Healthy Growth Unhealthy People

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Presentation for *Ten Years of 'War against Poverty': What have we learned since 2000 and what should we do 2010-2020?*

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Background

- Impressive rate of economic growth, especially since 1990s
- Poor performance on social front despite high growth
  - HDI: 135/174 (1996), 127/177 (2004), 128/177 (2008), 134/182 (2009)
  - Prevalence of inequality in various monetary and non-monetary dimensions of welfare
- Inclusive growth
  - Indian Plan documents and academicians: definition?
  - Non-monetary dimensions excluded
- Distribution of population health outcomes and growth (Sen 1998)

Objectives

- Does the growth in the past accompany similar achievements in health outcomes?
- How inclusive is the distribution of these outcomes?
  - Outcomes: infant mortality and morbidity
  - Infant mortality rate: SRS, Morbidity: NSSO (2004 & 1995-96)
- Has strength of the relationship between monetary and non-monetary dimensions of well-being changed over time?

Economic growth and infant mortality

National picture (1)

- Rates of change

Indicator/ Period	*1963-1971*	*1972-1980*	*1981-1989*	*1990-1998*	*1993-1999*	*1999-2008*
GDP	3.43	3.87	5.21	5.7	6.58	7.68
NNP per cap	0.97	1.38	2.91	3.53	4.48	5.98
IMR		(-) 1.93	(-) 2.67	(-) 2.03	(-) 1.26	(-) 2.97

- Deceleration in IMR decline during the 1990s

Economic growth and infant mortality

National picture (2)

- Disparity

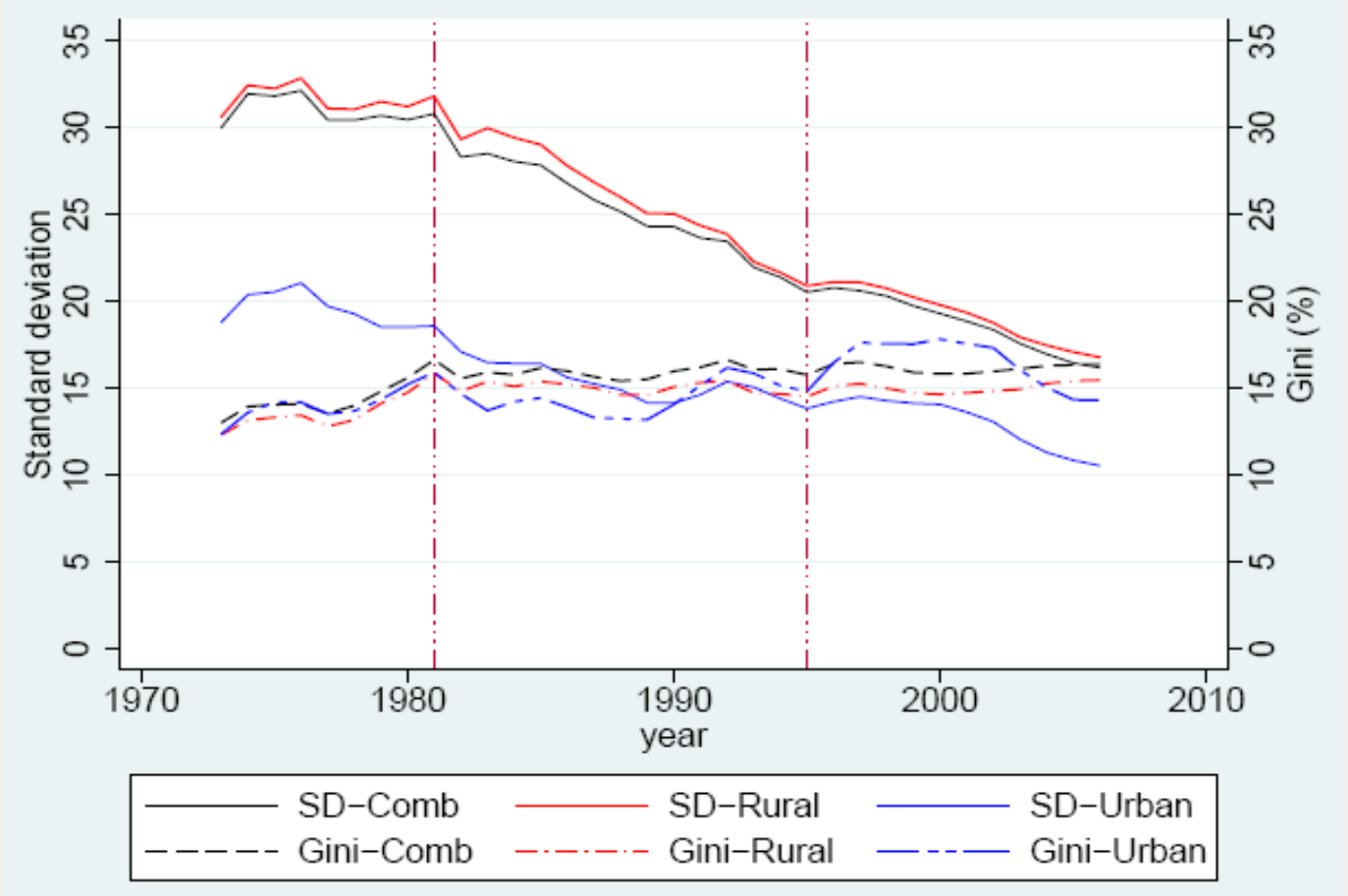
Indicator	Measure	1972	1983	1993	1999	2004
Rural-urban disparity						
MPCE	AD/Avg	0.40	0.43	0.54	0.63	0.71
	Ratio	1.43	1.48	1.63	1.76	1.88
IMR	AD/Avg	0.44	0.46	0.43	0.45	0.43
	Ratio	1.68	1.73	1.65	1.71	1.64
Inter-state disparity						
SDP per capita	Gini	0.151	0.137	0.160	0.166	0.175
IMR	Gini	0.136	0.165	0.167	0.166	0.173

- Rural-urban disparity: widened in MPCE, no change in IMR
- Inter-state disparity: divergence in both states' per capita income and IMR

Economic growth and infant mortality

National picture (3)

- Absolute vs relative disparity



Economic growth and infant mortality

An inter-state profile (1)

- In most of the states, the rate of growth during recent periods is higher than that during the previous periods
- However, unlike the case with per capita income, rate of decline of IMR does not show improvement over time
- Kerala, Uttar Pradesh and West Bengal reduced IMR at a relatively faster rate despite having relative low rate of growth of SDP per capita. Andhra Pradesh, on the other hand, provides a counter-example
- Persistence of IMR: States with high IMR in 1980s still have the same
  - Kendall's coefficient of rank concordance > 0.90

Economic growth and infant mortality

An inter-state profile (2)

- Rates of change: Rank correlations

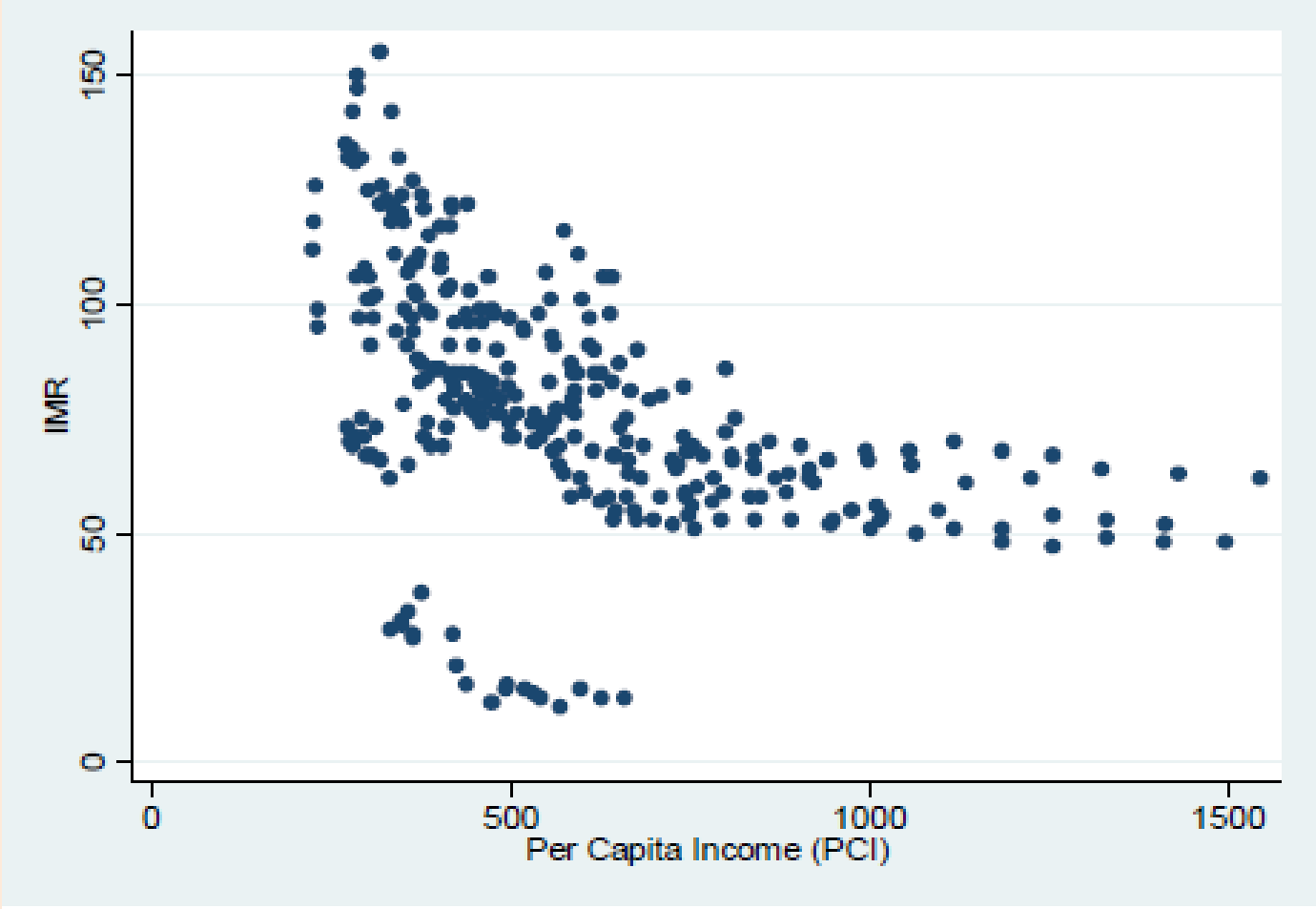
	Rate of growth (SDP per capita)				
	Period	***1963-71***	***1972-80***	***1981-89***	***1990-98***
Rate of change (IMR)	***1972-80***	0.14	-0.43		
	1981-89		-0.22	0.56**	
	1990-98			0.30	0.27
	1999-2007				-0.32

- No significant association between the two either in the contemporary period or with one period lag

Spatial Disparity between IMR and the Standards of Living

- IMR and Socioeconomic Characteristics in Five States Having the Highest IMR
  - 50 % of all the infant deaths in rural 40 in urban
  - Increasing disparity between the cumulative shares of infants' deaths and population
  - The disparities in urban areas exaggerated with time
  - The growth does not seem to be favoring the states deprived in terms of poor health outcomes

Income and IMR (1)



Income and IMR (2)

- Per capita income as an indicator of welfare
  - Association between IMR and SDP per capita (log) both three year averages, * indicates significant correlation at the five per cent level

Year	All Major States	Major States (Excluding Kerala)
1981	(-) 0.65*	(-) 0.71*
1991	(-) 0.64*	(-) 0.73*
2000	(-) 0.49	(-) 0.59

- The association weakened over time: all the more important to judge the overall level development or inclusiveness of growth using such measures as health outcomes

Short-term health status

- Self-reported morbidity: illness 15 days prior to the date of survey
- Classification of diseases into communicable and non-communicable diseases
- Poor people share disproportionately higher burden of communicable diseases
- Inequality (by income) increased between 1995-96 and 2004

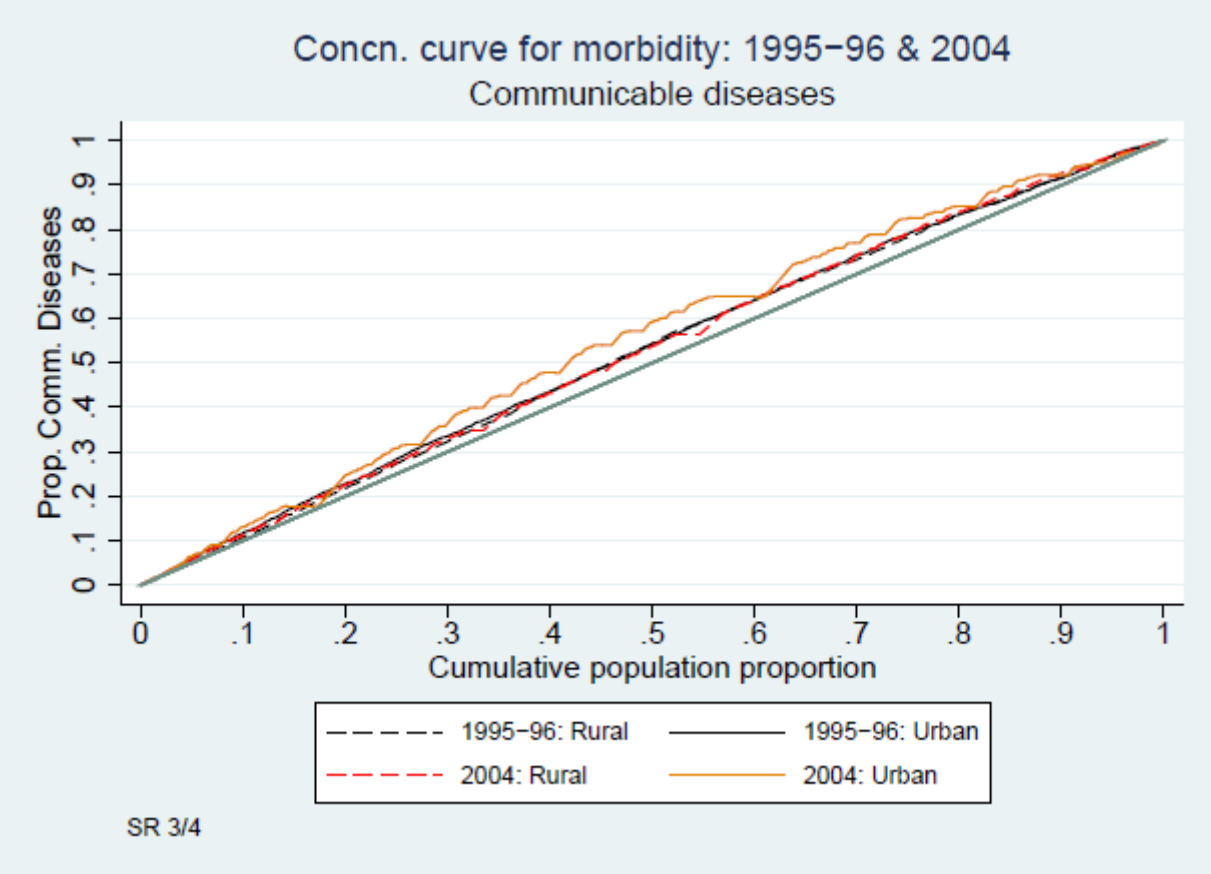
Morbidity

Disease-specific morbidity by economic profile

- Coexistence of diseases of deprivation vs diseases of affluence
  - Epidemiological transition!
- Deprivation: Diarrhoea, Tuberculosis and Malaria
- Affluence: CVDs, Respiratory, Diabetes
- Inequality in morbidity by socioeconomic status: concentration curves

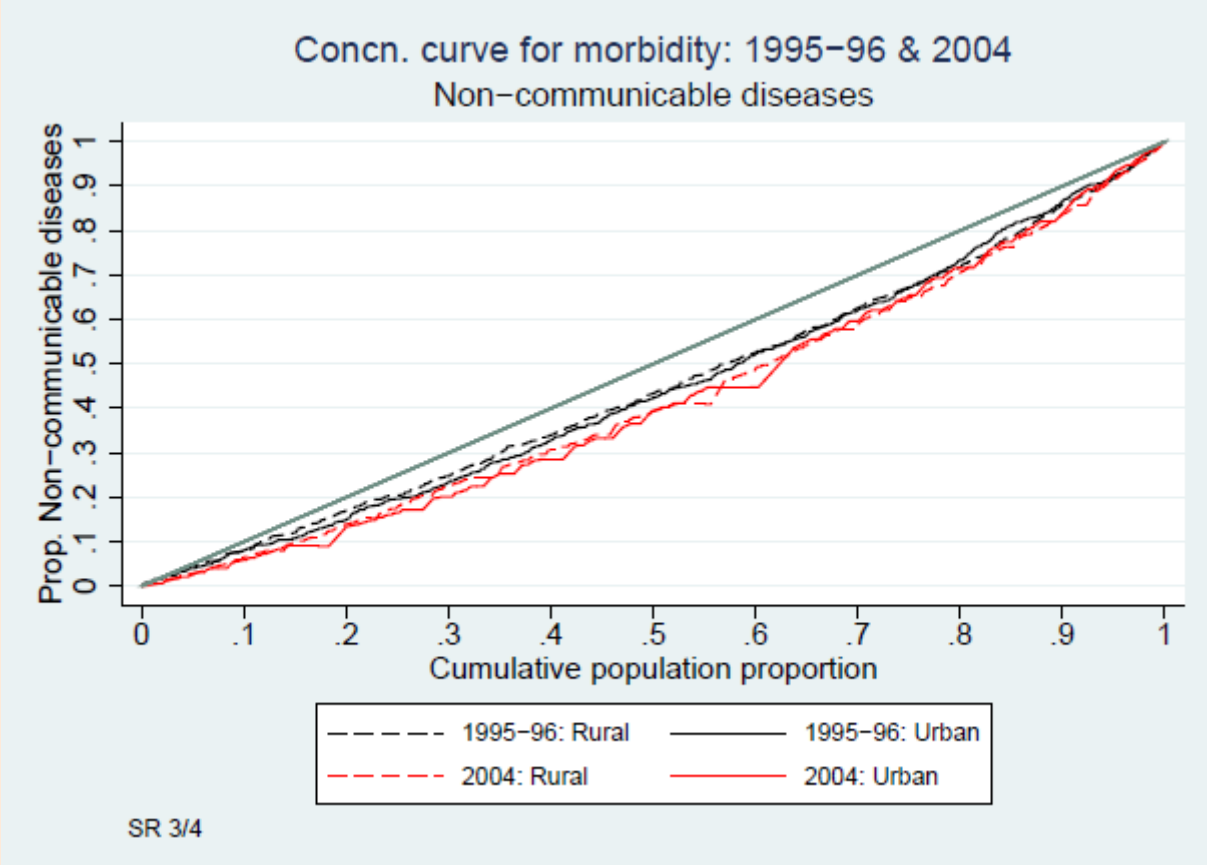
Inequality in morbidity

Communicable diseases



Inequality in morbidity

Non-communicable diseases



Summary (1)

- Inclusive growth, excluding the health?
  - As far as the national averages are concerned, the improvements in rate of economic growth and rate of decline of IMR do not corroborate each other
  - The high growth has co-occurred with worsening of the distributions of not only income (across the states, and rural and urban areas), but also IMR
  - At the level of states too, the states with better rate of growth do not show similar achievements in health outcomes

Summary (2)

- Disparity in health outcomes
  - Exaggeration of disparities in urban areas
  - Inequality in morbidity (by income) increased between 1995-96 and 2004
- Deprivation in multiple dimensions of well-being co-exists
  - Majority of infants' deaths are concentrated in poorer states of the country
  - Co-existence of body capital and physical capital
- Monetary and non-monetary indicators
  - Income is increasingly getting dissociated with IMR

Thank you

Disease-specific morbidity: 2004

major diseases (back)

Disease	Rural			Urban		
	Non-poor	Poor	All	Non-poor	Poor	All
Diarrhoea/ dysentery	7.09	11.19	7.93	5.66	9.55	6.47
Tuberculosis	2.46	3.76	2.73	1.49	2.67	1.74
Malaria	2.52	5.99	3.22	3.82	3.71	3.8
Gastric/ peptic ulcer	4.89	5.14	4.94	3.92	4.76	4.1
Heart disease	4.26	2.97	3.99	8.02	4.51	7.29
Hypertension	2.07	1.17	1.89	3.36	2.8	3.25
Respiratory & ENT	3.54	2.43	3.31	3.3	2.26	3.08
Joints/ bones	2.72	1.89	2.56	2.8	2.33	2.7
Kidney/urinary system	3.79	3.43	3.72	5.5	2.79	4.94
Neurological	3.32	2.59	3.17	3.08	2.82	3.02
Diabetes	2.11	0.26	1.73	2.48	1.75	2.33

Spatial disparity (back)

Panel	Charact.	Rural				Urban			
		1973	*1982*	*1991*	*2001*	*1973*	*1982*	*1991*	*2001*
A	*Popln (%)*	40.60	47.84	40.53	44.31	29.93	29.16	32.85	28.56
	MPCE (%)	39.79	43.44	38.88	40.97	27.36	26.02	29.55	24.09
	IMR (%)	47.37	57.64	49.00	52.35	37.83	39.66	42.03	39.61
B	*IMR/ Popln*	1.17	1.20	1.21	1.18	1.26	1.36	1.28	1.39
	IMR/ MPCE	1.19	1.33	1.26	1.28	1.38	1.52	1.42	1.64