

# Russia's Population Meltdown

Declining birth rates and soaring rates of disease now threaten Russia's very survival as a nation.

*by Murray Feshbach*

Last July, in his first annual presidential address to the Russian people, President Vladimir Putin listed the 16 “most acute problems facing our country.” Number one on the list, topping even the country’s dire economic condition and the diminishing effectiveness of its political institutions, was the declining size of Russia’s population. Putin put the matter plainly. The Russian population is shrinking by 750,000 every year, and (thanks to a large excess of deaths over births) looks likely to continue dropping for years to come. If the trend is not altered, he warned, “the very survival of the nation will be endangered.”

Unfortunately, even Putin’s grim reckoning of the numbers may understate the dimensions of the calamity confronting his country. Its birthrate has reached extraordinarily low levels, while the death rate is high and rising. The incidence of HIV/AIDS, syphilis, tuberculosis, hepatitis C, and other infectious diseases is soaring, even as the Russian health care system staggers. Perhaps 40 percent of the nation’s hospitals and clinics do not have hot water or sewage. Seventy-five percent or more of pregnant women suffer a serious pathology during their pregnancy, such as sepsis, toxemia, or anemia. Only about 25 percent of Russian children are born healthy. (The rate of infant *mortality*, however, has declined, at

least according to official statistics.) The leading Russian pediatrician Aleksandr Baranov estimates that only five to 10 percent of all Russian children are healthy.

As if these challenges were not enough, Russia bears the burden of decades of environmentally destructive practices that have a direct, harmful impact on public health. Their legacy includes not just conventional pollution of the air and water but serious contamination around many nuclear and chemical sites throughout the country. In Dzerzhinsk and Chapayevsk, two of the 160 “military chemical cities” that produce chemicals for the military-industrial complex, the rate of spontaneous abortions or miscarriages is above 15 percent of conceptions—a strong indication of chromosomal aberrations produced by the environment. Yet a weakened Russia lacks the means to contain ongoing pollution or to begin the monumental task of environmental cleanup. The decline in the size of the Russian population, and in Russians’ general health, vastly increases the difficulty of creating the economic health upon which such a cleanup—and so much else—depends.

It is not only compassion that should arouse the concern of the West. While some may cheer the weakening of this less-than-

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friendly power, still armed with large numbers of nuclear, biological, and chemical weapons, Russia's sickening decline raises the twin prospects of political disintegration and subsequent consolidation under an authoritarian leader hostile to Western interests. The nation's problems, in any event, can no longer be thought of as somehow only its own. Last year, an unclassified U.S. National Intelligence Estimate warned that the global rise of new and re-emergent infectious diseases will not only contribute to social and political instability in other countries but "endanger U.S. citizens at home and abroad." Deaths from infectious diseases (including HIV/AIDS) in the United States have nearly doubled, to some 170,000 annually, since 1980. And Russia's deteriorating weapons stockpiles pose a threat of unknown dimensions, particularly to the nearby Scandinavian countries.

The broad outlines of Russia's looming catastrophe can be sketched in stark terms. Russians are dying at a significantly faster rate than they are being born. Gloomy as it was, President Putin's speech was based on the relatively rosy projections of the Russian State Statistical Agency, or Goskomstat. This scenario assumes an increase in the total fertility rate beginning in 2006, a decline in the mortality rate, and an increase in net in-migration. But only the latter projection is remotely plausible.\* By 2050, I believe, Russia's population will shrink by one-third. In

\*Russia's net in-migration of between 150,000 and 200,000 in 1999 spared it an even more severe population decrease than the 750,000 recorded. Putin, calling upon ethnic Russians to return, has suggested that migration will solve the country's demographic problem. But unless a fresh round of deterioration drives more people from the Central Asian republics into Russia, annual net in-migration can be expected to shrink to between 100,000 and 150,000. And the reduced out-migration by Russian Jews, which has also improved Russia's numbers, may be only a temporary response to tensions in the Middle East and instances of anti-Semitism in Europe.

Illegal immigrants—mostly Chinese in the Russian Far East—are a source of new population. But illegals cannot necessarily be counted as full members of society, and indeed Russian officials are already beginning to express concern about the Chinese influx and its long-term implications for Russia's sovereignty over its eastern reaches.

other words, it will drop from roughly 145 million today to about 100 million, a blow that even a stable, prosperous country would have difficulty sustaining.

My projections, based on a model developed for West Germany by the Population Reference Bureau, are less apocalyptic than those of some other Russian officials, Duma members, and demographers. A new study produced under the auspices of the Institute of Social and Political Research of the Russian Academy of Sciences, for example, predicts that population will decline to between 70 and 90 million by 2045. If one takes the annual 750,000 decrease noted by Putin and multiplies it by 50 years, the result is a drop in population of 37.5 million persons, to a net total of 108 million—not far from my estimate of 100 million. The U.S. population, meanwhile, is projected by the U.S. Bureau of the Census to grow by 2050 from today's 275 million to 396 million, a level almost four times the projected Russian population.

In broad demographic terms, one can say that Russia's population is being squeezed by two pincers. On one side is the fertility rate, which has been falling since the early 1980s. Russian women now bear little more than half the number of children needed to sustain the population at current levels. In absolute terms, the number of annual births has dropped by half since reaching a high of 2.5 million in 1983. Due to Russia's rising mortality rates, fertility would need to reach 2.15 births per woman just to reach the so-called simple population replacement level. As of 1999, however, the total fertility rate stood at 1.17 births per woman. That is to say, Russian women bear an average of 1.17 children over their entire fertile life, from ages 15 to 49. Fertility would need to rise by some two-thirds to reach the replacement level.

The Goskomstat projection points to an increase in fertility to 1.7 births per woman by 2006. But this prediction seems to be

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based on a simple extrapolation of existing trends that does not take into account the deterioration of Russians' health. The harsh reality is that the number of women in the prime child-bearing ages of 20 to 29 is falling, while the rates of sexually transmitted diseases among men and women (which affect fertility) and gynecological illnesses are both rising. The ranks of eligible parents, especially fathers, are being thinned by tuberculosis, HIV/AIDS, alcoholism, drug abuse, and other causes. Fifteen to 20 percent of all Russian families experience infertility, with males accounting for 40 to 60 percent of the cases. Even as mortality and disease take more and more young people out of the pool of potential parents, attitudes toward childbearing have changed for the worse. An estimated two-thirds of all pregnancies now end in abortions. It is hard to see how the hoped-for fertility gains will occur. A steeper decline in Russia's population seems unavoidable.

**M**ortality rates are also assumed to rise in the official calculation, but much less markedly than I anticipate. Some perspective on the Russian situation is provided by a comparison with the United States, which projects an average life expectancy at birth and survival rates for specific age groups that are far from the best in the world—especially among 15- to 19-year-old males, who kill themselves with drugs, alcohol, and motorcycles. But in the United States, a boy who lives to age 16 has an 88 to 90 percent chance of living to age 60. His Russian counterpart has only a 58-60 percent chance. And those chances are shrinking.

Tuberculosis is only one of the maladies



*Death now visits Russia much more frequently than before. The annual death toll has risen by a third since the mid-1980s.*

whose surging incidence is not reflected in current Goskomstat projections. The disease flourishes among people weakened by HIV/AIDS, alcoholism, and poverty. Findings by the research institute of the Russian Federal Security Service project enormous numbers of deaths from tuberculosis. Whereas only 7.7 of every 100 new Russian tuberculosis victims died in 1985, the death rate is now 25.5 per 100. According to official reports, the number of tuberculosis deaths soared by 30 percent in the 1998-99 period. The 1999 death toll of 29,000 was about 15 times the toll in the United States, or nearly 30 times greater when measured as deaths per 100,000 population in both countries.

The Russian authorities also underestimate the future impact of HIV/AIDS, spread chiefly by sexual contact and intra-

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venous drug use. Vadim Pokrovskiy of the Federal Center for AIDS Prevention, Russia's leading HIV/AIDS epidemiologist, estimates there will be five to 10 million deaths in the years after 2015 (deaths that, I believe, aren't reflected in the projections). Most of the victims will be 15 to 29 years old, and most will be males—further diminishing the pool of potential fathers.

Moscow reported 2.5 new cases of HIV nationally per 100,000 population in 1998, but the actual rate may be five, 20, or even 50 to 100 times greater, according to Russian epidemiologists and health officials. (The U.S. HIV incidence rate was 16.7 new cases per 100,000 population in 1998.) The Baltic port city of Kaliningrad and its surrounding oblast hold the unhappy distinction of recording the highest official rate of HIV increase, at 76.9 new cases per 100,000. Moscow, however, is currently overtaking it.

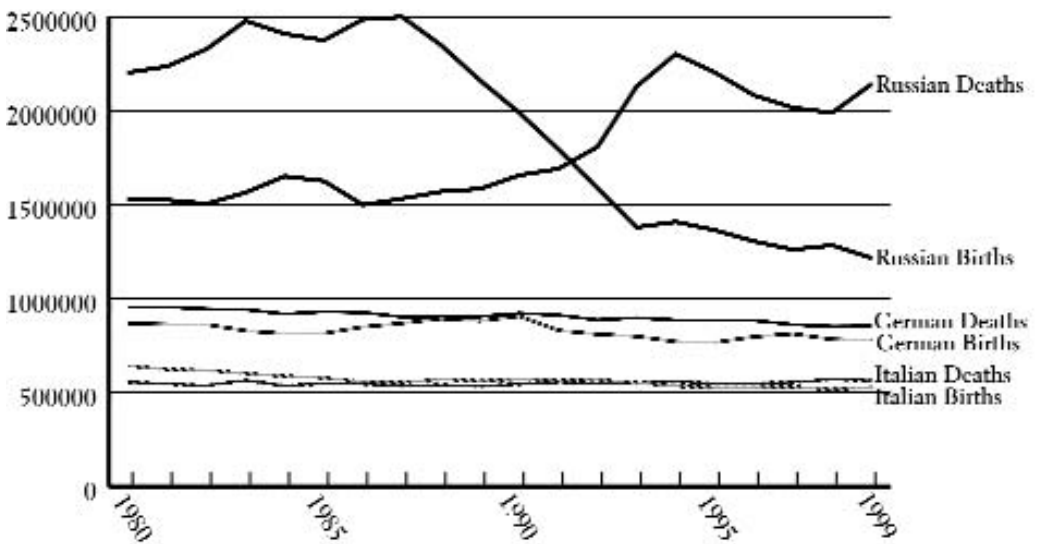
Some Russian demographers take comfort from the fact that their country is not entirely alone, since deaths exceed births in a number of European countries. But in countries such as Germany and Italy, the net ratio is close to 1.1 deaths to every birth. In Russia, deaths exceeded births by

929,600 in 1999, a ratio of 1.8:1. If health trends and environmental conditions are not dramatically changed for the better, Russia could see two or more deaths for every birth in the not-too-distant future.

None of this is to say that there are not some signs of improvement. Childhood vaccination rates for tuberculosis, diphtheria, whooping cough, and other diseases have risen since 1995. Vaccination for rubella (German measles), which causes birth defects when contracted by pregnant women in the first trimester, was added to Russia's prescribed immunization calendar in 1999. (However, no vaccines are produced in the country and none are yet imported; almost 600,000 cases were reported in 1999.) But the larger trends support the vision of looming demographic catastrophe. And a number of other developments also offer dark portents for the country's future rates of fertility and mortality, and for the general health of its people, especially its children.

Sexually transmitted diseases have seen incredible rates of increase during the past decade. These diseases cripple and kill, damage reproductive health, and

### How Russia Compares, 1980–99



While Russia isn't the only nation to suffer more deaths than births, the size of the Russian gap is alarming—akin to what a country might experience during wartime.

are associated with the spread of HIV/AIDS. The causes can be traced to the explosion of pornography and promiscuity; to the growth of prostitution, notably among 10- to 14-year-old girls; and, especially, to drug abuse involving shared needles and syringes. In 1997, the Ministry of Internal Affairs estimated that the market for illegal drugs was around \$7 billion, 600 times greater than in 1991.

The Russian Ministry of Health reported 450,000 new cases of syphilis in 1997, and Goskomstat published a figure of close to 405,000. These are the last reasonably accurate statistics we are likely to have, thanks to a 1998 law that imposes prison terms on syphilitics who contract the disease through drug abuse.

Just as one would predict, the number of registered new cases of syphilis declined in 1998 and 1999. However, the explosion in new cases of HIV, and a concomitant increase in the estimated number of drug addicts, belie the latest figures on syphilis. The “epidemiological synergy” between HIV/AIDS and other sexually transmitted diseases (including gonorrhea, which is vastly under-reported) suggests not only that syphilis is more widespread than reported but that further increases in the incidence of HIV/AIDS can be expected.

**T**he 1998 law that classified drug addicts as criminals ensured that few addicts—a group at high risk for HIV—will seek treatment. A specialist cited in *Komsomol'skaya Pravda* in 1998 made this grim prediction: “We will see increased risk of complications and overdoses, the death rate among drug addicts will rise, incidence of HIV/AIDS will rise; and...the illegal market of drug-related services will begin to develop quite intensively.”

**Smoking** is a habit among an estimated 70 percent of Russian males and one-third of females, and multinational tobacco companies aim to increase their sales in the country. The World Health Organization estimates that some 14 percent of all deaths in 1990 in the Soviet Union and Eastern Europe were traceable to smoking-related illnesses; it expects that number to rise to 22 percent by 2020.

**Alcohol** consumption reflects an epidemic of alcoholism. Russian vodka produced for the domestic market (usually in half-liter bottles) comes with a tear-off top rather than a replaceable cork or screw top because it's assumed that the bottle, once opened, will not be returned to the refrigerator. An estimated 20 million Russians—roughly one-seventh of the population—are alcoholics. Russia's annual death toll from alcohol poisoning alone may have risen to 35,000 in 2000, as compared with 300 in the United States in the late 1990s.

**Hepatitis B** has sharply increased in incidence, but the sole producer of vaccines for the disease told me in Moscow that only 1.3 million doses are produced annually to meet a total demand of 13 to 14 million doses. Perhaps even more alarming in the long run are increases in the incidence of **hepatitis C**, an illness that chiefly attacks the liver and requires a very costly treatment protocol. The disease is often fatal.

**Micronutrients** are in short supply, especially iodine. No iodized salt has been produced in Russia since 1991, and little or none has been imported. In young children, iodine deficiency causes mental retardation.

**Avitaminosis** is common. A longitudinal study by the Institute of Nutrition of the Russian Academy of Medical Sciences finds shortages of folic acid as well as vitamins A, B complex, D, and E among 30 percent of the population.

**Heart disease** exacts a toll, in age-standardized death rates, more than twice that in the United States and Western Europe. The death rate from such disease per 100,000 population is currently 736.1 in Russia, 267.7 in Belgium, 317.2 in the United Kingdom, and 307.2 in the United States.

**Cancer** is becoming more common. New cases increased from 191.8 per 100,000 population in 1990 to 200.7 in 1998. The incidence is likely to rise as a consequence of long-term exposure to low doses of radiation from decades of nuclear testing, as well as to benzo(a)pyrene, dioxin, and other industrial carcinogens. As in

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so many other cases, official statistics understate the problem. There is significant under-reporting of breast cancer, for example, especially among women of Muslim origin, who are reluctant to seek treatment from male doctors.

To all the foregoing challenges to the Russian future we must add a daunting collection of environmental ills. Russia will have to cope with a legacy of industrial development undertaken virtually without heed of the consequences for human health and the environment, just as it will have to contend with the consequences of decades of testing and stockpiling of nuclear, chemical, and biological weapons.

**T**he crises that temporarily focus worldwide attention on these problems, such as the 1986 Chernobyl nuclear power plant accident, only begin to hint at their severity. The news media beamed shocking reports of the 1994 Usinsk oil spill around the world, but it was only one of 700 “major” accidents and spills (defined as those involving 25,000 barrels of oil or more) that occur every year in Russia, spreading phenols, polyaromatic hydrocarbons, and a variety of other toxic chemicals. As Victor Ivanovich Danilov-Danilyan, the former head of the State Committee on Environment, notes, these losses are equivalent to about 25 Exxon Valdez spills *per month!*

Radioactivity remains a continuing concern. After the 1963 Test Ban Treaty barred open-air atomic weapons testing, the nuclear powers continued to conduct underground tests. But there was an important difference in the Soviet Union. There, many of the nation’s more than 100 nuclear explosions occurred in densely populated regions such as the Volga, as well as in the Urals and Yakutiya (Sakha) regions. After first denying that any of those explosions had been vented into the atmosphere, then Minister of Atomic Industry Viktor Mikhaylov later admitted that venting had occurred in 30 percent of the underground blasts.

What goes on today within the 10 formerly secret nuclear cities devoted to the

development and production of nuclear weapons in Russia remains largely a mystery. Around the city of Chelyabinsk, a thousand miles east of Moscow in the Urals, some 450,000 Russians face unknown risks from a series of spills and accidents that occurred from the late 1940s to the 1960s. And area rivers may have been tainted by seepage from nuclear waste directly injected deep underground at the Krasnoyarsk, Dmitrovgrad, and Tomsk sites. Near the Tomsk-7 facility, the site of a serious nuclear accident in 1993, Russian and American environmentalists recently found evidence of phosphorous-32, a radionuclide with a half-life of only about two months. The discovery strongly suggests that radioactive wastewater used in cooling Tomsk-7’s two remaining plutonium-producing plants was illegally dumped.

**C**hemical pollution is widespread. Even in Moscow, which is home to much heavy industry, there is evidence that pollution has caused genetic deformities in the young [see photo, facing page]. In a study of the impact of chemical, petrochemical, and machine-building industries on human health, the Russian Ministry of Health found that newborns suffered congenital anomalies at a much higher rate (108 to 152 per 10,000 births) in industrial cities than in rural localities (39 to 54 per 10,000).

Alarming cases of mercury pollution, which causes illness and birth defects, have been reported (though aggregate official data have never been published). Three years ago, 16 tons of mercury was released upriver from the major northern city of Arkhangel’sk. In Krasnoural’sk, a city in the Urals that produces car batteries, Russian and American researchers have found that 76.5 percent of the children are mentally retarded. Lead is the cause. Cadmium and arsenic are prevalent in the air and land throughout much of Russia. In the Arctic north, wind-blown heavy metal salts and other pollutants from the city of Norilsk’s nonferrous metal plants have left the land barren and treeless for 75 kilometers to the southeast.



*These children born in adjacent Moscow neighborhoods all suffer the effects of the same uncommon genetic anomaly—strong evidence that parental exposure to chemical pollution is responsible.*

Lakes and rivers everywhere are badly polluted by heavy metals dumped by industry and allowed to run off farmland. Estimates by the Yeltsin-era Ministry of Ecology and other observers suggest that only 25 to 50 percent of Russia's fresh water is potable.

**T**he world has not been blind to Russia's plight. By late 1998, the United States and other donors had sent more than \$66 billion in aid, according to a U.S. government estimate. The list of donors includes even South Korea, and recently officials of the European Union and the World Health Organization have recognized the need to act aggressively. But the aid has been inadequate and piecemeal, and its delivery has been hampered by corruption and inept administration. The frightening reality is that it may already be too late to help. Andrey Iliarionov, an economic adviser to President Putin, has pointed to 2003 as the year of reckoning, when the demographic crisis, the crumbling infrastructure, and the burden of massive foreign debt may combine to deal a crippling blow to Russia's remaining productive capacity—and thus, to its ability to help itself.

Where will the money come from for all the myriad improvements needed in reproductive and child health, for tuberculosis prevention and treatment, for HIV/AIDS cocktails of protease inhibitors? Who will supply the \$400 billion needed to clean up the water supply over the next 20 years, or the \$6 billion to clean up chemical weapons storage sites, or the hundreds of billions to clean up nuclear waste? The list of needs is depressingly long, and the Russian government has not always taken the right steps to address them. Last year, for example, President Putin abolished Russia's main environmental agency, the State Committee on Environment, and transferred its responsibilities to the Ministry of Natural Resources, which is in the business of developing the country's oil and mineral reserves. And yet, despite how daunting the task may seem, and how long the odds of success, we cannot simply ignore the ruin in Russia. The United States and other nations of the world have a profound interest in helping to avert an economic and demographic Chernobyl that would give a fearful new meaning to the word *meltdown*. □