EXPANDING BEYOND THE NUMBERS

Maternal Mortality and Morbidity Case Reviews

Inter-country Workshop for South Eastern Europe

Skopje, the Former Yugoslav Republic of Macedonia
29 September – 2 October, 2014

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1. Executive Summary

Pregnancy is a normal, healthy state which most women aspire to at some point in their lives. Yet this normal, life-affirming process carries with it serious risks of death and disability. Every year, many women suffer pregnancy-related complications and a number die. Linked to this is the burden of perinatal mortality and morbidity. Currently it is estimated that around 280,000 mothers die worldwide annually with 3 million stillbirths and 3 million perinatal deaths in the first week of life. Many of these are linked to complications in their mother's pregnancy or childbirth. Further, WHO estimate 20 million women suffer from severe complication of pregnancy, many of which have long lasting consequences. Most of these deaths and complications can be averted with basic and effective low-cost interventions, even where resources are limited. In order to do so, the right kind of information is needed upon which to base actions. Beyond the numbers (BTN) presents a number of approaches that go from counting the number of deaths to developing an understanding of why these occur and how they can be avoided.

The first South Eastern Europe BTN workshop was held in Skopje, Macedonia, from 29th September to 2nd October 2014, supported by UNFPA, with the participation of delegates from Albania, Armenia, Azerbaijan, Bosnia Herzegovina, Georgia, Kosovo, the Former Yugoslav Republic of Macedonia and Serbia.

The concepts of BTN were introduced, with an overview of the rationale behind reviewing maternal deaths and severe complications, information on different BTN approaches provided, examples from other countries presented, and how BTN can be used as a tool for improving clinical management and outcomes of care discussed. The purpose of BTN is aimed at helping countries introduce, at national and/or facility level, any one of the BTN approaches, to acquire experience, develop general recommendations for saving maternal and newborn lives, and in this manner reducing the burden of severe maternal and neonatal morbidity. During working group sessions, the country teams developed drafts for national action plans. All countries wished to implement one or more BTN approaches, but with different timelines, due to need to achieve political and professional commitment. The development/update, official endorsement and dissemination of evidence based clinical guidelines was confirmed to be a key requisite for the introduction of BTN approaches, in line with recommendations of previous BTN regional workshops and experience and reviews of its implementation in countries in this region. This is a basis for ensuring case reviews and enquiries are based on agreed updated reference standards and not on current practices or opinions. The first step for countries new to the process was generally considered the introduction of facility based near miss reviews at facility level. Regarding national level, some countries, including those who already adopted the confidential enquiry into maternal death approach, proposed that this could be strengthened by adding cases of severe maternal morbidity. All approaches need to be piloted and then moved out more widely or nationally, when quality of audit is ensured. Some countries wanted to assess quality of care and disseminate Effective Perinatal Care (EPC) training using WHO tools. Sustained long term technical and financial support, including international expertise, are needed from UN and development partners.

The Workshop was followed by UNFPA consultation with participation of UNFPA EECARO and UNFPA CO staff to discuss and agree next steps of the initiative expansion in the region.

2. Recommendations

Each of the eight countries which participated in this workshop had had varying prior knowledge of Beyond the Numbers; for some this workshop was their first introduction to its philosophy, principles and methodologies while others were involved at different degrees in previous workshops, and introduction and/or implementation of BTN approaches.

As this was an introductory workshop, it was not expected that participating countries would develop complete and final plans of action, but rather take away a deeper knowledge and understanding of how the use of BTN methodologies could assist in improving the quality of maternal and newborn health care and reduce deaths and disabilities. Although they discussed initial ideas for their countries, and made preliminary suggestions, all of the recommendations which emerged from this initial workshop were broad brush and will need further detailed discussion at country level through workshops involving key stakeholders, prior to adoption, finalization of plans, and implementation.

It was stressed that although national *BTN* approaches, such as confidential enquiries into maternal deaths or severe maternal morbidity, are extremely helpful in improving the quality of care for mothers and babies, in some countries the point where they can be easily introduced had not been reached. On the other hand all could start with piloting near miss case reviews at facility level. All methodologies should be piloted first, and their quality reviewed, before widespread and successful implementation.

It was agreed that clinical guidelines are invaluable in helping address issues of evidence based quality of care, and are a key requisite to the introduction of BTN, as a basis for the evaluation of cases during BTN reviews and enquiries. In fact BTN demonstrated a significant influence in speeding up the development and official endorsement of updated key clinical guidelines in most countries, as this was considered a pre-requisite before starting the introduction of the new approaches. The use of the updated guidelines during reviews and enquiries provided additional strength to their application in clinical practice.

Reviews and reports demonstrated that knowledge and implementation of Effective Perinatal Care, show positive effects on the correct adoption of BTN approaches.

In addition the existence and engagement of driving forces at national/district and institutional level and support from MoH and other key institutions/organizations (professional societies, QI departments and programmes, among others) are a key requirement for BTN introduction.

Commitment for coordinated, sustained and long term support by UN and development partners, which need to help preparatory steps, sensitization and advocacy activities, national meetings, piloting of selected approach(es), reviews, as well as scaling up of activities. Ensuring international expertise at key steps, such as national and technical workshops, reviews of the quality of audit, reports' writing and documentation, is a needed component of this contribution.

BTN introduces new approaches which need new knowledge and skills, as well as changes in practice and attitude of health care providers and managers. This cannot be achieved only by formal training: they involve substantial learning by doing, and, especially initially, experts' supervision, in order to avoid coming back of 'old ways', including 'eminence based medicine', blame and punishment.

The next step is for similar information and advocacy workshops to be held at country level in order to broaden the basis of health professionals, managers and decision makers who can support, and participate to, BTN activities. Further step will involve BTN technical workshops at country level during which more detailed methodologies and tools will be developed.

It was suggested that the participating counties be split into two smaller groups for the next round of workshops, as they would then better address those who were already implementing some methodologies and for those whom planning is still at initial level.

As the number of international experts is still very limited, their involvement should be planned at least 6 months in advance. UNFPA should consider contracting a technical institution at regional level and train additional trainers/experts for up scaling and speeding up the implementation of the methodology.

The rule of Ps

The overall consensus of the meeting can be defined as the rule of "P's"; i.e., the introduction of any technique for maternal and perinatal death reviews should be:

1. **Placed within a wider, comprehensive, programme for quality improvement for maternal and newborn care**

As a key part, but not the only component of a wider national programme for maternal and perinatal health improvement.

2. **Planned and well prepared**

Some counties will need to undertake more preparatory work before introducing any BTN approaches, such as development/adaptation of updated key clinical guidelines, or achieving professional or political support and address concerns by health professionals, managers and decision makers. Starting BTN introduction before key elements are in place can be counterproductive.

3. **Practical**

Using a BTN approach (among the five included in the BTN manual) that is realistic and feasible for a country's specific circumstances. Country representatives all agreed that it was important to "start small" and to learn and refine programmes based on experience.

4. Piloted

As a basis for good practice, country representatives agreed that, whatever the approach chosen, it should first be piloted so that tools, methods, practice and attitude, can be refined in the light of experience and any problems or difficulties that may emerge addressed. Pilots should be documented, reviewed and time limited.

5. Participative

The care of women and newborns is provided by a team of doctors, (obstetricians, anesthetists, neonatologists, pathologists, general practice medicine etc), nurses and midwives, backed up by hospital administrators. All should be involved in the process of case review in order to learn lessons about team work as well as specific lessons for their own disciplines, resources and multidisciplinary local protocol and standards development. Midwives in particular have a crucial role to play both in provision of care during pregnancy and childbirth, and organizing and facilitating case reviews and enquiries.

6. Be supportive and not *punitive*

A major obstacle to the implementation of effective case reviews is the threat of punishment of health care staff that has cared for women who have died. Most countries reported systems whereby maternal deaths are currently openly reviewed by teams of assessors who usually then suggest punitive measures against the health care workers. Such systems make health care providers uncomfortable in reporting the true circumstances of any death or "near miss" (severe morbidity case), and valuable opportunities to learn from experience are missed. It was agreed that BTN-style case reviews will require a shift in attitude, but workshop participants believed this shift would be possible over short time. Some countries therefore suggested running the new and old case review systems in parallel for a short period, before abandoning traditional systems.

7. Have *political* support

It was recognized that there are benefits from undertaking case reviews in a single facility, and these depend on the enthusiasm and commitment of particular individuals. By working through the Ministry of Health, national ownership is assured and necessary actions, such as development of a national programme of evidence-based management and clinical guidelines, can be taken at central level. Legal changes may also be required to enable heath care providers to freely participate in case reviews and promote the use of national clinical guidelines.

8. Partnership based

Country representatives agreed that developing and implementing the clinical audit methodology should be done in partnership with all key stakeholders (Ministries of Health,

professional associations, leading obstetricians and midwives, public health officials, women's groups, UN and other development partners, international donors and non-governmental organisations), starting at the planning phase, pilot, reviews of quality of implementation, dissemination and documentation of results, in order to contribute and collaborate to sustain the medium-long term implementation of BTN.

3. Objectives

The workshop was led by three international experts with direct experience in facilitation and skills in helping the national teams of professionals optimize implementation of BTN methods. They were Doctor Alberta Bacci, Professor Gwyneth Lewis and Professor Stelian Hodorogea. The workshop introduced the concepts of BTN, helped participants understand the methodologies, elaborated the principles of confidential national enquiry into maternal deaths and severe complications, and facility based near miss cases reviews, and emphasised the need to not only focus on the maternal mortality, but also on maternal morbidity.

The main aim of the workshop was to introduce the WHO Making Pregnancy Safer tool *Beyond the Numbers (BTN)* to the countries of South East Europe. *BTN* outlines the principles of maternal death and morbidity case reviews and gives practical advice on how to use any of these approaches to review maternal deaths and complications.

The objectives were:

- to introduce principles of maternal mortality and morbidity case reviews using Beyond The Numbers approaches;
- to review the different methods of maternal mortality and morbidity audits already implemented in the European Region;
- to discuss which approach is the most feasible for each country;
- to start development of country specific action plans to introduce and implement maternal mortality and morbidity case reviews for systemic improvements of maternal care.

4. Proceeding

WHO/Europe has assisted introduction of this approach in 14 countries, and has piloted and rolled it out in 10, in close collaboration with the United Nations Population Fund (UNFPA), the United Nations Children's Fund (UNICEF), the United States Agency for International Development (USAID) Zdrav Plus Project and other aid development partners.

In 2014, UNFPA EECARO provided its support to the WHO meeting "The impact of implementation of "Beyond the Numbers" approach in improving maternal and perinatal health", conducted in Bishkek (April 2014). Strategizing the next steps of the

initiative, the RO initiated the mapping of the country status concerning the involvement and further enrolment in BTN.

To expand the initiative and enrol new countries, the 4-day workshop "Expanding Beyond The Numbers - Maternal Mortality and Morbidity Case Reviews - Inter-country Workshop for South Eastern Europe" organized by the UNFPA EECARO, the UNFPA Country Offices in the Western Balkans, in collaboration with the WHO Regional Office for Europe and the Regional Development Centre on Public Health Services in FYROM of the South Eastern European Network, to introduce the BTN tools and methodology to countries in the Eastern European Region was held in Skopje, the Former Yugoslav Republic of Macedonia, 29 September – 2 October 2014.

The workshop's programme is given in Annex 1 and the participants' list in Annex 2.

Day 1

After the inaugural session and introduction, the participants were warmly welcomed by the Minister of Health of the Former Yugoslav Republic of Macedonia, Mr. Nicola Todorov. He stressed the importance of clinical audits and learning lessons from case reviews in improving the quality of maternal health care and assured the audience on his full support for implementation of the Beyond the Numbers (BTN) approaches in the country. Doina Bologa (UNFPA Representative for BiH, UNFPA Country Director for Kosovo, FYROM and Serbia) presented the objectives of the workshop and stressed the support of UNFPA to the introduction of BTN principles and methods to improve quality of care for mothers and babies in respect to human rights.

In her introductory presentation, Dr. Alberta Bacci focused on persistent differences in the levels of maternal and perinatal mortality and morbidity in the European region, introduced the concept of quality of care and a number of instruments and tools to improve quality of care (e.g. the Effective Perinatal Care training course, and the tools for assessing of quality of hospital and outpatient care for mothers and new-born babies) developed by WHO and successfully used in a number of countries of South-Eastern Europe and Central Asia. Prof Gwyneth Lewis presented the main concepts of BTN methodology, mentioning that the most promising and appropriate for the countries of this region would be Confidential Enquires into maternal mortality or severe morbidity at national level and Near Miss case reviews at the level of facilities.

In the following sessions, the main characteristics of the health care systems and current strategies and policies in the field of maternal and perinatal health, as well as existing systems of mortality and morbidity review in all participating countries were presented and discussed. It was concluded that in some countries of the region case reviews and audit are non-existent; in others, although data and cases are collected and analysed at local or central levels, audits are not efficient, being non participatory, focused mainly on medical factors and ending with punishment and blame, and not in recommendations and action plans.

Group work one, questioning BTN relevance to national conditions comprised the rest of the day with presentations made in the afternoon. These are given in Annex 5 of this report.

Day 2

A presentation was provided on BTN multi country reviews (organized by WHO in 2010 and 2014) with examples of challenges and achievements in BTN implementation in different countries, mentioning in particular the focus on quality of audit activities.

The rest of the second day was focused on developing national maternal death and cases of severe morbidity review strategies based on the principles explored in Beyond the Numbers and previous experience of their implementation in the European region including Central Asian countries, Moldova, Latvia and the United Kingdom.

The first presentation covered both the Experience of the UK Confidential Enquiries into Maternal Deaths and also the National Near Miss programme; the UK obstetric Surveillance System. Although the UK experience is not comparable to the countries participating the workshop, the presentation highlighted the essential principles for the successful implementation of this work in any country and any setting.

Further presentations by experts explained the principles, and barriers and solutions that have been encountered by other countries in the Region implementing national BTN approaches, mainly Confidential Enquiries into Maternal Death. Of particular interest was the presentation by Moldova, a country with a similar small population, few maternal deaths and a health care system very similar to many participating countries. Due to small number of deaths and issues relating to maintenance of confidentiality and the existing programmes of punishment rather than the encouragement to hold honest discussion into the real causes of maternal death as, to implement remediable actions, it was generally agreed that national Near Miss enquiries would be more acceptable at the start and would be less threatening.

Group work two, on critical issues for introduction / strengthening of CEMD at national level followed, with presentations made in the afternoon. These are given in Annex 6 of this report.

Day 3

The third day was focused on addressing the facility based near-miss case reviews (NMCR) based on the principles included in Beyond the Numbers. This is qualitative analysis of selected cases of severe maternal morbidity, with the aim to make recommendations to improve quality and organization of care, and monitor their implementation.

The presentations included main requisites for this approach, such as classification of near-miss (NM) cases, criteria for severity, types of definitions of near-miss and

examples, main concepts, standards, case review framework and areas of analysis. Definition of facility based NMCR, methods to organize, run and facilitate a NMCR meeting, ground rules, steps in the review process, concepts of confidential or anonymous, were also discussed. Summary tables for reviews' meetings, recording of follow up to recommendations, were introduced, in order to strengthen documentation.

In addition experiences of implementation of facility based NMCR in the European region including Central Asian countries, Moldova, Latvia, and countries in other regions of the world were presented.

Group work three, on critical issues for introduction / strengthening of NMCR at facility level followed, with presentations from each country in the afternoon. These are given in Annex 7 of this report.

At the end of the day countries presented their progress and challenges regarding development or adaptation of key clinical guidelines at national level and protocols/ algorithms at facility level.

Day 4

The final day of the meeting started with Dr Tamar Khomasuridze, Sexual and Reproductive Health Advisor of UNFPA Regional Office, stating EECARO readiness to support the expansion of Beyond the Numbers in the Region. She asked that the country working groups be very careful in planning their next steps as their realistic proposals and timelines would be part of the UNFPA decision making process and case for support from UNFPA Regional Office. The meeting was timely as the next UNFPA five year Country Programme Documents were currently being developed, and this initiative could strengthen partnership approaches and plans in collaboration with WHO and UNICEF.

Presentations on principles of development or adaptation of clinical guidelines at national level and protocols at facility level, and factors which facilitate changing practices were provided and discussed.

Group work four, to draft an initial plan of action to introduce / strengthen BTN at country level comprised the rest of the morning, with presentations made in the afternoon. A number of recommendations were made: these are given in Annex 8 of this report and summarised in the table below.

In summary:

- all countries wished to implement one or more BTN approaches, but with different timelines;
- the development/update, official endorsement and dissemination of evidence based clinical guidelines was confirmed to be a key requisite for the introduction of BTN approaches, in line with recommendations of previous BTN regional workshops and experience in its implementation in countries in this region. This is

a basis for ensuring case reviews and enquiries are based on agreed updated reference standards, and not on current practices or opinions;

- the first step for countries new to the process was generally considered the introduction of facility based near miss reviews;
- at national level, some countries, including those who already adopted the confidential enquiry into maternal death approach, proposed that this could be strengthened by adding in national reviews of cases of severe maternal morbidity;
- all approaches were to be piloted, reviewed by international experts, and then moved out more widely or nationally once implementation was practical;
- many countries wanted to assess current levels of quality of care and disseminate Effective Perinatal Care (EPC) training.

Participants filled a pre and post test on knowledge, which results are in annex 9; in summary:

- the average correct response rate has increased from 76.7% to 88.4%;
- 38% of participants had 100% accurate post-test response rate (as compared to only 7% during the pretest).

A Workshop Evaluation Assessment was also completed by participants: 27 people responded to the questionnaire (as opposed to 29 for pre- and 29 for post-test assessment). The overall workshops' evaluation average is 4.19 out of 5, and participants stated it generally met their expectations.

5. BACKGROUND

Maternal and perinatal health at global and regional levels

Pregnancy is a normal, healthy state which most women aspire to at some point in their lives. Yet this normal, life-affirming process carries with it serious risks of death and disability. Most of these deaths could be avoided if preventive measures were taken and adequate care available. For every woman who dies, many more suffer from serious conditions that can affect them for the rest of their lives.

United Nations recently reported that globally, the maternal mortality ratio dropped by 45 per cent between 1990 and 2013, from 380 to 210 deaths per 100,000 live births. Worldwide, almost 300,000 women died in 2013 from causes related to pregnancy and childbirth.

The health of the mother is closely connected with perinatal health and outcomes, as maternal mortality and morbidity can have a negative impact on the survival chances of the new baby.

Worldwide, the mortality rate for children under age five dropped almost 50 per cent, from 90 deaths per 1,000 live births in 1990 to 48 in 2012: of the 6.6 million deaths in children under age five in 2012, 2.9 million deaths occurred during the first 28 days of life (0–27 days)—the neonatal period. Encouragingly, neonatal mortality is on the decline worldwide. Between 1990 and 2012, the world neonatal mortality rate fell by almost one third, from 33 to 21 deaths for every thousand live births. However, the pace of decline has fallen behind that of post-neonatal mortality. As a result, the proportion of deaths occurring in the first 28 days of life has increased, from 37 per cent in 1990 to 44 per cent in 2012. Most neonatal deaths are preventable. The best possible way of reducing neonatal mortality is through greater investment in maternal care during the first 24 hours after birth, particularly in labour and delivery care and other high-impact interventions.

In the World Health Organization (WHO) European Region, official statistics in several countries report high coverage (up to 90-99%) for key interventions, such as skilled attendants at birth, antenatal care, breastfeeding. However outcome indicators show still high maternal and perinatal mortality figures, with significant differences between official statistics and UN estimates, indicating that under-reporting is common. Part of the under reporting is historically due to the fact that international definitions were not used when calculating the indicators for both coverage (such as for example those for exclusive breastfeeding), and outcomes (perinatal mortality, maternal mortality). A system of official/institutional audit of deaths cases is in place in many countries, which main aim is to identify “guilty” professionals and provide punishment, thus reinforcing concealing of key information and under-reporting of cases.

The mismatch between very high coverage to institutional delivery care and unsatisfactory outcomes, clearly points to the existence of unaddressed issues in the quality of care, if compared to countries with a similar health system context in other regions of the world.

It is recognised that quality of care is a neglected issue in the international health agenda, particularly with respect to care around childbirth. The existence of a quality gap is the most likely explanation for slow progress towards MDG 4 and 5 where access to institutional births is high, such as in countries of Central and Eastern Europe and the Commonwealth of Independent States.

Substandard or poor quality of care is an important contributor to avoidable maternal and neonatal mortality and morbidity in all countries, and particularly in countries with high coverage of skilled care at birth. Access to care without quality is a cost for the health system and for the households and poor quality care can be harmful to mothers and newborn babies.

In addition, the health risks are not distributed equally either across or within countries. Social factors are major determinants of perinatal care; individual family characteristics (maternal education and occupation, household income and marital status) as well as community level characteristics (deprivation, poverty, unemployment and segregation). These inequalities are associated with poor health outcomes, including maternal mortality and morbidity, and have far-reaching consequences for poor families and children. Differences in quality (by social status, by gender, by ethnicity) in the quality of care delivered are an important contributor to inequity in health outcomes, and poor and disrespectful care is not complying with the Universal Declaration of Human Rights.

Table 1 Reported and estimated maternal mortality rate (per 100.000 live births) in the countries

Country	Reported MMR (2012)[1]	Estimated MMR[2]
Albania	5.83 (2011)	21 (13-34)
Armenia	23.54	29 (19-44)
Azerbaijan	14.9	26 (16-40)
Bosnia and Herzegovina	9.36	8 (5-13)
Georgia	22.79	41 (23-77)
Serbia	14.87	16 (10-17)
TFYR Macedonia	4.24	7 (3-17)
Kosovo	4 - 8	n/a

"Beyond the Numbers" principles and approaches

Maternal death reviews can save mothers and newborns lives and also help reduce the burden of severe maternal and neonatal morbidity. Through the implementation of their recommendations they can improve access to, and the quality of, maternity care for all pregnant or recently delivered women and their infants. They review, assess and

[1] European Health for all data base, World Health Organization Regional Office for Europe. http://data.euro.who.int/hfadb/

[2] Trends in Maternal Mortality: 1990 to 2013. Estimates by WHO, UNICEF, UNFPA, The World Bank and the United Nations Population Division. http://www.who.int/reproductivehealth/publications/monitoring/maternal-mortality-2013/en/

identify the underlying factors which led to mothers' deaths and learn lessons from these in order to develop and promulgate recommendations to overcome the barriers and impediments to safe maternity care in future. They can take a number of forms depending on the circumstances, the scope and scale of the proposed study and the size of the population to be reviewed. They are not exercises in just counting numbers of deaths for statistical purposes. Instead, 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. A summary of the main aims and objectives of maternal death and near miss review are shown below:

- to save more women's and newborns lives, to reduce deaths and complications and to improve the quality of maternity services for the benefit of all pregnant women and their babies;
- through the use of guidelines and recommendations, to help ensure that all pregnant and recently delivered women receive the best possible care, delivered in appropriate settings in ways that take account of, and meets, their individual needs;
- to identify the wider non-health system barriers to maternity care and to take action or advocate for beneficial changes such as improved status of women, health education programmes and improved community transport;
- the approaches can be used at community, health care facility or at regional or national level;
- different approaches are appropriate for different circumstances; different levels of health service provision and can review a number of different outcomes, not just death.

In order to provide practical assistance to help address these issues, the WHO Making Pregnancy Safer programme developed a handbook on how to implement maternal death reviews to identify the underlying causes of maternal deaths in order to take remediable action.

The programme and book is entitled, "*Beyond the Numbers; reviewing maternal deaths and disabilities to make pregnancy safer*[3]" (BTN). It is a highly practical guide which describes a number of strategies and approaches to review cases of maternal death or disability to help understand why mothers really die. The lessons to be learnt from them enable health care planners to take the necessary action on the results. The methodologies described in detail in BTN range from community (verbal autopsy) and facility based reviews, confidential enquiries into maternal deaths, near miss reviews and clinical audit. These approaches, now introduced in over 50 countries globally as part of the BTN programme, are summarised in Table 2.

[3] http://www.who.int/maternal_child_adolescent/documents/9241591838/en/

Table 2 Different approaches to Maternal Death and Near Miss reviews

Approach	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 able to 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.
Confidential enquiries into maternal deaths	A systematic multi-disciplinary anonymous investigation of all or a representative sample of maternal deaths occurring at an area, regional (state) or national level. It identifies the numbers, causes and avoidable or remediable factors associated with them[i].
Reviews of severe morbidity (near misses)	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 healthcare delivery.

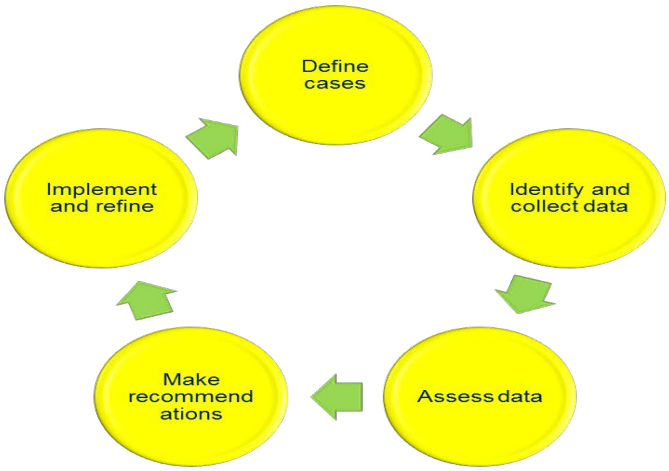
The philosophy of *BTN* is simple: it is possible to avoid maternal deaths even in resource poor countries, but this requires the right kind of information on which to base effective interventions. It is not enough to know the rates of maternal mortality; an understanding of the underlying factors that led to the deaths is essential. Each maternal death or case of life-threatening complication has a story to tell and can provide indications on practical ways of affecting the outcome. Case reviews of maternal deaths provide evidence of where the main problems lie to avoid maternal mortality and what can be done in practical terms, highlighting the key areas requiring interventions by the health sector and community, as well as guidelines required to improve clinical outcomes. The information gained from case reviews are a prerequisite for action.

Systematically combining the findings of individual reviews of women's deaths into wider maternal death or morbidity reviews provides evidence of why they occurred and barriers to accessing skilled care, allowing a more robust analysis of where the main solutions for preventing maternal mortality and morbidity. The outcomes of such reviews, wherever they have been adopted, have shown to result in practical changes in the delivery of maternity care, with significant improvements to outcomes of care. These have been achieved by acting on review results and applying resources or efforts

to key areas – not always health sector-based – enabling health sector and community interventions as well as developing of up-to-date clinical guidelines.

Translating findings into action is the whole purpose of these case reviews, for without interventions based on review recommendations the review process is worthless. The findings form a baseline against which to monitor the success of changes in clinical practices. Therefore, a method for monitoring implementation of review recommendations are being should be part of the system; this both provides a stimulus for health sector action and reminds review committees to ensure their recommendations are evidence-based. Thus all maternal death reviews are based on the maternal mortality or near miss assessment and reviews/surveillance cycle as shown in Figure 1.

Figure 1 Maternal audit and response cycle



The results of case reviews can also have a powerful advocacy role and can be used by Ministers of Health, government and decision-makers to raise awareness and mobilize national and donor resources. Maternal mortality and safe motherhood committees, as well as all other stakeholders in maternal health, can use the information generated through use of the *BTN* approaches.

Without the ability to diagnose why so many pregnant women are dying or suffer severe complications from pregnancy, the opportunity to identify correct remedial actions for specific women in different circumstances is lost. There is no "one size fits all" solution. Even though the causes and determinants may be similar, each country, district, facility or community faces a unique set of problems and constraints and needs to work out an individualised approach. The philosophy proposed in *BTN* and its methodologies for case reviews can be the essential first step in this process.

Any of the BTN approaches will result in recommendations for change. These recommendations made should, particularly in resource-limited countries, be evidence-based, simple, affordable, effective and widely disseminated.

Taking action is the reason for all the work. Actions may include recommendations for interventions in the health services, the community, in public education, in

communication and transportation systems, or the development of clinical guidelines or standards. It is important that those persons with the ability to implement the needed actions be involved in the process throughout so there are "no surprises" when the report is published and the need to take remediable action, or defend inaction, has already been considered.

Information from facility-based reviews may lead to local changes in clinical practice or modifications to service provision. An assessment of the community factors may also lead to the development of health promotion and education programmes as well as possible changes in community service provision. Information from these findings can be used at institutional, local and national levels by politicians, health service planners, professionals, public health personnel, educators and women's advocacy groups. They may also lead to national or regional clinical guideline development.

Closing the surveillance loop and evaluating the impact of the recommendations that were made is the vital last step in any approach review maternal deaths and morbidity. The main purpose of evaluation is to consider if the process of identifying maternal deaths or severe morbidity, collecting and analysing the data, and using the information for action improved the health, well-being and safety of pregnant women. It is important to recognise that achieving significant reductions in overall mortality or morbidity rates may take time, although local changes in practice can show quite rapid effects.

The countries in this meeting were focused on the possibility of introducing confidential enquires into maternal deaths nationally and on undertaking facility based near miss reviews. However it became apparent that because of very small numbers of deaths in many of the participating countries and the fear of disclosure and subsequent blame and punishment of the participating staff (which is contradictory to the principle of BTN) most countries agreed that they would prefer to introduce national severe morbidity together with death reviews, in order to dilute the number of cases and learn from the benefits of large case numbers.

5.1 Facility based Near Miss Case Reviews

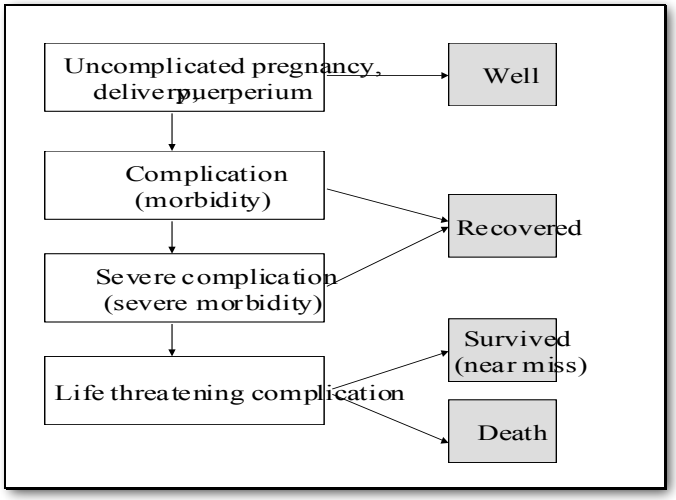
Cases of severe maternal morbidity, "near misses," are much more common than maternal deaths and their review can give more insight into risk factors and possible means of prevention, particularly in countries or facilities where deaths are uncommon. WHO estimate, globally, there to be 20 cases of severe maternal mortality to each death whereas in the UK a recent study of admissions to ICU showed that 120 women survived severe complications for each death which occurred.

What is a near miss?

Health during pregnancy represents part of a continuum between the extremes of normal health and death. On this continuum, a pregnancy may be thought of as being uncomplicated, complicated (morbidity), severely complicated (severe morbidity) or life threatening as shown in 1. From life threatening conditions the woman may recover, she may be temporarily or permanently disabled, or she may die. Therefore a *near miss*

represents one of two possible outcomes of a life threatening complication: the woman either survives or becomes a *near miss*, or she dies and becomes a maternal death.

Figure 2 Pregnancy continuum between extremes of normal and death



There are many definitions of a near miss case, but the one used in Chapter 7 of Beyond the Numbers, may be helpful: *" any pregnant or recently delivered woman (within six weeks after termination of pregnancy or delivery), in whom immediate survival is threatened and who because of the hospital care she receives."*

The near miss case reviews at facility level are mainly a qualitative approach, which key features are listed in the following table 3.

Table 3 Near-miss case reviews at facility level

- Regular (e.g. monthly) staff meetings to discuss the management of individual cases, **comparing actual management with evidence based guidelines**, preferably explicit ones
- Depend on **interaction, accountability**
- Based on **respect, confidentiality, avoidance of blame & punishment**
- Simple (no statistics), but **facilitation** of meetings can be challenging
- Review of **small number** of informative cases; essentially a **qualitative approach**
- **Views of women** are included
- Low cost; typically focuses on improvements with **available resources**
- Enable maternity staff to **develop specific recommendations** at facility level and **monitor their implementation**

Near miss case reviews at facility level help:

- Learn lessons from individual cases at local level;
- Learn from the women's stories, through the interviews;
- Strengthen the use of national clinical guidelines and local protocols;
- Identify what went well and praise the staff;

- Identify elements of care and organization which can be improved;
- Develop recommendations for improving clinical practice and/or organization of care;
- Implement recommendations to improve local practices and procedures for benefit of future mothers;
- Improve management understanding and response;
- Assess if previous meeting's recommendations were implemented, and if not identify reasons and correct;
- Develop recommendations for higher levels of the health system, if this is relevant and linked to the case review;
- Improve local data for advocacy and planning.

It is therefore crucial for teams involved in NMCR to:

- Learn how to organize, run and facilitate meetings;
- Agree on who conducts interviews, when, where and how;
- Develop standards of care, as a reference for case reviews.

Unlike a maternal death, maternal morbidity is not an unequivocal event, and opinions will vary, even amongst local clinicians, as to what represents a case for inclusion. Also some diagnoses of severe obstetric complications may be particularly dependent on subjective physician factors.

Therefore there are some additional steps for NMCR:

- Develop a complete consensus on the national criteria of the *near miss* cases to be reviewed;
- Decide how to define a *near miss* in the context of the chosen sites;
- Develop a consensus on the threshold for the *near miss* cases to be reviewed;
- Consider how to identify cases.

The use of standardized case definitions is strongly recommended, however, as this will facilitate the comparison with standard treatment protocols. These definitions can be based on a number of principles which are explained in detail in Beyond the Numbers and in more recent WHO guidelines. The main definitional approaches are:

- Management eg admission to ICU;
- Major interventions eg Blood transfusion of greater than 4 units, length of hospital stay greater than a week, peripartum hysterectomy;
- Clinical signs and symptoms, although for these it is often harder to obtain consensus, standardise and measure, or
- Major organ failure eg renal failure or cardiac decompensation.

It is important whatever definition is agreed to be used for review this is appropriate to local circumstances. The use of agreed and standardized case definitions is crucial as it will facilitate the comparison with guidelines and protocols, and enhance quantitative comparisons between facilities or over time.

All these technical issues are usually addressed, and methodologies and tools finalised, during BTN technical workshops.

5.2 The characteristics of a confidential enquiry into maternal death (CEMD)

A CEMD involves an anonymous multi-disciplinary in-depth assessment of the causes and circumstances surrounding maternal deaths in selected groups of facilities, regions or countries. The focus can confine itself to specific clinical issues and barriers to care, or be all-encompassing by further examining the circumstances in the community or family that may have contributed to the woman's death. Each enquiry will have different objectives dependant on local priorities, factors and resources; there can be no set template for such studies.

The process is confidential and before assessment all names of the women or any health care workers involved are removed. This provides a secure environment in which only anonymised cases are assessed, thus resulting in a greater openness and completeness in reporting with a more complete picture as to the precise sequence of events.

It should be nationally or regionally owned and have the support of health care planners, professionals and the Ministry of Health. The data provided should be of sufficient robustness to enable:

- national or regional policy development for improvements in maternal health care programmes and to provide a sound basis for seeking an increase in programme funding if and when available,
- the production of clinical guidelines and wider service development strategies which should impact directly at an individual level on saving women's lives, and
- feedback to be given to the community, women's groups or women in general to help them in their advocacy, and to understand key messages regarding their own health and pregnancy.

Each case has a standardised confidential report form[4] completed by all local health care workers who provided care to the woman who died. These may include the woman's primary care provider, the 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 socio-economic, domestic and geographic circumstances and any cultural practices that might have had an effect on her death.

These report forms are then anonymised by the local enquiry co-ordinator before being assessed by a regional multi-disciplinary panel of assessors who were not involved in her care. They are usually based in another institution or another part of the country.

[4] 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

Their evaluations are then collated and assessed by the central steering committee who prepares the final report and its recommendations.

By covering all, or a representative sample of maternal deaths, the numbers may not be so large as to appear overwhelming in their planning, undertaking and evaluation. And by acting on the findings and using guidelines alongside the studies to develop local as well as national protocols, the improvements in outcomes are visible and compelling to health care planners and professionals alike.

Severe maternal morbidity, using near miss definitions, can be assessed anonymously at a national level, as an adjunct to the confidential enquiry into maternal deaths, especially where the number of deaths is small. These Enquiries using Near miss case definitions can be undertaken nationally, following the same principles as Confidential Enquiries: the methodology used in this case it very different from the methodology used in facility base near miss reviews. Once the cases to review have been decided, the stages involved in the process of reviewing severe morbidity are very similar to those generally presented as the classical steps of the audit and response cycle. These are to establish best local practice, compare local current and best practice, implement change and re-evaluate practice.

National confidential enquiries on severe complications help:

- To strengthen mortality reviews and proved more cases for assessment and greater statistical rigor;
- Help proved more evidence for advocacy for change both professional an political;
- Estimation of burden of disease;
- Disease incidence/prevalence;
- Strengthen mortality reviews;
- Identify common risk factors;
- Improve clinical practice/guidelines/change in practice;
- Public health response;
- Research.

ANNEX 1

EXPANDING BEYOND THE NUMBERS
Maternal Mortality and Morbidity Case Reviews
Inter-country Workshop for South Eastern Europe

Skopje, the Former Yugoslav Republic of Macedonia
29 September – 2 October 2014

PROVISIONAL PROGRAMME

Day 0, 28 September

17:30 – 18:30	Facilitators' meeting	

Day 1, 29 September

08:30 - 09:00	Registration of participants	
09:00 - 09:15	Opening session	*Ministry of Health, UNFPA,WHO*
09:15 - 09:20	Objectives of the workshop	*Doina Bologa*

Overview of perinatal health in the European region, achievements and challenges, "Beyond the Numbers" (BTN) (part 1)

09:20 -10:00	Maternal and perinatal health in the European region: achievements, challenges and need for quality improvement	*Alberta Bacci*
10:00 - 10:30	Beyond The Numbers - Reviewing maternal deaths and complications for making pregnancy safer - general principles, deciding which approach to adopt	*Gwyneth Lewis*
10:30 - 11:00	**Break**	

Countries' presentations: an overview of characteristics of health systems, current policies, maternal and perinatal mortality, underlying causes and audit

11.00-13.00	Country presentations	
13:00 – 14:00	**Lunch**	
14:00 – 14:30	Questions and answers	

Group Work 1

14:30 – 15:30	Each country delegation will be asked to reflect on the topic, and debate BTN relevance to national conditions. Each country delegation will identify 3-4 critical issues for the implementation of BTN approaches in their country	*Country participants*
15:30 – 15:45	**Break**	
15.45 – 16:20	Group work 1 (continued)	*Country participants*
16:20 – 17:20	Presentations of group work 1	*(5' each country)*
17:20 – 17:30	Feedback and homework (read chapters 1-3 of *BTN*)	

Day 2, 30 September

09:00 – 09:15	Summary of previous day	*Participant TBD*

Overview of perinatal health in the European region, achievements and challenges, "Beyond the Numbers" (BTN) (part 2)

Review of BTN implementation in the European region

09:15 – 09:40	BTN Review 2014: achievements, challenges, way forward	*Alberta Bacci*

Specific approaches: Confidential Enquiries into Maternal Deaths (CEMD)

09:40 – 10:20	Saving Mothers Lives: over 60 years' experience of Confidential Enquiries into maternal deaths in the UK	*Gwyneth Lewis*
10:20 – 10:30	Questions and answers	
10:30 - 11:00	**Break**	
11:00 – 11:30	CEMD: experiences from countries	*Stelian Hodorogea*
11:30 – 12:00	Confidential Enquiries into Maternal Deaths: achievements and challenges of implementation in countries in the European region	*Alberta Bacci*
12:00 – 12:40	Lessons learnt from implementing maternal death reviews; what works and what doesn't	*Gwyneth Lewis*
12:40 – 13:00	Discussion	
13:00 – 14:00	**Lunch**	

Group Work 2

14:00 – 15:00	Discussion about critical issues and main highlights. Each country delegation will identify 3-4 critical issues for the introduction / reinforcement of *CEMD*	*Country participants*
15:00 – 15:30	Presentations of group work 2	*(5' each country)*
15:30 – 16:00	**Break**	
16:00 -16:20	Presentations of group work 2 (continued)	*(5' each country)*

Clinical guidelines and protocols for maternal and neonatal health: an overview of each country situation (part 1)

16:20 -16:35	Bosnia Herzegovina
16:35 - 16:50	Serbia
16:50 - 17:05	Armenia
17:05 - 17:20	Azerbaijan
17:20 - 17:30	Feedback and homework: Read chapter 4-6 of *BTN*

Day 3, 1 October

09:00 – 09:15	Summary of previous day	*Participant TBD*

Specific approaches: Near Miss Case Reviews (NMCR) at facility level

09:15 – 09:55	Near Miss case reviews main requisites Classification, criteria for severity, definitions of near-miss and examples, main concepts, standards, case review framework, areas of analysis	*Stelian Hodorogea*
09:55 – 10:30	Near Miss case reviews at facility level Definition of facility based NMCR, running a NMCR meeting, steps in the review process, how to facilitate, confidential or anonymous?, ground rules, summary table, follow up to recommendations, documentation	*Alberta Bacci*
10:30 - 11:00	**Break**	
11:00 – 11:30	NMCR: experiences from other countries (UZB, KAZ)	*Stelian Hodorogea*
11:30 – 12:00	Near-Miss Case reviews at facility level: achievements and challenges of implementation in countries in the European region (MDA, LTV)	*Alberta Bacci*

Group Work 3

12:00 – 13:00	Discussion about critical issues and main highlights. Each country delegation will identify 3-4 critical issues for the introduction/ expansion of *NMCR*	*Country participants*
13:00 – 14:00	**Lunch**	
14:00 – 14:30	Group work 3 (continued)	*Country participants*
14:30 – 15:30	Presentations of group work 3	*(5' each country)*
15:30 – 16:00	**Break**	

Clinical guidelines and protocols for maternal and neonatal health: an overview of each country situation (part 2)

16:00 - 16:15	Kosovo
16:15 - 16:30	the Former Yugoslav Republic of Macedonia
16:30 - 16:45	Albania
16:45 - 17:00	Georgia
17:00 - 17:15	Questions and answers
17:15 - 17:30	Feedback and homework: Read chapter 7-8 of *BTN*

Day 4, 2 October

09:00 – 09:15	Summary of previous day	*Participant TBD*

BTN critical issues: pre requisites (clinical guidelines), implementing changes, public health perspective

09:00 – 09:30	Clinical guidelines and protocols – how to develop/update, use and evaluate	*Stelian Hodorogea*
09:30 – 10:00	Implementing changes – how to be effective in doing these approaches	*Gwyneth Lewis*

Planning the immediate future

Based on the *BTN* approaches presented during the workshop, develop a draft implementation framework. Country delegations will discuss when, where and how they will introduce BTN, and identify resources and timelines required for BTN to make progress in their country

10:00-10:05	BTN implementation: principles and plans of UNFPA EECARO support to countries	*Tamar Khomasuridze*

Group Work 4

10:05-10.30	Developing a draft BTN country implementation strategy Decide changes required to improve quality of care and outcomes; Indicate which BTN approach should be introduced or refined in each country and why; Draft objectives and initial steps of BTN implementation at national level	*Country participants*
10:30-11:00	**Break**	
11:00-12:25	Group work 4 (continued)	*Country participants*
12:25 – 12:30	Workshop evaluation	
12:30 – 13:30	**Lunch**	

Presentation of groups' work: countries' proposals

13:30 – 15.30	Country presentations	
15:30 – 16:00	**Break**	
16:00 – 16:30	Summary (BTN approaches)	*Alberta Bacci*
16:30 - 17:00	BTN in EECA: UNFPA support and next steps	*Tamar Khomasuridze, UNFPA EECARO*
17:00 - 17:30	Closure	*Ministry of Health, UNFPA, WHO, other partners Speakers*

Facilitators wind up with UNFPA, WHO, UNICEF and other partners

ANNEX 2

Participants list

#	Country	First Name	Last Name	Title	Organization
1	Georgia	George	Mataradze	Programme Analyst	UNFPA Georgia
2	Georgia	Marina	Darakhvelidze	Head of Health Care Department	Ministry of Labour, Health and Social Affairs, Georgia
3	Georgia	Lika	Mikaberidze	Consultant at MCH	Ministry of Health of Georgia
4	Armenia	Gayane	Avagyan	Head of Maternal and RH care division	Ministry of Health of Armenia
5	Armenia	Vahe	Gyulkhasyan	Project Officer	UNFPA Armenia
6	Armenia	Vruyr	Grigoryan	Head of Delivery Department	Republican Institute of RHPOG, Yerevan State University, Armenia
7	Albania	Manuela	Bello	Assistant Representative	UNFPA Albania
8	Albania	Enkelejda	Prifti	Ob/Gyn	University Hospital, Ob-Gyn Clinic, Tirana, Albania
9	Albania	Nevila	Caushi	Chief of Planning Sector	Hospital Services, Materniteti K. Gliozheni, Tirana, Albania
10	Albania	Eduard	Tushe	Head of Neonatal service	Materniteti K. Gliozheni, Tirana, Albania
11	Azerbaijan	Jamila	Gurbanova	Deputy Director of OBGYN Institute	Ministry of Health of Azerbaijan
12	Azerbaijan	Teymur	Huseynov	Health Analyst	Public Health and Reforms Center, Ministry of Health of the Republic of Azerbaijan
13	Azerbaijan	Farid	Babayev	Assistant Representative	UNFPA Azerbaijan
14	Azerbaijan	Ramiz	Huseynov	Programme Assistant	UNFPA Azerbaijan
15	Kosovo	Gani	Shabani	General Secretary	Ministry of Health of Kosovo
16	Kosovo	Merita	Vuthaj	Chief of Division, Mother, Child & RH	Ministry of Health of Kosovo, Department for Health Services
17	Kosovo	Zarife	Miftari	Reproductive Health Coordinator	UNFPA kosovo
18	Kosovo	Memli	Morina	Obstetrician / Gynaecologist	Obs/Gyn Clinic, Prishtina
19	Kosovo	Syheda	Latifi	Professor; Gynaecologist / Obstetrician	Obs/Gyn Clinic, Prishtina
20	Kosovo	Sami	Uka	NPO Health Systems	WHO Kosovo
21	Bosnia and Herzegovina	Savka	Strbac	Head of Accrediation and Quality Department	Agency for Certification, Accrediation & Healt Quality Improvement in Health Care, Republika Srpska
22	Bosnia and Herzegovina	Alma	Kandic	Doctor of Medicine	Gynaecology and Obstetrics Clinic, Sarajevo
23	Bosnia and Herzegovina	Emina	Hadzimuratovic	Pediatrician / Neonatologist	University Clinical Center, Sarajevo
2	Bosnia and	Fatima	Cengic	SRH Focal Point	UNFPA BIH

4	Herzegovina				
25	Serbia	Marija	Rakovic	NPO Health Systems	UNFPA Serbia
26	Serbia	Olivera	Jovanovic	Consultant for Quality Improvement	PCU, Ministry of Health, Serbia
27	Macedonia	Brankica	Mladenovik	Head of Institute of MCH	Institute for Mother and Child Health
28	Macedonia	Nermina	Fakovic	Advisor / develoment and monitoring of the national annual programme for active health protection of MC	Ministry of Health of RM
29	Macedonia	Elizabeta	Zisovska	Director	Agency for Quality and Accreditation of HC facilities
30	Macedonia	Gordana	Adamova	Professor; Head of Perinatology	Remedika Hospital, Macedonia
31	Macedonia	Afrodita	Shalja Plavjanska	NSRH Programme Analyst	UNFPA Macedonia
32	Macedonia	Arta	Kuli	Country Programme Coordinator for STI/HIV/AIDS	WHO Macedonia
33	Macedonia	Kornelija	Trajkova	Ob/Gyn	University Clinic for Ob/Gyn, Skopje
34	Macedonia	Dragan	Tanturovski	Head of National Center for Reproductive Health	University Clinic for Ob/Gyn, Skopje

	TRAINERS				
#	**Country**	**First Name**	**Last Name**	**Title**	**Organization**
1	Italy	Alberta	Bacci	Consultant	
2	UK	Gwyneth	Lewis	Director, International Women's Health Research	Institute for Women's Health University College London
3	Moldova	Stelian	Hodorogea	Associate Professor	Ob-Gyn Department, State Medical and Pharmaceutical University
	UNFPA FACILITATORS				
#	**Office**	**First Name**	**Last Name**	**Title**	**Organization**
1	EECARO	Tamar	Khomasuridze	SRH Programme Advisor	UNFPA EECARO
2	EECARO	Teymur	Seyidov	SRH Programme Specialist	UNFPA EECARO
3	Bosnia and Herzegovina	Doina	Bologa	Country Director	UNFPA BIH

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