Systematic Review of the Effectiveness of Community-Based Primary Health Care in Improving Child Health: Main Findings

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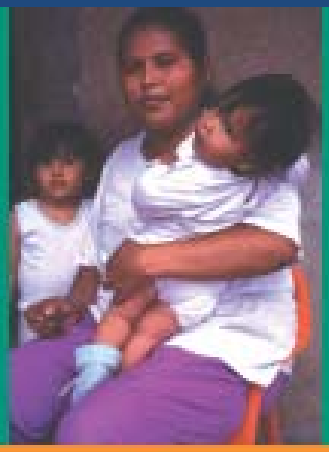
Future Generations

Outline

- Evidence concerning individual interventions
- Evidence concerning integrated approaches
- Collateral evidence
  - CHWs
  - Scaling up
- Findings and conclusions

Evidence for Specific Interventions



Family and community practices that promote child survival, growth and development

A REVIEW OF THE EVIDENCE

WORLD HEALTH ORGANIZATION
GENEVA

Key Findings from the Review: Effective CBPHC Interventions

- Community-based diagnosis and treatment of childhood pneumonia reduces child mortality
- The use of insecticide-treated bednets reduces childhood mortality
- Community-based approaches to the care of newborns – with emphasis on home visits after birth, cleanliness (especially cord care with antiseptic and clean handling), warmth, and immediate/exclusive breastfeeding reduces neonatal mortality
- Syphilis screening and treatment of pregnant women reduces perinatal and neonatal mortality – especially in Africa
- Handwashing reduces rates of childhood diarrhea AND pneumonia

Key Findings from the Review: Effective CBPHC Interventions (cont.)

- Cleanliness (including handwashing and keeping house and yard clear of human and animal feces) is important for reducing diarrhea and improving childhood nutritional status
- Exclusive breastfeeding and consumption of potable water (at point of use) reduces childhood diarrhea
- Exclusive breastfeeding, immunizations, vitamin A essential, and ORT (for treatment of diarrhea) are essential
- Family planning, women's empowerment, cash transfers, micro-credit, overall social/political environment each contribute

Meta-analysis of Interventions to Reduce Childhood Diarrhea (38 studies)

- Hygiene interventions (promotion of specific behaviors such as handwashing and keeping living areas free of feces) are as effective as improving water and structural sanitation

  Hygiene– 37% reduction
- Sanitation interventions – 32% reduction
- Water quality interventions – 31% reduction
- Water supply interventions – 25% reduction
- "A water quality intervention at the point of use should be considered for any water supply programme that does not provide 24 h access to a safe source of water."

  (Fewtrell et al., *Lancet Infectious Diseases*, 2005)

Meta-Analysis of Studies to Improve the Quality of Drinking Water (33 studies)

- Overall, 39% reduced risk of childhood diarrhea
- Addition of other interventions (e.g., hygiene instruction, improved water vessel storage, improved sanitation, or improved water supply) does not increase effectiveness

(Clasen et al., *British Medical Journal*, 2007)

Review of ITN Effectiveness (22 studies)

- Protective efficacy of ITNs in reducing child mortality:
  - 17% compared to no nets
  - 23% compared to untreated nets
  - 3 studies showed improved nutritional status in children
  - 370,000 deaths could be avoided annually if every child could be protected with an ITN

(Lengeler et al., *Cochrane Review*, 2004)

Meta-Analysis of Community-Based Management of Childhood Pneumonia (9 studies)

- Impact on overall mortality:
  - Neonatal mortality – 24%
  - Infant mortality – 20%
  - Under-5 mortality – 24%
- Impact on pneumonia mortality rates:
  - Neonatal mortality – 42%
  - Infant mortality – 36%
  - Under-5 mortality – 36%
  - (Sazawal and Black, *Lancet Infectious Diseases*, 2003)

Review of Community-Based Management of Childhood Malaria (9 studies)

- 2 studies showed no health impact
- 1 study showed decreased malaria prevalence and incidence
- 2 studies “suggested” a decreased prevalence or progression to severe malaria
- Only 1 of 4 studies assessing mortality impact demonstrated an effect

(Hopkins et al., *Malaria Journal*, 2007)

Review of Effectiveness of Birth Spacing (213 studies)

- Compared to children born less than 2 years after a previous birth, children born 3 to 4 years after a previous birth are:
  - 1.5 times more likely to survive the first week of life
  - 2.2 times more likely to survive the first 28 days of life
  - 2.3 times more likely to survive the first year of life
  - 2.4 time more likely to survival to age 5

(Setty-Venugopal and Puadhyay,

Review of Conditional Cash Transfers (10 studies)

- Increased use of health services found (5 studies)
- Unclear effect on use of immunizations services (4 studies)
- Effects on growth found in subgroups of children (2 studies)
- Unclear effects on health status (anemia, mothers' reports of child's health)

Legarde et al., JAMA, 2007

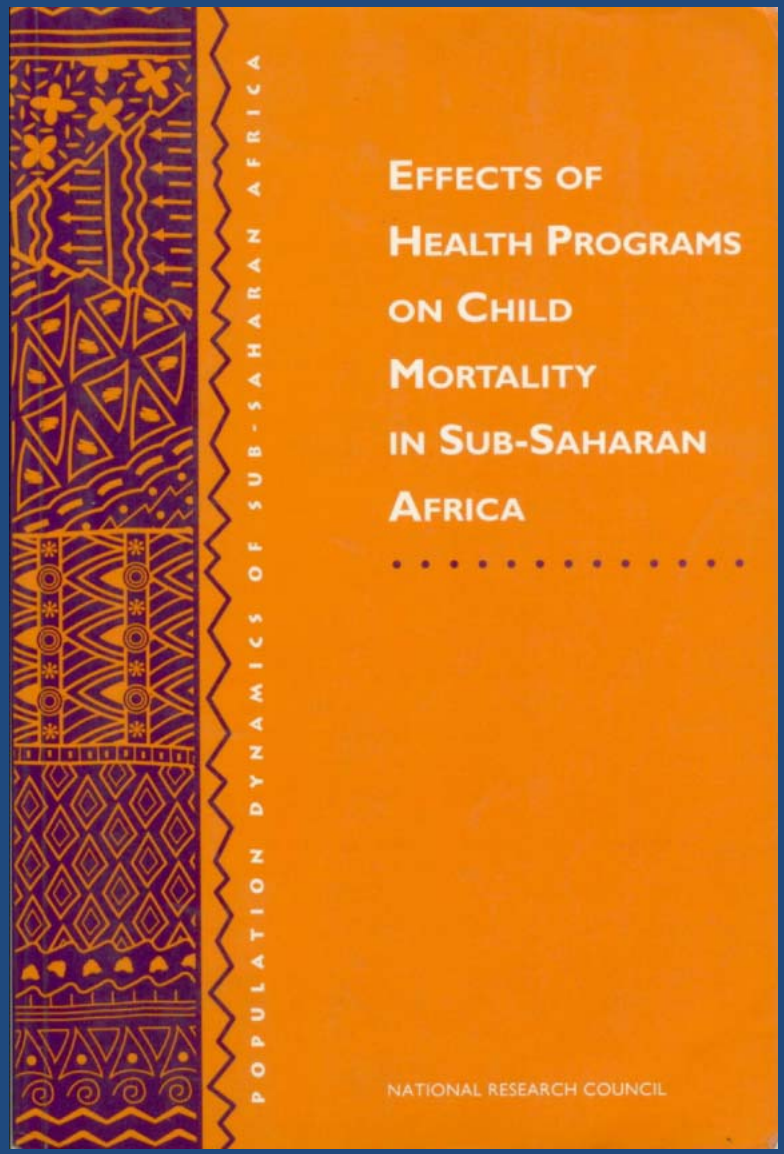
Evidence for Integrated Approaches

Reviews of Integrated Approaches

- 1980: Can Health and Nutrition Interventions Make a Difference? (monograph)
- 1993: Effects of Health Programs on Child Mortality in Sub-Saharan Africa (book)
- 1997: Prospective Community Studies in Developing Countries (book)
- 2000: Health for All in Bangladesh: Lessons in Primary Health Care for the 20th Century (book)

Reviews of Integrated Approaches (cont.)

- 2006: Estimation of Impact of USAID PVO Child Survival Projects (USAID website)
- 2007: Impact of Packaged Interventions on Neonatal Health (*Health Policy and Planning*)



Effects of Health Programs on Child Mortality in Sub-Saharan Africa (1993)

- Findings:
  - Almost all studies examined short-term mortality impact of single interventions in carefully controlled settings
  - We know very little about the overall effectiveness of integrated health programs
- Recommendations:
  - Go beyond measuring single intervention efficacy in carefully controlled settings
  - Measure the effectiveness of programs in more routine settings, where potential mortality impact can be affected by poor quality, low compliance rates, and low coverage
  - Evaluate various packages of interventions
  - Carry out more long-term studies that include regular collection of vital statistics and routine surveys of service utilization and quality of care
  - Declines in mortality rates should remain the ultimate indicator of the effectiveness of child survival programs in Africa

Ewbank and Gribble, 1993

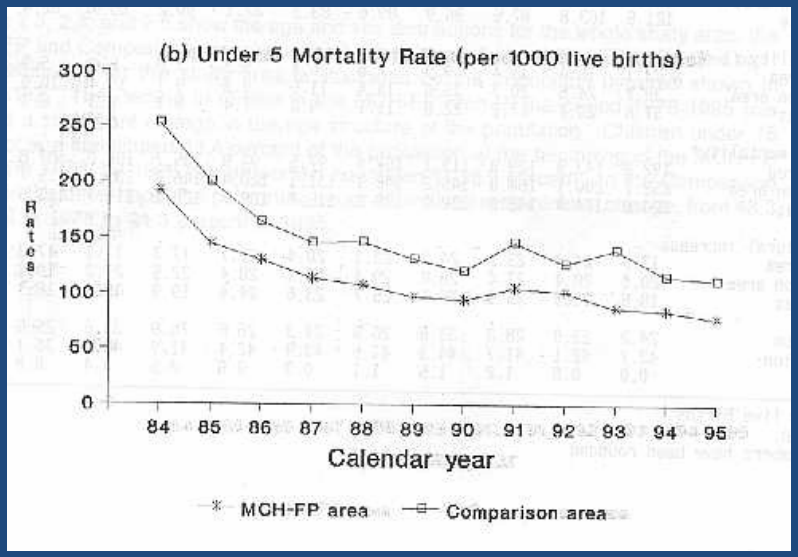
Packages of Neonatal Health (41 studies)

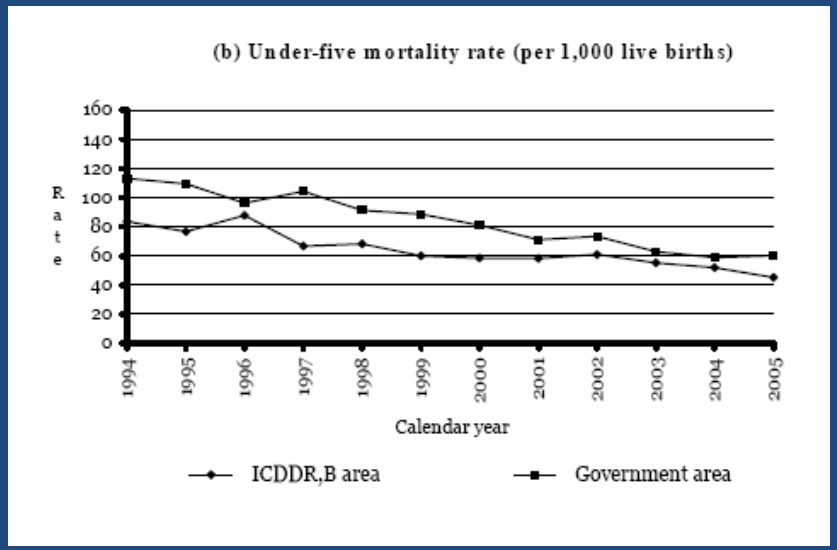
- Review of packages of interventions which had more than 1 plausible biological effect
- Few studies of any “complete” packages (antenatal, intrapartum and postpartum) which were recommended in the *Lancet* neonatal series
- Interventions appeared t o be bundled on basis of convenience or funding requirements
- No studies of true effectiveness of packages (in routine conditions) at scale

Haws et al., Health Policy and Planning 2007

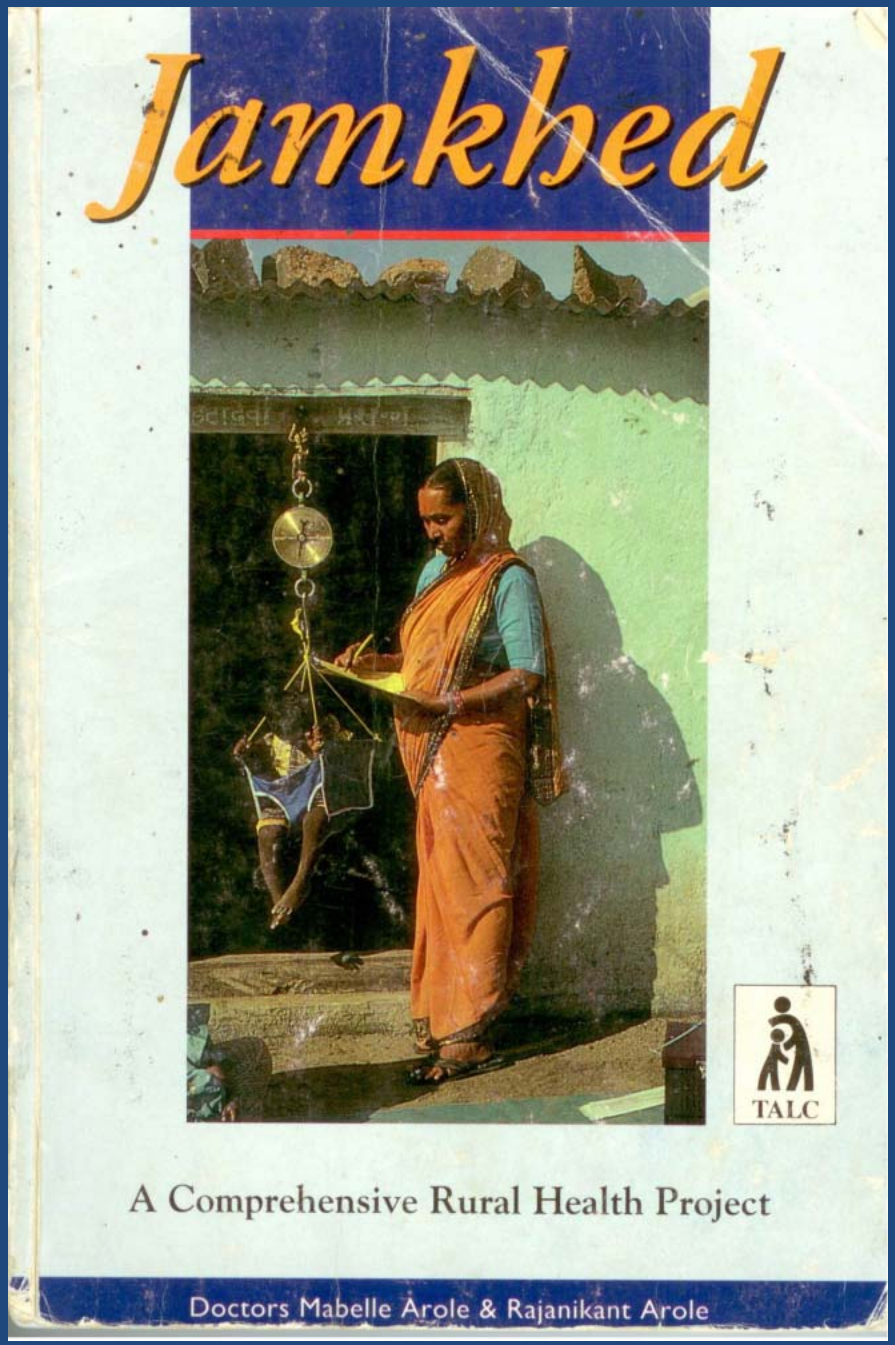
Examples of Sustained Impact of Integrated Programs

Matlab MCH-FP, Bangladesh, Field Site (100,000 people)

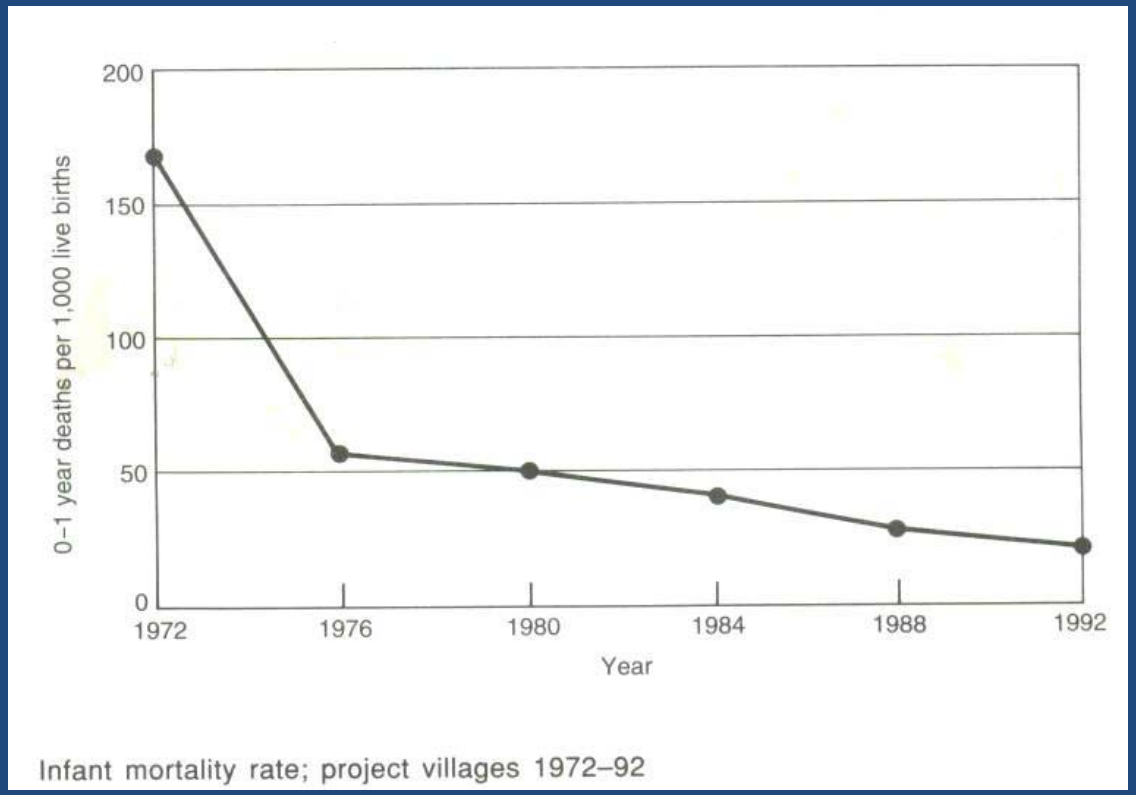




ICDDR,B, 1996 and 2007



Jamkhed (150,000 people)

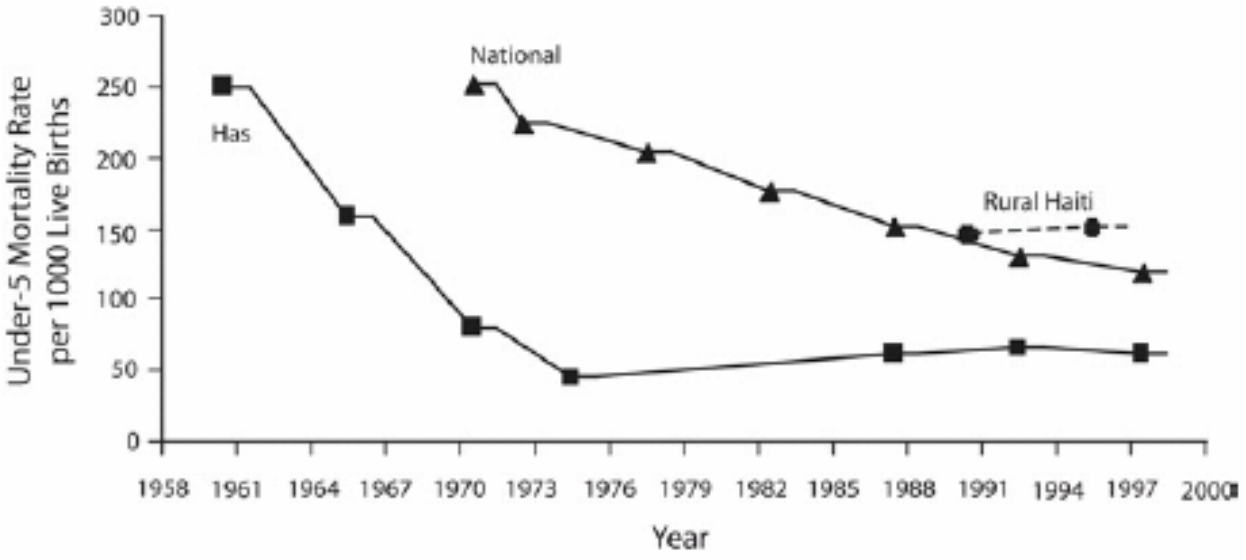


Infant mortality rate; project villages 1972–92

Arole and Arole, 1994

(Major external evaluation of mortality impact compared to surrounding villages currently underway by researchers at the London School of Economics and at the London School of Hygiene)

Hospital Albert Schweitzer, Haiti (150,000 people)

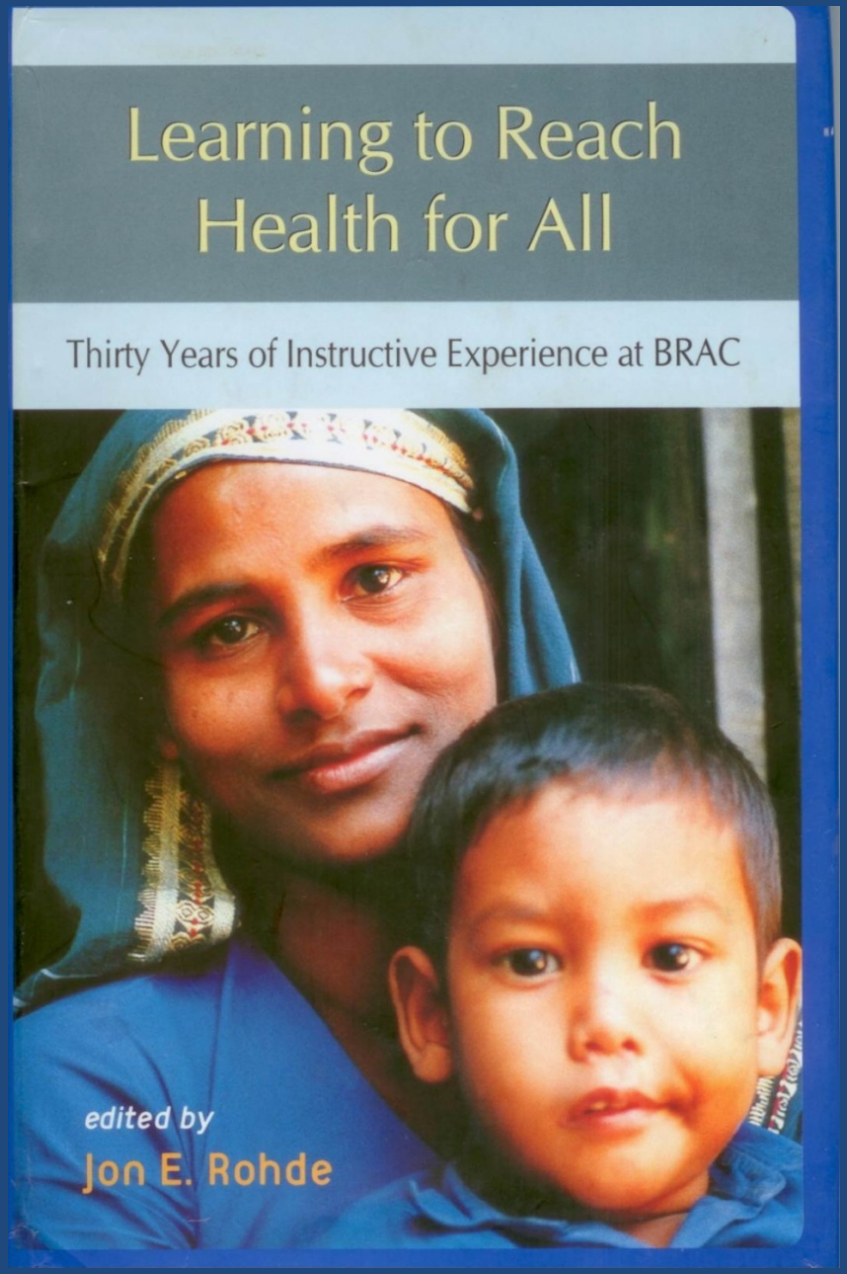


Source. HAS birth history survey, 2000, and Cayemittes et al.[12,18]
Note. Rates refer to the total risk of death over a 5-year period, from birth to 59 months of age. Mortality rates for rural Haiti were not available before 1985.

FIGURE 2—Long-term trends in under-5 mortality rates in Haiti and in the primary health care service area of the Hôpital Albert Schweitzer, 1958–1999.

Perry et al., American Journal of Public Health, 2007

Issues of Scaling Up



Lessons Learned from the BRAC National ORT Promotion Program

- Pilot everything
- Training should be based on active learning
- Use objective criteria to monitor program, and checks of quality should exist at each level
- Performance should influence pay
- Evaluate frequently, and modify program on the basis of evaluation results
- Build teamwork, reach out to men and opinion leaders as well as to mothers

Lessons Learned from the BRAC National ORT Promotion Program (cont.)

- Going to scale does not necessarily result in a loss of quality because management systems can be devised to assure quality at any scale
- Lay workers are effective conveyers of health information to change behaviors
- Collaboration between NGOs and government enhance program effectiveness
- Through developing greater levels of trust at the community level, citizens can actively become involved in improving health practices

  (Zaman and Karim, Learning to Reach Health for All, 2005)

Issues Related to CHWs

- With proper selection, training and supervision, CHWs can be effective agents in reducing child mortality
- Who is going to train and supervise them?
- Who is going to make sure they are not overloaded with too many tasks and also to make sure they are addressing the priority conditions responsible for preventable mortality in their communities?
- How can CHW programs be scaled up and sustained?

Shastyo Shebikas – CHWs Trained and Supervised by BRAC in Bangladesh

- 68,000 – helping to provide essential health care to 31 million people (and TB services to 83 million)
- Each responsible for 100-120 households
- Chosen by and responsible to the community
- Unsalaried, but receive minimal remuneration from sale of essential health commodities (e.g., latrine slabs, sanitary napkins, soap)

Activities of Shasthyo Shebikas

- Routine visitation of all homes with basic health education (including nutrition education)
- Childhood pneumonia detection and case management (with supervision)
- Promotion of diarrheal disease prevention and treatment
- Promotion of immunizations, family planning, antenatal/postnatal care
- Detection of symptomatic cases of possible TB, collection of sputum specimens, provision of directly observed treatment (with supervision)

Female Community Health Workers in Nepal

- 36,000 recruited in 1993 but program stopped after 1 year because government couldn't pay the stipend of $2 per month
- National Vitamin A Program reactivated this resource by providing training and local incentives (given prefence in obtaining government services)
- Critical for expanding vitamin A coverage, and now are expanding to deworming, case management of childhood pneumonia, distributing iron tablets to pregnant women

Review of Community Health Programmes and the Management of Sick Children

- Even though there is strong evidence that community-based treatment of pneumonia lowers under-five mortality, it is rarely implemented, especially in Africa
- In places where both malaria and pneumonia are major causes of childhood morbidity and mortality, they should be managed together by CHWs in the community
- There is little follow-up information available about the CHW programs of the 1980s
- New and emerging strategies for CHWs need rigorous evaluation and gradual scaling up

- Winch et al., *Health Policy and Planning*,2005

Achieving child survival goals: potential contribution of community health workers

Andy Haines, David Sanders, Uta Lehmann, Alexander K Rowe, Joy Lawn, Steve Jan, Damian Walker, Zulfiqar Bhutta

There is renewed interest in the potential contribution of community health workers to child survival. Community health workers can undertake various tasks, including case management of childhood illnesses (eg, pneumonia, malaria, and neonatal sepsis) and delivery of preventive interventions such as immunisation, promotion of healthy behaviour, and mobilisation of communities. Several trials show substantial reductions in child mortality, particularly through case management of ill children by these types of community interventions. However, community health workers are not a panacea for weak health systems and will need focussed tasks, adequate remuneration, training, supervision, and the active involvement of the communities in which they work. The introduction of large-scale programmes for community health workers requires assessment to document the impact on child survival and cost effectiveness and to elucidate factors associated with success and sustainability.

Lancet, 2007

Major Findings and Recommendations (Provisional)

Contextual Factors Enhancing Intervention Effectiveness

- Integrated community-based approaches are powerful and cost-effective strategies for reducing maternal and child mortality WHEN:
  - "Proven" interventions are employed
  - Strong technical and professional leadership present
  - Strong monitoring and evaluation and operations research present
  - Strong outreach components down to the household level are present
  - Strong supervisory systems present – especially for lower-level workers
  - Functioning health systems with referral systems (including referral hospital care) present
  - The health system interacts with the community and community-level workers with respect and treats them as partners
  - Long-term financial, technical and professional support (> 5 years)

General Findings

- The evidence for the efficacy of specific CBPHC interventions in improving child health is strong, and CBPHC deserves a stronger role in programming
- We need a stronger evidence base for the mortality impact of packages of interventions at scale in routine field settings (effectiveness studies)
- There are few studies of the influence of community partnerships and community empowerment in improving outcomes, but those which do exist are compelling

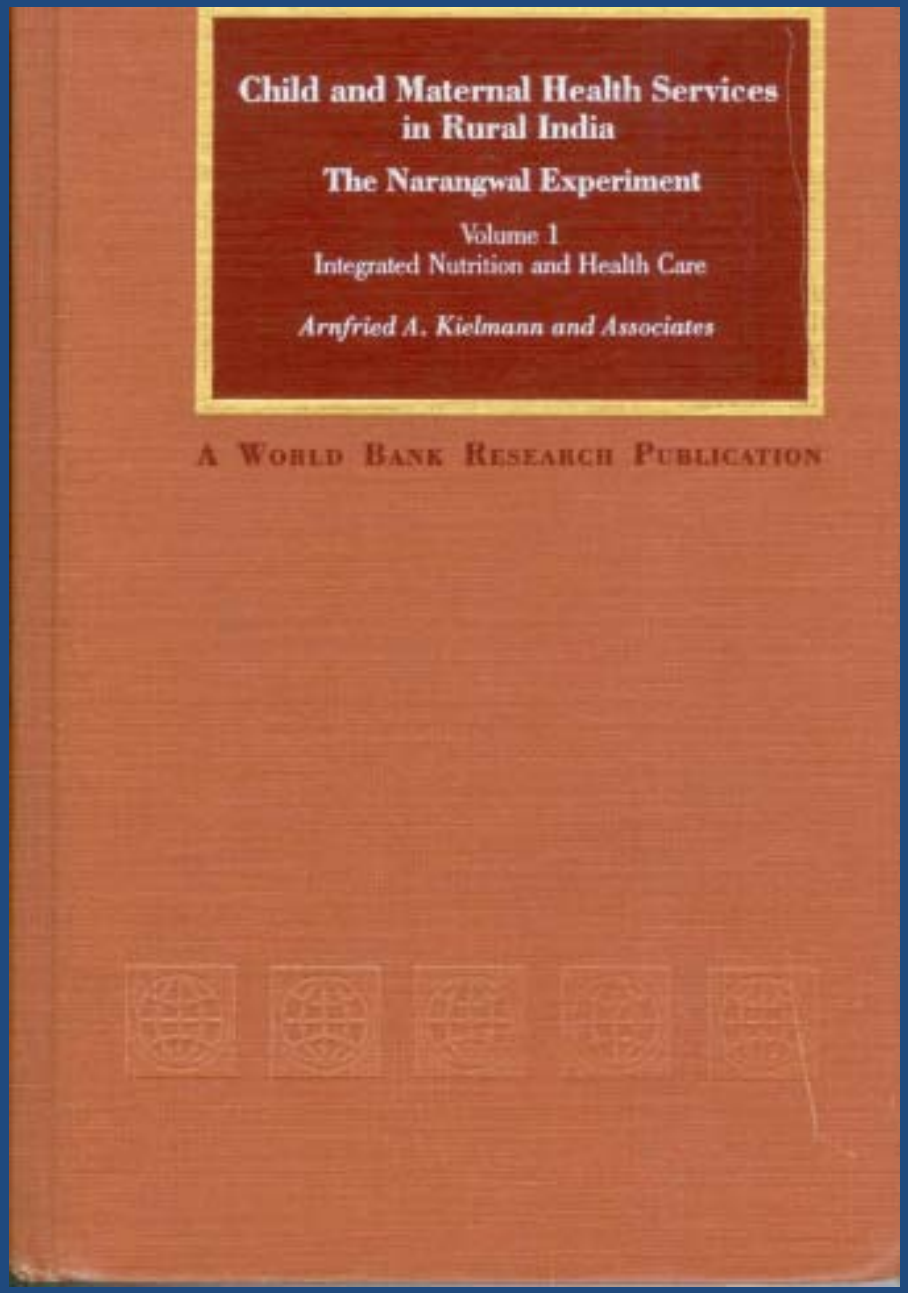
General Findings (cont.)

- The emerging evidence on the effectiveness of home-based neonatal care is very exciting, but effectiveness studies are needed at scale, especially when neonatal interventions are integrated with a broader package of interventions
- Lack of studies from Africa except for malaria interventions
- Need more effectiveness studies at scale of programs integrating reproductive and child health

Conclusions

- More emphasis on CBPHC needed to accelerate progress in reaching MDG4, especially in high mortality settings, where health systems are weak
- More efforts are needed to involve the community as a partner in order to help programs reach their full potential
- Ongoing rigorous monitoring and evaluation of impact on under-5 mortality will be critical for long-term effectiveness at scale

Introduction of Carl Taylor

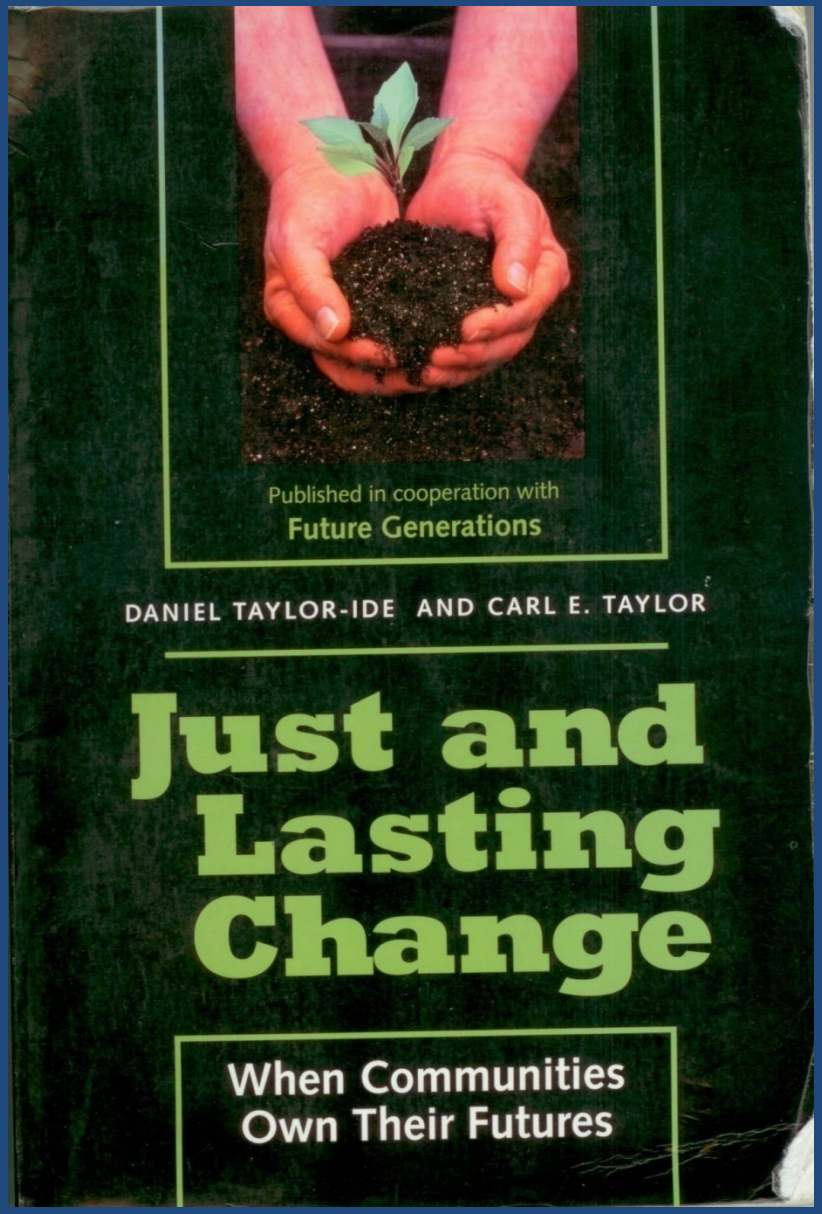


Significance of the Narangwal Project

- One of the few field research projects which treated the community as a partner and resource rather than a “target” and placed rights of villagers over scientific objectives
- First use of rapid breathing and chest in-drawing as a community-based method for diagnosing childhood pneumonia (suggested by the villagers)
- First demonstration of the effectiveness of antibiotics in reducing mortality from childhood pneumonia

Significance of the Narangwal Project (cont.)

- One of the few studies systematically comparing sets of integrated packages of services and integrating family planning, nutrition and health interventions, and clearly showing synergism (increased program effectiveness and cost-effectiveness) arising from integration
- Provided the basis for Carl Taylor's controversial "child survival hypothesis" which was disputed for many years but is now widely accepted
- Served as an inspiration to James Grant and the first Child Survival Revolution, to the Aroles at Jamkhed (India), and to the Bangs at SEARCH in Gadchiroli (India)



“The acknowledged leader of primary health care over the second half of the 20th century"

Jon Rohde, 2002