Assessment of the Quality of Maternal and Neonatal Services in Montenegro

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Remark

The content of the report is the sole responsibility of the authors, and it can in no way be seen to reflect the views and policies of UNICEF.

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List of abbreviations

AB therapy	Antibiotic therapy
ACOG	American College of Obstetricians and Gynecologists
AVD	Assisted vaginal delivery
BFHI	Baby-Friendly Hospital Initiative
CPAP	Continuous positive airway pressure
CS	Caesarean section
CTG	Cardiotocography
EmOC	Emergency obstetric care
EPC	Effective perinatal care
EU	European Union
FGR	Foetal growth restriction
FHR	Foetal heart rate
FIGO	International Federation of Gynecology and Obstetrics
HAI	Hospital-acquired infections
ICU	Intensive care unit
IMPAC	Integrated Management of Pregnancy and Childbirth Care
IPC	Infection prevention and control
ISUOG	International Society of Ultrasound in Obstetrics and Gynecology
MNCH	Maternal, newborn and child health
MoH	Ministry of Health
NICU	Neonatal intensive care unit
PChH	Podgorica Children's Hospital
PHC	Primary health care
PMR	Perinatal mortality rate
PROM	Premature rupture of membranes
PMTCT	Prevention of mother-to-child transmission
RANZCOG	Royal Australian and New Zealand College of Obstetricians and Gynaecologists
QoC	Quality of care
QI	Quality improvement
RDS	Respiratory distress syndrome
RGOC	Royal College of Obstetricians and Gynaecologists
SGA	Small for gestational-age foetus
UNICEF	United Nations Children's Fund

WHO	World Health Organization

1. Introduction

Montenegro is an upper-middle-income country in South-East Europe, with a total population of 619,221 in 2021. Montenegro ranked high for human development according to the 2019 Human Development Report. A series of health system reforms and reorganizations in Montenegro started in the early 2000s. Following the beginning of negotiations on EU accession in June 2012, planning of the health sector development is being implemented within the EU social, legal and economic framework, as stipulated in the key priorities of the 2020 Health policy.

Montenegro has a good network of primary health care (PHC) and hospital facilities and high coverage with essential obstetric and paediatric healthcare services. There are around 7,000 births per year in the country: in seven Level-1−2 maternity hospitals/wards that have between 185 and 785 deliveries per year; and in the tertiary-level Podgorica Clinical Centre that had 2,998 deliveries in 2021. In the last 20 years, the main maternal and child mortality indicators have been continuously declining due to improvements in antenatal, perinatal and paediatric care, and very good coverage with MCH services (the share of live births attended by skilled personnel is at almost 100% (UNICEF, 2021)). Maternal mortality is estimated to be 6 per 100,000 live births [1], similar to the average of the EU [21] and lower than the WHO European Region (12.7) [1]. Infant mortality decreased from 6 per 1,000 live births in 2010 to 2 per 1,000 live births in 2020 [22].

An assessment of the safety and quality of hospital care for mothers and newborn babies conducted in Montenegro in 2016 found a number of improvements in the infrastructure and in the quality of services compared to the first assessment conducted in 2011: suitable physical structures and good hygiene conditions; replaced and renovated equipment in labour and neonatal wards; many outdated procedures, such as the routine aspiration of amniotic fluid for normal births and immediate cord clamping, have been discontinued; others, such as episiotomy and enema in labour, were used less frequently; skin-to-skin contact started to be implemented and breastfeeding facilitated.

At the same time, the assessment highlighted several areas for improvement in the quality of care for women, babies and their families: the absence of single-patient rooms dedicated to labour and delivery in most hospitals; the presence of a labour companion, choice of position and freedom from restrictions in childbirth was not in place; persistence of many outdated, harmful practices (enema, shaving, non-vertical positions for delivery and the Kristeller manoeuvre); an increasing rate of caesarean sections and no efforts to control the incidence of abdominal delivery. In addition, national guidelines and protocols were missing, clinical record keeping was substandard, and data were not systematically collected, analysed and used to develop solutions/ recommendations to improve the quality of care.

In agreement with the Ministry of Health and the UNICEF Country Office in Montenegro, with technical assistance of the CURATIO International Foundation, the following were the objectives of this assessment:

a. assess the progress made since the previous assessment in 2016 and identify key areas of the quality of maternal and new-born care in Montenegro;
b. suggest priority actions needed to improve the quality of MCH care at the facility and national levels, considering each underlying factor influencing the quality of care;
c. develop a specific action plan using the WHO Hospital Care for Mothers and Newborn Babies Quality Assessment and Improvement Tool;
d. provide the opportunity for a national team of assessors to become familiar with the assessment tool and methodology and introduce the concept of peer review and quality improvement to managers and health professionals in the assessed facilities.

2. Assessment methodology

2.1 Assessment tool

For the evaluation of the quality of hospital care, the assessors' team used the revised version of the ***Hospital Care for Mothers and Newborn Babies Quality Assessment and Improvement Tool (second edition, 2014)***, developed by the WHO Regional Office for Europe, with technical support from the WHO Collaborating Centre in Mother and Child Health in Trieste, Italy [2].

The assessment tool and methods were based on the experience gained in the use of the paediatric assessment tool, developed by the WHO in 2001 and widely used globally, and on the experience gathered by the WHO Regional Office for Europe in the successful implementation of the Making Pregnancy Safer programme and Effective Perinatal Care training package in the last two decades [3].

Most reference standards of the assessment tool are represented by the WHO Regional Office for Europe Effective Perinatal Care training package and by the WHO global IMPAC package of guidelines. The last revision of the tool was issued in 2021, by including the latest recommendations of the WHO and other international and national professional organizations' (FIGO, ISUOG, RGOC, ACOG, RANZCOG, etc.) guidelines. The revised version of the Assessment Tool was field-tested during the evaluation of the quality of hospital care for mothers and newborn babies in Kyrgyzstan and Tajikistan in 2021 and used for evaluation of the quality of hospital care for mothers and newborn babies in Kazakhstan in 2022.

The items included in the assessment were chosen to provide a comprehensive assessment of the four dimensions of Quality of Care (QoC) as identified by the WHO European Strategic Approach for Making Pregnancy Safer:

- They must be based on scientific evidence and be cost-effective.
- They must be family-centred, respecting the human rights, confidentiality, privacy, culture, belief and emotional needs of women, families and communities.
- They must ensure the involvement of women in decision making for options of care, as well as for health policies.
- They must ensure the continuum of care from communities to the highest level of care, including efficient regionalization and a multidisciplinary approach.

The informing principles of the tool are the following – they must: i) be based on evidence-based internationally accepted standards; ii) be capable of guiding the collection of valid information in key areas and be user-friendly; iii) be able to stimulate the involvement of hospital staff in identifying problems and possible solutions.

The assessment tool reviews three main sections: 1) hospital support services; 2) case management; and 3) policies and organization of services. Standards of clinical care, governance, essential physical resources, competent and motivated human resources, processes for QI, an actionable information system, a functional referral system and respect for the rights of women, newborns and their families are covered throughout the tool.

In order to gather data on whether standards are being met, the following methods were used:

- Direct observation, e.g. of the environment, procedures, skills, handwashing, behaviour and attitude of the staff.
- Document review of medical records, policy and procedures, clinical protocols and guidelines, department data and indicators, inventory and maintenance records, etc.
- Staff interviews assessing knowledge and feedback on existing services.

- Patient interviews assessing attitudes on the quality of and access to services, out-of-pocket expenditure and the effectiveness of communication.
- Interaction with hospital management to obtain information about policies and capabilities.

Scoring system: each item was evaluated with the information gathered from different sources to reach an overall score. For scoring, a scale from 0 to 3 was used, as follows:

Score	Definition
3	Good or standard care
2	Need for some improvement to reach standard care (suboptimal care, but no significant hazard to health)
1	Need for substantial improvement to reach standard care (suboptimal care with significant health hazards, e.g. omission of evidence-based interventions, such as the use of steroids in premature labour)
0	Need for very substantial improvements (totally inadequate care and/or harmful practice with severe hazards to the health of mothers and/or newborns), e.g. a lack of availability of an emergency caesarean section (CS) or use of dangerous drugs.

2.2 Assessment team

The assessment was implemented by three international consultants: Chinara Kazakbaeva, midwife, Kyrgyzstan; Stelian Hodorogea, obstetrician-gynaecologist, Republic of Moldova; Audrius Maciulevicius, neonatologist, Lithuania.

A team of national co-assessors was set up by the Ministry of Health in collaboration with the Clinical Centre of Montenegro and with the support of a UNICEF. The team of national co-assessors comprised 16 members, 14 practising health workers, one psychologist from the Clinical Centre and one health worker from the Ministry of Health.

2.3 Assessed health facilities

Table 1: Assessed health facilities

Name of the health facility	Type	Level	Location
Clinical Centre of Montenegro	Maternity unit Centre for Neonatology	Tertiary	Podgorica
Niksic General Hospital	Maternity unit	Secondary	Niksic
Pljevlja General Hospital	Maternity unit	Secondary	Pljevlja
Cetinje General Hospital	Maternity unit	Secondary	Cetinje
Kotor Clinical Centre	Maternity unit	Secondary	Kotor
Bar General Hospital	Maternity unit	Secondary	Bar
Berane Clinical Centre	Maternity unit	Secondary	Berane
Bijelo Polje General Hospital	Maternity unit	Secondary	Bijelo Polje
Ulcinj PHC	Primary healthcare centre	Primary	Ulcinj
Plav PHC	Primary healthcare centre	Primary	Plav
Rozaje PHC	Primary healthcare centre	Primary	Rozaje
Mojkovac PHC	Primary healthcare centre	Primary	Mojkovac

2.4 Assessment programme

The assessment was carried out between 18 April and 16 May. An introductory workshop was organized on the first day of the mission (18 April), whose scope was:

- To introduce all members of the assessment team.
- To present the main principles of the methodology of the assessment: how to conduct peer-to-peer assessment; how to gather information; how to work in a multidisciplinary team of specialists working in the field of perinatology; how to discuss the findings, agree on them and how to present the findings to the assessed healthcare facility personnel with dignity, without blame, not trying to find guilty persons, but to find the problems and areas for improvement (Chinara Kazakbaeva and Audrius Maciulevicius).
- To introduce an updated version of the tool to members of the national assessors' team, including new international guidelines used for updates (Stelian Hodorogea).
- To inform about how to perform an interview with medical staff, women and patients (Chinara Kazakbaeva).
- To agree on the agenda and composition of the assessment team for each of the facilities and the division of tasks within the team (Audrius Maciulevicius and Ida Ferdinandi).

Additionally, a presentation about the organization of perinatal care in Montenegro: achievements and challenges after previous assessments done in 2011 and 2016 were made by Dr. Gordana Vukcevic, obstetrician-gynaecologist, and Dr. Saveta Stanisic, paediatrician-neonatologist, Podgorica Clinical Centre. For the agenda of the introductory workshop, see Annex 1**: Agenda for the National Workshop on Assessment of the Quality of MNH services in Montenegro**.

During the introductory meeting, it was underlined that this QoC assessment: is NOT carried out to "score" the facility and/or staff; is NOT carried out to blame the staff; and is NOT carried out to compare different hospitals. The QoC assessment is carried out to help the MOH, UNICEF, key stakeholders and partners, as well as managers and healthcare providers from the assessed facilities, in the identification of key areas of pregnancy, childbirth and newborn health care that need to be improved.

Eight maternity hospitals and four primary health care (PHC) facilities providing maternity services from Montenegro were assessed. The assessment agenda is included in Annex 2**: Assessment schedule**.

In all the sites under study, the assessment started with a presentation of the scope, aims and methods of the assessment, as well as the introduction of the team of assessors to the hospital director and heads of relevant services (maternity and neonatology), including the head nurses and midwives. Following the introduction and presentation of the scope and methods, the assessment team proceeded with a tour of the facility, accompanied by local healthcare providers; the team was then divided into groups to carry out the full assessment.

Different sources of information have been used to make the assessment as accurate as possible. Observation of existing everyday practice, review of the records and documentation, discussion with colleagues on the most interesting cases and interviews with mothers, family members and healthcare providers gave more or less objective results.

During the site visits, it was possible to observe the readiness for care and general condition of the facility, i.e. the physical structure, presence/absence of supplies, equipment and drugs, cleanliness and organization. The assessment included: a visit to healthcare services in both maternity and neonatal wards, delivery room and nursery; a visit to the surgical theatre and intensive care unit; examination and discussion of selected cases among the admitted patients

and sick newborn babies. Because most facilities are small and the evaluation team could not directly observe a sufficient number of deliveries and patients with complications, an important source of information was limited to examination and discussion of selected clinical records and interviews with health professionals and mothers in the postpartum unit.

The overall activity took a peer-to-peer and self-assessment approach. In all the visited facilities the team of local healthcare professionals participated in the assessment. It was a possibility for them to gain an understanding of peer-to-peer assessment, to discuss with colleagues how to improve the quality of care, to see how and in what conditions colleagues are working and learn from each other.

After visiting the eight hospitals and four PHC facilities, the assessment team had two days for summarization of the pooled consolidated results and preparation of the presentations of preliminary findings for the MoH, UNICEF and representatives of the evaluated facilities on the final day: report of findings from each professional group and interviewers, key recommendations from international experts and planning of further steps for quality improvement (for an agenda of the meeting on the last day, see Annex 3**: Agenda for the national meeting on the results of the assessment**; for the action plans/further steps for QI presented by national team and participants, see Annex 4**: Action plans/further priority steps for quality improvement of MNH services in Montenegro**).

3. Findings

The scores for each of the 12 quality areas for the eight maternity units from Montenegro are presented in Table 2. To ensure confidentiality, the names of the maternity units are replaced with letters (A–H). The last column represents the average score for each component of quality of MNCH care in the country.

A detailed description of the scores and findings on each assessed component of quality is presented below.

Table 2: Summary of assessment scores for hospital facilities

	A	B	C	D	E	F	G	H	Average score
Hospital support services									
1.1 Physical structure, staffing and basic services	2	2	2	2	1.6	2	2	1.8	**1.9**
1.2 Statistics, health management information system, medical records	1	1	1	1	0.4	2.2	2	1	**1.2**
1.3 Pharmacy management and medicine availability	2	2	2	2	1.9	2	2	2.4	**2.1**
1.4 Equipment	2	2	2	2	2	2	2	2	**2**
1.5 Supplies	2	2	2	2	2	2	2	2	**2**
1.6 Laboratory support	2	2	2	2	2.4	2.4	2	2.2	**2.1**
1.7 Ward infrastructures	1.3	1.7	1.7	1.5	1.6	2	2	1.5	**1.7**
Case management									
2. Normal labour and vaginal birth	1.5	1.5	1.2	1.4	1.3	1.9	1.5	1.3	**1.5**
3. Caesarean section	1.7	1.7	1.9	1.7	1.8	2.5	2.2	1.4	**1.8**
4. Maternal complications and emergencies	1.5	2	1.9	2	1.6	2.1	1.7	2.2	**1.9**
5. Routine neonatal care	1.9	2	2	1.7	1.9	2.3	2.1	1.6	**1.9**
6. Sick newborn care	1.8	1.8	1.8	1.6	1.7	2.2	1.8	1.4	**1.8**
7. Advanced newborn care	n/a	n/a	n/a	n/a	n/a	1.6	n/a	n/a	**1.6**
8. Monitoring and follow-up	1.8	1.9	1.7	1.9	1.8	2.1	1.8	1.6	**1.8**
Policies and organization of services									
9. Infection prevention	1	1.1	1.3	1.2	1.2	2.1	1.3	1.2	**1.3**
10. Guidelines and audits	1.2	1.3	1.4	1.2	1.0	1.8	1.2	1.2	**1.3**
11. Access to hospital care and continuity of care	2.2	2.2	2.3	2	2.2	2.6	2.3	1.8	**2.2**
12. Mother and newborn rights	1.5	1.5	1.5	1.3	1.5	2.0	1.5	1.3	**1.5**

3.1 Hospital support services

The average score for the eight facilities for the component "Hospital support services" is 2.0 (need for some improvement) (Table 2). High scores were assigned to the subcomponents "Laboratory support" – 2.4 and "Pharmacy management and medicine availability" – 2.1. The lowest score was attributed to the subcomponent "Statistics, health management information system, medical records" – 1.2 (need for substantial improvement).

Main strengths

All assessed healthcare facilities are supplied with running cold and warm water, electricity, a heating system, and oxygen. Almost all institutions have good physical access and quite rational planning of essential departments: delivery wards, ICUs, and operating theatres are either on the same floor or are in close proximity; all institutions have functioning elevators. In all healthcare facilities, the vast majority of medicines/drugs for EmOC (emergency obstetric care) and emergency neonatal care are available, and laboratories perform all the necessary laboratory tests. Emergency newborn resuscitation kits are properly completed in most of the facilities.

The necessary temperature is ensured in the delivery ward and operating theatre to avoid hypothermia of newborns just after birth. Normal temperature is also maintained in the rooming-in wards. Conditions are made for mothers to bathe their newborns in the ward.

Most facilities have a sufficient number of staff – obstetrician-gynaecologists and midwives. Almost all institutions have all the necessary essential equipment for obstetrics (cardiotocographs, infusion pumps for maternal care, ultrasounds, vacuum-extractors and monitors) and neonatology (incubators, radiant warmers, phototherapy lamps, pulse-oximeters, multi-function monitors, etc.) and a sufficient quantity of single-use medical items: gloves, catheters, cannulas, etc.

What needs to be improved

Physical structures, staffing and basic services (average score – 1.9)

The main structural deficiency is the absence of individual delivery rooms in all except one of the institutions. In the delivery ward there are separate rooms with many beds for the first stage of labour and another room for the second stage. Even in the facility that has individual delivery rooms, their number is not sufficient for the annual number of deliveries. This structural weakness makes the involvement of partners during the delivery very difficult; it is not possible to ensure privacy and confidentiality; and it increases the risk of healthcare-acquired infections.

Statistics, health management information systems and medical records (average score – 1.2)

No statistical indicators are collected in the assessed facilities to be used to identify and plan actions to improve the quality of care: in all institutions, with one exception, there was no information on the incidence of and indications for caesarean sections, no data on episiotomies, perineal ruptures, vacuum deliveries, the indications and success rate of inductions of labour, the main causes of obstetric and neonatal morbidity, etc.

The existing system and structure of medical records should be substantially revised and improved: staff spend a lot of time filling in a huge number of forms, consent slips and checklists; it is difficult to determine the chronology of events using these records; there are no links between important obstetric and neonatal data (e.g. administration of corticosteroids and antibiotics in preterm labour, information from obstetric history, etc.). There is no unified form of clinical record for newborns in the country. The quality of filling out the documentation (clinical records, registration books, etc.) requires serious review, as it does not allow for either a high-quality case

study, perinatal audit or more detailed statistical analysis. There is no unified electronic medical documentation system in the country.

Also, a unified form of partograph for labour monitoring is lacking: we identified five different designs, only one being the WHO partograph with a four-hour action line, which contains all the necessary maternal and foetal parameters.

Equipment and supplies (average score – 2.0)

Not all facilities have vacuum extractors, vital-sign monitors, and maternal infusion pumps to be used for the administration of oxytocin or other titrated drugs. There are no CPAP systems in most of the maternity wards for the treatment of newborns with RDS; there is also a lack of monitors and infusion pumps.

Bacteriological laboratories are limited in their ability to provide reliable results in time (blood culture). This is a very important point for clinicians to make timely decisions regarding antibacterial treatment tactics for newborns.

3.2 Case management in hospitals

3.2.1 Care for normal labour and vaginal birth

The average score for the component “Care for normal labour and vaginal birth” is 1.5 (need for substantial improvement), ranging from 1.5 to 1.9 (Table 2).

In should be highlighted that, in some facilities, due to the low number of births, there was no possibility to observe actual practices during childbirth. In these institutions, interviews were conducted with midwives and mothers after the birth, various simulation situations were played, and birth records and registers were reviewed.

Main strengths

Respectful attitudes towards women and a welcoming environment were observed in most health facilities, which was also confirmed during interviews with mothers.

The medical staff actively support and encourage women to eat and drink during the first period of labour and provide non-medical methods of pain relief, mainly massage. Midwives have good communication skills, which affects mothers’ satisfaction with the birthing process, as midwives organize a supportive environment during labour and the postpartum period.

Slowly, a trend towards encouraging the presence of a partner during labour has begun, but so far only in two of the assessed facilities. There is a tendency to reduce ineffective practices such as enema, pubic shaving, vaginal disinfection on a routine basis, and liberal use of episiotomies in some hospitals.

The temperature in the delivery room in most facilities meets the international standard for normal childbirth – 25°C. In most maternity wards, skin-to-skin contact and early breastfeeding are actively promoted. The practice of keeping the mother and baby in the same room (rooming-in) for 24 hours has also been acknowledged by mothers as a good practice in the maternity ward. These positive trends have been facilitated by the active re-introduction of the Baby-Friendly Initiative from 2021.

Early discharge from the hospital 48−72 hours after birth is practised in most healthcare facilities.

What needs to be improved

Currently, midwives mainly play the role of medical assistants. The obstetrician-gynaecologist is fully responsible for the management of the physiological birth. In facilities where a doctor is on call at night or on weekends, a midwife can carry out an initial full assessment of the woman and foetus when the woman is admitted to the maternity unit and then an obstetrician-gynaecologist is called to the labour, even during physiological births.

Ineffective routine procedures such as enema, shaving and applying ice packs to the perineum are still used. It should also be noted that shaving and enema are mandatory before caesarean sections in some facilities.

Individual delivery rooms have not been introduced, except for the maternity ward at the Podgorica Clinical Centre, which has five individual delivery rooms. But, according to the WHO standard of 400 births per one delivery room, this number must be increased to provide the woman with respectful and private care.

As mentioned above, in all other facilities, there are separate rooms for a woman in the first stage of labour and then the woman is transferred to the delivery room for the second stage of labour. Such organization and structure of the delivery ward cannot respect privacy and confidentiality for women who are delivering, neither are they appropriate for the presence of a partner/ companion. Many hospitals do not allow the presence of a partner due to the perceived reluctance of women and the organization of infection control during the COVID-19 pandemic (according to medical staff).

At the same time, one midwife mentioned during the interview: "*I had my own experience of giving birth with my partner (husband); it was a very easy birth, I wasn't afraid at all, as there was a close person around. He massaged me, gave me a drink, and encouraged me. He left during the delivery of the baby (his wish), but we were together afterwards. I wish all women would give birth with partners."* Unfortunately, the hospital where this midwife works, in 2023, had only this birth with the partner's presence.

Almost routine use of CTG (cardiotocography) in all vaginal deliveries, including low-risk ones, does not allow women to actively move and choose positions during birth. Evidence shows that routine continuous CTG and routine admission CTG also increase the incidence of CS.

Four different partographs are used to document the process of labour. None of these partographs is sufficiently informative as they do not contain qualitative and complete information on many components of the labour process, and on the condition of the mother and foetus (frequency and duration of contractions, FHR (foetal heart rate) at regular intervals, moulding, etc.). Partographs cannot and are not used as a decision-making tool for the diagnosis of deviations from the normal process of labour. The WHO partograph (2020) was available in some hospitals, but the staff are not skilled in completing it.

By analysing partographs, we determined that there are too frequent vaginal examinations without any indication. The partographs used do not have a part for recording the progress of labour and monitoring the mother and foetus in the second stage of labour. These data are checked by midwives and recorded in a separate monitoring form. When all the data are collated, they often differ, and it is impossible to trace the entire birth process.

From observation of birth practices and interviews with women, it was determined that most births take place in the supine position (which is not according to WHO recommendations).

The quality of foetal monitoring, in both the first stage and the second stage of labour, needs to be substantially improved. In low-risk labouring women, the foetal heart rate is not checked with a stethoscope according to existing international standards (at least every 30 minutes in the first stage and at least every five minutes in the second stage of labour). Also, staff do not respect the

recommended duration of FHR auscultation – for one minute. In the second stage of labour, when the risk of foetal heart abnormalities is very high, health workers, in most cases, either forgot to monitor the heart rate or the CTGs were simply kept switched on without recording. Stethoscopes, usually, are not used for monitoring FHR.

Liberal use of episiotomy continues to be practised in many facilities: 70% of nulliparous women had an episiotomy in one of the periphery institutions. The management of the third stage of labour is not done according to the WHO standards in all health facilities. There is also no measurement of blood loss after labour.

Despite the active introduction of skin-to-skin contact, it is not routine practice in most facilities. The actual application of this technology needs to be substantially improved. Most contact occurs within the first 15–30 minutes after birth, for a shorter period than the recommended minimum of one hour. In addition, in some facilities newborn babies are separated from mothers for examination and assessment by a neonatologist or anthropometry.

Assessment of the condition of the mother for the first 24 hours after labour also requires improvement. According to midwives, assessment is carried out by them, but the results of monitoring are not documented).

In conclusion, the priority aspects of the management of normal labour and delivery that should be substantially improved are:

a. *Partnership/companionship in labour* and family involvement in decision making are not implemented in the vast majority of institutions. The main barriers are: the absence of individual delivery rooms; and a lack of understanding of the benefits of companionship during labour and childbirth for the woman and family, as well as for healthcare providers and the facility themselves.
b. *Free delivery positioning during the second stage of labour* in most of the evaluated institutions: healthcare providers (midwives, obstetricians) do not effectively inform, counsel, encourage and physically help women in labour to choose the most comfortable, non-horizontal, non-supine positions during the second stage of labour.
c. *Effective use of a partograph*: partographs are not used as an instrument for labour management and decision making. None of the assessed facilities uses the 2020 WHO Partograph [10], which includes revised criteria of the start and normal progress of the active phase of the first stage of labour and also a new part to monitor the progress of labour, the foetus and mother in the second stage of labour.
d. *Recommended skin-to-skin contact with their mothers during the first hour after birth to prevent hypothermia and promote breastfeeding* is not fully implemented and often is interrupted by unnecessary procedures, which can be postponed, such as weighing and measuring newborn babies.

3.2.2 Care for caesarean section

The average score for the component “Care for caesarean section” is 1.8 (ranging from 1.4 to 2.5) (Table 2 on page 6)

Main strengths:

A 24/7 preparedness for caesarean sections was observed in all the assessed facilities. In the majority of facilities, obstetricians with good surgical skills, an anaesthetist and operating theatre staff are always present (on duty) in the facility during the night time and holidays; almost all maternity wards have their own, easily accessible surgical theatre near the delivery ward. In a few healthcare institutions in which either an obstetrician or an anaesthetist and/or surgical theatre

staff are not present 24/7 (are on-call), an emergency caesarean section (SC) can be performed without delay, in less than 30 minutes.

The caesarean section technique and procedures generally correspond to international recommendations and standards: elective CSs are not performed before 39 weeks of pregnancy; transversal skin and uterine wall incision, placenta removed by cord traction; correct type and timing of prophylactic antibiotics and uterotonics are routinely used; early discharge is also a routine practice. Local anaesthetic is the predominant method for CSs in half of the assessed facilities: most anaesthetists from these institutions are experienced in this technique and general anaesthetic is applied infrequently, mostly when specific indications exist.

One of the institutions uses the Robson classification [5] of the indications for abdominal delivery and makes efforts to implement policies to reduce the likelihood of a caesarean section; as a result, this facility has the lowest rate of CSs in the country.

What needs to be improved

Apart from Podgorica Clinical Centre, all institutions have an excess rate of CSs. During the last two decades, the rate of CSs has increased substantially in Montenegro: from 10% in 2000 to almost 24% in 2010 and, probably, to approximately 40% in 2023. Currently, there are no officially reported national data on the incidence of CSs but, according to birth registers from 2023, the rate of CSs varies between 29.4% in Podgorica Clinical Centre and 58% in one small facility. The Multiple Indicator Cluster Survey (MICS, MONSTAT and UNICEF) from 2018 determined that 24% of interviewed women had had a CS, confirming that the incidence of abdominal delivery in Montenegro is very high [15].

There are two main clinical contributors of a high rate of CSs: 1. In almost all institutions between 40% and 50% of CSs are performed in women who have had a previous caesarean; 2. In many facilities too many CSs are done in primiparous women (ranging from 30.5% to 51.7%, 65% and even 75%!), either intrapartum, or before labour. The incidence of a very high intrapartum CS rate has many underlining causes: over-diagnosis of poor progress of labour that results in a very high incidence of augmentation and CTG abnormalities; over-use of intrapartum CTG without clear recommendations on interpretation and no possibility to perform foetal blood sampling to confirm foetal distress; under-use of evidence-based intrapartum technologies proved to decrease the risk of CS (continuous support during labour (preferably by the partner), walking around and positions of maternal choice during the first stage of labour, non-horizontal positions in the second stage, monitoring of labour progress with a WHO partograph with a four-hour action line or with a 2020 WHO partograph).

An “on-call” system for obstetric and other relevant staff (anaesthetist, surgical theatre personnel) during the night time could be an important organizational reason for the liberal use of CSs: staff prefer to do caesarean sections during the day to “avoid risks of surgery during the night time”.

Most institutions (except the one mentioned above) do not implement policies to reduce or keep under control the likelihood of CSs. They: do not collect statistical data on the indications for abdominal delivery; do not analyse the appropriateness of diagnosis of poor progress and obstructed labour or foetal distress as factors leading to an unnecessary increase of the intrapartum CS rate; do not recommend routine induction of labour at a gestational age of more than 41 weeks and do not analyse the success rate of induction. The rate of vaginal birth after a previous CS in all facilities is very low.

Monitoring the condition/health status of post-operative women was not always adequate and do not correspond to the standards. Frequently women are placed in intensive care units (ICUs) or a separate room without the continuous presence of obstetric staff to monitor the tonus of the

uterus or the grade of vaginal bleeding, additionally to vital signs: no specific monitoring forms are available and used for this purpose in many of the assessed institutions.

In many institutions, most CSs continue to be performed under general anaesthesia. Separation of newborn babies from mothers delivered by CS for up to 24 hours is an important component of care that should be improved in almost all facilities.

Other problems related to CS in some of the facilities are: use of antibiotic therapy instead of antibiotic prophylaxis; manual removal of the placenta instead of delivery by cord traction; late discharge after uneventful surgery and the absence of written protocols for thrombo-prophylaxis after CS.

3.2.3 Management of maternal complications

The average score for the component “Management of maternal complications” is 1.9, ranging from 1.5 to 2.2 (Table 2 on page 3).

Main strengths

In all facilities, there is very good access to surgery rooms and intensive care units (ICU), most of them being located on the same floor as the delivery ward. Another strong point is that in all institutions, *RBC* (red blood cells) and *FFP* (freshly frozen plasma) are readily available.

Hypertensive disorders of pregnancy, in general, are correctly diagnosed, all necessary investigations (protein in urine, liver enzymes, platelet count, serum creatinine, USG with Doppler and CTG) are available and used to distinguish gestational and chronic hypertension from preeclampsia.

Management of preterm pre-labour ruptures of membranes (PPROM) corresponds to international standards: conservative management in the absence of signs of infection and foetal distress; correct prophylactic antibiotics and corticosteroids for prevention of respiratory distress syndrome (RDS); transfer to a third-level facility at a gestational age below 34 weeks; tocolytics only for 48 hours to administer corticosteroids or for transfer.

Appropriate evidence-based practices are used for the management of term PROM and for induction of labour with prostaglandins (Prostin). Diagnosis and management of small-for-gestational-age (SGA) foetuses and foetal growth restriction (FGR) also, in most cases, correspond to international standards.

What needs to be improved

Emergency-preparedness for maternal complications

In general, there is a low preparedness to deal with major obstetric emergencies and complications, from all perspectives (awareness, knowledge and skills, task-shifting, and organization). There are no standard emergency obstetric care (EmOC) kits with all the necessary drugs and supplies for management of severe preeclampsia/eclampsia and obstetric haemorrhages; no local algorithms/protocols and visual aids that clearly describe the steps of treatment and tasks distribution during management of obstetric complications and emergencies, including shoulder dystocia. Mid-level staff are not trained in how to treat obstetric complications and are not allowed to administer any drug without indication from an obstetrician-gynaecologist. Knowledge of ob-gyns in offering EmOC should also be improved: for example, some of them in the case of eclampsia would prefer to use Diazepam; other doctors – magnesium sulphate; the third group would rely on anaesthetists to administer anticonvulsants and antihypertensive drugs.

Intravenous anti-hypertensives were missing in some obstetric wards (available only in intensive care units, being administered by anaesthetists); in other institutions there was no magnesium

sulphate. Short-acting Nifedipine for the treatment of severe hypertension during pregnancy is not available in the country (only prolonged-release tablets).

Preeclampsia/eclampsia

There were many examples of substandard management of women with severe preeclampsia in different assessed facilities:

- inadequate antihypertensive therapy: the doses and/or frequency of drug administration were not adjusted to achieve maximum one-hour levels of BP of less than 160/110 mmHg, as recommended by international standards;
- $MgSO_4$ was administered in inadequate doses (e.g. a 2 g loading dose) and not continued after delivery/caesarean section, when the risk of eclampsia is still very high;
- intubation for caesarean sections done in women with very high blood pressure (in one case 200/115 mmHg);
- postpartum administration of fresh frozen plasma in the absence of any clinical and laboratory signs of coagulopathy;
- low-quality monitoring of foetal well-being in an acute setting or when a woman with severe preeclampsia is admitted to an ICU.

Obstetric haemorrhages

One of the main areas to be improved is monitoring of the patient's health status and distribution of tasks and responsibilities during obstetric haemorrhages (who does what and when). Also, most visited facilities do not have clear local protocols and algorithms for management of obstetric haemorrhages and do not measure routinely blood loss. In some institutions, we observed inappropriate use of blood products.

Management of preterm labour

Intrapartum antibiotics are not used for prevention of early neonatal sepsis in women with preterm labour. Over-diagnosis of threatened preterm labour was observed in some facilities, leading to unnecessary administration of tocolytics and corticosteroids for prevention of respiratory distress syndrome. Non-effective (intramuscular or vaginal progesterone) or non-evidence-based (Ferona, Raidocal) drugs were used for treatment of threatened preterm labour.

Diagnosis and management of poor progress/obstructed labour

There are two protocols from 2014 stating how to assess the progress of labour and how to diagnose poor progress in the first and second stages of labour. But in most facilities staff were either not aware or did not mention at all that such protocols exist. Also, the criteria of normal and pathological progress of labour and diagnostic criteria of poor progress of labour in the first stage of labour do not correspond to the current WHO recommendations included in the recent guideline "WHO recommendations: Intrapartum care for a positive childbirth experience" [6].

Only one facility uses the old WHO partograph with a four-hour action line for labour monitoring. In other institutions, four different forms of partographs were observed, none of them offering clear information on the frequency and duration of contractions, moulding, and the progress of cervical dilatation – important data for correct diagnosis of labour abnormalities. Also, frequently, vaginal examinations are conducted without indications, at short time intervals. As a result, over-diagnosis of the pathological progress of labour was observed in most of the visited facilities, leading to many unnecessary intrapartum caesarean sections, especially in nulliparous women.

In most institutions there are no written protocols on how to administer Oxytocin for labour augmentation – each institution and even each provider uses its own regimen: infusion rate, timing and rate of increments, and maximum dose. Additionally, not all institutions have or routinely use infusion pumps for the administration of Oxytocin.

Monitoring of foetal well-being and assisted vaginal delivery

One of the areas that need substantial improvement is: the quality of foetal monitoring during normal labour; monitoring of foetal well-being during obstetric complications; as well as use of assisted vaginal delivery in cases of non-reassuring foetal status in the second stage of labour.

CTG is used extensively, but not efficiently for monitoring foetal well-being during labour. In some facilities, foetal heart rate (FHR) is monitored by CTG intermittently, for 20–30 minutes in a two-hour interval: it is not clear how FHR is monitored the rest of the time. In other institutions continuous CTG is practised, even in low-risk pregnant women, leading to over-diagnosis of foetal distress and increasing the rate of intrapartum CSs and preventing women from adopting free positions and ambulating during the first stage of labour.

Most institutions do not have or do not regularly use the existing national protocol (2014) that describes how to correctly interpret CTG traces and list the conditions/situations when continuous CTG is indicated. Ancillary tests for abnormal CTG tracing (foetal blood sampling, foetal electrocardiography) to reduce the incidence of CS for foetal distress are absent in all surveyed facilities.

Almost all facilities have functioning vacuum equipment with silicon or rubber cups. Despite that, vacuum-extraction, a life-saving procedure in the case of severe foetal distress or poor progress in the second stage of labour, is not used at all or is exceptionally rare. It is important to mention that the WHO includes assisted vaginal birth as one of the seven essential functions of basic emergency obstetric care: AVB can reduce maternal and perinatal morbidity and mortality without resorting to a caesarean section in the second stage of labour, which has additional associated risks compared to a pre-labour or first-stage caesarean section [2]. The International Federation of Gynecology and Obstetrics (FIGO) considers the lack of access to (and underuse of) assisted vaginal delivery a major deficit in obstetric care in many facilities globally that need to be urgently addressed [7]. In most high-income countries, the rate of assisted vaginal delivery is above 10% (ranging from 6% in the USA to 19–20% in Norway and the UK) [8].

Prevention of mother-to-child transmission of HIV

There is no policy of universal, routine screening for HIV during pregnancy in Montenegro. Only 8% of pregnant women had HIV counselling and 7% were tested for HIV according to the 2018 MICS [15]. In the assessed facilities there are no protocols on the prevention of mother-to-child transmission of HIV and no antiretroviral drugs to be administered intrapartum to HIV-infected mothers and postnatally to their newborns.

Appropriate medicine use

Some drugs with unproved efficacy and even dangerous ones are frequently used: intravenous glucose, Buscopan, spasmolytic drugs and Diazepam in labour; FFP for treatment of preeclampsia; intramuscular or vaginal progesterone for threatened preterm labour; and Diazepam for the prevention of convulsions in severe preeclampsia.

3.2.4 Routine newborn care

The average score for the component “Routine newborn care” is 1.9 (need for improvement), ranging from 1.6 to 2.3 (Table 2 on page 6).

Main strengths

In all the visited hospitals conditions are ensured to maintain the thermal chain in the delivery room. The required air temperature is maintained, the doors to the delivery rooms are closed, and there is a heat source for heating clothes for the newborn before birth. In some maternity wards,

skin-to-skin contact between the mother and the newborn is ensured in the correct way and early breastfeeding is actively supported. A clear system of identification of mother and baby is used.

There is rooming-in for 24 hours after normal birth in all the visited facilities and full involvement of mothers in healthy term newborn care. The staff encourage women to breastfeed and actively help if any problem arises. All hospitals were included in the series of training courses on breastfeeding, but not all staff were trained.

The doctor/experienced nurse assesses the baby's condition upon admission and revises it at least once a day, advising the mother on newborn care and the importance of breastfeeding.

Routine prophylaxis (vitamin K), screening for hypothyroidism, hearing screening, and early discharge after a normal birth and SC is implemented. Before being discharged, mothers receive a discharge sheet with information on the history of birth, period of adaptation of the baby, received prophylactic measures, and treatment during the stay in the hospital, if it was done.

Mothers are satisfied with the attention and competence of the staff, as well as with the recommendations on newborn care that they receive before being discharged home. A good team relationship between neonatologists, paediatricians and nurses is noteworthy. Since September 2022, training on the Baby-Friendly Hospital Initiative (BFHI) has been initiated and is being successfully continued with outbound visits.

What needs to be improved

Skin-to-skin contact after normal birth has to be implemented in all maternity wards. We observed different approaches (no contact at all before a full assessment of the baby by a paediatrician, and skin-to-skin contact time varied depending on the hospital between 5 and 15–30 minutes).

Home clothes for newborns are not used during the stay in the maternity ward. None of the personnel interviewed could point to a document that prevents this. Hypothermia-control practices for healthy, but especially for low-birth-weight and sick, newborns have to be revised and strengthened. During the assessment, we found several cases where newborns suffered hypothermia, but there was no reaction from the staff in a timely manner and no appropriate measures were taken. The temperature of a newborn is not checked in all hospitals in the proper way after birth. Even in the monitoring sheets of preterm or sick newborns, it is not recorded correctly.

Preparation for resuscitation of a newborn should be seriously reviewed. All personnel who provide care to newborn babies (including midwives, obstetrician-gynaecologists, paediatricians/ neonatologists, anaesthetists and nurses) have to undergo regular training in neonatal resuscitation. Resuscitation algorithms must be clear, updated and placed in a visible place. Resuscitation equipment kit must be in one place, easily accessible and regularly checked so that the disposable items (intubation tubes, catheters, etc.) should not be used after their expiration date. Ambu bags, masks and laryngoscopes have to be cleaned in the proper way.

After caesarean sections, newborns are separated from their mothers for a period of 6–24 hours. Since the percentage of CSs is quite high in the country, it means that at least about 30%–40% of newborns receive their first feeding with milk formula and this can cause problems for successful breastfeeding in the future.

Newborns are vaccinated with the BCG vaccine in some hospitals, but some of them are discharged home without vaccination. During the assessment, it was not possible to obtain clear information on how information is received that newborns who were discharged home without BCG vaccination are actually vaccinated in the field of PHC paediatric care.

Fathers and family members are not allowed to support pregnant women during labour nor to visit the mother and newborn after birth.

3.2.5 Sick newborn care and advanced newborn care

The average score for the component “Sick newborn care” is 1.8 (Table 2 on page 6). The score for “Advanced newborn care” is 1.6.

Main strengths

In all the visited hospitals there is a separate area for the monitoring and care of preterm and sick newborn babies. In most of the visited hospitals, basic equipment for sick newborn care is also in place: working incubators, phototherapy lamps, infusion pumps, monitors and disposable care items.

There are also opportunities to conduct all the necessary laboratory tests (CBC, blood gases, glucose, etc.) including x-rays at any time of day.

An urgent referral system for sick and low-weight newborns to Podgorica Children’s Hospital (PChH) is organized in all hospitals. Depending on the condition of the newborn, either a nurse or a paediatrician/neonatologist, or an anaesthetist accompanies the infant during transport.

In some hospitals, sick newborns are admitted to the neonatal unit from home, up to 28 days after birth.

All newborns in need of intensive care are transferred to the Neonatal Intensive Care Unit (NICU) of Podgorica Children’s Hospital from all over the country. The ambulance service is working 24/7. In 2022, the NICU of PChH admitted 555 newborns (8.4% of all live births). The number of premature babies under 1500 g was 49 (8.8%), and the number of term babies 367 (66.1%).

In the NICU of PChH, we found real positive changes compared with the 2011 assessment in sick newborn care. The main improvements observed are:

- Environmental stress to babies (light and noise) is minimized during their stay in the NICU.
- Postural care (nests) is widely used and routine.
- Empirical effective AB therapy, recommended by the WHO when a congenital infection is suspected, is given according to the age and weight of the baby. A blood culture is performed before starting AB therapy.
- Temperature, respiratory rate, heart rate and SaO2 are checked and recorded.
- Fluids and caloric intakes are recorded daily.
- The parenteral infusion is prepared by trained staff.
- The NICU has started to collect some statistical data regarding the structure of morbidity and main causes of infant mortality.

What needs to be improved

In general, mothers are not involved in the care of preterm or sick newborns. During our visit to the NICU of PChH we did not observe any mother near their baby. This approach has to be changed. When mothers are separated from their preterm or sick newborns, an early start of enteral feeding, predominantly using breastmilk is not possible. One of the more serious problems found during visits to all the hospitals is the extensive and liberal use of formula milk for feeding sick newborns, especially in the first days after birth.

Kangaroo mother care for LBWI is not yet implemented and used in all visited maternity wards including the NICU of PChH.

The NICU is overcrowded with recovering newborns who do not require intensive treatment, only close monitoring and additional care. Overloading the ward with patients increases the risk of hospital-acquired infections (HAI) and the staff have less time to devote to critically ill newborns.

There are no indications to separate babies from their mothers if the baby receives phototherapy treatment. There are no indications to give an intravenous infusion if the baby is receiving phototherapy but is being fed well. There are no indications to start AB treatment if the baby is on an intravenous infusion.

There are no CPAP systems in maternity units for the treatment of babies with RDS, excluding the NICU. Oxygen therapy is too liberal in most of the neonatal units. All of the hospitals visited, including the NICU, have poor control of oxygen therapy for newborns with RDS, which increases the risk of retinopathy in preterm infants.

Despite improved laboratory support, uniform standards for evaluating laboratories/tests are not used in many facilities. In most maternity wards it is possible to perform a pH and blood gases test; unfortunately, the results of the tests are sometimes misinterpreted. After receiving positive or negative laboratory test results, writing an interpretation of it in the clinical record is not practised.

The trend of de-medicalization in sick newborn care is noticed but, unfortunately, not in all hospitals. Up until now, in some hospitals, during the resuscitation of a newborn with asphyxia, medications (dexamethasone, atropine, aminophylline) which are not effective, and which can also be harmful, are being used. For newborns who were born with asphyxia and were resuscitated, resuscitation protocols/sheets are not being filled in. The Apgar score very often does not correspond to the measures taken during resuscitation. Not using resuscitation sheets does not provide an opportunity to perform internal audits on the quality of resuscitation.

Sometimes, the x-ray assessment is incorrect, and the diagnosis is made by the radiologist and not by a clinician; this leads to suboptimal treatment. A classic example: diagnosis of congenital pneumonia is made only on an x-ray description without paying attention to the results of other laboratory tests.

Different hospitals use different criteria for hypoxic-ischemic encephalopathy. Often, the problem begins with an incorrect assessment of the newborn according to the Apgar score and not filling in the resuscitation protocol.

When congenital infection is suspected, empirical AB therapy in most maternity wards corresponds to WHO recommendations, but quite often an AB treatment course of five to seven days is not supported by tests or clinical diagnosis that prove infection. Bacteriological laboratories are limited in their ability to provide reliable results in time (blood culture). This is a very important point for clinicians to make timely decisions regarding antibacterial treatment tactics for newborns.

Monitoring forms/sheets for sick newborns are not being used effectively or their benefits are not yet understood. Sometimes, the clinical diagnosis is not fully supported by the laboratory tests.

The role of responsibility of nurses in the NICU should be reviewed in terms of their involvement in joint training at the unit level.

Fathers and relatives are not allowed to visit sick newborns.

3.2.6 Monitoring and follow-up

The average score for the component “Monitoring and follow-up” is 1.9 (need for some improvement), ranging from 1.5 to 2.5 (Table 2 on page 6).

Real-time monitoring of women during and immediately after labour and delivery, of patients after a caesarean section or those with obstetric complications using properly designed monitoring forms should be substantially improved. This is also true for the monitoring of the condition of sick newborn babies.

3.3 Policies and organization of services at hospitals

3.3.1 Infection prevention and control

The average score for component “Infection prevention and control” is 1.3 (need for substantial improvement), ranging from 1.0 to 2.1 (Table 2 on page 6).

Main strengths

All hospitals have a hospital epidemiologist as well as an infection control committee (composed of their own staff).

Handwashing training for specialists was carried out in all organizations by the epidemiologists and the head nurses. These trainings took place during the COVID-19 pandemic. Institutions have started to pay attention to handwashing facilities: posters on handwashing are displayed everywhere; almost all maternity wards have well equipped hand-washing facilities for both staff and patients.

A sufficient number of single-use medical items are available: gloves, catheters and cannulas. In many organizations, sterilization of instruments and materials is centralized, and sterile bags are used, which remain sterile for 6–12 months, depending on the type of bag. All hospitals have a well-organized system for washing and storing hospital linen. There are posted algorithms for the disposal of waste: medical, non-medical and highly hazardous.

Almost all hospitals have an isolation room for women with suspected infections/COVID-19.

What needs to be improved

There is no policy on the organization of infection control systems in the assessed healthcare facilities. Although there is a Ministry of Health order from 2019 on the organization of an infection control system at the level of all healthcare facilities, none of the surveyed health facilities were familiar with the order. Since the handwashing training conducted during the COVID-19 pandemic (2020–21), no infection prevention and control (IPC) training has been organized.

It should also be noted that there are no prescribed algorithms/standards for organizing working processes: placing/removing intravascular catheters, urinary catheters, etc. Each specialist does what he/she has been trained to do.

In some maternity wards, Ambu bags, masks and other equipment are not sterile, and are kept in inappropriate conditions; non-sterile water is used for humidifiers. In some facilities, decontamination of surfaces from blood and other biological liquids is not performed regularly and correctly.

Disinfection of instruments is done by the midwives themselves, but there are no prescribed standards. In some hospitals, the sterilization process is also carried out by midwives in a sterilization cupboard using dry heat, but there is also no prescribed standard operational procedure for the sterilization. Often all disinfection and sterilization actions take place in the delivery room, where there is no division into dirty and clean areas.

Although many hospitals have organized and equipped hand-washing facilities, staff are not sufficiently proficient in handwashing. During the observation of the birth process, hands were not properly or always washed. Also, not all medical professionals know how to correctly put on sterile gloves.

There are also persistent practices that are not based on evidence: wearing gowns, masks, hats when entering the ward, the use of ultraviolet lamps to disinfect the room, and the prohibition of visits by the mother's relatives.

Although all institutions have isolation rooms, there are no prescribed algorithms for patient triage and no list of patients to be isolated from healthy patients.

There is no system for controlling and monitoring how IPC practices are applied. The incidence and types of HAI are not registered in most of the facilities visited. Without correct statistical data on the incidence of HAIs, it is very difficult to develop and implement effective infection control programmes and policies.

3.3.2 Guidelines, training and audits

The score for the component "Guidelines, training and audits" is 1.3 (need substantial improvement), ranging from 1.0 to 1.8 (Table 2 on page 6).

Guidelines and protocols

Several national protocols were produced and published in 2014: caesarean sections, normal labour, management of preterm rupture of membranes (PROM), meconium-stained amniotic fluid, postpartum haemorrhages, indications, and interpretation of CTG, diagnosis and management of poor progress of labour in the first and the second stages. The problem is that some of the recommendations from these protocols are outdated. In most facilities, staff were not aware or did not mention/report the use of these protocols in everyday practice.

Only in one facility were all these protocols available and/or displayed in the labour ward. Additionally, a number of other important protocols were produced locally and implemented in this institution: augmentation of labour with Oxytocin, antepartum thrombo-prophylaxis, antibiotics for prevention of early neonatal sepsis, etc.

Unfortunately, national protocols on the management of many other obstetric complications and conditions – preterm labour, hypertensive disorders, foetal growth restriction, shoulder dystocia, assisted vaginal delivery, etc. – are lacking. As mentioned above, in most facilities there are no local algorithms/protocols on emergency care during obstetric or neonatal complications.

Guidelines for care of healthy newborns and sick newborns are largely absent. Where available, guidelines are outdated (2001). Only in one maternity ward did we find steps to develop and implement local protocols on sick newborn care. Also, there are no written protocols on interventional procedures (phototherapy, intubation, catheterization, etc.).

Currently, at the national level, there is no requirement that each facility should produce its own local protocols based on existing national protocols/guidelines and most facilities do not have local protocols and algorithms with clear distributions of roles and responsibilities of the staff during management of obstetric and neonatal complications.

In the process of evaluation of current practices and discussions with healthcare professionals, as well as during the meeting for the presentation of preliminary results of the assessment, existence of evidence-based, up-to-date national guidelines and protocols was mentioned as one of the most important prerequisites for successful improvement of the quality of obstetric and neonatal care in Montenegro.

Continuous education and learning

The process of continuous education and learning is a component of quality improvement that should be improved. There is no access to up-to-date, evidence-based healthcare literature and sources in the national language: up-to-date textbooks for obstetricians, midwives and neonatologists do not exist – it seems that only outdated textbooks originating from Serbia are available and used by healthcare professionals.

There is no effectively functioning system of continuous medical education for physicians in Montenegro. Doctors participate in periodic training activities abroad, mostly in Serbia, and at their own expense.

Montenegro has a school of medicine that mainly trains nurses, but there is no midwifery department. Most midwives were trained and graduated in Serbia and Albania. There is no system for postgraduate education of midwives in the country. Midwives themselves receive some training at their own expense, also mostly in Serbia. More attention is paid to the education of doctors by the health facilities than that of midwives and nurses. Thus, midwives do not upgrade their knowledge and skills after graduation. Also, there is no midwifery professional association and no chamber of nurses in Montenegro.

Internally, midwives themselves informally use a mentoring approach for newly employed midwives, without using any motivational mechanisms for the mentor.

Notably, midwives are open to communication and willing to learn and improve their knowledge and skills, which would contribute to changing practice and improving the quality of services.

No training sessions on most priority obstetric and neonatal topics and no drills on management of obstetric and neonatal (resuscitation) emergencies are organized in the facilities. Some of the priority training courses could be “Effective perinatal care”, “Newborn resuscitation” and S.T.A.B.L.E.

Audits and case reviews

In most surveyed facilities, periodical reviews of cases of neonatal deaths or complications, as well as obstetric complications, seem to be practised; however, local responsible persons and local committees or teams for organizing audits and case reviews to guide the audit processes and propose/implement actions to improve the quality of care are lacking in all health facilities. None of the facilities was able to present clearly defined plans of activities and actions for the prevention of future cases of perinatal death or severe complications based on regularly collected sets of statistical data or analysis of cases of perinatal mortality or severe maternal complications.

3.3.3 Access and continuity of care

The score for the component “Access and continuity of care” is 2.2 (needs some improvement), ranging from 1.8 to 2.6 (Table 2 on page 6).

Access to care is not restricted to race, ethnicity, cultural or religious grounds in the assessed facilities and is provided free-of-charge. There is a good system in place to transfer pregnant women with severe complications of pregnancy or with severe medical conditions to Podgorica Clinical Centre. But there are no protocols on the criteria for case referral or on actions before transfer and documentation of the process.

Transportation is not a barrier to access, as all institutions have and provide transport for referred patients.

Transfer of very preterm and/or sick newborn babies is organized without any delays. We could not assess the quality and safety of transportation because there were no forms filled out on monitoring the condition of a baby during transportation. Another important deficiency is that preterm or sick newborns admitted to NICU or to other wards of the paediatric hospital are separated from their mothers.

Cooperation between neonatologists of different care levels needs to be strengthened to ensure the continuity and quality of service delivery.

In general, the coordinating role of Podgorica Clinical Centre, as the only tertiary-level institution should be substantially increased: to be a leader in development and distribution of guidelines and protocols; in training staff from other facilities how to manage obstetric and neonatal complications, including periodical training in neonatal resuscitation; organizing regular meetings with second- and first-level hospitals to discuss efficiency of case referral or to review cases of perinatal mortality or severe obstetric complications.

3.3.4 Mother and newborn rights

The average score for the component “Mother and newborn rights” is 1.5 (need for substantial improvement), ranging from 1.3 to 2.0. (Table 2 on page 6).

The strong points are: good availability; and physical, economic and non-discriminatory accessibility of services. Communication with women has been noted to be caring and empathic.

The quality of care is frequently substandard in the dimensions of: *information, communication, counselling, respecting dignity, confidentiality and privacy*, *and avoidance of unnecessary or painful procedures* [17, 18], in particular:

Lack of respect of privacy and confidentiality: open doors in delivery rooms; maternity beds facing the front door; the presence of two beds in the delivery room and 2–3 beds in the room for the first stage of labour in some facilities and a lack of a curtains; in some newly-built healthcare facilities, glass doors were observed in the delivery ward and postpartum rooms; healthcare staff do not always ask permission from the women for their presence in the delivery room during labour and childbirth; sometimes staff do not introduce themselves to the patient; women with sick or dead babies were placed in the same postpartum room with mothers of healthy newborns.

Restrictions in access and involvement in care of mothers and family members: in all hospitals, relatives are not allowed to visit the woman and newborns during the postpartum period; in most institutions, companionship in labour is not permitted or promoted; sick newborns are separated from mothers (in most maternity hospitals and in the NICU); problems with enabling skin-to-skin contact and early breastfeeding after caesarean sections.

Unnecessary or painful procedures are frequently used: enema, shaving and disinfection of genitalia after birth are examples of unnecessary procedures; liberal use of episiotomies in some facilities; lack of pain relief options in labour was noted in most institutions.

A charter or a policy that specifies the rights of the mother and of the newborn is not available/approved;

Women’s informed consent is not maintained for all procedures.

3.4 Assessment of QoC in the primary health centres (PHCs) in Ulcinj, Plav, Rozaje and Mojkovac

Since 2016, these institutions have been designated by the Ministry of Health as delivery wards only for imminent births and for EmOC. All these institutions have quite good infrastructure: delivery rooms with essential equipment for normal labour and delivery, including instruments for suture of the perineum and intrauterine manipulations; heaters and Ambu bags and masks for newborns; vacuum-extractors (except in one facility); and even USG and CTG. At the time of our visit, in three of these facilities there were midwives covering 24/7 services. Obstetrician-gynaecologists and paediatricians are only on call. But, in 2023, in two PHC maternity wards there was only one delivery in each of them, and no deliveries at all in the other two. The director of one of the PHCs decided to close the maternity ward with the cancellation of staff duties.

Because there were no actual or even recent cases of deliveries in these institutions, it was difficult to assess the quality of medical care (management of normal labour and delivery, care of healthy newborn and preparedness to manage obstetric and neonatal complications). Based on discussions with the staff, analyses of medical records and registries and checking the availability of equipment, drugs and protocols/algorithms for management of complications, it was concluded that many local practices are not in line with international standards and that PHC facilities are not ready to provide good-quality care in cases of complications.

In general, it is not safe to give birth in these institutions: no possibility to do an emergency caesarean section to save the life of the foetus in cases of severe intrapartum distress or of the mother in cases of antepartum or intrapartum haemorrhages; no equipment or no skills to do assisted vaginal delivery; no knowledge about which manoeuvres to use in case of shoulder dystocia; and low preparedness and knowledge for neonatal resuscitation. Also, there are no sets of drugs and equipment, with written protocols and algorithms for EmOC; and the staff are not confident about how to diagnose and manage severe preeclampsia/eclampsia, sepsis and antepartum or postpartum haemorrhages. There is no access to blood and blood products and even some essential drugs are missing in a part of these institutions (e.g. magnesium sulphate, short-acting Nifedipine and intravenous anti-hypertensives).

The staff of these PHC institutions had not had any training in EmOC or neonatal resuscitation in the last 10–15 years. Without practice, personnel are losing their qualifications and the risk of inappropriate decisions even during normal births is increasing.

It seems that it is safer and more cost-efficient if women with imminent deliveries and obstetric complications are referred to institutions which provide caesarean sections and laparotomies by the vehicles (ambulances) of emergency medical services. This will require the enhancement of the ambulance referral services in the country. Ambulances should be equipped with sets for births, drugs and algorithms for the management of obstetric complications and Ambu bags and masks for neonatal resuscitation. Also, staff from emergency medical services should receive training in EmOC and newborn resuscitation.

4. Conclusions and recommendations

The current assessment of the quality of hospital care for mothers and babies determined good progress in the implementation of a number of effective perinatal technologies. These include: the promotion of skin-to-skin contact, early breastfeeding and rooming-in as components of the actively re-introduced Baby-Friendly Initiative; a tendency to reduce ineffective intrapartum practices such as enema, pubic shaving, vaginal disinfection on a routine basis, and liberal use of episiotomies in some hospitals; the first steps towards encouraging mobility, non-horizontal positions and the presence of a partner/companion in labour, supporting women to eat and drink during the first period of labour. Among the strengths, the following should be mentioned: the good quality of hospital support systems; the availability of essential obstetric and neonatal equipment, drugs and supplies; the high qualification of medical staff, as well as the use of appropriate diagnostic criteria and the principles of management of many maternal and neonatal complications and pathological conditions.

At the same time, many effective perinatal technologies are not fully implemented or are only formally used as described in the report. The main areas for improvement include: management of normal labour and delivery (individual delivery rooms, companionship, birthing positions, monitoring of labour progress and of the mother's and foetus's condition using a WHO partograph, effective skin-to-skin contact and warm chain, diagnosis and management of poor progress of labour, appropriateness of the indications to a caesarean section and policies to reduce the incidence of abdominal delivery, under-use of assisted vaginal deliveries, preparedness for obstetric and neonatal emergencies, including neonatal resuscitation, liberal use of infant formula, and not involving mothers in sick newborn care.

Statistical data collection and analysis, quality improvement mechanisms, infection prevention practices, respect of women rights, counselling and involvement in decision making, availability of national guidelines and protocols, as well the system of continuous medical education of staff are other important quality components that need to be improved.

During discussions among different-level professionals, stakeholders, and international consultants, it was agreed that among the important causes of this situation are: an absence of priority national obstetric and neonatal guidelines and protocols; a lack of coordination within the MCH care system; and an inefficient system of continuous education and learning – staff from the evaluated facilities did not have any training in effective perinatal technologies nor in quality improvement methodologies.

The delivery wards of the assessed PHC facilities cannot ensure safety during births, nor efficient management of obstetric complications and neonatal pathological conditions. The main reasons are the lack of a possibility to perform emergency caesarean sections and difficulty in maintaining clinical skills due to the very low caseload, but also the absence of any training in EmOC and neonatal resuscitation. The solution could be the referral of women with imminent deliveries and obstetric complications to higher-level hospital maternity units by ambulance.

5. Recommendations

National level

Recommendation 1: Develop and implement a national policy/strategy/programme.

- Develop the "National Perinatology Programme", including effective perinatal regionalization.
- Develop and implement national policy and standards for HIV testing and counselling of pregnant women and PMTCT.
- Develop and approve an IPC policy and strategy for perinatal care institutions.

Recommendation 2: Institutionalize MNCH statistical data collection and analysis.

- Design and implement a unified set of statistical indicators for the MNCH care system to collect proper data for quality improvement activities.
- Collect and analyse appropriate statistical data on all indications, including for caesarean sections.
- Ensure regular review of collected indicators and broad discussion with healthcare managers and providers.

Recommendation 3: Introduce and monitor compliance with evidence-based national clinical guidelines and protocols.

- Revise the few existing guidelines/protocols and support the development and implementation of a key set of evidence-based national clinical guidelines/protocols in obstetrics and neonatology. The main priorities are protocols and guidelines on management of normal labour and delivery, care of healthy newborns, management of the most frequent and relevant obstetric (hypertensive disorders, haemorrhages, preterm labour, diagnosis and management of poor progress of labour, assisted vaginal delivery and shoulder dystocia) and neonatal complications and diseases (asphyxia, sepsis, jaundice, care for low-birth-weight babies).
- Develop a mechanism to monitor compliance with national clinical guidelines/protocols and performance, and motivate healthcare providers to change practices.

Recommendation 4: Ensure standardization of medical documentation.

- Revise, simplify and unify the existing forms of medical records: create links between obstetric and neonatal forms.
- Develop and use unified paper-based monitoring forms: partographs, postpartum and post-caesarean checklists, resuscitation and sick newborn babies checklists etc.; ensure the quality of medical documentation when being filled in.

Recommendation 5: Enhance the regulatory base.

- Re-address, strengthen and legally regulate the role of midwives. Midwives' competencies, responsibilities and skills must be protected and enhanced in order to promote their autonomy as primary and most appropriate caregivers for normal labour and birth.

Recommendation 6: Promote capacity building and continuous professional development of health professionals.

- Organize training of staff on the following priority clinical topics:
    - Management of normal labour and delivery; use of the new 2020 WHO Partograph [10].
    - Revised criteria of normal and abnormal progress of labour [6].
    - Intrapartum foetal monitoring, including interpretation of CTG.

  - Assisted vaginal delivery: vacuum extraction.
  - Revised classification and management of hypertensive disorders during pregnancy, with a focus on emergency care in severe preeclampsia/eclampsia [13, 14].
  - Care of healthy newborns.
  - Newborn resuscitation.
  - Management of neonatal pathological conditions (asphyxia, sepsis, jaundice).
  - Infection prevention and control measures in maternity wards.
  - Implement and train healthcare providers to use Robson classification of indications for CSs.

  The recently updated WHO "Effective Perinatal Care (EPC)" training package could be used for the training of multidisciplinary teams from maternity units in Montenegro.

- Postgraduate training of key professionals in other countries should be considered only for sites where evidence-based practices are implemented.

Recommendation 6: Enhance capacity of resource institutions for improvement of the quality of MNCH services.

- Consolidate and support the "Montenegro National Perinatal Group" to properly define and solve the priorities that need to be addressed in perinatal care:
  - Develop the "National Perinatology Programme", including effective regionalization.
  - Identify priority national protocols and guidelines to be developed.
  - Design and implement unified medical records, registries and a set of statistical data.
  - Create the national trainers' team for "Training on Neonatal Resuscitation" according to the previous recommendations.
- Strengthen the coordinating role and methodological support of Podgorica Clinical Centre as a tertiary-level institution:
  - In development and distribution of guidelines and protocols.
  - In training staff from MCH facilities about how to manage obstetric and neonatal complications, including periodical training in neonatal resuscitation.
  - In setting up a supportive supervision system.
  - To organize regular meetings with second- and first-level hospitals to discuss efficiency of case referral.
  - To review cases of perinatal mortality or severe obstetric complications.
  - To develop and implement a sick newborn transportation monitoring sheet and other forms of medical documentation.
  - To analyse the quality of the referral system for pregnant women and newborns.
- Promote establishment and support registration of a National Midwifery Association

Recommendation 7: Institutionalize continuous quality improvement (QI) in healthcare facilities.

- Create facility-based QI teams and train in continuous quality improvement management principles and methodology.
- Organize an assessment of the quality of outpatient antenatal and postpartum care for mothers and newborns using the "WHO assessment tool for outpatient antenatal and postpartum care of women and newborn babies".

Recommendation 8: Enhance the perinatal referral ambulance services

- Ensure that ambulances are equipped with sets for births, drugs and algorithms for the management of obstetric complications and Ambu bags and masks for neonatal resuscitation.
- Staff of the emergency ambulance services are trained in EmOC and newborn resuscitation.

Recommendation 9: Organize regular information, education and communication campaigns.

- Organize national informational campaigns: for the promotion of breastfeeding; for family-oriented maternity care; on the risks of interventions in the normal process of pregnancy and delivery (caesarean sections, augmentation, routine unnecessary procedures).
- Ensure involvement of the civil society organizations and NGOs in demand generation (family-oriented, natural births, breastfeeding, etc).

Institutional level

Recommendation 10: Implement evidence-based, effective technologies in normal labour and for the care of healthy newborns.

- Organize a sufficient number of individual delivery rooms (one per 350–400 deliveries per year) and equip them with everything necessary for practising effective perinatal technologies (partnership, alternative delivery positions and mobility) and ensuring the safety of the labour process (equipment and supplies for resuscitation of newborns, assisted vaginal delivery, warm chain, kits, algorithms for EmOC, etc.).
- Encourage and actively implement the involvement of companions (partnership) and vertical positions and mobility in the first and second stages of labour.
- Monitor the conditions of the mother and foetus and progress of labour using the WHO 2020 Partograph.
- Avoid non-evidence based, ineffective and even dangerous intrapartum technologies: enema, shaving, liberal episiotomies, the Kristeller manoeuvre, intravenous glucose, Buscopan, spasmolytic drugs, Diazepam.
- Effectively apply measures to prevent postpartum haemorrhaging (active management of third stage, monitoring of the mother in the first hours after labour).
- Improve quality of care for the healthy newborn in the first two hours (skin-to-skin contact and early initiation of breastfeeding, other components of warm chain, including measurement of temperature after 30 minutes and two hours, postponing examination, and anthropometry). Use home clothes for newborns.
- Increase the role of midwives in monitoring and care in normal labour.

Recommendation 11: Implement policies to reduce the likelihood of caesarean sections.

- Review and analyse indications for CSs (implement and use Robson classification)
- Recommend vaginal birth after a CS if no contraindications and after informed consent of the woman.
- Implement effective intrapartum technologies that prevent primary CSs: continuous support, offering fluids and light foods in uncomplicated labour, encouraging walking around and positions of maternal choice, monitor progress of labour using WHO 2020 Partograph.
- Correctly apply criteria of normal progress and analyse appropriateness of diagnosis of poor progress and obstructed labour.
- Train staff in correct interpretation of intrapartum CTG. Avoid routine admission and continuous CTG: use only when indicated.
- Recommend induction of labour at a gestational age of more than 41 weeks

- Offer local anaesthetic as a first choice to women undergoing a CS.
- Do not separate newborns from mothers, but implement early skin-to-skin contact and breastfeeding after a caesarean section.

Recommendation 12: Build capacity of medical professionals

Train ob-gyns and use assisted vaginal delivery when indicated.

Recommendation 13: Improve preparedness for EmOC and neonatal resuscitation.

Improve preparedness for EmOC and neonatal resuscitation through provision of emergency kits with all necessary drugs and supplies, written instructions/protocols/ algorithms, task-shifting and drills/training of the staff.

Recommendation 14: Improve the quality of medical documentation.

Improve recording and maintenance of clinical records and monitoring sheets for better interpretation of laboratory tests, substantiation of clinical diagnoses and treatment.

Recommendation 15: Reorganization of post-delivery unit set-up.

- Individual delivery rooms (one per 350–400 deliveries per year) organized in maternity units.
- Reorganize spaces in post-delivery unit.
- Promote partner-assisted deliveries and allow visits by fathers/relatives in the postpartum ward and neonatal nursery.

Recommendation 16: Ensure availability of medicines and consumables.

- Supply obstetric departments with all required medicines and consumables, especially with intravenous antihypertensive drugs and short-acting Nifedipine.
- Maternity units to be supplied with rapid tests and antiretroviral drugs for PMTCT.

References

1. WHO Regional Office for Europe. (2022). Core health indicators in the WHO European Region. Special Focus: European Programme of Work Measurement Framework. Copenhagen: <www.euro.who.int/en/data-and-evidence/databases/european-health-for-all-database-hfa-db>
2. WHO. (2014). WHO Hospital care for mothers and new-born babies quality assessment and improvement tool. <www.euro.who.int/en/health-topics/Life-stages/maternal-and-newborn-health/publications/2014/hospital-care-for-mothers-and-newborn-babies-quality-assessment-and-improvement-tool>
3. WHO Regional Office for Europe Effective Perinatal training package. <www.euro.who.int/pregnancy/esscare/20080122>
4. Molina G et al. (2015). Relationship Between Cesarean Delivery Rate and Maternal and Neonatal Mortality. JAMA. 2015;314(21):2263–2270. <https://doi.org/10.1001/jama.2015.15553>
5. Vogel, J.P. et al. (2021). Use of the Robson classification to assess caesarean section trends in 21 countries: a secondary analysis of two WHO multicountry surveys. Lancet Glob Health 2015; 3: e260–70 https://www.thelancet.com/action/showPdf?pii=S2214-109X%2815%2970094-X.
6. WHO. (2018). WHO recommendations: intrapartum care for a positive childbirth experience. Geneva: World Health Organization; 2018. License: CC BY-NC-SA 3.0 IGO. <https://apps.who.int/iris/bitstream/handle/10665/260178/9789241550215-eng.pdf>
7. Wright A, Nassar AH, Visser G, Ramasauskaite D, Theron G. for the FIGO Safe Motherhood and Newborn Health Committee. (2021). FIGO Good Clinical Practice Paper: Management of the second stage of labour. Int J Gynecol Obstet. 2021; 152:172–181. <https://obgyn.onlinelibrary.wiley.com/doi/epdf/10.1002/ijgo.13552>
8. Seijmonsbergen-Schermers AE, van den Akker T, Rydahl E, Beeckman K, Bogaerts A, Binfa L, et al. (2020). Variations in use of childbirth interventions in 13 high-income countries: A multinational cross-sectional study. PLoS Med 17 (5): e1003103. <https://doi.org/10.1371/journal.pmed.1003103>
9. WHO. (2016). WHO recommendations on antenatal care for a positive pregnancy experience. Geneva: WHO; 2016. <www.who.int/ru/publications/i/item/9789241549912>
10. WHO. (2020). WHO labour care guide: user's manual. Geneva: World Health Organization; 2020. License: CC BY-NC-SA 3.0 IGO. <https://apps.who.int/iris/bitstream/handle/10665/

337693/9789240017566-eng.pdf>

11. ISUOG. (2020). ISUOG Practice Guidelines: diagnosis and management of small-for-gestational-age fetus and foetal growth restriction. Ultrasound Obstet Gynecol 2020; 56: 298–312. <www.isuog.org/static/b2aa3fb4-031e-4d84-b7246d613a466884/ISUOG-Practice-Guidelines-diagnosis-and-management-of-small-for-gestational-age-fetus-and-foetal-growth-restriction.pdf>
12. FIGO. (2021). The International Federation of Gynecology and Obstetrics (FIGO) initiative on foetal growth: Best practice advice for screening, diagnosis, and management of foetal growth restriction. Int J Gynecol Obstet. 2021;152(Suppl. 1):3–57. <www.ncbi.nlm.nih.gov/pmc/articles/PMC8252743/pdf/IJGO-152-3.pdf>
13. Brown MA, Magee LA, Kenny LC, et al. (2018). The hypertensive disorders of pregnancy: ISSHP classification, diagnosis & management recommendations for international practice. Pregnancy Hypertens. 2018; 13:291–310. <www.sciencedirect.com/science/article/abs/pii/S2210778918301260?via%3Dihub>
14. FIGO. (2019). The International Federation of Gynecology and Obstetrics (FIGO) initiative on pre-eclampsia: A pragmatic guide for first-trimester screening and prevention. Int J Gynaecol Obstet. 2019 May; 145 Suppl 1(Suppl 1):1–33. doi:10.1002/ijgo.12802. <https://pubmed.ncbi.nlm.nih.gov/31111484/>
15. MONSTAT and UNICEF. (2019). Multiple Indicator Cluster Survey, 2018. Montenegro and Montenegro Roma Settlements. <www.unicef.org/montenegro/media/15976/file/mne-media-publication1002.pdf>
16. WHO Regional Office for Europe. (2013). “WHO assessment tool for outpatient antenatal and postpartum care of women and newborn babies”. <www.euro.who.int/__data/assets/pdf_file/0006/191697/ANC_tool__English19062013_revised.pdf>
17. Parliamentary Assembly of Council of Europe. (2019). Obstetric and gynecological violence. Resolution 2306. Text adopted by the Assembly on 3 October 2019 (34th Sitting). <https://assembly.coe.int/nw/xml/XRef/Xref-XML2HTML-EN.asp?fileid=28236>
18. WHO. (2015). “The prevention and elimination of disrespect and abuse during facility-based childbirth”. Department of Reproductive Health and Research, World Health Organization, 2015. <https://apps.who.int/iris/bitstream/handle/10665/134588/WHO_RHR_14.23_eng.pdf>
19. WHO. (2016). Standards for improving quality of maternal and newborn care in health facilities. https://cdn.who.int/media/docs/default-source/mca-documents/qoc/quality-of-care/standards-for-improving-quality-of-maternal-and-newborn-care-in-health-facilities.pdf?sfvrsn=3b364d8_4>

20. WHO. (2020). Standards for improving quality of care for small and sick newborns in health facilities. <https://apps.who.int/iris/rest/bitstreams/1299348/retrieve>
21. The World Bank. Data. https://data.worldbank.org/indicator/SH.STA.MMRT?locations=EU
22. UNICEF Data Warehouse. https://data.unicef.org/resources/data_explorer/unicef_f/?ag=UNICEF&df=GLOBAL_DATAFLOW&ver=1.0&dq=MNE.CME_MRY0.&startPeriod=1970&endPeriod=2023

Annexes

Annex 1: Agenda for the National Workshop on Assessment of the Quality of MNH services in Montenegro

"Assessment of the Quality of Maternal and Newborn Services in Montenegro"
Workshop Programme, Podgorica, 18 April 2023

Time	Activity	Responsible/Speaker
09:00–09:30	Opening. Objectives, expected outcomes of the mission.	Sladjana Coric, MoH Ida Ferdinandi, UNICEF
09:30–09:50	Organization of perinatal care in Montenegro: achievements, challenges.	Gordana Vukcevic Saveta Stanisic
10:10–10:40	Introduction to the assessment process of MNHC care and overview of the assessment tools.	Audrius Maciulevicius
10:40–11:00	Introduction of participants	Chinara Kazakbaeva
11:00–11:30	*Coffee break*	
11:30–12:15	The purpose, structure and content of the quality assessment tool. Updates of tool 2014–2021.	Stelian Hodorogea
12:15 - 12:45	Using the quality assessment tool: methodology, experience, role of the national co-assessors.	Audrius Maciulevicius .
12:45 -13:00	Q&A	International experts
13:00–14:00	*Lunch*	
14:00–14:30	How to conduct an interview.	Chinara Kazakbaeva
14:30–15:30	Working with the tool. The tool is distributed among the four groups of specialists.	International experts
15:30–16:00	*Coffee break*	
16:00–16:30	Working with the tool. Q&A	International experts
16:30–17:30	Organizing an assessment visit (schedule, local team leader, responsible for logistics, etc.).	International experts, UNICEF
17:30–18: 00	Summary of the day and "homework" to go through the assessment tool chapters	Audrius Maciulevicius

Annex 2: Assessment schedule

Assessment schedule

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1		18 April – Workshop for co-assessors in Podgorica	19 – Niksic, day 1	20 – Niksic, day 2	21 – Pljevlja
2	24 – Cetinje, day 1	25 – Cetinje, day 2 and Kotor, day 1	26 – Kotor, day 2	27 – Bar, day 1	28 – Bar, day 2 and PHC Ulcinj
3	1 May	2 May	3 – Podgorica, day 1	4 – Podgorica, day 2 and NICU	5 – Berane, day 1
4	8 – Berane, day 2 and PHC Rozaje	9 – PHC Plav	10 – Bijelo Polje, day 1	11 – Bijelo Polje, day 2 and PHC Mojkovac	12 – Compilation and discussion of preliminary results of assessment and plan of action.
5	15 – Preparation of presentations on assessment findings, recommendations and action plan.	16 – Presentation, validation and action planning in Podgorica	17	18	19

Annex 3: Agenda for the national meeting on the results of the assessment

Meeting on the results of the Assessment of the Quality of Maternal and Newborn Services in Montenegro

Podgorica, 16 May 2023

Time	Activity	Responsible/Speaker
09:00–09:10	Welcome speech	Vladimir Obradovic, MoH; Nela Krnic, UNICEF; Audrius Maciulevicius
09:10–09:30	Overview of the assessment aims and methodology.	Chinara Kazakbaeva
09:30–10:30	Presentation of the main results of the Assessment of the Quality of Maternal and Newborn Services in Montenegro (*Midwifery team, Ob-Gyn team, Neonatal team, Interviewers team*)	Gordana Vukcevic, Dara Vujovic, Saveta Stanisic, Anja Djuric
10:30–10:45	Discussions	
10:45–11:15	*Coffee break*	
11:15–11:50	Main conclusions of the assessment	Audrius Maciulevicius
11:50–12:20	Recommendations on priority actions to improve the quality of maternal and newborn care in Montenegro	Stelian Hodorogea.
12:20–12:40	The role of midwives in maternal and newborn health care	Chinara Kazakbaeva
12:40–13:00	Discussions	International experts
13:00–14:00	*Lunch*	
14:00–14:45	Group work: action plans to improve quality of care in HCO based on the assessment results	National team
14:45–15:25	Presentation of action plans. Q&A	National team
15:25–15:45	Key areas of MoH to improve the quality of care for mothers and newborns in MNE	Milica Markovic, MoH
15:45–16:00	From access and coverage to equitable coverage with quality. Key messages	Fakhriddin Nizamov, UNICEF
16:00–16:15	*Coffee break*	
16:15–17:00	Wrap-up of the mission	MoH, international experts, UNICEF

Moderators: Audrius Maciulevicius and Ida Ferdinandi

Annex 4: Action plans/further priority steps for quality improvement of MNH services in Montenegro

Action plans/further priority steps for quality improvement of MNH services in Montenegro

I. Group one (national level)

Uniform partograph

Activities	Responsible
– Proposal to the management of the Clinical Centre – Proposal to the Ministry of Health for acceptance and implementation of the 2020 WHO Partograph – Translation of partograph guide – Training and implementation in practice	Management of the Ob-Gyn Ward of the Clinical Centre Ministry of Health Facilities

Leading role of midwives in physiological vaginal delivery

Activities	Responsible
– Develop and approve legislation	Ministry of Health Chamber of Nurses

Companionship and individual delivery rooms

Activities	Responsible
– Proposal to hospital management and Ob/Gyn director and their approval – Address the issue of limited space	Hospital management

II. Group two (facility level)

Vaginal birth

Activities	Responsible
– Encourage the presence of partners – Implementation of the 2020 WHO Partograph – Organize the documentation records – System of education and training for professionals – Revise and implement national guide	Hospital management Obstetricians, midwives

Caesarean sections

Activities	Responsible
– Encourage skin-to-skin contact – Implement unified statistics and Robson classification – Apply it to reduce C-section incidence	Hospital management Obstetricians, midwives, neonatologists

Neonatal care

Activities	Responsible
– Encourage skin-to-skin and breastfeeding – Improve preparedness for resuscitation and monitoring of resuscitated children – Hypothermia awareness – Evaluation of condition during transport upon referral – National guide (revise and implement)	Hospital management Neonatologists, obstetricians, midwives, neonatal nurses

Management of complications

Activities	Responsible
– Develop algorithms and protocols and ensure availability of medication for management of emergencies – Organize trainings and drills	Hospital management Neonatologists, obstetricians, midwives, neonatal nurses

III. Group three (maternity ward level)

Activities	Responsible
– Involving midwives in monitoring labour – Revise, develop and implement local protocols and standards – Implement Robson's classification of the indications of caesarean sections – Improve Strep Group B screening – Improve HIV screening – Organize pregnancy school – Conduct and participate in trainings	Hospital management Neonatologists, obstetricians, midwives, neonatal nurses