


The Evidence Speaks Out: Normal Labor and Childbirth

MAQ Exchange

25-1

SUGGESTED ACTIVITY: Before beginning the presentation, pose the following questions to the audience, asking for a show of hands:

- How many of you have **attended births**?
- How many have worked under policies that said all primiparas should be given an **episiotomy**?
- How many have **used a partograph** to monitor labor?
- How many have routinely performed **active management of third stage of labor**? (May need to define: giving oxytocin, clamping cord, and delivering placenta by controlled cord traction with countertraction during a contraction, followed by fundal massage.)



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.

Labor and Childbirth

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Best practices are “best” because there is evidence that they promote **positive maternal and newborn** outcomes. Likewise, when we say that a practice is “**no longer recommended**,” it is because negative outcomes have been linked to its implementation.

Ideally, a practice is recommended or not **based on randomized controlled trials** that scientifically prove whether it is effective.

In the real world, however, such studies are **not always possible or ethical**—we can’t subject women to known harmful practices just to provide scientific evidence.

Because of these realities, we must **sometimes rely on less rigorous studies and/or global expert opinion**. Fortunately, more expert opinion is now being challenged and either proved or disproved by scientific data.

Best practices generally **apply to all levels of care**.



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.


Labor and Childbirth

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The focus of this session is on **normal** labor and childbirth. More than 80% of births are normal.

And the **15–20% that develop complications** *may have been* normal except for inappropriate interventions by healthcare providers.

The skilled healthcare provider needs to know how to **recognize and preserve “the normal” in order to avoid such inappropriate interventions**; this approach can help avert unnecessary complications and also conserve valuable resources.



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**

Labor and Childbirth

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Some consider the first hour postpartum to be the fourth stage of labor, which encourages vigilant observation for bleeding during this critical time.

OPTIONAL: See Slides 39 & 40 for an overview of best practices covered in this presentation.



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.


Labor and Childbirth

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The concept of skilled attendance has gained a lot of attention and support:

- The focus of the 1997 Safe Motherhood Initiative
- The action message of the 1997 Safe Motherhood Technical Consultation in Sri Lanka: “The single most critical intervention is to ensure that a health worker with midwifery skills is present at every birth and transportation is available in case of emergencies.”
- “There is clear clinical justification for the presence of a skilled attendant at delivery, as this may reduce both the incidence of complications and case fatality” (AbouZahr and Wardlaw 2001).

SOURCES: AbouZahr C and T Wardlaw. 2001. Maternal mortality at the end of a decade: Signs of progress? *Bulletin of the World Health Organization*. 79: 561–568; Interagency Group on Safe Motherhood. 2000. *Skilled Care during Childbirth (Fact Sheet)*. Family Care International: New York.



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.

Labor and Childbirth

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At the heart of the concept of the “skilled attendant” is the idea that **cadre is not as important as knowledge and skills.**

Referral of the woman or newborn to a higher level of care is necessary if complications occur that require interventions **beyond the attendant’s level of competence or available resources. Referral means more than** just sending the woman or newborn someplace else; it means ensuring that the woman or newborn reaches the referral point in the best possible condition, which may involve:

- maintaining stabilization of the woman during transport;
- providing drugs and supplies to support her condition (e.g., to keep an IV running);
- ensuring that someone who can provide continuous support accompanies her during transport;
- providing adequate referral documentation/records;
- facilitating transport as feasible.

The skilled attendant and the process of skilled attendance **must be supported by an enabling environment** at the domiciliary and primary or first referral levels, which includes availability of supplies and equipment, adequate infrastructure, and an efficient and effective system of communication and referral/transport.

SOURCE: World Health Organization (WHO). 1999. *Care in Normal Birth: A Practical Guide—Report of a Technical Working Group.* WHO: Geneva.



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

Labor and Childbirth

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To prevent delays, preparations for normal birth and possible complications should be made **well in advance of the estimated date of birth**, as a routine part of antenatal care. But it also makes sense to discuss birth preparedness/complication readiness in the context of labor and childbirth because the concept helps define **essential elements of the labor and childbirth setting**, whether in the home or a facility (i.e., this is the time when preparations already made can actually save the lives of women and newborns).

Considering that the interval from onset to death for antepartum hemorrhage can be approximately 12 hours, while the interval from onset to death for postpartum hemorrhage can be 2 hours, the hours required for making arrangements (which, again, should have been made prior to the emergency) may define the line between survival and death (Maine 1991).

In Nepal, a recent study showed that **less than 50% of families** of women who died in pregnancy, childbirth or the postpartum period **recognized the problem**. In rural situations in the developing world, as many as 12 to 15 hours may elapse between the **decision to seek treatment** and **beginning to travel towards that treatment** (Ministry of Health, His Majesty's Government of Nepal 1998).

The same study found that of those families who did decide to seek treatment for complications, **36%** began transport to the healthcare facility **within 2 hours** of recognizing the problem, **15%** began transport **between 2 to 23 hours**, and **29%** began transport **1 to 8 or more days after** recognition of a life-threatening complication (Ministry of Health, His Majesty's Government of Nepal 1998).

SOURCES: Maine D. 1991. *Safe Motherhood Programs: Options and Issues*. Center for Population and Family Health. Columbia University: New York; Ministry of Health, His Majesty's Government of Nepal. 1998. *Maternal Mortality and Morbidity Study*. Ministry of Health, His Majesty's Government of Nepal: Kathmandu, Nepal.



Birth Preparedness/Complication Readiness: Best Practice

<p>Preparation for normal birth:</p> <ul style="list-style-type: none"> ◆ Skilled attendant ◆ Place of birth ◆ Transportation ◆ Funds ◆ Essential items ◆ Nutrition 	<p>Readiness for possible complications:</p> <ul style="list-style-type: none"> ◆ Early detection of danger signs ◆ Designated decision maker(s) ◆ Communication ◆ Emergency transportation ◆ Emergency funds ◆ Blood donors
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Labor and Childbirth

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In preparation for **normal birth**:

- A **skilled attendant** was identified—and the woman was able to contact the attendant when signs of labor occurred.
- An appropriate **place of delivery** was determined, based on cultural considerations and available resources, as well as the condition of the woman, (e.g., if she had a previous cesarean section, her antenatal care provider may have recommended that she give birth at the district hospital).
- Arrangements were made for the **transportation** of the woman or skilled attendant to the designated place of delivery, whether a healthcare facility or the woman's home.
- The woman and her family have **funds** to pay for basic care during labor and childbirth (or other financial arrangements have been made, if necessary).
- Essential items** were gathered for a clean and safe birth, such as a clean plastic cover, cutting instrument, cord ties or clamp, receptacles for the placenta and other waste, soap, etc. There is also a **fluid/food supply** for adequate nutrition during labor and childbirth. It may have been necessary for the woman and her family to gather these essential items, even if she is giving birth in a healthcare facility.

When a **complication arises**, many elements must already be in place for a woman or newborn to reach appropriate care in a timely manner. The family should have been prepared during the woman's pregnancy to **recognize and respond to danger signs**. Specific arrangements to be made before a crisis arises include: determining how **decisions** will be made if a complication arises, how to contact and **communicate** with the source of care, **transportation** to the appropriate healthcare facility, **funds** to pay for emergency care, and **who will give blood** if needed.



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.

Labor and Childbirth

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In many developing countries, women come for care during the antenatal period but not during labor and childbirth—past experience may have told them that they will not be treated with respect, what they want doesn't matter, and their traditional practices will not be permitted.

Our question as skilled providers should be, “What is best for the woman?” rather than, “What is most convenient for us as providers?”

Woman-friendly care is **accessible** and **adheres to certain technical standards**, but is also **acceptable** to the woman, her partner and her family. Women are more likely to follow the provider's recommendations and return for continued care if care is provided in a way that helps them feel safe, confident and empowered to become active participants in their own healthcare.

Woman-friendly care is more of an approach to service provision than a specific practice; **it is a thread that runs through all best practices**, many of which focus on giving the woman choices and ensuring her comfort and support through labor and childbirth.



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.

Labor and Childbirth

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Infection prevention practices must be integrated into care during labor and childbirth to protect:

- the woman and newborn from sepsis; and
- women, newborns and healthcare workers from transmission of HIV, Hepatitis B and other infectious diseases.

SOURCES: Save the Children/Saving Newborn Lives. 2001. *State of the World's Newborns*. Women and Children First: London; WHO and the World Bank. 1997. *Maternal Health around the World* (Poster). WHO: Geneva.



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)

Labor and Childbirth

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These infection prevention principles apply to all levels of care:

- Wash **hands** before and after contact with the client, and before and after wearing gloves.
- Wash the woman's **perineum** with soap and water or antiseptic and keep it clean.
- Do not place herbs or any other unclean objects in the vagina.
- Ensure that the **surface** where the woman is lying and the baby is born is kept clean.
- For **cord cutting**, use only high-level disinfected instruments, sterile gauze and clean cord ties.
- Throughout labor and childbirth, **use disposable materials once** and **decontaminate reusable materials**.

In addition to the six cleans, which focus on protecting the woman and newborn, healthcare workers should further protect themselves by:

- Wearing protective clothing—such as shoes, an apron or gown, and glasses or goggles—throughout labor and childbirth
- Wearing gloves during vaginal examination, during the birth of the newborn and when handling the placenta



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

Labor and Childbirth


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How do you know a woman is in labor?

Methods of distinguishing active labor from latent or Braxton-Hicks contractions are not well-defined, vary greatly among different providers, are not universally applied and have not been subjected to scientific scrutiny (Thornton and Lilford 1994).

Application of specific criteria for diagnosis of active labor as part of initial labor assessment aims to differentiate more accurately between active labor and latent labor or false labor.

SOURCE: Thornton JG and Lilford RJ. 1994. Active management of labor: Current Knowledge and research issues. *Br Med J* 309: 366–369.



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.

Labor and Childbirth

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CI = confidence interval.

A Cochrane Review evaluated the impact of applying specific criteria to diagnose active labor on the outcome of labor.

Results showed that if specific criteria were used, there was a reduction in:

- misdiagnosis of dystocia in latent phase labor; and
- unnecessary interventions, such as cesarean section and the use of oxytocics or analgesia.

SOURCE: Lauzon L and E Hodnett. 2000. Caregivers' use of strict criteria for diagnosing active labour in term pregnancy (Cochrane Review), in *The Cochrane Library*. Update Software: Oxford.



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

Labor and Childbirth


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Prolonged and/or obstructed labor is one of the top five causes of maternal mortality.

The partograph is a **useful tool** for monitoring the progress of labor. **However**, in many countries today where its use has been mandated without proper training, the partograph serves **only as a record of labor** (often completed *after* the *baby* is born) and not as a tool to guide decision-making.

Using the partograph effectively helps to ensure careful monitoring of the woman in labor, avoid unnecessary interventions, and recognize and respond to complications in a timely manner---all of which can help prevent maternal and neonatal morbidity or mortality.

OPTIONAL: See Slide 41 for a more detailed description and graphic image of the partograph.



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.


Labor and Childbirth

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This landmark WHO trial began in 1987 and studied the labors of more than 25,000 women (WHO 1994).

Interventions that may be appropriate **when the action line is crossed** include cesarean section, oxytocin augmentation, or vacuum-assisted delivery.

SOURCE: WHO Safe Maternal Health and Safe Motherhood Programme. 1994. World Health Organization partograph in management of labour. *Lancet* 343(8910): 1399–1404.



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.

Labor and Childbirth

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In this study, after implementing the partograph:

- There were significantly fewer women who had labor longer than 18 hours, needed augmentation of labor or had postpartum infection; and
- Among women with normal labor and childbirth, more had spontaneous cephalic births and fewer required forceps.

Numerous other reports have shown the benefits of partograph use (WHO 1994):

- Philpott and Castle demonstrated reduced prolonged labor, cesarean sections, labor augmentation and perinatal death in Zimbabwe.
- There were similar reports in Malawi.
- Beazley and Kurjak reported an increase in augmentation and a shortening of labor.

SOURCE: WHO Safe Maternal Health and Safe Motherhood Programme. 1994. World Health Organization partograph in management of labour. *Lancet* 343(8910): 1399–1404.




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

Labor and Childbirth

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Drugs **can have a detrimental effect** on the baby at birth (e.g., narcotic analgesics) and depress the baby's respiration.



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.


Labor and Childbirth

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OR = odds ratio, CI = 95% confidence interval.

Noninvasive, nonpharmacologic pain relief measures **reduce the need for medications** or **a lower dose is needed**.

SOURCE: Neilson JP. 1998. Evidence-based intrapartum care: Evidence from the Cochrane Library. *Int J Gynecol Obstet* 63 (Suppl 1): S97–S102.



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.

Labor and Childbirth

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Policy of “nothing by mouth” (NPO) in labor is **a routine established on anecdotal information**, much of which developed when general anesthesia was administered with greater frequency during labor and childbirth.

SOURCE: Ludka LM and CC Roberts. 1993. Eating and drinking in labor: A literature review. *J Nurse Midwifery* 38(4): 199–207.



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.

Labor and Childbirth


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Nutritious fluids help meet the woman's fluid, electrolyte and energy requirements during labor and childbirth.

Randomized controlled trial of 195 nulliparous women in normal labor showed that higher fluid intake was associated with:

- statistically significant **reduction in incidence of prolonged labor** (> 12 Hours)
- nonstatistically significant **reduction in labor duration and need for oxytocin infusion**

SOURCE: Garite TJ et al. 2000. A randomized controlled trial of the effect of increased intravenous hydration on the course of labor in nulliparous women. *Am J Obstet Gynecol* 183(6): 1544–1548.



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

Labor and Childbirth

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Most women in traditional societies give birth in **nonsupine or “upright” positions**. Allowing the woman to choose what is comfortable for her is an important part of culturally sensitive, woman-friendly care. And nonsupine positions have many advantages over supine or dorsal lithotomy positions.

Side-lying

Advantages: Fewer perineal lacerations because of greater control of the fetal head during childbirth, and greater relaxation and less tension of the perineal muscles

Disadvantage: Need a person to help hold up the leg of the woman

Squatting

Advantages: Both the transverse and anterior-posterior diameter of the pelvic outlet are bigger; results in less oxytocin stimulation, fewer mechanically assisted deliveries, fewer and less severe perineal lacerations (if the perineum was adequately supported), and fewer episiotomies

Disadvantage: If used before engagement of the caput, it may impede descent; if used without adequate perineal support, can result in increased maternal injuries

Hands and knees

Advantages: Less perineal trauma because gravity directs pressure away from the perineum and at the same time promotes fetal descent, and there is increased perineal elasticity in this position

Disadvantage: Wrist fatigue and tiring for the woman if used for long periods


Semi-sitting

Advantage: Maximizes thrust and direction of uterine contractions' force on fetus so as to enhance passage through the pelvic canal; resulted in fewer late decelerations and increased Apgar scores

Disadvantage: May slow labor if not alternated with other positions because the contractions are of lower intensity and less efficient in dilating the cervix than standing/lateral positions

Sitting

Advantage: Shorter duration of second stage; Increased bearing down pressure.



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.

Labor and Childbirth

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OR= odds ratio; CI = 95% confidence interval.


For centuries, there has been controversy in the medical community about which positions are more advantageous in labor.

Lying down is often encouraged but is associated with more negative maternal and neonatal outcomes.

Supine = on the back

Dorsal lithotomy = on the back with legs up in stirrups

SOURCE: Gupta JK and VC Nikodem. 2000. Woman's position during second stage of labour (Cochrane Review), in *The Cochrane Library*. Issue 4. Update Software: Oxford.



Birth Companion: Evidence/ Randomized Trial in Botswana

Labor Outcome	Experimental Group (%)	Control Group (%)	p
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.

Labor and Childbirth

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The presence of a birth companion **to provide support** throughout labor and childbirth is consistent with cultural practice in many traditional societies.


This birth companion should be of the woman's choice (e.g., **a female friend, relative or traditional birth attendant**).

There is a wealth of anecdotal evidence suggesting that this best practice is linked **with more positive outcomes**.

In a **randomized, controlled trial** in Botswana, 53 women had a female relative with them throughout labor, and 56 did not.

Conclusion of trial: The presence of female relative improved birth outcomes.

SOURCE: Madi BC et al. 1999. Effects of female relative support in labor: A randomized control trial. *Birth* 26:4–10.



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.

Labor and Childbirth

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Anecdotally, **women benefited emotionally from presence of one caregiver** throughout labor rather than a plethora of caregivers from one intervention/examination to the next.

A Cochrane review of 14 trials concluded that continuous support appears to have a number of **other important benefits** for mothers and their babies.

SOURCE: Hodnett ED. 2000. Caregiver support for women during childbirth (Cochrane Review). (Cochrane Review), in *The Cochrane Library*. Issue 3. Update Software: Oxford.



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.

Labor and Childbirth

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SOURCES: Prendiville WJ et al. Active versus expectant management of the third stage of labor. *Cochrane Database Sys Rev* 2: CD000007; World Health Organization (WHO). 1999. *Care in Normal Birth: A Practical Guide—Report of a Technical Working Group*. WHO: Geneva.

OPTIONAL: See Slide 42 for a detailed explanation of this best practice.



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.

Labor and Childbirth

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Two landmark studies found that in comparison to women who received physiologic management, those who received active management **had a shorter third stage and reduced need for blood transfusion and therapeutic oxytocics.**

SOURCES: Prendiville WJ et al. 1988. The Bristol third stage trial: Active versus physiological management of the third stage of labour. *Br Med J* 297: 1295 – 1300; Rogers J et al. 1998. Active versus expectant management of third stage of labour: The Hinchingbrooke randomised controlled trial. *Lancet* 351: 683–699.



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.

Labor and Childbirth

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Another review of 20 randomized clinical trials found that in "...vaginal deliveries, active management of third stage and use of uterotonic agents **decrease the risk of postpartum hemorrhage and transfusion.**"

This study also came to some other important conclusions (e.g., oxytocin is the drug of choice for active management).

SOURCE: Chauhan SP and NW Hendrix. 2000. Postpartum hemorrhage: Risk factors, prevention, and medical management. *Obstet Gynecol Management* May 46–65.



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.

Labor and Childbirth

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Care during labor and childbirth includes care of the newborn as well as the mother. Immediately after birth, the newborn is especially vulnerable to death (67% of newborn deaths in immediate newborn period).

29% of these deaths are due to birth asphyxia and injuries.

SOURCE: Save the Children/Saving Newborn Lives. 2001. *State of the World's Newborns*. Women and Children First: London.



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.

Labor and Childbirth

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Prevent heat loss-

•Practices: Dry the newborn *immediately* and replace wet cloth with a dry one; Facilitate skin-to-skin contact with the mother immediately, covering both with a dry blanket or cloth; Unwrap only the part of the baby on which you are working; keep head covered as this is a large surface area; Do not bathe the baby within first 24 hours, until temperature is stable.

Breathing –

•Practices: Every skilled attendant must be able to immediately resuscitate; all equipment must be at hand; oxygen not necessary. Routine suctioning is no longer necessary.

Breastfeeding –

•Practice: Breastfeeding should be initiated within one hour of birth and should be exclusive (i.e., no prelacteal feeds, no supplements).

Infection prevention –

•Importance: The newborn has little natural resistance to infection; proper cord care can help prevent cord infection which can be fatal; proper eye care can prevent severe eye infection and possible blindness in infants exposed to infections in the mother, such as gonorrhea and chlamydia.

•Practices: Wash hands. Place the newborn on a clean surface. Cut, clamp and tie the newborn's cord with clean instruments/materials. Wipe the newborn's eyes and apply antibiotic eye drops or ointment within the first hour (use tetracycline, povidone-iodine, erythromycin, or---if none of the others is available---silver nitrate); do not rinse out drops or ointment.

NOTE: Tetanus toxoid immunization and treatment of syphilis in mother before or during pregnancy is also life-saving for newborn.



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.

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SOURCES: Kane TT et al. 1992. Maternal mortality in Giza, Egypt: Magnitude, causes, and prevention. *Stud Fam Plann* 23: 45–57; Li XA et al. 1996. The postpartum period: The key to maternal survival. *Int J Gynaecol Obstet* 54: 1–10.



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

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Vigilant monitoring is necessary to **detect hemorrhage** and/or **atonic uterus**, which will lead to hemorrhage.



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.

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SOURCE: Signorello LB et al. 2000. Midline episiotomy and anal incontinence: Retrospective cohort study. *Br Med J* 320(7227): 86–90.



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.

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Restricted episiotomy appears to have a number of benefits compared to routine episiotomy:


- Less posterior perineal trauma
- Less suturing
- Fewer complications

In addition, restricted episiotomy is associated with no increase in incidence of:

- severe vaginal or perineal trauma or pain, dyspareunia or urinary incontinence
- 3rd degree tear reduced (1.2% with episiotomy, 0.4% without)

There have been no controlled trials on controlled delivery or guarding the perineum to prevent trauma.

SOURCES: Carroli G and J Belizan. 2000. Episiotomy for vaginal birth (Cochrane Review), in *The Cochrane Library*. Issue 2. Update Software: Oxford; Eason E et al. 2000. Preventing perineal trauma during childbirth: A systematic review. *Obstet Gynecol* 95: 464–471; World Health Organization (WHO). 1999. *Care in Normal Birth: A Practical Guide—Report of a Technical Working Group*. WHO: Geneva.



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.

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Enemas are uncomfortable, can damage the bowel and do not shorten labor or decrease neonatal infection or perinatal wound infection.

Shaving does not reduce infection and, in fact, may increase the risk of infection or transmission of HIV or hepatitis to the fetus if the mother has open cuts on the perineum. Shaving may also lead to discomfort with regrowth of hair.

Restricting food/fluid intake may be unnecessary because women self-regulate this during labor, usually limiting it to fluids.

Routine **IV** is not usually necessary if woman is drinking freely.

Repeated or frequent **vaginal exams** can introduce infection; perhaps more significant as etiology of infection than is 2nd stage interventions.

Labor and birth in same bed is more comfortable and less disturbing to the woman.

SOURCES: Neilson JP. 1998. Evidence-based intrapartum care: Evidence from the Cochrane Library. *Int J Gynecol Obstet* 63 (Suppl 1): S97–S102; World Health Organization (WHO). 1999. *Care in Normal Birth: A Practical Guide—Report of a Technical Working Group*. WHO: Geneva.



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.

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Lithotomy position is uncomfortable for woman and is contrary to the forces of gravity which may aid descent and birth of baby. Most women find it easier to push in the squatting or lying position than in the lithotomy position.

Intramuscular oxytocin produces an effect that cannot be controlled as the drug continues to be released into the system, even if contractions produced are life-threatening to the mother or fetus.

Sustained pushing during second stage result in oxygen deprivation to baby and has not been shown to decrease the length of second stage.

There is no evidence for or against **perineal massage** in the second stage of labor. There is, however, convincing evidence that antepartum perineal massage for up to 6 weeks before delivery may help stretch the perineum and reduce trauma at delivery.

Fundal pressure during birth can cause damage to uterine and abdominal tissue, and is extremely painful to the mother.

SOURCE: Eason E et al. 2000. Preventing perineal trauma during childbirth: A systematic review. *Obstet Gynecol* 95: 464–471.



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.

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Forced pushing without an urge to push has not been shown to be effective in decreasing length of second stage and together with sustained pushing may decrease oxygenation of baby.

The **duration** of second stage is not as important as the condition of the mother and baby in deciding if intervention is needed. If maternal and/or fetal condition deteriorates, intervention is indicated no matter how short the length of second stage. Likewise, if maternal and fetal condition are good and there is progress in labor second stage can be allowed to continue longer than one hour.

Lavage or manual exploration of the uterus can cause infection, mechanical trauma and shock.

Routine **exploration of the uterus** following birth may introduce infection to the uterus and trauma to the cervix and uterus.

SOURCES: Neilson JP. 1998. Evidence-based intrapartum care: Evidence from the Cochrane Library. *Int J Gynecol Obstet* 63 (Suppl 1): S97–S102; Ludka LM and CC Roberts. 1993. Eating and drinking in labor: A literature review. *J Nurse Midwifery* 38(4): 199–207.



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.**

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Optional Slides

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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**

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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**

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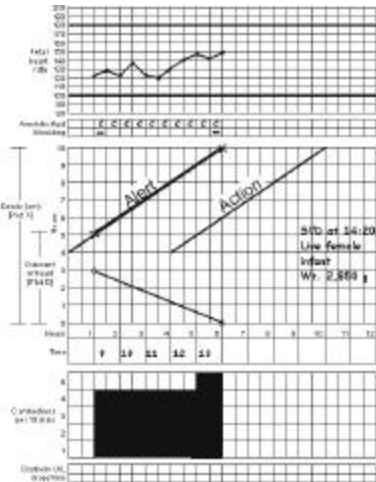
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Use of Partograph: Best Practice *continued*

- ◆ 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.

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On the partograph, observations are recorded at regular intervals.

The alert line designates the onset of the active phase of labor (4 cm). The patient is expected to reach full dilation at the rate of at least 1 cm/hour. At the action line, which is 4 hours to the right of the alert line, the practitioner is signaled to take action.



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

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Active management of the third stage of labor involves giving oxytocin to encourage uterine contractions, clamping the cord, using controlled cord traction to deliver the placenta and massaging the uterus after delivery of the placenta.