Reproductive, Maternal and Newborn Health Project
2015 - 2016, Khyber Pakhtunkhwa
Quality and Patient Safety in Obstetric (QUAPASO)
Technical Advisory Group Workshop
Implementing the WHO Safe Childbirth Checklist

Prof. Dr. Sebastian Vollmer
Jana Kuhnt, M.Sc.
Maternal and child health

• maternal mortality ratio:
  210 maternal death per 100,000 live births on average in 2013
  → 289,000 women died following pregnancy and childbirth world wide

• infant mortality rate:
  34 death per 1000 live births on average in 2013
  → 2.8 million infants died within their first month world wide

  - large differences between regions
Maternal and child health

Maternal mortality ratio (per 100 000 live births), 2013

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not be full agreement.

Data Source: World Health Organization
Map Production: Health Statistics and Information Systems (HSI)
World Health Organization
© WHO 2014. All rights reserved.
Maternal and child health

Under-five mortality rate (probability of dying by age 5 per 1000 live births), 2013


The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.
Maternal and child health

**WHAT ARE PREGNANT WOMEN DYING FROM?**

- **28%** Pre-existing medical conditions exacerbated by pregnancy (such as diabetes, malaria, HIV, obesity)
- **27%** Severe bleeding
- **14%** Pregnancy-induced high blood pressure
- **11%** Infections
- **8%** Abortion complications
- **9%** Obstructed labour and other direct causes
- **3%** Blood clots

© World Health Organization 2014
Maternal and child health

- global ambitions to reduce these mortalities:
  UN Millennium Development Goals (MDG)
  
  MDG4: reduce by $\frac{2}{3}$ between 1990 and 2015 under-five mortality rate
  MDG 5: reduce by $\frac{3}{4}$ between 1990 and 2015 maternal mortality ratio

- achieved: reduction by $\frac{1}{2}$
  & reduction by $\frac{1}{2}$

  → substantial improvements but failed to meet the goals
  → further efforts required
Improving maternal and child health

WHAT IS NEEDED TO SAVE MORE LIVES?

- Quality care before, during & after childbirth
- Safe blood supplies
- Essential medicines such as antibiotics and oxytocin
- Contraception & safe abortion services
- Every death is counted & its cause recorded

© World Health Organization 2014
Improving quality of service: checklists in medicine

- Atual Gawande from Harvard
- idea to use checklists to handle increasing complexity as done by pilots, engineers,…
  - help to recall all steps
  - establish higher standard
Improving quality of service: checklists in medicine

• checklists for intensive care
  – checklist for central line insertion
    □ wash hands with soap
    □ clean the patient’s skin with antiseptic
    □ put sterile drapes over the entire patient
    □ wear a sterile mask, hat, gown, and gloves
    □ cover the site with a sterile dressing

• central line associated blood stream infections rate reduced dramatically
Surgical Safety Checklist

Before induction of anaesthesia
(with at least nurse and anaesthetist)

- Has the patient confirmed his/her identity, site, procedure, and consent?
  - Yes
- Is the site marked?
  - Yes
  - Not applicable
- Is the anaesthesia machine and medication check complete?
  - Yes
- Is the pulse oximeter on the patient and functioning?
  - Yes

Does the patient have a:

- Known allergy?
  - No
  - Yes
- Difficult airway or aspiration risk?
  - No
  - Yes, and equipment/assistance available
- Risk of >500ml blood loss (7ml/kg in children)?
  - No
  - Yes, and two IVs/central access and fluids planned

Before skin incision
(with nurse, anaesthetist and surgeon)

- Confirm all team members have introduced themselves by name and role.
- Confirm the patient’s name, procedure, and where the incision will be made.
- Has antibiotic prophylaxis been given within the last 60 minutes?
  - Yes
  - Not applicable

Anticipated Critical Events

To Surgeon:
- What are the critical or non-routine steps?
- How long will the case take?
- What is the anticipated blood loss?

To Anaesthetist:
- Are there any patient-specific concerns?

To Nursing Team:
- Has sterility (including indicator results) been confirmed?
- Are there equipment issues or any concerns?

Is essential imaging displayed?
- Yes
- Not applicable

Before patient leaves operating room
(with nurse, anaesthetist and surgeon)

Nurse Verbally Confirms:
- The name of the procedure
- Completion of instrument, sponge and needle counts
- Specimen labelling (read specimen labels aloud, including patient name)
- Whether there are any equipment problems to be addressed

To Surgeon, Anaesthetist and Nurse:
- What are the key concerns for recovery and management of this patient?

This checklist is not intended to be comprehensive. Additions and modifications to fit local practice are encouraged.
Improving quality of service: checklists in medicine

- WHO checklist on safe surgery
  - pilot study in 8 hospitals across the 6 WHO regions
    - rate of major inpatient complications dropped from 11% to 7%
    - inpatient death rate following major operations fell from 1.5% to 0.8%.

  - similar results by other studies
WHO safe childbirth checklist

- idea to use checklist for childbirth
  - builds on the positive experiences with checklists in medicine
  - ensure compliance with evidence-based practices

- 29 items addressing major causes of maternal and infant mortality

- details should be adapted to country specific circumstances

- 4 “checkpoints”:
  admission, before pushing/cesarean, shortly after birth, before discharge

- first pilot projects suggest high potential of checklist
Safe Childbirth Checklist Pause Points

Checkpoint #1
On admission

Checkpoint #2
Just before pushing (or before Cesarean)

Delivery

Checkpoint #3
Soon after birth (within 1 hour)

Discharge from birth facility

Checkpoint #4
Before Discharge

Admission to birth facility

Maternal & neonatal mortality risk

Labor onset

Antenatal period

Time

28 days

42 days
# Before Birth

**SAFE CHILDBIRTH CHECKLIST - PILOT EDITION**

## 1. On admission

<table>
<thead>
<tr>
<th>Does Mother need referral?</th>
<th>Check your facility’s criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="on_admission/no" alt=" " /> No</td>
<td></td>
</tr>
<tr>
<td><img src="on_admission/yes" alt=" " /> Yes, organized</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Partograph started?</th>
<th>Start plotting when cervix ≥4 cm, then cervix should dilate ≥1 cm/hr</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="partograph/no" alt=" " /> No</td>
<td>• Every 30 min: plot HR, contractions, fetal HR</td>
</tr>
<tr>
<td><img src="partograph/yes" alt=" " /> Yes</td>
<td>• Every 2 hrs: plot temperature</td>
</tr>
<tr>
<td><img src="partograph/yes" alt=" " /> Yes</td>
<td>• Every 4 hrs: plot BP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Does Mother need to start:</th>
<th>Give antibiotics to Mother if any of:</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="antibiotics/no" alt=" " /> No</td>
<td>• Mother’s temperature ≥38°C</td>
</tr>
<tr>
<td><img src="antibiotics/yes" alt=" " /> Yes, given</td>
<td>• History of foul-smelling vaginal discharge</td>
</tr>
<tr>
<td><img src="antibiotics/yes" alt=" " /> Yes, given</td>
<td>• Rupture of membranes &gt; 18 hrs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Magnesium sulfate?</th>
<th>Give magnesium sulfate to Mother if any of:</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="magnesium/no" alt=" " /> No</td>
<td>• Diastolic BP ≥110 mmHg and 3+ proteinuria</td>
</tr>
<tr>
<td><img src="magnesium/yes" alt=" " /> Yes, given</td>
<td>• Diastolic BP ≥90 mmHg, 2+ proteinuria,</td>
</tr>
<tr>
<td><img src="magnesium/yes" alt=" " /> Yes, given</td>
<td>and any: severe headache, visual disturbance, epigastric pain</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Antiretrovirals?</th>
<th>Mothers with CD4 ≤350 or clinical diagnosis require treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="antiretrovirals/no" alt=" " /> No</td>
<td></td>
</tr>
<tr>
<td><img src="antiretrovirals/yes" alt=" " /> Yes, given</td>
<td></td>
</tr>
<tr>
<td><img src="antiretrovirals/yes" alt=" " /> Yes, given</td>
<td>If status unknown, HIV test ordered</td>
</tr>
</tbody>
</table>

- Confirm supplies are available to clean hands and wear gloves for each vaginal exam
- Encourage Birth Companion to be present at birth
- Confirm that Mother or Companion will call for help during labour if needed

Call for help if any of:
- Bleeding
- Severe abdominal pain
- Severe headache or visual disturbance
- Unable to urinate
- Urge to push

Completed by: ____________

## 2. Just before pushing (or before Caesarean)

<table>
<thead>
<tr>
<th>Does Mother need to start:</th>
<th>Give antibiotics to Mother if any of:</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="antibiotics/no" alt=" " /> No</td>
<td>• Mother’s temperature ≥38°C</td>
</tr>
<tr>
<td><img src="antibiotics/yes" alt=" " /> Yes, given</td>
<td>• History of foul-smelling vaginal discharge</td>
</tr>
<tr>
<td><img src="antibiotics/yes" alt=" " /> Yes, given</td>
<td>• Rupture of membranes &gt; 18 hrs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Magnesium sulfate?</th>
<th>Give magnesium sulfate to Mother if any of:</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="magnesium/no" alt=" " /> No</td>
<td>• Diastolic BP ≥110 mmHg and 3+ proteinuria</td>
</tr>
<tr>
<td><img src="magnesium/yes" alt=" " /> Yes, given</td>
<td>• Diastolic BP ≥90 mmHg, 2+ proteinuria,</td>
</tr>
<tr>
<td><img src="magnesium/yes" alt=" " /> Yes, given</td>
<td>and any: severe headache, visual disturbance, epigastric pain</td>
</tr>
</tbody>
</table>

- Confirm essential supplies are at bedside and prepare for delivery:
  - for Mother
    - Gloves
    - Alcohol-based handrub or soap and clean water
    - Oxytocin 10 units in syringe
  - for Baby
    - Clean towel
    - Sterile blade to cut cord
    - Suction device
    - Bag-and-mask

- Prepare to care for Mother immediately after birth:
  - Confirm single baby only (not multiple birth)
  - 1. Give oxytocin within 1 minute after birth
  - 2. Deliver placenta
  - 3. Massage uterus after placenta is delivered
  - 4. Confirm uterus is contracted

- Prepare to care for Baby immediately after birth:
  - 1. Dry baby, keep warm
  - 2. If not breathing, stimulate and clear airway
  - 3. If still not breathing:
    - clamp and cut cord
    - clean airway if necessary
    - ventilate with bag-and-mask
    - shout for help

- Assistant identified and ready to help at birth if needed?

Completed by: ____________

This checklist is not intended to be comprehensive and should not replace the patient chart or partograph. Additions and modifications to fit local practice are encouraged. For more information on recommended use of the checklist, please refer to the “Safe Childbirth Checklist Manual” at: www.who.int/patientsafety.

© WHO, 2012

WHO/IER/PSP/2012.15
## 3. Soon after birth (within 1 hour)

### Is Mother bleeding abnormally?
- ☐ No
- ☐ Yes: Shout for help

### Does Mother need to start:

#### Antibiotics?
- ☐ No
- ☐ Yes, given

#### Magnesium sulfate?
- ☐ No
- ☐ Yes, given

### Does Baby need:

#### Referral?
- ☐ No
- ☐ Yes, given

#### Antibiotics?
- ☐ No
- ☐ Yes, given

#### Special care/monitoring?
- ☐ No
- ☐ Yes, organized

#### Antiretrovirals?
- ☐ No
- ☐ Yes, organized

- ☐ Started breastfeeding and skin-to-skin contact (if Mother and Baby well)
- ☐ Confirm Mother/Companion will call for help if danger signs present

---

## 4. Before discharge

### Is Mother’s bleeding controlled?
- ☐ No: Treat and delay discharge
- ☐ Yes

### Mother to start antibiotics?
- ☐ No
- ☐ Yes: Give and delay discharge

### Baby to start antibiotics?
- ☐ No
- ☐ Yes: Give antibiotics, delay discharge, give special care

### Is Baby feeding well?
- ☐ No: Establish good breastfeeding practices and delay discharge
- ☐ Yes

### If Mother HIV positive, Mother and Baby have ARVs for 6 weeks?
- ☐ Yes

- ☐ Discuss and offer family planning options to Mother

- ☐ Arrange follow-up and confirm Mother/Companion will seek help if danger signs are present after discharge

---

### DANGER SIGNS

**Mother** has any of:
- Bleeding
- Severe abdominal pain
- Severe headache or visual disturbance
- Breathing difficulty
- Fever or chills
- Difficulty emptying bladder

**Baby** has any of:
- Fast/difficult breathing
- Fever
- Unusually cold
- Stops feeding well
- Less activity than normal
- Whole body becomes yellow
Safe Childbirth Project in Pakistan
Pakistan – country profile

**economy**
- GNI p.c.: US$ 1,360
- GDP growth rate: 4%
- Poverty rate: 13%

**education**
- Primary completion rate: 73%
- Secondary enrollment rate: 38%

**health**
- Life expectancy: 67 years
- Access to improved water: 91%
- Access to improved sanitation: 48%

**population**
- 182 million
  - Aged < 15 years: 34%
  - World bank income classification: Lower middle
  - HDI (rank): 0.537 (146)

Safe Childbirth Project

September 15, 2015
Child and maternal health in Pakistan

<table>
<thead>
<tr>
<th>Measure</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>total fertility rate</td>
<td>3.2</td>
</tr>
<tr>
<td>maternal mortality ratio</td>
<td>170 deaths per 100,000 live births</td>
</tr>
<tr>
<td>under-five mortality rate</td>
<td>86 deaths per 1,000 live births</td>
</tr>
<tr>
<td>infant mortality rate</td>
<td>69 deaths per 1,000 live births</td>
</tr>
</tbody>
</table>
Child and maternal health in Pakistan

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Births attended by skilled personnel</td>
<td>43%</td>
</tr>
<tr>
<td>Births in health institutions</td>
<td>41%</td>
</tr>
<tr>
<td>Pregnant women attending at least 1 antenatal care visit</td>
<td>61%</td>
</tr>
<tr>
<td>Pregnant women attending at least 4 antenatal care visit</td>
<td>28%</td>
</tr>
</tbody>
</table>
Project: study site

province Khyber Pakhtunkhwa

district Haripur

district Nowshera
Project: health facilities

• Includes all health facilities of all levels that are conducting delivery services
• 40 BHU, 4 MCHC, 6 RHC, 6 Hospitals in Haripur
• 30 BHU, 5 MCHC, 7 RHC, 6 Hospitals in Nowshera

• Additionally, all CMWs in Haripur and Nowshera will be included
Group Work: Adaptation of SCC – ideal situation

- Image a hospital in Pakistan where you are conducting delivery services in an **ideal setting**, so this does not have to resemble the reality you are facing in your facilities.
- Go through each pause point of the SCC and check whether you understand the items, whether the descriptions are **detailed enough** and understandable, if there are **items missing** or **not necessary** for the Pakistani ideal context.
- Use the **green cards** for adding items or descriptions to items and the **yellow cards** for things you would like to leave out of the SCC.
Group Work: Adaptation of SCC

Group 1
Dr. Shazia Haroon
Dr. Maria Ashfaq
Ms. Shazia Hayat
Ms. Azra Reham
Ms. Mahjabeen Bibi
Ms. Fozia Bibi
Ms. Uzma Bibi
Dr. Sha Bano
Ms. Nighat Rashid
Dr. Amra Takreem

Group 2
Dr. Niyar Munir
Dr. Safia Aurangzeb
Ms. Sarwat Farasat
Ms. Nihar Begum
Ms. Ambreen Anjum
Ms. Saeeda Adil
Ms. Shamim Fazal
Ms. Bushra Mujahid
Dr. Tahira Naz

Safe Childbirth Project

September 15, 2015
Group Work: Adaptation of SCC – reality check

• Imagine a situation where you are conducting delivery services in a hospital in Pakistan where reality kicks in. So meaning that certain things are not available or are just not done in your facility.

• Please go through the pause points again and mark those things that are feasible, that you could not conduct because tools/medication/knowledge is missing by using the red cards.
Role play: Implementation of SCC

- A pregnant woman comes into the hospital
- What happens, who is involved?
- How do you use the SCC?
Group Work: Data Collection

- Use the **data reporting tools** that you brought and fill out the paper handed out.
- Indicate whether the respective variable is **collected** in your health facility, whether it is **reported to a higher level**, and whether **monthly data** is available!
- Use the **green cards** to indicate that the information **is collected** and the **red cards** to show that it is **not collected** in your health facility.
Role Play: Referral system

• Image a situation where a pregnant women shows signs of high fever. She is currently with a CMW.
• What happens now?
  – First start with an ideal situation: what should happen?
  – Then do a reality check: what happens in reality in Pakistan?