



Reducing child and maternal mortality. MDG+ for health

4.1. INTRODUCTION: DEMOGRAPHIC SITUATION IN THE RUSSIAN FEDERATION

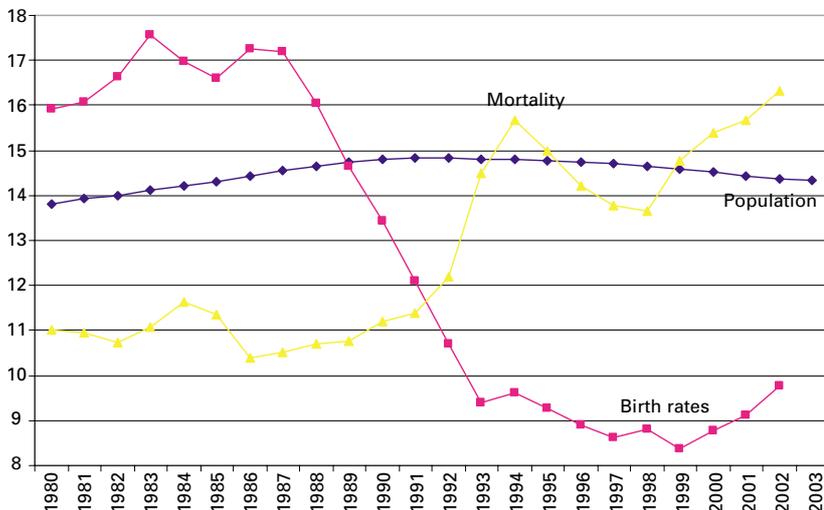
Reproductive health in Russia has attracted much interest, particularly regarding declining birth rates, which have implications for the labor market and social security provision, and for depopulation of strategic areas.¹ Maternal and child health figures are often seen by the government not so much as an indicator of overall poor health, but as key to solving a demographic crisis. However, despite importance of the reproductive and child health, potential, demographic effect from improvement of their indicators will be minimal compared with even slight improvement of Russia's catastrophic indicators for premature death among adults of working age. In this

Chapter we will try to highlight some important health indicators and consider them in the context of the MDGs, taking account of the current unfavorable health situation in Russia.

Russian and international experts have devoted much argument and research to decline of the birth rate and fluctuation of the mortality rate since the 1980s (Figure 4.1). This combination of demographic factors has produced negative population growth in Russia, and in the second half of the 1990s this trend ceased to be compensated by registered immigration. Potential consequences of current demographic trends for politics, economics and security have roused concerns of various political groups and sections of Russian society.

There is no consensus about causes of the two mortality rises in 1994 and after 1998. The majority of experts blame a combination of factors, including social² and economic factors³ and behavioral changes, particularly increase in alcohol consumption.⁴ What is more important for purposes of setting appropriate health targets is that mortality rates in Russia, even when declining, are much higher than in developed western countries and countries with the same level of average income per capita, and in many cases are higher than in the former republics of the Soviet Union. Since birth rates are relatively similar to those in western countries, but mortality is atypically high, it is the latter that calls for urgent measures.

Figure 4.1. Birth and crude mortality rates per 1000 persons, and population in tens of millions, Russia, 1980-2003.



Birth rates are often mentioned in debates about depopulation. However, the technologies for increasing birthrates of native populations are far from clear, with high cost of stimulating measures, e.g. social benefits for mothers, and low effect of regulative measures. Even in the most totalitarian years of the USSR, the 1930s, restriction of abortion led to no more than 8% increase in birth rates, and more recent attempts have failed completely.⁵ The latest decline in birth rates in Russia started in 1987, marking the beginning of what is called the second demographic transition, characterized by complete decoupling of reproductive behavior, sex and family. However, the birth rate has shown a rising trend since 2000. These fluctuations of the birth rate have probably been influenced by change of Russia's social foundations at the end of the 1980s and the beginning of the 1990s, and the somewhat lower numbers of potential parents born in the late 1960s. Before the collapse of the Soviet Union there was a significant contribution to population reproduction from people marrying at the age of 20. This was related to marriages at a relatively early age, immediately after military service. Significant social benefits, such as the opportunity to obtain separate apartments or social welfare, were substantial incentives for early procreation. The new economic reality has forced people to postpone procreation until a later age, when the parents can afford separate accommodation, complete their education and carve out their career, or until the "now or never" stage. In addition the cohort of women in some age groups important for reproduction has been somewhat smaller throughout the 1990s. Hence a couple of factors can help explain the birth rate upturn in the last few years: many couples who had previously postponed child-bearing reached the age of 30 in 2002-2003 and simultaneously a large cohort born around the mid-1980s started to attain early reproductive age.

Migration is the third process determining the demographic situation and somewhat offsetting population decline in Russia. Uncontrolled or inappropriately controlled immigration might aggravate the social situation, affect human rights and would definitely lead to health problems. Reliable statistics on illegal and temporary immigrants are not available, but it can be assumed that they are among the most vulnerable groups in Russia.

4.2. MDG 4, TARGET 5. REDUCE BY TWO THIRDS, BETWEEN 1990 AND 2015, THE UNDER-FIVE MORTALITY RATE

4.2.1. INTRODUCTION: TARGET UNDER-FIVE MORTALITY LEVEL FOR RUSSIA IN 2015

The Millennium Development Goals adopted by the international community in 2000 include a target to reduce under-five mortality rates by two thirds in 2015 com-

Box 4.1. Defining and measuring under-five mortality

Under-five mortality is defined as the probability of dying between birth and exactly five years of age, expressed per 1000 live births. It largely consists of infant mortality, i.e. deaths in the first year of life, as risk of death declines after the first weeks of life. However, even such a broadly used term as infant mortality is quite ambiguous. Although the definition of death itself is relatively straightforward, the concept of live birth varies radically in Russia and some other parts of the former Soviet Union compared with most other countries.

The WHO definition of live birth, adopted in 1992, is

"The complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached."

The Soviet definition of life birth, which still predominates in most of the former Soviet states, excludes cases when infants are born at less than 28 weeks, weighing less than 1,000 grams, or less than 35 centimeters in length if they die within seven days. It should be noted that gestation age quite hard to determine precisely, allowing obstetricians to tailor it as needed. In addition breathing was the only criterion of life in Soviet times, and this still obstructs introduction of the WHO definition. These differences mean that many infant deaths in Russia and some of the former Soviet republics are not recorded. The situation is further complicated by use of various formulas in certain countries to account for the fact that some infants born this year die next year. Cases of modifying definitions and even manipulating statistics to meet propaganda needs are instructive in themselves. Monitoring achievement of any targets in Russia is complicated, as in the case of infant mortality, and might lead to manipulation of data rather than to improvement.

pared with 1990. In Russia, where the level of child mortality was 21.5 per 1000 in 1990, this would mean a reduction to 7 per 1000 a quarter of a century later. This level was registered in 2000 in Israel and in 2002 in Estonia, and is somewhat higher than the European Union average (5.6 in 2000-2002).

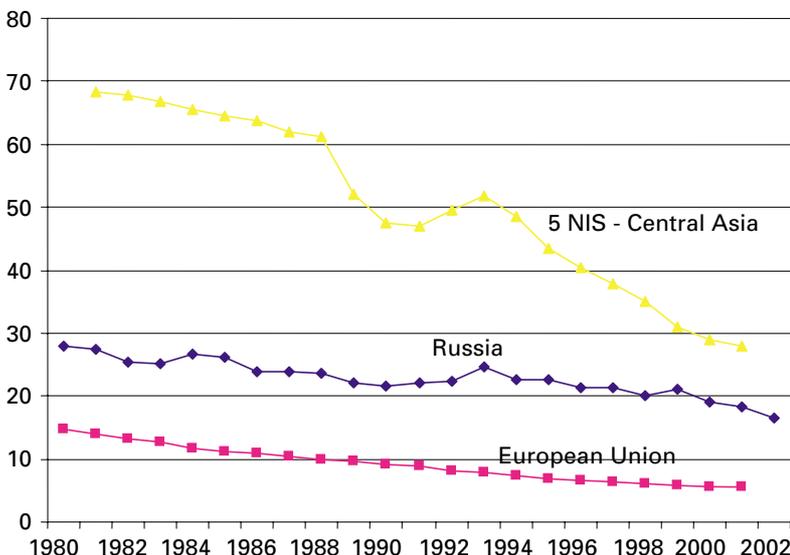
4.2.2. UNDER-FIVE MORTALITY: COMPARING ACROSS COUNTRIES AND TIME

Risk of death under five in Russia was 16.5 per 1000 live births in 2002 compared to less than 6 in the European Union (Figure 4.2). The fall in under-five mortality in Russia is, however, quite remarkable as the indicator stood at almost 28 per 1000 in 1980. The indicator is somewhat higher if WHO's corrected estimate is used: 17 per 1000 and 18.6 per 1000 for boys alone. It is also noteworthy that a number of studies report that the same causes which lead to child mortality cause significant but poorly reported disability in childhood.⁶ When looking at the issue of mor-

tality it is important to keep in mind that we only see the tip of the iceberg in terms of burden, as only a small percentage of cases causing disease or even disability lead to well recorded outcomes, such as death. Many conditions leading to important outcomes, e.g. blindness, mental or locomotive disability, are not systematically recorded in a way enabling in-depth exploration.

The level of under-five mortality is declining in Russia largely as a result of falling infant mortality. The problem of under-five mortality is most severe in the very poor countries of sub-Saharan Africa, due to high infant mortality rates and to malaria and other gastrointestinal and respiratory infections. For instance, in one study, diarrhea, acute respiratory infections and fever from unknown origin accounted for up to 50% of the under-five deaths in an African country.⁷ Malnutrition and vaccine preventable diseases, largely measles, account for a large part of child mortality. The problem also exists in some parts of the former Soviet Union, e.g. in Turkmenistan, where under-five mortality is 98 per 1000 live births⁸.

Figure 4.2. Under-five mortality rates in Russia, European Union and 5 former Central Asian Soviet republics, 1980-2002.



Source: WHO HFA, 2005. www.who.dk

Risk of infant mortality is strongly associated with low birth weight. Birth weight has been shown to be an important determinant of foetal outcome, with both neonatal mortality (deaths within the first 28 days of life) and postneonatal mortality (deaths between 29 days and 1 year) climbing steeply as birth weight falls below 3000 g.⁹ The registered cause of nearly 50% of infant deaths in Russia is "complications in the perinatal period" and another quarter of infant mortality is associated with congenital abnormalities. According to official statistics, another 10% of infant deaths are put down to respiratory diseases, and injuries and gastrointestinal conditions each account for 6%.¹⁰ However, it must be noted that these causes are poorly

defined, particularly the biggest group of “perinatal complications and conditions”, and require systematic epidemiological investigation.

4.2.3. EXPLORING UNDER-FIVE MORTALITY IN RUSSIA

Research has shown that under-five mortality consists mainly of infant mortality, but information on child mortality in Russia is far from exhaustive and study of mortality in the one to five age group is insufficient. (Box 4.2)

Two well-known and highly important facts concerning infant mortality in Russia are that rates are declining and that rates cannot be directly compared with western countries, because they are understated^{12,13} by about one third mainly by recording of very low birth-weight deaths as stillbirths and miscarriages.¹⁴ This is important since around 80% of under-five deaths are infant mortality (in the first year of life), so levels of under-five mortality in Russia will tend to be underestimated as well. Causes of infant mortality are routinely recorded, but there is little data on the other 20% of deaths between ages of one and five. Some limited evidence suggests that a significant contribution to the later child deaths in Russia is made by injuries, with biggest gap in mortality as compared to the Western Europe accounted for by drawings¹⁵.

4.2.4. RANGE OF STRATEGIES TO REDUCE UNDER-FIVE MORTALITY

As birthrates have declined since 1987 in Russia, sectors threatened to have the funding reduced due to smaller workloads have adopted defensive strategies. These sectors include obstetrics, pediatrics, educa-

Box 4.2. Issues of terminology and data

Although under-five mortality is monitored by WHO, it is not a valid Medical Subject Headings (MeSH term) used in biomedical publications search engines such as MEDLINE.¹¹ Instead two MeSH terms overlapping with under-five mortality are recognized: “Child Mortality” defined as deaths of children between one year and 12 years of age and “Infant Mortality”, which encompasses all deaths that occur within the first year of life and excludes foetal death (miscarriages and abortions). Infant mortality again overlaps with perinatal mortality, representing deaths occurring from the 28th week of gestation to the 7th day after birth, neonatal mortality, representing deaths from birth to 27 days after birth, and post-neonatal deaths, occurring between 28 days and 365 days after birth.

There is no single paper cited in MEDLINE published in scientific biomedical journals on the issue of under-five or even child mortality (from 1 to 12 years of age) in Russia! Even studies of infant mortality in Russia are relatively scarce with only 80 MEDLINE citations in the period 1990-2005, and most of the publications in Russian are limited to comparing trends and aggregate statistics across regions.

tion and the military. The obstetric service reacted by increasing duration and rates of hospitalization during and following pregnancy, over-diagnosing threat of miscarriage and over-medicalizing the reproductive process, with some regions reallocating a half of maternal beds for pregnancy complications.¹⁶ The pediatric service has reacted in similar fashion: the age of those under surveillance was increased to 18 years, alleged quasi-universal poor health among children was used as an excuse for placing more children under observation, and necessity of dispancerisation (screening for any diseases in general populations via checkups carried out by groups of narrow specialists) was argued, over diagnosing of often non-existing diseases became common, government and society are threatened with myopia and scoliosis epidemics.

Discussions of MDG 4 may be used by advocates of separate pediatric services to raise their agenda. Pediatric service, despite importance of controlling vaccine preventable diseases, probably has zero to minimal potential influence on under-five mortality in Russia because perinatal deaths (in the first 7 days of life), which account for nearly two thirds of all under-five deaths in Russia, usually happen in obstetric units. The major arguments for downsizing pediatric services and introducing a system centered on GPs are control of com-

Box 4.3. "Yes" to reform of primary medical care, "No" to exclusion of pediatricians from the primary level

Will medical provision for children benefit from the reform, by which primary health care for children will be provided by a general practitioner and not a specially qualified pediatrician?

It is important to remember that the character and specifics of the child health care system in Russia are a legacy of the country's social, economic and cultural development. This relates particularly to the social nature of Russian medicine and the concept of community self-government seen most clearly in rural health care. The Russian rural health system, including easy access to unpaid care, a prophylactic approach and use of district doctors, was the basis of the Soviet state system of child health care (the first such state system in the world). The system was notable for the fact that, for the first time in the world, primary health care to children was provided by experts specially trained for that task in medical school.

We believe that transfer of primary pediatric care to general practitioners would be premature in Russia at the present time. The reasons for this are as follows:

1. We are not convinced by reasoning based on the fact that the general practitioner system exists in all countries except Russia (notably in other European countries), since there is no convincing evidence of superiority of European standard primary health care. Better indicators of population health and quality of medical care in western countries are conditioned by living standards in those countries, more generous financing of health care, and organization of the physician's job, which ensures that he has an interest in doing that job well.

2. Many people abroad consider the general practitioner system to be far from optimal.

3. In an increasing number of European countries, and with increasing frequency, primary health care for children is being provided by pediatricians, i.e. there is a tendency towards primary child health care on the Russian model.

4. Russia currently lacks infrastructure for implementing family medical care and financing for transition to a general practitioner system has not been put in place. The main financing problem is where to find money for increasing salaries to general practitioners, retraining district doctors and pediatricians, and equipping general practice offices.

5. The skill level of a general practitioner in matters of pediatrics will be always lower than that of a pediatrician. In the USA most diagnostic and tactical mistakes in medical care of children are made by family doctors.

6. The social component of the reform cannot be overlooked. It will cause pediatricians to become narrow specialists, creating a risk of commercialization and drop in availability of pediatric care.

However, some restructuring of Russian primary health care to children is undoubtedly needed, since a critical mass of problems have accumulated in the sector. Our proposals, in the context of the problem being discussed in this Chapter, are as follows:

1. To create a general practitioner service for (a) the adult population, and for (b) remote and sparsely populated regions, where such a practitioner would serve both adults and children.

2. To use, as an alternative, the group (team) method, by which primary medical care is provided by a group of medical specialists – general doctor, pediatrician, obstetrician-gynaecologist.

3. To give the profession of "district pediatrician" (initial-contact pediatrician, general-practice pediatrician) legal status as an independent profession.

4. To train pediatricians for work in primary medicine at specialized departments of medical training institutions (social and polyclinic pediatrics, ambulatory pediatrics, family pediatrics).

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plex chronic diseases, many of which are rooted in childhood, and changing the incentives system to stimulate efficiency and orientation towards health rather than supplier-induced demand, e.g. administering the greatest possible amount of lucrative but often ineffective treatments. However, these arguments relate to the MDG+, which will be presented at the end of this Chapter.

Birth weight is a largely socially-associated variable considered to be single most important determinant not only of poor perinatal outcomes but also of health in later life. In an earlier study carried out in the Tula Region we have attempted to explore whether socio-economic factors leading to low birth weight are mitigated by effective perinatal care. To illustrate this we have compared outcomes according to birth weight in Tula with data from Sweden, the country with the lowest perinatal mortality in Europe, for 1998, the most recent year for which we had access to the relevant data (Sveriges Officiella Statistik 1998) (Box 4.4).

Our findings essentially demonstrate that improvement of obstetric and perinatal technologies can have a major effect on all under-five mortality. Obstetricians and perinatologists have a key role in Russia. There is a clear need to improve pregnancy, delivery and postnatal care, including promotion of evidence-based methods and procurement of effective pharmaceuticals and equipment.

Improvement of care provision to children after discharge from maternity units will probably have little effect on under-five deaths, since a significant part of child mortality (around 40% in 1995) seems to be from external causes,¹⁷ such as injuries, poisonings, drowning and suffocations, which are prevented by safer environment, with outcomes little influenced by treatment. By comparison, respiratory infections cause less than 30% of under-five deaths, infectious diseases less than 10% and cancer around 5%, and is not clear whether better medical care or social conditions would significantly improve the situation. Vaccine preventable diseases are a major public health issue, but such diseases currently seem to be under control in Russia, although efforts are needed to ensure updating of vaccination

schemes and keeping coverage high. These points suggest that Russia has an extensive, fairly up-to-date health service, so that simplified approaches such as the ICDS (Integrated Child Development Service), proposed by the international community, have limited application except to help improve economic efficiency, reduce ineffective interventions and promote simple but important measures which tend to be overlooked precisely because of their simplicity, e.g. oral rehydration.

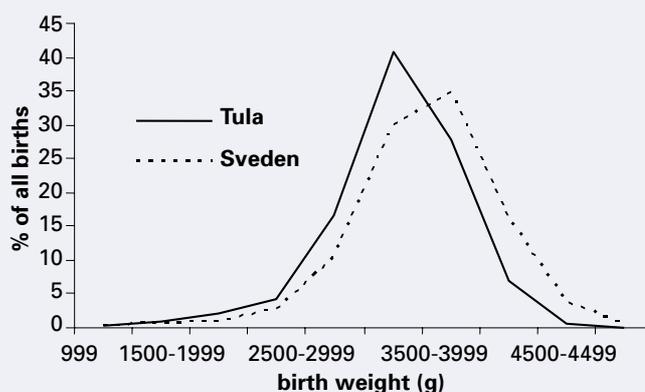
4.2.5. POTENTIAL EFFECT OF ACHIEVING MDG 4

A study examining appropriateness of the health MDGs for Russia, looking at effects of their achievement on life expectancy at birth, found that the effects would in fact be relatively small.¹⁸ It was calculated that achieving reduction of infant mortality and mortality in one-to-four year olds by two thirds, as per MDG Target 5, would add 0.76 years and 0.17 years to life expectancy respectively. However, such a reduction is not easy to achieve. It is worth noting that even if all Russian regions succeeded in achieving levels of infant and one-to-four year mortality equal to current levels in the best regions of the country, the increase in national life expectancy would be less than one month. By comparison, a 20% reduction of largely avoidable adult mortality would cause increase of life expectancy by two years.¹⁹ In order to emphasize the point: there are about 17-18,000 under-five deaths in Russia annually, of which 15,000 are infant deaths, but there are 1,200,000 deaths due to circulatory problems in the population as a whole and 270,000 deaths due to external causes, and many of the fatalities, which make up these two last statistics, are premature and avoidable.

4.2.6. FEASIBILITY OF ACHIEVING MDG 4

The overall trend of under-five mortality in the last 20 years of the 20th century would not allow Russia to reach the Target 5 level of 7 per 1000 as defined in the Millennium Development Goals. However, the trend in the first years of the 21st century looks more encouraging (Figure 4.3). The white line on the graph below shows the most optimistic scenario (starting from the elevated level of 1999), but it is reasonable to believe that further economic growth and further improvement of antenatal and perinatal services could enable the target level to be approached, if not reached, in Russia by 2015. On the other hand, if economic growth stagnates, some elevation of under-five mortality can be expected, as seen after the collapse of the Soviet Union and the economic crisis of 1998. It is noteworthy that some of the Eastern European countries, e.g. Czech

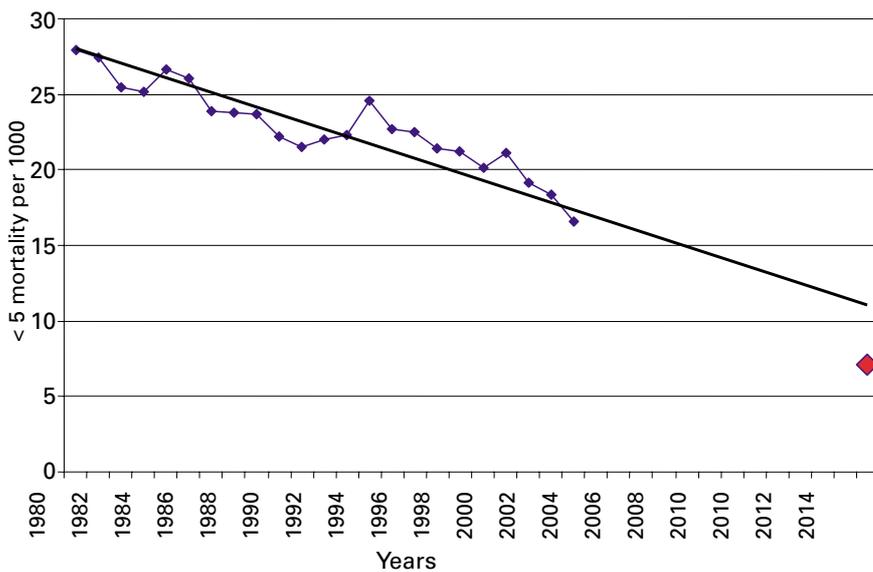
Box 4.4. Distribution of birth weight in Tula Region (2000) and Sweden (1998)



The distribution of birth weight in Tula is shifted to the left compared with that in Sweden. This is clearly a result of smoking and alcohol consumption (also leading to foetal alcohol syndrome) during pregnancy, as well as poor nutrition and other socio-economic and behavioural factors (it should be noted in passing that major gradient in risk of child death in Russia depending on variations of income, education, marital status of parents and regional differences emphasize inequality in Russia and the importance of social factors). The question is whether the adverse birth weight distribution in Tula compared with Sweden explains higher perinatal mortality in Tula. This question was addressed by applying the birth-weight specific perinatal mortality rates in Tula to the distribution of birth-weight in Sweden. Doing so yields a birth weight-adjusted figure of 14.4/1000 births, which is almost three times as high as the Swedish figure of 5.4/1000. The conclusion is that, notwithstanding the need to improve the birth weight distribution, the main mortality factor is the rate of survival of babies once born.

Chapter 4

Figure 4.3. Under-five mortality per 1000 in Russia in 1980-2002, the trend in 1980-2000 (straight line) and in 1999-2002 (twisting line) and the target value in 2015 (diamond).



Republic, Poland, Hungary, Slovakia and Estonia are already at levels similar to what Russia should aim to achieve in 2015.

Russian under-five and infant mortality rates have been improving since the mid-1990s and are much lower than in developing countries. Drastic change as suggested in MDG 4 is impossible in developed countries, which have already carried out most of the achievable reduction, and two-thirds reduction will also be complex and costly for Russia. Even 50% reduction seems rather ambitious for transition countries.

4.2.7. SUGGESTIONS FOR INDICATORS

Infant, perinatal, and neonatal mortality are important indicators. There is a need to change the way they are evaluated in Russian regions: infant mortality is a relatively rare event in most localities, making it hard to draw statistically significant inferences

regarding trends on a monthly and, in most cases, even on an annual basis. Regional health officials are often unfamiliar with probability theory, and may draw far-reaching conclusions from chance fluctuation of small quantities: most obstetric services deal with less than 1000 births per year, suggesting about 15 infant deaths on average, and any “trends” may well be chance variations with no statistical significance. Monitoring of birth weight trends and birth weight adjusted outcomes can allow better evaluation of performance of medical and social systems, but, again, large enough samples are needed.

Given relatively low probability of infant death, it is important to carry out independent investigation of reasons and causes, but this is complicated by corporatism of the medical profession, the system of medical records, and lack of access for relatives to maternity units. Improved access for relatives and friends to labor and delivery rooms is not only a medically evidenced beneficial practice,²⁰ but can help to improve the service through better lay-person control. A cheap and effective way to monitor performance of maternity services is a “near-miss” approach,²¹ which explores significant and potentially life-threatening complications, which did not in fact lead to death. However, this methodology is new, not fully developed and requires additional studies. Achievement of MDG 4 in Russia requires improvement of obstetric and perinatal technologies, and monitoring of processes and methods in maternity units in addition to outcome-based evaluation.

Birth-weight specific perinatal death rates deserve to be proposed as the main indicators for under-five mortality. Such an indicator helps to separate effects of complex social influences and smoking during pregnancy from medical care per se. In addition,

comparison of death rates at lower birth-weight levels can be helpful in identifying under-reporting of perinatal mortality overall. (Appendix 4.1. Table).

4.2.8. CONCLUSIONS ON MDG 4

Perinatal deaths constitute the bulk of under-five mortality; hence, addressing this indicator offers greatest potential for achieving MDG 4. There is a clear need in Russia to improve survival of newborns through developing modern standards of obstetric care (antenatal and perinatal) and to provide better support to women to ensure proper levels of nutrition and healthy behavior from the pre-conception stage (mainly in relation to smoking, alcohol and safer sex) in order to lower perinatal death rates. It is also necessary to ensure implementation of the WHO definition promoted by the Ministry of Health and Goskomstat joint decree 380/190 from April 4, 1992, which is still not adhered to. Other causes of child mortality, at ages above infancy, require careful and detailed epidemiological investigation.

It is important not to “let the tail wag the dog”, since infant and under-five mortality rates are, first and foremost, indicators of functioning of healthcare and other governmental welfare institutions. However, it would be a mistake to overemphasize the importance of lowering infant or under-five mortality, because its achievement will not lead to drastic improvement in population health in transition countries and might distract society and the Government from other more important tasks, including reduction of adult mortality. We should also bear in mind that manipulation of infant mortality data has occurred frequently in Russia in the past, and if significance of this indicator is overempha-

sized there will be an even greater risk of figures being manipulated.

4.3. MDG 5, TARGET 6. REDUCE BY THREE QUARTERS, BETWEEN 1990 AND 2015, THE MATERNAL MORTALITY RATIO

4.3.1. INTRODUCTION: TARGET MATERNAL MORTALITY LEVEL FOR RUSSIA IN 2015

Maternal mortality in Russia in 1990 was 47.4 per 100,000 recorded live births, slightly lower than in the preceding and subsequent seven years (apparently due to

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chance fluctuation). In order to reach the goal of 75% reduction the level in 2015 would have to be no higher than 11.8 per 100,000 live births, which is still above the level of Hungary (8.3) and Estonia (7.7) in 2002.

4.3.2. DEFINING AND MEASURING MATERNAL MORTALITY

Maternal mortality ratio is “the number of women who die as a result of child-bearing, during the pregnancy or within 42 days of delivery or termination of pregnancy,

irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes,” and it is usually estimated per 100,000 live births during that year. However, it is often difficult to establish a link between pregnancy and death, as death during pregnancy may be due to aggravation of pre-existing conditions or other risk factors. Use of different formulas and chance variation in small absolute numbers of deaths in developed and transitional countries makes maternal mortality rates hard to compare across years and countries. Issues of under-reporting are common even in places with established and well-functioning surveillance systems.²²

Maternal mortality has a somewhat different meaning in Russia than in other countries. Throughout the 1990s there were about two abortions per birth or at least 2 million abortions annually, and despite rapid decline in abortion numbers still over half of pregnancies are still terminated. Around a quarter of maternal deaths are abortion-related. As only about one in three pregnancies leads to birth, this significantly diminishes the denominator of the equation, i.e. the number of women in the risk group. Even though abortions involve four times less risk of maternal mortality than birth, their sheer numbers distort the statistical comparison.

Overall, maternal mortality in Russia is a rare event prone to chance variation. Assuming a level of 8.77 live births per 1000 population (as in 2000) and maternal mortality rates between 40 and 60, there would be about 520-780 maternity-related deaths per year in Russia. In 2002 there were 470 maternity-related deaths, representing maternal mortality of 33.6 per 100,000. However, if we exclude abortion-related deaths, the number will be only 350. This brings maternal mor-

tality from non-abortion related causes down to 25 per 100,000 live births. If, however, we take the ratio of maternal deaths per 100,000 pregnancies rather than live births, the value would be even lower at 14.6. The usefulness of such indicators in Russia can be argued as no other country in Europe, and probably in the world, has such a high ratio of abortions to births. For comparison, there are a little more than 2 abortions per 10 births in the European Union.

4.3.3. MATERNAL MORTALITY: COMPARING ACROSS COUNTRIES AND TIME

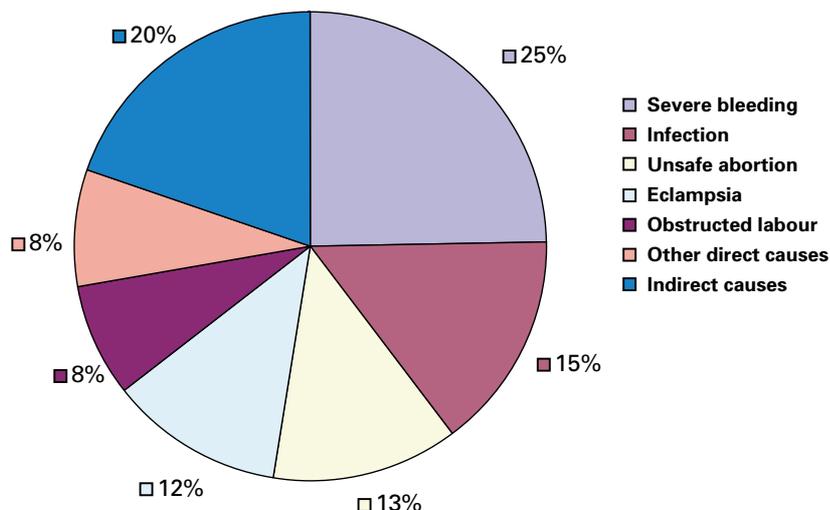
Even though abortions in Russia are a safer outcome of pregnancy than birth in terms of maternal mortality, the large number of abortions significantly obscures cross-country comparison of maternal mortality indicators. The maternal mortality ratio in the European Union is around 5 per 100,000, which is six times lower than in Russia. Correction for abortions still leaves the EU result three to five times higher than for Russia.

Maternal mortality in developing countries is usually estimated indirectly, using various complex epidemiological methods, due to lack of vital statistics. WHO data indicates that sub-Saharan Africa has the highest maternal mortality rates worldwide, ranging from 500 to 700 per 100,000 births as compared to 55-650 in Asia and 110-210 in Latin America. But the data for sub-Saharan Africa may not tell the whole story, since maternal death rates as high as 1000 per 100,000 births have been recorded in some rural areas.²³ Family planning has the greatest potential to reduce maternal mortality in Africa by preventing unwanted pregnancies and illegal abortions and increasing earnings of families by reducing the number

of pregnant women. Skilled attendance at delivery (essential obstetric services, including toxoid immunization, Caesarian sections and other life saving interventions in emergency cases) as well as antenatal care²⁴ and HIV prevention and treatment²⁵ would be of crucial importance in reducing maternal mortality in developing countries (Figure 4.4).

Despite the difficulties in assessment, maternal mortality rates still appear to be considerably higher in Russia than in the West. Abortion-related mortality represents about a quarter of deaths, and some estimates suggest that up to two thirds of abortion-related deaths are due to the abortions being carried out away from facilities.²⁶ This raises a number of questions about access to abortion and other services, such as why women would undertake such high-risk interventions when the procedure is legal and widely available. However, beyond the issue of abortion, the remaining 75% of maternal death is due to non-abortion related factors and needs detailed investigation. The official statistics suggests that about 15% of maternal deaths in Russia are due to haemorrhage and 10% due to toxæmia (eclampsia). However, a quick review carried out by the author (unpublished) of all 14 maternal deaths recorded in the last five years in one of the European Russian regions found that the cause of death in half of the cases, at least according to investigation results, was anaesthesiological malpractice, while two deaths were due to late admission of women with relatively manageable conditions due to geographical remoteness and lack of means of communication and transportation. Further exploration of causes of maternal deaths is difficult, since aggregate, routinely collected statistics are often “cleaned” to avoid penalties. The data do not offer a sufficient level of detail to shed light on the issues, which need to be addressed. Any in-

Figure 4.4. Causes of maternal deaths worldwide



Source: "Coverage of Maternal Care: A Listing of Available Information, Fourth Edition". World Health Organization, Geneva, 1997

depth investigation is virtually impossible due to corporative protectionism of the medical profession.

4.3.4. EXPLORING MATERNAL MORTALITY IN RUSSIA

The maternal mortality rate in Russia declined by about a quarter in the 1990s, and the absolute number of maternal deaths had dropped from 950 to 470 by 2002. Decline in absolute numbers is partially due to decline of pregnancy rates, but the improving rates of maternal mortality have been attributed to two processes: about 65% is due to improving pregnancy and birth safety and another 35% is due to decline in abortion rates. Risk of maternal deaths associated with birth had decreased by nearly a quarter in 2002-2003 compared with 1990. This positive dynamic, paralleled by recent decline in infant mortality, suggests a real trend, which can be associated with improvements in obstetric care. Box 4.5 offers a time-line of actions by Federal Government agencies in prevention of maternal, infant and child mortality.

Box 4.5. The official view on maternal and infant mortality issues

Levels of maternal, infant and under-five mortality correlate with quality, scope and availability of medical care to women and children. Conversely, efficiency of public health bodies and establishments can be assessed by indicators and dynamics of infant mortality.

From 1990 to the present the Ministry of Health and Social Development of the Russian Federation has been carrying out work on further development and improvement of medical care to women, including pregnant women and children.

In 1992 the Ministry of Health and Goskomstat of Russia issued the order "On Transition to Criteria of Live Birth and Dead Birth as Recommended by the World Health Organization". The transition was to take place as of January 1, 1993.

In 1998 the Ministry of Health of Russia designed and sent to subjects (administrative regions) of the Russian Federation a program of action for improving the preventive, diagnostic and treatment system with the aim of reducing infant mortality. Subjects of the federation were required to prepare relevant documents with regional scope for realization of the respective strategy.

On August 7, 1998, the Ministry of Health of Russia issued the order "On Improvement of Medical Documentation Certifying Cases of Birth and Death in Connection with Transition to International Classification of Diseases".

In November 2000 the Government approved an Action Plan for reduction of maternal and infant mortality in the Russian Federation in 2001-2003.

On December 28, 2000, the Ministry of Health of Russia issued order No. 457 "On Improvement of Prenatal Diagnostics in Prevention of Hereditary and Congenital Diseases Among Children".

The Russian Federal Government decree No. 1270-p of September 27, 2001, approved the "Concept of Demographic Development of the Russian Federation Until 2015". The Coordination Board of the Russian Ministry of Health responsible for improvement of efficiency in rendering medical care to mothers and infants has been in operation from 2000 until the present time. Its targets are: development of strategic action in provision, and improvement of efficiency and quality, of medical care and social assistance to pregnant women, obstetric patients, parents and infants; development of proposals on improvement of normative and legal control in this field; providing hands-on assistance to Russian regions; etc. From 2000 to June 2005 the Board held 33 sessions and reports from 67 subjects of the Russian Federation were heard.

Experts of medical research institutions, specialized in obstetrics, gynaecology and pediatrics, representatives of the Russian Ministry of Health and the Russian Academy of Medical Sciences and the corresponding special departments in higher educational medical establishments supervise regions of the Russian Federation in organization and improvement of work to provide and raise efficiency and quality of medical care to pregnant women, obstetric patients, parents and infants (order No. 201/51 of the Russian Ministry of Public Health, June 4, 2001).

Relevant orders issued by the Russian Ministry of Health are No. 50 of February 10, 2003 "On Perfection of Obstetric and Gynecological Treatment in Outpatient and Polyclinic Establishments" and No. 329 of August 5, 2003 "On Improvement of Medical Care of Newborns in Obstetric and Inpatient Clinics".

The Russian Federal Government decree No. 690 of November 26, 2004, approved the state guarantee program assuring free medical care to citizens of the Russian Federation in 2005. Medical care is provided, from budget funds of all levels, to women in pregnancy, child-birth, and the postnatal period, as well as prophylactic observation of pregnant women and healthy children.

On December 9, 2004, the Russian Ministry of Health and Social Development issued order No. 308 "On Organization of Perinatal Centers".

To date the Russian Ministry of Health and Social Development has:

- designed and submitted for approval by the Russian Federal Government a concept of health protection for children in the Russian Federation and an action plan for its implementation in the period up to 2010;
- set up a working group (order No. 288 from 21 April, 2005, by the Russian Ministry of Health and Social Development) on introduction in the Russian Federation of criteria, recommended by WHO, of live and dead birth, including changes in the time when the perinatal period begins, etc.;
- prepared a draft action plan on reduction of maternal, infant and child mortality in the Russian Federation up to 2010.

The Ministry of Health and Social Development together with relevant federal executive bodies has begun work on amended drafts of a concept of demographic development of the Russian Federation up to 2015 and an action plan for its implementation up to 2008, taking account of migratory tendencies in the Russian Federation.

**Ministry of Health and Social Development
of the Russian Federation**

A 55% fall in absolute numbers of abortions since 1990 is due to better knowledge and access to modern contraceptive methods (Figure 4.5). However, abortions in Russia have not become a safer procedure judging by WHO data⁴⁵, at least not before 2003. Rates of 6-7 deaths per 100,000 abortions are surprisingly stable with minor fluctuations since 1990, and make Russian abortions 10 times more risky than in the USA, where mortality is 0.7 per 100,000.²⁷ The Russian rate is largely, but not exclusively, due to illegal abortions. Figures from the Federal State Statistics Service are 20% lower for abortion related deaths in 2000-2004 than the WHO data, however official Russian statistics has a vaguely classified group of deaths "due to other causes" representing over a quarter of all maternal deaths part of which is likely associated with abortions. Even after exclusion of deaths due to abortions away from medical facilities, the risk of death from abortion in Russia is still over 3 times higher than in the USA.

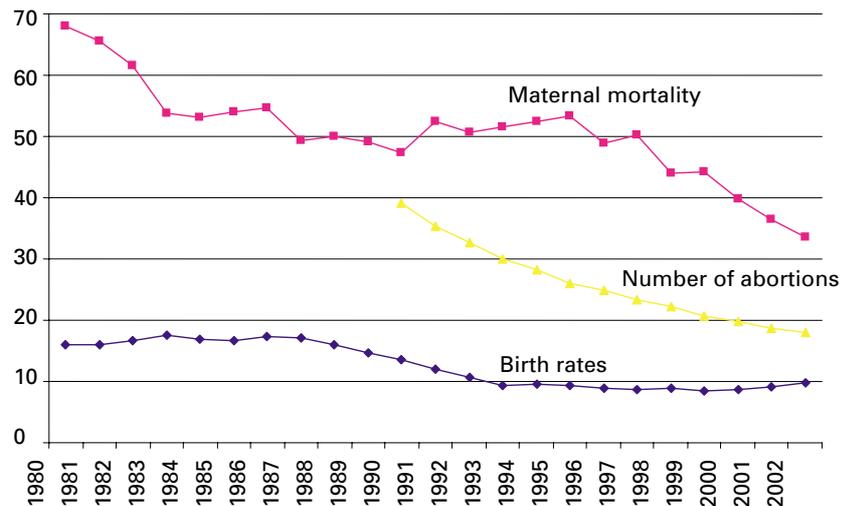
It is generally assumed that there are no problems with access to maternity care in Russia. Aggregate statistics show that a large majority of women give birth in health care facilities and make numerous antenatal care visits. However, evidence suggests that there are clearly small groups who do not access formal care, e.g. those who partake in illegal abortions or do not register for consultations before giving birth, and that a large number of women are victims of over-medicalization of the reproductive process, receiving, for example numerous useless injections and unnecessary hospitalisations. There is little research on access to care for various minorities and marginalized groups, and it is not quite clear who gets access to what services in Russia.²⁸ Research in other countries of the former Soviet Union has identified many women who are forced to deliver at

home because they cannot afford the expense of birth in a medical facility²⁹ As suggested by recent experience from Eastern European counties, formal and informal payments to health care providers are likely to be high, as pregnancy is a planned event usually with a positive outcome. Reproductive health research in Russia found that more than half of deliveries involve at least some payment.³⁰ Repeated abortions indicate a major system failure caused by lack of sufficient post-abortion counselling, and this could be because abortions are a lucrative service.

Studies³¹ indicate that out of a little less than one third of 14-20-year olds reporting sexual activity, 42.6% did not use a condom during their last sexual intercourse. Over 16% of married people report out of marriage sexual contacts, 83.5% not using condoms. Despite a wealth of research on reproductive health, it is unclear exactly why women do not use modern family planning methods, and what measures could promote responsible behaviour (adequate knowledge, convenience, availability, choice, quality). There is little information on whether cost and availability are barriers to uptake of effective contraception.

There is evidence that maternity care does not always reflect the current state of international medical knowledge. Introduction of evidence-based clinical protocols and cost-effective technologies in reproductive and perinatal care are seen as essential to improving maternal care in Russia.^{32,33} For instance, our findings from a study carried out in the Tula region in 2000 indicate wide variation between clinical practice across facilities. Caesarean section rates varied from 3.3% to 37% of births and episiotomies from 9% to 80% (p for both differences < 0.001), and the variation persisted after controlling for case

Figure 4.5. Maternal mortality per 100,000 live birth, birthrates per 1000 in Russia, and absolute numbers of abortions in hundreds of thousands, 1980-2002.



mix. Many practices were associated with size and type of the facility, with maternity homes having much higher numbers of procedures than maternity departments of general hospitals: rates of caesarean section were 18% and episiotomies were 37% in the former, compared with 11% and 24% in the latter. Other large scale studies have shown routine use of ineffective and harmful practices (e.g. routine shaving, enema, injections) and insufficient use of cheap and effective interventions (e.g. rooming in or access for relatives to the delivery room).³⁴

There are questions about inefficiencies in the system given the large number of facilities, the low occupancy rate and excess staff, who are under-paid and poorly motivated. For instance, there has been very little change in maternity bed numbers despite significant decline in birth rates since 1987. Instead of closing facilities, which were excessive by any criteria even before the birth-rate decline, postnatal beds, which could not be filled, were turned into beds for management of pregnancy complications (Figure 4.6). Conversion of ward and department special-

izations has pushed up hospitalization rates for “pregnancies disorders” and increased the overall length of stay, wasting resources and creating potential health hazards.

4.3.5. STRATEGIES NEEDED TO ACHIEVE MDG 5

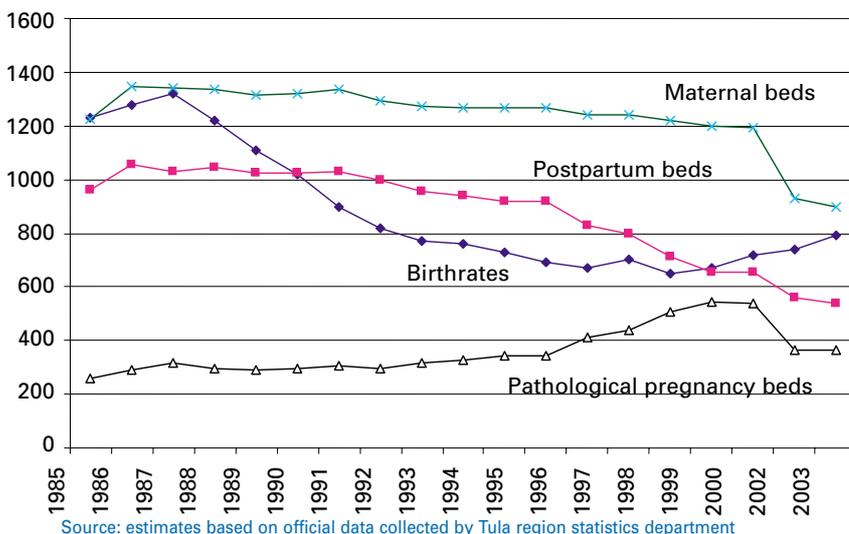
Recommendations on how to improve maternal mortality in Russia can only be offered in very general terms, as input indicators are nearly perfect on the surface, but do not match the outcomes. Standard process indicators used in safe motherhood programmes,³⁵ such as the percentage of women delivering with trained attendants, family planning use, and antenatal care measures tend to be of little value in Russia. A vast majority of women do deliver with attendants, there is a low overall fertility rate, and antenatal care is widely used, if not over-used. Abortion services are also legal and widely available, although lately there were some attempts to limit their accessibility.

Interventions must therefore be focused on improving quality of care and education, which should reflect international evidence to a greater extent. Efforts are also needed to improve overall functioning of health systems and structural efficiency, and to help those small groups, which do not have access to services.

There should be further investigation into existing variations in practices and institutional factors shaping practices or hindering change. Medical education needs to shift its paradigm towards primary and multi-disciplinary health care, which would give more responsibility to nurses and midwives where appropriate. It is important to promote evidence-based medical training of obstetric staff and other medics.

Work needs to continue on reducing abortion numbers and improving safety of the procedure. Although declining abortion rates might suggest improved use of appropriate family planning methods, further efforts by the government, NGOs and business to promote informed choice, safer sexual practices and access to contraceptives are needed. Abortions are 10 times riskier than in the USA and do not seem to become safer since the 1990s, which is quite worrying.

Figure 4.6. Birth rates per 100,000, total number of maternity beds (excluding gynaecological), beds for postnatal (postpartum) and pregnancy complications, Tula region, 1985-2003.



An incentive structure needs to be developed, which would discourage over-medicalization of the reproductive process and maintenance of excess facilities. Slow decline in maternity bed numbers despite rapid fall of birth rates since 1987 suggests a need to review financing mechanisms, e.g. moving away from the current system of payment on the basis of budget items or per quantity of services provided. Surplus facilities are having an influence on current practices, including excessive length of hospital stays by pregnant women and excess bed-days after delivery.

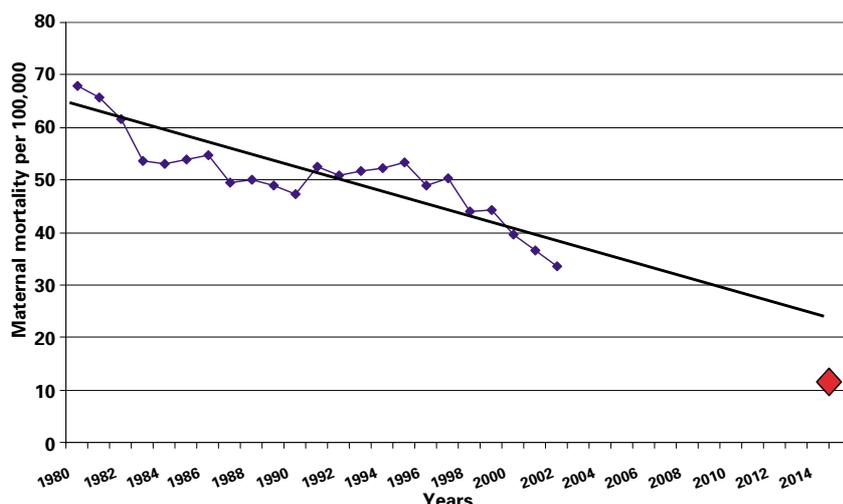
4.3.6. POTENTIAL EFFECTS OF ACHIEVING MDG 5

The effects of achieving MDG 5 on the overall health, demographic and economic situation in Russia will be almost negligible. A 75% reduction in maternal mortality in Russia would mean averting around 250-400 deaths out of about 2 million occurring annually. For comparison, just by bringing the stroke (cerebrovascular) mortality rates to the level of the Baltic states, which is probably also a more realistic target, Russia would prevent over 200,000 deaths or 500-1000 times more than by achieving MDG 5. The effect on life expectancy at birth of achieving MDG 5 would only be felt by women, whose life expectancy is already 13 years greater, and would be very small:³⁶ reduction of maternity deaths by three quarters, as suggested in Target 6, would add half a week to female life expectancy, and could prove relatively complicated and costly. On the other hand, most measures to reduce maternal mortality have potential to improve other reproductive health indicators, which are very unfavorable in Russia.

4.3.7. FEASIBILITY OF ACHIEVING MDG 5

Maternal mortality in Russia showed slight fluctuations in 1983-1995 without any stable tendency to decline. But there has been significant reduction since 1997, at least in the recorded figures (Figure 4.7). Since maternal mortality is quite a rare event in both developed and transitional countries, it is very hard to separate chance variations from tendencies caused by social and medical factors. As early as 2001-2002 a number of former Soviet Union republics had already reached the level, which Russia should reach in 2015 if it is to have the 75% reduction. So the Goal is at least feasible for Russia. However, Russia's

Figure 4.7. Maternal mortality per 100,000 live births in Russia in 1980-2002, the trend in the 1980-2000 (straight line) and in 1997-2002 (twisting line) and the target value in 2015 (diamond).



huge territory and low population density, the diversity of its population, which includes national minorities, migrants and other vulnerable and hard-to-reach groups, might make achievement of the task very difficult. In the unlikely event of pro-life movements succeeding in enacting further abortion restrictions, maternal mortality may even rise above current levels due to increase of illegal abortions. Since maternal mortality is already relatively low in Russia, further improvement could be hard to obtain in any case. Developed countries are not able to reduce maternal mortality much further already, so a reduction of 50% would be a remarkable achievement for a transition country.

4.3.8. SUGGESTED INDICATORS FOR MONITORING MDG 5

Maternal mortality is an important indicator for international comparison but its use for detailed health planning or monitoring in Russian conditions is limited. The maternal mortality rate is unsuited for

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regional comparisons because such deaths are rare, not usually exceeding 20 per region per year. Ascertaining real reasons for the deaths is difficult due to their rarity and geographical dispersion, and identifying statistically significant determinants at any given location would be very difficult if not impossible. However, qualitative research may prove useful in investigating factors that are likely to contribute to these deaths, e.g. geographical inaccessibility of obstetric facilities in extremely remote regions, poor quality care in some facilities, or undersupply of basic pharmaceuticals and equipment. But these again would be complicated by medical corporatism and lack of mechanisms to carry out independent evaluation. Additionally, there may be scope for investigation of factors leading to maternal morbidities or 'near-miss' complications (life-threatening complications that did not lead to death), which might be more

The two maternal mortality indicators, which can be of use on the national level in evaluating performance of obstetric services, are abortion-related deaths per 100,000 abortions and non-abortion related maternal deaths per 100,000.

common and similarly reflect on key aspects of the health system. Clinical audit and case discussions are carried out in many facilities, but have poor potential to achieve quality improvement as there are no standard tools and mechanisms.

Monitoring of the maternal health situation in Russia could be carried out in a less direct but more useful way by measuring the number of abortions, rates of some sexually transmitted infections (although under-recording is a problem), and birth weight. In particular, there is a need to monitor the absolute number of abortions or the

ratio of abortions to the total number of women of child-bearing age in order to avoid being misled by fluctuating birth rates as can happen with the traditional indicator of abortions per 1000 live births. Birthweight can provide useful insight into smoking, alcohol consumption and social status of mothers during pregnancy. The two maternal mortality indicators, which can be of use on the national level in evaluating performance of obstetric services, are abortion-related deaths per 100,000 abortions and non-abortion related maternal deaths per 100,000 births. (Appendix 4.1. Table).

4.3.9. CONCLUSIONS ON MDG 5

Maternal mortality reduction by 75% will have negligible effect on population health in Russia. However, maternal mortality is an indicator of healthcare performance and health more generally. In order to further improve maternal mortality, and maternal health in general, it is important to make pregnancy, births and abortions safer, to reduce the number of abortions, and to eliminate illegal pregnancy termination away from medical facilities. Pregnancy, birth and abortion methods need to reflect current international evidence better than it is the case now. Improvement of practice is complicated by lack of access to international literature and by a perverse incentive system. There is additional potential for improvement through working with marginal groups. Abortion rates can be lowered through use of appropriate family planning methods, which is achieved by improvement of knowledge and access. More in-depth and qualitative research is needed to improve understanding of reproductive health issues in Russia, especially among adolescents, and to improve the design of interventions that aim to address maternal health.

4.4. WHAT GOALS FOR HEALTH DOES RUSSIA NEED AND HOW CAN AVOIDABLE ADULT MORTALITY FROM NON-COMMUNICABLE DISEASES BE PREVENTED?

Under-five and maternal mortality are important indicators, but it only accounts for an insignificant share of the disease burden in Russia. Reaching or approaching the target levels for these indicators by 2015 in a country with a transition economy is an important indicator of economic, social and healthcare development rather than a goal in itself. Other, much more important, Russian health problems need to be addressed alongside reduction of under-five and maternal mortality. Moreover, under-five and maternal mortality is already relatively low in Russia compared with developing countries, so the level of change called for in the targets might be over-ambitious for Russia.

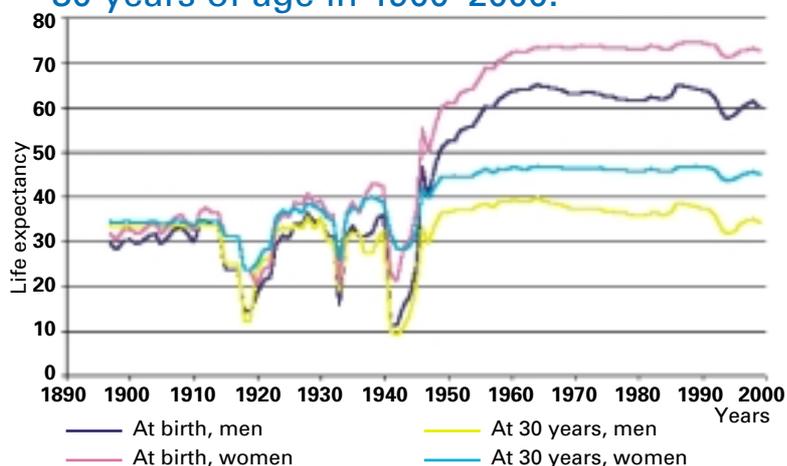
Life expectancy, especially of males, is very low in Russia and offers a comprehensive health indicator, particularly since research shows that the non-fatal health burden among males is relatively low at the moment.³⁶ The well-known calculation by World Bank experts showed that child mortality among boys in India is compensated by high adult mortality rates in Russia leading to very similar male life expectancy of about 59 years in both countries. High mortality among Russian men of working-age from non-communicable diseases, mainly cardiovascular disorders and external causes, is particularly worrying. Life expectancy of Russian men at the age of 30 showed no change throughout the 20th century, remaining at about 33-34 years, despite the celebrated achievements of modern medicine (Figure 4.8). Cardiovascular disease is still the main killer, despite existing preventive technologies.

The mortality rate from external causes is six times higher in Russia than in the European Union. At the present time injuries kill more people in Russia than cancers. Mortality from major groups of external deaths: suicides, homicides and road vehicle accidents in Russia are around 3.5,

Life expectancy of Russian men at the age of 30 showed no change throughout the 20th century, remaining at about 33-34 years, despite the celebrated achievements of modern medicine.

30 and 2 times higher than in the European Union. But preventable cancer deaths should not be disregarded, particularly lung and cervical cancer. Nearly all cases of lung cancer are caused by smoking and could be prevented through anti-tobacco interventions, which would also have major impact on the burden of many other cancers and most importantly diseases of the circulatory system. Cervical cancer death rates are nearly 3 times higher than in the European Union and could be very effectively addressed via a screening system and early treatment of pre-cancers.

Figure 4.8. Change in life expectancy of Russian men and women at birth and at 30 years of age in 1900–2000.



Source: Centre of Human Demography and Environment, Institute of National Economy Forecasting, Russian Academy of Sciences

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The limited number of deaths that could be averted by achieving MDG 4 and 5, related to under-five and maternal mortality, suggests that the focus in Russia's case should instead be on preventing premature adult mortality.

As they are forced out of western markets, tobacco companies are aggressively attacking less developed countries with negative impact on life expectancy and the burden of major diseases. Reduction of mortality rates from lung cancer due to low smoking rates in the cohort of people who grew up after World War II is distracting Russian Government attention from this problem.³⁷ The mortality rate from breast cancer is quite favorable compared with Western Europe, but it is likely to deteriorate in coming years due to the trend towards postponement of first child-bearing, which is a risk factor for breast cancer. Economic efficiency of screening is limited. Overall, this issue needs more detailed examination and design of definite guidelines.

Improvement in overall health in Russia can be best achieved through public health interventions. The health service as such can also have an input to life expectancy improvement, but to a lesser extent.³⁸ For instance, treatment of strokes is problematic, whereas prevention is relatively simple and effective.³⁹ Strokes kill 20% of Russians and mortality due to strokes is 4-6 times higher than the average European level, which is convincing evidence of the failure of hypertension control programs and failure to promote healthy life style. Deaths due to external causes can also be largely prevented, particularly deaths from motor vehicle accidents, which are already twice higher than in the European Union, despite lower rates of cars to population.

The scope for improvement of life expectancy through medical care in the narrow

sense is somewhat limited. If efficiency of Russian health-care outcomes was raised to its level in the UK, life expectancy for men would only improve by about 1.7 years and for women by about 1.5 years.⁴⁰ By comparison, tobacco smoking alone causes about 10 years reduction of life among smokers⁴¹ and, according to rough estimates, current rates of smoking^{42,43} cause over 6 years decline in life expectancy among males and 3 years in women. The role of other desirable and achievable behavioral factors, such as physical activity, moderation of alcohol consumption, safer sex, safer driving and better nutrition can hardly be overemphasized, but their effects are harder to quantify accurately within the scope of this chapter. It is important that such behavioral factors can be modified relatively easily by such measures as raising alcohol and cigarette taxes to increase prices for these life-threatening products, tightening and better enforcement of anti-tobacco legislation and of limitations on sale and consumption of alcohol, as well as traffic and work-related safety regulations. But all these highly effective interventions require political decisions, which might be unpopular and provoke opposition in some sectors of society. Greater efforts of all stakeholders are needed to help healthy lifestyles become a priority. Introduction of general practitioners and restructuring of the healthcare system are also important components in dealing with chronic concomitant conditions and promoting healthier life styles, but the most important measure, which is needed to improve healthcare, is a change in the incentive structure of the system to ensure that it prioritizes people's health. (Appendix 4.1. Table).

4.5. CONCLUSIONS AND RECOMMENDATIONS

The limited number of deaths that could be averted by achieving MDG 4 and 5, relat-

ed to under-five and maternal mortality, suggests that the focus in Russia's case should instead be on preventing premature adult mortality. There is room for improvement in the health status of women and children in Russia, but maternal and child mortality are already relatively low, and solving the problem of adult mortality would have much more impact on life expectancy at birth in Russia and in other transition countries: the average gain for all transition countries would be 7.75 years, and it would be 10.09 years in the Russian Federation. By contrast, achievement of the MDG targets for under-five and maternal mortality would give average gains of less than one year for both genders and only half a week for females. Reducing under-five and maternal mortality to UK levels would result in a gain of about one year, while reaching the best Russian regional values for these indicators across the whole country would offer an average gain of about five months.³⁶

The MDGs are important because they drive the choice of policies supported by the international community. However, it is important to place greater emphasis on adult mortality in Russia. The choice of goals at a global level is largely determined by what data are available. The absence, in many developing countries, of data on adult mortality thus precludes the use of life expectancy at birth as a global measure. In Russia and other transitional countries where more data exist, specific measures of adult mortality such as deaths from cardiovascular disease, stroke and external causes are the most

appropriate measures of progress in improving health. In addition measures of health-related behavior, particularly alcohol abuse and smoking, are crucial.

President Vladimir Putin said in his address to Russia's Parliament:⁴⁴ "...As regards modernization of healthcare. We have been talking about this for several years, but changes have been slow and haven't led to any significant outcomes yet. Russia is now lagging behind many countries in terms of the most important health indicators. For instance, life expectancy is 12 years lower than in the USA, 8 years lower than in Poland, and 5 years lower than in China. The primary reason for that is high mortality among the population of working age. Child mortality, although declining, is still one and a half or two times higher than in developed countries."

There is understanding in the Russian leadership of the importance of health issues and the urgency of taking measures. Some of these measures are bound to be unpopular and their efficient implementation will depend on the resources, which are made available, as well as on obtaining a social consensus. Society and all levels of Government in Russia will need to make a major effort on many fronts to ensure that healthy lifestyles become a priority, and that efficient and high-quality healthcare is mobilized to overcome the problems of avoidable mortality, which is posing a serious threat to development and preservation of human capital in Russia.

Chapter 4

- 1 Government of the Russian Federation, Kontseptsiya demographicheskogo razvitiya na period do 2015 goda. 24.09.2001
- 2 Plavinski SL, Plavinskaya SI, Klimov AN. Social factors and increase in mortality in Russia in the 1990s: prospective cohort study. *BMJ*. 2003 Jun 7;326(7401):1240-2.
- 3 Notzon FC, Komarov YM, Ermakov SP, Sempos CT, Marks JS, Sempos EV. Causes of declining life expectancy in Russia. *JAMA*. 1998 Mar 11;279(10):793-800.
- 4 Shkolnikov V, McKee M, Leon DA. Changes in life expectancy in Russia in the mid-1990s. *Lancet*. 2001 Mar 24;357(9260):917-21.
- 5 Zakharov S.V., Reproduktsiya v Rossii. Perviy i vtoroy demographicheskij perekhod. http://www.demoscope.ru/weekly/knigi/konfer/konfer_08.html
- 6 Kemp A, Sibert J. Childhood accidents: epidemiology, trends, and prevention. *J Accid Emerg Med*. 1997 Sep;14(5):316-20.
- 7 Etard JF et al. Childhood mortality and probable causes of death using verbal autopsy in Niakhar, Senegal, 1989-2000. *Int J Epidemiol*. 2004 Dec;33(6):1286-92.
- 8 Globalis indicators - 2002. <http://globalis.gvu.unu.edu/indicator.cfm?IndicatorID=26&country=RU#rowRU>
- 9 Shapiro S, et al. Relevance of correlates of infant deaths for significant morbidity at 1 year of age. *Am J Obstet Gynecol* 1980; 136: 363-73.
- 10 Goskomstat, "Zdravookhraneniye Rossii". Moscow, 2001.
- 11 National Library of Medicine premier bibliographic database covering more than 4,800 biomedical journals published in the United States and 70 other countries in most biomedical fields, contains over 12 million citations dating back to the mid-1960s
- 12 Andreev EM, Kvasha EA. Kharakteristika pokazatelya mladencheskoy smertnosti v Rossii // Problemy sotsial'noy gigieny i istorii meditsyny. 2002 (4). pp. 15-20.
- 13 Wuhib T. et al. Underestimation of infant mortality rates in one republic of the former Soviet Union. *Pediatrics*. 2003 May;111:596-600.
- 14 Danishevski K, Balabanova D, McKee M, Nolte E, Schwalbe N, Vasileva N. Inequalities in birth outcomes in Russia: evidence from Tula oblast. *Paediatr Perinat Epidemiol*. 2005 Sep;19(5):352-9.
- 15 McKee M, Oreskovic S. Childhood injury: call for action. *Croat Med J*. 2002 Aug;43(4):375-8
- 16 Departament zdravookhraneniya Tuly. Statisticheskij ezhegodnik. 2003.
- 17 European observatory on health societies in transition. Child health during the transition. Report. 1999.
- 18 Rachel B, Shapo L and McKee M. Appropriate health-related Millennium Development Goals for the Europe and Central Asia Region: Potential Impacts and Policy Implications
- 19 Lock K, Andreev EM, Shkolnikov VM, McKee M. What targets for international development policies are appropriate for improving health in Russia? *Health Policy Plan*. 2002 Sep;17(3):257-63.
- 20 Enkin M, Keirse M, Renfrew M, Neilson J. 2000. A Guide to Effective Care in Pregnancy & Childbirth, third edition. UK. Oxford University Press.2000
- 21 Filippi V, Brugha R, Browne E, Gohou V, Bacci A, De Brouwere V, Sahel A, Goufodji S, Alihonou E, Ronsmans C. Obstetric audit in resource-poor settings: lessons from a multi-country project auditing 'near miss' obstetrical emergencies. *Health Policy Plan*. 2004 Jan;19(1):57-66.
- 22 Turner LA et al. Maternal Mortality and Morbidity Study Group of the Canadian Perinatal Surveillance System. Under-reporting of maternal mortality in Canada: a question of definition. *Chronic Dis Can*. 2002;23(1):22-30.
- 23 Sanogo D. Maternal mortality: the demographic aspects. *Vie Sante*. 1989 Oct;(1):7-8.
- 24 Buor D, Bream K. An analysis of the determinants of maternal mortality in sub-Saharan Africa. *J Womens Health (Larchmt)*. 2004 Oct;13(8):926-38
- 25 Kruger AM, Bhagwanjee S. HIV/AIDS: impact on maternal mortality at the Johannesburg Hospital, South Africa, 1995-2001. *Int J Obstet Anesth*. 2003 Jul;12(3):164-8.
- 26 Zhironova IA, Frolova OG, Astakhova TM, Ketting E. Abortion-related maternal mortality in the Russian Federation. *Stud Fam Plann*. 2004 Sep;35(3):178-88
- 27 Bartlett LA, Berg CJ, Shulman HB, Zane SB, Green CA, Whitehead S, Attrash HK. Risk factors for legal induced abortion-related mortality in the United States. *Obstet Gynecol*. 2004 Apr;103(4):729-37.
- 28 Rivkin-Fish M. "Change yourself and the whole world will become kinder": Russian activists for reproductive health and the limits of claims making for women. *Med Anthropol Q*. 2004 Sep;18(3):281-304.
- 29 Oxfam. Access to health care in the Caucasus. Situation analysis. Unpublished field material. 2001
- 30 David PH, Bodrova V, Avdeev A, Troitskaia I, Boulay M. Women and Infant Health Project Household Survey 2000. Report of Main Findings – WIN project. USAID/Russia and John Snow Inc. (JSI), December 2000.
- 31 Vannappagari, V. "Monitoring Sexual Behavior in the Russian Federation: The Russia Longitudinal Monitoring Survey 2001-2003." Report submitted to the U.S. Agency for International Development. Carolina Population Center, University of North Carolina at Chapel Hill, North Carolina. April 2004.
- 32 McIlwaine J. Identification, review and synthesis of literature on maternal health in Russia and the former socialist republics. Final report, DFID/JSI project, June 2001
- 33 David PH. Women and Infant Health Project Facility Survey 2000. Report of Main Findings – WIN project. USAID/Russia and John Snow Inc. (JSI), January 2001.
- 34 Bodrova V, Shakarishvili A, Goldberg H, Storey D. 1996 Russian women's reproductive health survey: a study of three sites. Final Report. All-Russian Centre for Public Opinion and Market Research, Centers for Disease Control and Prevention, USAID, Moscow: 1998
- 35 <http://www.safemotherhood.org>
- 36 Andreev EM, McKee M, Shkolnikov VM. Health expectancy in the Russian Federation: a new perspective on the health divide in Europe. *Bull World Health Organ*. 2003;81(11):778-87. Epub 2004 Jan 20.
- 37 Shkolnikov V, McKee M, Leon D, Chenet L. Why is the death rate from lung cancer falling in the Russian Federation? *Eur J Epidemiol*. 1999 Mar;15(3):203-6.
- 38 CDC. Ten Great Public Health Achievements - United States, MMWR. 1900-1999. 1999;48(12):241- 243
- 39 Cushman WC. The burden of uncontrolled hypertension: morbidity and mortality associated with disease progression. *J Clin Hypertens (Greenwich)*. 2003 May-Jun;5(3 Suppl 2):14-22.
- 40 Andreev EM, Nolte E, Shkolnikov VM, Varavikova E, McKee M. The evolving pattern of avoidable mortality in Russia. *Int J Epidemiol*. 2003 Jun;32(3):437-46.
- 41 Doll R, Peto R, Boreham J, Sutherland I. Mortality in relation to smoking: 50 years' observations on male British doctors. *BMJ*. 2004 Jun 26;328(7455):1519.
- 42 McKee M, Bobak M, Rose R, Shkolnikov V, Chenet L, Leon D. Patterns of smoking in Russia. *Tob Control*. 1998 Spring;7(1):22-6.
- 43 Gilmore A, Pomerleau J, McKee M, Rose R, Haerper CW, Rotman D, Tumanov S. Prevalence of smoking in 8 countries of the former Soviet Union: results from living conditions, lifestyles and health study. *Am J Public Health*. 2004 Dec;94(12):2177-87.
- 44 President Vladimir Putin's address to the Upper House of the Parliament of the Russian Federation, May 24, 2004, Moscow, Kremlin
- 45 <http://www.who.dk/hfad>

Table. MDG+ for health and MDG 4 and 5. Reduce under-five and maternal mortality. Indicators recommended for Russia

MDG Targets	MDG Targets in the Russian context	Indicators of progress in achievement of targets	Indicators of progress in achievement of targets for Russia	Current value of the indicator	Target indicators for 2015		
no analogy	Goal recommended for monitoring: Life expectancy and mortality rates from major causes	no analogy	Life expectancy of males at birth	59 years	Regain the level in the mid-1980s, or at least a slight improvement	65 years	
			Life expectancy of females at birth	72 years		75 years	
			Standardized mortality rates from ischemic heart disease (European standards)	395 per 100,000		300 per 100,000	
			Standardized mortality rates from cerebrovascular diseases (European standards)	307 per 100,000		220 per 100,000	
			Standardized coefficient of mortality from external causes (European standards)	230 per 300,000		150 per 100,000	
no analogy	Goal recommended for monitoring: Healthy lifestyles	no analogy	Smoking, monitoring by age groups and genders is desirable	% of smokers	Among males above 15 years: 63% Among females above 15 years: probably 20%	Decrease among males; at least retain current levels among females	Males: 50% Females: status quo maintained
				Number of cigarettes sold per person-year	2400	1500	
			Alcohol abuse (indirect indicators)	Mortality from acute alcohol or surrogate intoxication	Approximately 50,000 per year (end of 1990s – beginning of 2000s)	Less than 20,000 yearly	
				Rate of alcoholic psychosis	54 per 100,000 (in 2002)	Less than 30 per 100,000	
Goal 4, Target 5. Reduce by two thirds, between 1990 and 2015, the under-five mortality rate	Reduce the mortality rate of children under 5 by at least 50% by 2015, as compared to 1990 (from 21.5 to 11 per 1000)	Reduce infant mortality. Increase access to pre-natal medical support, delivery of births by trained medical personnel.	Reduce infant mortality. Bring the technologies of pre-natal support and delivery into accordance with international evidence on effectiveness, avoid excessive medicalization of the reproductive process.	13 per 1000 Breastfeeding at 3 months – 41% Breastfeeding at 6 months – 33% Rooming in – percentage unknown	Less than 9 per 1000 Breastfeeding at 3 months – minimum 60% Breastfeeding at 6 months – minimum 40% Rooming in – no less than 70% of regular births		
		Reduce mortality of children under five.	Increase safety of the environment in order to reduce mortality from external causes.	Detailed data on mortality for children under five (with causes of death) is required for monitoring of the indicator. Such data is routinely collected, but a methodology for analysis needs to be developed.			
		Increase number of children vaccinated for measles to 90%	Retain high levels of vaccination against common diseases at the current level; regular renewal of vaccination calendars.	Over 95% coverage by main-stream vaccines that are included in the vaccination calendars (diphtheria, pertussis, poliomyelitis, measles, parotiditis, rubella)	No less than 95%		
Goal 5, Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio.	Reduce maternal mortality ratio by at least 50% in the period 1990-2015	Increase access to assistance during pregnancy and birth delivery by trained personnel.	Increase safety of the reproductive process by use of modern methods of care during pregnancy and delivery	The risk of maternal mortality from causes not linked to abortions, 25 per 100,000 birth deliveries	Less than 15 per 1000		
		Increase access to contraception	Reduce number of abortions	1.8 million per year	Less than 1 million		
	Increase safety of abortion		7 per 100,000 abortions, 2.2 per 100,000 abortions if we discount deaths from illegal abortion	2 per 100,000 abortions, total eradication of illegal abortion as a cause of death for women			