Can redirecting mothers and newborns to different levels of service improve care in Kyrgyzstan?

Kyrgyzstan, a rugged Central Asian country along the Silk Road, the ancient trade route between China and the Mediterranean, is on its way to reaching Millennium Development Goal (MDG 4), but progress in achieving MDG 5 has been much slower. The maternal mortality rate ratio in the region remains high at 55,5 per 100,000 live births. The main causes of maternal death are bleeding (44%), pregnancy-induced hypertension (19%) and sepsis (14%)[1]. The situation is worsened by weak health care infrastructure, poor quality of emergency obstetric care, weak capacity of health workers, non-observance of clinical protocols, lack of criteria and standards, high staff turn-over, and lack of transport facilities to access health services, as well as poor overall quality of health services[1,2].

We aimed to evaluate the efficiency of redirecting mothers and newborns in the Osh oblast region of the Kyrgyz Republic (Uzgen, Kara-Suu and Karakuldja raions districts), from primary health care to secondary- and tertiary-level public hospitals. The selection of regions for our study was determined by density of population, fertility rates, availability of home birth, distance from regional centres, and location in border areas. Data sources included medical records, redirection logs, ambulance records, an audit of 36 clinics and an anonymous survey of 241 women and 79 paramedics.

We found the study area to be isolated with poor road conditions, decentralized water supplies, an insufficient number of ambulances and frequent power outages. Most clinics providing services for pregnant women do not meet basic requirements of privacy, heat, water and sanitation and contain insufficient equipment and low levels of medical staff, including gynecologists.

Women tended to be poorly educated and had low levels of knowledge about the danger signs in pregnancy.

Knowledge and skill of health workers on pregnancy, birth and newborn care maintenance issues. The respondents included obstetricians (34%), family doctors (11%), midwives (28%), nurses (24%) and paramedics (2%). Around 78% of the paramedics,

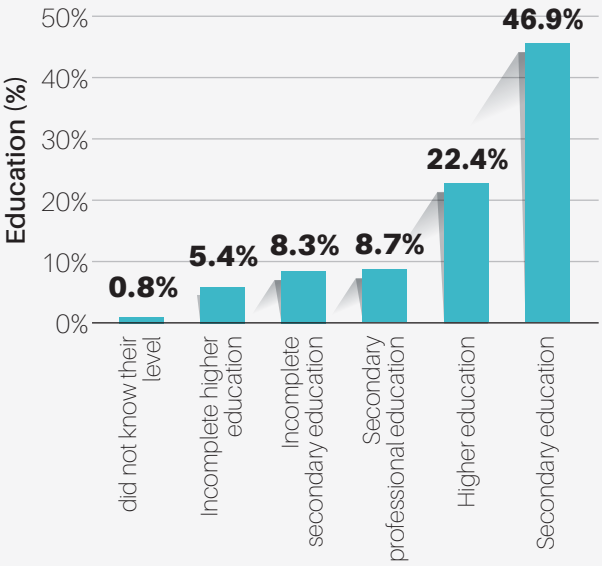

Figure 1: Educational level of women and trimester of pregnancy

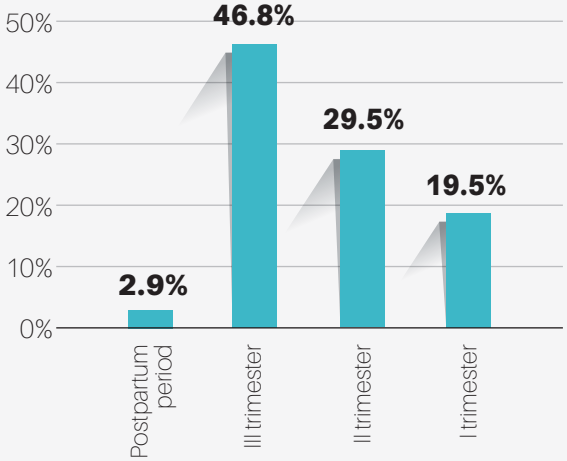

Figure 2: Trimester of pregnancy

[1] The first report of a confidential audit of maternal mortality in the Kyrgyz Republic for 2011-2012. Bishkek, 2014. 55 p.
[2] Evaluation of the quality of care for mothers and newborns in hospitals and primary care (UNICEF, 2012, 78 pp.).

74% of the family physicians, 69% of the obstetrician-gynecologists, 68% of the midwives, 61% of the neonatologists and 54% of the nurses had knowledge regarding antenatal care. Regarding obstetrics knowledge, 76% of obstetrician-gynecologists, 69% of midwives, 66% of neonatologists, 59% of family physicians, 48% of nurses, and 47% of paramedics had obstetrics knowledge. Knowledge regarding post-natal care was 74% among obstetricians and gynecologists, 56% among neonatologists, 55% among family physicians, 47% among midwives, and 29% among nurses. The knowledge level on redirection of patients to corresponding specialist or medical institution on time was around 80% among obstetricians and neonatologists, 71% among midwives and family physicians, 58% among nurses, 50% among feldshers (midwives), with an average across levels of providers of 68%.

Only five out of 36 clinics have an internet connection, and just six have a toilet. General equipment in hospitals lacked the instruments for delivery, medicine, and blood products. Protocols of perinatal commissions and research regarding critical incidents held at 6 clinics, appear to be formalities, with no subsequent reviews or monitoring of whether recommendations are implemented.

Analysis of the redirection of patients to corresponding specialists or medical institutions on time showed an absence of criteria and "algorithms of action" in cases of emergency, non-compliance with clinical protocols, unwarranted interference, weak skills of doctors in the diagnosis, incomplete emergency logs, and lack of continuity of care during transportation. Ambulances were not equipped properly and there were no resuscitation algorithms or monitoring of patients during transportation.

Analysis of transport and advisory services in the states of the region showed that the financial support allocated to organizational services were very small (0,6-4%), out of which a meager salary is allocated for obstetrician and neonatologist consultants. None of the organizations was able to give an account of fuel consumption for a given service. Questionnaires for clinic managers on regionalization of perinatal care showed gaps in organization, as well as in providing this assistance, demonstrating low potential of managers for decision-making in this field, although there is financial autonomy and resources for each case.

Conclusions

- Almost all organizations have a low level of infrastructure making it difficult to ensure safe delivery.
- The level of knowledge of care providers does not meet professional standards.
- Medical staff knowing the criteria for redirection (re-referral) experience organizational difficulties due to a lack of continuity and interaction between different levels, particularly in the absence of transport and remote locations.
- There is a need to develop standard algorithms and protocols to streamline the redirection system.

Recommendations

1. Improvement of clinic infrastructure and equipment provision, at various levels of care.
2. Development of a standard criterion for redirection of patients for each region and district clinic.
3. Improvement of coordination and cooperation between different levels of care.
4. Revision of the regulatory framework of financing and allocation of funds to transport and advise service consultants.
4. Training of care providers on advisory service for emergency obstetric care, transportation, and patient stabilization
5. Strengthening of the role of midwives and nurses in redirection issues.
6. Focusing not only on providing antenatal coverage, but on the continuous improvement of the quality system (including regular training, monitoring and evaluation of care providers' knowledge and a stable system of supervision and mentoring).

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