

# Systematic Review of the Effectiveness of Community-Based Primary Health Care in Improving Child Health: Current Status

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# Collaborating Entities

- Task Force on the Effectiveness of CBPHC in Improving Child Health
  - Henry Perry (Future Generations)
  - Paul Freeman (Consultant)
  - Sundeep Gupta (CDC, Uganda)
  - Bahie Rassek (World Bank)
- Working Group on CBPHC of the International Health Section of APHA
- UNICEF, WHO, World Bank, USAID/CORE, and Future Generations
- Expert Review Panel

# Members of the Expert Review Panel

- Carl Taylor, Chairperson, Johns Hopkins University, Baltimore, MD, and Future Generations
- Raj Arole, Comprehensive Rural Health Project, Jamkhed, India
- Rajiv Bahl, World Health Organization, Geneva
- Abhay Bang, Society for Education, Action and Education (SEARCH), Gadchiroli, India
- Al Bartlett, USAID, Washington, DC
- Zulfiqar Bhutta, Aga Khan University, Karachi, Pakistan
- Robert Black, Johns Hopkins University, Baltimore, MD

# Members of the Expert Review Panel (cont.)

- Mushtaque Chowdhury, BRAC University, Dhaka, Bangladesh
- Anthony Costello, University College of London, London, UK
- Dan Kaseje, Vice Chancellor, Great Lakes University, Kenya
- Betty Kirkwood, London School of Hygiene and Tropical Medicine, London, UK
- Rudolph Knippenberg, UNICEF, New York, NY
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- Claudio Lanata, Institute of Nutritional Research, Lima, Peru

# Members of the Expert Review Panel (cont.)

- Adetokumbo Lucas, Harvard University, Ibadan, Nigeria
- James Phillips, Columbia University, New York
- Pang Ruyan, WHO, Beijing, China
- David Sanders, University of Western Cape, Cape Town, South Africa
- Agnes Soucat, World Bank, Washington, DC
- Mary Taylor, Gates Foundation, Seattle, WA
- Cesar Victora, University of Pelotas, Pelotas, Brazil
- Zonghan Zhu, Capital Institute of Pediatrics, Beijing, China

# Key Questions

- How strong is the evidence that CBPHC can improve child health?
- What conditions/program elements must be in place for CBPHC to be effective?
- How important are partnerships between communities and health systems?
- Does CBPHC promote equity and is it cost-effective?
- What further research is needed?

# Key Outcomes

- Reductions in under-5 mortality
- Improvements in childhood nutritional status
- Improvements in serious childhood morbidity
- Improvements in key processes known to be closely linked to child health (e.g., population coverage of key child survival interventions, adherence to community-case management protocols, etc.)

# Definition of CBPHC

- Activities, interventions, projects or programs that take place in the community outside of health facilities
- Includes selective and comprehensive approaches
- Includes non-health interventions (e.g., micro-credit, education, women's empowerment, societal factors)

# Review Process

- Review of available documentation (225 documents at present): peer-reviewed journal articles, books, program evaluations, unpublished reports
- Data extraction - 2 independent reviewers
- Special focus on community context and community partnerships
- Face-to-face meeting of Expert Review Panel sponsored by UNICEF in New York in March 2008
- Process is still underway – 3<sup>rd</sup> draft for Expert Review Panel due in 3 weeks
- Hoped for final products: journal articles (including journal supplement) and book

# Effective CBPHC Interventions Provided by Outreach

- Immunizations
- Vitamin A
- Promotion of hygiene, safe water, and sanitation
- ITNs, household spraying of insecticide
- Iodization of salt and iodine supplementation in iodine-deficient areas
- Prevention of mother-to-child transmission of HIV (and possibly provision of ARVs to HIV-infected parents)
- Intermittent preventive treatment of malaria for pregnant women
- Ready-to-use therapeutic foods for severe acute malnutrition

# Effective CBPHC Interventions Requiring Behavior Change and Strong Community Involvement

- Breastfeeding
- ORT and zinc for diarrhea
- Handwashing
- Clean delivery
- Home-based neonatal care including management of neonatal sepsis
- Community-based management of pneumonia and malaria

# Conditions for Maximizing Effectiveness

- Community engagement
- Delivery channel to ensure interventions reach those who need them (routine systematic home visitation a common program element)
- Relationship of trust and respect between the community and the health system
- Community-based worker

# Cost Effectiveness of CBPHC

	Cost per Year of Life Saved	Cost per DALY Saved
<b>Individual Interventions</b>		
Vitamin A supplementation (*when added to existing program)	\$11*	\$9
Community-based therapeutic care for severe acute malnutrition	\$327-387	\$11-12
Home-based neonatal care	\$150 -2,996	\$7-9
Participatory women's groups for maternal and neonatal care (with health system strengthening)	\$5,801-6,912	
<b>Integrated Approaches</b>		
Individual PVO/NGO child survival projects supported by USAID	<\$1,000 - \$1,198	
Review of 32 recent PVO/NGO child survival project supported by USAID	\$1,293	
UNICEF Accelerated Child Survival and Development Project	\$407	
Comprehensive primary health care (including CBPHC)	\$2,775-3,800	\$77
<b>Benchmarks</b>		
Cost-effectiveness threshold established by the Commission for Macroeconomics and Health	\$14,872	
Anti-retroviral therapy		\$350-500

# Equity

- Methods for reaching all homes ensures greater equity than passive approaches (e.g., waiting for people to come to a fixed site)

# Programmatic Factors Enhancing Effectiveness of CBPHC Interventions

- Strong technical and professional leadership
- Strong monitoring and evaluation and operations research
- Strong outreach components down to the household level
- Strong supervisory systems present – especially for lower-level workers
- Linkage to functioning health care systems (including referral hospital care)
- 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)

# Analysis of Integrated Projects

- Review of studies with at least 3 child survival interventions and at least 4 years of implementation
- 40 studies/projects identified

# Characteristics of 18 Integrated Projects in Database So Far

	Median	Range
Population	158,000	10,500 – 10 million
Number of interventions	10	6-15
Duration	5 years	4-43 years
Study design	N	
Baseline/final without comparison	14	
Baseline/final with comparison	4	
Types of Projects	USAID Child Survival to PVOs:	12
	Long-term community health program:	3
	Research-oriented field project:	2
	Other international donor-funded project:	1

# Basic Characteristics of Integrated Community Processes Used in Intervention Implementation

Community process	Number
Use some type of community-based outreach agent	18/18
Had strong community involvement/engagement/mobilization	17/18
Involved in strengthening health system capacity	18/18

# Examples of Types of Community Outreach Workers

- CHWs/VHWs
- Health agents
- Promoters
- Family health workers
- Peer educators
- Family planning agents
- Malaria/nutrition agents
- Community case management workers
- Lead mothers
- Community health extension workers
- Animators
- Community health officers
- Mobile clinic team
- Care groups
- “Socoristas”
- “Accompagnateurs”
- Health surveillance assistants
- Community surveillance volunteers
- Auxiliary nurses
- Bridge to health teams
- Nutrition counselor mothers

# Common Methods of Outreach

- Censuses/mapping/family registration common
- Routine home visitation common
- Common approaches to reaching and motivating the community collectively:
  - Drama
  - Dance
  - Songs
  - Puppet shows for health education

# Examples of Types of Community Involvement/Participation

## At community leadership level

- Village health committees
- Associations of village health committees
- Village development committees
- Health action committees
- Community leadership committees
- Meetings with chiefs/mayors/elders/imams
- Imams as community mobilizers
- Community meetings/assemblies
- Community pharmacies
- Self-sufficient maternity homes

## At household level

- Health days (for community clean up)
- Model mothers
- Competitions among mothers for healthiest babies
- Breastfeeding support groups
- Husbands and mothers-in-law as targets for messages
- Pregnant women's groups
- Mothers' clubs
- Child clubs

# Examples of Types of Support of Health System

- Train staff
- Provide support for logistics (fuel, repair motorbikes, etc.)
- Facilitate referral/counter referral
- Promote visits to model programs
- Promote regular meetings between community leaders and health facility staff
- Communicate messages from facilities to communities (e.g., community vaccination dates, etc.)

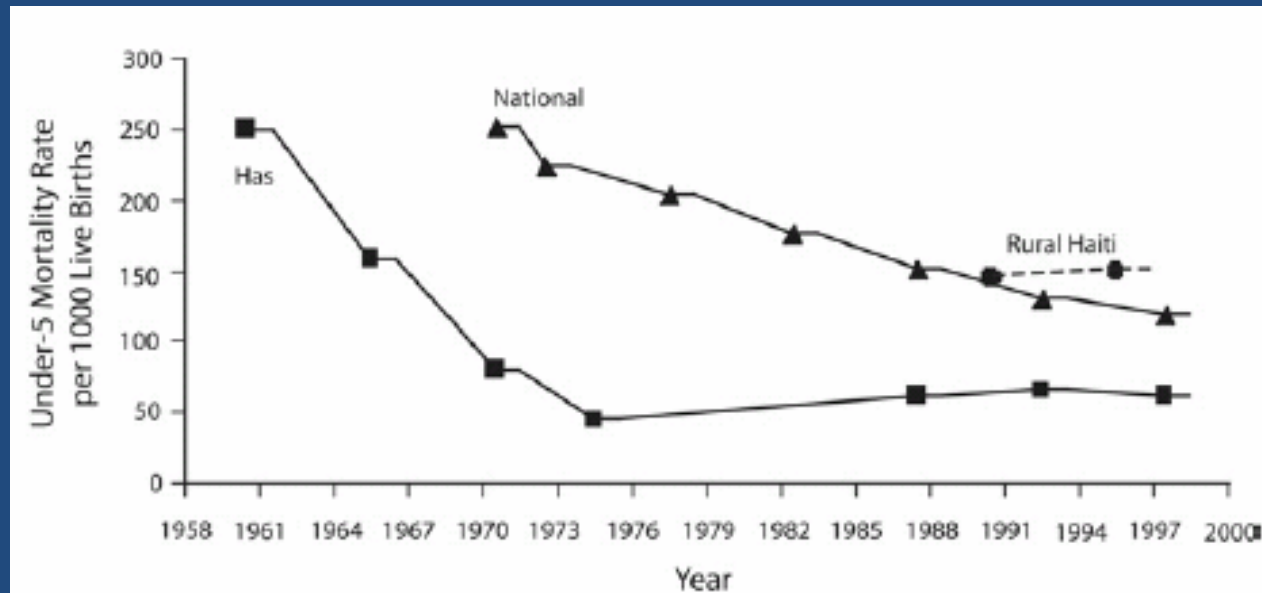
# Outcomes of 18 Integrated Projects

	Median	Range
Improvements in population coverage of key child survival indicators (14 projects)	24%	13-91%
Improvements in nutritional status (2 projects)	2 projects	
Change in mortality rate (6 projects)	55%	24-89%

# Analysis of 4 CBPHC Programs with Long-Term (> 10 years) Child Mortality Impact

- Hospital Albert Schweitzer (Haiti)
- Jamkhed (India)
- Matlab (Bangladesh)
- SEARCH (India)

# Hospital Albert Schweitzer, Haiti (150,000 people)

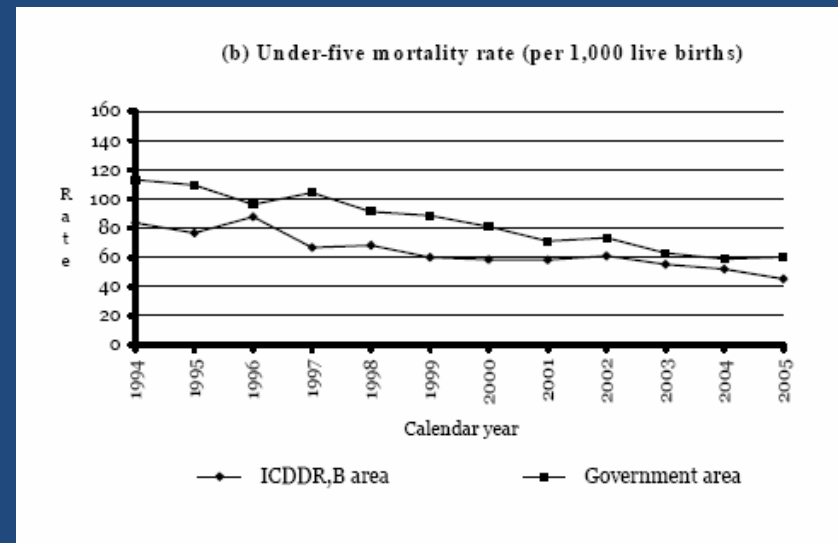
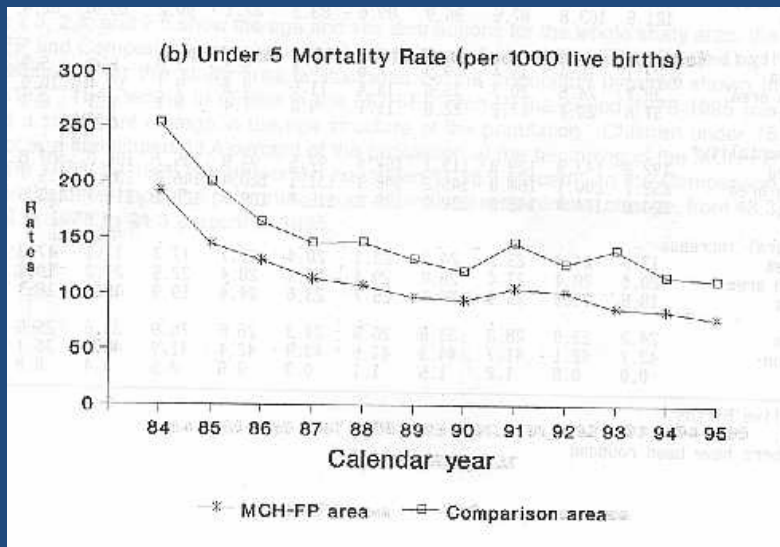


Source. HAS birth history survey, 2000, and Cayemittes et al.<sup>12,13</sup>

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.

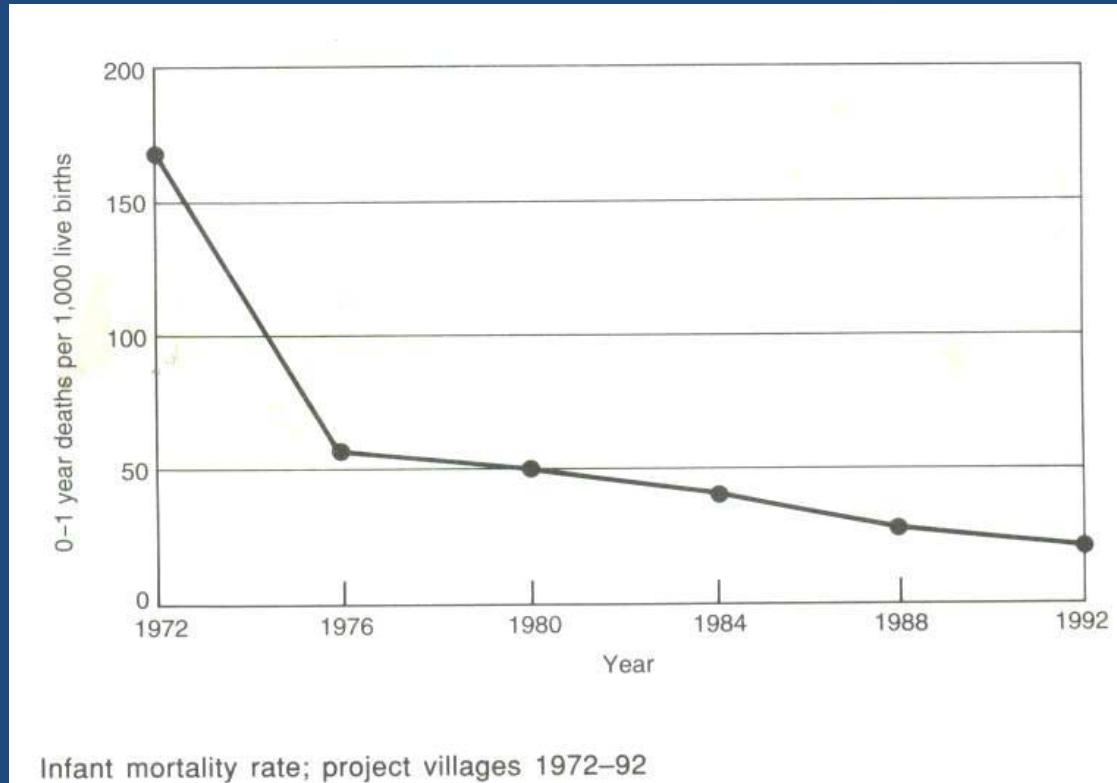
**FIGURE 2—Long-term trends in under-5 mortality rates in Haiti and in the primary health care service area of the Hôpital Albert Schweitzer, 1958–1999.**

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



ICDDR,B, 1996 and 2007

# Jamkhed Comprehensive Rural Health Project, India (150,000 people)



## 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)

# Reductions in Infant Mortality at SEARCH in Gadchiroli, India (40,000 people)

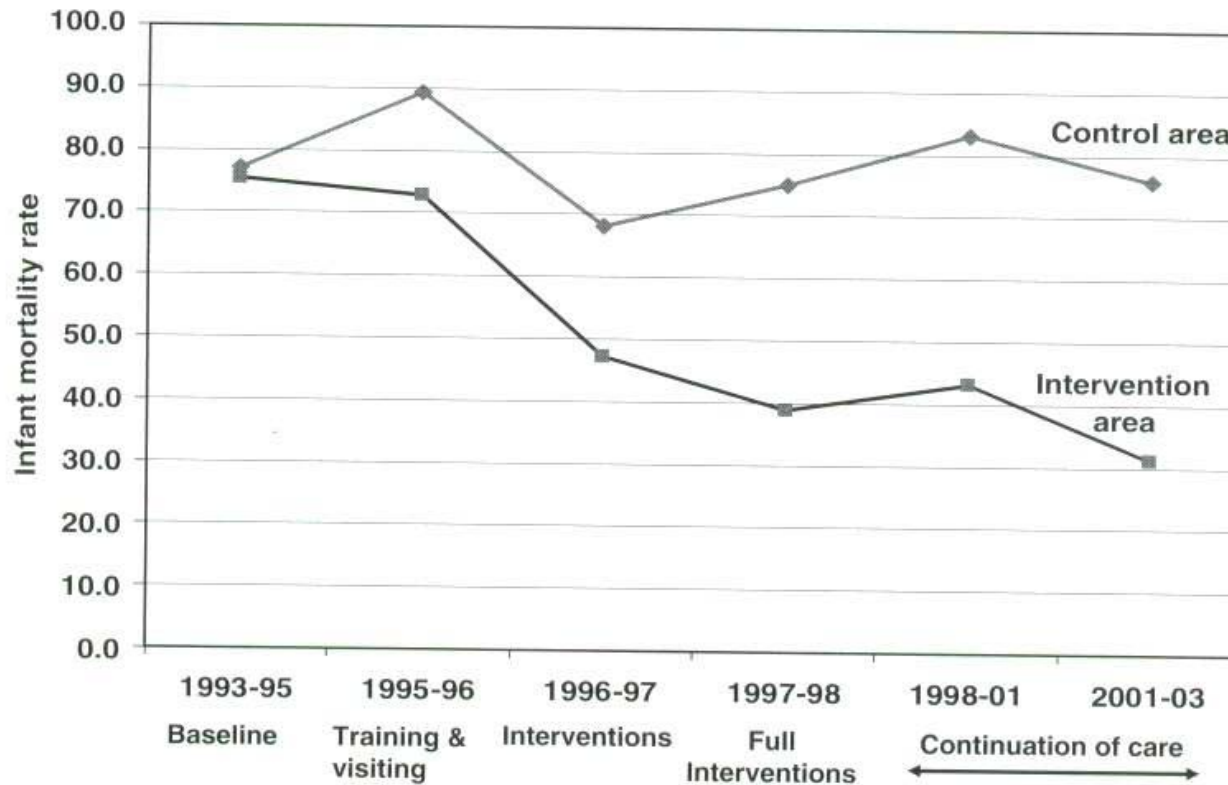


Figure 6. Infant mortality rate in intervention and control areas in Gadchiroli: 1993–1995 to 2001–2003.

Source: Bang et al., Journal of Perinatology, 2005

- All have:
  - Comprehensive child, maternal, reproductive health care (including family planning services)
  - General curative services
  - Community-based workers
  - Routine systematic home visitation
  - Strong supervisory, referral, and logistical support systems
  - Strong partnerships with communities

# Conclusions

- (1) The evidence for the efficacy of specific CBPHC interventions in improving child health is strong (and getting stronger rapidly), and CBPHC deserves a stronger role in programming
- (2) As interventions are integrated and implemented at scale in routine field settings, ongoing impact on under-5 mortality needs to be monitored through transparent and independent processes and the results publicly available – locally, nationally and internationally
- (1) + (2) can accelerate progress toward reducing Millennium Development Goals 1, 4, 5, 6, 7 in high-mortality countries that are lagging

## Conclusions (cont.)

- The second child survival revolution should move beyond highly selective vertical approaches to integrated approaches that foster community partnerships and form sustainable structures upon which a comprehensive PHC system envisioned at Alma Ata can eventually emerge
- In resource-poor, high-mortality settings, CBPHC is one of the foundational elements of an effective, affordable and sustainable health system
- CBPHC provides the opportunity for linking effective approaches for major progress in maternal and child health, HIV/AIDS, TB and malaria

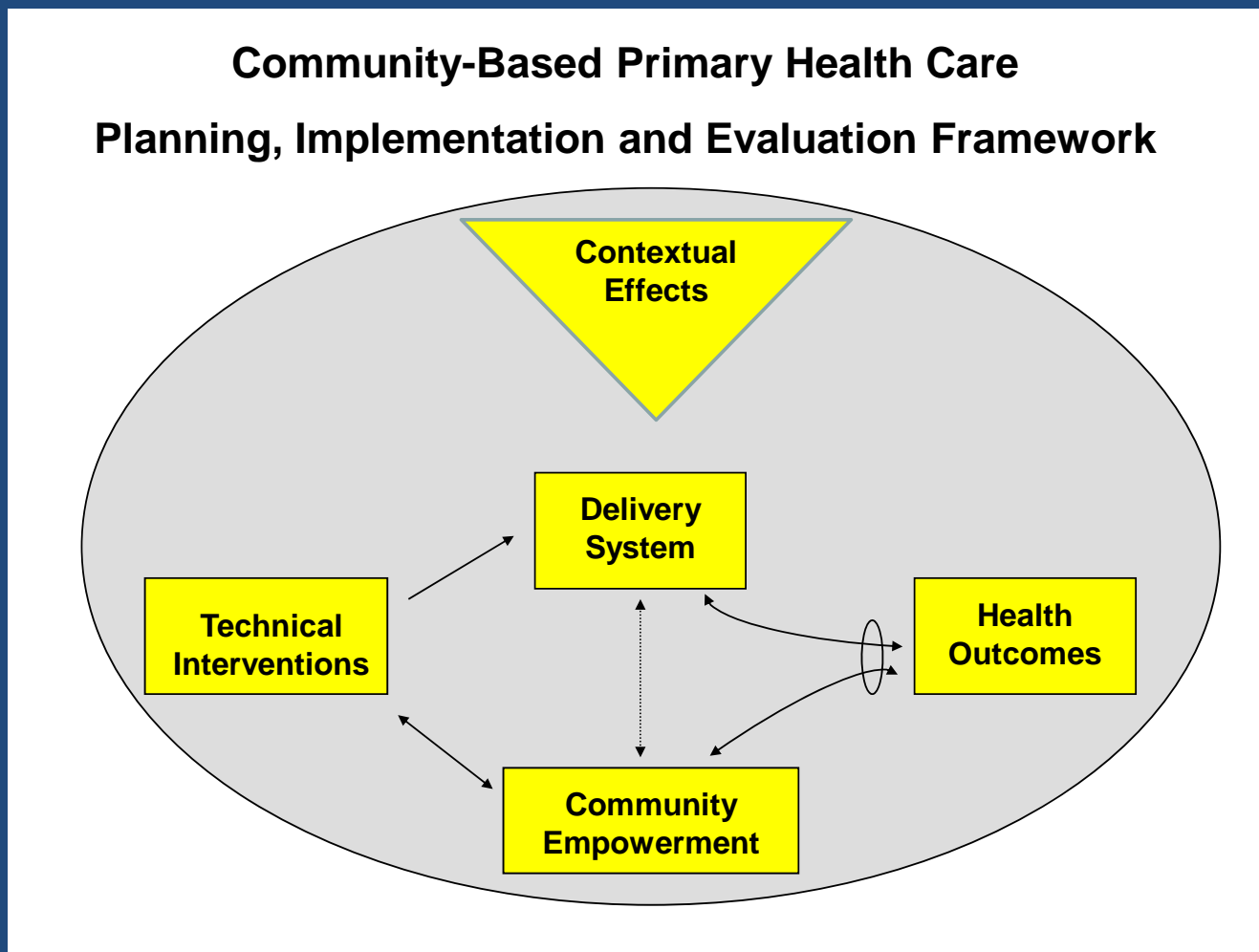
## Conclusions (cont.)

- There is no evidence that facility-based approaches by themselves improve child health
- There is strong evidence that programs to promote facility-based IMCI alone do not improve child health
- We need more evidence of the long-term effectiveness (in routine settings) of integrated CBPHC at scale
- We need better documentation of processes used by effective programs/projects/studies

# Next Steps

- Forceful statement SOON from the Expert Review Panel to the world (via Bulletin of the WHO?) – building on the review but moving beyond it
- Completion of the review as soon as possible
- Incorporation of suggestions and recommendations of the Expert Review Panel and others into final report
- Broad dissemination of findings

# A Conceptual Framework for Planning, Implementing and Evaluating the Effectiveness of Proven Technical Interventions in Routine Field Situations at Scale



# Complete Copies of Current Drafts of CBPHC Review

- Available at:

<http://www.apha.org/membergroups/sections/apha/sections/intlhealth/cbphcw/news/>

Detailed technical comments as well as  
general overall comments are welcome!

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