Acceptability and applicability of simplified case sheets in improving quality of maternal and neonatal healthcare in primary health centres of northern Karnataka, India

Mexico City

Swaroop N1, Krishnamurthy Jayanna1,2, Prem Mony3, Troy Cunningham1, Maryann Washington3, Arin Kar1, B M Ramesh1,2, Lisa Avery2, Maryanne Crockett2, Janet Bradley2, James Blanchard2, Stephen Moses2

1. Karnataka Health Promotion Trust, Bangalore, India
2. Center for Global Public Health, University of Manitoba, Winnipeg, Canada
3. St. John’s National Academy of Health Sciences, Bangalore, Karnataka
Background

- Institutional deliveries in Karnataka – 65.1% to 89.1%.
- Quality of care not improved considerably.
- Implementation of onsite mentoring to improve quality in primary care facilities through nurse mentors.
- Simplified case sheets were introduced.
  - Delivery record
  - Complication case sheets
**Simplified case sheets as job aid**

**SECTION 3: DELIVERY NOTES**

**BACKGROUND INFORMATION**
- **District**: [Blank]
- **Subdistrict**: [Blank]
- **Village**: [Blank]
- **P.H.C. Location**: [Blank]

**SPECIFIC DIAGNOSIS AND INITIAL MANAGEMENT**

**Diagnosis (Tick as applicable)**
- [ ] Anemia
- [ ] Severe anemia
- [ ] Severe dehydration
- [ ] Respiratory distress
- [ ] Pneumonia
- [ ] Jaundice
- [ ] Hypoglycemia
- [ ] Hypertension
- [ ] Metabolic acidosis
- [ ] Hypothyroidism
- [ ] Hypocalcemia
- [ ] Jaundice
- [ ] Respiratory distress
- [ ] Pneumonia
- [ ] Jaundice
- [ ] Hypoglycemia
- [ ] Hypertension
- [ ] Metabolic acidosis
- [ ] Hypothyroidism
- [ ] Hypocalcemia

**Initial management at the P.H.C.**

1. [ ] Place the baby on his back
2. [ ] Place the baby on his stomach
3. [ ] Place the baby on his side
4. [ ] Place the baby on his feet
5. [ ] Place the baby on his head

**TIME AT WHICH HEART RATE WAS COMPARED**

- [ ] Newborn
- [ ] Mother

**ACTION TAKEN**

- [ ] Place baby on his back
- [ ] Place baby on his stomach
- [ ] Place baby on his side
- [ ] Place baby on his feet
- [ ] Place baby on his head

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- [ ] Severe dehydration
- [ ] Respiratory distress
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- [ ] Hypothyroidism
- [ ] Hypocalcemia
Objective

To understand the acceptability and application of simplified cases sheet in improving the quality of maternal and newborn care in PHCs within the Indian Public Health System.

Acceptability: Trend in the use of case sheets for women in labour or with complications.

Application: Use of case sheet for provision of evidence based care.
Methods

Data Source: Record review of case sheets, parturition & referral registers

Data collection tools: Acceptability – Case sheet summary
Applicability – Case sheet audit

Study period: Case sheet summary - Mar 2013 – Nov 2014
Case sheet audit - Apr 2014 – Nov 2014

Case sheet filled by: Staff Nurses of 385 PHCs

Data collected by: Nurse Mentors, M&E Specialists

Data analysis tools: Microsoft excel, STATA 14

Statistical analysis: Frequencies, Z test, ANOVA
Acceptability of case sheets, Mar 2013- Nov 2014

Delivery record trend

Complication sheet trend

Significant difference (p<0.01) between years 2013 and 2014 - delivery load of the PHCs
<table>
<thead>
<tr>
<th>Maternal care</th>
<th>April 2014</th>
<th>November 2014</th>
<th>Z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestational age</td>
<td>63.1%</td>
<td>73%</td>
<td>8.17</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Hemoglobin test</td>
<td>33.3%</td>
<td>39.5%</td>
<td>4.93</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Partograph</td>
<td>80.2%</td>
<td>91.2%</td>
<td>11.25</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Active Management Third Stage Labour (AMTSL)</td>
<td>96.2%</td>
<td>99.2%</td>
<td>7.56</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>
Case sheet application – delivery record

<table>
<thead>
<tr>
<th>Newborn care</th>
<th>April 2014</th>
<th>November 2014</th>
<th>Z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast feeding initiation</td>
<td>91.6%</td>
<td>95.1%</td>
<td>5.34</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Vitamin K</td>
<td>66.6%</td>
<td>80.2%</td>
<td>11.79</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>BCG</td>
<td>44.8%</td>
<td>43.6%</td>
<td>0.92</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Zero dose OPV</td>
<td>90.2%</td>
<td>93.4%</td>
<td>4.43</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Zero dose Hepatitis B</td>
<td>81.5%</td>
<td>91.5%</td>
<td>11.19</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>
## Case sheet application – delivery record

<table>
<thead>
<tr>
<th>Follow-up</th>
<th>April 2014</th>
<th>November 2014</th>
<th>Z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge time</td>
<td>93.4%</td>
<td>96.8%</td>
<td>5.99</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Delivery outcome</td>
<td>93.8%</td>
<td>96.3%</td>
<td>4.38</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Informed ASHA</td>
<td>79.8%</td>
<td>88.8%</td>
<td>9.45</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Diagnosis &amp; management of maternal complications</td>
<td>April 2014</td>
<td>November 2014</td>
<td>Z</td>
<td>p</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------</td>
<td>------------</td>
<td>----------------</td>
<td>-----</td>
<td>--------</td>
</tr>
<tr>
<td>Prolonged / Obstructed Labour diagnosed using Partograph</td>
<td>N=421</td>
<td>N=398</td>
<td>8.2</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td></td>
<td>40.4%</td>
<td>67.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe Pre-Eclampsia &amp; Eclampsia Proteinuria test done</td>
<td>N=340</td>
<td>N=267</td>
<td>3.1</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td></td>
<td>8.8%</td>
<td>17.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe PIH/ Preeclampsia/ Eclampsia BP recorded</td>
<td>N=340</td>
<td>N=267</td>
<td>4.1</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td></td>
<td>32.4%</td>
<td>48.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe PIH/ Preeclampsia/ Eclampsia antihypertensive administered</td>
<td>N=340</td>
<td>N=267</td>
<td>3.0</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td></td>
<td>20.3%</td>
<td>31.1%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Case sheet application – complication sheet

<table>
<thead>
<tr>
<th>Diagnosis &amp; management of maternal complications</th>
<th>April 2014</th>
<th>November 2014</th>
<th>Z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemorrhage (APH/PPH) - blood loss and vitals (BP, Pulse) recorded</td>
<td>N=148</td>
<td>N=148</td>
<td>1.8</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td></td>
<td>40.5%</td>
<td>50.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haemorrhage (APH/PPH) - fluids administered before referral</td>
<td>N=148</td>
<td>N=148</td>
<td>0.7</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td></td>
<td>35.8%</td>
<td>39.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPH - uterotonics administered before referral</td>
<td>N=74</td>
<td>N=79</td>
<td>1.3</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td></td>
<td>25.7%</td>
<td>35.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preterm/premature rupture of membranes corticosteroids used before referral</td>
<td>N=246</td>
<td>N=263</td>
<td>1.4</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td></td>
<td>16.7%</td>
<td>21.7%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Case sheet application – complication sheet

<table>
<thead>
<tr>
<th>Diagnosis &amp; management of newborn complications</th>
<th>April 2014</th>
<th>November 2014</th>
<th>Z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>LBW cases where KMC was provided before referral</td>
<td>N=78</td>
<td>N=87</td>
<td>4.9</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td></td>
<td>32.1%</td>
<td>67.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asphyxia cases where bag and mask was used for resuscitation</td>
<td>N=161</td>
<td>N=173</td>
<td>7.2</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td></td>
<td>26.7%</td>
<td>63.0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Conclusions

- Acceptance of case sheets improved from Mar 2013 to Nov 2014.
- Evidence based management of cases improved.
- Integrating checklist with case sheet – effective tool.
- Further analysis - impact of simplified case sheets on reducing MMR & NMR.
Acknowledgements

- Government of Karnataka (Directorate of Health and National Health Mission)
- Sukshema partners
- Bill and Melinda Gates Foundation

Disclaimer: The views expressed herein are those of the authors and do not necessarily reflect the official policy or position of the Bill & Melinda Gates Foundation.