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Abstract

Upon request from the Ministry of Health of Uzbekistan, the WHO Regional Office for Europe has carried out activities for mother and child health care in Uzbekistan since the 1990s in collaboration with a number of partners. The WHO Making Pregnancy Safer programme has been implemented since 2002, through a series of policy dialogues with the Ministry of Health and partners, and based on the sustained provision of technical expertise in key areas. In 2003, the Ministry of Health issued a comprehensive normative document (Prikaz) on mother and newborn care, with the support of United Nations agencies and intergovernmental and nongovernmental organizations: the first in a series of documents endorsing evidence-based practices and WHO recommendations. Making Pregnancy Safer activities have included training workshops on improving maternal and neonatal health care, and assessment and follow-up after training to reinforce the skills acquired during courses in a number of districts. Evidence-based care for mothers and newborn babies was introduced at a 2003 workshop, and evidence-based guidelines for obstetric complications were developed in the following years. In 2004 Uzbekistan participated in the first regional workshop on Beyond the Numbers (BTN), a global tool developed by WHO for reviewing maternal deaths and complications to improve quality of care. A BTN national workshop in 2005 reviewed the various approaches and recommended that near-miss case reviews (NMCR) and confidential enquiries into maternal deaths (CEMD) be introduced to Uzbekistan. A technical BTN workshop on NMCR was held in June 2007, and a plan of action developed for pilot implementation. NMCRs started in 2007 in four pilot maternity units, and international experts reviewed them in 2008. The lessons learned were discussed at a workshop and the dissemination of NMCRs to other hospitals, and the introduction of CEMD at national level, was recommended. The Ministry of Health is leading the collaborative efforts of several partners to implement, disseminate and document the comprehensive strategic approach to improve maternal and perinatal health, supported by WHO technical expertise.

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**Making Pregnancy Safer
in Uzbekistan**

**Maternal mortality and
morbidity audit**

**Activities Report
2002-2008**





Making Pregnancy Safer in Uzbekistan

Maternal mortality and morbidity audit

Report of Activities: 2002–2008

Making Pregnancy Safer: summary of activities, 2002–2008

**Workshop on Evidence-Based Mother and Newborn Care,
10–14 November 2003**

**National workshop: Development of Guidelines for Emergency
Obstetric and Pregnancy-induced Hypertension,
18–21 January 2005**

**National Workshop on “Beyond the Numbers”,
28 February-04 March 2005**

**Technical Workshop on “Beyond the Numbers”:
Near-Miss Case Review, 12–15 June 2007**

**Piloting Near-Miss Case Reviews: international consultancy
4–10 November 2007**

**Near-Miss Case Reviews in pilot sites: follow-up
22–23 and 29–30 January 2008**

**Near-Miss Case Reviews: Workshop on Women’s Interview
17–18 April 2008**

**“Beyond the Numbers” Review and Scaling Up
12–23 May 2008**

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Keywords

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Abbreviations

AFT	assessment and follow-up after training
AGREE	appraisal of guidelines for research and evaluation
BCA	biannual collaborative agreement
BP	blood pressure
BTN	beyond the numbers
C/s	Caesarean section
CAH	child and adolescent health
CEMD	Confidential Enquiry into Maternal Death
CPS	Country Policies and Systems (section of WHO Regional Office for Europe)
EAPPC	essential antenatal, perinatal and postpartum care
EBM	evidence-based medicine
EBMN	evidence-based mother and newborn
ENC	essential newborn care
ENCBF	essential newborn care and breastfeeding
FCH	family and community health
GEM	gender mainstreaming
I/v	intravenous
IMPAC	Integrated Management of Pregnancy and Childbirth
MCH	maternal and child health
MCPC	managing complications in pregnancy and childbirth
MDGs	Millennium Development Goals
MPS	Making Pregnancy Safer
NCAMM	National Committee on Maternal and Child Mortality
NCCEMD	National Committee on CEMD
NGO	nongovernmental organization
NMCR	near-miss case review
NNT	number needed to treat
NPO	national professional officer
PIH	pregnancy-induced hypertension
RCT	randomized controlled trial
RHL	(WHO) Reproductive Health Library
RHR	reproductive health and research
ToT	training of trainers
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development

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1 Introduction: Making Pregnancy Safer

While motherhood is a positive and fulfilling experience for most women, pregnancy and childbirth can also be associated with suffering, ill health and death. No issue is more central to global well-being than maternal and perinatal health. Every individual, every family and every community at some point is intimately involved with pregnancy and the success of childbirth. Yet every year women and newborn babies die from complications that could have been prevented. WHO launched the Making Pregnancy Safer (MPS) programme globally in 2000 to help countries scale up access to essential interventions to reduce maternal and newborn morbidity and mortality and improve health. The key message of the MPS global strategic approach¹ is to ensure skilled care at every birth within the context of a continuum of care.

Further, all women should have the highest attainable standard of health, secured through the best possible care before and during pregnancy, childbirth and the postpartum period. This continuum of care encompasses the life-cycle of the woman, from adolescence through to the birth of her child. In addition, it includes all levels of the health system from the household to the first service level, and a higher-level referral service site, as appropriate for the needs of each mother and newborn baby. Technical and financial capacity building should ensure sustainability: self-reliance in these areas is a target for national governments and partners working collectively.

1.1 European strategic approach

The WHO European Region, which has 53 Member States and includes eastern European countries, the Caucasus and central Asia, still shows wide differences between and within countries in mothers' and newborn babies' morbidity and mortality, and in access to and the quality of care. The challenges in maternal and child health care include overmedicalization, the use of outdated and potentially harmful practices, and insufficient inter-professional and multi-disciplinary collaboration. Further, primary health care is often neglected, health education is poor, and patient satisfaction is suboptimal.

Based on the global strategic approach, a European document was prepared to address specific challenges. The **goal** of the **European strategic approach for making pregnancy safer**² is to improve maternal and perinatal health and the **objective** is to ensure safe pregnancy and childbirth through equitable and efficient provision of, access to and use of quality skilled care for **all** women and their newborn babies, especially those in poor and vulnerable groups, in the WHO European Region.

The following core values and operational principles form the basis for the regional strategy.

Core values

Internationally agreed human rights and global consensus declarations were considered in the development of the strategy, which promotes the **rights** of women and newborn babies to the highest attainable standards of health. To ensure that these rights are respected, policies, programmes and interventions must promote **gender equality** as the basis of maternal and newborn health programmes.

The core values are **universal coverage** to ensure **equity in access** to quality care, regardless of socioeconomic status, with special attention to the poor and populations that are currently underserved, ensuring that all women survive and are healthy during pregnancy and childbirth and newborn babies have a healthy start in life. These values should also ensure governments' responsiveness to the needs of all their citizens, especially guaranteeing that the poor and marginalized have access to health services, including healthy reproduction, and that the improvement of maternal and newborn health is emphasized, as well as the reduction of maternal and perinatal deaths.

¹ Making a difference in countries: Strategic Approach to Improving Maternal and Newborn Survival and Health, WHO Department of Making Pregnancy safer, 2006

² Improving Maternal and Perinatal Health: European strategic approach for making pregnancy safer, WHO Regional Office for Europe, 2007
http://www.euro.who.int/pregnancy/20071024_1

Operational principles

It is recognized that interventions to prevent maternal and newborn mortality from major causes exist, and can be implemented even in resource-poor settings. Evidence has shown, however, that it is not always possible to predict which woman or newborn will develop complications; many complications occur among women and infants who are not considered to be at high risk. Therefore, in order to reduce deaths due to pregnancy and childbirth, it is essential to ensure an effective **continuum of care** that stretches from the household to the referral centre, and includes all maternal and newborn care including timely and appropriate management of pregnancy-related complications. These services must be available to all women and their newborn babies, wherever they live, whatever the circumstances of their pregnancy and birth, regardless of their socioeconomic situation.

The need for a continuum of care calls for a **health systems approach** in order to ensure support to maternal and newborn health. The package of services provided should include **evidence-based cost effective interventions** that have proven feasible to implement even in resource poor settings. There is a great need in this Region to eliminate the overuse of non-evidence-based interventions that have no added value and or pose a safety issue.

Since the inception of the **primary health care** movement, maternal and child health has formed the backbone of health services that should be integrated, comprehensive, reaching out to all parts of the population and should be strongly linked with other key primary health care components (such as immunization, environmental health, nutrition, hygiene, emergencies and child survival). Maternal and neonatal health care is a core component and should be included in the package of pre-paid services.

Making pregnancy safer does not depend only on the health system, but requires a **multisectoral approach**, because of the complex set of interactions between many factors that influence maternal and perinatal health outcomes.

Partnerships should be set up in order to increase the availability of resources and maximize their effective use, reducing unnecessary duplication of activities building on existing initiatives and activities striving to achieve the Millennium Development Goals (MDGs) for reducing child mortality, improving maternal health, promoting gender equality and empowering women.³

A key issue for MPS is the **empowerment of women**, promoting their understanding of the issues related to pregnancy and childbirth to improve their ability to take and act upon decisions, making them full partners in improving the outcome of pregnancy and birth, based on the support of their families, communities and local health institutions.

MPS is and will continue to be a work-in-progress, committed to taking steps – one at a time – to improve health system based on full political commitment, strong partnerships, supportive legislation and regulatory framework. MPS envisages a skilled workforce, a strengthened infrastructure and supply of essential drugs and equipment, and a functional referral system. Provision of evidence-based packages of interventions should be ensured through training of health professionals and through quality of care improvement mechanisms. Effective monitoring of outcomes will result in better decision-making at the provider and management levels.

³ MDGs: Reduce child mortality, Improve maternal health; promote gender equality and empower women

2 Making Pregnancy Safer activities in Uzbekistan – Summary

WHO Regional Office for Europe activities in the field of maternal and child health (MCH) started in the 90's, based on a series of requests through the biannual collaborative agreement (BCA) by the Ministry of Health of Uzbekistan in collaboration with partners such as UNFPA, UNICEF and nongovernmental organizations (NGOs) like ZdravPlus and Project Hope, the Veneto Region of Italy, and Cariverona Foundation, Verona, Italy. The country was also part of the central Asian republics and Kazakhstan mother and child health project, which was evaluated in 2000.

Uzbekistan is among the leading countries implementing WHO recommendations in the field of MCH; in particular the Ministry of Health of Uzbekistan has developed and endorsed a series of policy and legal documents to support and reinforce the implementation of evidence-based recommendations in the making pregnancy safer framework, and ensured its follow-up and evaluation.

Uzbekistan has made good progress in the reduction of maternal and perinatal mortality and in working towards achieving correct data collection and reporting, but there are still significant gaps in comparison to other countries in the European Region.

Fig. 1. Maternal and perinatal deaths, Uzbekistan, groups of countries and European Region.

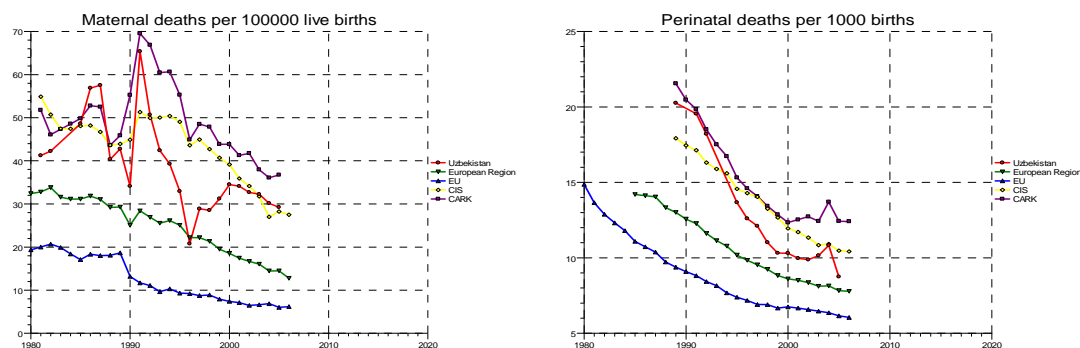


Fig. 1 shows maternal and perinatal deaths trends from 1980 and onwards in Uzbekistan, the European Region, the European Union (EU), the Commonwealth of Independent States (CIS), central Asian Republics and Kazakhstan (CARK) as indicated in the WHO European Health for All database.⁴

The combined activities and components introduced below are part of the implementation of MPS in Uzbekistan, strengthening different health system functions, including stewardship (development/update of laws norms and regulations), service delivery (in-service training and development/update of clinical guidelines and protocols), and resource generation (planning for appropriate perinatal technology and appropriate use of medicines, update of curricula, pre-service training).

2.1 Service delivery: improving quality of perinatal care

Several activities have been carried out, including training of key professionals and decision-makers, in-service training, development of clinical guidelines, policies and laws and regulation. These activities are now being disseminated by partners in line with WHO Regional Office MPS framework, using our material and expertise.

⁴ WHO Health for All database, accessed 14 August 2008, <http://www.euro.who.int/HFADB>

WHO MPS European Region has participated/conducted/initiated a series of policy dialogues in order to address key issues to improve maternal and perinatal health and provide technical guidance, expertise and tools.

The results of the Uzbekistan experience in the field of MCH have been presented by MoH representatives at a series of regional meetings organized by WHO Regional Office in collaboration with partners, as well as during FCH Focal Points meetings, which are held on a regular basis and involve delegations from a number of Member States.

MCH activities in Uzbekistan were reviewed at a national orientation and planning meeting held in April 2002 at the personal request of the Minister of Health, where the WHO MPS programme was introduced and its suitability for national conditions discussed. In general, participants considered MPS appropriate for Uzbekistan and recommended implementation.

In 2002, joint collaboration in Uzbekistan brought together the Ministry of Health, the Italian Cooperation, Rome, Italy, the Veneto Region of Italy, the Cariverona Foundation, Verona, Italy and the WHO Regional Office for Europe.

Within this biannual collaborative agreement (BCA), WHO posted an international professional officer in Tashkent to coordinate the MCH programmes in two pilot districts: Shumanay (Autonomous Republic of Karakalpakstan) and Boz (Andijan Region).

Activities included needs assessments, training and monitoring, and ensuring the availability of essential drugs and equipment. Outcomes have included implementation of evidence-based practices and greater collaboration among partners, the Ministry of Health and at regional level. The dissemination of up-to-date MCH principles and practices was achieved through national and sub-national “cascade” training courses in essential antenatal perinatal and postpartum care (EAPPC) and essential newborn care and breastfeeding (ENCBF) conducted in June 2002. Visits to the pilot districts (August 2002) showed an improvement in the skills and practices in maternity hospitals.

To facilitate the development and implementation of evidence-based clinical guidelines, standards and their use in medical practice, the Uzbekistan government updated and revised national maternal and perinatal legislation. These activities were then successfully replicated in other oblasts and used as a model by WHO partners implementing similar projects elsewhere in the region.

To further disseminate the MPS programme, orientation and planning meetings were held at district level, introducing MPS framework to local health authorities, health care providers and communities. These were held in the Navoi oblast (August 2002), Nukus, Republic of Karakalpakstan (September 2002), and Urgench, Korezm oblast (November 2002).

A workshop on assessment and follow-up after training (AFT), July 2003, was organized as follow-up to the training courses on EAPPC and ENCBF held in June 2002 and in May-June 2005, a training of trainers (ToT) in essential obstetric and newborn care (ENC) was held at the request of the major republican institutions in Tashkent, with the objective of updating and revising clinical practices based on WHO recommendations; an AFT workshop followed in March 2006.

2.2 Stewardship and governance

Uzbekistan Government and Ministry of Health provided strong stewardship to support improvement of mother and child health through a series of legal documents (prikaz).

In August 2002, a meeting was organized jointly by UNICEF and WHO European Region to introduce WHO live birth indicators, crucial for collecting comparable data in different settings to support realistic health planning activities.

During this period, close contacts between health authorities allowed collaborative programmes to be implemented with other United Nations agencies (the United Nations Children’s Fund (UNICEF), the United Nations Population Fund (UNFPA), the United Nations Development Programme (UNDP) and the World Bank), the United States Agency for International Development (USAID) and NGOs, streamlining MCH interventions.

In July 2003, the Ministry of Health called a meeting of the United Nations Agencies (WHO, UNICEF), international governmental organizations (USAID) and an NGO (Project Hope) to review suggested changes to Prikaz No. 155, which deals with mother and child care. A working group had been set up end 2002 to prepare a new version of this Prikaz, with specialists called in to assist in the process as required. The objective was to update the Prikaz to international standards, taking into consideration local conditions. The main changes included a regional approach to gynaecological and neonatal care and the setting up of antenatal care consultancies at regional and national levels.

The modernization of labour practices was ensured through de-medicalization of labour, free positioning during labour and use of the partograph. The Prikaz also deals with prevention of HIV in health workers and stipulates that hepatitis and HIV positive women deliver in normal maternity clinics. Intensive care units and wards were given an organizational structure; and WHO recommendations were adapted into standard guidelines for first reanimation of newborn babies.

The Prikaz was approved on 13 November 2003 and then introduced into the public health system at a regional orientation meeting, followed by “cascade” meetings at district level.

The WHO Regional Office for Europe held regular policy dialogues on maternal and child health issues. In the following years the Government and Ministry of Health issued a series of legal documents which, step by step, endorsed and promoted dissemination of evidence-based practices and WHO recommendations:

- State programme No. 30: “2005 – Year of Health”;
- 22 April 2005: Ministry of Health Order No. 176 “About infant mortality reduction program”;
- 19 March 2006 Ministry of Health order No. 81 “About spreading of Baby Friendly Hospitals initiative” ;
- 5 September 2005: Decree No. 425 “On implementation of modern technologies on increasing the effectiveness of provision of care for pregnant women in the facilities of the primary level”;
- 31 October 2005: Decree No. 530 “On common ordering of anti-epidemic arrangements in treatment-and-preventive institutions”;
- 28 February 2007: Decree No. 77 Live Birth Definition;
- 27 September 2007: Ministry of Health order No. 428 “On implementation of the confidential review of near-miss cases at the maternity units of Uzbekistan Health Care System”.

2.3 Recent activities: evidence-based approach to maternal mortality and morbidity audit

The most recent series of activities organized by the Regional Office, which are included in this report, focus on the preparation, introduction, piloting and review of maternal mortality and morbidity audit following the “beyond the numbers” (BTN) approaches in collaboration with partners and under the leadership of Ministry of Health. The objective is to introduce a new system for maternal audit, which should be evidence-based, ensure confidentiality, and aim at improving the quality of care.

The existence of updated evidence-based clinical guidelines is a prerequisite for provision of quality health care and for conducting case reviews following WHO recommendations. Therefore, the Regional Office prioritized the capacity building in this area among a core team of top-level clinicians and guidelines makers, through workshops on EBM and practical development of key clinical guidelines on major obstetric complications.

As a first step the Regional Office organized a workshop on **evidence-based mother and newborn care (EBMN)** in November 2003, to build capacity to use scientific evidence in the development and update of clinical guidelines, standards and regulations, with the ultimate objective of introducing changes in clinical practices and as a key requirement for maternal audit.

In 2005, a Regional Office expert was invited by Ministry of Health to assist in the **development of the national guideline** for pregnancy-induced hypertension (PIH). A draft protocol was reviewed and an action plan drawn up for its introduction at national level. In the following years, a series of clinical guidelines for major obstetric complications were developed and reviewed using WHO expertise, endorsed and disseminated by Ministry of Health. The process of development, official endorsement and dissemination of national clinical guidelines was strengthened and accelerated by the WHO recommendations which underline that updated evidence-based guidelines are a key requirement for the introduction of maternal and perinatal audit. On the other hand basing audit sessions on clinical guidelines reinforces their use and adoption in clinical practice.

An Uzbek delegation (representatives from Ministry of Health, top-level professionals and partners) participated to the **first regional BTN workshop** held in Issyk Kul, Kyrgyzstan from 30 May to 2 June 2004, organized by the Regional Office, involving participants from the central Asian Republics and Moldova. Selected BTN approaches were recommended by the Uzbekistan team as a methodology to improve the quality and outcome of care, and it was suggested that a national workshop should be held to introduce BTN at country level.

A **national BTN workshop** was held in Uzbekistan from 28 February to 04 March 2005, organized by the Ministry of Health, the the Regional Office and UNFPA. It was attended by Ministry of Health staff, leading medical teaching professionals, health care providers, including obstetrician/ gynaecologists and midwives, and representatives from the areas of psychology and social services. The BTN approaches identified by the participants as suitable for Uzbekistan to improve the quality and outcome of care are: Confidential Enquiry into Maternal Deaths (CEMD) at national level, and near-miss case review (NMCR) at facility level.

A **technical BTN workshop** to develop tools and mechanisms for introducing NMCR in four pilot institutions was organized by the Regional Office, with UNFPA and UNICEF support, in June 2007. NMCR identifies and assesses cases in which pregnant women survive obstetric complications. A plan of action was developed for its implementation.

The **NMCRs were piloted** in four maternity units selected by Ministry of Health (Andijan, Fergana, Karshi and Tashkent Perinatal Centre) starting from November 2007, with technical support of a WHO expert. WHO organized a workshop on **How to conduct interviews** held by a local expert, following an assessment of this specific need. The WHO Country Office provided additional **technical support and follow-up** as Dr Mavzhuda Babamuradova, the NPO, Country Policies and Systems (CPS)-FCH visited the four maternity units and carried out observation of NMCR sessions, together with the appointed national coordinator for NMCR.

The most recent step in implementing the maternal audit was an expert mission which aim was to observe and **review the piloting of NMCR**; this was followed by a **workshop for scaling up BTN approaches**, held in May 2008. The review made it evident that it is possible to achieve real information about maternal care, to develop indications for feasible practical solutions to improve quality of care, already after a few case reviews. The actual challenge is to implement these solutions in order to improve quality of maternal as well as perinatal care.

Ministry of Health and the National Committee, with support of the WHO Country Office, Uzbekistan, were very active in the preparatory activities to start implementation of NMCR in Uzbekistan. Professionals involved in these reviews fully understand purpose and methodology of this approach, putting the accent on detection of missed opportunities and elaboration of solutions to improve practices, and not on finding the guilty person and administer punishment. After reporting, review and evaluation of the NMCR early phase implementation in 4 pilot sites there is a clear understanding of the positive results

and planning for future steps of piloting and future dissemination and institutionalization of NMCRs in Uzbekistan. The plans for introducing the other selected BTN approach, CEMD at national level, are now developed, and steps are undertaken by Ministry of Health, key stakeholders and partners to prepare the needed legal framework and tools.

3 Uzbekistan participation in intercountry activities

As further steps in implementing MPS, Uzbekistan representatives participated in a number of regional activities in the framework of BCA implementation in the area of family and community health, and the additional support of the partners' agreement between the Regional Office, the Veneto Region and the Cariverona Foundation (Italy).

3.1 Mother and Child Health Focal Points meeting, Malta, October 2002

This activity, organized by the Regional Office child and adolescent (CAH) and MPS programmes, has taken place biennially over the past several years. The objective is to bring Member States together with WHO technical programmes in the area of MCH, as well as selected partners, to exchange experiences on implementation of interventions at national and district levels and plan for scaling up of activities. New WHO initiatives and tools are introduced and the appropriateness of their implementation in countries discussed.

3.2 Training of Trainers in Follow-up, Russian Federation, November 2002

This regional training course was organized to train health professionals from a number of countries, including Uzbekistan, in follow-up activities after training, an integral part of MPS ENCBF and EAPPC courses. The main objectives were to reinforce knowledge and skills of health workers and train local and regional supervisors to use the MPS follow-up questionnaires. As part of the training, the workshop assessed two maternity units in the Samara oblast, and developed recommendations for improving quality of care for mothers and newborn in both institutions.

3.3 Planning for Appropriate Perinatal Care, Kazakhstan, July 2003

Over the past decades, many countries have introduced expensive technology in their health systems without prior needs assessment at different levels, appraisal of alternative options, evaluation of cost effectiveness and availability of adequate technical support, or proper training of staff. As a consequence, the beneficial effects, if any, are much less than expected due to frequent breakdown of equipment; further, resources to pay for such technology are often diverted from priority health areas. The workshop was organized by the Regional Office and UNICEF in collaboration with the government of Kazakhstan. Participants included high-level Ministry of Health representatives from Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan. The workshop focused on long-term and short-term planning, and development of operational targets based on updated scientific evidence.

3.4 Family and Community Health Focal Points Meeting, Cyprus, April 2004

HO Regional Office has promoted FCH interventions since 1992, disseminated through biennial meetings of Member States' focal points for family and community health. Recently, WHO has, both at global and regional level, developed strategies on reproductive health, gender, making pregnancy safer, and child and adolescent health and development. The Regional Office FCH section⁵ organized a focal points meeting to bring together Ministry of Health counterparts and partners such as United Nations and bilateral agencies and NGOs. The objective was to review and discuss achievements to date in implementing family and community strategies and initiatives, share challenges encountered and their solutions. One of the main issues was how to meet the United Nations MDGs for MCH in the European Region.

⁵ Child and adolescent health (CAH), gender mainstreaming (GEM), Making Pregnancy Safer (MPS) and reproductive health and research (RHR)

3.5 First Regional Workshop on “Beyond the Numbers”, Kyrgyzstan, May-June 2004

Beyond the Numbers is a global strategy developed by WHO for reviewing maternal deaths and complications with the objective of identifying problem areas and appropriate solutions, which are then incorporated into recommendations disseminated throughout the health system to improve quality of care. The purpose of the regional workshop was to help countries select and introduce any one – or a combination – of the five suggested approaches to case reviews in order to reduce the burden of death and morbidity. Participants reviewed the different methods and developed national plans of action for introducing and implementing the chosen approach(es) at pilot level with later expansion to the national level.

3.6 National Policies and Strategies for Family and Community Health, Turkey, April 2005

The objective of this meeting was to discuss how WHO and other partners can provide support for integrating policies and strategies on reproductive health, gender, maternal and perinatal health as well as child and adolescent health into health systems in Member States. Participants exchanged experiences in developing and implementing national policies, the problems of integrating these with the health system and how these can be overcome. Presentations were made on examples of implementing existing national policies and tools that illustrate current best practice.

3.7 Family and Community Health Focal Points Meeting, Spain, September 2006

The Family and Community Health Section at WHO Regional office organized a meeting of national focal points in Malaga, Spain, September 2006. The objective was to give national counterparts and other partners an opportunity to review and discuss challenges, achievements and developments in implementing the programmes promoted by the Regional Office programmes on child and adolescent health and development, MPS, reproductive health and research and gender and women’s health.

4 Introduction to evidence-based care

Many factors influence the delivery of health care: clinicians and managers need to integrate relevant research findings into clinical practice in the context of their own experience, circumstances and resources; everyday clinical practice raises many questions and different types of evidence are required to help find answers. However, it is important to structure questions precisely before setting out to find evidence. This can save time and improve the chances of finding the right sort of evidence (study type) to help answer questions. There are many potential sources of evidence and advice available, e.g. colleagues, guidelines, journals, the Internet. The time and resources available, as well as the urgency and importance of the questions, determine clinicians' choices.

Clinical research continually produces new findings that can contribute to effective and efficient patient care. However, such research cannot change patient outcomes unless health services and health care providers adopt them in practice. Uneven uptake of research findings – and thus inappropriate care – occurs across different health care settings, countries and specialties. Making sense of research papers involves asking four main questions.

- (1) Is this the right sort of study to answer this specific question?
- (2) Is this research valid (trustworthy)?
- (3) What do the results really say (precision and effect size)?
- (4) How relevant are the findings to local circumstances (transferability)?

The WHO MPS programme focuses on effective evidence-based interventions that target the major causes of maternal and newborn morbidity and mortality. It aims at strengthening health systems by identifying evidence-based interventions at hospital and community levels to ensure that mothers and children have access to optimal care. Situation analyses have shown that in many eastern European and ex-Soviet countries, health professionals lack the appropriate background in epidemiology and updated scientific knowledge, a constraint in clinical management and guidelines making. During the development of clinical guidelines for maternal and neonatal care in the Region, the need was identified for greater in-depth understanding of evidence-based medicine among professionals who are involved in preparation, update and implementation of clinical guidelines for maternal and perinatal care.

Based on early experiences in Moldova and Georgia, a model course has been designed based on a step-by-step evidence-based classical medical teaching framework. The course was adapted to the field of perinatology and includes selected readings on general evidence-based medicine topics and scientific papers in obstetrics and neonatology.

4.1 Workshop on Evidence-Based Mother and Newborn Care, November 2003

The evidence-based mother and newborn (EBMN) national workshop was held from 10 to 14 November 2003 at the Republican Perinatal Centre in Tashkent, led by WHO expert Professor Tengiz Asatiani. The EBMN training course introduces the principles and practices of clinical guideline development and introduces participants to the appraisal of published guidelines, how to identify barriers to optimal mother and newborn health care, and how to evaluate the scientific background to different approaches for changing professional and organizational practices. Once sources have been identified, their strengths and weaknesses are considered.

A range of study designs is covered during critical appraisal sessions: randomized controlled trials (RCTs), systematic reviews and diagnostic studies. Plenary sessions introduce participants to key concepts of EBM, e.g. confidence intervals, numbers-needed-to-treat. Rather than attempting a full literature search, the course focuses on a limited range of useful sources of evidence, i.e. PubMed, Cochrane and the WHO Reproductive Health Library (RHL). The course also covers principles and practices of clinical reviews, building on experience from reviews that have taken place in other settings, offering participants the opportunity to challenge and discuss the premise of EBM. In addition, participants find and appraise papers reflecting their own interests.

4.1.1 Objectives

The Workshop was held:

- to offer participants the opportunity to challenge and discuss the premise of evidence-based medicine;
- to help the participants structure questions precisely before setting out to find evidence (this can save time and improve the chances of finding the right sort of evidence (study type) to help answer questions);
- to focus on a limited range of useful sources of evidence: PubMed, Cochrane and the WHO Reproductive Health Library;
- to make sense of research papers;
- to introduce participants to key concepts in evidence-based medicine, such as confidence intervals, numbers-needed-to-treat;
- to give the participants the principles and practice of guideline development and how to appraise published guidelines;
- to help the participants consider barriers to EBMN health care, and the scientific background for different approaches needed to change professional and organizational practice;
- to give the participants the principles and practice of clinical audit, building on experience from audits elsewhere;
- to help the participants locate and appraise papers reflecting their own interests.

4.1.2 Recommendations

- Evidence-based principles should be used to develop national clinical guidelines and standards and in daily clinical practice.
- Knowledge of EBM should be disseminated to all health care providers.

4.1.3 Organization

Most of the group sessions are preceded by didactic lectures from facilitators, e.g. on the rationale and need for RCTs. Some of these are theory-based and cover important issues such as chance and bias. It is essential that attempts to understand research evidence is based on an understanding of key concepts, so it needs to be clearly explained why some theoretical knowledge is required to appraise research findings. Didactic sessions could possibly be shorter but more frequent to ensure that a range of key theoretical issues is raised in a timely manner. When possible, clinical examples in the field of maternal and neonatal care are incorporated into the lectures.

Course methodology used included presentations and interactive small group work. Several participants were initially unfamiliar with small group learning methods, however, the majority adapted quickly and enthusiastically. Some participants also showed frustration with course lectures, especially after small group discussions; others expressed a wish to learn more about theoretical issues before proceeding to group work.

All participants were able to follow the five-day course successfully. The participants were high-level professionals, and meaningful as well as crucial questions were raised and discussions in a participatory and enthusiastic manner. Each participant received a full set of EBM training materials in Russian.

4.1.4 What happened

Dr Klara Yadgarova, the Ministry of Health focal point for MCH, opened the workshop. Professor Asomiddin Kamilov, Deputy Minister of Health, closed the workshop, and certificates were given to all participants.

Participants were briefed in detail on objectives, training requirements and the implications of EBM in routine clinical activities.

Day 1 focused on topics such as what is evidence-based medicine, which study design answers my question and simplified statistics.

Participants were requested to complete a questionnaire, using a five-point scale to assess their familiarity with clinical effectiveness and terminology; this helped facilitators understand how to prioritize presentations and which subjects should be given extra focus.

Day 2 began with a presentation on RCTs, with special focus on critical appraisal, followed by interactive work in small groups on a case study: neonatal resuscitation of newborn: use of 100% oxygen or room air? Other presentations covered systematic reviews, how to find the correct type of evidence and sources of evidence (Cochrane Library, WHO RHL, etc.).

Day 3 focused on how to search the literature and diagnostic articles, followed by small group work on searching sources of evidence. Inter-active small group work on critical appraisal of diagnostic studies focused on trans-vaginal ultrasonography of the endometrium in women with postmenopausal bleeding; is it always necessary to perform an endometrial biopsy.

Day 4 was devoted to introducing clinical guidelines and clinical reviews, both increasingly used for planning and provision of health care. It was underscored that, in order to have any positive impact, guidelines need to be carefully developed and adapted to local needs and circumstances. The main challenge at this point was the absence of a unified format for the development of clinical guidelines and standards. Consequently, participants were introduced to the appraisal of guidelines for research and evaluation (AGREE) tool. AGREE provides a framework for assessing clinical guidelines, both as regards quality of reporting and some aspects of recommendations; it has 23 key items organized in six domains, each of which captures a separate dimension of guideline quality. AGREE assesses the predicted validity of a guideline and the likelihood of its achieving the intended outcome.

Participants were then divided in small groups, and asked to make a critical appraisal of the hypertensive disorders during pregnancy guideline; participants agreed that a common format for clinical guidelines, based on EBM principles, would be required. Special emphasis was given to full implementation of all clinical guidelines or standards.

Day 5 was devoted to economic evaluation and different barriers to evidence-based health care, the various approaches needed to change professional and organizational practices and identification of local solutions for implementation of EBM. Participants made presentations (using scientific papers from course material, research papers of their own choice or EBM topics).

Overall, the reaction from the participants was extremely positive. Comments from participants included their commitment to change the way they develop clinical guidelines and assess existing papers and guidelines and to implement EBM recommendations in their places of work.

4.1.5 Evaluation by participants

Participant completed a form at the opening of the workshop on familiarity with clinical terms. When responses were left blank, it was assumed that respondents were unfamiliar with the term and a score of zero assigned. Prior to the course, low familiarity scores (under 3) were reported with all terms but three – journal editorial, clinical trial and clinical review. After the course, familiarity scores improved, with the greatest improvements in mean score >1.5 (in italics) observed for systematic review, meta-analysis, odds ratios, confidence intervals, diagnostic tests, specificity, likelihood ratio, case control study, literature search, Cochrane and WHO RHL.

Immediately following the course, participants completed anonymous questionnaires on overall course assessment, applicability of skills and knowledge gained, what sessions were of most interest, what areas required further clarification and what other improvements they felt could be made to the course. Specific questions were:

- familiarity with clinical effectiveness sources and terminology;

- how far, if at all, their original goals (or learning objectives) had been met;
- what was good about the programme;
- how the programme could be improved.

Table. 1. Self-reported familiarity with clinical effectiveness sources and terms

a) Clinical effectiveness term or source	b) Familiarity (scale of 1 to 5)		
	Mean pre-course (n=15)	Mean post-course (n=12)	Change in mean score
Journal editorial	52 (3.4)	55 (4.5)	1.1
Clinical trial	53 (3.5)	53 (4.4)	0.9
Systematic review	40 (2.6)	50 (4.1)	1.5
Meta-analysis	26 (1.7)	46 (3.8)	2.1
Odds ratios	20 (1.3)	51 (4.2)	2.9
Statistical significance	49 (3.2)	55 (4.5)	1.3
Confidence intervals	26 (1.7)	53 (4.1)	2.4
Sensitivity	42 (2.8)	51 (4.2)	1.4
Diagnostic test	40 (2.6)	51 (4.2)	1.6
Specificity	32 (2.1)	51 (4.2)	2.1
Likelihood ratio	35 (2.3)	52 (4.3)	2.0
Cohort study	36 (2.4)	44 (3.6)	1.2
Case control study*	28 (1.8)	52 (4.3)	2.5
Literature search	36 (2.4)	51 (4.2)	1.8
Publication bias	52 (3.4)	50 (4.1)	0.7
Cochrane Collaboration	28 (1.8)	45 (3.7)	1.9
WHO RHL	30 (2)	50 (4.1)	2.1
Clinical review	46 (3.0)	51 (4.2)	1.2
Clinical guidelines	47 (3.1)	53 (4.4)	1.3

4.1.6 Participants

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Alimova N

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- Yolgondiev A. K.
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4.2 Workshop on the Development of Guidelines for Emergency Obstetrics, January 2005

As a follow up to the EBMN workshop (November 2003), to assist national top-level professionals in developing national guidelines for obstetric emergencies and in particular on pregnancy-induced Hypertension (PIH) using EBM methodology, a four day workshop was organized on the development of selected clinical guidelines for emergency obstetrics. This activity was led by the WHO expert Professor Gelmius Siupsinskas from 18 to 21 January 2005 at the Republican Perinatal Centre, Tashkent.

Clinical guidelines are increasingly used for planning and provision of health care. However, to have any positive impact, guidelines need to be rigorously developed and adapted to local needs and circumstances. Clinical review is the systematic and critical analysis of the quality of clinical care. As well as helping to judge the performance of clinicians and health care organization, clinical review represents a method to support improvements in care.

The existence of updated evidence-based clinical guidelines is a prerequisite for provision of quality health care and for conducting case reviews following WHO recommendations. Therefore, the Regional Office prioritized the capacity building in this area for a core team of top-level clinicians and guidelines makers, through workshops on EBM and practical development of key clinical guidelines on major obstetric complications.

4.2.1 Protocol development

The draft protocol was compiled using the newest available and most credible evidence and references: WHO Integrated Management of Pregnancy and Childbirth series (IMPAC⁶), Royal College of Obstetricians and Gynaecologists, American Society of Obstetricians and Gynaecologists (ACOG), Scottish Intercollegiate Guidelines Network recommendations, Cochrane database, Medline, important clinical studies such as WHO antenatal care model trial, eclampsia trial, Magpie trial, etc. For the formal evaluation of the guidelines, the modified AGREE tool was used,⁷ which includes assessment of:

- scope and purpose.
- stakeholder involvement.
- rigueur of development.
- clarity and presentation.
- applicability.
- editorial independence.

After discussions, it was agreed that the national PIH guidelines (and, possibly, future guidelines) should have two parts:

- detailed guidelines (recommendations) with graded strength of evidences and references
- 2–4 summary sheets to be used as reminders in everyday practice.

4.2.2 Recommendations

- Provide external review of the final version (after updating and internal revision) of National PIH guidelines.
- Organize a national training course including clinical practice in a leading maternity unit, modelled on experiences in Kazakhstan and Kyrgyzstan, to facilitate implementation of appropriate practices.

⁶ http://www.euro.who.int/pregnancy/esscare/20051103_3 as per 26.08.2008

⁷ AGREE Collaboration, January 2003, www.agreecollaboration.org

- Include in training curricula of key perinatal health care professionals, infection control/management (HIV universal precautions, rational use of antibiotics, etc.) and prevention of mother-to-child transmission of HIV.
- The next national guideline to be developed should be for postpartum haemorrhage, as this is the main cause of maternal mortality in Uzbekistan.

4.2.3 What happened

The national working group is made up of obstetricians and neonatologists (clinicians and academicians). Dr Aleksey Klimashkin prepared the draft of the guidelines under the supervision of Professor Yulduz Rasul-Zade, Tashkent maternity unit No.1. Professor Siupsinskas recommended that other stakeholders (i.e. anaesthesiologists and gynaecologists from out-patient departments) should also be involved. These professionals joined the group on the second day.

The work went smoothly; all disputed statements were revised and agreed upon among the experts. All recommendations in the protocol were graded as follows:

- A – based on RCTs
- B – based on non-randomized controlled cohort or case-controlled trials
- C – based on non-controlled descriptive studies, fundamental research and opinion of experts.

The Working Group evaluated overall compliance of the protocol with AGREE standards and found it to be as high as 68%.

4.2.4 Outcome of group work

Two summary sheets were developed for management of particular PIH forms based on international diagnostic criteria, one for instructions on medications for blood pressure (BP) control, and one flowchart for management of eclampsia

The group recommended that the next steps should be:

- update guidelines to meet AGREE criteria, specifically:
 - obtaining opinion of customers;
 - identifying obstacles to implementation; and
 - identifying economic consequences.
- guidelines to be reviewed by professionals from levels 1, 2 and 3 maternity units;
- guidelines to be piloted for 2–3 months in a number of maternity units;
- practices in these maternity units to be evaluated against agreed criteria (listed below) to obtain a baseline before guideline implementation;
- repeat evaluation after 2–3 months;
- after validation, scale-up to national level (issue Prikaz, etc.).

In order to monitor the validity/effectiveness of the guidelines or review compliance, the following indicators were suggested:

- women's or family's confidence in recognizing warning signs (number of signs provided by woman/family member on admission);
- valid criteria for admission (%);
- valid indications for induction of labour (%);
- appropriate magnesium sulfate in severe PIH cases (%);
- non-proven medications for PIH (%);
- average hospital stay for PIH;
- newborn Apgar score at 5 min; in case of PIH;
- admission to newborn intensive care unit (%) in case of PIH.

Suggestions were made about leading professionals to be involved in the development of the next national guidelines (postpartum haemorrhage, etc.).

4.2.5 Participants

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5 Beyond the Numbers, an Approach to Maternal Mortality and Morbidity Case Reviews

Every year, some 8 million women suffer pregnancy-related complications and over 500 000 die globally. In developing countries, one woman in 11 may die of pregnancy-related complications compared to one in 5 000 in developed countries. Annually, many women suffer from pregnancy-related complications, which often cause death. This problem is also reflected in the high rates of perinatal mortality and morbidity. A majority of the pregnancy-related complications and related cases of deaths could be prevented by means of very simple effective and cheap measures even in resource limited countries and settings.

5.1 Introduction to Beyond the Numbers

The philosophy of Beyond the Numbers (BTN) is simple: maternal deaths can be avoided even in resource-poor countries; however, to do so requires the right kind of information on which effective interventions can be based promoting understanding of the factors that led to the deaths. Case reviews can provide evidence of where the main problems lie, what can be done in practical terms and key areas requiring interventions by the health sector and community, allowing development of up-to-date evidence-based clinical guidelines.

Systematically combining findings of individual reviews of women’s deaths into wider maternal death or morbidity reviews will allow a more robust analysis; outcomes of such reviews have resulted in practical changes in the provision of maternal care with significant improvements to outcomes of care, providing a baseline against which to monitor the success of interventions; such a method for monitoring implementation of recommendations is an essential part of the system, providing stimulus for health sector action and reminding review committees that their recommendations need to be evidence-based. The results of case reviews can also have a powerful advocacy role and can be used by Ministry of Health, government and decision-makers to raise awareness and mobilize national and donor resources.

BTN is a practical guide written by leading international experts and describes five proven approaches for reviewing cases of maternal death or morbidity. There is *no one size fits all* solution to maternal deaths and complications. Even if causes and determinants are similar, each country, district, facility or community faces a unique set of problems and constraints that need to be worked out on an individualised approach. The philosophy proposed in BTN and its methodologies for case reviews can be the first step in this process.

Table 2. Beyond the Numbers approaches

Approach	c)	Definition
Community-based maternal death reviews (verbal autopsies)		A method of finding out the medical causes of death and ascertaining the personal, family or community factors that may have contributed to the deaths in women who died outside of a medical facility.
Facility-based maternal death review		A qualitative, in-depth investigation of the causes of and circumstances surrounding maternal deaths occurring at health facilities. Deaths are initially identified at the facility level but such reviews may be expanded to identify the combination of factors at the facility and in the community that contributed to the death, and which deaths were avoidable.
CEMD		A systematic multi-disciplinary anonymous investigation of all or a representative sample of maternal deaths occurring in an area, regional (state) or national level. It

	identifies the numbers, causes and avoidable or remediable factors associated with them. ⁸
Reviews of severe morbidity cases NMCR	The identification and assessment of cases in which pregnant women survive obstetric complications. These can be used in addition to reviewing maternal deaths through any of the other approaches described here.
Clinical audit	Clinical audit has been described as a quality improvement process that seeks to improve patient care and outcomes through systematic review of aspects of the structure, processes and outcomes of care against explicit criteria and the subsequent implementation of change. Where indicated, changes are implemented at an individual, team or service level and further monitoring is used to confirm improvement in health care delivery. ⁹

The results of case reviews will determine what, if any, avoidable or remediable clinical, health system or community-based factors were present in the care provided to the women and will enable health care providers and health planners to learn from the errors of the past.

Any of the BTN approaches will result in recommendations for change that should, particularly in resource-limited countries, be evidence-based, simple, affordable, effective and widely disseminated. Most of the clinical recommendations will be similar to the evidence-based guidelines that are part of the global WHO IMPAC¹⁰ tools and Effective Perinatal Care training package developed by the WHO Regional Office for Europe and partners, which can be adapted to local circumstances and introduced immediately, without the need of developing guidelines from scratch.

5.2 Background to BTN in Uzbekistan

In 2004, representatives from Ministry of Health and leading health care institutions participated in the first Regional BTN workshop in Kyrgyzstan. The workshop introduced new approaches to review maternal and perinatal morbidity and mortality, the requirements for starting implementation, obstacles to effective review procedures and how these could be overcome. Participants recommended that national BTN workshops be organized in order to involve health care providers in implementing BTN methodology at national and at district levels.

5.2.1 Recommendations from Uzbek participants, first regional BTN workshop, Issyk Kul, Kyrgyzstan, May–June 2004

Next steps for the implementation of maternal and perinatal morbidity and mortality case reviews were:

- conduct preliminary roundtable/s
- conduct National BTN workshop
- establish working group
- identify interested, skilled and potential parties
- identify pilot regions/sites
- prepare questionnaires and the other needed documents/forms
- develop and adopt evidence-based clinical guidelines, protocols.

Requirements to start case review implementation were:

- set up accurate goals and objectives, scope of work and purpose based on the participation of the stakeholders/interested sides;
- define and agree upon near miss definition;

⁸ Why Mothers Die. The United Kingdom Confidential Enquiries into Maternal Health 1997–99. London, Royal College of Obstetricians and Gynaecologists (RCOG) Press: November 2001. www.cemach.org.uk

⁹ National Institute for Clinical Excellence. Principles and practice in clinical audit. London, The National Institute for Clinical Excellence 2002. <http://www.nice.org.uk>

¹⁰ IMPAC is a comprehensive set of norms, standards and tools that can be adapted and applied at the national and district levels in support to country efforts to reduce maternal and perinatal morbidity and mortality. Available from Department of Reproductive Health and Research, WHO Geneva. Consult website <http://www.who.int/reproductive-health/index.htm> for other information.

- define and agree upon common methodology;
- train/educate team;
- agreement with, and support, the goals/objectives, scope and purpose by Ministry of Health;
- Ministry of Health and government support confidentiality.

Obstacles to effective case reviews were:

- absence of legislative base for introducing review;
- low interest on all sides;
- lack of financial means;
- administrative type of management and top down approach;
- setting up unfeasible nationwide activities;
- absence of common updated national clinical protocols based on evidence;
- the absence of feedback from grassroots, implementation level;
- punishment oriented review rather than aiming on care development, change in attitude and improving practice;
- fear of punishment;
- confidentiality and reliability of data provider/source.

Strategies to overcome obstacles were:

- piloting;
- legislation supporting confidentiality, and guaranteeing no punishment;
- participation of all stakeholders;
- both the top down and bottom up approaches utilized;
- develop/adapt and adopt clinical guidelines;
- develop anonymous questionnaires;
- work with the community;
- intersectoral approach;
- work with mass media.

5.3 National Workshop on BTN, February–March 2005

Based on recommendations from the Uzbek participants at the First Regional Workshop, a national BTN workshop was organized by WHO in collaboration with UNFPA, and took place from 28 February to 03 March 2005 in Tashkent. During the workshop, the general principles of BTN were presented, BTN approaches and tools discussed and two approaches were selected as suitable for implementation in Uzbekistan: CEMD at national level and NMCR at facility level. These two approaches are complementary and both contribute to improving quality of care, as they address deaths and severe complications at different levels.

During the workshop a draft of a national action plan for introduction of NMCR and CEMD was developed and pilot sites for NMCR were identified.

5.3.1 Objectives

The main objective of the workshop was to introduce BTN at the national level. Specific objectives were:

- to introduce the different approaches for reviewing maternal deaths and complications;
- to evaluate the approach(es) most feasible for Uzbekistan;
- to develop a concrete, optimally designed plan of action for implementing BTN at pilot site level, for later scaling up to national level.

5.3.2 Recommendations

Participants recommended that NMCR and CEMD be considered for implementation in Uzbekistan. As a first step, a structure and logistics for development, endorsement, dissemination and use of key clinical guidelines should be set up. For introduction of BTN, it will be necessary to develop mechanism for the NMCR and CEMD processes, as well as proposals for implementation of CEMD and NMCR approaches to make pregnancy and delivery safer.

Participants recommended that a technical workshop be organized for piloting NMCR and finalization/development of:

- action plan for implementing NMCR at pilot site level.
- structure and logistics for implementation.
- identification of next steps for NMCR implementation.
- Piloting of NMCR in three oblasts/regions, each representing different demographic characteristics and maternal mortality rates (the final decision will be made by the Ministry of Health, but proposals include the Fergana valley in Andijan (Maternity House No. 3), Tashkent Maternity Unit No. 3, Navoi and Kashkadarya); and
- preparatory steps for the implementation of CEMD, including ensuring confidentiality at all levels including government.

5.3.3 Organization

The first day of the workshop was held at the Grand Mir Hotel. The second day, as it targeted clinical practitioners, took place at the Republican Perinatal Centre, a national clinic with adequate training facilities and a referral centre for women from all over the country. A copy of the BTN manual in Russian was given each participant as was the Russian version of the WHO publication, *Pregnancy, childbirth, postpartum and newborn care, a guide for essential practice* (PCPNC); which has been translated with support of Project Hope in Uzbekistan. All presentations were in Russian or English with simultaneous translation.

Prior to the workshop, a report was developed by the WHO Uzbekistan MCH national professional officer outlining the health system infrastructure, MCH policies and programmes. The report provided facilitators with clear insights into general health and MCH at the national level.

5.3.4 Participants

The workshop brought together Ministry of Health officials, teams from leading national institutions, national, regional and district level health facilities (Republican and Municipal Perinatal Centre, Scientific Research Institute of Pediatrics, Scientific Research Institute of Obstetrics and Gynecology in Karshi oblast, Maternity Facility nr. 3, Andijan, and others), the National Committee on Maternal and Child Mortality (NCAMM), representatives of national programmes and institutions implementing MPS, State Medical Institutes and major partners involved in MCH activities (WHO, UNICEF, UNFPA, Association of Obstetrician/Gynaecologist in Uzbekistan). Also represented were the women's advocacy organization and the Uzbekistan Women's Committee.

Health facility teams were represented by all levels of staff: deputy directors, chief/senior obstetricians/gynaecologists, midwives and nurses. Participants had been selected based on discussions with experts, Ministry of Health and partners, as well as on recommendations from the first BTN workshop (2004) regarding selection of pilot areas, key players and main stakeholders. As professors from medical institutes are involved in reviewing cases of maternal deaths, medical institution teams had also been invited to participate.

5.3.5 Conclusions

- Maternal deaths are not a crime. While open dialogues are not widely undertaken, the least that can be achieved to reduce mortality is improving the quality of care, care utilization and women's knowledge.
- No matter how the system is developed or how highly qualified the workforce, there will always be room for improvement. The system and workforce depend on each other; the system needs to set policies and procedures so that the workforce can operate effectively and smoothly. The system should stimulate and motivate the workforce to follow procedures that then provide feedback to the system, which should be used for improvement rather than punishment. No blame should be assigned based on case reviews and lessons learned should lead to improved outcomes in similar or parallel cases.
- Today, with a better understanding of the difficulties in measuring levels of maternal mortality, Uzbekistan has an increasing need to update strategies and develop tools that can help determine the real reasons why mothers die. The present model for analysing maternal deaths, neither evidence-based nor participatory and based on punishment rather than open dialogue and process improvement, uses data with little reliability, creating problems and challenges rather than solutions. New strategies are available that can help direct a larger share of limited resources into understanding why maternal mortality persists and how to avert both death and cases of severe morbidity; finding answers to these questions is vital for Uzbekistan health planners and care providers.
- CEMD is an appropriate approach for the national level since it can provide better evidence of the main causes of maternal mortality. CEMD analyses cases of mortality and what practical action can be taken to avoid similar deaths, highlighting key areas where the health sector and/or community need to take action, as well as overall directions for improving clinical outcomes.
- The main principles of CE into maternal and perinatal deaths are similar: experience gained during maternal mortality case reviews may be used for perinatal mortality cases, adding a new dimension and enabling health care planners to develop more effective interventions.
- Review of maternal morbidity cases, particularly those at the severe end of the morbidity spectrum (near miss), can represent useful outcome measures for evaluating and improving maternal health services. NMCR allows a more comprehensive quantitative analysis for comparing maternal death reviews due to the small absolute number of these, highlighting positive elements in the care offered, ensuring that women's and families' perspectives are taken into account during the quality improvement process.

- The overall purpose of case reviews is to translate findings into action. Without interventions based on review recommendations, the review process is worthless. Findings form a baseline against which to monitor the impact of changes in clinical practices. Therefore, a method for monitoring implementation of review recommendations should be part of the system, providing a stimulus for health sector action and reminding review committees that their recommendations must be evidence-based.
- In the long-term, BTN approaches are efficient; however, investments must be made in order to start the process and time, skills and financial resources are required to implement recommendations.

5.3.6 What happened

The national BTN workshop was held in Tashkent from 28 February to 04 March 2005, jointly organized by the Ministry of Health, Regional Office and UNFPA. An overall introduction to the various BTN approaches for investigating maternal and perinatal deaths and complications was made, which were then reviewed by participants who addressed specific issues related to the approaches selected for Uzbekistan (CEMD and NMCR). Plans of action were developed for their introduction and implementation.

Following discussions with experts/facilitators, Ministry of Health and partners, it was decided to divide the workshop into two parts, the first for policymakers and health managers and the second for health care providers. At the end of the workshop, the two groups came together to finalize and agree on workshop recommendations and action plans.

Workshop facilitators were foremost experts in practical implementation of BTN approaches, university or national lecturers experienced in leading post-graduate workshops, facilitating and supporting implementation of BTN methodologies.

Group work was core to workshop activities. Starting on day 2 and continuing on days 3 and 4, each facility team met separately, supported by a facilitator, to discuss practical steps and possible obstacles to introducing the selected BTN maternal death review approaches. Each group used worksheets listing issues to be addressed when developing action plans. The groups were characterized by frankness and willingness to address and discuss challenging issues.

A major workshop achievement was changing participants' viewpoints and attitudes. It is interesting to note that on day 1 words such as blame, mistake and negligence were frequently used; on day 2, these expressions were replaced by, for example, missed opportunity. Participants came to fully understand and accept that a maternal death is not a crime and, if not addressed openly, the reason for the death would never be known and hence no improvements in care practices introduced. This is also clear from workshop results, group presentations and participants' evaluation of workshop activities.

During the workshop, facilitators and Regional Office staff met with Ministry of Health staff to discuss legal issues of confidentiality.

On day 1, the Deputy Minister of Health for MCH, Professor Assomiddin I. Kamilov, opened the meeting and stressed that fact that this was an especially significant day because, for the first time, a workshop on maternal death review was being held in Uzbekistan. Professor Kamilov stated that Ministry of Health priorities and government policies are aimed at improving care for mothers and newborn babies, and that the Ministry of Health has reformed its health care and services structures and has started to change the system for assisting pregnant women. As a follow up to implementation of Prikaz No. 500, the Ministry of Health will be updating legislation, clinical guidelines and standards in order to improve pregnancy outcomes.

The WHO representative, Dr Arun Nanda, expressed his satisfaction in having been able to organize this event together with UNFPA and confirmed that such joint efforts will continue in the future. He felt it to be positive that Uzbekistan has chosen to review two BTN approaches: CEMD and NMCR.

Implementation of effective maternal death reviews is challenging and requires commitment from all stakeholders; it is significant that many key people were present at the workshop.

The UNFPA representative, Dr Nessim. Tumkaya, in his opening remarks, confirmed the effectiveness of collaboration with WHO. Maternal mortality, he said, is related to reproductive health, and is also one of the United Nations MDG. The number of maternal deaths in Uzbekistan is unacceptably high. To find adequate solutions, it will be essential to review care during pregnancy, delivery and just after delivery; it is time to move beyond mortality rates and see not just how many, but why and how, women die. There are also a large number of *near miss* cases and it is crucial to learn from these during NMCR in order to bring down the maternal mortality rate.

The MPS coordinator WHO Regional Office for Europe, Dr Alberta Bacci, outlined the objectives of the workshop and spoke of the relevance of the United Nations MDG to the European Region. Following, Dr Gwyneth Lewis, a workshop facilitator, introduced the concept of BTN. Professor James Drife, also a facilitator, gave a presentation on the United Kingdoms 50-year experience with CEMD. The benefits and drawbacks of each BTN approach would be discussed in depth over the following days.

Dr Klara Yagdarova of the Ministry of Health made a presentation on the status of MCH in Uzbekistan following implementation of government programmes, Ministry of Health policies and legal documents (*prikazes*), as well as future plans for improving care and outcomes of care.

On day 2, the main subject discussed was CEMD; a presentation was made on the general principles of maternal mortality/morbidity reviews: how to select the appropriate approach to, and practical principles of, maternal death reviews. After a short introduction, working groups were set up, followed by discussions on the strengths and weaknesses of EBM at the patient, physician, community and health system levels, and the obstacles to introducing and implementing clinical guidelines; which clinical guidelines need to be developed and/or updated. During a second working group session, terms of confidentiality and anonymity were discussed and defined, as was how to ensure confidentiality. Working group results were presented in plenary later in the day.

On day 3, the focus was on perinatal mortality reviews. Working groups discussed the development of clinical guidelines, examining specific questions such as: who should develop national guidelines; how should the process be initiated and continuity ensured. Topics were selected for guideline development. Discussions were held on how to evaluate guideline quality and ways of disseminating these to ensure the widest possible use so that impact in everyday practice could be evaluated. The results were presented and discussed in plenary.

On day 4, working definitions for NMCR were discussed. As an introduction, an overview was made of how to design this type of review. Participants were then divided into groups by facilities: the Republican Perinatal Centre, Municipal Perinatal Centre I, Andijan Maternity Facility No. 3 and Karshi branch of the Scientific Research Institute of Obstetrics and Gynaecology. The groups worked on identifying NMCR goals; the definition of near-miss cases; the woman's perspective; and how to interview women. Confidentiality was at the core of all group discussions. Results were presented and discussed at a plenary session.

On the last day of the workshop, working groups continued discussing CEMD and NMCR. During presentation of the results from the CEMD discussions, agreement was reached on a national implementation action plan. The Republican Perinatal Centre, Municipal Perinatal Centre I, Andijan Maternity Facility No. 3 and the Scientific Research Institute of Obstetrics and Gynaecology (Karshi oblast) each presented an action plan for NMCR, which may be piloted in their facilities.

Partners and donor agencies were invited to attend the closing plenary session, during which results from the workshop were presented. Overall, participants agreed that case reviews should be nationally or regionally owned and have the support of the Ministry of Health, health care planners and health providers. The data from reviews should be of sufficient robustness to enable:

- national or district policy development for improving maternal health care and as a sound basis for seeking increases in funding, if and when available;
- development of evidence-based clinical guidelines and wider service development strategies that impact directly on saving women’s lives; and
- feedback from reviews should be made available to the community, women’s groups and women in general, to help them understand the key messages regarding a woman’s health and pregnancy.

At the close of the workshop, plans for implementation of maternal case reviews had been completed. Workshop facilitators agreed to support further development as needed. Participants requested that a technical BTN workshop be organized to review achievements, to learn from each other’s successes and failures, as well as providing more in-depth training sessions. Participants also proposed the organization of a number of intercountry activities and professional meetings.

The workshop was characterized by a real commitment from facilities, institutions and individual participants to take case reviews forward. During both plenary and group work sessions, participants showed their willingness to start taking action immediately. For most participants, the workshop was a turning point, allowing them to see other viewpoints and change their attitudes. Issues raised and discussed ranged far beyond the principles of BTN and encompassed the use of best practice and evidence-based guidelines, as well as addressing more problematic issues such as legal frameworks, current punitive actions against health care providers and how best to ensure case review confidentiality and full participation in the process.

The Regional Office assured participants of its continued support for implementation of BTN.

5.3.7 Evaluation by participants

At the end of the workshop, participants completed anonymous evaluation forms: whether or not they had achieved their learning objectives; what they felt had been good about workshop content and what could be improved.

The evaluation shows that the workshop appropriately addressed and fully achieved its learning objectives. The overall consensus was 100% of objectives met. Further, several participants reported having defined personal goals and plans for introducing CE and NMCR. Others stated that they felt stimulated to carry out future work.

Participants provided positive comments to group work; many said it had helped them change attitude, and they felt the workshop had highlighted crucial and important issues that needed a new approach.

Table 3. Participant’s evaluation: what was good about the workshop

Area	Participants
Group work	18
Changing attitude	15
Workshop brought up very burning and important issues which has to be addressed with a different approach	15
Overall active participation and openness regardless of the job status – everyone could share opinion and everyone heard	11
Provision with the materials and handouts	11
Exchange of experience/example of European experience	8

An opportunity to communicate with the colleagues and generate common vision and understanding on a very serious topic	8
Detailed discussions of the issues	7
Gaining of new knowledge	4
Good organization of workshop	4
Serious topic versus friendly environment	5

Table 4. Participant’s suggestions: what could be improved

Possible Improvement	Participants
Interventions in the future, continue the activities as it has been only initiation/launch of the serious and essential issue	13
No change	9
Sharing the experiences of more countries	8
To allocate more time to the presentations and their discussions	6
Disseminate more materials and handouts	6
To attempt to fill a form confidentially/anonymously	4
Include prosecutors and Ministry of Justice representatives	2

Table 5. Participant’s feedback on key topics

	1	2	3	4	5	Mean
	%	%	%	%	%	
NMCR at facility level		3.7	1.9	37	45	4.2
CEMD			21.4	42.9	35.8	4.2
Definition of confidentiality			3.6	46,4	50	4.5
Definition of being anonymous				37	63	4.6
Quality of materials		3,7	11.1	44.4	40.8	4.0
Workshop organization				32.1	67.9	4.7

Listed above are the main topics discussed during the workshop. Participants were asked to grade those they felt to be most pertinent to them; 5 is the highest score and 1 the lowest:

1. limited or no understanding
2. understand to some extent, but does not know how to apply into practice
3. knows well and in some extent knows how to apply
4. good understanding and good knowledge how to apply in practice
5. excellent understanding and confident about applying in practice

5.3.8 Introduction of BTN approaches: next steps

There are shared features and differences between the BTN approaches CEMD and the facility-based NMCR. Both approaches have the common goal of reducing future maternal mortality and severe maternal morbidity by learning from cases in the recent past. There are a number of differences in methodology, but the most important one is perhaps the level at which this primarily happens: at the national level of policy-makers for CEMD; at the local level of hospital teams for NMCR. This is why the two approaches are complementary and, hopefully, synergistic; this is also why the proposed strategy to introduce both approaches simultaneously is particularly promising, provided Uzbekistan has the capacity to do so.

The following table illustrates what the two approaches have in common, and where they are different.

Table 6. NMCR and CEMD: differences and similarities

	CEMD	NMCR
Cases to be reviewed	Maternal deaths	Focusing on near-miss cases, possibly extending to maternal deaths
Levels of health services involved	All levels	Hospital, possibly also referring health centre
Information flow	Information on individual case is anonymised and forwarded to higher levels	Information on individual case remains at local level
Comprehensiveness	All cases are enquired into comprehensively	Selection of informative cases are reviewed
Type of data generated	Quantitative and qualitative	Predominantly quantitative
Individuals performing enquiry/review	High profile expert team	Local hospital team
Perspective	Focuses on medical perspective/expert perspective	In its recommended patient-centred variety, patient/family perspective systematically taken into account
Primary objectives	Guidance for policy-makers General recommendations for health care providers	Learning opportunity for local hospital team
Secondary objective	Learning opportunity for those involved	Sharing lessons learned with other hospital teams (requires setting up system for sharing NMCR experience)
Confidentiality, non-punishment	No blame, accusation, disciplinary action, prosecution Instead: Support and provision of learning opportunities	
Goal	To reduce maternal mortality and severe maternal morbidity	

5.3.9 Near miss case reviews at facility level

Introducing facility-based NMCR: next steps

Participants at the workshop unanimously and enthusiastically embraced the idea of introducing facility-based NMCR for cases of severe maternal morbidity (*near miss* cases), with the option of adding maternal deaths to the eligible cases. A large majority also opted for capturing the women's perspective

(and possibly that of their families) by conducting semi-structured interviews with them and reporting the interview's content back to members of the case review team. There was a general agreement that CEMD, which is planned to be introduced in parallel with NMCR, is a complementary rather than a competing concept.

While NMCR by definition take place in individual hospitals and health centres, introduction in pilot sites – with later expansion if successful – is a process that should be owned and coordinated at the national level by the Ministry of Health, possibly supported by professional organizations of obstetricians and midwives. The introduction of NMCR is expected to evolve in two phases: preparatory and introductory. Furthermore, it has been discussed and agreed with the Ministry of Health and WHO that the whole process should be monitored and evaluated scientifically, to provide valuable lessons for Uzbekistan and other countries considering introducing NMCR.

Preparing for facility-based NMCR

The introduction of NMCR depends on the following issues, considered prerequisites.

Clarifying and possibly adapting the legal framework

Workshop participants expressed strong concern that information gathered and shared in case review meetings could lead to disciplinary action and even legal prosecution. This is particularly relevant when it is decided to review a maternal death: by law, all maternal deaths have to be investigated by the prosecutor's office. At this time, medical records are routinely confiscated and staff is questioned; the principle of confidentiality requires that this does not happen to minutes and participants of case review meetings, bar in exceptional circumstances of gross misconduct or criminal activity (to be defined). The situation is even less clear in near miss cases, when complaints are filed after severe maternal morbidity, e.g. emergency hysterectomy. The fear of disciplinary action and legal prosecution is real and understandable and risks undermining successful introduction of NMCR.

Establishing national guidelines for the management of obstetric complications

A key element of NMCR is that the hospital team compares how it managed the reviewed case with evidence-based clinical guidelines, currently being developed at the national level. New guidelines are important as many of the present ones are old fashioned that is, not evidence-based; obstetric practices appear to be in use (e.g. elective caesarean section for myopia) that may be prescribed in earlier regulations or have become part of the implicit guidelines each health care providers keeps in mind. It should be understood that guidelines are not laws; they define the standard approach for usual situations; it is permissible to deviate from guidelines if appropriate to a specific situation; then, the health provider who has decided to deviate from the guideline should be able to justify his/her decision.

It may be appropriate to formulate national guidelines that are specific for different levels of the health system – case management in health centres may be different from those in referral hospitals. Care should be taken to make guidelines realistic and take availability of resources into account; guidelines that are (partially) unrealistic are of limited usefulness, undermine its credibility and compliance with the realistic parts of the guidelines. So far, only one new guideline (on management of hypertension in pregnancy, pre-eclampsia, eclampsia) has reached an advanced stage of development, agreed on by national and international experts and endorsed by the Ministry of Health.

In principle, NMCR should not start before national guidelines cover at least the four main obstetric complications responsible for maternal death or near miss: eclampsia, haemorrhage, obstructed labour, sepsis. If the process for developing new guidelines continues to be slow so that current momentum and enthusiasm among staff of pilot hospitals risks being lost, NMCR could start earlier but should then be restricted to pathologies for which new guidelines exist. This is clearly not a desirable situation but may be a reasonable compromise. In any case, the establishment of new national guidelines should have high priority.

Introducing facility-based NMCR

Once the preparatory phase has been sufficiently initiated, the introduction of NMCR can begin. An initial workshop should take place at which the following issues should be addressed:

National definitions of near miss cases should be uniform to facilitate the exchange of information between hospitals on experiences with NMCR. Preliminary draft definitions for eclampsia, haemorrhage, obstructed labour and sepsis have been developed at a workshop in Tashkent and are a valuable first step; however, more work will be needed before they can be circulated for comment among a larger group of professionals and endorsement by Ministry of Health. Translation into English of the draft is pending so no definitive comments could be given at this time, but the impression was that the definitions need to be more explicit and less broad; sometimes, the definition appeared to describe a complication that is not life-threatening. Sets of case definitions from other countries should be made available as a source of inspiration.

Participants prepared a first draft of the plan of action during the workshop. Translation into English is pending; once this is completed, issues for further discussion will be identified, one of which is to determine the eligibility of staff members to participate in NMCR team meetings. Depending on the size of the health facility, it may not be possible to invite all staff, or even all staff who have been involved in the management of the case under review, as a group of over 12 (or perhaps 15) could hamper the active participation of those most involved and a frank exchange between them. It is advisable to have an NMCR coordination committee of about three or four staff members in each facility, who will participate in every meeting as guarantors for continuity of the process, while inviting other staff members on a case-to-case basis.

Another issue that needs further clarification is the interview of women (and possibly their families). Participants felt that this interview should be conducted at the woman's home after discharge; this method will probably encourage women to speak out more freely but may have cost implications that could make it unsustainable. There was discussion of who should conduct the interview: trained health staff (psychologist? social worker? health visitor? community nurse?) or community volunteers (makhala). It would be interesting to involve community volunteers who may add the community view of quality of care to the individual woman's perception, help to improve health providers' accountability towards the community they serve and spread word of innovations in the health facility; on the other hand, involving outsiders in NMCR may undermine its confidentiality, or at least health providers' confidence in confidentiality.

The list of unanswered questions is likely to become longer once the English translation of the draft plan of action has become available for comment.

Local case management protocols: introduction of national clinical guidelines

As mentioned above, national clinical guidelines should be realistic for all levels of the health system and it should not be necessary to adapt them to various diagnostic or therapeutic procedures, drugs, etc. However, it will be necessary to make them operational: if, for instance, national guidelines prescribe magnesium sulfate as drug of first choice for the treatment of eclampsia, local teams need to clarify in writing how the drug can be made continuously available and now it can be ensured that a health provider is at hand who has experience and has received training in its use.

Feedback mechanism to Ministry of Health

While NMCR confidentiality means that information on individual patients, health staff and health facilities remains at the local level and is not forwarded to the Ministry of Health, there should be a mechanisms for sharing NMCR experiences with other health facilities. Health facilities participating in NMCR could be requested to provide an annual report to the Ministry of Health with lessons learned about successful service improvements; the Ministry of Health make a summary of this report available to all health facilities of the country.

Training

After having completed near-miss case definitions, the plan of action, local case management protocols and the feedback mechanism to the Ministry of Health, training of members of the coordination committees can go ahead. Topics of the training should include showing how to:

- identify eligible cases for review;
- select cases for review;
- prepare and present a case summary;
- conduct an interview with the woman (and possibly her family);
- prepare and present a summary of the woman's interview;
- facilitate an NMCR meeting (encourage active participation; foster supportive, non-accusatory atmosphere; ensure concrete action points on service improvement are agreed on and responsibility is clarified; ensure follow-up of action points); and
- write an annual report, highlighting lessons learned on service improvements that could be relevant for other health facilities

Given the prospects of extending NMCR nationwide after a successful pilot phase, this initial training could serve as a ToT, and could then be responsible for spreading the NMCR methodology after the pilot phase through “cascade training”, on condition that trainers are identified early.

Experience from other countries has shown that a refresher training course one year after the initial course can have a very positive effect on the quality of NMCR. It is therefore proposed to foresee such refresher courses in Uzbekistan. In this case, the ToT could be undertaken during the refresher training, as by then it may be easier to identify the most suitable individuals to become NMCR trainers.

Monitoring and evaluation

Monitoring and evaluation activities can be divided into operational – addressed to the Ministry of Health – and scientific, addressed to the international public health and safe motherhood community. It is assumed that the plan of action budget will provide resources for the operational monitoring and evaluation and possibly for some less resource-intensive elements of the scientific evaluation, while more expensive elements of the scientific evaluation will require additional research funds. Monitoring and evaluation activities should be undertaken as a collaboration between Uzbek researchers and international experts to draw on both local and international knowledge. Such collaboration is also likely to have a capacity building effect.

It is assumed that the Ministry of Health, as owner of the NMCR introductory phase, will need instruments to monitor progress as the process evolves, for instance: three-monthly reports on the number of NMCR sessions, participants, reviewed cases, case management problems identified, action points agreed on and implemented. This should be a straightforward activity and should not place a significant administrative burden on the NMCR coordination committees.

Another question is on what basis the Ministry of Health will decide to expand NMCR after the pilot phase – suggested to last at least two years – to other health facilities. In other words, how will the Ministry of Health decide whether the pilot activities have succeeded or failed? A discussion of this issue has not taken place but should start soon so baseline data, if required, can be collected before NMCR introduction starts. It is suggested that the Ministry of Health proposes criteria by which it will decide that the pilot phase has been successful. Expert advice should be sought on the feasibility of using these criteria.

The introduction of NMCR in Uzbekistan will provide an excellent learning opportunity that may be highly relevant for policy-makers in countries where NMCR is not common practice but is being considered for introduction. Such evaluation could consist, among others, of the following elements.

- Anthropological/sociological research into what facilitates and what is a barrier to successful introduction of NMCR, as well as the impact of NMCR on job satisfaction, accountability to the community, community perception of quality of services, etc. It is essential to understand whether NMCR work but also why they work, or fail, either overall or in a particular health facility. Note that, up to now, most of this research has been conducted in health systems that are dysfunctional because of pronounced impunity of health workers. Uzbekistan could provide an opportunity to study a setting that has traditionally emphasized control, disciplinary action and prosecution. This research should start as soon as possible as the process of changes in this traditional setting has already begun.
- Epidemiological research into the performance of NMCR could be assessed in a number of ways, some looking at quality, some at effectiveness.
 - The quality of the NMCR process can be studied through assessing to which extent NMCR teams were able to identify case management problems, make an appropriate analysis of its causes, suggest sensible solutions and follow them up correctly, provided medical records, NMCR case summaries and minutes are adequately kept. This research will show if NMCR has been done as it should; it does not show whether NMCR makes any difference in clinical practice or health outcomes.
 - The effectiveness of NMCR to improve clinical practice can be studied by measuring if adherence to national case management guidelines (or other criteria of good quality of care) improves. Evidence produced by this research gains in strength by: (1) having a control group of health facilities where clinical guidelines, but not NMCR, are introduced; (2) measuring quality of care before the introduction of NMCR; and (3) having multiple measurements before and after introduction of NMCR so that trends – as opposed to point estimates – can be measured before and after intervention.
 - The ultimate proof of the effectiveness of NMCR to improve health outcomes would be assessment of maternal mortality at community level. This is notoriously difficult because of sample size requirements and only possible in exceptional circumstances. The simultaneous introduction of CEMD might provide this, provided it can be shown in the pilot phase that CEMD produces valid estimates of maternal mortality. Then, the rollout of NMCR after the pilot phase could be done in a randomized way, so that the gold standard of a (cluster) RCT would be achieved. This would be an ambitious and expensive undertaking, nevertheless kept in mind as an option for future consideration.

Note that maternal mortality or near-miss morbidity at the hospital level has been considered as alternative indicators for the health outcome of NMCR. The problem with these alternative indicators is that, as long as maternal mortality or near miss morbidity also occurs outside health facilities, any improvement in the referral system may lead to an increase of these indicators in hospitals despite improvements in quality of care, so that their interpretation may be difficult.

Last, CEMD introduction brings with it similar opportunities and challenges to monitoring and evaluation and that, ideally, monitoring and evaluation of both interventions should happen in an integrated way.

5.3.10 CEMD at the national level

Participants were enthusiastic and unanimous in their opinion that such reviews should be introduced, and that the key principles of CEMD were that they “tell the story” of how and why individual women died and trace their path through the health and community services. In addition, CEMD provide evidence of where the main problems lie in overcoming maternal mortality, an analysis of what can be done in practical terms and highlight key areas requiring recommendations for health sector and community action as well as guidelines for improving clinical outcomes:

- the ownership or involvement by those in a position to influence changes in the health care system should lead to findings being used to develop local, regional or national maternal health care programmes; and
- ownership by the various health care groups involved can lead to development of clinical guidelines or standards that should be disseminated for improving quality of care.

Participants agreed that the basic principle of confidentiality be built into the process from the start. During CEMD, data are initially collected in a confidential manner at the local level and then totally anonymized before collation and assessment by an independent multi-disciplinary group of health and other professionals. This means that the name of the woman who died, health care providers who cared for her and the institution in which she died cannot be identified. This enables those who cared for the woman to have the confidence to provide an unbiased and frank account of the actual circumstances as well as any deficiencies surrounding her death without any fear of punitive action. Thus, a more realistic picture of the precise events and any avoidable or remediable factors in the care she received can be obtained.

Participants recognized that there are constraints in the current system of investigating maternal deaths that may lead to punishment of the health care providers involved. This results in a climate where people may not be totally open about all the events surrounding a woman's death, and there is little opportunity for lessons learned in order to prevent similar deaths in the future. The current system does not lend itself to openness in discussing the real problems that may have occurred and the opportunities to improve care may have been missed.

Nevertheless, participants were of the firm belief that it would be possible, with the support of the relevant Ministries, to start piloting the principle of CEMD in parallel with the existing system, eventually leading to a change in the system nationwide. Participants also recognized that these changes would take time and considerable discussion and debate.

Preparing for CEMD at national level

The WHO manual BTN¹¹ describes a CEMD as:

a systematic multi-disciplinary anonymous investigation of all or a representative sample of maternal deaths occurring at an area, regional (state) or at national level, which identifies the numbers, causes and avoidable or remediable factors associated with them. Through the lessons learnt from each woman's death, and through aggregating the data, they provide evidence of where the main problems in overcoming maternal mortality lie, an analysis of what can be done in practical terms and highlight the key areas requiring recommendations for health sector and community action as well as guidelines for improving clinical outcomes.

The principal aim of CEMD is to save lives by determining any deficiencies in each woman's personal health care or in the health care system or community that may have contributed to her death, collecting the sum of knowledge and evidence acquired from assessing the totality of cases and recommending appropriate changes.

Participants agreed that the review should be nationally owned and have the support of health care planners, providers and the Ministry of Health. The anonymous data it provides should be sufficiently robust to enable

- national or regional policy development for improvements in maternal health care programmes and provide a sound basis for seeking increases in programme or donor funding if and when available;
- the development of clinical guidelines and wider service strategies with impact directly at the individual level to save women's and newborn babies' lives; and
- feedback given to the community, women's groups or women in general to help in advocacy, and to understand key messages regarding their own health and pregnancy.

Information from CEMD findings will be used at institutional, local and national levels by health service planners, clinicians, social workers, educators and women's advocacy groups.

Establishing a national committee

Step 1 is setting up a national committee whose key roles will be:

¹¹ http://www.euro.who.int/pregnancy/mortality/20050922_1

- to plan the mechanism for the enquiry and design the anonymous report form;
- to ensure involvement of key stakeholders from government, health care system, professional organizations and community-based groups who can assume ownership and act as advocates for change;
- to appoint, provide oversight and consultation to regional coordinators;
- to oversee pilot tests of the CEMD system in selected areas;
- to provide support for extending the enquiry process to regional or national levels;
- to review and analyse the cases on an ongoing basis;
- to synthesize data, interpret results, make recommendations for action and prepare a report;
- to plan dissemination of the report, obtain feedback and utilize findings (dissemination may include professional journals and events, women's groups and the media).

One working group proposed the committee be called the National Committee of Uzbekistan for the Confidential Review and Prevention of Maternal Death. It will need close links with, and the support of, the Ministry of Health. This is crucial since, in order to be effective, all clinical recommendations and changes in policy and work routine will need to be supported by the Ministry of Health. The National Committee should be run by a national enquiry coordinator, a person of high professional standing, known to be honest and concerned with improving the health of pregnant women and newborn babies. There was some discussion whether this post, as well as the regional coordinators discussed later, should be subject to open competition. The precise number of members was not finalized but participants stressed that the following.

- It should be small enough to be workable.
- All members should be recognized experts in their field.
- Members should be committed to safe motherhood and prepared to work in a confidential manner.
- Experts should be drawn from all regions of the country and represent specific problems of their area as well as contribute to national discussion.
- Experts should also be drawn from different levels of the health care system so they represent and express constraints specific to each level of the system. They should not all come from national centres.

It was suggested that experts from the following fields should be considered for inclusion:

1. obstetricians (number not yet determined)
2. 2 midwives
3. 1 pathologist
4. 1 anaesthesiologist
5. 1 neonatologist
6. 1 psychologist
7. 1 social worker
8. 1 statistician
9. other experts as necessary, e.g. physician
10. representatives from community and women's groups.

It was agreed that, as a minimum, travel expenses and per diem should be paid for members travelling to national meetings.

Appointment of regional coordinators

It was unanimously agreed that each region should have a well-respected independent regional coordinator. The process of appointment will be organized by the National Committee. The contact details of this coordinator would be made widely available to health providers, institutions and the public so that anyone would be able to report a maternal death to him/her. It was not decided if this post should be subject to open competition. This would be in addition to the coordinator's other duties but, as with the national experts, carry considerable prestige.

Apart from the staff directly involved, the regional coordinator will be the only person in the enquiry process who knows the names of the women and the health care providers. Although these details are not shown on the report form, the coordinator must maintain confidentiality and ensure that the record is securely kept when not in use and no photocopies taken. It is the coordinator's responsibility to remove any other possible identifying information from the report form before it is sent to the national director.

Planning data collection and determining time frame for reporting and completion

The National Committee will develop an anonymous standardized maternal death information form. There are several from other countries that could serve as a basis for Uzbekistan. Initially, the form should be simple and quick to complete. The form will include simple check boxes for basic details such as age, parity, educational status and type of delivery, as well as having open boxes for free text to expand on any particular issue, such as past obstetric, medical history or significant social circumstances.

The second part of the form will be individual pages so each health provider (e.g. obstetrician, midwife, anaesthetist, etc.) who cared for the women who died can write an anonymous and true account of their care giving. These pages will be individual (and possibly colour coded) and not shown to any other person involved in the case. No one will be able to read what each is saying, which should lead to more complete and honest reporting. The health provider will also be asked to say what he/she has personally learnt from the case and how this may change his/her future practice (completing these forms can act as a learning process for individuals and institutions). The regional coordinator will ensure that all information from the facility and its staff is collected and that papers are entirely anonymous. These forms will then be sent to the national director.

In addition to clinical information, it is planned to collect information from relatives and community workers where appropriate. This will be undertaken on a trial basis, using the verbal autopsy approach described in BTN. Such a complete assessment will enable a far better understanding of social and other factors that may have led to the death of the woman, such as lack of information or transport. Recommendations for action can then be made in these areas.

Determining time frames for reporting and completion of the report

It will be important at the outset that a clear timescale for the enquiry process be determined to enable those completing the forms, regional and national coordinators to have firm deadlines for asking for case reports and provide advance notice that a report is expected. However, it is also important to be realistic about the timescale envisaged, as it will take some time for the process to become established. The timescale envisaged for setting up the National Committee and initiated the pilot phase is included at the end of this report.

Expert assessors

It is recommended that the individual professional members of the National Committee undertake the actual anonymous assessments. These will be based on pre-agreed standards, guidelines, protocols or consensus opinion and given on a second anonymous form. Here again, there are examples from other countries that can be used for adaptation purposes. Non-medical assessors can give valuable insights into other factors such as social circumstances, domestic violence, etc., and can also make more broad-based recommendations.

Experts will be expected to assess the case and comment on the standard of care the woman received compared to local best practice (see paragraph above), any barriers she encountered in accessing the health system, and point to remediable actions that might be taken in future. It is important that quality control issues be considered to ensure standardized and consistent review and reporting. The final level of quality control will take place when all the cases are reviewed together by the central enquiry panel prior to writing and publication of the report. For women who died of rare diseases, it may be necessary to co-opt an expert from the particular speciality involved to assess the care she received in line with best practice.

Experts will not know the names of the women, health care providers or facilities. They must be independent from the existing process of inspection and investigation of a maternal death undertaken by the Ministry of Health and must not have the authority to take disciplinary action or disclose any findings. This independence will need to be guaranteed by the ministries involved that will ensure maintaining the confidentiality of findings at all times and not make comments on any specific case outside the confines of National Committee meetings.

Training

National Committee members may initially require expert help in devising and piloting the questionnaires and in standardizing methods of assessment. The Committee will need to organize a training day for regional coordinators, perhaps using practice cases or scenarios. Members of the Committee and the regional assessor will undertake training of staff in the specific area. It may be helpful to train in each facility separately. Understanding the nature of confidentiality and the change in philosophy will be crucial in ensuring full staff support, and this will be helped by directives from the Ministry of Health.

Completing the report

The regional coordinator, once notified of a maternal death, will contact the national coordinator who will assign a number to the case. It is important that this be done centrally to ensure duplicate numbers are not used. This number is the only identifying detail on the questionnaire. The regional coordinator will send the form to the lead obstetrician (or other nominated person in the facility) for completion. Although facility staff will know the name of the woman, they will be instructed not to write any identifying details on the form. This includes not giving her name, address, date of birth (age in years should be used) or date of death (although the year should be given). They should also ensure they do not name the facility or any staff and the form must not be signed.

The facility organizing officer should ensure that forms be kept in a secure place while being collected and that no-one have access to them. Should case notes be required or pathology reports or autopsy report, these may be photocopied with all identifying information, including the name of the institution, removed. Once the forms are complete, they are sent to the Regional Coordinator and no copies of the forms will be kept at the facility where the death occurred.

Each standardized confidential report form must be completed by all local health care staff that provided care to the woman who died. These may include the woman's primary care provider, local doctor, obstetrician, anaesthetist, nurse or midwife who cared for her during her pregnancy, delivery or in the postpartum period, and any other physicians, surgeons and nursing staff who provided care for conditions associated with her death. Sections should also be completed by any pathologist who may have been involved and autopsy details provided, if available. In addition to medical details, if possible information should be collected about the woman's socioeconomic, domestic and geographic circumstances and any cultural practices that might have had an effect on her death.

National assessment of deaths, collation and analysis of findings and preparation of recommendations for action

The National Committee will need to decide on the best method and timing for assessing cases. Members should meet on a regular basis to assess the latest cases, discuss emerging findings and recommendations. At least once a year, they will hold an overall review with regional coordinators, timings to be determined by the caseload and deadlines for publication. Through this ongoing assessment, the committee can also identify particular areas in which the enquiry process is not functioning as well as it should and institute remedial action.

Experience has shown that, during this process, emerging findings often become apparent early on and, if firm trends are identified, preparation for guidelines and recommendations can start to be made prior to publication of the report. It is more useful to publish a report that also contains firm guidelines and

recommendations than to suggest these be developed in future. Furthermore, the nearer to the end of the reporting period the final report is produced, the more immediate impact it will have on local practice.

Data analysis

The Committee will undertake both quantitative and qualitative analysis as both provide insights into the causes of maternal deaths. A combination of both can provide more insights into maternal deaths than either can provide alone. Quantitative analysis shows which groups of women may be at higher risk of maternal death, e.g. women from specific ethnic groups, place of residence or who have other characteristics in common. Qualitative analysis provides more detailed information on the precise clinical causes of death for individual women from the higher risk groups. It will be helpful to use national statistics as denominator data where possible.

Findings and recommendations

When evaluating and discussing the causes of maternal death, the terms errors, substandard care or failures should not be used. Instead, the working group recommends use of the term missed opportunities. This is less punitive and implies that lessons can be learned from these cases to enable actions to be taken to improve maternal care in the future. Further, the report should identify areas of good practice and give praise when it is due. It is not possible to identify the precise recommendations that will be made until data analysis is undertaken. Analysis may probably include a mixture of public health, health system and social system issues. Examples may include general issues for public education, raising and promoting health awareness and empowering of women, modifications to the existing provision of services and the use of evidence-based clinical guidelines.

Experience from other countries has shown that, at least in the first few years, it will be best to keep the number of recommendations to a minimum, preferably less than ten. Recommendations should be realistic and within the capacity of the health care system and be considered achievable.

Disseminating findings and recommendations

The National Committee should formally plan how to disseminate the report but remain open to new possibilities. It is important to note that, at the outset, it will be impossible to define what the specific recommendations may be. The exact timing of the reports is yet to be decided. It is recommended that the findings be made available in either a specific publication or in professional journals. To involve the public in this process and make them aware of the risks of pregnancy and the need to ensure healthy lifestyles, the media will also be briefed. This will include newspapers, radio and television.

One working group suggested that the regular reports be entitled *So other children do not become orphans*. It would be helpful if the report had an introduction written by the Ministry of Health or leaders of health care professionals' organizations. First reports should not be long: it will take some time before the process becomes established and its principles accepted. Over time, reports can become more detailed.

The National Committee may wish to launch the report at a national event, such as an official launch by the Ministry of Health, with the involvement of the media, parliamentarians, health care providers and consumer advocacy groups.

Evaluation and refinement

The last step in CEMD is evaluating both the process of the enquiry and the uptake and impact of the recommendations and modifying procedures as appropriate. It is recognized that, in the case of maternal deaths, achieving significant reductions in overall mortality rates may take time, although local changes in practice can show quite rapid effects. Indeed, maternal mortality rates may appear to increase just after CEMD starts as the number of cases reviewed increases. This is normal and this possibility should be built into the system.

Legal issues

The introduction of CEMD will require clarity in a number of legal areas and should be protected by the Ministry of Health and Ministry of Justice. It is important that discussions be held as soon as possible with these and other organizations involved in the current system of maternal death investigation. The working groups recognize that it will take time for the current system to change significantly but, with good will on all sides and the necessary directives from the Ministry of Health, CEMD and the current system can for a time run in parallel.

5.3.11 Group work

➤ **Evidence-based medicine**

Group 1

The strengths of clinical guidelines are:

- for the health care system:
 - improvement of the system as a whole;
 - economic benefits;
 - quality improvement;
 - effective use of resources;
 - reduced mortality; and
 - improved qualifications of the health workforce;
- for physicians:
 - Improvement in quality of care, performance and interaction among staff;
 - attitudes changed;
 - knowledge strengthened, increased skills and experience to manage cases;
 - ability for self-monitoring;
 - responsibilities defined; and
- for patients:
 - timely, effective and evidence-based care;
 - a chance to survive the case; and
 - participation in the care decision process;
- for the community as a whole:
 - reduced maternal and perinatal mortality;
 - better relationship between health care provider and community; and
 - complete and happy families.

Group 2

The weaknesses of clinical guidelines are:

- language barrier;
- lack of access, both financially and geographically;
- too large in volume;
- financial;
- need for republishing;
- time; and
- human factor.

Group 3

The possible obstacles and challenges to introducing clinical guidelines into practice in Uzbekistan include:

- overall, there should be no obstacles to introducing clinical guidelines into practice;
- availability of funds to develop guidelines;

- availability of funds to publish and disseminate guidelines;
- organization of training courses for introduction of guidelines and follow-up to ensure they work; and
- monitoring implementation.

The proposed solutions include:

- participation and cooperation of stakeholders;
- training courses and meetings;
- dissemination of information;
- ensure guidelines are official through Ministry of Health prikaz; and
- support by Ministry of Health.

Group 4

Areas of utilization of clinical guidelines include:

- routine clinical practice;
- self-monitoring;
- training/education;
- audit and case reviews at all levels;
- dissemination to general population and community;
- more research and resource allocation at Ministry of Health level; and
- regionalization.

Table 7. Evidence-based clinical guidelines: suggested activities

	Group 1	Group 2	Group 3
Who will develop national guidelines?		Group of experts.	
Who will initiate the process?	Ministry of Health.	Association of Obstetrician/Gynaecologist	Ministry of Health and Association of Obstetrician/Gynaecologist
Is a special structure needed?	Yes.	Yes (technical work).	Yes.
Who will participate in the development of guidelines?	Experts and National Committee.	Obstetrician/Gynaecologist and other experts.	Pertinent experts, National Committee on maternal mortality review.
How to ensure continuity of the process?	Setting up working group; planning group activities; and financing.	Working continuously.	Availability of permanent group, planning of group activities and financing.
How will topics for guideline development be selected?	Relevant statistics and results of review.	Topics will be selected based on maternal mortality structure and <i>near miss</i> cases.	Statistics and results of reviews.
How will the quality of the guidelines be evaluated?	Reviews (internal and external), piloting and testing.	Feedback basis after testing.	Reviews (internal and external) and piloting.
How will guidelines be disseminated?	Through Ministry of Health and by holding workshops and conducting training.	Through Obstetrician/Gynaecologist Association.	Through Ministry of Health (workshops/trainings).

How will use of the guidelines be ensured?	Conducting trainings and workshops.	Through training and monitoring.	Trainings and workshops.
How to evaluate if guidelines are working in practice?	Monitoring and review.	Anonymously and by analyses based on maternal and perinatal mortality indicators.	Testing and review.

➤ **CEMD**

Table 8. CEMD; suggested activities

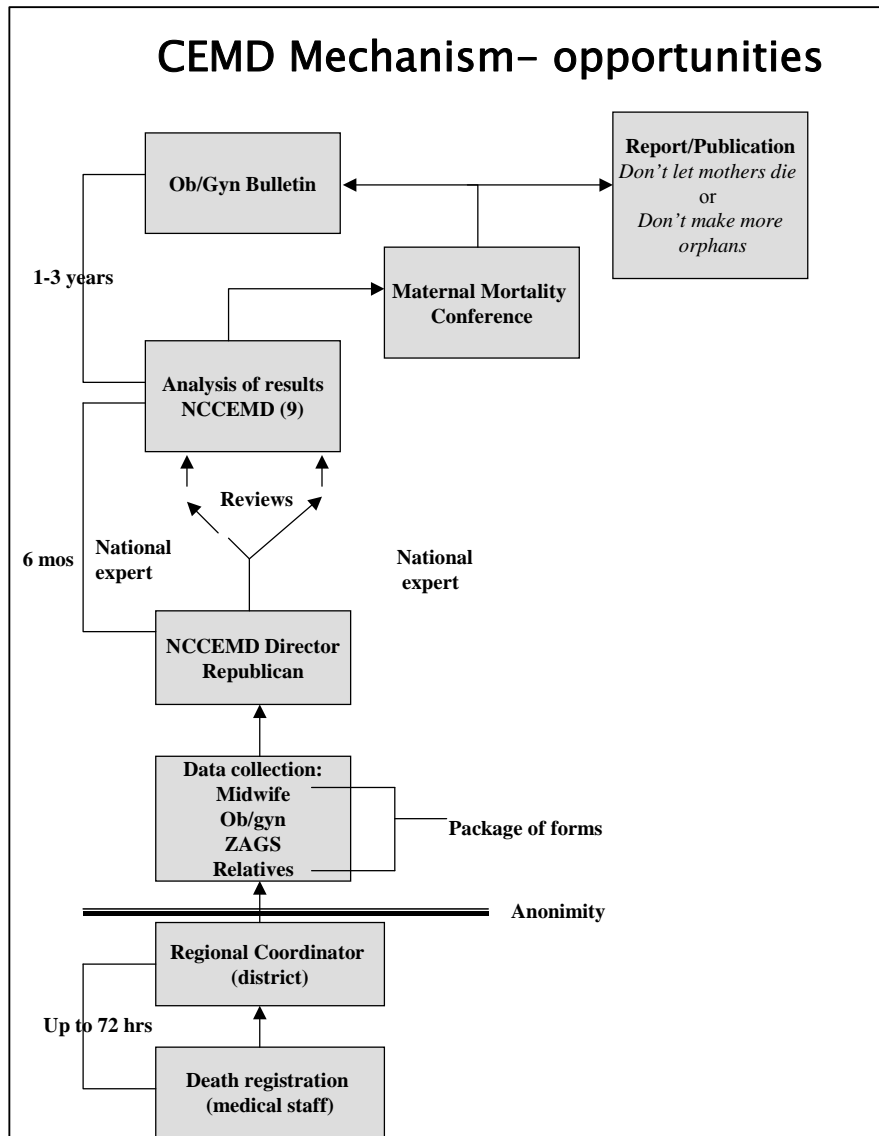
	Working Group 1	Working Group 2
Detecting and informing about the cases		
Who will initiate the process?	Person who registers maternal death (medical staff), mandatory within 24 hours.	Neonatologist not involved in process, but from another point has easy access to facility.
Who are cases reported/sent to or who will be informed about cases?	Regional NCAMM Coordinator– phone, post/mail.	CE Committee at Obstetrician/Gynaecologist Assoc. (WG could not reach consensus on committee members, opinion was expressed that those involved in official analysis/ review of mortality should not be part of committee). Ex.: 7 Obstetrician/Gynaecologist (incl. regions), 3 Anaesthesiologists, 2 Midwives, 1 each paediatrician, therapist, pathologist, anaesthetist-nurse, community member/ representative (chair, Makhalla Committee), representatives local administration, representative, Women’s Committee, Sociologist.
Hiring on merit based competition? Questionnaire will be used.	Criteria: Local working experience: 10 years or more; knowledge of 2 or more languages; education, at least specialized-middle level education (medical and social workers); motivation; communication skills.	
How you will ensure that no cases missed?	All-round coverage – Makhalla committees, informing medical staff, citizens, marital status registration office.	Verification, checking cases through Marital Offices once a year (current procedure); via funeral services; cross-matching with community based data; WHO – a member of the Committee.
What kind of information should be reflected in the forms?	Age, social status, risky behaviour, diseases, somatic status, Obstetrician/Gynaecologist history/anamnesis, current pregnancy and childbirth, diagnosis from referral, post-mortem diagnosis.	Socio-demographic data, general and Obstetrician/Gynaecologist anamnesis, course of current pregnancy, health condition when referred, admissions; stages of care; time between onset of signs/symptoms and care-seeking, between care-seeking and reaching health facility, between reaching facility and

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		delivery of care; factors influencing timely care seeking in time.
Who will send the forms?	Regional Coordinator of NCAMM.	Local? Regional Coordinator (responsible neonatologist).
Who will fill in the forms?	Interested people.	All those involved will fill in their respective parts, including relatives.
How to ensure that the information is reliable?	Data collection from various sources: community, marital status office, family of the dead woman, health facility.	Coordinator will utilize various sources, cross-enquiry; training of coordinators; develop ways of motivating coordinators (material/financial, socio-moral methods?).
What is confidentiality?	Absence of passport data exc. age, separate questionnaire, instant sealing of envelope, system of coding.	Independence; non-disclosure, no punishment or blame/censure; objective: discovering the truth; What for/why: possibility to make true/ objective conclusions, recommendations.
Is it feasible to achieve anonymity?	If above conditions followed and later destroying of data.	What is anonymity? Absence of all identification data of participants, including women and facilities.
How to ensure anonymity		Photocopying original case notes; code/hatch all identification data.
Development of recommendations – National Committee/Working Group		
How many people will be in National Committee/ working group and what should be size of group?	9 persons or more.	Obstetrician/Gynaecologist – 7 (including regions), 3 anaesthesiologists, 2 midwives, 1 each pediatrician, therapist, pathologist, anaesthetist nurse, community member/representative (chair, Makhalla Committee), representative local administration, representative, Women’s Committee, sociologist.
What kind of specialists/specializations should be represented?	1 each Head/Chief, (Ministry of Health representative), 1 Obstetrician/Gynaecologist, Midwife, Neonatologist, Anaesthesiologist-Reanimatologist, Pathologist, Statistician, Women’s Committee representative; Therapist.	See above.
How should the group develop its recommendations?	By levels of care and causes of death.	Define mortality structure by causes; recommendations to be: based on each cause, feasible, concrete, evidence-based without contradicting current guidelines; supported by Ministry of Health, contribute to improvement in care.
Should recommendations be disseminated among professionals-specialists?	Mandatory: published reviews, bulletins, journals and magazine articles, reports and lectures, TV, radio programs.	If disseminating full report is not feasible, a short report should be made accessible to specialists.
Which do you think is best way of communicating	Published reviews and bulletins.	Conferences, meetings at various levels with participation of stakeholders,

message most effectively?		professionals, disseminating information via publications.
Is there possibility of funding publication of reports?	Involving international organizations, government, Ministry of Health.	In most cases it is not feasible, seeking sponsorship should be considered.
Is denominator data available?	Yes, but it may not be objective/unbiased all the time.	Statistical data are accessible.
How will publication be highlighted and covered by mass media?	Involve government, NGOs, Ministry of Health, Women's Committee, Parliament Health Committee, community/makhalla.	Articles, TV, social videos.

- Fig. 2. CEMD framework



➤ **NMCRs**

Table 9. NMCR: suggested goals and facilitation factors

Andijan Maternity House No. 3	Municipal Perinatal Centre 1	Scientific Research Obstetrician/Gynaecologist Institute, Karshi Oblast	Republican Perinatal Centre
What do you think is the goal of introducing NMCR in Uzbekistan?			
<p>Define: major causes leading to near-misses; methods, approaches to prevent repeat of near-miss case; most frequent organ-system failure; avoid future missed opportunities; positive moments managing near-miss, weaknesses of current clinical guidelines, develop new ones; care quality by interviewing women; if hospitalization timely and needed Reallocation of scarce resources for effective management of near-miss Use standardized approaches Obtain valid information Quality improvement of midwifery, perinatal care Improve, contribute to team building in facility (friendly, cooperation, delegating and rotating) Decrease expenditures.</p>	<p>Goal: define underlying conditions, factors, causes (near miss with confidentiality) at hospital and outpatient levels, change staff attitudes, qualifications, sense of responsibility; reduce maternal mortality and near-miss cases.</p>	<p>Goals: define: real causes of <i>near miss</i> cases; missed opportunities; underlying factors of near misses, avoiding blame and punishment; obtain reliable information.</p>	<p>Goal: improvement of quality of health care and quality improvement of women's and children's lives; Objectives: learn from 'near misses', reduce perinatal and maternal mortality, reduce disability, continuous education of staff; optimization of administrative-organizational procedures/processes, improve clinical practice (follow guidelines), maintain reproductive health, women's and families' satisfaction with health care services.</p>
What keys factors should be taken into account for NMCR to be successful in Uzbekistan and how should the problems be solved?			
Avoid blame, punishment,	Agreement of Ministry of Health and regional health	Results should not be used for punishment or blame, should not	Legalization of NMCR; orientation meetings with

relationship among colleagues based on mutual respect, trust, inter-relationship among various levels of care, Interest, support of administration, introduction of, training in IMPAC, review, include changes into health legislation (public health), prepare, train social workers.	dept.; legislative basis: confidentiality anonymity; legalization of confidentiality, no punishment through Ministry of Justice or Prosecutor's Office; only cases where there have been official complaints from patient's side should be investigated by the Prosecutor's office; unbiased and unprejudiced defining of missed opportunities.	be disseminated. NMCR should be made legal by legislation; working with communities; training of social workers.	various stakeholder, Ministries and sectors; confidentiality, no punishment; develop decree at Cabinet of Ministers level; improve interpersonal relationship culture; availability of clinical guidelines and standards; prepare trainers, institute training of staff; conduct training/workshops; staff motivation; participant moral, material motivation; dissemination of positive experience/piloting; technical support during preparation of introductory phase; identify internal resources; WHO, donor agencies; participation/ involvement, support of key people; participation in orientation meetings; training.
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Table 10. Draft working definitions of near-miss cases

Andijan Maternity House No. 3	Municipal Perinatal Centre 1	Scientific Research Obstetrician/Gynaecologist Institute, Karshi Oblast	Republican Perinatal Centre
Distocia: Absence of head movement during expulsion period; foetal distress; bloody excretions; symptoms of shock.	Haemorrhage: haemorrhage, systolic BP ≤ 90 mm Hg, pulse ≥ 100 beats/min; infusion therapy (2 litres or more); blood transfusion; removal of uteri.	Distocia: Absence of foetus' head movement during expulsion period; foetus distress; bloody vaginal excretions or symptoms of shock; induced delivery (using instruments); multiple foetuses, hydramnion; long waterless stage, Caesarean section (C/s); removal of uteri; signs of chorion-amnionitis.	Sepsis: generalization of bacterial infection during pregnancy, childbirth, postpartum period, diagnosed by at least two of: temperature reaction: <36 (hypothermia) or >38 (hyperthermia) during not less than 3 days; BP < 90 mm Hg, pulse >100 beats/min; administration of 2 or more antibiotics; hospital stay of 7 or more days; Tachypnoe: breathing rate of > 20 per min; Manual Vacuum Aspiration; removal of uteri in the late stage of postpartum period.
Induced delivery (using instruments): hydramnion, multiple foetus, long period with ruptured membranes, C/s, uterus removal, signs of chorion-amnionitis.		Mild hypertension and: convulsions; coma; anyzocoria; jaundice; breathing distress; tachycardia (pulse more than 100 beats per min.); severe headaches.	
Eclampsia: definition: presence of: hypertension/convulsions, proteinuria/convulsions; well developed oedema in upper part of body and back.		Eclampsia: severe hypertension: emergency care at admissions department; C/s.	
Severe hypertension: hypertension: emergency care at admission; C/s;			

stroke; severe headaches; jaundice; breathing distress (less than 30 per minute); cardiovascular distress (tachycardia > 100 beats/min).			
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Table 11. Women’s perspective

Andijan Maternity House No. 3	Municipal Perinatal Centre 1	Scientific Research Obstetrician/Gynaecologist Institute, Karshi Oblast	Republican Perinatal Centre
Woman’s perception on quality of care receive			
Was care timely; was woman agreement obtained; friendly attitude/approach, psycho-emotional support; define if interventions, care based on clinical guidelines.	If care was timely; was woman informed, involved in decision-making on care; attitude, psycho-emotional support during care; satisfaction.	Was care timely; woman’s agreement obtained; friendly attitude/approach, psycho-emotional support; were interventions, care based on guidelines.	Was care timely; was woman kept informed during stages of care; was woman satisfied with: care quality; health provider attitudes, provisions; was she centre of attention; what were her wishes.
Discuss main features of interview with woman (who will conduct, when, where and how):			
Trained volunteers from Makhalla/ community, patronage nurses; 2 weeks after discharge from hospital; in woman’s home; as a patronage visit, informal and confidential talk.	Who: psychologist or trained staff; when: after hospital discharge; where: woman’s home; how: confidentially, by talking and questionnaire.	Member of Makhalla/community, social worker, following discharge from hospital; best to interview in woman’s home.	Psychologist or trained staff; after discharge from hospital; at home; by talking, confidential questionnaire.
Propose 5 questions women to be asked:			
Woman’s conditions prior to pregnancy; pregnancy: observations, recommendations; health status at admission; what happened in hospital (how was care, how did delivery take place, etc.); what do you think of what had happened, and why; satisfaction and recommendations for other women, families and health staff	Attitude of health staff; satisfaction about care, interventions; what happened, why it happened; progress of pregnancy; health status at referral and admission to hospital.	Attitude of health staff; what do you think of what happened, why; pregnancy: how did it go; health status at admission; what happened in hospital (how was care, how delivery went, etc.); satisfaction, opinion about how care was delivered.	Are you satisfied with: care rendered, staff attitude; were you sufficiently informed; were your expectations met; would you seek care from this clinic again and would you recommend it to others; what are your next wishes.

➤ **Proposals for implementation BTN approaches to make pregnancy safer**

Table 12. NMCR

Maternity Complex No. 3, Andijan	General
Background information:	
Number of deliveries – 4587	Number of deliveries – 1 500 – 5 000
Maternal mortality ratio – 1 (21,8 per 100 000)	Maternal mortality ratio – (20–40 per 100 000)
Estimated nr of maternal deaths/ <i>near miss</i> – 200	Estimated number of maternal deaths – 1–2 Estimated number of <i>near miss</i> – 40–280
What is the overall goal for NMCR in your facility?	
Define factors leading to <i>near miss</i> ; improve system and mechanisms of care and clinical practice; improve families and women’s knowledge of pregnancy, possible complications and danger signs.	Define factors contributing/leading to near misses; improve clinical practice and mechanisms of delivery of care; improve and strengthen women’s and family’s knowledge on pregnancy, possible complications and danger signs; capacity building of health staff; improve tactic of quick response to critical conditions/cases.
Do you think there is a need for a NMCR steering committee?	
Yes, to ensure sustainability and continuity.	Yes, to ensure sustainability.
What would be the Committee’s responsibilities?	
Define <i>near miss</i> cases; select <i>near miss</i> cases; organize meetings; share responsibilities; ensure confidentiality and ethical issues; monitor implementation of recommendations and feedback.	Define criteria for <i>near miss</i> ; select <i>near miss</i> cases; organize meetings; share responsibilities; ensure confidentiality and ethical considerations; feedback and monitoring of recommendation implementation; develop and disseminate recommendations.
Who will be the members of the committee?	
2–3 Obstetrician/Gynaecologist (incl. outpatient department and hospital); 1 each Epidemiologist, statistician, neonatologist, Reanimatologist, therapist.	2–3 Obstetrician/Gynaecologist (including hospital and outpatient department); 1 each midwife; neonatologist; reanimatologist; others.
How often will it meet?	
Once a month.	Once a month.
When/where will the first meeting be?	
Where – maternity facility (during visit to outpatient department); when – first Wednesday of month.	Where: maternity facility (visit to primary care if needed); when: when standards are ready, on fixed days of the month; juridical/legal support available.
How will you appoint over-all coordinator in facility? Who might this best be, given workloads, etc.	
Through election; who: Obstetrician/Gynaecologist with 10 years or more experience, good communicator, not overloaded with other responsibilities; highly qualified.	How: based on competition and election; who: Obstetrician/Gynaecologist (not administrator): experience 10 years or more; highly skilled; good communicator; not overloaded with work.
How many cases do you expect will be studied in one year?	
Up to 10 cases.	From 10 to 40.

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If there are too many cases, how you will chose cases that will be discussed during review meetings?	
Conditions combining the most <i>near miss</i> criteria; lowest satisfaction of woman and family (become disabled etc.).	Cases with most combination of <i>near miss</i> criteria; where results gave least satisfaction to woman and family; most frequent and rarest cases; cases with most of missed opportunities in facility.
How will you ensure staff are aware of and the need for full participation in <i>near miss</i> ?	
Issue prikaz to conduct review in the facility; conduct quality review; ensure confidentiality; change of statistical indicators; monitoring; praising review participants.	Issue prikaz covering reviews; inform, train staff; conduct quality review; ensure confidentiality; monitor; change statistical indicators used in practice; praise participants; no blame or punishment.
How will you ensure staff can be confident the study is confidential?	
Anonymity and coding; correct selection of coordinator; no punishment or blame; quality of review; time factor (for acceptance of NMCR).	Anonymity and coding; no punishment or blame; correct selection of coordinator, quality of review; positive experience with previous review.
Once the system is running, how often do you plan to have review meetings?	
Advocacy and orientation – March-April 2005 Introducing review – May-June 2005? Once a month.	Advocacy and orientation in the field: March – April 2005. Introducing case reviews: May – June 2005. Once a month.
Who will be responsible for organizing meetings?	
Coordinator with the support of administration.	Coordinator with support of administration.
Who will participate in the meetings?	
Committee; all of maternity facility staff; staff of faculty/department; others as needed.	Committee; maternity staff or, if maternity facility is large, participants in <i>near miss</i> case; Not more than 15 people; department staff; others ad hoc.
Who will, follow up on how recommendations are being implemented? What actions can you take to ensure recommendations are being followed?	
Review committee; recommendations will be put up for common view/review on stands; monitoring of implementation; in some cases, administrative actions if the case related with negligence.	Review committee; recommendations will be widely disseminated and placed on wall for general view/review; monitoring of implementation; in some cases, administrative punishment if related to negligence.
Data forms: Who will be responsible for designing/updating these?	
Review committee	
Local protocols: Who will be responsible for designing/updating these?	
Dept/chair staff; Deputy Chief Physician; Chief District Obstetrician/Gynaecologist; Chief Midwife	Chair staff; Deputy Chief Physician; Chief Midwife; District Chief Obstetrician/Gynaecologist
How will the 'near miss' be identified?	
<i>Near miss</i> criteria; case notes from Reanimation and Intensive Care Unit; extreme situations in department;	<i>Near miss</i> criteria; case notes from Reanimation and Intensive Care Units; monthly reports; extreme

monthly reports.	situations in department; information from general population.
Who should be responsible for identifying all <i>near miss</i> in facility? This should be done regularly, (perhaps a daily check of all facility departments)	
Committee Coordinator.	Coordinator.
What resources do you think will be required and for what purpose would they be used?	
Financial resources: for documentation; database and monitoring (computer).	Financial resources: train coordinators and staff; documentation for monitoring and dissemination; database and monitoring (technical means); praise review participants.

Table 13. CEMD

What kind of information on maternal death is available, are there data/findings that would help you?	Outpatient observation form; Individual Form of pregnant woman; delivery case notes; newborn development form; review protocol at local, oblast level; expert conclusion on national/republican level; excerpts from hospital during pregnancy; pregnant woman care and referral form; pathologist's conclusion; national annual, semi-annual analysis of maternal mortality; findings of commission on reliability of maternal death and its causes.	
How do they help?	Reassuring, revising findings from various data sources.	
How you will ensure that staff is confident that review is confidential and anonymous?	No punishment, blame or censure, prosecution; anonymous and coded forms; positive experience from participating in confidential enquiries; legalization of confidentiality and anonymity principles; destruction of sources of information immediately after publication of report.	
How will you ensure that involved facilities will report to National Committee of CEMD about progress?	Availability of local/regional coordinator; following principles of confidentiality; monitoring by National Committee; training of local/regional coordinators; high quality report; simple forms for data collection; comparison of number of deaths with official data; inform community on how to contact; hot line/trust phones.	
Who will follow up to ensure that recommendations are being implemented? What would you undertake to ensure that the recommendations are followed/implemented?	Administration of health system; give recommendations official status (orders and decrees of Ministry of Health); wide dissemination (through professional associations, mass media, professional conferences and events, publishing the recommendations for general public).	
What kind of experts do you need?	Internal; external.	
Mechanism of implementing the recommendations		
Timeline		
Action	Date	Comments
Achieving consensus Define activities	May 2005??	Involve WHO and donor agencies

- set up structure of National Committee - orientation meetings of partners (incl. Ministry of Justice, Governmental Statistics Committee, Oblast Health Departments and its specialists) with participation of external experts		
Develop recommendations incl. clinical guidelines - clinical guidelines, case review forms		Who: Technical/Working group (according to action plan), National Committee on CEMD (NCCEMD)
Approval		NCCEMD, Obstetrician/Gynaecologist Assoc., WHO, Ministry of Health experts
Data collection - package of documents: clinical guidelines and report forms Piloting - defining pilots – Andijan, Navoi	March 2005	Training of regional coordinators; involved parties provided with relevant documents, forms
Analysis of pilot	Jan 2006	NCCEMD
Presentation and defining the problem - review results in pilot site	Feb 2006	Regional Coordinator, NCCEMD
Process starts - scaling up pilot	Mar 2006	WHO, NCCEMD, Ministry of Health
Mid-term analysis of data - pilots and involved regions	Aug/Sept 2006	Ministry of Health, NCCEMD
First compilation/development of the report and recommendations; Dissemination	Jan 2007	WHO, NCCEMD, Ministry of Health, Ministry of Justice, law enforcement authorities
New cycle begins		

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5.4 Technical Workshop on BTN: NMCRs, June 2007

As recommended by participants at the 2005 national BTN workshop, a technical workshop on NMCR was organized from 12 to 15 June 2007, as a joint effort between the Ministry of Health, WHO Regional Office for Europe, UNFPA and UNICEF. The workshop's objective was to introduce the NMCR (severe complications) concept; a review was made of NMCR definitions and procedures to be used during review meetings. Action plans for implementation of NMCR both the national and pilot levels were developed.

In agreement with Ministry of Health, priority was given to this approach because severe morbidity (Near-Miss cases) do not imply mandatory judiciary involvement and subsequent punishment, and may allow starting working in a confidential manner. It was agreed that the needed preparation for the introducing of CEMD would be undertaken by Ministry of Health and key stakeholders. This second approach should then be introduced at a later stage.

A representative from the prosecutor's office was invited to attend the workshop in order to provide additional clarifications on issues related to confidentiality and punishment and to start a dialogue on introduction of a new system (BTN approach) for Uzbekistan.

5.4.1 Objectives

The Workshop's objectives were:

- to refine and test NMCR tools developed in 2005, reviewing definitions, quality of care framework, case review forms;
- to develop/refine guidelines on roles, accountability and structure (near-miss review groups, national, if required; monitoring and reporting);
- to develop review skills, including how to facilitate meetings and implement changes;
- to develop simple evaluation protocol to monitor quality of NMCR during pilot phase;
- to prepare a detailed budget for each hospital during pilot phase (e.g. photocopy, etc.).

5.4.2 Recommendations

The following issues were addressed and agreed upon: national definitions of near miss cases, local case management standards, NMCR process and documentation, details of women interview. Feed-back and monitoring mechanisms to Ministry of Health and National Committee were discussed in detail. It was decided that information on individual patients, health workers and health facilities remains at the local level and should not be forwarded to the Ministry of Health. At the same time, in order to prepare periodical and annual reports on implementation of NMCR and to share lessons learned, local coordinators will provide Ministry of Health data on the number of NMCR sessions, reviewed cases, case management problems identified, action points agreed on and implemented.

The introduction of NMCR is expected to evolve in two phases: preparatory and introductory. It was agreed that very important prerequisites for implementation of this approach were adaptation of legal framework and establishment of national guidelines for the management of obstetric complications. Adaptation of legal framework is necessary to prevent disciplinary action and legal prosecution of health personnel involved in case management when information is gathered and shared in case review meetings. Another key element of NMCR is comparison of management of reviewed cases with nationally agreed, evidence-based clinical guidelines. (Related action plan is in section 10.7)

5.4.3 Organization

The workshop took place over three and a half days and was held in Tashkent. Activities included plenary and group work sessions. Participants received a Russian version of the BTN manual, as well as Russian versions of the WHO IMPAC and MCPC manuals (translated with the support of Project Hope in Uzbekistan) and sets of four Regional Office technical posters, WHO partograph, positions in labour, how to wash hands, newborn resuscitation.

Workshop participants included Ministry of Health staff and staff from the four institutions selected by the Ministry of Health as NMCR pilot sites: the Republican Perinatal Centre, the Scientific Research Institute of Obstetrics and Gynaecology maternity unit in Karshi, and the Andijan and Fergana oblast maternity units. All levels were represented: deputy directors, chief/senior obstetrician/gynaecologist, midwives and nurses, a core group who will head the NMCR process and as trainers in “cascade” courses.

5.4.4 What happened

On day 1, the Deputy Minister of Health, Professor Asomiddin I. Kamilov opened the workshop. In his comments, Professor Kamilov said that the basic indicators in public health services are maternal and infant mortality rates, which have been falling in Uzbekistan over the last 10 years. In spite of this, women continue to die; in 30% of cases, maternal death is linked to a woman’s social status. Professor Kamilov listed the actions taken by the Ministry of Health for the prevention of anaemia and endocrinology diseases: fortification of flour and salt iodization for iodine deficiency.

Professor Kamilov praised the commitment of health care providers to improving their knowledge and skills. He stated that the Ministry of Health will adopt both international standards and the WHO strategies for the European Region. He stressed the importance of conferences, seminars and technical consultations. Newly developed and/or revised clinical guidelines will be endorsed by the Ministry of Health only after having been revised by WHO international experts. He wished participants success in their endeavours during the workshop.

Dr Alberta Bacci, MPS European Coordinator, thanked Professor Kamilov for his very relevant speech. She praised Uzbekistan’s commitment to health reform. Dr Bacci reminded participants that the title of the workshop reflects the importance of numbers in achieving improvement in mortality indicators. Dr Bacci said she and the WHO team had visited the Tashkent City Perinatal Centre, and had been impressed by the level of knowledge and skills of doctors and nurses and their dedication to introducing evidence-based changes in clinical day-to-day practice. Dr Bacci then gave an overview of workshop objectives, followed by a presentation on The need for quality improvement in maternal and newborn health care to contribute achieving MDG in the European Region.

Four maternity units chosen as pilot sites for NMCR – Republican Perinatal Centre, Tashkent, Andijan Oblast Maternity unit, Fergana Oblast Maternity unit and Obstetrician/Gynaecologist Institute, Karshi, each made a presentation on identified cases of severe complications.

Closing the session, Dr Klara Yagdarova presented the recommendations made by participants at the National BTN workshop (2005) that serve as a basis for the activities of the Technical workshop.

Day 2 started with a presentation of review guidelines, the clinical summary form and the review minutes form. A presentation was also made on the various roles during review meetings and how to behave in difficult situations. Mock reviews are case reviews of anonymized near-miss cases identified in advance, performed by the facility team. Each case review is carried out in front of workshop participants, who observe and take notes of strengths and weaknesses of the review process. The mock case reviews for facilities 1 and 2 were held on day 2 and those for 3 and 4 on day 3.

Following the mock case reviews, the review tools were further refined based on results and observations at the mock case reviews. In the afternoon, participants were divided into two groups: those who would interview women and who were asked to set out guidelines on how interviews should be carried out. Other staff were asked to write up consensus on tools, guidelines, standards and procedures for NMCR.

At the close of day 3, participants were asked to develop proposals for introduction of NMCR in Uzbekistan, including an evaluation of pilot experience. This exercise continued on day 4, at the end of which Dr Bacci closed the meeting, thanking all participants for their dedication and hard work to make the workshop a success.

On day 4, action plans were developed for national and facility level: these plans were presented and discussed with Ministry of Health and partners.

5.4.5 Group work

➤ Final definitions of near-miss cases.

Based on the draft definitions developed during the BTN national workshop and on the initial experience of using them in the maternity units participants provided the final definitions for identifying near miss cases in the maternity units with expert support.

Sepsis comprises fever or hypothermia with the prescription of two or more antibiotics of a wide spectrum of action, for more than five days to a woman during postpartum after abortion period.

Haemorrhage comprises any loss of blood, whether external or internal, accompanied by two symptoms:

- pulse of over 100/minute.
- systolic BP less than 70 ml.

Eclampsia affects women with diastolic hypertension, over 110 and systolic, over 160, plus one or more of the following:

- headache;
- pains in epigastria;
- visual impairment (frontal vision);
- oliguria (reduction of diuresis less than 30 ml hour); **or**
- women with eclampsia.

➤ Standards for assessing quality of care provided in life-threatening situations

In line with the national clinical guidelines on major obstetrics complications, participants developed related standards for quality of care in order to guide auditing..

Qualitative criteria in cases of obstetrical bleeding

- An emergency care team of two obstetricians/gynaecologists, anaesthesiologist, nurse-anaesthesiologist, midwife, etc., should be available no later than 10 minutes after diagnosis.
- For any form of obstetrical bleeding, independent of BP and pulse parameters, venous access (I/v line) should be set up within five minutes.
- In case of bleeding, the level of haemoglobin or haematocrit, blood group and Rh-factor to be analysed for compatibility and blood coagulation.
- Continuous monitoring of BP, pulse and diuresis parameters are criteria for blood volume replacement therapy.
- In case of non-stop bleeding, after transfusion of three litres of liquids (crystalloids, colloids), transfusion of erythrocytes iso-group or blood of I (O), Rh negative to be initiated.
- In case of the heavy form of uterus atony, a minimum dose of 20 UA oxitocin to be used.
- If non-stop bleeding has reached a volume of 1500 ml in addition to homodynamic instability, laparotomy should be performed. It is important that laparotomy take place no later than 30 minutes after decision.
- During laparotomy (in case of atonic haemorrhage), before hysterectomy, steps to stop bleeding to be taken: injection of Enzaprost intrauterus, sewing together of uterine artery/removal of uterus blood vessels. Repeated examination of maternal [generative] passages is carried out if bleeding continues after injections of high doses of uterotonic.
- Before laparotomy, uterine bleeding should be controlled/decreased through bimanual compression of uterus or compression of an aorta abdominalis.
- For women with prepartum bleeding, vaginal examination to be carried out only after placental presentation is excluded through ultrasound examination, or if there are preconditions for urgent interruption of pregnancy (delivery room should be prepared).
- To prevent bleeding in all women in third stage of labour, delivery is recommended.

Qualitative criteria of a medical care in case of complex forms of pre-eclampsia/eclampsia

- The senior doctor/consultant on duty should monitor patients with complex forms of pre-eclampsia/eclampsia.
- For patients with high BP, tests (analyses) should be carried out on level of protein in urine, amount of urine per hour, period of fibrillation and level of transaminase upon arrival in hospital.
- The therapy for reducing BP should target parameters under 170/110 mm Hg.
- To reduce BP, nitroprussic sodium or sulfate of magnesia should be available for both treatment and prevention of convulsions (initial dose of 15–20 ml 25%, followed by doses of 1–2 g/hour).
- If necessary, sulfate of magnesia therapy should be continued during delivery and for no less than 24 hours in the postpartum period.
- During administration of sulfate of magnesia, continuous monitoring should be made of knee reflexes, diuresis as well as breathing status.
- For cases of magnesia overdoses, 10% calcium gluconate should be available.
- During the postoperative/postpartum period, I/v injections should be no more than 85 ml/hour (except for situations of blood volume replacement during bleeding).
- Pregnancy should be interrupted no later than 24 hours after diagnosis of complex forms of pre-eclampsia/eclampsia.
- Endotracheal anaesthesia should not be used for cases of BP over 170/110 mm Hg.
- Epidural anaesthesia should be employed for C/s.

Qualitative criteria of management of uterus rupture cases (hysterorrhexis)

- Team for emergency care: 2 obstetricians/gynaecologists, anaesthesiologist, nurse-anaesthesiologist, midwife, etc., to be available no later than 10 minutes after diagnosis.
- I/v access line should be in place within maximum of five minutes.
- After transfusion of three litres of liquids (crystalloids, colloids), transfusion of erythrocytes iso-group or blood of I (O), Rh negative should be initiated.
- Laparotomy should take place no later than 30 minutes after decision.
- Continuous monitoring of BP, pulse and diuresis is critical for appropriate blood volume replacement.

Qualitative criteria of an estimation of cases of a septic condition

- Senior doctor/consultant and anaesthesiologist should examine patients with septic conditions.
- Blood culture should be carried out for septic conditions.
- I/v treatment with one of a wide range antibiotics (cephalosporin, augmentin-amoxiclav, ampicillin gentamicin) to be initiated immediately.
- Mandatory requirement is inclusion of anti-anaerobe drugs (metronidazole) in treatment.
- Continuous monitoring of BP, pulse, diuresis to confirm patient is responding to treatment.
- Examination and cleaning of the uterus cavity by vacuum aspiration to be carried out to remove placenta remains (after start of antibacterial treatment).
- In case of bacterial-toxic shock and haemodynamic instability, a hysterectomy should be performed.

➤ Proposed decisions /actions

The last and critical stage during a case review is finding solutions to identified problems. These solutions should be in context, developed and registered during discussions by the review team within the limits of a given session. It is necessary to register a timeline and person responsible for implementation. Solutions should be specific (unlike general recommendations) and measurable (the review team should be able confirm that implementation has taken place). Another important point is recognition that acceptance and implementation of solutions may require discussions with other hospital staff not part of the review process.

It is significant for the review process that staff involved (in fact, all facility staff) has knowledge of the process – and that reviews focus both on positive and negative aspects of medical care. When review findings indicate that health care providers should change or improve a given practice, it should be possible to implement decisions qualitatively, with indications of how subsequent improvements should be made by other experts so changes in practice are disseminated throughout the system.

➤ **Mutual support, confidentiality**

Participants were divided into three groups, and were requested to read a case and answer the related 6 questions.

The responses below refer to only one group; however, it was, in many aspects, typical and can be compared with experiences at BTN workshops in Kyrgyzstan, Tajikistan and Kazakhstan.

Case

Maria is a 32 year old woman in her third pregnancy. Her first and second pregnancies ended in a caesarean section because of delays in the second stage. There were no postoperative complications and both children are healthy.

This pregnancy was so far uncomplicated. An ultrasound scan performed at 20 weeks suggested that she might have an anterior placenta praevia. She is now 36 weeks pregnant and has been admitted to hospital as she lives in a remote place. A further ultrasound scan is planned for tomorrow. It is planned to deliver her by C/s in two weeks' time at 38 weeks gestation.

At 2 a.m., she calls the midwife because she had noticed fresh painless vaginal bleeding. The junior obstetrician is called. Apart from the bleeding all is normal. She/he puts an intravenous drip up, takes blood for blood tests, orders cross matching of 6 units of blood and asks the midwife to check Maria's pulse and blood pressure hourly and to report if the bleeding increases.

At 4 a.m., the midwife calls the junior obstetrician again. Maria's pulse is now 120 bpm and her blood pressure is 95/45 mm Hg. The obstetrician rushes to the antenatal ward. Maria's bed is blood soaked and she is obvious having labour pains. The fetal heart is audible at a rate of about 180 bpm. It recovers slowly after contractions. The junior obstetrician is very worried. S/he asks urgently for the blood to be brought to the unit, the senior obstetrician, theatre team and anaesthetist to come to the hospital, and for Maria to be transferred to the labour ward.

Neither the blood nor the senior obstetrician can be found. The anaesthetist and the theatre team arrive at the moment Maria gives birth just after arriving in the labour ward. The baby appears well and has an Apgar score of 7 at one minute and 10 at five minutes.

There is massive postpartum haemorrhage. Maria receives oxygen and fluid replacement as directed by the anaesthetist and oxytocin as directed by the junior obstetrician. The midwife examines the placenta. It appears to be complete.

At 9 a.m., the senior obstetrician arrives at work. At 10 a.m., the first unit of blood arrives on the labour ward. The original blood test results are never reported. Maria has a total of 10 units blood transfused and is discharged after 10 days in hospital. She and her baby are well.

Is this a near miss case? What is the likely diagnosis?

- The group had no problem in identifying Maria's case as a near-miss (haemorrhagic shock, probably due to placenta praevia).
- No health worker group has so far had a problem in identifying Maria's case as a near miss-case, although the identification of near miss cases is not the major challenge.

During the subsequent audit, the following additional information is obtained.

- *The staff from the blood bank and the senior obstetrician were all at the same wedding party until 5 a.m.*
- *When Maria was asked about her experience she mentioned that she was grateful to the hospital for still being alive. She still felt that the midwife should not have told her off “for making such a fuss” when she called her at 4 a.m. because of the bleeding. She was also very disappointed that she had not seen her child until she was discharged and now was not able to breastfeed. She worked out for herself that her womb must have ruptured.*
- *When the antenatal ward midwife was asked she mentioned that she was afraid to call the junior obstetrician as s/he always was quite angry when called in the early morning. She also mentioned that there were too many mothers and babies to look after and that she may not have checked Maria’s blood pressure hourly. The records showed normal blood pressure readings at hourly intervals.*
- *When the junior obstetrician was asked s/he mentioned that s/he did not initially inform the senior obstetrician as s/he thought that s/he could handle the situation without assistance. S/he mentioned that s/he had given detailed written instructions to the staff on the antenatal ward but that the paper must have got lost.*
- *When the senior obstetrician was asked s/he mentioned that the battery on his/her mobile phone must have been flat and that s/he had given early on clear instructions to be called in the event of any bleeding. There was no evidence of this in the case records.*
- *When the anaesthetist was asked he mentioned that this is not the first time he had been in a situation like this with this particular senior obstetrician and that two months earlier another mother was nearly lost because s/he could not be found or was drunk.*

What went well, and who should be praised?

The group discussed several candidates for praise but finally refused to praise any of them – the group’s consensus was that the only one to be praised here is the woman herself.

The midwife called the junior obstetrician twice, alerting him to the emergency. Participants pointed out that she did not monitor blood pressure hourly as prescribed by the junior obstetrician and therefore does not deserve praise.

Junior obstetrician initiated emergency obstetric care. Participants pointed out that s/he failed to recognize the need for emergency caesarean section at the first signs of bleeding and therefore does not deserve praise.

At this point, the facilitator pointed out that the objective of this step in the review process is not to identify and praise health workers who have done *everything* right, but those who have done *something* right – and to praise them for whatever they have done right.

Anaesthetist: initiated and oversaw volume replacement and oxygen therapy – participants argued that he joined the efforts at a late stage.

The facilitator pointed out that the anaesthetist was called in late, which was not his fault, and encouraged participants to be more generous in allocating praise; an important reason for going through the praise stage is to make participants in review meetings feel at ease and increase chances they will accept criticism later on.

This tendency to be overly critical with fictitious colleagues has been observed in health workers groups from other CAR countries during national workshops. A change in attitude is required here that will take more time and input than a national or technical workshop can provide.

What went wrong?

Participants had no difficulty in identifying a long list of shortcomings in Maria's case management. This included failures by both junior and senior obstetricians not deciding in favour of an emergency caesarean section at the first haemorrhage and not responding in time to the emergency call.

Again, this experience was typical of what has been observed before: during this type of exercise, the groups do not find it difficult to identify shortcomings, including those that are the responsibility of health workers at the upper end of the hierarchy.

Choose two or three problems, and analyse them by asking "why – but why?"

The group chose the following problem for discussion: no emergency caesarean section was performed at the first sign of bleeding, despite the obstetric history. The group then identified the following cause for the problem. "The junior obstetrician did not recognize the need for an emergency caesarean section.

During the discussion, the group understood that, while this statement is probably valid, it is not very helpful in finding a solution – one must dig deeper. This was therefore a good example of the usefulness of the why – but why technique. It became clear that based on available information, no clear answer could be given to the second why – but that, in a real-life review, such additional information would have been sought and probably found. The following options for a second cause were formulated.

- "The junior obstetrician did not know that a bleeding from a placenta praevia is an indication for emergency caesarean section."
- "The junior obstetrician did not pay sufficient attention to the clinical records where a suspicion of placenta praevia had already been documented."
- "The experienced midwife did not dare to hint at the need for an emergency caesarean section because she feared an angry reaction by the junior obstetrician."

The last option was a welcome opportunity to discuss the virtues of teamwork for achieving the best possible outcome for patients.

The discussion of this problem went particularly well so that, if future groups find it difficult to identify a case they would like to discuss, they could be prompted to use this one.

What action could prevent similar problems in the future?

The group decided to discuss solutions for the first option mentioned above. It agreed on the following suggestion: "Develop a protocol for the management of *haemorrhage*, based on the national model."

The group was then encouraged to elaborate on this suggestion, clarifying details and also what should happen after the protocol was developed. It was stressed that, typically, it needs to be stated who is in charge and by when, realistically, the activity should be completed. The group decided on the following.

- "The Deputy Chief Medical Officer will be in charge of the development of the protocol."
- "The protocol will be developed collectively."
- "The protocol will be submitted for approval."
- "The approved protocol will be shared with all departments."
- "The approved protocol will be displayed on notice boards"
- "The approved protocol will be filed in special folders containing all protocols."

How should the moderator react to the comments by the anaesthetist?

In contrast to the first five questions, this question was discussed in plenary. The three groups made the following suggestions.

- “The discussion of this issue should take place outside the review meeting – dealing with such an accusation is not in the remit of the review team. This is a matter for the hospital administration.”
- “After the review meeting, the moderator should investigate whether the accusations are justified. If so, he/she should talk to the senior gynaecologist. If the accusation is substantiated, it should then be discussed in a general staff meeting.”
- “Although the anaesthesiologist has violated the principle of no-blame, no-accusation, his statement cannot be ignored. The moderator should seek to speak to the senior gynaecologist in confidence. If that does not settle the matter or result in a promising solution for the future, the moderator should try to involve another senior gynaecologist of good reputation and who enjoys the trust of most staff to ensure the full cooperation of the accused.”

All the groups recognized that it would be counterproductive to let this topic be discussed during the review meeting, as this could undermine its normal functioning based on no blame, but helping improve individual and team performance.

The more difficult question is what to do instead. Group 1 suggested notifying the administration, that is, deal with the matter in the traditional way. This would be a clear violation of review confidentiality without even trying to confirm whether there is any truth in the anaesthetist’s accusations.

Group 2 recognized that accusation is not evidence and suggested an investigation be carried out. However, the strategy of having a general staff meeting to discuss the accusation, if substantiated, is quite problematic – and would be a massive breach of confidentiality; it is difficult to see how this course of action could possibly be justified.

Group 3 also recognized the need for the issue to be examined and possibly acted upon. This group was more conscious of the need to protect confidentiality and tried to find a way of minimizing the breach should it turn out that the matter cannot be resolved otherwise.

Overall, the groups’ suggestions reflect the spectrum of reactions observed in other workshops. A positive aspect was certainly that all groups in the Uzbek workshop recognized the need to keep such discussion out of the review meeting and that the next step would probably be to verify whether there was any truth in the anaesthetist’s allegations; groups in other workshops have concluded that they all must be punished – midwife, junior and senior gynaecologists, without any further investigation.

More worrying, however, was observing that two of the three groups were ready to breach confidentiality in quite drastic ways. Again, this falling back into an old-style punitive approach did not come as a surprise since it has been observed in other workshops. By the time of the exercise, groups usually know that confidentiality is a crucial principle of NMCR and most agree with it – yet it seems they do not know how to uphold it in difficult situations. This underlines the need for careful preparation of the hospital teams, possibly through exercises like this one or role play; if confidentiality is breached in real life in the crass way suggested by groups 1 and 2, it could easily mean the premature end of NMCR in the hospital concerned.

➤ **Mock reviews**

Three or four participants from each pilot facility had been asked to choose a near-miss case that occurred in their hospital in the last couple of months, prepare a case summary and carry out a review meeting based on the rules and recommendations set out earlier. The remaining workshop participants observed and gave feed-back afterwards.

Review of Case 1

The case of a woman with severe pre-eclampsia who went on to develop postpartum haemorrhage due to uterine atony, which in turn led to hysterectomy.

Except for the fact that it started with a case summary, Review 1 did not meet the recommended NMCR format. As soon as the case presenter had finished, the moderator began an interrogation that lasted until the end of the review. The other two hospital team members virtually did not participate. After the

review, the case presenter complained bitterly that she had agreed with the moderator she would be praised for the positive elements of the case management. This shows that, despite better knowledge, habits are powerful and resistant to change and that hospital teams need ample training and supervision before they can be expected to practice NMCR according to WHO recommendations.

NB: it emerged that the patient had not received any uterine massage prior to surgery; one might suspect that this simple intervention could have prevented the hysterectomy.

Review of Case 2

A woman (3 grav 0 par) in week 36, with hypertension, albuminuria, headaches, fetal heart beat at entry. C/s was proposed but rejected by the family, fearing for the premature baby. Labour was induced with prostaglandin and amniotomy. During labour, the patient had an eclamptic fit of. The baby was dead on delivery.

Review 2 came much closer to the recommended course of a review meeting than the first. Here, an effort was made to identify and name the positive elements of the case management.

The following issues were raised as opportunities for further improvement.

- The case presenter should have the chance to *tell the story* without frequent interruptions.
- The moderator should hold back and first try to make the other participants speak; for instance, she should ask the others to identify positive elements instead of listing them herself.
- The case summary should focus on the most critical elements, here: the eclamptic fit, perinatal death and the period immediately preceding these events. Not much said was about surveillance of blood pressure and fetal heartbeat, so that fit and perinatal death came as a surprise. It would be important to know and to discuss whether surveillance was really so imperfect or whether this was a shortcoming in the case summary.
- Only after the review did it become clear that the team had made considerable efforts to convince the family to allow a C/s, but failed. It is important for the review team to get a full picture so they can identify valid causes and solutions (here, for instance: involve midwives in interaction with family).
- This case demonstrates that crucial information may be obtained only from interviewing the woman and her family – namely, why they have refused the C/s and what might have convinced them otherwise. However, it also demonstrates that these interviews come with a risk – if the interviewer is not conscientious and well trained, the woman may be blamed for the death of her baby, which would be detrimental.

Review of case 3

Review 3 was also based on an eclampsia case; under-dosed magnesium therapy and lack of patient compliance played a role.

Again, this case review was an improvement over the previous one: the moderator managed to make all team members participate actively. The following comments were made with respect to further improvement.

- Besides facilitating the active participation of all review team members, the moderator also has the role of leading the discussion and wraps up at the end so team members get a take-home message.
- There is a risk in discussing too frequently issues related to referral and patient compliance, as this can constitute a distraction from own deviations from protocols and standards.
- Calling in the administration to tackle issues of negligence should really be limited to rare exceptions when negligence has been gross, or when repeated efforts to end negligence have been to no avail. Primarily, however, it is the job of the review team to understand why negligence occurs and find a way to tackle it.
- Review team members said that the mock review was a stressful experience. To some extent, reviews will be stressful now and again – due to the nature of the issue being dealt with: how to improve the management of life-threatening complications.

Review of case 4

A case of uterine pre-rupture due to a hydrocephalic dead fetus. At some point, the midwife in charge of monitoring labour progress alerted the gynaecologist because contractions had become very painful. Surgery was delayed and complicated by haemorrhage and shock; eventually, hysterectomy was performed to save the woman's life. The suggested solution was to develop a protocol. The woman had only one child and wanted more.

Review 4 was again an improvement over the previous one. There was good participation by all review team members and an open discussion of shortcomings in the case management. The case was well chosen as it offered a good opportunity to reflect on the shortcomings of the hospital itself as opposed to those related to other actors (family, referring health facility).

- Often, there are more case management problems than can be sensibly discussed in one session, making the selection of the problem(s) for discussion crucial: it should be relevant to the outcome for the woman (and possibly the baby), and it should be vulnerable to interventions of the review team. Here, a very relevant problem that the case review team would have been able to do something about was left out: the delay between the beginning of the pre-rupture syndrome and surgery, which probably contributed to the unfortunate outcome.
- It is advisable to follow the recommended NMCR structure and avoid moving in circles. Here, 30 minutes into the meeting the moderator invited participants (again) to name the positive elements in the case management.
- If an important contributing factor to the delay was that the doctor did not listen to the midwife's alert, then it is difficult to see how a new protocol could be helpful. Obviously, there is a need to improve teamwork between physicians and midwives. As one midwife said during the feed-back discussion: "Taking the midwives' point of view could save women's lives". She suggested more joint case discussions.
- The fact that the gynaecologist did not react immediately to the midwife's alert was characterized as negligence. One workshop participant suggested no longer using this term as it is both imprecise and not helpful, but does have disciplinary connotations.
- The woman had not been informed about the hysterectomy *to avoid traumatizing her*. The question is whether she was entitled to know her fate – if the answer is *yes*, then the hospital had a duty indeed to inform her and to do so in the least traumatizing way.

5.4.6 Action plans

Participants developed action plans for NMCR introduction at national and facility levels.

➤ National level

- Create a working group on development of the project of the order on NMCR, including representatives of Ministry of Health, the partner organizations and pilot maternity hospitals – by 1 July 2007
- Develop and approve the order from Ministry of Health about piloting NMCR in four maternity clinics, including appendices with a plan of action, functional duties of case review teams, etc., by 1 August 2007
- Ministry of Health appoints the National coordinator on NMCR – by August, 1st 2007
- Finalize the guidelines on obstetric sepsis and haemorrhage – by September 2007
- Prepare reports and standards for introduction in pilot sites – including a meeting of teams from pilot maternity hospitals – by mid-August 2007
- Organize an orientation trip to the Republic of Moldova (representatives of Ministry of Health, pilot maternity units and partner organizations) – 2008

Table 14. NMCR: actions and timeline

Action	Deadline
Set up working group to develop NMCR process, to include Ministry of Health, partner organizations, maternity pilot sites	1 July 2007

Ministry of Health protocol for piloting NMCR in pilot sites completed, including appendices for plan of action, review team responsibilities, etc.	1 August 2007
National coordinator on NMCR appointed by Ministry of Health	1 August 2007
Clinical guidelines on obstetric sepsis and haemorrhage completed	September 2007
Reports and standards completed for start up of NMCR at pilot sites; meeting of teams from pilot maternity units	Mid-August 2007
Orientation visit to Republic of Moldova (representatives of Ministry of Health, pilot maternity units and partner organizations)	2008

➤ **Facility level**

Each one of the four pilot maternity units developed a specific plan for implementation of NMCR.

Tashkent Republican Perinatal Centre

In addition to the above timeline, the following steps were discussed:

- NMCR:
 - structure and logistics;
 - process mechanisms;
 - action plan for implementation at pilot site level; and
 - next steps for implementation;
- clinical guideline: structure and logistics for development and introduction;
- follow-up visits to the pilot sites.

Table 15. Tashkent Republican Perinatal Centre: activities, responsible person and timeline

Activity	Responsible	Deadline
Introduce leader and case review team members and recommendations	Centre committee	1 July
Develop mechanisms for interaction between present case review system and selected BTN approaches to avoid overlap	Leader, Centre Case Review Team	1 August
Participation in meetings dealing with clinical guidelines and standards	Babadjanova Sh	Mid-August
Setting up of case review committee and individual member responsibilities	Centre director, case review team	One month after signing of national order
Start of case review implementation (linked to pilot case review) with participation of outside facilitator	Babadjanova Sh	October 2007
Evaluation of initial phase of implementation together with external facilitators	Chairman, Case Review team	Following 6 meetings (by June 2008)
Additional training for case review team to increase capacity, based on needs identified during assessment process	Proposal, case review committee (Babadjanova Sh) for WHO, partners	June – mid-2008

Fergana Oblast maternity unit

Table 16. Fergana: activities, responsible person and timeline

Activity	Responsible	Deadline
Introduce leader and case review team members and recommendations	Centre Committee	1 July
Develop mechanisms for interaction between present case review system and selected BTN approaches to avoid overlap	Case Review team leader and team members	1 August
Revise existing clinical guidelines and develop draft for conditions where no guidelines exist	Head and case review team members	No later than mid-August
Participation in meetings dealing with clinical guidelines and standards	Nasyrova M.A.	Mid-August
Protocol setting up of case review facility teams (kernel) and individual member responsibilities	Head of facility and case review team members	One month after signing of national order
Start of case review implementation (linked to pilot case review) with participation of outside facilitator	Nasyrova M.A.	October 2007
Evaluation of initial phase of implementation together with external facilitators	Case review team, Team leader and members of	Following 6 meetings (by June 2008)
Additional training for case review team to increase capacity, based on needs identified during assessment process	Proposal, case review team (Nasyrova M.A.) for WHO, partners (UNICEF, ZdravPlus)	June – mid-2008

Karshi Filial of the Obstetrician/Gynaecologist Institute

Table 17. Karshi: activities, responsible person and timeline

Activity	Responsible	Deadline
Introduce team leader and members of case review team and recommendations	Centre Committee	1 July
Develop mechanisms for interaction between present case review system and selected BTN approaches to avoid overlap	Facility Director and Case Review Team leader (Dzhumanazarova E.)	1 August
Revise existing clinical guidelines and develop draft for conditions where no guidelines exist	Case Review team leader and team members	No later than mid-August
Participation in meetings dealing with clinical guidelines and standards	Dzhumanazarova E.	Mid-August

Protocol setting up of case review facility teams (kernel) and individual member responsibilities	Case Review Team leader, team members and NII AiG unit	One month after signing of national order
Start of case review implementation (linked to pilot case review) with participation of outside facilitator	Dzhumanazarova E.	October 2007
Evaluation of initial phase of implementation together with external facilitators	Case Review Team leader and team physicians	Following 6 meetings (by June 2008)
Additional training for case review team to increase capacity, based on needs identified during assessment process	Proposal, case review team (Dzhumanazarova E.) for WHO, partners (UNICEF, ZdravPlus)	June mid-2008

Andijan Oblast maternity unit

Table 18. Activities, responsible person and timeline

Activity	Responsible	Deadline
Introduce team leader and members of case review team and recommendations	Andijan team	1 July
Develop mechanisms for interaction between present case review system and selected BTN approaches to avoid overlap	Facility Director and Case Review Team leader (Asrankulova D.)	1 August
Revise existing clinical guidelines and develop draft for conditions where no guidelines exist	Department head and Case Review Team members	No later than mid-August
Participation in meetings dealing with clinical guidelines and standards	Asrankulova D.	Mid-August
Protocol setting up of case review facility teams (kernel) and individual member responsibilities	Case Review Team Members and Head, genus unit	One month after signing of national order
Start of case review implementation (linked to pilot case review) with participation of outside facilitator	Asrankulova D.	October 2007
Evaluation of initial phase of implementation together with external facilitators	Case Review Team Leader, unit heads	Following 6 meetings (by June 2008)
Additional training for case review team to increase capacity, based on needs identified during assessment process	Case Review Team Leader (Asrankulova D.) to WHO and partners (UNFPA)	June – mid2008

5.4.7 Participants

Matlyuba Abdukhalilova
Deputy Head, Oblast Maternity unit, Andijan

- Shakhnoza Aripova
Obstetrician, Obstetrician/Gynaecologist Research Institute, Kashkadarya, Karshi
- Dilya Arifjanova,
Head, Maternal Dept., Ministry of Health, Tashkent
- Matlyuba Abdukhalilova
Deputy Head, Oblast Maternity unit, Andijan
- Dilorom Asrankulova
Head, OB/GYN Dept., Andijan Medical Institute
- Nargiza Azimova
Senior Midwife, Republican Perinatal Center, Tashkent
- Shokhida Babadjanova
Obstetrician, Republican Perinatal Center, Tashkent
- Abdurasul Gafurov
Deputy Head, Oblast Health Dept., Kashkadarya, Karshi
- Elionora Jumanazarova
Deputy Head, Obstetrician/Gynaecologist Research Institute Kashkadarya, Karshi
- Salima Kayumova
Midwife, Oblast Maternity unit, Andijan
- Zarifa Khashimova
Obstetrician, Reproductive Health Center, Andijan
- Dilfuza Khudayberganova
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- Aleksey Klimashkin
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- Shakhobiddin Kuchkarov
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- Flora Islamova
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5.5 Piloting NMCR: International Consultancy, November 2007

Following two national BTN workshops, the country progressed very quickly in preparation to and implementation of NMCR approach: on 27 September 2007, the Ministry of Health endorsed Prikaz No. 428 on NMCR introduction in four pilot maternity units of Uzbekistan: Republican Perinatal Centre, Tashkent, Andijan Oblast Maternity unit, Fergana Oblast Maternity unit, Obstetric/gynaecologic Institute Karshi.

This Prikaz was presented to participants of a joint meeting of NMCR national and local coordinators, MCH department of Ministry of Health and the WHO Country Office held at Ministry of Health on 27 October 2007. During the meeting it was agreed to start NMCR implementation in the four pilot sites with technical support of WHO experts in order to evaluate and discuss funding issues with local staff and coordinators and to provide recommendations on how to improve the process.

The first NMCRs started with audit sessions in the four pilot maternity units on 4–10 November 2007 with support of WHO expert Stelian Hodorocea, assistant professor, State Medical University of Moldova, WHO Regional and country office staff Mavzhuda Babamuradova., NPO FCH, WHO Country Office, Michel Taillhades (in 3 facilities), head of WHO Country Office, and Fuad Aliev, Assistant Representative UNFPA Country Office (in one facility).

5.5.1 Objectives

The objectives of the WHO consultancy were:

- to provide technical support to audit teams in 4 pilot maternity units in BTN NMCR meetings;
- to build capacity of team leaders, and
- to provide feedback and recommendations to local teams, Ministry of Health and WHO Country Office.

5.5.2 Recommendations

During NMCR implementation phase, attention should be focused on following aspects:

1. maximal inclusion of midwives and nurses in audit teams; these health personnel have a very important role in offering the care and may provide very precious inputs to review process;
2. try to avoid direct implication of administration: teams should independently and freely analyse their performance and inform administration about main results and proposed solutions;
3. cases should be maximally selected according to agreed definitions;
4. it may be rational to review definition of haemorrhage, including in it volume of blood loss;
5. during case presentation to focus on details relevant to future discussion;
6. in each facility staff should discuss and agree upon local standards for management of obstetrical complications and management to be reviewed against agreed standards;
7. as a result of discussions general recommendations (like to improve activity of laboratory services) should be avoided: concrete and relevant solutions should be proposed and their implementation should be follow-up and monitored;
8. all efforts should be made to respect confidentiality and non-punishment: only in this case staff will discuss openly and all important aspects of management will be revealed. That is why is highly recommended to centralize only general information on number and type of near miss cases, main findings of good performance and missed opportunities, proposed solutions and recommendations and to maintain confidential names of facility and health staff.

5.5.3 What happened

Multidisciplinary teams consisting of obstetricians – gynaecologists, midwives, anaesthesiologists and nurses – participated in NMCR meetings in all facilities. Participants were staff trained in National Technical Workshop – members of local committee for NMCR and staff involved in management of the cases. Members of local committee and local coordinators assured implementation of correct methodology and progress of the process of review. Limitation of number of participants (from 5 to a maximum of about 12 in different facilities) was necessary to assure confidentiality, a constructive and positive atmosphere during audit sessions, to let staff express openly their opinions.

It was stressed that participation of administration in NMCR sessions should be assessed very carefully and individually. Staff may feel uncomfortable and restrained to provide important details and to discuss openly the management and solutions in front of the administrator. In one facility, participants mentioned that it was much easier for them to review the case with external experts and WHO representatives than during a mock session they organized a day before with the administrator. At the same time, administrators participated in two attended sessions: in one he was involved in the management of the discussed case, in the second – his role was to observe review process and his participation did not influenced quality of discussions.

It was noted that during many audit sessions, staff who presented the case went into too many details (of history, diagnosis, treatment) not directly related or not relevant to the review and presentations of cases were too long. In the future it would be necessary to focus on the most important aspect of the management: writing these details on a flipchart may facilitate the process and save the time.

Interview with women were incorporated into the near miss case review in all facilities. Interviews were done by middle level staff – midwives, nurses or physicians from reproductive health centres. Most women's opinions were not related to the management but reflected the quality of care and attitude of staff. Most were very satisfied that health personnel saved their life and relatives were allowed to participate in the care.

Only in few facilities local standards (included in the Prikaz on NMCR implementation) were used for analysis of the cases. It seemed that these standards were not discussed among professionals from the pilot maternity units.

It was stressed that agreed guidelines and standards of care are the most important prerequisites for successful implementation of BTN approaches. During audit sessions, actual care and management should be compared with existing standard and solutions should be proposed to assure use of best methods and technologies.

It was recommended to present guidelines and standards to all maternity unit staff for discussion and adaptation to local conditions, before start of NMCR. Local standards/protocols should be printed and placed in visible places to be used in case of emergencies. Supply of all necessary medications and equipment mentioned in standards should be assured.

It was observed that in most facilities teams made a very good analysis of offered care using door-to-door approach: from the moment the case becomes life-threatening till the discharge from the hospital..

One of the disadvantages of discussions was that care in many cases was not compared with standards: or standards for such situations were absent (spinal anaesthesia) or existing ones were not used. Also, the “why, but why?” approach was not applied in some facilities. This approach offers a possibility to detect root causes of the problems and to propose correct solutions to overcome them.

For success of NMCR approach it is very important to create a trusting atmosphere during sessions, to respect principles of confidentiality and non-punishment. It should be mentioned that such a positive atmosphere during NMCR is very difficult to create, but this was very successfully assured during these first audit sessions. With few exceptions, staff felt free to put questions and express their opinions; local

coordinators were very supportive and did their best to avoid accusation and promote active participation of all involved.

It was stressed many times that for ensuring this in the future, it is necessary to avoid any external interference in the audit process: no names of personnel or facility should be included in the reports sent to National coordinator or Ministry of Health. Collected information may include: number of cases, what near miss cases were discussed, main good aspects of care and missed opportunities revealed, solutions /recommendations made to improve practices. Implementation of solutions and effect on outcomes may be also monitored.

All teams made a big number of recommendations to improve care. It was pointed to the fact that some of them were very general (like to improve laboratory facilities) or not real/potentially effective (to have an ultrasound machine in ICU): such kind of recommendations should be avoided. But most proposed solutions were directly related to existing practices and their implementation would improve quality of care and avoid problems.

5.5.4 Debriefing meeting at Ministry of Health

A debriefing was held with Ministry of Health, and was attended by Klara. Yadgarova, Head of MCH Ministry of Health and member of National NMCR Committee, Dr Arifjanova D Deputy head MCH, Ministry of Health, Dr Islamova N., Deputy head MCH and Mavzhuda Babamuradova. –WHO National Professional Officer, FCH as well as the WHO expert Stelian Hodorogea. The enormous preparatory work made by Ministry of Health and National NMCR Committee for implementation of BTN approaches in Uzbekistan was mentioned: the necessary legal framework for implementation of NMCR and national guidelines on most important obstetrical complications were prepared and endorsed in due time. It was stressed that Ministry of Health will have a very important coordinating role in this process being involved in collection of data from pilot facilities on number of discussed cases, type of near miss, main deficiencies and proposed solutions and recommendations. This information may be used by Ministry of Health for development of strategies for reducing of maternal and perinatal mortalities in the country. Participants highlighted the importance of respecting the principles of confidentiality and non-punishment: medical records should not be collected by National NMCR Committee; names of facilities and health staff should not be mentioned in the reports.

5.5.5 Conclusions

Ministry of Health, National NMCR Committee and WHO Country Office did all necessary preparatory activities to start implementation of NMCR audit in Uzbekistan. Involved professionals fully understand purpose and methodology of this approach, putting the main accent on detection of missed opportunities and elaboration of solutions to improve practices, and not finding the guilty person and punishment. There was a clear understanding of future steps of pilot stage and institutionalization of BTN methodology in Uzbekistan after reporting and evaluation of the NMCR early phase implementation in 4 pilot sites.

5.6 NMCR at pilot sites: follow-up, January 2008

In accordance with recommendations of the BTN Technical Workshop (July 2007) and the WHO expert, additional follow up visits to observe NMCR and provide feed-back regarding needs and improvements, were carried out in January 2008 as follows:

- Republican Perinatal Centre, Tashkent: 18 January 2008
- Andijan Oblast Maternity unit: 22 January 2008
- Fergana Oblast Maternity unit: 23 January 2008

- Obstetrician/Gynaecologist Institute, Karshi: 29 January 2008

5.6.1 Objectives

The NMCR pilot sites were nominated by Ministry of Health Prikaz No. 428 (27 September 2007), which also set up the National NMCR Committee, with Dr Shakhda Babajanova as secretary. Dr Babajanova and Dr Mavzhuda Babamuradova, Regional Office national professional officer, attended the case review sessions in the Andijan, Fergana and Karshi pilot sites, with the objectives of:

- ensuring implementation of NMCR methodology and progress of the review process.
- providing technical support to pilot site NMCR teams during review meetings.
- providing feedback and recommendations to local teams.

5.6.2 Recommendations

The following recommendations were agreed after the follow-up visits and observations and discussions on the NMCR sessions.

1. Improve involvement of midwives into the implementation of NMCR
2. Strengthen the use of and reference to the national clinical guidelines on major obstetric complications and related protocols and standards,
3. Strengthen capacity of conducting, summarizing and presenting women's and family members interviews,
4. Improve development, implementation and analysis of feasible actions to improve quality of care related to NMCR.

5.6.3 Findings

The pilot sites initiated discussion by reviewing previous recommendations and actions taken to improve the care. Recommendations were listed, however, there was no analysis of implemented solutions or whether there had been improvement in clinical practices or multidisciplinary team work. It will be interesting to see if practices change after recommendations are implemented.

There was a special request for Regional Office assistance in training additional people to conduct interviews of the women. Debriefing meetings of the NMCR teams was carried out in each facility and feedback provided

➤ Near-miss case selection

The recommendations from previous similar activities were taken into consideration during case selection. All facilities selected cases based on NMCR definitions and national guidelines: one case of pre-eclampsia complicated by postpartum eclampsia; and three cases of haemorrhage caused by premature detachment of placenta (complicated by severe haemorrhage after C/s, solved by hysterectomy), postpartum haemorrhage caused by inversion of uterus. All facilities reported holding regular case review meetings that are duly documented (registered, recommendations drawn up and implementation monitored) when near-miss cases occur.

➤ Near-miss case presentation

Cases were presented verbally by doctors, without going into details, and key information was transcribed on to a flipchart. There has not been much improvement in the women's perspective. Interviews with women are carried out in all pilot facilities either by midlevel providers or doctors, but only in one facility was useful information incorporated into the review session – this proved to be an important issue that could change and improve practice.

Use of local standards has increased compared to the first review sessions. Maternity unit staff has also received national clinical guidelines. However, the sepsis guidelines are not used as they are considered too scientific and not appropriate for the pilot maternity units, being appropriate only for a very high level

facility or specialized clinic. As a consequence, the review teams agreed not to select sepsis cases for the time being. It was also agreed to recommend that the Ministry of Health develop clinical guidelines more appropriate for second level facilities. The clinical guidelines and standards on eclampsia and haemorrhage are used by all pilot facilities; however, it was recommended that health providers receive further training in standards to improve their knowledge and skills.

At each site, teams made analysis of good performance and missed opportunities, using a door-to-door approach. Facilitators encouraged participants to raise questions and discuss various aspects of case management. However, midwives' involvement was emphasized at only one meeting. Although facilitators at all pilot sites highlighted confidentiality when discussing information, this did not result in really open discussions.

Facilitators and participants tried to make more concrete recommendations that addressed practical issues:

- Organize evaluation of a decade of management of normal delivery following evidence-based recommendations, including the use of WHO partograph and active management of third of stage labour.
- review each record to ensure medicines were prescribed correctly to avoid unnecessary medication;
- attach the prescription list in a pocket on the bed-side of patients in emergency /intensive care;
- conduct question/answer sessions on eclampsia with midwives and doctors.

5.6.4 Participants

Review meetings were carried out by the local NMCR coordinator and the NMCR teams, trained in the methodology by the Regional Office. Participants were facility staff involved in case management, including obstetricians, anaesthesiologists, midwives and nurses. The level of midwives' involvement has improved since the first review meeting, although this is not so in all sites. Midwives need to receive encouragement from facilitators to express their opinions and increase their involvement in case reviews. In one review, the reason for low midwifery involvement was the presence of facility administration. Although administrators attended both the national and technical BTN workshops and have accepted the NMCR approach, staff does not yet feel comfortable speaking out in their presence. Thus, it was agreed with the administration that they will not be present in future sessions but will share review meeting outcomes in a later stage.

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Head Doctor of maternity unit, Andijan Oblast Maternity unit

Dilorom Asrankulova
BTN NMCR Coordinator and review team, Andijan.

Shakhida Babajanova
National NMCR Coordinator, Uzbekistan

Mavzhuda Babamuradova
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Eleonora Jumanazarova
NMCR Coordinator and review team, Karshi

Muyassar Nosirova
NMCR Coordinator and review team, Fergana

Rustam Yuldashev
Head of clinic, OB/GYN Institute, Karshi

5.7 NMCR: workshop on interviewing women, April 2008

In line with the expert's and participants' recommendations from the NMCR pilot sessions, the WHO Regional office for Europe organized a workshop on how to interview women in Tashkent, 17–18 April 2008. Participants were 10 members of the teams implementing NMCR in pilot maternity units. The workshop was conducted using interactive educational methods, and led by Nodira H. Azimova, Chairwoman of the Sociology Centre Sharh va Tavsiya.

The workshop addressed the following issues:

1. the purposes and aims of interview;
2. steps for carrying out interview and analysis;
3. how to prepare the guide for the interview;
4. types of questions;
5. preparation of the guide for interviews; (group work);
6. discussion and presentation of sections of the guide for interview;
7. ethical guidelines of interviewer;
8. how to take field notes;
9. role plays (interviewer and respondent);
10. practical issues when carrying out an interview;
11. guidelines for writing the transcript;
12. practice in writing transcript by participants;
13. analysis of interview data;
14. practical work on analysis of data;
15. writing of report;
16. discussions, questions and answers.

5.7.1 Recommendations

The participants developed the following recommendations:

- to conduct monitoring of the NMCR sessions twice a year, using the guide prepared during this workshop;
- to conduct additional training reserved specifically for data analysis, report writing and practical utilization of the materials collected;
- to consider interview not only of patients, but also of relatives of the woman;
- to give dictaphones to the interviewers;
- to conduct training on communication skills for professionals involved in perinatal care.

5.7.2 What happened

At the beginning of training participants brainstormed on the difficulties of carrying out interviews. Participants noted that the most difficult aspect for them was the lack of a guide, winning women's trust and persuade them to talk, as well as analysing the information received.

Participants then defined the purpose of the interview and the tasks of the interviewer

➤ **Goal of Interview: Elicit positive and negative side of organization and provision of health care.**

The Interviewer's tasks were:

- to determine condition of a woman before pregnancy
- to learn about of the women's pregnancy
- to determine her state of health during hospitalization

- to describe the process of health care provision in the hospital (level of health care provision, labour, delivery, etc.)
- to get information about the complications from the woman point of view,
- to determine her satisfaction regarding the health care provision,
- to gather her recommendations to other women, families, and medical personnel

Based on the above defined tasks, participants working in groups, developed a guide for conducting the interview.

Practical exercises were conducted. on how to design the guide, the related questions, the data entry, and role plays (the interviewer and the respondent)

Participants showed huge interest to training, and especially to practical exercises, which they can now apply in their everyday activities. Many expressed desire to participate in further training to strengthen practical skills in carrying out of interview and writing of the related report for the NMCR sessions.

5.7.3 Evaluation by participants

The participants evaluated the training as positive experience and stated their wishes. They liked:

- (1) simple clear language that was used to carry out the training
- (2) scrupulous explanations
- (3) ability to obtain new skills that can be applied in practical work
- (4) developed questionnaire for interview.

5.7.4 Guide for interviewing women after childbirth

Condition of the woman up to pregnancy: 5 minutes

1. Tell about yourself

Name, education, employment, etc. How many children do you have what are their names.
Probe in what family she grew until marriage, whether she had medical treatment before marriage, what kind, and how did it go?

Pregnancy: 10 minutes.

2. Now, shall we talk about your last pregnancy?

How did you become pregnant (whether it was planned or unwanted?)
When, where and how did you register your pregnancy?
What services have been provided during this period by in the medical facility?
How did pregnancy evolve, did you have any illness?, if yes where and how was it treated?

State of health at the time of hospitalization: 5 minutes.

3. When and why you have been hospitalized

Where and who has taken you to the hospital? At what time of the day? Were there any inconveniences at the time of hospitalization?
What did you take with you to the hospital?

What happened in the hospital (who provided which services and what kind of services): 30 minutes.

4. Tell us in more detail about the services provided to you in the medical facility.

Who was the first person you met in the maternity hospital, what service she/he provided to you?
If respondent was in pre-patrimonial department, ask what services were given to her,
Why it was necessary to be hospitalized to a maternity hospital before terms?
What services have been rendered during delivery? How did delivery proceed? Who from the members of her family was present during delivery and why?

What happened after delivery?

What do the woman think were the reasons of such course of delivery (probe in problems with health, family situation or quality of services given by medical staff)

Level of satisfaction of health service and recommendations to other women, families, and medical personnel: 5 minutes

5. Your recommendations and wishes concerning improvement of quality of services in medical facilities rendering services during pregnancy and delivery. Probe.

Attitude of medical staff, availability of equipment, medicines, etc.

5.8 BTN review and scaling up, May 2008

As requested by Ministry of Health and recommended in previous workshops this review of implementation of maternal morbidity case reviews using WHO BTN framework (12–23 May 2008) included visits of international and national team of experts to the four pilot maternity units, to observe NMCR sessions, discuss and provide feedback and recommendations. During a two-day workshop achievement, challenges, and plans for next steps were discussed, with involvement of Ministry of Health and partners. Findings and recommendations were discussed with Ministry of Health and presented to partners, which identified different areas for support.

Under the leadership of Ministry of Health, and guidance from MPS WHO, Asian Development Bank will support NMCR in selected maternity units (as part of quality improvement activities), UNFPA will support CEMD at national level, UNICEF will support training and follow-up on Effective Perinatal Care, and other partner will contribute accordingly. All partners are planning to use WHO strategic approach for making pregnancy safer, WHO training, follow-up and assessment tools, and to use WHO experts. In particular UNICEF discussed and sought support from WHO in order to share technical responsibility regarding the EU project Improvement of Mother and Child Health Services in Uzbekistan, Tacis Action programme 2006 for central Asia.

5.8.1 Recommendations

The participants recommended:

- continuing implementation of selected BTN approaches and ensuring its documentation;
- finalizing the agreement among partners to provide evaluation before and after further interventions, using the tool for assessing quality of hospital care for mothers and newborn babies developed by the WHO Regional Office for Europe.

➤ NMCR

- Broaden the selection of cases of NM, including prolonged/obstructed labour as an additional obstetric complication to be reviewed. To ensure evidence-based reviews of these cases, a national protocol for management of obstructed labour should be finalized by the end of this year.
- Organize a national consensus conference on management of sepsis/septic shock should to facilitate use of national guidelines for review of these cases and develop local standards.
- Provide additional training on communication skills and women interview to staff from pilot facilities.
- Organize an experience sharing visit to Moldova.
- Ensure documentation of NMCRs: include summary of NMCR outcomes in pilot maternity units for the last year and.
- Provide feed-back to professionals at national level, including organization of a national conference with participation of teams from different maternity units to present achievements and experience.
- Start scaling up NMCR by conducting NMCR orientation meeting for the regions that will choose to implement NMCR in 2009.
- Conduct EPC training courses in future pilot maternity units as one of the main prerequisites for successful implementation of good quality NMCR audit.

➤ CEMD

- Establish a National Committee to plan the mechanism for CEMD and develop forms based on
- existing report forms from other countries.

- Involve key stakeholders from Government, professional organizations, the health care system and community based groups to act as advocates for change.
- Identify an independent coordinator for each region, who should be a well-respected individual appointed by the National Committee and the MCH department of the Ministry of Health.
- Conduct a national orientation meeting to present and discuss the action plan for implementing the CEMD. This should involve Ministry of Health officials, professionals and partners, and should be in December 2008 or January 2009.
- Organize training for National Committee members and regional coordinators.
- Collect case of maternal deaths and analyse the findings for at least one year, after which the National Committee will decide the time schedule for producing recommendations and report depending on the number of cases.
- Technical support from WHO and partners will be needed.
- Findings and recommendations developed by the Committee will be shared with key stakeholders – policy-makers, community representatives, professional associations and partners.
- The impact of the recommendations will be evaluated and procedures will be modified and refined as appropriate.

5.8.2 Visit to pilot maternity units

These included observing audit sessions where near miss cases reviews were performed by local teams, and observing and discussing maternity unit practices and clinical management of cases. The visits took place Wednesday 14 May to the Tashkent Republican Centre, 15 May Andijan Oblast Maternity unit, 16 May Fergana Oblast Maternity unit and 22 May Obandgyn Institute Karshi. Dr Klara Yadgaroga Ministry of Health, joined the team of experts in Andijan and Fergana, and Dr Michel Tailhades, Head, WHO Country Office, Uzbekistan joined the team in Karshi.

The visit to maternity units included a quick assessment of the achievements and challenges in implementing evidence-based practices for maternal and neonatal care by the team of experts. Substantial progress was made thanks to updated policy and legal framework and significant investment in training and follow up by Ministry of Health, WHO and partners in past years. A series of partners' reports and assessments of quality of care document these achievements. A final set of three clinical guidelines for major obstetric complications were developed and reviewed together with a WHO expert, endorsed and disseminated by Ministry of Health by 2007.

The use of a common assessment tool before further interventions (EPC training courses, maternal audit) would ensure appropriate evaluation pre- and post-interventions. In order to achieve this, it was discussed with Ministry of Health and partners to consider using the tool for assessing quality of maternal and neonatal health care at hospital level developed by the WHO Regional Office for Europe.

➤ NMCR sessions

The team of international and national experts visited the 4 pilot maternity units, and observed a “near-miss case review” session in each, providing feed-back at the end of the session.

In all facilities audit sessions were attended by multidisciplinary teams that included physicians (obstetricians, anaesthesiologists, sometimes neonatologists) and middle level staff – midwives and nurses, mostly from obstetrical ICU. Most of them were involved in the care of women with severe complications which cases were discussed during the meeting; participants at the National workshop being trained in NMCR methodology acted as facilitators.

In each centre there was constructive and free-flowing discussion about the case and practical recommendations were made for improving care. This was very impressive. It was particularly impressive to see highly practical solutions emerging from discussion, to improve care at no extra cost. These included admitting high risk patients to the hospital's best equipped unit.

Midwives and nurses participated in all audit sessions, but their involvement was different: in most cases midwives and nurses provided very important information and inputs for the discussions, while in others they were reluctant or not encouraged to intervene and participate. Middle level staff may offer very important details of the management process that can be omitted by doctors or considered not relevant. That is why it is recommended to invite middle staff to audit sessions and to encourage them to present opinions and participate in discussions.

Administrators should play an important role in implementation of solutions proposed by the teams after NMCRs. At the same time, their participation may be stressful to staff and to block open discussions. Nevertheless, in some maternity units, administrators were invited to audit sessions and personnel could freely present their opinions not being afraid to be blamed or punished. In other, administrators did not participate and staff considered this an important precondition of success of audit sessions. A good example was observed in one of the facilities when administrator was invited after the case was discussed and was informed about main missed opportunities and recommendations made by audit team. Some of the recommendations were related to organization of care and solutions could be implemented only by administrator.

Only open discussions and positive attitude may assure that staff will offer information about all details of care that will help to identify problems and to develop the recommendations for improvement. Before start of each session, local coordinators mentioned that the purpose of audit is to reveal areas for improvement and to improve quality of care, and not to find guilty people. In most cases, teams succeeded to avoid blame and accusation during audit sessions, to create an atmosphere of trust between participants that permitted to discuss freely, in details management of patient and to look for good aspects of care and missed opportunities and not for guilty people. Also it was important that focus was on their performance and not on what was done wrong before admission.

In all facilities, teams followed the methodology of NMCR audit: started with analysis of how solutions and recommendations made during previous meetings were implemented and continued with short presentation of the analysed case. In most cases, presentation was very short and concise, showing the most relevant details of the management. Sometimes presenters of cases went into too many details and it took too much time. During follow, experts mentioned that review meetings are attended mostly by those involved in the care, and it is not necessary to have a very detailed case presentation.

After case presentation, participants made a door to door analysis of management. Opinions of health workers involved in the management of case were asked and discussed. Good performances were noted, underlined and documented in all discussed cases: it is very important that good examples are shared with all staff to assure an effective management in the future

All facilities did analysis in a very structured mode and showed a good capacity to find deficiencies and missed opportunities. Actual management was compared with existing national guidelines and local standards. Capacity to reveal deficiencies and to compare management with standards was much higher in facilities which staff was trained in EPC trainings and successfully implemented evidence-based technologies in everyday practice.

Each group included a social worker, who had interviewed the patient after delivery. This interview produced very useful information, particularly about the woman's perception of her care. It was concerning, however, that in some cases this information was clinically important but had not been included in the initial presentation of the case.

Women (relatives) opinion about the quality of care was presented during all audit sessions. Staff found out very important information and answers why patients, for example, did not tell about symptoms of severe pre-eclampsia (she was afraid of Caesarean section seeing a women death in another facility) or why woman did not seek care having symptoms of gestosis (did not want her preterm pregnancy being interrupted). It was noted that in many instances provided information did not add new details of the management, but it is important for staff to know women's opinion: this knowledge will influence future

care. Also it is important to react to women's opinions and propose solutions based on them: it was not always done during attended NMCR sessions.

Quality of interviews in many cases was very low, resembling collection of medical history, and not of the opinion of women about care. Interviewers noted that they have little skills in doing interview and asked about additional training in this.

Participants at NMCR audit sessions showed a very good capacity to propose real and effective solutions for improvement of quality of care: related to organization – to develop and implement a standard of monitoring of woman after caesarean section, to teach nurses in ICU to palpate and massage uterus; related to supplies – to include Nifedipine in the list of essential drugs for facility of to put a set for spinal analgesia in the emergency box for eclampsia. There were revealed many problems common to all health care system: closing of maternity units for disinfection every year as required by Sanepid regulations that leads to overcrowded facilities and inadequate level of care; lack of midwives, especially at night time (one midwife attending 4–5 and more labouring women).

One the most important achievement of first audit sessions is that staff from all facilities concluded that standards/guidelines should be followed and recommendation to develop new standards/protocols, for more conditions and complications were made as a result of NMCR audit meetings. In all facilities it was noted a very good quality documentation of audit session and proposed solutions in specially designed forms and protocols.

After each audit session, experts and representative of Ministry of Health presented to staff feedback on quality and methodology of discussions and offered recommendation how to improve NMCR audit process.

➤ **Comment on clinical issues arising from observing the sessions**

International experts came out with the following comments/recommendations on the clinical management of the cases.

- History taking needs improvement, so that all relevant factors are taken into consideration on first admission. We had the impression that the woman could have given useful information but was not asked about it.
- Communication between polyclinic, peripheral hospital and tertiary centre needs to be improved. The hospital should be notified about women with pre-eclampsia who may require early delivery.
- The introduction of patient-held records (“home-based maternal record”) should be initiated at national level.
- If antenatal records are not available on admission a full history must be taken. If enough staff is not available to do this, staff numbers will need to be increased.
- It may be helpful to focus on pre-eclampsia, a common complication which carries risks to both mother and baby. This focus would therefore benefit both maternal and perinatal mortality rates. Management requires cooperation between community, peripheral hospital and tertiary centre. Regional and national protocols are essential and examples from other countries are available for translation.
- In all three facilities the “near miss” chosen for discussion was a case of pre-eclampsia or eclampsia. This is not surprising because the condition is common in all countries and indeed used to be the leading cause of maternal death in the United Kingdom. It was concerning, however, that in each case hypertension had already been noted elsewhere but this had not been communicated the staff in the centre where the woman was delivered.

5.9 BTN review and scaling up workshop, May 2008

A workshop to share lessons learned from the first 6 months of piloting of NMCRs was held in Tashkent on 19–20 May 2008, to discuss dissemination of this approach, and to plan introduction of CEMD.

Outcomes were the:

- identification of achievements and gaps, and possible solutions for the implementation of BTN approaches.
- recommendations for further effective implementation of BTN at national level, including joint planning of future activities.
- building documentation of examples of the BTN pilot and lessons learned for implementation in other countries

5.9.1 Objectives

The specific objectives of the workshop were:

- to present and discuss experiences, challenges and lessons learned during the initial implementation of NMCR;
- to provide technical inputs from international experts in order to strengthen and implementation at national level;
- to document progress in order to disseminate results;
- to reinforce partnership with key stakeholders and international and national organizations;
- to provide technical support and discuss challenges and requirements for introduction of CEMD approach;
- to identify areas in which further support by WHO and partners will be a key, in order to scale-up implementation and monitoring of interventions.

5.9.2 What happened

The workshop was facilitated by WHO regional experts James Drife and Stelian Hodorocea, the Uzbek anthropologist Nodira Azimova, Mavzhuda Babamuradova WHO National Professional Officer for FCH and Alberta Bacci WHO, MPS regional coordinator.

The workshop was opened by Dr Klara Yagdarova, Ministry of Health: she welcomed the initiative also on behalf of Deputy Minister Professor Asomiddin Kamilov, and appreciated the timely response from WHO to the country request of technical support. Dr Yagdarova mentioned that this Workshop in one of the important steps for implementation of BTN approaches in Uzbekistan that will allow participants to exchange first experience, to analyse with WHO experts successes and challenges and to plan future activities for scaling up of NMCR and starting CEMD.

The MPS regional coordinator presented challenges and way forward in the European Region and specific challenges, activities implemented as well as results in Uzbekistan with main focus on the experience in the field of maternal mortality and morbidity case review.

The Russian version of the document *Improving maternal and perinatal health – European strategic approach for making pregnancy safer* was made available to participants, in order to provide general framework and guidance.¹²

During following group work participants identified key areas to be strengthened for continuing NMCR, especially related to communication issues, and need to share and disseminate existing good quality clinical protocols (algorithms, based on national clinical guidelines) for major obstetric complications, among different maternity units.

¹² <http://www.euro.who.int/pregnancy>

The final session was dedicated to outline a plan of action for next steps, which included capacity building in selected areas, and plans to disseminate and scale up NMCRs to other maternity units. Full report of the review and of the workshop, including recommendations, is in preparation.

Media interest was good with journalist interviews of participants on issues of improving maternal health.

➤ **NMCR at facility level**

Dr Klara Yadgarova presented main steps of preparation and implementation of NMCR in the country and the Ministry of Health order N428 on introduction of NMCR. She mentioned that this Prikaz approved National NMCR Committee, TOR mandate of NMCR Committee and coordinators, regulations on NMCR audit meetings in facilities and minutes including recommendations and reporting on NMCR audit meetings. It also identifies criteria of near-miss case review; set of local standards on management of most frequent obstetrical complications: obstructed labour, pre-eclampsia/eclampsia, obstetrical haemorrhages and sepsis; procedures of carrying out of NMCR meetings, documentations/regulations and reporting of the case review meeting.

Four pilot maternity units identified to implement NMCR: Republican Perinatal Centre (RPC), Karshi Filial of Obstetrician/Gynaecologist Institute, Andijan and Fergana oblast maternity units presented their experience, achievements and challenges after first 6 months of use of this approach. They compared how cases of severe maternal morbidity were analysed before and mentioned the advantages of NMCR audit: multidisciplinary approach with participation of midwives and nurses, atmosphere of non punishment and accusation, focus on missed opportunities and not on guilty persons, incorporation of the opinion of women and families, possibility to reveal real causes of deficiencies and propose achievable solutions to improve practices and prevent such complications in the future.

The most important achievements were considered: better communication among staff, progress from very general recommendations (to improve care..., to stress importance...) to very practical ones (implement protocol on postpartum monitoring of women, to train nurses from ICU to palpate uterus, to have in emergency set for pre-eclampsia/eclampsia equipment for spinal analgesia etc), better skills to reveal most important missed opportunities and propose solutions. Almost all facilities mentioned that staff started to compare management with national guidelines and with agreed in the facility standards of care and to realize that care according to protocols/standards would assure the best outcomes.

Among challenges of first steps of implementation of NMCR were noted: absence of trust between staff, especially of physicians to midwives and nurses, lack of interview skills, fear of punishment and accusation, difficulties to initiate and organize audit sessions.

Dr Stelian Hodorocea presented point of view of facilitators on quality of NMCR audit sessions in 3 pilot maternity units. He mentioned that all facilities conducted meetings respecting NMCR audit methodology: started with analysis on how prior recommendations and solutions were implemented, followed by a short presentation of the case, step by step analysis of what was done well and what were deficiencies of care, incorporation of women and relatives opinion, very detailed review of real causes of deficiencies using “why but why” approach and proposal of solutions to overcome them and improve quality of care. All facilities documented very well audit sessions and implementation of proposed solutions. Recommendation were done how to improve quality of NMCR in pilot facilities: to save time by providing a very concise description of case and interview with women and to follow strictly methodology of audit; to use specific standards for management of severe complication and to compare actual conduct of the case with them, to do a more deep “why but why” analysis of revealed missed opportunities to find real causes, to involve more actively midwives and nurses in discussions, to develop skills for proposing real, achievable and effective solutions and recommendations.

A session on interviewing women was presented by Nodira Azimova. This presentation began by explaining that unstructured interviews are well recognized as a method of qualitative research, which aims to answer questions such as “Who? What? Why? Where? When? and How?” rather than the

question “How many?”. Interviews are part of fieldwork, which produces new data from primary sources, and starts from a broad topic rather than a detailed hypothesis. Researchers must be well prepared and open to new information, and should not focus on preconceptions, which may turn out to be wrong. An interview is a face to face conversation where the interviewer tries to get information or opinions from the respondent. Data are collected in the form of field notes, which require much self-discipline from the interviewer, who must retain information and write notes by heart immediately after the interview.

Although the unstructured interview resembles a friendly conversation, with no questionnaire or order of questions, it is underpinned by clear principles. All questions must be relevant and should be formulated to be consistent with the respondent’s experience. The interviewer should uncover the real meaning of answers given by the respondent, and not make assumptions. Respondents should be asked to elaborate, explain and give examples. The goal of the interview in the context of NMCR is to elicit positive and negative aspects of the organization and provision of health care. The tasks are to learn about the condition of the woman before and during the pregnancy and when she was admitted to hospital, to describe the health care she received, and any incidents, from her point of view, to determine her level of satisfaction and make recommendations to other women, families and medical personnel. The interviewer should also talk to relatives of the woman, and should use descriptive, structured and “contrast” questions to ensure full understanding.

Regarding the details of the interview process, everything is important, including the timing of the interview, the appearance of the interviewer and most importantly, the art of maintaining a dialogue to encourage the respondent to provide full answers. There are “Do’s”, such as “Always speak clearly and always be neutral” and there are “Don’ts” such as “Never give long explanations, never allow another person to answer instead of the respondent, and never hurry or speak condescendingly”. Finally, reports on interviews should have a structure, consisting of an introduction, methodology, findings, conclusions and recommendations (if any).

This presentation was an analysis of the required specialized skill needed for conducting interviews, which can often appear deceptively simple. The interviews as presently conducted for the NMCR are more focussed on taking what might be regarded as a full medical history, and are not yet oriented towards eliciting a woman’s opinion about what happened and the care she received. Participants agreed that further technical support in this area is needed.

➤ **CEMD at national level**

The session on CEMD began with a presentation from Professor Drife, which explained the current problems relating to maternal deaths in the United Kingdom. The maternal mortality rate in the United Kingdom is no longer falling and has risen slightly in recent years, mainly (but not entirely) due to an increase in indirect deaths. Causative factors include high rates of smoking and obesity among women in the United Kingdom, increased immigration (including asylum seekers) and most importantly, failure to target care towards the poorest sections of society, which have the highest rates of maternal mortality. The purpose of this presentation was to emphasize that the problems of maternal mortality are universal and no country has all the answers to these problems. There then followed a presentation from the Ministry of Health about maternal mortality in Uzbekistan, which gave an honest appraisal of the problems to be tackled in this country.

Participants then began group work. Initially it had been felt that this would include aspects such as problems already identified with setting up a CEMD and how the experience of doing this in Uzbekistan could be used by other countries embarking on this work. However, it was clear that progress in setting up the CEMD has not yet reached the point where these lessons can be discussed, and the group work therefore focussed on the general model for implementing CEMDs at a national level, with discussion aimed at checking whether this model is appropriate for Uzbekistan. During discussion it became clear that participants felt strongly that the CEMD model is indeed appropriate and that they are impatient for progress in setting it up.

A potential problem is the link between a CEMD and the present system of Ministry of Health case reviews. Participants agreed that the current system will have to continue. It is designed to be rapid, and

therefore in each case, after investigation under the current Ministry of Health system is complete, data collection for the new CEMD system can begin. This information will be collected under guarantee of anonymity. The CEMD will be run by a National Committee and in each region a local coordinator will be appointed. This could be a doctor who is involved in management and should be a well-respected individual. The process of appointment of local coordinators will be organized by the National Committee and the MCH department of the Ministry of Health.

Participants discussed the identification and notification of cases. They agreed that the manager of the facility will notify the local coordinator about a case of maternal death, and the secretary of the National Committee will also be informed. In order to ensure that cases are not missed (i.e. overlooked or hidden) there must be a guarantee that information given to the CEMD will not result in punishment. Information about the CEMD must be widely publicized, so that anyone can submit information about a maternal death – including those which occur outside health care facilities.

The design of information forms was discussed and participants agreed that new forms are necessary. Current forms include details of the place and names of individuals, are not confidential, and do not include information from those involved with the case. Participants were keen to develop a new, unified questionnaire. In each case of maternal death the questionnaire will be sent out by the local coordinator, filled in by all involved health care workers and by relatives of the deceased woman, and collected and checked by the local coordinator.

Confidentiality must be ensured and this means that when the questionnaire form is sent to the National Committee it must contain no names – of health care workers or the patient – and no information about where the death occurred. The local coordinator (who will know this information) has to be able to maintain confidentiality and must have the right to refuse requests – even official requests – to reveal this confidential information. Participants agreed that anonymization of forms can be achieved if code numbers are used for cases, and coordinators receive a guarantee that confidentiality will be respected.

The information gathered will be assessed by the National Committee, which will consist of health care workers from different specialties and will include a social worker. Existing standards will be used in the assessment of cases but new standards will have to be developed.

In discussing the next steps required for establishment of a CEMD, participants discussed in detail the roles of the National Committee. These will include planning the mechanism of the Enquiry and designing the anonymous report form, which can be adapted from existing forms used in other countries. The Committee will ensure the involvement of key stakeholders from Government, health care systems, professional organizations and community groups, who can act as advocates for change. Participants discussed the possibility of piloting the CEMD system in selected areas and extending it to regional or national levels. The Committee will review and analyse the cases on an ongoing basis, interpret the results and prepare a report with recommendations for action.

Findings and recommendations will be shared with key stakeholders, including policy-makers, community representatives, professional associations, donors and nongovernmental organizations. The Committee's report will then be disseminated through professional journals and events, women's groups and the media. After this the process of the Enquiry will be evaluated, including the uptake and impact of its recommendations and procedure will be modified as appropriate.

All forms, and the time frame for reporting and completion will be approved by the Ministry of Health through a new prikaz.

Participants discussed the time frame for the next steps in setting up a CEMD. The external advisers indicated that some proposals were unrealistic but participants were very keen to make progress and the ambitious time frame set out below reflects their enthusiasm. An internal review of the progress after one year from starting CEMD is recommended.

Table 19. CEMD: next steps and timeline

Steps	Targets dates
Establishing a National Committee	August – October 2008
Appointment of Regional Coordinators	November 2008
Orientation meeting on CEMD	December 2008 or January 2009
Training for Committee Members and Regional Coordinators	December 2008 – January 2009
After one year of collection of cases and analysis the National Committee will set dates for: <ul style="list-style-type: none"> • completion of reports on cases • national assessment, collation and analysis of findings, preparation of recommendations for action • meeting to disseminate findings and recommendations • evaluation and refinement 	Date to be set after one year from the start of CEMD

Facilitators will be needed for the orientation meeting of the National Committee and for training the Committee and the regional coordinators. Participants agreed that, following the pilot experience in Moldova, when the Committee begins assessing its first cases it will need the help of a strong facilitator.

5.9.3 Outcome of group work

➤ Group work on CEMD

As an additional refinement of the recommendations developed during the national BTN workshop held in 2005 the following questions were discussed regarding the implementation of CEMDs at the national level

Links with present Ministry of Health system of case reviews:

The cases will be investigated in current system on the Maternal Death Cases Investigation Committee. After “investigation”, “new” information will be collected. All information will be anonymous and will use the CEMD approach. The local coordinator may be, for example, a doctor from the management department.

Identifying and notifying cases

- a. Who initiates the process?
Manager of facility will inform local coordinator about maternal death case
- b. To who are cases notified?
Secretary of CEMD committee
- c. How do you ensure that cases are not missed?
 - 1) Guarantee fully there is no punishment: a moratorium on punishment.
 - 2) Provide wide information about CEMD committee, where every one can submit information about maternal death.

Design of information forms

- a. Is the current form satisfactory?
No. It has information about place, participants, and it isn't confidential. No information from participants. We should develop new, unified questionnaire
- b. Who sends it out?
Local coordinator
- c. Who fills it in?
All involved health care workers + relatives
- d. WHO Country Office collects it?
Local coordinator

- e. What cross-checking is done?
Local coordinator

Ensuring confidentiality – anonymization

- a. What does “confidentiality” mean?
No name (health care workers, patient), no place. Coordinator will be guaranty of confidentiality and he will have the right to refuse requests of confidential information
- b. Can anonymization be achieved?
Yes, if use code and provide guaranty to local coordinators

Analysing the results

- a. Who assesses the cases?
Committee consisting of health care workers of different specialties and a social worker
- b. What quality controls are used (standards and guidelines against which to judge care)?
We have standards, but we need to develop new ones.

Regarding making recommendations, National Committee, disseminating results, publication, media involvement, participants referred to the outcome of group work on the same topics achieved during the national workshop on BTN held in March 2007.

➤ Group work on NMCR

Next steps in introducing NMCR

Table 20. NMCR: next steps and timeline

Activities	Timeline
Enlarge the selection of NM cases, and include prolonged labour	2008 (by the end of 2008) will be ready protocol on prolonged labour
Summarize NMCR outcomes for the last year and organize conference with participation of teams from another facilities	November 2008
Publishing the materials of workshop.	End of 2008, beginning of 2009
“Communications skills” training for regions	August 2008
Developing materials for orientation meeting	December 2008, January 2009
Conducting NMCR orientation meeting for the regions, with WHO expert participation	February 2009

Training

Table 21. Capacity building activities and timeline

Activities	Timeline
Consensus conference on sepsis	September, 2008
Experience sharing visit to Moldova	October, 2008
Conducting “Effective Perinatal Care” training for pilots	2009

Staffing and financial resources

- Financial resources for conferences, trainings, workshops and visit to Moldova
- Equipment (computers, printers, modems, consumables, Xerox, internet)
- Manpower and financial resources for meetings in pilots

5.9.4 Participants

The participants comprised: professionals involved in the pilot implementation, Ministry of Health representatives, key stakeholders, staff of United Nations agencies, other partners: bilateral agencies, nongovernmental organizations and professional associations and representatives from other sectors such as the social and judiciary sector.

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