Countdown to 2030
Maternal, Newborn & Child Survival

Johns Hopkins
Bloomberg School
of Public Health

Are Capital Cities in Sub-Sahara Africa Losing their Child Survival and RMNCH Coverage Advantage?

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Why study urban health inequalities in SSA?

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- Increasing share of the population lives in urban areas
  - World: 43% in 1990 to 56% in 2020 to 68% in 2050
  - Sub-Saharan Africa: 27.5% in 1990 to 41% in 2020 to 58% in 2050;
  - Capital cities are growing faster and concentrates a substantial share of the urban population
- In general, urban populations enjoy better health than rural populations
  - Better employment, housing, access to education, health care, social services
- Urban areas also present serious health threats, especially to vulnerable groups
  - Triple threats: infectious diseases, NCDs and conditions, injuries and violence
- Urban growth and expansion in LMIC is not adequately contained and planned, generating large socio-economic and health inequities
- Increasing evidence of poor performance of urban areas/capital cities compared to rural areas in several countries

Research questions

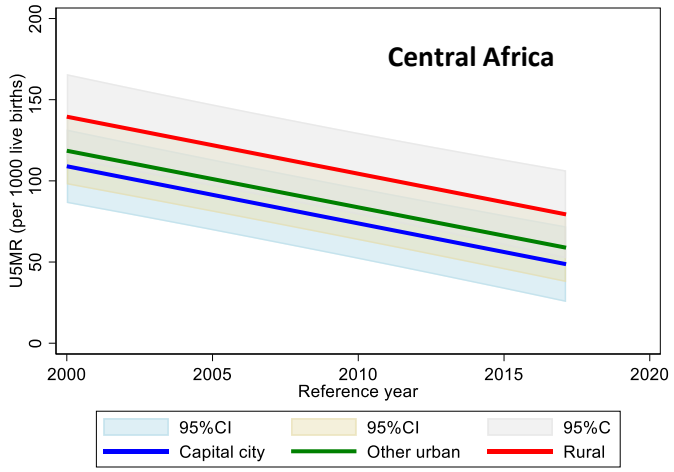
1. What are levels and trends in childhood mortality and MNCH coverage in capital cities, other urban and rural areas in sub-Saharan Africa? Are cities losing their health advantage?
2. What are the within urban health inequalities, especially between poorest and richest, and between poorest urban and rural populations?

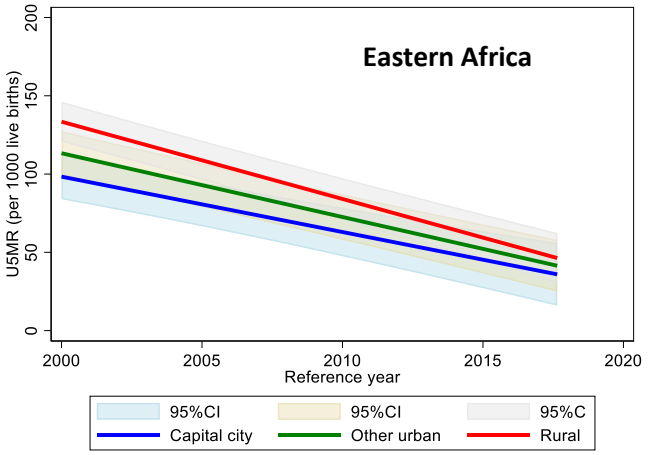
Data & Methods

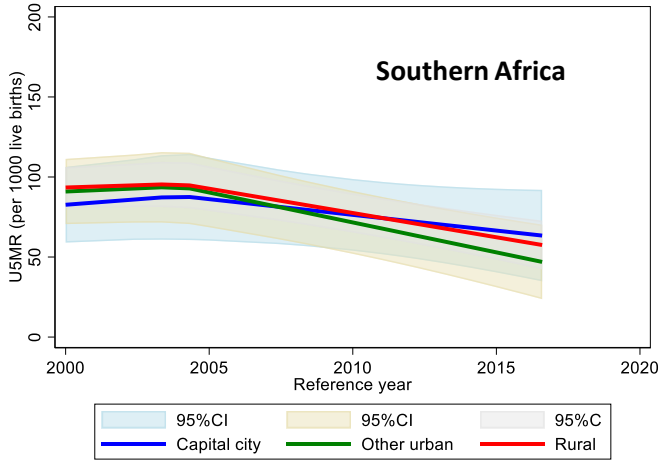
- DHS and MICS data for direct under-five mortality and RMNCH coverage measures
  - Mortality: 163 surveys in 39 countries from 1990 to 2020
  - Coverage measures: 141 surveys in 39 countries, from 1993 to 2021
- Use full birth history module in the surveys to estimate mortality rates for the period of five years preceding the survey
  - Assume place of residence of respondent has not changed significantly over the past five years
- RMNCH coverage measure = Composite Coverage Index (CCI)
  - CCI = [FPC + (ANC4+SBA)/2 + (BCG+2DPT3+MSL)/4 + CARESEEK]/4
- Place of residence: capital cities, other urban, rural areas consistent with country definition in each survey; did not account for redefinitions or reclassifications
- Analysis: Fit two levels random effect linear regression models for each residence
- We predicted estimates in 2000, 2005, 2010 and 2015 to assess inequity trends
- Use SSA's four sub-regions: Central, Eastern, Southern, and West Africa

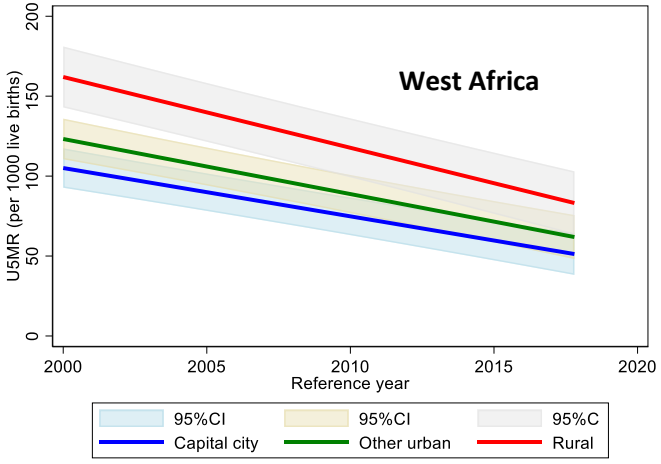
Under-five mortality

Trends in under-five mortality by residence and sub-region in sub-Saharan Africa

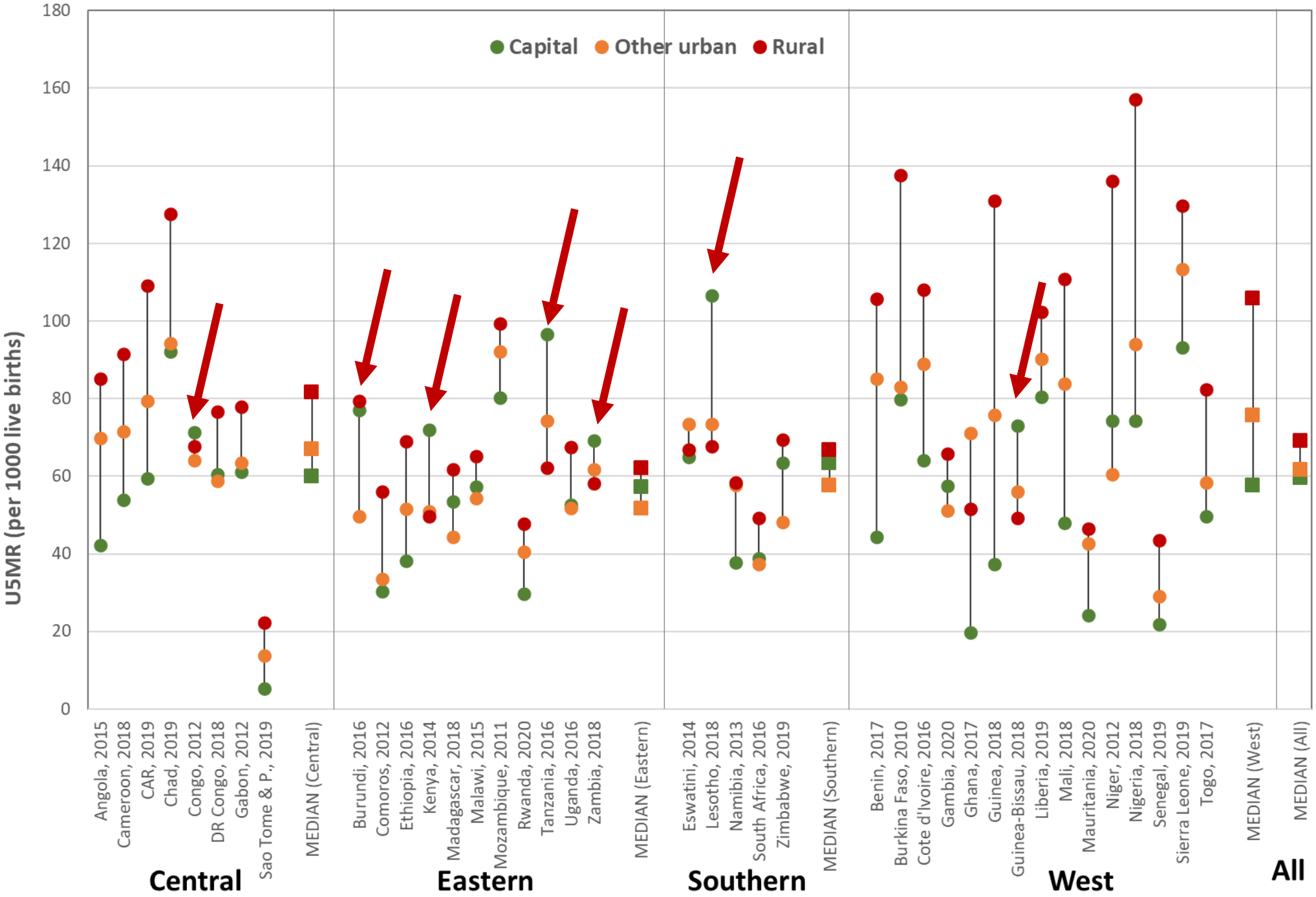




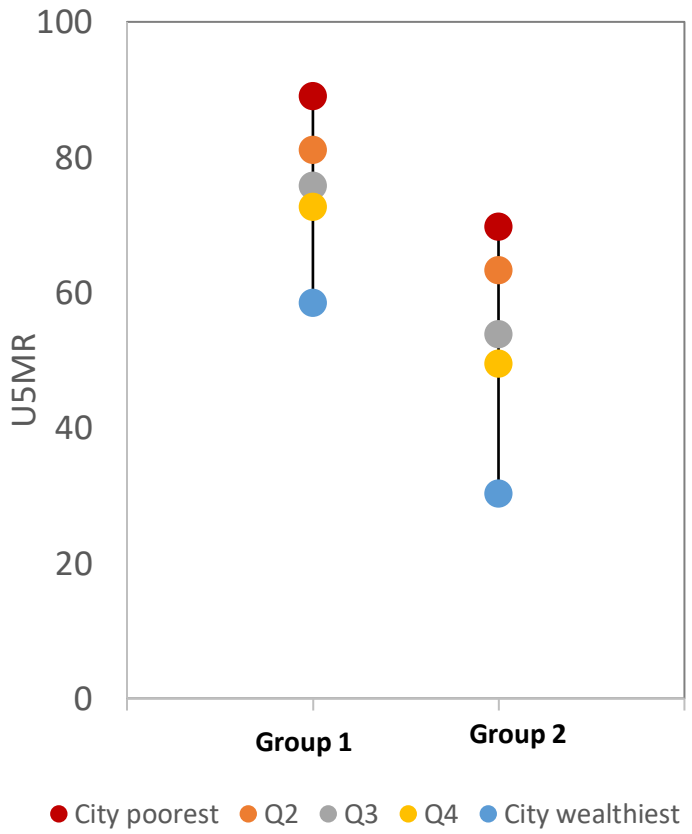




		Slope	95%CI
ALL COUNTRIES			
Capital		-2.9	(-3.4, -2.5)
Other urban		-3.4	(-3.8, -3.0)
Rural		-4.1	(-4.6, -3.7)
CENTRAL AFRICA		Slope	95%CI
Capital		-3.5	(-4.4, -2.7)
Other urban		-3.5	(-4.2, -2.8)
Rural		-3.5	(-4.6, -2.4)
EASTERN AFRICA		**Slope**	**95%CI**
Capital		-3.5	(-4.6, -2.5)
Other urban		-4.1	(-4.7, -3.4)
Rural		-4.9	(-5.7, -4.2)
WEST AFRICA		**Slope**	**95%CI**
Capital		-3.0	(-3.8, -2.5)
Other urban		-3.4	(-4.1, -2.8)
Rural		-4.4	(-5.2, -3.7)
SOUTHERN AFRICA	**Period**	**Slope**	**95%CI**
Capital	2000-2004	1.4	(-1.7, -4.4)
	2004-2015	-3.3	(-1.7,4.4)
Other urban	2000-2004	0.8	(-1.4,2.9)
	2004-2015	-4.5	(-8.1,-1.0)
Rural	2000-2004	0.6	(-0.9, 2.1)
	2004-2015	-3.6	(-6.1,-1.1)


Capital
Other urban
Rural
U5MR (per 1000 live births)
180
160
140
120
100
80
60
40
20
0
Angola, 2015
Cameroon, 2018
CAR, 2019
Chad, 2019
Congo, 2012
DR Congo, 2018
Gabon, 2012
Sao Tome & P., 2019
MEDIAN (Central)
Central
Burundi, 2016
Comoros, 2012
Ethiopia, 2016
Kenya, 2014
Madagascar, 2018
Malawi, 2015
Mozambique, 2011
Rwanda, 2020
Tanzania, 2016
Uganda, 2016
Zambia, 2018
MEDIAN (Eastern)
Eastern
Eswatini, 2014
Lesotho, 2018
Namibia, 2013
South Africa, 2016
Zimbabwe, 2019
MEDIAN (Southern)
Southern
Benin, 2017
Burkina Faso, 2010
Cote d'Ivoire, 2016
Gambia, 2020
Ghana, 2017
Guinea, 2018
Guinea-Bissau, 2018
Liberia, 2019
Mali, 2018
Mauritania, 2020
Niger, 2012
Nigeria, 2018
Senegal, 2019
Sierra Leone, 2019
Togo, 2017
MEDIAN (West)
West
MEDIAN (All)
All

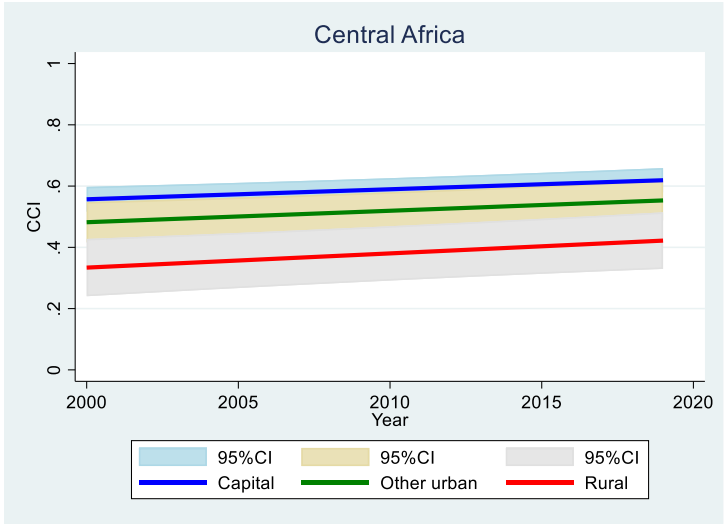
Under-five mortality rates by wealth quintile comparing group of countries with highest mortality in the capital city to other countries

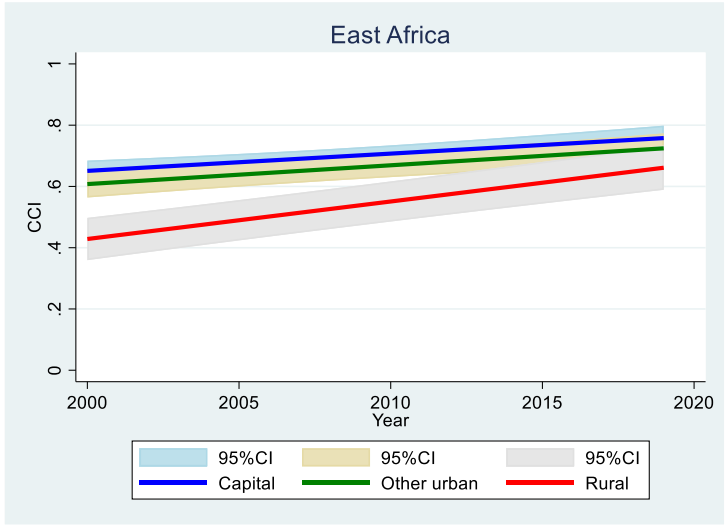


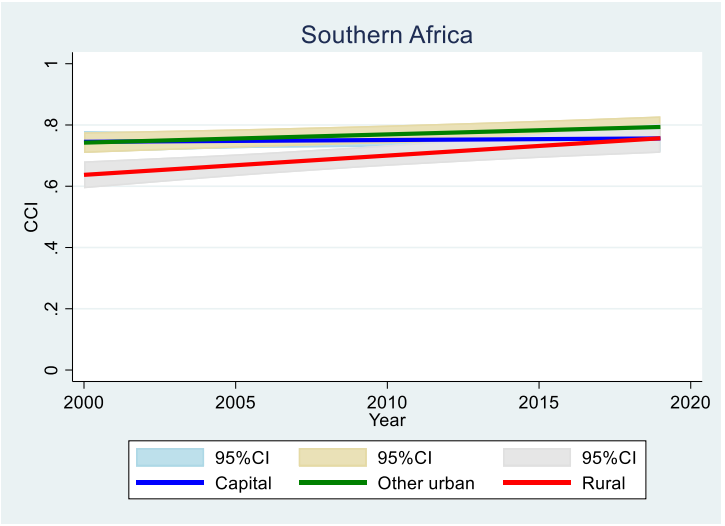
Note: Group 1 includes countries capital city U5MR higher than rural U5MR: These include Burundi, Congo, Guinea-Bissau, Kenya, Lesotho, Tanzania, Zambia; Group 2: include other countries in the analysis, not included in group 1A.
Q2, Q3, and Q4 refer to wealth quintiles 2, 3 and 4 respectively. City poorest represents the first quintile, and the City wealthiest represents the fifth quintile.

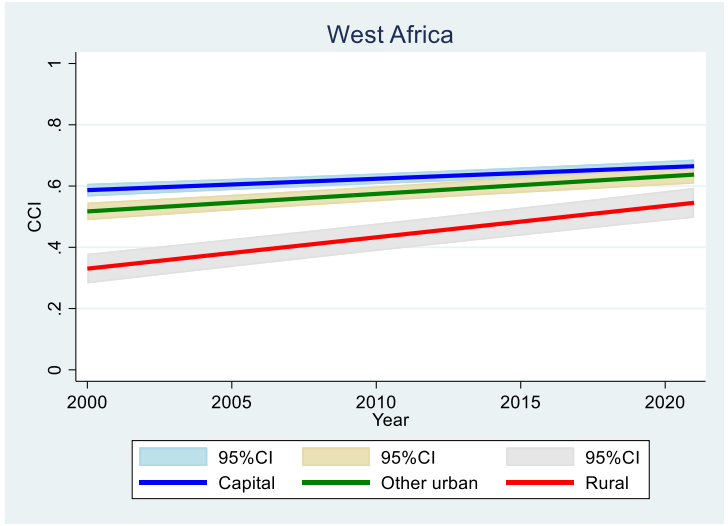
Coverage of RMNCH interventions

Predicted trends in composite coverage index (CCI) by sub-region in sub-Sahara Africa

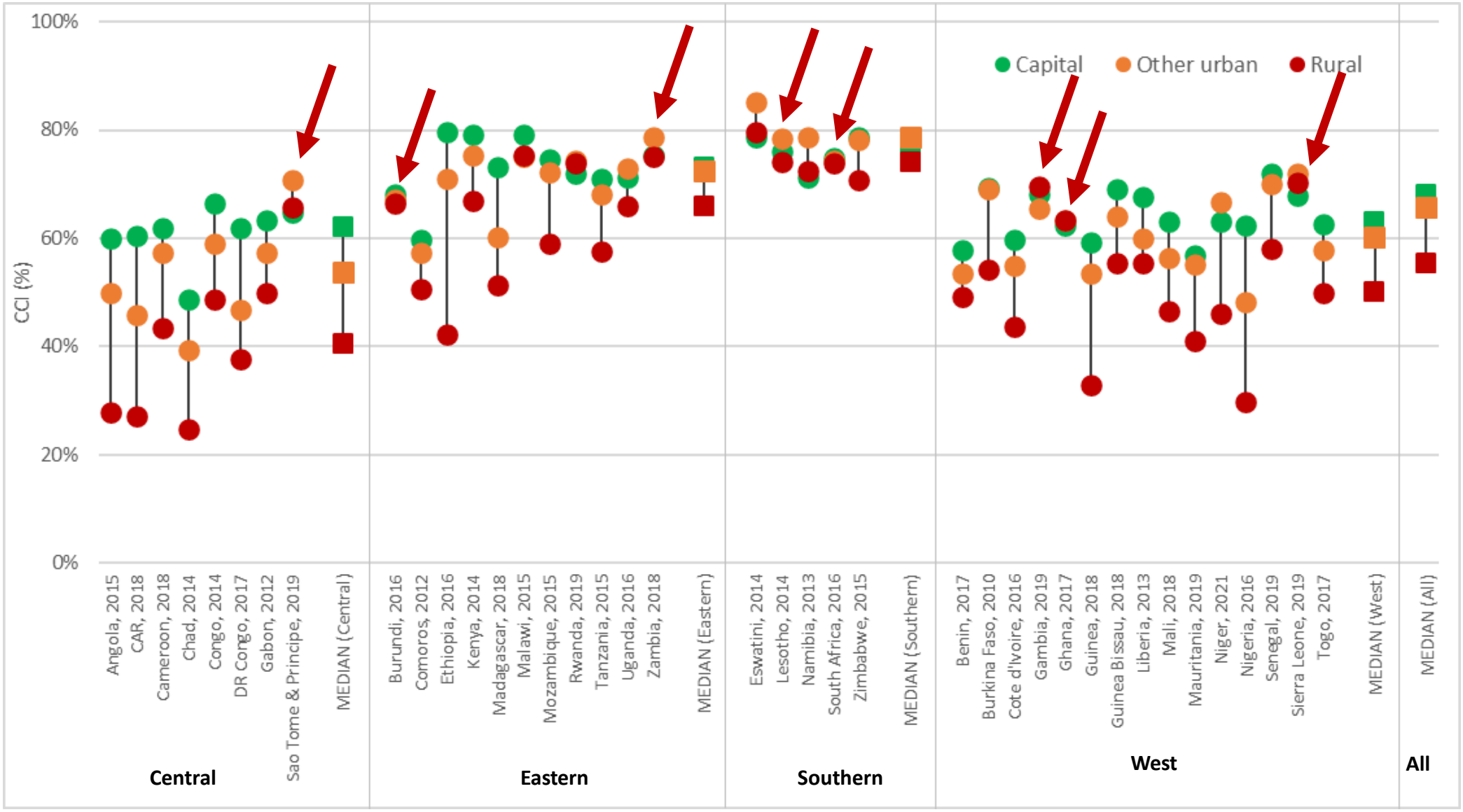




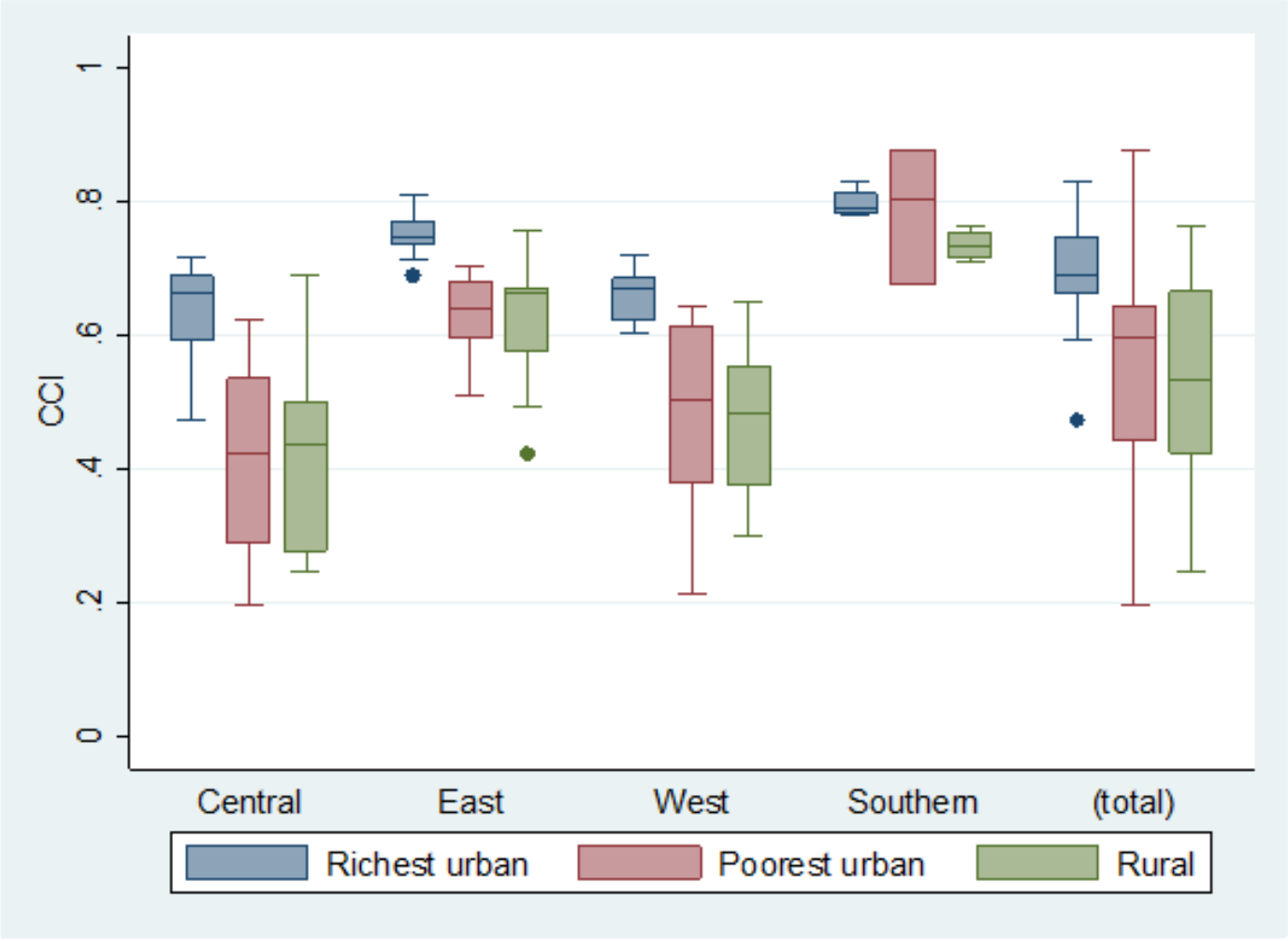




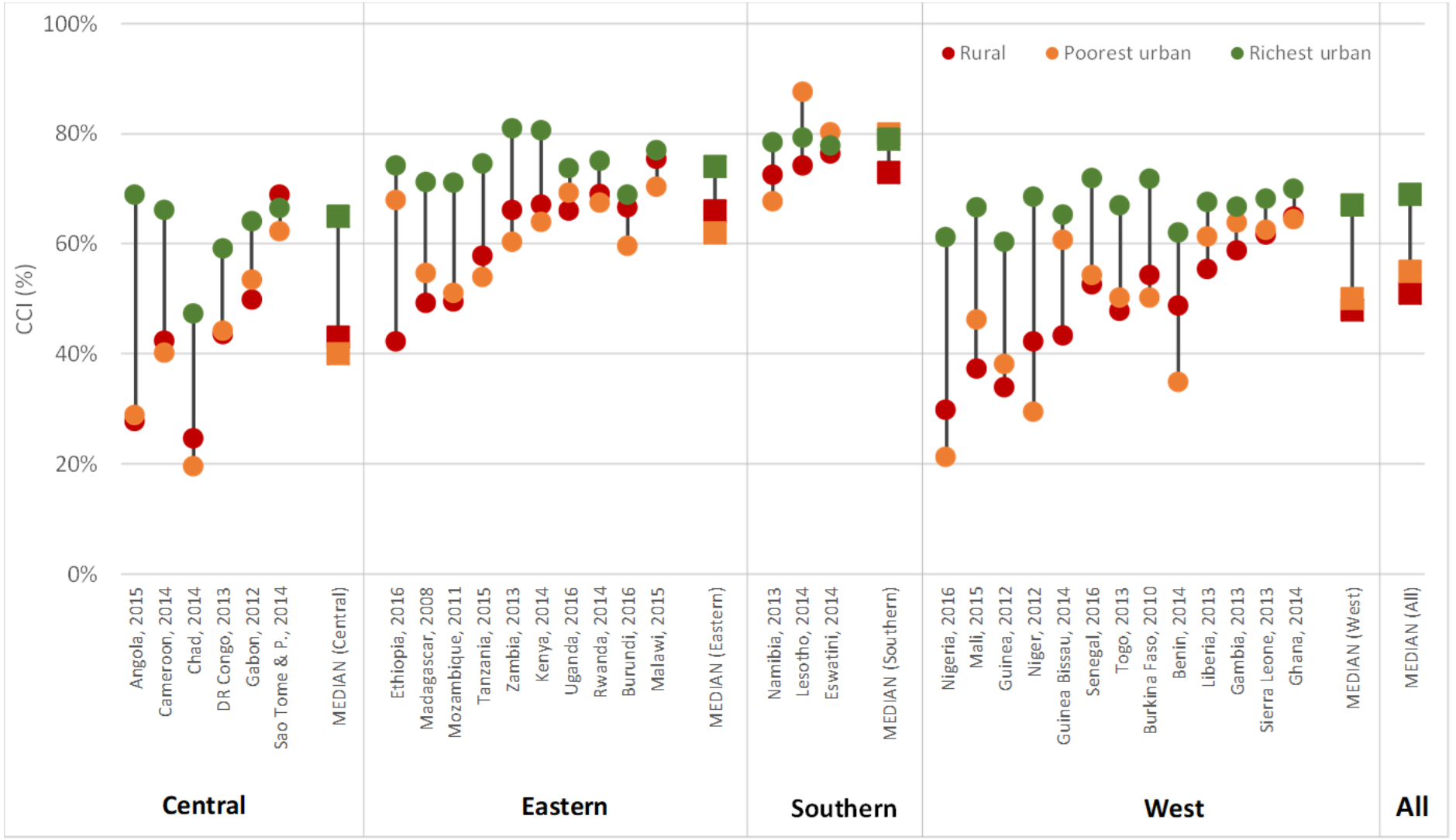
Composite coverage index by place of residence by country in sub-Saharan Africa (latest DHS/MICS survey, ordered by subregion and coverage level)



Median and interquartile range of composite coverage index (CCI) for richest urban, poorest urban and rural by sub-region in sub-Saharan Africa



Composite coverage index for richest urban, poorest urban, and rural population by country



In Summary

The analysis suggests four main results:

1. Capital city child mortality and RMNCH coverage advantage has eroded substantially over time
2. Rural areas have experienced faster progress in child mortality reduction and increases in intervention coverage compared to other urban or capital cities
3. There is a large within urban health inequality with the richest in cities areas having a large advantage over the poorest in most countries
4. The poorest in urban areas have no health advantage over the rural population

Implications

1. Understand patterns of growth of urban areas and major cities in terms of physical environment and natural expansion and reclassifications

2. Where are the urban and city poor? Are they generally spread out or geographically clustered into slums? This will have implications on programs reaching the poor to address inequities

3. More studies to understanding the major drivers of maternal and child health inequities in urban areas and major cities specific to each country

4. Address the push factors in rural settings

5. Surveys must incorporate information to disaggregate data by capital city or major cities (including possibly slums), other urban areas, and rural areas

Coming Soon

Special Series on Maternal, Newborn and Child Health in Cities in sub-Saharan Africa

Thank you!