Cesarean Section Rates and Indications at MRRH

By: Natasha Spencer
Introduction

- Cesarean section has become one of the most commonly performed surgical operations in the world today. In the past few decades, the rate of cesarean sections has been increasing worldwide.

- The World Health Organization (WHO) has stated that there is no justification for any region to have cesarean sections rates higher than 10 to 15 percent.

- In 2007, Betrán et al concluded that although very unevenly distributed, 15 percent of births worldwide occur by cesarean sections.
  - Latin America and the Caribbean show the highest rate (29.2%), and Africa shows the lowest (3.5%).
According to Uganda Demographic Health Survey (DHS) conducted in 2006, less than 50 percent of births within Uganda in the five years preceding the survey took place in health facilities and of those delivering at various health facilities, 3 percent of births were delivered by cesarean sections.

Additionally, when viewing the utilization of cesarean sections by subregions of Uganda, the DHS showed that the prevalence of cesarean sections varied from a high of 4 percent in Western area, which includes Mbarara, to a low of 1.5 percent in Northern part.
At MRRH…

- The rates of cesarean section at Mbarara Regional Referral Hospital (MRRH) does not support the figures described by DHS however. In fact, the cesarean section rates have been above the recommended rate by WHO for several years now.

- In FY2006/2007, the Annual Health Sector Performance Report recorded the cesarean sections rate for MRRH at 24.1 percent. It rose to 28.4 percent in FY2008 then 28.5 percent in FY2009 as per the MRRH Annual Performance Report. Last year, the rate of cesarean sections had decreased slightly to 27.7 percent per internal data gathered by the OBGYN department.
Study Rationale

- Although the cesarean section rate has decreased faintly, it still remains much elevated than what is recommended.

- Regardless of the reason, the progressively increasing cesarean sections rates at MRRH in the midst of low cesarean section rates for Africa (as well as Uganda and its western region) are cause for concern and also raise the question of the appropriateness of the selection of cases for the procedure.
Objectives

- This will be a chart review/descriptive study intended to generate data that describes the rate of cesarean sections and indications at Mbarara Regional Referral Hospital (MRRH). The objectives of the study are as follows and apply to the population of women who delivers at MRRH:
  - **Objective 1**: Describe the rate of cesarean sections done at MRRH via the number of cesarean sections performed and total number of deliveries
  - **Objective 2**: Evaluate the indications for cesarean section performed at MRRH
  - **Objective 3**: Provide educational feedback to the OBGYN staff and students at MRRH
  - **Objective 4**: Provide recommendations for improving antenatal care and the appropriateness of the selection of cases for cesarean sections if necessary
Methods

- **Study Design**

A prospective chart review will be done to determine the rate of cesarean section and assess the indications for cesarean sections during the month of April 2011 at MRRH in Mbarara, Uganda. Demographic data collected includes patient name, age, parity, estimated gestation age, pre-op diagnosis and evaluation, post-op diagnosis, anesthesia, whether procedure was primary or repeat, outcome (fetal and maternal), and referral status. Other information will be gathered from members of the obstetrics and gynecology department on the antenatal and postpartum wards. Demographic data will only be used to collect statistical figures and no personally identifiable information will be noted.
Sample Table for Data Gathering

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Age</th>
<th>Parity</th>
<th>EGA</th>
<th>Pre-op Dx</th>
<th>Post-op Dx</th>
<th>Pre-op Evaluation</th>
<th>Anest</th>
<th>Primary or Repeat</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Maternal</td>
</tr>
</tbody>
</table>


Results

- 801 Total Deliveries
  - 594 SVDs
  - 8 V/E
  - 199 C/S

- Cesarean Section Rate (CSR) Formula:

  \[
  \text{Number of cesarean sections performed} \times 100 \quad \text{Total number of Deliveries}
  \]

- CSR for the month of April was approximately 25%
The Most Common Indications

- Fetal Distress (17.1%)
- Contracted Pelvis (16.1%)
- Repeat Sections (14.1%)
- Obstructed Labor (9%)
- Prolonged Labor (6.5%)
- Scar tenderness (5.0%)
## Overall Evaluation Results

<table>
<thead>
<tr>
<th>Eval Score</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Good</td>
<td>106</td>
<td>53.3</td>
<td>53.3</td>
<td>53.3</td>
</tr>
<tr>
<td>Average</td>
<td>50</td>
<td>25.1</td>
<td>25.1</td>
<td>78.4</td>
</tr>
<tr>
<td>Poor</td>
<td>43</td>
<td>21.6</td>
<td>21.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>199</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
# Common Final Dx and Eval Score

<table>
<thead>
<tr>
<th>Final Dx</th>
<th>Evaluation</th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very Good</td>
<td>Average</td>
<td>Poor</td>
<td></td>
</tr>
<tr>
<td>&gt;2 P/S</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>2 P/S</td>
<td>23</td>
<td>0</td>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td>CP</td>
<td>8</td>
<td>14</td>
<td>10</td>
<td>32</td>
</tr>
<tr>
<td>FD</td>
<td>11</td>
<td>12</td>
<td>11</td>
<td>34</td>
</tr>
<tr>
<td>Obstructed labor</td>
<td>5</td>
<td>7</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td>Prolonged labor</td>
<td>3</td>
<td>6</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Scar tenderness</td>
<td>0</td>
<td>1</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>136.593(a)</td>
<td>74</td>
<td>.000</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>157.232</td>
<td>74</td>
<td>.000</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>199</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Discussion

- MRRH CSR is higher than the recommended rate suggested by WHO
  - The CSR has been greater than 24 percent for the past four years and was 25 percent in the month of April 2011

- Significance of high CSR
  - High and steadily increasing CSR has the potential to result in an increase in maternal and perinatal mortality as well as morbidity
  - Medically unnecessary procedures pose danger to patients
    - Souza et al investigated the relationship between cesarean sections without medical indication and severe maternal outcomes. They found that cesarean sections were associated with an intrinsic risk of increased severe maternal outcomes and concluded that cesarean sections should be performed when a clear benefit is anticipated, a benefit that might compensate for the higher costs and additional risks associated with this operation.
Discussion

- Cesarean sections usually determines the future obstetric course of any women and therefore should be avoided whenever possible.

- Being that repeat cesarean sections of ≥2 scars will undoubtedly remain unchanged, the first area of intervention to reduce CSR is to lessen primary cesarean sections.

- Reason of primary sections must be genuine.
  - Unless there is a solid indication, trial of labor must be given to patient.
  - 59.3 percent of cesareans performed were primary and only 49.2 percent with adequate supporting evidence.
  - More specifically, fetal distress, obstructed labor, contracted pelvis, and prolonged labor were the most common indications for primary cesareans; however, only 29.6 percent of the cases had adequate support.
  - The CSR can be greatly affected by modifying those numbers.
Discussion

- Trial of scar can be given in singleton pregnancy, in which the previous scar indication is no longer valid, to decrease the repeat CS, as the risk of rupture is 0.3%.
  - The most common indications for repeat cesareans, other than 2 or more scars, were contracted pelvis (25.9%) and scar tenderness (12.3%)
  - 25 (80.6%) cases had either average or poor evaluation scores which could have been considered potential VBAC cases

- It is understandable that being a referral hospital can cause a slight increase in CSR due to the fact that the patients referred most times have one or more risk factors and/or already had a trial of labor somewhere else.
  - In the 28 referred cases, the common indications were obstructive labor, fetal distress, contracted pelvis, and prolonged labor
  - 62.3 percent did not have adequate evidence
Recommendation

- Looking at the data, there is room for reduction
  - Reducing primary cesareans
  - Encouraging VBACs
  - Better re-assessment of referral cases
  - More active management of Labor

- Probable Interventions
  - Audit and Feedback Cycles
  - Multifaceted Strategies
  - Continuous Quality Improvement
    - Obtaining CTG on every FD patient
    - Performing thorough exams and pelvimetry
    - Maintaining partographs
    - Obtaining estimated fetal weights for suspected LGAs
    - Better documentation in file