WHO Principles of Perinatal Care: The Essential Antenatal, Perinatal, and Postpartum Care Course

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ABSTRACT: *World Health Organization (WHO) recommendations and meta-analyses of controlled trials have concluded that inappropriate perinatal care and technology continue to be practiced widely throughout the world, despite the acceptance of evidence-based principles and care. The WHO Regional Office for Europe, in consultation with policy makers and reproductive health experts recently proposed ten "Principles of Perinatal Care," which have been endorsed by the reproductive health units of most member states. A comprehensive training program, based on the principles, is now being offered throughout the European region. This paper describes the development of the WHO principles and the WHO training course "Essential Antenatal, Perinatal and Postpartum Care." Together they provide an innovative model of evidence-based and psychosocially sensitive care for the future guidance of perinatal policy makers and caregivers worldwide. (BIRTH 28:3 September 2001)*

Recommendations from the World Health Organization (WHO) as well as meta-analyses of controlled trials have suggested that inappropriate perinatal care and technology continue to be practiced widely throughout the world, despite the acceptance of evidence-based principles and care. Recently, concern about this approach has led to the identification of principles of perinatal care and the development of educational materials designed to facilitate their implementation by the WHO Regional Office for Europe. These new programs, described in this paper, are a continuation of previous WHO maternal and newborn health activities directed toward similar issues.

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Background

Two documents, published in 1985 by the World Health Organization, aroused controversy and debate throughout the European region and beyond. They were a review article, ''Appropriate Technology for Birth'' (1) and the book, *Having a Baby in Europe* (2). The theses and recommendations contained in these works were given considerable support and credence, however, by the publication in 1989 of the two-volume book, *Effective Care in Pregnancy and Childbirth* (3). Indeed, a comparison of the WHO recommendations for birth and the findings of randomized controlled trials indicated an almost one-to-one correlation between the two (4). Table 1 includes forms of care and technologies recommended to be abandoned according to both documents, and Table 2 includes forms of care that both manuscripts advised were beneficial.

Impact of the WHO Recommendations for Childbirth

The WHO Regional Office for Europe recently convened a Perinatal Care Workshop at which it was proposed that ten principles should underlie perinatal care in the future (5). These principles were ratified by a subsequent meeting of the WHO Regional Office for Europe and its member states, the Second meeting of

Table 1. Forms of Care That Should be Abandoned (Recommended by Both WHO and *Effective Care in Pregnancy and Childbirth*)

Failing to involve women in decisions about their care
Involving doctors in the care of all women
Insisting on universal institutional confinement
Leaving mothers unattended during labor
Routine shaving
Routine enemas
Routine electronic fetal heart monitoring without availability of scalp blood sampling
Restricting maternal position in labor
Routine episiotomy
Routine repeat cesarean section after previous cesarean section
Routine induction at < 42 weeks
Routine sedatives/tranquilizers
Routine use of gowns and masks in newborn nurseries
Separating healthy mothers and babies
Routine water/glucose for breastfed babies
Routine formula for breastfed babies
Scheduled breastfeeding
Distribution of free formula samples
Prohibiting siblings from visiting

Table 2. Forms of Care That Reduced the Negative Outcomes of Birth (Recommended by Both WHO and *Effective Care in Pregnancy and Childbirth*)

Providing enhanced support for women
Unrestricted mother-infant contact
Little benefit from a cesarean section rate much higher than 7%
An upright labor position

Focal Points for Reproductive Health/Health of Women and Children in the European Region (6).

The ten Principles of Perinatal Care that WHO endorsed at the meeting comprise the following:

1. **Care for normal pregnancy and birth should be demedicalized,** meaning that essential care should be provided with the minimum set of interventions necessary and that less rather than more technology be applied whenever possible.
2. **Care should be based on the use of appropriate technology,** which is defined as a complex of actions that includes methods, procedures, techniques, equipment, and other tools, all applied to solve a specific problem . This principle is directed toward reducing the overuse of technology or the application of sophisticated or complex technology when simpler procedures may suffice or indeed be superior.
3. **Care should be evidence-based,**meaning supported by the best available research, and by randomized controlled trials where possible and appropriate
4. **Care should be regionalized** and based on an efficient system of referral from primary care centers to tertiary levels of care.
5. **Care should be multidisciplinary,** involving contributions from health professionals such as midwives, obstetricians, neonatologists, nurses, childbirth and parenthood educators, and social scientists.
6. **Care should be holistic,** and should be concerned with intellectual, emotional, social, and cultural needs of women, their babies and families and not only with their biological care.
7. **Care should be family-centered** and should be directed toward meeting the needs of not only the woman and her newborn but also of her partner and significant family or friends.
8. **Care should be culturally appropriate** and should consider and allow for cultural variations in meeting these expectations.
9. **Care should involve women in decision making.**
10. **Care should respect the privacy, dignity and confidentiality of women.**

These principles strongly endorse the protection, promotion, and support necessary for effective perinatal care. They are currently being incorporated into the technical materials as well as the monitoring and evaluation tools of the European regional office of WHO-Euro.

Implementing the WHO Principles

Although countries have acknowledged intuitively, and even sometimes explicitly, the 1998 WHO Principles of Perinatal Care, to date they have not always been implemented. Disseminating the concepts and implementing them in practice are the current challenges facing those who wish to implement evidence-based care worldwide. Methods used to promote this approach include traditional academic ones, such as publications, conference presentations, and workshops, often with minimal success. Alternative and more innovative methods, such as using peer influence, appear to offer more promise of success.

Perinatal Care Training Courses

WHO-Euro has recently adopted a multifaceted, long-term, programmatic approach to disseminating the Principles of Perinatal Care and to ensuring their implementation. This new program includes (a) training courses facilitated by international experts, (b) selection of potential trainers from among delegates, (c)

training-of-trainer courses, (d) independent training by local trainers, and (e) follow-up and evaluation some months later using a standardized assessment tool.

As a component of this approach, the Child Health and Development Unit of the WHO Regional Office for Europe, based in Copenhagen, developed two perinatal courses, one devoted primarily to obstetric care (7) and the second to neonatal care and breastfeeding (8). Although the courses demonstrate some overlap of content and considerable congruence in approach, this paper focuses primarily on the obstetric manual rather than the neonatal care text.

The course manual contains independent modules that allow for adaptation of the course to local needs or to the abilities of delegates and trainers. The two texts, *A Guide to Effective Care in Pregnancy and Childbirth* (9) and *Pregnancy and Parenthood: Heaven or Hell* (10), as well as additional readings, are distributed together with the course manuals. Ring binders allow for easy insertion of notes or additional readings or teaching materials into the course materials. In addition, trainer's instructions are provided that include useful practical tools, such as the partograph, an example of a birth plan, an evaluation tool for the assessment of psychosocial stresses in pregnancy as a predictor of postpartum adjustment difficulties (the ALPHA scale) (11,12), and an explanation of innovative educational methods for the teaching of modules. An interactive method of teaching is emphasized, using a variety of teaching methods and tools, including exercises, group activities, role-plays, and videos. Modules included in the course are listed in Table 3.

The manual is supplied together with a set of overhead projection acetates that provide a wealth of additional illustrative information and observations. Overhead projection allows for on-site modification in relatively low-technology environments.

Table 3. Teaching Modules Included in the Essential Antenatal, Perinatal, and Postpartum Care Course

Preface	
Introduction	
Principles Underlying the Course	
Module 1	Changing maternity care
Module 2	Safe motherhood
Module 3	Antenatal care
Module 4	The concept of risk
Module 5	Sensitivity and specificity of tests
Module 6	Education for parenthood
Module 7	Anemia in pregnancy
Module 8	Referral in pregnancy with reference to bleeding
Module 9	Hypertensive disorders
Module 10	Labor
Module 11	The use of the partogram
Module 12	Administration of oxytocin in the intrapartum period
Module 13	Obstructed labor
Module 14	Care and positions in the second stage of labor
Module 15	Physiology and management of the third stage of labor
Module 16	Induction of labor: who, why, and how?
Module 17	Postpartum hemorrhage
Module 18	Care of the baby at birth and resuscitation
Module 19	Care of the mother and baby in the first week
Module 20	Infant feeding
Module 21	Family planning
Module 22	Postnatal checkup
Module 23	Record keeping
Module 24	Protocols: rationale and design
Module 25	Audit: basic principles of clinical audit
Module 26	Assessment of a publication
Module 27	Synoptic tables of interventions
Module 28	Strategies to implement locally appropriate interventions
References and Materials Used for Preparing this Workshop	
Glossary	
Final Evaluation	

Evaluation and Dissemination

No more than two months after courses are implemented locally, a clinical practice evaluation package, obtainable from WHO-Euro, is applied at local centers. This permits evaluation of staff practices, women's perceptions of care, and observation of clinical situations, drugs, and supplies. Feedback from these assessment tools encourages local facilities to assess their progress on implementing the practices that are based on the WHO ten principles and courses.

The program has been offered in several countries in the European region, including the CARK region (Kazakhstan, Turkmenistan, Tajikistan, Kyrgystan, and Uzbekistan) and Belarus, Moldova, Kosovo, Georgia, Armenia, and Russia. Training-of-trainer programs are currently being held, and many of these countries are moving to the stage of self-sustainable training. The course's applicability to more technologically sophisticated countries is unquestionable. As is to be expected, however, WHO-Euro has directed its efforts toward those countries in the region that are most in need of strengthening, namely, the countries of Central and Eastern Europe, the Commonwealth of Independent States, and the Central Asian Republics (CCEE/CIS/CAR). Course manuals and teaching materials are currently available in English and Russian.

Key Features of the WHO-Euro Antenatal, Perinatal, and Postpartum Care Course

The Antenatal, Perinatal, and Postpartum Care Course is extensive and cannot be adequately summarized here, but some key features of recommended clinical practice are presented in Tables 4–7. These recommen-

Table 4. Recommended Antenatal Care Practices for Perinatal Caregivers

Issues	*Recommendations*
Nutrition	Intake of folic acid before pregnancy and in the first trimester.
	Iron supplementation only on indication, acknowledging that a lower iron level than has been customarily considered to indicate anemia appears to be physiological in pregnancy (9).
	Abandon traditional perinatal ''risk'' scoring evaluations, since they cannot predict who will develop complications. Instead, regard women to be not at risk until proved otherwise, while remaining vigilant at all times for signs of deviations from normal. ''At risk'' classification should remain flexible and open to review.
Clinical care	Reduce the recommended number of antenatal visits for women with normal pregnancies in keeping with a policy of discouraging overmedicalization and overhospitalization.
	Reduce the routine use of ultrasound examinations in pregnancy to ''on indication only'' or to one (at about 18 wk) if locally preferred.
	Minimize the number of screening tests performed during visits. Blood typing, blood pressure, and urine tests for proteinuria are essential together with fundal height measurement. All others should be used on indication only.
	Understand the sensitivity and specificity of any tests used. Do not administer tests without clear clinical implications.
Psychosocial care	Provide preparation for pregnancy, birth, and parenthood. Refer to appropriate education classes or provide necessary information as part of care. Include companions of the woman's choice in this preparation. Recognize that fathers have needs of their own as individuals and not simply as companions or supports for their partner.
	Facilitate the use of birth plans and adhere to them as closely as possible.
	Assess potential psychosocial risk factors possibly influencing a woman and her family. A scale such as the ALPHA Scale (11,12) is useful for this purpose.
	Provide mothers with home-based records of their pregnancy and birth. Mothers keep these medical records to ensure that they are available no matter where or when she goes into labor.
	Provide evidence-based information for women, and encourage their participation in decisions about care.
	Do not feel obliged, at any stage of the pregnancy or birth, to provide care that is not in the best evidence-based interests of the mother or baby, even if at the request of the woman or her family.
	Offer an individualized approach to care at all times rather than routine practice.
	Encourage the development of local protocols for care.
Infant feeding	Encourage breastfeeding as the preferred method of infant feeding. Do not recommend any preparation of the breasts for infant feeding, since it is not effective.

Table 5. Recommendations for Intrapartum Care

Issues	*Recommendations*
Stage 1	Use a partograph to record and monitor the progress of labor. Limit vaginal examinations to assess progress to every 4 hours in normal first stage labor and every 2 hours when the alert line of the partograph is reached.
	Minimize the number of interventions in labor; particularly avoid unnecessary introduction of any nonessential item into the vagina. Encourage a policy of ''hands off,'' including any ''routine'' sweeping or stretching of the vagina.
	Abandon the use of shaving and enemas.
	Encourage ambulation in labor.
	Use a fetal stethoscope for monitoring the fetal heart in preference to other methods.
	Do not restrict fluids during labor, and allow women with normally progressing labors to eat light meals if needed.
Psychosocial support	Provide one-to-one care during labor from caregivers, and do not leave a woman alone in labor.
	Encourage a companion of the woman's choice to accompany her in labor and at birth. Provide doulas in the absence of support persons, and encourage their presence in addition to family members at the woman's request. Note that fathers may not always be effective support persons for their partners, and that they themselves might benefit from support at this time.
	Use a rotational system of midwifery staffing to facilitate periods of peak activity in labor units.
	Respect women's privacy and dignity at all times during pregnancy, birth, and the postpartum period.
	Be sensitive to cultural needs and expectations of women and their families.

Table 5. Continued

Issues	*Recommendations*
Stage 2	Use an upright position of the woman's choice for delivery. Avoid the use of a supine position for delivery and, particularly, of stirrups. Abandon traditional birthing beds for normal deliveries. Use a standard bed if a bed is chosen for delivery. Do not routinely perform an episiotomy (or perineotomy or midline incision). Do not routinely suture any tears or minor cuts: small lacerations can usually be left to mend themselves. Perform suturing on indication. Do not routinely conduct any examinations of the cervix after delivery unless there is evidence of hemorrhage. Cesarean section rates should range from about 5% to 15% in any facility, depending on its level. Use the simplest technology available rather than more sophisticated techniques, provided this is supported by sound evidence. Use the Misgav Ladach (Starr) method of cesarean section when possible. Do not charge extra for essential medical care, including so-called privileges such as companionship in labor: a supportive companion for labor is essential medical care, not a luxury. Costs of nonessential care (e.g., television in rooms) can be covered as private fees if essential.
Pain management	Avoid the use of medications in labor. Preferably pain management should use nonpharmacological methods, such as ambulation, changing positions, massage, relaxation, breathing, acupuncture, and others. Avoid epidural analgesia as a routine method of pain management. Choose spinal/epidural anesthesia in preference to general anesthesia for cesarean section.

Table 6. Recommendations for Mother-Infant Contact

Issues	*Recommendations*
Birth	Deliver the baby onto the mother's abdomen and dry him/her immediately. Encourage the mother to assist. Remove the towel and cover both mother and baby with a second dry towel. Keep the baby's head covered to minimize heat loss. Cut the cord once it has stopped pulsating while the baby is with the mother, assuming no significant hemorrhage has occurred. Support skin-to-skin care of mother and baby for about the first 2 hours after delivery and as much as possible during the postpartum period and beyond.
Promote breastfeeding	Encourage infant feeding when the baby shows signs of readiness, such as rooting, salivating, oral movements, hands or fists at the mouth and movement toward the mother's breasts. Do not force infant feeding until the baby indicates that she/he is ready. Do not remove the baby from the mother in the first few hours after delivery. Conduct all essential examinations of the normal newborn at the mother's bed rather than at a separate examination table. Delay nonessential examinations until later. Perform essential examinations with mother and baby together; for example, delay bathing for at least 6 hours or more. Delay eye prophylaxis until later to allow for undisturbed eye contact between mother and baby. At appropriate times after birth, provide vitamin K, BCG, and ocular prophylaxis against gonorrhea (where local conditions indicate this).

dations apply irrespective of the perinatal caregiver—obstetrician, midwife, or family doctor. They are concerned with both the woman and her family's experience of pregnancy and birth, as well as with care of the mother's and baby's health.

The course advocates a multidisciplinary, holistic, demedicalized, yet evidence-based approach that involves women and their families in decisions about care and expects a sensitive and respectful approach to care. At the same time, the course stresses the need for caregivers to monitor both medical and psychosocial outcomes constantly through an ongoing audit.

Conclusions

The World Health Organization heavily emphasizes an overriding philosophy of respect, support, and care for the pregnant and birthing woman throughout its training program, together with endorsement for an evidence-based approach to care. In addition to effective perinatal care, psychologically sensitive, multidisciplinary, and culturally appropriate care is a priority. The World Health Organization intends that this new approach will balance and combine with the past decades of technological development and emphasis

Table 7. Recommendations for Postpartum Care

Issues	*Recommendations*
Promote mother-infant contact and breastfeeding	Follow Baby Friendly Hospital Initiative guidelines for infant feeding: encourage exclusive breastfeeding on demand from birth and avoid any supplementation of the baby with water, glucose, or breastmilk substitutes.
	Provide rooming-in for all mothers and babies 24 hours a day.
	Encourage skin-to-skin contact during the postpartum hospital stay with or without breastfeeding.
Psychosocial support	Allow liberal visiting to family members of the women's choice during the postpartum stay.
	Ideally, offer facilities for a family member to stay with the mother at night.
Discharge	Use a flexible approach to discharge timing: allow women to judge for themselves when they are ready to return home.
	Ensure an adequate and supportive home situation before discharge, and arrange for intensive follow-up when this is not available to women. Facilitate community contact and referral to local support resources for all women.
	Incorporate women's and their partners' perceptions of care as part of standard audit procedures for effective and appropriate care.
Family planning	Ensure that family planning advice is provided before discharge.

in perinatal care to ensure not only good practice but also good care for childbearing women and families.

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