Quality of Antenatal and Childbirth Care in Selected Rural Primary Healthcare Facilities in Burkina Faso, Ghana and Tanzania: an Intervention Study

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QUALMAT project

Clinical decision support system (eCDSS)

Performance based incentives

Bridging the Gap

Knowing what to do

Doing what you know

Improved quality of antenatal and childbirth care

Improved mother and newborn health
Objective

- Document changes in the quality of routine antenatal and childbirth care
  - intervention and non-intervention
  - before and after intervention implementation
Source:
Study Setting (2)

• Rural primary health care facilities
  – outside district capital - no more than 2 hours drive from district hospital
  – electricity present or installable
  – admission facilities available

• Staff: health professionals with 1-3 years of training - no medical doctors

• Emergency transport available upon request or not available
Intervention performance based incentives

- Burkina Faso
  - financial and non-financial incentives
  - individual and health facility team awards (financial incentives only at facility level)
- Ghana and Tanzania
  - non-financial incentives
  - individual and health facility team awards
- Implemented for 36 (Burkina Faso), 15 (Ghana), and 17 (Tanzania) months before the post-intervention assessment
Intervention computer-assisted clinical decision support system (eCDSS)

• Checklists: guiding of routine actions
  – Checkboxes
  – Proposed actions

• Electronic tracking of childbirth and immediate postpartum activities
  – Electronic partograph

• Detection of situations of concern
  – Algorithms with warnings and proposed actions
History of current pregnancy - Part 1 of 3

Please greet the woman and make her feel welcome

Please ask the woman about her general well being

- No relevant complaints
- One or more of the following complaints:
  - Lost weight
  - Easily tired
  - Reported fever
    - Only within the last 48 hours
    - Within less than or exactly 1 month
    - More than 1 month ago

The woman has the following gastro-intestinal symptoms

- No relevant complaints
- Intermittent or continuous diarrhea

Please ask the woman if she had urinary / genital symptoms

- No relevant complaints
- One or more of the following complaints:
  - Burning on urination
  - Abnormal vaginal discharge
  - Itching at vulva

A Mama
24 years old
3rd pregnancy / 2 previous deliveries
25th week of current pregnancy

Known allergies
- Amoxicillin
- Chloroquine

First ANC
- History of current pregnancy
- Physical exam
- Laboratory
- HIV
- Other Information
- Consider the following advice
- Counseling and prevention
- Conclusion
Physical exam - Part 1 of 5

Height: 158 cm
Weight: 50.0 kg

Blood pressure first reading: 150 / 120 mmHg

Blood pressure second reading: 150 / 100 mmHg

Heart rate: 80 bpm
Temperature: 38.8 °C

General appearance
- Normal
- Pathologic
  - Lethargic
  - Visible wasting
  - Very weak, unable to stand
  - Generalized edema (other than pretibial)

A Mama
- 24 years old
- 3rd pregnancy / 2 previous deliveries
- 25th week of current pregnancy

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- Consider the following advice
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Blood pressure is still too high! Repeat after one hour.
### Consider the following advice - Part 1 of 5

**The woman may suffer from severe pre-eclampsia**

<table>
<thead>
<tr>
<th>Signs</th>
<th>Advice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood pressure first reading: 150/120 mmHg</td>
<td>Give magnesium sulphate</td>
</tr>
<tr>
<td>Proteinuria</td>
<td>Give appropriate anti-hypertensives</td>
</tr>
<tr>
<td></td>
<td>Revise the birth plan</td>
</tr>
<tr>
<td></td>
<td>Refer urgently to hospital</td>
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**Known allergies**
- Amoxicillin
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- 24 years old
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**First ANC**
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**The woman may suffer from severe anemia**

<table>
<thead>
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<tr>
<td>Measured hemoglobin value: less than 7 g/dl</td>
<td>Refer urgently to hospital if possible</td>
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<td>Revise birth plan so as to deliver in a facility with blood transfusion services</td>
</tr>
<tr>
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<td>Give double dose of iron (1 tablet twice daily) for three months</td>
</tr>
<tr>
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<td>Counsel on compliance with treatment</td>
</tr>
<tr>
<td></td>
<td>Give appropriate oral antimalarial</td>
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<td>Plan to follow up in 2 weeks to check clinical progress</td>
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</table>
Methodology Quality Assessment

- Availability of material and human resources
  - Health facility survey
- Actual care given
  - Direct observation study
  - Review of patient records and routinely collected data
- Women’s experience of care
  - Satisfaction survey (exit interviews)
Compiling Quality Scores

- Health facility survey and direct observation study
  - Commodity available or activity observed=1 / not available or observed=0
  - Variables grouped
  - Mean score for each variable, each group and total score

- Satisfaction survey
  - 5-point Likert scale
  - Factor analysis => variables grouped
  - Mean score for each variable, each group and total score
Assessment of Quality Changes

• Same quality assessment tools used
  – 2010 and 2013/14
  – All intervention and non-intervention facilities

• Wilcoxon–Mann–Whitney test and Wilcoxon signed-rank test used for assessing statistically significant differences in quality of care
Main Findings

• Critical gaps
  – Counselling and health education
  – Laboratory investigations
  – Examination and monitoring of mother and newborn during childbirth
  – Partographs not (correctly) used
  – Equipment to provide assisted vaginal deliveries absent in almost all surveyed facilities

• Post-intervention quality of care does not show a clear difference to pre-intervention quality and quality at the non-intervention facilities
Quality of Routine ANC Care

**Burkina Faso**

- **Nouna**
  - 2010: 0.60
  - 2013/14: 0.80

- **Solenzo**
  - 2010: 0.40
  - 2013/14: 0.60

**Ghana**

- **Kassena-Nankana**
  - 2010: 0.50
  - 2013/14: 0.80

- **Builsa**
  - 2010: 0.40
  - 2013/14: 0.60

**Tanzania**

- **Lindi Rural**
  - 2010: 0.70
  - 2013/14: 0.90

- **Mtwara Rural**
  - 2010: 0.60
  - 2013/14: 0.80

Legend:
- ANC health facility survey
- ANC observation study
- ANC patient record review
Quality of Routine ANC Care

Burkina Faso

Ghana

Tanzania

ANC health facility survey
ANC observation study
ANC patient record review
Quality of Routine ANC Care

Burkina Faso

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ANC health facility survey
ANC observation study
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Quality of Routine ANC Care

**Satisfaction Survey**

### Burkina Faso

- **Nouna**
  - 2010: Quality Score: -1.50
  - 2013/14: Quality Score: -2.00
- **Solenzo**
  - 2010: Quality Score: -1.00
  - 2013/14: Quality Score: 0.00

### Ghana

- **Kassena-Nankana**
  - 2010: Quality Score: -2.00
  - 2013/14: Quality Score: -1.50
- **Builsa**
  - 2010: Quality Score: -1.00
  - 2013/14: Quality Score: -0.50

### Tanzania

- **Lindi Rural**
  - 2010: Quality Score: -1.50
  - 2013/14: Quality Score: -2.00
- **Mtwara Rural**
  - 2010: Quality Score: -1.00
  - 2013/14: Quality Score: -0.50
Quality of Routine ANC Care

Satisfaction Survey

Burkina Faso

Ghana

Tanzania
Quality of Routine Childbirth Care

Burkina Faso

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C redtubei health facility survey
Childbirth observation study
Quality of Routine Childbirth Care

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  - Nouna: 2010, 2013/14
  - Solenzo: 2010, 2013/14

- **Ghana**
  - Kassena-Nankana: 2010, 2013/14
  - Builsa: 2010, 2013/14

- **Tanzania**
  - Lindi Rural: 2010, 2013/14
  - Mtwara Rural: 2010, 2013/14

Legend:
- Blue: Childbirth health facility survey
- Pink: Childbirth observation study
Conclusion

• Quality assessment results quite similar at the three study sites

• QUALMAT intervention did not improve the quality of ANC and childbirth care - no trend in change of quality identified

• Urgent action to improve quality of ANC and childbirth needed

• Supportive environment addressing know-do gap needed
  – context specific interventions
  – genuine involvement of all stakeholders

• Computers can be successfully introduced in rural PHC facilities in resource-constrained settings


• Duysburgh E, Temmerman M, Yé M, Williams A, Massawe S, Williams J, Mpembeni R, Loukanova S, Haefeli WE & Blank A ‘Quality of antenatal and childbirth care in selected rural health facilities in Burkina Faso, Ghana and Tanzania: an intervention study’ accepted for publication at Tropical medicine & international health.


Thank you