Identification and Understanding of Preterm Birth

An assessment of the quality of neonatal care at Kintampo Municipal Hospital

Joanna Parga, MS IV
The Mount Sinai School of Medicine
2011 GE/NMF Scholar
Neonatal Care in Resource Poor Countries

- Neonates comprise 38% of childhood mortalities under age 5
- Yearly, four million infants will die before reaching four weeks of age
- Deaths primarily in middle and low income countries - lack of simple care and quality services for mother and infant
Prematurity and Neonatal Death

- Preterm birth is defined as less than 37 weeks gestational age.
- Complications of preterm birth are the single biggest risk factor for neonatal death and increased morbidity.
- Accounts for 27% of the four million neonatal deaths yearly, from direct and indirect causes.
- Despite this, preterm birth lacks visibility and political backing in low-income countries.
Research Question

• What is the current management of premature infants at Kintampo Municipal Hospital?
  ▪ What is the baseline knowledge about care for premature infants that the hospital staff at Kintampo Municipal Hospital possess?
  ▪ What is the prevalence of prematurity in Kintampo?
  ▪ Is there a need for improvement in premature infant care? If so, how can targeted interventions be provided?
Methods

• **Qualitative cross-sectional study** looking at the prevalence of management of premature infants born at Kintampo Municipal Hospital

• **9 - Question Neonatal Care Survey** was created, for all midwives working in the maternity ward
  - For quick survey analysis, created scale based on preexisting clinical knowledge, and percentage of responses: Adequate care/knowledge ≥ 75%, Satisfactory care/knowledge 50-74%, Inadequate care/knowledge ≤ 50%
Neonatal Care Survey
Kintampo Municipal Hospital

1. How old are you? Gender ____________

2. What is your official title at Kintampo Municipal Hospital?

3. How many years of experience have you had working in your field?

4. When a baby is first born, what care do you provide for that infant?

5. When do you consider an infant to be premature?

6. Can you identify 5 challenges that a premature infant faces?

7. If a baby is born that is premature, how does the management of that infant change?

8. What instructions, if any, do you give to mothers who are discharged with premature infants?

9. How valuable is infant life considered in Ghanaian culture?
Methods

- **Neonatal Assessment Sheet** was created to as a tool for collection of basic neonatal data.
- Sheet originally contained the Dubowitz-Ballard scale to assess post-term gestational age, but this assessment was too complex.
- Scale was tailored based on survey results, and need for primary document for neonatal patients.
# Newborn Assessment Sheet

**Date:** __________  **Time of Birth:** __________

**Mother’s Hospital ID Number:** __________

**Estimated Gestational Age in Maternal Folder (weeks):** __________

**Is the infant premature (less than 37 weeks – circle one):**  
- Yes  
- No

**How preterm is the infant (circle one):**  
- Moderate (33-36 weeks)  
- Very (28-32 weeks)  
- Extremely (less than 28 weeks)

**APGAR Score:**  
<table>
<thead>
<tr>
<th>Score</th>
<th>1 min</th>
<th>5 min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Body all blue (cyanosis)</td>
<td>Blue at extremities (pallor/cyanosis)</td>
</tr>
<tr>
<td>Pulse</td>
<td>Absent</td>
<td>Less than 100bpm</td>
</tr>
<tr>
<td>Grinace</td>
<td>No response to stimulation</td>
<td>Grinace and weak cry when stimulated</td>
</tr>
<tr>
<td>Activity</td>
<td>None</td>
<td>Some flexion</td>
</tr>
<tr>
<td>Respiration</td>
<td>Absent</td>
<td>Weak, irregular, gasping</td>
</tr>
</tbody>
</table>

**Need for Neonatal Resuscitation (circle one):**  
- Yes  
- No

**If Yes, describe the resuscitation:** __________

---

**Did the infant require placement in an incubator (circle one):**  
- Yes  
- No

**Physical Exam:**

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Pulse Rate</th>
<th>Respiratory Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal: 35.6°C to 37.5°C</td>
<td>Normal: 109–169 beats/minute</td>
<td>Normal: 49–60 respirations/minute</td>
</tr>
<tr>
<td>Observed:</td>
<td>Observed:</td>
<td>Observed:</td>
</tr>
</tbody>
</table>

**Weight (kg):** __________  **Length (cm):** __________

**Head Circumference (cm):** __________  **Chest Circumference (cm):** __________

**General (posture, activity, gross abnormality, color):** __________

---

**Ability to Suck (circle one):**  
- Strong  
- Weak  
- Absent

**Other Comments:** __________________________________________________________________________
_________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________________
Study Population

• N = 14
• 13 female, 1 male - 13 midwives, 1 doctor
• Ages ranged from 25 to 59 with a mean 43 years +/- 13 years
• Years of experience ranged from 2 to 30 years with a mean of 9 years +/- 6 years
Results:
Defining Preterm Birth

Average estimated GA for preterm birth = 33 weeks +/- 4.4 weeks

No apparent correlation between years of experience and correct definition of prematurity
Results:
Standard of Care for All Infants

Categories of necessary care for all infants:
- Wrap and clean
- Assess head circumference
- Assess chest circumference
- Assess weight
- APGAR
- Physical Exam
- Vitamin K
- Early Breastfeeding

Adequate care: wrap and clean (93%), assess weight (93%), and early breastfeeding (79%)

Satisfactory care: Not provided in any category.

Inadequate care: head (36%) and chest circumference (21%), APGAR (43%), Physical Exam (29%), Vitamin K (14%)
Results:
Standard of Care for Premature Infants

Categories of necessary care for premature infants:
- Incubator usage
- Increased frequency of breast feeds
- Referral to maternal-child clinic
- Preparation for resuscitation
- Decreased exposure (ie. no bathing)

Adequate care: Not provided in any category
Satisfactory care: Incubator usage (57%), Increased frequency of feeds (57%)
Inadequate care: Referral to maternal-child clinic (43%), Preparation for resuscitation (14%), Decreased exposure (21%)
Results: Challenges to Premature Infants

Only 14% of respondents could name 5 challenges. Average of 3 challenges named, +/- 1.5

No apparent correlation between naming challenges to premature infants and year of experiences.
Results:
Counseling Given to Mothers of Premature Infants

Categories of necessary instruction for mothers of premature infants:
- Decrease Exposure (ie. keep infant wrapped)
- Increased frequency of breast feeds
- Watch for signs of infection
- Visit Clinic
- Practice Sterility (ie. hand washing)
- Avoid local herbs

Adequate counseling:
Decreased exposure (79%), increased breastfeeding (93%), watching for infection (79%)

Satisfactory counseling:
Visit clinic (57%), practicing sterility (64%)

Inadequate counseling:
Avoidance of local herbs (29%)
Results:
Views on Infant Mortality

- “He has gone back to God” - “Let’s give it to God”
- “Shouldn’t mourn if you have other children, the others may die if you do that”
- “The woman should deliver again. If you mourn too much it will disturb you.”
- “Mother feels very bad and it pains the mother. There is no funeral, the small baby is buried in the back of the house in a packing case [cardboard box] and that is all.”
Limitations

- Small sample size
- Language barrier - spoke English, but sometimes it was difficult to communicate the meaning of survey questions
- Limited tools for statistical analysis
- Unable to be present at all deliveries during the research period
Discussion

- Being required to take care of two patients at once overstretches midwives
- Cultural-barriers exist to improving infant care
- Ghana is in a unique position to build a neonatal care program
- By standardizing neonatal care Ghana is closer to achieving its Millennium Development Goals
Recommendations for Improvement

- Continued use of neonatal assessment sheet
- Making a country-wide neonatal assessment sheet
- General reorganization of the ward
- Creating folders for neonates
- Giving the head midwife more responsibility to audit the performance of her workers
- Hold weekly educational sessions in the maternity ward for its staff
- More collaboration between the Kintampo Research Center and the Hospital
Acknowledgements

- Dr. Damien Punguyire, Head Midwife Atia Florence and the management and staff at Kintampo Municipal Hospital
- Dr. Emilia Udofia, Mentor
- Dr. Gilbert Buckle, Program Coordinator Ghana
- Dr. Esther Dyer, President and CEO NMF
- Kenneth, Program Coordinator
- The three scholars - Maria Berenice, Anne-Lise, Stephanie
- GE/NMF
References

- Mandy GT, LE Weisman, MS Kim. Short-Term Complications of the Premature Infant. Up to Date Inc. 2010.