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TECHNICAL DOCUMENT:

Assessment of Perinatal Care in Zhezkazgan and Karaganda Cities

Author:

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Lithuania

**January 18 – February 2, 2002
Karaganda Oblast, Kazakhstan**



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I. Abbreviations

- CARK - Central Asia Republics and Kazakhstan
- ICD-10 - International Classification of Diseases (10th ed.)
- EBM - Evidence Based Medicine
- EOC - Essential Obstetric Care Facilities
- FGP - Family Group Practice
- KDHS - Kazakhstan Demographic and Health Survey
- MCH - Maternal and Child Health
- MPS - Making Pregnancy Safer
- NICU - Neonatal Intensive Care Unit
- PEPC - Promoting Effective Perinatal Care
- SES - Sanitary-Epidemiology (Infection Control) Service
- USAID - United States Agency for International Development
- WHO - World Health Organization

II. Abstract

ZdravPlus has been implementing health reforms in the Zhezkazgan region of Kazakhstan for several years and in early 2002 they undertook their first assessment of perinatal care in the cities of Karaganda and Zhezkazgan. The report looks at the current practices, level of knowledge and available resources existing in inpatient and outpatient perinatal facilities. Based on this information a series of recommendations (based on WHO's Perinatal Care Task Force recommendations delineated in Venice in 1998) are made for improving health care delivery for expectant mothers, for those who have just given birth and for newborns. The ZdravPlus team presented their findings to city and oblast officials and health officials and discussed potential courses of action and policy issues related to further action.

III. Executive Summary

In January-February 2002, Gelmius Siupsinskas, obstetrician-gynecologist and temporary adviser to the World Health Organization (WHO)-Europe, visited Zhezkazgan and Karaganda Cities, Kazakhstan, at ZdravPlus' request. ZdravPlus has been involved for several years in supporting and developing primary health care in the Zhezkazgan region, as well as other areas of Kazakhstan.

Dr. Gelmius Siupsinskas, in close collaboration with Dr. Dana Sharman and Ms. Asta Kenney (ZdravPlus), visited several Family Group Practices (FGPs) and maternity units in Zhezkazgan and Karaganda Cities. He also met with regional health authorities and representatives of several medical schools.

In all facilities and institutions (Annex 1), meetings and open discussion with personnel took place. The main issues addressed were safe demedicalization of maternity care, evidence-based medicine, and family-centered and holistic approaches. The discussions were appreciated by officials and underlined the need for changes in routine practices most of which were established during Soviet times. Current practices include obligatory screening of pregnant women which often leads to misdiagnosis and wastes scarce resources, and the stipulation that at least 12 visits be made to health workers during pregnancy where WHO recommendations recommend four to five visits.

Health authorities in both Zhezkazgan and Karaganda expressed support for the initiative based on WHO recommendations, but they also asked for a written program and indicators to be measured during program implementation.

Representatives of the Ob/Gyn departments of Karaganda Medical Academy, Zhezkazgan Medical College and Almaty Institute for Postgraduate Education underlined their commitment to active participation in the project, and their willingness to be involved in all phases of implementation.

Recommendations include: demedicalization of care so that pregnancy is treated as a physiological process, not a disease, and newborns are no longer thought of as 'patients'; basing care on available resources; reducing the emphasis on sterilization; ensuring that care takes on a regional aspect and moves away from over centralization; moving towards evidence based medicine; and including family and community in infant and maternity care.

IV. Scope of Work

- Review key documents, such as the Kazakhstan Demographic and Health Survey, the proposed Kazakhstan reproductive health protocols, etc;
- Visit FGPs in Zhezkazgan/Satpaev and nearby rural areas, as well as in Karaganda City, to assess the level of knowledge and skills of gynecologists and other staff with respect to obstetrical care, their attitudes toward the provision of such care, and the facilities and equipment available to them;
- Visit the outpatient clinics and the inpatient facilities of the maternity houses (and other hospitals, if appropriate) in Zhezkazgan/Satpaev and Karaganda City, to assess the level of knowledge and skills of gynecologists and other staff with respect to obstetrical care, and the facilities and equipment available to them;
- Meet with the leadership of the FGP Association;
- Meet with city and oblast officials in Zhezkazgan and Karaganda to present the findings of the assessment, to discuss potential courses of action and explore policy issues around the implementation of the planned program;
- Meet with selected Republican officials;
- Discuss findings and recommendations with ZdravPlus staff and develop a preliminary strategy for the Safe Motherhood program.

V. Background

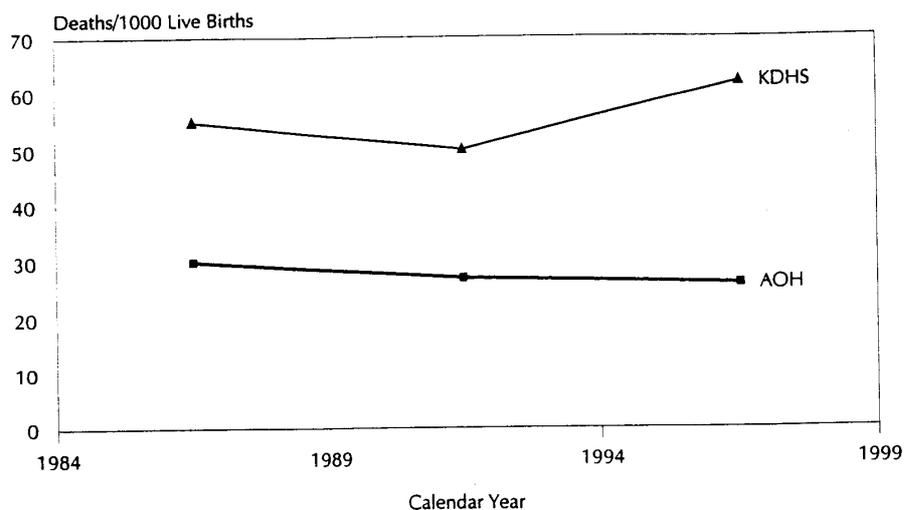
According to the latest census (1999), the population of Kazakhstan is 14.9 million people. Population density is approximately six people per square kilometer (2). Karaganda Oblast is located in central Kazakhstan and has a population of 1,398,900 (2001) inhabitants (8). The population of Zhezkazgan City is 102,789, (1) and the population of Karaganda City is 432,700 (8).

The official infant mortality rate in Kazakhstan is reported to be approximately 22/1,000 (1999) (2) and in Karaganda Oblast – 21.0/1,000 (2000) (11, 12). The maternal mortality ratio in Kazakhstan is 62.5/100,000 (1999) (2) and in Karaganda Oblast – 44.25/100,000 (2000) (11, 12). Perinatal mortality in Karaganda Oblast is reported to be as high as 16.8/1,000 (2001) (11, 12). (Figure 1).

It should be underlined that the definition of live births used by local professionals differs from that proposed by WHO. For example, Zhambyl excludes a birth occurring without a sign of breathing, regardless of the presence of other signs of life, and considers such to be a stillbirth. Further, any child born under the gestational age of weeks or weighing less than 1,000 grams, regardless of the presence of any sign of life, was considered an abortus unless the child survived to seven days of age (15). The same trends could be found in Karaganda Oblast.

Therefore all official indicators should take into account differences in official and real infant mortality revealed by the Kazakhstan Demographic and Health Survey (KDHS).

Figure 1. Trends in Infant Mortality: Agency on Health (AOH) and KDHS (2)



VI. Findings

A. Zhezkazgan

1. Primary (Outpatient) Perinatal Care

The population of Zhezkazgan City is 102,789 (2001) (1). Currently, obstetricians and midwives deliver antenatal care for pregnant women in Zhezkazgan region in the antenatal departments of the maternity units (Zhezkazgan and Satpaev) and in one FGP clinic (Rudnik). In all other FGPs women are referred to the antenatal department of the maternity unit after pregnancy detection. Early catchment of pregnant women is 62.3% (1). Every week, the FGPs contact maternity units to obtain information regarding deliveries, in order to provide postnatal care to women and newborns being discharged. Midwives serve as assistants to obstetricians, taking measurements, filling in records and doing home visits (patronage) for pregnant women. Women are requested to visit an obstetrician about 12 times, even for a normal pregnancy. That is one of the reasons why women are often unwilling to contact medical services in early pregnancy. Quite recently, new antenatal care protocols based on WHO recommendations (only 4-5 visits are required for normal pregnancies) were released by the MCH Center in Almaty, but these are still not practically in place. All facilities visited were found to be warm and clean, having everything necessary for providing relevant antenatal care for normal pregnancies. However, essential medications necessary for potential emergencies (severe pre-eclampsia/eclampsia, obstetrical hemorrhage) are not universally available (magnesium sulphate, hydralasine, normal saline for intravenous lines, systems for intravenous infusions).

Obstetricians practicing in outpatient (as well as inpatient) departments make extensive use of ultrasound to diagnose so-called chronic fetal hypoxia, poli- and oligohydramnion, fetal intrauterine growth restriction, placental insufficiency, etc. In all these cases, women are usually hospitalized. It is also common to refer pregnant women for treatment in case of so-called pre-gestosis (edema and/or rapid weight gain) or for mild pre-eclampsia.

It is not common - if it happens at all - that the husband or other family members are involved in antenatal care classes. This is quite understandable, since the obstetricians have more than five hundred pregnant women on their list and are too busy with routine screening procedures. Health professionals still believe that the antenatal services' only task is to screen for pathology, and to refer in case a problem presents itself. Very few efforts are made to educate, advise, support and reassure the

mother-to-be and her husband/family. These activities are not included in the new protocols for antenatal care either.

Extensive screening for different perinatal infections (often not necessary) and genetic counseling does take place. Screening for β -hemolytic streptococcus, asymptomatic bacteriuria and PAP smears is not available. Some of the procedures that are routinely used during antenatal visits are outside of a scientific basis (e.g. external pelvic and abdominal circumference measurements, controlling weight gain, multiple ultrasound scans, multiple vaginal smears, multiple syphilis tests, etc.). All these conditions are resulting in a number of false diagnoses and/or wasting resources.

Some professionals were not confident of the criteria for diagnosing anemia during pregnancy – they say they are using 120g/l instead of 110g/l. Anemia is recognized as a severe problem, but nobody knows the proportion of genuine (below 70g/l) anemia that is important for perinatal outcomes. The international criteria and classification of pre-eclampsia are not known either, despite the fact that all diagnoses countrywide are reported according to ICD-10. Recommendations are given to women to reduce water and salt intake in order to prevent pre-eclampsia.

Some primary health care professionals say they advise women to give some water (besides breastmilk) to their newborns, especially in summer time, and to use different liniments for taking care of their breasts.

2. Referral (Inpatient) Perinatal Care

There are two maternity units in Zhezkazgan region – Zhezkazgan maternity hospital and Satpaev general hospital, which has an obstetrical department. There were 1,499 deliveries in the Zhezkazgan maternity hospital in 2001 (1) and approximately 1,150 in Satpaev general hospital. Perinatal mortality in Zhezkazgan was 13.4 and the caesarean section rate was 10% (1) (in Satpaev it was approximately 18%). Sick newborns are referred to the neonatology department in Zhezkazgan pediatric hospital.

Both Satpaev and Zhezkazgan maternity units were found to be very warm and clean, with plenty of space in the buildings. Despite that, six or eight pregnant women are often placed in one room together, while other rooms lie empty. The same applies for new mothers and their babies: three patients with newborns will be put in one small room, while several other rooms lie empty. The professionals say that the SES requests that they regularly disinfect the delivery rooms and postnatal wards and then keep them empty for several days.

Diagnoses for prenatal inpatients were: chronic fetal hypoxia, polyhydramnion, pre-gestosis or mild pre-eclampsia (nephropathia), fetal intrauterine growth restriction, threatening pre-term labor, moderate anemia, and some extragenital pathology. The majority of these do not need inpatient care. The condition of the fetus is assessed exclusively using ultrasound. Pathological signs usually include those of placenta, amniotic fluid and fetal behavior. Although there is no cardiotocography available in either facility, the fetal biophysical profile is often mentioned as a criterion for assessment of fetal well-being. Some women are allowed to go home every second or third day or on weekends. A number of different medications are prescribed for treatment including: kurantil triantal, actovegin, vitamins, oxygen cocktails, calcium, glucose for chronic hypoxia and placental insufficiency, antibiotics for polyhydramnion, intravenous fluids, rheopoliglucin, norvasc for pre-eclampsia, hemotransfusion for even moderate anemia, hormones and vitamins for 'preparation for labor'. Most of those treatments are outdated, and have no place in modern evidence-based practices. Some professionals agreed they are over-diagnosing and over-treating, but say they need to keep beds occupied in order to prevent staff cuts.

Only anecdotal cases of vacuum assisted deliveries are reported. Doctors say they are blamed if an instrumental delivery takes place. In Zhezkazgan, there has been a significant increase (as compared to

2000) in caesarian sections (10% and 7.2%) and in the number of women with a previous caesarian section (2.6% and 1.9%). Incidence of severe anemia in pregnant women in 2001 was 7.5% (1).

In Satpaev, two women who had just given birth (during the last hour) were found alone in one delivery room on Rachmanov tables. Their newborns were separated from them in another special room. The neonatologist said they practice early skin-to-skin contact, but after that, they separate the mother and baby until transferal to the postnatal ward. All other newborns were found with their mothers. Another delivery room was empty and was said to be 'resting after disinfection (obrabotka)'. One woman was found under oxytocics (also alone in a pre-labor ward) because of 'contraction weakness'. The obstetrician said that she had been admitted early in the morning, and since then (the visit was made at 3 pm) had made no progress in opening her cervix (which remained at 3 cm), and her contractions had become weaker. Her amniotic membranes were not ruptured. No partograms were used in the facilities.

In Zhezkazgan, four newborns were found in different rooms to their mothers – one had been delivered by caesarian section, and another was qualified as 'high risk' and therefore needed to be in a special room for observation. Delivery rooms had no wall thermometers or clocks (except in one room). Delivery beds were in very bad condition because of frequent use of aggressive disinfectants.

Neonatal intensive care wards in both maternity units were empty during the visit. In fact, there are very limited options for taking care of sick newborns in the maternity units and no relevant equipment for ventilation, monitoring (no pulseoxymetry, etc.) or treatment (no intravenous pumps, catheters, etc.). The incubators are very old, but 'still working?'. All sick babies, if delivered and recognized as 'transportable', need to be transferred to the pediatric hospital in Zhezkazgan for intensive care.

About 30% of all infants up to 3 years of age are under dispenserization in the private infants clinic within the maternity unit because of 'posthypoxic encephalopathy or intracranial hypertension' or other neurological disorders (5).

The maternity units are closed to visitors, and due to SES rules, friends and relatives are not allowed in during delivery. Women sometimes affix a ward number to the window, so that family members standing outside the building will recognize them (Figure 2).

Figure 2. Family members are not allowed to visit women in delivery and /or newborns. A ward number can be seen in the window for visitors to see (Satpaev)



B. Karaganda

1. Primary (Outpatient) Perinatal Care

In Karaganda City, primary antenatal and postnatal care is delivered in FGPs by obstetrician-gynecologists and midwives. The issues addressed during the mission were much the same as in Zhezkazgan: over-medicalization of care; non-evidence based irrational use of resources; outdated protocols; and non family-friendly services. Midwives serve only as technical assistants to doctors, mainly filling in antenatal cards and taking some measurements. Despite that, KDHS shows that up to 30 percent of deliveries in rural areas and up to 15 percent in cities are assisted exclusively by midwives (2). Over frequent and unsystematic ultrasound scans are offered to pregnant women, especially if referred for consultation to the secondary level.

A large proportion of pregnant women, after consulting a therapist (internist) come back to the obstetrician with different additional diagnoses – cardiac, renal or anemic – and are considered to be pathological cases for the rest of their pregnancy, irrespective of their current health status.

Professionals desperately need to be updated in the management of pre-eclampsia, perinatal infection and other clinical conditions. Also, families and communities should learn to help care for pregnant women (especially normal pregnancies). Counseling skills regarding breastfeeding are inadequate and need to be improved including recommendations during pregnancy for preparation of the breasts for breastfeeding, giving water to breastfed infants, using liniments to prevent sore nipples, etc.

Secondary referral-level outpatient care for pregnant women is offered in polyclinics. One of those visited by the author was located next to the Oblast Diagnostic Center. Many pregnant women referred for consultation to the polyclinic were put on day-bed treatment, apparently quite often without appropriate indications (i.e. poli- and oligohydramnios, chronic renal infection, threatened abortion, etc.). In the day-bed department, pregnant women receive a number of medications such as antibiotics, intravenous lines, vitamins and spasmolytics.

Diagnoses such as chronic fetal hypoxia, placental insufficiency and fetal intrauterine growth restriction are made by a single ultrasound examination using a two-dimensional sonography machine (cardiotocography is not available). It was also noted that there are no well set-up, functioning links between levels of care.

2. Inpatient Perinatal Care

Inpatient obstetrical care is provided in three maternity units – the oblast and city maternity units and a private maternity unit. The author visited the first two of these.

There are approximately 1,700 deliveries in the city maternity unit ('Roddom') and approximately 2,500 in the oblast maternity unit. The Ob/Gyn Department of the Medical Academy is located within the city maternity unit. Antenatal wards were found to be almost full, especially in the oblast maternity unit, but the reasons for hospitalization were questionable. Almost all women received a number of medications in different combinations for such pathologies as poli- and oligohydramnion, fetal intrauterine growth restriction, fetal hypoxia, threatening abortion or preterm labor, edemas and mild pre-eclampsia, mild anemia, or prolonged pregnancy etc. SES rules are strictly followed in all facilities, so some delivery rooms and postnatal wards and neonatal intensive care units are closed for disinfection, while others are over-crowded with as many as six or more antenatal or up to four postnatal patients per ward. A large amount of resources are allocated to buy disinfectants. Estrogens, vitamins and calcium are administered for so called preparation for labor.

Two or even three women give birth in the same room at the same time, while there are plenty of empty rooms in maternity units that could be used as individual delivery rooms. In figure 3, three women who have just given birth can be seen in one delivery room feeding their newborns. Note however, that there is no skin-to-skin contact.

Figure 3. Three women who have just given birth breastfeed their babies in one delivery ward (oblast maternity unit, Karaganda)



Almost all newborns in the maternity units were found with their mothers. Only a few were separated from their mothers, either because they had been delivered by caesarian section; were premature; had

hyperbilirubinemia (phototherapy); or for one baby, because it had been abandoned. The oblast maternity unit was certified some time ago as a baby-friendly maternity unit.

Not all delivery rooms had wall clocks and thermometers, although all rooms and wards were quite warm (no less than 22° C). The equipment present in the maternity units is appropriate for uncomplicated deliveries. No cardiotocography was available. The situation for neonatal care was better in the oblast maternity unit. There were more incubators and intravenous pumps, but no pulse-oxymeters and only one ventilator. The oblast maternity unit manages pathological deliveries for the whole oblast, so the rate of premature births is approximately 18%. Good quality neonatal resuscitation algorithms were found in the delivery rooms and neonatal intensive care unit.

Doctors were skeptical about fetal vacuum extraction. No relevant equipment was available. No bacteriology cultures are available in any of the city maternity units.

VII. Recommendations

The values and general principles for maternal and perinatal care in Europe were drawn up by the WHO Perinatal Care Task Force at its first meeting in Venice in 1998, and have subsequently been promoted, disseminated and implemented throughout the region at the country level (8, 9, 10):

- Care for normal pregnancy and birth should be **demedicalized**
- Care should be based on use of **appropriate technology**
- Care should be **regionalized**
- Care should be **evidence based**
- Care should be **multidisciplinary**
- Care should be **holistic**
- Care should be **family-centered**
- Care should be **culturally appropriate**
- Care should **involve women** in decision-making
- Care should respect women's **privacy and dignity**

A. Care for Normal Pregnancy and Birth should be Demedicalized

Demedicalization should be aimed at considering pregnancy as a physiological event rather than as a disease - in other words, birth and newborns should not be regarded *a priori* as a problem and as patients, respectively. A non-critical approach to demedicalization should be avoided, and safe demedicalization should always ensure skilled attendance during pregnancy, at birth, and after birth, for each birth at each level of care.

Currently (in facilities visited), nearly 90 percent of all pregnant women are considered as patients requiring medical treatment (often on an inpatient basis) even for minor reasons (mild anemia, mild hypertension, swellings, vaginal candidiasis, etc.) that have no proven impact on perinatal outcome. Every effort should be made to protect pregnant women, women in labor, women after delivery and their newborns from unnecessary prescription of different tests and medications, which often result in unfavorable outcomes. Four antenatal visits are enough for appropriate monitoring of most

pregnancies (no less than 85%). The most appropriate professionals to deliver antenatal care are midwives (along with family doctors). Participation of specialists in routine antenatal and intrapartum care usually results in over-medicalization of care: more interventions; more medications; less satisfaction; and no improvement in outcomes (3, 4, 13, 14). It should be underlined that there is very limited evidence that antenatal care reduces maternal mortality (13).

B. Care should be Based on the Use of Appropriate Technology

Appropriate technologies are defined as methods, procedures, techniques and equipment that are scientifically valid, adapted to local needs and acceptable both to those who use them and to those for whom they are used, and which can be maintained and utilized by the community with resources the community can afford.

With respect to primary care, it should again be underlined that the most appropriate professional to provide that care is a midwife, then a family doctor, and only then specialist gynecologists. This is appropriate (efficient) in terms of cost-effectiveness, patient satisfaction and perinatal outcomes (3, 4, 13, 14).

In maternity settings, the emphasis should be placed on clean, not necessarily sterile delivery (4):

- clean hands (sterile gloves)
- clean perineum
- clean delivery surface
- nothing unclean to be introduced into the vagina
- cleanliness in dividing the umbilical cord and taking care of the newborn baby
- instruments, gauze and ties used for delivery and cord care should be sterile
- nothing should be applied either to the cutting surface or to the stump
- the stump should be left uncovered to dry and mummify.

There is no need for disinfection of rooms, wards, furniture and no need for sterilization of bedclothes, underwear and newborn's clothes. All items mentioned should simply be clean. All wards should be rearranged so that every woman giving birth (with her companion) has a separate room. There is more than enough space in all the maternity units visited for such rearrangements. In general, an over-sterilized, disinfected environment in maternity units only results in sustainability of nosocomial infection. Companionship during labor and delivery, while not replacing the presence of a professional, reduces instrumental deliveries and the need for stimulation and bad outcomes for the newborn, and costs nothing.

Women are giving birth in an inappropriate, flat-backed position with their legs fixed in stirrups. A regular bed, if needed, is much more appropriate than a Rachmanov bed. WHO recommends more vertical supine positions, otherwise women are encouraged to choose the position they feel most comfortable with.

The partograph should be implemented for monitoring all deliveries. Such an example of appropriate technology evidently reduces the need for interventions and medications and improves neonatal outcomes. Caesarian section rates are too high in most maternity units (in Satpaev they are up to 18%). This may be partially explained because all women who have previously had caesarian sections

are given caesarians, and also because excessive (often inappropriate) use of ultrasound for assessment of fetal well-being leads to aggressive interventions. Vacuum-extraction is not used in maternity units, mostly because the equipment is in bad condition and, because the authorities recognize every ventouse-assisted delivery as an example of bad practice, which is contradictory to evidence-based medicine (EBM).

Early discharge from maternity units should be a mandatory part of appropriate management, especially for newborns (3, 4, 5, 13, 14).

It should be clearly underlined, that there is not enough evidence to support routine ultrasound screening for all pregnant women (3, 4, 14)

C. Care should be Regionalized

Effective and safe maternal and perinatal care should be available at each level of care in an integrated network between the primary (minimal), secondary (intermediary) and tertiary (intensive) levels of care. This will ensure that regionalization of perinatal care replaces a previously centralized, outdated and non-functional system.

Outpatient antenatal care should be shifted as close as possible to the family and community. Screening for problems in pregnancy is only one of the important roles of antenatal care. Others are education, information, reassurance of the mother-to-be and her family. In case a problem should arise (that cannot be managed within primary care), the woman needs to be referred to the secondary level for outpatient or, if necessary, inpatient care.

In the Zhezkazgan region, there are two maternity units: Zhezkazgan and Satpaev (less than an hour's drive apart) for obstetric care; and a pediatric hospital (Zhezkazgan) for neonatal intensive care. The possibility for referral of a woman or newborn somewhere else for more advanced care (Karaganda or Almaty) is questionable, except for a few special cases, i.e. already-known severe extragenital pathology or fetal illness.

It is absolutely clear that for rational allocation of human and financial resources for the approximately 2,500-2,700 deliveries in the region, only one maternity unit should be equipped for pathological (or "high risk" fetal intrauterine growth restriction, multiple pregnancy, preterm delivery, somatic disease, etc.) deliveries and neonatal intensive care. Another maternity unit should be reserved for normal cases.

The picture is much the same in Karaganda. Of the three maternity units in the city (approximately 5,500-6,000 deliveries/year), it would be worthwhile from a public health perspective to select (and equip) one maternity unit as a tertiary perinatal referral center (even for oblast purposes - 1.3 million population, 16,000 deliveries/year). It is absolutely clear that the available resources (both human and financial) are not enough to equip all maternity units with the relevant neonatal intensive care units and high-risk pregnancy laboratories (ultrasound, cardiotocography, intensive care, etc.) (3, 4, 13, 14).

Secondary (referral) outpatient care is definitely problematic. In Zhezkazgan, it is provided by special clinics located next to the maternity unit. While this is probably a good idea, the only problem is that in Zhezkazgan, even primary antenatal care is delivered in this clinic - with just two doctors for approximately 1,500 pregnancies/year. The quality of the screening in these outpatient clinics is questionable for both objective and subjective reasons. In reality, the outpatient clinics in the maternity units are now serving as "nets" to catch the necessary number of patients to guarantee the "occupation of obstetric inpatient beds".

In Karaganda City, secondary referral care is delivered by polyclinics. In one clinic visited by the author, it was clear that polyclinics have neither relevant links with primary or secondary inpatient care.

Women arrive randomly through self-referral and information about consulting, analysis and diagnosis often does not reach the primary care level (FGPs). Polyclinics use their day beds for treatment of patients who could easily be managed at home, often without medication. In terms of screening for obstetrical pathology, polyclinics currently cannot offer anything that different from the primary level (except probably the experience of the provider although this, however, is not always evidence-based). Strategic and systematic planning and one strong perinatal center with an appropriate outpatient clinic (department) should solve these discrepancies.

A bacteriological service is very important within a maternity unit!

D. Care should be Evidence Based

Common practices, professional skills, protocols and policies for care should be based on scientific evidence and regularly updated.

Written protocols were not found (except for resuscitation of newborns in the oblast Roddom – the only example) in FGPs and maternity units. Those recently proposed by the MCH Center in Almaty are quite good but need to be more flexible or, better still; recommendations should be adapted and adopted by every single institution, according to local needs and available resources.

Those practices which are either evidently ineffective/harmful or not yet tested for efficacy and safety (medical treatment of fetal intrauterine growth restriction; fetal chronic hypoxia; poli- and oligohydramnios; mild pre-eclampsia; mild pregnancy induced hypertension; threatening spontaneous abortion or threatening preterm delivery; administration of sedatives (instead of magnesium sulphate) for severe pre-eclampsia/eclampsia; spasmolytics in labor; hormones for cervical ripening; multiple medications for newborns/infants for post-hypoxic encephalopathy; etc.), should be actively discouraged. The Center for Drug Information, located next to the Karaganda City Health Department is, unfortunately, little used for such purposes. At the same time, practices which are evidently effective (glucocorticoids for preterm deliveries; effective antibiotics for chorioamnionitis instead of prophylactic hysterectomy in case of caesarian section; companionship in labor; anti-D prophylaxis; effective treatment of genuine anemia; oxytocics for third stage of labor; antibiotic prophylaxis in caesarian section; vacuum-extraction instead of forceps; partograph for monitoring labor; free positioning of woman in labor and delivery; and many others) should be implemented as soon as possible (3, 4, 13, 14).

It should be underlined that implementation of EBM should always be based on three related components (4):

- sound scientific evidence,
- clinical expertise of the provider, and
- preference (opinion) of care receiver.

E. Care should be Multidisciplinary

All the health professionals involved in perinatal care should be trained to work in strict and open interdisciplinary collaboration.

The current situation where almost every pregnant woman, after consulting a therapist (internist), receives a diagnosis (which, in most cases, has no proven impact on outcome) and is automatically referred to a high-risk group should be abandoned. Thus, consultation by a family doctor rather than a specialist (internist) should be enough for most pregnant women. A key role in caring for normal pregnancies and deliveries should be reserved for well-trained midwives.

Anesthesiologists should be trained to manage such pathologies as severe pre-eclampsia/eclampsia, shock, and obstetric hemorrhage in line with EBM and within a midwife-obstetrician-neonatologist team.

F. Care should be Holistic and Family-centered

Maternal and perinatal care should satisfy the physical, emotional and psychosocial needs of mothers, newborns, fathers and families in a holistic approach. Screening for, and managing complications is only one goal of evidence-based maternity care. Others are education, information and psychological support of women and their families. Separation of pregnant women and those who have just given birth and their newborns from their families (not letting visitors into maternity and neonatal intensive care units) is unacceptable, both based on EBM and from a humanistic point of view. Pregnancy and birth are normal, physiological events, and in order to be implemented, perinatal care interventions have to be centered on the information, motivation and participation of the whole family and local community.

There is no doubt that no institution should be recognized as baby-friendly unless it is friendly to the woman and/or family too.

G. Care should be Culturally Appropriate and should Involve Women in Decision-making

Whenever possible, all acceptable traditional practices of care should be respected after having been tested for safety and effectiveness. Each intervention in the new initiatives should be evaluated in each national context for its impact on cultural attitudes and an effort should be made to facilitate its acceptance through information and discussion.

Any change should be introduced not because of new “prikazes” but because it comes from understanding the needs and motivation of local people and is based on multidisciplinary agreement including the opinion of care-receivers.

Women's participation in decision making, implementation of initiatives and advocacy should be enhanced and encouraged through a global effort to disseminate a global awareness of health and health education.

It is easy to see that the principles discussed above can be used in developing implementation strategies and activities in three partially overlapping areas: quality of health care, health system development and family and community involvement (2, 9).

1. Quality of Health Care

In this area, the approach to implementation should ensure quality standards of health care by providing essential packages of training, monitoring and impact evaluation. Strategies should also ensure the regular provision of essential professional skills, drugs and availability of supplies and equipment, with respect to the concepts of appropriate technologies, cost-effective interventions and a holistic approach.

A feasible contribution in that field could be training of primary care providers (obstetricians-gynecologists, midwives and family doctors) and maternity unit staff (obstetricians, midwives and neonatologists) to practice EBM. The WHO training packages: Making Pregnancy Safer / Promoting Effective Perinatal Care (MPS/PEPC) would be a good option.

2. Health System Development

The implementation of objectives in this area should ensure that health systems are adequately updated and organized at each level of care. Legislative reforms and/or implementation of existing laws should take place where necessary, and health systems should be modified accordingly, so as to address the health needs of mothers and newborns in a holistic way.

The appropriate strategy emphasizes the role of the primary level of health care, offering a model of regionalized health care in which specific tasks and responsibilities are designed for each level of care. This model ensures continuity of care, based on standards of care for each level and standard criteria for referral of complicated cases.

Some of the systemic obstacles, at least in maternity care, are:

- An outdated SES service;
- The punitive character of medical audits - rather than an anonymous and constructive/supportive character;
- A mandatory formal risk-oriented perinatal screening system - instead of a problem-oriented system (5, 13)

The availability of the essential package provided by the WHO (including training, supervision and protocols for the correct use of drugs and technology) can lead to a reduction in costs for health services. This in turn, can lead to improvements in the quality of care, greater patient satisfaction, increased use of public health services and, in all probability, more cost-effective delivery of health care.

3. Family/Community Level Involvement

The implementation of Safe Motherhood Strategies should promote actions to involve families and the community. Communities need to be strengthened and families need to be supported in order to provide the necessary care for mothers and newborns.

Ensuring that every pregnant woman receives antenatal care is primarily the responsibility of the family and community in which she lives. The woman requires the support of her family and community in seeking care if complications arise during the pregnancy, delivery or postpartum and lactation period. To provide this care, families need information, skills and motivation to try to sustain the new practices. They require social and material support from their community. They also require support from the health sector in the form of accessible, responsive and friendly services offering a holistic approach (taking into account the physical, emotional and psychosocial needs of women and newborns) to maternal and perinatal care.

Changing maternity care in accordance with WHO recommendations could play an important role in many aspects of health sector reform by (8):

- improving the cost-effectiveness of essential maternal/neonatal health care services;
- strengthening the capacity for decentralized management at the district level;
- improving the quality of maternal/neonatal health care;
- supporting the new role of health authorities;

- guiding the introduction and integration of private health care provision for maternal/neonatal care;
- strengthening the provision and management of appropriate drugs and supplies.

Common maternal/perinatal process indicators for monitoring changes are recommended by various organisations, including the World Bank, WHO and the World Summit for Children (1993), and include the following (15):

- percentage of pregnant women attending antenatal care;
- number of essential obstetric care facilities (EOCs) per 500,000 population;
- geographic distribution of EOCs;
- percentage of women with complications admitted to EOC facilities;
- time interval from onset of complications (or arrival at facility) to treatment at a referral site;
- percentage of births attended by skilled health personnel;
- caesarian sections as a percentage of all births in the population;
- percentage of health providers who are trained and competent;
- presence of a companion during the birth;
- use of the WHO partograph;
- use of a supine position at delivery;
- practice of skin-to-skin contact for at least 30 minutes in the first hour;
- percentage of hospitals with breast-feeding protocols;
- percentage of women receiving breast-feeding advice during pregnancy and prior to discharge from the facility after delivery.

Finally, it is absolutely clear that investing in maternal and perinatal care is also a vital social and economic investment, promoting women's health, wellbeing and contribution to society.

The key to improving maternal and perinatal health is a continuum of services, including, in particular, a stronger primary health care sector with better referral capabilities for complicated cases, and appropriate management of those in hospitals providing relevant effective treatment in line with internationally recognized standards.

VIII. References

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Annex 1:

List of facilities/organisations visited and persons met

Date	Facility/ Organization	Persons met
19.01.02	ZdravPlus, Almaty	Hafner G., Regional Deputy director Dr. Sharman D., RH specialist
21.01.02	Health Dept., Zhezkazgan	Dr. Kabikenov K., Head of Health Dept Dr. Makenbaeva A., Director of Association of FGPs Dr. Tmubajev S., Chief obstetrician-gynecologist Dr. Tazhikenova Zh., ZdravPlus coordinator
“	Association of FGPs, Zhezkazgan	Dr. Tazhigulova D., Association obstetrician-gynecologist
“	FGP, Zhezkazgan	Dr. Makenbaeva A., Head Gynecologist Midwife
“	FGP, Zhezkazgan	Dr. Bekseitova N., Head Dr. Bajanova N., Gynecologist Midwife
22.01.02	FGP, Satpaev	Dr. Karbysheva V., Head Dr. Tsemuchina A., Gynecologist Pavlikova A., Midwife
“	FGP, Satpaev	Dr. Achmetova A., Head Dr. Abdichadirova G., Gynecologist Tumibergenova G., Midwife
“	Satpaev City Hospital	Dr. Achanov Zh., Head Dr. Barlybajeva L., Deputy Dr. Aimbetova B., Chief of Obstetrics department Dr. Ryzhenkova, Gynecologist Obstetricians, Neonatologists and Midwives of the maternity unit (14 persons)
23.01.02	Zhezkazgan City Maternity Unit	Dr. Tmubajev S., Head Obstetricians, Neonatologists and Midwives of the maternity unit (19 persons)
24.01.02	Zhezkazgan Pediatric Hospital	Dr. Naukenova N., Vice-director Dr. Sagimbajeva S., Pediatrician of FGP Association Neonatologist, Chief of NICU Dr. Osipova S., Chief of Genetic Center
“	Zhezkazgan Medical College	Dr. Mataj J., Vice-director Dr. Kim T., Ob/Gyn teacher College Teaching Staff (9 persons)
“	Health Dept., Zhezkazgan	Dr. Kabikenov K., Head of Health Dept., Dr. Makenbaeva A., Director of FGP Association
25.01.02	ZdravPlus, Almaty	Hafner G., Regional Deputy Director Kenney A., Regional RH Director Dr. Sharman D., RH specialist Dr. Van der Velden T., Consultant/Quality of Care
28.01.02	Health Dept.	Dr. Jermekbakejev, Head of Health Dept Dr. G. Omarova, Chief Oblast Obstetrician Dr. N. Che, RGKP ‘Health’ Director Prof. Gulejev A., Center for Pharmaceutical Information Prof. Jermekbajeva B., Center for Pharmaceutical Information
“	Karaganda City Maternity Unit	Dr. Chepelenko B., Vice-Director

		Prof. Pak I., Head of Ob/Gyn Department, Karaganda Medical Academy Dr. G. Omarova, Chief Obstetrician Obstetricians, Neonatologists and Midwives of the maternity unit (23 persons)
29.01.02	Health Department	Prof. Alichanova K., Head of Family Medicine Department, Medical Academy
“	FGP “Orbita”, Karaganda	Dr. Tabenova V., Chief Dr. Bazhenova I., Gynecologist, Paziuk N., Midwife
“	Oblast maternity	Dr. Ajtzhanova A., Head Dr. Abushachmanova N., Deputy Obstetricians, Neonatologists, Anesthesiologists and Midwives of the maternity unit (33 persons)
30.01.02	FGP “Zhansaja”, Karaganda	Dr. Abakova, Chief doctor Dr. Kruch T., Deputy Dr. Romanova L., Gynecologist Riugarinkova N., Midwife
“	Polyclinic & Diagnostic center	Dr. Rachishev E., Director Dr. Kutinskaja O., Gynecologist Dr. Smirnova L., Chief Gynecologist, day-bed department,
“	Oblast Health Dept.	Dr. G. Omarova, Chief Oblast Obstetrician Prof. Pak I., Head of Ob/Gyn Department, Karaganda Medical Academy Dr. Abushachmanova N., Deputy Director, Oblast Maternity Unit
31.01.02	ZdravPlus, Almaty	Hafner G., Regional Deputy director Kenney A., Regional RH director Dr. Sharman D., RH specialist
01.02.02	ZdravPlus, Almaty	Kenney A., Regional RH director Dr. Sharman D., RH specialist Prof. Karimova T., Ob/ Gyn Department, Institute for Postgraduate Continuing Education