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Vital and Health Statistics

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June 2003

# Vital and Health Statistics: Russian Federation and United States, Selected Years 1985-2000 With An Overview of Russian Mortality in the 1990s

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics

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Series 5, Number 11

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## International Vital and Health Statistics Reports

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics

Hyattsville, Maryland
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In memory of

# John M. Eisenberg

*Director of the Agency for Healthcare Research and Quality*

## Dedication

This report is dedicated to the memory of John M. Eisenberg, Director of the Agency for Healthcare Research and Quality (AHRQ). Dr. Eisenberg passed away on March 10, 2002, following a yearlong illness. He had served as the director of AHRQ since 1997, during which time he reinvigorated the organization and developed a focus on health care quality. He was also an important participant in U.S. and Russian collaborations on health, serving as Secretary Donna Shalala's key advisor on U.S.-Russian collaboration since 1998.

Dr. Eisenberg brought a keen intellect and wide-ranging interests to all of his activities, and this was certainly true of his involvement in the health collaboration between our two countries. He was committed to the idea of improving the quality of health care through evidence, and he saw no borders. He wanted every health care system in the world to have access to the latest scientific evidence as the basis of its clinical practice, while being mindful of the differences in cultures and systems. ''Globalize the Evidence, Localize the Decisionmaking'' was one of his favorite quotes.

He was a collaborator, a mentor, a coordinator, and a friend to us all. And we will sorely miss him.

# Preface

This report is the third in a series providing comparative vital and health statistics data for the Russian Federation and the United States. The publication is a joint effort by the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics (NCHS) in the United States and the Central Public Health Research Institute (CPHRI), Ministry of Health of the Russian Federation.

The purpose of the current report is to update vital and health statistics data previously published for the two countries, and to provide an overview of mortality trends in the Russian Federation in the last decade. The vital and health statistics section of the report makes available information on a variety of health measures for the populations of the Russian Federation and the United States. The data are presented in a comparative format to enhance the reader's understanding of health status in both countries. The report includes a discussion of data quality issues to assist the reader in understanding limitations in the accuracy, coverage, or comparability of the information presented. The overview of Russian mortality trends summarizes recent changes in Russian mortality by age group and by cause of death and considers risk factors and other issues underlying these trends. The mortality review updates earlier work by the authors for the years 1990–94 (1).

The vital and health statistics section of the report contains 23 tables on population size, natural increase in population, birth rates, abortions, life expectancy, infant mortality, death rates, reportable diseases, human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS), levels of health personnel, hospital utilization, and ambulatory care. The report also includes selected tables on mortality by urban and rural area of the Russian Federation. Data are provided for selected years from 1985 to 2000, with the focus on the 1990s. The mortality overview for the Russian Federation includes six tables and several figures providing detailed information on recent mortality trends.

The complete report is available as an Acrobat PDF file on the Internet through the NCHS home page. The direct Uniform Resource Locator (URL) address is: http://www.cdc.gov/nchs.

For answers to questions about this report, contact:

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# Foreword by Professor Yuri M. Komarov

This is the third digest of vital and health statistics compiled by Russian and American specialists. And for the third time, Edward J. Sondik, the Director of NCHS, and I have been honored to write a foreword for this report. The first digest was published in 1995 by NCHS and was comprised of statistical data for 1980–93. In their joint statement, the Secretary of the U.S. Department of Health and Human Services and the Minister of Health of the Russian Federation praised the results of this teamwork. The second compilation presented a comparative analysis of statistics of maternal and child health, an important issue in both countries. This work was done within the framework of the Russian-American Committee for Economic and Technological Cooperation and then published in 1999 both in English and Russian. There are essential differences between Russian and American statistical systems and records, definitions, criteria, classifications, and methods of calculation and analysis; however, there is also the need to make statistical data comparable. These factors defined the scientific and creative nature of this project. The present report includes a comparative analysis of statistical data for the last decade of the 20th century. It also contains a review of mortality trends in Russia in the 1990s, reflecting scientific interest in this topic.

The factors that determine the size, structure, and composition of the Russian Federation population have developed over several decades. The birth rate began to decline in the late 1980s, but for several years, net migration compensated for the decline in natality. In the 1990s, the continued decline in births and the rise in mortality, along with a gradual reduction of immigrants, led to a declining population. The population of Russia reached a peak of 148.3 million in 1992 and has been falling since, declining by 400,000–500,000 annually in recent years, and reaching 144.8 million in 2001. According to some predictions, by 2040 the population level may have fallen back to the that of 1926.

The quality of family life has also suffered in recent years. The number of marriages has declined, the number of divorces has increased, and the birth rate for unmarried women has doubled in the last 10 years. These trends, along with very high mortality among working-age men, have led to a growing number of single mothers. There are 5.2 million single-parent families in Russia now. There are about 680,000 orphans, which is just as many as there were in Russia after World War II, except that now, in 95 percent of cases, these children have living parents.

Although the abortion rate has decreased 52 percent in the past 10 years, this index is still 6 times higher than in the United States. Reducing the number of unwanted pregnancies and abortions is an important part of government policy. We can achieve this if the educational standard of society improves, people become aware of the need to care for their health, contraceptives become widely available (now less than one-quarter of women use modern methods of contraception), and other changes occur.

Childhood and adolescent health is also a major concern in Russia. This is why in 2002 the Ministry of Health began a large-scale clinical medical examination (preventive checkups with followup observation where necessary) of all children and adolescents. This program is an attempt to restore the health care system that existed in the former Soviet Union, but with improvements in many areas.

Still the most urgent socioeconomic, political, and medical-demographic problem is the mortality rate, which is one of the highest in the world. Every year more than 2 million people die in Russia, and the mortality rate is 1.7 times higher than the birth rate. Russia's mortality rate is not always registered fully and correctly, nor is the real cause of death always identified accurately. Nevertheless, with such large data sets, statistical errors cannot be a significant factor. The highest levels of mortality have been registered in the central regions of Russia (the regions of Tver, Tula, Ivanovo, Pskov, and Novgorod), and in the Republic of Tyva.

Mortality rose rapidly from 1992 to 1994, the direct result of the changed socioeconomic living conditions. After 1994 the mortality rate decreased slightly, because by that time, many of those who had not been able to adapt to the new lifestyle had already become impoverished and had died. This trend lasted until the economic crisis of 1998, when, quite abruptly, many middle-class Russians became poor, leading to the rise in mortality in 1999 and following years. The main reasons for the mortality rate growth since 1999 are considered to be a worsening of socioeconomic living conditions of the majority of the population, people's constant exposure to stress, and growing alcohol abuse.

A comparison of standardized rates between Russia and the United States shows that in Russia the rate of suicide is 4.0 times higher; homicide, 3.6 times higher; death from cerebrovascular disease, 6.4 times higher; and death from heart disease, 2.0 times higher. But at least 40 percent of all deaths are potentially preventable if there is correct and timely prevention and treatment, i.e., a proper health care system. Cardiovascular diseases account for 55 percent of all deaths, but many of these decedents were already elderly. Many people do not live to the age at which they could be expected to die of cardiovascular diseases, because they die at earlier ages from neoplasms, respiratory and digestive system diseases, and especially from infections, injuries, and violence, with the peak of deaths occurring at ages 35–45 years. If we calculate the number of years of life lost due to these diseases, we see they are a greater burden than are cardiovascular diseases.

An examination of specific causes of death provides many examples of the need to improve the organization and quality of medical care in the Russian Federation. For example, rising

mortality from pneumonia is not due to changes in etiology or the nature of this disease but to inadequate prevention and ambulatory health care, resulting in undiagnosed, neglected, and incompletely cured cases. Mortality due to digestive system diseases is highest in regions of Russia where urgent health care is underdeveloped. The rise in mortality due to tuberculosis is not due to an increase in cases but to the deterioration of the primary and secondary systems for prevention and early-stage diagnosis. The lack of effective treatment of tuberculosis among prisoners has led to the spread of the disease in prisons, and after releases of large groups of prisoners, in the civilian population as well.

In summary, this report not only compares vital and health statistics in Russia and the United States but also makes it possible to identify major health problems, consider national health care strategy, and point out the need to improve the reliability, quality, and comparability of demographic and medical statistics. This collaboration has provided an opportunity for specialists of both countries to better understand each other and to enrich themselves with new knowledge, ideas, and methods.

Within the framework of this cooperation with NCHS, a number of activities have been carried out in Russia. These activities include training workshops on the use of the *International Classification of Diseases, 10th Revision* (ICD–10), the development of an automated system for the coding of causes of death, and (in collaboration with the Open Society Institute) improvements in medical statistics of Tula oblast and Stavropol krai.

We would like to express our gratitude to the governing bodies and staff of NCHS for their contribution to this joint work on vital and health statistics.

Professor Yuri M. Komarov
Ph.D. Medicine, D.Sc. Medicine
Honorable Scientist of the Russian Federation
Vice-President of the Russian Medical Association

# Foreword by Edward J. Sondik

For nearly 10 years, NCHS and the CPHRI, formerly MedSocEconom-Inform, of the Russian Federation have carried out a cooperative program on health statistics. This collaboration began under a memorandum of understanding and has continued as part of the binational U.S.-Russia Health Committee, a component of the U.S.-Russia Joint Commission on Economic and Technological Cooperation. Under this program, we have sought to share information, improve the quality and comparability of our health data, and publish joint reports.

In the area of joint reports, we have published broad overviews of health data in both countries and reports focusing on specific topics of mutual interest. The first report compared vital and health statistics data on a range of topics, while the second report focused on maternal and child health status in both countries. We also published a journal article focusing on the reasons for the decline in life expectancy in Russia in the early 1990s. The current report updates our initial publication on vital and health statistics and also revisits the issue of mortality trends in Russia.

In both countries, much has changed in the area of health since the publication of our first report. Life expectancy improved dramatically in Russia in the mid-1990s, followed by a renewed decline that coincided with the economic difficulties beginning in 1998. Improvements in vaccination coverage eliminated the diphtheria epidemic in Russia, but strong growth in the number of tuberculosis and AIDS cases has presented new challenges to the Russian health care system. In the United States, improvements in life expectancy have slowed markedly compared with the gains of the 1980s, although mortality due to HIV/AIDS has declined dramatically. In the area of health expenditures, renewed rapid growth in health care costs is complicating efforts to expand health insurance coverage.

Cooperation between our two organizations is not limited to the publication of joint reports. We have collaborated for several years on activities designed to improve the quality and completeness of vital statistics data in Russia. This collaboration has included the revision of the content of vital event certificates, the development of computer-based training software for the coding of causes of death, and the evaluation of vital statistics data collected in Russia. We are combining information from death certificates and coroners' certificates to better understand the causes of injury death in Russia. Currently we are focusing on the development of an electronic database system for data entry, editing, and tabulation of vital statistics data, and the installation of this system in various territories of Russia. Included in this activity is the preparation of an automated system for the coding of cause-of-death information, which will produce mortality data coded according to the full *International Classification of Diseases, 10th Revision* (ICD) for the first time in Russia. We would like to thank the National Institute of Child Health and Human Development and the National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health; the Office of Global Health, the CDC; the Agency for Healthcare Research and Quality; and the Open Society Institute for their financial assistance in several of these activities.

We want to thank our colleagues at the CPHRI for their involvement in our joint projects. We have learned much about our respective health data systems, and about each other, in the course of our collaboration, and we hope that it will continue into the future.

Edward J. Sondik, Ph.D.
Director
National Center for Health Statistics

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## Abstract

This report provides comparative vital and health statistics data for recent years for the Russian Federation and the United States. Statistical data for Russia are from the Ministry of Health of Russia and from Goskomstat, the central statistical organization of Russia. Information for the United States comes from various data systems of the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics (NCHS) as well as other parts of the Department of Health and Human Services.

The initial section of the report summarizes information on recent mortality trends in the Russian Federation. During the 1990s, Russia experienced a major increase in mortality from 1990 to 1994, a substantial reduction in mortality from 1994 to 1998, and another major increase from 1998 to 2000. The mortality overview uses tables and figures to describe mortality changes by age group, sex, and cause of death, and to determine the contribution of each of these to changes in life expectancy. The overview also considers risk factors and other issues underlying these trends, in an attempt to understand the impact of major mortality determinants on changes in life expectancy.

The section on vital and health statistics uses tables, figures, and commentary to present information on many different health measures for the populations of the two countries. Topics covered include population size, fertility, life expectancy, infant mortality, death rates, communicable diseases, and various health personnel and health resource measures. The commentary includes a discussion of data quality issues that affect the accuracy and comparability of the information presented. Data are provided for selected years from 1985 to 2000. In addition to national data, mortality information on urban and rural subgroups in Russia is provided. A glossary of terms at the end of the report provides additional information on definitions and data sources and limitations.



**Keywords:** United States • Russia • fertility • mortality • infant mortality • morbidity • abortion • immunization • communicable diseases • hospitals • health care utilization


# Vital and Health Statistics: Russian Federation and United States, Selected Years 1985–2000 with an Overview of Russian Mortality in the 1990s


*by Francis C. Notzon, Ph.D., Office of International Statistics; Yuri M. Komarov, M.D., Ph.D., D.Sc.; Sergei P. Ermakov, Ph.D., D.Sc.; Alexei I. Savinykh, M.D., Central Public Health Research Institute, Ministry of Health of Russia; Michelle B. Hanson, Juan Albertorio*


## Overview of Russian Mortality in the 1990s

The first decade of the Russian Federation has been fraught with economic, political, and social problems. Health status also declined severely in the first half of the decade, as reported extensively in scholarly journals and the press (1–5). The health situation reached a low point in 1994, when male life expectancy at birth fell below 58 years. Health trends in Russia improved after 1994, with both men and women regaining more than half of the years of life expectancy lost in the earlier period. These improvements are less well known in the West, as they generated less academic and journalistic attention. More recently, however, both the economy and health status of Russia have again deteriorated.

In order to better understand the erratic trends in mortality and their relationship to other factors within Russia, this report examines changes in the leading causes of death over the 1990s, with a focus on the years after 1994. It also assesses changes in other aspects of Russian society over the same time period. The analysis presented below thus continues earlier findings reported by the authors for the period 1990–94 (1). It also represents one part of the continuing collaboration between the CPHRI of Russia and NCHS.

## Methods

Information on births, deaths, economic measures, and other variables for Russia were obtained from Goskomstat of Russia (the central statistical office) and other sources. Comparative data on births and deaths in the United States were provided by NCHS. As with our previous analysis, we used life tables prepared by CPHRI for the detailed assessment of mortality trends after 1994.

To compare mortality risks over time, we calculated the percent change in age-specific mortality during the three distinct mortality intervals of the 1990s:


The authors gratefully acknowledge the assistance of the American and Russian specialists in compiling data for this report. Collection and tabulation of the Russian data were carried out by Irina N. Veselkova, the Head of the Demography Division of the Central Public Health Research Institute. Significant technical support was provided by Elmira I. Pogorelova, the Head of the ICD-10 Training and Research Unit of the same Institute. This report was edited by Demarius V. Miller, typeset by Annette F. Holman and Margaret C. Avery, graphics produced by Michael W. Jones, and printing managed by Patricia Wilson and Joan Burton of the Publications Branch, Division of Data Services.

1990–94, 1994–98, and 1998 to the present. However, changes in age-specific mortality may not provide a complete picture of the impact of mortality changes on a population. The effect of changes in age-specific mortality on life expectancy depend on which age group is affected: the younger the age group, the greater the impact of mortality change on life expectancy, as increased (or reduced) deaths at younger ages will result in larger changes in the number of life-years lived. To assess more accurately the impact of changes in mortality by age group, we applied a life-table partitioning technique (6,7). The partitioning technique provides a more accurate assessment of the effect on life expectancy of changes in age-specific mortality, by combining information on relative change in mortality rates with data on the absolute level of mortality.

We also calculated age-adjusted mortality rates for selected causes of death for the key years of 1990, 1994, 1998, and 2000, using the direct method of adjustment. As in our previous analysis, we used the World Health Organization (WHO) "old" European standard population (8). We used these rates to assess cause-specific mortality risks over time in Russia. We also applied the same life-table partitioning technique to determine the contribution of selected causes of death to changes in life expectancy during the 1990s.

Beginning in 1999, the responsibility for coding causes of death was shifted from Goskomstat to the Ministry of Health. Under the new system, physicians are responsible for coding the underlying cause of death using the ICD–10 (9). This is a major change from the previous system, in which Goskomstat staff coded the underlying cause of death using a summary list of about 200 causes of death. In practice, however, the information available to users has not changed greatly, as Goskomstat continues to tabulate mortality data according to a summary list of causes of death. The summary list undergoes modification with each revision of the ICD and was expanded to 254 causes in 1999 in accordance with the introduction of the 10th revision of the ICD. These changes have not had a major impact on the broad cause categories used in this report, with the exception of motor vehicle deaths. For these, it was necessary to broaden the category to include all transportation accidents to ensure good comparability over time in Russia, as well as comparability between Russia and the United States. All of the other cause groups presented here are the same as those used in the earlier report.

Among the leading causes of death, alcohol continues to be very important in Russia, and so we retained the cause category "other alcohol-related causes." This category combines data on deaths due to alcohol-dependence syndrome and alcohol poisoning, although the preponderance of deaths due to alcohol intoxication are coded to alcohol poisoning in Russia.

The cause group "other injuries" is another important category of mortality in Russia. This cause group represents all unintentional-injury deaths, with the exception of motor vehicle crash deaths and alcohol-poisoning deaths, plus deaths due to events of undetermined origin, complications of medical and surgical care, and operations of war.

# Results

## Trends up to 1994

Detailed mortality trends in Russia before 1990 and in the period 1990–94, have been described elsewhere (1). These trends can be summarized as follows: From 1960 through the mid-1980s, male life expectancy gradually declined, while female life expectancy remained unchanged (figure 1). Life expectancy for both sexes rose abruptly from 1985 through 1987, largely as the result of the antialcohol campaign initiated by Mikhail Gorbachev soon after he became the new leader of the Soviet Union. As the success of the anti-alcohol campaign faded, mortality rates rose and continued to rise through the first chaotic years of the Russian Federation. From 1990 to 1994, the age-adjusted mortality rate rose by one-third, male life expectancy declined by more than 6 years, to 57.7 years, and

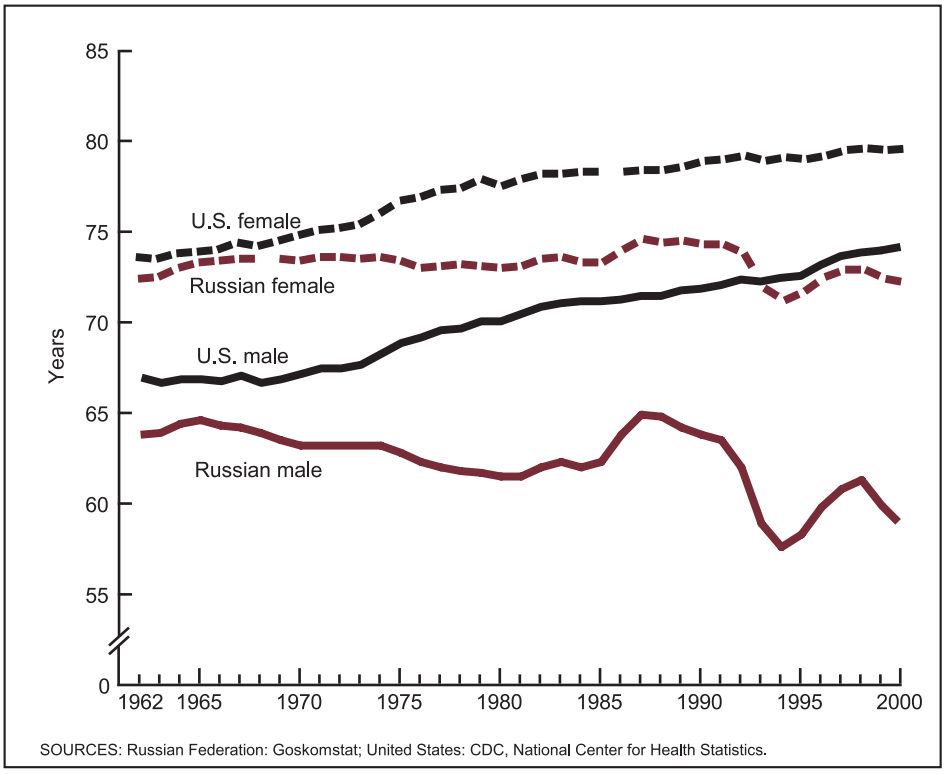


**Figure 1. Life expectancy, Russian Federation and United States, 1962–2000**

**Table A. Life expectancy and age-adjusted mortality rates, Russian Federation and United States, selected years 1990–2000**

| Year | Life expectancy | | | | | |
|---|---|---|---|---|---|---|
| | Russian Federation | | | United States | | |
| | Total | Male | Female | Total | Male | Female |
| 1990 | 69.3 | 63.8 | 74.4 | 75.4 | 71.8 | 78.8 |
| 1994 | 64.1 | 57.7 | 71.2 | 75.7 | 72.4 | 79.0 |
| 1998 | 67.2 | 61.3 | 73.2 | 76.7 | 73.8 | 79.5 |
| 2000 | 65.3 | 59.0 | 72.2 | 76.9 | 74.1 | 79.5 |
| | Change in life expectancy | | | | | |
| 1990–94 | –5.2 | –6.1 | –3.2 | 0.3 | 0.6 | 0.2 |
| 1994–98 | 3.1 | 3.6 | 2.0 | 1.0 | 1.4 | 0.5 |
| 1998–00 | –1.9 | –2.3 | –1.0 | 0.2 | 0.3 | 0.0 |
| | Age-adjusted mortality rate | | | | | |
| 1990 | 1,192.7 | 1,688.4 | 892.2 | 803.4 | 1,035.3 | 628.8 |
| 1994 | 1,581.6 | 2,290.5 | 1,098.4 | 784.7 | 996.4 | 621.8 |
| 1998 | 1,323.7 | 1,847.0 | 957.4 | 741.4 | 909.8 | 607.7 |
| 2000 | 1,461.2 | 2,075.6 | 1,020.6 | 735.7 | 889.6 | 610.8 |
| | Percent change in mortality rates | | | | | |
| 1990–94 | 32.6 | 35.7 | 23.1 | –2.3 | –3.8 | –1.1 |
| 1994–98 | –16.3 | –19.4 | –12.8 | –5.5 | –8.7 | –2.3 |
| 1998–00 | 10.4 | 12.4 | 6.6 | –0.8 | –2.2 | 0.5 |

0.0 Quantity more than zero but less than 0.05.

SOURCES: Russian Federation: Life expectancy, Central Public Health Research Institute; Mortality rates, Goskomstat. United States: Centers for Disease Control and Prevention, National Center for Health Statistics, Division of Vital Statistics.

female life expectancy fell by more than 3 years, to 71.2 years (table A). Over the same interval, U.S. life expectancy rose by a modest amount.

Although mortality rose in every age group, the majority of the increase occurred among adults 25–64 years of age. Much of the rise in mortality was due to cardiovascular disease, unintentional and intentional injuries, and alcohol-related causes of death. Combined with a sharp drop in the birth rate, the mortality rise led to a significant excess in deaths over births by 1994 (table B). Although the return migration of ethnic Russians from other parts of the former Soviet Union offset much of this excess of deaths over births, the Russian population had stopped growing by 1993.

The 1990–94 period also can be characterized as a time of severe economic difficulties in Russia. Following the breakup of the Soviet Union, the Russian Federation experienced an extended period of hyperinflation and negative economic growth. Economic restructuring, intended to develop a market economy as quickly as possible, led to the closing of enterprises, wage cuts, and growing unemployment, which rapidly increased the number of Russians living in poverty (table C).

**Table B. Number of live births and deaths and natural increase in population: Russian Federation and United States, selected years 1985–2000**

| Year | Russian Federation | | | United States | | |
|---|---|---|---|---|---|---|
| | Live births | Deaths | Natural increase in population[1] | Live births | Deaths | Natural increase in population[1] |
| 1985 | 2,375,147 | 1,625,266 | 749,881 | 3,760,561 | 2,086,440 | 1,674,121 |
| 1990 | 1,988,858 | 1,655,993 | 332,865 | 4,158,212 | 2,148,463 | 2,009,749 |
| 1991 | 1,794,626 | 1,690,657 | 103,969 | 4,110,907 | 2,169,518 | 1,941,389 |
| 1992 | 1,587,644 | 1,807,441 | –219,797 | 4,065,014 | 2,175,613 | 1,889,401 |
| 1993 | 1,378,983 | 2,129,339 | –750,356 | 4,000,240 | 2,268,553 | 1,731,687 |
| 1994 | 1,408,159 | 2,301,366 | –893,207 | 3,952,767 | 2,278,994 | 1,673,773 |
| 1995 | 1,363,806 | 2,203,811 | –840,005 | 3,889,589 | 2,312,132 | 1,577,457 |
| 1996 | 1,304,638 | 2,082,249 | –777,611 | 3,891,494 | 2,314,690 | 1,576,804 |
| 1997 | 1,259,943 | 2,015,779 | –755,836 | 3,880,894 | 2,314,245 | 1,566,649 |
| 1998 | 1,283,292 | 1,988,744 | –705,452 | 3,941,553 | 2,337,256 | 1,604,297 |
| 1999 | 1,214,689 | 2,144,316 | –929,627 | 3,959,417 | 2,391,399 | 1,568,018 |
| 2000 | 1,266,800 | 2,225,332 | –958,532 | 4,058,814 | 2,403,351 | 1,655,463 |

[1]Increase is number of births mimus number of deaths.

SOURCES: Russian Federation: Goskomstat; United States: Centers for Disease Control and Prevention, National Center for Health Statistics, Division of Vital Statistics.

## Trends from 1994 to 1998

Economic and social conditions gradually began to improve in Russia in the mid-1990s, and at the same time, mortality began to decline from the 1994 peak. Although negative economic growth continued for several years, the Russian government was able to reduce inflation to a more manageable level from 1995 to mid-1998 (table C). Reported information on economic growth probably understated the true increase in economic activity during the decade, as tax avoidance became increasingly common during the 1990s (10).

The annual number of deaths fell by more than 300,000 from 1994 to 1998, but a continuing decline in births produced a substantial excess of deaths over births. The return migration of ethnic Russians gradually fell off after 1994, resulting in slow but consistently negative population growth. By 1998 the population of Russia had declined to 146.5 million, almost 2 million below the 1992 peak of 148.3 million (table B).

The age-adjusted mortality rate for all causes of death declined by more than 16 percent from 1994 to 1998, the male rate dropping by 19 percent and the female rate by 13 percent (table A). In the same time period, U.S. age-adjusted mortality fell 6 percent. In Russia, male life expectancy rose by 3.6 years to 61.3 years, restoring nearly 60 percent of the years lost in the previous interval. Female life expectancy rose by 2 years, to 73.2 years, making up nearly two-thirds of the earlier loss. The male-female differential in life expectancy in Russia fell from 13.5 years in 1994 to 11.9

**Table C. Economic indicators, Russian Federation 1991–2000**

| | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|
| Annual growth rate, per capita gross domestic product | –11.4 | –14.6 | –8.5 | –12.7 | –3.6 | –3.1 | 1.3 | –4.5 | 5.8 | 8.9 |
| Percent unemployed | - - - | 4.9 | 5.5 | 7.5 | 8.8 | 9.3 | 9.0 | 11.5 | 12.6 | 10.4 |
| Annual percent change in consumer prices | - - - | 1,353.0 | 876.0 | 307.0 | 198.0 | 48.0 | 14.6 | 27.8 | 85.8 | 20.8 |
| Percent of population below poverty level | - - - | 29.8 | 30.9 | 23.1 | 26.2 | 21.4 | 21.2 | 24.6 | 34.1 | - - - |

– – –Data not available.

SOURCES: Per capita gross domestic product and percent unemployed, Economist Intelligence Unit; consumer prices and population below poverty level, Russian Economic Trends.

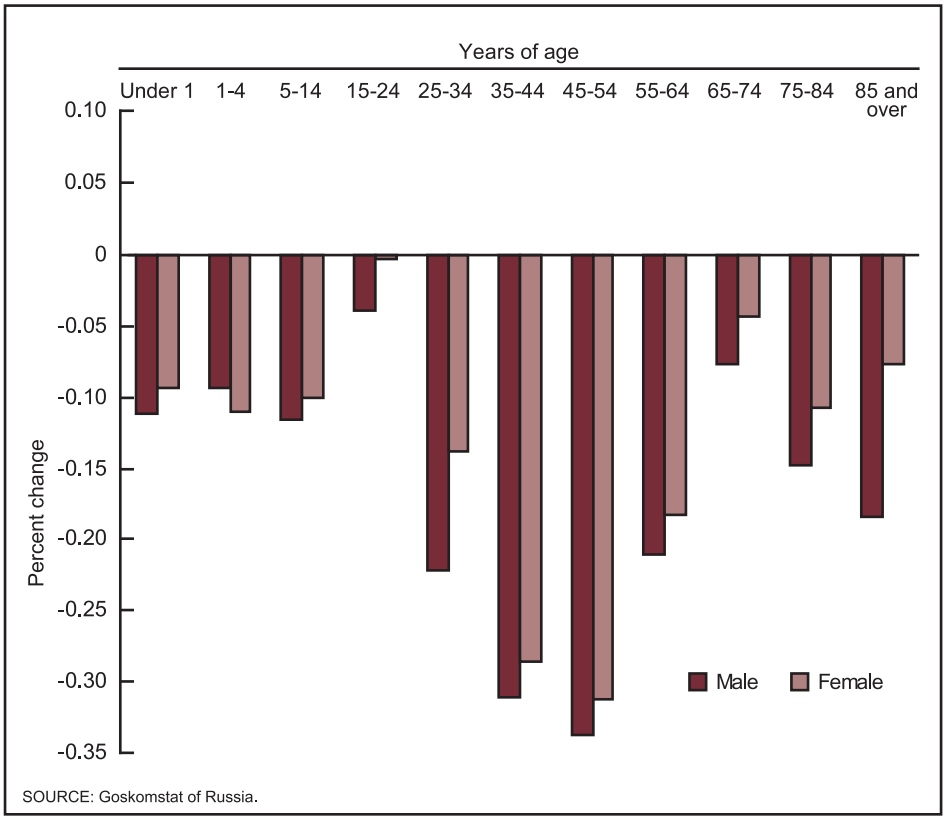


**Figure 2. Change in all-cause mortality rates by age and sex, Russian Federation 1994–98**

years in 1998 but remained higher than in other industrialized countries.

All-cause mortality rates declined for all age groups and both sexes in the interval from 1994 to 1998, with the exception of women 15–24 years of age (figure 2). For both men and women, the largest declines were in the age groups between 25 and 64 years. The group age 15–24 years experienced the smallest decline in mortality (–4 percent), with the female death rate in this age group remaining unchanged during the interval. Mortality rates declined substantially in the very young and very old age groups.

With the exception of female breast cancer, mortality rates for all major causes of death declined significantly from 1994 to 1998 (table D). The reductions in mortality due to diseases of the heart and cerebrovascular diseases eliminated a major part of the 1990–94 increases for these causes, in particular for diseases of the heart. Cancer mortality for all sites, essentially unchanged from 1990 to 1994, declined by 6 percent in the 1994–98 period. Mortality due to other alcohol-related causes increased the most from 1990 to 1994 (+258 percent) and declined by the largest amount from 1994 to 1998 (-56 percent). In 1998, however, mortality due to alcohol-related causes remained nearly 60 percent above the 1990 level. Other mortality rates that increased dramatically in the earlier period—intentional and unintentional injuries, liver diseases, and pneumonia and influenza—declined through 1998 but also remained substantially above their 1990 levels. Mortality due to transport accidents exhibited a different pattern, declining by 4 percent in the 1990–94 period and an additional 20 percent by 1998. Despite these changes, Russian mortality in 1998 remained much higher than in the United States for many causes of death: 1.8 times higher for diseases of the heart, 6.0 times higher for stroke, about 3.5 times higher for suicide and homicide, and eight times higher for other alcohol-related causes. Russian mortality was lower than the U.S. level for pneumonia, influenza, and chronic obstructive pulmonary disease (COPD), and was approximately equal to the U.S. rate for malignant neoplasms.

The impact of these mortality changes can also be measured in terms of their contribution to the change in life expectancy, using the partitioning technique previously described. Table E provides the contribution of the mortality change in each age group to the change in life expectancy for men, women, and the total population. For men, the results show substantially the same pattern as the earlier information, based on mortality rates: The majority of the change in life expectancy took place in the age group 25–64 years (82 percent). For women, the largest part of the change in life expectancy was in the age interval 35 to 74 years (75 percent). The majority of the life-expectancy change took place in the active adult population for the following reasons: First, mortality declines in the younger age groups were relatively small and thus had little effect on life

**Table D. Age-adjusted death rates for selected causes of death, by sex: Russian Federation and United States, 1990–2000**

| Sex and cause of death[1] | Russia mortality rates | | | | Russia percent change | | | U.S. mortality rates | | | | Russia and U.S. ratio | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1994 | 1998 | 2000 | 1990–94 | 1994–98 | 1998–00 | 1990 | 1994 | 1998 | 1999[2] | 1990 | 1994 | 1998 |
| All causes | | | | | | | | | | | | | | |
| Total | 1,192.8 | 1,581.8 | 1,323.8 | 1,461.2 | 32.6 | –16.3 | 10.4 | 803.4 | 784.7 | 741.4 | 744.4 | 1.48 | 2.02 | 1.79 |
| Male | 1,688.5 | 2,290.8 | 1,847.1 | 2,075.6 | 35.7 | –19.4 | 12.4 | 1,035.3 | 996.4 | 909.8 | 905.9 | 1.63 | 2.30 | 2.03 |
| Female | 892.3 | 1,098.7 | 957.5 | 1,020.6 | 23.1 | –12.9 | 6.6 | 628.8 | 621.8 | 607.7 | 614.9 | 1.42 | 1.77 | 1.58 |
| Infectious diseases (001–139) | | | | | | | | | | | | | | |
| Total | 12.8 | 21.1 | 19.5 | 25.0 | 64.5 | –7.5 | 28.1 | 21.3 | 27.2 | 17.1 | 17.2 | 0.60 | 0.78 | 1.14 |
| Male | 22.0 | 36.9 | 34.5 | 44.2 | 67.6 | –6.5 | 28.1 | 31.7 | 40.7 | 21.7 | 21.6 | 0.69 | 0.91 | 1.59 |
| Female | 5.8 | 8.2 | 6.9 | 8.5 | 39.9 | –15.4 | 23.1 | 11.6 | 14.5 | 13.0 | 13.2 | 0.50 | 0.56 | 0.53 |
| Diseases of heart (390–398, 401–429) | | | | | | | | | | | | | | |
| Total | 367.9 | 477.9 | 390.8 | 445.7 | 29.9 | –18.2 | 14.0 | 262.5 | 243.6 | 220.5 | 219.0 | 1.40 | 1.96 | 1.77 |
| Male | 505.7 | 690.9 | 548.1 | 636.4 | 36.6 | –20.7 | 16.1 | 344.7 | 315.8 | 279.6 | 275.5 | 1.47 | 2.19 | 1.96 |
| Female | 286.5 | 342.5 | 288.9 | 318.3 | 19.5 | –15.6 | 10.2 | 200.6 | 188.0 | 173.2 | 173.4 | 1.43 | 1.82 | 1.67 |
| Cerebrovascular diseases (430–438) | | | | | | | | | | | | | | |
| Total | 245.6 | 297.0 | 278.3 | 297.4 | 20.9 | –6.3 | 6.9 | 50.7 | 48.8 | 46.1 | 44.8 | 4.84 | 6.08 | 6.04 |
| Male | 287.4 | 355.8 | 317.8 | 347.4 | 23.8 | –10.7 | 9.3 | 53.9 | 51.9 | 47.3 | 46.0 | 5.33 | 6.85 | 6.72 |
| Female | 224.4 | 262.9 | 251.7 | 263.7 | 17.2 | –4.3 | 4.8 | 48.0 | 46.1 | 44.4 | 43.3 | 4.68 | 5.70 | 5.67 |
| Malignant neoplasms (140–208) | | | | | | | | | | | | | | |
| Total | 201.5 | 204.5 | 192.4 | 192.4 | 1.5 | –5.9 | 0.0 | 200.0 | 196.0 | 185.0 | 183.6 | 1.01 | 1.04 | 1.04 |
| Male | 315.0 | 314.3 | 289.2 | 287.1 | –0.2 | –8.0 | –0.7 | 253.5 | 244.8 | 226.5 | 223.8 | 1.24 | 1.28 | 1.28 |
| Female | 140.6 | 141.8 | 136.7 | 137.3 | 0.9 | –3.6 | 0.5 | 164.2 | 163.0 | 155.8 | 154.9 | 0.86 | 0.87 | 0.88 |
| Malignant neoplasms of the respiratory system (160–165) | | | | | | | | | | | | | | |
| Total | 49.9 | 50.9 | 44.9 | 43.8 | 2.0 | –11.8 | –2.5 | 60.0 | 58.9 | 54.8 | 53.9 | 0.83 | 0.87 | 0.82 |
| Male | 116.2 | 115.9 | 101.6 | 98.8 | –0.3 | –12.4 | –2.7 | 90.4 | 84.5 | 74.6 | 72.9 | 1.29 | 1.37 | 1.36 |
| Female | 11.8 | 11.5 | 10.1 | 9.7 | –2.2 | –12.3 | –3.9 | 37.6 | 39.7 | 39.7 | 39.3 | 0.31 | 0.29 | 0.25 |
| Malignant neoplasms of the breast (174) | | | | | | | | | | | | | | |
| Female | 19.2 | 22.1 | 23.6 | 24.1 | 15.5 | 6.8 | 1.9 | 32.1 | 29.8 | 26.5 | 25.5 | 0.60 | 0.74 | 0.89 |
| Pneumonia and influenza (480–483, 485–487) | | | | | | | | | | | | | | |
| Total | 10.3 | 21.9 | 15.4 | 25.6 | 111.6 | –29.4 | 65.8 | 27.4 | 25.3 | 25.8 | 25.1 | 0.38 | 0.86 | 0.60 |
| Male | 15.7 | 37.1 | 25.4 | 43.6 | 137.0 | –31.6 | 71.7 | 35.7 | 32.5 | 31.6 | 29.9 | 0.44 | 1.14 | 0.80 |
| Female | 6.8 | 10.0 | 7.9 | 11.7 | 47.1 | –21.8 | 49.0 | 22.4 | 21.0 | 22.1 | 21.9 | 0.30 | 0.48 | 0.36 |
| Chronic obstructive pulmonary diseases (490–496) | | | | | | | | | | | | | | |
| Total | 35.7 | 41.3 | 30.3 | 36.4 | 15.8 | –26.7 | 20.1 | 31.8 | 34.3 | 35.1 | 36.4 | 1.12 | 1.20 | 0.86 |
| Male | 69.8 | 82.4 | 60.9 | 72.5 | 18.0 | –26.1 | 19.1 | 45.7 | 45.6 | 44.1 | 45.2 | 1.53 | 1.81 | 1.38 |
| Female | 20.8 | 21.0 | 15.2 | 16.9 | 0.8 | –27.4 | 10.9 | 23.3 | 27.4 | 29.4 | 30.6 | 0.90 | 0.77 | 0.52 |
| Chronic liver diseases and cirrhosis (571.0–571.3, 571.5, 571.6) | | | | | | | | | | | | | | |
| Total | 9.9 | 18.8 | 14.2 | 17.6 | 89.3 | –24.2 | 23.8 | 11.2 | 10.2 | 9.4 | 9.4 | 0.89 | 1.83 | 1.50 |
| Male | 15.0 | 27.1 | 20.6 | 24.6 | 80.5 | –23.9 | 19.5 | 15.9 | 14.6 | 13.4 | 13.4 | 0.94 | 1.85 | 1.53 |
| Female | 6.8 | 12.8 | 9.7 | 12.3 | 88.2 | –24.5 | 26.9 | 7.0 | 6.3 | 5.9 | 5.8 | 0.97 | 2.02 | 1.65 |
| Other alcohol-related causes (303,305.0,E860) | | | | | | | | | | | | | | |
| Total | 12.5 | 44.9 | 19.9 | 27.9 | 257.8 | –55.6 | 39.9 | 2.8 | 2.7 | 2.5 | 2.4 | 4.48 | 16.61 | 7.97 |
| Male | 21.5 | 74.2 | 33.5 | 46.3 | 245.2 | –54.9 | 38.3 | 4.7 | 4.5 | 4.1 | 4.1 | 4.57 | 16.48 | 8.16 |
| Female | 4.7 | 19.2 | 8.2 | 11.9 | 306.8 | –57.2 | 44.9 | 1.2 | 1.1 | 1.1 | 1.0 | 3.93 | 17.45 | 7.47 |
| Motor vehicle and other transport accidents (E800–E848) | | | | | | | | | | | | | | |
| Total | 29.0 | 27.8 | 22.2 | 25.8 | –4.3 | –20.3 | 16.4 | 19.3 | 17.0 | 16.6 | 16.9 | 1.50 | 1.63 | 1.33 |
| Male | 48.6 | 45.3 | 34.6 | 40.7 | –6.8 | –23.8 | 17.7 | 27.9 | 24.1 | 23.3 | 23.9 | 1.74 | 1.88 | 1.48 |
| Female | 11.7 | 12.1 | 10.9 | 12.3 | 3.1 | –9.4 | 12.6 | 11.2 | 10.4 | 10.4 | 10.3 | 1.04 | 1.16 | 1.05 |
| Suicide (E950–E959) | | | | | | | | | | | | | | |
| Total | 27.0 | 41.7 | 34.2 | 37.4 | 54.6 | –18.0 | 9.4 | 12.3 | 11.8 | 11.1 | 10.5 | 2.20 | 3.54 | 3.09 |
| Male | 47.5 | 76.4 | 62.2 | 69.0 | 60.8 | –18.5 | 10.9 | 20.7 | 19.9 | 18.6 | 17.7 | 2.29 | 3.83 | 3.35 |
| Female | 10.5 | 12.5 | 10.4 | 10.5 | 19.0 | –16.5 | 0.7 | 4.8 | 4.4 | 4.3 | 4.0 | 2.18 | 2.82 | 2.45 |
| Homicide and legal intervention (E960–E978) | | | | | | | | | | | | | | |
| Total | 14.1 | 31.4 | 21.9 | 26.9 | 122.5 | –30.1 | 22.6 | 9.5 | 9.3 | 6.7 | 6.3 | 1.49 | 3.37 | 3.29 |
| Male | 22.4 | 50.3 | 34.6 | 42.6 | 125.0 | –31.3 | 23.3 | 15.0 | 14.8 | 10.3 | 9.7 | 1.49 | 3.39 | 3.34 |
| Female | 6.4 | 13.9 | 10.3 | 12.6 | 117.0 | –26.3 | 22.9 | 4.0 | 3.8 | 3.0 | 2.9 | 1.60 | 3.64 | 3.38 |
| Other external causes (E850–E859, E861–E943) | | | | | | | | | | | | | | |
| Total | 53.9 | 107.4 | 86.0 | 95.8 | 99.1 | –19.9 | 11.4 | 17.2 | 17.4 | 18.0 | 17.1 | 3.14 | 6.18 | 4.77 |
| Male | 89.9 | 181.3 | 143.9 | 162.9 | 101.6 | –20.6 | 13.2 | 25.5 | 25.7 | 25.8 | 24.7 | 3.53 | 7.04 | 5.57 |
| Female | 22.8 | 43.5 | 35.5 | 37.2 | 90.7 | –18.4 | 4.9 | 9.9 | 10.0 | 11.0 | 17.6 | 2.31 | 4.35 | 3.22 |

0.0 Quantity more than zero but less than 0.05.

[1]Cause of death codes are from the *International Classification of Diseases, Ninth Revision.*

[2]Rates were modified with the comparability ratios developed in the comparability study between ICD–9 and ICD–10 carried out by the National Center for Health Statistics and reported in the Technical Notes, Deaths, Final Data for 1999. National vital statistics reports; vol 49, no 8. Hyattsville, Maryland: NCHS, 2001.

NOTE: Age adjusted using as standard population the European standard 100,000 population prepared by the World Health Organization (see Appendix).

SOURCES: Russian Federation: Goskomstat; United States: Centers for Disease Control and Prevention, National Center for Health Statistics, Division of Vital Statistics.

**Table E. Contribution of change in mortality from each age group to the change in life expectancy, Russia, 1994–98 and 1998–2000**

| Age | Both sexes | | Males | | Females | |
|---|---|---|---|---|---|---|
| | Years | Percent | Years | Percent | Years | Percent |
| | | | 1994–1998 | | | |
| Total | 3.14 | 1.00 | 3.71 | 1.00 | 2.03 | 1.00 |
| 0 | 0.13 | 0.04 | 0.14 | 0.04 | 0.11 | 0.05 |
| 1–4 years | 0.03 | 0.01 | 0.03 | 0.01 | 0.04 | 0.02 |
| 5–14 years | 0.03 | 0.01 | 0.04 | 0.01 | 0.02 | 0.01 |
| 15–24 years | 0.03 | 0.01 | 0.04 | 0.01 | 0.00 | 0.00 |
| 25–34 years | 0.28 | 0.09 | 0.42 | 0.11 | 0.08 | 0.04 |
| 35–44 years | 0.69 | 0.22 | 0.90 | 0.24 | 0.33 | 0.16 |
| 45–54 years | 0.90 | 0.29 | 1.09 | 0.29 | 0.52 | 0.25 |
| 55–64 years | 0.64 | 0.20 | 0.67 | 0.18 | 0.45 | 0.22 |
| 65–74 years | 0.19 | 0.06 | 0.21 | 0.06 | 0.24 | 0.12 |
| 75–84 years | 0.15 | 0.05 | 0.12 | 0.03 | 0.18 | 0.09 |
| 85 years and over | 0.06 | 0.02 | 0.04 | 0.01 | 0.08 | 0.04 |
| | | | 1998–2000 | | | |
| Total | –1.79 | 1.00 | –2.26 | 1.00 | –0.92 | 1.00 |
| 0 | 0.07 | –0.04 | 0.07 | –0.03 | 0.06 | –0.06 |
| 1–4 years | –0.01 | 0.01 | –0.01 | 0.00 | –0.01 | 0.01 |
| 5–14 years | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | –0.01 |
| 15–24 years | –0.15 | 0.08 | –0.23 | 0.10 | –0.04 | 0.04 |
| 25–34 years | –0.27 | 0.15 | –0.37 | 0.17 | –0.10 | 0.11 |
| 35–44 years | 0.33 | 0.18 | –0.43 | 0.19 | –0.15 | 0.16 |
| 45–54 years | –0.44 | 0.25 | –0.56 | 0.25 | –0.23 | 0.25 |
| 55–64 years | –0.38 | 0.21 | –0.46 | 0.20 | –0.23 | 0.25 |
| 65–74 years | –0.20 | 0.11 | –0.21 | 0.09 | –0.13 | 0.14 |
| 75–84 years | –0.04 | 0.02 | –0.04 | 0.02 | –0.05 | 0.05 |
| 85 years and over | –0.03 | 0.02 | –0.01 | 0.00 | –0.05 | 0.05 |

0.0 Quantity more than zero but less than 0.05.

**Table F. Contribution of change in mortality from each cause of death to the change in life expectancy, Russia, 1994–98 and 1998–2000**

| Cause | Both sexes | | Males | | Females | |
|---|---|---|---|---|---|---|
| | Years | Percent | Years | Percent | Years | Percent |
| | | | 1994–1998 | | | |
| All causes | 3.14 | 100.0 | 3.71 | 100.0 | 2.03 | 100.0 |
| Infectious diseases | 0.02 | 0.7 | 0.03 | 0.9 | –0.02 | –0.9 |
| Diseases of the heart | 0.87 | 27.9 | 0.97 | 26.1 | 0.69 | 33.8 |
| Cerebrovascular diseases | 0.18 | 5.6 | 0.19 | 5.1 | 0.17 | 8.2 |
| Malignant neoplasms | 0.14 | 4.6 | 0.18 | 5.0 | 0.08 | 3.7 |
| Pneumonia and influenza | 0.10 | 3.3 | 0.14 | 3.8 | 0.06 | 2.9 |
| Chronic obstructive pulmonary diseases | 0.09 | 3.0 | 0.11 | 3.0 | 0.09 | 4.2 |
| Chronic liver disease and cirrhosis | 0.06 | 1.9 | 0.06 | 1.6 | 0.04 | 2.1 |
| Other alcohol-related causes | 0.39 | 12.5 | 0.47 | 12.7 | 0.24 | 11.6 |
| Motor vehicle and other transport accidents | 0.11 | 3.5 | 0.12 | 3.1 | –0.03 | –1.7 |
| Other external causes | 0.35 | 11.1 | 0.51 | 13.9 | –0.19 | –9.5 |
| Suicide | 0.12 | 3.9 | 0.20 | 5.3 | 0.05 | 2.7 |
| Homicide | 0.18 | 5.6 | 0.17 | 4.5 | 0.08 | 3.8 |
| Remainder | 0.52 | 16.5 | 0.56 | 15.1 | 0.79 | 39.0 |
| | | | 1998–2000 | | | |
| All causes | –1.79 | 100.0 | –2.26 | 100.0 | –0.92 | 100.0 |
| Infectious diseases | –0.09 | 5.3 | –0.13 | 5.7 | –0.04 | 3.8 |
| Diseases of the heart | –0.59 | 33.1 | –0.68 | 30.0 | –0.40 | 43.0 |
| Cerebrovascular diseases | –0.17 | 9.6 | –0.18 | 8.0 | –0.14 | 14.8 |
| Malignant neoplasms | 0.01 | –0.6 | 0.02 | –1.0 | 0.00 | –0.1 |
| Pneumonia and influenza | –0.13 | 7.3 | –0.17 | 7.5 | –0.06 | 6.4 |
| Chronic obstructive pulmonary diseases | –0.05 | 3.0 | –0.08 | 3.3 | –0.02 | 1.6 |
| Chronic liver disease and cirrhosis | –0.05 | 2.9 | –0.05 | 2.3 | –0.05 | 5.2 |
| Other alcohol-related causes | –0.13 | 7.2 | –0.16 | 7.1 | –0.07 | 7.6 |
| Motor vehicle and other transport accidents | –0.07 | 3.8 | –0.09 | 4.1 | –0.03 | 3.2 |
| Other external causes | –0.18 | 10.2 | –0.28 | 12.4 | –0.03 | 3.2 |
| Suicide | –0.07 | 3.7 | –0.10 | 4.6 | –0.01 | 0.9 |
| Homicide | –0.09 | 4.8 | –0.10 | 4.6 | –0.05 | 5.9 |
| Remainder | –0.18 | 9.9 | –0.26 | 11.4 | –0.04 | 4.3 |

0.0 Quantity more than zero but less than 0.05.

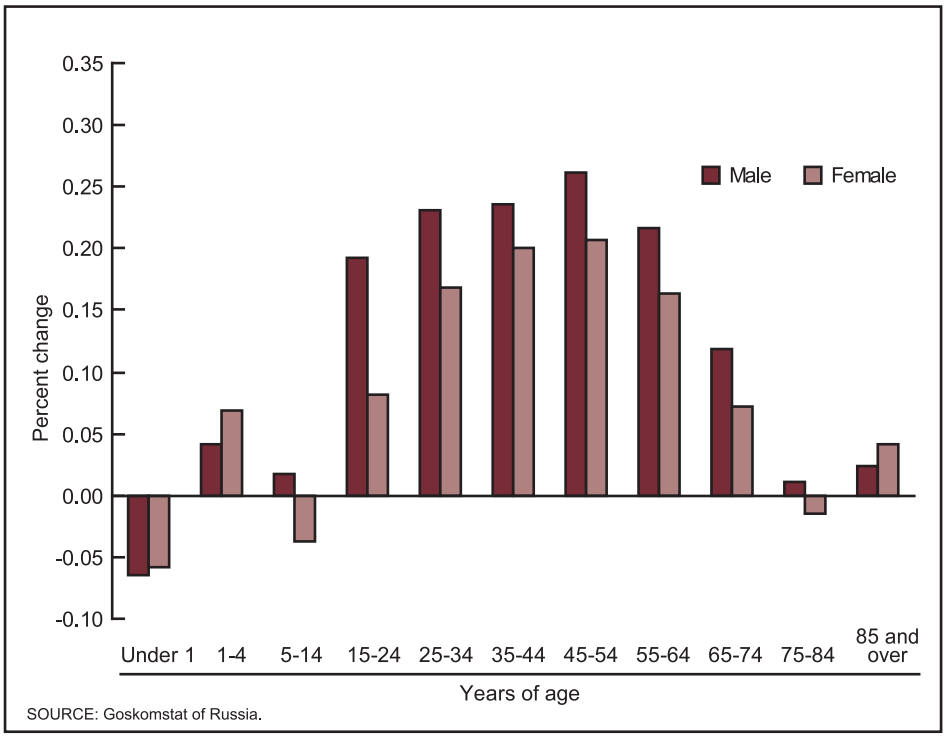


**Figure 3. Change in all-cause mortality rates by age and sex, Russian Federation 1998–2000**

expectancy; second, there was a major decline in mortality in the middle-age groups; and third, mortality declines in the elderly had only a small effect on life expectancy, as explained earlier.

In table F, the same approach was applied to measure the contribution of each cause of death to the change in life expectancy. The largest single contributor was diseases of the heart; combining this cause with cerebrovascular diseases accounted for about one-third of the change between 1994 and 1998. The other major contributor to the improvement in life expectancy was external causes of death (transport, other external causes, suicides, and homicides). Reductions in deaths due to these unintentional and intentional injuries accounted for nearly one-quarter of the total change. Combining the external causes of death with other alcohol-related causes accounted for 37 percent of the rise in life expectancy. For men, the contribution of cardiovascular diseases was smaller than for women (31 versus 42 percent). Cancer and pneumonia were larger contributors to the change in life expectancy for men than for women. Although female mortality due to other external causes declined during the interval, an increase in female deaths at young ages (15–29 years) resulted in a net reduction in life expectancy due to this cause. A similar pattern in transport-accident deaths also reduced female life expectancy. These changes, along with small increases in female mortality due to breast cancer and infectious diseases offset some of the gains in female life expectancy from the other cause-of-death categories.

In summary, mortality from most causes of death declined over the 1994–98 interval, substantially reducing the very high death rate of 1994. Even with these declines, however, most cause-specific death rates in 1998 were substantially greater than in 1990, with the exception of malignant neoplasms, COPD, and transport accidents. In terms of life expectancy at birth, male life expectancy remained 2.5 years below the 1990 level, and female life expectancy was 1.2 years below the 1990 figure.

## Trends from 1998 to 2000

Another economic crisis began in mid-1998. The economic collapse led to a sharp increase in inflation and rising unemployment (table C). The rate of inflation gradually declined in late 1999 and 2000, and positive economic growth returned. The combination of inflation and unemployment, however, led to growing economic inequality and an increase (to 34 percent) in the proportion of the population below the poverty level.

In the period following the onset of the economic crisis, the gains of 1995–98 began to unravel. In 1999, there was a sharp rise in the number of deaths and a decline in the number of births (table B). In 2000, however, the mortality increase was only half the increase of the previous year, and the number of births rose substantially. Nevertheless, between 1998 and 2000, the age-adjusted mortality rate due to all causes rose by 10 percent, with the male rate increasing by 12 percent and the female rate by 7 percent (table A). Life expectancy declined by 1.9 years, to 65.3 years. Male life expectancy fell 2.3 years, to 59.0 years, while life expectancy for women dropped 1.0 years, to 72.2 years. For both men and women, life expectancy fell below the level recorded in 1996. As with the rise in the number of deaths, the bulk of the decline in life expectancy occurred in 1999.

From 1998 to 2000, all-cause mortality rates rose substantially for the age groups 15–74 years, while rates for most of the other age groups remained stable or were only slightly increased (figure 3). A major exception was the infant death rate, which fell by more than 6 percent. Unlike the 1994–98 interval, mortality rates for the 15–24 year age group changed (increased) substantially for both men and women.

The mortality increase from 1998 to 2000 was reflected in all of the selected causes of death, with the exception of malignant neoplasms (unchanged from 1998). The largest relative increases were in pneumonia and influenza (66 percent), other alcohol-related causes (40 percent), infectious diseases (28 percent), chronic liver disease and cirrhosis (24 percent), and homicides (23 percent). The majority of the increase took place in 1999, with substantially lower rates of increase for most causes of death in 2000. For example, in 2000 the age-adjusted death

rate for cancer and for suicide declined by 1 percent, the infectious disease death rate rose by only 1 percent, and the death rates for cerebrovascular diseases and for transport accidents rose by 3 percent. The major exceptions to this trend were the two alcohol-related causes of death: The death rate for chronic liver disease and cirrhosis rose by 14 percent in 2000 (versus 8 percent in 1999), and the death rate for other alcohol-related causes rose by 24 percent in 2000 (compared with 13 percent in 1999).

The pattern of mortality change by age group was somewhat different when using the life-expectancy approach. For men and women, the 15–74 year age interval was the largest contributor to the fall in life expectancy, but for women, the age groups 75–84 and 85 years and over also made substantial contributions to the decline in life expectancy. For both sexes combined, all age groups contributed to the fall in life expectancy, with the exception of infants and those aged 5–14 years.

Applying the life-expectancy analysis to cause-specific mortality also produced somewhat different results than those reported above. Infectious disease mortality rose sharply in 1999 and 2000, largely because of a significant increase in tuberculosis mortality, and accounted for 6 percent of the fall in life expectancy. Diseases of the heart and cerebrovascular diseases remained the leading contributors, but their contribution—more than 43 percent of the total decline in life expectancy—was greater than their contribution to change in 1994–98. Conversely, the impact of changes in mortality due to external causes and alcohol-related causes was smaller than in the earlier period: These cause groups accounted for more than 30 percent of the fall in life expectancy in 1998–2000, compared with 36 percent of the change in the earlier period.

Cause-specific contributions to the change in life expectancy were somewhat different for men than for women. The contribution of infectious diseases was substantially larger for men than for women, and the same was true for suicide and other injuries. However, the contribution of cardiovascular disease was much larger for women than for men, 57 versus 38 percent.

# Discussion

Mortality trends in Russia have exhibited three distinct patterns in the 1990s, rising sharply from 1990 to 1994, declining to a lesser extent through 1998, and turning upward again in 1999–2000. Although the mortality increase in 2000 was substantially smaller than in 1999, it is uncertain when, or to what extent, Russian mortality rates will decline. In sum, the difficult era of adjustment following the breakup of the Soviet Union continues.

Although many factors are contributing to the persistently high mortality of the 1990s, data-quality issues cannot account for these trends. First, it would be difficult to identify data-quality issues that could lead to a one-third increase in mortality in the first half of the decade, followed by a 16-percent decline through 1998, and then another 10-percent increase by 2000. Second, data-quality problems in the area of vital statistics typically lead to understatement of vital rates, not overstatement. Several studies have examined data quality issues and concluded that these problems cannot account for the mortality increase of the early 1990s (1,5).

The sharp swings in mortality over the decade, and the scale of these changes, indicate some fundamental and far-reaching problems affecting the state of health in Russia. We consider several factors that may have contributed separately or jointly to recent mortality trends.

## Economy

Economic conditions can affect health status in a variety of ways, creating a cascade of events that can lead to improvement or deterioration in health. Hyperinflation, wage reductions, and unemployment pushed many middle- class Russians below the poverty level during the 1990s. Declines in living standards were especially dramatic for retirees, whose pensions failed to keep pace with rapid price increases (11). The economic turmoil and rise in poverty that characterized, in particular, the first half of the decade and the end of the decade led to a profound deterioration of the health care system, an inability to obtain necessary medication, increasing nutritional deficiencies, and a sharp rise in stress and depression (4,12,13). The accompanying decline in governmental and social controls may have played a key role in the rise of homicides and suicides in Russia, along with the sharp increase in per capita alcohol consumption. The economy clearly is not the only factor accounting for these problems, but it is an important part of the story. In addition, many of these problems tend to reinforce each other through a negative feedback loop.

It should also be noted that economic conditions are far from uniform across Russia. One change that has taken place during the 1990s is the growing concentration of wealth in Moscow (10). The relative prosperity of Moscow and the stability of the city's health care system are in marked contrast to other Russian cities, and the disparity is even greater in comparison to rural areas. A similar differential exists for mortality: All-cause mortality rates were nearly equal for urban Russia, rural Russia, and Moscow from 1990 to 1995, but by 2000 the Russian urban death rate was 16 percent above the Moscow rate, and Russian rural mortality was 20 percent higher than the Moscow rate.

## Alcohol

The role of alcohol in the health trends of the 1990s has been emphasized in virtually every study of Russian health during the decade (5,14–16). The direct impact of alcohol consumption on health is reflected in the rise of mortality due to alcohol poisoning and indirectly in the increasing levels of homicides, suicides, and deaths due to other injuries such as occupational injuries and drowning. Chronic alcoholism also plays a role in certain chronic diseases such as stroke. Binge drinking has been proposed as an explanation for much of the rise in heart

disease deaths, although this has yet to be confirmed (14). The sharp swings in mortality due to alcohol-related causes are noteworthy for their size and their rough correspondence with economic trends.

## Tobacco

The prevalence of smoking in Russian adults has historically been high and was about 60 percent for men and 10 percent for women at the beginning of the 1990s (1). Based on survey information for Russia, smoking prevalence has increased for adult men and women over the decade of the 1990s (17). By 2000 the adult male smoking rate had increased slightly, from 60.0 percent in 1992 to 63.5 percent, while the female rate had nearly doubled, from 7.3 to 14.2 percent. However, smoking rates increased gradually over the decade and were not consistent with the large and rapid swings in mortality. Tobacco consumption in Russia thus is an important risk factor associated with the historically high levels of mortality from heart disease and other leading causes of death but does not explain the mortality trends of the 1990s.

## Nutrition

Numerous studies have noted a variety of problems with the Russian diet, particularly the very high level of fat consumption and inadequate quantities of fresh fruits and vegetables (12, 18,19). These are historic problems, however, that predate the problems of the 1990s. Recent declines in per capita income have reduced the consumption of certain foodstuffs, such as meat and fresh fruits and vegetables (20). Declining living standards also may have led to a reduction in fat consumption, but the net effect on nutritional status is clearly negative.

## Stress and Depression

The effect of stress and depression on Russian health status was readily apparent in the very high suicide level of the early 1990s. The Russian death rate due to suicide was 3.5 times the U.S. rate in 1994. Less well known was that, within Russia, the rural suicide rate was more than 50 percent greater than the urban rate, reflecting the more difficult economic situation and hopelessness of rural Russia. This differential remained roughly the same at the end of the decade. Rising levels of stress, depression, and hopelessness may explain in part the rise in alcohol consumption in Russia, with alcohol and depression tending to reinforce each other.

Stress and depression also can play an important role in the development of chronic diseases and are frequently cited by Russian health experts as factors in the mortality rise of the 1990s. Research in the United States and Western Europe is beginning to explain the mechanisms by which stress and depression can lead to cardiovascular disease (21–23). Similar factors no doubt also account for part of the recent rise in cardiovascular mortality in Russia.

## Health Care System

Government spending on the Russian health care system declined drastically over the 1990s (12, 24). The decreasing health budget translates into inadequate supplies and equipment, insufficient staff, and in some cases, to the elimination of hospitals and clinics. The net effect is a decline in the level of care provided, which undoubtedly has contributed to the rise in mortality. At the same time, Russia continues to maintain excess capacity in hospitals and beds, and the system would benefit from some reductions. Nevertheless, the reductions in hospitals and beds that have taken place to date have been primarily in rural areas. Overall, the deterioration of the health care system has disproportionately affected the rural areas of Russia (24).

## Principal Contributors to the Change in Life Expectancy

Just as in the 1990–94 period, two major categories of causes of death accounted for the majority of the rise in life expectancy in 1994–98 and the renewed decline in 1999–2000: cardiovascular diseases and external causes of death. The fact that the same causes of death can account for both major increases and decreases in life expectancy implies there are external factors underlying these rapid swings in mortality.

### External Causes of Death

With the exception of transport deaths, external-cause mortality in Russia remains extremely high in comparison to other industrialized countries. The seesaw trends in mortality due to external causes are no doubt the result of many factors, but alcohol consumption and changes in the level of governmental and social controls are, in all likelihood, major contributors to the trends in deaths due to homicides, suicides, and most unintentional injuries.

Deaths due to transport accidents have not consistently followed the trend for all external-cause deaths, for reasons that are not clear. Despite the apparent rapid rise in alcohol consumption in 1990–94, and the accompanying dramatic increase in all external-cause deaths, the mortality rate due to transport accidents declined. The reduction in transport mortality may have been due to a general decrease in driving during the interval, the result of the economic crisis. In the 1994–98 period, transport deaths and all external-cause deaths jointly declined, even though the improved economic conditions arguably led to increased driving, which could have raised the number of transport deaths. In this case the impact of decreased alcohol consumption—as reflected in a decrease in alcohol-related deaths—may have had the stronger influence on transport mortality. In the 1998–2000 period, the rise in alcohol-related deaths, which coincided with the economic downturn in Russia, again may have been the most important influence on transport mortality, even though economic problems may well have resulted in decreased driving.

### Cardiovascular Diseases

The wide swings in cardiovascular mortality during the 1990s are also difficult to explain. Similar trends in alcohol consumption (as implied by the rise in alcohol-related deaths), the availability of pharmaceuticals, and stress and depression imply that these factors may have played a role in cardiovascular disease trends, but the importance of these factors is unclear. Some of the fluctuations in cardiovascular deaths may have been due to a tendency of Russian physicians to overdiagnose cardiovascular disease as a cause of death (25). The historically high levels of heart disease in Russia are consistent with risk-factor levels in existence before 1990, including high consumption of alcohol and tobacco, poor diet and insufficient physical activity, along with deficient control of hypertension (25,26).

### Malignant Neoplasms

The mortality rate due to malignant neoplasms stands out because the rate changed very little in Russia in the 1990s. Despite wide swings in death rates for almost every major cause of death, the cancer death rate rose only slightly in the first half of the decade and decreased by about 6 percent between 1994 and 2000. Such a pattern makes sense, as one would not expect rapid changes in cancer death rates in response to recent changes in risk factors; instead, any increases in the cancer mortality rate may not be evident for one or two decades into the future. The declines in cancer mortality in the 1990s may well be the result of premature deaths of middle-aged Russians due to other causes, eliminating a substantial number of people who would otherwise be at risk of developing cancer. The one exception to the overall trend was the continuous rise in breast cancer over the 1990s.

### Infectious Diseases

Through most of the decade, infectious diseases were not a major factor in mortality trends. However, by 2000 the impact of infectious-disease deaths had grown substantially, accounting for 5 percent of the decline in life expectancy in 1999 and 2000. The increasing role of infectious diseases is largely the result of rapid growth in tuberculosis cases, and particularly of multidrug-resistant tuberculosis. Based on reported cause-of-death data, the level of human immunodeficiency virus (HIV)AIDS) mortality remains small, although the number of deaths due to HIV doubled between 1999 and 2000. Given the rapid growth of HIV-positive cases in recent years, the death rate due to HIV is certain to accelerate sharply in the near future.

## Conclusion

The decade of the 1990s included three distinct trends in life expectancy: a rapid decline through 1994, substantial improvement from 1995 to 1998, and a renewed decline in 1999–2000. In each of these intervals, the young and middle-aged population (25–64 years) was the most affected; cardiovascular diseases and external causes of death were the main contributors to these trends. Yet the scale of these mortality trends, and the frequency with which they were reversed, indicate that external factors likely played an important role. Such factors include economic and social conditions, excess alcohol consumption and other poor personal health behaviors, and an inadequate health care system.

It remains to be seen what the mortality trends of the second decade of the Russian Federation will be. Improving life expectancy will require social stability, economic growth without hyperinflation, and improvements in the health care system. Public health efforts to address alcohol consumption and other risk factors, along with programs to reverse the spread of infectious diseases, such as tuberculosis and HIV/AIDS, will be essential to improve health status in Russia.

Mortality data for 2001 show a continued decline in life expectancy, although the downward trend slowed considerably from 1999–2000, and may be nearly at an end. Economic growth in recent years may be a factor in the leveling off of life expectancy, along with other improvements. Continued economic growth may contribute to future increases in life expectancy, particularly if the economic improvements spread beyond Moscow and other major cities.

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# Vital and Health Statistics: Russian Federation and United States

# Highlights

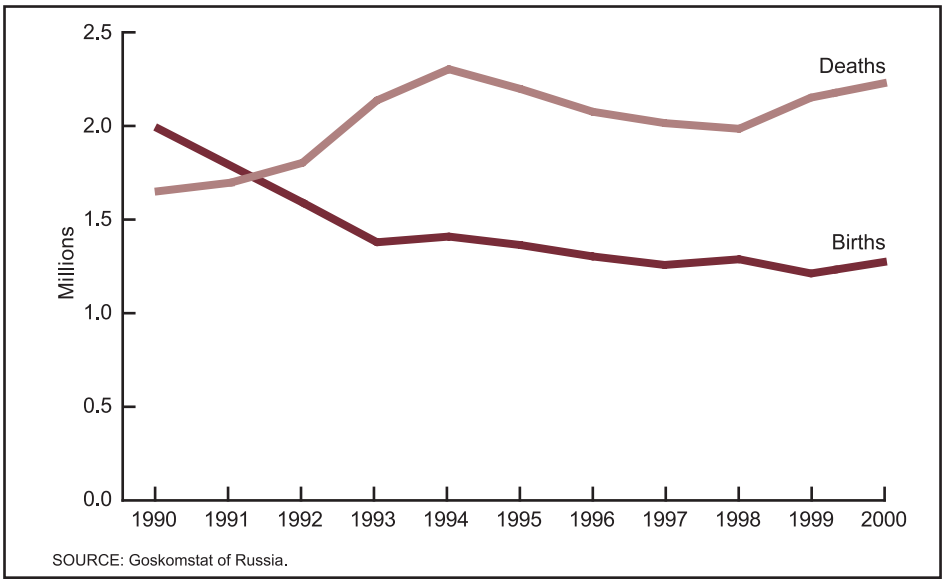


**Figure 4a. Live births and deaths, Russian Federation 1990–2000**

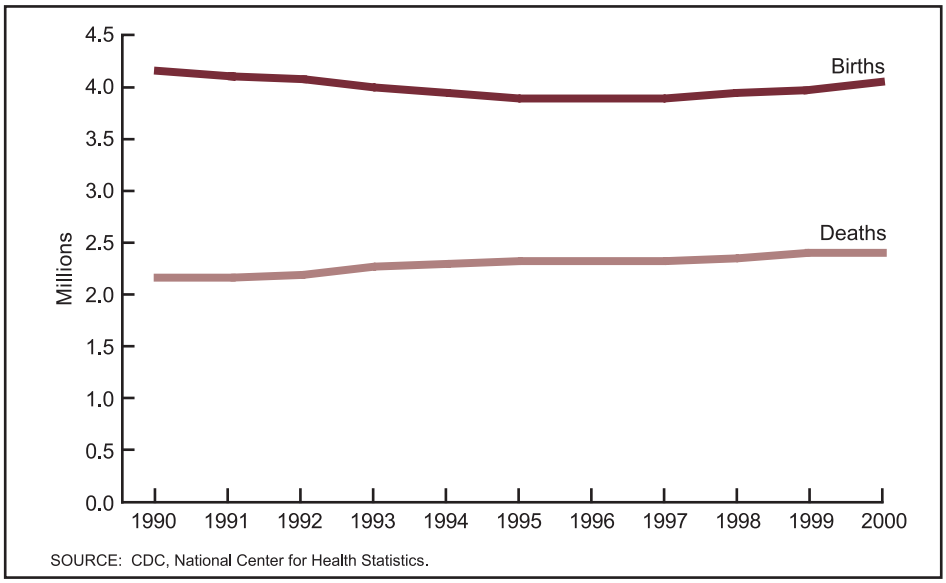


**Figure 4b. Live births and deaths, United States 1990–2000**

## Population

### Russian Federation

- The total population reached its highest level, 148.3 million, in 1992 and declined thereafter. The total population in 2000 was 145.2 million.
- Between 1990 and 2000, the population under 5 years of age experienced the greatest reduction in size, declining by 45 percent to 6.4 million.
- The age group that increased the most was the population 65 years of age or over, which grew by 23 percent between 1990 and 2000.
- The annual number of deaths exceeded the annual number of live births in every year since 1992. This population deficit reached almost 900,000 in 1994 and was about 960,000 in 2000. The impact on total population growth was moderated by the return migration of ethnic Russians from other parts of the former Soviet Union to the Russian Federation during the 1990s.

### United States

- The population grew by about 9.6 percent between 1990 and 2000, to an estimated level of 275.3 million.
- The population under age 5 years grew by only 1.3 percent between 1990 and 2000, reflecting the gradual decline in birth rates during the 1990s.
- The elderly population grew rapidly, with the population aged 65 years and over increasing by nearly 10.6 percent between 1990 and 2000. The age group that increased the most during this period was the population age 85 years and over, which grew by nearly one-third. Growth of the elderly population will continue in the future, as the age group 45–64 years grew by 25 percent during the same interval.
- The excess of live births over deaths has moderated slightly since the recent peak of 2.0 million in 1990, but this surplus was still 1.7 million in 2000.

# Characteristics of Live Births

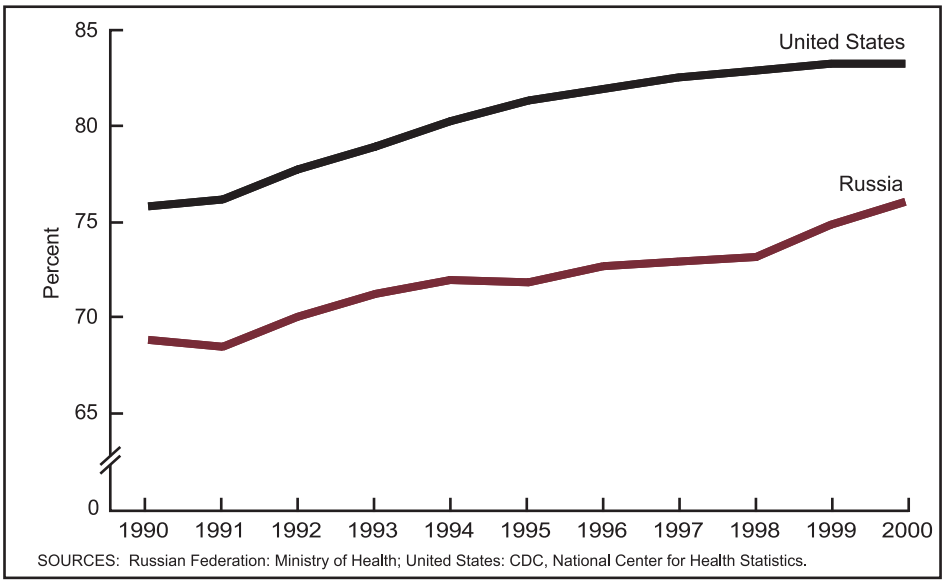


**Figure 5. Percent of women receiving prenatal care in first trimester: Russian Federation and United States, 1990–2000**

### Russian Federation

- The major factor behind the population decrease has been the reduction in the annual number of births, not the rise in deaths. Since 1990 the birth rate, or the number of live births per 1,000 population, has declined by 35 percent, while the annual number of births has declined by nearly 725,000. The fertility rate, defined as the number of births per 1,000 women 15–44 years of age has decreased by 37 percent.
- In 1990 the Russian birth rate was 20 percent lower than the U.S. rate. Because of the much larger decline in Russian fertility during the 1990s, by 2000 the birth rate was 43 percent below the U.S. rate.
- The proportion of births to unmarried women has increased substantially, from 14.6 percent in 1990 to 28 percent in 2000.
- As fertility has declined, more health resources are being devoted to insuring the survival of newborns. For example, the adequacy of prenatal care gradually improved during the 1990s, with the proportion of women initiating prenatal care in the first trimester increasing to nearly 76 percent in 2000.

### United States

- From 1990 to 1997, the annual number of live births declined slowly, dropping to 3.9 million in 1997. The number of live births increased in the following 2 years, exceeding 4 million births in 2000.
- After rising rapidly through the 1980s and early 1990s, the proportion of live births to unmarried women leveled off in the middle of the decade. However, in 1998 this proportion began to rise again, reaching 33.2 percent in 2000.
- The proportion of women initiating prenatal care in the first trimester of pregnancy has risen slowly but consistently since 1990. By 2000, women reported that their first prenatal visit took place in the first trimester for 83 percent of live births.

# Abortion

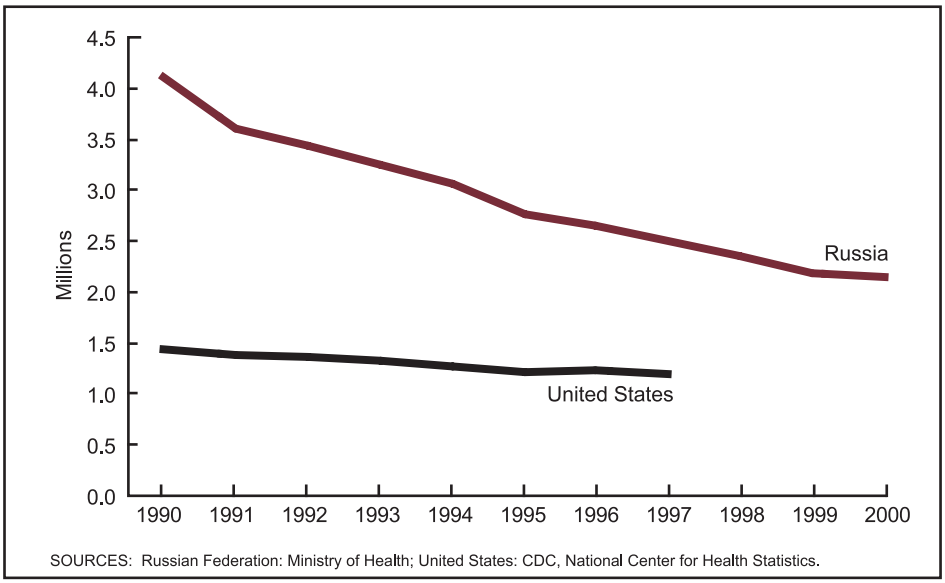


**Figure 6. Number of abortions, Russian Federation and United States, 1990–2000**

### Russian Federation

- The level of abortions declined sharply in the 1990s: The rate of abortions per 1,000 women of childbearing age dropped by 52 percent from 1990 to 2000.
- The ratio of abortions per 100 live births and stillbirths fell much more slowly than the number of abortions, declining by only 18 percent during the 1990s. The slower rate of decline was due to the rapid decrease in the number of live births during the decade. The 2000 ratio of 168.7 was 28 percent below the peak rate of 235, recorded in 1993.
- The increased availability of contraceptives in Russia was certainly part of the explanation for the declining number of abortions. Another possible factor was the rising level of divorces. Some of the decline in abortions, however, may be due to the increasing use of private providers for abortion services.
- In 1990 the Russian abortion ratio was six times the U.S. ratio. Despite a decrease in the Russian abortion ratio after 1993, the Russian figure was 6.6 times the U.S. ratio in 1997. The Russian abortion ratio dropped substantially after 1997, but this may only return the Russia-U.S. differential to the 1990 level.

### United States

- The number of abortions declined by 15 percent from 1990 to 1997. In 1998, reports were not received from 4 of the 52 reporting areas. Based on trend data from the 48 areas that reported in 1998, the number of abortions declined by about 2 percent from 1997 to 1998.
- The ratio of abortions per 100 live births declined by 12 percent from 1990 to 1997, to 30.5. The decline was continuous throughout the 1990s, with the exception of a small increase in 1996. Using trend data from the 48 reporting areas, the abortion ratio declined by about 4 percent from 1997 to 1998.
- The rate of abortions per 1,000 women of childbearing age declined by 21 percent from 1990 to 1997.
- The largest declines in the U.S. abortion ratio from 1990 to 1998 were for teenagers and women age 30 years and over.

# Life Expectancy

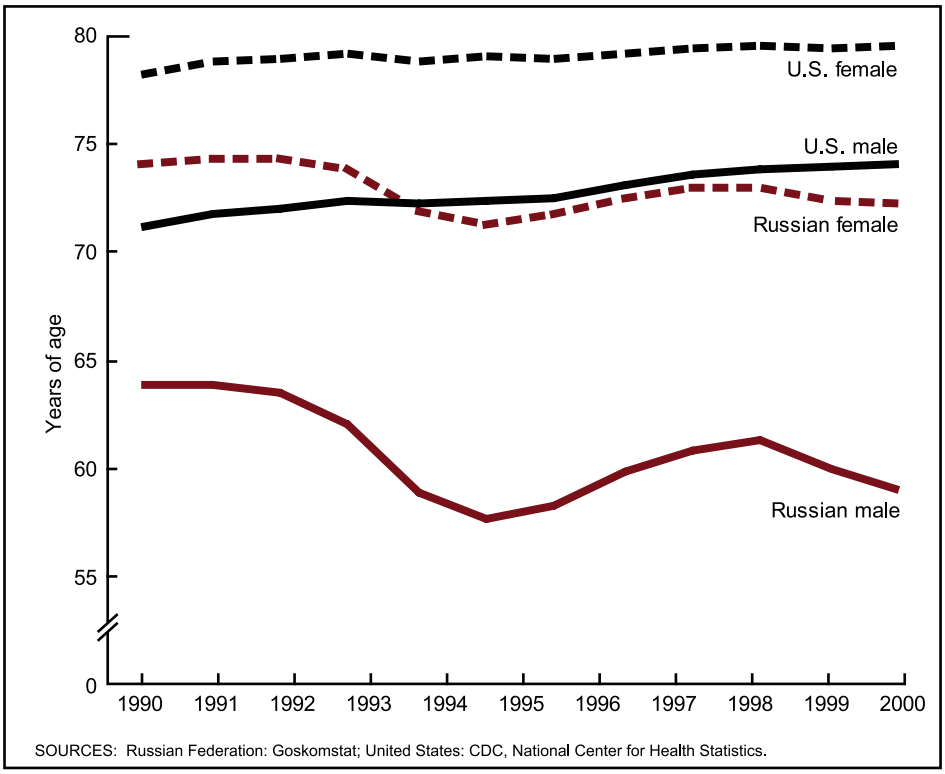


**Figure 7. Life expectancy at birth, Russian Federation and United States, 1990–2000**

### Russian Federation

- Life expectancy declined dramatically in the early 1990s. From 1990 to 1994, overall life expectancy fell by more than 5 years, to 64.0 years. The decline in male life expectancy was even more striking, falling by more than 6 years to 57.6 years in 1994.
- Following 1994, life expectancy rose rapidly through 1998 but declined again in 1999 and 2000. By 1998 overall life expectancy had regained 3 of the 5 years lost earlier in the decade. Male life expectancy rose by nearly 4 years, while female life expectancy increased by almost 2 years. The decline in life expectancy after 1998 affected both men and women, resulting in a 1.7-year decrease in overall life expectancy to 65.3 years, or 3.9 years less than in 1990.
- The gap between male and female life expectancy in Russia is the largest of all industrialized countries. This difference grew to 13.6 years in 1994 but declined through 1998. However, the gap grew to 13.2 years in 2000.

### United States

- Although there were some small declines in life expectancy in the early 1990s, the general trend in the United States has been regular increases in life expectancy. By 2000 this measure was 1.5 years higher than in 1990.
- Annual changes in life expectancy are much smaller in the United States than in Russia. Typical annual U.S. changes are in the 0.2–0.3-year range, with the largest change being 0.6 years for men in 1996. Annual changes in Russia have been much larger, particularly for men, with year-to-year increases or decreases of 1 year or more.
- Although life expectancy is higher in the United States than in Russia, particularly for men, the U.S. figures are lower than in many other industrialized countries. International life expectancy figures from the 1990s rank U.S. men and U.S. women 19th among industrialized counties.

# Infant Mortality

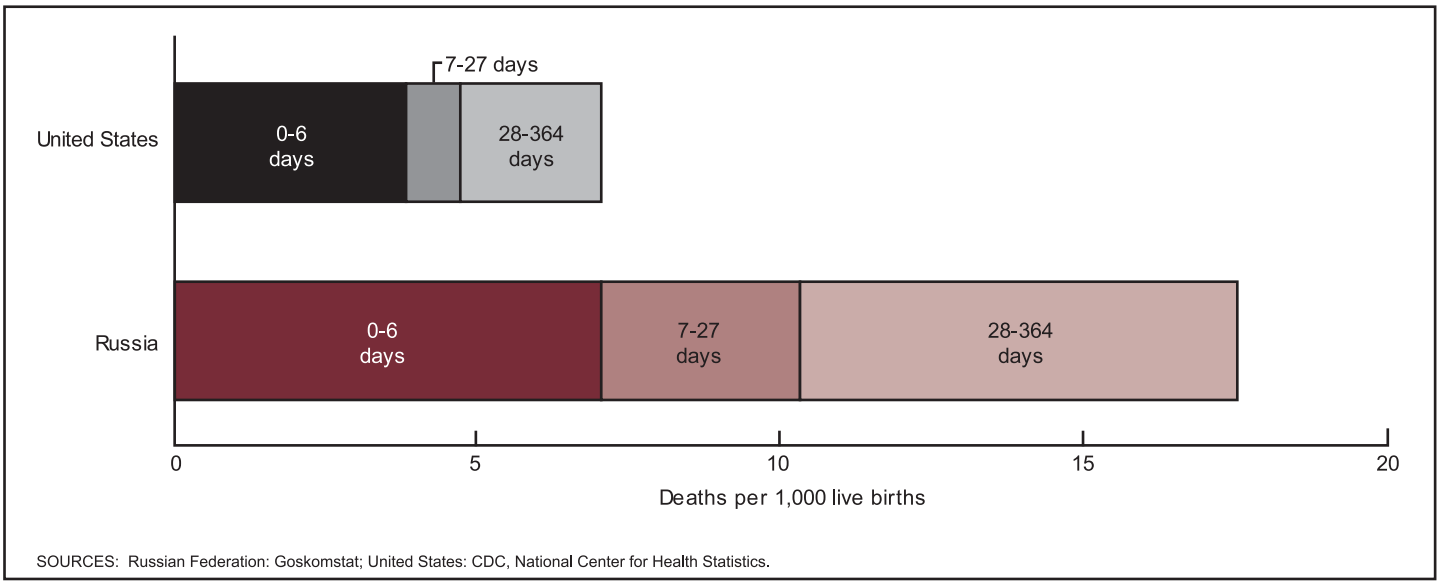


**Figure 8. Infant mortality by age at death, Russian Federation and United States, 1999**

### Russian Federation

- During the 1990s, the infant mortality rate peaked at 19.9 in 1993 and declined continuously through 1998. Infant mortality rose slightly in 1999, to 16.9, but fell substantially in 2000, to 15.3. However, infant mortality remains seriously understated because of the Russian practice of not reporting infant deaths during the first week of life for very preterm or very low birthweight infants.
- The 1993–2000 decline was roughly the same for both neonatal and postneonatal mortality: Both rates declined by about 23 percent over the interval.
- Official infant mortality rates are not calculated according to the international formula. The international formula divides the number of infant deaths in a year by the number of live births in the same year. The official Russian formula uses a denominator that combines one-third of live births in the previous year with two-thirds of live births in the current year.

### United States

- Since 1990, the infant mortality rate has fallen by 25 percent, to 6.9 in 2000. Most of the improvement took place in the early 1990s, and there has been little change since 1996.
- The neonatal mortality rate declined by 21 percent from 1990 to 2000, while postneonatal mortality fell by 32 percent. The neonatal mortality decline was due in part to the introduction of surfactants, which led to declines in neonatal mortality from respiratory distress syndrome in the late 1980s and early 1990s. The declines in postneonatal mortality have taken place throughout the 1990s, due to declines in deaths from sudden infant death syndrome (SIDS), congenital anomalies, and injuries.
- Although the U.S. infant mortality rate is less than half the Russian rate, the U.S. rate is higher than in many other industrialized countries. In 2000, the United States ranked 28th in terms of infant mortality among all industrialized countries.

# Mortality

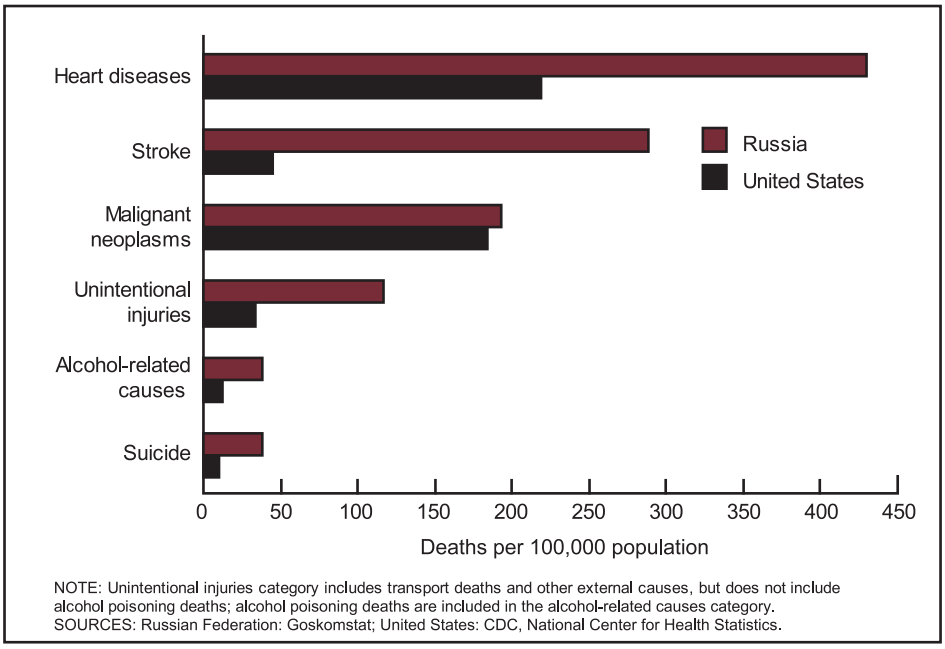


**Figure 9. Leading causes of death, Russian Federation and United States, 1999**

### Russian Federation

- There have been at least two major fluctuations in Russian mortality during the 1990s. From 1990 to 1994, the age-adjusted mortality rate increased by nearly one-third, the result of severe economic and social changes brought about by the breakup of the Soviet Union. Mortality rates declined by 16 percent from 1994 to 1998, but mortality rose by 10 percent in 1999–2000.
- The largest relative increases in mortality from 1990 to 1994 were in the adult population, spanning the ages of 15 to 64 years. Conversely, the largest percent decrease in mortality during the 1994–98 period was among adults 25 to 64 years of age. In 1999–2000, large increases occurred for ages 15–64 years.
- From 1990 to 1994, there were sharp increases in deaths due to all major causes of death with the exception of malignant neoplasms. The most important contributors to the overall rise in mortality were cardiovascular diseases and deaths due to unintentional injury or violence. From 1994 to 1998, death rates declined for virtually all causes; the most important contributors to the decline were again cardiovascular disease and external causes of death. In 2000, death rates increased for infectious and parasitic diseases by 28 percent, and unintentional injury and violence by 10 percent.
- In 1999 Russian age-adjusted death rates substantially exceeded U.S. rates for many causes of death. The ratio of Russian to U.S. rates was 2.0 for diseases of the heart, 6.4 for cerebrovascular diseases, 1.6 for chronic liver diseases and cirrhosis, 3.6 for suicides, and 4.0 for homicides.
- Maternal mortality in 2000 was 39.7 deaths per 100,000 live births, 25 percent below the peak rate of 53.3 in 1995. Nevertheless, maternal mortality in Russia remains more than four times higher than in the United States. About one-quarter of all maternal deaths are due to abortions, primarily illegal abortions.

### United States

- The age-adjusted death rate declined by 8 percent from 1990 to 2000. In 1994 the Russian death rate was more than double the U.S. rate, and in 2000 the Russian rate remained nearly twice the U.S. rate.
- Death rates decreased in all age groups during the 1990s, but the largest relative decreases took place in the population under 35 years of age. Within this age group, the greatest percent reduction occurred among children under 5 years of age.
- From 1990 to 1999, there were reductions in mortality due to all major causes, with the exception of chronic obstructive pulmonary disease. The most important contributors to the overall decline in mortality were cardiovascular diseases and malignant neoplasms.
- In 1999 age-adjusted U.S. death rates were 18 percent higher than in Russia for pneumonia and influenza. The death rate for malignant neoplasms was nearly equal in both countries.

# Communicable Diseases

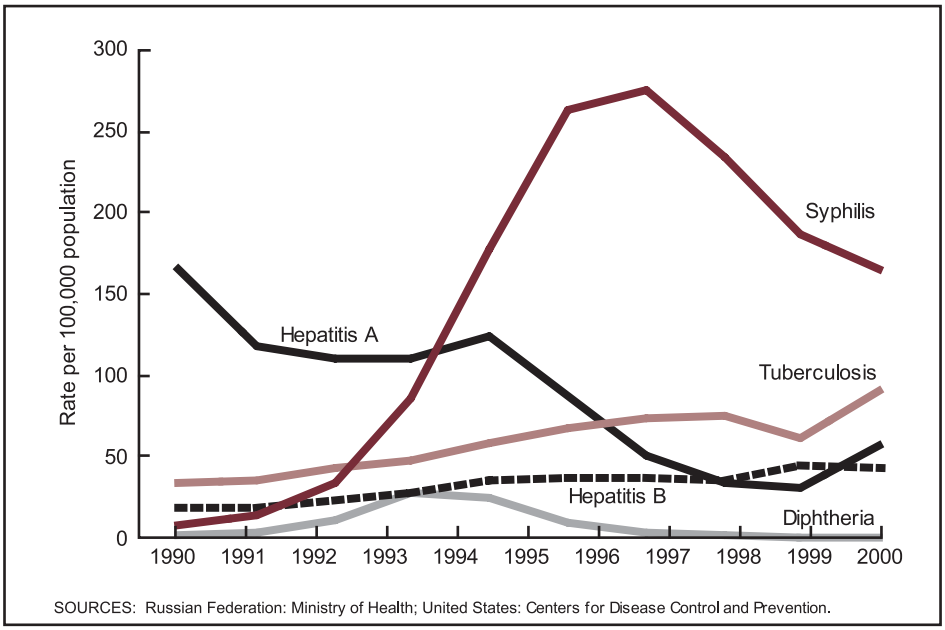


**Figure 10a. Incidence of communicable diseases, Russian Federation 1991–2000**

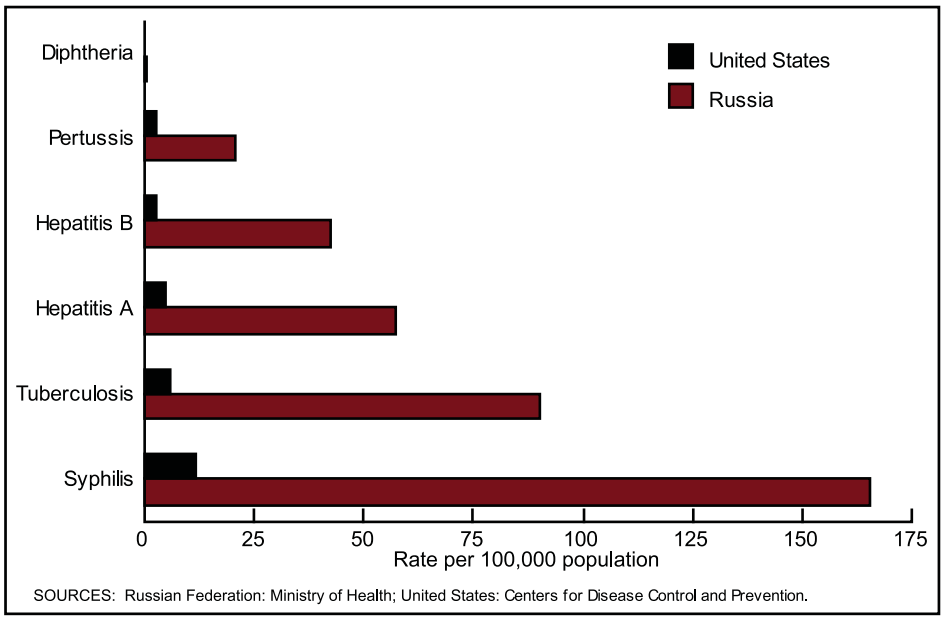


**Figure 10b. Incidence of communicable diseases, Russian Federation and United States, 2000**

### Russian Federation

- Rates of most reportable diseases rose sharply in the early and mid-1990s, but almost all of these have declined in recent years. One example is the diphtheria rate, which rose by a factor of 34 from 1991 to 1994, but was below its 1991 level by 2000, thanks to major improvements in immunization coverage. Another example is the rate of pertussis, which rose by more than 50 percent by 1994 before declining.
- A poliomyelitis outbreak in the Chechen Republic, where immunization efforts dropped substantially in the mid-1990s, affected 154 children in 1995. Improved immunization eliminated all cases of poliomyelitis caused by wild polio virus in Russia after 1996.
- Rates of certain diseases increased dramatically during the 1990s. The rate of tuberculosis nearly tripled from 1991 to 2000. The syphilis rate increased by a factor of 40 before declining substantially in 1999 and 2000.
- The trend in hepatitis case rates has varied significantly by type of hepatitis. The rate of hepatitis A in 2000 was only one-third the 1991 rate, although the rate increased substantially in 2000. Both hepatitis B and C have risen sharply, however, with hepatitis B doubling and hepatitis C increasing by a factor of 7 by 2000.
- The reported rate of gonorrhea declined by more than 50 percent from 1993 to 1998, but rose by 18 percent in 1999–2000. The gonorrhea rate in 1998 was 25 percent below the reported rate for the United States.

### United States

- Rates of most reportable diseases declined continuously after 1992. Some of the largest declines were hepatitis A (down 61 percent from 1990), hepatitis B (down 65 percent), gonorrhea (down 52 percent), and syphilis (down 79 percent).
- Although the case rates for most reportable diseases are generally higher in Russia than in the United States, the differentials are very large for certain diseases. In 2000 the Russian rate for hepatitis B was 14.4 times the U.S. rate; for tuberculosis the Russian rate was 15 times higher, and for syphilis it was 14.3 times the U.S. rate.

# Immunization Coverage

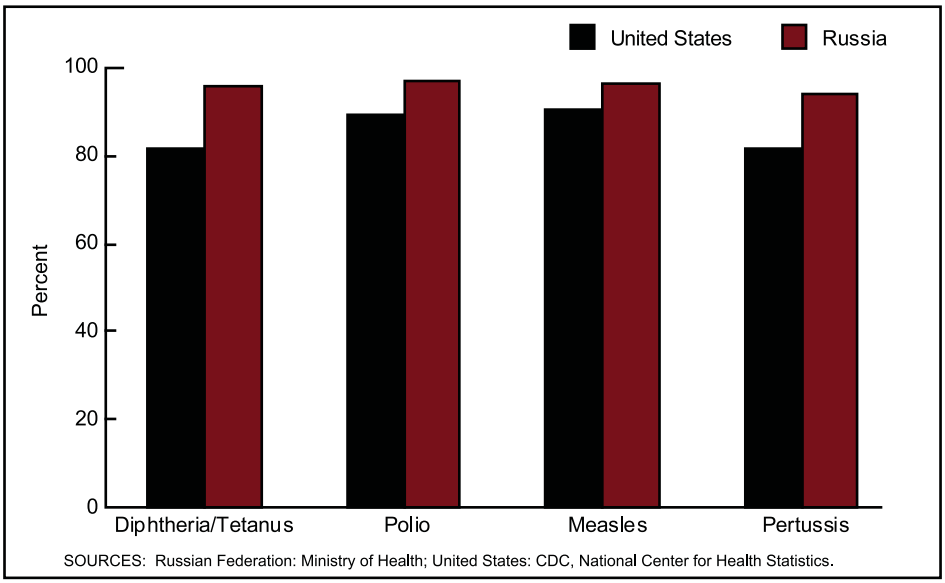


**Figure 11. Immunization coverage rates, Russian Federation and United States, 2000**

### Russian Federation

- The vast improvement in immunization coverage achieved in Russia during the 1990s helps to explain the declines in incidence rates for many communicable diseases. The immunization rate for four or more doses of diphtheria/tetanus rose continuously from 68.7 percent in 1991 to 98.3 percent in 1999 before falling slightly to 95.6 percent in 2000. The achievement of 95 percent coverage in 1996 and later years helps to explain the dramatic decline in the diphtheria rate in 1996.
- The coverage rate for four or more doses of pertussis rose from only 59 percent in 1991 to 93.9 percent in 2000. Although the immunization rate for pertussis lagged behind the level achieved for diphtheria/tetanus, the rate of pertussis cases has dropped to nearly the level reported in 1990.
- By 2000 the immunization rates for most vaccines were higher in Russia than in the United States. The rates of diphtheria/tetanus and pertussis vaccinations were substantially higher in Russia, at 95.6 and 93.9 percent versus 81.7 percent for the combined DTP vaccine in the United States. Nearly 97 percent of Russian children received three or more doses of polio vaccine in 2000, against 90 percent in the United States. The coverage rate for measles vaccine was also substantially higher in Russia.

### United States

- Immunization coverage rates have increased substantially in the United States since 1993, when the Childhood Immunization Initiative was implemented, but coverage levels have fallen slightly in recent years. The coverage rate for four or more doses of DTP vaccine rose from 76 percent in 1994 to 84 percent in 1998 but dropped to 82 percent in 2000. For polio, the immunization rate for three doses or more rose from 83 percent in 1994 to 91 percent in 1998 but fell below 90 percent in 2000.
- The rapid rise in coverage for hepatitis B vaccine, from 8 percent in 1992 to 90 percent in 2000, accounts for some of the recent decline in the hepatitis B case rate.
- An essential part of future improvements in immunization coverage will be the development of State- and community-based computerized immunization registries to identify children needing vaccination.

# HIV Infection and AIDS

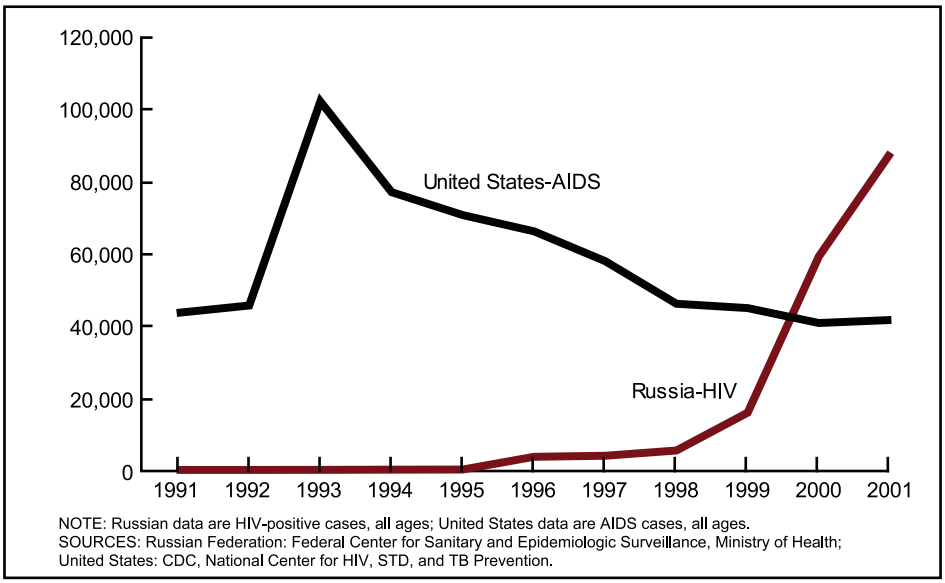


**Figure 12. HIV/AIDS cases, Russian Federation and United States, 1991–2001**

### Russian Federation

- The level of HIV cases was very low in the late 1980s and early 1990s, because of limited interaction between the population of the Soviet Union and other nations. However, the number of cases of HIV infection rose dramatically in Russia during the 1990s. The annual number of reported cases rose from 84 in 1991 to 5,466 in 1998 and 87,614 in 2001. Information and health education campaigns are urgently needed, particularly programs aimed at Russian youths.
- Through most of the 1990s, the HIV incidence rate was very low and thought to be severely underreported. The rapid increase in HIV cases after 1998 has raised the incidence rate substantially but the rate is still considered underreported.
- The number of AIDS cases and AIDS deaths was also very small during the 1990s and considered underreported. The number of AIDS cases and deaths rose substantially in 2000 and 2001 but these figures are still likely to be underestimated.

### United States

- The number of AIDS cases more than doubled in 1993, the result of a revision in the AIDS definition to include a broader range of AIDS-indicator diseases and conditions. Since 1993, however, the number of AIDS cases has declined continuously. In 2001 the number of persons diagnosed with AIDS was less than half the 1993 figure. The decrease was somewhat less for women 13 years of age and over than for men of the same age.
- The decline in the number of AIDS deaths has been even greater than the decline in the number of AIDS cases. Since the peak in 1995, the number of deaths among men age 13 years and over has declined by 71 percent; deaths among women in the same age group have fallen by 56 percent. Among children 12 years of age or under, the number of deaths has fallen by 79 percent since the peak year of 1994. Beginning in 1998, HIV infection no longer figured among the 15 leading causes of death in the United States.

# Health Care Personnel

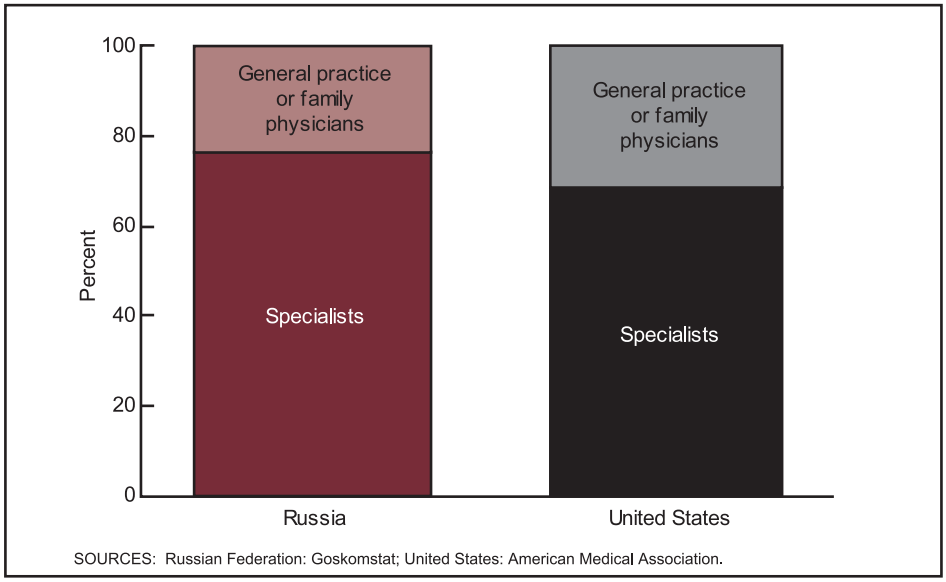


**Figure 13. Physican specialization, Russian Federation and United States, 2000**

### Russian Federation

- The physician/population ratio changed very little in Russia from 1990 to 2000, despite a significant reduction in government spending on health care. The number of physicians per 10,000 population actually rose slightly over the 1990s, as did the ratio for certain specialties.
- The physician-to-population ratio for family physicians and internists declined slightly through 1996. In later years the ratio grew, reflecting the new emphasis of the Ministry of Health on family medicine.
- The level of physician specialization is slightly greater in Russia than in the United States. Less than one-quarter of all physicians were general family practice or internal medicine practitioners in Russia in 2000, compared with one-third of non-Federal, office-based physicians in the United States.
- The major change in health personnel in the 1990s was the decline in provider/population ratios for physician assistants, down by 54 percent, and the 51 percent decline for midwives. The decline in midwives may be the result of the severe drop in the number of births in Russia. However, the physician assistants, also known as feldshers, are the first point of contact with the health care system for the rural population. The sharp drop in the number of physician assistants indicates a serious deterioration of the rural health care system.

### United States

- The number of physicians per 10,000 population increased in the United States during the 1990s for both general practitioners and specialists. Increases were highest for pediatricians and internal medicine practitioners, reflecting ongoing changes in the organization of health care in the United States.
- The provider/population ratio for registered nurses grew by 16 percent from 1990 to 1999, indicative of efforts to control escalating health care costs. The nurse/population ratio was substantially higher in the United States than in Russia.
- The physician/population ratio in the United States is about half the ratio in Russia, but the Russian definition of a physician contains categories not included in the U.S. definition, such as inactive physicians, sanitary-epidemiological physicians, and physiotherapists.

# Health Resources and Services

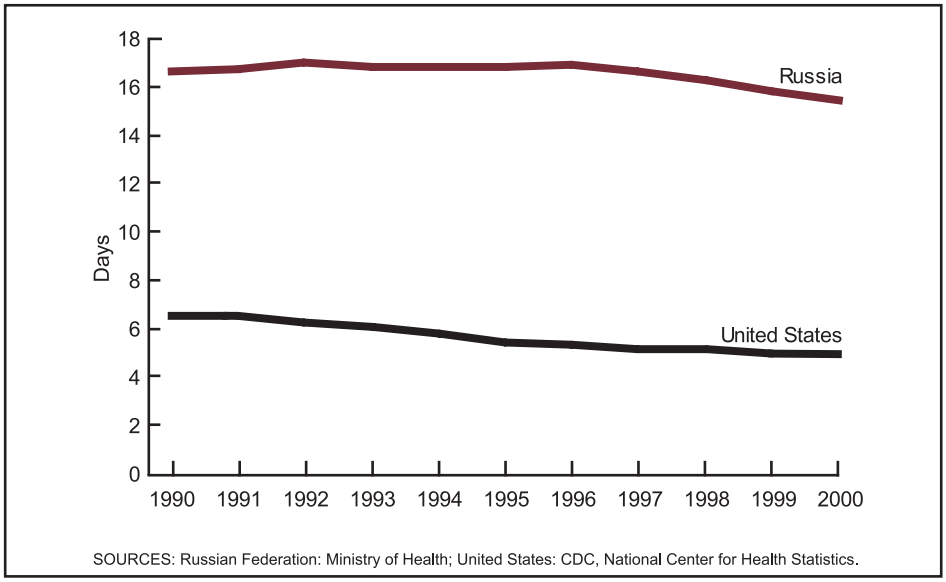


**Figure 14a. Average length of hospital stay, Russian Federation and United States, 1990–2000**

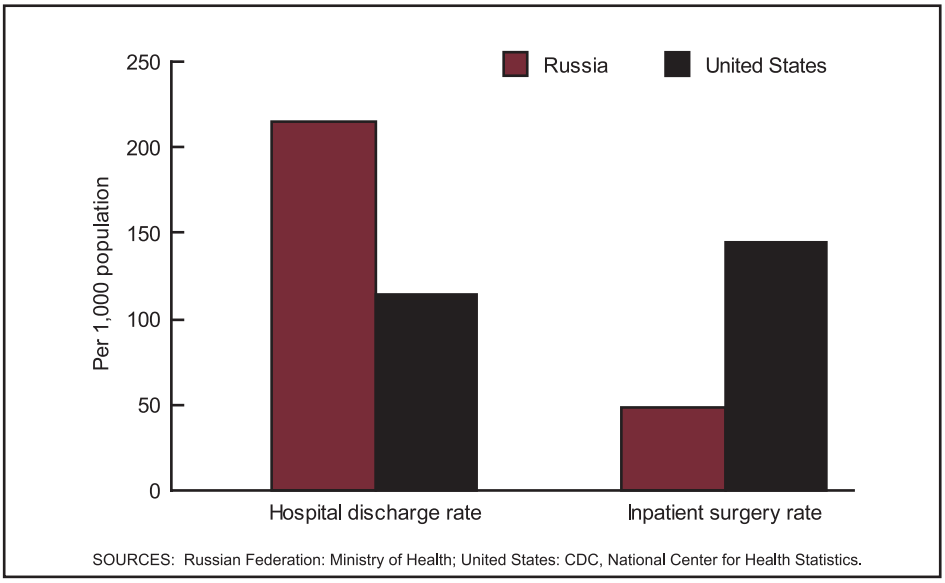


**Figure 14b. Rates of hospital discharge and inpatient surgery, Russian Federation and United States, 2000**

### Russian Federation

- Since 1990 the Russian health care system has substantially reduced both the number of hospitals (down 16 percent) and the number of beds per 10,000 population (down 16 percent). The hospital closures have affected primarily medium and small hospitals, including city hospitals (down 23 percent), rayon (regional) hospitals (down 19 percent), and rural hospitals (down 31 percent). The largest hospitals have increased slightly in number over the decade. Roughly equal numbers of beds have been eliminated from the medium and the small hospitals. The net effect of these changes has been a reduction in the availability of care in rural areas.
- Other aspects of Russian health care have begun to change toward a system less dependent on hospital-based care, but the changes have been very gradual. Since 1990 the average length of a hospital stay has dropped by 7 percent, and the discharge rate has declined by 2 percent. The outpatient surgical procedure rate has grown by 37 percent, but the inpatient surgical procedure rate has increased by 16 percent as well.
- The Russian health care system remains highly hospital centered, even after the reductions of the 1990s. In 1999 Russia had more than two times the number of hospitals in the United States and nearly four times the number of beds per 10,000 population. The Russian discharge rate was more than twice the U.S. rate. The average Russian hospital stay was more than three times the length of stay in the United States, although the Russian average may be inflated by the inclusion of long-stay hospitals.

### United States

- The number of hospitals fell by 9 percent during the 1990s. Most of the closures were of medium and large hospitals, the opposite of the pattern in Russia. The largest reduction in beds took place in medium-sized hospitals.
- Efforts to reduce the cost of health care in the United States can be seen in the 25 percent reduction in the average length of a hospital stay and the 8 percent decline in hospital discharge rates since 1990. Although the rate of surgical operations has increased, a growing proportion of these are performed on an outpatient basis. In 2000 the U.S. rate of surgical operations in hospitals was about three times the rate in Russia.

**Table 1. Resident population, by age and sex: Russian Federation and United States, selected years 1985–2000**

| Country, sex, and year | All residents | Under 1 year | 1–4 years | 5–14 years | 15–24 years | 25–34 years | 35–44 years | 45–54 years | 55–64 years | 65–74 years | 75–84 years | 85 years and over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Russian Federation | | | | | | | | | | | | |
| All persons | | | | | | | | | | | | |
| 1985 | 143,444,187 | 2,356,758 | 9,147,605 | 20,604,916 | 20,993,186 | 25,191,767 | 16,204,174 | 19,129,215 | 15,599,878 | 8,629,684 | 4,800,442 | 786,562 |
| 1990 | 147,913,047 | 2,042,649 | 9,472,425 | 22,446,402 | 19,709,319 | 24,675,511 | 21,676,613 | 16,548,721 | 16,502,192 | 8,609,347 | 5,268,041 | 961,827 |
| 1991 | 148,244,835 | 1,870,366 | 9,091,489 | 22,766,281 | 19,810,056 | 24,058,606 | 22,726,686 | 16,043,405 | 16,458,415 | 9,217,642 | 5,186,105 | 1,015,784 |
| 1992 | 148,310,174 | 1,680,008 | 8,511,358 | 23,123,387 | 20,026,600 | 23,334,571 | 23,357,050 | 15,669,662 | 16,525,533 | 10,000,225 | 5,016,311 | 1,065,469 |
| 1993 | 148,145,911 | 1,480,467 | 7,819,486 | 23,411,771 | 20,348,922 | 22,536,113 | 23,941,809 | 15,228,511 | 16,658,582 | 10,762,688 | 4,855,254 | 1,102,308 |
| 1994 | 147,967,813 | 1,409,618 | 7,106,850 | 23,540,111 | 20,733,995 | 21,826,445 | 24,350,080 | 15,035,818 | 16,713,924 | 11,409,294 | 4,712,581 | 1,129,097 |
| 1995 | 147,773,657 | 1,392,301 | 6,494,163 | 23,475,826 | 21,070,849 | 21,205,942 | 24,628,655 | 15,145,024 | 16,662,239 | 11,975,828 | 4,555,947 | 1,166,883 |
| 1996 | 147,373,009 | 1,331,932 | 6,005,840 | 23,176,061 | 21,320,745 | 20,624,647 | 24,881,259 | 15,423,481 | 16,574,153 | 12,399,702 | 4,419,912 | 1,215,277 |
| 1997 | 146,938,319 | 1,278,971 | 5,640,602 | 22,619,126 | 21,570,718 | 20,185,756 | 24,974,060 | 16,162,970 | 16,234,275 | 12,650,735 | 4,345,277 | 1,275,829 |
| 1998 | 146,533,492 | 1,270,105 | 5,420,605 | 21,734,940 | 21,935,580 | 19,892,112 | 24,936,563 | 17,425,774 | 15,556,846 | 12,647,221 | 4,385,971 | 1,327,775 |
| 1999 | 145,943,393 | 1,247,988 | 5,273,255 | 20,697,501 | 22,335,307 | 19,734,426 | 24,645,896 | 18,891,360 | 14,850,879 | 12,370,244 | 4,531,142 | 1,365,395 |
| 2000 | 145,189,156 | 1,237,828 | 5,118,833 | 19,678,294 | 22,650,919 | 19,755,023 | 24,108,160 | 20,266,172 | 14,132,054 | 12,118,105 | 4,750,888 | 1,372,880 |
| Male | | | | | | | | | | | | |
| 1985 | 66,438,950 | 1,203,729 | 4,667,286 | 10,464,373 | 10,590,598 | 12,791,354 | 7,970,451 | 8,929,434 | 6,103,645 | 2,517,775 | 1,061,812 | 138,493 |
| 1990 | 69,266,204 | 1,046,981 | 4,829,681 | 11,397,039 | 10,059,661 | 12,477,908 | 10,747,471 | 7,747,552 | 7,012,977 | 2,564,501 | 1,223,983 | 158,450 |
| 1991 | 69,481,089 | 958,645 | 4,642,122 | 11,561,824 | 10,112,724 | 12,157,406 | 11,266,195 | 7,516,747 | 7,078,842 | 2,815,595 | 1,201,677 | 169,312 |
| 1992 | 69,562,474 | 861,576 | 4,351,791 | 11,747,232 | 10,235,144 | 11,773,602 | 11,575,696 | 7,357,830 | 7,157,643 | 3,161,508 | 1,159,884 | 180,568 |
| 1993 | 69,528,088 | 760,501 | 4,004,697 | 11,901,131 | 10,415,918 | 11,360,626 | 11,854,079 | 7,169,595 | 7,234,700 | 3,512,562 | 1,124,084 | 190,195 |
| 1994 | 69,479,594 | 723,589 | 3,645,851 | 11,976,893 | 10,608,190 | 11,026,042 | 12,044,104 | 7,100,050 | 7,248,913 | 3,814,639 | 1,093,115 | 198,208 |
| 1995 | 69,387,481 | 713,720 | 3,333,605 | 11,957,113 | 10,748,361 | 10,758,464 | 12,166,261 | 7,167,697 | 7,206,558 | 4,068,947 | 1,056,871 | 209,884 |
| 1996 | 69,158,893 | 682,951 | 3,082,204 | 11,813,865 | 10,842,046 | 10,495,626 | 12,274,597 | 7,312,289 | 7,143,208 | 4,262,864 | 1,025,631 | 223,612 |
| 1997 | 68,926,337 | 656,481 | 2,893,532 | 11,538,375 | 10,943,983 | 10,289,432 | 12,316,076 | 7,673,757 | 6,968,729 | 4,399,770 | 1,008,516 | 237,686 |
| 1998 | 68,717,053 | 652,367 | 2,779,117 | 11,097,150 | 11,112,094 | 10,147,865 | 12,295,644 | 8,269,424 | 6,651,276 | 445,980 | 1,015,013 | 251,123 |
| 1999 | 68,405,752 | 641,652 | 2,703,604 | 10,575,971 | 11,306,036 | 10,063,275 | 12,149,718 | 8,944,895 | 6,313,411 | 4,392,236 | 1,053,530 | 261,424 |
| 2000 | 67,991,254 | 636,896 | 2,626,212 | 10,060,771 | 11,462,184 | 10,060,431 | 11,879,547 | 9,568,154 | 5,969,851 | 4,342,753 | 1,119,608 | 264,847 |
| Female | | | | | | | | | | | | |
| 1985 | 77,005,237 | 1,153,029 | 4,480,319 | 10,140,543 | 10,402,588 | 12,400,413 | 8,233,723 | 10,199,781 | 9,496,233 | 6,111,909 | 3,738,630 | 648,069 |
| 1990 | 78,646,843 | 995,668 | 4,642,744 | 11,049,363 | 9,649,658 | 12,197,603 | 10,929,142 | 8,801,169 | 9,489,215 | 6,044,846 | 4,044,058 | 803,377 |
| 1991 | 78,763,746 | 911,721 | 4,449,367 | 11,204,457 | 9,697,332 | 11,901,200 | 11,460,491 | 8,526,658 | 9,379,573 | 6,402,047 | 3,984,428 | 846,472 |
| 1992 | 78,747,700 | 818,432 | 4,159,567 | 11,376,155 | 9,791,456 | 11,560,969 | 11,781,354 | 8,311,832 | 9,367,890 | 6,838,717 | 3,856,427 | 884,901 |
| 1993 | 78,617,823 | 719,966 | 3,814,789 | 11,510,640 | 9,933,004 | 11,175,487 | 12,087,730 | 8,058,916 | 9,423,882 | 7,250,126 | 3,731,170 | 912,113 |
| 1994 | 78,488,219 | 686,029 | 3,460,999 | 11,563,218 | 10,125,805 | 10,800,403 | 12,305,976 | 7,935,768 | 9,465,011 | 7,594,655 | 3,619,466 | 930,889 |
| 1995 | 78,386,176 | 678,581 | 3,160,558 | 11,518,713 | 10,322,488 | 10,447,478 | 12,462,394 | 7,977,327 | 9,455,681 | 7,906,881 | 3,499,076 | 956,999 |
| 1996 | 78,214,116 | 648,981 | 2,923,636 | 11,362,196 | 10,478,699 | 10,129,021 | 12,606,662 | 8,111,192 | 9,430,945 | 8,136,838 | 3,394,281 | 991,665 |
| 1997 | 78,011,982 | 622,490 | 2,740,070 | 11,080,751 | 10,626,735 | 9,896,324 | 12,657,984 | 8,489,213 | 9,265,546 | 8,250,965 | 3,336,761 | 1,038,143 |
| 1998 | 77,816,439 | 617,738 | 2,641,488 | 10,637,790 | 10,823,486 | 9,744,247 | 12,640,919 | 9,156,350 | 8,905,570 | 8,201,241 | 3,370,958 | 1,076,652 |
| 1999 | 77,537,641 | 606,336 | 2,569,651 | 10,121,530 | 11,029,271 | 9,671,151 | 12,496,178 | 9,946,465 | 8,537,468 | 7,978,008 | 3,477,612 | 1,103,971 |
| 2000 | 77,197,902 | 600,932 | 2,492,621 | 9,617,523 | 11,188,735 | 9,694,592 | 12,228,613 | 10,698,018 | 8,162,203 | 7,775,352 | 3,631,280 | 1,108,033 |

**Table 1. Resident population, by age and sex: Russian Federation and United States, selected years 1985–2000—Con.**

| Country, sex, and year | All residents | Under 1 year | 1–4 years | 5–14 years | 15–24 years | 25–34 years | 35–44 years | 45–54 years | 55–64 years | 65–74 years | 75–84 years | 85 years and over |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| United States[1] | | | | | | | | | | | | |
| All persons | | | | | | Number in thousands | | | | | | |
| 1985 | 237,924 | 3,679 | 14,163 | 33,692 | 39,992 | 41,696 | 31,691 | 22,459 | 22,135 | 16,859 | 8,890 | 2,667 |
| 1990 | 248,710 | 3,946 | 14,812 | 35,095 | 37,013 | 43,161 | 37,435 | 25,057 | 21,113 | 18,045 | 10,012 | 3,021 |
| 1991 | 252,177 | 4,011 | 15,210 | 35,909 | 36,399 | 42,876 | 39,273 | 25,739 | 21,005 | 18,280 | 10,314 | 3,160 |
| 1992 | 255,078 | 4,000 | 15,512 | 36,451 | 36,147 | 42,445 | 39,906 | 27,415 | 20,925 | 18,460 | 10,559 | 3,256 |
| 1993 | 257,783 | 3,917 | 15,774 | 37,050 | 36,030 | 41,875 | 40,784 | 28,657 | 20,922 | 18,640 | 10,720 | 3,413 |
| 1994 | 260,341 | 3,870 | 15,857 | 37,611 | 35,943 | 41,354 | 41,659 | 29,871 | 21,018 | 18,712 | 10,925 | 3,522 |
| 1995 | 262,755 | 3,848 | 15,743 | 38,134 | 35,947 | 40,873 | 42,468 | 31,079 | 21,131 | 18,759 | 11,145 | 3,628 |
| 1996 | 265,284 | 3,769 | 15,516 | 38,422 | 36,221 | 40,368 | 43,393 | 32,370 | 21,361 | 18,669 | 11,430 | 3,762 |
| 1997 | 267,636 | 3,797 | 15,353 | 38,778 | 36,580 | 39,610 | 43,998 | 33,633 | 21,813 | 18,499 | 11,706 | 3,871 |
| 1998 | 270,299 | 3,776 | 15,190 | 39,163 | 37,213 | 38,774 | 44,520 | 34,585 | 22,676 | 18,395 | 11,952 | 4,054 |
| 1999 | 272,691 | 3,820 | 15,122 | 39,495 | 37,774 | 37,936 | 44,813 | 35,802 | 23,389 | 18,218 | 12,147 | 4,175 |
| 2000 | 275,265 | 3,847 | 15,149 | 39,674 | 38,367 | 37,431 | 44,892 | 37,153 | 23,974 | 18,168 | 12,314 | 4,296 |
| Male | | | | | | | | | | | | |
| 1985 | 115,730 | 1,882 | 7,245 | 17,247 | 20,276 | 20,793 | 15,594 | 10,917 | 10,384 | 7,339 | 3,292 | 761 |
| 1990 | 121,239 | 2,018 | 7,581 | 17,971 | 18,915 | 21,564 | 18,510 | 12,232 | 9,955 | 7,907 | 3,745 | 841 |
| 1991 | 122,979 | 2,052 | 7,784 | 18,388 | 18,609 | 21,427 | 19,432 | 12,563 | 9,932 | 8,022 | 3,888 | 881 |
| 1992 | 124,480 | 2,043 | 7,937 | 18,668 | 18,478 | 21,232 | 19,768 | 13,398 | 9,914 | 8,125 | 4,008 | 909 |
| 1993 | 125,800 | 2,005 | 8,071 | 18,972 | 18,399 | 20,942 | 20,204 | 14,001 | 9,927 | 8,236 | 4,097 | 946 |
| 1994 | 127,076 | 1,981 | 8,114 | 19,260 | 18,347 | 20,677 | 20,649 | 14,591 | 9,983 | 8,290 | 4,206 | 980 |
| 1995 | 128,314 | 1,970 | 8,055 | 19,529 | 18,352 | 20,432 | 21,062 | 15,182 | 10,044 | 8,342 | 4,330 | 1,017 |
| 1996 | 129,810 | 1,928 | 7,940 | 19,681 | 18,618 | 20,191 | 21,569 | 15,837 | 10,166 | 8,325 | 4,486 | 1,070 |
| 1997 | 131,018 | 1,943 | 7,858 | 19,861 | 18,806 | 19,810 | 21,883 | 16,457 | 10,390 | 8,269 | 4,629 | 1,112 |
| 1998 | 132,046 | 1,929 | 7,767 | 20,050 | 19,042 | 19,254 | 22,101 | 16,900 | 10,806 | 8,250 | 4,761 | 1,187 |
| 1999 | 133,277 | 1,952 | 7,731 | 20,220 | 19,334 | 18,826 | 22,254 | 17,499 | 11,150 | 8,199 | 4,871 | 1,240 |
| 2000 | 134,626 | 1,965 | 7,742 | 20,309 | 19,636 | 18,600 | 22,307 | 18,171 | 11,434 | 8,204 | 4,963 | 1,293 |
| Female | | | | | | | | | | | | |
| 1985 | 122,194 | 1,796 | 6,918 | 16,446 | 19,716 | 20,903 | 16,097 | 11,543 | 11,751 | 9,520 | 5,598 | 1,906 |
| 1990 | 127,471 | 1,928 | 7,231 | 17,124 | 18,098 | 21,596 | 18,925 | 12,824 | 11,158 | 10,139 | 6,267 | 2,180 |
| 1991 | 129,198 | 1,959 | 7,426 | 17,520 | 17,790 | 21,450 | 19,840 | 13,177 | 11,073 | 10,258 | 6,426 | 2,279 |
| 1992 | 130,597 | 1,957 | 7,575 | 17,783 | 17,669 | 21,212 | 20,139 | 14,018 | 11,011 | 10,335 | 6,551 | 2,347 |
| 1993 | 131,983 | 1,912 | 7,703 | 18,078 | 17,630 | 20,933 | 20,580 | 14,657 | 10,996 | 10,403 | 6,623 | 2,467 |
| 1994 | 133,265 | 1,889 | 7,743 | 18,352 | 17,595 | 20,677 | 21,011 | 15,279 | 11,034 | 10,422 | 6,719 | 2,542 |
| 1995 | 134,441 | 1,878 | 7,688 | 18,606 | 17,595 | 20,441 | 21,406 | 15,897 | 11,087 | 10,417 | 6,815 | 2,611 |
| 1996 | 135,474 | 1,841 | 7,577 | 18,741 | 17,604 | 20,177 | 21,825 | 16,533 | 11,195 | 10,345 | 6,944 | 2,692 |
| 1997 | 136,618 | 1,854 | 7,495 | 18,917 | 17,774 | 19,799 | 22,115 | 17,176 | 11,422 | 10,230 | 7,077 | 2,759 |
| 1998 | 138,252 | 1,847 | 7,423 | 19,113 | 18,172 | 19,521 | 22,419 | 17,685 | 11,870 | 10,146 | 7,191 | 2,866 |
| 1999 | 139,414 | 1,868 | 7,392 | 19,276 | 18,439 | 19,110 | 22,558 | 18,303 | 12,239 | 10,020 | 7,276 | 2,935 |
| 2000 | 140,639 | 1,882 | 7,407 | 19,365 | 18,731 | 18,831 | 22,585 | 18,982 | 12,540 | 9,964 | 7,350 | 3,003 |

[1]Populations for age groups may not add to the total because of rounding.

SOURCES: Russian Federation: Goskomstat; United States: Centers for Disease Control and Prevention, National Center for Health Statistics, Division of Vital Statistics.

**Table 2. Number of live births and deaths and natural increase in population: Russian Federation and United States, selected years 1985–2000**

| Year | Russian Federation | | | United States | | |
|---|---|---|---|---|---|---|
| | Live births | Deaths | Natural increase in population[1] | Live births | Deaths | Natural increase in population[1] |
| 1985 | 2,375,147 | 1,625,266 | 749,881 | 3,760,561 | 2,086,440 | 1,674,121 |
| 1990 | 1,988,858 | 1,655,993 | 332,865 | 4,158,212 | 2,148,463 | 2,009,749 |
| 1991 | 1,794,626 | 1,690,657 | 103,969 | 4,110,907 | 2,169,518 | 1,941,389 |
| 1992 | 1,587,644 | 1,807,441 | –219,797 | 4,065,014 | 2,175,613 | 1,889,401 |
| 1993 | 1,378,983 | 2,129,339 | –750,356 | 4,000,240 | 2,268,553 | 1,731,687 |
| 1994 | 1,408,159 | 2,301,366 | –893,207 | 3,952,767 | 2,278,994 | 1,673,773 |
| 1995 | 1,363,806 | 2,203,811 | –840,005 | 3,889,589 | 2,312,132 | 1,577,457 |
| 1996 | 1,304,638 | 2,082,249 | –777,611 | 3,891,494 | 2,314,690 | 1,576,804 |
| 1997 | 1,259,943 | 2,015,779 | –755,836 | 3,880,894 | 2,314,245 | 1,566,649 |
| 1998 | 1,283,292 | 1,988,744 | –705,452 | 3,941,553 | 2,337,256 | 1,604,297 |
| 1999 | 1,214,689 | 2,144,316 | –929,627 | 3,959,417 | 2,391,399 | 1,568,018 |
| 2000 | 1,266,800 | 2,225,332 | –958,532 | 4,058,814 | 2,403,351 | 1,655,463 |

[1]Increase is number of births minus number of deaths.

SOURCES: Russian Federation: Goskomstat; United States: Centers for Disease Control and Prevention, National Center for Health Statistics, Division of Vital Statistics.

**Table 3. Birth rates: Russian Federation and United States, selected years 1985–2000**

| Year | Live births per 1,000 population | | Live births per 1,000 women 15–44 years of age | |
|---|---|---|---|---|
| | Russian Federation | United States | Russian Federation | United States |
| 1985 | 16.6 | 15.8 | 65.7 | 66.3 |
| 1990 | 13.4 | 16.7 | 60.6 | 70.9 |
| 1991 | 12.1 | 16.3 | 54.2 | 69.6 |
| 1992 | 10.7 | 15.9 | 47.9 | 68.9 |
| 1993 | 9.4 | 15.5 | 41.5 | 67.6 |
| 1994 | 9.6 | 15.2 | 42.4 | 66.7 |
| 1995 | 9.3 | 14.8 | 41.0 | 65.6 |
| 1996 | 8.9 | 14.7 | 39.3 | 65.3 |
| 1997 | 8.6 | 14.5 | 38.0 | 65.0 |
| 1998 | 8.8 | 14.6 | 38.6 | 65.6 |
| 1999 | 8.3 | 14.5 | 36.6 | 65.9 |
| 2000 | 8.7 | 14.7 | 38.3 | 67.5 |

SOURCES: Russian Federation: Goskomstat; United States: Centers for Disease Control and Prevention, National Center for Health Statistics, Division of Vital Statistics.

**Table 4. Percent of live births by selected characteristics: Russian Federation and United States, selected years 1985–2000**

| Year | Percent of live births | | |
|---|---|---|---|
| | Low birthweight[1] | Mother not married | Prenatal care initiated in first trimester |
| Russian Federation | | | |
| 1985 | 5.6 | 12.0 | 72.7 |
| 1990 | 5.7 | 14.6 | 68.8 |
| 1991 | 5.7 | 16.0 | 68.5 |
| 1992 | 5.9 | 17.2 | 70.0 |
| 1993 | 6.1 | 18.2 | 71.2 |
| 1994 | 6.2 | 19.6 | 72.0 |
| 1995 | 6.2 | 21.1 | 71.8 |
| 1996 | 6.2 | 23.0 | 72.7 |
| 1997 | 6.3 | 25.3 | 72.9 |
| 1998 | 6.3 | 27.0 | 73.2 |
| 1999 | 6.7 | 27.9 | 74.8 |
| 2000 | 6.4 | 28.0 | 76.0 |
| United States | | | |
| 1985 | 6.8 | 22.0 | 76.2 |
| 1990 | 7.0 | 28.0 | 75.8 |
| 1991 | 7.1 | 29.5 | 76.2 |
| 1992 | 7.1 | 30.1 | 77.7 |
| 1993 | 7.2 | 31.0 | 78.9 |
| 1994 | 7.3 | 32.6 | 80.2 |
| 1995 | 7.3 | 32.2 | 81.3 |
| 1996 | 7.4 | 32.4 | 81.9 |
| 1997 | 7.5 | 32.4 | 82.5 |
| 1998 | 7.6 | 32.8 | 82.8 |
| 1999 | 7.8 | 33.0 | 83.2 |
| 2000 | 7.6 | 33.2 | 83.2 |

[1] Less than 2,500 grams.

SOURCES: Russian Federation: Goskomstat, Ministry of Health; United States: Centers for Disease Control and Prevention, National Center for Health Statistics, Division of Vital Statistics.

**Table 5. Number and percent distribution of abortions, according to age of woman: Russian Federation and United States, selected years 1985–2000**

| Country and age | 1985 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Russian Federation | | | | | | | | | | | | |
| Ministry of Health | 4,257,581 | 3,920,287 | 3,525,904 | 3,265,718 | 2,977,935 | 2,808,103 | 2,574,834 | 2,469,198 | 2,320,948 | 2,210,166 | 2,059,702 | 1,961,539 |
| Combined reports | 4,454,400 | 4,103,400 | 3,608,400 | 3,436,700 | 3,244,000 | 3,060,200 | 2,766,400 | 2,652,000 | 2,498,100 | 2,346,100 | 2,181,200 | 2,138,800 |
| | | | | | Abortions per 1,000 women 15–49 years of age | | | | | | | |
| All women 15–49 years of age | 121.5 | 114.0 | 100.3 | 95.0 | 88.4 | 82.4 | 72.6 | 69.3 | 64.9 | 60.6 | 56.2 | 55.0 |
| | | | | | Abortions per 100 live births and stillbirths | | | | | | | |
| All ages | 187.4 | 205.9 | 200.7 | 216.1 | 235.0 | 217.0 | 202.6 | 203.0 | 201.6 | 182.6 | 179.4 | 168.7 |
| | | | | | Percent distribution of abortions by age of woman | | | | | | | |
| All ages | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Under 15 years | - - - | - - - | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 15–19 years | - - - | - - - | 9.9 | 10.0 | 10.8 | 10.9 | 10.9 | 10.2 | 10.2 | 10.2 | 9.8 | 10.0 |
| 20–34 years | - - - | - - - | 71.6 | 70.8 | 70.3 | 68.9 | 68.4 | 69.4 | 68.8 | 68.5 | 69.0 | 69.6 |
| 35 years and over | - - - | - - - | 18.3 | 19.1 | 18.8 | 20.1 | 20.5 | 20.3 | 20.9 | 21.2 | 21.1 | 20.3 |
| United States | | | | | | | | | | | | |
| Reported number of legal abortions | 1,328,570 | 1,429,577 | 1,388,937 | 1,359,145 | 1,330,414 | 1,267,415 | 1,210,883 | 1,225,937 | 1,186,039 | 884,273[1] | - - - | - - - |
| Reported number excluding Alaska, California, New Hampshire, and Oklahoma | - - - | - - - | - - - | - - - | - - - | - - - | 908,243 | 934,549 | 900,141 | 884,273[1] | - - - | - - - |
| | | | | | Abortions per 1,000 women 15–49 years of age | | | | | | | |
| All women 15–49 years of age | 21.2 | 21.8 | 21.0 | 20.3 | 19.8 | 18.7 | 17.7 | 17.7 | 17.2 | - - - | - - - | - - - |
| | | | | | Abortions per 100 live births | | | | | | | |
| All ages | 35.4 | 34.5 | 33.9 | 33.5 | 33.4 | 32.1 | 31.1 | 31.4 | 30.6 | 26.2 | - - - | - - - |
| Under 15 years | 137.6 | 84.4 | 76.7 | 79.0 | 74.4 | 70.4 | 66.7 | 72.3 | 72.9 | 74.5 | - - - | - - - |
| 15–19 years | 68.8 | 51.5 | 46.2 | 44.0 | 44.0 | 41.5 | 39.9 | 41.5 | 40.7 | 38.8 | - - - | - - - |
| 20–24 years | 38.6 | 37.7 | 37.8 | 37.6 | 38.4 | 36.4 | 34.9 | 35.5 | 34.4 | 32.7 | - - - | - - - |
| 25–29 years | 21.7 | 22.0 | 22.1 | 22.2 | 22.7 | 22.2 | 22.1 | 22.7 | 22.3 | 21.5 | - - - | - - - |
| 30–34 years | 19.9 | 19.1 | 18.7 | 18.3 | 18.0 | 17.2 | 16.5 | 16.5 | 16.0 | 15.7 | - - - | - - - |
| 35–39 years | 33.6 | 27.3 | 26.2 | 25.6 | 24.8 | 23.4 | 22.4 | 22.0 | 20.8 | 19.7 | - - - | - - - |
| 40 years and over | 62.3 | 50.1 | 46.9 | 45.4 | 43.0 | 41.2 | 38.7 | 37.6 | 35.0 | 33.3 | - - - | - - - |
| | | | | | Percent distribution of abortions by age of woman | | | | | | | |
| All ages | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | - - - | - - - |
| Under 20 years | 26.3 | 22.4 | 21.0 | 20.1 | 20.0 | 20.2 | 20.1 | 20.3 | 20.1 | 19.8 | - - - | - - - |
| 20–24 years | 34.7 | 33.2 | 34.4 | 34.5 | 34.4 | 33.5 | 32.5 | 31.9 | 31.7 | 31.8 | - - - | - - - |
| 25 years and over | 39.0 | 44.4 | 44.6 | 45.4 | 45.6 | 46.3 | 47.4 | 47.8 | 48.2 | 48.4 | - - - | - - - |

- - - Data not available.

[1]In 1998, only 48 of 52 reporting areas provided abortion data. Alaska, California, New Hampshire, and Oklahoma did not report abortion data.

NOTE: Data are based on reporting by State health departments and by hospitals and other medical facilities.

SOURCE: Russian Federation: Ministry of Health, Maternal and Child Health Services, 1997. United States: Centers for Disease Control and Prevention, National Center for Health Statistics, Health United States, selected years; Centers for Disease Control and Prevention, CDC Surveillance Summaries, June 7, 2002. MMWR 51:ss-3. 2002.

**Table 6. Life expectancy at birth, by sex: Russian Federation and United States, selected years 1985–2000**

| Year | Russian Federation | | | | | | United States | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | | Male | | Female | | | | |
| | Official[1] | Estimated[2] | Official[1] | Estimated[2] | Official[1] | Estimated[2] | Total | Male | Female |
| 1985[3] | 69.3 | 68.2 | 63.8 | 62.7 | 74.0 | 73.3 | 74.7 | 71.1 | 78.2 |
| 1990 | 69.2 | 69.3 | 63.8 | 63.8 | 74.3 | 74.4 | 75.4 | 71.8 | 78.8 |
| 1991 | 69.0 | 69.0 | 63.5 | 63.5 | 74.3 | 74.3 | 75.5 | 72.0 | 78.9 |
| 1992 | 67.9 | 67.9 | 62.0 | 62.1 | 73.8 | 73.8 | 75.8 | 72.3 | 79.1 |
| 1993 | 65.1 | 65.3 | 58.9 | 59.1 | 71.9 | 72.0 | 75.5 | 72.2 | 78.8 |
| 1994 | 64.0 | 64.1 | 57.6 | 57.7 | 71.2 | 71.2 | 75.7 | 72.4 | 79.0 |
| 1995 | 64.6 | 64.7 | 58.3 | 58.4 | 71.7 | 71.7 | 75.8 | 72.5 | 78.9 |
| 1996 | 65.9 | 66.0 | 59.8 | 59.9 | 72.5 | 72.5 | 76.1 | 73.1 | 79.1 |
| 1997 | 66.6 | 66.9 | 60.8 | 61.1 | 72.9 | 73.0 | 76.5 | 73.6 | 79.4 |
| 1998 | 67.0 | 67.2 | 61.3 | 61.4 | 72.9 | 73.2 | 76.7 | 73.8 | 79.5 |
| 1999 | 65.9 | 66.1 | 59.9 | 60.1 | 72.4 | 72.5 | 76.7 | 73.9 | 79.4 |
| 2000 | 65.3 | 65.4 | 59.0 | 59.2 | 72.2 | 72.3 | 76.9 | 74.1 | 79.5 |

[1]Official rate from Goskomstat.

[2]Estimated rate from Central Public Health Research Institute.

[3]Russian Federation data for 1985–86.

SOURCES: Russian Federation: Goskomstat; Central Public Health Research Institute; United States: Centers for Disease Control and Prevention, National Center for Health Statistics, Division of Vital Statistics.

**Table 7. Infant mortality, late fetal mortality, and perinatal mortality rates: Russian Federation and United States, selected years 1985–2000**

| Year | Infant mortality rate | | Neonatal[3] | | | | |
|---|---|---|---|---|---|---|---|
| | International[1] | Russian[2] | Under 28 days | Under 7 days | Postneonatal[3] | Late fetal mortality rate[4] | Perinatal mortality rate[5] |
| | Deaths per 1,000 live births | | | | | | |
| Russian Federation | | | | | | | |
| 1985 | 20.8 | 20.7 | 11.1 | 8.6 | 9.6 | 9.3 | 17.8 |
| 1990 | 17.6 | 17.4 | 11.1 | 9.0 | 6.3 | 9.1 | 17.9 |
| 1991 | 18.1 | 17.8 | 11.0 | 8.9 | 6.8 | 8.7 | 17.5 |
| 1992 | 18.4 | 18.0 | 11.5 | 9.0 | 6.5 | 8.3 | 17.2 |
| 1993 | 20.3 | 19.9 | 12.1 | 9.6 | 7.8 | 7.8 | 17.4 |
| 1994 | 18.6 | 18.6 | 11.8 | 9.2 | 6.8 | 7.8 | 17.0 |
| 1995 | 18.2 | 18.1 | 11.0 | 8.4 | 7.1 | 7.4 | 15.8 |
| 1996 | 17.5 | 17.4 | 10.8 | 8.1 | 6.6 | 7.8 | 15.9 |
| 1997 | 17.3 | 17.2 | 10.6 | 7.8 | 6.6 | 8.0 | 15.8 |
| 1998 | 16.4 | 16.5 | 10.1 | 7.5 | 6.4 | 7.5 | 15.0 |
| 1999 | 17.1 | 16.9 | 10.3 | 7.0 | 7.2 | 7.2 | 14.2 |
| 2000 | 15.2 | 15.3 | 9.3 | 6.5 | 6.0 | 6.7 | 13.2 |
| United States | | | | | | | |
| 1985 | 10.6 | . . . | 7.0 | 5.8 | 3.7 | 4.9 | 10.7 |
| 1990 | 9.2 | . . . | 5.8 | 4.8 | 3.4 | 4.3 | 9.1 |
| 1991 | 8.9 | . . . | 5.6 | 4.6 | 3.4 | 4.1 | 8.7 |
| 1992 | 8.5 | . . . | 5.4 | 4.4 | 3.1 | 4.1 | 8.5 |
| 1993 | 8.4 | . . . | 5.3 | 4.3 | 3.1 | 3.8 | 8.1 |
| 1994 | 8.0 | . . . | 5.1 | 4.2 | 2.9 | 3.7 | 7.9 |
| 1995 | 7.6 | . . . | 4.9 | 4.0 | 2.7 | 3.6 | 7.6 |
| 1996 | 7.3 | . . . | 4.8 | 3.8 | 2.5 | 3.6 | 7.4 |
| 1997 | 7.2 | . . . | 4.8 | 3.8 | 2.5 | 3.5 | 7.3 |
| 1998 | 7.2 | . . . | 4.8 | 3.8 | 2.4 | 3.4 | 7.2 |
| 1999 | 7.1 | . . . | 4.7 | 3.8 | 2.3 | 3.4 | 7.1 |
| 2000 | 6.9 | - - - | 4.6 | - - - | 2.3 | 3.2 | - - - |

. . . Category not applicable.

- - - Data not available.

[1]Infant (under 1 year of age) deaths per 1,000 live births in the same year.

[2]Infant (under 1 year of age) deaths per 1,000 live births (1/3 from the previous year plus 2/3 from the current year).

[3]Neonatal (under 28 days), early neonatal (under 7 days), and postneonatal (28–364 days) deaths.

[4]Number of fetal deaths of 28 weeks or more gestation per 1,000 live births plus late fetal deaths.

[5]Number of late fetal deaths plus infant deaths within 7 days of birth per 1,000 live births plus late fetal deaths.

SOURCES: Russian Federation: Goskomstat; United States: Centers for Disease Control and Prevention, National Center for Health Statistics, Division of Vital Statistics.

**Table 8. Maternal mortality rate by causes of death: Russian Federation and United States, selected years 1985–2000**

| Cause of death[1] | 1985 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| All causes (630–676) | 54.0 | 47.4 | 52.4 | 50.8 | 51.6 | 52.3 | 53.3 | 48.9 | 50.2 | 44.0 | 44.2 | 39.7 |
| Ectopic pregnancy (633) | 3.2 | 3.2 | 4.4 | 4.7 | 3.8 | 4.1 | 3.9 | 3.5 | 4.3 | 3.1 | 4.0 | 2.6 |
| Legally induced abortion (635) | 1.8 | 0.8 | 1.1 | 1.4 | 1.7 | 1.5 | 1.5 | 1.2 | 1.9 | 1.6 | 1.3 | 3.0 |
| Other abortion (630–632, 634, 636–639) | 19.7 | 12.8 | 11.9 | 10.9 | 13.1 | 11.7 | 10.9 | 10.1 | 10.3 | 8.4 | 9.4 | 6.6 |
| Hemorrhage of pregnancy and childbirth (640, 641.1–641.9, 666) | 5.3 | 6.4 | 7.1 | 7.2 | 7.1 | 6.2 | 6.7 | 6.5 | 5.7 | 5.8 | 8.1 | 6.6 |
| Toxemia of pregnancy (642.4–642.9, 643) | 5.6 | 5.7 | 7.7 | 5.8 | 6.2 | 6.4 | 5.3 | 6.4 | 5.3 | 4.1 | 5.7 | 5.7 |
| Sepsis (659.3, 670) | 1.8 | 1.7 | 1.6 | 2.3 | 1.7 | 2.3 | 2.4 | 2.6 | 2.4 | 1.7 | 1.9 | 1.4 |
| Other (642.0–642.3, 641.0, 644–648, 652–659.2, 659.4–659.9, 660–665, 667–669, 671–676) | 16.6 | 16.7 | 18.7 | 18.5 | 17.5 | 20.2 | 22.7 | 18.6 | 20.3 | 19.3 | 13.9 | 13.7 |
| United States | | | | | | | | | | | | |
| All causes (630–676) | 7.8 | 8.2 | 7.9 | 7.8 | 7.5 | 8.3 | 7.1 | 7.6 | 8.4 | 7.1 | 9.9 | 9.8 |
| Ectopic pregnancy (633) | 0.9 | 1.0 | 0.8 | 0.7 | 0.8 | 0.6 | 0.5 | 0.6 | 0.6 | (*)[2] | (*)[2] | 0.6 |
| Legally induced abortion (635) | (*)[2] | (*)[2] | (*)[2] | (*)[2] | (*)[2] | (*)[2] | (*)[2] | (*)[2] | (*)[2] | (*)[2] | (*)[2] | (*)[2] |
| Other abortion (630–632, 637–638) | (*)[2] | (*)[2] | (*)[2] | (*)[2] | (*)[2] | (*)[2] | (*)[2] | (*)[2] | (*)[2] | (*)[2] | (*)[2] | (*)[2] |
| Hemorrhage of pregnancy and childbirth (640–641, 666) | 1.1 | 1.1 | 0.9 | 1.0 | 1.0 | 1.2 | 0.9 | 1.0 | 1.1 | 0.6 | 1.1 | 0.7 |
| Toxemia of pregnancy (642.4–642.9, 643) | 0.9 | 1.5 | 1.6 | 1.3 | 1.1 | 1.7 | 1.2 | 1.0 | 1.6 | 1.2 | 2.3 | 1.8 |
| Complications of puerperium (670–676) | 2.4 | 2.4 | 2.4 | 2.3 | 2.5 | 2.6 | 2.4 | 2.6 | 3.2 | 2.5 | 2.1 | 2.3 |
| Other (642.0–642.3, 644–646, 651–659, 661–665, 667–669) | 2.2 | 1.4 | 1.3 | 1.5 | 1.2 | 1.3 | 1.4 | 1.4 | 1.2 | 1.5 | 4.0 | 4.0 |

* Figure does not meet standards of reliability or precision.

[1]Cause of death codes are from the *International Classification of Diseases, Ninth Revision.*

[2]Rates based on fewer than 20 events.

SOURCES: Russian Federation: Goskomstat; United States: Centers for Disease Control and Prevention, National Center for Health Statistics, Division of Vital Statistics.

**Table 9. Death rates from all causes, by age and sex: Russian Federation and United States, selected years 1985–2000**

| Sex and age | Russian Federation | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1985 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
| Both sexes | | | | | | | | | | | | |
| All-ages, age-adjusted | 1,226.2 | 1,192.7 | 1,198.1 | 1,264.7 | 1,474.5 | 1,581.6 | 1,506.1 | 1,413.4 | 1,355.5 | 1,323.7 | 1,416.7 | 1,461.2 |
| All-ages, crude | 1,116.6 | 1,118.2 | 1,138.6 | 1,214.9 | 1,428.8 | 1,555.3 | 1,491.3 | 1,412.9 | 1,371.9 | 1,357.2 | 1,469.3 | 1,532.7 |
| Under 1 year | 2,094.4 | 1,717.8 | 1,737.2 | 1,738.6 | 1,880.8 | 1,854.5 | 1,784.1 | 1,713.7 | 1,699.4 | 1,661.0 | 1,661.2 | 1,558.1 |
| 1–4 years | 135.6 | 98.5 | 100.6 | 99.4 | 108.4 | 104.8 | 108.3 | 97.9 | 99.9 | 94.3 | 102.9 | 99.3 |
| 5–14 years | 52.0 | 48.9 | 55.2 | 53.3 | 54.8 | 51.2 | 53.9 | 47.5 | 44.2 | 45.6 | 47.6 | 45.5 |
| 15–24 years | 136.8 | 139.7 | 145.3 | 164.2 | 190.7 | 199.6 | 215.2 | 202.3 | 186.9 | 192.5 | 209.1 | 224.6 |
| 25–34 years | 244.1 | 238.5 | 255.0 | 303.8 | 377.3 | 412.6 | 403.5 | 365.8 | 330.5 | 329.5 | 366.4 | 401.2 |
| 35–44 years | 440.0 | 418.0 | 443.0 | 530.5 | 703.1 | 797.5 | 747.3 | 647.5 | 571.2 | 553.0 | 624.0 | 679.1 |
| 45–54 years | 908.7 | 930.9 | 952.0 | 1,090.7 | 1,379.5 | 1,544.2 | 1,409.3 | 1,222.7 | 1,063.0 | 1,035.3 | 1,178.4 | 1,287.5 |
| 55–64 years | 1,736.9 | 1,877.0 | 1,897.8 | 2,014.0 | 2,393.7 | 2,657.5 | 2,458.5 | 2,264.9 | 2,156.9 | 2,108.9 | 2,349.5 | 2,515.7 |
| 65–74 years | 3,939.1 | 3,571.5 | 3,538.0 | 3,654.7 | 4,181.1 | 4,437.8 | 4,290.2 | 4,195.2 | 4,219.8 | 4,221.0 | 4,511.7 | 4,650.4 |
| 75–84 years | 8,672.8 | 8,664.8 | 8,703.0 | 8,834.0 | 9,804.3 | 10,231.8 | 9,771.1 | 9,485.7 | 9,370.4 | 9,002.0 | 9,158.9 | 8,948.6 |
| 85 years and over | 21,197.9 | 20,161.0 | 19,720.1 | 19,873.6 | 21,815.6 | 21,899.6 | 21,126.1 | 20,427.9 | 20,221.4 | 19,763.4 | 20,630.4 | 20,512.3 |
| Male | | | | | | | | | | | | |
| All-ages, age-adjusted | 1,771.5 | 1,688.4 | 1,699.0 | 1,803.7 | 2,128.0 | 2,290.5 | 2,158.8 | 2,002.4 | 1,899.1 | 1,847.0 | 1,991.6 | 2,075.6 |
| All-ages, crude | 1,169.1 | 1,156.4 | 1,188.7 | 1,303.3 | 1,585.8 | 1,765.2 | 1,682.8 | 1,566.9 | 1,492.2 | 1,475.2 | 1,626.4 | 1,735.2 |
| Under 1 year | 2,408.6 | 1,976.2 | 1,995.6 | 2,000.8 | 2,131.9 | 2,127.5 | 2,027.7 | 1,964.4 | 1,940.3 | 1,889.6 | 1,873.3 | 1,766.1 |
| 1–4 years | 152.8 | 110.9 | 114.1 | 113.5 | 119.4 | 116.0 | 120.9 | 109.8 | 107.9 | 105.2 | 113.4 | 109.6 |
| 5–14 years | 67.4 | 64.2 | 73.1 | 69.6 | 70.0 | 64.5 | 68.2 | 59.4 | 57.0 | 57.0 | 60.6 | 58.0 |
| 15–24 years | 215.8 | 209.4 | 217.6 | 246.8 | 289.3 | 304.2 | 331.8 | 311.6 | 283.9 | 292.5 | 319.5 | 348.9 |
| 25–34 years | 390.3 | 381.8 | 407.0 | 490.7 | 611.5 | 665.8 | 645.7 | 583.0 | 520.4 | 518.4 | 578.8 | 638.3 |
| 35–44 years | 694.8 | 648.3 | 688.1 | 834.4 | 1,116.9 | 1,269.6 | 1,189.5 | 1,028.4 | 904.4 | 875.4 | 987.7 | 1,082.1 |
| 45–54 years | 1,422.2 | 1,443.4 | 1,476.6 | 1,712.8 | 2,173.4 | 2,438.5 | 2,219.7 | 1,920.0 | 1,653.1 | 1,615.5 | 1,847.9 | 2,037.2 |
| 55–64 years | 2,755.6 | 2,887.7 | 2,907.8 | 3,094.4 | 3,731.1 | 4,176.7 | 3,867.8 | 3,550.5 | 3,369.4 | 3,297.8 | 3,720.9 | 4,012.4 |
| 65–74 years | 6,075.0 | 5,411.4 | 5,362.2 | 5,506.7 | 6,371.1 | 6,741.0 | 6,451.9 | 6,248.3 | 6,246.7 | 6,220.9 | 6,707.4 | 6,960.7 |
| 75–84 years | 11,747.5 | 11,461.5 | 11,535.7 | 11,618.6 | 13,013.4 | 13,359.6 | 12,529.2 | 12,034.9 | 11,848.7 | 11,378.9 | 11,596.6 | 11,496.8 |
| 85 years and over | 23,475.6 | 22,600.8 | 22,204.0 | 22,283.6 | 23,896.0 | 23,661.0 | 21,803.9 | 20,467.1 | 20,159.4 | 19,293.3 | 20,011.2 | 19,757.8 |
| Female | | | | | | | | | | | | |
| All-ages, age-adjusted | 915.7 | 892.2 | 889.6 | 918.5 | 1,041.0 | 1,098.4 | 1,052.4 | 1,002.9 | 979.6 | 957.4 | 1,008.9 | 1,020.6 |
| All-ages, crude | 1,071.4 | 1,084.7 | 1,094.4 | 1,136.8 | 1,289.9 | 1,369.5 | 1,321.9 | 1,276.8 | 1,265.5 | 1,252.9 | 1,330.7 | 1,354.4 |
| Under 1 year | 1,766.3 | 1,446.0 | 1,465.5 | 1,462.6 | 1,629.7 | 1,566.6 | 1,527.9 | 1,449.8 | 1,445.3 | 1,419.7 | 1,436.7 | 1,337.6 |
| 1–4 years | 117.5 | 85.6 | 86.5 | 84.6 | 96.8 | 93.0 | 95.0 | 85.3 | 91.5 | 82.8 | 91.8 | 88.4 |
| 5–14 years | 36.1 | 33.2 | 36.8 | 36.4 | 39.1 | 37.5 | 39.1 | 35.1 | 30.9 | 33.7 | 34.1 | 32.5 |
| 15–24 years | 56.5 | 67.0 | 69.9 | 77.7 | 87.3 | 90.0 | 93.8 | 89.3 | 87.0 | 89.8 | 96.0 | 97.2 |
| 25–34 years | 93.3 | 91.8 | 99.7 | 113.4 | 139.2 | 154.1 | 154.2 | 140.8 | 133.0 | 132.9 | 145.4 | 155.1 |
| 35–44 years | 193.3 | 191.5 | 202.0 | 232.0 | 297.2 | 335.4 | 315.6 | 276.6 | 247.0 | 239.4 | 270.3 | 287.5 |
| 45–54 years | 459.2 | 479.7 | 489.6 | 540.0 | 673.3 | 744.0 | 681.1 | 594.1 | 529.6 | 511.3 | 576.3 | 617.0 |
| 55–64 years | 1,082.1 | 1,130.0 | 1,135.5 | 1,188.6 | 1,367.0 | 1,494.0 | 1,384.4 | 1,291.1 | 1,245.0 | 1,221.0 | 1,335.3 | 1,421.0 |
| 65–74 years | 3,059.2 | 2,790.9 | 2,735.8 | 2,798.6 | 3,120.1 | 3,280.9 | 3,177.8 | 3,119.6 | 3,138.9 | 3,136.9 | 3,302.8 | 3,360.1 |
| 75–84 years | 7,799.4 | 7,818.3 | 7,848.6 | 7,996.4 | 8,837.5 | 9,287.2 | 8,938.0 | 8,715.5 | 8,621.4 | 8,286.3 | 8,420.5 | 8,162.9 |
| 85 years and over | 20,711.2 | 19,679.8 | 19,223.3 | 19,381.8 | 21,376.3 | 21,524.6 | 20,977.5 | 20,419.0 | 20,235.6 | 19,873.0 | 20,777.0 | 20,692.6 |

**Table 9. Death rates from all causes, by age and sex: Russian Federation and United States, selected years 1985–2000—Con.**

| Sex and age | United States | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1985 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
| Both sexes | | | | | | | | | | | | |
| All-ages, age-adjusted | 848.8 | 803.4 | 792.5 | 779.3 | 794.5 | 784.7 | 781.6 | 766.7 | 751.9 | 741.4 | 744.4 | 735.7 |
| All-ages, crude | 876.9 | 863.8 | 860.3 | 852.9 | 880.0 | 875.4 | 880.0 | 872.5 | 864.7 | 864.7 | 877.0 | 873.1 |
| Under 1 year | 1,088.1 | 971.9 | 916.6 | 865.7 | 854.4 | 819.3 | 768.8 | 755.7 | 738.7 | 751.3 | 731.4 | 728.7 |
| 1–4 years | 51.8 | 46.8 | 47.4 | 43.6 | 44.8 | 42.9 | 40.6 | 38.3 | 35.8 | 34.6 | 34.7 | 32.9 |
| 5–14 years | 26.5 | 24.0 | 23.6 | 22.5 | 23.4 | 22.5 | 22.5 | 21.7 | 20.8 | 19.9 | 19.2 | 18.7 |
| 15–24 years | 94.9 | 99.2 | 100.1 | 95.6 | 98.5 | 98.0 | 95.3 | 89.6 | 86.2 | 82.3 | 81.2 | 81.6 |
| 25–34 years | 124.4 | 139.2 | 139.1 | 137.8 | 142.4 | 143.3 | 141.3 | 126.7 | 115.0 | 109.6 | 108.3 | 108.1 |
| 35–44 years | 207.7 | 223.2 | 224.4 | 228.8 | 235.5 | 238.8 | 240.8 | 221.3 | 203.2 | 199.6 | 199.2 | 200.0 |
| 45–54 years | 519.3 | 473.4 | 468.8 | 456.1 | 460.0 | 461.6 | 460.1 | 445.9 | 430.8 | 423.5 | 427.3 | 431.6 |
| 55–64 years | 1,294.2 | 1,196.9 | 1,181.0 | 1,151.7 | 1,154.7 | 1,128.2 | 1,114.5 | 1,094.1 | 1,063.6 | 1,030.7 | 1,021.8 | 1,004.6 |
| 65–74 years | 2,862.8 | 2,648.6 | 2,618.5 | 2,588.9 | 2,617.1 | 2,584.9 | 2,563.5 | 2,538.4 | 2,509.8 | 2,495.1 | 2,484.3 | 2,428.6 |
| 75–84 years | 6,398.7 | 6,007.2 | 5,890.0 | 5,775.5 | 5,951.6 | 5,860.2 | 5,851.8 | 5,803.1 | 5,728.2 | 5,703.2 | 5,751.3 | 5,688.4 |
| 85 years and over | 15,712.4 | 15,327.4 | 15,107.6 | 14,972.9 | 15,481.7 | 15,296.7 | 15,469.5 | 15,327.2 | 15,345.2 | 15,111.7 | 15,476.1 | 15,321.5 |
| Male | | | | | | | | | | | | |
| All-ages, age-adjusted | 1,104.8 | 1,035.3 | 1,018.5 | 998.8 | 1,013.8 | 996.4 | 985.8 | 956.9 | 931.5 | 909.8 | 905.9 | 889.6 |
| All-ages, crude | 948.6 | 918.4 | 912.1 | 901.6 | 923.5 | 915.0 | 914.1 | 896.4 | 880.8 | 876.4 | 882.0 | 874.7 |
| Under 1 year | 1,219.9 | 1,082.8 | 1,023.8 | 956.6 | 945.8 | 899.4 | 843.8 | 828.0 | 812.8 | 818.2 | 801.5 | 799.9 |
| 1–4 years | 58.5 | 52.4 | 52.0 | 48.0 | 49.5 | 47.3 | 44.8 | 42.2 | 39.7 | 37.6 | 38.5 | 36.5 |
| 5–14 years | 31.8 | 28.5 | 28.7 | 27.2 | 27.4 | 26.9 | 26.7 | 25.4 | 24.0 | 23.4 | 22.2 | 21.7 |
| 15–24 years | 138.9 | 147.4 | 148.0 | 141.8 | 146.2 | 145.8 | 140.5 | 130.6 | 124.0 | 119.3 | 115.9 | 117.5 |
| 25–34 years | 179.6 | 204.3 | 204.0 | 202.0 | 208.6 | 208.8 | 204.7 | 178.6 | 160.1 | 151.7 | 150.2 | 149.9 |
| 35–44 years | 278.9 | 310.4 | 311.6 | 318.7 | 328.6 | 332.9 | 333.0 | 298.1 | 265.7 | 258.5 | 256.7 | 256.9 |
| 45–54 years | 671.6 | 610.3 | 605.2 | 591.7 | 596.0 | 599.4 | 598.9 | 573.8 | 550.5 | 542.8 | 546.7 | 552.5 |
| 55–64 years | 1,711.4 | 1,553.4 | 1,524.7 | 1,481.5 | 1,479.9 | 1,444.3 | 1,416.7 | 1,388.7 | 1,336.6 | 1,296.9 | 1,280.0 | 1,253.5 |
| 65–74 years | 3,856.3 | 3,491.5 | 3,438.7 | 3,374.4 | 3,394.8 | 3,332.3 | 3,284.6 | 3,233.4 | 3,191.2 | 3,143.7 | 3,109.3 | 3,015.7 |
| 75–84 years | 8,501.6 | 7,888.6 | 7,689.0 | 7,482.7 | 7,653.2 | 7,440.9 | 7,377.1 | 7,249.8 | 7,116.1 | 7,019.2 | 6,999.8 | 6,854.7 |
| 85 years and over | 18,614.1 | 18,056.6 | 17,800.6 | 17,740.4 | 18,257.2 | 17,972.3 | 17,978.9 | 17,547.7 | 17,461.9 | 16,763.3 | 16,931.3 | 16,605.4 |
| Female | | | | | | | | | | | | |
| All-ages, age-adjusted | 658.6 | 628.8 | 621.5 | 612.5 | 627.1 | 621.8 | 623.3 | 618.1 | 611.7 | 607.7 | 614.9 | 610.8 |
| All-ages, crude | 809.1 | 812.0 | 811.0 | 806.5 | 838.6 | 837.6 | 847.3 | 849.7 | 849.2 | 853.5 | 872.2 | 871.6 |
| Under 1 year | 950.6 | 855.7 | 804.4 | 770.8 | 758.6 | 735.5 | 690.1 | 680.0 | 661.1 | 681.3 | 658.1 | 654.3 |
| 1–4 years | 44.8 | 41.0 | 42.7 | 39.0 | 39.9 | 38.2 | 36.2 | 34.3 | 31.8 | 31.4 | 30.8 | 29.1 |
| 5–14 years | 21.0 | 19.3 | 18.3 | 17.5 | 19.1 | 17.9 | 18.2 | 17.8 | 17.4 | 16.2 | 16.1 | 15.6 |
| 15–24 years | 49.6 | 49.0 | 50.0 | 47.2 | 48.6 | 48.2 | 48.1 | 46.2 | 46.3 | 43.5 | 44.7 | 44.0 |
| 25–34 years | 69.4 | 74.2 | 74.2 | 73.5 | 76.2 | 77.8 | 77.9 | 74.7 | 69.9 | 68.1 | 66.9 | 66.7 |
| 35–44 years | 138.7 | 137.9 | 139.0 | 140.5 | 144.0 | 146.4 | 150.1 | 145.4 | 141.4 | 141.5 | 142.5 | 143.9 |
| 45–54 years | 375.2 | 342.7 | 338.8 | 326.4 | 330.0 | 330.1 | 327.6 | 323.3 | 316.1 | 309.6 | 313.1 | 315.8 |
| 55–64 years | 925.6 | 878.8 | 872.8 | 854.7 | 861.0 | 842.2 | 840.8 | 826.7 | 815.2 | 788.4 | 786.5 | 777.7 |
| 65–74 years | 2,096.9 | 1,991.2 | 1,976.8 | 1,971.4 | 2,001.4 | 1,990.3 | 1,986.1 | 1,979.0 | 1,959.0 | 1,967.7 | 1,972.9 | 1,945.1 |
| 75–84 years | 5,162.1 | 4,883.1 | 4,801.4 | 4,731.1 | 4,899.0 | 4,870.9 | 4,882.7 | 4,868.3 | 4,820.5 | 4,831.9 | 4,915.4 | 4,900.9 |
| 85 years and over | 14,553.9 | 14,274.3 | 14,066.6 | 13,901.0 | 14,416.9 | 14,265.3 | 14,492.4 | 14,444.7 | 14,492.3 | 14,427.4 | 14,861.1 | 14,768.6 |

NOTE: Age adjusted using as standard population the European standard 100,000 population prepared by the World Health Organization (see Appendix).

SOURCES: Russian Federation: Goskomstat; United States: Centers for Disease Control and Prevention, National Center for Health Statistics, Division of Vital Statistics.

**Table 10. Age-adjusted death rates for selected causes of death, by sex: Russian Federation, 1990–2000**

| Sex and cause of death[1] | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Deaths per 100,000 population | | | | | | | | | | |
| All causes | | | | | | | | | | | |
| Total | 1,192.8 | 1,198.3 | 1,264.9 | 1,474.8 | 1,581.8 | 1,506.4 | 1,413.6 | 1,355.6 | 1,323.8 | 1,416.7 | 1,461.2 |
| Male | 1,688.5 | 1,699.1 | 1,803.9 | 2,128.3 | 2,290.8 | 2,159.1 | 2,002.6 | 1,899.2 | 1,847.1 | 1,991.6 | 2,075.6 |
| Female | 892.3 | 889.8 | 918.7 | 1,041.3 | 1,098.7 | 1,052.6 | 1,003.1 | 979.7 | 957.5 | 1,008.9 | 1,020.6 |
| Infectious diseases (001–139) | | | | | | | | | | | |
| Total | 12.8 | 12.8 | 14.0 | 18.4 | 21.1 | 21.8 | 22.2 | 21.2 | 19.5 | 24.8 | 25.0 |
| Male | 22.0 | 21.8 | 24.5 | 32.3 | 36.9 | 37.9 | 39.5 | 37.9 | 34.5 | 44.3 | 44.2 |
| Female | 5.8 | 5.7 | 5.6 | 7.2 | 8.2 | 8.4 | 7.5 | 7.0 | 6.9 | 8.3 | 8.5 |
| Diseases of heart (390–398, 401–429) | | | | | | | | | | | |
| Total | 367.9 | 360.9 | 372.0 | 442.7 | 477.9 | 443.4 | 417.4 | 400.2 | 390.8 | 429.5 | 445.7 |
| Male | 505.7 | 506.4 | 526.5 | 634.7 | 690.9 | 635.9 | 590.6 | 561.0 | 548.1 | 606.4 | 636.4 |
| Female | 286.5 | 277.8 | 280.3 | 324.8 | 342.5 | 319.2 | 305.0 | 296.2 | 288.9 | 313.1 | 318.3 |
| Cerebrovascular diseases (430–438) | | | | | | | | | | | |
| Total | 245.6 | 242.2 | 247.4 | 277.1 | 297.0 | 287.4 | 277.9 | 278.3 | 278.3 | 288.9 | 297.4 |
| Male | 287.4 | 282.3 | 288.3 | 328.7 | 355.8 | 338.3 | 322.7 | 320.8 | 317.8 | 332.5 | 347.4 |
| Female | 224.4 | 221.0 | 225.3 | 248.5 | 262.9 | 256.1 | 249.4 | 250.9 | 251.7 | 259.0 | 263.7 |
| Malignant neoplasms (140–208) | | | | | | | | | | | |
| Total | 201.5 | 202.6 | 204.3 | 205.5 | 204.5 | 200.0 | 194.9 | 193.6 | 192.4 | 193.3 | 192.4 |
| Male | 315.0 | 316.3 | 316.5 | 319.7 | 314.3 | 305.0 | 296.0 | 292.8 | 289.2 | 290.0 | 287.1 |
| Female | 140.6 | 140.7 | 142.1 | 141.2 | 141.8 | 139.7 | 137.2 | 137.1 | 136.7 | 137.6 | 137.3 |
| Malignant neoplasms of the respiratory system (160–165) | | | | | | | | | | | |
| Total | 49.9 | 50.4 | 50.8 | 51.5 | 50.9 | 48.9 | 46.7 | 41.8 | 44.9 | 44.0 | 43.8 |
| Male | 116.2 | 116.9 | 116.6 | 117.6 | 115.9 | 111.2 | 105.9 | 93.7 | 101.6 | 100.0 | 98.8 |
| Female | 11.8 | 11.5 | 11.7 | 11.6 | 11.5 | 10.8 | 10.4 | 10.4 | 10.1 | 9.6 | 9.7 |
| Malignant neoplasms of the breast (174) | | | | | | | | | | | |
| Female | 19.2 | 19.8 | 21.0 | 21.4 | 22.1 | 22.0 | 22.6 | 23.2 | 23.6 | 23.8 | 24.1 |
| Pneumonia and influenza (480–483, 485–487) | | | | | | | | | | | |
| Total | 10.3 | 10.1 | 11.9 | 18.8 | 21.9 | 21.8 | 18.6 | 16.5 | 15.4 | 21.3 | 25.6 |
| Male | 15.7 | 15.1 | 19.1 | 30.7 | 37.1 | 36.8 | 31.1 | 26.8 | 25.4 | 35.3 | 43.6 |
| Female | 6.8 | 6.8 | 6.7 | 9.8 | 10.0 | 10.1 | 8.9 | 8.7 | 7.9 | 10.5 | 11.7 |
| Chronic obstructive pulmonary diseases (490–496) | | | | | | | | | | | |
| Total | 35.7 | 33.0 | 33.3 | 39.5 | 41.3 | 36.5 | 34.7 | 34.1 | 30.3 | 36.1 | 36.0 |
| Male | 69.8 | 64.7 | 65.2 | 78.6 | 82.4 | 72.4 | 68.9 | 67.4 | 60.9 | 72.4 | 71.6 |
| Female | 20.8 | 18.9 | 18.8 | 20.8 | 21.0 | 18.7 | 17.8 | 17.6 | 15.2 | 17.4 | 16.6 |
| Chronic liver diseases and cirrhosis (571.0–571.3, 571.5, 571.6) | | | | | | | | | | | |
| Total | 9.9 | 9.9 | 10.6 | 14.1 | 18.8 | 20.4 | 17.7 | 15.2 | 14.2 | 15.4 | 17.6 |
| Male | 15.0 | 14.9 | 15.7 | 20.5 | 27.1 | 29.8 | 25.9 | 22.3 | 20.6 | 22.5 | 24.6 |
| Female | 6.8 | 6.9 | 7.4 | 9.9 | 12.8 | 13.6 | 11.8 | 10.1 | 9.7 | 10.2 | 12.3 |
| Other alcohol-related causes (303, 305.0, E860) | | | | | | | | | | | |
| Total | 12.5 | 12.7 | 19.6 | 35.2 | 44.9 | 37.2 | 28.7 | 21.9 | 19.9 | 22.5 | 27.9 |
| Male | 21.5 | 21.8 | 33.5 | 58.6 | 74.2 | 62.0 | 48.0 | 36.7 | 33.5 | 37.4 | 46.3 |
| Female | 4.7 | 4.7 | 7.4 | 14.6 | 19.2 | 15.5 | 11.8 | 9.1 | 8.2 | 9.7 | 11.9 |
| Motor vehicle and other transport accidents (E800–E848) | | | | | | | | | | | |
| Total | 29.0 | 30.5 | 29.9 | 30.1 | 27.8 | 25.4 | 22.2 | 20.8 | 22.2 | 25.0 | 25.8 |
| Male | 48.6 | 50.8 | 49.4 | 49.4 | 45.3 | 40.9 | 35.2 | 32.4 | 34.6 | 39.7 | 40.7 |
| Female | 11.7 | 12.7 | 12.4 | 12.8 | 12.1 | 11.5 | 10.5 | 10.3 | 10.9 | 11.8 | 12.3 |
| Suicide (E950–E959) | | | | | | | | | | | |
| Total | 27.0 | 26.9 | 31.3 | 38.0 | 41.7 | 41.0 | 38.7 | 36.6 | 34.2 | 37.7 | 37.4 |
| Male | 47.5 | 47.6 | 55.8 | 68.9 | 76.4 | 74.1 | 70.7 | 66.6 | 62.2 | 68.7 | 69.0 |
| Female | 10.5 | 10.1 | 10.9 | 12.1 | 12.5 | 12.7 | 11.5 | 11.2 | 10.4 | 11.5 | 10.5 |

**Table 10. Age-adjusted death rates for selected causes of death, by sex: Russian Federation, 1990–2000—Con.**

| Sex and cause of death[1] | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Deaths per 100,000 population | | | | | | | | | | |
| Homicide and legal intervention (E960–E978) | | | | | | | | | | | |
| Total | 14.1 | 15.1 | 22.6 | 29.7 | 31.4 | 29.8 | 25.7 | 23.1 | 21.9 | 25.1 | 26.9 |
| Male | 22.4 | 24.1 | 36.4 | 47.5 | 50.3 | 47.6 | 40.5 | 36.5 | 34.6 | 39.3 | 42.6 |
| Female | 6.4 | 6.7 | 9.7 | 13.2 | 13.9 | 13.3 | 11.9 | 10.7 | 10.3 | 12.0 | 12.6 |
| Other external causes (E850–E859, E861–E943, E980–E999) | | | | | | | | | | | |
| Total | 53.9 | 59.2 | 71.7 | 96.2 | 107.4 | 106.9 | 94.6 | 84.1 | 86.0 | 91.2 | 95.8 |
| Male | 89.9 | 99.1 | 120.3 | 161.8 | 181.3 | 180.1 | 158.7 | 140.7 | 143.9 | 154.0 | 162.9 |
| Female | 22.8 | 24.3 | 29.1 | 39.4 | 43.5 | 43.0 | 38.7 | 35.0 | 35.5 | 36.6 | 37.2 |

[1]For 1990–98, cause of death codes are from the *International Classification of Diseases, Ninth Revision; for 1999–2000, cause of death codes are from the International Classification of Diseases, Tenth Revision.*

NOTE: Age adjusted using as standard population the European standard 100,000 population prepared by the World Health Organization (see Appendix).

SOURCE: Goskomstat.

**Table 11. Age-adjusted death rates for selected causes of death, by sex: United States, selected years 1985–99**

| Sex and cause of death[1] | 1985 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999[2] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Deaths per 100,000 population | | | | | | | | | | |
| All causes | | | | | | | | | | | |
| Total | 848.8 | 803.4 | 792.5 | 779.3 | 794.5 | 784.7 | 781.6 | 766.7 | 751.9 | 741.4 | 744.4 |
| Male | 1,104.8 | 1,035.3 | 1,018.5 | 998.8 | 1,013.8 | 996.4 | 985.8 | 956.9 | 931.5 | 909.8 | 905.9 |
| Female | 658.6 | 628.8 | 621.5 | 612.5 | 627.1 | 621.8 | 623.3 | 618.1 | 611.7 | 607.7 | 614.9 |
| Infectious diseases (001–139) | | | | | | | | | | | |
| Total | 11.4 | 21.3 | 22.7 | 23.9 | 25.6 | 27.2 | 27.5 | 23.0 | 17.8 | 17.1 | 17.2 |
| Male | 14.5 | 31.7 | 34.1 | 36.0 | 38.3 | 40.7 | 40.5 | 32.2 | 23.0 | 21.7 | 21.6 |
| Female | 8.9 | 11.6 | 12.1 | 12.6 | 13.6 | 14.5 | 15.2 | 14.3 | 13.0 | 13.0 | 13.2 |
| Diseases of heart (390–398, 401–429) | | | | | | | | | | | |
| Total | 308.8 | 262.5 | 256.0 | 249.5 | 252.0 | 243.6 | 240.4 | 233.9 | 227.3 | 220.5 | 219.0 |
| Male | 411.8 | 344.7 | 335.1 | 325.7 | 327.6 | 315.8 | 310.0 | 300.0 | 290.6 | 279.6 | 275.5 |
| Female | 231.6 | 200.6 | 195.9 | 191.5 | 194.2 | 188.0 | 186.3 | 182.0 | 177.2 | 173.2 | 173.4 |
| Cerebrovascular diseases (430–438) | | | | | | | | | | | |
| Total | 59.3 | 50.7 | 49.1 | 48.1 | 48.8 | 48.8 | 49.3 | 48.8 | 47.7 | 46.1 | 44.8 |
| Male | 63.0 | 53.9 | 52.4 | 51.2 | 52.1 | 51.9 | 51.9 | 51.2 | 50.1 | 47.3 | 46.0 |
| Female | 56.1 | 48.0 | 46.2 | 45.4 | 46.1 | 46.1 | 46.8 | 46.4 | 45.5 | 44.4 | 43.3 |
| Malignant neoplasms (140–208) | | | | | | | | | | | |
| Total | 197.1 | 200.0 | 199.5 | 197.8 | 197.6 | 196.0 | 194.2 | 191.3 | 188.2 | 185.0 | 183.6 |
| Male | 250.2 | 253.5 | 251.7 | 248.9 | 248.2 | 244.8 | 241.1 | 236.3 | 231.3 | 226.5 | 223.8 |
| Female | 161.3 | 164.2 | 164.4 | 163.5 | 163.4 | 163.0 | 162.4 | 160.2 | 158.3 | 155.8 | 154.9 |
| Malignant neoplasms of the respiratory system (160–165) | | | | | | | | | | | |
| Total | 56.0 | 60.0 | 59.9 | 59.6 | 59.7 | 58.9 | 58.4 | 57.8 | 57.2 | 54.8 | 53.9 |
| Male | 88.9 | 90.4 | 89.2 | 87.1 | 86.7 | 84.5 | 82.9 | 81.1 | 79.5 | 74.6 | 72.9 |
| Female | 31.7 | 37.6 | 38.1 | 39.1 | 39.5 | 39.7 | 40.1 | 40.2 | 40.4 | 39.7 | 39.3 |
| Malignant neoplasms of the breast (174) | | | | | | | | | | | |
| Female | 32.1 | 32.1 | 31.6 | 30.6 | 30.2 | 29.8 | 29.5 | 28.4 | 27.2 | 26.5 | 25.5 |
| Pneumonia and influenza (480–483, 485–487) | | | | | | | | | | | |
| Total | 25.9 | 27.4 | 26.0 | 24.7 | 26.3 | 25.3 | 25.2 | 24.9 | 25.1 | 25.8 | 25.1 |
| Male | 35.2 | 35.7 | 34.0 | 32.4 | 33.9 | 32.5 | 32.0 | 31.2 | 31.4 | 31.6 | 29.9 |
| Female | 20.5 | 22.4 | 21.3 | 20.1 | 21.7 | 21.0 | 21.0 | 20.9 | 21.2 | 22.1 | 21.9 |
| Chronic obstructive pulmonary diseases (490–496) | | | | | | | | | | | |
| Total | 29.9 | 31.8 | 32.5 | 32.3 | 34.8 | 34.3 | 34.1 | 34.5 | 34.8 | 35.1 | 36.4 |
| Male | 46.8 | 45.7 | 45.5 | 44.6 | 47.0 | 45.6 | 44.9 | 44.2 | 44.6 | 44.1 | 45.2 |
| Female | 19.4 | 23.3 | 24.6 | 24.7 | 27.3 | 27.4 | 27.5 | 28.4 | 28.7 | 29.4 | 30.6 |
| Chronic liver diseases and cirrhosis (571.0–571.3, 571.5, 571.6) | | | | | | | | | | | |
| Total | 12.5 | 11.2 | 10.8 | 10.5 | 10.3 | 10.2 | 10.0 | 9.8 | 9.6 | 9.4 | 9.4 |
| Male | 17.7 | 15.9 | 15.3 | 15.1 | 14.6 | 14.6 | 14.3 | 13.9 | 13.6 | 13.4 | 13.4 |
| Female | 8.0 | 7.0 | 6.9 | 6.4 | 6.4 | 6.3 | 6.1 | 6.0 | 6.0 | 5.9 | 5.8 |
| Other alcohol-related causes (303, 305.0, E860) | | | | | | | | | | | |
| Total | 2.5 | 2.8 | 2.7 | 2.7 | 2.7 | 2.7 | 2.7 | 2.6 | 2.5 | 2.5 | 2.4 |
| Male | 4.1 | 4.7 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.2 | 4.1 | 4.1 | 4.1 |
| Female | 1.1 | 1.2 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.0 |
| Motor vehicle and other transport accidents (E800–E848) | | | | | | | | | | | |
| Total | 19.7 | 19.3 | 17.8 | 16.8 | 16.8 | 17.0 | 17.1 | 17.1 | 16.8 | 16.6 | 16.9 |
| Male | 29.0 | 27.9 | 25.7 | 24.1 | 24.1 | 24.1 | 24.2 | 23.9 | 23.4 | 23.3 | 23.9 |
| Female | 10.9 | 11.2 | 10.4 | 9.9 | 10.0 | 10.4 | 10.5 | 10.7 | 10.6 | 10.4 | 10.3 |

**Table 11. Age-adjusted death rates for selected causes of death, by sex: United States, selected years 1985–99—Con.**

| Sex and cause of death[1] | 1985 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999[2] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Deaths per 100,000 population | | | | | | | | | | |
| Suicide (E950–E959) | | | | | | | | | | | |
| Total | 12.4 | 12.3 | 12.1 | 11.8 | 11.9 | 11.8 | 11.7 | 11.4 | 11.2 | 11.1 | 10.5 |
| Male | 20.5 | 20.7 | 20.5 | 19.9 | 20.1 | 19.9 | 19.9 | 19.4 | 18.8 | 18.6 | 17.7 |
| Female | 5.2 | 4.8 | 4.7 | 4.6 | 4.6 | 4.4 | 4.3 | 4.3 | 4.3 | 4.3 | 4.0 |
| Homicide and legal intervention (E960–E978) | | | | | | | | | | | |
| Total | 8.0 | 9.5 | 10.0 | 9.6 | 9.8 | 9.3 | 8.6 | 7.8 | 7.3 | 6.7 | 6.3 |
| Male | 12.3 | 15.0 | 15.8 | 15.3 | 15.4 | 14.8 | 13.3 | 12.1 | 11.4 | 10.3 | 9.7 |
| Female | 3.8 | 4.0 | 4.3 | 4.0 | 4.2 | 3.8 | 3.8 | 3.4 | 3.2 | 3.0 | 2.9 |
| Other external causes (E850–E859, E861–E949) | | | | | | | | | | | |
| Total | 17.8 | 17.2 | 17.0 | 16.8 | 17.5 | 17.4 | 17.5 | 17.6 | 17.7 | 18.0 | 17.1 |
| Male | 26.2 | 25.5 | 25.2 | 24.9 | 25.8 | 25.7 | 25.7 | 25.5 | 25.6 | 25.8 | 24.7 |
| Female | 10.5 | 9.9 | 9.9 | 9.6 | 10.1 | 10.0 | 10.2 | 10.6 | 10.5 | 11.0 | 17.6 |

[1]Cause of death codes are from the *International Classification of Diseases, Ninth Revision.*

[2]Rates were modified with the comparability ratios developed in the comparability study between ICD–9 and ICD–10 carried out by the National Center for Health Statistics and reported in the Technical Notes, *Deaths, Final Data for 1999*. National vital statistics reports; vol 49 no. 8. Hyattsville, MD: NCHS. 2001.

NOTE: Age-adjusted using as standard population the European standard 100,000 population prepared by the World Health Organization (see Appendix).

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, Division of Vital Statistics.

**Table 12. Rate of selected notifiable diseases, by type of disease: Russian Federation and United States, selected years 1985–2000**

| Country and disease | 1985 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Russian Federation | | | | | | Cases per 100,000 population | | | | | | |
| Diphtheria | - - - | - - - | 1.26 | 2.63 | 10.28 | 26.83 | 24.11 | 9.29 | 2.75 | 0.96 | 0.57 | 0.53 |
| Hepatitis A | - - - | - - - | 165.55 | 117.22 | 110.12 | 109.86 | 123.68 | 87.61 | 50.43 | 34.01 | 30.34 | 57.30 |
| Hepatitis B | - - - | - - - | 17.95 | 18.09 | 22.29 | 26.90 | 35.65 | 36.02 | 36.63 | 35.87 | 43.95 | 42.53 |
| Hepatitis C | - - - | - - - | - - - | - - - | - - - | 3.14 | 6.78 | 8.43 | 9.14 | 11.59 | 21.01 | 21.10 |
| All viral hepatitis | - - - | - - - | 191.69 | 136.17 | 133.92 | 141.23 | 167.49 | 133.69 | 97.65 | 83.68 | 98.55 | 125.40 |
| Malaria | - - - | - - - | 0.14 | 0.11 | 0.13 | 0.24 | 0.28 | 0.41 | 0.54 | 0.74 | 0.54 | 0.55 |
| Meningococcal disease | - - - | - - - | 3.95 | 3.49 | 3.55 | 3.86 | 3.35 | 3.39 | 3.06 | 2.69 | 2.59 | 2.70 |
| Mumps | - - - | - - - | 24.63 | 23.56 | 30.22 | 27.97 | 36.05 | 47.41 | 69.92 | 98.94 | 48.41 | 28.08 |
| Pertussis (whooping cough) | - - - | - - - | 20.83 | 16.18 | 26.62 | 32.85 | 13.96 | 9.39 | 18.51 | 19.15 | 15.23 | 20.50 |
| Poliomyelitis | - - - | - - - | 0.01 | 0.01 | 0.00 | 0.01 | 0.10 | 0.00 | [1]0.00 | [1]0.00 | [1]0.00 | 0.01 |
| Rubeola (measles) | - - - | - - - | 13.79 | 12.52 | 50.26 | 19.38 | 4.49 | 5.55 | 1.96 | 4.24 | 5.09 | 3.32 |
| Syphilis[2] | - - - | - - - | 7.22 | 13.42 | 33.82 | 85.56 | 177.23 | 263.41 | 276.10 | 233.80 | 186.17 | 165.30 |
| Gonorrhea[2] | - - - | - - - | 128.64 | 169.58 | 230.18 | 203.90 | 173.64 | 138.36 | 113.65 | 102.64 | 119.50 | 121.50 |
| Tuberculosis | - - - | - - - | 34.00 | 35.84 | 42.92 | 47.86 | 57.51 | 67.21 | 73.61 | 75.71 | 61.70 | 90.30 |
| United States[3] | | | | | | | | | | | | |
| Diphtheria | 0.00 | 0.00 | 0.00 | 0.00 | – | 0.00 | – | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 |
| Hepatitis A | 10.03 | 12.64 | 9.67 | 9.06 | 9.40 | 10.29 | 12.13 | 11.70 | 11.22 | 8.59 | 6.25 | 4.91 |
| Hepatitis B | 11.50 | 8.48 | 7.14 | 6.32 | 5.18 | 4.81 | 4.19 | 4.01 | 3.90 | 3.80 | 2.82 | 2.95 |
| Hepatitis C; non-A, non-B | 1.76 | 1.03 | 1.42 | 2.36 | 1.86 | 1.78 | 1.78 | 1.41 | 1.43 | 1.30 | 1.14 | 1.17 |
| Malaria | 0.44 | 0.52 | 0.51 | 0.43 | 0.55 | 0.47 | 0.55 | 0.68 | 0.75 | 0.60 | 0.61 | 0.57 |
| Meningococcal disease | 1.04 | 0.99 | 0.84 | 0.84 | 1.02 | 1.11 | 1.25 | 1.30 | 1.24 | 1.01 | 0.92 | 0.83 |
| Mumps | 1.30 | 2.17 | 1.72 | 1.03 | 0.66 | 0.60 | 0.35 | 0.29 | 0.27 | 0.25 | 0.14 | 0.13 |
| Pertussis (whooping cough) | 1.50 | 1.84 | 1.08 | 1.60 | 2.55 | 1.77 | 1.97 | 2.94 | 2.46 | 2.74 | 2.67 | 2.88 |
| Rubeola (measles) | 1.18 | 11.17 | 3.82 | 0.88 | 0.12 | 0.37 | 0.12 | 0.20 | 0.06 | 0.04 | 0.04 | 0.03 |
| Rubella (German measles) | 0.26 | 0.45 | 0.56 | 0.06 | 0.07 | 0.09 | 0.05 | 0.10 | 0.07 | 0.13 | 0.10 | 0.06 |
| Syphilis, all stages | 28.50 | 53.80 | 51.69 | 45.03 | 39.70 | 32.00 | 26.20 | 19.97 | 17.39 | 14.19 | 13.07 | 11.58 |
| Gonorrhea[4] | 384.28 | 276.60 | 249.48 | 201.60 | 172.40 | 168.40 | 149.50 | 122.80 | 121.40 | 132.88 | 133.20 | 131.65 |
| Tuberculosis | 9.30 | 10.33 | 10.42 | 10.46 | 9.82 | 9.36 | 8.70 | 8.04 | 7.42 | 6.79 | 6.43 | 6.01 |

- - - Data not available.

0.00 Rate greater than zero but less than 0.005.

– Quantity zero.

[1]Polio associated with oral polio vaccine.

[2]Data from Goskomstat.

[3]Data are based on reporting by State health departments.

[4]Data for 1994 do not include cases from Georgia.

NOTES: United States: The total resident population was used to calculate all rates except sexually transmitted diseases, for which the civilian resident population was used prior to 1991. Population data from those States where diseases were not notifiable or not available were excluded from rate calculation.

SOURCES: Russian Federation: Federal Center for Sanitary and Epidemiological Surveillance, Ministry of Health; Goskomstat; United States: Centers for Disease Control and Prevention. Summary of notifiable diseases, United States, 2000. Morbidity and Mortality Weekly Report; 49(53). Atlanta, Georgia: Public Health Service. 2002.

**Table 13. Rates of immunization coverage (percent) in children: Russian Federation and United States, selected years 1991–2000**

| Country and vaccine | No. doses | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Russian Federation[1] | | | | | | Percent | | | | | |
| Diphtheria/tetanus toxoids | 4 or more | 68.7 | 72.6 | 79.2 | 88.1 | 92.7 | 95.1 | 95.6 | 97.3 | 98.3 | 95.6 |
| Pertussis vaccine | 4 or more | 58.7 | 62.0 | 65.2 | 71.7 | 81.0 | 86.9 | 88.8 | 92.6 | 95.7 | 93.9 |
| Parotitis vaccine[2] | 1 | 56.8 | 61.7 | 66.9 | 71.2 | 77.1 | 83.4 | 86.8 | 94.4 | 97.7 | 95.3 |
| Poliomyelitis vaccine (OPV) | 3 or more | 71.5 | 69.0 | 82.2 | 87.5 | 91.6 | 96.8 | 98.0 | 98.8 | 99.1 | 96.8 |
| Measles vaccine[2] | 1 | 78.7 | 82.6 | 88.2 | 91.3 | 94.2 | 95.3 | 96.3 | 97.6 | 98.8 | 96.7 |
| BCG | 1 | 88.3 | 86.2 | 87.0 | 95.5 | 96.2 | 98.9 | 97.2 | 98.1 | 95.8 | 96.2 |
| United States[3,4] | | | | | | | | | | | |
| Combined series (4:3:1:3)[5] | . . . | - - - | - - - | - - - | 69 | 74 | 77 | 76 | 79 | 78.4 | 76.2 |
| DTP[6] | 4 or more | - - - | - - - | - - - | 76 | 79 | 81 | 81 | 84 | 83.3 | 81.7 |
| Polio | 4 or more | - - - | 72 | 79 | 83 | 88 | 91 | 91 | 91 | 89.6 | 89.5 |
| Measles-containing[7] | 1 | - - - | 83 | 84 | 89 | 90 | 91 | 91 | 92 | 91.5 | 90.5 |
| Hib[8] | 3 or more | - - - | 28 | 55 | 86 | 92 | 92 | 93 | 93 | 93.5 | 93.4 |
| Hepatitis B | 3 or more | - - - | 8 | 16 | 37 | 68 | 82 | 84 | 87 | 88.1 | 90.3 |

. . . Category not applicable.

- - - Data not available.

[1]Includes children 12–23 months of age.

[2]Measles, mumps, and rubella used as single antigens or as combined vaccine (MMR) with locally produced preparations or imported preparations registered appropriately.

[3]Includes children 19–35 months of age.

[4]Final estimates of data from the U.S. National Immunization Survey include an adjustment for children with missing immunization provider data.

[5]The 4:3:1:3 combined series consists of four doses of diphtheria-tetanus-pertussis (DTP) vaccine, three doses of polio vaccine, one dose of a measles-containing vaccine, and three doses of haemophilus influenzae type b (Hib) vaccine.

[6]Diphtheria-tetanus-pertussis vaccine.

[7]Respondents were asked about measles-containing or MMR (measles-mumps-rubella) vaccines.

[8]Haemophilus influenzae type b (Hib) vaccine.

NOTE: Final estimates of data from the National Immunization Survey include an adjustment for children with missing immunization provider data.

SOURCES: Russian Federation: Ministry of Health, Federal Center of the State Sanitary and Epidemiologic Surveillance; United States: Centers for Disease Control and Prevention (1992–93) Health Interview Survey, National Center for Health Statistics; (1994–98) National Immunization Survey, National Immunization Program; (1992) unpublished Hepatitis B data.

**Table 14. Number of persons with HIV or acquired immunodeficiency syndrome, and deaths due to HIV, by sex and age: Russian Federation and United States, selected years 1985–2001**

| Sex and age | 1985 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Russian Federation | | | | | Number of persons, by year of report | | | | | | | | |
| All persons diagnosed with HIV | - - - | - - - | 84 | 88 | 107 | 161 | 196 | 3,720 | 4,007 | 5,466 | 15,936 | 59,190 | 87,614 |
| All persons diagnosed with AIDS | - - - | - - - | 15 | 18 | 11 | 24 | 18 | 29 | 48 | 43 | - - - | 398 | 457 |
| | | | | | Number of deaths due to HIV | | | | | | | | |
| Both sexes, all ages | - - - | - - - | - - - | | [- - - 50 - - -] | | | [- - - 98 - - -] | | 40 | - - - | 279 | 330 |
| United States | | | | | Number of persons, by year of report | | | | | | | | |
| All persons diagnosed with AIDS | 8,160 | 41,459 | 43,393 | 45,687 | 101,488 | 76,706 | 70,455 | 65,929 | 57,651 | 45,811 | 44,630 | 40,836 | 41,587 |
| Male, 13 years and over | 7,505 | 36,188 | 37,366 | 38,989 | 84,751 | 62,489 | 56,719 | 52,186 | 44,803 | 35,052 | 34,047 | 30,202 | 30,749 |
| Female, 13 years and over | 524 | 4,546 | 5,362 | 5,954 | 15,870 | 13,246 | 12,991 | 13,093 | 12,405 | 10,393 | 10,329 | 9,996 | 10,667 |
| Both sexes, under 13 years | 131 | 725 | 665 | 744 | 867 | 971 | 745 | 650 | 443 | 366 | 254 | 188 | 171 |
| | | | | | | | Number of deaths due to HIV | | | | | | |
| Male, 13 years and over | - - - | 22,224 | 25,867 | 29,118 | 31,867 | 35,421 | 35,723 | 25,094 | 12,801 | 10,242 | - - - | - - - | - - - |
| Female, 13 years and over | - - - | 2,642 | 3,344 | 4,080 | 4,955 | 6,241 | 6,952 | 5,692 | 3,550 | 3,089 | - - - | - - - | - - - |
| Both sexes, under 13 years | - - - | 309 | 334 | 355 | 435 | 446 | 432 | 337 | 159 | 92 | - - - | - - - | - - - |

- - - Data not available.

SOURCES: Russian Federation: Federal Center for Sanitary and Epidemiological Surveillance, Ministry of Health; United States: Centers for Disease Control and Prevention, National Center for HIV, STD, and TB prevention, Division of HIV/AIDS Prevention.

**Table 15. Number of providers per 10,000 population, by specialty: Russian Federation and United States, selected years 1985–2000**

| Country and provider type | 1985 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Russian Federation | | | | | Personnel per 10,000 population | | | | | | | |
| All physicians[1] | 43.2 | 45.0 | 42.6 | 43.0 | 43.4 | 43.3 | 44.5 | 45.7 | 46.2 | 46.7 | 47.1 | 47.2 |
| Family physicians and internal medicine | 10.8 | 11.5 | 11.1 | 11.3 | 11.3 | 11.5 | 10.5 | 10.8 | 9.6 | 10.6 | 10.7 | 11.0 |
| Pediatrics[2] | 22.9 | 24.5 | 23.3 | 23.5 | 24.2 | 24.0 | 24.6 | 25.6 | 25.5 | 25.5 | 26.3 | 28.5 |
| Obstetrics and gynecology[3] | 4.8 | 5.2 | 4.9 | 5.0 | 5.1 | 5.0 | 5.2 | 5.4 | 5.4 | 5.3 | 5.4 | 5.5 |
| Surgery | 4.7 | 5.6 | 5.2 | 5.3 | 5.3 | 5.6 | 5.8 | 6.0 | 6.1 | 6.0 | 6.2 | 4.3 |
| Ophthalmology | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.1 | 1.1 |
| Otolaryngology | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 |
| Neurology | 1.1 | 1.2 | 1.2 | 1.2 | 1.3 | 1.3 | 1.4 | 1.4 | 1.5 | 1.5 | 1.5 | 1.6 |
| Psychiatry and narcology | 1.2 | 1.5 | 1.3 | 1.4 | 1.3 | 1.3 | 1.3 | 1.5 | 1.5 | 1.5 | 1.6 | 1.6 |
| Dentists | 2.8 | 3.3 | 3.2 | 3.1 | 3.4 | 3.1 | 3.3 | 3.5 | 3.5 | 3.7 | 3.8 | 3.9 |
| Nursing personnel, total | 122.4 | 124.5 | 115.8 | 115.3 | 113.1 | 109.7 | 111.0 | 112.7 | 111.5 | 111.4 | 111.3 | 108.4 |
| Physician assistants (feldshers) | 26.5 | 27.9 | 23.8 | 22.5 | 20.2 | 17.8 | 18.6 | 18.1 | 17.5 | 16.3 | 15.9 | 12.8 |
| Midwives | 23.5 | 20.3 | 16.6 | 16.3 | 16.4 | 14.8 | 14.5 | 13.8 | 13.5 | 12.1 | 11.9 | 10.0 |
| Nurses[4] | 60.5 | 67.1 | 62.6 | 63.4 | 64.3 | 67.8 | 68.4 | 66.8 | 66.6 | 65.7 | 66.2 | 70.3 |
| Laboratory assistants (feldshers-laborants) | 4.7 | 5.7 | 5.9 | 4.9 | 6.5 | 5.6 | 5.8 | 6.9 | 7.0 | 6.8 | 6.8 | 7.4 |
| X-ray technicians | 1.5 | 1.9 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 2.0 |
| United States | | | | | | | | | | | | |
| All active physicians | 20.9 | 22.0 | - - - | 22.7 | 22.9 | 23.3 | 23.8 | 24.3 | 24.8 | 24.7 | 24.5 | 25.1 |
| Non-Federal office-based physicians | 13.8 | 14.5 | . . . | 15.2 | 15.5 | 15.6 | 16.3 | 16.8 | 17.1 | 17.3 | 17.4 | 17.8 |
| Family practice | 2.3 | 2.3 | - - - | 2.3 | 2.3 | 2.2 | 2.3 | 2.3 | 2.3 | 2.4 | 2.4 | 2.5 |
| Internal medicine | 2.2 | 2.3 | - - - | 2.6 | 2.6 | 2.6 | 2.8 | 2.9 | 3.0 | 3.1 | 3.1 | 3.2 |
| Pediatrics[2] | 4.3 | 4.9 | - - - | 5.2 | 5.4 | 5.5 | 5.9 | 6.1 | 6.4 | 6.6 | 6.9 | 7.2 |
| Obstetrics and gynecology[3] | 1.9 | 2.0 | - - - | 2.1 | 2.1 | 2.1 | 2.2 | 2.2 | 2.2 | 2.3 | 2.2 | 2.3 |
| General surgery | 1.0 | 0.9 | - - - | 1.0 | 0.9 | 0.9 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 | 0.9 |
| Ophthalmology | 0.5 | 0.4 | - - - | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| Otolaryngology | 0.2 | 0.3 | - - - | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Orthopedic surgery | 0.5 | 0.6 | - - - | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 | 0.6 | 0.6 |
| Neurology | 0.2 | 0.1 | - - - | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Psychiatry | 0.8 | 0.8 | - - - | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| Dentists | 5.7 | 5.9 | 6.3 | 6.2 | 6.0 | 6.0 | - - - | 6.0 | 5.9 | 5.9 | 6.0 | 6.1 |
| Registered Nurses | 64.4 | 72.0 | 69.7 | 74.2 | 75.5 | 78.5 | 80.5 | 81.5 | 82.3 | 82.8 | 83.3 | - - - |

- - - Data not available.

[1]Includes dentists and both active and nonactive physicians who are not retired, residents and interns, sanitary-epidemiological doctors, dentists, and physiotherapists.

[2]Per 10,000 children 0–14 years of age.

[3]Per 10,000 females.

[4]Nurses refers to all types of nurses.

SOURCES: Russian Federation: Goskomstat; United States: Bidese, C.M., and Danais, D.B.: Physician Characteristics and Distribution in the United States, 1982 Chicago. American Medical Association, 1982; Roback, G.A., Mead, D., and Randolph, L.L.: Physician Characteristics and Distribution in the United States, 1986 Chicago. American Medical Association, 1986; Roback, G.A., Randolph, L.L., and Seidman, B.: Physician Characteristics and Distribution in the United States, 1990; 1992; 1993. Chicago. American Medical Association, 1990; 1992; 1993. Pasko, T., Seidman, B., and Birkhead, S.: Physician Characteristics and Distribution in the United States, 2000–2001; 2001–2002. Chicago. American Medical Association, 2000. (Copyrights 1982, 1986, 1990, 1992, 1993, 2000, 2001; used with the permission of the American Medical Association).

**Table 16. Number of hospitals and beds per 10,000 population, by hospital type and bed size: Russian Federation and United States, selected years 1985–2000**

| Hospital type and/or bed size | 1985 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Russian Federation | | | | | | Number of hospitals | | | | | | |
| All hospitals | 12,526 | 12,726 | 12,711 | 12,599 | 12,575 | 12,272 | 12,064 | 11,841 | 11,499 | 11,136 | 10,910 | 10,704 |
| Ministry of Health system: | 12,031 | 12,149 | 12,065 | 11,869 | 11,781 | 11,523 | 11,387 | 11,087 | 10,771 | 10,450 | 10,195 | 9,946 |
| Oblast hospitals (500–2000 beds) | - - - | 84 | 84 | 86 | 87 | 86 | 86 | 86 | 87 | 88 | 95 | 93 |
| City hospitals (100–750 beds) | - - - | 2,234 | 2,193 | 2,138 | 2,107 | 2,053 | 2,002 | 1,947 | 1,904 | 1,831 | 1,781 | 1,727 |
| Specialized hospitals (100–500 beds) | - - - | 419 | 405 | 396 | 413 | 423 | 418 | 421 | 417 | 411 | 407 | 392 |
| Central rayon hospitals (150–500 beds) | 1,781 | 1,798 | 1,807 | 1,810 | 1,799 | 1,778 | 1,786 | 1,776 | 1,775 | 1,769 | 1,765 | 1,765 |
| Rayon hospitals (75–250 beds) | 329 | 324 | 316 | 312 | 307 | 299 | 294 | 282 | 267 | 262 | 246 | 263 |
| Rural hospitals (utchastkovye bolnitsy) (10–75 beds) | 4,701 | 4,813 | 4,818 | 4,709 | 4,676 | 4,522 | 4,409 | 4,185 | 3,923 | 3,665 | 3,474 | 3,310 |
| Others (maternity hospitals, psycho-neurological hospitals, university clinics and medical research institutes, nursing homes, etc.) | - - - | 473 | 495 | 507 | 510 | 520 | 555 | 568 | 598 | 632 | 654 | 645 |
| Other health care systems (railway health care system, banking, etc.) | 410 | 578 | 646 | 730 | 794 | 748 | 677 | 754 | 728 | 686 | 715 | 758 |
| | | | | | | Beds per 10,000 population | | | | | | |
| All hospitals | 134.6 | 137.5 | 134.8 | 130.7 | 129.4 | 127.6 | 126.1 | 123.9 | 121 | 117.8 | 114.6 | 115.9 |
| Ministry of Health system: | 130.3 | 130.5 | 127.1 | 121.5 | 120.8 | 118.6 | 118.2 | 116.2 | 113.6 | 110.9 | 108.2 | 108.7 |
| Oblast hospitals (500–2000 beds) | - - - | 5.5 | 5.5 | 5.5 | 5.5 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.5 | 5.5 |
| City hospitals (100–750 beds) | - - - | 35.3 | 34.8 | 33.4 | 33.1 | 32.8 | 32.3 | 31.7 | 30.9 | 30.1 | 29.8 | 29.0 |
| Specialized hospitals (100–500 beds) | - - - | 5.1 | 4.9 | 4.6 | 4.7 | 4.8 | 4.8 | 4.8 | 4.7 | 4.6 | 4.6 | 4.6 |
| Central rayon hospitals (150–500 beds) | 29.5 | 30.4 | 29.9 | 29.1 | 28.5 | 27.8 | 27.7 | 27.4 | 26.7 | 26.0 | 25.9 | 25.8 |
| Rayon hospitals (75–250 beds) | 2.4 | 2.3 | 2.2 | 2.1 | 2.1 | 2.1 | 2.1 | 2.0 | 1.9 | 1.9 | 1.8 | 2.0 |
| Rural hospitals (utchastkovye bolnitsy) (10–75 beds) | 10.8 | 10.5 | 10.3 | 9.9 | 9.6 | 9.0 | 8.7 | 8.1 | 7.3 | 6.7 | 6.5 | 5.9 |
| Others (maternity hospitals, psycho-neurological hospitals, university clinics and medical research institutes, nursing homes, etc.) | - - - | 17 | 16.6 | 16.6 | 15.9 | 15.7 | 15.7 | 15.7 | 15.7 | 15.7 | 15.9 | 14.9 |
| Other health care systems (railway health care system, banking, etc.) | 4.3 | 7.0 | 7.7 | 9.2 | 8.6 | 8.4 | 8.1 | 7.4 | 7.7 | 6.6 | 7.3 | 7.2 |
| United States[1] | | | | | | Number of hospitals | | | | | | |
| All bed sizes | 5,732 | 5,384 | 5,342 | 5,292 | 5,261 | 5,229 | 5,194 | 5,134 | 5,057 | 5,015 | 4,956 | 4,915 |
| 199 beds or fewer | 3,996 | 3,730 | 3,699 | 3,661 | 3,639 | 3,623 | 3,663 | 3,634 | 3,571 | 3,582 | 3,534 | 3,489 |
| 200–499 beds | 1,417 | 1,369 | 1,362 | 1,338 | 1,337 | 1,333 | 1,267 | 1,249 | 1,231 | 1,179 | 1,168 | 1,179 |
| 500 beds or more | 319 | 285 | 281 | 293 | 285 | 273 | 264 | 251 | 255 | 254 | 254 | 247 |
| | | | | | | Beds per 10,000 population | | | | | | |
| All bed sizes | 42.1 | 37.3 | 36.6 | 36.1 | 35.6 | 34.6 | 33.2 | 32.5 | 31.9 | 31.1 | 30.4 | 29.9 |
| 199 beds or fewer | 14.4 | 12.6 | 12.4 | 12.2 | 12.1 | 11.8 | 11.8 | 11.7 | 11.2 | 11.2 | 10.9 | 10.5 |
| 200–499 beds | 18.4 | 16.8 | 16.5 | 16.0 | 15.9 | 15.5 | 14.6 | 14.3 | 14.0 | 13.3 | 13.0 | 13.0 |
| 500 beds or more | 9.2 | 7.9 | 7.7 | 7.9 | 7.7 | 7.3 | 6.9 | 6.5 | 6.7 | 6.6 | 6.5 | 6.4 |

- - - Data not available.

[1]Includes short-stay hospitals only.

NOTE: For the United States, data exclude psychiatric and tuberculosis and other respiratory disease hospitals.

SOURCES: Russian Federation: Goskomstat, Ministry of Health; United States: American Hospital Association: Hospital Statistics, 1981, 1986, 1991–2002 Editions. Chicago, 1981, 1986, 1991–2002 (Copyrights 1981, 1986, 1991–2002: Used with the permission of the American Hospital Association.)

**Table 17. Number of outpatient care contacts per person, by year and type of contact: Russian Federation and United States, selected years 1985–2000**

| Type of contact | 1985 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Russian Federation | | | | | | Contacts per person | | | | | | |
| All types | 11.1 | 9.5 | 9.3 | 9.0 | 9.2 | 9.2 | 9.1 | 9.1 | 9.1 | 9.1 | 9.3 | 9.4 |
| Visit to physician | 10.7 | 9.2 | 9.0 | 8.7 | 8.9 | 8.9 | 8.7 | 8.8 | 8.8 | 8.8 | 8.9 | 9.0 |
| Urgent and ambulance care | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 |
| United States | | | | | | | | | | | | |
| All types | 5.3 | 5.5 | 5.8 | 6.0 | 6.1 | 6.1 | 7.0 | 5.9 | - - - | - - - | - - - | - - - |
| Physician office | 3.0 | 3.3 | 3.3 | 3.3 | 3.4 | 3.4 | 3.6 | 3.2 | - - - | - - - | - - - | - - - |
| Hospital outpatient department | 0.8 | 0.7 | 0.8 | 0.9 | 0.8 | 0.8 | 1.0 | 0.7 | - - - | - - - | - - - | - - - |
| Telephone | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | 0.8 | 0.7 | - - - | - - - | - - - | - - - |
| Other | 0.8 | 0.8 | 0.9 | 1.1 | 1.2 | 1.1 | 1.6 | 1.2 | - - - | - - - | - - - | - - - |

- - - Data not available.

NOTES: For Russia, the term visit to physician refers to a visit to a state physician's office; visits to private physicians are not included. For the United States, "hospital outpatient department" includes hospital outpatient clinic, emergency room, and other hospital contacts.

SOURCES: Russian Federation: Ministry of Health; United States: Centers for Disease Control and Prevention, National Center for Health Statistics, Division of Health Interview Statistics: Data from the National Health Interview Survey.

**Table 18. Average length of stay and rate of discharges and surgical operations per 1,000 population: Russian Federation and United States, selected years 1985–2000**

| Type of statistic | 1985 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Russian Federation | | | | | | | | | | | | |
| | | | | | | Number of days | | | | | | |
| Average length of stay | 17.0 | 6.6 | 16.7 | 17.0 | 16.8 | 16.8 | 16.8 | 16.9 | 16.6 | 16.3 | 15.8 | 15.4 |
| | | | | | | Rate per 1,000 population | | | | | | |
| Discharges | 236.7 | 222.5 | 213.3 | 205.1 | 211.4 | 229.9 | 216.6 | 211.5 | 207.5 | 209.0 | 208.0 | 217.5 |
| Surgical operations: | | | | | | | | | | | | |
| Inpatient | 45.5 | 42.9 | 41.5 | 41.8 | 42.2 | 43.6 | 44.0 | 44.5 | 45.1 | 47.0 | 47.9 | 49.6 |
| Outpatient | - - - | 30.2 | 32.1 | 34.6 | 36.6 | 36.3 | 39.3 | 38.4 | 38.3 | 39.6 | 39.6 | 41.3 |
| United States | | | | | | | | | | | | |
| | | | | | | Number of days | | | | | | |
| Average length of stay[1] | 6.6 | 6.5 | 6.5 | 6.2 | 6.1 | 5.8 | 5.4 | 5.3 | 5.1 | 5.1 | 5.0 | 4.9 |
| | | | | | | Rate per 1,000 population | | | | | | |
| Discharges[1] | 151.4 | 125.2 | 125.0 | 122.8 | 120.9 | 119.8 | 118.0 | 116.0 | 116.1 | 117.9 | 117.8 | 114.9 |
| Surgical operations: | | | | | | | | | | | | |
| Inpatient[1] | - - - | - - - | - - - | - - - | - - - | 157.9 | 152.7 | 153.3 | 152.1 | 153.8 | 151.5 | 145.0 |
| Outpatient[1] | - - - | - - - | - - - | - - - | - - - | 107.9 | 113.6 | 120.1 | - - - | - - - | - - - | - - - |

- - - Data not available.

[1]Data are age-adjusted to the U.S. 2000 standard population.

SOURCES: Russian Federation: Ministry of Health; United States: Centers for Disease Control and Prevention, National Center for Health Statistics, Division of Health Care Statistics: Data from the National Hospital Discharge Survey and the National Survey of Ambulatory Surgery.

# Appendix
# Urban-Rural data for the Russian Federation Tables

**Table I. Life expectancy at birth, by sex and urban-rural status: Russian Federation, selected years 1985–2000**

| Year | Male | | | Female | | |
|---|---|---|---|---|---|---|
| | Total | Urban | Rural | Total | Urban | Rural |
| 1985[2] | 63.8 | 64.5 | 61.8 | 74.0 | 74.0 | 73.6 |
| 1990 | 63.8 | 64.4 | 62.0 | 74.3 | 74.4 | 73.9 |
| 1991 | 63.5 | 64.1 | 61.7 | 74.3 | 74.3 | 73.9 |
| 1992 | 62.0 | 62.5 | 60.7 | 73.8 | 73.8 | 73.5 |
| 1993 | 58.9 | 59.3 | 57.9 | 71.9 | 72.0 | 71.5 |
| 1994 | 57.6 | 57.9 | 56.8 | 71.2 | 71.3 | 70.8 |
| 1995 | 58.3 | 58.5 | 57.7 | 71.7 | 71.8 | 71.5 |
| 1996 | 59.8 | 60.2 | 58.4 | 72.5 | 72.7 | 71.9 |
| 1997 | 60.8 | 61.4 | 58.9 | 72.9 | 73.1 | 72.3 |
| 1998 | 61.3 | 61.8 | 59.9 | 72.9 | 73.1 | 72.3 |
| 1999 | 59.9 | 60.4 | 58.6 | 72.4 | 72.7 | 71.6 |
| 2000 | 59.0 | 59.4 | 58.0 | 72.2 | 72.4 | 71.6 |

[1]Russian Federation: Goskomstat data for 1985–86.

SOURCE: Goskomstat.

**Table II. Infant mortality, late fetal mortality, and perinatal mortality rates, by urban-rural status: Russian Federation, selected years 1985–2000**

| Year and status | Infant[1] | Neonatal[1] | | Postneonatal[1] | Late fetal mortality rate[2] | Perinatal mortality rate[3] |
|---|---|---|---|---|---|---|
| | | Under 28 days | Under 7 days | | | |
| 1985: Total | 20.7 | 11.1 | 8.5 | 9.6 | 9.3 | 17.8 |
| Urban | 19.8 | 12.6 | 9.9 | 7.2 | 10.1 | 20.0 |
| Rural | 22.8 | 7.7 | 5.3 | 15.1 | 7.3 | 12.6 |
| 1990: Total | 17.4 | 11.1 | 8.9 | 6.3 | 9.1 | 17.9 |
| Urban | 17.0 | 12.0 | 9.9 | 5.0 | 9.6 | 19.5 |
| Rural | 18.3 | 8.9 | 6.9 | 9.4 | 7.5 | 14.4 |
| 1991: Total | 17.8 | 11.0 | 8.8 | 6.8 | 8.7 | 17.5 |
| Urban | 17.2 | 12.0 | 9.7 | 5.2 | 9.4 | 19.1 |
| Rural | 19.1 | 9.3 | 7.1 | 9.8 | 7.2 | 14.3 |
| 1992: Total | 18.0 | 11.5 | 8.9 | 6.5 | 8.3 | 17.2 |
| Urban | 17.6 | 12.3 | 9.7 | 5.3 | 8.8 | 18.5 |
| Rural | 19.1 | 9.8 | 7.4 | 9.3 | 7.4 | 14.8 |
| 1993: Total | 19.9 | 12.0 | 9.6 | 7.9 | 7.8 | 17.4 |
| Urban | 19.2 | 12.6 | 8.2 | 6.6 | 6.6 | 14.8 |
| Rural | 21.4 | 10.3 | 10.3 | 11.1 | 8.4 | 18.7 |
| 1994: Total | 18.6 | 11.8 | 9.2 | 6.8 | 7.8 | 17.0 |
| Urban | 17.9 | 12.3 | 9.7 | 5.6 | 8.2 | 17.9 |
| Rural | 20.1 | 9.8 | 8.1 | 10.3 | 6.9 | 15.0 |
| 1995: Total | 18.1 | 11.0 | 8.4 | 7.1 | 7.4 | 15.8 |
| Urban | 17.4 | 12.0 | 8.8 | 5.4 | 7.9 | 16.7 |
| Rural | 19.8 | 9.5 | 7.6 | 10.3 | 6.4 | 14.0 |
| 1996: Total | 17.4 | 10.8 | 8.1 | 6.6 | 7.8 | 15.9 |
| Urban | 16.4 | 11.4 | 8.3 | 5.0 | 8.2 | 16.5 |
| Rural | 19.4 | 9.4 | 7.6 | 10.0 | 7.0 | 14.6 |
| 1997: Total | 17.2 | 10.6 | 7.8 | 6.6 | 8.0 | 15.8 |
| Urban | 16.1 | 11.0 | 7.9 | 5.1 | 8.5 | 16.4 |
| Rural | 19.6 | 9.6 | 7.6 | 10.0 | 6.9 | 14.5 |
| 1998: Total | 16.5 | 10.1 | 7.5 | 6.4 | 7.5 | 15.0 |
| Urban | 15.7 | 10.7 | 7.6 | 5.0 | 7.9 | 15.5 |
| Rural | 18.3 | 9.0 | 7.2 | 9.3 | 6.9 | 14.1 |
| 1999: Total | 16.9 | 10.3 | 7.0 | 6.6 | 7.2 | 14.2 |
| Urban | 16.1 | 11.1 | 7.2 | 5.0 | 7.6 | 14.8 |
| Rural | 18.8 | 9.2 | 6.5 | 9.6 | 6.4 | 12.9 |
| 2000: Total | 15.3 | 9.3 | 6.5 | 6.0 | 6.7 | 13.2 |
| Urban | 14.7 | 10.0 | 6.6 | 4.7 | 7.1 | 13.7 |
| Rural | 16.8 | 8.2 | 6.2 | 8.6 | 5.7 | 11.9 |

[1]Infant (under 1 year of age), neonatal (under 28 days), early neonatal (under 7 days), and postneonatal (28–385 days).

[2]Number of fetal deaths of 28 weeks or more gestation per 1,000 live births plus late fetal deaths.

[3]Number of late fetal deaths plus infant deaths within 7 days of birth per 1,000 live births plus late fetal deaths.

SOURCE: Goskomstat.

**Table III. Death rates from all causes, by sex, age, and urban-rural status: Russian Federation, 1994–2000**

| Sex and age | Urban | | | | | | | Rural | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
| Both sexes | | | | | | | | | | | | | | |
| All ages, age-adjusted | 1,587.2 | 1,514.9 | 1,400.4 | 1,334.7 | 1,314.4 | 1,417.4 | 1,466.9 | 1,596.0 | 1,499.9 | 1,458.7 | 1,428.3 | 1,383.1 | 1471.3 | 1,515.6 |
| All ages, crude | 1,496.1 | 1,442.0 | 1,345.0 | 1,294.4 | 1,289.8 | 1,408.1 | 1,477.6 | 1,715.1 | 1,624.3 | 1,596.1 | 1,581.0 | 1,539.3 | 1,634.4 | 1,681.1 |
| Under 1 year | 1,799.0 | 1,720.9 | 1,632.5 | 1,599.6 | 1,591.3 | 1,592.7 | 1,510.6 | 1,969.9 | 1,917.5 | 1,888.3 | 1,917.6 | 1,814.0 | 1,811.5 | 1,664.4 |
| 1–4 years | 85.1 | 88.8 | 77.5 | 78.8 | 74.2 | 83.6 | 80.8 | 146.5 | 148.7 | 140.2 | 143.9 | 137.0 | 144.4 | 139.3 |
| 5–14 years | 47.0 | 50.3 | 43.0 | 39.7 | 41.9 | 43.3 | 41.1 | 61.4 | 62.3 | 57.8 | 54.5 | 54.1 | 57.3 | 55.2 |
| 15–24 years | 185.4 | 203.5 | 188.1 | 175.2 | 183.7 | 201.9 | 219.5 | 243.1 | 250.3 | 244.3 | 220.5 | 217.5 | 229.2 | 238.4 |
| 25–34 years | 395.3 | 388.5 | 345.3 | 306.1 | 310.2 | 347.1 | 386.1 | 462.7 | 447.7 | 427.3 | 404.5 | 389.7 | 427.0 | 448.8 |
| 35–44 years | 784.1 | 739.0 | 627.7 | 543.0 | 528.2 | 601.5 | 663.2 | 841.1 | 773.7 | 708.8 | 656.7 | 626.8 | 689.9 | 724.7 |
| 45–54 years | 1,521.9 | 1,395.1 | 1,187.6 | 1,016.0 | 995.6 | 1,142.2 | 1,258.0 | 1,620.0 | 1,458.9 | 1,348.0 | 1,231.7 | 1,177.1 | 1,305.8 | 1,388.8 |
| 55–64 years | 2,644.8 | 2,450.9 | 2,215.1 | 2,071.9 | 2,032.5 | 2,275.4 | 2,432.0 | 2,688.0 | 2,477.1 | 2,390.8 | 2,376.7 | 2,310.8 | 2,549.1 | 2,747.9 |
| 65–74 years | 4,493.2 | 4,358.2 | 4,209.3 | 4,203.5 | 4,221.8 | 4,509.3 | 4,627.5 | 4,314.8 | 4,140.5 | 4,164.4 | 4,255.2 | 4,219.3 | 4,516.8 | 4,700.6 |
| 75–84 years | 10,459.3 | 10,026.0 | 9,625.6 | 9,466.1 | 9,120.3 | 9,309.2 | 9,085.4 | 9,780.8 | 9,258.9 | 9,198.6 | 9,169.0 | 8,747.2 | 8,830.6 | 8,645.9 |
| 85 years and over | 22,304.2 | 21,748.4 | 20,739.4 | 20,672.6 | 20,309.5 | 21,433.7 | 21,403.4 | 21,202.3 | 20,064.8 | 19,897.6 | 19,450.8 | 18,820.0 | 19,229.1 | 18,954.4 |
| Male | | | | | | | | | | | | | | |
| All ages, age-adjusted | 2,270.7 | 2,139.7 | 1,954.1 | 1,840.6 | 1,807.6 | 1,971.9 | 2,070.3 | 2,289.7 | 2,128.0 | 2,046.8 | 1,993.6 | 1,929.2 | 2,062.9 | 2,143.8 |
| All ages, crude | 1,735.3 | 1,662.2 | 1,520.6 | 1,429.6 | 1,422.0 | 1,581.6 | 1,700.0 | 1,844.8 | 1,737.5 | 1,689.6 | 1,658.3 | 1,616.5 | 1,744.7 | 1,827.7 |
| Under 1 year | 2,063.3 | 1,956.5 | 1,876.3 | 1,818.7 | 1,820.0 | 1,803.7 | 1,713.6 | 2,261.2 | 2,178.0 | 2,154.3 | 2,207.6 | 2,042.7 | 2,026.4 | 1,884.1 |
| 1–4 years | 94.4 | 99.2 | 87.2 | 85.5 | 83.8 | 92.9 | 91.3 | 161.9 | 165.9 | 156.6 | 154.7 | 151.0 | 157.7 | 149.2 |
| 5–14 years | 59.0 | 63.0 | 54.1 | 51.1 | 51.9 | 54.8 | 52.0 | 77.8 | 80.3 | 71.7 | 70.4 | 68.6 | 73.4 | 71.2 |
| 15–24 years | 280.7 | 315.2 | 291.7 | 267.7 | 281.7 | 310.7 | 342.6 | 374.2 | 379.9 | 367.9 | 328.9 | 322.0 | 342.8 | 365.7 |
| 25–34 years | 640.0 | 619.4 | 547.7 | 479.7 | 484.9 | 544.2 | 611.0 | 737.7 | 721.3 | 687.5 | 643.4 | 621.9 | 687.0 | 724.4 |
| 35–44 years | 1,266.1 | 1,192.0 | 1,009.6 | 870.8 | 844.5 | 961.3 | 1,070.4 | 1,280.4 | 1,182.3 | 1,082.2 | 998.7 | 960.7 | 1,059.5 | 1,113.6 |
| 45–54 years | 2,423.2 | 2,220.2 | 1,885.0 | 1,597.6 | 1,571.8 | 1,815.1 | 2,021.3 | 2,488.4 | 2,218.1 | 2,037.0 | 1,838.6 | 1,760.5 | 1,954.4 | 2,087.6 |
| 55–64 years | 4,206.6 | 3,899.0 | 3,502.2 | 3,258.0 | 3,195.5 | 3,632.7 | 3,912.5 | 4,108.2 | 3,794.5 | 3,666.8 | 3,644.9 | 3,556.4 | 3,948.8 | 4,278.1 |
| 65–74 years | 6,758.3 | 6,516.8 | 6,218.9 | 6,184.7 | 6,184.8 | 6,675.9 | 6,910.4 | 6,701.7 | 6,307.8 | 6,312.5 | 6,379.9 | 6,297.9 | 6,774.5 | 7,067.4 |
| 75–84 years | 13,370.2 | 12,591.6 | 11,982.2 | 11,753.2 | 11,295.9 | 11,561.7 | 11,477.7 | 13,335.2 | 12,383.5 | 12,160.1 | 12,078.6 | 11,579.8 | 11,680.6 | 11,542.6 |
| 85 years and over | 24,106.0 | 22,186.9 | 20,811.7 | 20,473.0 | 19,689.2 | 20,724.5 | 20,499.5 | 22,792.3 | 21,056.6 | 19,784.2 | 19,524.7 | 18,471.7 | 18,501.6 | 18,174.7 |
| Female | | | | | | | | | | | | | | |
| All ages, age-adjusted | 1,116.9 | 1,076.3 | 1,013.3 | 985.6 | 970.9 | 1,028.4 | 1,040.4 | 1,102.0 | 1,042.7 | 1,024.9 | 1,015.4 | 981.2 | 1,028.9 | 1,042.7 |
| All ages, crude | 1,285.6 | 1,248.6 | 1,191.1 | 1,176.0 | 1,174.3 | 1,256.7 | 1,284.0 | 1,598.4 | 1,522.1 | 1,511.5 | 1,510.9 | 1,469.3 | 1,534.1 | 1,547.8 |
| Under 1 year | 1,519.9 | 1,472.9 | 1,375.6 | 1,367.5 | 1,349.3 | 1,369.1 | 1,295.0 | 1,663.5 | 1,643.9 | 1,609.1 | 1,614.3 | 1,573.5 | 1,584.8 | 1,432.8 |
| 1–4 years | 75.4 | 77.8 | 67.2 | 71.8 | 64.1 | 73.8 | 69.7 | 130.4 | 130.6 | 122.9 | 132.6 | 122.3 | 130.4 | 128.8 |
| 5–14 years | 34.5 | 37.1 | 31.5 | 27.9 | 31.4 | 31.3 | 29.7 | 44.5 | 43.7 | 43.4 | 38.0 | 39.0 | 40.5 | 38.6 |
| 15–24 years | 86.7 | 89.4 | 83.2 | 82.1 | 85.1 | 92.6 | 96.0 | 100.4 | 107.5 | 107.9 | 101.8 | 103.6 | 105.7 | 100.5 |
| 25–34 years | 150.4 | 153.4 | 136.8 | 126.3 | 128.5 | 142.1 | 152.8 | 165.2 | 156.5 | 152.9 | 153.4 | 146.6 | 155.9 | 162.7 |
| 35–44 years | 330.1 | 313.6 | 270.3 | 236.4 | 232.2 | 264.6 | 282.1 | 354.4 | 322.4 | 298.1 | 282.0 | 262.5 | 288.3 | 304.4 |
| 45–54 years | 730.0 | 670.5 | 575.5 | 505.9 | 491.9 | 557.4 | 599.6 | 793.7 | 720.1 | 664.5 | 620.5 | 585.7 | 647.9 | 681.3 |
| 55–64 years | 1,479.1 | 1,374.8 | 1,263.1 | 1,199.8 | 1,182.3 | 1,291.9 | 1,369.6 | 1,531.2 | 1,408.9 | 1,364.6 | 1,365.9 | 1,326.6 | 1,456.2 | 1,568.0 |
| 65–74 years | 3,341.9 | 3,243.4 | 3,159.3 | 3,154.1 | 3,167.9 | 3,331.2 | 3,372.5 | 3,147.1 | 3,034.0 | 3,032.4 | 3,105.7 | 3,068.5 | 3,240.0 | 3,332.3 |
| 75–84 years | 9,523.0 | 9,200.9 | 8,869.6 | 8,736.6 | 8,434.1 | 8,600.8 | 8,324.0 | 8,839.8 | 8,432.6 | 8,412.2 | 8,388.1 | 7,978.7 | 8,037.1 | 7,815.1 |
| 85 years and over | 21,899.4 | 21,646.4 | 20,722.0 | 20,721.8 | 20,466.0 | 21,616.1 | 21,638.7 | 20,895.0 | 19,869.0 | 19,920.3 | 19,436.0 | 18,890.2 | 19,376.6 | 19,113.1 |

NOTE: Age adjusted using as standard population the European standard 100,000 population prepared by the World Health Organization (see appendix).

SOURCE: Goskomstat.

**Table IV. Age-adjusted death rates for selected causes of death, by sex, Russian Federation, 1990–2000, urban settlements**

| Sex and cause of death | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| All causes | | | | | | | | | | | |
| Total | 1,188.4 | 1,194.3 | 1,263.1 | 1,478.0 | 1,585.3 | 1,516.2 | 1,402.2 | 1,334.0 | 1,308.6 | 1,406.2 | 1,452.5 |
| Male | 1,662.9 | 1,675.5 | 1,785.5 | 2,123.0 | 2,290.3 | 2,166.0 | 1,979.3 | 1,857.6 | 1,813.3 | 1,966.8 | 2,056.3 |
| Female | 901.6 | 899.1 | 928.2 | 1,052.1 | 1,107.9 | 1,067.1 | 1,004.1 | 975.7 | 958.8 | 1,013.7 | 1,025.2 |
| Diseases of heart (390–398, 401–429) | | | | | | | | | | | |
| Total | 354.5 | 350.5 | 361.8 | 435.0 | 471.4 | 438.1 | 405.2 | 383.9 | 376.6 | 415.8 | 431.7 |
| Male | 492.9 | 492.8 | 513.7 | 627.9 | 687.4 | 633.4 | 576.7 | 539.8 | 530.1 | 590.3 | 619.6 |
| Female | 273.8 | 268.1 | 270.5 | 316.0 | 333.7 | 311.9 | 294.1 | 283.5 | 276.7 | 302.1 | 307.1 |
| Cerebrovascular diseases (430–438) | | | | | | | | | | | |
| Total | 262.9 | 260.1 | 266.0 | 297.9 | 318.7 | 311.7 | 297.6 | 297.5 | 297.9 | 311.0 | 318.6 |
| Male | 302.5 | 298.6 | 305.2 | 347.9 | 376.7 | 361.9 | 341.1 | 337.9 | 333.7 | 351.2 | 366.9 |
| Female | 241.7 | 238.8 | 243.8 | 269.3 | 284.0 | 279.8 | 269.2 | 270.5 | 272.4 | 282.1 | 285.5 |
| Malignant neoplasms (140–208) | | | | | | | | | | | |
| Total | 216.3 | 216.9 | 217.8 | 219.1 | 216.8 | 211.3 | 205.9 | 204.1 | 202.2 | 203.7 | 202.6 |
| Male | 331.9 | 332.9 | 331.6 | 335.2 | 328.0 | 316.9 | 307.5 | 304.0 | 299.4 | 301.4 | 297.6 |
| Female | 155.0 | 154.5 | 155.5 | 154.7 | 154.7 | 151.8 | 149.0 | 148.5 | 147.6 | 148.8 | 148.8 |
| Malignant neoplasms of the respiratory system (160–165) | | | | | | | | | | | |
| Total | 51.0 | 51.4 | 51.5 | 52.0 | 51.0 | 48.9 | 46.3 | 45.6 | 44.5 | 43.5 | 43.1 |
| Male | 118.6 | 119.3 | 118.2 | 119.1 | 116.5 | 111.7 | 105.7 | 104.1 | 101.4 | 99.8 | 97.9 |
| Female | 12.6 | 12.3 | 12.5 | 12.3 | 12.2 | 11.4 | 10.9 | 11.0 | 10.5 | 10.0 | 10.2 |
| Malignant neoplasms of the breast (174) | | | | | | | | | | | |
| Female | 21.8 | 22.4 | 23.6 | 24.2 | 24.9 | 24.5 | 25.1 | 25.8 | 26.1 | 26.3 | 26.7 |
| Pneumonia and influenza (480–483, 485–487) | | | | | | | | | | | |
| Total | 9.7 | 9.4 | 11.5 | 19.2 | 23.0 | 22.7 | 19.1 | 16.3 | 15.5 | 21.8 | 27.2 |
| Male | 15.0 | 14.3 | 19.0 | 32.4 | 40.2 | 39.7 | 32.9 | 27.2 | 26.4 | 37.2 | 47.5 |
| Female | 6.3 | 6.2 | 6.2 | 9.3 | 9.9 | 9.8 | 8.5 | 8.3 | 7.5 | 10.4 | 12.1 |
| Chronic obstructive pulmonary diseases (490–496) | | | | | | | | | | | |
| Total | 29.1 | 27.3 | 27.4 | 32.4 | 33.8 | 29.6 | 27.5 | 26.6 | 23.5 | 27.1 | 27.2 |
| Male | 57.6 | 54.3 | 54.5 | 65.3 | 68.4 | 59.7 | 55.8 | 53.4 | 48.1 | 56.0 | 56.6 |
| Female | 16.9 | 15.5 | 15.3 | 16.9 | 17.0 | 15.0 | 13.8 | 13.7 | 11.8 | 13.0 | 12.6 |
| Chronic liver diseases and cirrhosis (571.0–571.3, 571.5, 571.6) | | | | | | | | | | | |
| Total | 9.5 | 9.6 | 10.4 | 14.4 | 19.4 | 21.1 | 18.1 | 15.1 | 14.2 | 15.6 | 17.9 |
| Male | 14.4 | 14.5 | 15.4 | 20.8 | 28.1 | 31.0 | 26.5 | 22.5 | 20.6 | 22.7 | 25.1 |
| Female | 6.6 | 6.7 | 7.2 | 10.2 | 13.2 | 14.1 | 12.0 | 9.9 | 9.8 | 10.5 | 12.4 |
| Other alcohol-related causes (303, 305.0, E860) | | | | | | | | | | | |
| Total | 11.3 | 11.4 | 18.6 | 33.9 | 43.5 | 36.9 | 27.7 | 20.6 | 18.8 | 21.4 | 26.6 |
| Male | 19.7 | 20.0 | 32.3 | 57.6 | 73.4 | 62.6 | 47.3 | 35.1 | 32.0 | 36.1 | 45.0 |
| Female | 4.1 | 4.0 | 6.7 | 13.6 | 18.2 | 15.2 | 11.3 | 8.4 | 7.6 | 9.1 | 11.3 |
| Motor vehicle and other transport accidents (E800–E848) | | | | | | | | | | | |
| Total | 26.0 | 27.6 | 27.8 | 28.3 | 26.2 | 24.1 | 20.8 | 19.6 | 21.0 | 23.4 | 24.4 |
| Male | 42.8 | 45.3 | 45.4 | 46.0 | 42.3 | 38.2 | 32.5 | 30.1 | 32.3 | 36.7 | 38.1 |
| Female | 11.7 | 12.6 | 12.5 | 13.0 | 12.4 | 11.9 | 10.5 | 10.4 | 11.1 | 11.8 | 12.5 |
| Suicide (E950–E959) | | | | | | | | | | | |
| Total | 24.7 | 25.1 | 29.0 | 34.5 | 37.1 | 37.0 | 34.4 | 31.9 | 29.8 | 32.8 | 32.0 |
| Male | 43.2 | 44.2 | 51.3 | 62.2 | 67.9 | 66.7 | 62.9 | 58.1 | 54.2 | 59.4 | 59.1 |
| Female | 10.4 | 10.0 | 10.9 | 11.8 | 11.9 | 12.2 | 10.9 | 10.4 | 9.7 | 10.8 | 9.6 |
| Homicide and legal intervention (E960–E978) | | | | | | | | | | | |
| Total | 13.4 | 14.6 | 22.4 | 30.1 | 31.8 | 30.5 | 25.9 | 22.8 | 21.7 | 25.0 | 26.9 |
| Male | 21.5 | 23.6 | 36.5 | 48.9 | 51.7 | 49.5 | 41.3 | 36.6 | 34.6 | 39.5 | 43.0 |
| Female | 6.0 | 6.3 | 9.6 | 13.0 | 13.8 | 13.4 | 11.9 | 10.5 | 10.1 | 12.1 | 12.6 |
| Other external causes (E850–E859, E861–E943, E980–E999) | | | | | | | | | | | |
| Total | 50.1 | 54.7 | 69.2 | 95.2 | 107.4 | 107.5 | 93.4 | 81.4 | 84.2 | 90.4 | 95.1 |
| Male | 83.8 | 92.211 | 117.4 | 162.1 | 183.7 | 183.1 | 158.2 | 138.1 | 142.6 | 154.4 | 163.8 |
| Female | 21.4 | 22.7 | 28.2 | 38.5 | 42.8 | 43.2 | 38.1 | 33.4 | 34.6 | 36.1 | 36.3 |

NOTE: Age adjusted using as standard population the European standard 100,000 population prepared by the World Health Organization (see appendix).

SOURCE: Goskomstat.

**Table V. Age-adjusted death rates for selected causes of death, by sex, Russian Federation, 1990–2000, rural settlements**

| Sex and cause of death | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| All causes | | | | | | | | | | | |
| Total | 1,222.8 | 1,228.3 | 1,287.3 | 1,483.5 | 1,586.2 | 1,495.0 | 1,454.8 | 1,426.0 | 1,378.2 | 1,460.5 | 1,499.1 |
| Male | 1,767.7 | 1,774.2 | 1,862.7 | 2,152.9 | 2,300.3 | 2,147.6 | 2,069.1 | 2,014.0 | 1,942.0 | 2,063.1 | 2,129.9 |
| Female | 882.8 | 881.5 | 909.3 | 1,028.1 | 1,086.3 | 1,028.9 | 1,010.6 | 1,002.7 | 967.8 | 1,012.7 | 1,025.2 |
| Diseases of heart (390–398, 401–429) | | | | | | | | | | | |
| Total | 395.4 | 384.5 | 395.3 | 461.1 | 492.4 | 455.3 | 446.5 | 441.1 | 426.5 | 463.6 | 480.4 |
| Male | 546.5 | 539.0 | 557.3 | 651.7 | 699.1 | 640.8 | 624.2 | 613.9 | 593.1 | 644.9 | 675.3 |
| Female | 312.8 | 299.5 | 302.4 | 345.3 | 362.2 | 336.6 | 330.8 | 328.4 | 316.4 | 341.3 | 347.2 |
| Cerebrovascular diseases (430–438) | | | | | | | | | | | |
| Total | 213.9 | 209.3 | 213.5 | 239.1 | 257.8 | 243.3 | 243.5 | 244.8 | 243.6 | 248.4 | 259.2 |
| Male | 256.1 | 248.4 | 253.0 | 288.3 | 311.9 | 288.3 | 284.3 | 284.6 | 284.0 | 291.4 | 304.6 |
| Female | 194.0 | 189.6 | 193.2 | 212.7 | 226.7 | 215.4 | 216.5 | 218.9 | 217.0 | 219.2 | 227.2 |
| Malignant neoplasms (140–208) | | | | | | | | | | | |
| Total | 171.6 | 173.4 | 177.2 | 178.4 | 180.2 | 177.5 | 173.5 | 173.4 | 173.3 | 172.7 | 172.0 |
| Male | 278.9 | 280.0 | 284.0 | 286.7 | 286.0 | 280.3 | 272.1 | 269.8 | 267.9 | 265.9 | 265.6 |
| Female | 111.0 | 112.2 | 114.6 | 113.3 | 115.0 | 114.8 | 112.4 | 113.2 | 113.8 | 113.6 | 112.3 |
| Malignant neoplasms of the respiratory system (160–165) | | | | | | | | | | | |
| Total | 48.6 | 49.2 | 50.2 | 51.6 | 52.2 | 50.1 | 48.9 | 48.3 | 47.4 | 46.7 | 46.7 |
| Male | 111.8 | 112.3 | 114.1 | 115.6 | 116.1 | 111.8 | 108.0 | 106.8 | 103.6 | 102.2 | 102.3 |
| Female | 10.2 | 10.1 | 10.2 | 10.5 | 10.3 | 9.7 | 9.7 | 9.4 | 9.4 | 9.1 | 8.9 |
| Malignant neoplasms of the breast (174) | | | | | | | | | | | |
| Female | 12.9 | 13.8 | 15.1 | 14.9 | 15.6 | 16.2 | 16.4 | 16.9 | 17.7 | 17.6 | 17.4 |
| Pneumonia and influenza (480–483, 485–487) | | | | | | | | | | | |
| Total | 12.0 | 11.8 | 12.7 | 17.0 | 18.3 | 18.5 | 17.0 | 16.7 | 15.0 | 19.7 | 20.7 |
| Male | 17.4 | 16.7 | 19.1 | 25.3 | 28.4 | 28.4 | 25.8 | 25.3 | 22.7 | 30.4 | 32.8 |
| Female | 8.2 | 8.1 | 7.9 | 10.5 | 9.8 | 10.3 | 9.6 | 9.7 | 8.6 | 10.9 | 10.6 |
| Chronic obstructive pulmonary diseases (490–496) | | | | | | | | | | | |
| Total | 50.1 | 45.8 | 46.7 | 55.7 | 58.4 | 52.3 | 51.4 | 51.6 | 46.5 | 56.4 | 57.2 |
| Male | 97.9 | 89.3 | 90.6 | 109.8 | 115.1 | 102.2 | 99.9 | 101.0 | 91.3 | 111.4 | 115.1 |
| Female | 28.8 | 25.9 | 26.1 | 29.0 | 29.3 | 26.4 | 26.3 | 26.0 | 22.9 | 26.9 | 25.8 |
| Chronic liver diseases and cirrhosis (571.0–571.3, 571.5, 571.6) | | | | | | | | | | | |
| Total | 10.9 | 10.6 | 10.9 | 13.2 | 16.7 | 18.1 | 16.4 | 15.4 | 14.0 | 14.8 | 16.7 |
| Male | 16.4 | 16.0 | 16.1 | 19.6 | 24.0 | 26.4 | 24.1 | 21.7 | 20.5 | 21.6 | 23.0 |
| Female | 7.4 | 7.4 | 7.6 | 8.8 | 11.4 | 12.0 | 10.9 | 10.7 | 9.3 | 9.5 | 11.7 |
| Other alcohol-related causes (303, 305.0, E860) | | | | | | | | | | | |
| Total | 16.4 | 17.0 | 23.2 | 39.4 | 48.9 | 38.4 | 31.7 | 26.4 | 23.6 | 26.1 | 31.6 |
| Male | 26.8 | 27.5 | 37.4 | 62.2 | 77.0 | 61.4 | 50.4 | 41.9 | 37.9 | 41.3 | 50.4 |
| Female | 6.6 | 7.0 | 9.3 | 17.5 | 22.2 | 16.4 | 13.8 | 11.5 | 10.0 | 11.5 | 13.9 |
| Motor vehicle and other transport accidents (E800–E848) | | | | | | | | | | | |
| Total | 39.4 | 40.6 | 37.4 | 36.4 | 33.3 | 30.1 | 27.0 | 24.7 | 25.9 | 30.2 | 30.3 |
| Male | 67.0 | 68.3 | 62.5 | 60.4 | 55.2 | 49.3 | 43.7 | 39.4 | 41.5 | 48.7 | 48.6 |
| Female | 12.4 | 13.5 | 12.8 | 12.8 | 11.7 | 11.0 | 10.5 | 10.3 | 10.6 | 12.1 | 12.1 |
| Suicide (E950–E959) | | | | | | | | | | | |
| Total | 34.6 | 33.3 | 39.0 | 49.2 | 55.9 | 53.5 | 52.1 | 51.0 | 47.8 | 52.9 | 53.9 |
| Male | 60.8 | 58.5 | 69.3 | 88.5 | 101.0 | 95.6 | 93.5 | 91.5 | 85.5 | 95.3 | 97.2 |
| Female | 11.4 | 10.9 | 11.6 | 13.5 | 14.8 | 14.6 | 13.7 | 13.8 | 13.0 | 13.9 | 13.6 |
| Homicide and legal intervention (E960–E978) | | | | | | | | | | | |
| Total | 16.4 | 16.7 | 23.3 | 28.8 | 30.4 | 27.6 | 25.2 | 23.9 | 22.7 | 25.3 | 27.2 |
| Male | 25.0 | 25.6 | 36.3 | 43.6 | 46.5 | 42.4 | 38.6 | 36.5 | 34.5 | 38.9 | 41.8 |
| Female | 7.8 | 7.8 | 10.2 | 14.0 | 14.3 | 13.2 | 12.0 | 11.4 | 10.9 | 12.0 | 13.0 |
| Other external causes (E850–E859, E861–E943, E980–E999) | | | | | | | | | | | |
| Total | 67.2 | 74.2 | 80.9 | 101.6 | 110.0 | 106.9 | 100.1 | 93.3 | 92.3 | 93.5 | 98.1 |
| Male | 110.0 | 121.4 | 132.2 | 165.0 | 178.6 | 175.0 | 163.2 | 150.3 | 150.0 | 152.6 | 159.8 |
| Female | 27.4 | 30.0 | 32.4 | 42.4 | 45.4 | 42.4 | 40.8 | 39.7 | 38.2 | 38.2 | 40.0 |

NOTE: Age adjusted using as standard population the European standard 100,000 population prepared by the World Health Organization (see appendix).

SOURCE: Goskomstat.

# Appendix Glossary

## Glossary of Terms

This glossary is an alphabetical listing of terms used in this report. It includes cross-references to related terms and synonyms and *International Classification of Diseases* (ICD) codes for cause of death and diagnostic and procedure categories.

***Abortion***—The Centers for Disease Control and Prevention's (CDC) surveillance program counts legal abortions only. For surveillance purposes, legal abortion is defined as a procedure performed by a licensed physician or someone acting under the supervision of a licensed physician to induce the termination of a pregnancy.

***Acquired immunodeficiency syndrome (AIDS)***—All 50 States and the District of Columbia report AIDS cases to CDC using a uniform case definition and case report form. The case reporting definitions were expanded in 1985 (MMWR 1985; 34:373–5); 1987 (MMWR 1987; 36 (supp. no. 1S): 1S-15S); and 1993 (MMWR 1993; 41 (supp. no. RR-17)). These data are published semiannually by CDC in HIV/AIDS Surveillance Report. See related Human immunodeficiency virus (HIV) infection.

***Age adjustment***—Age adjustment, using the direct method, is the application of age-specific rates in a population to a standardized age distribution in order to eliminate the differences in observed rates that result from age differences in the population. This adjustment is usually done when comparing two or more populations at one point in time or one population at two or more points in time.

In this report the death rates are age-adjusted to the European standard 100,000 population (table VI). CPHRI performed all of their calculations for age-adjusted mortality rates for Russia using the 19 age groups shown in table VI. NCHS combined the values from table VI into 11 age groups in calculating age-adjusted rates for the United States. Age-adjusted rates for the United States are customarily calculated using the U.S. 2000 standard population, thus the age-adjusted rates for the United States shown in this report will differ from previously published ones.

**Table VI. European standard 100,000 population used to adjust death rates**

| Age | Standard 100,000 |
|---|---|
| All ages | 100,000 |
| Under 1 year | 1,600 |
| 1–4 years | 6,400 |
| 5–9 years | 7,000 |
| 10–14 years | 7,000 |
| 15–19 years | 7,000 |
| 20–24 years | 7,000 |
| 25–29 years | 7,000 |
| 30–34 years | 7,000 |
| 35–39 years | 7,000 |
| 40–44 years | 7,000 |
| 45–49 years | 7,000 |
| 50–54 years | 7,000 |
| 55–59 years | 6,000 |
| 60–64 years | 5,000 |
| 65–69 years | 4,000 |
| 70–74 years | 3,000 |
| 75–79 years | 2,000 |
| 80–84 years | 1,000 |
| 85 years and over | 1,000 |

SOURCE: World Health Organization. 1996 World Health Statistics. Geneva. 1998.

***Average length of stay***—The average length of stay is computed by dividing the total number of days of care (counting the date of admission but not the date of discharge) by the number of patients admitted (Russian Federation) or discharged (United States). See related *Discharge*.

***Bed***—Any bed that is set up and staffed for use by inpatients is counted as a bed in a facility. For the American Hospital Association, the count is of the average number of beds, cribs, and pediatric bassinets during an entire reporting period. The World Health Organization, as well as the Russian Federation, defines a hospital bed as one regularly maintained and staffed for the accommodation and full-time care of a succession of inpatients and situated in a part of the hospital where continuous medical care for inpatients is provided. In Russia the bed is the unit for determining State financial support. See related *Hospital*.

***Birth rate***—See *Rate: Birth and related rates*.

***Birthweight***—The first weight of a newborn obtained after birth. Low birthweight is defined as less than 2,500 grams or 5 pounds 8 ounces.

***Cause of death***—For the purpose of national mortality statistics, every death is attributed to one underlying condition, based on the information reported on the death certificate and using international rules for selecting the underlying cause of death from the reported conditions. The *International Classification of Diseases, Ninth Revision* (ICD–9) was used for coding cause of death in both countries for the period 1979–98, and the *International Classification of Diseases, Tenth Revision* (ICD–10) was implemented in 1999. Prior to 1999, Russia used a short list of 175 causes to code and tabulate deaths by cause; the short list was based on ICD–9. Beginning in 1999, the Ministry of Health of Russia was given responsibility for coding causes of death, and began doing so using the full version of ICD–10. Goskomstat, the central statistical bureau of Russia, uses a short version of ICD–10 for the tabulation and publication of mortality statistics for Russia.

***Central Public Health Research Institute***—The state institution in the Russian Federation that is responsible for investigation of the health of the population, scientific support of health reform and medical statistics, and training of health service and public health managers for the Russian Federation. Also known as *MedSocEconomInform*.

***Crude birth rate; crude death rate***—See *Rate: Birth and related rates; Death and related rates*.

***Death rate***—See *Rate: Death rates*.

***Diagnosis***—See *First-listed diagnosis*.

***Discharge***—The National Health Interview Survey defines a hospital discharge as the completion of any continuous period of stay of 1 night or more in a hospital as an inpatient, not including the period of stay of a well newborn infant. According to the National Hospital Discharge Survey, American Hospital Association, and National Master Facility Inventory, discharge is the formal release of an inpatient by a hospital (excluding newborn infants), that is, the termination of a period of hospitalization (including

stays of 0 nights) by death or by disposition to a place of residence, nursing home, or another hospital. See related *Average length of stay*.

***Early neonatal mortality rate—***See *Rate; Death and related rates*.

***Federal Center for Sanitary and Epidemiologic Surveillance (SES)*** —In the Russian Federation, this is the governmental body responsible for epidemiological health and organization of public hygiene.

***Feldsher***—Russian paramedical personnel, similar to a U.S. physician assistant. The feldsher serves as the first point of contact of the rural population with the health care system. Feldshers provide first aid, treat minor illnesses, administer immunizations, and improve sanitation and hygiene. They are supervised by a physician from a rural hospital. Feldsher-midwife posts serve villages and collective farms.

***Fertility rate***—See *Rate: Birth and related rates*.

***Fetal death***—In the World Health Organization's definition, which has also been adopted by the United Nations, the United States, and the Russian Federation, a fetal death is death before the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy; the death is indicated by the fact that after such separation, the fetus does not breathe or show any other evidence of life, such as heartbeat, umbilical cord pulsation, or definite movement of voluntary muscles. For statistical purposes, fetal deaths are classified according to gestational age. In this report tabulations are shown for fetal deaths with stated or presumed gestation of 28 weeks or more, also known as late fetal deaths or stillbirths. See related *Live birth; Rate: Death and related rates*.

***First-listed diagnosis***—In the National Hospital Discharge Survey this is the first recorded final diagnosis on the medical record face sheet (summary sheet).

***Gestation***—For the National Vital Statistics System and the CDC's Abortion Surveillance, the period of gestation is defined as beginning with the first day of the last normal menstrual period and ending with the day of birth or day of termination of pregnancy. See related *Abortion; Fetal death; Live birth*.

***Goskomstat***—State Statistical Committee of the Russian Federation. Goskomstat is responsible for collecting and publishing population estimates, vital statistics, and other data from other ministries and Federal agencies.

***Gross Domestic Product (GDP)***—GDP is the market value of the goods and services produced by labor and property located in the United States. As long as the labor and property are located in the United States, the suppliers (that is, the workers and, for property, the owners) may be either U.S. residents or residents of the rest of the world.

***HIV—***See *Human immunodeficiency virus infection*.

***Hospital***—Hospitals are licensed institutions with at least six beds in the United States and normally 15 beds or more in Russia. The primary function of a hospital is to provide diagnostic and therapeutic patient services for medical conditions by an organized physician staff and to have continuous nursing services under the supervision of registered nurses. See related *Average length of stay; Bed*.

*Short-stay hospitals*—in the United States are those in which the average length of stay is less than 30 days. In Russia there are only general hospitals, which have both long- and short-stay patients.

*Specialty hospitals*, such as psychiatric, tuberculosis, chronic disease, rehabilitation, maternity, and alcoholic or narcotic provide a particular type of service to the majority of their patients.

***Human immunodeficiency virus (HIV) infection***—(For mortality coding) Beginning with data for 1987, NCHS introduced category numbers *042–*044 for classifying and coding HIV infection as a cause of death. The asterisk before the category numbers indicates that these codes are not part of the *International Classification of Diseases, Ninth Revision* (ICD–9). Beginning with 1987, death statistics for HIV infection are not strictly comparable with data for earlier years. Starting with data year 1999 and the introduction of the *International Classification of Diseases, Tenth Revision (ICD–10)*, the title for this cause of death changed to HIV disease from HIV infection and the ICD codes changed to B20–B24.

For morbidity coding diagnosis data are coded using the *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD–9–CM). During 1984 and 1985, only data for AIDS (ICD–9–CM 279.19) were included. Beginning with data for 1986, discharges with a diagnosis of HIV infection (ICD–9–CM 042–044, 279.19, and 795.8) were included. See related *Acquired immunodeficiency syndrome; Cause of death; International Classification of Diseases; International Classification of Diseases, Ninth Revision, Clinical Modification*.

***ICD; ICD codes—***See *Cause of death; International Classification of Diseases, Ninth Revision*.

***Incidence***—Incidence is the number of cases of disease having their onset during a prescribed period of time. It is often expressed as a rate (for example, the incidence of measles per 1,000 children 5–14 years of age during a specified year). Incidence is a measure of morbidity or other events that occur within a specified period of time. See related *Prevalence*.

***Infant death***—An infant death is the death of a live-born child before his or her first birthday. Deaths in the first year of life may be further classified according to age as neonatal and postneonatal. *Neonatal deaths* are those that occur during the first 27 days of life; *postneonatal deaths* are those that occur between 28 days and 1 year of age. See *Live birth; Rate: Death and related rates*.

***International Classification of Diseases (ICD)***—*The International Classification of Diseases* (ICD) provides the ground rules for coding and classifying cause-of-death data. The ICD is developed collaboratively between the World Health Organization (WHO) and 10 international collaborating centers. The purpose of the ICD is to promote international comparability in the collection, classification, processing, and presentation of health statistics. Since the beginning of the century, the ICD has been modified about once every 10

years, except for the 20-year interval between ICD–9 and ICD–10. The purpose of the revisions is to stay abreast with advances in medical science. New revisions usually introduce major disruptions in time series of mortality statistics. See related *Cause of death; International Classification of Diseases, Ninth Revision, Clinical Modification*.

***International Classification of Diseases, Ninth Revision, Clinical Modification (ICD–9–CM)***—The ICD–9–CM is based on and is completely compatible with the *International Classification of Diseases, Ninth Revision*. The ICD–9–CM is used to code morbidity data, and the ICD–9 is used to code mortality data.

ICD–9 and ICD–9–CM are arranged in 17 main chapters. Most of the diseases are arranged according to their principal anatomical site, with special chapters for infective and parasitic diseases; neoplasms; endocrine, metabolic, and nutritional diseases; mental diseases; complications of pregnancy and childbirth; certain diseases peculiar to the perinatal period; and ill-defined conditions. In addition, two supplemental classifications are provided: the classification of factors influencing health status and contact with health service and the classification of external causes of injury and poisoning. See related *International Classification of Diseases*.

***Late fetal death rate***—See *Rate: Death and related rates*.

***Life expectancy***—Life expectancy is the average number of years of life remaining to a person at a particular age and is based on a given set of age-specific death rates, generally the mortality conditions existing in the period mentioned. Life expectancy may be determined by race, sex, or other characteristics, using age-specific death rates for the population with that characteristic. See related *Rate: Death and related rates*.

***Live birth***—In 1967 the WHO defined a live birth as 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 heartbeat, umbilical cord pulsation, or definite movement of voluntary muscles, whether the umbilical cord has been cut or the placenta is attached. Each product of such a birth is considered live born. The United Nations and NCHS also adopted this definition at that time. The Russian Federation adopted the definition in 1993.

The classification of very preterm births in Russia differs from the WHO definition. Infants weighing less than 1,000 grams at birth, or less than 28 weeks gestation, or less than 35 centimeters birth length must survive 7 days to be reported as live births. If the infant dies before completing the seventh day of life, neither the live birth nor the infant death is reported. See related *Rate: Birth and related rates; Death and related rates*.

***Live-birth order***—This item from the birth certificate refers to the total number of live births the mother has had, including the present birth as recorded on the birth certificate. Fetal deaths are excluded. See related *Live birth*.

***Low birthweight***—See *Birthweight*.

***Marital status***—Marital status is classified into the categories of married and unmarried. The term ''married'' encompasses all married people including those separated from their spouses. Unmarried includes those who are single (never married), divorced, or widowed.

***Maternal mortality rate***—See *Rate: Death and related rates*.

***National Center for Health Statistics (NCHS)***—The principal vital and health statistics agency of the U.S. Federal Government. NCHS is part of the Centers for Disease Control and Prevention (CDC), U.S. Department of Health and Human Services.

***Neonatal mortality rate***—See *Rate: Death and related rates*.

***Notifiable disease***—A notifiable disease is one that, when diagnosed, health providers are required, usually by law, to report to State or local public health officials. Notifiable diseases are those of public interest by reason of their contagiousness, severity, or frequency.

***Oblast***—Administrative division used in the Russian Federation. Russia is divided into oblasts, or territories, with a population ranging from half a million to several million persons.

***Perinatal mortality rate, ratio***—See *Rate: Death and related rates*.

***Physician***—In the United States, physicians are licensed doctors of medicine or osteopathy, as follows:

*Active (or professionally active) physicians*—are currently practicing medicine, regardless of the number of hours worked per week.

*Federal physicians*—are employed by the Federal Government; non-Federal or civilian physicians are not.

*Office-based physicians*—spend the plurality of their time working in practices based in private offices.

*Hospital-based physicians*—spend the plurality of their time as salaried physicians in hospitals.

In the Russian Federation, a physician is a person who received a high medical education from a medical institute or from the medical faculty of a university and who has the legal right to practice medicine. The term ''physician'' also includes sanitary-epidemiological, dental, and physiotherapeutic practitioners. Data from the Russian Federation on numbers of physicians do not distinguish between active and nonactive physicians or interns and residents in training.

***Physician specialty***—A physician specialty is any specific branch of medicine in which a physician may concentrate. Data from the United States are based on physician self-reports of their primary area of specialty. Physician data are broadly categorized into two general areas of practice: generalists and specialists. See related *Physician*.

***Population***—Census bureaus collect and publish data on populations in the Russian Federation and the United States according to several different definitions. Various statistical systems then use the appropriate population for calculating rates.

*Resident population*—is the population living in a country. It includes members of the military and their families living in that country. It excludes international military, naval, and diplomatic personnel and their families located in that country and residing in embassies or similar quarters.

Also excluded are international workers and international students living in the country and citizens living abroad. The resident population is usually the denominator when calculating birth and death rates and incidence of disease.

***Postneonatal mortality rate***—See *Rate: Death and related rates*.

***Prevalence***—Prevalence is the number of cases of a disease, infected persons, or persons with some other attribute present during a particular interval of time. It is often expressed as a rate (for example, the prevalence of diabetes per 1,000 persons during a year). See related *Incidence*.

***Procedure***—A procedure is defined as a surgical or nonsurgical operation, diagnostic procedure, or special treatment assigned by a physician and recorded on the medical record of a patient discharged from the inpatient service of a short-stay hospital. Procedures are classified as diagnostic and other nonsurgical procedures, or as surgical operations.

***Rate***—A rate is a measure of some event, disease, or condition in relation to a unit of population, along with some specification of time.

## Birth and related rates

*Birth rate*—is calculated by dividing the number of live births in a population in a given year by the midyear resident population. It is expressed as the number of live births per 1,000 population. The rate may be restricted to births to females of specific age, race, marital status, or geographic location (specific rate), or it may be related to the entire population (crude rate). See related *Live birth*.

*Fertility rate*—is the number of live births per 1,000 females of reproductive age, that is, 15–44 years.

## Death and related rates

*Death rate*—is calculated by dividing the number of deaths in a population in a year by the midyear resident population. (For census years in the United States, rates are based on populations as of April 1.) Death rates are expressed as the number of deaths per 1,000 or per 100,000 population. The rate may be restricted to deaths in specific age, race, sex, or geographic groups or from specific causes of death (specific rate) or it may be related to the entire population (crude rate).

*Fetal death rate*—is the number of fetal deaths with stated or presumed gestation of 20 weeks or more divided by the sum of live births plus fetal deaths, stated per 1,000 live births plus fetal deaths. *Late fetal death rate* or *stillbirth* is the number of fetal deaths with stated or presumed gestation of 28 weeks or more divided by the sum of live births plus late fetal deaths, stated per 1,000 live births plus late fetal deaths. See related *Fetal death*.

*Infant mortality rate*—recommended by the United Nations is calculated by dividing the number of infant deaths during a year by the number of live births reported in the same year. It is expressed as the number of infant deaths per 1,000 live births. The infant mortality rate used by Goskomstat of Russia differs in terms of the denominator: Rather than use the number of live births in the same year, Goskomstat uses a formula that is roughly equal to the sum of one-third of live births from the previous year plus two-thirds of live births from the current year. Because of this difference in denominators, infant mortality rates for Russia calculated according to the Goskomstat formula will differ from those based on the UN-recommended infant mortality rate.

*Neonatal mortality*—rate is the number of deaths of children under 28 days of age, per 1,000 live births. *Postneonatal mortality rate* is the number of deaths of children that occur 28–365 days after birth, per 1,000 live births. See related *Infant death*.

*Perinatal*—relates to the period surrounding the birth event. Rates and ratios are based on events reported in a calendar year. *Perinatal mortality* rate is the sum of late fetal deaths plus infant deaths within 7 days of birth, divided by the sum of live births plus late fetal deaths, stated per 1,000 live births plus late fetal deaths. *Perinatal mortality ratio* is the sum of late fetal deaths plus infant deaths within 7 days of birth, divided by the number of live births, stated per 1,000 live births. See related *Fetal death; Infant death; Live birth*.

*Maternal death*—is one for which the certifying physician has designated a maternal condition as the underlying cause of death. Maternal conditions are those assigned to complications of pregnancy, childbirth, and the puerperium. The *maternal mortality rate*, which indicates the likelihood that a pregnant female will die from maternal causes, is the number of maternal deaths per 1,000 live births. The number of live births used in the denominator is an approximation of the population of pregnant females who are at risk of a maternal death.

***Rayon***—Subdivision of Russian oblast, or territory, ranging in size from a few thousand persons in rural areas to half a million persons or more in large cities.

***Resident population***—See *Population*.

***Registered Nurse***—In the United States only, a registered nurse is an individual who has completed one of the following nurse training programs: baccalaureate education, which requires at least 4 years of college or university; associate degree programs, which are based in community colleges and are usually 2 years long; and diploma programs, which are based in hospitals and are usually 3 years.

***Stillbirth***—See *Rate: Death and related rates*.