

Can the Baby- and Woman-Friendly Maternity Wards Save Lives?

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Improving the health and well-being of mothers, infants and children has been an important public-health goal for many countries, which is reflected in the Millennium Development Goals (4 and 5), set by the United Nations. The well-being and health of mothers, infants and children determine future population health and thus public health challenges as well as economic development prospects. Although Ukraine and the other countries of the Former Soviet Union have fared well compared to the less developed countries of Asia, Africa and Latin America, their maternal and infant mortality and morbidity rates are 3 to 5 times higher than those in the European countries (including those of the Former Socialist block). There are many factors behind this situation. Nevertheless, a lot can be done to improve maternal and infant health by simply changing the way labor and delivery services are provided. New evidence-based medicine (EBM) standards introduced by the Mother and Infant Health Project (MIHP) are more baby- and woman-friendly and include: partner deliveries; avoidance of unnecessary C-sections, amniotomies and episiotomies; use of free position during delivery; immediate skin-to-skin contact; early breastfeeding; and the rooming-in of mothers and newborns. The impact of the Project culminates with 3 mothers' and 11 newborns' lives saved every two years in an average participating region.

Infant mortality/morbidity has often been a focus of health economics and medical research as a major indicator of a country's well-being. In contrast, maternal health outcomes have been much less investigated. There are several potential reasons for such negligence. One is that the rates of maternal deaths are quite low in developed countries. The second is attributed to the difficulty of measuring maternal health outcomes in developing countries where the rates of maternal mortality are particularly high. Nevertheless, the issue of maternal health attracts considerable attention from society due to the fact that most of maternal deaths and health deteriorations are preventable. Moreover, recent evidence demonstrates that improvements in health outcomes for mothers and infants are not as much related to the availability of care (structural quality), as to the way this care is provided (process quality) (Barber and Gertler, 2002). Furthermore, some

studies find that access to low quality providers in fact contribute to higher child morbidity and mortality (Sodemann et al., 1997).

Although the population health in Ukraine compares favorably to the situation in the developing world, it is still lagging far behind the developed countries in terms of maternal and infant mortality and morbidity. During the latest years, the level of anemia among pregnant women has increased 4.5 times, maladies of genital urinary system about 3 times, and diseases of blood circulation system 2 times. The average maternal mortality ratio fluctuates around 18-22 women per 100,000 live births, which is 3.5 times higher than in the EU. At the same time, infant mortality (9.5/1000) is two times higher than that in the EU, while the rate of stillbirth (16.89/1000) is four times higher. Additionally, the incidence of congenital anomalies of newborns has

increased over time and reached the number of 2878 per 100,000, which is 77% higher than the EU average.

Another alarming problem related to maternal health is persistently high rate of abortions, which most likely originates from ignorance in modern family planning methods. In contemporary Ukraine, 71% of pregnancies end up in abortions. Although the number of abortions decreased twice between 1991 and 2003 (from 1532/1000 live births to 728/1000 live births respectively), the incidence is still 3.5 times higher than that in the EU (Center of Medical Statistics of Ukraine 2007).

Mother and Infant Health Project Description

The Mother and Infant Health Project¹ is an eight-year project advocating evidence-based medical practices aimed to improve women's reproductive and newborns' health. With funding from the USAID and private sources, and with the support from the Ministry of Health of Ukraine, the project has been implemented by the JSI Research and Training Institute. The first phase of the project was initiated in September 2002 in four regions of Ukraine, but the first four maternities joined the Project in mid-December 2003. By the end of 2006, the Project had expanded to 20 maternity hospitals in twelve pilot regions.

Following the Millennium Development Goals (MEU, 2005), the MIHP pioneers to introduce new evidence-based medicine (EBM) standards: partner deliveries; avoidance of unnecessary C-sections, amniotomies and episiotomies; use of free position during delivery; immediate skin-to-skin contact; early breastfeeding; and the rooming-in of mothers and newborns. In addition, the Project actively supports the provision of training on effective

perinatal technologies for the staff of the MIHP maternities, development of "centers of excellence" that serve as models in training/education of medical practitioners of the corresponding oblast, and organizing a health awareness campaign on healthy lifestyles. The MIHP also aims to reinforce liaisons with local governmental institutions.

Furthermore, the Project works on integration of the EBM standards into a package of perinatal practices throughout Ukraine. It also targets revision of the current curricula for medical universities and colleges in order to increase the evidence base of educational programs for medical students and health care providers.

The MIHP in Ukraine belongs to a family of maternal and infant health improving initiatives throughout the world and builds upon their experience, JSI Mother Care (1998-2000) being the largest among them. However, the MIHP in Ukraine is unique both with respect to the institutional setting and to its scope and length, which allows for rigorous evaluation. Most of the earlier projects implemented by the JSI have mainly focused on specific issues (e.g. pregnancy of adolescent girls in Uganda and Zambia, anemia in Malawi) and have been short-term (the longest have been two-year projects in Egypt, Pakistan, and Zambia).

The Impact of the Mother and Infant Health Project

The evaluation of the impact of the first phase (2002-2006) of the Mother and Infant Health Project in Ukraine allows for an identification of improvements in the maternal and infant health outcomes due to enhancements in the quality of labor and delivery services. The identification of the quality improvement effect has been possible for two reasons. First, the basic perinatal and obstetrics care is universally available in Ukraine. Hence, the

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<http://www.mihp.com.ua/english/Home/homepage.html>

estimated impact of the small region participating in the MIHP can be attributed to the improvement in medical technologies rather than the availability of the services per se. Second, the variation in the project participation over time and across regions allows for control of the overall population health trend in the country.

Taking into account the effect of the other maternal health programs and personnel training outside the Project, Nizalova and Vyshnya (2010) find that the MIHP impact is in general health improving. Decreases in both maternal and infant mortality and morbidity in participating regions are more pronounced after the start of the Project. Among the infant health characteristics, the MIHP impact is observed for stillbirths and infant mortality and morbidity resulted from deviations in perinatal period and congenital anomalies.

Concerning maternal health, the MIHP is most effective in combating anemia, blood circulation, veins, and urinary-genital system complications, and late toxicosis. The analysis suggests that the effects are due to early attendance of antenatal clinics, lower share of C-sections, and greater share of normal deliveries.

For some outcomes (maternal mortality, normal deliveries, and anemia) there exists a significant effect of the MIHP trainings (without joining the Project), although it is about twice as small in magnitude for normal deliveries and anemia than the direct MIHP impact.

Cost-Benefit Considerations

A comprehensive cost-benefit analysis of the MIHP project is limited, since the majority of maternal and infant health indicators are hard to assess in monetary terms (e.g. increase in early neonatal visits of mothers; decrease in the number of cases of late toxicosis and complicated deliveries; decrease in infant

morbidity due to various reasons etc.). Therefore, the focus is on the most “tangible” cost effectiveness indicators: (i) average annual per maternity cost of the Project and (ii) average annual per maternity “tangible” benefits.

The average annual per maternity cost is about 60,000 USD and it is calculated as an overall cost of the first phase of the project - 6 million USD - distributed over 20 treatment sites during 2002-2006, including the first year of the Project setup. Set of “tangible” benefits includes savings due to (i) a switch from C-sections to vaginal deliveries (cost savings of around USD 2,500 per maternity per year), (ii) a switch away from medicine-intensive ways of leading both C-sections and vaginal deliveries (around USD 65,000 per maternity per year), and (iii) saved lives of mothers and infants due to the implementation of the MIHP practices (around USD 5.8 million per maternity per year²).

Overall, the project cost to benefit ratio is 1 to 97 (60 to 5,847 thousand USD) if one takes into account the value of lives saved and it is 1 to 1.08 (60 to 65 thousand USD) if one considers only cost savings due to change in C-section and vaginal delivery practices and the switch away from C-sections to vaginal deliveries. The latter represents the lowest bound of the Project’s benefits since it does not take into account any health-improving impact of the MIHP. Although the range is quite wide and this preliminary calculation suffers from several limitations, it seems unlikely that given the estimated impact the true costs would exceed the true benefits.

² Based on the Value of Statistical Life estimate of 0.79 million USD for Poland, a country most similar to Ukraine with the existing estimates of the VSL (Giergiczny 2008).

References

Barber, Sarah L and Paul J Gertler. 2002. "Child Health And The Quality of Medical Care." University of California-Berkeley Working Paper http://faculty.haas.berkeley.edu/gertler/working_papers/02.28.02_childheight.pdf.

Giergiczny, Marek. 2008. "Value of a Statistical Lifethe Case of Poland." *Environmental and Resource Economics* 41 (2).

MEU. 2005. "Millennium Development Goals. Ukraine." Ministry of Economy of Ukraine <http://www.undp.org.ua/download.php?id=1139>.

Olena Y. Nizalova & Maria Vyshnya, 2010. "Evaluation of the impact of the Mother and Infant Health Project in Ukraine," *Health Economics*, John Wiley & Sons, Ltd., vol. 19(S1): 107-125.

Sodemann, M., M.S. Jakobson, I.C. Molbak, I.C. Alvarenga, and P. Aaby. 1997. "High mortality despite good care-seeking behavior: a community study of childhood deaths in Guinea-Bissau." *Bulletin of the World Health Organization* 3 (75):205-12.

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Olena Nizalova joined KEI in August 2005 as a Senior Economist after completing a PhD program in Economics at Michigan State University. Beside her position at KEI, Olena is teaching graduate courses in Microeconomics, Labor Economics and Policy Evaluation at Kyiv School of Economics.

Nizalova's research interests lie in the fields of Labor and Health Economics, Economic Demography, and Economics of Aging. Her recent works include an investigation of the long-run effects of minimum wages in the United States, several studies of the behavior of near elderly with respect to the labor supply and informal care for their elderly parents throughout the world, as well as the education-health gradient research in the countries of the Former Soviet.

She is also actively engaged in several policy impact evaluation studies in Ukraine: the evaluation of the impact of Mother and Infant Health Program funded by the Global Development Network on maternal and infant health and mortality, the evaluation of the impact of Free Economic Zones on local wages and employment, and the impact evaluation of the Social Assistance System Modernization Project for the Ministry of Labor and Social Policies of Ukraine and the World Bank.