

REVIEW

Health of Europeans twenty years after the fall of Berlin wall

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Abstract: The failure of central planning in the totalitarian systems of the USSR and its satellites adversely affected not only the economy and social relations but also the population health. While in the countries with established democracy (DEM) the general health and the life expectancy (LE) steadily improved, in countries declaring socialism (SOC) the LE was stagnant and in the USSR even decreased. Dramatic changes in Russia after the demise of Soviet Union resulted in an extraordinary destabilization of LE that reached a minimum in 1994. Remarkably, even twenty years after the breakdown of the Iron Curtain there persists a gap in the general health between the DEM and the SOC regions of Europe. Within the territory of the former Soviet influence there are additional differences in LE: Central Europe is much better off than Russia and its neighbours. Main cause of relatively high mortality in the post totalitarian Europe is the cardiovascular disease (CVD). Among females about 80 % difference in LE between DEM and SOC countries is related to premature CVD mortality. In SOC males compared to DEM, about 50 % of the higher mortality is caused by CVD, 20 % is related to external factors (trauma, suicide) and 10 % is oncologic disorders. The main suggested cause of such excess mortality, besides a low socioeconomic level and limited funding for health care, is an improper life style: alcoholism, smoking and inadequate intake of protective nutrients. Alcoholism, especially binge drinking is a prominent factor in Russia, Belarus, Ukraine and in the Baltic Republics (Fig. 6, Tab. 4, Ref. 20). Full Text in free PDF www.bmj.sk.

Key words: Iron Curtain breakdown, life expectancy, cardiovascular disease, external factors, alcohol, smoking, Russia, Central Europe

The objective of this review is to address the differences in population health between the DEM and SOC regions of Europe in the recent past and also twenty years after the fall of communism. The data presented here is based mostly on reports of the World Health Organization Regional Office for Europe - European Health for All database (1) and Mortality Indicators by 67 Causes of death, age and sex (2) updated in August 2009.

Life expectancy (LE) and healthy life expectancy (HALE)

After the end of World War II the health of most European countries, irrespective of their social order, started to improve. Neonatal mortality had prominently decreased and the LE improved. Toward the end of the 1950's the LE in the USSR was even somewhat better than in the USA. Figure 1 documents the male LE in Czechoslovakia and Poland in that period to be similar to Austria and higher than in Portugal. Further development during the expansion of the Soviet power and until the fall of communism brought about stark differences among nations. In the DEM countries of Europe the LE continually improved while the SOC regions expressed stagnation in the LE, along with the

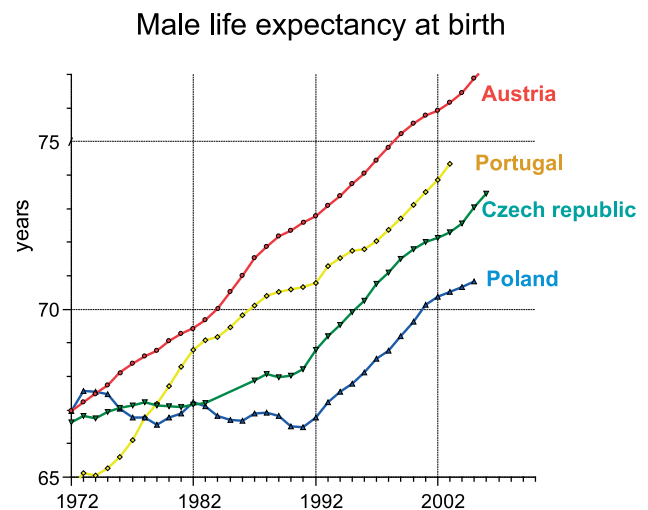


Fig. 1. Differences in trends of male life expectancy at birth in DEM and SOC countries.

onset of recession of the centrally directed economies. Only after the breakdown of communism a segment of formerly SOC countries recovered and their LE started to trail the west of Europe.

Presently, the LE in the DEM countries is in males around 78 years, in females around 83. Tables 1 and 2 illustrate that the countries of the former Soviet bloc are in LE clearly behind the

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Tab. 1. Male Life Expectancy at birth (LE) and Healthy Life Expectancy (HALE) in Europe. Last available data (2006–2008).

| Country | Life expectancy | Healthy life expectancy |
|----------------------|-----------------|-------------------------|
| 1 Switzerland | 79,6 | 71,1 |
| 2 Sweden | 78,9 | 71,9 |
| 3 Italy | 78,6 | 70,7 |
| 4 Norway | 78,3 | 70,4 |
| 5 Netherlands | 78,2 | 69,7 |
| 6 Austria | 77,9 | 69,3 |
| 7 U.K. | 77,7 | 69,1 |
| 8 France | 77,5 | 69,3 |
| 9 Greece | 77,2 | 69,1 |
| 10 Germany | 77,2 | 69,6 |
| 11 Spain | 77,1 | 69,9 |
| 12 Finland | 76,1 | 68,7 |
| 13 Portugal | 74,9 | 66,7 |
| 14 Slovenia | 74,8 | 66,6 |
| 15 Czech Rep. | 73,8 | 65,9 |
| 16 Croatia | 72,6 | 63,8 |
| 17 Poland | 71,0 | 63,1 |
| 18 Slovakia | 70,9 | 63,0 |
| 19 Romania | 69,8 | 61,0 |
| 20 Bulgaria | 69,3 | 62,6 |
| 21 Hungary | 68,8 | 61,5 |
| 22 Estonia | 67,3 | 59,2 |
| 23 Latvia | 65,8 | 58,0 |
| 24 Lithuania | 64,9 | 58,9 |
| 25 Belarus | 64,6 | 56,6 |
| 26 Ukraine | 62,3 | 54,9 |
| 27 Russia | 60,5 | 52,8 |

Tab. 2. Female Life Expectancy at birth (LE) and Healthy Life Expectancy (HALE) in Europe. Last available data (2006–2008).

| Country | Life expectancy | Healthy life expectancy |
|----------------------|-----------------|-------------------------|
| 1 France | 84,6 | 74,7 |
| 2 Switzerland | 84,3 | 75,3 |
| 3 Italy | 84,3 | 74,7 |
| 4 Spain | 83,8 | 75,3 |
| 5 Sweden | 83,2 | 74,8 |
| 6 Austria | 83,2 | 73,5 |
| 7 Finland | 83,2 | 73,5 |
| 8 Norway | 83,0 | 73,6 |
| 9 Netherlands | 82,7 | 72,6 |
| 10 Germany | 82,4 | 74,0 |
| 11 Slovenia | 82,1 | 72,3 |
| 12 Greece | 82,0 | 72,9 |
| 13 U.K. | 81,9 | 72,1 |
| 14 Portugal | 81,6 | 71,7 |
| 15 Czech Rep. | 80,3 | 70,9 |
| 16 Poland | 79,8 | 68,5 |
| 17 Croatia | 79,4 | 69,3 |
| 18 Slovakia | 78,7 | 69,4 |
| 19 Estonia | 78,2 | 69,0 |
| 20 Lithuania | 77,3 | 67,7 |
| 21 Hungary | 77,2 | 68,2 |
| 22 Romania | 76,9 | 65,2 |
| 23 Latvia | 76,5 | 67,5 |
| 24 Bulgaria | 76,3 | 66,8 |
| 25 Belarus | 76,3 | 64,9 |
| 26 Ukraine | 73,8 | 63,6 |
| 27 Russia | 73,3 | 64,3 |

West even in 2007 (the year of the last full report). The gap in male LE is enormous 20 years when Iceland is compared with Russia, in females such comparison shows a difference of „only“ 10 years. NationalMaster.com (3) lists the male LE for 2005 in 226 countries. Russia positions itself on this scale with a very unfavourable score of 168, worse even than Pakistan, Mongolia, Bangladesh, Phillipines, Brazil, Peru, Vietnam, Sri Lanka and Libya. US scored rather low at 48.

Healthy life expectancy (HALE) may also be expressed as DALE (Disability Adjusted Life Expectancy). Since HALE indicates the years experienced without remarkable health problems (the healthy years) the values of HALE are obviously lower than the LE (the total life span that includes years marked with disease). WHO Headquarters was the source of these parameters. HALE was calculated using the Sullivan method based on age-specific information on the prevalence of non-fatal health outcomes. National HALE estimates are based on the life tables for each Member State, population representative sample surveys assessing physical and cognitive disability and general health status, and detailed information on the epidemiology of major disabling conditions in each country.

Like the LE, the values for HALE are also markedly better in the DEM countries. Remarkably, even twenty years after the demise of communism the dark legacy of the totalitarian system is reflected in the population health. A remarkable exception is Slovenia, formerly part of Yugoslavia. This is now an adequately developed country enjoying prosperity as well as a GDP per

Tab. 3. Standardized mortality (age 25–64 y. per 100 000) in males caused by cardiovascular diseases, ischaemic heart diseases and cerebrovascular diseases in Europe. Last available data (2005–2008).

| Country | Cardiovascular diseases | Ischaemia | Stroke |
|----------------------|-------------------------|--------------|--------------|
| 1 Switzerland | 59,7 | 33,5 | 5,8 |
| 2 France | 66,5 | 27,5 | 11,5 |
| 3 Italy | 69,8 | 34,5 | 11,1 |
| 4 Netherlands | 70,6 | 30,9 | 9,8 |
| 5 Norway | 72,3 | 42,3 | 10,5 |
| 6 Sweden | 75,5 | 43,8 | 12,1 |
| 7 Austria | 75,7 | 45,2 | 10,2 |
| 8 Spain | 80,7 | 40,4 | 14,4 |
| 9 U.K. | 96,8 | 62,9 | 12,4 |
| 10 Germany | 100,0 | 52,1 | 12,6 |
| 11 Portugal | 101,9 | 45,1 | 31,3 |
| 12 Slovenia | 112,0 | 51,9 | 19,9 |
| 13 Greece | 128,7 | 85,9 | 19,7 |
| 14 Finland | 130,3 | 73,4 | 19,3 |
| 15 Czech Rep. | 170,2 | 90,8 | 23,9 |
| 16 Croatia | 194,5 | 93,5 | 48,5 |
| 17 Poland | 231,5 | 90,3 | 45,1 |
| 18 Slovakia | 257,5 | 123,4 | 32,0 |
| 19 Romania | 292,1 | 135,3 | 77,1 |
| 20 Hungary | 323,2 | 175,3 | 56,6 |
| 21 Estonia | 358,0 | 174,7 | 68,4 |
| 22 Bulgaria | 403,9 | 124,4 | 93,9 |
| 23 Lithuania | 437,9 | 237,3 | 64,4 |
| 24 Latvia | 512,2 | 263,8 | 80,6 |
| 25 Belarus | 512,6 | 333,6 | 107,5 |
| 26 Ukraine | 595,9 | 366,9 | 110,8 |
| 27 Russia | 673,7 | 359,7 | 145,7 |

Tab. 4. Standardized mortality (age 25–64 y. per 100 000) in females caused by cardiovascular diseases, ischaemic heart diseases and cerebrovascular diseases in Europe. Last available data (2005–2008).

| Country | Cardiovascular diseases | Ischaemia | Stroke |
|----------------------|-------------------------|--------------|-------------|
| 1 Switzerland | 19.5 | 6.4 | 4.8 |
| 2 France | 21.1 | 4.7 | 6.2 |
| 3 Italy | 23.8 | 7.3 | 6.7 |
| 7 Spain | 24.4 | 7.4 | 7.3 |
| 5 Norway | 25.1 | 10.7 | 6.5 |
| 8 Austria | 26.9 | 9.6 | 7.3 |
| 6 Sweden | 28.6 | 12.1 | 7.8 |
| 12 Slovenia | 28.8 | 6.7 | 9.0 |
| 4 Netherlands | 30.9 | 8.8 | 9.1 |
| 14 Finland | 30.9 | 12.1 | 9.5 |
| 10 Germany | 34.9 | 12.7 | 7.7 |
| 9 U.K. | 35.8 | 15.0 | 9.9 |
| 11 Portugal | 36.3 | 9.7 | 14.4 |
| 13 Greece | 37.2 | 17.8 | 10.5 |
| 15 Czech Rep. | 54.7 | 21.7 | 11.7 |
| 16 Croatia | 58.7 | 20.2 | 19.9 |
| 17 Poland | 67.5 | 19.6 | 20.5 |
| 18 Slovakia | 76.3 | 31.1 | 11.3 |
| 21 Estonia | 90.9 | 32.8 | 27.0 |
| 20 Hungary | 103.7 | 47.8 | 24.2 |
| 19 Romania | 113.3 | 42.1 | 41.5 |
| 23 Lithuania | 113.4 | 47.7 | 28.4 |
| 24 Latvia | 138.3 | 55.6 | 35.7 |
| 25 Belarus | 151.0 | 77.6 | 50.3 |
| 22 Bulgaria | 154.8 | 35.0 | 43.2 |
| 26 Ukraine | 199.1 | 114.0 | 51.6 |
| 27 Russia | 212.7 | 89.0 | 66.4 |

capita substantially higher than in other Central European economies transitioning to the free market. Slovenia owes this advantage to a long border with Austria and Italy. Tito regime permitted work in these DEM countries and work savings were transferred back to Slovenia.

Cause specific mortality

Infant mortality is often used as an indicator of the level of health in a country (4). Infant mortality is defined as the number of deaths of infants (one year of age or younger) per 1000 live births. High European infant mortality after World War II started to improve after 1960 in all European regions. Declining fertility and better nutrition and housing along with rising standard of living, played important roles in reducing infant mortality. Presently, infant mortality is relatively high in Russia, Bulgaria and Romania (over 10/1000) while it trails the DEM countries in other post totalitarian regions: while in Western Europe it is less than four, in Central and Eastern Europe it is 3 – 6. A marked and sad exception is a very high infant mortality in the enclaves with Roma population.

Middle age mortality related to CVD is one of the most prominent causes of poorer overall population health in SOC countries. The difference between SOC and DEM countries in this category is enormous. Overall CVD mortality at 25–64 years of age is in Russia eleven fold, in Ukraine ten times higher when

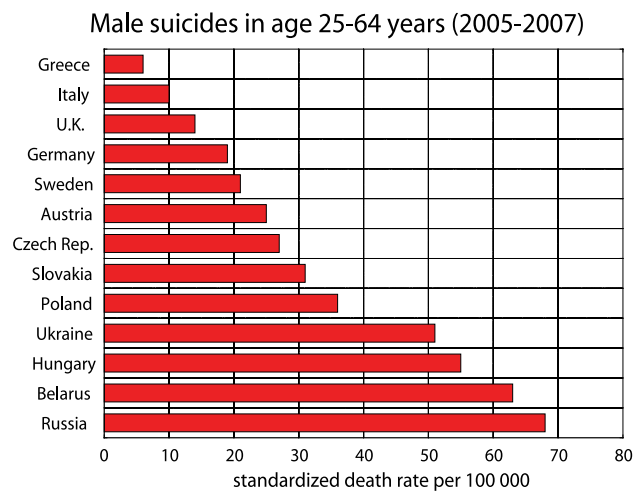


Fig. 2. Male suicides are higher in SOC than in DEM countries.

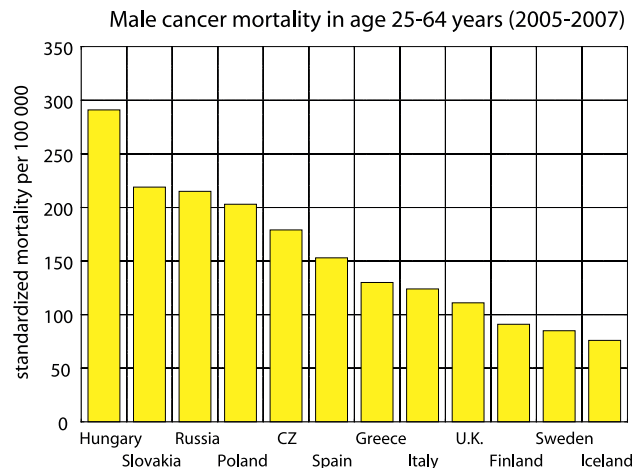


Fig. 3. Male cancer mortality is higher in SOC than in DEM countries.

compared with Switzerland (Tab. 3). CVD mortality in Russian females is more than ten times higher when compared to Switzerland or France (Tab. 4). The difference in CVD mortality between Russia and Ukraine on one hand and Switzerland is related predominantly to ischemic heart disease and cerebrovascular accidents. Stroke mortality in Russian middle age males is twenty times higher than in in Switzerland or Austria.

Excessive Russian mortality from external causes is part of the explanation for the enormous gap in health between Russia and the West. This includes various work and household accidents, transportation injury, falls, poisoning, murder and suicide. There is a temporal variability in these external causes, reflecting the ups and downs of the socioeconomic situation in Russia. External causes affect mortality substantially less in Central Europe and they show a mildly declining trend in Austria and Slovakia.

An adverse psychoemotional impact of living in Russia, Belarus, Ukraine and Hungary is documented by suicide rate at

Male mortality from chronic liver disease and cirrhosis in age 25-65 (2005-2007)

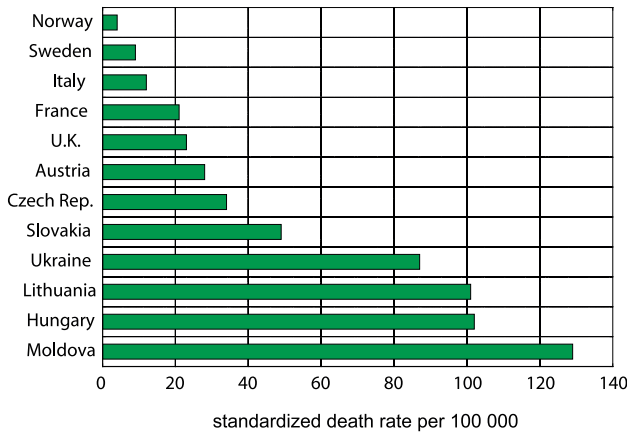


Fig. 4. Male mortality from chronic liver diseases and cirrhosis is higher in SOC than in DEM countries.

age 25 – 64 (Fig. 2). In Russia there is an elevenfold higher suicide rate compared to Greece.

Premature mortality induced by neoplastic disorders (cancer) illustrates somewhat different distribution (Fig. 3). Hungary has an ungraceful lead in cancer for both males and females. Hungarian cancer mortality for age 25–64 is almost fourfold compared to Iceland. Slovakia while somewhat better than Hungary, is in cancer mortality in the second place, right before Russia.

In the cause specific mortality, oncologic disorders contribute less to the adverse LE in SOC countries than the other factors listed above.

Specific health problems of Russia and Hungary

Alcoholism is a deeply rooted, near a historic problem in Russia. It has been a very important part of Russia's social behavior and history since around the 10th century. Nearly every class and both genders appear to over indulge regularly. The culture of alcohol use has continued into modern times. The main difference between alcohol consumption in Russia compared to other countries is that it mostly represents hard liquor like vodka, the consumption occurring in binges. Such type of alcohol consumption is more damaging (5). High intake of alcohol in Russia and its neighbours is associated not only with CVD disorders and with external causes of mortality but it also contributes to disability from chronic liver disease (6, 7).

Strangely enough, the Russian statistical reports as opposed to other countries, do not list mortality related to chronic liver disease and liver cirrhosis. In an attempt to highlight this problem, we include Figure 4 documenting liver mortality (males 25 – 64 years) in Moldova, Ukraine and Lithuania – countries with a very significant proportion of Russian population. In Moldova more than twice more men died of chronic liver disease than in Slovakia. Ukraine neighbouring Slovakia, had more than twice

Male life expectancy at birth in years

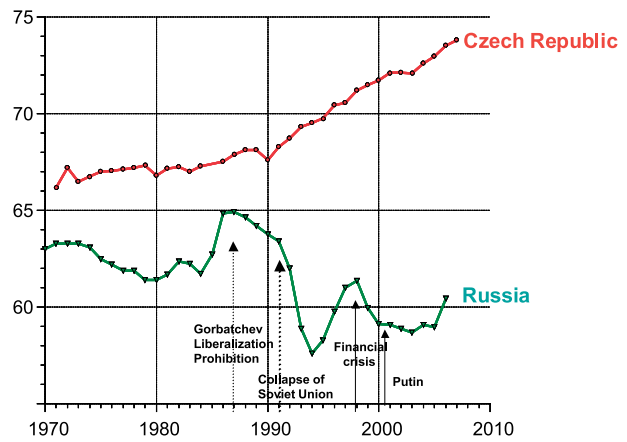


Fig. 5. Great differences in trends of male life expectancy at birth in the Russian Federation and in the Czech Republic.

the liver disease mortality compared with the Czech Republic and four times higher mortality than the wine growing empire France. From this it may be deduced that the mortality related to liver disease is also high in Russia.

Chronic viral hepatitis is another important factor besides alcohol, that contributes to disability and mortality from liver disease. WHO data indicate that Russia holds an unfavourable lead also in this disease category. In 1990 the incidence of viral hepatitis in Czechoslovakia was only slightly higher than in Austria while in Russia it was about seven times higher. Viral hepatitis then further decreased in the Czech Republic while in Russia this was still about four times higher.

Regarding liver disease mortality, Hungary holds an adverse score among the post communist countries. The difference between Hungary and DEM countries is staggering: Hungarian liver mortality is more than thirty fold compared with Norway !

Socioeconomic roots of adverse health development in the post communist countries

History of Russia in the 20th century, marked by dramatic and tragic sequences exerted a definitive impact on the health of its population. There were revolutions in 1905 and the Civil war ending with the bolsheviks taking over in 1917, followed by decades of Stalin merciless rule and the German incursion costing millions of lives. After the World War II the Soviet Union was doomed by a slow fateful degeneration of its centrally planned and one party directed political system. A prominent decline in general health occurred in the 1970's to the early 1980's.

Early in the 1980's the LE of Russian males was 62–63 years while in the DEM Europe it was 70–71 years. During the Gorbatschew perestroika the LE increased to 65 years due to a measure of political relief and an intensive anti-alcohol campaign. Then regretfully, social changes related to the overall col-

lapse of the Soviet system resulted in an unprecedented decrease of LE to 57 years.

Transformation from seventy years of central planning and one-party hegemony to the market economy, induced in Russia a remarkable and devastating rise in unemployment and in general poverty. An unprecedented gap between the dirt poor and the very rich brought along dire human consequences. Official data indicate that up to 30 % of Russians strive below the poverty level. These poorest socioeconomic levels of population experienced the greatest overall disadvantage when compared to other parts of Europe. Such sharp and sudden drop in LE as in Russia has not been observed anywhere else in the world (Fig. 5).

Gradually, the Russian Federation started to recover but the financial crisis of 1998 induced another blow to the LE. It took until Putin years after 2000, to note some stability and a modest improvement in the LE. Recent years document a marked improvement but Russian lagging behind other countries, including the developing world, persists – see specific data related to Russia (9–16).

Compared to USSR, in the Soviet satellites of Central and Southern Europe the general health was better but during the Soviet rule the LE stagnated. After the fall of the Iron Curtain, in the 1990's these countries attained progressively improved health, best documented by LE in the Czech Republic (Fig. 5). Out of all of these countries, former East Germany that unified with its west part, showed the best progress, without doubt because of enormous influx of funds from West Germany. The three former Central European satellites, the Czech Republic, Slovakia and Poland responded to the transformation to free market with an improved LE. Hungary, Bulgaria and Romania experienced chaotic first years negatively impacting on the LE after the fall of communism. Later on they too improved the LE of their people. However, except for the Czech Republic, these overall improvements in LE to 69–71 years still fall behind the LE in the DEM Europe.

Hungary is a puzzling case and the task of elucidating its health trends is a daunting one. Hungarian middle age males experience high mortality related to CVD, to liver cirrhosis, suicides and the highest rate of oncological disorders of all Europe. There are some putative factors possibly contributing to adverse health of Hungarians: High alcohol and tobacco consumption, unbalanced diet that contains plenty of animal/pork fat and to certain degree a persisting socio-economic instability (17–20). However, in many respects the health of Hungarians is so disproportionately out of line with its neighbours that other unidentified factors, including genetic, should be considered.

Funding of health care and the life expectancy

The system of health care and the the level of national wealth exert prominent influence on general health of populations, even when this may be somewhat less decisive than the other factors listed above. The level of health expenditure is not fully related to the quality of population health. USA spend more of the GDP per capita on health care, yet several European countries spending less have better population health indices. This is a complex

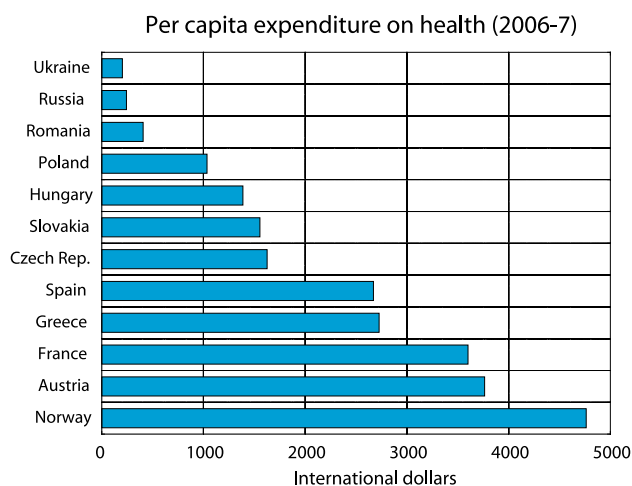


Fig. 6. Great differences in the expenditure on health in various parts of Europe.

issue related also to universal accessibility of health delivery to all, to the quality of the insurance system and to reimbursement of health care workers. But without doubt, the national wealth generated by a country and its proportion allocated to health care has an important role.

Norway contributes of all European countries the most to the health of its people. The Czech Republic, Slovakia and Hungary contribute to health only about one third of what Norway does. On the other hand Russia, Ukraine and Romania provide an entirely insufficient funding for health (Fig. 6).

Conclusion

A careful analysis of population health trends in Europe confirms that an established democratic society, adequately distributing the material wealth generated by its market economy, is the best guarantor of a healthy life that leads to a low premature disability and to a reduced human and economic burden from excess mortality. The Soviet system and its forceful imposition on the satellite countries proved a failure also in safeguarding the health of its citizen. Health care was subjected to central planning directed by voluntaristic political doctrine that did not permit correction by checks and balances. Real economic mechanisms were substituted with empty declarations on the right to health for everybody. Even after the party and the state expropriated all private ownership, their handling of these enormous assets was not able to keep pace with the health progress in the rest of the world. Health problems of the former Soviet Union and its satellites, although gradually improving persist even twenty years after the fall of communism. It may well take for the former Soviet Union another twenty or thirty years to fully catch up with health standards of the West. The human lesson from this population health statistics strongly confirms that seventy years of doctrinarian mismanagement result in disastrous consequences for populations subjected to the totalitarian rule.

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