



## Infant Mortality Is One of the Leading Types of Death in the World

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### Dear Editor-in-Chief

The world is replenished to 365 thousand newborns. The largest population in the world is China, which exceeds 1.3 billion Chinese, besides the dominant population size of the nation and "multiplies" faster than all. At the same time, according to the forecast, the situation with diseases is complicated, many of which were not at the advanced rank places. Thus, the share of lung cancer, bronchial, tracheal, rectum, breast, esophagus, nephritis and nephrosis, chronic obstructive pulmonary diseases, diabetes, arterial hypertension, and the consequences of road traffic acci-

dents has increased in the structure due to mortality reasons (1, 2).

The indicator evaluating the total "disease burden" is the DALY (Disability Adjusted Life Year. At present time, the DALY index is increasingly used in public health for more balanced assessments. Therefore, morbidity and mortality were estimated in some units of measurement and represented a single indicator (3, 4). Preliminary, you can also calculate the years of life for disability, in order of rank for 2020 (Table 1).

**Table 1:** DALYs for the top 10 leading reasons in the world with the forecast for 2020 in comparison with 1999

<i>Year 1999</i>		<i>Year 2020</i>		<i>Difference of ranks</i>
<i>Diseases or injuries</i>	<i>Rank</i>	<i>Diseases or injuries</i>	<i>Rank</i>	
Lower respiratory tract infections	1	Coronary heart disease	1	5
HIV/AIDS	2	Unipolar Major Depression	2	3
Conditions of the perinatal period	3	Road traffic accidents	3	6
Diarrheal diseases	4	Cerebrovascular diseases	4	3
Unipolar Major Depression	5	Chronic obstructive pulmonary diseases	5	5
Coronary heart disease	6	Lower respiratory tract infections	6	-5
Cerebrovascular diseases	7	Tuberculosis	7	0
Malaria	8	Military losses	8	0
Road traffic accidents	9	Diarrheal diseases	9	-5
Chronic obstructive pulmonary diseases	10	HIV/AIDS	10	-8

From the table, in 1999, the world's first places in the "disease burden" were occupied by lower respiratory tract infections, HIV infection and AIDS, as well as conditions occurring in the perinatal period. Forecasts for 2020 indicate that IHD, unipolar major depression and road traffic injuries will take the first places (2). For the economically developed countries and European countries, the last decades have been

generally years of reducing the infant mortality rate, its convergence between the countries. In some of them, the decline was quite large: in Austria - 2.1 times, in the Netherlands - 2.2, in Switzerland - 2.0, in the USA - 1.8, in other countries - less noticeable (Ireland - 18%, Spain - 17%, Romania - 26%). Figure 1 shows infant mortality rates in some countries, for 2015.

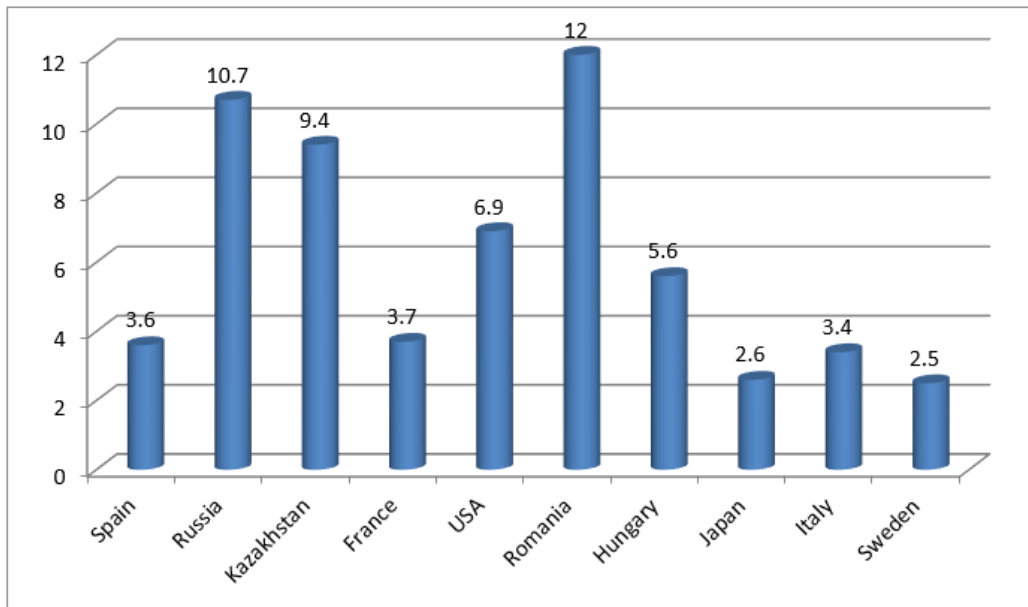


Fig. 1: Infant mortality rate in some countries in 2015

It is necessary to develop a complex of various measures to significantly reduce, in the first place, premature mortality, in particular infant mortality (Table 2) and, especially, the preventable part thereof. According to WHO, in developing countries the infant mortality rate of children born to a mother under the age of 20 is 1.6 times greater than that of a mother aged 20-29 yr. Apparently, the body of a young mother, who is not yet sufficiently strong, is not able to fully meet the requirements for pregnancy and lactation, and ensure the child's vitality (1,4,5). Of great importance are the interval between births, the number of abortions, the state of health of the mother and father, the course and fullness of

pregnancy. There is a probability that the death rate of subsequent children may decrease with the increase in the birth ordinal number up to the 8th, sometimes the 5th child, after which it gradually and not dramatically increases. Mortality of first-borns is higher than subsequent children, and not only second, but also further. Thus, the most favorable interval between two births is the interval of up to 3 years. Since the short interval, based on the foregoing, this will cause a greater probability of a newborn's death, and a longer one will lead to the fact that children of high birth ordinal numbers will be born to older mothers, which may also not be an entirely favorable factor.

**Table 2:** Infant mortality (per 1000 births) in some countries of the world

<i>Countries</i>	<i>Infant mortality</i>	<i>Countries</i>	<i>Infant mortality</i>
Kazakhstan	9,37	Bulgaria	7.75
Russia	7,33	Hungary	5,12
Azerbaijan	9,82	United Kingdom	3.94
Kyrgyzstan	19,88	Germany	3.3
Tajikistan	11,78	Turkey	10.1
Uzbekistan	14,96	Denmark	3.49
Ukraine	8,39	Latvia	6.28
Belarus	3,85	Estonia	2.38

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## Competing interests

The authors state that there are no conflicts of interest.

## References

1. World Health Statistics, 2009. Demographic and socioeconomic statistics. pp.131-141 <https://www.who.int/whosis/whostat/2009/en/>
2. Mathers CD, Loncar D (2006). Projections of Global Mortality and Burden of Disease from 2002 to 2030. *PLoS Med*, 3(11): e442.
3. Murray, Christopher J. L, Lopez, Alan D, World Health Organization, World Bank & Harvard School of Public Health (1996). The Global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020: summary / edited by Christopher J. L. Murray, Alan D. Lopez. <https://apps.who.int/iris/handle/10665/41864>
4. The World health report (2005). Make every mother and child count. Mothers and children matter – so does their health. pp.10-21. <https://www.who.int/whr/2005/en/>
5. Matthews TJ, Hamilton BE (2009). Delayed childbearing: more women are having their first child later in life. *NCHS Data Brief*, 21:1–8.