national statistics office, EPI own estimate, UN Population Division
- Caveats:
  - Not all vaccines may be gathered through admin system (e.g., polio in Ethiopia)
  - Both numerator and denominator subject to errors

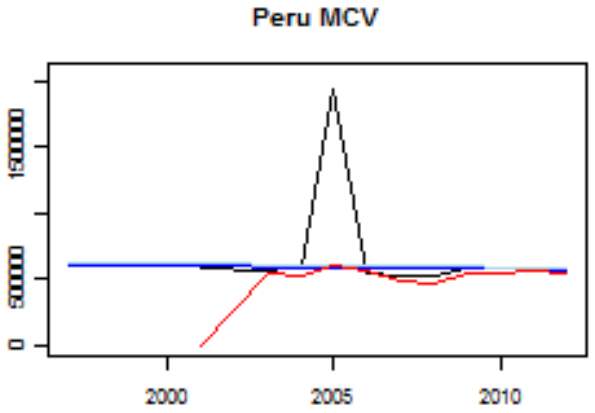
# Errors in Numerator and Denominator

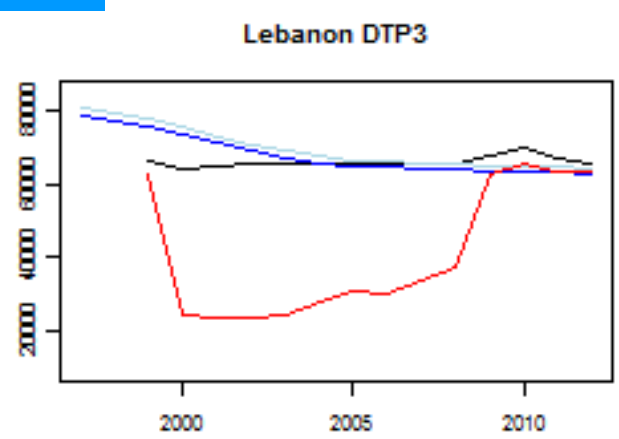
- Numerator
  - Over-reporting
    - Wrong age included (12 months or older)
    - Children counted in the numerator are not in denominator (e.g., migration, refugee)
    - Inclusion of campaign doses (not for the 3 CD indicators, though)
    - Miscounting
  - Under-reporting
    - Exclusion of private sector vaccinations (Lebanon)
    - Miscounting
- Denominator
  - Out-of-date census
  - Population migration
  - Revisions to target population estimates following a new census
- Survey advantage: estimates can be obtained even if the denominator is not well estimated, and can capture coverage in areas where the private sector is included

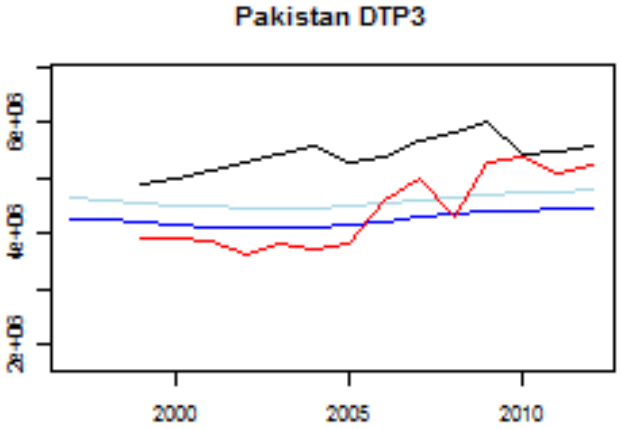
# Participants' Admin Data at a Glance

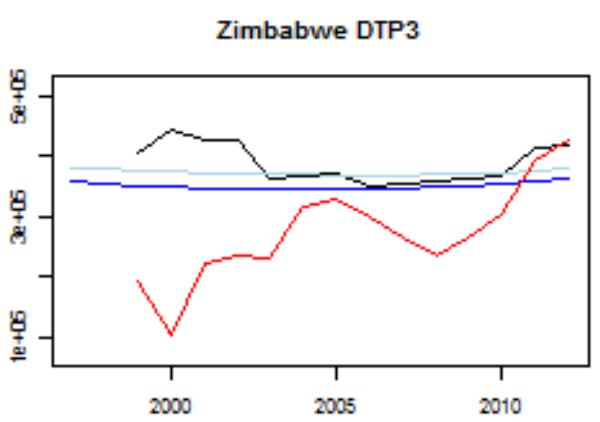



UNPD births
UNPD surviving infants
Country denominator
Country numerator

# National Coverage Levels vs Interagency Estimates

- In participant countries, they coincide only in Kenya and Peru (in recent years)
- No subnational WHO/UNICEF estimates made
- What to use: WUENIC for national. There is always a reason for any discrepancy.  May be politically sensitive.
- WUENIC methodology:
  - http://www.who.int/bulletin/volumes/87/7/08-053819/en/
  - http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0047806

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# QUESTIONS ON IMMUNIZATION COVERAGE?

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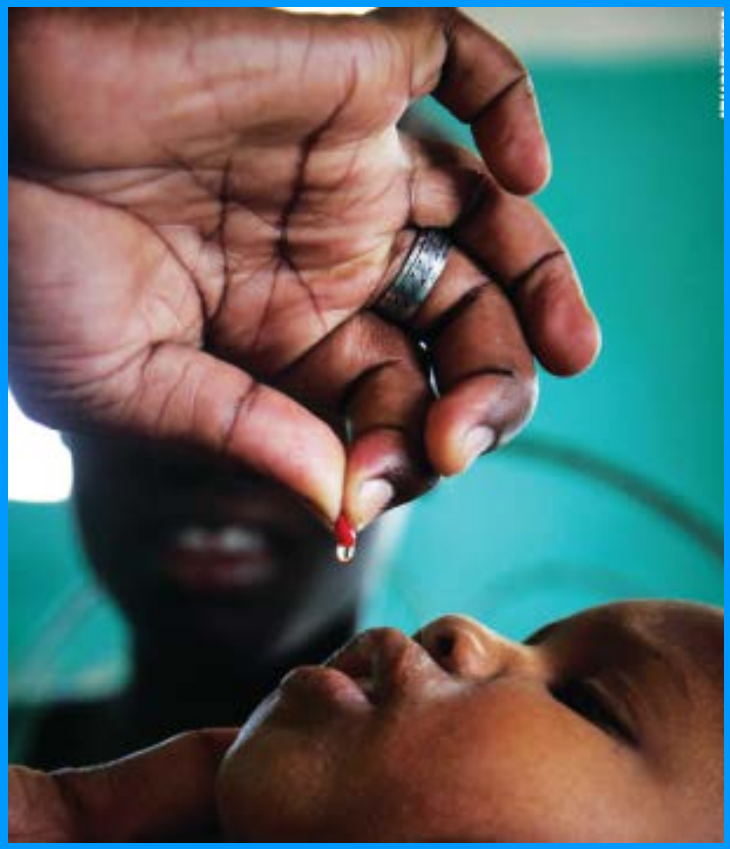
# VITAMIN A



# *Vitamin A supplementation*

Data sources for monitoring progress

- **Tally sheets** used during campaign-style events to capture the total number of capsules delivered to children
  - Summed up and presented as a proportion of the targeted population (most often with census projections)
  - Data quality may be affected by inaccuracies in numerators (e.g., children outside of the targeted age range may receive capsules) and denominators (e.g., outdated census data).
- **Health information systems** in most affected countries capture the total number of capsules delivered through routine contacts
  - Central level in conjunction with information on vaccines or essential drugs and reported as a proportion of the targeted population.
  - Data quality varies widely by country, and these systems may be inadequate where capsules are delivered through campaigns.

# *Vitamin A supplementation*

Data sources for monitoring progress

- **Nationally representative household surveys** (e.g. DHS, MICS) with questions designed to capture the proportion of children receiving supplements within six months prior to data collection.
  - Reliability of survey-derived estimates may be affected by maternal recall (e.g. timing between dosing and data collection often exceeds several months and mothers may not have been present at dosing or timing of the survey (i.e. often before or during a vitamin A distribution round)
- **Rapid coverage assessments** immediately following capsule distribution to specifically capture coverage (in a limited number of countries)
  - Reduced recall problems, although mothers not always present at time of dosing
  - Concern for sampling method and representativeness

# *Vitamin A supplementation* – Challenges in reporting

- International recommendations call for vitamin A supplementation every four to six months
- Current monitoring efforts are unable to capture the proportion of children covered who are receiving *both* annual doses of vitamin A.
  - Coverage is reported for each of two semesters in one year (January–June and July–December)
  - Approximations of two-dose coverage assume that in countries providing more than one round of supplementation, the same group of children – those with poor access to health services – is probably missed by both distributions.
- The reliability of survey-derived estimates may be affected by maternal recall (e.g. timing between dosing and data collection)
  - For example, a DHS in Rwanda that was enumerated between September 2010 and March 2011 was not consistent with any one semester and therefore may not best represent coverage of vitamin A in that country.

# *Vitamin A supplementation* – Challenges in reporting

Process for estimating coverage

- Coverage based on tally sheets checked against UNDP estimates for quality assurance
- Previously reported population and coverage estimates
- Semester variation
- Distribution mechanism and monitoring tool
- Level of VAS programme implementation
- Work together with CO/RO

Coverage estimates from nationally representative household surveys

- Coverage should only be considered where survey data collection was carried out within six months of a vitamin A distribution

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# HIV AIDS

# HIV and AIDS Data

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# Sources of data

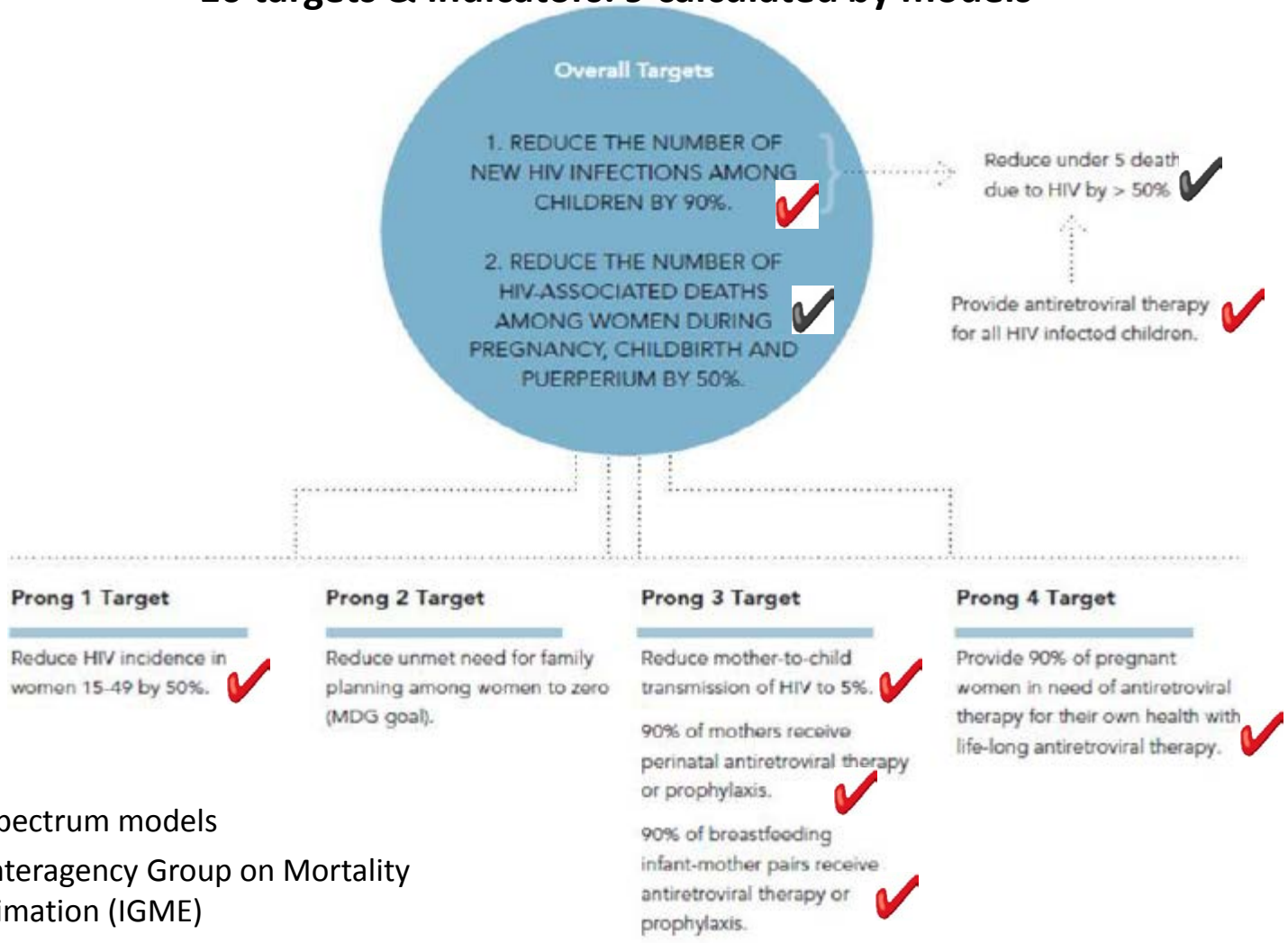
- Nationally representative household surveys
- Targetted surveys
- **Routine programme or service provision data**
- **Statistical modelling**
- Special studies/research
- Rapid assessments
- Qualitative information

# PMTCT Indicator

- One of the Global Plan indicators
- Percentage of pregnant women living with HIV receiving antiretroviral (ARVs) medicines for preventing mother-to-child transmission of HIV (PMTCT)

# Global Plan Towards the Elimination of New HIV Infections Among Children by 2015 and Keeping Their Mothers Alive (EMTCT)

## 10 targets & indicators: 9 calculated by models




= Spectrum models

= Interagency Group on Mortality Estimation (IGME)

*Source: P.39 of the Global Plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive*

# Calculating the indicator

- **Numerator:** Number of pregnant women living with HIV receiving anti-retroviral medicines to prevent mother-to-child transmission of HIV at the end of the reporting period

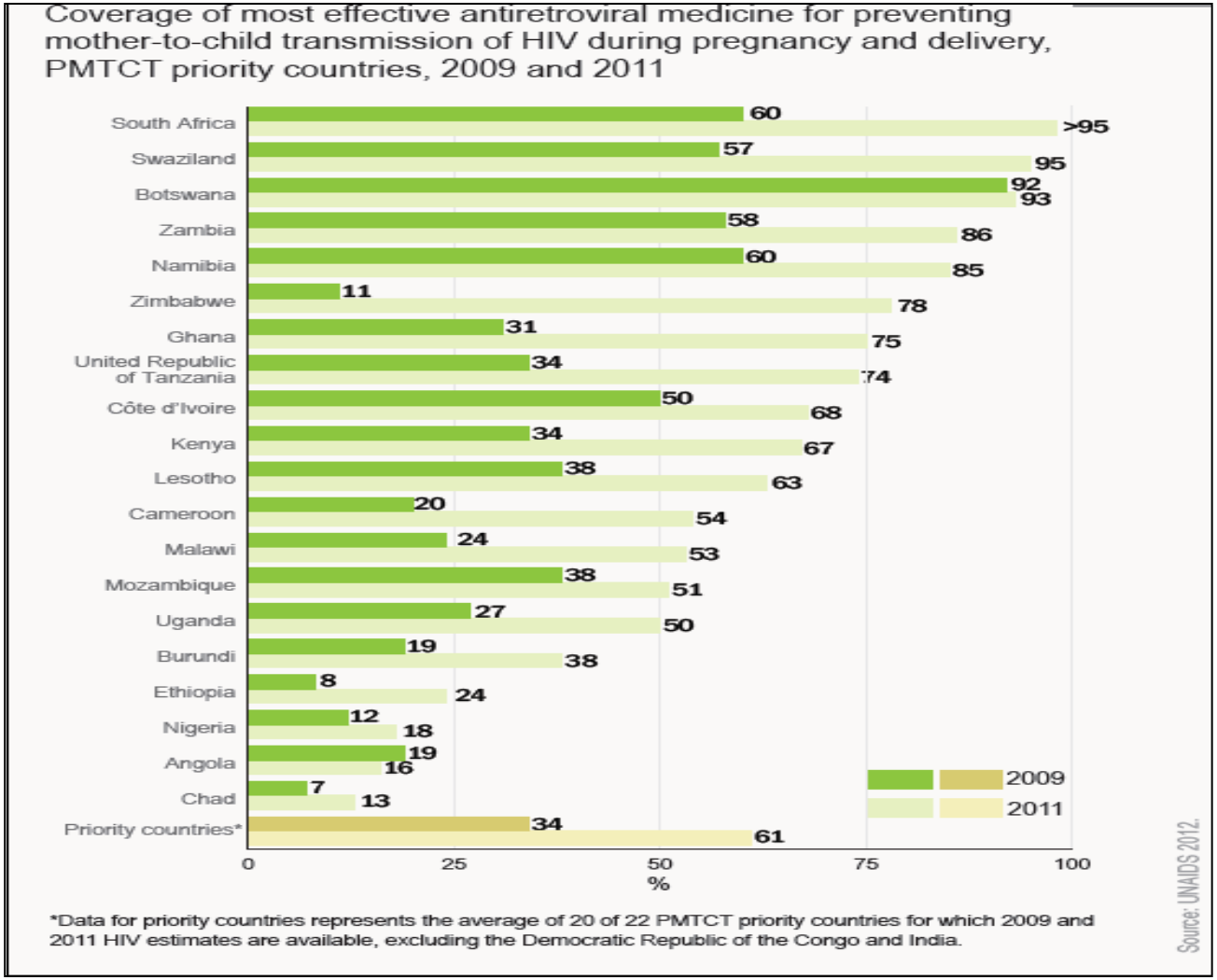
- **Denominator:** Estimated number of pregnant women living with HIV at the end of the reporting period

# Sources of data

- **Numerator:** Derived from national programme reporting systems - data aggregated from health facilities or other service delivery sites (government, private and NGOs).

- **Denominator:** Generated using statistical modelling

# Substantial progress has been made in extending antiretroviral medicines to prevent mother-to-child transmission of HIV




**Factors for success:**

- Launch of the Global Plan in 2009 has spurred much of progress in providing ARVs for PMTCT in the priority countries
- Global partnership of 28 agencies [interagency task team (IATT)] provides technical assistance, develops normative guidance and monitors progress
- Governments' commitment in adopting new 2010 WHO guidelines, updated in 2012 & revised in 2013
- Innovative technologies & programme approaches e.g. use of SMS, community involvement, service linkages, etc

# Measurement challenges & data discrepancies

- Poor data quality due to weak national programme monitoring systems – double/triple counting is common, incomplete, inconsistent, and lack of timeliness in data collection
- In some countries the number receiving ARVs exceeds estimated number of HIV+ pregnant women – hence over 100% coverage!
- Some countries use different methods of estimating the number of pregnant women living with HIV based on only registered cases, which does not account for undiagnosed cases: - underestimates need & overestimates coverage

# Measurement challenges & data discrepancies

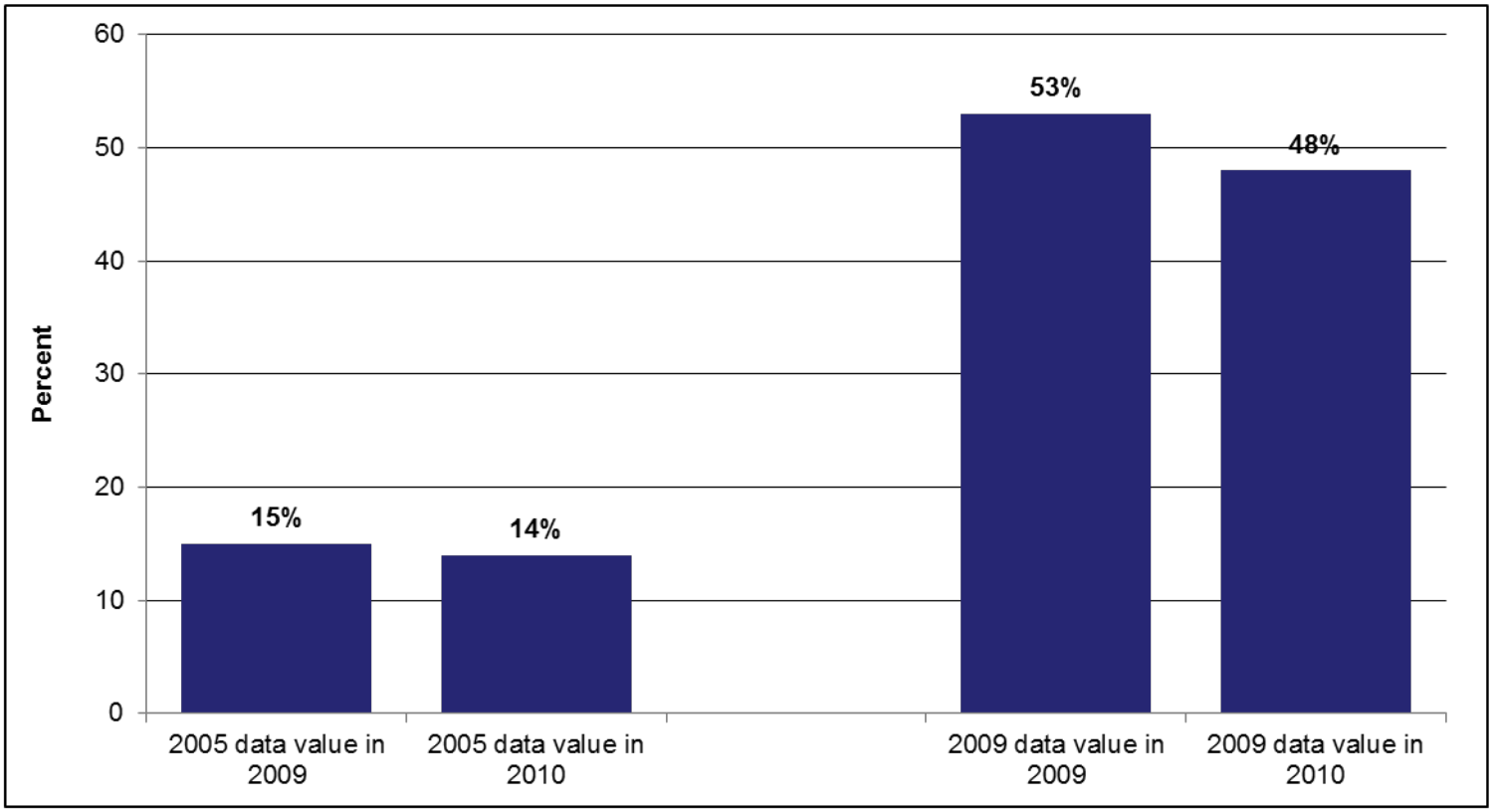
- UN uses standard HIV estimation methodology based on Spectrum software – http://www.futuresinstitute.org/spectrum.aspx
  - Consideration of various epidemic & demographic parameters and coverage of ART in a country - e.g. HIV prevalence, fertility, mortality, antiretroviral treatment (ART) coverage
  - Provides comparable data at global and country levels
  - Enables monitoring of progress towards global commitments – Global Plan, High level meeting, Universal Access, etc
- Estimates have to be recalculated retrospectively each time estimation assumptions change to account for revised HIV treatment guidelines and new research/evidence
- Current estimates **are not** comparable to those previously published

# Models have improved over time

- Improved HIV surveillance by countries
- Increasing number of nationally-representative household surveys
  - Calibrates HIV prevalence from antenatal clinics
- Improved assumptions in the Spectrum software based on evolving research & policy changes
- Improved curve fitting models
  - From 4 parameter model to model that allows variation in force of infection over time
- Earlier models were of lower quality than current models so do not compare results from different models
- Do not look for trends between 2009 estimates and 2012 estimates, for example. Use trends from one round of most recent estimates recalculated backwards to include for previous years

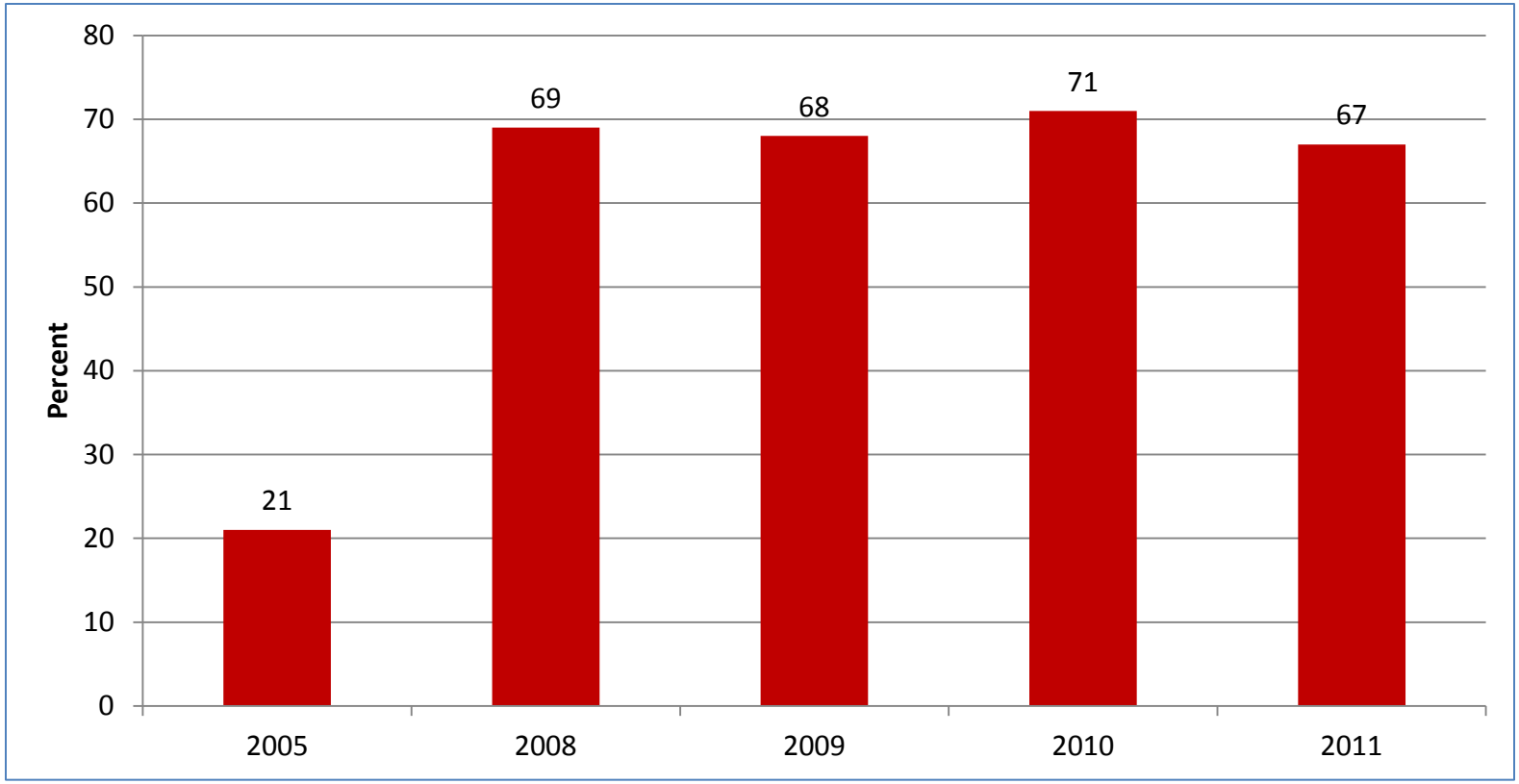
# Difficult to monitor trends with different data sources and refined methodology

Percentage of pregnant women living with HIV receiving antiretroviral medicines for preventing mother-to-child transmission of HIV in low- and middle-income countries, 2005 & 2009 published in different years




*Source*: WHO, UNICEF, UNAIDS. Global AIDS Response Progress Reporting

# Poor data quality makes it difficult to assess trends in coverage of PMTCT in Kenya which has remained almost the same over the years




*Source*: WHO, UNICEF, UNAIDS. Global AIDS Response Progress Reporting

# Summary

- Various sources of HIV/AIDS data with varying data quality
- Substantial progress towards EMTCT targets globally and in all countries
- Programme data remain of poor quality and make monitoring of PMTCT coverage problematic
- Models have improved over time and hence HIV and AIDS estimates are recalculated each time ARV treatment guidelines and assumptions change
- Estimates generated from previous models CANNOT be compared to estimates from current models

# References/relevant websites


- WHO and UNICEF. Global monitoring framework and strategy for the Global Plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive. Geneva, WHO **2012** **http://www.who.int/hiv/pub/me/monitoring_framework/en/index.html**

- WHO, UNICEF, and UNAIDS. Global HIV/AIDS Response Epidemic update and health sector progress towards Universal Access 2011. Geneva, WHO, 2011 **http://www.who.int/hiv/pub/progress_report2011/en/index.html**

- UNICEF website: **http://www.childinfo.org/hiv_aids.html**

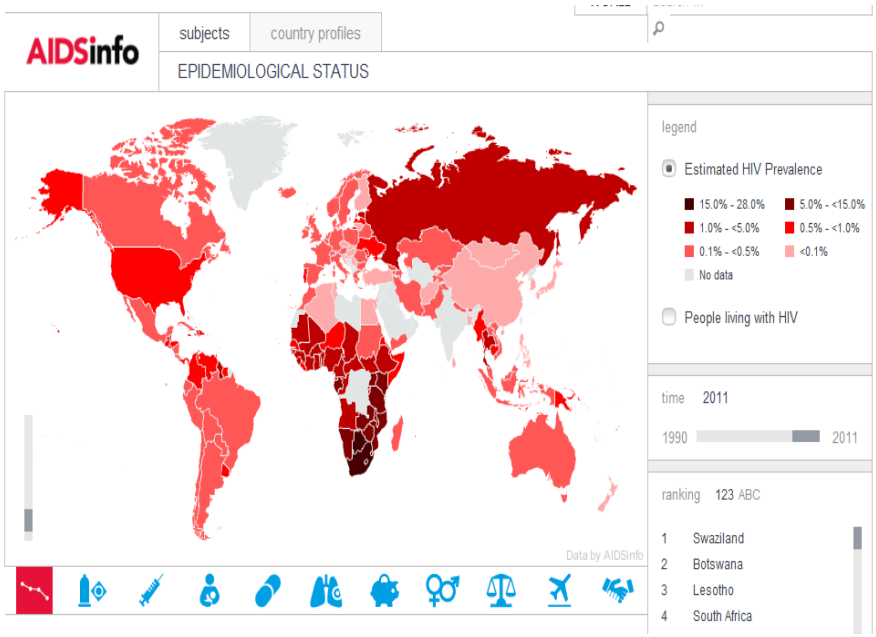
- UNAIDS. ***Countdown to Zero: Global plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive***, 2011-2015, UNAIDS, Geneva, 2011.
  **http://www.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2011/20110609_JC2137_Global-Plan-Elimination-HIV-Children_en.pdf**
- WHO website:
  **http://www.who.int/research/en/**

**To access HIV/AIDS data & additional information please visit:**

UNICEF website: http://www.childinfo.org/hiv_aids.html or

UNAIDS website: www.aidsinfoonline.org or

http://www.unaids.org/en/dataanalysis/datatools/aidsinfo/





# THANK YOU

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# QUESTIONS ON HIV AIDS?

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# WATER AND SANITATION

## WHO/UNICEF JOINT MONITORING PROGRAMME FOR WATER SUPPLY AND SANITATION (JMP)

# *Overview*

1. Importance of WASH
2. Intro to JMP
3. Data sources
4. Definitions
5. Methodology
6. Discrepancies
7. Resources

# *MDG target + indicators*

**MDG 7 Target 7c:**

- *Halve, by 2015, the [1990] proportion of people without sustainable access to safe drinking water and basic sanitation*

**MDG indicators:**

- *Proportion of the population that uses an **improved** drinking water source (urban and rural)*

- *Proportion of the population that uses an **improved** sanitation facility (urban and rural)*

# Household survey data used for international estimates

- JMP data sources are national user-based sources: censuses and household surveys
  - Not *administrative* data reported by line-ministries

# *What do household survey and census data tell us?*

| **WATER AND SANITATION** | | |
|---|---|---|
| WS1. WHAT IS THE MAIN SOURCE OF DRINKING WATER FOR MEMBERS OF YOUR HOUSEHOLD? | **Piped water**<br>Piped into dwelling<br>Piped into compound, yard or plot<br>Piped to neighbour<br>Public tap / standpipe<br>**Tube Well, Borehole**<br>**Dug well**<br>Protected well<br>Unprotected well<br>**Water from spring**<br>Protected spring<br>Unprotected spring<br>**Rainwater collection**<br>**Tanker-truck**<br>**Cart with small tank / drum**<br>**Surface water** (river, stream, dam, lake, pond, canal, irrigation channel)<br>**Bottled water**<br>**Other (*specify*)** | |

# *JMP standardized definitions*

## Drinking Water

**IMPROVED**

- Piped into dwelling, plot or yard
- Public tap/standpipe
- Tube well/borehole
- Protected dug well
- Protected spring
- Rainwater collection

**UN-IMPROVED**

- Unprotected dug well
- Unprotected spring
- Cart with small tank/drum
- Tanker truck
- Surface water (river, dam, lake, pond, stream, canal, irrigation canal)
- Bottled water (unless 2nd Improved source)

## Sanitation

**IMPROVED**

Flush/pour flush to:

- piped sewer system
- septic tank
- pit latrine

Ventilated improved pit (VIP) latrine

Pit latrine with slab

Composting toilet

**UN-IMPROVED**

Flush/Pour flush to elsewhere

Pit latrine without slab/open pit

Bucket

Hanging toilet/hanging latrine

Shared and public facilities

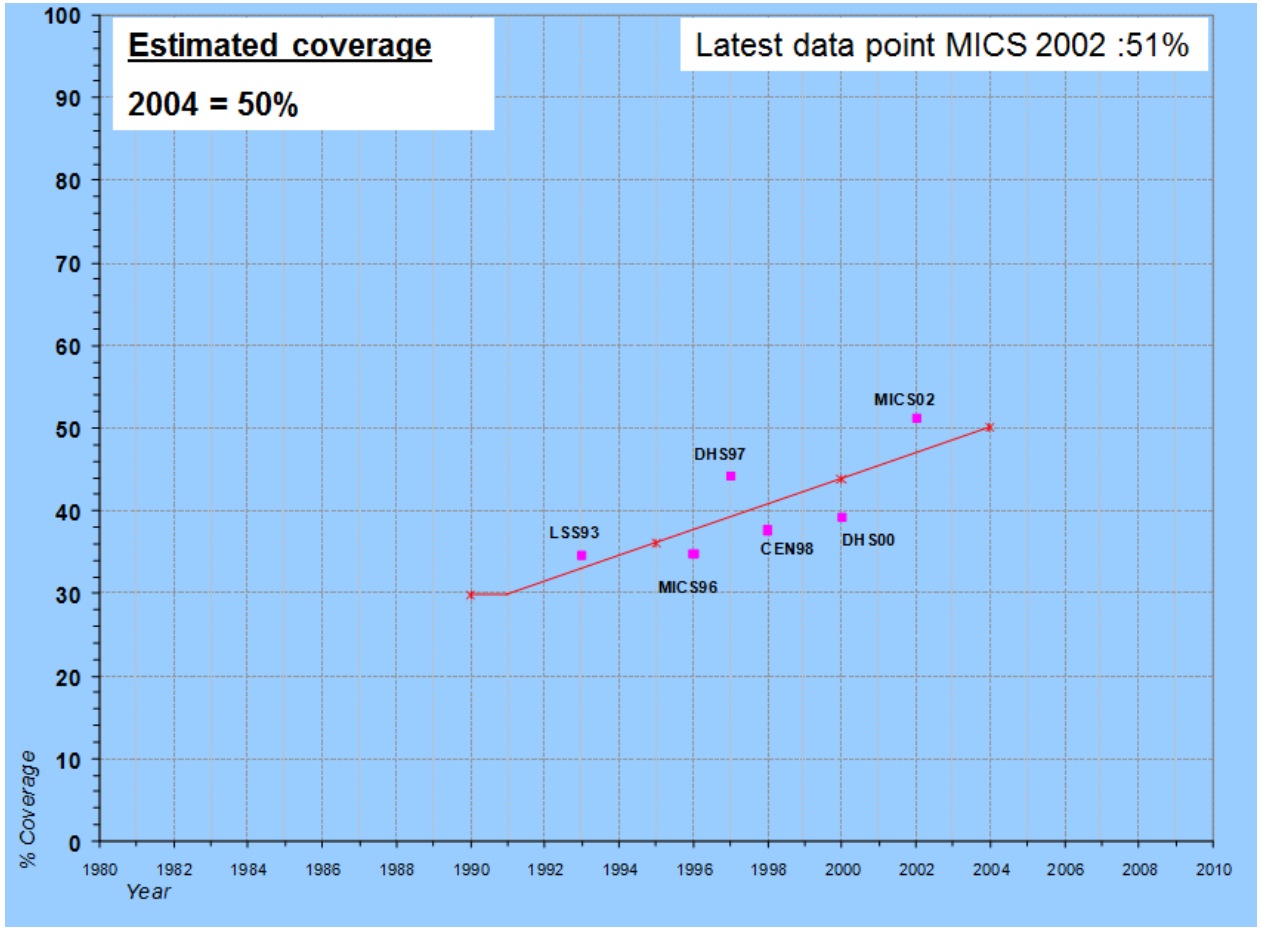
No facilities, bush or field

# *Survey example: Percentage use of different types of sanitation facilities for urban and rural areas*

| DHS | | 2005 |
|---|---|---|
| Proportion shared improved facilities/all improved facilities | 0.56 | 0.18 |
| Sanitation | Urban (%) | Rural (%) |
| Flush to piped sewer system | 1.4 | 0.0 |
| Flush to septic tank | 1.8 | 0.0 |
| Flush, don't know where | 0.3 | 0.1 |
| Flush to pit latrine | 4.3 | 1.2 |
| Ventilated improved pit latrine (VIP) | 3.8 | 0.5 |
| Pit latrine with slab | 38.1 | 1.2 |
| Composting toilet | 2.6 | 3.7 |
| | | |
| Pit latrine without slab / open pit | 35.7 | 24.1 |
| Flush to somewhere else | 0.2 | 0.0 |
| Bucket toilet | 0.1 | 0.0 |
| Hanging toilet / hanging latrine | 0.3 | 0.0 |
| | | |
| No facility / bush / field | 11.3 | 69.2 |
| Other | 0.1 | 0.0 |
| TOTAL | 100.0 | 100.0 |
| | | |
| % Use of an improved sanitation facility | 53% | 7% |

*Source: Ethiopia DHS 2005*

# *Proportion using an improved sanitation facility*

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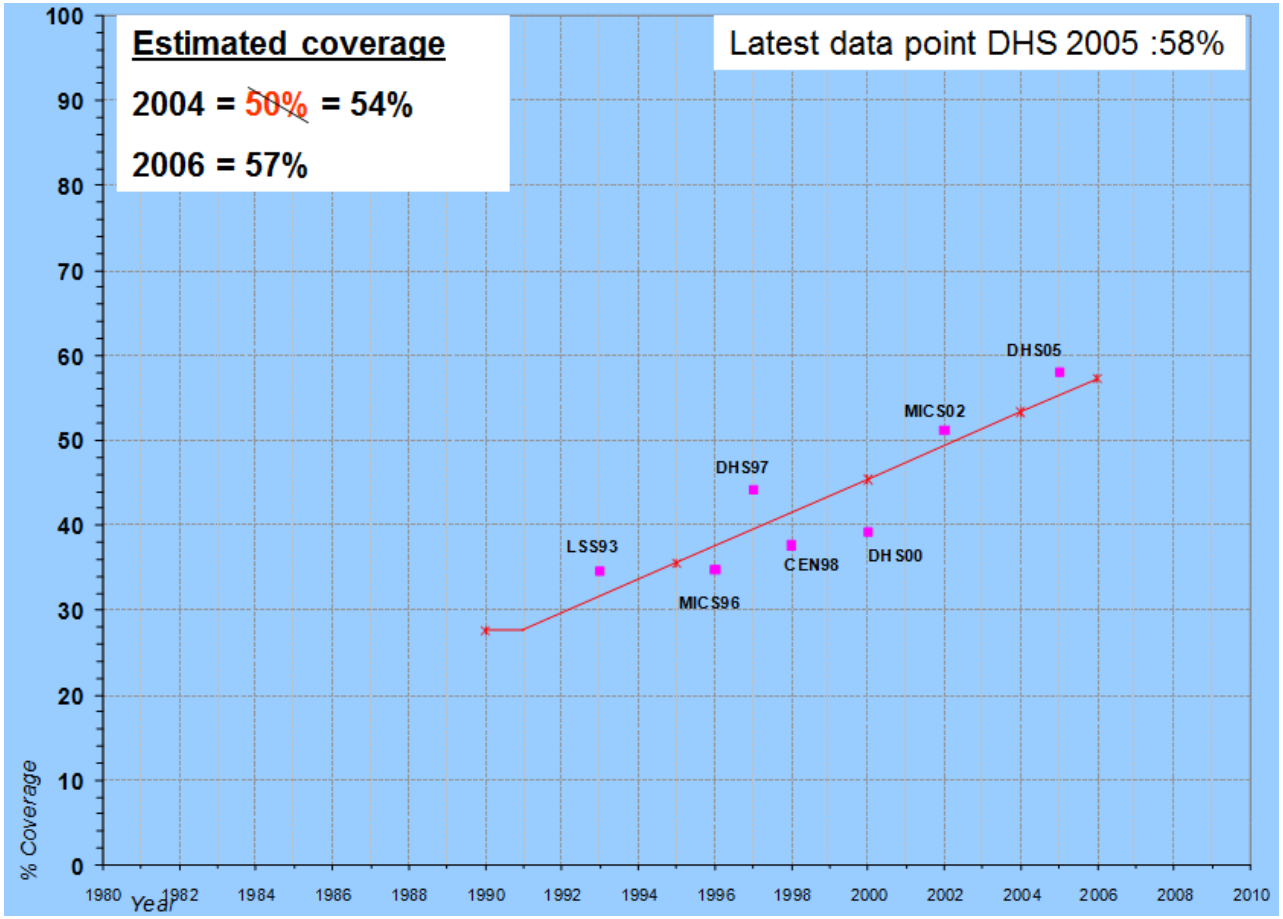

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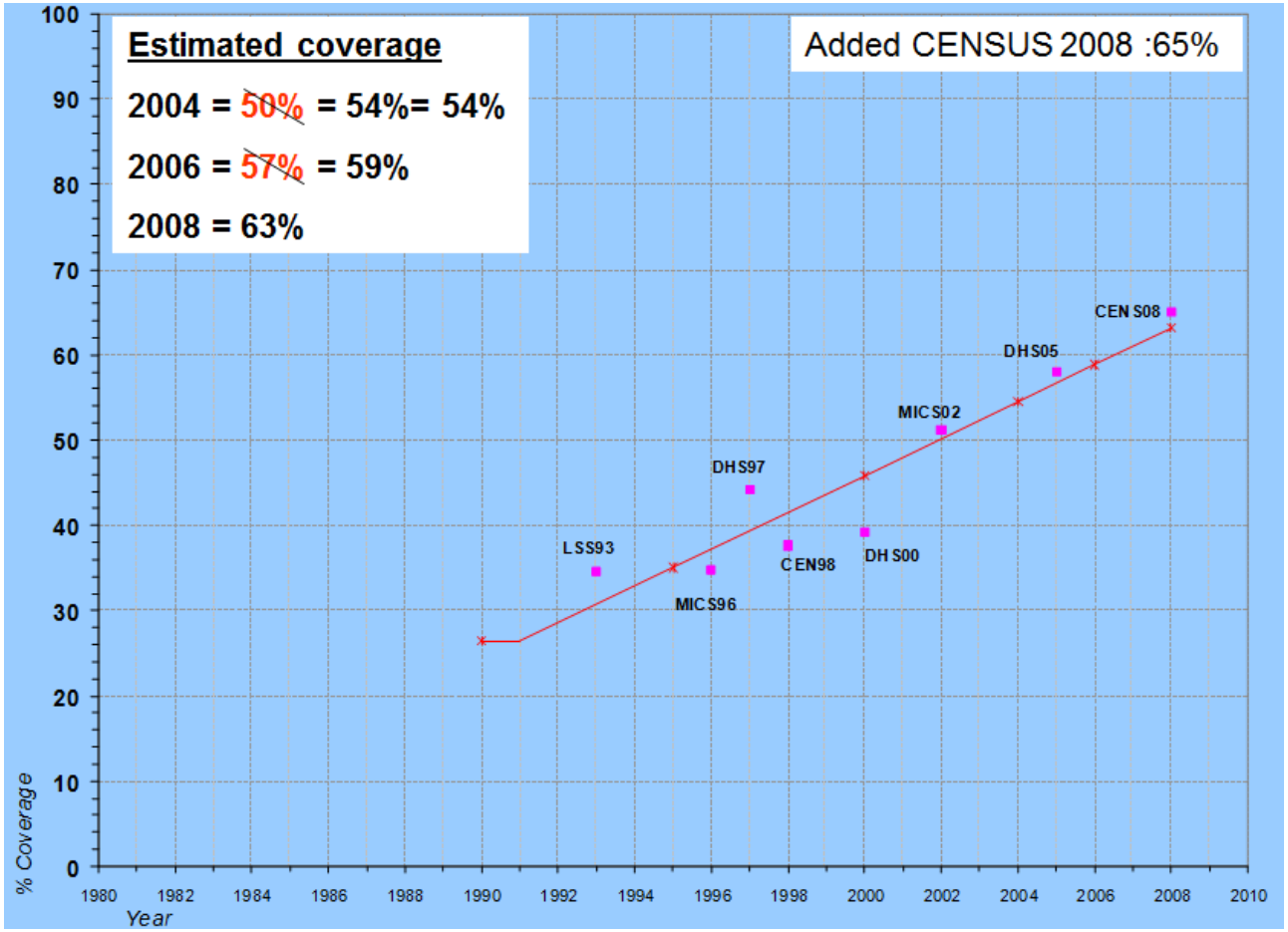


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# *Explanation of most common differences between national and international estimates*

- Use of different definitions of access
- Exclusion for MDG monitoring of shared and public sanitation facilities from “improved” sanitation facilities
- Use of latest survey or census findings vs. use of an interpolated estimates based on linear regression (MDG monitoring)
- Latest available estimates not yet included in international estimates
- Use of line ministry data/estimates based on programme outputs or water company records instead of independently verifiable population based data from sample surveys or censuses
- Use of different population estimates

Thank you!

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# QUESTIONS ON WATER AND SANITATION?

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# MATERNAL HEALTH AND MALARIA

# *Maternal health indicators*

- Antenatal care, at least one visit (MDG)
- Skilled attendant at birth (MDG)

*Standard definitions, may differ from national definitions*

- Normally derived directly from survey data.
- Differences between profile and national estimates possible due to definitional differences.

# *Skilled attendant*

- All skilled attendants *must* have the core midwifery skills.
- The additional skills required will vary from country to country, and possibly even within a country, to take account of local differences such as urban and rural settings.

# *Skilled birth attendant* – WHO definition

A **Skilled birth attendant** is an accredited health professional – such as a midwife, doctor or nurse – who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns.

Traditional birth attendants, trained or not, are excluded from the category of skilled attendant at delivery.

# *Skilled categories*

## Doctor, nurse, midwife

For reporting - customized with specific skilled categories at the country level.

Examples:

- **Pakistan:** Lady Health Visitor (skilled)
- **Ethiopia:** Health Extension Worker (not skilled but reported in surveys)
- **Burkina Faso:** matrones/ accoucheuses formées.

In some countries **auxiliary midwives** are considered skilled (appropriate training, skills) in some they are not – needs customization

# *Maternal health indicators*

- Countries with high coverage of maternal health services and well established routine health systems report some maternal health indicators from non-survey sources (administrative sources):
  - ❑ Latin American countries or
  - ❑ Central and Eastern Europe and the Commonwealth of Independent States (CEE/CIS)
- Potential issues
  - ❑ Representativeness – some report only public facilities – but private facilities are important in many countries.
  - ❑ Non-facility births might not be reported

# *Malaria treatment indicator*

## Current MDG Indicator

Proportion of children under five years old with fever receiving anti-malarial medicines

## Issues with current survey indicator

- Denominator for malaria treatment - All febrile children -
- Data on diagnostic results not available – validity issues

**Watch out!** NOT all fevers are malaria even in malaria endemic countries

## First line treatment indicator: Countdown profiles

Percent of children receiving first line treatment among those receiving any antimalarial (ACTs)

For additional analysis it is measure in conjunction with Diagnosis testing.

# *Malaria treatment indicator*

M*any fever cases are still treated presumptively with antimalarials without parasitological diagnosis, and not all confirmed malaria cases receive appropriate treatment with a quality-assured antimalarial.*

**Data from routine health information systems** could potentially be a more accurate source for malaria  treatment – although data quality and availability issues may exists.

- Quality and data availability issues of **routine health information systems** are specific to country settings.

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# QUESTIONS ON MATERNAL HEALTH OR MALARIA?

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# THANK YOU!