SANDS: The Stillbirth And Neonatal Death Study

A Mixed Methods Approach to Understanding the First 7 Days of Life

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Neither I nor my co-investigators have any financial disclosures to make
60 million non-facility births worldwide

6 million stillbirths and early neonatal deaths (deaths within the first seven days of life)

684 deaths per hour
Ghana: Perinatal Landscape

• 60% of deliveries outside of health facilities in rural Ghana

• Little information on perinatal mortality
  – Hospital studies, small sizes & complex modeling

• DHS reported on SB rates in 2004
  – In northern Ghana, (pop 1M): 0 SB, 6 END
  – SB 24/1000
  – ND 30/1000
Study setting: Navrongo

Navrongo Health Research Center (NHRC)
Demographic Surveillance System

Two part study:
- Quantitative assessment of SANDS using DSS
- Qualitative assessment of beliefs & practices among perinatal care providers
Study 1: Quantitative

Aims:
• Identify stillbirth, END & ND rates in the Upper East
• Characterize community-based SB, END & ND rates

Methods:
• All registered pregnancies, births, and infant deaths in DSS, Jan 2002 – Dec 2008
• Maternal, infant data linked for analysis
Study 2: Qualitative

Aims:
- To understand beliefs & practices
- To contextualize the quantitative
- To inform evidence-based, locally relevant interventions

Methods:
- In-depth interviews, focus group discussions
- Mothers, grandmothers, community leaders, healthcare providers
What did we ask them about?

- Prenatal period (nutrition, activity, ANC, dos, don’t)
- Delivery care
- Post-partum
- Infant care
- Traditions

SAVING NEWBORN LIVES
TOOLS FOR NEWBORN HEALTH

QUALITATIVE RESEARCH
TO IMPROVE NEWBORN
CARE PRACTICES

Ronald P. Parlato, Gary L. Darmstadt, and Anne Tinker
## Quantitative Study Results

20497 pregnant women registered.

- 755 moved out of study area within
- 233 miscarriages
- 18852 live births
- 451 stillbirths

### MULTIPLE DELIVERY

<table>
<thead>
<tr>
<th></th>
<th>GEE model OR</th>
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<tbody>
<tr>
<td>YES</td>
<td>5.24</td>
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### GESTATIONAL AGE

<table>
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<th>GEE model OR</th>
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<tr>
<td>&lt; 32 weeks</td>
<td>2.84</td>
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<tr>
<td>32-36 weeks</td>
<td>1.29</td>
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<td>&gt;36 weeks</td>
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### NUMBER OF CHILDREN

<table>
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<th>GEE model OR</th>
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<tr>
<td>0</td>
<td>1.85</td>
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<tr>
<td>1-3</td>
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<tr>
<td>&gt;3</td>
<td>0.97</td>
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Timing of END in NHDSS, 2002-2008
Timing of END by cause, determined by VA, 2002-2008
Qualitative Results

253 Participants

In-Depth Interviews (N=72)
- Women with Newborns (N=35)
- Health Care Providers (N=13)
- Trad’l Birth Attendants, Herbalists (N=8)
- Community Leaders (N=16)

Focus Groups (18 FGs, N=181)
- Grandmothers (8 FGs; N=81)
- Compound Heads (2 FGs; N=22)
- Heads of Household (8 FGs; N=78)

~2000 pages of transcripts
Sample Quotes

- “When you are also treating the cord, you have to take good care of it so that dirt will not enter it for it to get rotten and breed maggots because this is where you will not feel comfortable taking care of it.”
  
  - Nankam Grandmother

(Suggested “Cord Care” paper)
Sample Quotes

• “For us in the olden days we will stay in the house and will be commanding the woman to push and all of a sudden you will see the woman is lying dead and we will carry her to go and bury. So this is the reason why we have accepted the hospital for women to go and deliver there.”

  - FGD, Grandmothers

(Suggests paper about attitudes toward Facility-Based Delivery)
Qualitative Study Results

- Major domains:
  - Infant nutrition
  - Clean delivery
  - Community perceptions of illness, tx
  - Grandmothers as gatekeepers
  - Disconnect between providers and community
  - Recognition of maternal danger signs
Take home points

• SB & END remain a significant problem in KND
  • Prematurity, multiple birth & primiparity biggest risk factors
• COD: Infection, prematurity, birth asphyxia
• Social factors appear to play a large role:
  • Choice of delivery location
  • Community power structures
  • Traditions around infant care
Take home points - 2

• DSS data can provide rigorous alternative to DHS

• DSS environments rich sources for qualitative data
  • Opportunity for contextualization

• Fostering interdisciplinary approaches enhances research design, execution, interpretation

• Deliberate integration of mentorship at all levels
  • “Field work is not a long term career” - FB
Take home points - 3

• Synergy of DSS sites working together >> powerful results
e.g. NICHD Global Network, AFRINEST study

• Thoughtful pairing of maternal with the newborn
Publications

• Stillbirth & Early Neonatal Death... (Engmann et al., In Press)
• Infant nutrition in the first seven days of life... (Aborigo et al., In preparation)
• Clean delivery practices... (Moyer et al., Submitted)
• Neonatal mortality... (Walega et al., in preparation)
• Under 5 mortality... (Walega et al., in preparation)
• Impact of the community power structure on maternal and newborn care in the first 7 and first 28 days (Adongo et al., in preparation)
• Community perceptions & practices affecting perinatal mortality
• Grandmothers as gatekeepers
• Recognition of maternal danger signs
• Formal vs. traditional providers
• Disconnect between community and health care providers
SANDS Team

Raymond Aborigo, NHRC
Philip Adongo, UG
Paul Walega, NHRC
Cyril Engmann, UNC
Abraham Hodgson, NHRC, GHS
Cheryl Moyer, UM
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