Helping Babies Breathe in a Mud Hut

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• Passionate about improving access to rural healthcare near Arcahaie, Haiti
• Co-founder of Community Health Initiative (CHI)
Where is Arcahaie, Haiti?
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• Continuing investment in the same rural Arcahaie communities
• Returns with 5 medical and 2 surgical trips per year
• CHI staffs local Haitians year round
VOLUNTEERS
• 819 Clinic Volunteers from 28 States
• 50% of volunteers are non-medical
• 50% returning volunteers/team

STAFF
• 16 year-round employees
• Employed 1,225 Haitians
CHI PROJECTS

• 20,000 lbs of plastic recycled per year
• 1,100 water treatment systems delivered
  This reduced diarrhea rate from 40% to 1.8%
• 81 women trained with Helping Babies Breathe
• 2 deep water wells
• 105 eco-composting latrines
• Created a new road
• Installed a solar-powered street light
What is Helping Babies Breathe?
Neonatal Resuscitation

- 1 million babies die each year from lack of oxygen at birth
- In Haiti:
  - Neonatal mortality rate: 27 per 1000 live births
  - Also, 15 per 1000 are stillborn
  - 25% of these deaths are directly attributed to neonatal asphyxia
10-20% of babies do not breathe at birth

Most need drying/warmth, clearing the airway, and stimulation

Only 3-6% will require bag and mask ventilation

1% need more advanced assistance
Helping Babies Breathe (HBB)

Partnership of the:
- American Academy of Pediatrics
- United States Agency for International Development
- National Institute of Child Health and Human Development
- Laerdal Global Health
- Johnson & Johnson
HBB has been shown to significantly reduce neonatal mortality

In Tanzania:
- Sustained 47% reduction in early newborn mortality within 24 hrs
- 25% reduction in the rate of fresh stillbirths
How can this work in Haiti?

- Near Arcahaie:
  - Only 14% of women deliver in a hospital.
  - The majority who deliver at home don’t have their births attended by anyone who has had any formal training.
  - In 2006, only 25% of deliveries in Haiti had a skilled birth attendant present.
How is our HBB different?

• CHI trained Community Health Workers (CHWs) who then train birth attendants and midwives.

• Using a life-like mannequin, basics skills from HBB are taught:
  • vigorous drying
  • using a bulb suction to clear fluid from the mouth and nose
  • stimulation
Then what?

• CHW follow up after delivery and gather information about the birth.

• There was data on 200-300 people
  • Data was incomplete
  • Not all subjects were tracked through
Outcomes Following Birth

214 Babies
- Healthy: 86%
- Ill: 5%
- Dead: 9%

213 Mothers
- Healthy: 84%
- Ill: 16%
- Dead: 0%
Babies per Delivery

- Singletons: 93%
- Twins: 7%

Does HBB help?

- HBB helped: 88%
- HBB didn’t help: 12%
Does HBB help?

Supplies Ready for Birth?
- Yes: 90%
- No: 10%

Midwife There for Birth?
- Yes: 81%
- No: 19%

Someone Trained in HBB?
- Yes: 75%
- No: 25%
How experienced were participants?

• 60% was first birth assist
• 7 Birth assists on average

• Most of the HBB trained birth assistants were untrained laypeople.
How does optimizing care affect baby outcomes?

- When all criteria optimized, how does baby do?
- When not all criteria optimized, how does baby do?

Condition of children:
- Healthy
- Ill
- Dead

%
Does it matter?

Healthy baby birth was significantly more likely if HBB trained person present. (90% vs 76%, \( p = 0.01 \))

Also, neonatal mortality was lower among deliveries with:

- somebody HBB trained present
- supplies ready before delivery
- a midwife present

(2.3% vs 8.0%, \( p = 0.054 \))
Does it matter?

Mom is 66% vs 52% likely to be healthy after delivery if the following three criteria are present at the birth:

• a HBB trained person
• all of the HBB equipment is ready
• a midwife

Finally, 88% of patients thought the program was helpful in their birth.
Why does this matter?

We proved HBB works:
• Out of hospital
• By laypeople
• Without fancy respiratory equipment
Limitations:

• We are largely dependent on local data collection
  • Data are often missing
  • Data collection is ongoing
  • Difficult to verify and ensure uniformity especially with controls

• Huge untapped data set
  • Lots of future analysis options
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• Dr. Chris Buresh

• Dr. Kari Harland

• University of Iowa Department of Emergency Medicine
References:

• CHI website: www.chihaiti.org
• Helping Babies Breath resource page and website: https://www.healthynewbornnetwork.org/partner/helping-babies-breathe/
• WHO website: who.int/
• Google Maps: www.google.com/maps
Thanks!