Chlorhexidine Operations Research (CHX OR) Study 2008-2009

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Partners:
• Government of Bangladesh
• Shimantik
• PATH
• RTM International
• Popular Pharmaceuticals
• ICDDR,B
• John Hopkins Bloomberg School of Public Health
• USAID through the Global Research Activity cooperative agreement with JHSPH
Aims of Operations Research

- Identify and evaluate strategies for delivering CHX to households
  - Promotion through various mechanisms
  - Stand-alone product vs. addition to CDK
- Identify and evaluate strategies for promoting correct and timely CHX cord cleansing
Phase 1: Product and Application

- CHX product from main efficacy trial was used
  - Screw top bottle
  - Re-sealable plastic bag with cotton balls
  - Instruction leaflet
- Application method also same as in trial
  - CHX applied using 2 cotton balls
  - Instructions reflected the instructions given to the community workers in the trial
Instruction Leaflet

[Diagram showing steps to follow]
Phase 1: Distribution and Assessment

- Female Health Counselors (Project staff) provided within 2 months of EDD
  - Direct visit to household
  - OR, community meetings
- CHX also distributed freely at ANC visits (Family Welfare Centers)
- Direct observation of use and semi-structured interviews
Lessons Learned - Phase 1

- Mother applies chx, and usually for 7 days
- 1st applied after cutting cord or after 1st BF
- 2 cotton balls accepted, used as instructed
- Application demonstration with doll helps
- Making instructions **understandable** AND **compact** is challenging
- Hand washing before CHX is common
Development of new product
Nozzle Bottle

- User preferences / attribute study
- BCC Workshop with study partners
- Prototype produces produced and pre-tested for user approval, packaging, and instructions
Two products in Phase 2

- Nozzle bottle product produced by local manufacturer
- Distributed in two ways
  - Stand alone product
  - Packaged in Clean Delivery Kit along with usual items
- Folded instruction leaflet was wrapped around CHX bottle and secured with a rubber band
Phase 2 - Instructions

4% Chlorhexidine Solution
Antiseptic solution for the umbilical cord and umbilicus

**Application**
Apply once daily starting from the day of birth until the baby’s 7th day.
Apply chlorhexidine immediately after cutting the cord.

1. Wash your hands with drinking water and soap, before and after applying the chlorhexidine solution.
   Do not dry hands after washing.

2. Squeeze the bottle to apply the chlorhexidine solution to the base of the umbilical cord.

3. Squeeze the bottle to apply the chlorhexidine solution to the stump of the umbilical cord.

4. Squeeze the bottle to apply the chlorhexidine solution to the tip of the umbilical cord.
   Make sure that the entire umbilical cord is soaked.
   Do not clean off any solution from umbilical cord or umbilicus after application.

5. Continue applying the chlorhexidine solution to the umbilicus after cord separation

**Precaution**
Do not touch your eyes during application.
Keep in dry and cool place, away from light.
Keep away from children.
Distribution/ Sale CHX and CDK

- CHX bundles with CDK distributed for free:
  - Family Welfare Centers
  - Satellite Clinics
  - EPI Health Assistants
  - Family Welfare Assistants

- Stand-alone CHX and CDK bundles sold by CDKs by pharmacies and TBAs
Communication Channels

- Community meetings
- Posters, leaflets, stickers
  - Where, why, how
- Folk song developed, for rickshaws and meetings
Timeline and Assessment

- Initiated in May 2009 and completed in September 2009
- Household Survey of women who delivered during project period
  - n=314, n=299 live births
- Direct observations of chx application in home (n=25)
- In-depth interviews and focus discussions
  - Mothers, husbands, providers, TBAs
Coverage and Use

- Chlorhexidine scale up was broadly accepted and rapid
  - From 0% to 60% in 5 months
  - 68% among home births, 48% among facility births

- About 80-85% of families using CHX acquired it before delivery

- Use within 24 hours varied substantially
  - 79% (home births); 19% (facility births)
TBAs were most common source of CHX

EPI Health Assistants (31%) and FWCs (22%)

The bundle seemed to be more common
  - 84% got CHX within CHX/CDK bundle

Reported exposure to communication messages and reminders strong predictors
Adherence to Instructions

- Mean 7.2 days application
- 83.1% reported washing hands before applying
- 54% first applied immediately after cutting
  - Delay in application assoc with facility delivery
- High proportion followed instructions closely
  - 91% self report, 73% in direct observation
Acquisition of CHX

- Increase attendance at community meetings
- Making CHX part of routine care in health facilities
- Increase exposure to information about CHX, preferably with a strong mass media component
- Increase reminders to collect CHX
Facilities

- Including facilities is important
- Practices in facilities set an example for practices outside of facilities
- Some people wondered why we promoted the product when it wasn’t used in facility
- We can reduce exposure here, too, and residual effect of chlorhexidine continues to offer protection after baby arrives home
Traditional Birth Attendants

- Biggest single source of CHX and CHX sales
- TBA reminders to use CHX led to higher usage rates
- TBAs often did the first application right after birth
- Possible improvement in quality of application by family if TBA initiates (i.e. demonstrates)
Reminders and Target Groups

- Reminders to use CHX one of most important factors
- In scaled up programs, pregnant women should remain target group
  - The just-delivered woman was the most common applier of CHX
- Husbands, mothers-in-law, TBAs, etc could also be target of reminders, etc.
All pregnant women

 Didn’t hear about CHX

 Heard about CHX, didn’t know where to get it

 Provider didn’t have CHX in stock, no CHX in health facilities

 Didn’t receive instructions, demonstration or reminder about CHX application

 Problems with promotion, sales and distribution

 Problems with acceptance, affordability and application of CHX

 Decided not to obtain/buy CHX, didn’t see benefits of CHX for baby

 Couldn’t afford CHX

 CHX not applied in first 24 hours

 Low self-efficacy for correct application and/or CHX applied incorrectly

 Correct application of CHX within first 24 hours