World Health Organization
REGIONAL OFFICE FOR Europe

WHO meeting report "Improving quality of antenatal and postpartum care and referral system"

24-25 October, 2013

Yerevan, Armenia

Keywords
MATERNAL MORTALITY
MORBIDITY
NEONATAL MORTALITY
POSTPARTUM CARE
PRIMARY HEALTH CARE
REFERRAL

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Acronyms

ANC	Antenatal care
APPC	Antenatal postpartum care
BTN	Beyond the Numbers
CEMD	Confidential Enquiry into Maternal Deaths
CS	Caesarean Section
EMOC	Emergency obstetric care
EPC	Effective Perinatal Care
FP	Family planning
HRS	Human Resources
HS	Health System
ICPD	International Conference on Population and Development
LBW	Low Birth Weight
MDSR	Maternal Death Surveillance Review
MM	Maternal mortality
MoH	Ministry of Health
MOSAIC	Models of Organising Access to Intensive Care for Very Preterm Births
MoU	Memorandum of Understanding
NCD	Noncommunicable Diseases
NGO	Non-Governmental Organization
NICU	Neonatal Intensive Care Unit
NMCR	Near Miss Case Review
NMCs	Near Miss Cases
NN	Neonatologist
Ob/Gyn	Obstetrician Gynaecologist
PHC	Primary Health Care
QoC	Quality of Care
RH	Reproductive Health
SKO	South Kazakhstan Oblast
UNFPA	United Nations Populations Fund
UNICEF	United Nations Children's Fund
WHO	World Health Organization

Introduction

The WHO regional meeting on “Improving quality of Antenatal and Postpartum care and Referral System” was held in Yerevan, Armenia on the 24-25of October 2013as part of the project on “Reduction of maternal and neonatal morbidity and mortality in countries of Eastern Europe by improving primary health care and referral system” financially supported by the Russian Federation (RF).

The meeting was opened by Dr Khachatryan, the Deputy Minister of Health; Dr Babloyan, the Head of the Standing Committee on Health in Armenia; Mr Ivanov, the Advisor to the Ambassador of the Russian Federation in Armenia; Dr Axelrod, the Deputy Director of the Department of International Cooperation and Public Relations under the Ministry of Health of Russian Federation and Dr Hakobyan, Head of WHO Country Office in Armenia.

The meeting included key professionals in the area of maternal and new-born health from 11 countries of the WHO European Region (see Annex 2: list of participants), along with UNFPA and UNICEF representatives and the NGO World Vision Armenia.

During the opening the importance of this meeting was stressed by the Deputy Minister of Health from Armenia, as it allowed participants to exchange and share information to improve the health of mothers and children and the quality of primary health care in the Region. Dr Babloyan raised his concerns about the fact that there are still many problems leading to high neonatal mortality all over the world and in the European Region which needs to be addressed. He suggested improving health education and public health in general to prepare adolescents for adulthood and parenthood.

The representatives from the RF emphasized the good collaboration and cooperation with Armenia, furthermore, maternal and new-born health were put forward at the Global Perinatal Conference in Moscow (June, 2013). In all 53 countries of the WHO European Region there have been good results in reducing MDGs 4 and 5, but there is a need to focus on the challenges post 2015. In Russia, the reduction of maternal mortality (MM) was achieved through the three approaches: by construction of perinatal centres (34 more in 32 regions), through modernisation, and better equipment, and by using mobile teams. This has led to a 30% reduction of infant deaths.
The RF has become an important donor country in the international community, and a valuable partner to WHO. Currently the Government is working on extending the memorandum of understanding with WHO for another 5 years, to invest in health and carry out joint project with both WHO headquarters and the European Regional Office. Another fruitful outcome is the opening of a Moscow based WHO Office on Noncommunicable Diseases (NCD) late 2014.

Objectives of the meeting

Initially the meeting had been planned for two countries, but the interest to participate from member states was large, and resulted in 11 countries being present. There were two main focus areas for the meeting:

1. Decrease of maternal mortality and morbidity through improved quality of care, and
2. Improvement of the referral system for mothers and newborn babies.

The objectives of the meeting were to:

- Discuss the regional results of the "Reduction of maternal and neonatal morbidity and mortality in countries of Eastern Europe by improving primary health care" project and achievements in Armenia and Kyrgyzstan,

- Demonstrate the experience of countries of the region in using the "Tool on assessment of quality of antenatal and postpartum care for women and newborns",

- Introduce participants to the experience of the development of referral system in countries of the WHO European Region,

- Develop recommendations for further improvement of the access to quality antenatal and postpartum care for women and newborns and referral system in the countries of the WHO European Region.

Progress in implementation of the project

A presentation on the status of maternal and newborn health in the WHO European Region based on the recent situation analysis from ICPD Cairo and the latest figures on the relevant MDGs was made. Despite the steady decrease in maternal and newborn mortality rates, some countries in the region still need to speed up the process of in achieving the targets of the MDGs 4 and 5. There is evidence that with low cost and small investments, it is still possible to make a big difference.

The most popular WHO training and assessment tool in this area of work is the Effective Perinatal Care training tool (EPC) which has shown to be very effective in increasing knowledge and skills of health professionals and improving the quality of maternal and newborn health in the Region. The need for a holistic life course approach was emphasized. The new WHO European regional strategic framework "Health 2020" endorsed by all 53 member states in 2012 focus on improving health and wellbeing and decreasing health inequalities.

An overview of the development and use of the WHO tools for assessment of quality of maternal and neonatal care tools in hospitals and out-patient settings was presented by Dr A. Bacci, a WHO former staff and now a WHO consultant.

The aim of the tool is to help staff and managers of health facilities, local authorities, Ministry of Health, and partners, to carry out assessments of perinatal health care in a homogeneous and valid way and to identify key areas that need to be improved. The results of assessments enabled the development of an action plan for improvement of access to services and quality of care at the national level and in the health facilities.

Antenatal and Postpartum Care (APPC) assessment tool

Many years back it was routine during WHO missions to countries, to conduct small “biopsy” assessments, but the need to have a tool enabling experts to make a more systematic approach was obvious. The tool is based on the EPC and other tools and guidelines developed by the WHO and partners in the Region.

The tool for assessment of the quality of hospital care for mothers and newborns was developed in 2009 and has since then been used in many countries of the Region, as well as in other parts of the world (Africa; Middle East etc.),and used jointly by a number of other UN agencies, aid development partners and NGOs. The tool for assessment of the quality of antenatal and postpartum care (APPC) for women and newborns was developed in 2011.
In order to carry out the assessment it is highly advised to use a national and international team of experts (midwife, neonatologist, obstetrician/gynaecologist and interviewers). The evidence the international experts bring helps local teams to analyse the results and make recommendations. It is also important to have the Ministry of Health representatives and heads of facilities supporting the assessment, otherwise it can be counterproductive.

The role of the assessors is to observe how patients are treated and how things are done, not intervening or interfering, not posing questions during patient time; only after a patient’s session should the assessors look at the records and provide feedback.
Service provision is also at the core of quality of care (QoC), and listening to the users, the mothers, can help give ideas on how to improve practices and thus the QoC. Another good angle for assessors is to interview the cleaners, hearing about the normal ways of cleaning; or checking the heating, the cleaning of instruments, the access to the facility, the water supply etc.

Following the assessment there is the scoring with the team, and feed-back to the facility. It is also crucial that recommendations are kept general and aim to improve the quality, and not to finding faults.

The team of assessors meet with the MoH, to provide additional more overarching feed-back on the recommendations which could be carried out at the national level.

APPC experience in countries

Representatives from Armenia, Kyrgyzstan, the Republic of Moldova, Tajikistan and Turkmenistan shared their experience in the adaptation and application of the Assessment Tool for the Quality of Antenatal and Postpartum Care and emphasized the importance of both – the process and the outcomes.

Dr Oleg Schvabsky, WHO expert, shared the achievements and challenges faced when carrying out the project on reduction of maternal and neonatal morbidity and mortality, with a focus on the two target countries Armenia and Kyrgyzstan. Both countries used the APPC assessment tool, with support from MoH, WHO and other aid development partners. These two countries were chosen as their MoHs prioritized the improvements of quality of MCH care and asked WHO for support specifically in this area.

One of the outcomes was the review and improvement of protocols, which also led to an update of the perinatal card in Kyrgyzstan for example. The WHO Collaboration Centre in Uppsala contributed with expertise in this area. The challenge will be to introduce and disseminate the perinatal card. We found that despite massive training knowledge is still lost. Therefore, international organizations will need to align to avoid duplication and overlap and overrun some health facilities.

Monitoring is not easy; it is difficult to choose the right indicators and criteria. It was found that the patient is often the best source of information, so questionnaires were developed targeting the mothers and their relatives.
One of the challenges is access to information in general and to the guidelines. Not all guidelines are in Russian. The Reproductive Health Library[1] (RHL) which contains both educational videos and guidelines is underused.

Recommendations for improvement of antenatal and postpartum care

Based on the plenary discussion following the presentations the following recommendations were made:

- There is a need to adapt the APPC assessment tool to local setting. Not in terms of key practices but in terms of available /updated protocols and guidelines, and in terms of the conditions of the facilities. This is also the reason why it is crucial to have both national and international experts conducting the assessment. The detailed criteria can change slightly from country to country,

- There is a need for training, and this can only be done through the support of partners, as WHO is not a donor organization. WHO can provide the expertise and conduct pilots, but for scaling up other organizations need to take the lead. In Kyrgyzstan UNFPA supported the APPC assessment in remote parts of the country, in Armenia it was supported by UNFPA, UNICEF and World Vision Armenia,

- If appropriate it is possible to extend the scope of assessed area to include child health. In Armenia the adaptation and flexibility of the questionnaire facilitated its expansion and had parts addressing danger signs, breast feeding, respiratory disease, diarrhoea, fever and other problems at early age,

- It was highlighted that in Tajikistan the primary health care (PHC)assessment helped getting donor support as it enabled the MoH and partners to pinpoint the issues to be addressed, which also led to a consolidation of the resource and streamlining the efforts,

- In Moldova the PHC assessment made it clear that the indicators are quite different from hospital care and outcomes of the assessment will help improve the development a plan for

[1] http://apps.who.int/rhl/ru/index.html

the improvement of quality of PHC,

- The experiences from having carried out EPC and maternal mortality and morbidity reviews (BTN) have made a difference to the successful carrying out of the assessments in many countries and resulted in better understanding of a supportive and non-punitive approach,

- It would be very useful to gather material, and publish examples in peer-review medical journals. This is something all countries need to strive for. Participants were encouraged to publish, both at local level, but also at international level as it is the best way of sharing the experience gathered.

Results and future steps of APPC project in target countries

Both target countries under the project, Armenia and Kyrgyzstan shared their experience and the outcomes of the first year.

Kyrgyzstan

The following results from the assessment carried out in 2012 and follow up activities were presented:

- Kyrgyzstan revised clinical protocols and perinatal forms,
- New medical documentation for APPC has been developed,
- Supportive supervision groups, different from previous forms of supervision – from "control" towards "the support" have been developed. Supportive supervision was absent at the out-patient level,
- Questionnaires to measure women's satisfaction and family members were developed to monitor the impact of the activities.

The recommendations identified and promoted:

1. Increased training and education:
    a) Cascade training in combination with supportive supervision needed,
    b) Exchange training visits to other countries were recommended.

2. Organizational:
    a. Introduction of the possibility for women to sign up for the visits,
    b) Introduction of patient satisfaction forms to monitor the impact of activities,
    c) Involvement of families to improve APPC,
    d) Translation of materials for health professionals into Kyrgyz language,
    e) Development of informational materials for women and population that would include danger signs,

f) Evaluation of possibilities to subsidize or have free of charge transport for referral patients,
g) Prevention:
    - To cover expenses related to application of folic acid, treatment of anaemia from the national budget,
    - To consider possibilities to cover anti-rhesus immunoglobulin from the national budget,
    - Develop unified medical chart for all.

The problems and challenges faced were presented:

1) Low salaries,
2) High outflow/change of junior medical staff,
3) Low motivation of staff,
4) Problems of supervision on regular basis,
5) Lack of training on ANC.

It was concluded that there were not enough trainings, and trainings in APPC was not integrated into the national system of education. Additionally the system of supportive supervision was not integrated into the existent outpatient system. It would require a large amount of time and funding to ensure quality regular supportive supervision. Thus the recommendation for the specialists who do the supervision would be to receive training in the principles of "supportive", not "punitive" supervision, and to equip them with the tool. It would be good to include training in the curriculum of ANC and to replicate best practices. Kyrgyzstan MoH is still trying to work on how to introduce "supportive supervision" into the "existent national system". Furthermore, one of the main goal is to set up a system for monitoring and referral, and promulgate modern ways of monitoring especially high risk patients.

Armenia

The following results from the assessment were presented:

- PHC system is functioning,
- All women and children have access to free health care,
- Outpatient care for children is provided by paediatricians, and in the rural areas – by family doctors and nurses,
- Patients have free choice of facility, so there is an interest in providing better service to attract women to the facilities,
- There is high level of qualification of medical staff on basic knowledge and interventions.

It was outlined that the strength in Armenia in this area resides in the:

1) Good infrastructure and available staff,
2) High qualification of staff,

3) Availability of technical equipment,
4) Early home visits after births,
5) Interchange between maternities of different level,
6) Immunization according to the national schedule,
7) Promotion of breastfeeding,
8) Timely hospitalization,
9) High percentage of pregnant women starting antenatal care before 12 weeks of gestation,
10) Ensured access to PHC was made more accessible, increased awareness of the population though the certificate cards.

However, needs for improvements were also identified:

1) Using the full potential of family doctors and midwifes,
2) Updating the out-patient documentation in line with WHO standards,
3) Decrease over-medicalization and hyper-diagnostics,
4) Revise protocols for referrals,
5) Update and revision of the perinatal card,
6) Improve timely screening, use of gravidogram and understanding of its effectiveness in early diagnostics of deviations,
7) Body mass index is not calculated even though weight is measured at all visits,
8) Confidentiality and privacy are not always ensured,
9) Improve knowledge of evaluation of healthy newborn baby,
10) Improve the knowledge and skills of counselling mothers about the newborn baby,
11) Improve the knowledge regarding most common diseases related to newborn care.

Armenian delegation suggested:

- To look at WHO's recommendations for "maternity" schools,
- To adapt national instrument of outpatient care,
- To promote change of the behaviour of medical staff by empowering them,
- To involve health care managers in implementation of supportive supervision,
- To consider the possibility of financial incentive for high quality of care provided,
- To consider introduction of the4th level (or highly specialized level) referral for women and newborn care.

The next steps in order to address the challenges and recommendations identified were to:

- develop the medical card for pregnant women,
- assess the effectiveness of the latest prikaz's in Armenia,
- provide trainings for trainers on counselling,
- analyse existent informational materials for women and their families,
- produce new protocol on management of pregnancy complications,
- develop protocol on referral,
- update clinical protocol on preeclampsia/eclampsia.

On a more overall basis it would be important for the European Region as a whole to channel more effort into allowing women to breast-feed, and continue to advocate for mothers to have a minimum of 4 antenatal visits.

Discussion outcome and recommendations

Following the presentations from the two countries, participants discussed the priority areas which needed to be addressed, as well as general recommendations for further improvement of APPC in the WHO European Region.

It was recommended to use the APPC tool for monitoring the quality of care in 2nd and 3rd level of care, linking it with perinatal health indicators.

It would be crucial to ensure that health information systems are in place to monitor not only hospital care but also PHC. Surveys (such as DHS, MICS, etc.) are crucial to obtain more health information and disaggregated data including information on social determinants of health.

In terms of sustainability it was suggested that qualitative and quantitative indicators should be developed for PHC/APPC tools, insurance companies who are linked to quality control should be linked to evidence-based medicine. Additionally it was concluded that CEMD could provide more precise and additional information on how to improve the quality of APPC, and that by listening to women's opinion, through interview, and by analysing the results regularly could be and added benefit for the quality of out-patient care.

The overall concluding recommendations for improvement of quality were to focus efforts on:

1) Education of medical staff,
2) Creation of stability and sustainability in the implementation of strategies, programmes and initiatives,
3) Ensuring high quality standards and protocols,
4) Making way for a systematic approach and motivation,
5) Ensuring the future steps taken in countries are in line with WHO recommendation,
6) Ensuring adequate financial support by the government.

Panel discussion on ways to improve primary health care for women and babies

The next session of the meeting put together a number of countries' representatives to discuss the ways of improving the PHC of women and babies of the Easter and Central European Region. The panellists were specifically asked to discuss:

- how the quality of APPC in out-patient health facilities is monitored in their respective countries,
- how they managed to improve the quality of APPC;
- and which challenges they came across and how they plan overcoming them.

All panellists felt their countries had undergone positive improvements. Several emphasized that rural populations are still difficult to reach.

Regarding the monitoring of the quality of outpatient APPC; the following examples came up:

In Latvia the process is not monitored; as it is a small country with less than 20.000 births they analyse the maternal mortality and quality of care using the Beyond the Numbers (BTN) approach.

In the UN admin Province of Kosovo they consider the monitoring of APPC the most complicated part and they are aware that without a strong and well-functioning health system in place it is not possible to monitor the interventions. WHO works together with UNICEF and UNFPA to monitor and report on perinatal indicators. Ad hoc surveys are used to monitor the progress in improvement of maternal and perinatal health and the impact of EPC. In terms of PHC home visits are supported.

It was remarked that survey as a methodology is pricey, and not all countries can afford it. Within all 53 member states few surveys have been carried out and only some countries have included APPC data.

In Tajikistan the primary level monitoring is commissioned by a decree from the minister of health. Tajikistan made a reform of family medicine and the standards were disseminated.
A team consisting of a medical doctor and midwife now visit health care institutions and look at the implementation of standards, but do not ask questions, just monitor. There are several national programmes being implemented (RH and FP) that include auditing. Good/bad sides and shortcoming are voiced for reference, 5 point scale is used. The coordinating bodies are with the deputy minister, with frequent meetings with no reference to specific institutions but just discussing recommendations and their implementation. The team is not paid but receives support from the MoH and international aid development partners.
Remarks were made that in the low income countries for the Region, it is easier to attract donor funding, but this is not a common denominator for the European Region.

In Uzbekistan there is a department in the MoH dealing with primary outpatient health services that receives weekly reports including a number of indicators such as contraception coverage, immunization etc. These indicators are monitored on a regular basis. It is a team of experts, who are carrying out the visits, and their travel is covered, but the team members do not receive additional compensation. They provide supervisory inspections using questionnaires designed by MoH, e.g. basic information, how they weight/ measure children, how they conduct interview. This approach does not cover the whole country but has started in pilot regions. Uzbekistan has started modernizing health facilities with proper equipment both state and donor funded.

In Turkmenistan data are collected on a monthly basis, locally, regionally and nationally. Some parameters are obtained on a quarterly basis. Antenatal coverage, screening during early period of gestation, use of protocols, breast-feeding etc. are evaluated. Twice a year the research institute deploys teams to regions and in each region there are several doctors, midwives, and

laboratory technicians etc. to educate and inform the health professionals in the region. Turkmenistan is engaged in an analysis and assessment of PHC with very good result of early coverage.

In the Russian Federation discussions on what work and what doesn't work for assessing and monitoring ANC have taken place. Russia had a national programme of modernisation of PHC that worked. There is a hierarchical system, with 3 sets of statistics, and many parameters are well traced. Medical professionals are used to follow orders, as over the years there has been a lot of scrutiny, but some data are not reliable. The question was raised "who is monitoring the monitoring". Who will be evaluating the quality of monitoring?

Furthermore, a country like the RF is by its size much more challenging to oversee than a smaller one. Overall perhaps what is missing in Russia is a standard tool (universal at country level).One of the suggestions was to implements an integrated system across Russia for monitoring ANC using WHO standards.

In the Republic of Moldova midwifery work and studies were paused, but in 2008 funding for family doctor centres, outpatient and PHC clinics was established including perinatal care assistance, which meant that midwives came back by optimization of resources for health care. MoH does not monitor the quality of health services including PHC. Since 2004 there is public health insurance, including hospital, outpatient and primary care. Free medication for pregnant mothers and children under 5 is provided and since 2010 there are standards for pregnancy management including ultrasounds at primary level, standards for child health, and quality management. The other quality indicator is management of child health during 0-1 year of age.

In Ukraine, 500000 births per year take place. 89% of all pregnancies are covered by ANC. Currently Ukraine is reforming the perinatal care system, and will use family doctors for referral. There is a department for quality assistance in the MoH.

In Lithuania, a small country, they have conducted strategic analysis of maternal and perinatal health since 1995. All women are covered by a medical insurance. However, reports produced by family doctors, obstetricians and midwives are not always reviewed. The goal is to ensure that all data are available online.

In Armenia they introduced a special cards ensuring that women have access to free delivery. They have a hotline for calls, that when analysed provides very useful data, showing the shortcoming in the system. The hotline works 24/7 and the calls are recorded and forwarded to all levels. The four staff linked to the hotline can dispatch ambulances, refer etc. Furthermore, there is a second system the national health agency finances are based on the number of cases and bonuses based on early start of antenatal care are received.

Recommendations from the panel discussion

- To link monitoring of quality of care with health insurance,
- To analyse the impact of bonus incentives,
- To target specific population groups,

- To focus not only on data collection and generation, but ensure that data is analysed and used for further improvement of access and quality of care,
- To encourage medical professionals and institutions to measure their own performance, not waiting for external assessors,
- To adherence to quality standards at all level,
- To have a more systemic approach, motivate and train medical professionals,
- To incorporate the assessment tool developed by WHO in the regular monitoring of the quality of out-patient care.

Referral system in maternal and newborn health care

Doctor A. Bacci made an introduction to the importance of a good referral system for maternal and newborn health care, using an example form the United States. They found that there is a link between the levels of hospital for low birth weight infant (LBW) (less than 1000g).
40 % of LBW babies are born in 1st level facilities. The report showed that infant mortality increases as level of a facility decreases. It is a must to ensure that each infant is born in a facility that matches his/her needs. In 1976 standards for the management of the LBW infants were issued, in 1993 the standards were updated, and in 2002 the referral standards were endorsed by professionals.

In the stat of Wyoming USA, they had the highest rate of mortality in 1971, but in 1980 they became the second best.
In 1990 France started to put in place regionalization, but it took eight years to implement them.
A huge advance in the discussion was made during the MOSAIC[2] study, because many countries were pulled together for the outcome of babies depending on the level of care. The report proposed that pre-term babies are born in facilities prepared for emergency care and have a NICU, and that LBW babies have better chances of surviving if there is a NICU.

Nevertheless, only few infants born pre-term are in the need of intensive care. When a baby is 30-32 weeks of gestation the need for interventions is very low, most babies more than 1500g or after 32 week, need help to establish oral feeding and supportive care. Other findings showed that the mother is the best carer, and admitting the mother to intensive care has a very good outcome. Furthermore, intensive care for babies that do not need it is costly.

The example of the South Kazakhstan Oblast

In 2006, the WHO Regional Office for Europe was asked to help the South Kazakhstan Oblast (SKO) with the challenges of regionalization. WHO conducted several workshops on perinatal regionalization, and developed some steps for emergency perinatal guidelines. The “order” (prikaz) was issued.

[2] The MOSAIC project: 'Models of OrganiSing Access to Intensive Care for very preterm births,' was a project that conducted a cohort study of births between 22 and 31 weeks' gestation in 10 European regions (7222 very preterm babies) and a descriptive survey of the organization of obstetrics and neonatology departments in these regions (428 maternity units and 290 neonatal intensive care units (NICUs), financed by the DG-RESEARCH http://www.epiceproject.eu/en/our-project/mosaic.html

To start with, all hospitals wanted to become the 3rd level hospital, so in order to proceed and achieve consensus it was important to look at the definition of the 3rd level health facilities and discuss norms for referral. A perinatal committee was set up to discuss financing, implementation of facility based protocols, the current trends, available data and definitions of the 3rd level.

After the successful changes and defining of the three levels in SKO, maternal death decreased, the perinatal mortality slightly increased but this was because the data were better collected and all babies were registered. More births of LBW babies were registered in 2007-2009. The Perinatal centers were nervous about the fact that more babies were dying at the 3rd level facilities, however, it was explained during WHO technical assistance that this should be seen as a good results as the overall trend is the decrease in deaths both infant and maternal. If complications during birth of LBW babies are referred properly it would be the outcome. The positive changes in the referral system also resulted in less referral of normal births to the 3rd level. It is important to refer only complicated cases. Another change was the improving of the transfer in utero before 32 weeks of gestation. Such approach increases survival, but this phenomena is not to be taken for granted as it requires good management and staff.

The example of the Irkutsk oblast (Russian Federation)

Professor Protopopova introduced the core numbers of the oblast. Irkutsk has a population of 2.428.000 and covers an area of 774.900 km2 and 80% of the populations are living in urban environment. The Russian government invested 16 billion roubles in the modernization of the perinatal care, 25% of which went to improve referral system. When it comes to evidence based medicine, etc. simulation centre and training facilities were built. There are few settlements up north and very poor infrastructure with bad roads, not much public transport etc. In winter there is a need for special equipment. These are difficult conditions to arrange provision of health care of good quality. It was decided to install local regulations. Therefore, there is the opportunity to centralize health care system; and to consolidate the system of medical services. The regionalization started in 2000 when the maternal and infant mortality rate was high, so there was a need to improve the system to address these issues. In Irkutsk oblast, it was not a choice to close small facilities, as without them, it would be impossible to provide care.
In Irkutsk oblast 3 levels of care were introduced, also with small facilities; it took 6 years to interact with practitioners, population and local authorities to implement the system. The biggest barrier was the practitioners themselves. They did not want to divert complication and LBW births away from the local facilities. So it took a lot of awareness raising. By 2006 it became possible to establish the 2nd and 3rd level and design protocols and standards. The awareness raising was very useful; to enlighten all about the why's and the evidence. The protocols were promulgated by the local MoH in 2006.

In Russia there is an overall problem in maintaining and getting human resources (HRS), but in Irkutsk oblast MoH managed to retain junior medical staff, however, there is still a lack of neonatologists (NN) and Obstetricians (OB).There is staff at the 3rd level facilities, more or less adequate staff at the 2nd level, but at the 1st level there is shortage in health professionals. Therefore, doctors from 2nd and 3rd level facilities are doing shifts/ being deployed there on a

rotational basis. There is a training institution in Irkutsk, the rotations of the teams work quite well.

In Irkutsk oblast focus is also on satisfaction of population. Although some obstetrical departments in local facilities were closed, the management was good in defining profiling. There are emergency units at the 1st level facilities (in Irkutsk oblast there are 24 1st level, 7 - 2nd level, and 2 - 3rd level facilities). 50.000 births take place at the 1st level per year. Regarding the payment, a system of subsidies has been introduced since 2009, as some women have problems in paying. Some would refuse to get transport as it was too expensive, so now it is the regional budget that covers the transport if there are complications or pathologies that require multi-disciplinary consultations.

Since introduction of the regionalization and better transportation there has not been any maternal death at the 1st or the 2nd level, only at the 3rd level health facilities. As for NMCs 18-20 women per year are evacuated from the 1st and 2nd level to the 3rd level facilities and are taken over by inter-disciplinary teams. All cases get analysed. The eligibility to get transported until 22 week is very successful. The main reasons for MM in 2012 are indirect causes (chronic diseases), obstetrical haemorrhage, and sepsis.

In 2012 more than 90% of pre-term births before 32 weeks of gestation took place in the 3rd level facilities but almost 50% of spontaneous pre-term deliveries after the 33rd week of gestation happened at the 2nd level decreasing the burden from the highest specialised level of care. 80% of the high-risk births happen in 3rd level facilities. As of 2003, the new live birth definitions (from 22 weeks of gestation) were implemented resulting in increase of the infant mortally rate.

The example of Lithuania

Professor Nadisauskiene confirmed that in Lithuania they were facing the same problems as in other countries in the beginning. In Lithuania a national perinatal committee was established in 1991 and the WHOs live birth definition was adopted. In 1992 the perinatal regionalization started, and in 2001 the principles of making pregnancy safer were formulated, including regionalization.
In 1993 Lithuania started the registration of each delivery, getting all the information, which is now analysed every year. Facilities with less than 300 births per year were closed, and the adoption of the live birth definition meant a leap in the number of deaths, but it was overcome with improvement of the quality of care.

Defining the referral system and transportation, when the centre and different levels were established, was crucial in order to inform and advise. In Lithuania a list of equipment for the different levels of care was elaborated:

- 1st level - polyclinics and family doctors;
- 2nd level - district hospitals and maternity wards including premature births over 28 weeks of gestation;

- 3rd level – there are two perinatal centres (in Kaunas and in Vilnius) where the deliveries from 22 weeks of gestation take place. There is some specialisation between these two centres - if cardiac pathology of the foetus is diagnosed the pregnant woman is refereed to Vilnius; if it is neurosurgical problem - to Kaunas. With support from Swiss funds there are two good NICUs.

Regionalization level is mentioned in the perinatal card, which also contains the risk level/factors that women need to be aware of. At the 3rd level, there is collaboration between practitioners and university teaching staff. For NN it is important that intensive care vehicles etc. are available. Heads of the NICU confirm that the infant deaths are declining dramatically, and this is well received by politicians.

Maternal mortality ratio is up and down as the number of deliveries is small and one maternal death case makes difference and changes the ratio. The dominating reason is obstetrical/direct complications, at the same time in the last 15 years no women have died of haemorrhage. Most perinatal problems arise from poor communication between the different teams and health professionals. Systematic improvement of the quality of care using simulation and short courses (one-two days) are on-going.

The professional association responsible for development of the national standards is aware that not much literature on evidence based medicine is available in Lithuanian and is working on getting protocols from different sources. 70 algorithms are in the process of development (including graphic presentation, and ways on how to monitor and audit).The plan is to introduce them in all hospitals to have a unified approach. The conclusion is that data collection and monitoring is not enough – one should implement the recommendations and improve the quality of care. Systematic approach is to be used and good leadership is crucial.

Discussion outcome on referral systems

After the presentations on referral systems in different parts of the European Region, participants were given the opportunity to ask questions and discuss specific issues of concerns.
The main points of discussions were:

1. Proper information to the woman, as there is free choice of hospitals. It is important to inform women that pregnancy is a physiological process not an illness and present information about the options and procedures linked with each level, in order to avoid the situation that all women chose the 3rd level thinking they get better service. The crucial issue is to emphasize that at each level the adequate quality care is available.

2. The importance of informing about the role of the midwives, as well as training and using midwives for normal births as is the practice in some European countries like United Kingdom, Norway, Denmark etc. Midwife is the appropriate health professional to provide help for normal births. There are many scientific publications providing evidence that this approach provides good results including avoiding over-medicalization compared to the

highly specialized care.

3. There is very high Caesarean section (CS) rate especially at the 3rd level of care. It was emphasized that the CS rate very much depends on the management of the hospital, and health professionals need to start with themselves. CS is a challenge in many European countries. A recent small study in Lithuania when asking colleagues from centre on voluntary basis showed that 30% are done during first deliveries and normal pregnancies. But more detailed analyses is to be carried out to make any recommendations and to compare the results to similar health facilities in other countries.
   Issues of the funding were raised. It becomes a problem if CS generates more funding for the facility than a normal birth. What should be done about the distribution between CS; normal and complicated delivery? The speakers recommended that there should not be more funding for CS at the different levels. This should ideally be determined at the national level and the prices should be the same across the country.

4. In some countries the regionalization process is still not working well, and problems remain in distribution by levels. Experience shows that it is more likely to success if the process is bottoms-up and not top down,

5. It was suggested that it would be very helpful if a methodology of simulation training and recommended monitoring methods would be available. Furthermore, emergency obstetric care (EMOC) standards would be good to link with regionalization,

6. It is important to raise awareness among the policy makers emphasizing that safe maternity and healthy next generation depends on implementation of women's rights principles, on the level of education and financing. Health professionals cannot be kept responsible for everything.

Existing referral system in primary health care in countries of Eastern and Central Europe

At the second panel session, country representatives were asked to discuss which mechanisms regulates referral of a pregnant woman, a mother or a baby from out-patient, primary health care to another level of care in their countries. Each representative gave a short summary of the referral system in place:

- In the UN Admin. Province of Kosovo the referral system requires improvement. There are no respective regulations to support referral, and no health insurance in place to set the rules and restrictions. Women have the right to choose the facility for delivery and use their own criteria.

- In Uzbekistan some elements of the perinatal care regionalization have been introduced. Health facilities were renovated and equipped; the criteria for the referral system were developed (separately for women and newborns), discussed and agreed upon. The 3rd level

facilities are the centres for the data collection and analyses. Still problems remains with remote areas, where the staffing, knowledge and capacity needs major improvement. The legal framework for regionalization has not been approved yet.

- In Turkmenistan there is daily communication between the services, the most difficult cases are solved using sanitary aviation and bringing complicated cases to the perintal centres. The elements of the monitoring system are in place; the regulation framework for the regionalization has not been developed, but there is an existing program for maternal health improvement.

- In Tajikistan there is no regulation framework for regionalization, some elements only – the list of situations for reference.

- In Moldova the regionalization of service is well regulated and has worked for the last 12 years. It is in a process of revision and updating; the process is guided by the national protocols that are revised every second year.

- In Kyrgyzstan there is a national program, the protocols and guidelines are in place, but the referral system is not developed,

- In Ukraine a concept note for the perinatal care system reform was approved in 2010. The framework for referral institutions was developed, but still in the process of implementation including revision of human resources and equipment. The monitoring report is developed twice a year.

The panellists were asked to discuss the biggest challenges in referring a patient in time and to the right level:

- In Armenia the biggest challenge is the number of perinatal centres versus the country needs and difference of costs of medical interventions at different levels of care. Recent assessment of quality of care showed that clear criteria for referral are to be developed.

- In Ukraine the biggest challenge is the fact that regionalization is not functioning optimally. Only 50% of deliveries in the 3rd level facilities have indications for that level. Training of the staff requires continuation. Communication and collaboration with PHC institutions is to be improved. Sometimes, the quality of the roads and infrastructure can be an obstacle for women's transportation to a facility of another level.

- In Kyrgyzstan the challenges are linked to the infrastructure of medical facilities, which could be improved. Different referral level facilities have the same type of equipment and can provide the same level of care; staffing is still a problem, including the migration and

willingness of the professionals to gain better knowledge and skills.

- In Moldova the challenges are with the revision the structure of the health facilities especially those at the 1st level with small number of deliveries, however, the referral/transportation is a problem as well and causes delay in finding the best solution.

- In Tajikistan challenges are in the area of transportation and lack of planned hospitalization. Delayed actions, emergency cases result in worst results to the mothers and babies as well as higher expenses for the health system in general.

- In Turkmenistan they face challenges with the transportation from remote areas. Linkage of the hospital and out-patient care requires further improvement.

- In the UN admin. of Kosovo the biggest challenges is the fact that there is insufficient infrastructure, lack of regulations and health insurance. Protocols start to be developed only recently.

Finally the country representatives discussed and clarified the monitoring of effectiveness of regionalization/referral system. Some countries like Ukraine carry out monitoring reports twice a year with a routine list of indicators developed and the monitoring reports are available in e-form, but for internal use only. In other countries the monitoring takes place once a year, and in others there is no monitoring of the effectiveness of regionalization.

Group work on referral system for pregnant women, mothers and newborns

After the panel session on the referral system, all the participants worked in groups and developed recommendations for improving the referral system for pregnant women, mothers and newborns.

The groups approached the work differently. The first groups listed a number of specific recommendations. Group two approached it differently by defining specific problems and recommending solutions. The third group identified specific areas for improvement.

Outcome of the group work

The first group came up with the following recommendation:

- To carry out situational analysis of gaps in the referral system, including revision of the relevant protocols and standards on all levels to improve quality of care for woman and newborns,

- To analyse the existing referral system implementation experience, including the revision of regulation documents,

- To strengthen the role of PHC with a special emphasis on the role of midwives at all levels, including the promoting of home visits,

- To involve family and communities in all stages of a referral system, by increasing the awareness of the population,

- To provide a sustainable health care insurance system linked to standards of care, and promote staff motivation including certification and accreditation of provided services,

- To promote a change of attitude in health care providers sensitizing them to the concept of referral system by including this topic in the training of all involved health professionals;

- To revise and prepare a clear terms of reference for each health professional, defining the functions that includes responsibility for referring;

- To revise EMOC guidelines, and work on optimization of care, and

- To close facilities with low number of births.

The second group defined eight areas that needed to be addressed and recommended solutions.

Challenge 1: Not everywhere the regulatory framework is developed, it would be useful to:

- Make an inventory of equipment for each different level,
- Provide targeted education and staff training for each level,
- Set up procedure and indications of redirection to the different levels,
- Elaborate transport protocol,
- Establish multidisciplinary working groups in collaboration with the MoH, (obstetricians/gynaecologists, neonatologists, midwives, community representatives, scientists, teachers),
- Seek out “champions” willing to prepare the first version of the documents,
- Identify funds to support the working groups (MoH budget or funding of aid development partners),
- Edit and streamline the documents - with the assistance of international organizations (WHO).

Challenge 2: Poor quality of the monitoring and evaluation system, and lack of data on cost-effectiveness. Recommendation is:

- To develop evaluation and monitoring systems with clear criteria and indicators of effectiveness on different levels of care, taking into account the experience of monitoring and evaluation in the country.

Challenge 3: In some countries the system of punishment leads to unreliable information. It would be important:

- To ensure a transition from a punishment system to a system based on promotion and motivation,
- To train and show the staff that there are alternative methods of investigation of perinatal and maternal mortality (with the support of the WHO and other aid development partners).

Challenge 4: Shortage of doctors, especially at the primary level could be addressed by:

- Delegating authority to family physicians, midwifes and paramedics in management of pregnant women. It requires changes in the regulations and normative base.
- Improving the knowledge and skills of midwives and family physicians.
- Improve/revise the training programs for midwives and family physicians, and harmonize the educational programs for midwives and medical doctors.
- Continuous training of the teaching staff/academia.
- Using new teaching methods, using simulation technology, telemedicine etc.
- Developing a national and regional plan for training and retraining

Challenge 5: Late/untimely treatment of women should be addressed by:

- Raising awareness of women, e.g. by including information on the perinatal/ANC cards, elaborate leaflets, through dialogue, and possibly engaging with and involving religious organizations and the community,
- Improving counselling skills of midwives and delegating this function to them.

Challenge 6: Women from the socially vulnerable groups start the antenatal care very late, or do not/cannot attend antenatal care services. It is important:

- To ensure cooperation with other services (social services, psychologists, legal services, non-governmental organizations, local communities).

Challenge 7: Doctors do not want to redirect to the next level. This challenge requires that:

- Legal documents are developed,
- Medical staff receive clear explanation and information about each level,
- Financing system is analysed and revised if necessary to ensure the effectiveness of the redirection,
- Barriers for women (paying for transportation themselves, medicines etc.) are removed.

Challenge 8: Lack of transportation can be addressed by:

- Having/using ambulances,
- Providing financial support to women when there is a need to transfer to a higher level of care,
- Providing consultation at home.

The third group identified the targeted topical areas for improving referral system and came up with a number of recommendations classified according to the health systems functions.

Stewardship
- Legal documents are to be in place.
- Clinical guidelines are to be developed and promoted.
- Standard operating procedures are to defined.

Resources
- Availability of qualified staff is crucial.
- Equipment, transport, medicines, infrastructure is to be according to the level of care.

Service provision
- Emergency obstetric care
- Standardization
- Quality committee at the facility level
- Information to the population, work with communities
- Feedback (patients surveys)

Financing
- Rational use of resources
- Adequate funding for working with community
- Revision of the possible financial incentives

Despite different approaches in addressing the referral system in the groups they came up with similar challenges and possible solutions which could benefit the countries of the European Region. The ministry of health will need to engage other sectors (transport, finance, legal system, education, etc.). There is a need to reduce the inequality in health care and focus on those most in need groups (rural population, populations in remote mountainous areas, Roma population, migrants, etc.).

The final recommendations of the plenary discussion were:

- Use the European strategic framework "Health 2020" to improve the quality of antenatal care and referral system by improving inter-sectoral collaboration (education, social protection, transport, media),
- Improve the availability of information on the activities in different health facilities (comparative analysis of health institutions),
- Define priorities and increase the prestige of primary care at the national level,
- Strengthen the role of midwifes/nurses by delegating certain functions performed by medical doctors (management of normal pregnancy, counselling, etc.),
- Streamline feedback between hospitals and out-patient health care,
- Improve the knowledge and skills of family doctors and nurses on pre- and postnatal care through training and supportive supervision,
- Develop mechanisms for monitoring the implementation of national standards/protocols,
- Monitor regularly (every 6 months) the percentage (%) of implementation of the standards,
- Develop clear criteria for institutions at different levels of care and develop the route sheets,
- Improve age-specific reproductive health literacy of the population,
- Develop optimal mechanisms for early assistance to a pregnant woman, based on the features and capabilities of each country.

The participants discussed the next steps to be taken in order to implement the recommendations of the meeting.

The delegates of Armenia were committed to review the criteria of referrals and levels of medical aid by the end of 2013. They also informed that they would conduct a seminar to introduce the revised perinatal cards.

The delegates of Uzbekistan underlined the importance and the enriching inputs received from having been invited to participate to this workshop. They will discuss the recommendations with the MoH working group and determine how to prioritize them depending on funds availability. regionalization and review of the referral system is seen as a priority in Uzbekistan. The working group drafting guidelines would like to get technical assistance from the WHO. They proposed to develop a web based platform to share experience and receive comments.

The delegates from Ukraine confirmed that they would continue the improvement and will use the CEMD to identify systemic dysfunctions and prevent mistakes. They will advocate for better/more training for midwives and obstetricians

The participants from Kyrgyzstan proposed to organize a meeting with partners and MoH to prioritize the recommendations for regionalization.

The delegates from Tajikistan will use the recommendations from the upcoming assessment of ANC; and present them to the association of Ob/gyn for their comments, review and action.

As Turkmenistan is in the starting phase of regionalization the delegates proposed cooperation with Prof Nadisauskiene. They were grateful for all the experience shared in the workshop. All the recommendations will be submitted to MoH and discussed. They furthermore asked WHO and other organizations for technical support.

The policy makers in Kosovo and partners will be briefed about the main recommendations and possible next steps will be discussed. The UN admin Province of Kosovo is at an early stage of reform.

The delegates from Moldova confirmed that the end of the month they would submit the results and recommendations of an expert teams and the board will decide for the plan of action.

In Transnistria region a meeting to brief all relevant parties will be organized and development of regulations initiated. The work will continue based on the outcomes from the assessment of the quality of care. Furthermore, there are plans to conduct a seminar on perinatal issues and establishment of a midwifery school.

The delegates of the RF were keen to advise the MoH on the results and recommendations from this workshop, hoping that appropriate next steps are taken.

Final conclusion

Participants were very positive about the outcome of the workshop and the importance of the topics discussed and the experience shared. Furthermore, there was a broad wish from all the support, if funding permits, that WHO coordinates a follow up meeting in two years' time, to see how the regionalization is implemented, and to provide a platform for further exchange of experience and knowledge.

Annex 1 Programme

THURSDAY 24 OCTOBER

08:30-09.00	Registration	
09:00 - 10:30	**Opening and introduction session**	
	Welcome	-Dr Khachatryan Deputy Minister of Health, Armenia -Svetlana Axelrod, Ministry of Health, Russian Federation -Mr Ivanov, Advisor to the Ambassador of the Russian Federation in Armenia -Dr Hakobyan, Head of WHO Country office in Armenia
	Meeting objectives	Oleg Shvabskiy, WHO expert
	Maternal and newborn health in the WHO European Region**:** present situation and activities to improve it. Plenary discussions	Gunta Lazdane, WHO/Europe
10:30 - 11:00	*Coffee/Tea* *Meeting with mass media*	
11:00 - 12:30	**Progress in implementation of the project "Reduction of maternal and neonatal morbidity and mortality in countries of Eastern Europe by improving primary health care and referral system" supported by the Russian Federation**	
11:00-11.20	Tool on assessment of the quality of antenatal and postpartum care for women and newborns	Alberta Bacci, WHO expert
11:20-11:40	Achievements and challenges in implementation of the project	Oleg Shvabskiy
11:40-12:30	Plenary discussion and development of recommendations for the further improvement of antenatal and postpartum care for women and newborns	*Moderator:* Henrik Khachatryan, WH Country office in Armenia
12:30 - 13:30	*Lunch*	
13:30 – 15:30	**Results and future steps of APPC project in target countries**	
13:30-14.00 14:00-14:15	**Kyrgyzstan** – Representatives from the APPC implementation team in Kyrgyzstan Questions and answers	Aigul Boobekova, Ministry of Health, Kyrgyzstan
14:15- 14:45 14:45 – 15:00	**Armenia** - Representatives from the APPC implementation team in Armenia Questions and answers	Karine Saribekyan, Ministry of Health, Armenia
15:00-15:30	Plenary discussion on lessons learnt, monitoring of the results and exchange of experience	*Moderator:* Kubanychbek Monolbaev, WHO Country office in Kyrgyzstan
15:30 - 16:00	*Coffee/Tea*	
16:00 - 17:30	**Panel discussion – Ways of improvement of primary health care for pregnant women, mothers and newborns in countries of Eastern and central Europe**	

	Discussion questions: • How the quality of antenatal and postpartum care in out-patient health facilities is monitored in your country? • What are the successes in improving APPC and main triggers to reach them? • What are the remaining challenges and plans in overcoming them?	Panellists: Representatives from Russian Federation, Tajikistan, Turkmenistan, Republic of Moldova, Ukraine, Uzbekistan, United Nations Interim Administration Mission in Kosovo *Facilitator* Gunta Lazdane
17:30-17:45	Closing of the day	

FRIDAY, 25 OCTOBER

9:00 - 10:30	**Referral system in maternal and newborn health care**	
9:00-9:20 9:20-9.35	General principles of referral and regionalization for improving maternal and perinatal outcomes Questions and Answers	Alberta Bacci
 9:35- 9:50 9:50- 10:05	Lessons learnt in:Russian Federation &Lithuania	Natalia Protopopova, Russian Federation Ruta Nadisauskiene , Lithuania
10:05 – 10:30	Discussion	*Moderator:* Zulfya Pirova, WHO Country Office in Tajikistan
10:30 - 11:00	*Coffee/Tea*	
11:00 - 12:30	**Panel discussion – Existing referral system in primary health care in countries of Eastern and Central Europe**	
	Discussion questions: - Which mechanisms regulate referral of a pregnant woman, mother or a newborn from out-patient, primary health care to another level of care? - What are the biggest challenges in referring a patient in time and to the right level of care? Plenary discussion	Panellists: Representatives from Russian Federation, Tajikistan, Turkmenistan, Republic of Moldova, Ukraine, Uzbekistan, United Nations Interim Administration Mission in Kosovo Facilitator: Oleg Shvabskiy
12:30 - 13:30	*Lunch*	
13:30 – 15:30	Group work on developing recommendations for improvement of referral system for pregnant women, mothers and newborns	Facilitators: Alberta Bacci, Oleg Shvabskiy, Ruta Nadisauskiene
15:30 - 16:00	*Coffee/Tea*	
16:00 - 17:15	Recommendations from the groups and plenary discussion on the next steps	Facilitator: Gunta Lazdane
17:15 – 17:30	Closing of the meeting	

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