



The Evidence Speaks Out: Normal Labor and Childbirth

MAQ Exchange



Session Objectives

- ◆ **Identify best practices for facilitating normal labor and childbirth and encourage their adoption in practice.**
- ◆ **Identify practices that are no longer recommended with the goal of eliminating them from practice.**



Objectives of Care during Labor and Childbirth

- ◆ **Protect the lives of women and newborns.**
- ◆ **Facilitate normal labor and childbirth.**
- ◆ **Detect and manage complications in a skilled and timely manner.**
- ◆ **Support and respond to the needs of the woman, her partner and her family.**



The Three Stages of Labor

- ◆ **First stage: lasts from initial dilatation of the cervix to full dilatation**
- ◆ **Second stage: begins at full dilatation of the cervix and ends when the baby is born**
- ◆ **Third stage: lasts from the birth of the baby until the placenta is expelled**



Skilled Attendant at Every Birth: Importance

- ◆ **Every year, more than 500,000 women die from causes related to pregnancy and childbirth.**
- ◆ **An additional 300 million women currently suffer from short- or long-term illnesses related to childbearing.**
- ◆ **Most maternal mortalities and morbidities occur in developing countries, where skilled attendance is often scarce.**

Sources: AbouZahr and Wardlaw 2001; Interagency Group on Safe Motherhood 2000.



Skilled Attendant at Every Birth: Best Practice

- ◆ **A skilled attendant has the knowledge and skills to:**
 - ◆ Facilitate normal labor, childbirth and the immediate newborn/postpartum period
 - ◆ Recognize the onset of complications and stabilize the woman or newborn if necessary
 - ◆ Manage complications and/or refer the woman or newborn to a higher level of care if necessary
- ◆ **Skilled attendance is the process through which this care is provided.**

Source: WHO 1999.



Birth Preparedness/Complication Readiness: Importance

- ◆ Delay is a significant factor in many maternal and newborn deaths and disabilities.
- ◆ Birth preparedness ensures skilled attendance and other factors that may contribute to a positive outcome.
- ◆ Complication readiness reduces delays in:
 - ◆ recognizing the problem
 - ◆ deciding to seek care
 - ◆ reaching and receiving care



Birth Preparedness/Complication Readiness: Best Practice

Preparation for normal birth:

- ◆ Skilled attendant
- ◆ Place of birth
- ◆ Transportation
- ◆ Funds
- ◆ Essential items
- ◆ Nutrition

Readiness for possible complications:

- ◆ Early detection of danger signs
- ◆ Designated decision maker(s)
- ◆ Communication
- ◆ Emergency transportation
- ◆ Emergency funds
- ◆ Blood donors



Woman-Friendly Care: Best Practice

- ◆ **Protect the woman's health, life and rights to information, choice and participation.**
- ◆ **Provide continuous emotional and physical support.**
- ◆ **Be kind and courteous.**
- ◆ **Facilitate effective communication among all present—focusing on listening and answering questions.**
- ◆ **Obtain consent/permission when necessary.**
- ◆ **Ensure privacy and confidentiality.**
- ◆ **Respect cultural beliefs and practices, as well as the woman's desires and preferences.**



Infection Prevention: Importance

- ◆ Infection accounts for 14.9% of all maternal deaths and 32% of all neonatal deaths.
- ◆ Risk of infection increases during labor and childbirth due to:
 - ◆ exposure to blood and other body fluids
 - ◆ openings or tears in skin and membranes
- ◆ Infection prevention practices are essential to protecting women, newborns and healthcare workers.

Sources: Save the Children/Saving Newborn Lives 2001; WHO 1997.



Infection Prevention: Best Practice

WHO's "six cleans" for labor and childbirth:

- ◆ Clean hands
- ◆ Clean perineum
- ◆ Nothing unclean introduced into vagina
- ◆ Clean delivery surface
- ◆ Clean cord-cutting instrument
- ◆ Clean cord care (clean cord ties and cutting surface)



Criteria to Diagnose Active Labor: Best Practice

- ◆ Mistaken diagnosis of active labor may result in unnecessary (and potentially risky) interventions.
- ◆ Active labor is differentiated from latent or false labor when:
 - ◆ cervix has dilated 4–9 cm
 - ◆ rate of dilation is at least 1 cm/hour
 - ◆ fetal descent has begun



Criteria to Diagnose Active Labor: Evidence

	Experimental Group (105)	Control Group (104)	Odds Ratio (95% CI)
Cesarean section for labor dystocia	2	8	0.28 (0.08–1.00)
Intrapartum oxytocics	24	42	0.45 (0.25–0.80)
Any intrapartum analgesia	84	96	0.36 (0.16–0.78)
Epidural analgesia	83	94	0.42 (0.20–0.89)

Source: Lauzon and Hodnett 2000.



Use of Partograph: Best Practice

- ◆ WHO recommends using the partograph to monitor all women during labor.
- ◆ The partograph is a *tool*, not an end in itself.
- ◆ When used effectively, the partograph:
 - ◆ provides a graphic representation of labor progress and the condition of the mother and fetus
 - ◆ guides early detection of prolonged or obstructed labor
 - ◆ informs decision-making in the management of labor



Use of Partograph: Evidence/WHO Trial

- ◆ **Objectives:**
 - ◆ Evaluate the impact of the WHO partograph on labor management and outcome.
 - ◆ Devise and test a protocol for labor management with the partograph.
- ◆ **Design: multicenter trial randomizing hospitals in Indonesia, Malaysia and Thailand**
- ◆ **At the action line, definitive intervention is required.**

Source: WHO 1994.



Use of Partograph: Evidence/WHO Trial *continued*

Outcomes	Before Implementation	After Implementation	<i>p</i>
Total deliveries	18254	17230	
Labor > 18 hours	6.4%	3.4%	0.002
Labor augmented	20.7%	9.1%	0.023
Postpartum sepsis	0.70%	0.21%	0.028
Spontaneous cephalic	83.9%	86.3%	< 0.001
Forceps	3.4%	2.5%	0.005

Source: WHO 1994.



Noninvasive, Nonpharmacologic Pain Relief: Best Practice

- ◆ **Calm, gentle voice and soothing touch**
- ◆ **Relaxation techniques, such as deep-breathing exercises and massage**
- ◆ **Cool cloth on the forehead**
- ◆ **Encouragement, reassurance and praise**
- ◆ **Assistance in voiding or changing positions as desired**



Noninvasive, Nonpharmacologic Pain Relief: Evidence

- ◆ Reduced need for analgesia (OR = 0.68, CI = 0.58–0.79)
- ◆ Fewer operative vaginal deliveries (OR = 0.73, CI = 0.62–0.88)
- ◆ Less postpartum depression at 6 weeks (OR = 0.12, CI = 0.04–0.33)

Source: Neilson 1998.



Nutrition: Importance

- ◆ **The belief that women should not have food or fluid during labor in childbirth is common.**
- ◆ **Labor and childbirth require an enormous amount of energy.**
- ◆ **In women deprived of food and fluid:**
 - ◆ **Amount of ketones in blood increases**
 - ◆ **Essential amino acids in blood decreases**
 - ◆ **Risk of fetal ketotic hypoglycemia increases**

Source: Ludka and Roberts 1993.



Nutrition: Best Practice/Evidence

- ◆ **Current literature supports allowing women to eat and drink as desired in normal labor.**
- ◆ **Higher fluid intake associated with:**
 - ◆ **less incidence of prolonged labor (> 12 hours)**
 - ◆ **shorter labor duration**
 - ◆ **reduced need for oxytocin infusion**

Source: Garite et al 2000.



Position of Choice in Labor and Birth: Best Practice

- ◆ **Allow freedom of movement and position of choice throughout labor and childbirth.**
- ◆ **Encourage any nonsupine position:**
 - ◆ **Side-lying**
 - ◆ **Squatting**
 - ◆ **Hands and knees**
 - ◆ **Semi-sitting**
 - ◆ **Sitting**



Position of Choice in Labor and Birth: Evidence

Use of upright or lateral position compared with supine or lithotomy position is associated with:

- ◆ Shorter second stage of labor (5.4 minutes, CI = 3.9–6.9)
- ◆ Fewer assisted deliveries (OR = 0.82, CI = 0.69–0.98)
- ◆ Fewer episiotomies (OR = 0.73, CI = 0.64–0.84)
- ◆ Fewer reports of severe pain (OR = 0.59, CI = 0.41–0.83)
- ◆ Less abnormal fetal heart rate patterns (OR = 0.31, CI = 0.11–0.91)

Source: Gupta and Nikodem 2000.



Birth Companion: Evidence/ Randomized Trial in Botswana

Labor Outcome	Experimental Group (%)	Control Group (%)	<i>p</i>
Spontaneous vaginal delivery	91	71	0.03
Vacuum delivery	4	16	0.03
Cesarean section	6	13	0.03
Analgesia	53	73	0.03
Amniotomy	30	54	0.01
Oxytocin	13	30	0.03

Source: Madi et al 1999.



Continuous Support by a Caregiver: Best Practice

- ◆ The same caregiver, rather than several caregivers, should be present throughout labor and childbirth.
- ◆ A Cochrane review showed that continuous support resulted in:
 - ◆ reduced need for medication for pain relief
 - ◆ fewer operative vaginal deliveries
 - ◆ fewer cesarean deliveries
 - ◆ fewer 5-minute APGAR scores below 7

Source: Hodnett 2000.



Active Management of Third Stage: Importance

- ◆ Due to the risk of postpartum hemorrhage, delivery of the placenta and membranes (the third stage of labor) is potentially the most hazardous part of childbirth.
- ◆ Hemorrhage is the leading cause of maternal mortality globally, resulting in almost half of the 500,000 deaths annually.

Sources: Prendiville et al 2000; WHO 1999.



Active Management of Third Stage: Evidence

		Active Management	Physiologic Management	OR (95% CI)
Duration of third stage (median)	Bristol	5 minutes	15 minutes	Not done
	Hinchingbrooke	8 minutes	15 minutes	Not done
Third stage > 30 minutes	Bristol	25 (2.9%)	221 (26%)	6.42 (4.9–8.41)
	Hinchingbrooke	25 (3.3%)	125 (16.4%)	4.9 (3.22–7.43)
Blood transfusion	Bristol	18 (2.1%)	48 (5.6%)	2.56 (1.57–4.19)
	Hinchingbrooke	4 (0.5%)	20 (2.6%)	4.9 (1.68–14.25)
Therapeutic oxytocics	Bristol	54 (6.4%)	252 (29.7%)	4.83 (3.77–6.18)
	Hinchingbrooke	24 (3.2%)	161 (21.1%)	6.25 (4.33–9.96)

Sources: Prendiville et al 1988; Rogers et al 1998.



Active Management of Third Stage: Evidence *continued*

- ◆ **Active management of third stage:**
 - ◆ reduces the risk of postpartum hemorrhage
 - ◆ does not increase the incidence of entrapment of the placenta
- ◆ **Physiologic management of third stage:**
 - ◆ increases the risk of postpartum hemorrhage
 - ◆ is associated with the increased need for blood transfusion

Source: Chauhan and Hendrix 2000.



Immediate Newborn Care: Importance

- ◆ More than 7 million infants die annually.
- ◆ Almost two-thirds of these deaths occur in the first month of life.
- ◆ Among those who die in the first month, two-thirds die in the first week.
- ◆ Among those who die in the first week, two-thirds die in the first 24 hours.



Immediate Newborn Care: Best Practice

- ◆ Prevent heat loss.
- ◆ Ensure breathing—resuscitate if necessary.
- ◆ Facilitate immediate breastfeeding.
- ◆ Practice infection prevention, including eye care and cord care.



Close Monitoring during the Immediate Postpartum: Importance

- ◆ In developing countries, 40–50% of maternal deaths are due to postpartum hemorrhage.
- ◆ In a study in Egypt, 88% of deaths due to postpartum hemorrhage occurred within 4 hours of childbirth.

Sources: Kane et al 1992; Li et al 1996.



Close Monitoring during the Immediate Postpartum: Best Practice

Monitor the woman closely for the first 6 hours postpartum:

- ◆ **Parameters**

- ◆ Blood pressure
- ◆ Pulse
- ◆ Vaginal bleeding
- ◆ Uterine firmness

- ◆ **Timing**

- ◆ Every 15 minutes for 2 hours
- ◆ Then every 30 minutes for 1 hour
- ◆ Then every hour for 3 hours



Practices No Longer Recommended: Routine Episiotomy

A Harvard study found that:

- ◆ At 3 months, the rate of fecal incontinence in women who had undergone episiotomy was more than twice that of women without episiotomy.
- ◆ At 6 months, the rate had declined, but was still twice as high in the episiotomy group.

Source: Signorello LB et al 2000.



Restricted Use of Episiotomy: Evidence

Clinically Relevant Morbidities	Relative Risk	95% CI
Posterior perineal trauma	0.88	0.84–0.92
Need for suturing	0.74	0.71–0.77
Healing complications at 7 days	0.69	0.56–0.85
Vaginal or perineal trauma	1.11	0.83–1.50
Dysparuria	1.02	0.90–1.16
Urinary incontinence	0.98	0.79–1.20

Sources: Carroli and Belizan 2000; Eason et al 2000; WHO 1999.



Practices No Longer Recommended

- ◆ Use of enema
- ◆ Pubic shaving
- ◆ Restriction of food and fluids during labor
- ◆ Routine intravenous infusion in labor
- ◆ Repeated or frequent vaginal examinations, especially by more than one caregiver
- ◆ Routinely moving laboring woman to a different room at onset of second stage

Sources: Neilson 1998; WHO 1999.



Practices No Longer Recommended *continued*

- ◆ Routine use of lithotomy position with or without stirrups during labor
- ◆ Administration of oxytocin at any time before delivery in such a way that the effect cannot be controlled
- ◆ Encouraging sustained, directed bearing-down efforts during the second stage of labor
- ◆ Massaging and stretching the perineum during the second stage of labor (no evidence)
- ◆ Fundal pressure during labor

Source: Eason et al 2000.



Practices No Longer Recommended *continued*

- ◆ Encouraging woman to push when full dilation or nearly full dilation of cervix has been diagnosed, before woman feels urge to bear down
- ◆ Rigid adherence to a stipulated duration of the second stage of labor (e.g., 1 hour) if maternal and fetal conditions are good and labor is progressing
- ◆ Lavage of the uterus after delivery
- ◆ Manual exploration of the uterus after delivery

Sources: Ludka and Roberts 1993; Neilson 1998.



Conclusions

- ◆ **Women and newborns deserve the safest and best care possible.**
- ◆ **We should continually challenge and examine our practices around labor and childbirth based on the highest quality evidence available.**



Optional Slides

Labor and Childbirth



Best Practices: Overview

- ◆ **Skilled Attendant at Every Birth**
- ◆ **Woman-Friendly Care**
- ◆ **Birth Preparedness/Complication Readiness**
- ◆ **Infection Prevention**
- ◆ **Criteria to Diagnose Active Labor**
- ◆ **Use of Partograph**
- ◆ **Noninvasive, Nonpharmacologic Pain Relief**
- ◆ **Nutrition**



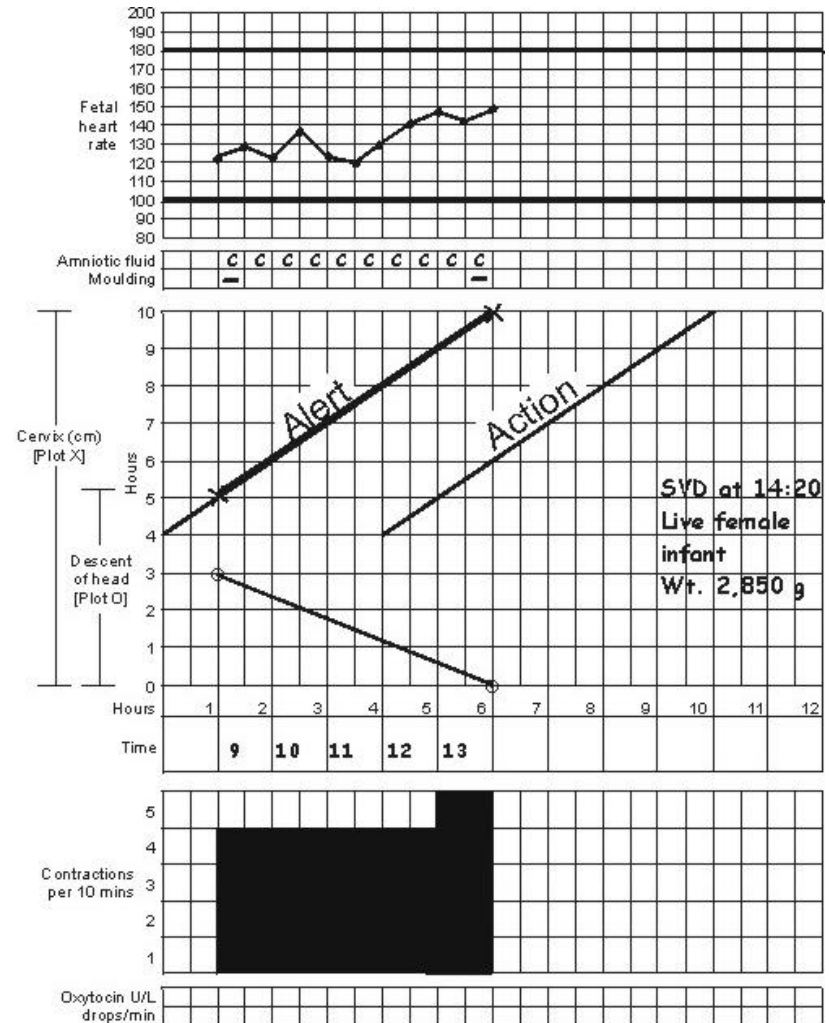
Best Practices: Overview *continued*

- ◆ **Position of Choice in Labor and Childbirth**
- ◆ **Birth Companion**
- ◆ **Continuous Support by a Caregiver**
- ◆ **Active Management of Third Stage**
- ◆ **Immediate Newborn Care**
- ◆ **Close Monitoring during the Immediate Postpartum**



Use of Partograph: Best Practice *continued*

- ◆ Label with patient identifying information
- ◆ Note fetal heart rate, color of amniotic fluid, presence of molding, contraction pattern and medications
- ◆ Plot cervical dilation
 - ◆ Alert line: in normal labor, starts at 4 cm and increases by at least 1 cm/hour
 - ◆ Action line: if the plotted line crosses the action line, intervention is required.





Active Management of Third Stage: Best Practice

- ◆ **Oxytocin given**
- ◆ **Cord clamped**
- ◆ **Placenta delivered by controlled cord traction with countertraction on the fundus during contraction**
- ◆ **Fundal massage after delivery of the placenta**