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Innovative Approaches to assess the quality and completeness of civil registration data: Discussant Comments

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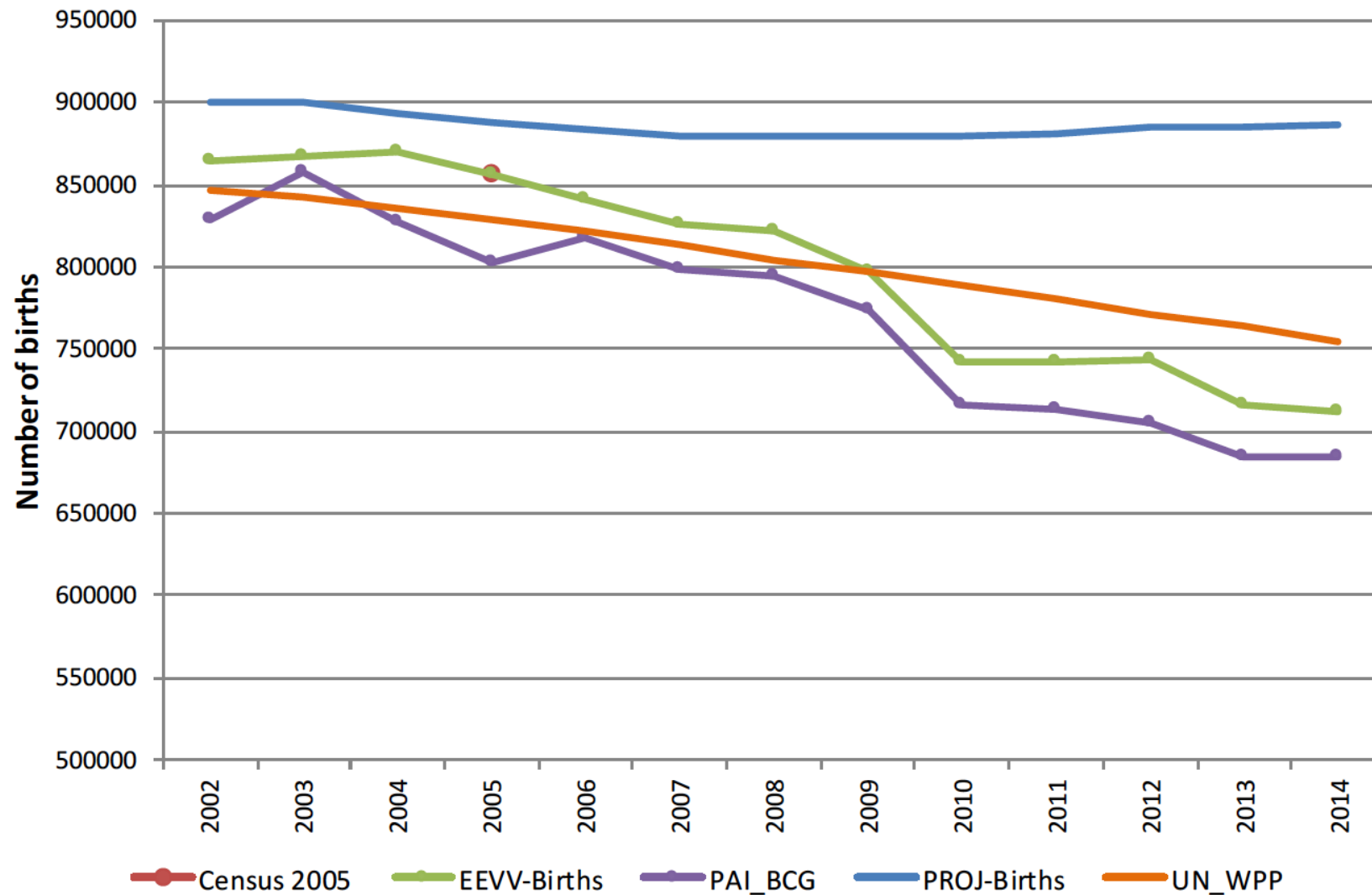
5 December, 2019

IUSSP-UNFPA Expert Group Meeting on Population Data in the 21st Century

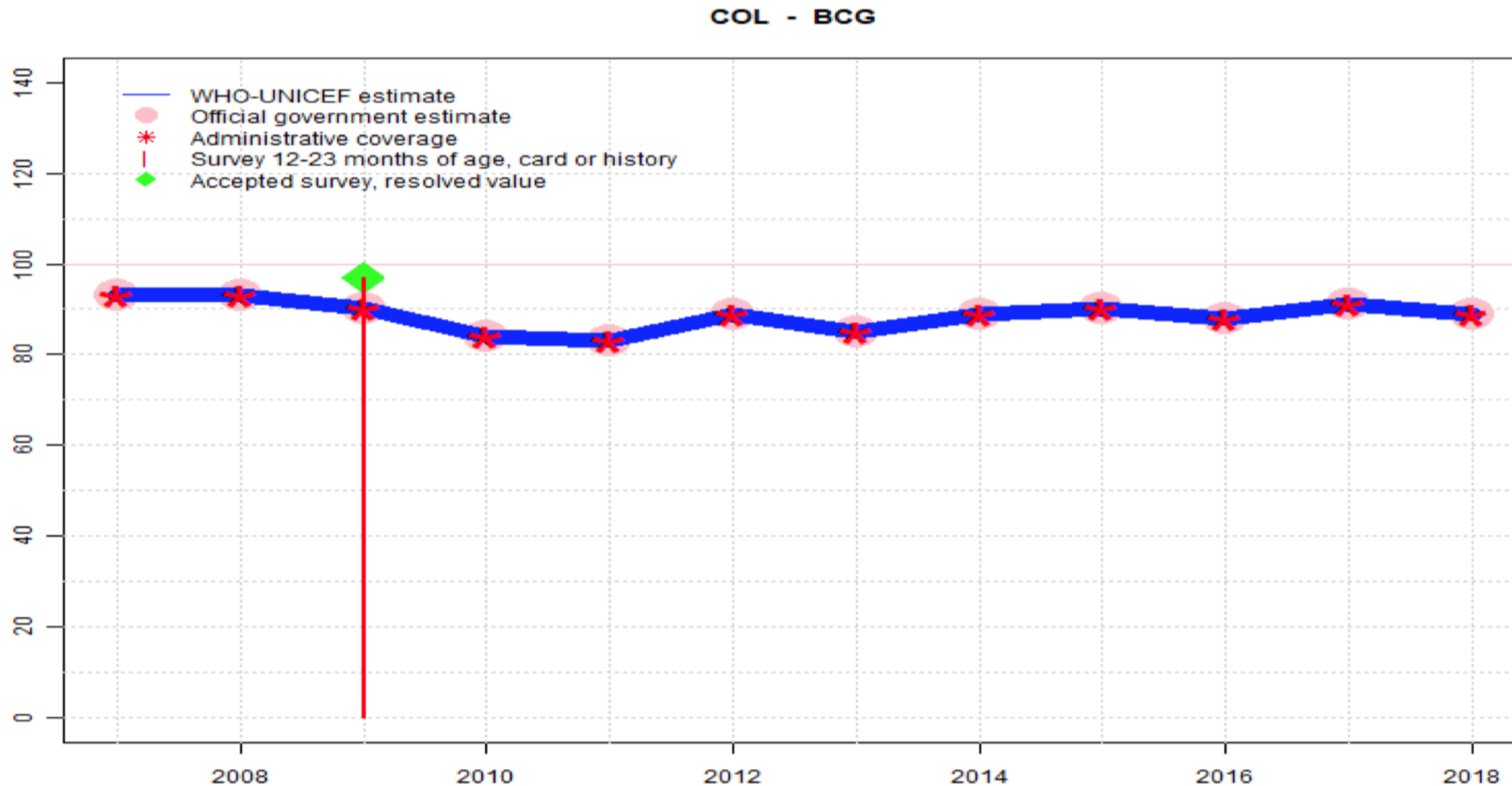
UNFPA Headquarters, New York



Ramirez and Ospina. Estimation of fertility in Colombia through adjustment for coverage of registered births with immunization records

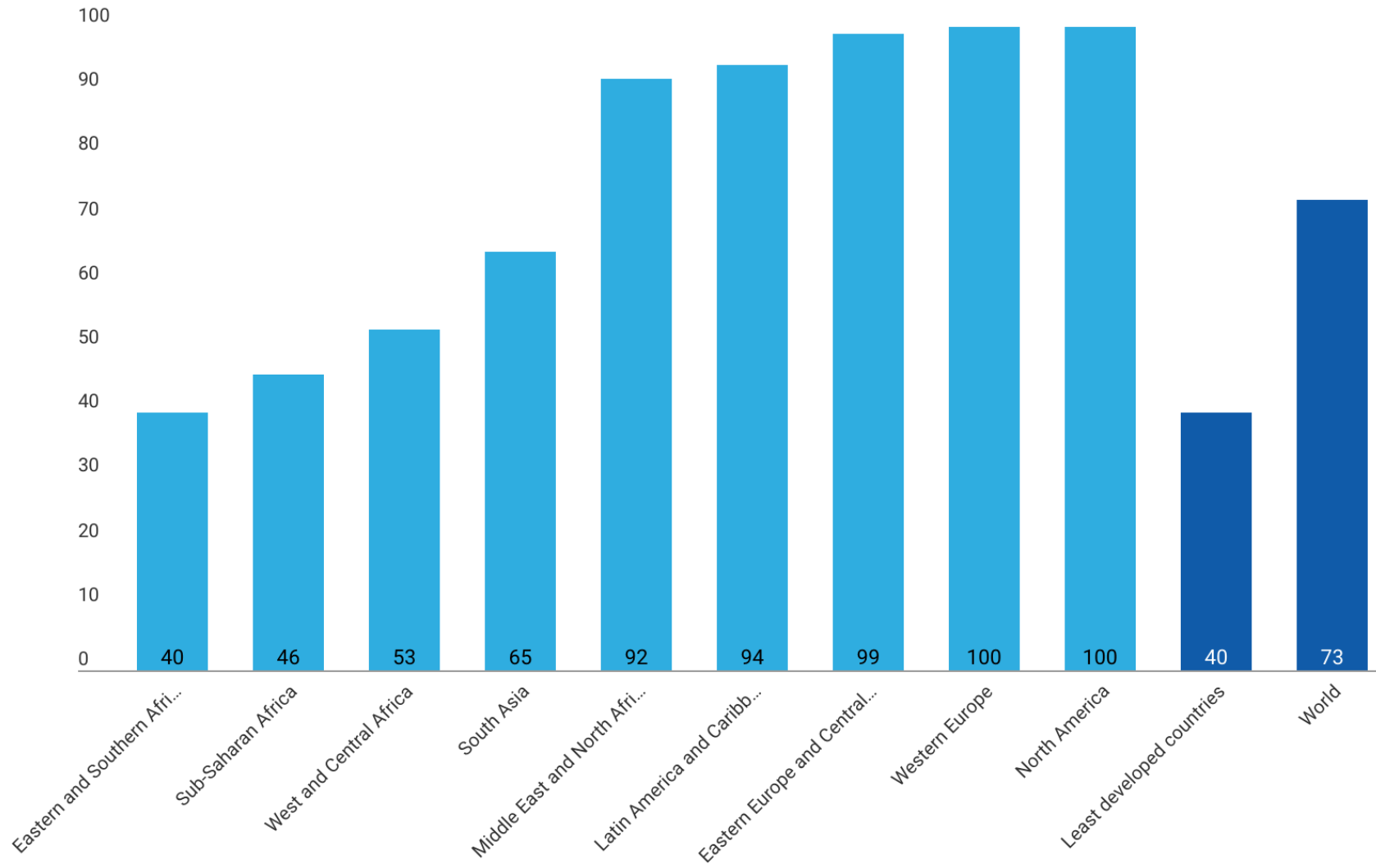


Ramirez and Ospina. Estimation of fertility in Colombia through adjustment for coverage of registered births with immunization records



Birth Registration Completeness: Heavy reliance on decennial census and DHS/MICS survey data

Percentage of children under five years of age whose births are registered, by region



Ramirez and Ospina. Estimation of fertility in Colombia through adjustment for coverage of registered births with immunization records

- Their approach **engenders a culture of continuous assessment and customized statistical adjustment** of incomplete/deficient civil registration when constructing summary demographic measures (such as TFR)
- **Clarification/Limitation/Caveat:** how is the adjustment of BCG immunization records being done? how well do these adjustments factor in subnational heterogeneity in fertility levels and trends? Potential to factor in proactive search

Addressing the Passive Nature of Civil Registration: Integration with the health system and related systems

- Szwarcwald et al. (2014) used proactive search process of vital events in North/Northeast Brazil to identify:
 - live birth and death certificates issued but not reported to the CRVS system, and
 - live births and deaths whose certificates were not issued.
- Use of multiple alternative data sources!
 - recognition of the largely passive nature of civil registration procedures

Table 1 Vital events found in the proactive search by information source, Amazonia and Northeast Brazil, 2008

Source	Deaths	Live births
	n (%)	n (%)
Hospitals	2,196 (26.4)	9,027 (51.5)
Registry offices	2,588 (31.1)	7,397 (42.2)
Primary health care units	355 (4.3)	350 (2.0)
Institutes of forensic medicine/services of death investigation	402 (4.8)	-
Official and unofficial cemeteries	1,368 (16.5)	-
Funeral homes	960 (11.5)	-
Unified Registry of the Federal Government Social Programs	83 (1.0)	578 (3.3)
Other	360 (4.3)	175 (1.0)
Total	8,312 (100.0)	17,527 (100.0)

Szwarcwald et al. *Population Health Metrics* 2014, 12:16
<http://www.pophealthmetrics.com/content/12/1/16>

Adjustment of Civil Registration Data via cross-validation with complementary sources

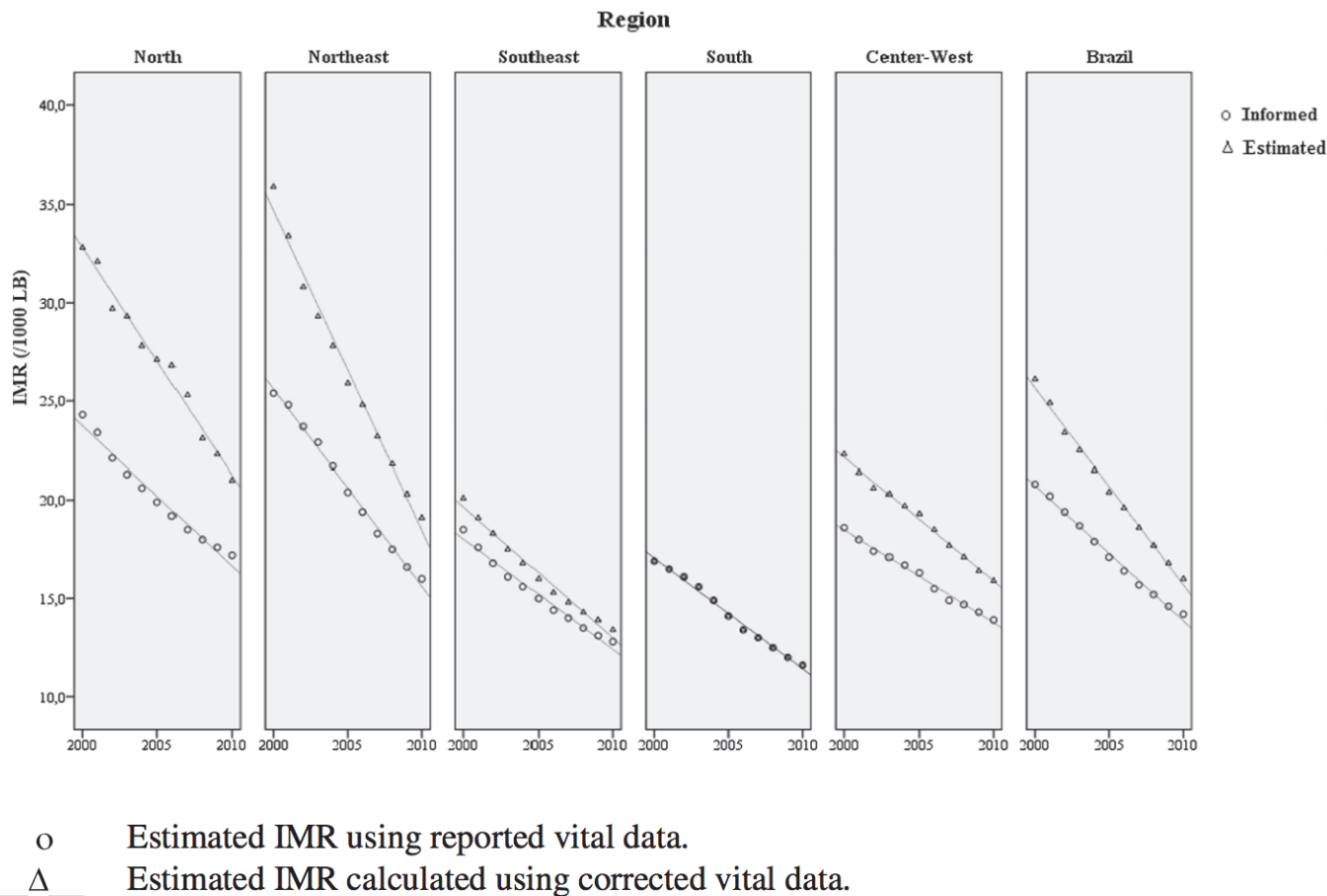


Figure 1 Infant Mortality Rate (IMR) estimates using reported and corrected data, Brazilian regions, 2000-2010.

- Correction factors were estimated by strata based on additional vital events found in the proactive search.
- The procedure was generalized to correct municipal vital statistics for the period 2000–2010.

$$\log(DC_i) = \log(R_i) + \varepsilon_i,$$

where DC_i = Death Correction Factor for municipality i ;

$$R_i = \frac{ASMR_i}{\max(ASMR_i, \text{median}(ASMR_1, ASMR_2, \dots, ASMR_i, \dots))}$$

Ramirez and Ospina. Estimation of fertility in Colombia through adjustment for coverage of registered births with immunization records

- Their approach **engenders a culture of continuous assessment and customized statistical adjustment** of incomplete and deficient civil registration when constructing summary demographic measures (such as TFR)
- **Clarification/Limitation/Caveat:** how is the adjustment of BCG immunization records being? how well do these adjustments actually factor in subnational heterogeneity in fertility levels and trends?
- **Extension:** Describe how this approach is being used by local authorities around the country – to both monitor birth registration completeness and performance and summary demographic measures such as the annual adolescent birth rate in rural areas?

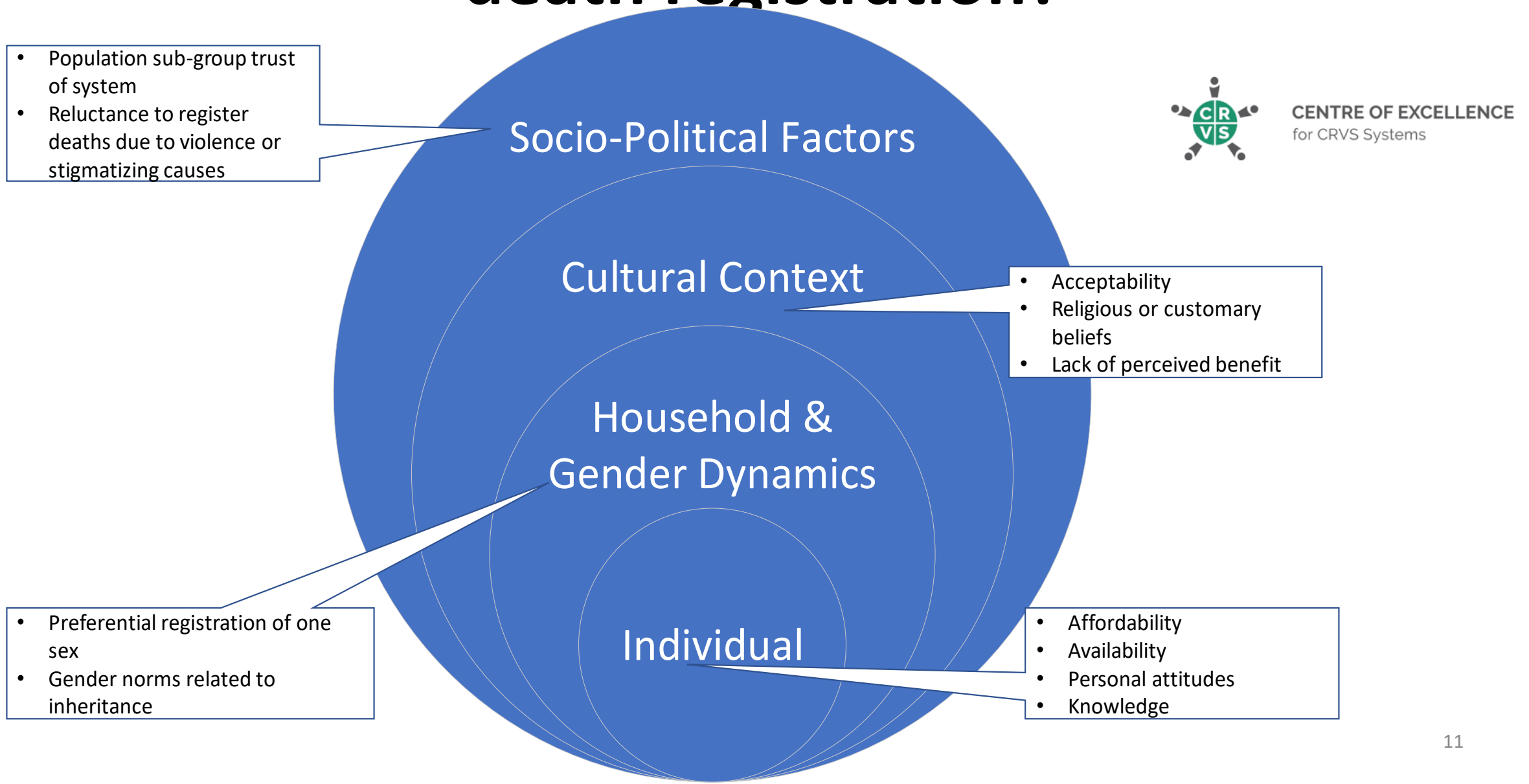
Setel et al. Advances, Challenges, and Lessons Learned from CRVS Scale-Up Initiatives in 19 countries



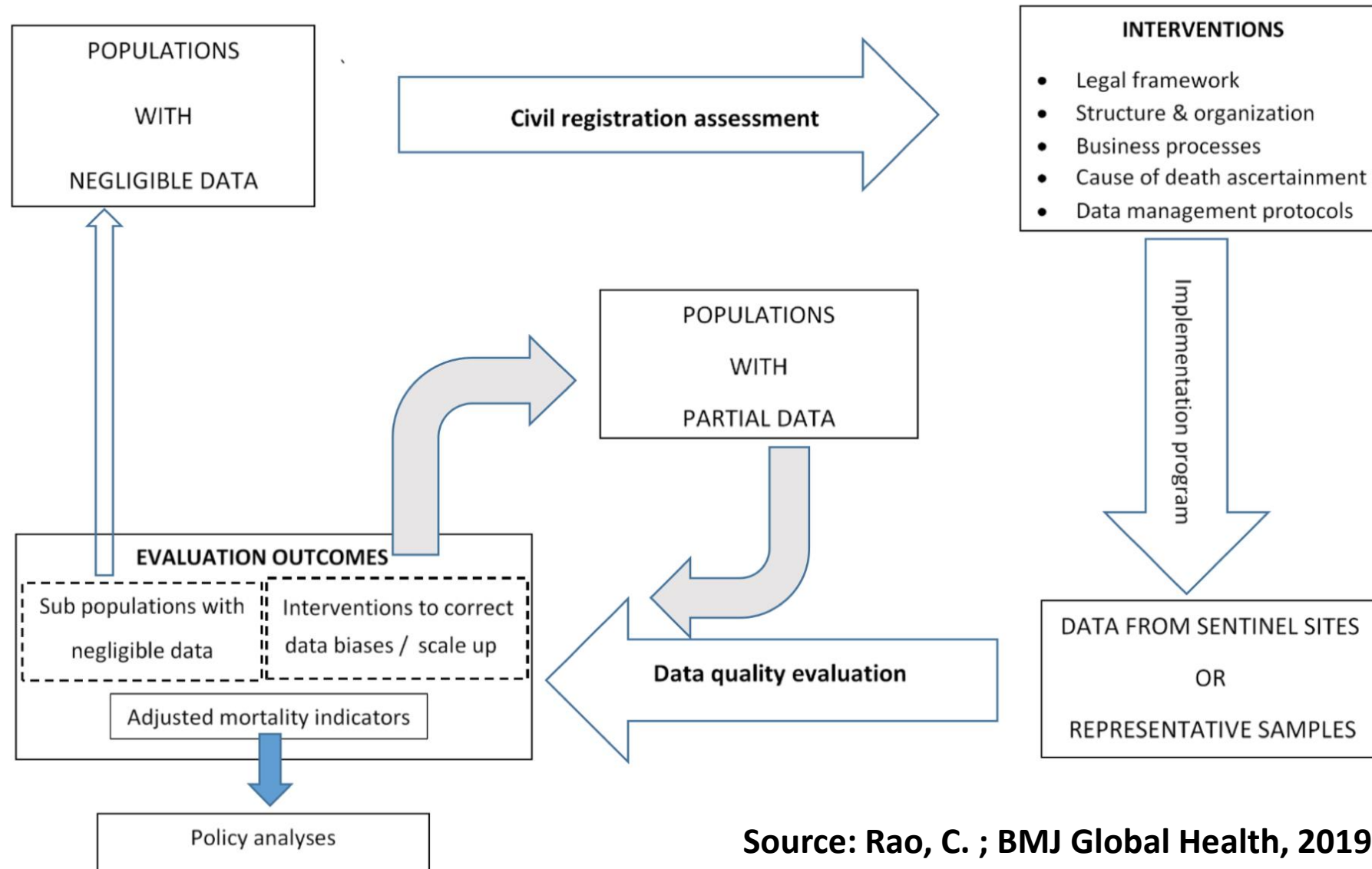
Challenge: how might we improve demographic methods to assess completeness/quality of death registration data

- Over the last 30 years - Very modest methodological advances in demographic methods to assess completeness of death registration, despite increasing calls for disaggregated analyses of subnational inequalities
- What we need
 - Denominators for death registration completeness in small areas
- What we do
 - $\text{CDR}_{\text{national}} \times \text{Estimated Midyear Pop} = \text{Total Expected Deaths}$
- What we're doing about it
 - Working with NSOs and international statisticians to develop and apply new methods

How do supply-side and demand-side factors affect death registration?



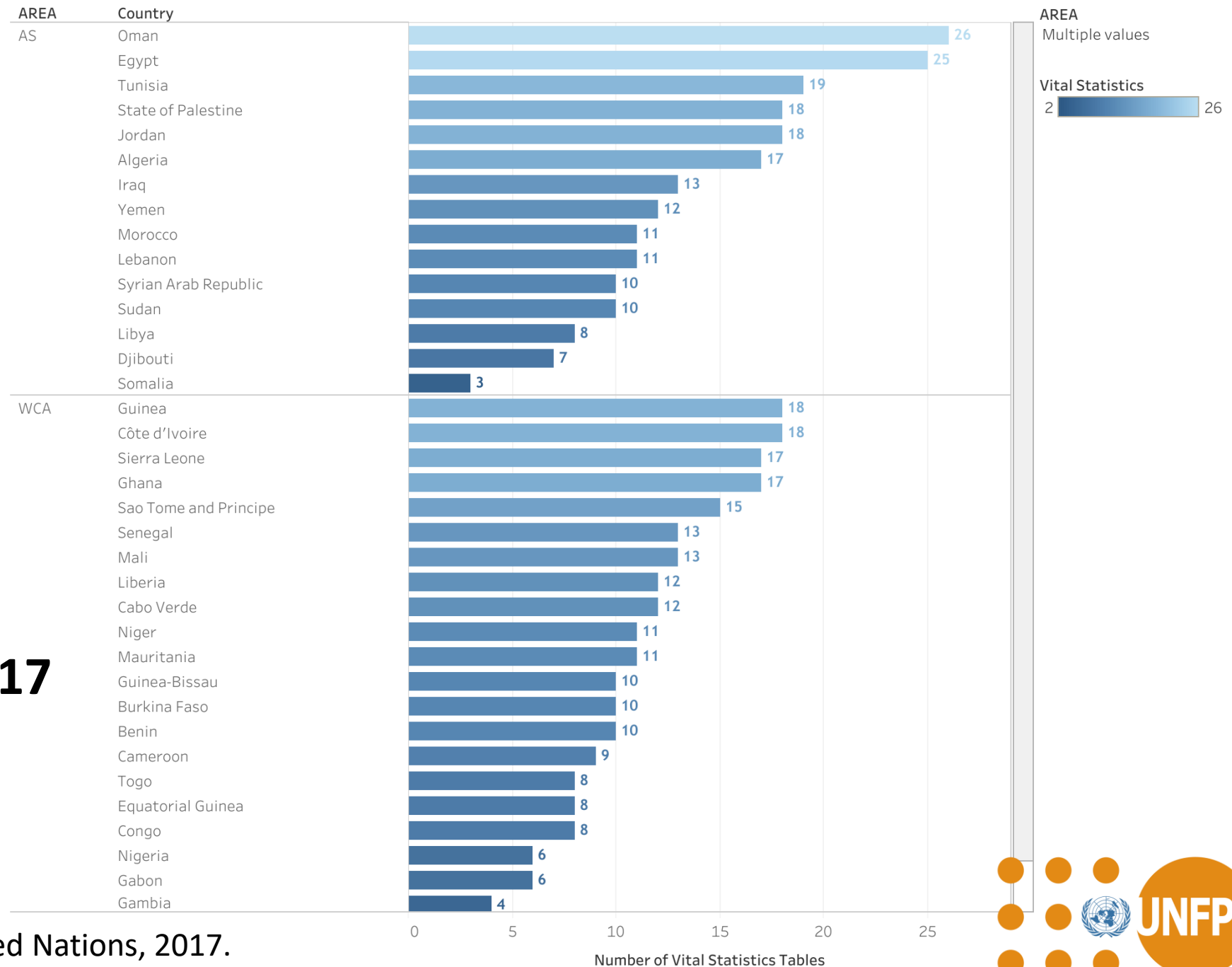
How might we scale interventions and system enhancements to large/national scale?



Source: Rao, C. ; BMJ Global Health, 2019.

Need for a Culture of Vital Statistics Production and Usage

VS Table Production – Arab States & West/Central Africa, 2017



Source: Demographic Yearbook, United Nations, 2017.

