



The progress of rural-urban health dynamics over two decades in Bangladesh



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Introduction

- ❑ Standing one of the most populated country in the world Bangladesh has made impressive progress in reducing fertility and mortality and improving health and education conditions in recent decades
- ❑ The percentages of population living in the **rural** and the **urban** areas are **68.34%** and **31.66%** respectively (Population and Housing Census 2022)
- ❑ However, **most of health-related infrastructure**, medical workforce, and other health resources are concentrated in urban areas (Population and Housing Census 2022)
- ❑ More than **60% of Bangladesh's urban population** is concentrated mainly in **four metropolitan cities** - Dhaka, Chittagong, Khulna, and Rajshahi (Dhaka Tribune, 2018)

Introduction

- ❑ Indeed, Bangladesh is being urbanised at a rapid pace
- ❑ Urban population of Bangladesh increased from 8.87 % in 1974 to 31.66 % in 2022 (Population and Housing Census 1974-2022)
- ❑ More than **60% of Bangladesh's urban population** is concentrated mainly in **four metropolitan cities** - Dhaka, Chittagong, Khulna, and Rajshahi (Dhaka Tribune, 2018)
- ❑ Therefore, **most of health-related infrastructure**, medical workforce, and other health resources are concentrated in urban areas (Population and Housing Census 2022)
- ❑ The equitable access to healthcare services remains a big concern, particularly for 70 percent of the population outside metropolitan cities
- ❑ The disparities between urban households vs. rural households and poorest vs. richest population are significant in terms of the availability of health care and the standard of care

Objectives of the study

The objectives of this study are to observe the trends, patterns and inequality of health indicators in Bangladeshi households

Methodology

- ❑ Data were extracted from **Bangladesh Demographic and Health Survey (BDHS)** which is a nationally representative cross-sectional survey.
- ❑ We have utilized the **latest five (5) rounds of the BDHS data** (2004, 2007, 2011, 2014 and 2017-18)
- ❑ **Mothers nutritional status** was assessed by **body mass index (BMI)**, a composite measure of adult nutritional status **as per WHO guideline**. A mother was defined as underweight if BMI was below 18.5. Similarly, BMI of above 25 were considered as overweight (BDHS, 2017-18)
- ❑ Childhood undernutrition was assessed by **anthropometric measurements** developed by the **WHO guideline**, namely, height-for-age z-score (HAZ), weight-for-age z-score (WAZ), and weight-for-height z-score (WHZ). A child was defined as stunted if HAZ was below minus two (-2) standard deviation (SD) from the mean of the reference population. Similarly, WAZ of below -2 SD, WHZs of below -2 SD and above +2 SD were considered as underweight, wasting and overweight (WHO, 2006)
- ❑ According to **Demographic and Health Survey (DHS)**, household socioeconomic status was measured by calculating **the wealth index** using **principal component analysis (PCA)** to assign the ad hoc weights of the indicators.
- ❑ The **socioeconomic status of households** was categorized into the **'poorest', 'poorer', 'middle', 'richer' and 'richest'** quintiles

Methodology

- ❑ To elicit **childhood Diarrhea** and **Acute respiratory infections** (ARIs) specific information, mothers were asked to provide information on the history among children aged 0–59 months in the two weeks prior to the survey.
- ❑ **Hypertension** was defined by individual who had an average systolic blood pressure (SBP) **level of 140 mmHg or above**, they had an average diastolic blood pressure (DBP) level of 90 mmHg or above, or they were currently taking antihypertensive medication.
- ❑ **Pre-hypertension** was by individual who had an average systolic blood pressure (SBP) between **120 and above and less than 140 mmHg**, they had an average diastolic blood pressure (DBP) between 80 and above and less than 90 mmHg
- ❑ **Diabetes** was defined by individual who had had a **fasting blood glucose (FBG)** equivalent **level of 7 mmol/L or above** at the time of the survey or reported currently taking prescribed medication for their high blood glucose or diabetes.
- ❑ **Pre-diabetes** was defined by individual who had had a **fasting blood glucose (FBG)** equivalent level **between 6.1-6.9 mmol/L** at the time of the survey.

Methodology (cont.)

- ❑ **Inequality analysis** was executed at three stages: plotting the concentration curves and examining the concentration indexes (CIs)
- ❑ We constructed the **concentration curves**, which plot the **cumulative share of** specific indicator (e.g., childhood stunting) against the **cumulative percentage of the population** ranked from the poorest to the richest
- ❑ For example, if the undernutrition is **more concentrated among poor people**, the concentration curve **will lie above the equity line** and vice-versa
- ❑ CIs are calculated to measure **the gap between the** concentration curves and the equity line.
- ❑ The value of the CI lies between **-1 and +1 (i.e., $-1 \leq CI \leq +1$)**, where -1 refers the specific indicator (e.g., undernutrition) is fully concentrated among the poorest quintile, and +1 refers fully concentrated among the richest quintile.

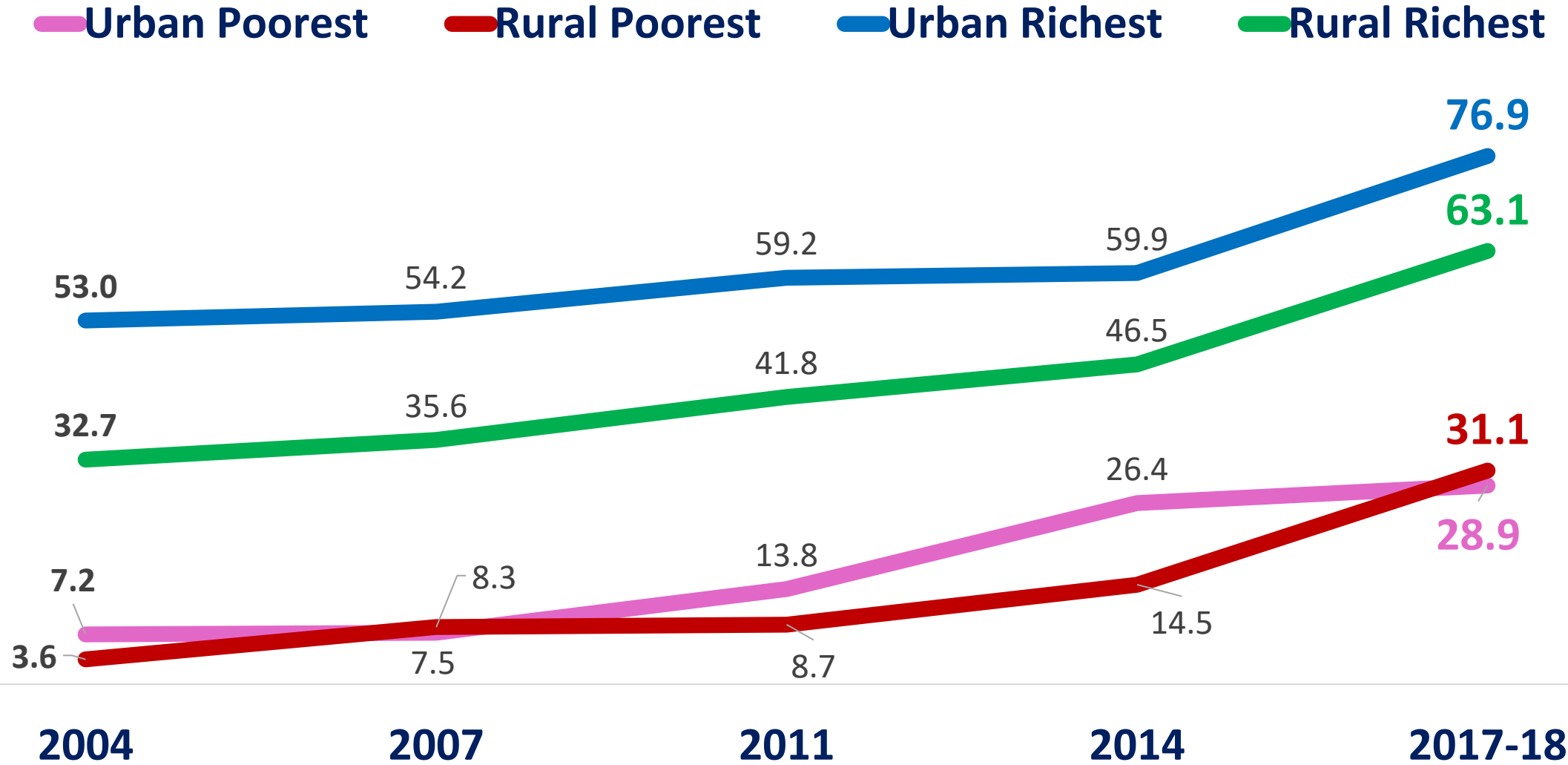
RESULTS

Background Characteristics, N (%)

Characteristics	2004	2007	2011	2014	2017-18
Place of residence					
Urban	2,306 (22)	2,267 (22)	4,305 (25)	4,844 (28)	5,505 (28)
Rural	8,194 (78)	8,133 (78)	12,836 (75)	12,456 (72)	13,952 (72)
Size of households (hh)					
Small (less than 3 members)	814 (8)	957 (9)	1,618 (9)	1,843 (11)	2,260 (12)
Medium (3 to 5)	5,740 (55)	5,981 (58)	10,352 (60)	10,785 (62)	12,378 (64)
Large (more than 5)	3,947 (38)	3,462 (33)	5,171 (30)	4,671 (27)	4,818 (25)
Wealth index					
Poorest	2,367 (23)	2,214 (21)	3,756 (22)	3,523 (20)	4,050 (21)
Poorer	2,204 (21)	2,175 (21)	3,481 (20)	3,498 (20)	3,960 (20)
Middle	2,029 (19)	2,083 (20)	3,325 (19)	3,393 (20)	3,803 (20)
Richer	1,961 (19)	1,959 (19)	3,283 (19)	3,447 (20)	3,880 (20)
Richest	1,939 (18)	1,968 (19)	3,296 (19)	3,438 (20)	3,764 (19)
Total number of households (N= 74,798)	10,500	10,400	17,141	17,300	19,457

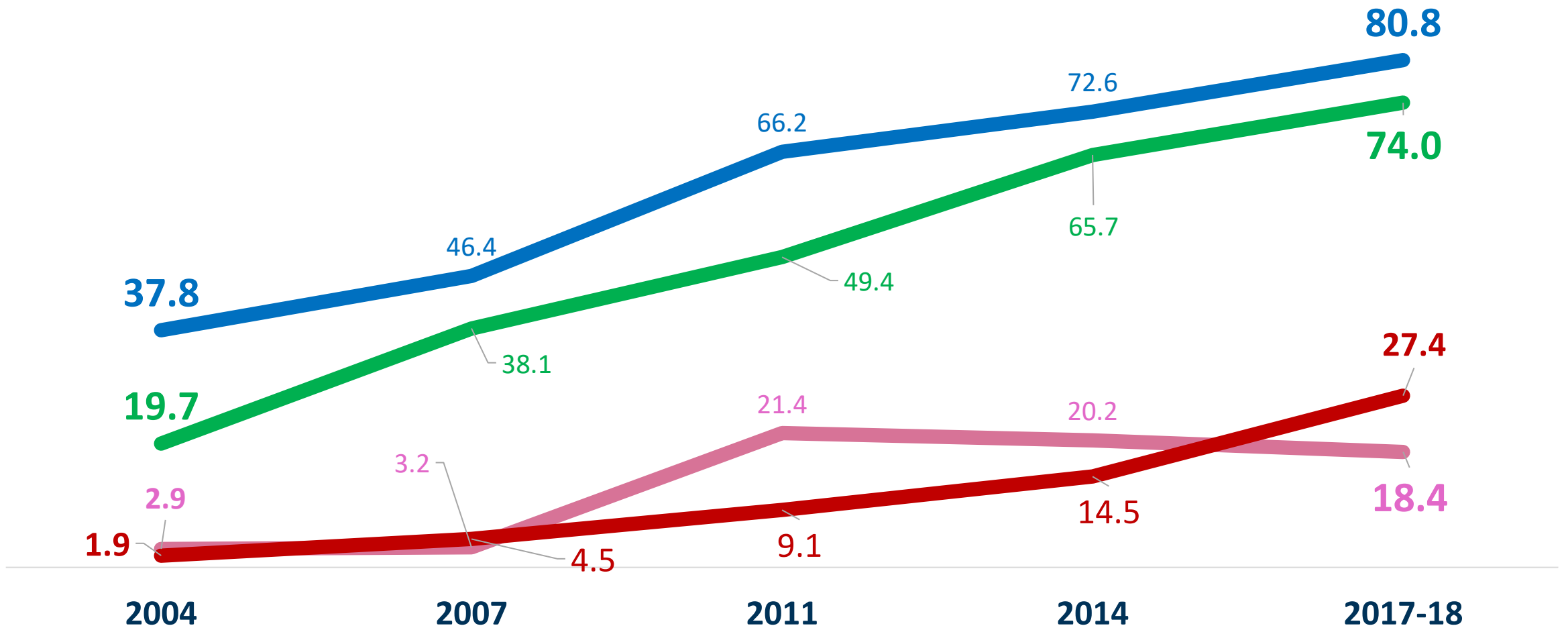
Maternal Health Indicators

Urban HH vs. Rural HH (ANC 4 and more)



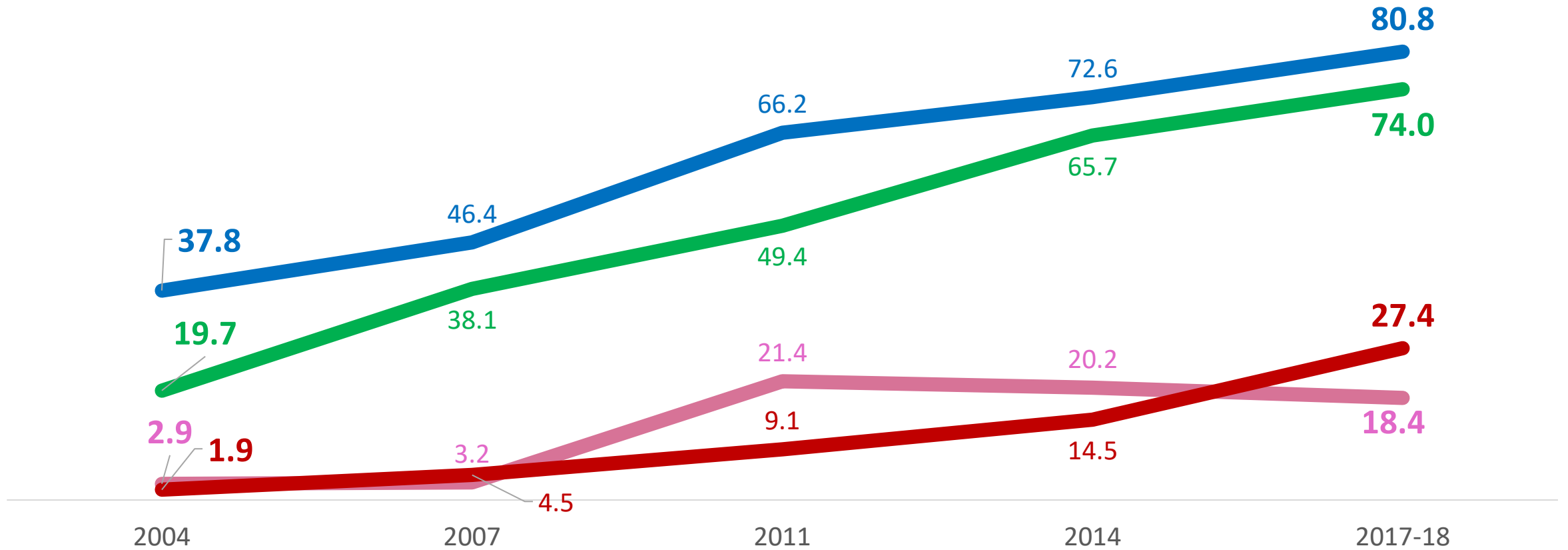
Urban HH vs. Rural HH (Institutional child delivery)

Urban Poorest Rural Poorest Urban Richest Rural Richest



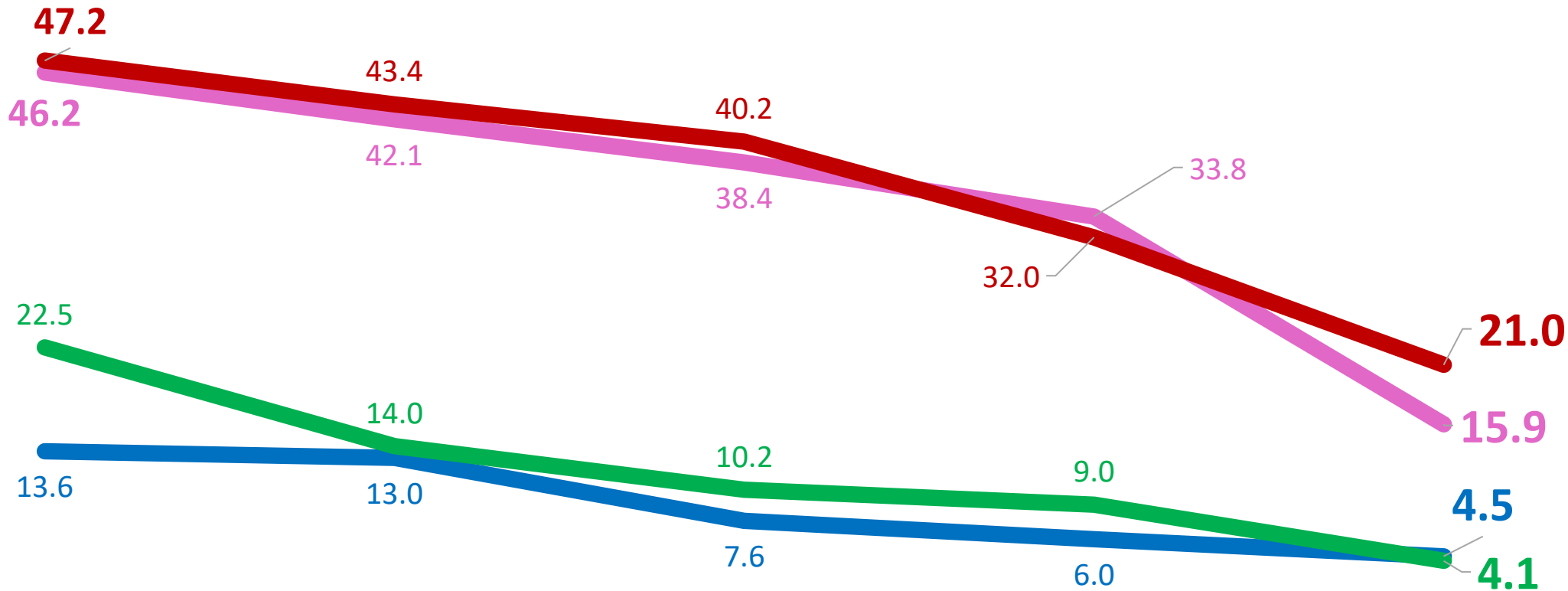
Urban HH vs. Rural HH (C- section delivery)

— Urban Poorest — Rural Poorest — Urban Richest — Rural Richest



Urban HH vs. Rural HH (Underweight mother)

Urban Poorest Rural Poorest Urban Richest Rural Richest



2004

2007

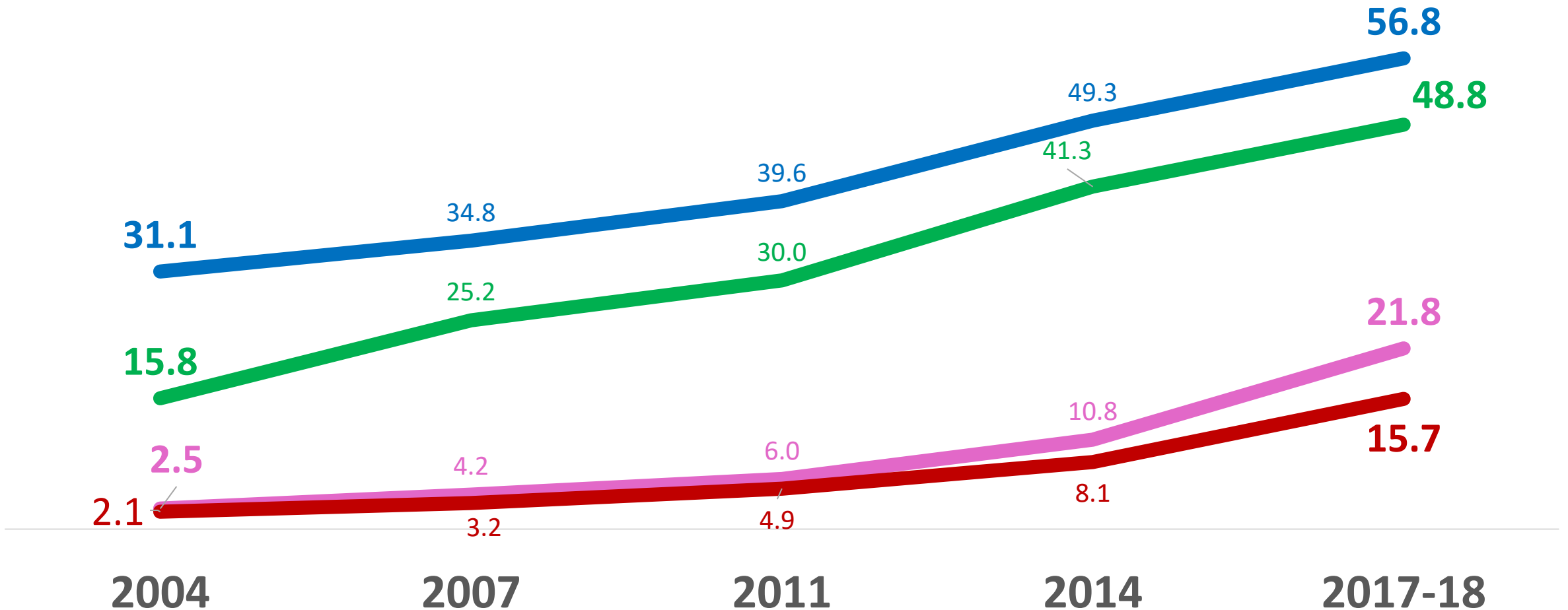
2011

2014

2017-18

Urban HH vs. Rural HH (Overweight mother)

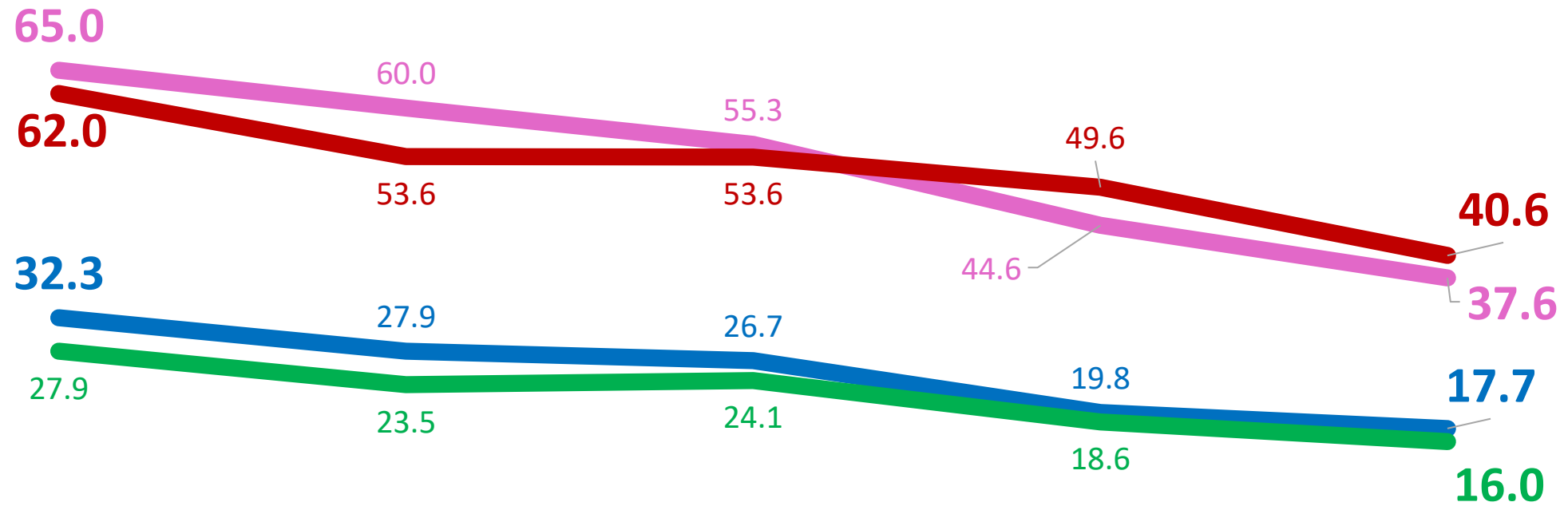
— Urban Poorest — Rural Poorest — Urban Richest — Rural Richest



Child Health

Urban HH vs. Rural HH (Childhood Stunting)

— Urban Poorest — Rural Poorest — Urban Richest — Rural Richest



2004

2007

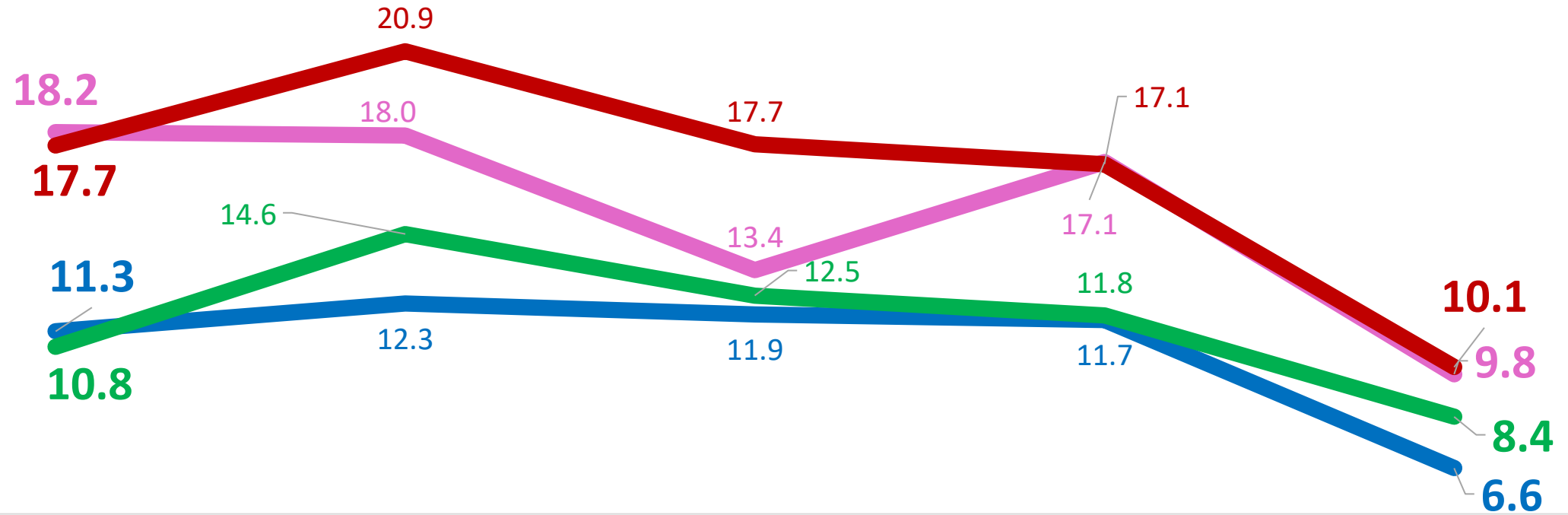
2011

2014

2017-18

Urban HH vs. Rural HH (Childhood Wasting)

— Urban Poorest — Rural Poorest — Urban Richest — Rural Richest



2004

2007

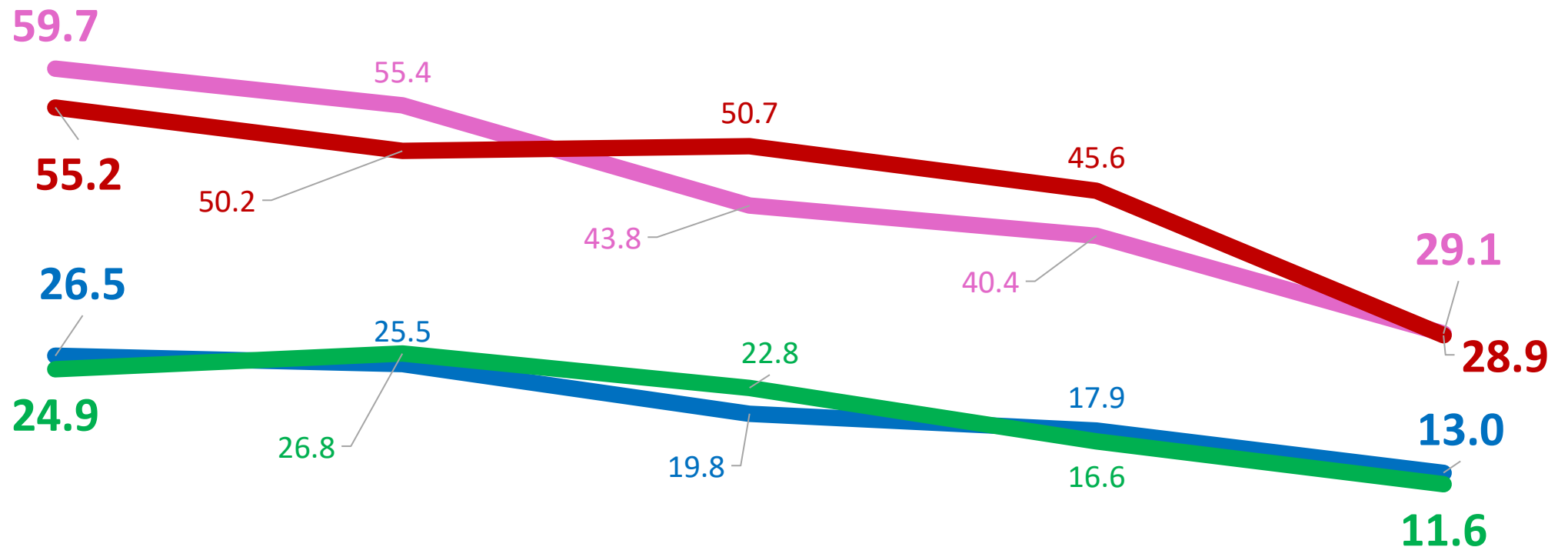
2011

2014

2017-18

Urban HH vs. Rural HH (Childhood Underweight)

— Urban Poorest — Rural Poorest — Urban Richest — Rural Richest



2004

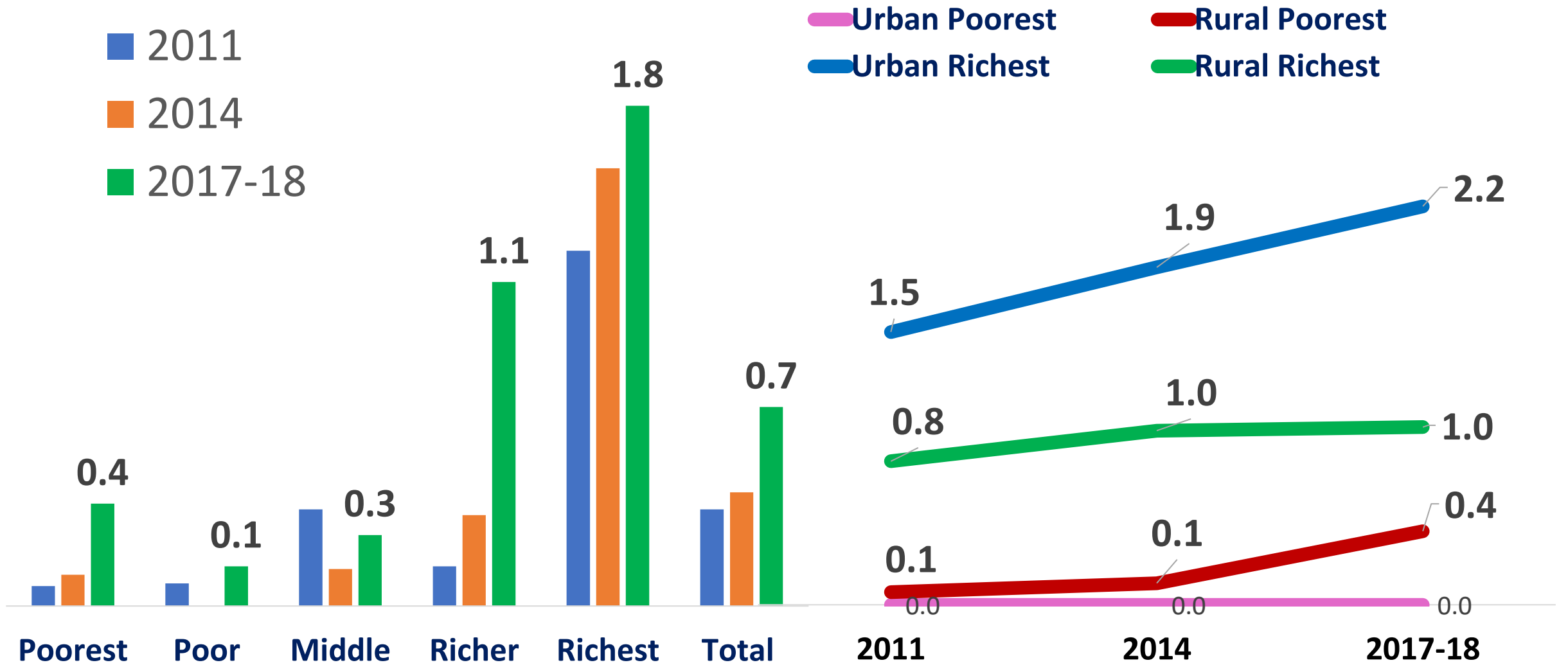
2007

2011

2014

2017-18

Childhood Overweight (Weight-for-age)

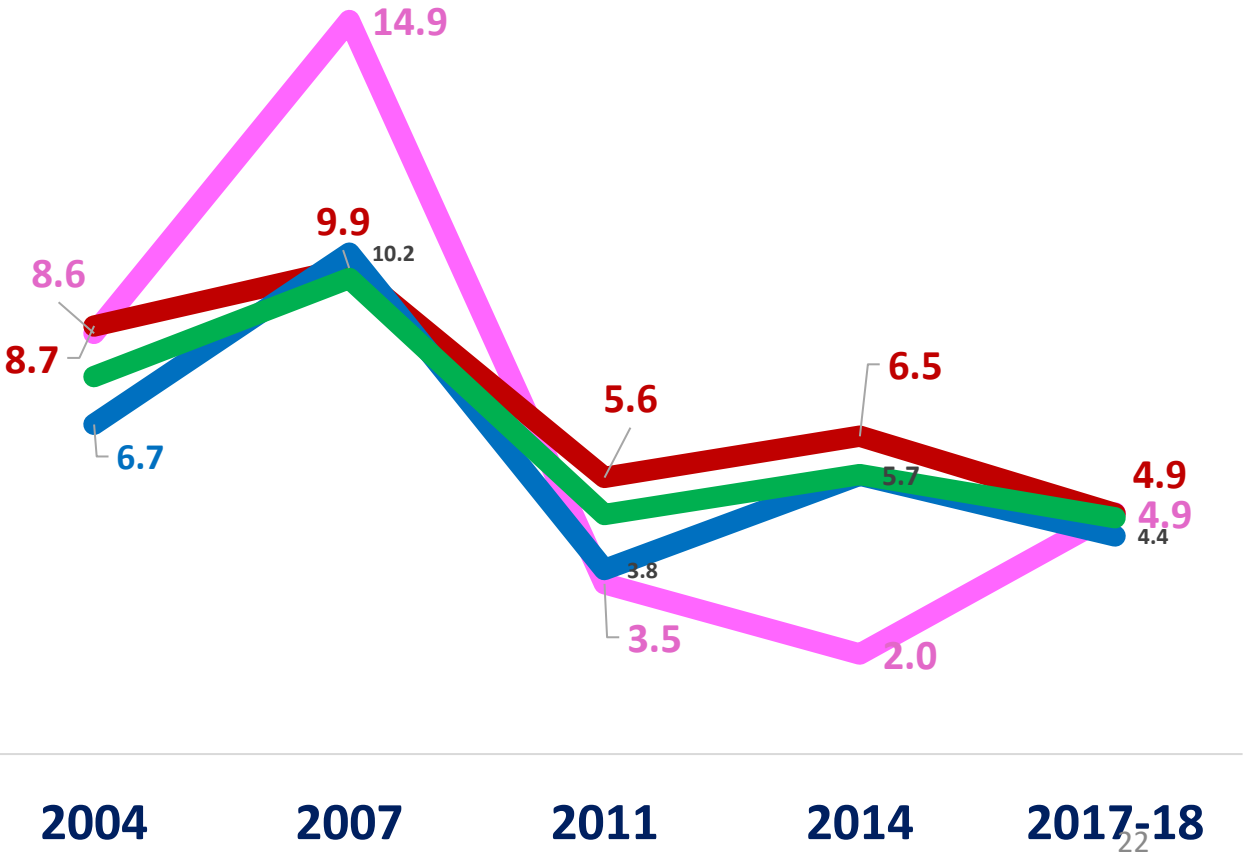
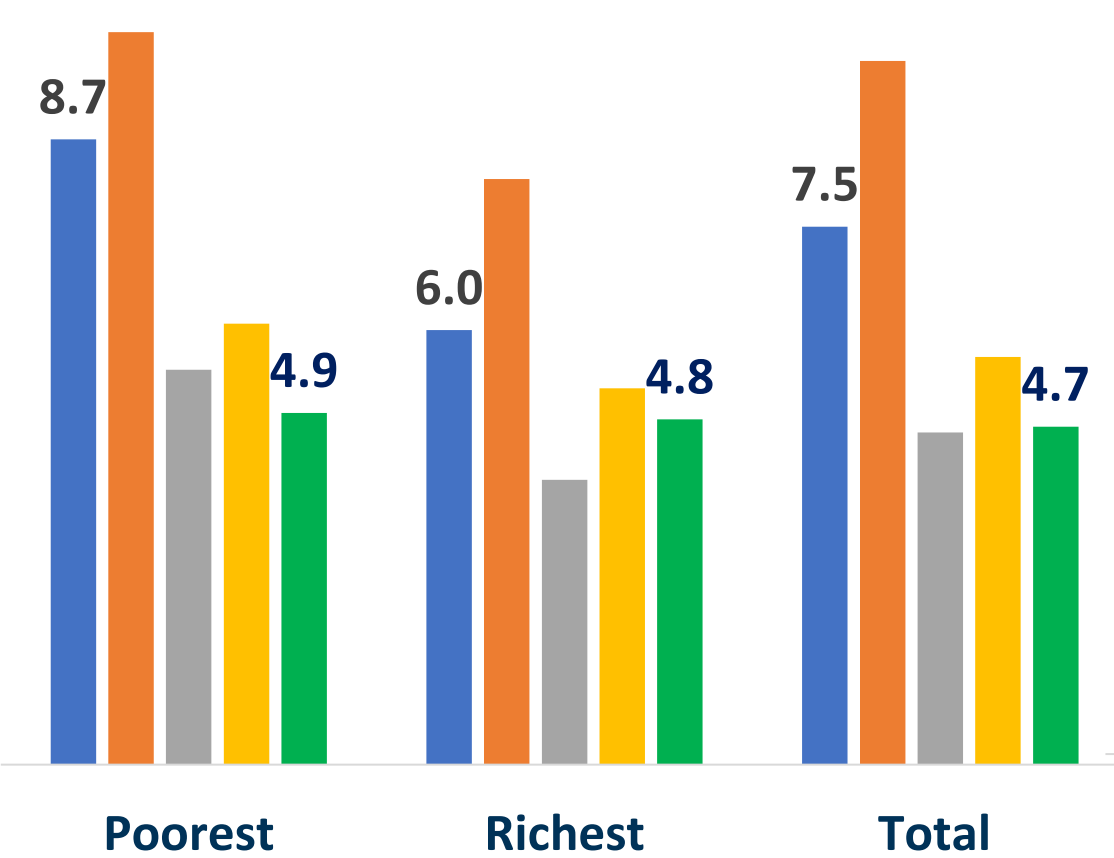


Diseases

Childhood Diarrheal Disease

■ 2004 ■ 2007 ■ 2011
■ 2014 ■ 2017-18

— Urban Poorest — Rural Poorest
— Urban Richest — Rural Richest



Childhood Acute Respiratory Infections (ARIs)

2004

2007

2011

2014

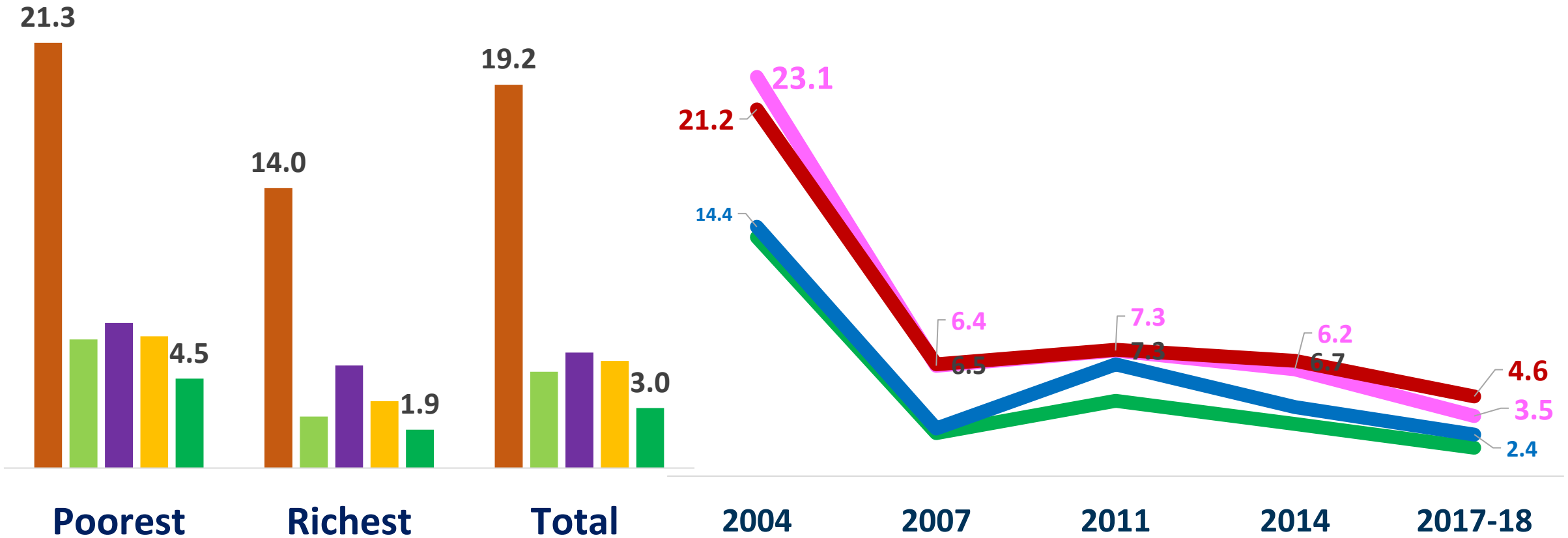
2017-18

Urban Poorest

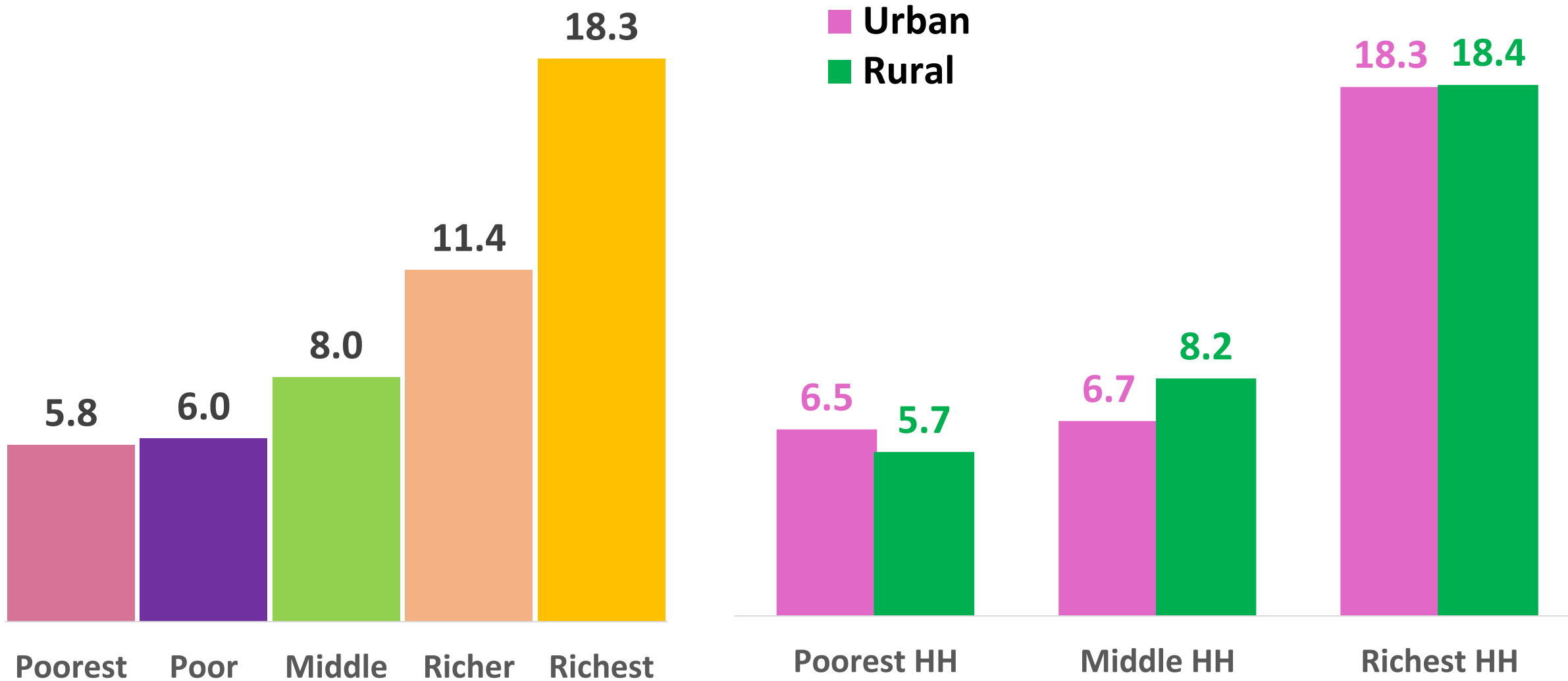
Rural Poorest

Urban Richest

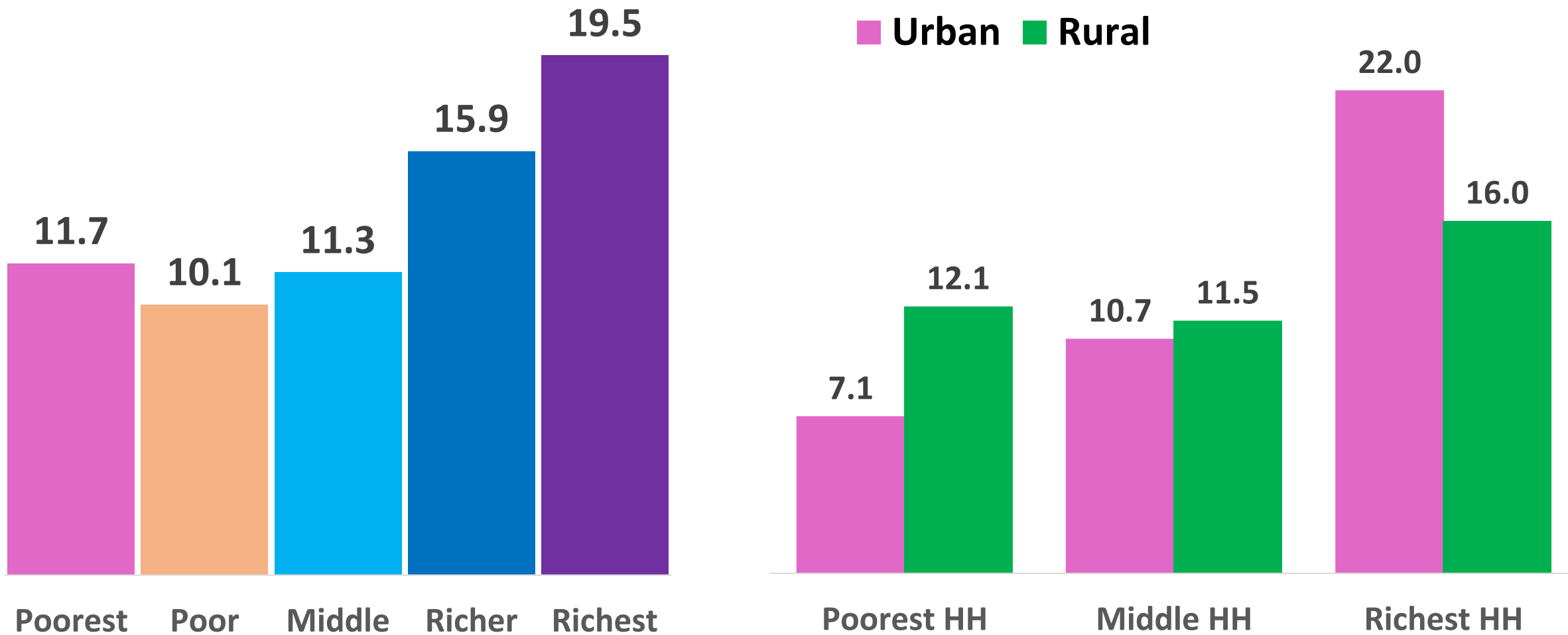
Rural Richest



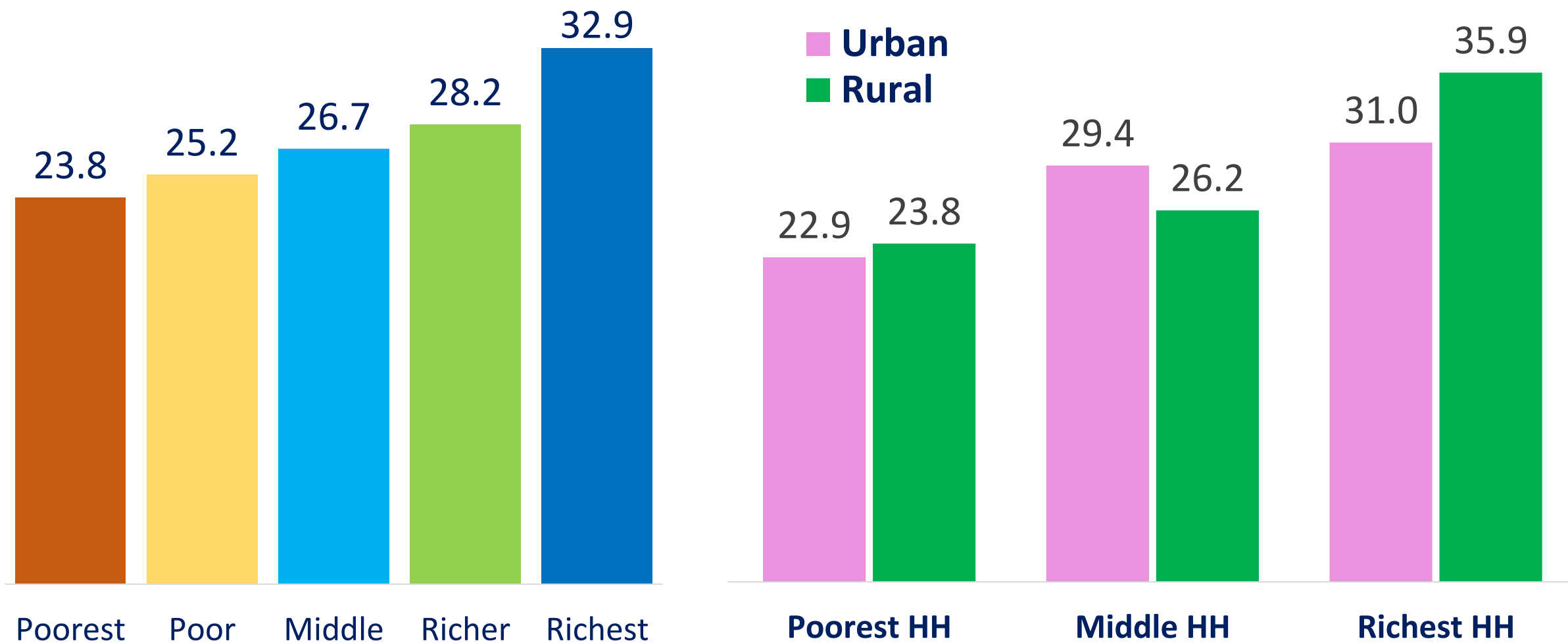
Diabetes in 2017-18 (Overall prevalence, 9.9%)



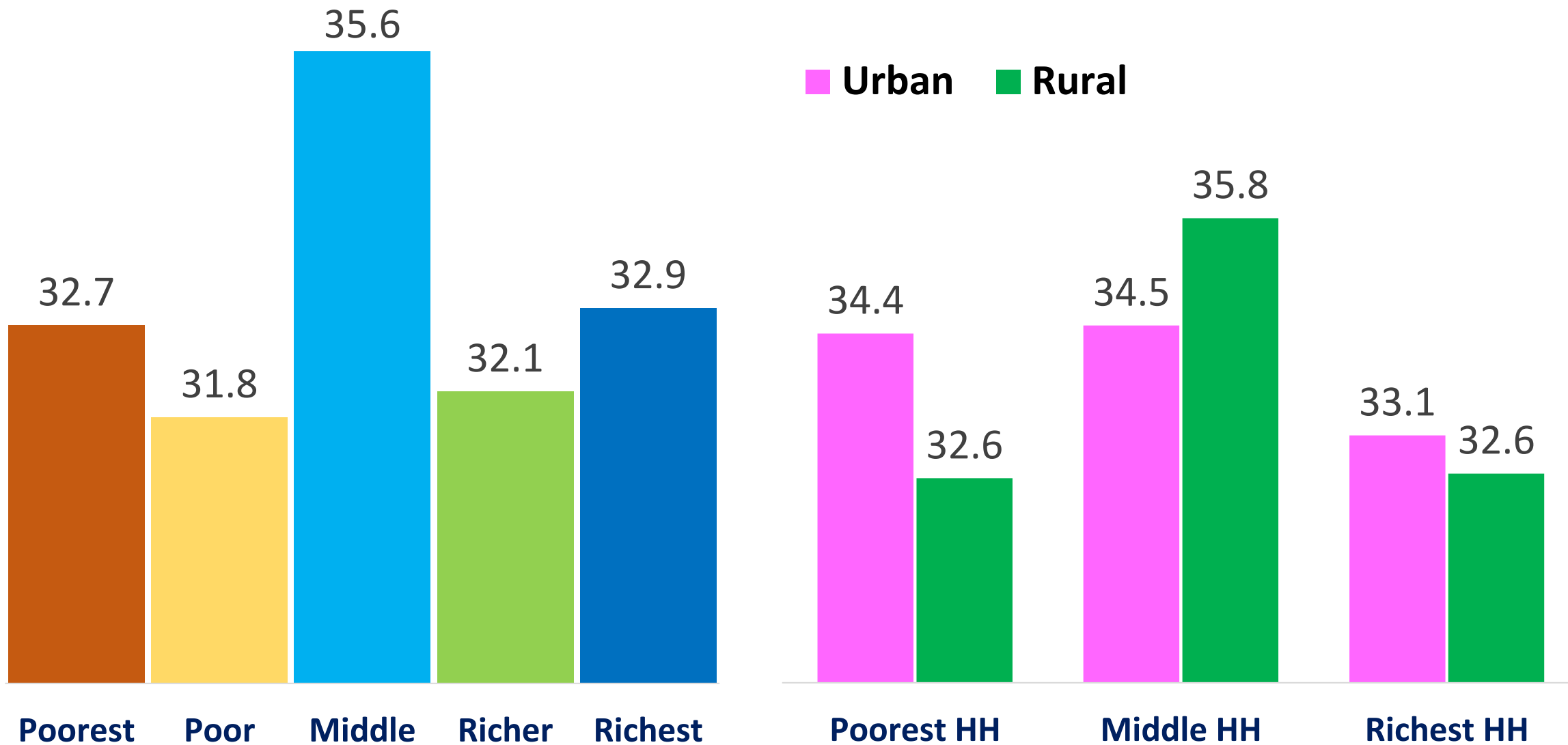
Pre-diabetes in 2017-18 (Overall prevalence, 13.7%)



Hypertension in 2017-18 (Overall prevalence, 27.5%)



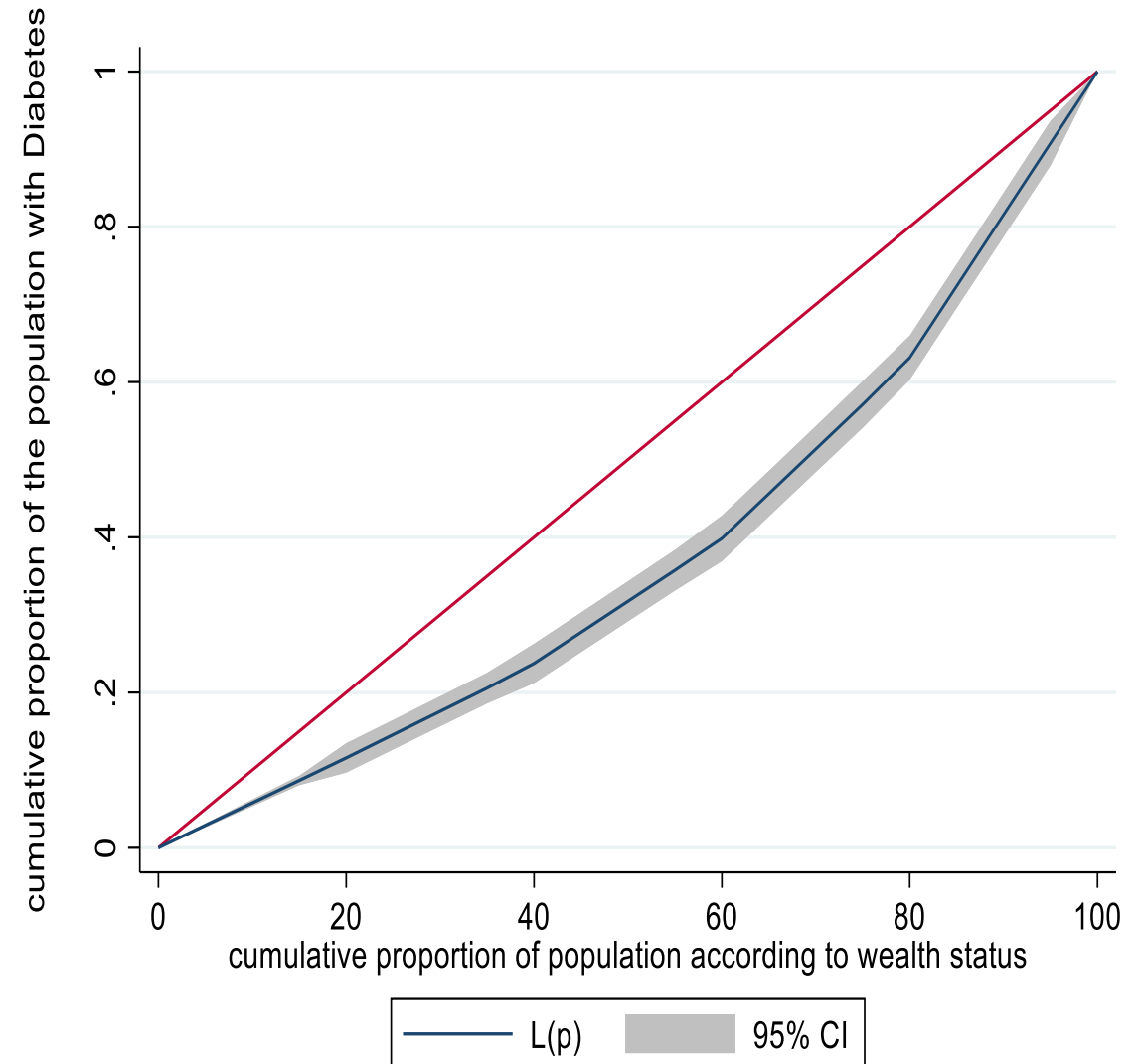
Pre-hypertension in 2017-18 (Overall prevalence, 27.5%)



Inequalities !

Values of Concentration Index (CI) across selected indicators

Variables	Overall	Urban	Rural
Underweight mother	-0.296	-0.281	-0.277
Childhood underweight	-0.176	-0.207	-0.156
Childhood stunting	-0.21	-0.195	-0.189
Childhood wasting	-0.051	-0.116	-0.059
Overweight Children	0.416	0.346	0.316
4+ ANC visits	0.311	0.384	0.235
Institutional Deliveries	0.398	0.412	0.336
C-section delivery	0.407	0.376	0.369
Overweight mother	0.329	0.282	0.286
Hypertension	0.087	0.064	0.091
Diabetes	0.275	0.233	0.244



Summary and Conclusion

- ❑ The main conclusion could be summarized by observing that, while the overall **health** situation is **improving**, **inequalities** in terms of socioeconomic aspects has appeared to have **widened over time**, especially those between rural and urban areas
- ❑ Access to **affordable healthcare** remains a significant barrier for poor and marginalized populations in both urban and rural areas. Policy support should include provisions for **financial assistance** and **health insurance schemes** specifically designed for resource-poor communities.
- ❑ In conclusions, by focusing on **infrastructure development**, **healthcare workforce distribution**, **financial assistance**, **technology integration**, **community engagement**, and **research-driven policy**, policymakers can lay the foundation for a more equitable and accessible healthcare system.
- ❑ Bridging this divide is a matter of **social justice** and essential for overall well-being!₃₀

Thank You

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DEVELOPMENT**

DEVELOPMENT, JUSTICE AND FREEDOM