

Health in Europe 1



The unequal health of Europeans: successes and failures of policies

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Europe, with its 53 countries and divided history, is a remarkable but inadequately exploited natural laboratory for studies of the effects of health policy. In this paper, the first in a Series about health in Europe, we review developments in population health in Europe, with a focus on trends in mortality, and draw attention to the main successes and failures of health policy in the past four decades. In western Europe, life expectancy has improved almost continuously, but progress has been erratic in eastern Europe, and, as a result, disparities in male life expectancy between the two areas are greater now than they were four decades ago. The falls in mortality noted in western Europe are associated with many different causes of death and show the combined effects of economic growth, improved health care, and successful health policies (eg, tobacco control, road traffic safety). Less favourable mortality trends in eastern Europe show economic and health-care problems and a failure to implement effective health policies. The political history of Europe has left deep divisions in the health of the population. Important health challenges remain in both western and eastern Europe and signify unresolved issues in health policy (eg, alcohol, food) and rising health inequalities within countries.

Introduction

For the purposes of this Series, we define Europe pragmatically as the 53 countries included in WHO's European region, but are aware that any attempt to define Europe is far from straightforward (panel 1). This Series is the first that *The Lancet* has published about Europe. Europe provides a rich natural laboratory to study the determinants of population health and the effects of health policy. For example, diet and drinking patterns, which are both known determinants of health, vary widely in Europeans because of climatic, and thus agricultural, diversity. The countries of Europe have pursued very different policies that affect the determinants of health, whether proximal, such as those about tobacco, road traffic injury, and illicit drugs, or distal, such as those about poverty. Although united in a commitment to universal coverage of health services, each country organises its health system in a different way, and much can be learned from this diversity.⁶

Europe differs from many countries that have featured in previous *Lancet* Series, such as China, India, Brazil, and Mexico. These countries are expanding access to health care as their predominantly rural societies undergo rapid industrialisation and urbanisation, accompanied by rising standards of living, even if the benefits are unevenly shared. For Europe, by contrast, the challenge is to sustain comprehensive health systems while undergoing deindustrialisation and, in many countries, relative or absolute economic decline as manufacturing shifts to countries where labour is cheaper. This challenge is exacerbated by the global financial crisis and demographic changes, with falling birth rates, increasing life expectancy, and migration changing the pattern of disease and the capabilities of labour-intensive health and social services to respond.

In this paper, we review patterns of health in different parts of Europe, and chart successes and failures. The remaining papers explore some of these issues in greater depth. The second paper looks at the European project to build an ever closer union.⁷ Many policies that affect health are now decided collectively⁸—an inevitability, in view of the common challenges that the countries of Europe face, which, in a single market, can only be tackled through joint action. Yet for many people the workings of the European Union (EU) are a mystery, a situation not helped by the scant attention paid in some countries by the mass media, except, in some cases, to hold the EU responsible for all the evils in the world (both real and imagined).

The third paper looks at the countries that emerged from the break-up of the Soviet Union,⁹ countries that were united for most of the 20th century. The Soviet regime initially made health a priority, but by the 1960s it was suffering from a combination of scientific isolation and

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This is the first in a Series

of seven papers about health in Europe

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Key messages

- Europe offers a remarkable natural laboratory in which to study the effects of health policy and health systems
- The political divisions of 20th century Europe remain apparent in patterns of health, with a persisting east–west divide
- Despite overall progress, noteworthy failures of health policy have been documented even in western Europe, such as delays in acting on tobacco in Denmark, Germany, and Austria, and the rise in alcohol-related deaths in Finland and the UK
- The east–west health divide is partly due to failures of health policies in eastern Europe—eg, those related to tobacco, alcohol, infectious diseases, road and child safety, and health care
- Patterns of health also vary greatly within countries by region, socioeconomic group, and ethnic origin, providing further opportunities for health improvement in addition to those related to experience elsewhere

Panel 1: Europe—more than a geographical expression?

Europe is part of the Eurasian land mass, and its border with Asia is as much a question of culture and history as one of physical geography—a fact noted by the 19th century Austrian statesman Klemens von Metternich, who pejoratively suggested that Asia began on the outskirts of Vienna.¹ Two partly European countries, Turkey and Russia, have the largest parts of their land masses in Asia, and both draw on cultural traditions from east and west.^{2,3} The European region of WHO stretches from western Greenland to Vladivostok, Russia, and includes several countries that are unambiguously in Asia—eg, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan, Israel. The European Union (EU) extends across the world, with the Spanish enclaves of Ceuta and Melilla on the north coast of Africa, French departments and Dutch municipalities in the Caribbean and, in the case of French Guiana, on the South American mainland, and other French departments in the Indian Ocean.

Geographical complications also exist within mainland Europe as a result of changing borders. The collapse of the communist bloc in the 1990s reshaped the map of Europe. New countries were formed, the two parts of Germany reunited, and the two parts of Czechoslovakia divided. Two of the most multiethnic states, the Soviet Union and Yugoslavia, broke up into their constituent republics, a process that might not yet have concluded in view of the still-contested status of some entities—eg, Kosovo, Transnistria, several other autonomous enclaves in the former Soviet Union.⁴ Not only the location, but also the nature of borders is changing. National borders have all but disappeared within most of the EU since the creation of the Schengen Area, within which people can travel without hindrance. This arrangement, however, has been achieved through reinforcement of the EU's external borders, creating what has been termed fortress Europe,⁵ designed to keep out people who do not have the skills or resources that Europe needs. In some cases—eg, the former Soviet Union and Yugoslavia—countries that were once united have even had to erect frontier posts.

Definition of national groupings within Europe often causes confusion. For example, the EU comprises 27 member states (soon to be 28 with the accession of Croatia in 2013). However, several small states within its borders (Monaco, San Marino, Andorra, and Liechtenstein) and some larger nearby ones (Iceland, Switzerland, and Norway) are not in the EU, but all are, to greater or lesser degrees, closely linked to the EU functionally. These small states within the borders of the EU all use the euro as their currency, and Norway enacts EU laws, in some cases faster than the actual member states. All are members of the open-border Schengen agreement, by contrast with the UK and Ireland. All these countries share many common features, and thus to group them together makes sense. However, an adequate term for this cluster of countries does not exist (the European Economic Area, although broader than the EU, includes only three of these non-member states). Western Europe conventionally includes the 15 pre-2004 EU member states, Iceland, Norway, and Switzerland, and the microstates within them. The term central and eastern Europe usually includes all former communist countries that were not part of the Soviet Union, but strictly speaking many former Soviet countries are also part of eastern Europe. According to customary use, before German unification East Germany was in central and eastern Europe, but is now part of western Europe.

A similar problem arises with the countries that have emerged from the Soviet Union. Originally referred to by WHO and others as newly independent states, this term seems inappropriate more than 21 years after they became independent. The term former Soviet Union strictly includes the three Baltic States that are now part of the EU—ie, Estonia, Latvia, and Lithuania. The Commonwealth of Independent States was created to link the remaining 12 former Soviet countries. Georgia has since left; however, for simplicity of language, it is still taken to be part of the Commonwealth of Independent States in common usage.

diversion of resources to the military-industrial complex. Although the Soviet Union had some of the outward signs of a superpower—eg, nuclear weapons, a major space programme—it neglected the health of its people. When the Soviet Union collapsed, life expectancy was plummeting—a situation otherwise noted only in wartime or when the AIDS epidemic swept across parts of Africa.¹⁰

The fourth paper discusses child health.¹¹ The pattern of disease in children in Europe has been transformed, especially as a consequence of progress in the control of infectious diseases (eg, through vaccination). Health professionals are now caring for children with complex chronic diseases, such as juvenile-onset diabetes (the incidence of which is rising substantially), genetic disorders, childhood cancers, and behavioural disorders (eg, autism). Health systems have responded in different ways, offering opportunities to learn from different experiences.¹²

Three further papers examine the changing needs of different population groups in Europe today. The fifth paper examines how European governments are responding to increasing numbers of migrants, and offers an opportunity to draw on experience of good practice from across Europe.¹³ Europe needs migration to fill the gap left by falling birth rates. However, migrants often face disadvantages and, in many cases, outright discrimination.¹⁴

The sixth paper looks at older Europeans (ie, those aged 65 years or older).¹⁵ Healthy lifestyles and improvements in living conditions and health care mean that Europeans are living longer than ever, resulting in opportunities to contribute to society for longer. However, an ageing population also brings challenges because health services will have to deal with more people surviving with complex chronic diseases and comorbidities.¹⁶

The final paper addresses the effects of the global economic crisis.¹⁷ Some countries have been affected much more than others, in particular the so-called PIGS—Portugal, Ireland, Greece, and Spain. Yet the crisis has had implications for nearly all countries in Europe, whether as recipients or donors of funds to support Europe's ailing economies or as major trading partners. Many of the policy responses have been characterised by austerity, and the seventh paper examines how they affect health and health services.

Improvements and setbacks

The political divisions of Europe are immediately apparent in patterns of mortality. The countries of western Europe have experienced sustained improvements in life expectancy¹⁰ since World War 2 (figure 1A) despite occasional short-term stagnation or even reversal of mortality declines in some age groups—eg, young Spanish men in the 1980s (largely due to injuries and HIV/AIDS)¹⁸ and women in Denmark and the Netherlands in the 1990s (due to a peak in smoking-related deaths).^{19,20} The overall pattern within western Europe is one of convergence of life expectancy, with slightly faster progress in countries that were lagging behind in 1960, such as Finland and Portugal.²¹

By contrast, the formerly communist countries of central and eastern Europe and the former Soviet Union experienced stagnation of, or even falls in, life expectancy during the 1960s, 1970s, and 1980s. Overall life expectancy figures from this period conceal increases in mortality in middle-aged men, which were compensated for, and to some extent obscured by, continued improvements in child mortality.²² The situation changed after 1990 when the communist bloc collapsed (figure 1B). Life expectancy improved almost at once in Poland, the former East Germany, and what was then Czechoslovakia, but the improvement was delayed until 1993 in Hungary and a few years later in Romania and Bulgaria. Of the countries that emerged from Yugoslavia, Slovenia was the only successor state where secession was largely peaceful and life expectancy improved without interruption. Elsewhere, hundreds of thousands of people were killed and many more displaced because of ethnic violence. Interruptions in data collection mean that the effects of these events are difficult to detect in life expectancy trends, with the exception of Croatia, which had a clear dip in male life expectancy in the early 1990s (figure 1B). In the countries of the former Soviet Union, a series of rapid fluctuations in life expectancy were noted from the mid-1980s onwards that, although varying in magnitude, were similar in timing.^{23,24} The overall pattern within eastern Europe is one of divergence of life expectancy, especially for men.

Some of these trends and variations can be explained by economic developments. Western Europe experienced economic growth in the 1980s, when many countries in central and eastern Europe and the Soviet Union were experiencing economic stagnation due to the failure of the communist economic model (and subsequent severe economic decline in the 1990s exacerbated by forced restructuring of the economy).²⁵ The effect of economic growth on life expectancy, however, is probably mediated by various factors, including less exposure to hazardous living conditions, lifestyle change, more effective public health systems, and improved health care.^{26,27}

By the beginning of the 21st century, most of Europe had achieved a degree of stability and life expectancy was increasing sharply almost everywhere. In the EU, life expectancy for men increased by 3·15 years between 1999 and 2010, while the corresponding increase for women was 2·47 years. These gains can be decomposed to identify how many years the major causes of death at different ages contributed to the overall change in life expectancy (figure 2). The greatest effect was brought about by reductions in deaths in men aged 60 years or older and women aged 65 years or older, which were largely because of falls in mortality from cardiovascular disease, although reduced deaths from external causes (ie, injuries and violence) had a role in younger men. The large falls in mortality in older people seemed to open a new phase in the epidemiological transition, which could have important consequences for population ageing.^{30,31}

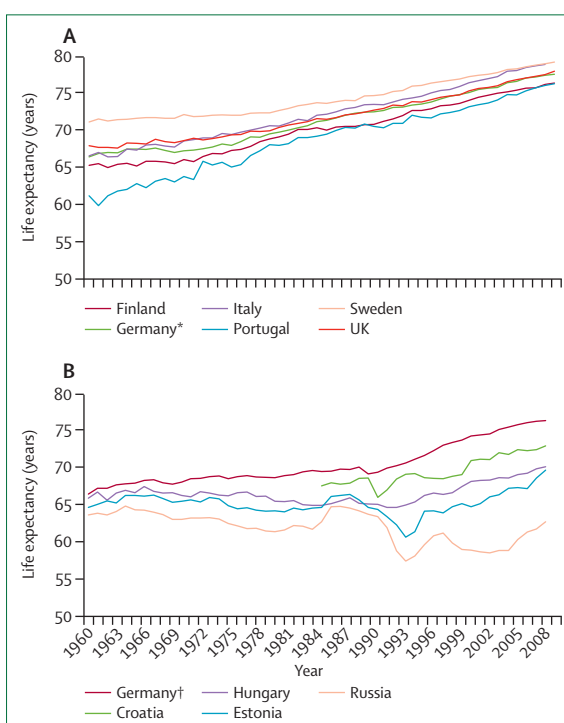


Figure 1: Trends in life expectancy at birth in men in selected countries in western Europe (A) and central and eastern Europe (B), 1960–2010
Source: Human Mortality Database. *Federal Republic of Germany until 1990, western Länder subsequently. †German Democratic Republic until 1990, eastern Länder subsequently.

For the Human Mortality Database see <http://www.mortality.org>

Progress in life expectancy in the former Soviet Union has been more diverse.^{32,33} The 1990s were characterised by a series of substantial fluctuations; life expectancy in the Baltic states—ie, Estonia, Latvia, and Lithuania—began to increase (at times erratically) after 1994, whereas sustained improvements in the remaining 12 countries began only in the mid-2000s (figure 1B). Life expectancy at birth still lags far behind that in the EU; the gap is 12 years for men and 8 years for women. Gains in life expectancy since 1990 have been driven by lower death rates in infancy. Almost no changes at other ages have been noted in women and death rates in men at many ages are higher than they were in 1990 (figure 2). Improvements since 2005 in some countries (data not shown) are largely a result of reductions in deaths from circulatory diseases in both men and women and at older ages, which are thought to be because of improvements in access to health care.³² However, rates of death from circulatory diseases remain two-to-three-times higher than the EU average. Countries in the South Caucasus (ie, Armenia, Azerbaijan, and Georgia) have long had lower death rates from cardiovascular disease than have other Soviet countries, which has been plausibly linked to their somewhat healthier Mediterranean-style diets, but some caution is needed when interpreting mortality data from this region because of problems with data quality.³⁴ Panel 2

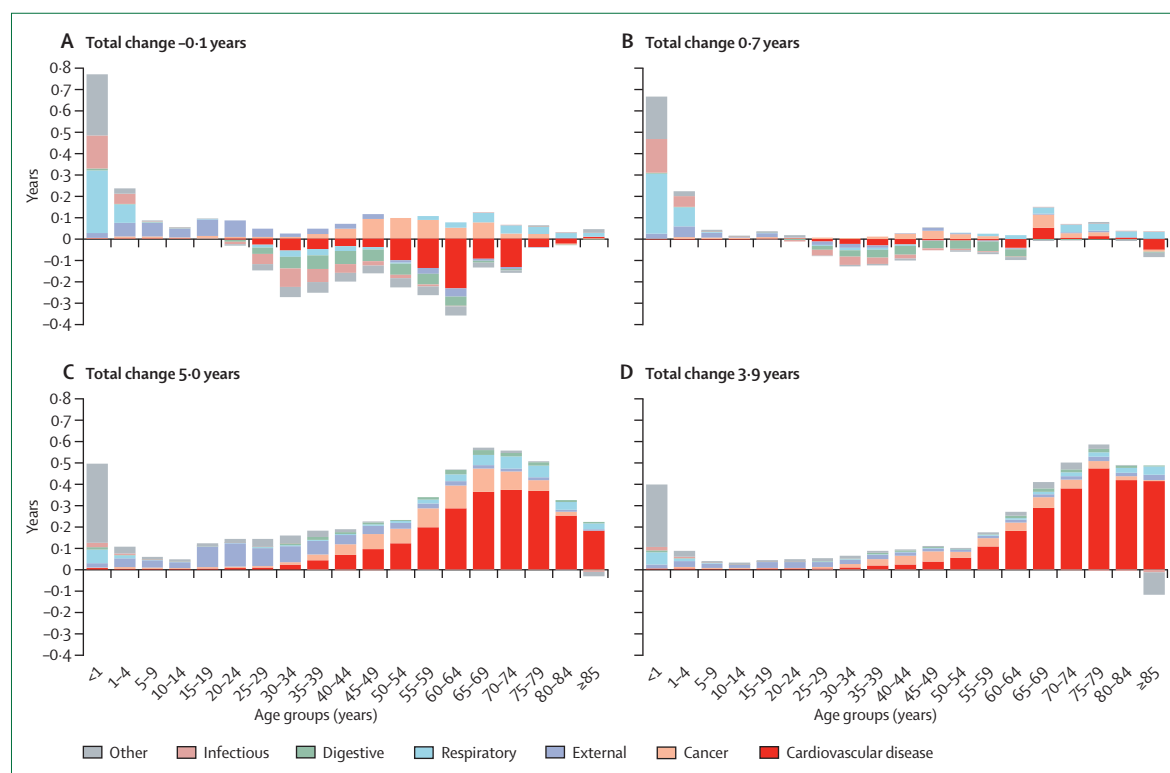


Figure 2: Age-specific and cause-specific contributions to life expectancy, 1990–2010 (or most recent year available), in men and boys (A) and women and girls (B) in the Commonwealth of Independent States, and in men and boys (C) and women and girls (D) in the European Union

Source: WHO Mortality Database (updated July, 2012). Life expectancy was calculated with Chiang's method,²⁸ and decomposition by cause with Arriaga's method.²⁹ Data for Armenia, Belarus, France, Georgia, Greece, Hungary, Italy, Kazakhstan, Kyrgyzstan, and Luxembourg are until 2009, those for Azerbaijan until 2007, for Belgium and Denmark until 2006, for Tajikistan and Uzbekistan until 2005, and for Turkmenistan until 1998. The y-axes represent the number of years that changing death rates in each age group contribute to the overall change in life expectancy.

For the WHO Mortality Database
see <http://www.who.int/whosis/mort/download/en/index.html>

describes progress in the collection of morbidity data. The appendix contains more information about European mortality patterns.

Health policy in western Europe

Successes and failures

Specific health policies that have contributed to favourable health effects in western Europe since 1970 were identified through a process of consultation with experts in a range of subjects, who then did targeted reviews of published work and additional data analyses.⁶ The policies identified include those for health protection and promotion (eg, tobacco control, home and road traffic safety, reductions in air pollution) and improved health care (eg, perinatal and maternal health, immunisations, detection and treatment of hypertension, cancer screening, more effective treatment for many diseases). Some health policies, such as those about alcohol and food, have had more mixed results.⁶ Notwithstanding some overall successes, implementation of effective health policies has differed greatly between western European countries, leaving substantial room for further health gains. We provide four examples to show these differences.

Tobacco control

Tobacco remains the leading cause of avoidable premature mortality in Europe. Many western European countries have made substantial progress in tobacco control. Countries that have implemented more tobacco control policies—eg, price increases, restrictions on smoking in public places, advertising bans—tend to have lower smoking prevalences than do those that have not implemented such policies, particularly in men (figure 3A). Lung cancer mortality in men is decreasing in many European countries, and reductions in smoking prevalences have contributed substantially to decreases in mortality from ischaemic heart disease.^{42–44}

Unfortunately, countries have differed substantially in the nature and timing of their policies³⁹—a fact shown by the slow spread of bans on smoking in public places.⁴⁵ Ireland was the first western European country to enact a comprehensive ban, and was soon followed by Scotland, England, Wales, Italy, Spain, and France. Bans have now extended more widely to countries including Bulgaria. However, other countries—especially those where links between the tobacco industry and politicians and scientists are tight, such as Germany⁴⁶ and Austria—have been slower to adopt

See Online for appendix

Panel 2: Sources of morbidity data

Unlike the USA, which has administered regular nationwide health interview and examination surveys for many years, the European Union is only beginning this process and, where data exist, they provide incomplete coverage. Data are available from a diverse range of health interview and examination surveys, which are now coordinated by the European Commission to produce core modules that can be compared across Europe. However, much work needs to be done to achieve comprehensive and consistent coverage by the European Health Interview Survey and the European Health Examination Survey. The European Health Interview Surveys, for which progress is more advanced, covers background demographic variables, risk factors, health status, and use of health-care services. Another source of data is the Survey of Income and Living Conditions in Europe, but the health content is small and many of the questions about potential explanatory variables have changed since the survey's inception. The Survey of Health, Ageing and Retirement in Europe is following up 55 000 individuals aged 50 years or older from 20 European countries. Despite its restricted age range, it has become an important source of morbidity data because it includes measures of self-reported health problems and disabilities, and measured functional limitations.³⁵ Perhaps the best known example of data harmonisation is the network of European cancer registries, which, in a series of specific research projects (European Cancer Registry-based Study on Survival and Care of Cancer Patients [EUROCARE]) has done much to harmonise data collection.³⁶ However, not all countries are included (eg, Luxembourg and Hungary do not participate) and, even in some participating countries (eg, France, Spain, Italy) only a few geographical areas are covered. Research based on the EUROCARE data has exposed wide variations in outcomes³⁷ and had a major effect on cancer policy in some countries.³⁸

bans, and the measures that have been taken have been partial and poorly enforced.

The contrast between Denmark and Sweden is especially noteworthy.⁴⁷ The former has been reluctant to take action against smoking. The tobacco industry in Denmark has successfully promoted the view that smoking is an expression of individual freedom, whereas, in Sweden, successive governments have taken wide-ranging action to reduce smoking. Some commentators have linked Sweden's success partly to the legalisation of chewing tobacco, but this association is not evidence based.⁴⁸ Consequently, the death rate from lung cancer in Denmark is now twice that in Sweden, and the rate in Danish women is by far the highest in western Europe.

Alcohol control

By contrast with developments in tobacco control, progress in alcohol control has been poor in the past four decades.

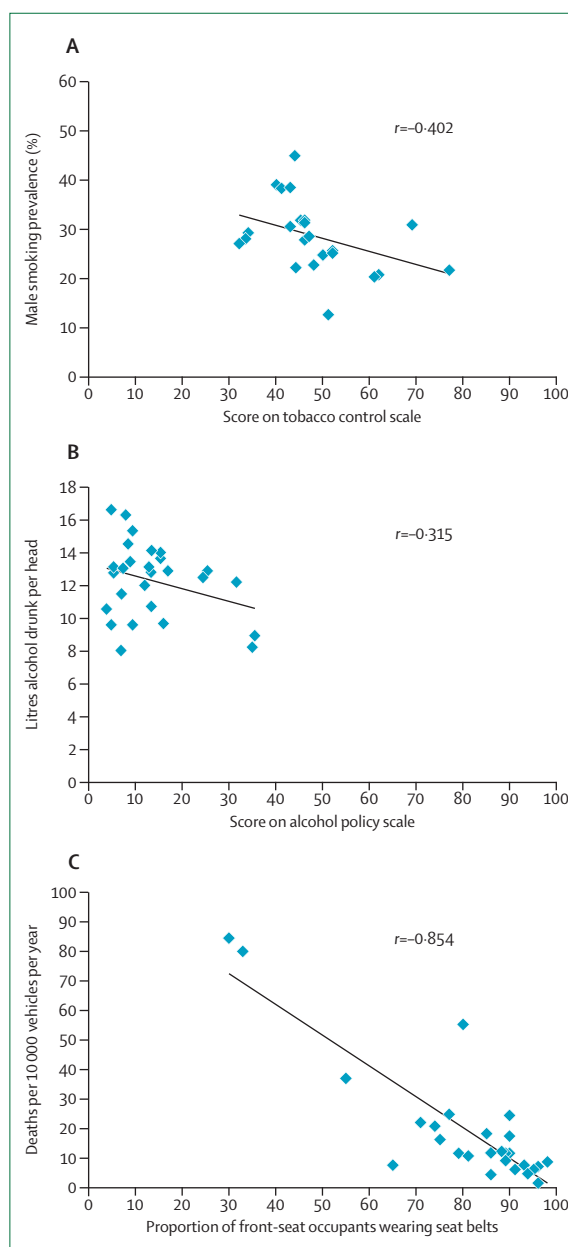


Figure 3: Associations between a country's score on the tobacco control scale and male smoking prevalence (A), score on the alcohol policy scale and alcohol consumption (B), and rate of seat-belt wearing and mortality from road traffic injury in car occupants (C)

Data for (A) are from individual years around 2009, those for (B) from individual years around 2004, and those for (C) from individual years around 2007. The tobacco control scale ranges from 0 to 100 and shows completeness of implementation of various tobacco control policies in individual years around 2010.³⁹ Smoking prevalence is the proportion of population aged 15 years or older that currently smokes daily in around 2008 (source: WHO's European Health for All Database). The alcohol policy scale ranges from 0 to 40 and shows completeness of implementation of a range of alcohol control policies in around 2002.⁴⁰ Alcohol consumption is the litres of alcohol drunk per head in around 2006 (source: WHO Health for All Database). Seat-belt wearing is defined as the rate of observed wearing of seat belts.⁴¹ Mortality from road traffic injury in car occupants is the deaths per 10 000 vehicles per year (calculated from WHO data⁴¹).

For WHO's European Health for All Database see <http://www.euro.who.int/en/what-we-do/data-and-evidence/databases/european-health-for-all-database-hfa-db2>

Although alcohol control policies (eg, restrictions on alcohol marketing and availability, tax increases) have become more strict in some countries (particularly those in southern Europe, where they were traditionally very weak), they have changed little in many other countries.⁴⁹ Alcohol consumption has increased in many western European countries, although not in southern Europe. Differences in consumption are partly a result of differences in policy (figure 3B), and have pronounced consequences for health.

Alcohol consumption is deeply rooted in European culture. Historically what was drunk varied substantially, largely because of variations in agriculture. However, these historical patterns are breaking down in the face of massive marketing campaigns by the global alcohol industry and the introduction of products such as alcopops, which are designed to appeal to adolescents.⁵⁰ France, which in 1970 had one of the highest death rates in western Europe from chronic liver disease and cirrhosis, has imposed a wide range of policies designed to reduce hazardous consumption of alcohol. These policies include restrictions on access, price increases, controls on marketing, and measures to reduce drunk driving, and have been accompanied by a steady reduction in deaths from cirrhosis to a rate that is now less than a third of that in 1970.⁵¹ Elsewhere, policy changes have been less favourable. The UK has pursued a deregulatory approach, making alcohol easier to access. The death rate from cirrhosis in the UK has increased almost four fold since 1970.⁵²

Finland provides another example of policy failure. When the country joined the EU in 1994, it deregulated its very strict alcohol controls, which had included a state monopoly on alcohol. In 2004, when neighbouring Estonia, which has much lower alcohol prices, joined the EU, Finland reduced taxes on alcohol substantially.⁵³ Mortality from alcohol-related causes, including cirrhosis, increased considerably.⁵⁴ A small tax increase was introduced in 2008,⁵⁵ and since then death rates have begun to fall slightly.

Food policy

Food policy is still in its infancy. As with alcohol, food consumption in Europe has historically been shaped by patterns of agriculture, giving rise to the Mediterranean diet rich in fresh fruits, vegetables, and olive oil, which is thought to be a factor in the low rates of ischaemic heart disease in southern Europe.⁵⁶ Since World War 2, European diets have changed substantially, with mixed consequences for health. On the one hand, the consumption of animal products has increased in southern European countries where people traditionally had healthy diets. On the other hand, people in northern Europe, whose diets were previously characterised by high concentrations of fat and low concentrations of micronutrients, are eating more fresh fruit and vegetables.⁵⁷ To a sizeable extent, these changes have been a consequence of globalisation of food production and marketing, including the European common market, and government interventions to

support the agricultural industry (eg, through provision of subsidies) irrespective of the health effects.

However, in some cases governments have stepped in to influence nutrition on grounds of health. The best-known example is the Finnish North Karelia project, which was initiated in 1972 and adopted a multisectoral approach to improve the traditionally unhealthy Finnish diet.⁵⁸ Although many similar projects have been launched elsewhere on a more localised scale, European governments have been reluctant to take specific measures to change what people eat on grounds of health. However, this reluctance might be changing: Denmark is taking action on trans fats,⁵⁹ and several countries, such as France and Finland, are imposing new taxes on sweetened soft drinks, and some are considering action on salt.

Road traffic safety

Road traffic safety is another success story in western Europe. The death rate from motor vehicle traffic injuries in the 15 pre-2004 members of the EU has fallen from 22·3 per 100 000 in 1970, to 5·8 per 100 000 in 2009, partly as a result of policies to make roads safer; implementation and enforcement of legislation on seat belts (figure 3C), speed limits, helmets, and drunk driving; and education of the public with media campaigns.^{41,60}

Some of the greatest reductions have been in countries which had the highest initial rates—eg, Portugal, which has progressively introduced a set of comprehensive measures. Other countries where death rates were already low have achieved even further declines. In 1997, Sweden launched its Vision Zero campaign, which brought together the transport, education, justice, environment, and health sectors to pursue a goal of prevention of all deaths and serious injuries on Swedish roads.⁶¹ Similarly, in the 1990s, the Netherlands adopted the Sustainable Safety strategy, which placed a particular emphasis on design to protect cyclists and pedestrians.⁶² Sweden and the Netherlands have the lowest rates of deaths from motor vehicle accidents of the pre-2004 EU member states. Unfortunately, road traffic safety has not been so successful everywhere. Death rates in Greece, for example, have increased during the past four decades.

Health policy in central and eastern Europe and the former Soviet Union

Successes and failures

Unfortunately, fewer successes have been noted in central and eastern Europe and the former Soviet Union. The less favourable health outcomes in these regions of Europe are partly attributable to an absence of implementation of effective health policies. Before the collapse of the Soviet Union, many areas of health policy were seriously underdeveloped. Almost no tobacco control was in place, alcohol control was erratic, and awareness of the health risks of a diet rich in saturated fats and with few fruits and vegetables was low, resulting in high rates of chronic disease. In Romania, the policies

adopted by Nicolae Ceaușescu had especially tragic health effects, with extremely high rates of maternal mortality due to the prohibition of contraception and induced abortion, and a cohort of children infected with HIV because of the bizarre policy of giving blood transfusions to boost the immune systems of malnourished children.⁶³

Tobacco and alcohol control

Tobacco control still lags behind that in the west, although some countries are making progress. A downside to the fall of the Iron Curtain has been the entry of transnational tobacco industries to formerly closed markets. These companies have marketed their products aggressively,⁶⁴ especially to women, who were traditionally less likely to smoke in this region. As expected, smoking rates in young women have risen substantially.⁶⁵ Alcohol control is even weaker, despite widespread heavy drinking, especially in the former Soviet Union. Cheap and easily available surrogate alcohols, ostensibly sold as aftershaves and medicinal tinctures (which are therefore untaxed) but containing 70–90% ethanol, are consumed in substantial quantities.⁶⁶ Evidence implicates these surrogate alcohols in sudden cardiac death, which is thought to be caused by the direct toxic effect of ethanol on the myocardium.⁶⁷ However, some progress has been made in Russia, where a 2006 law introduced some controls on production and sale of these surrogates.⁶⁸

Control of infectious diseases

After the political changes that occurred around 1990, new and more effective health policies were implemented slowly, and some health policies actually broke down. One of the few successes of the Soviet health system was control of infectious diseases. Unfortunately, the systems that many of the newly independent states inherited in 1991 rapidly collapsed, and diseases that had once been controlled (eg, diphtheria) re-emerged⁶⁹ and new problems, most notably multidrug-resistant tuberculosis and HIV/AIDS, arose.⁷⁰ Indeed, 15 of the 27 countries noted to have a high burden of multidrug-resistant tuberculosis are in central and eastern Europe or the former Soviet Union.

Some signs are promising, however, and Estonia has been praised for developing a comprehensive strategy to tackle multidrug-resistant tuberculosis that is beginning to have an effect. The strategy includes bans on sales of tuberculosis drugs in pharmacies, improved training of health-care professionals, and greater efforts to tackle tuberculosis in heavy drinkers.⁷¹

Home and road safety

Alcohol is heavily implicated in the high death rates from injuries and violence in central and eastern Europe and the former Soviet Union. However, other factors, such as the condition of road networks, also contribute, although major improvements have been made in central and eastern Europe as a result of investment by EU structural funds. Another determinant is failure to enforce road

safety laws, which is exacerbated by pervasive police corruption in some countries.⁷² Children in this region are especially vulnerable, often have little access to safe play areas, and are exposed to many hazards in the home environment.⁷³ Rates of drowning are very high because of the common practice of swimming in rivers and lakes without adult supervision.⁷³

Health care

Inadequate health care has also contributed to lack of improvement of population health in central and eastern Europe and the former Soviet Union.^{74,75} After the collapse of the communist bloc, mortality from causes that medical care can prevent or delay fell substantially in some countries. The failure of the Soviet Union to develop a modern pharmaceutical industry, coupled with an inefficient distribution system,⁷⁶ meant that many chronic diseases were untreated—a situation that persists in many parts of the region.⁷⁷ The upward turn in life expectancy trends in central and eastern Europe in the early-to-mid-1990s is generally thought to be at least partly because of improvements in health care.⁷⁸ However, in many former Soviet countries the previous system that at least provided basic care has broken down. Many people have to pay out of pocket for care, either as

Panel 3: Contrasts between the Czech Republic and Austria, and Estonia and Finland

Czechoslovakia and Austria became independent countries with the dissolution of the Austro-Hungarian Empire after World War 1. In the 1920s and 1930s, both countries had very similar economic and cultural conditions and nearly identical life expectancies. After World War 2, however, Czechoslovakia became part of the Soviet bloc after a communist coup d'état, while Austria remained in the western sphere of influence. From about 1970, life expectancies started to diverge; Austria's life expectancy continued to increase, whereas that of Czechoslovakia stagnated and gradually became similar to the lower life expectancy in Poland. Only since the break-up of the Soviet bloc have the gaps in life expectancy between Austria and what are now the Czech Republic and Slovakia started to diminish somewhat. The Czech Republic is outperforming many other central and eastern European countries in several areas of health policy, including teenage pregnancies, neonatal mortality, cancer screening, and road traffic safety, but is lagging behind in tobacco and alcohol control.⁶

Estonia became independent from Russia in 1918, but was reoccupied by the Soviet Union in 1940 and became independent again only in 1989. Finland provides a possible counterfactual of what could have happened to Estonian life expectancy had the country not been under Russian influence for almost 50 years. Finland was also part of the Russian empire at the beginning of the 20th century, but became independent in 1917 and has been independent ever since. In 1930, people in Finland and Estonia had similar life expectancies, some 5–10 years lower than those of people in Sweden but 15–20 years higher than those of people in Russia. After 1950, life expectancies began to diverge, and although Finland steadily narrowed the gap with Sweden, Estonia followed in the steps of Russia, with stagnating, and even falling, life expectancy, particularly in men. When Estonia became independent in 1991, trends in life expectancy started to break away from those in Russia once again.^{32,33} Compared with Finland, Estonia still has weaker tobacco control and higher rates of smoking and lung cancer mortality, less alcohol control and higher alcohol consumption and rates of mortality from liver cirrhosis, more teenage pregnancies and higher neonatal mortality rates, and worse road safety and higher mortality from road traffic accidents.⁶

formal or informal payments. As a consequence, many people do not obtain necessary care.⁷⁹

Panel 3 describes the contrasting experiences of Austria and the Czech Republic and Estonia and Finland, countries in which health is still strongly determined by Europe's political history.

Subnational variations

Regional variations

The countries of Europe vary enormously in size and population, from Monaco and San Marino, each with fewer than 40 000 inhabitants, to Russia and Germany, with 142 and 82 million, respectively. Unsurprisingly, within-country differences are often as large as between-country differences.

A mortality atlas by Eurostat reveals striking patterns of regional variation.⁸⁰ In France, Germany, and the UK, life expectancy is higher in the south, whereas in Spain it is higher in the north. These subnational variations in health are sometimes quite large—eg, life expectancy at birth in Scotland in men is 2·5 years lower and in women 1·9 years lower than the UK average.⁸⁰ Despite European integration, national boundaries are still clear in maps of cause-specific mortality, suggesting the continuing effects of

national-level factors (figure 4). Nonetheless, as many of the larger European countries undergo processes of decentralisation, policies related to health are increasingly established at regional rather than national levels. In the UK, for example, the four constituent countries now have noticeably different policies for the delivery of health care,⁸¹ as do the 17 regions of Spain, although in Spain the financial crisis is leading to a rebalancing of power between the centre and regions (led by finance ministries).⁸²

Socioeconomic inequalities

The most substantial source of health variations within countries is the scale of inequalities between socioeconomic groups defined on the basis of education, occupation, or income. Inequalities in life expectancy between socioeconomic groups are typically in the order of 5–8 years and have been stable or even widening since 1970.⁸³ Although life expectancy has improved in all socioeconomic groups, improvements are often faster in higher socioeconomic groups.⁸⁴ These differing improvements are mainly because of the widening gap in cardiovascular disease mortality. Falls in cardiovascular disease mortality have been greater in the higher than in the lower socioeconomic groups, showing differences in uptake of behaviour changes and new health-care interventions. Some of the successes of health policy mentioned previously do not seem to have been shared equally.

Yet variations in the magnitude of health inequalities between European regions show that these inequalities are modifiable.⁸⁵ In the Mediterranean countries, inequalities in mortality are smaller than they are elsewhere because of narrower inequalities in mortality from cardiovascular disease and cancer (particularly in women); differences between socioeconomic groups in smoking and excessive alcohol consumption are also smaller. In central and eastern Europe, by contrast, inequalities in mortality are larger than in other regions because of large differences in mortality from cardiovascular disease, cancer, and injuries as a result of larger inequalities in smoking, excessive alcohol consumption, and inadequate health care.⁸⁵ Most of the increases in mortality in central and eastern Europe and the former Soviet Union in the 1990s were in lower socioeconomic groups only, which seem to have been particularly vulnerable to the economic transformation.⁸⁶

Ethnic variations are also an issue, but patterns are far from consistent because of the diverse range of countries of origin. Health-related selection processes, which are addressed later in this series, also have roles in these variable patterns. Crucially, ethnic disadvantage is not restricted to migrant populations and, in many countries in central and eastern Europe, the Roma population face widespread discrimination and suffer from worse health than do the majority populations.⁸⁷ In 2012, a major review of social determinants of health in Europe by the European Regional Office of WHO was published, and this forms a key part of the Office's new Health 2020 strategy.⁸⁸

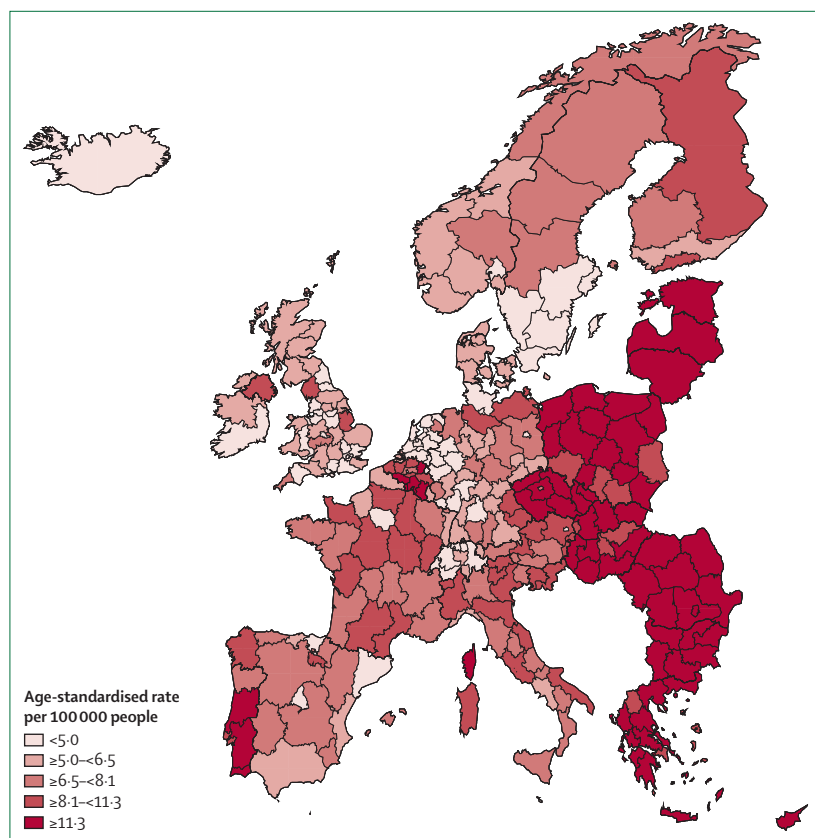


Figure 4: Mortality from transport accidents by NUTS2 region in the European Union, Iceland, Switzerland, and Norway

Data are 3 year means for 2008–10 (or latest available). NUTS=nomenclature of territorial units for statistics. Copyright EuroGeographics for the administrative boundaries.

Conclusion

The political history of Europe has left deep marks on population health. The failure of the communist system to foster economic growth and implement effective health policies in the 1970s and 1980s and the disruptive transition to a capitalist economy in the 1990s have been disastrous for population health. Fortunately, many countries, particularly those oriented towards the EU, have been improving rapidly recently, but closing of the gap will take many more years and great efforts in health policy.

In western Europe, developments have been more favourable, partly because of the implementation of effective health policies. Even there, however, remarkable differences between countries have been noted, leaving much room for further health gains. To bring about health gains will also necessitate strengthening of policies that are only weakly developed—eg, food policy. Important challenges remain, not only for the improvement of overall population health but also for the reduction of health inequalities within populations.

Contributors

JPM and MM drafted the paper jointly. MK did the data analysis. All authors revised the paper.

Conflicts of interest

We declare that we have no conflicts of interest.

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