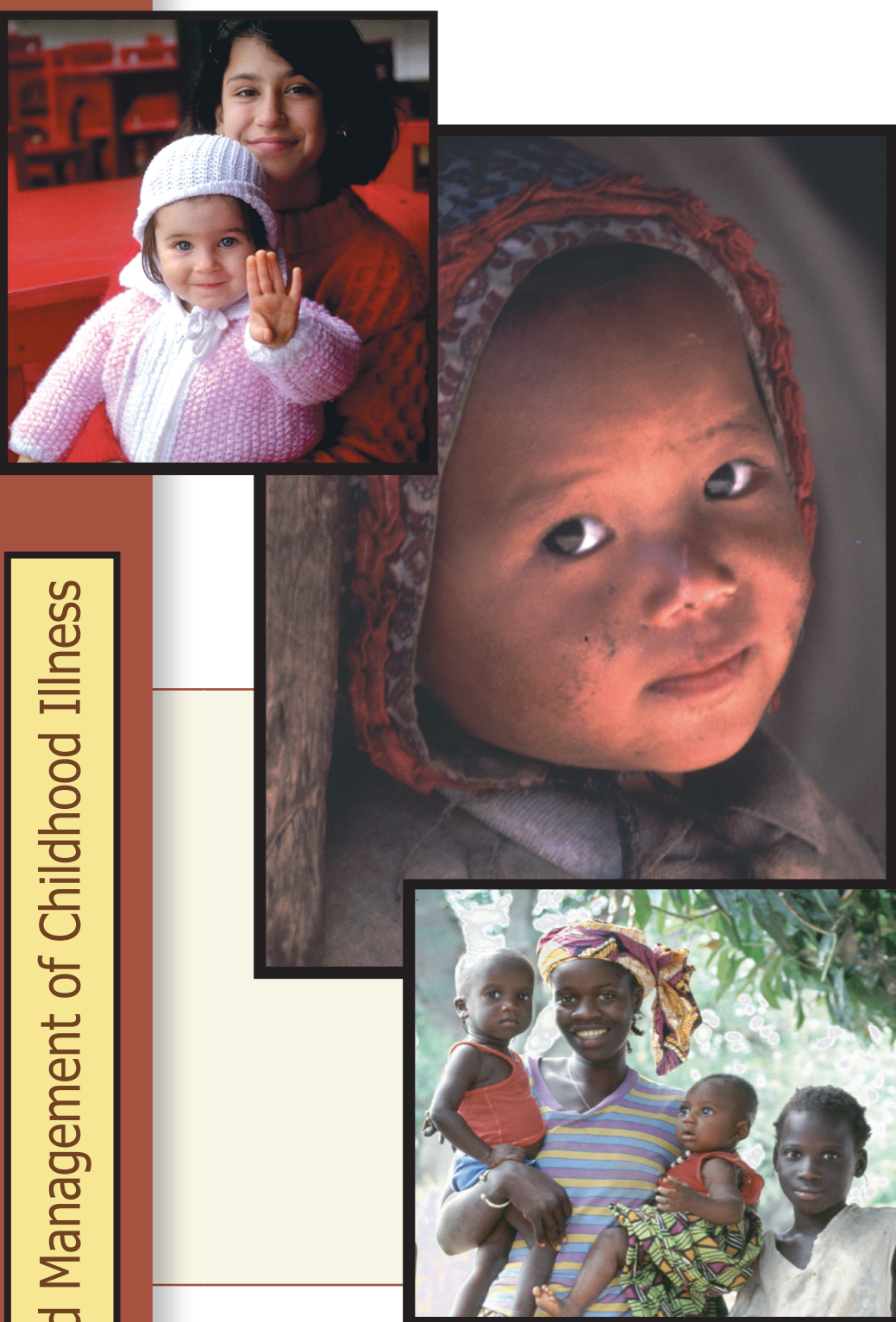


Impact of IMCI health worker training on routinely collected child health indicators in Northeast Brazil



Background

- IMCI strategy launched in mid-1990s by WHO and UNICEF
- In 1997, IMCI was introduced in Brazil, being largely restricted to training of health workers in many municipalities
- Implementation of the other two components (strengthening health system and improving family and community practices) was very limited

Objective

To analyze the impact of IMCI health worker training on infant mortality in three states in northeast Brazil.

Research question

Is IMCI implementation associated with increased coverage and reduced mortality, under routine conditions?

Setting

- **North-eastern Brazil:** the poorest region in the country
- **Infant mortality rate:** 41.4 per 1000 (2002); 50% above the national rate
- **Evaluation conducted in three states:** Ceará (CE), Paraíba (PB) and Pernambuco (PE)

Study units

- **Unit of analysis:** municipalities
- **Included:** those with a population of 5,000 to 50,000 inhabitants (in 2000)
- **Excluded:** larger municipalities (e.g. state capitals) because they are atypical, and small municipalities due to important annual fluctuations in mortality rates

Discussion

Three other IMCI impact evaluations conducted so far:

- Tanzania: reduced mortality and improved nutrition. Strong IMCI training and district management strengthening.
- Bangladesh: final results from this efficacy study will be available in 2007.
- Peru: no impact on mortality. Mostly clinical training as in Brazil.

Conclusions

The negative findings suggest that IMCI clinical training, in the absence of the other two IMCI components, and in an area with no malaria and infant mortality under 50 per 1000, did not lead to a measurable impact on mortality.

Variables

DEPENDENT: infant mortality

INDEPENDENT: IMCI training coverage among first-level health workers, including doctors and nurses, stratified in 3 categories (High, Low and No IMCI)

CONFOUNDING FACTORS: population, illiteracy rate, per capita monthly income, poverty rate, water supply, urban population, urban development index, distance from state capital, coverage of Family Health Program, community health worker coverage.

Data Sources

Mortality data (1)

Mortality Information System-SIM: officially reported deaths
Live Births Information System- SINASC: officially reported births
Data from 1999-2002 were analyzed

Mortality data (2)

Community Health Worker (CHW) Information System-SIAB: monthly reporting of deaths, births and other health events by CHW

Confounding variables

Brazilian Institute of Geography and Statistics (IBGE), UNDP, UNICEF

Data analyses

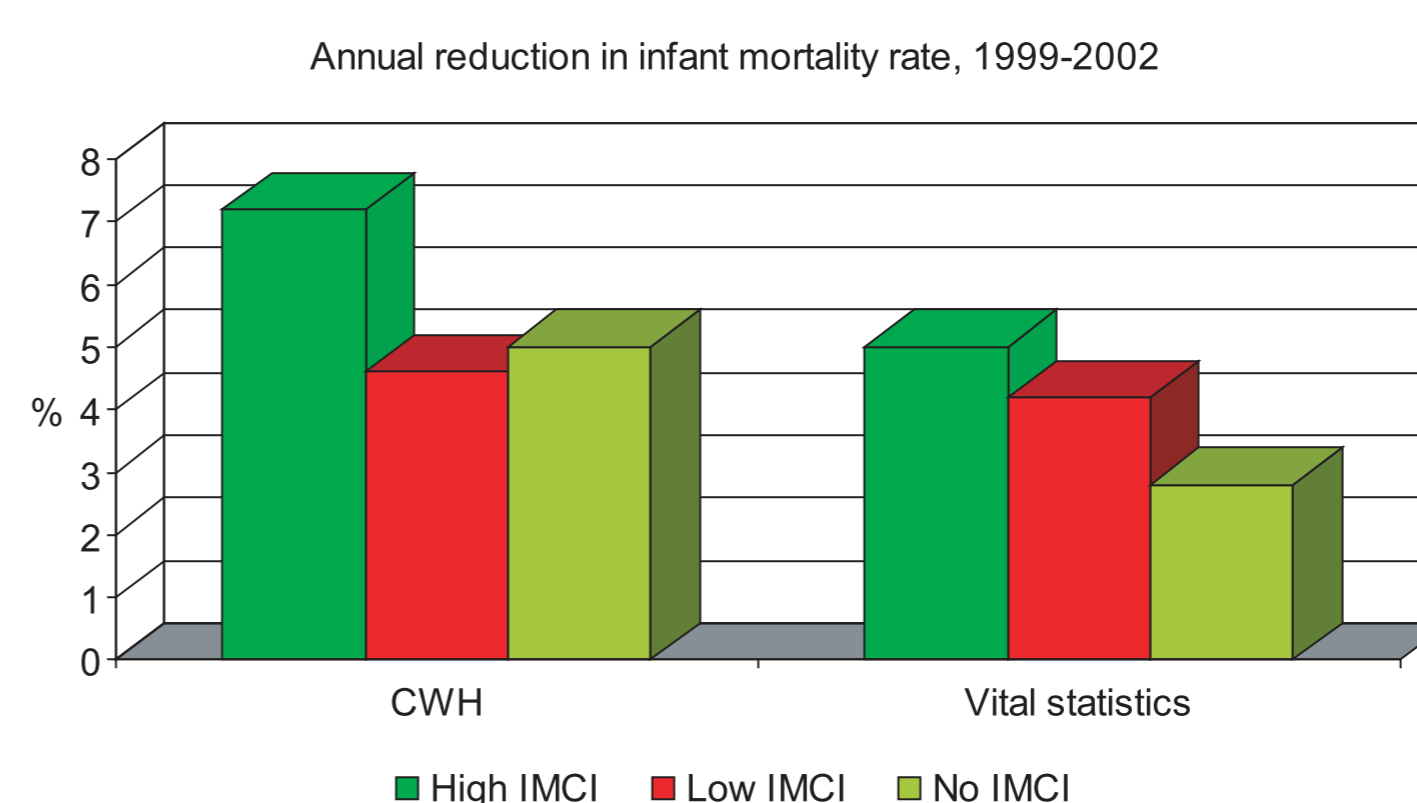
ANOVA: to compare mean levels of confounding variables and of mortality indicators (between the 3 groups of municipalities), stratified by strength of IMCI implementation

Time trends in mortality rates: average annual change was calculated for each municipality (linear regression of IMR on calendar year) and regression slopes compared (ANOVA)

Results

- Information was obtained from all eligible municipalities: 156 in CE, 136 in PB and 151 in PE
- 23 municipalities classified as having HIGH IMCI training coverage ($\geq 60\%$ over the 3-year period); 216 with LOW and 204 with NO IMCI staff
- After adjusting for confounding variables, there was no association between IMCI training coverage and infant mortality

	Year	High IMCI		Low IMCI		No IMCI		All municipalities	
		Mean	SD	Mean	SD	Mean	SD	Mean	Standard deviation
Population	2000	20252	11566	20226	10698	14906	9572	17777	10558
Illiteracy rate (%)	2000	40.2	8.0	39.4	5.6	39.7	6.5	39.6	6.2
Water supply (%)	2000	36.2	19.5	37.1	16.8	35.6	16.4	36.3	16.7
Urban population (%)	2000	49.0	22.7	52.0	16.2	48.1	17.6	50.0	17.3
Per capita monthly income	2000	82.3	23.9	84.9	27.1	76.7	15.8	81.0	22.7
Human development index	2000	.605	.052	.612	.038	.603	.042	.607	.04
Poverty rate (%)	2000	70.5	7.9	69.7	8.2	71.4	6.2	70.6	7.4
Number of municipalities		23		216		204		443	



No significant impact of IMCI on infant mortality according to either of the two data sources, after adjustment for confounding.