Improving child survival in developing countries: The need for integrated and targeted approach to programming

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Outline

- Background
- Objective
- Theoretical perspectives
- Data
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- Conclusion

Background: Why Care?

- Childhood mortality a key indicator of socio-economic development
- Widening rift in early childhood mortality rates
- Recent trends worrying: increase in Sub-Saharan Africa (SSA); stagnation in Southern Asia
- Shift in the structure of relationships
- Substantial improvements required in SSA and Southern Asia

Objectives of study

- Explore factors associated with **early childhood** mortality risks
- Recommend actions to improve child survival

Theoretical perspectives

- Factors associated with childhood mortality risk change with age
- Disaggregating by age captures changes in risk factors
- Neonatal mortality dominated by biological factors
- Post-neonatal mortality dominated by socio-economic factors

Data

- Kenya 1998 Demographic and Health Survey
- India 1998/99 Demographic and Health Survey
- Maternity history data for women aged 15-49
- Data available on access & utilization of MCH services, socio-economic characteristics & social amenities

Methods of analysis

- Bi-variate statistics → log rank tests for equality of survivor functions

- Multivariate models
  - Survival analysis → Proportional hazard → Cox regression

  - Model

$$\log h_i(t, X_{1i}, X_{2i}, X_{3i}) = a(t) + b_1X_{1i} + b_2X_{2i} + b_3X_{3i}$$

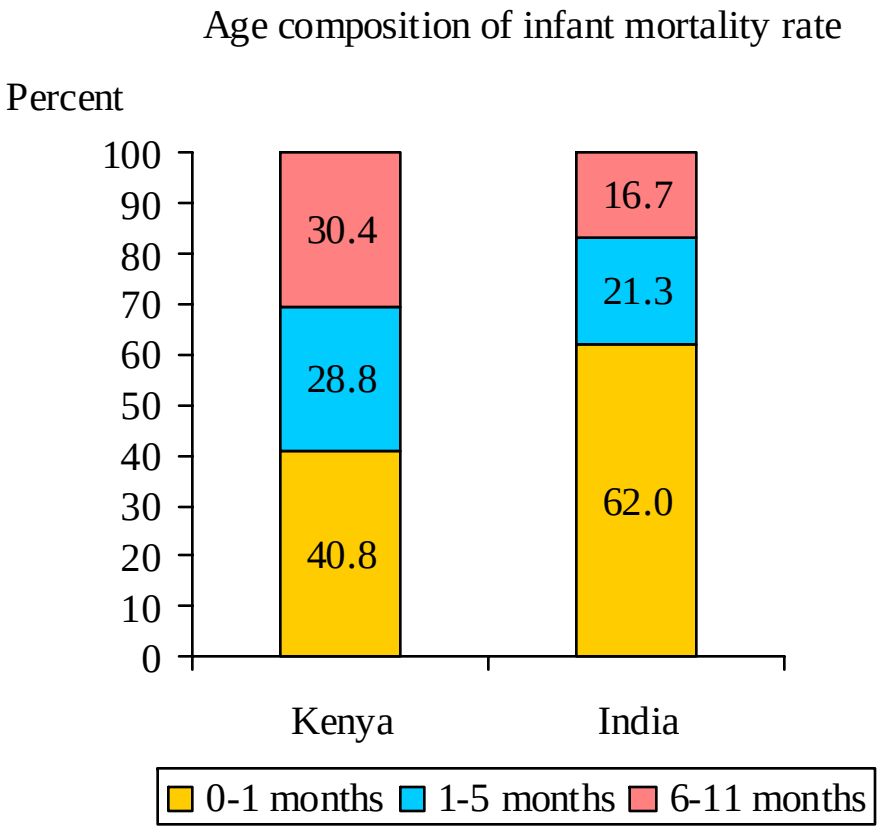
X_1, X_2, and X_3 are vectors of child, mother, and cluster variables respectively; b_1, b_2, and b_3 are corresponding vectors of coefficients.

Result 1

A variety of factors are associated with early childhood mortality risks					
Factor / Variable				**Impact on early childhood mortality (Relative risk - %)**	
				Kenya	**India**
Contraceptive use:	Modern	vs.	None	-40	-38
Birth weight:	Low	vs.	Average	+80	+29
Maternal age at birth:	15-19	vs.	20-34	+122	+30
Breastfeeding duration:	1-5	vs.	6-11 months	+264	+132
Malnutrition:	% underweight (Kenya); % wasted (India)			+10	+5
Standard of living:	High	vs.	Low	-48	-
Fertility:	Birth order 2-4	vs.	5+	+86	-
Institutional delivery:	Private	vs.	Public hospital	-77	-
Medical treatment of illnesses:	High	vs.	Low	-44	
Maternal education:	Secondary+	vs.	None	-	-38
Religion:	Christian	vs.	Hindu	-	-32
Religion:	Moslem	vs.	Hindu		-19
Birth interval:	Average+	vs.	Short	-	-35
Vaccination coverage:	High	vs.	Low	-	-28
Tetanus injection:	1+	vs.	None	-	-30
Prenatal care provider:	None	vs.	Professional	-	13

Result 2

Risk of death highest among neonates



India IMR – 56
Kenya IMR - 79

Result 3

- Shift in the structure of relationships
  - Shift in relative importance from socio – economic to biological factors
  - Health access factors remain important overall

Result 4 – Comparing mortality level in India & Kenya

Why Neonatal mortality is higher in India		
Variables	Prevalence (%)	
	India	Kenya
Low birth weight	25	16
Teenage mortality	20	17
Tetanus toxoid injection	76	91
Antenatal care	67	95
Prenatal care provided by a health professional	67	88
Delivery assistance provided by a health professional	36	41
Institutional delivery	35	39
Maternal malnutrition	35	11

Why Post-neonatal mortality is higher in Kenya		
Variables	Prevalence (%)	
	Kenya	India
Higher incidence of morbidity	51	44
Lower medical response to illnesses	60	74
Lower maternal education (Secondary +)	24	33
Lower standard of living (high status)	15	39
Higher maternal participation in labor force	69	46
Poor water (non-piped water)	74	63
Poor sanitation (non-flush toilet)	94	80

Recommendations

- Implement **integrated program** targeted to the needs and locations of children in different ages
  - Incorporate the **variety of factors** associated with overall child survival
  - **Target** age and sector specific factors

Components of the integrated program

- Effective M&E framework
  - Encourages information-driven programming and results-based management
  - Encourages pooling of resources to streamline administration and improve targeting

Components of the integrated program cont'd…

- Programs and practices that enhance survival among neonates
  - Promote institutional delivery and skilled care
  - Train and equip TBAs
  - Improve access / adequacy of antenatal services
  - Promote modern contraception

Components of integrated program cont'd…

- Effective implementation of child survival programs
  - Re-invigorate the IMCI initiative
  - Expand MCH services among vulnerable groups
  - Better home care for sick children
  - Direct targeting of children from poor families
  - Improve socio-economic circumstances of the populace
  - Increase public health spending

Conclusion

- Adequate focus on neonatal mortality
- Re-organization of existing programs
- Targeted and integrated approach to programming