



HEALTHIER LIVES IN AGING SOCIETIES

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Healthier lives in aging societies

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Executive summary

Of all the regions of the world, Europe and Central Asia (ECA) has experienced the least gains in life expectancy since the 1960s. A person born now in ECA could expect to live to 76 years: a full five years less than a counterpart in the EU-15². Although the number of older people is inexorably rising in ECA, many of these lives are shorter than they could be.

Premature mortality primarily affects the middle aged, for whom mortality has hardly improved or even worsened in contrast to the global trend. Men in Russia, the Eastern Partnership and Baltic countries fare particularly badly. This has had a significant impact on population structures and labor forces in ECA. For example, if Ukraine had experienced the same mortality reductions as France since 1950, its labor force would be 19 percent larger than it is today.

Much of ECA's lower life expectancy is explained by higher mortality in the less well-off. The factors leading to these inequalities are complex, but include differing levels of health-related risky behaviors. International evidence shows, however, that countries with the least inequality in lifespans are those that enjoy the longest life expectancies. For ECA countries, the biggest gains in life expectancies can be made by targeting those with the shortest lives.

The EU-15's achievement of longer lives was primarily due to widespread measures to reduce the prevalence and severity of cardiovascular disease, an effort known as the 'cardiovascular revolution'. This did not occur in ECA and today the region loses more years to cardiovascular disease than any other cause. Almost half the gains in life expectancy from the cardiovascular revolution can be attributed to the reduction of risk factors such as smoking, high blood pressure and high cholesterol. These are poorly managed in many ECA countries, and cardiovascular disease is a key policy target to drive any convergence in life expectancy.

Reducing disability in ECA's aging population, however, may be more difficult than reducing mortality. People in EU-15 countries have been benefiting for some time from

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² The original 15 countries in the European Union and a common comparator for ECA.

health strategies aimed at reducing the risk of disease and disability, leading to a shift from severe to milder disability. In contrast, people in ECA are starting from a worse point. When levels of disability are broken down by age, older people in ECA are living with more disability in ECA compared to Western Europe and worldwide. Indeed, overall disability for the middle-aged population actually increased in ECA between 1990 and 2010 in contrast to the global trend. Middle-aged people in ECA countries report worse health and more functional limitations than those in the EU-15. Those with less education report worse health across Europe, particularly in Central Europe and the Baltic countries. This higher level of disability now will be exacerbated by the predicted increase in age-related diseases – such as cancer and dementia – in the future.

Without urgent policy action, morbidity may actually expand in older ages in ECA in contrast to other regions. This is not directly because of aging; rather it is because societies in ECA are aging less well than elsewhere. Continuing along the current trajectory in ECA will inevitably result in a population who are living longer, but in generally poorer health; and therefore in steady need of health and long-term care services. Yet ECA has the potential for healthier aging if health and social care systems are adapted now to meet the needs of an aging population. Importantly, this package of policy interventions will both lengthen life and make existing cohorts healthier.

Degenerative diseases associated with aging may impact on working capacity and lead to earlier exit from the workforce in the absence of treatment or adaptive workplaces. Preventing and preserving as much function as possible could translate into higher workforce participation by those in their 50s and 60s, as well as a reduced need for long-term care. Yet increased capacity to work is not directly associated with labor force participation in older people, with national retirement policies that provide incentives to leave the workforce having a greater impact at older ages than health status. We found no relationship between lower mortality and increased labor force participation in ECA. As for health and long-term care, social protection systems in ECA will need to adapt to enable societies to capitalize on longer lives.

Health and long-term care dominate concerns on the fiscal implications of aging. Yet the relationship between aging and care needs is not as straightforward as it seems. It has been consistently shown in OECD³ countries that health expenditures spiral in the last few years of life, and particularly the final year due to increasingly intensive treatment. As age and death are correlated, age is often blamed for this increase in health costs whereas the causative factor is actually proximity to death. Although death-related costs will rise from demographic bulges in ECA, our analysis shows that the rise in spending should be manageable. Time to sickness is also a critical factor that influences the impact of aging on health care costs. The poorer health status of the middle-aged in ECA may lead to “unhealthy bulges” of older people. Strategies to reduce disease in the middle-aged now is a worthwhile investment to reduce the burden of disease and associated costs when this cohort enters old age.

Overall, however, technological advances are far more important than aging in driving health costs. Cost control mechanisms such as prioritization systems and strategic

³ Organization for Economic Coordination and Development

purchasing are under-utilized in ECA, and investment to build capacity in these functions now will buffer future technology-driven growth in health costs. Aging should not become the “red herring” that distracts from the hard choices: in ECA, these center on how best to adopt technology and the scope of health benefits packages.

Long-term care costs may prove more of a shock than health expenditures. The status quo in ECA is to rely on health budgets to make up for deficits in long term care funding, which prevents adequate planning for long-term care and puts pressure on health financing systems. Projections of long-term care needs in ECA for this report demonstrate the impact of healthy and unhealthy aging in an example country, with an optimistic scenario showing a reduction between 2013 and 2073 in the proportion requiring long-term care if measures to support healthy aging were implemented now. The urgency in ECA is the current absolute underprovision of long term care services, combined with the potential unhealthy demographic bulges. The capacity of substitute care such as informal and acute hospital care is likely to be overwhelmed unless formal long-term care services are expanded for at least some population groups.

Supporting healthy aging in ECA is not only a challenge of raising the revenue to finance the increasing demand for health care and long-term care, but also mobilizing them from a shrinking share of the economically active population. EU-15 countries facing the same challenge adopted changes to their contribution systems or attempted to strengthen enforcement of contributions. Countries have also complemented mandatory contributions through additional sources of public funding, such as ‘sin taxes’ or more commonly transfers from general taxation. While social health insurance systems are particularly prone to the effects of aging on revenues, general tax financed systems must also search for ways to expand their financing bases. These efforts should meet the general principles of fiscal and economic sustainability – as well as financial protection for the poor.

To protect against what can become impoverishing costs, comprehensive long-term care entitlements need to be expanded to all those need it, including the better-off. There are currently three models that expand benefits to the entire population and finance the bulk of costs with a single financing mechanism: (i) integrating long-term care under the health financing scheme; (ii) provision of long-term care through the social care system financed from tax revenues; (iii) stand-alone social insurance schemes. Countries tend to favor managing the funds for long-term care separately from health and social care, which can help build public support for extra revenue collection but hinders integration of services. Some countries have opted to introduce voluntary long-term care insurance to fill gaps and accelerate progress toward comprehensive population coverage, yet this faces incentive issues that seem to prevent it from developing into sizable markets. ECA countries with a growing demand for formal care but limited capacity to raise revenues should gradually expand systems that cover comprehensive long-term care for the poorest individuals with high needs.

In order to leverage the maximum health gains for an aging population, increased revenue needs to be spent strategically. A preventive approach to diseases associated with aging does not always receive adequate investment in ECA. For example, people in

ECA are up to five times less likely than those in the EU-15 to receive screening for some of the most common forms of cancer. Any enhancement of preventive programs should be targeted to high-risk and hard-to-reach groups to reduce inequalities in health outcomes. Implementing effective tobacco control policies now, which receive strong popular support in ECA, would also go a long way towards mitigating the effects of an aging population. Removing copayments on risk-reducing medications for cardiovascular disease is recognized as a “best-buy” for healthy aging, by increasing treatment adherence and reducing the incidence of more expensive complications.

Service delivery in ECA also needs to adapt to changing disease burdens. A hospital-dominated health sector is not the best model of care for aging populations. Elderly patients are often better managed in a primary care or outpatient setting, with the aim to avoid admission through proactive management outside of hospital. Prolonged hospital stays for elderly patients often arise because of a lack of capacity in home or community-based services or insufficient coordination between health and social services. Provision of rehabilitation services such as physiotherapy, occupational therapy, and home-based services can all hasten discharge and decrease readmission rates. In order to deliver care sustainably to an aging population, primary care must become the mainstay of ECA healthcare services, acting as coordinators of disparate services for elderly patients. Finally, in order to cope with an aging population, health workers will need to be trained to manage the specific health needs of elderly patients, including cognitive decline and multiple chronic diseases.

In order to absorb the impact of ECA’s aging population, it is clear that significant reforms need to be made now to the health and long-term care systems in ECA. Most of these policy solutions are familiar and well-defined, but politically challenging. Indeed, it could be said that aging simply adds a sense of urgency to a lagging reform agenda. Yet there is still time to implement effective changes to support healthy aging in ECA. Strong political leadership is imperative to articulate and drive this vision of sustainable, holistic care for older people in ECA.

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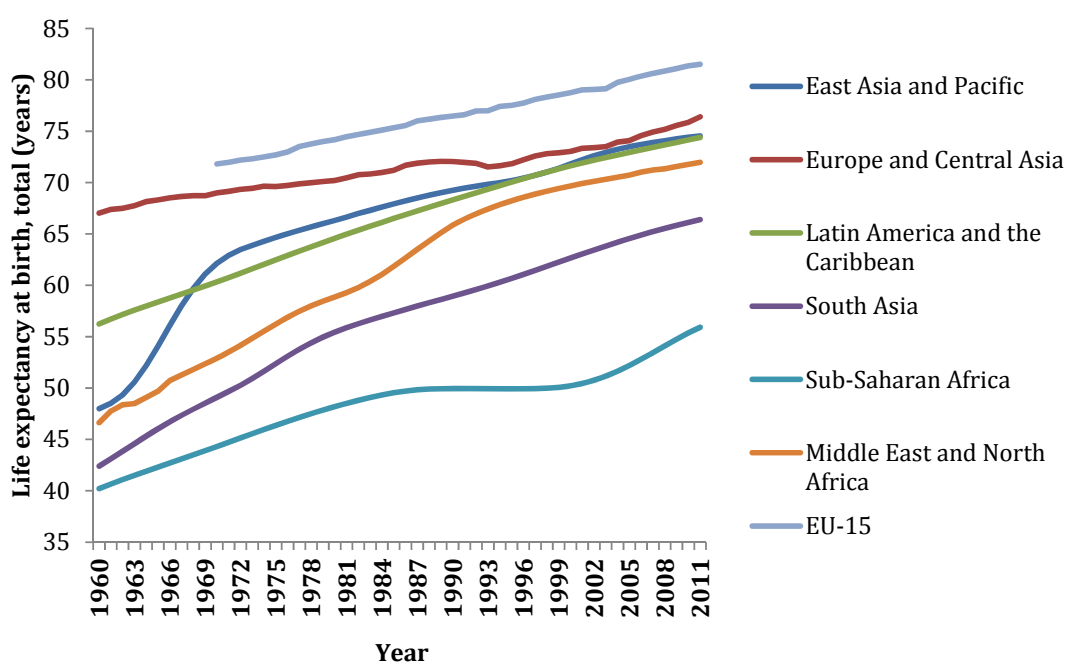
Abbreviations

ADL	Activities of Daily Living
ECA	Europe and Central Asia
EU	European Union
EU-13	Member States of the European Union after 2004
EU-15	Member States of the European Union before 2004
EU-28	All Member States of the European Union
EU-SILC	Statistics on Income and Living Conditions
HTA	Health Technology Assessment
IADL	Instrumental Activities of Daily Living
IHME	Institute for Health Metrics and Evaluation
LFPR	Labor force participation rate
NICE	National Institute for Health and Care Excellence (UK)
OECD	Organization for Economic Coordination and Development
PHARMAC	New Zealand Pharmaceutical Management Agency
U.K.	United Kingdom
U.S.A.	United States of America
USD	United States Dollars
WHO	World Health Organization

1 Introduction

Of all the regions of the world, Europe and Central Asia (ECA)⁴ has experienced the least gains in life expectancy since the 1960s. People in ECA have added just nine years to their life expectancy since 1960, whereas this has doubled in Latin America and the Caribbean - another middle-income region with rapidly aging populations - and tripled in East Asia and the Pacific (Figure 1). A person born now in ECA could expect to live to 76 years: a full five years less than a counterpart in the EU-15 (the original 15 countries in the European Union and a common comparator for ECA). This divergence is even starker if better performers such as Turkey and the Western Balkans are excluded from the total (Smith and Nguyen, 2013). In essence, although the number of older people is inexorably rising in ECA, many of these lives are shorter than they could be.

FIGURE 1 Life expectancy gains in ECA have been the lowest in the world



Source: World Development Indicators (database) and Health for All (database), accessed 2 July 2014

While ECA is underperforming in terms of life expectancy, the goal of simply longer lives is no longer sufficient. The quality of these extra years, and any associated demands for health and social care, are just as important as additional life alone. Not only will an individual's experience of life at older ages be less marred by illness and disability, but longer and healthier lives contribute to the welfare of society. If people stay in good health and continue to work as they get older, thus utilizing their human capital for longer, then they and society can become more prosperous.

⁴ECA is a World Bank region consisting of 31 countries in the Commonwealth of Independent States, Central, East and South-East Europe. A map of these countries can be viewed here: http://siteresources.worldbank.org/ECAEXT/Images/eca_region_map_insom.gif

In ECA, a long and healthy life is an aspiration ready to be achieved. With global increases in life expectancy, medical advances, and a better understanding of how to maintain health and independence, the potential for healthy aging is within the grasp of ECA countries. Although the path forward is marked with challenges, there are many lessons that can be drawn from countries further ahead in the aging process.

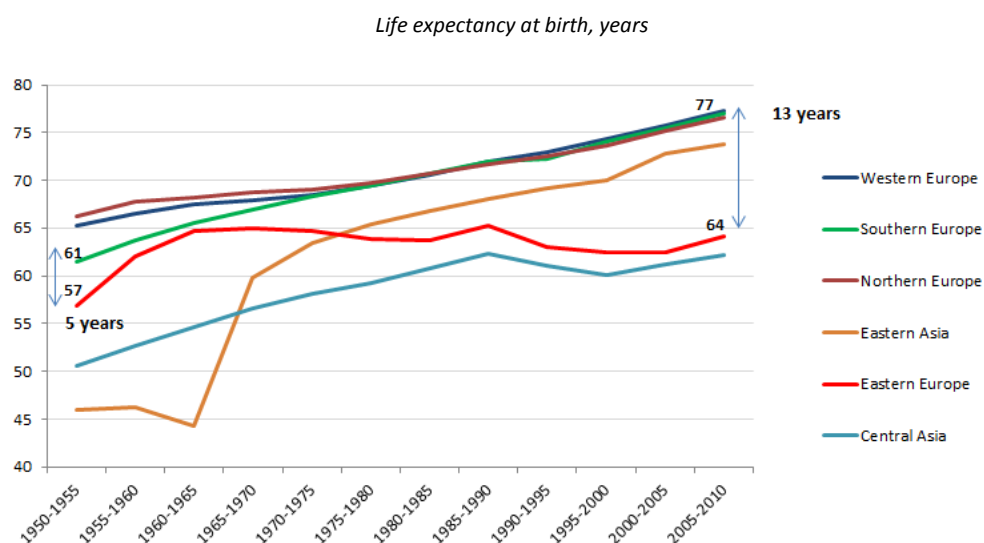
This background paper, written to support the ECA Flagship Report on Aging, explores the most important health issues for ECA's aging population. In this paper, we examine the evidence for healthy aging in ECA's population and review how other countries have made longer and healthier lives a reality. The economic consequences of healthy and unhealthy aging are considered, alongside projections of future health and care needs. Finally, policy options to shape ECA's health and social care systems to meet the challenges of an aging population are outlined, drawing on the experiences of other aging countries. This paper is complemented by others in the series - particularly those on fertility, active aging, and care - and is designed to build on the evidence emerging from these reports. For consistency, we employ the same country groupings as detailed in the main report.

2 Aging cut short

Premature mortality has been a long-standing problem in ECA and has put a brake on population aging. People are more likely to die in ECA than in the EU-15, particularly men and the middle-aged. This has meant that people's lives are cut short and so we are not seeing substantially longer lives compared to other regions. Populations are smaller due to people dying earlier and women outnumber men at older ages.

Life expectancy in Eastern Europe has diverged from the better-performing areas in ECA and stagnated in Central Asia. The gap in life expectancy between Eastern Europe and Southern Europe has grown from 5 years in 1950-55 to 13 years in 2005-2010 (Figure 2). By contrast, Western European countries have achieved the highest life expectancy of 77 years at birth in 2005-2010. Central Asia started in 1950-55 with a life expectancy of 50 years – higher than Eastern Asia with 46 years. Over time, Central Asia failed to keep up with the gains experienced elsewhere: East Asia gained 28 years by 2005-2010 compared to just 12 years in Central Asia. Like Eastern Europe, Central Asia experienced a stagnation of life expectancy over the transition period from 1990.

FIGURE 2 Life expectancy in Eastern Europe has diverged from the better performers in Europe



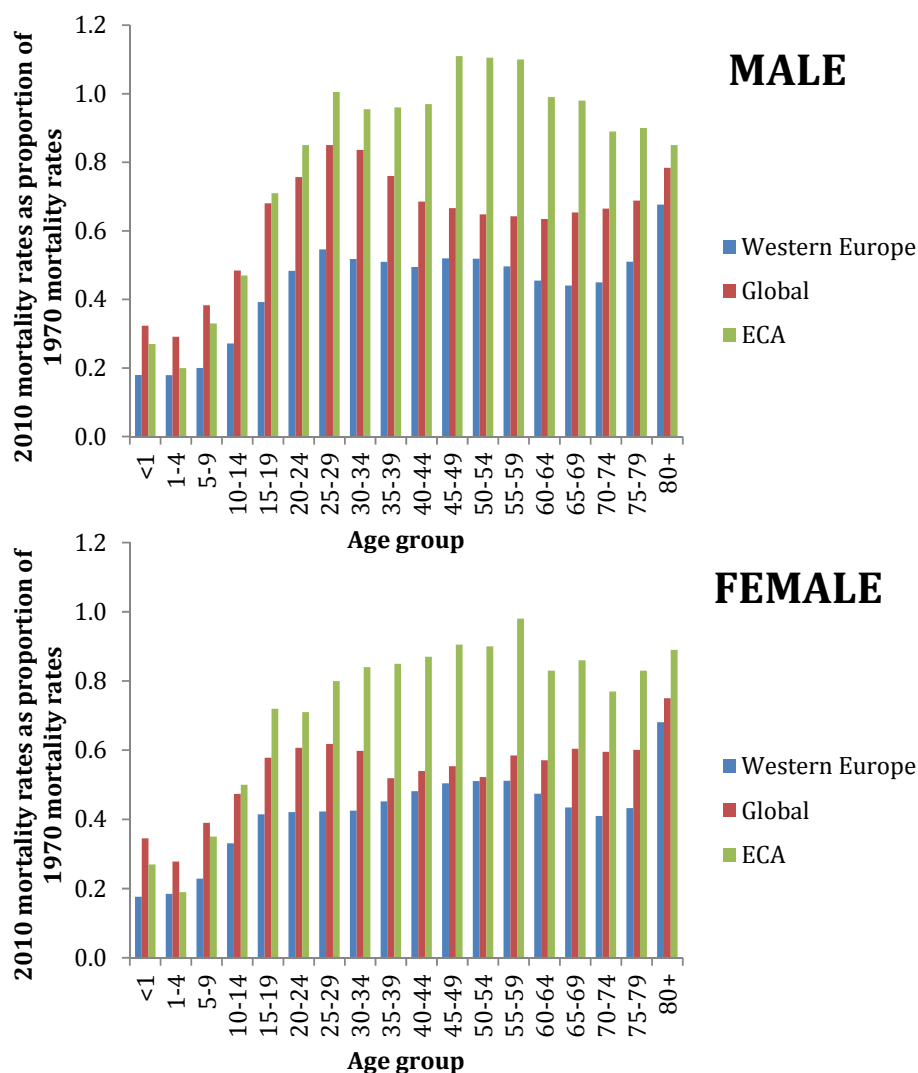
Notes: UN level 2 regional classifications used. Eastern Europe comprises Belarus, Bulgaria, Czech Republic, Hungary, Poland, Republic of Moldova, Romania, Russian Federation, Slovakia and the Ukraine. Southern Europe is made up by Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Malta, Montenegro, Portugal, Serbia, Slovenia and Spain. Western Europe comprises Austria, Belgium, France, Germany, Luxembourg, Netherlands and Switzerland.

Source: United Nations Population Division (2013).

Premature mortality is primarily a problem of the middle aged in ECA, for whom mortality has hardly improved or even worsened in contrast to the global trend. Summary trends such as life expectancy at birth can mask considerable variation in mortality at different ages. When we examine mortality rates at different ages, it becomes clear that the burden of premature mortality is falling primarily on the middle-aged in ECA. Figure 3 compares mortality rates in 2010 with those in 1970, by calculating the proportion of 1970 rates represented by 2010 rates. While these proportions are markedly lower for Western Europe and globally, signifying a decline in mortality over all age groups, mortality for women aged 40 to 59 years in ECA is nearly the same as in 1970. For men in the same age group, the proportion is actually larger -- i.e. mortality in 2010 is higher than forty years ago.

FIGURE 3 The midlife crisis continues for ECA

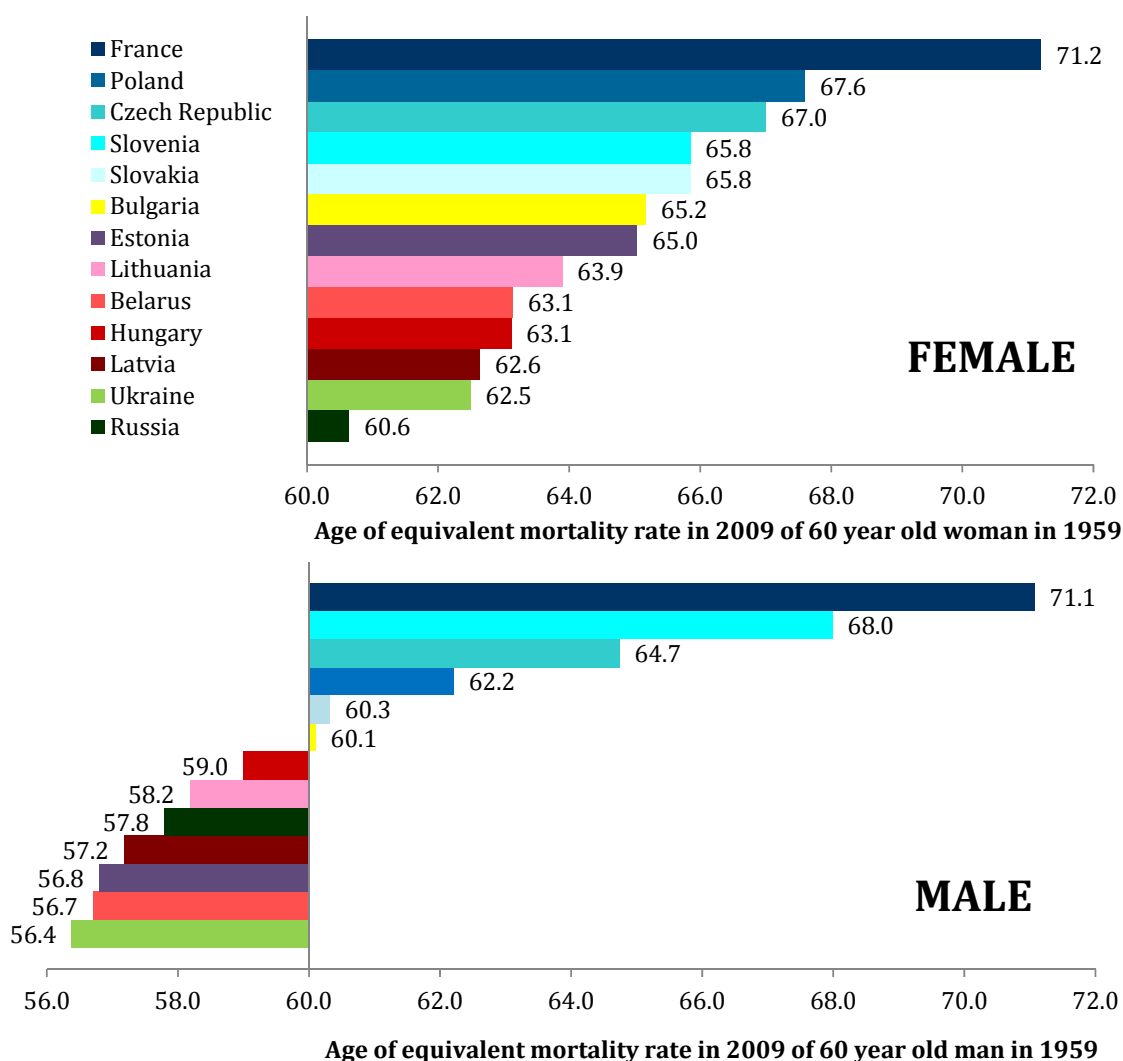
How do mortality rates in 2010 compare to those in 1970 at different ages?



Source: Global Burden of Disease Study 2010 (2013). Global Burden of Disease Study 2010 (GBD 2010) Results 1990-2010. Seattle, WA, Institute for Health Metrics and Evaluation (IHME). Accessed 27 June 2014.

FIGURE 4 Men in Russia, the Eastern Partnership and Baltic countries ‘feel’ worse at 60 in 2009 than they did in 1959

How old you have to be today to have the same mortality as a person of 60 in 1959



Source: Authors' calculations for all ECA countries with data available using Human Mortality Database. University of California, Berkeley (USA), and Max Planck Institute for Demographic Research (Germany), www.mortality.org, accessed 2 February (males) and 1 May 2014 (females)

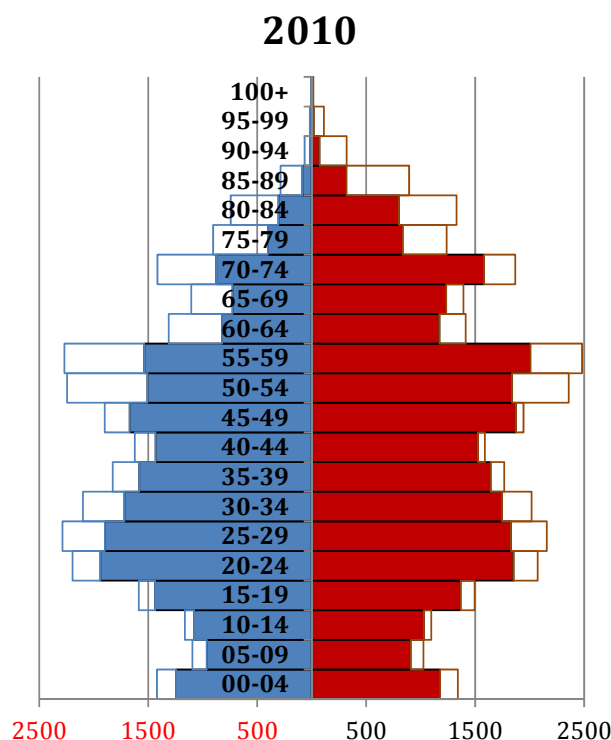
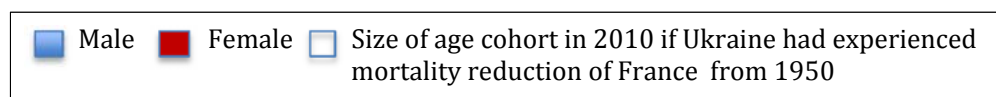
Middle-aged men in Russia, the Eastern Partnership and Baltic countries fare particularly badly. If we take the mortality rate of 60-year old men in 1959 and ask at what age people have an equivalent mortality rate in 2009, we get a sense of the intervening gain (or loss) in life (Milligan and Wise, 2012). Figure 4 shows these “mortality equivalent ages” in selected ECA countries. In France a 71 year old man in 2009 had the same risk of dying as a 60 year old man in 1959, underscoring the almost constant lengthening of life in most high-income countries over the last 165 years (Christensen et al., 2009). Yet in several ECA countries, principally Russia, the Eastern Partnership and Baltic countries, a man in 2009 is worse off than his predecessors half a

century ago. For example, in Ukraine, a 54 year old man in 2009 had the same risk of dying as a 60 year old in 1959. Women are in a better position in all countries studied, living longer than their counterparts in 1959 and their male compatriots, although still lagging behind the gains seen in richer countries like France.

This persistent premature mortality has had a significant impact on population structures and labor forces in ECA. For example, the divergence in mortality rates between France and Ukraine equated to 1.2 million life years lost prematurely for 60 year-olds in Ukraine in 2010, compared to 0.8 million for the same age in France, a country with 1.5 times the population of Ukraine (Global Burden of Disease Study 2010, 2013). In order to assess the accumulative effect of these different trajectories, we estimated what Ukraine's population would look like today if it had experienced the same reductions in mortality as France from 1950 onwards. Figure 5 displays the resulting population pyramid. Overall, if Ukraine had experienced the same mortality reductions as France since 1950, its labor force would be 19 percent larger than it is today.

FIGURE 5 What a difference sixty years makes

Ukraine's population in 2010 if mortality had declined as in France from 1950

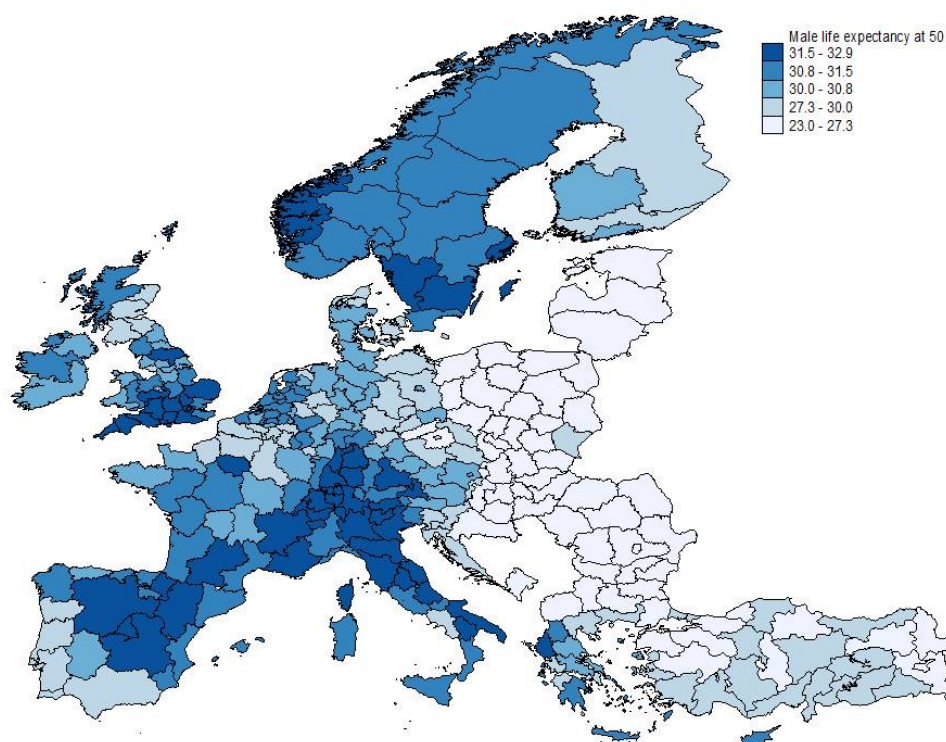


Source: Authors' calculations using UN Population Data (Revision 2012).

3 Some people are aging better than others

Even within a country, there can be considerable variation in life expectancy. As seen above, life expectancy is lower for men than women in ECA. In addition to gender, other factors such as income or education are also linked with variation in mortality rates. These inequalities between different population groups can become substantial on a national level. Figure 6 shows life expectancy at age 50 for men in subnational regions of EU member states. The remaining life that a 50-year-old man can hope to enjoy on average varies widely between different areas in the same country.

FIGURE 6 Location matters for lifespan in ECA



Source: Eurostat database, accessed 6 May 2014

Notes: Life expectancy at age 50 for males in EU NUTS 2 regions, latest year available. All EU Member States with available data included. Data to produce life expectancies are collected in different ways between EU Member States so results should be interpreted cautiously.

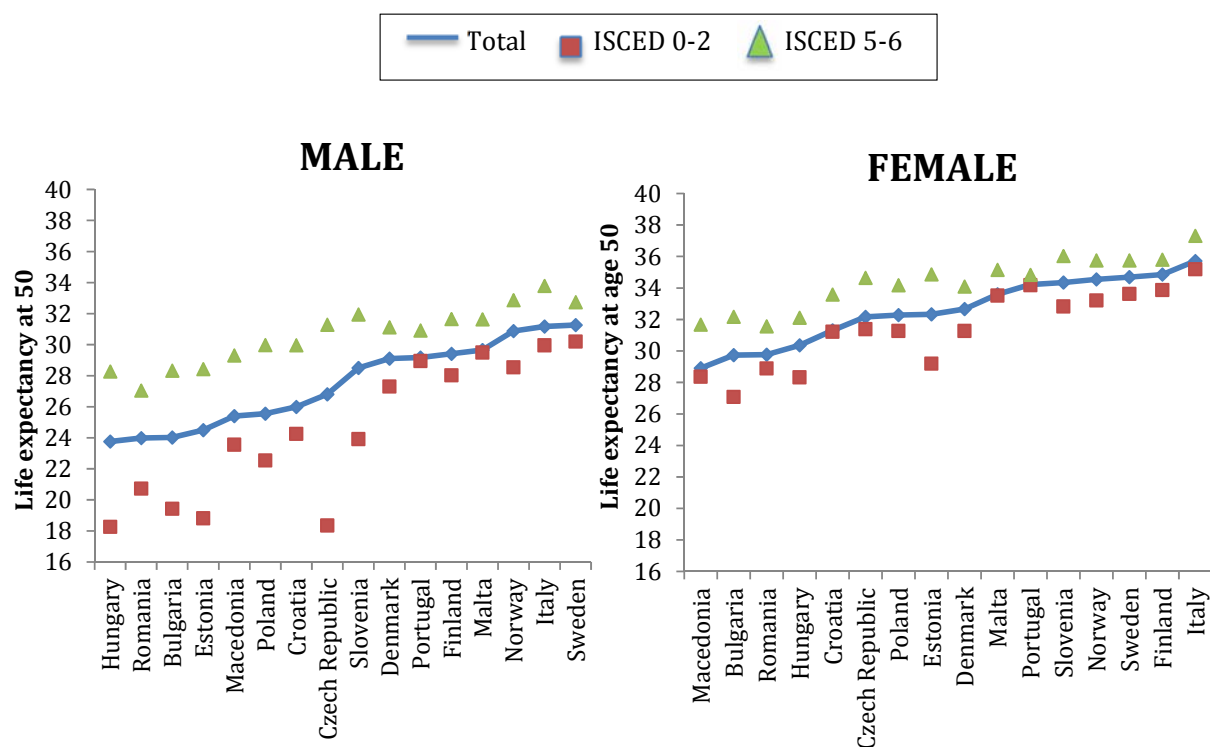
Much of ECA's lower life expectancy is explained by higher mortality in the less well-off. When life expectancies at age 50 are broken down by levels of educational attainment (see Box 1), an “educational premium” is revealed (Figure 7). This gradient is larger for men than women, wider in countries with shorter life expectancies, and especially severe in Eastern European countries. For instance, the average life expectancy at age 50 for men with tertiary education in Eastern Europe is around 10 years higher than for men without upper secondary education, a difference that dwarfs the 6.1 years in the U.S.A. identified by Pijoan-Mas and Rios-Rull (2014).

Box 1 *How can we measure inequality in aging in ECA?*

Inequalities in mortality rates and life expectancies have been linked to several measures of socioeconomic disadvantage. In a seminal work, Kitagawa and Hauser (1973) showed that mortality rates in 1960 in the United States were inversely related to education and income. Since then, a large body of evidence has emerged confirming the socioeconomic gradient of mortality rates, which is found in education and income but also for wealth, occupation, marital status and ethnicity.

Education is a particularly useful indicator to identify inequalities in ECA. It is a composite measure related to several important social and economic factors, such as social class, income, cognitive ability and healthy behaviors (Kohler et al., 2008; Elo and Preston, 1996; Feldman et al., 1989). Moreover, an individual's level of educational attainment tends not to change after early adulthood, compared to more fluid measures such as income or labor market status. The latter is particularly important for women in ECA, where participation has increased markedly over the last few decades. As the level of highest educational attainment is related to these different factors (e.g. income, illness, cognitive ability), inequalities by educational level cannot be automatically ascribed to the effect of education.

FIGURE 7 Less life lived by those with less education in ECA



Source: Eurostat database, accessed 6 May 2014

Notes: All EU Member States with available data included. ISCED 0-2 = attainment of pre-primary, primary or lower secondary education attained. ISCED 5-6 = attainment of tertiary education.

The factors leading to these inequalities are complex, but include differing determinants of health-related risky behaviors. Establishing causality for inequalities in health can be difficult. For example, a low income may lead to worse health through poorer access to healthcare, but sicker individuals may also not be able to hold down well-paying or full-time jobs leading to lower income. Moreover, inequalities at older ages usually reflect an accumulation of inequalities over the course of an individual's life. For example, socioeconomic deprivation in childhood may result in lower-paid jobs as a young adult, reducing access to preventive healthcare and leading to health problems in middle age. Yet a purely economic lens does not take account of the many psychological, social and biological factors that are associated with differences in health-related risky behavior (de Walque, 2014). These factors – such as time-inconsistent preferences, risk compensation, and social norms – often differ strongly between population groups and thus contribute to inequalities in health (Lundberg and Shapira, 2014).

Importantly, international evidence shows that the countries that enjoy the longest life expectancies are those with the least inequality. For example, Denmark led the world in life expectancy in the middle of the last century, yet this ranking started to decline in the 1980s and was actually three years lower than that of Sweden by the 2000s. Subsequent analysis has shown that life expectancy in Denmark started to stagnate at the same time as progress on reducing inequalities in lifespan (Christensen et al., 2009). These inequalities have been shown to be largely related to differences in health-related risky behaviors, particularly smoking and alcohol consumption (Juel, 2008; Christensen et al., 2010).

For ECA, the biggest gains in life expectancies can be made by targeting those with the shortest lives. In order to catch up with the life expectancy of the EU-15, ECA countries should focus on tackling the excess mortality in specific population groups. Identifying these inequalities and understanding their determinants will allow policies to be effectively targeted to those benefiting least from longer lives. Bringing down excess mortality in these vulnerable groups will help slow further growth in inequalities and bring up life expectancy for all.

The EU-15's achievement of greater life gains than ECA provides important lessons for ECA. The following sections will consider how EU15 and other OECD countries have been successful in making these changes, and how ECA might apply some of these interventions to move towards longer and healthier aging.

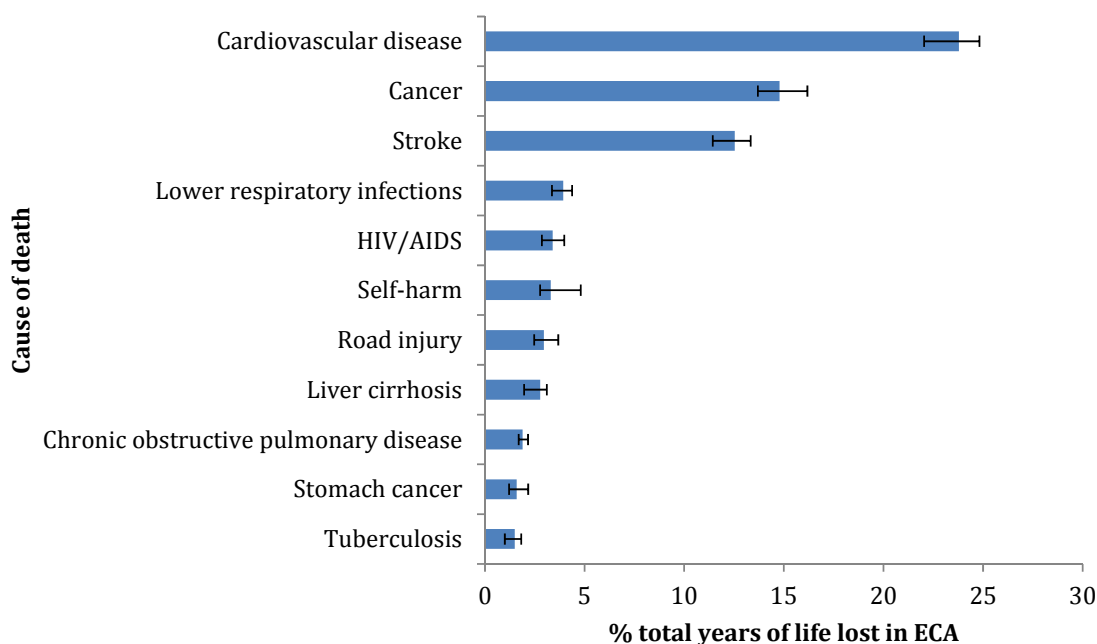
4 How did the West grow old?

Gains in life expectancy in OECD countries were boosted by a “cardiovascular revolution”...During the second half of the last century, there was a tremendous burst of research on the treatment and prevention of cardiovascular disease (disease of the heart and blood vessels). This emerging science saw richer countries such as those in the OECD (Organization for Economic Coordination and Development) implementing widespread measures to reduce the prevalence and severity of cardiovascular disease, an effort known as the ‘cardiovascular revolution’.

...which did not occur in ECA. At the same time, economic stagnation in ECA countries and the transition to independence in the 1990s led to a rise in risk factors associated with cardiovascular disease (Smith and Nguyen, 2013). This was augmented by sluggish incorporation of new health technologies and best medical practices (Vallin and Meslé, 2001).

Today, ECA still loses more years to cardiovascular disease than any other cause. When causes of death are examined for ECA as a region, cardiovascular disease still dominates – accounting for a quarter of all life years lost in the region (Figure 8).

FIGURE 8 Cardiovascular disease accounts for most life years lost in ECA

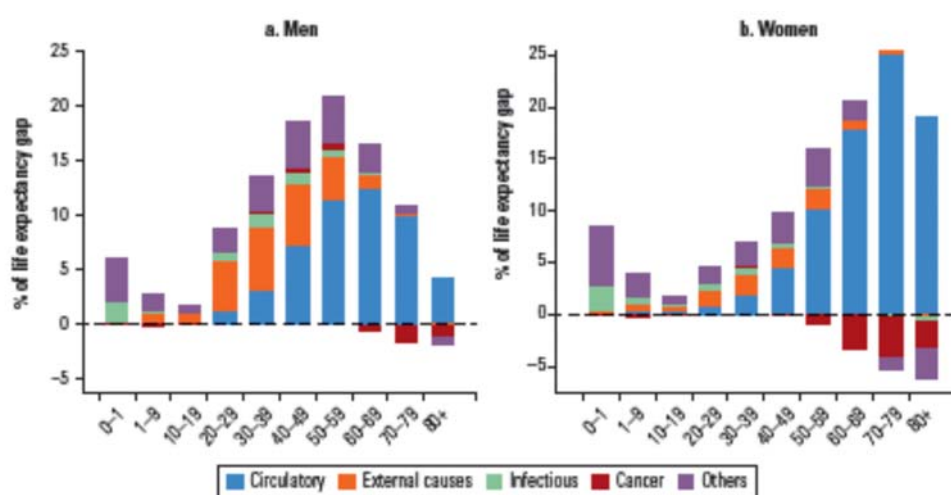


Source: Global Burden of Disease Study 2010 (2013). Global Burden of Disease Study 2010 (GBD 2010) Results 1990-2010. Seattle, WA, Institute for Health Metrics and Evaluation (IHME). Accessed 27 June 2014.

Notes: Years of life lost are due to premature death. For each death from a specific cause, the numbers of years lost were estimated from the highest life expectancy in that individual's age group. Ninety-five percent confidence intervals are displayed for each cause of death.

Cardiovascular disease explains the majority of the life expectancy gap with the EU-15. Today, with the exception of Turkey and the western Balkans, cardiovascular disease accounts for more than half of the life expectancy gap between ECA and the EU-15 (Cutler et al., 2006, Smith and Nguyen, 2013). This rises to 75 percent for women (Figure 9). While many factors contribute to the current health of ECA's population, from less favorable economic conditions in the 1920s and 30s (Brainerd, 2010; Kesternich et al., 2012) to a higher prevalence of injuries and accidents (Smith and Nguyen, 2013), it is clear that the greatest disparity is the prevention and management of cardiovascular disease.

FIGURE 9 Cardiovascular disease is the main cause of life expectancy gap with EU-15

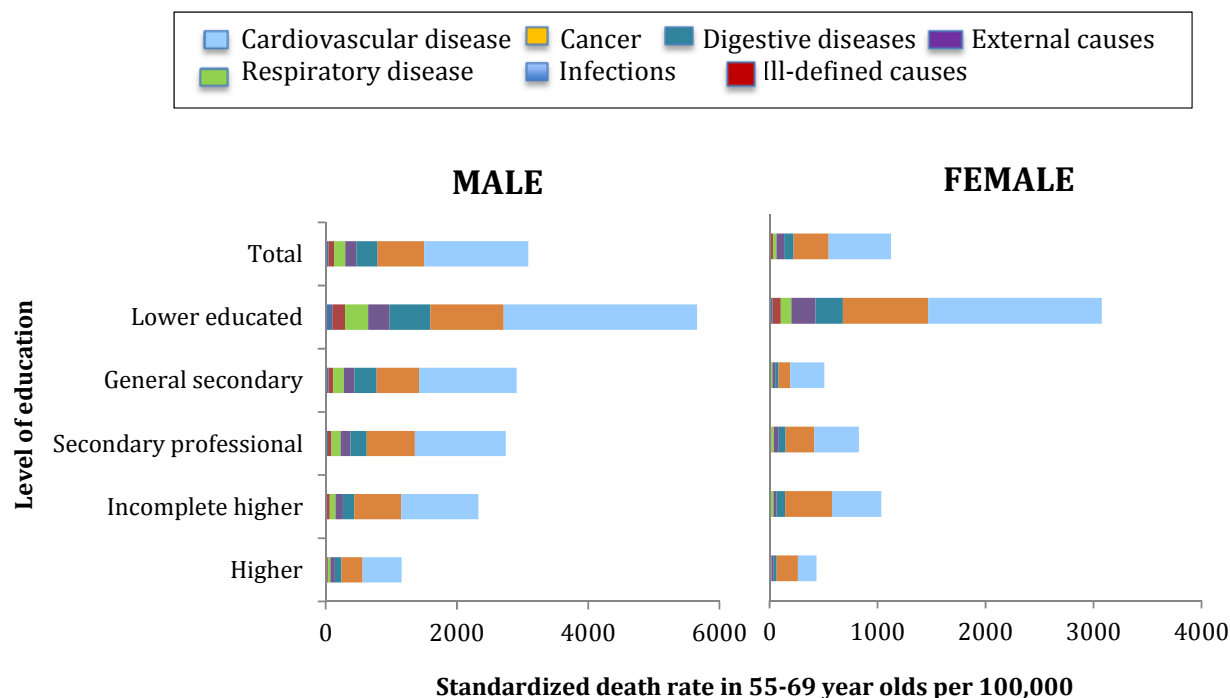


Source: Smith, O. and S. Nguyen (2013). Getting Better: Improving health system outcomes in Europe and Central Asia. Europe and Central Asia Reports. Washington, D.C., The World Bank. Reproduced with permission.

This cardiovascular ‘epidemic’ has had a massive impact on ECA populations... The influence of cardiovascular disease in ECA can be seen through the accumulated differences in life expectancy at birth in two countries: Ukraine and France. In Ukraine, the cumulative effects of worsening mortality from cardiovascular disease between 1966 and 2006 led to nearly four years of lost life expectancy for men and two years for women (Meslé et al., 2012). In contrast, France reaped the benefits of the cardiovascular revolution, leading to a gain in life expectancy by 2006 of almost 4 years in men and 5 years in women (Meslé et al., 2012).

..which is borne mainly by those in lower socioeconomic groups. When causes of death for middle-aged Russian men are broken down by educational group (Figure 10), cardiovascular disease is overwhelmingly concentrated among the lower educated (Ivanova et al., 2014). A study examining inequalities in mortality in Estonia, Lithuania, Hungary and Poland between 1990 and 2000 (Liensalu et al., 2009) found that inequalities by educational group increased across all four countries, which was due in Estonia and Lithuania to a large increase in mortality among lower educated groups in

FIGURE 10 Excess mortality among the less educated in Russia is mainly due to cardiovascular disease



Source: Ivanova, A., E. Zemlyanova, A. Mikhaylov and S.E. Golovenkin. 2014. The differences in mortality of adult population of Russia according level of education. *Zdravookhranenie Rossiyskoy Federatsii* 6: 4-8. Reproduced with permission.

Note: 2011 data

particular. When analyzed further, the biggest contributors to this widening mortality gap was cardiovascular disease and external causes such as suicide.

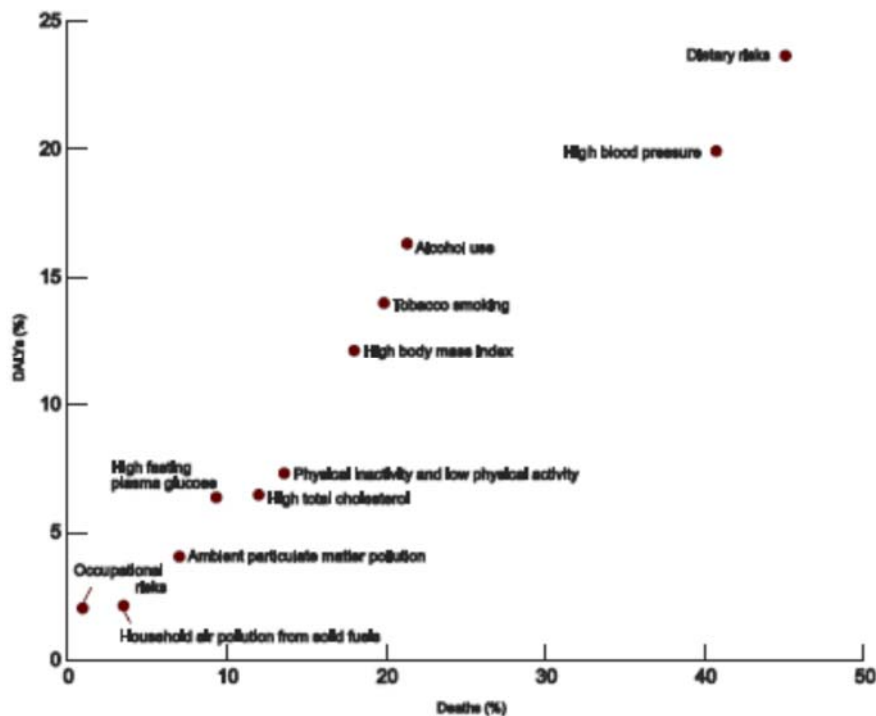
Cardiovascular disease presents ECA with a key opportunity to learn from successes in other regions and introduce policies that can drive major health gains and convergence in life expectancy. The cost per annum of implementing a bundle of measures to reduce mortality from non-communicable diseases, including cardiovascular disease, has been estimated at under USD1 per capita in low income countries, USD1.50 in lower middle income countries, and USD3 in upper middle income countries (World Health Organization, 2011a) - dwarfed by the potential increased productivity from a larger, healthier labor force. The experience of the EU-15 demonstrates that the cardiovascular revolution is possible: moreover, it is vital to ECA's future longevity. The next section outlines the roadmap followed by the EU-15 to achieve the cardiovascular revolution.

5 Launching a cardiovascular revolution

Preventing cardiovascular disease through the management of risk factors and improved treatment of acute episodes led to the benefits of the cardiovascular revolution. The ‘cardiovascular revolution’ comprised a constellation of policies and interventions that addressed (i) the key risk factors for developing cardiovascular disease; (ii) the risk of acute cardiovascular events such as heart attacks and stroke once cardiovascular disease has developed; (iii) the treatment of acute episodes to reduce mortality and ongoing disability. The critical element of the cardiovascular revolution has been primary prevention of disease through reducing smoking rates and managing other risk factors. This has accounted around half the benefits seen in the West, with improved treatment for the other half (Smith and Nguyen, 2013).

Large health gains can be made in ECA through decreasing risk factors for cardiovascular disease, which are markedly higher than in the EU-15. These risk factors include smoking, high blood pressure (hypertension), and high cholesterol levels. All are in the top ten risk factors in ECA, with about 30 percent of deaths in ECA attributable to high blood pressure (Figure 11) (World Health Organization, 2009; Smith and Nguyen, 2013). Heavy alcohol use is also a risk factor for cardiovascular disease and remains a concern in ECA (see Box 2).

FIGURE 11 The leading risk factors in ECA are manageable

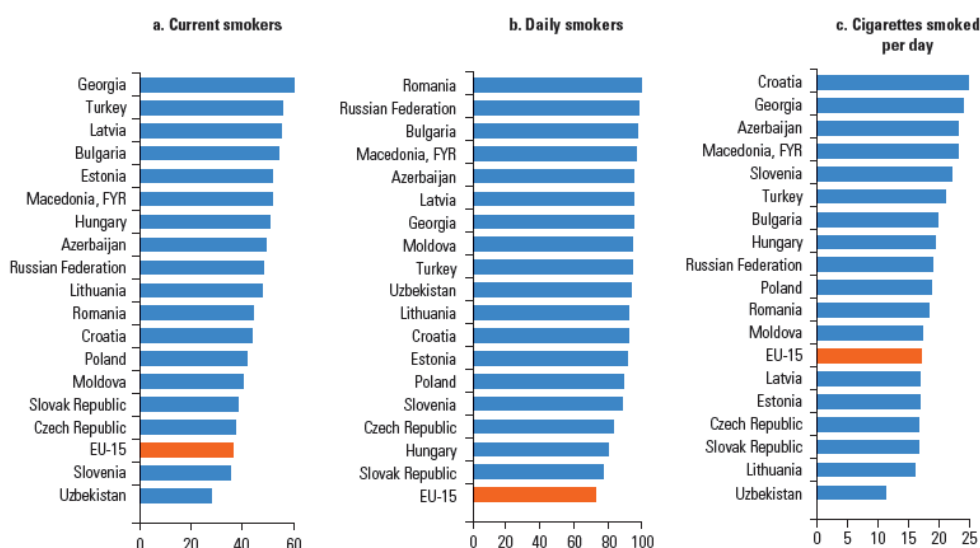


Source: Institute for Health Metrics and Evaluation, Human Development Network, The World Bank. The Global Burden of Disease: Generating Evidence, Guiding Policy – Europe and Central Asia Regional Edition. Seattle, WA: IHME, 2013. Modified with permission.

Box 2 Alcohol: an unfinished agenda

Excessive alcohol consumption is a particular hazard to health and risk to life expectancy in ECA, both as a risk factor for cardiovascular disease and for deaths from injuries or accidents. Eastern and Western Europe lead the world in per capita consumption of alcohol (World Health Organization, 2011b). Alcohol-related deaths have been shown to contribute heavily to the overall gap in mortality between educational groups in EU Member States (European Commission, 2013). This risk to health is mainly attributed to 'binge' drinking, that is drinking 5 or more drinks at one sitting (World Health Organization, 2012a). Binge drinking is more common in ECA than in EU-15, particularly where it forms part of cultural ceremonies such as in Georgia. The majority of people in ECA, and particularly women, support better policies to reduce risky alcohol consumption. Indeed, support for alcohol reduction policies have more public support in ECA than in neighboring EU-15. By strengthening alcohol policy, significant gains could be made in healthy life expectancy in ECA: gains which have not yet been fully realized by other regions.

FIGURE 12 A smoke-filled region: smoking rates are higher in ECA than EU-15



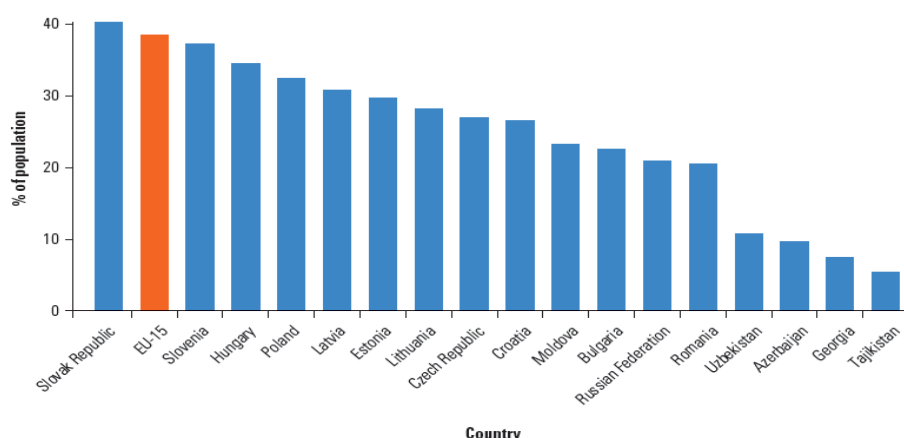
Source: Smith, O. and S. Nguyen (2013). Getting Better: Improving health system outcomes in Europe and Central Asia. Europe and Central Asia Reports. Washington, D.C., The World Bank. Reproduced with permission.

More of the population smoke in ECA than almost anywhere else in the world, but many want to quit. Smoking is the leading global cause of preventable death (World Health Organization, 2013), reducing life expectancy by about seven years on average. The prevalence of cigarette smoking has reduced in many regions around the world; however it is a pervasive habit in ECA. People in most ECA countries smoke more cigarettes and more frequently than in the EU-15 (Figure 12). In fact, a 2012 study of fourteen large middle-income countries showed Russia, Turkey and Ukraine in the top three places for smoking in young men (Giovino et al., 2012). Yet half of all smokers in

ECA had attempted to stop smoking within the last 12 months - with fewer smokers successful at quitting than their EU15 counterparts (Smith and Nguyen, 2013).

Better management of high blood pressure and cholesterol has played a key role in the cardiovascular revolution, and ECA is still to catch up. High blood pressure and cholesterol can both be cheaply and effectively controlled in primary care, through proactive screening, effective treatment and regular monitoring to ensure levels are under control. Yet less than 20 percent of the adult population in ECA have had a cholesterol test, compared to 40 percent in EU15 (Figure 13), and those with high cholesterol are three times less likely than in the EU-15 to receive adequate treatment (Smith and Nguyen, 2013). In many ECA countries, adults have their blood pressure checked as or more frequently than their EU-15 neighbors, yet those identified with high blood pressure are five to six times less likely to receive adequate treatment than in OECD countries and only 10 percent of those with the disease have it under control (Smith and Nguyen, 2013) (Figure 14). Control of these two major risk factors for cardiovascular disease is an area with huge potential for improvements in health status and life expectancy, at relatively little cost.

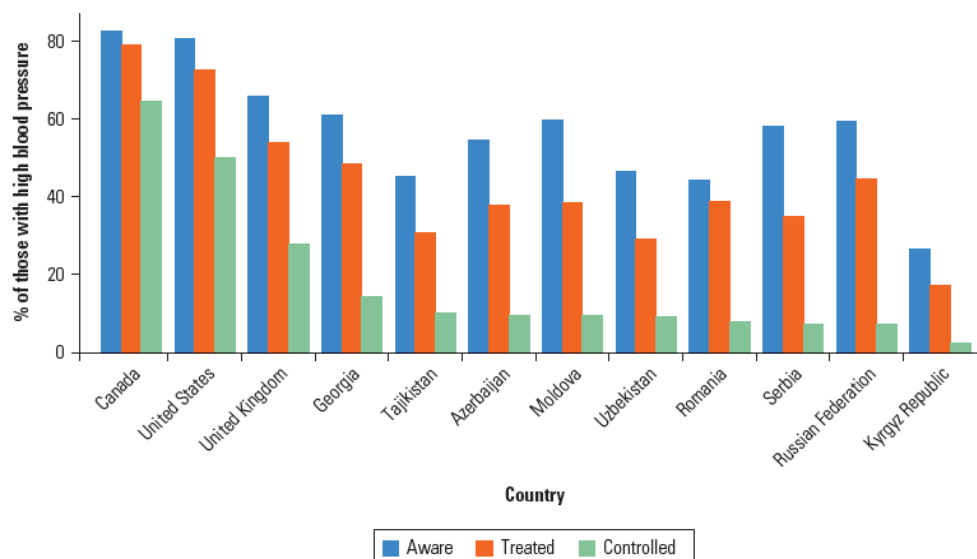
FIGURE 13 Not enough people are being tested for high cholesterol in ECA
Percentage of adult population in ECA that have had a cholesterol test in the last 12 months



Source: Smith, O. and S. Nguyen (2013). *Getting Better: Improving health system outcomes in Europe and Central Asia*. Europe and Central Asia Reports. Washington, D.C., The World Bank. Reproduced with permission.

While prevention should be the primary focus of a cardiovascular revolution, there is also the need for improved treatment. ECA has been slow to ensure adequate staffing, well-equipped facilities, and adoption of new treatment technologies, such as coronary artery bypass grafts, angioplasty, and clot busting drugs, that are all part of high quality cardiovascular care (Smith and Nguyen, 2013). Indeed, in a survey of five ECA countries - Albania, Armenia, Georgia, Russia (Kirov oblast), and Tajikistan - health facilities were found to have less than a third of the essential equipment and basic laboratory services required for the management of acute episodes (Smith and Nguyen, 2013). Quality of care is also a concern, with the same survey finding that less

FIGURE 14 Treatment for high blood pressure is inadequate



Source: Smith, O. and S. Nguyen (2013). Getting Better: Improving health system outcomes in Europe and Central Asia. Europe and Central Asia Reports. Washington, D.C., The World Bank. Reproduced with permission.

than two thirds of doctors correctly diagnosed a hypothetical heart attack, and less than a half of doctors would have given the patient aspirin, the most appropriate first treatment (Smith and Nguyen, 2013). Clinical pathways for acute cardiovascular care should be implemented across ECA countries to ensure the population is receiving effective, evidence-based treatment for acute episodes like heart attack and stroke.

6 Longer and healthier lives

Quality of life matters as much as quantity. Most would agree that the goal of longer lives is not just simply living extra years, but living these years in good and active health. Additional years of life gained through reductions in premature mortality may be time spent mostly in illness, frail and dependent on others. An aging population in poor health will incur more health and long-term care expenditures and may be less likely to remain in the labor force. Adding more life to years as well as years to life is therefore an important goal for ECA.

Reducing disability may be more difficult than reducing mortality. The pathway to success, however, may take one of several different routes (see Box 3). Evidence about what has happened in countries with older populations is conflicting because of the difficulty in comparing morbidity and disability across countries. In most countries, disability has not decreased at the same rate as increases in life expectancy (Salomon et al., 2012). The growing consensus from OECD countries is that while severe disability has decreased substantially, less severe disability has also become more common: this is known as the dynamic equilibrium scenario (Christensen et al., 2009). Part of this can be explained by earlier diagnosis and treatment of chronic diseases so that they are less disabling over an individual's remaining life (Christensen et al., 2009).

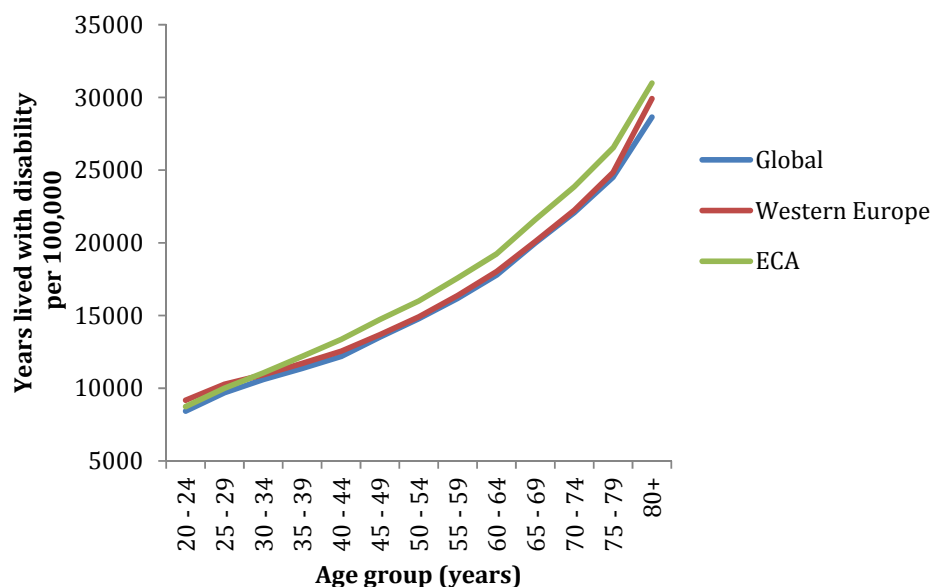
Box 3 *Healthier, sicker, or somewhere in between?*

Three scenarios have been suggested for the trajectory of health outcomes in aging populations. The first is compression of morbidity (Fries, 1980; Fries et al., 1989; Fries, 2003), where populations live longer and healthier lives. Here, a larger proportion of people's lives are free of disease and disability through better medical care and primary prevention. Serious disease and disability – and their associated costs – are largely postponed until the very end of people's lives. The opposite is expansion of morbidity (Gruenberg, 1977; Kramer, 1980, Olshansky et al., 1991). The same advances in medical care, particularly in secondary prevention, result in the sick and frail surviving longer. People are less likely to die of their diseases, but live for more years with chronic disease and disability. The last scenario, dynamic equilibrium, combines elements of expansion and compression of morbidity (Manton, 1982). People are less likely to acquire diseases and also less likely to die of them. Better prevention and medical care slows the progression of chronic diseases, so the sick live for longer with mild to moderate disease than moderate to severe disease. Essentially, life expectancy gains are balanced by health status improvements, so that the years spent in good health remain constant.

In ECA, people are moving into older age with more disability than elsewhere. Whilst it is difficult to examine trends in health status in many ECA countries due to a lack of comparable data, there is evidence that the ECA's middle-aged population of today is heading into older age with a greater burden of disability than in other regions. When levels of disability are broken down by age, older people in ECA are living with more disability in ECA compared to Western Europe and worldwide (Figure 15). Indeed,

overall disability for the middle-aged population increased in ECA between 1990 and 2010 in contrast to the global downward trend (IHME, 2013).

FIGURE 15 Older people in ECA experiences more disability than elsewhere



Source: Global Burden of Disease Study 2010 (2013). Global Burden of Disease Study 2010 (GBD 2010) Results 1990-2010. Seattle, WA, Institute for Health Metrics and Evaluation (IHME). Accessed 1 May 2014.

Notes: Years lived with disability indicate years of life lived with any short-term or long-term health loss, adjusted for severity. Data displayed is the rate per 100,000 people to adjust for cohort size.

Indeed, middle-aged people in ECA countries report worse health and more functional limitations than those in the EU-15. When people aged 55-64 years old in the EU-28 are asked to assess their health⁵, those in EU-13 countries systematically report worse health than those in the EU-15 (Figure 16). Of course, these data suffer from cross-cultural differences in reporting and coping with illness. Yet poor self-assessed health is predictive of functional decline and greater use of health and social care among the elderly (Lee, 2000). Moreover, individuals who assess their health as poor have been shown to have a two-fold risk of death compared to those reporting very good health (DeSalvo et al., 2005).

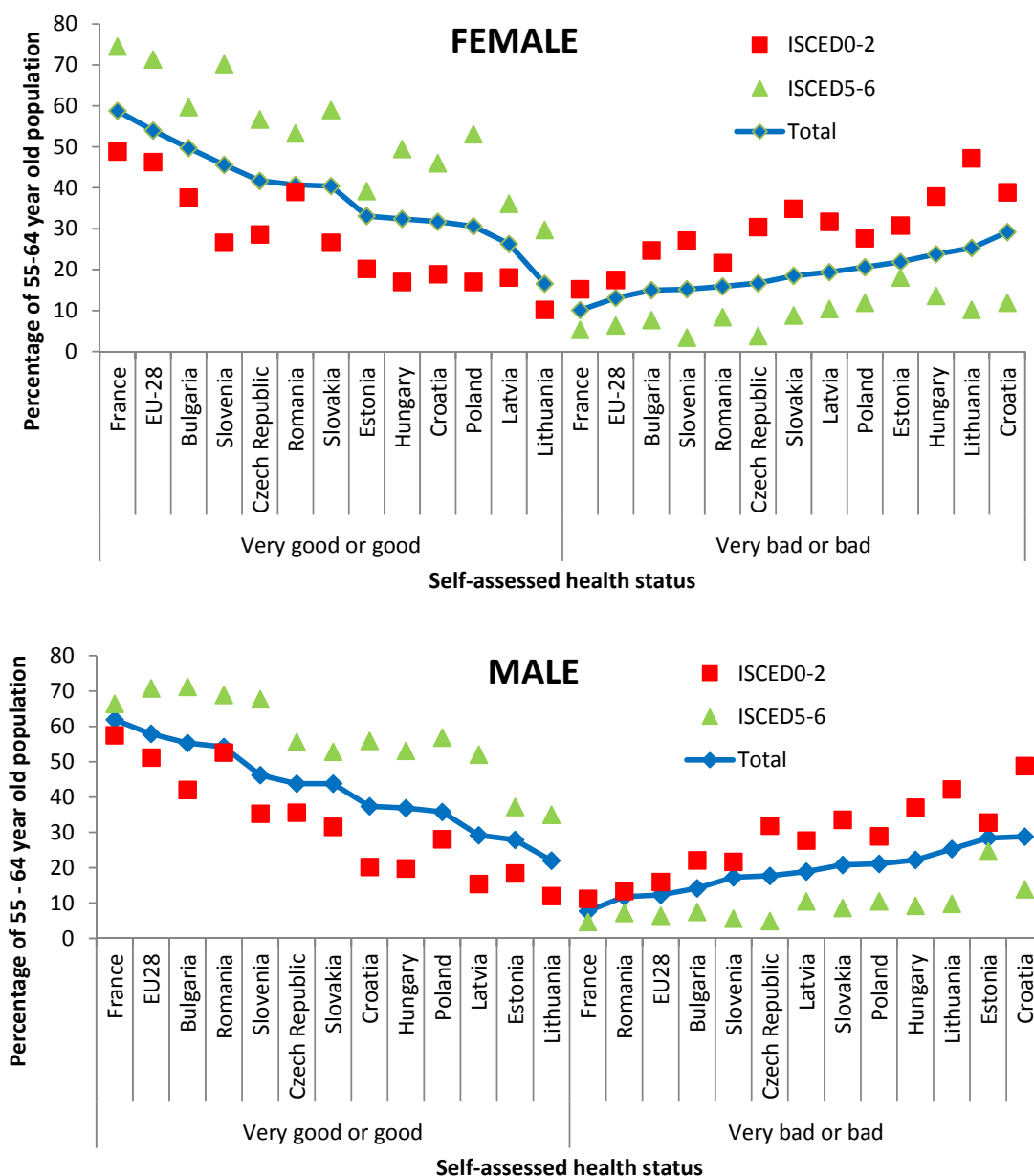
Those with less education report worse health across Europe. It can be seen from Figure 16 that the educational premium⁶ exists for measures of disability as well, particularly for Central Europe and the Baltic countries. Poorly educated women tend to assess their health as worse and report more disability than highly educated women or

⁵ An EU-wide survey, Statistics on Income and Living Conditions (EU-SILC), asks questions on health status, long-standing illnesses, and limitations in activities due to health problems. Results are then adjusted for national differences in people's likelihood to report poor health associated with cultural norms.

⁶ See section "Some people are aging better than others"

poorly educated men. Indeed, disadvantaged older people in ECA face a double burden: not only do they have shorter life expectancies, but they also appear to suffer worse health during these shorter lives than better off peers.

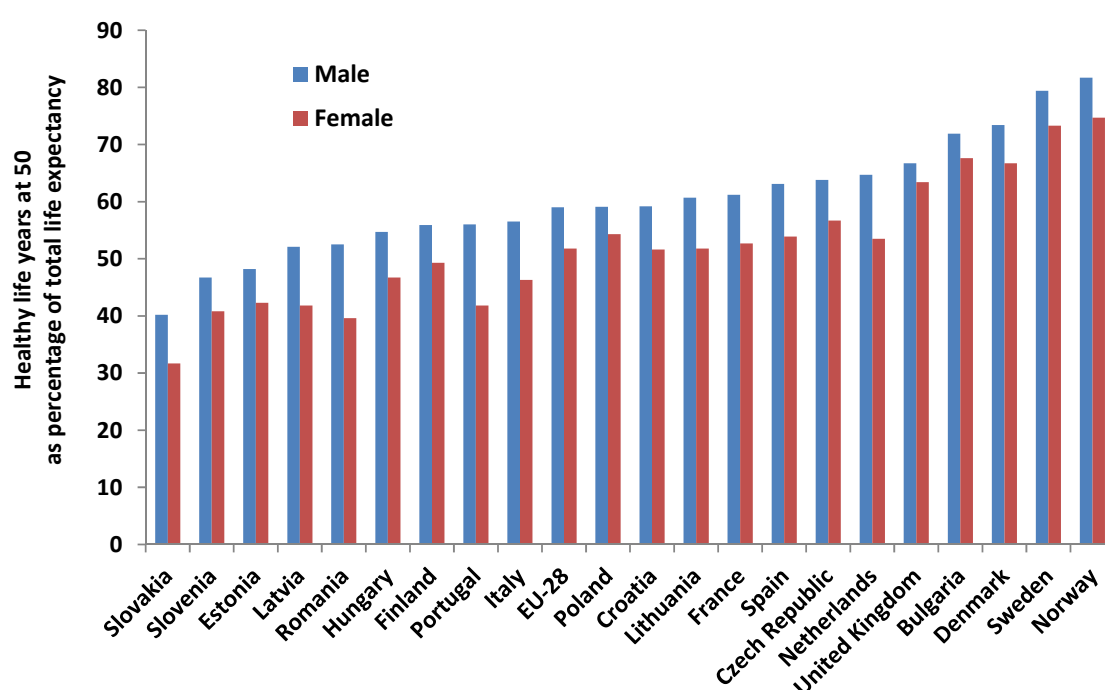
FIGURE 16 The middle-aged in EU-13 assess their health as worse than in the EU-15



Source: Eurostat 2012 data, accessed 5 May 2014

At current rates of disability, middle-aged people in the EU-13 can expect to live less of their remaining life without functional limitations than in Western Europe. Self-reported limitations in usual activities due to health problems can be combined with conventional life expectancy to form a composite measure called healthy life expectancy. When expressed as a percentage of life expectancy, this can be interpreted as the amount of remaining life that people can expect to live in good health (based on current rates of disability and mortality). Figure 17 shows that middle-aged men and women in the EU-13 can expect to live far less of their remaining life in health compared to counterparts in Northern Europe, and women can expect less time free from limitations than men across all countries.

FIGURE 17 At 50, people in the EU-13 can expect to live less of their remaining life in health compared to the EU-15



Source: Eurostat 2011 data, accessed 3 September 2014

Overall, the population in ECA is starting from a worse point than other aging regions.... People in OECD countries have been benefiting for some time from health strategies aimed at reducing the risk of disease and disability, such as tobacco control policies (Polder et al., 2002). This has led to a fall in overall disability in the middle-aged population that is carrying over to the older age groups. This shift means that while people are living longer, the extent of any disability and the intensity of the support they require are likely to be less. In contrast, people in ECA have not benefited from the same investment into preventive policies with the consequence is that this rapidly aging population will carry a legacy of poor health from their earlier years. Whilst some of this disease burden can be explained by the period-specific effects of the political upheaval of the 1990s and economic hardship of the early 2000s (Stuckler et al., 2009; Leon et al.,

2000), many risk factors will remain in place to affect younger, subsequent cohorts without urgent policy action.

...and will also experience growing rates of diseases associated with age, such as cancer, dementia and depression. Experiences of other countries indicate that additional years of life are often characterized by the growing prominence of other diseases. This is due both to the progression of chronic diseases and the emergence of age-related diseases (Jagger et al., 2007). Other countries where cardiovascular mortality has fallen have seen a concurrent rise in the prevalence of diabetes, cancers, lung diseases, dementia, cataracts, arthritis, and depression (Christensen et al., 2009). These diseases impact both on healthy life expectancy and the capacity of care services.

Cancer will rise exponentially in ECA.... Globally, new cancer cases are projected to rise from 14 million annually to 22 million people in the next two decades (International Agency for Research on Cancer, 2014). ECA will be disproportionately affected due to the combination of aging populations, cancer-promoting behaviors such as smoking and heavy alcohol use, underdeveloped cancer detection and prevention programs, and worse survival rates than EU15 countries⁷. Figure 18 shows the projected increase in new cases of cancer in the 65 year and over population by 2035, with Tajikistan facing nearly a 300 percent increase without changes to current policies.

... unless prevention programs are improved. People in ECA are up to five times less likely than those in the EU-15 to receive screening for some of the most common forms of cancer (including cervical, breast and colon) (Smith and Nguyen, 2013). Treatment alone cannot address the human and economic costs of cancer. Innovative cancer drugs are one of the main drivers of rising health costs, yet increased expenditures have not been matched by better outcomes (Chalkidou et al., 2014) (discussed in further detail below). The cost of the current model of cancer treatment is rapidly becoming unaffordable even for high-income countries, and action to prevent cancer is essential to contain health spending in ECA.

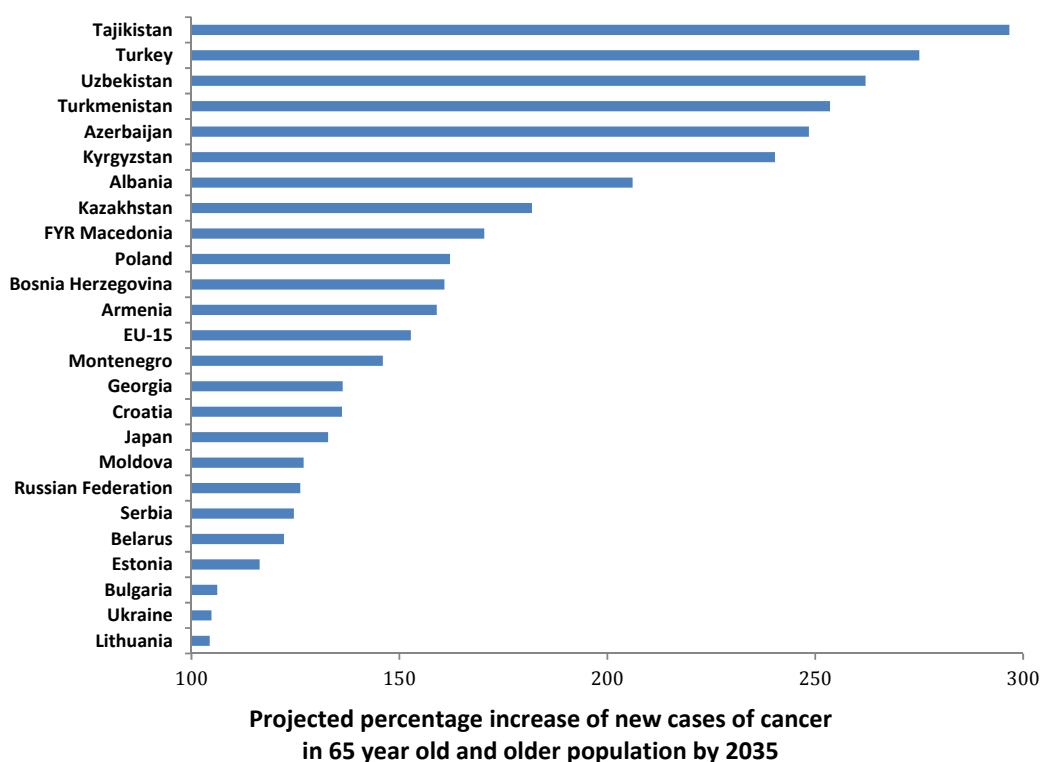
ECA populations may be more at risk of cognitive decline at older ages. Weakening cognitive function at older ages is a major cause of disability and dependence. Trends are less well studied than for other illnesses, but there is some evidence for less cognitive decline at older ages in OECD countries (Christensen et al., 2009). Current populations in ECA, however, have been exposed to more risk factors associated with cognitive decline over their life course. Smoking, for example, is associated with cognitive decline, the rate of which accelerates by 36 percent if combined with heavy drinking (Hagger-Johnson et al., 2013). Evidence from SHARE also shows that economic recessions during early and middle age are associated with worse cognitive function at age 50-74⁸ (Leist et al., 2014).

Levels of dementia will increase, particularly in Central Asia. It is estimated that 35.6 million people worldwide are living with dementia (see Box 4). The total number of people with dementia is projected to nearly double every 20 years, to 65.7 million in

⁷This is particularly so for those types of cancers with better prognoses (De Angelis et al, 2013).

⁸ Possibly due to more unfavourable labor market trajectories.

FIGURE 18 Cancer will rise dramatically in over 65 year old population by 2035 unless prevention is improved



Source: Globocan 2012, International Agency for Research on Cancer, accessed 19 April 2014. Projections are based on 2012 incidence data and UN population projections.

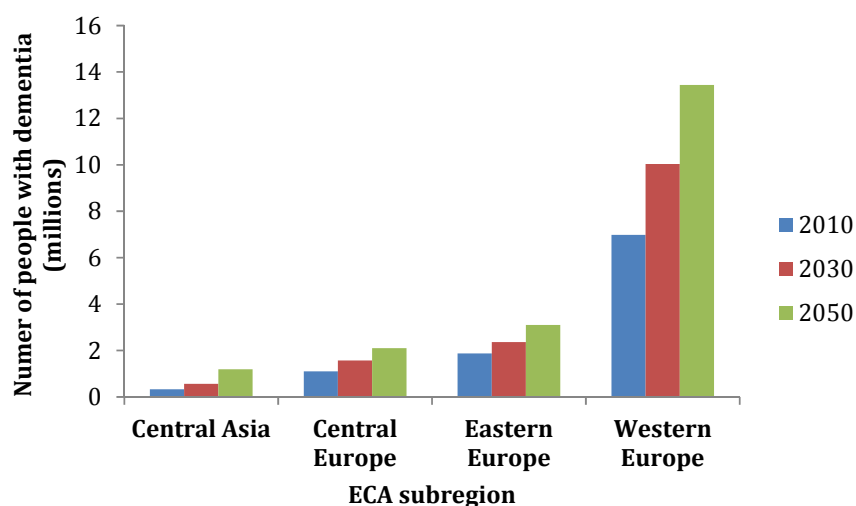
Note: Latvia is excluded from the figure and is projected to have a 4 percent decrease in new cases of cancer in 2035 compared to 2012.

2030 and 115.4 million in 2050 (Alzheimer's Disease International, 2009). When these projections are broken down by ECA subregion (Figure 19), Eastern Europe faces the highest absolute number of people with dementia by 2050, but Central Asia will need to cope with the greatest proportionate increase over the next forty years (261 percent compared to 91 percent in Central Europe and 66 percent in Eastern Europe). There are

Box 4 *What is dementia?*

Dementia is a disease of brain degeneration that affects memory, thinking, behavior, and the ability to carry out everyday tasks such as dressing or cooking. There are several types, of which the most common is Alzheimer's disease. Mild disease can be unnoticed at first, but this gradually progresses to moderate and severe disease that often necessitates formal care. Although not a normal part of aging, dementia is increasingly common with age (World Health Organization, 2012b). There is a steady rise in prevalence after the age of 65, with almost one in four people over 85 having dementia (Ferri et al., 2005).

FIGURE 19 The number living with dementia will rise in all ECA sub-regions



Source: Data extracted from World Health Organization. 2012. *Dementia: a Public Health Priority*. Geneva: World Health Organization.

currently no effective treatments for dementia and the majority of care provided for dementia is informal. Health and social services in ECA will need to adapt to this growing need, including earlier diagnosis and managing symptoms through a holistic range of services.

Older people in ECA are also at risk for depression. Retirement, increasing disability, loss of independence, bereavement and loneliness all contribute to the risk of depression at older ages. The incidence of depression in older people worldwide is estimated at about 7 percent (Global Burden of Disease Study 2010, 2013), with rates for those in residential care almost three times that of those living at home (McDougall et al., 2007). In ECA, rates of self-reported depression are higher than the EU-15 (Smith and Nguyen, 2013). In addition to poorer quality of life, depression in older age leads to increased mortality from suicide (Reynolds and Kupfer, 1999). Suicide rates among the elderly population in the EU-13 are higher than in the EU-15, with men more at risk than women (Innamorati et al, 2010). Identifying and treating depression could have significant health benefits in ECA, both for morbidity and mortality (Jenkins et al., 2005; World Bank, 2007). Long-term care services can help through reducing social isolation in older people, for example through day care centers or home visits.

Without urgent policy action, morbidity may actually expand in older ages in ECA in contrast to other regions. Continuing along the current trajectory in ECA will inevitably result in a population who are living longer, but in generally poorer health – and therefore in steady need of health and long-term care services.

Yet ECA has the potential for healthier aging if health and social care systems are adapted now to meet the needs of an aging population. ECA has the potential to follow in the footsteps of other regions and shift towards the dynamic equilibrium scenario. This would shift the disease burden from moderate-severe disease towards milder disease and disability through improved prevention and treatment strategies.

Importantly, this package of policy interventions will both lengthen life and make existing cohorts healthier. In the following sections, the policy actions required to implement healthy aging will be outlined, but first we examine whether longer lives will equate to more active lives in ECA.

7 Longer and active lives

Disability associated with aging may impact on working capacity. In addition to new and chronic diseases, many parts of the body start to degenerate as people grow older (see Box 5). These declining functions may lead to earlier exit from the workforce in the absence of treatment or adaptive workplaces. Preventing and preserving as much function as possible, for example through the inclusion of appropriate treatments in health benefits packages, could translate into higher workforce participation by those in their 50s and 60s, as well as a reduced need for long-term care (Smith and Nguyen, 2013).

Box 5 *Aging, health, and exit from the workforce*

- Eyesight often starts to diminish as people age, with both cataracts and macular degeneration - a disorder of central vision –increasing after 60 years. Despite this, vision in older people has actually improved overall in Sweden, Spain and the USA (Christensen et al., 2009). Regular eye examinations and provision of cataract surgery, which can now be provided on an outpatient basis, are important factors to minimize disability due to vision impairments.
- Aging bones and joints can lead to arthritis and lower bone density in older age, causing reduced mobility, pain, and fractures. Muscle function declines, reducing strength and making falls more common. Improving calcium intake and exercise throughout life are important for prevention, as well as access to joint replacement operations that can greatly reduce functional limitations and improve independence.
- Hearing also deteriorates with age, and regular testing, combined with support mechanisms such as hearing aids, can help counteract disability caused by hearing loss and lengthen working lives. These are often included in health benefit packages by OECD countries.

Yet ‘increased capacity to work’ is not directly associated with labor force participation in older people and national retirement policies may have a greater impact at older ages than health status. Milligan and Wise assessed the relationship between mortality and employment rates of men in 12 OECD countries⁹ between 1957 and 2007 (Milligan and Wise, 2012) and found that increased “capacity to work”—measured as decreasing mortality trends in a country over this period—is not directly associated with whether older people continue to work. While in the late 1960s and early 1970s, the difference in employment rates across countries was modest for all age groups, throughout the 1990s and 2000s there was increasing disparity between countries after the age of 60. For example, in 2007, while 75% of men aged 60-64 were

⁹ Belgium, Canada, Denmark, France, Germany, Italy, Japan, the Netherlands, Spain, Sweden, the United Kingdom, and the United States.

found to be working in Japan, less than 25% of men of the same age were working in France and Belgium. Overall, men's employment rates have fallen, despite concurrent increases in life expectancy. At lower mortality rates, the differences in employment across countries are relatively small. However, when mortality rates increase, these differences increase significantly: at a mortality rate of 0.015, only 5 percent of the workforce is employed in France compared to 50 percent in the United States.

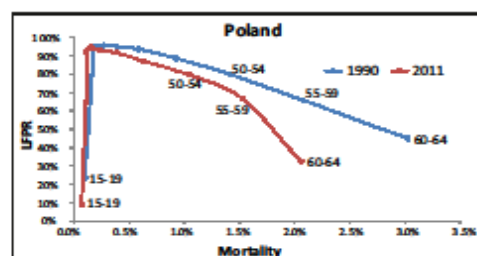
There is no relationship between lower mortality and increased labor force participation in ECA. A similar analysis was undertaken for this report comparing mortality and labor force participation rates (LFPR) for selected ECA countries¹⁰. The major finding is that there is no relationship between health gains and changes in LFPR (Figure 20), which confirms the finding of Milligan and Wise. However, the headline result hides interesting country-specific stories when trends in individual countries are examined more closely. We consider four neighboring countries that have had very different developments in terms of their LFPR and mortality evolutions: Poland, the Czech Republic, Lithuania, and Belarus (Figure 20). For each country, a curve has been constructed comparing mortality rates to LFPR for all relevant age groups. For all four countries, differences in LFPR and mortality are largest in the oldest age groups: 55 to 59 and 60 to 64 years.

As for health and long-term care, social protection systems in ECA will need to adapt in order to capitalize on longer lives. Contrasting mortality and LFPR in this way allows broad lessons to be drawn from the range of experiences in ECA. This analysis suggests that the wide discrepancies in LFPR can be explained not by health status, but rather by national policy structures that provide incentives to exit the labor force and discourage further participation at older ages. The background paper on Active Aging explores these issues in more detail.

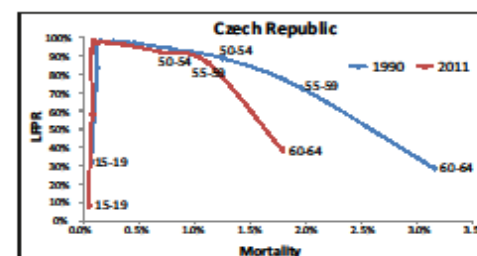
¹⁰ In ECA, comparable longitudinal data is more limited than for OECD countries. Data from www.humanmortality.org and the International Labor Organization were utilized to undertake similar analyses as Milligan and Wise, using data from 25 ECA countries. These comprised Poland, Turkey, Belarus, Latvia, Serbia, Ukraine, Georgia, Russia, Lithuania, Estonia, Cyprus, Bosnia and Herzegovina, Croatia, Slovenia, Armenia, Albania, Czech Republic, Slovakia, Azerbaijan, Romania, Moldova, Macedonia, Montenegro, Bulgaria and Hungary. Due to geopolitical changes, data are not available for many ECA countries until 1990, and while annual mortality data is sometimes available, only data from 1990, 2000 and 2011 are available for other countries. We accepted Milligan and Wise correlations between mortality and health status. However, we replaced employment data with labor force participation rates as this correlates well with employment rates with the added advantage of measuring readiness to work. Women were excluded from the analysis as it would be difficult to untangle cohort effects from the dramatic increase in female labor force participation over the second half of the 20th century.

Figure 20 Older men do not necessarily work for longer as mortality declines

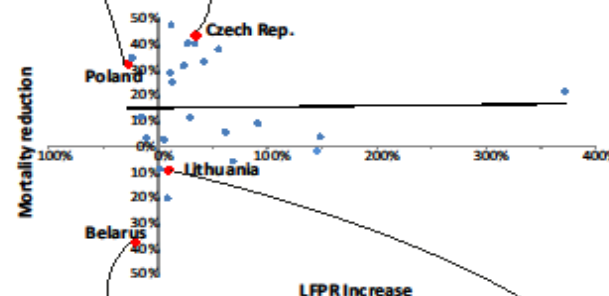
Trends in mortality and labor force participation rate across age cohorts in selected ECA countries



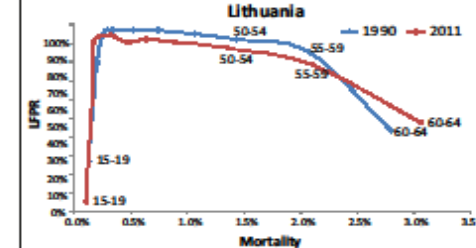
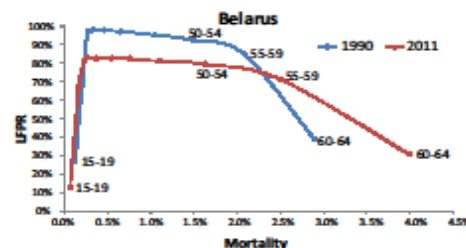
In Poland, the mortality rate declined across all groups between 1990 and 2011. While these correlated with almost constant LFR for age groups 25-29 to 55-59, there was a marked drop for the 60-64 age group. Early in the transition, Poland tolerated and even encouraged early retirement, which often happened through the disability program. Poland stands out among the former communist countries as the most successful reformer with the highest cumulative economic growth between 1989-2009. During the expansion, public expenditure on old age and survivor cash benefits more than doubled from 5.1 percent of GDP in 1990 to 11.8 percent in 2009 (3 percent higher than in the Czech Republic). More recent attempts to reduce the footprint of early retirement and disability programs are starting to bear fruit, but progress is slow.



In the Czech Republic, the mortality rate declined between 1990 to 2011 across all age groups. This decline was greatest in 55-64 year olds, where the largest increases in LFR were also seen. While the improving health status of older males in the Czech Republic might have contributed to this higher participation, policy interventions to promote a longer working life are also likely to have played a part. There has been tight control on public spending for old-age and survivor cash benefits, comprising 5.8 percent of GDP in 1990 and 8.3 percent in 2009. More recently, from 2008, the retirement age for men has been increasing two months each year until it reaches 65 in 2030.



In Belarus, LFR dropped consistently across all age groups from 1990 to 2011, with the lowest rate for 60-64 year olds among the four countries studied. At the same time, the mortality rate increased between 1990 and 2011 for the 30-34 age group onwards, rising significantly for 55-64 year olds. Deteriorating health outcomes can partially explain the slow progress on health reforms in Belarus since transition, with the health of older age groups being more vulnerable to the shortcomings of a weaker health system. At the same time, the population is rapidly aging, with pensioners accounting for more than a quarter of the population. Working at older ages is discouraged through the lowest legislated retirement age of all four countries at 60 years for men, with an effective retirement age of 58.8. In addition, pensions are high relative to wages at the time of retirement and are subsequently indexed generously, thus increasing incentives to exit the labor market.



Lithuania has the highest LFR of all four countries for those aged 60-64 at 48%, despite the mortality rate in this age group actually increasing between 1990 and 2011. This age group is likely to have been most affected by the economic hardships of the transition, with a knock-on effect on health in later life. A contributing factor to the high LFR may be very tight eligibility criteria for early retirement and disability benefits and relatively low pension levels resulting in low overall spending on pensions (7.7 percent of GDP compared to an average of 12.9 percent in the EU-27 as of 2011, with a slower rate of growth than GDP).

Note: LFR = Labor force participation rate

Sources: LFR data from International Labor Organization. Mortality data from Human Mortality Database. University of California, Berkeley (USA), and Max Planck Institute for Demographic Research (Germany), www.mortality.org, accessed 2 February 2014. Retirement ages are compiled from Eurostat and country data, and are for latest year available. Expenditure data is from Eurostat (accessed 16 June 2014) and "Public Expenditure on Pensions", in Pensions at a Glance 2013: Retirement-income Systems in OECD and G20 Countries, Paris: OECD. Additional information from European Commission.

8 The cost of healthy aging

The interaction between health, aging, and cost is integral to the impact of longer lives on public finances. Health and long-term care dominate concerns on the fiscal implications of aging. There is a common perception that expenditures in these areas will rise relentlessly with an aging population, with many ECA countries underprepared to meet the ticking timebomb of care needs. Yet the relationship between aging and care needs is not as straightforward as it seems. This section examines the evidence around the cost of healthy aging, both for healthcare and long-term care (see Box 6).

Box 6 *What is long-term care?*

Long-term care is a descriptive term for the wide range of services designed to support people who lose their ability to autonomously perform basic everyday tasks due to physical and/or mental deterioration. Long-term care is distinct from healthcare in that it does not focus on ‘curing’ people; rather, it aims to help people live a dignified and fulfilling life. It can include support with Activities of Daily Living (ADLs) like bathing, dressing, eating or other personal care. It may also include Instrumental Activities of Daily Living (IADLs) such as preparing meals, cleaning, money management, transportation, and managing money. Long-term care can be delivered in residential institutions or based in the community. Community care includes home-based care and day care provided in specialized centers.

Healthcare costs

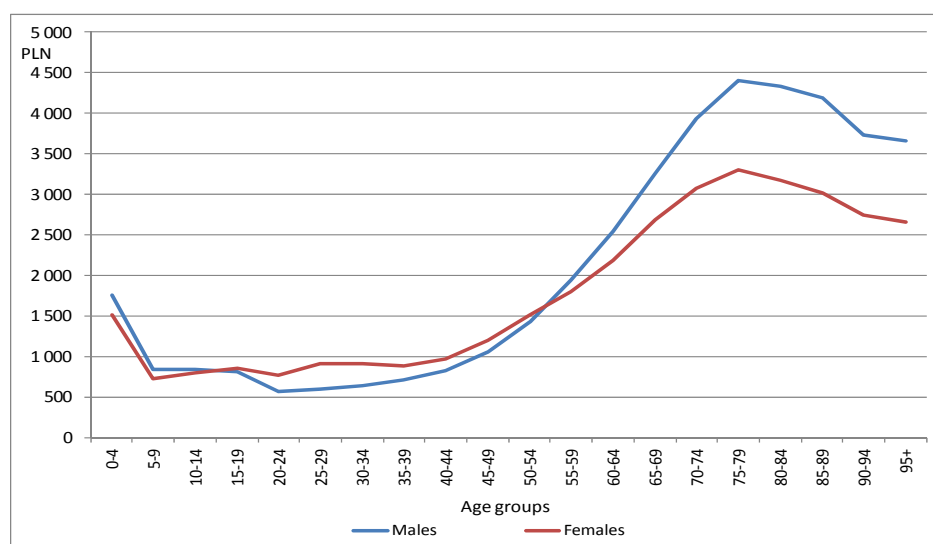
It has been shown around the world that health costs tend to rise after the age of 50.... Age-specific profiles of public health expenditures consistently show a J-shaped curve: with the lowest spending in younger life, rising after middle age and peaking in the elderly, with an unexpected decline in the “oldest old” (80 years and over) (Meerding et al., 1998; Fuchs, 1998; Mendelson and Schwartz, 1993; Economic Policy Committee, 2005; Hagist and Kotlikoff, 2005). Figure 21 shows such a graph for Poland.

...leading to the inference that health expenditures will rise exponentially with an aging population. The aging population in ECA is often associated with a “doomsday” scenario of unsustainable health and long-term spending due to spiraling care needs.

Yet this assumption relies on a snapshot of healthcare costs in time, whereas the situation is actually more dynamic. Two key factors turn this scenario into a more dynamic one: time to death and time to sickness.

For health costs, time to death is important—not time from birth. It has been consistently shown in OECD countries that health expenditures spiral in the last few years of life, and particularly the final year (Lubitz and Riley, 1993; Spillman and Lubitz, 2000). As an individual nears death, their worsening health status tends to unleash a snowball of increasingly intensive treatment and frequent hospitalizations that is more concentrated than any other period in their life. Being close to death is often accompanied by increased morbidity and disability, necessitating not only costly

FIGURE 21 Older people appear to absorb more public health spending



Source: Public health spending per capita in 2012, based on Polish National Health Fund (NFZ) data

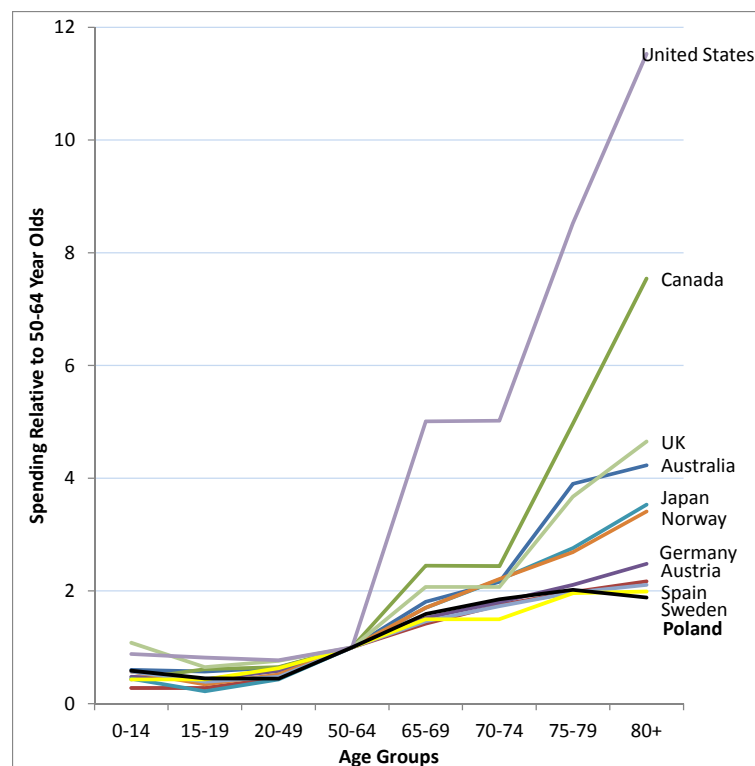
medical interventions, but also support for daily living. Studies in the U.S.A. have estimated these so-called death-related costs to be about 25 percent to 30 percent of total Medicare¹¹ health expenditure (Lubitz and Riley, 1993; Felder, 1997; Hogan et al., 2001). European studies have found similar end-of-life spending shares, with the majority of these costs incurred from hospital and nursing home care (Polder et al., 2006)¹². These proportions of end-of-life expenditures in overall spending have been found to be quite stable over time (Hogan et al., 2001; Riley and Lubitz, 2010).

As age and death are correlated, age is often blamed for this increase in health costs whereas the causative factor is actually proximity to death. When age-specific public expenditure patterns are examined, there is actually considerable variation in the slope of spending profiles at older ages (Figure 22). Spending on those aged 75 plus is only around twice that of the 50-64 year old reference group for Austria, Germany, Poland, Spain, and Sweden. Not only does Poland have a relatively flat age-specific spending profile, but per capita spending on health is low compared to other OECD countries. This compares to the U.S.A. where spending rises steeply with age until spending on the oldest old is 12 times higher than the reference group. This is partly because the data reflect only public spending and so Medicare support to those aged 65 and over (Hagist and Kotlikoff, 2005). But the sharp rise in health costs at older ages in

¹¹ Medicare is one of two national social health insurance programs in the United States of America, covering mainly the population aged 65 and over and disabled. Medicaid is the other program, covering low-income individuals and families.

¹² For instance, in the case of the Netherlands, an analysis of health insurance data linked at the individual level with data on the use of home care and nursing homes and causes of death in 1999 finds that 11.1 percent of total expenditure of the included health services was due to final year of life costs or 26.1 percent for the retired Dutch population aged 65 years and older (Polder et al., 2006).

FIGURE 22 Age-specific expenditure profiles show health spending not driven by age



Note: Public health spending.

Sources: For Poland, World Bank calculations based on National Health Fund (NFZ) data. For all other countries, Hagist and Kotlikoff (2005) based on national data sources.

the U.S.A. relative to other countries also reflects the intensive use of technology nearer to death.

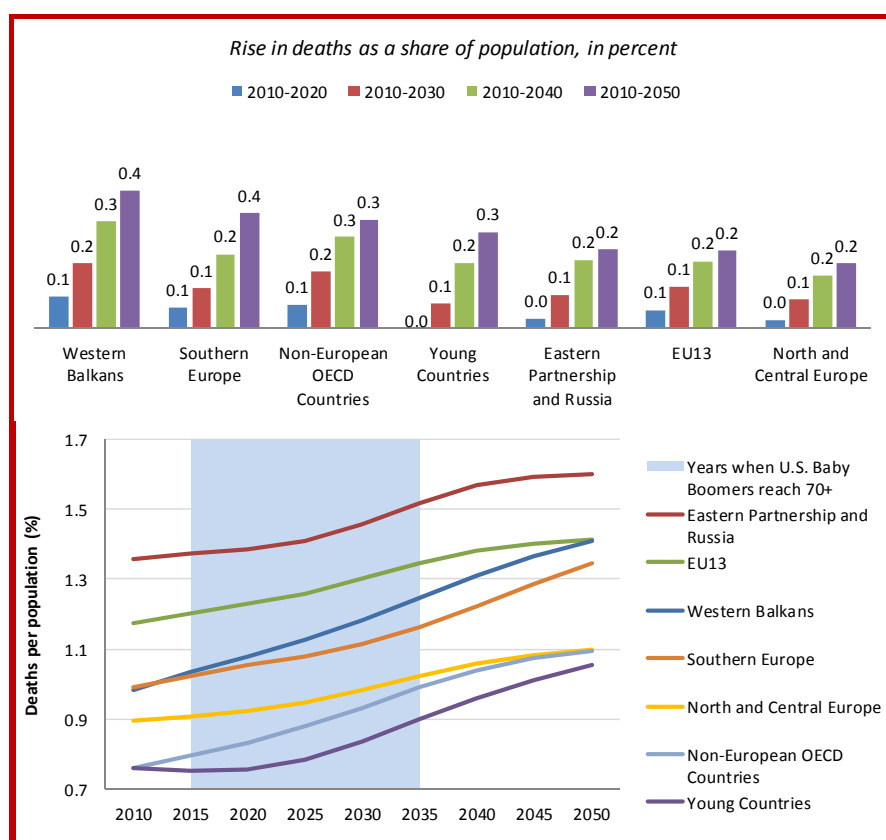
Although death-related costs will rise from demographic bulges in ECA, the rise in spending should be manageable. The ripples of aging baby boomers¹³ will bring increased deaths and their associated costs in ECA countries in coming years. However, the rise in deaths is manageable: the EU-13, Eastern Partnership and Russia, and Young ECA countries will have to absorb about 0.2 percent more of the population dying annually by 2040 (Figure 23). If we assume that health spending in the last year of life is equal to that of the Netherlands¹⁴ (Polder et al., 2006), then a 0.2 percent share of the

¹³ The start of the post-World War II baby boom differed across countries and endured for varying periods: see background paper on fertility for more details. Broadly speaking, if we take the timing of the U.S. baby boom as a reference period (1946-1964), this generation will begin to reach 70 years of age in 2016 and start to peter out around 2040.

¹⁴ An analysis of health insurance data linked at the individual level with data on the use of home care and nursing homes and causes of death in 1999 found that 11.1 percent of total expenditure

population dying in the next year would increase spending by 3 percent, all other things being equal. Therefore, the impact of the upcoming demographic bulges on the overall health budget is not extreme. The Western Balkans and Southern European countries face a larger challenge, however, with an increase in deaths equal to 0.4 percent of the population during the same period.

FIGURE 23 Countries face considerable differences in the expected increase in the proportion of the population expected to die every year



Note: Non-European OECD country group comprises Australia, Canada, Japan, New Zealand, Republic of Korea and U.S.A.

Source: Authors' calculations based on UN Population Data (Revision 2012).

Time to sickness is a critical factor that also determines the impact of aging on health care costs. Death-related costs explain the counter-intuitive decline in health costs in the “oldest old”: those who survive until the very oldest ages are usually in better health and less frail than those who die earlier.¹⁵ Indeed, when lifetime health expenditures are compared for individuals in good and poor health at age 70, those in good health do not have greater overall costs despite living longer (Lubitz et al., 2003).

of the included health services was due to final year of life costs or 26.1 percent for the retired Dutch population aged 65 years and older (Poldera et al., 2006).

¹⁵ Though rationing of care at older ages may also play a role. See for instance, Brockmann (2002), for evidence from hospital claim files from a large German public health insurer on oldest old patients receiving less costly treatment than younger patients for the same illness.

The inference is that the less time spent sick at older ages before death - i.e. healthy aging - plays a key role to dampening the costs associated with longer lives. As seen in the previous section, there has been a trend towards healthier aging in OECD countries, with severe disease giving way to more moderate illness. Adjusting for both death-related costs and this trend for healthier aging significantly decreases the impact of aging in health expenditure projections (Raitano, 2006).

The poorer health status of the middle-aged in ECA may lead to “unhealthy bulges” that increase health costs associated with aging. If the time to sickness at older ages shortens, with the period spent with illness or disability expanding, then longer life expectancies may lead to higher lifetime expenditures on care (Figure 24). As we saw in the previous section, evidence suggests that middle-aged people in ECA are entering old age with more disability than in other regions. This poorer population health, combined with the ripples of babyboomers moving into old age, is likely to create a series of “unhealthy bulges” that strain current health and long-term care budgets.

Strategies to reduce disease in the middle-aged now would still pay dividends in terms of reducing the burden of disease and associated costs when this cohort reach old age. The previous sections outlined the measures that would decrease disability in existing and future cohorts. If ECA countries can move towards a scenario where extra years of life are lived mainly in good health, then health care costs and demands on health services are likely to be reduced throughout life, regardless of life expectancy.

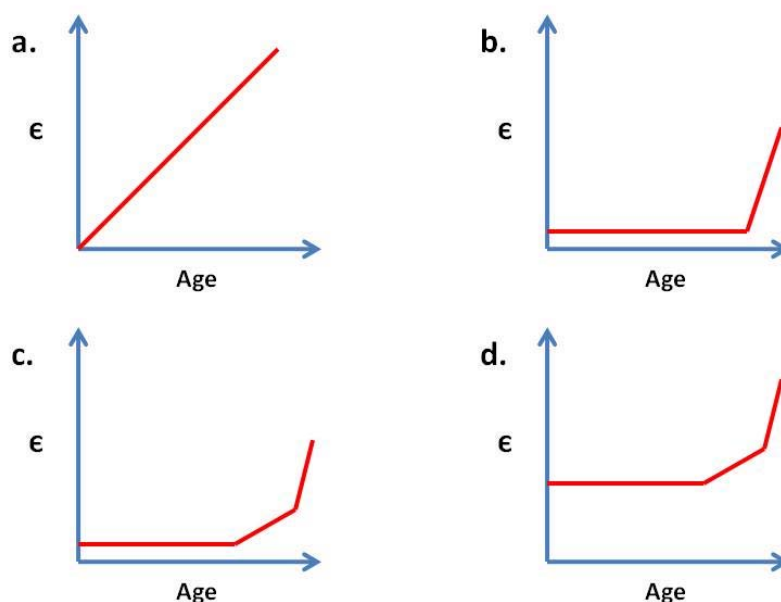
Overall, however, aging is not the most important factor in driving health costs. Health care costs have been rising over time for all age groups, not just the elderly (Morgan and Cunningham, 2011). When trends in costs are analyzed over time, it is revealed that non-demographic drivers such as advances in health technologies, income and labor actually have more impact than aging. Of these, technology is by far the most significant factor (Smith et al., 2009).

The adoption of new health technologies is the key cost driver. How countries react to medical technological advances has been and will remain the critical driver of cost pressures in health systems (Smith et al., 2009; Newhouse, 1992). Indeed, 25 percent to 75 percent (and averaging around 50 percent) of growth in health expenditure in high income countries is considered to be driven by technological changes (Sorensen et al., 2013), far surpassing any impact of aging¹⁶. Although technological innovations have the

¹⁶ Increased national income is generally correlated with increased healthcare spending in a country, independent of need, though there are many confounding factors that influence healthcare spending by country - particularly national health strategies and policies (European Commission, 2012). The way in which health systems and institutions are set up also have an important impact on healthcare spending: whether the bulk of healthcare is delivered by general practitioners or specialists, in the community or in hospitals, methods of financing and incentivizing services, and the depth and coverage of benefits packages (European Commission, 2012). In particular, labor acquisition and retention play a massive role in healthcare costs: the health workforce and the labor-intensive nature of healthcare pose a substantial financial burden in training and salary costs (Baumol, 2012).

potential to improve health status while creating cost efficiencies, costly product innovations to alleviate diseases appear to have dominated cost-saving process and preventive innovations in recent decades (a trend which contributes to the magnitude of death-related costs) (Zweifel, 2003; Baumol, 2012) (Figure 24).

FIGURE 24 The costs of healthy aging are not what they first appear

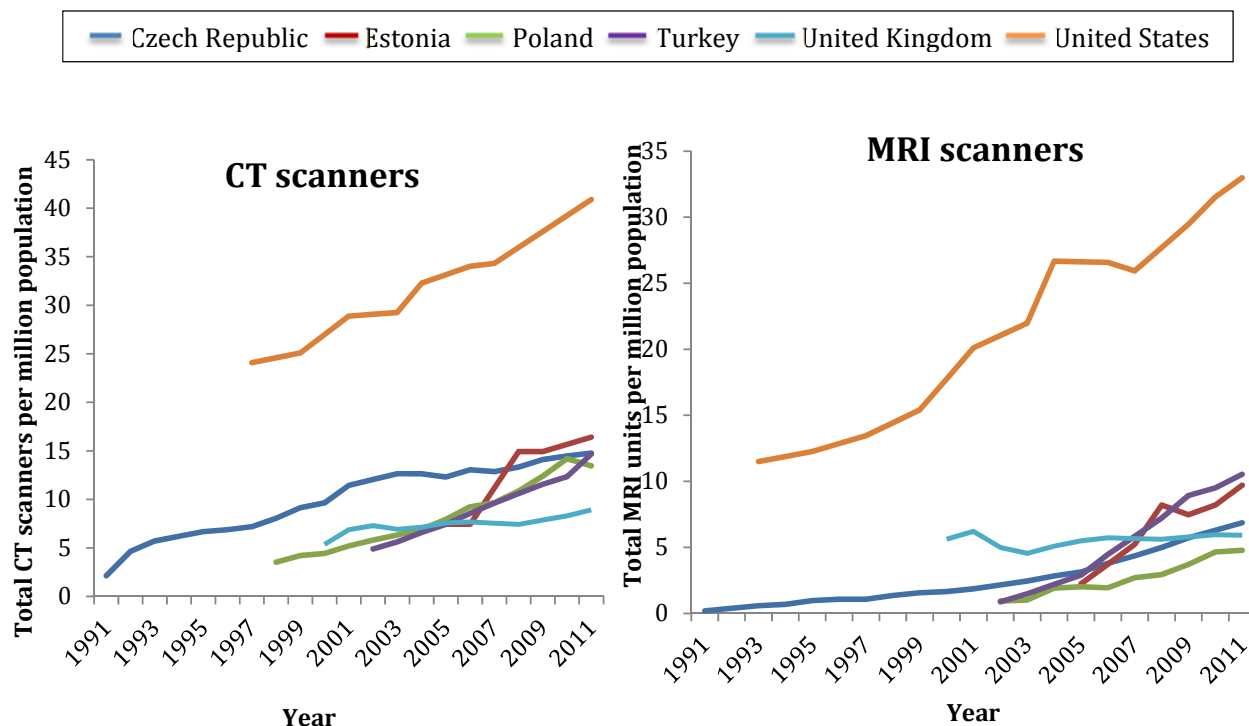


A representation of the relationship between health, aging and costs: a. Health expenditures are perceived to increase with age. b. Yet analysis of lifetime expenditures shows that most spending in fact occurs in the last year of life - so-called 'death-related costs'. c. If time to sickness is short at older ages, then poor health status in the years before death could lead to higher health and long-term care costs in addition to death-related costs. d. Technology is a more important cost driver than aging. If mechanisms are not employed to ensure value for money, lifetime health expenditures will be higher regardless of aging.

This is particularly true in many ECA countries with increasing demand for technological solutions and weak cost control mechanisms. Figure 25 shows the increase over 20 years in selected ECA countries of two types of high-cost scanners used in healthcare. The U.K. is included as a comparator country with relatively strong cost containment through a single-purchaser tax-funded public health system and specific prioritization mechanisms for new technologies. In comparison, the U.S.A. has very little cost containment, with far higher health expenditure than other OECD countries. Of course, it is difficult to set an optimal number of scanners in a population due to differences in disease burden and variation in medical practice, however acquisition of high cost technology in the absence of strong regulations on appropriate use tends to push up health spending due to changing patient and clinician expectations. While most ECA countries had fewer scanners than the UK and United States in the early 2000s, the number of scanners has consistently risen since then. In fact, all ECA countries except

Poland had more CT and MRI scanners per person in 2011 than the UK, despite substantially lower public health expenditure.

FIGURE 25 Scanners on the horizon: ECA countries are buying more high-cost technology



Note: CT = Computed Tomography; MRI = Magnetic Resonance Imaging. Data for 2011, all ECA countries with available data included.

Sources: OECD Statistics

Strategic purchasing and prioritization mechanisms to contain the cost of health technologies are essential to sustainable health spending in ECA. There are substantial sociopolitical and ethical pressures to invest in new technologies. Other countries have had success countering these pressures by investing in strategic purchasing and prioritization mechanisms that help ensure value for money for public funding. These cost control mechanisms are under-utilized in ECA, and investments in their implementation now in order to buffer technology-driven growth in health costs will far outstrip any impact of aging-related expenditure. As Zweifel et al. (1999) put it, aging should not become the “red herring” that distracts from the hard choices: in ECA, these center on how best to adopt technology and the scope of health benefits packages. We return to this topic in the section ‘Spending Money Wisely’.

Long-term care costs

Long-term care costs may prove more of a shock than health expenditures. Most ECA countries are unprepared to manage the shock of long-term care financing. The European Commission has predicted that out of an increase of 4.5 percent of GDP in age-related public expenditure in Europe between 2010 and 2060, 1.5 percent would be

related to on long-term care compared to only 1.1 percent on healthcare (European Commission, 2012).¹⁷

Long-term care is a ‘Cinderella’ sector in many ECA countries, with health budgets frequently covering deficits in funding. Expenditures on long term care in ECA are difficult to estimate. This is largely due to the difficult position of long-term care, straddling both health and social care, formal and informal sectors, and national and subnational levels of government (World Bank, 2010). Indeed, long-term care has a ‘Cinderella’ nature in ECA countries, with a frequent lack of recognition, coherent strategy and robust vision (World Bank 2010). This approach often results in undesirable fragmentation and cost shifting, and partly accounts for variations in national spending on long term care. The status quo in ECA is to rely on health funding to make up for any deficit in long term care funding, which prevents adequate budgeting for long-term care and puts pressure on health financing across the region (World Bank, 2010).

There is a current overreliance on informal and hospital care in ECA to meet long-term care needs. In many ECA countries, spouses or children provide most informal care for elderly relatives¹⁸. Yet when informal care can no longer adequately meet care needs, we see acute hospital care substituting for long-term care in many ECA countries (World Bank, 2010). Indeed, the historically large hospital infrastructure is being utilized to provide inappropriate and expensive care for elderly patients. In addition, many municipal hospitals in ECA are being turned into long term care homes (World Bank, 2010), yet these facilities are often not suitable to meet the specific care and rehabilitation needs of elderly patients.

In richer countries, long-term care is continuing to shift from residential settings to a range of dedicated community-based services. The delivery of long term care can suffer from being conceptualized as medical care with relegation to institutional settings particularly due to ECA’s legacy of hospital overcapacity (Norton, 2000; Smith and Nguyen, 2013). Institutional care is an important component of many long term care systems, but by nature it is a high intensity solution, and in order to achieve cost effectiveness and financial sustainability, long term care strategies need to provide a range of services to address different level of needs. Care to meet differing levels of dependency can take many different forms (see Box 7).

Changing disease burdens will require different care solutions. The focus of what long term care exists in ECA countries has traditionally been addressing the physical needs of recipients. As the prevalence of dementia and depression (see previous section) rises, a more holistic provision of care will be required to meet the particular needs of these patients (Warshaw and Bragg, 2014). ECA governments could consider

¹⁷ These estimates assume that health care expenditures are driven by a combination of changes in the population structure, an assumption that half of the future gains in life expectancy are spent in good health and a moderate impact of rising national incomes on health care costs. An aging population is expected to increase public spending for long-term care due to sharply rising frailty and disability at older ages, especially amongst the fast-growing population of the oldest old (European Commission, 2012).

¹⁸ See background paper on care for more details.

Box 7 *Types of long term care*

Personal care: Non-skilled care, including help with ADL such as bathing, dressing, eating, getting in and out of bed or chair, and using the bathroom

Domestic care: Assistance with IADL (e.g. cooking, cleaning, managing finances).

Health/nursing care: Medical acts (e.g. administering medication, changing dressings).

Community-based services: Services in the community, such as adult day services, home delivered meals, or transportation services. Designed to help older people stay in their homes as independently as possible.

Day services: Services provided during the day at a community-based center. Programs address the individual needs of functionally or cognitively impaired adults by providing social and support services in a protective setting, but not residential care.

Assisted living facility: Residential living arrangement that provides individualized personal care and a protective environment. Care is not as intensive as care offered at a nursing home and is designed to allow people to remain relatively independent.

Residential care/Nursing home/Long term care facility: Facility where older people live that provides general nursing care to those who are chronically ill or unable to take care of daily living needs.

Adapted from LongTermCare.gov (U.S. Department of Health and Human Services)

new formats of delivering care that do not necessarily follow the same evolution of those in OECD countries.

Long-term care provided in the community has fiscal and health benefits. There are fiscal and psychosocial benefits to people maintaining the autonomy and independence of receiving care in their own home, rather than relying on residential facilities for long-term care (Kaye et al., 2010). Residential care is expensive due to overheads and labor costs. Home services are often more financially efficient and more highly rated by recipients (World Bank, 2010). An important pathway to developing sustainable long term care services is to invest in community-based services (Kaye et al., 2010).

Long-term care costs are related to the same factors as health costs, including time to death and time to sickness. As with health expenditures, time to death increases substantially the probability of nursing home use and of formal care¹⁹ (although the availability of informal care significantly reduces this effect). Time to sickness is also important: the study by Lubitz et al. (2003) looking at lifetime health expenditures of elderly people in the USA found that individuals who were in a nursing home at the age of 70 had cumulative expenditures that were much higher than those

¹⁹ Overall, proximity to death significantly increases the probability of formal long-term care services. Weaver et al. (2009) found that being within 2 years of death increases the probability of nursing home use by 50 percent and of formal home care use by 12.4 percent using a sample of elderly aged 70+ from the 1993–2002 U.S. Health and Retirement Study.

for persons who were independent at the same age. Indeed, the reduction in levels of severe disability seen in OECD countries may lead to less expensive lifetime healthcare and long-term care costs. It is estimated for OECD countries that healthy aging and associated productivity gains could together reduce projected increases in long term care costs to 5-10 percent by 2050 (OECD, 2011).

The demand for long-term care is driven not by the growing number of older people per se, but the proportion of the elderly that are dependent on others for care. The old age dependency rate (the number of over 65 year olds as a proportion of the 15-64 year old workforce) is often used to estimate future costs of long-term care. As older countries see declines in morbidity and improved functioning at older ages, however, this ratio becomes less useful as a proxy of long-term care needs. A more pertinent metric is the care dependency ratio: the ratio between those requiring care and the healthy population. There is a paucity of data on care dependency rates in ECA, however a World Bank study found that the care dependency rate in Latvia and Poland was higher than in the EU-15 (World Bank, 2010).

Projections of long-term care needs in ECA demonstrate the impact of healthy and unhealthy aging. As part of the analysis for the ECA Flagship Report on Aging, a model was constructed to estimate long-term care needs in ECA. This used data on rates of disability in the adult population from the European Health Interview Survey and the Russian Longitudinal Monitoring Survey²⁰ to examine the impact of different trends in healthy and unhealthy aging (see Box). Figure 26 depicts the results for Romania under these different scenarios as the proportion of the 65 year and older population requiring long-term care. Women will require more long-term care than men in all scenarios. After 2020, there is a marked increase in the proportion requiring long-term care for the scenarios that assume unhealthy aging, i.e. little change in current rates of disability. The more optimistic scenario, however, shows a reduction between 2013 and 2073 in the proportion requiring long-term care if measures to support healthy aging were implemented now. Results for other ECA countries and the region as a whole will be published separately.

The urgency in ECA is the current absolute underprovision of long term care services, combined with the unhealthy babyboomer bulges. Long-term care services in ECA are insufficient to meet current needs, usually being substituted by informal and acute hospital care. In addition, as outlined in the previous section, the babyboomer ripples are likely to enter old age with greater dependency and disability than in the EU-15. The capacity of current substitute care is likely to be overwhelmed unless formal long-term care services are expanded for at least some population groups, combined with efforts to improve the health status of middle-aged cohorts.

²⁰ We assumed that all people with moderate and severe disability (defined as restrictions in IADL and ADL respectively) would require long-term care.

Box 8 Differing scenarios for future disability levels

In order to assess the impact of differing trends in disability rates on long-term care needs, four scenarios were applied based on work done in the U.K..

The **baseline scenario** assumes constant disability rates across all projected years.

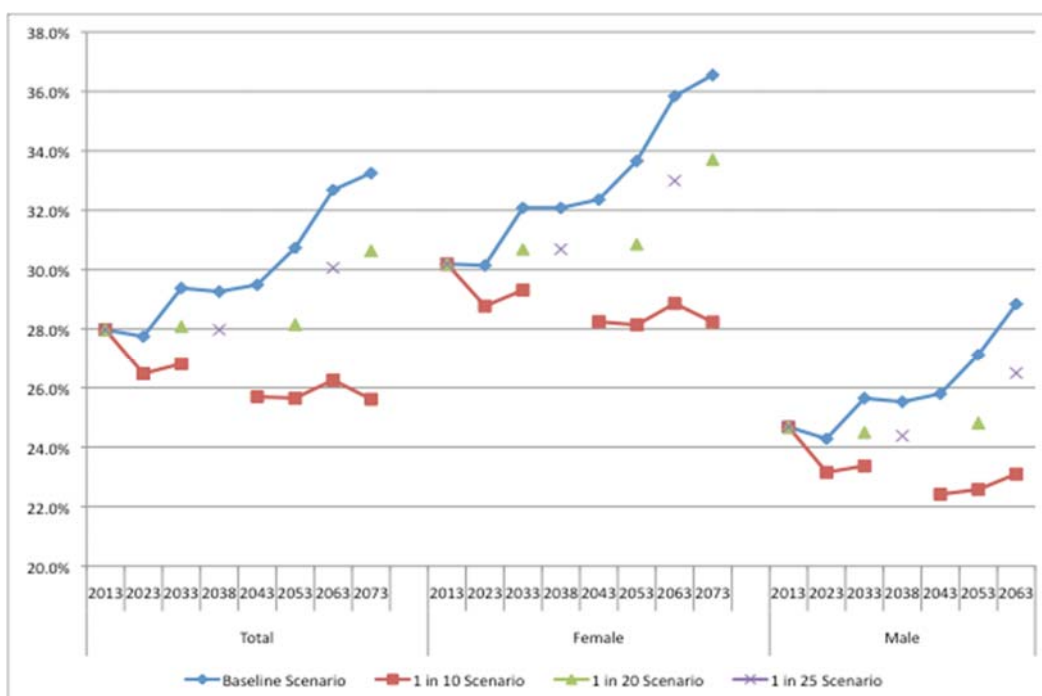
The optimistic scenario (known as 1 in 10), based on the tendency for declining disability rates seen in OECD countries, assumes that the probability of becoming disabled in the next year of a (healthy) person age x in year y will be equal to the likelihood of a healthy person aged $x+1$ in year $y+10$ becoming disabled the following year.

The realistic scenario (known as 1 in 20) assumes that the probability that a healthy person age x in year y becoming disabled will be equal to the likelihood of a healthy person aged $x+1$ in year $y+20$ becoming disabled the following year.

The pessimistic scenario (known as 1 in 25) assumes that the probability of becoming disabled in the next year of a healthy person age x in year y will be equal to the likelihood of a healthy person aged $x+1$ in year $y+25$ becoming disabled the following year.

Source: Karlsson, M, L. Mayhew, R. Plumb and B. Rickayzen. 2006. Future costs for long-term care Cost projections for long-term care for older people in the United Kingdom. *Health Policy* 75: 187–213

FIGURE 26 Future long-term care needs in Romania depend on healthy aging



Source: Authors' calculations based on 2008 data from Eurostat and European Union population projections for Romania

It is clear that in order to contain costs both for health and long-term care in ECA, significant changes need to be made now to help the public budget to cope with the rapidly aging population. Most of these policy solutions are familiar and well-defined, yet are politically difficult, with the policy cycle preventing a sufficiently long-term perspective in many ECA countries. Indeed, it could be said that aging brings a sense of urgency to a reform agenda that has lagged for decades. Yet there is still time to make vital reforms that will enable the health and social care systems to absorb the impact of ECA's aging populations. The following section reviews the mechanisms that other countries have employed to generate the health and long-term care funding necessary for aging populations, with the subsequent sections highlight the most pressing purchasing and service delivery reforms required to avert an aging crisis.

9 Finding the money to grow old

Supporting healthy aging in ECA is not only a challenge of raising the resources to finance the increasing demand for health care and long-term care, but also mobilizing them from a shrinking share of the economically active population. The focus of this section is on the policy options to mobilize resources to support healthy aging, including long-term care which is traditionally covered only in part by health financing systems. This task is particularly problematic for those ECA countries where social security contributions are the prime source of revenue, with contributions levied on earnings of workers. These constitute half the countries in the region covering more than half of its population.

EU-15 countries have faced the same pressures to sustain the fiscal stability of their health system in the face of a diminishing economically active population. By reviewing these experiences, lessons can then be drawn from countries later on in the demographic transition. While this section draws primarily on the experiences of EU-15 countries, it also includes examples from European countries and elsewhere who have implemented reforms in response to their aging populations. Of course, broader policy measures enacted in response to population aging can ease the pressures on health systems. The most important of these measures included more liberal immigration policies and increases in retirement ages, which are discussed at length in other background papers in this series.

Funding healthcare

Income generation for longer lives is a particular challenge for social health insurance systems, which rely on earnings-based contributions from the shrinking workforce to fund the costs of a growing elderly population. When revenues fall short of rising costs over sustained periods of time, systems have traditionally responded with increases in contribution rates. However, concerned with the impact of higher costs of formality and employment as well as the competitiveness of local firms and the economy as a whole, European countries have increasingly looked for alternative responses.

Many countries adopted changes to their contribution systems. They modified the relationship between the employer and employee contribution rates, shifting the financial burden towards the employee. For example, in 2009, Germany locked in the employer contribution, allowing increases only to the employee contribution. The Netherlands went a step further, and introduce a flat rate premium, capped at three percent of household income. Alternatively, countries changed contribution floors and ceilings. For instance, both Estonia and Hungary lifted their social health insurance contribution ceilings (Thomson et al., 2009). While this particular reform measure has the effect of increasing equity in finance through higher contributions for higher earning individuals, it also enhances incentives for wealthier segments of the population to evade contributions, diminishing the net effect on revenue.

In addition, countries attempted to strengthen enforcement of contributions as a strategy to maximize revenues from current collection mechanisms. Estonia, Hungary and Romania, for example, shifted the responsibility for collection from their national health insurance funds to the central government tax agencies (Thomson et al., 2009). Merging the databases on tax collection and social health insurance contributions allows these countries to exert further control over evasion. Going a step further, Hungary implemented an online information system available in all health facilities, which allows staff to verify affiliation and contribution status of every patient. While noncontributing clients are not refused medical care, they are reported to the tax agency, which is then able to collect contributions retroactively for up to five years (Ribe et al., 2012).

Aside from reforming existing contribution mechanisms, countries have complemented mandatory contributions through additional sources of public funding. This increases the resource base for health while reducing the costs of labor. For example, France in 1991 lowered employee contributions below one percent of wages and offset the decrease in revenue by introducing a tax levied on income called the Contribution Sociale Generalisée (Sandier et al., 2004). Later, the French government replaced most of the employee portion of the payroll tax levied on wages with the Contribution Sociale Generalisée, which had grown to 34.6 percent of the health insurance scheme's revenue by 2000 (Thomson et al., 2009).

“Sin taxes,” or taxes levied on goods that are harmful for health such as tobacco or alcohol are often used as another form of earmarked taxes for health, although these limit budget flexibility. In 2006, Romania introduced sin taxes on alcohol and cigarettes, which have generated revenues to fund a number of important national health programs (Vladescu et al., 2008). While sin taxes reduce risky health-related behaviors (often higher in the worse-off as seen in earlier sections), they also tend to be regressive, comprising a larger percentage of income among the poor. More generally, when taxes are earmarked for health, they limit the flexibility within government budgets.

More commonly, countries resort to using general taxes to complement earnings-based contributions. In most of the traditional social health insurance systems of Europe, general tax revenues constitute a significant source of co-financing, from six percent in France, to eight percent in Germany and the Netherlands, and 32 percent in Austria²¹. One challenge is how to feed tax revenues into the social health insurance system, especially where multiple health insurance funds collect and retain their own social security contributions. Both Germany and the Netherlands have therefore begun pooling all funds at the national level, which are then allocated among the individual insurers (Thomson et al., 2009). Germany uses general tax revenues to subsidize in particular premiums of enrollees with children (Lisac, 2006). In the Netherlands, these revenues are used as health care allowances in the form of transfers paid monthly to

²¹ 2010 data from the Global Health Observatory. Available at: <http://www.who.int/gho>.

individuals earning below a certain income threshold (Thomson, 2009; World Health Organization, 2007).

While social health insurance systems are particularly prone to the effects of aging on revenues, general tax financed systems must also search for ways to broaden their financing bases to cope with increased demand for healthcare. As with social health insurance systems, good practices of tax policy apply. These are beyond the scope of this chapter, yet it is important to note that the trend of complementing social health insurance contributions with general taxation is in line with good practices of taxation in European countries. For example, in its most recent country-specific recommendations, the European Commission called on its member states to further shift the tax base away from labor to taxation that is less detrimental for employment and growth, such as environmental and recurrent property taxes (European Commission, 2014).

Measures to expand the revenue base for health should also meet the general principles of fiscal and economic sustainability – as well as financial protection for the poor. Governments may be able to create additional fiscal space to meet growing health needs, by potentially shifting budgets from sectors that are likely to face reduced needs as the population ages - for example, education and unemployment benefits. At the same time, they often cannot avoid ratcheting up cost control measures, including deductibles and co-payments to manage demand and spending ceilings in order to control overall expenditure growth. Given the need to target strategies for healthy aging in the worst off (particularly the uptake of preventive care)²², subsidies for individuals and families on low incomes must be an integral part of these measures.

Funding long-term care

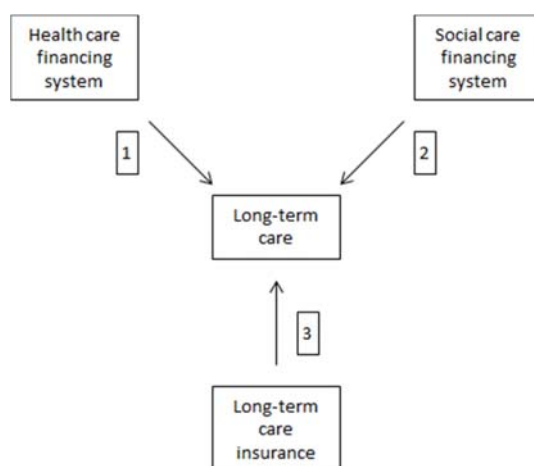
To protect against what can become impoverishing costs, comprehensive long-term care entitlements need to be expanded to all those need it, including the better-off. Comprehensive long-term care entitlements include nursing, personal and domestic care. Health financing systems traditionally cover only health and nursing costs of long-term care with social care or welfare services providing additional services targeted to most disadvantaged populations (typically the poor and disabled). Countries that provide comprehensive services to the entire population spend typically between 2 percent and 3.5 percent of GDP on long-term care.

There are currently three models that expand long-term care benefits to the entire population and finance the bulk of costs with a single financing mechanism (Figure 27).

The first model integrates long-term care under the health financing scheme. In practice, this model is found only in countries with social health insurance systems. For example, in Belgium, the social health insurance system finances nursing and personal care and local social welfare centers pay board and lodging for the elderly (Willeme et al., 2012).

²² See Sections ‘Some people are aging better than others’ and ‘Longer and healthier lives’

FIGURE 27 Models for financing of long-term care



The second model provides long-term care through the social care system financed from tax revenues. This model is typical for Nordic countries, where local municipalities are responsible for health and social care. They finance care from local taxes complemented with grants from the central government to adjust for differences in revenues (tax bases) and costs (demography). Local governments in all Nordic countries provide nursing and personal care, while those in Denmark and Sweden also cover domestic care (Karlsson et al., 2010).

The third model covers long-term care under a stand-alone social insurance scheme. Some of these systems, for example in Germany and Japan (see Box 9), require members to contribute from their income beyond their retirement age (Shultz, 2010; Zuchandke et al., 2012; Campbell et al., 2010). Benefits typically include a comprehensive set of long-term care services. Some systems, such as Japan, limit benefits to the elderly and exclude disabled people. Other countries that have adopted this model include the Netherlands and Luxembourg (Shut et al., 2013; OECD, 2011).

Of these three models, countries typically adopt one that builds on their health and social care systems to take advantage of existing financing arrangements. For example, in countries adopting model 2, the same government body managing revenues for health care (e.g. the local municipalities in Nordic countries) is also responsible for managing those for long-term care. Similarly, in countries adopting model 3, the existing health financing institutions (e.g. the sickness funds in Germany) typically operate the new long-term care scheme (Schultz, 2010).

Countries tend to favor managing the funds for long-term care separately from health and social care, which can help build public support for extra revenue collection but hinders integration of services. Indeed, the Belgian example of model 1 remains the exception among countries with social health insurance systems, with most countries creating separate budget lines (model 2) or creating a new insurance scheme (model 3). On the one hand, this ring-fencing prevents funds dedicated for long-

Box 9 Golden care for the Golden Oldies

Over the past fifty years, Japan has achieved the highest life expectancy in the world. Social expectations and preferences have rendered home-based care the traditional approach to long term care for older people in Japan, with informal care provided by their children. However, the rise of urbanization and labor market participation by women has seen demand outstrip the capacity of informal care. In 1989, the Government of Japan addressed this by introducing the 'Gold Plan', a scheme that provides universal healthcare and long term care for older people based on physical and mental need (Campbell and Ikegami, 2003). The Gold Plan is paid for by mandatory long term social insurance from those aged 40 and over, with means-tested co-payments. The scheme provides incentives for doctors to manage patients at home, with a shift to choice and competition for long term care service provision. The system has so far proven sustainable, with popular support.

term care from being used for other purposes, such as compensating for budget shortfalls in other areas of health and social care. Moreover, clearly linking budgets with benefits may also create a sense of entitlement that helps generate support from the public for measures to collect the necessary funding. On the other hand, this ring-fencing combined with different reimbursement rates for health and social care creates incentives for patient shifting. For example, hospitalized patients may be discharged inappropriately early back into long-term care to free beds for cases with higher reimbursement rates under the health financing system.

To date, only a few countries rely on a single mechanism to finance comprehensive long-term care; the majority draws on different mechanisms for different services. In Scotland, for example, the tax-financed health care systems covers nursing care, whereas the social care system finances most of the cost of personal care in both institutional and home care settings (Bell and Bowes, 2006). In Italy and the Czech Republic, the health financing system covers institutional care, while the government pays non income-related cash allowances to cover the cost of home care (Tediosi and Gabrielle, 2010; Sowa, 2010).

Only a few countries with mixed models provide comprehensive coverage of long-term care for the entire population. Typically, health systems provide for nursing care, while social care systems or other financing mechanisms ensure access to additional long-term care services for the severely disabled with means-testing for the poor. For example, Switzerland provides a means-tested cash allowance to cover the cost of personal care in addition to covering universal, in-kind nursing care through its mandatory health insurance. Complementary financing mechanisms may also be available for some, but not all income groups, often with benefits decreasing with income. For example, France's general councils fund a cash allowance, the *Allocation personnalisée d'autonomie*, for disabled people over the age of 60 with the benefit amount varying according to need and income (OECD, 2011).

Some countries opted to introduce and promote voluntary long-term care insurance to fill gaps and accelerate progress toward comprehensive population coverage. However, voluntary long-term care insurance faces incentive issues

similar to voluntary old-age pension and health insurance that seem to prevent it from developing into sizable markets. Benefits will not occur until the distant future: moreover, it is uncertain to what extent they will be needed. These issues are typically compounded by a general trust in family solidarity. Germany, for example, introduced voluntary long-term care insurance in the mid-1980s, but by 1993 only 250,000 contracts had been purchased despite a rapidly growing number of individuals in need of long-term care (Costa-Font and Courbage, 2012).

Thus, mixed models tend to face a number of challenges. Gaps in the coverage of services and population groups leave needs unmet or families drawing on their income and assets before they drop below deprivation levels that entitle them to benefits. In addition, multiple financing mechanisms aggravate the challenge of care coordination (see following sections), usually incur higher administrative costs and suffer from adverse selection issues.

ECA countries with a growing demand for formal care but limited capacity to raise revenues should expand systems that cover comprehensive long-term care for the poorest individuals with high needs. The pre-dominance of mixed models seems to be the result of countries moving through different stages along a common pathway towards comprehensive long-term care coverage dependent on their demographic profiles and economic conditions. Countries where demand for long term care is low rely heavily on their health care systems, informal care, and out-of-pocket expenditures to cover the cost of caring for the elderly and disabled. As economic conditions improve and aging accelerates, countries may expand the eligibility or complement these systems to include individuals with lower needs and higher incomes until they may opt to consolidate various mechanisms into one universal and comprehensive model of financing for long-term care consistent with the existing structures of health and social care financing.

Over the next decade, many ECA countries will find themselves facing the same pressure as European countries. However, without major reforms of their health financing systems today, they will start from a more challenging point. Experiences from European countries facing the brunt of aging populations on their health systems show clear policy trends and pathways toward effectively funding longer lives. However, health financing systems in ECA today rely heavily on out-of-pocket expenditures (Table 1), with insufficient financial protection for the poor. Public funding stems to a large extent from social security contributions, often at even higher shares than the average in EU-15 countries. Furthermore, these contributions are raised from a relatively small proportion of the population. While there seems to be room to increase public funding for health from general government revenue, major spending increases will depend on the country's economic performance.

As these funds materialize, it is of utmost importance that they are invested in health care systems that effectively translate them into improved health outcomes. The following section lays out some of policy options to ensure these increased revenues provide value for money for ECA's aging population.

TABLE 1 **Macro, fiscal and key health financing indicators**

Group	GDP per capita (PPP) ^a	General government revenue ^b	Health expenditure					Social security enrollment ^f
			Total ^c			Out of pocket ^d	Social security ^e	
			% of GDP	Total	% of GE			
EU-15	36,670	43.5	10.5	3,751	16.6	14.3	39.0	1.4
ECA Aging	18,232	36.9	7.0	1,160	11.0	33.0	40.1	2.1
ECA Young	8,786	32.5	5.9	681	11.1	32.4	35.9	3.0

Notes: GDP = Gross Domestic Product. PPP = Purchasing Power Parity. GE = Government Expenditures. ^a=in international \$, constant 2011 [2010]; ^b= as a percentage of GDP [2010]; ^c= as a percentage of GDP, per capita in international \$, constant 2005, [2010], and as a percentage of government expenditure; ^d= as a share of total health expenditure [2010]; ^e= as a share of total health expenditure [2010]; ^f= as the population without over the population with coverage [latest year available, 2003 - 2010].

10 Spending money wisely

It is clear that in order to most effectively meet the demands for health and long-term care from an aging population, every effort should be made to ensure this population enters old age in as healthy a state as possible. It has also been shown that technology is the most important driver of spending on health. In order to meet both these challenges, a three-pronged approach to cost containment is required to address supply and demand issues through: (i) reorienting health benefits packages to primary and secondary prevention to reduce health and care needs; (ii) implementing prioritization systems to assess value for money; (iii) using purchasing power to deliver better health outcomes.

Prevention is better than cure

Strategies to both avoid diseases developing (primary prevention) and delaying progression and complications if developed (secondary prevention) are a worthwhile investment to contain health and long term care costs of aging populations. In the U.S.A., for each 10 percent increase in spending on local public health interventions, an economic evaluation found a drop in deaths of 3.2 percent for cardiovascular disease, 1.4 percent for diabetes and 1.1 percent for cancer (Mays and Smith, 2011). A model looking at the cost impact of improved primary and secondary prevention for seven chronic diseases in the US predicted USD 218 billion would be averted in direct treatment costs by 2023, USD 76 billion of this on cardiovascular disease alone. This impact was found to be even greater in low-income communities (DeVol and Bedroussian, 2007).

This forward-looking approach does not always receive adequate investment in ECA. A key element of the cardiovascular revolution has been primary and secondary prevention through decreasing tobacco use and managing risk factors. Yet, as shown earlier, many people in ECA countries are less likely to be adequately treated for high blood pressure and cholesterol than their EU-15 counterparts. In another example, older people are advised to have an annual influenza vaccination as they are more at risk of developing complications than younger people. Yet the population coverage of this vaccine is extremely low in ECA, despite evidence showing that the vaccination strategy is more cost effective compared to the treatment of complications of influenza (Peasaha et al., 2013).

Implementing tobacco control policies, which receive strong popular support in ECA, will go a long way towards mitigating the effects of an aging population. Studies have found the ECA population to be aware of both the health and financial implications of smoking, and indeed double the proportion of people living in ECA countries complain about smoky environments compared to EU-15 countries (Smith and Nguyen, 2013). Given so many people are aware of the health consequences of smoking and are trying to quit, it is not surprising that there is significant support from the population in ECA (particularly from women) for tobacco control policies. Several ECA countries, notably Turkey and the Russian Federation, have harnessed this public support to implement comprehensive tobacco control policies and are now reaping the rewards in terms of their population health. Successful tobacco control policies require

strong political commitment across multiple sectors, but are supported by compelling evidence.

Removing copayments on risk-reducing medications for cardiovascular disease makes economic sense. While blood pressure and cholesterol lowering medications are part of outpatient drug benefit packages in many ECA countries, they often require a co-payment. This is a false economy as it has been shown that out of pocket payments, no matter how small the cost, reduces adherence to medication regimes (Sidorenko and Zaidi, 2013). For example, in Moldova, 50 percent of survey respondents only took antihypertensive medication “when needed” (rather than the daily regime required for effective treatment) and 5 percent only “when affordable” (Roberts et al., 2012). This increases the risk of complications like heart attack and stroke and essentially pushes the costs of these diseases to more expensive levels of the health system (Baiker and Goldman, 2011). Moreover, maintenance of health status and functioning in the elderly depend on early and continuous treatment of chronic diseases. In light of this, it is considered one of the “best buys” in health to completely subsidize hypertension and cholesterol medication (Gaziano et al., 2006; Jha et al., 2012, World Health Organization 2011a).

Preventive programs should be targeted to high-risk and hard-to-reach groups. Earlier sections have described the inequalities in life expectancy and healthy life expectancy prevalent in ECA and the need to address these in order to converge with the EU-15. Much of this inequality can be explained by the concentration of risky health behaviors such as smoking and heavy alcohol use in lower socioeconomic groups, which then increases the risk of cardiovascular and other diseases. Evidence from OECD countries shows that population-level preventive programs tend to be taken up most by those from higher socioeconomic groups, which can leave the burden in lower socioeconomic groups relatively untouched (Capewell and Graham 2010; Wallach-Kildemoes et al., 2013). Preventive programs in ECA should make every effort to seek out and engage those from high-risk and hard-to-reach groups, who have the most to benefit from disease prevention.

Criticisms of a preventive approach do not take a societal viewpoint. There has been criticism of the cost-effectiveness of preventive approaches, with reviews finding a wide range of costs per year of healthier life gained (Cohen et al., 2008). Yet these critiques often consider only health benefits and do not take a societal approach, with the reduced care needs, longer labor force participation, intergenerational transfers and higher social capital that is the potential of a healthy elderly population in ECA.

Prioritizing health for all

Without mechanisms to explicitly assess the budget impact and associated opportunity costs of publicly funded health technologies, pressure from clinicians, patients and decision-makers often combine to push benefits packages towards more expensive technologies. Over time, this lack of cost containment mechanisms in the face of growing demands, not least from an aging population, drives up health spending. For example, public expenditure on pharmaceuticals in Serbia increased by 13 percent over 2012-2013, with negative GDP growth in 2012 of -1.7 percent (World Development Indicators).

This spending does not necessarily translate into better health outcomes. Many new technologies do not offer substantially higher benefits over existing ones, particularly for pharmaceuticals where fewer and fewer revolutionary drugs are coming onto the market. Moreover, the opportunity costs – the value of the alternatives not chosen – are high. With more expensive technologies eating up the available budget, cheaper (but still effective) medications are often subject to co-payments or rationed in practice through reduced availability in the public sector. These financial barriers disproportionately affect the poor and can worsen inequalities.

To maximize the health gain available from a fixed health budget and reduce inequalities, many countries have introduced prioritization systems that transparently assess the value for money of new technologies. Many OECD countries have established dedicated units or agencies to set priorities for publicly funded healthcare (Kanavos et al., 2010). This is known as health technology assessment (HTA): a systematic and transparent appraisal and deliberation process that uses criteria such as efficacy, cost-effectiveness, and overall fiscal space to make decisions on the public reimbursement of medical technologies, devices and procedures (see Box 10 for an example). HTA can be extremely effective, particularly when combined with strategic purchasing mechanisms (see below). New Zealand spent 636 million USD in 2012 on drugs, a third of the estimated 1912 million USD that it would have spent without the explicit prioritization, negotiation and procurement strategies used by its pharmaceutical management agency PHARMAC (PHARMAC, 2013).

Box 10 *Counting the cost of Alzheimer's disease*

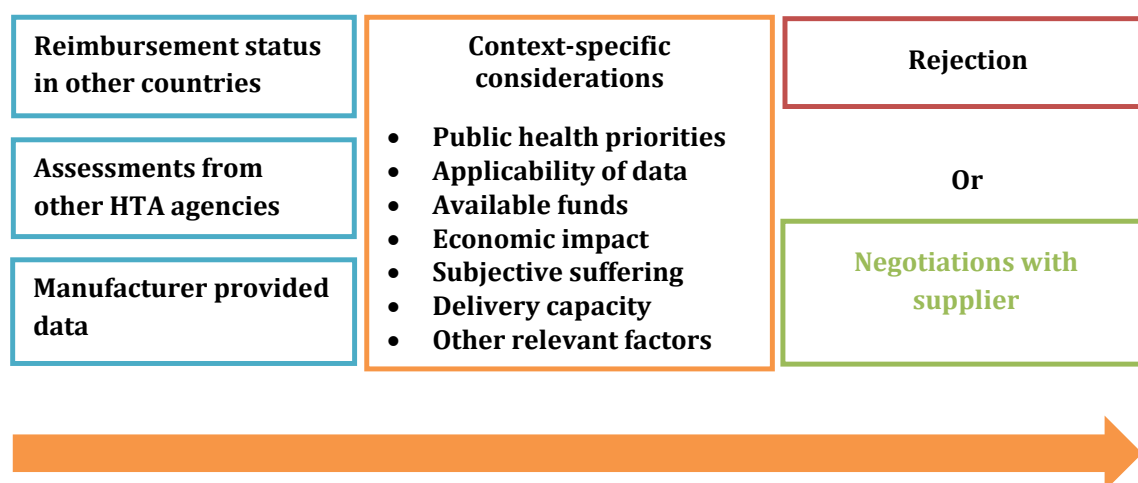
Alzheimer's disease is the commonest type of dementia, leading to a large burden of formal and informal care. In 1997, a new class of drug – anticholinesterases – was introduced that could delay cognitive deterioration in some patients for up to 12 months. These drugs cost around USD 4 per day and around 500,000 people in the UK have Alzheimer's disease, with the prevalence of Alzheimer's disease predicted to rise as for other aging countries. If each existing patient was started on an anticholinesterase drug for one year, the budget impact for the National Health Service would be USD 730 million.

Difficulties in estimating the cost-effectiveness of treating Alzheimer's disease include how to assess improvement in quality of life and how to value carers' time (Geldmacher, 2008). In 2001, the English HTA agency NICE (the National Institute for Health and Care Excellence) recommended these drugs for use in mild to moderate Alzheimer's disease. In 2006, however, this guidance was modified to restrict use in moderate to severe disease due to differing cost-effectiveness results in these patient subgroups.

In 2011, the NICE guidance was reviewed in light of evidence from further clinical trials and economic evaluations of treating the disease throughout its course. Patients with mild to moderate disease, rather than moderate to severe, now have access to the anticholinesterase drugs, funded by the National Health Service.

While many ECA countries need to develop capacity in HTA, interim methods can be used to undertake evidence-based prioritization..... Undertaking full HTAs is a considerable undertaking, and current capacity is low in many ECA countries. In the short- to medium-term, ECA countries can use interim methods to make evidence-based decisions that lay the foundation for more robust priority setting (Figure 28).

FIGURE 28 Example of an interim system to support decisions on inclusion of a new health technology into a health benefits package



Source: Modified from Seiter, A (2014). How can countries define and manage a pharmaceutical benefit component under universal health coverage. HNP Challenges and Solutions Brief Series. Washington (D.C.): The World Bank.

...such as *de facto* HTA....For example, Serbia and Romania have used a rapid HTA method to assess the cost-effectiveness of their national drug formularies (see Box 11) (Lopert et al. 2013). This ‘de facto’ HTA is based on the rationale that if a high-income country judges that a particular health technology is not acceptably cost-effective, it is very unlikely to be cost-effective in a middle- and low-income setting (Moran 2010). Using this method, more than 30 of the top 50 medicines by expenditure on the Romanian formulary were considered unlikely to be cost-effective (Lopert et al., 2013). Based on a similar analysis, Serbia renegotiated prices on a range of commonly used medications, achieving savings of over 53 million dollars.

...or HTA ‘scorecards’. An alternative method is a rapid assessment ‘scorecard’ that draws on available data and decisions from other countries, but also considers local factors such as public health priority, feasibility of delivery, and capacity to contain inappropriate use (Seiter, 2010). Until recently, Romania used such a scorecard that awarded points to new technologies based on defined criteria, including recommendations of the English and French HTA agencies, reimbursement status in other E.U. countries, relative efficacy and safety, and outcome measures relevant to patients (e.g. pain or functioning). Priorities for funding were then based on the overall scores (Lopert et al., 2013)

Box 11 *What is 'de facto' HTA?*

The 'de facto' HTA approach is a method of rapidly determining whether a healthcare technology represents value for money for one country, by referring to the results of an HTA performed in another. Its application requires the selection of a reference country for which details of prices, HTA processes and outcomes are known, and assumes a fixed relationship between cost-effectiveness and per capita GDP as a proxy for affordability. Using this method, a technology may be considered potentially cost effective if: (i) used in a manner consistent with the conditions under which it is considered cost effective in the reference country and (ii) where the price of the technology is no higher than the reference country price adjusted for relative per capita GDP.

This approach does not capture the influence of local factors that may affect the cost effectiveness and budget impact of a new therapy. It is, however, a useful 'rule of thumb' for informing price negotiations in the absence of local, evidence-based considerations of value for money.

Note: See Lopert et al. (2013) for an application of the method.

Source: Lopert, R. 2014. Republic of Serbia. Technical Assistance: Review of Pharmaceutical Reimbursement Formulary. Washington, D.C.: The World Bank.

Using interim methods in this way, ECA countries can move towards more robust priority setting to contain technology costs in the long term while ensuring that funding decisions take into account the health needs of an aging population over the short to medium term. Developing the capacity for robust priority setting will take time, but ECA countries should make every effort to establish systems for prioritization now. Such decisions can be politically difficult in any context (Seiter, 2010) and public support will need to be gradually built for priority setting ahead of hard choices.

The power of purchasing

While prioritizing technologies and services to be provided with public funding are one way to maintain downward pressure on health spending in the face of an aging population, another is to use the considerable power of a national purchaser to provide high value care better adapted to the needs of elderly people.

ECA countries can harness their purchasing power to ensure value for money for new technologies. The process of deciding whether to reimburse a health technology (usually medications or devices) can be used as an opportunity to negotiate with the manufacturer or wholesaler to obtain prices that are affordable in the local context.

Weak purchasing power contributes to the low use of "best-buys" for healthy aging in many ECA countries. Weak procurement can lead to disproportionately high prices for publicly reimbursed health technologies in ECA. In Serbia, for example, an analysis found that the cost of 23 out of 50 drugs on the essential medicines list was more than 15 percent higher than the cost of these same drugs in the U.K. or New Zealand (Lopert, 2014). Indeed, for two common statins (cholesterol-lowering medications vital in the prevention and treatment of cardiovascular disease), Serbia was paying ten times the price in New Zealand. These high prices influence provision, with

2012 data showing the use of statins in Serbia to be just 5 - 65 percent that in OECD countries (Lopert, 2014). This underuse is likely to be concentrated in the poor who are least able to afford co-payments, but most at risk of cardiovascular disease.

A range of mechanisms can be used to manage countries can better harness their purchasing power for health technologies. For example, New Zealand uses sole-source tendering where the winning contractor receives a monopoly on supply of the drug for a fixed term in return for favorable pricing. The introduction of high-cost drugs into health benefits packages can be managed through risk-sharing arrangements such as price-volume agreements where the manufacturer provides the drug for free if demand exceeds an agreed number of patients or outcome-based schemes where purchasers only pay for those patients that respond to the drug. While the range of mechanisms varies from country to country, they have the effect of bringing both parties together to negotiate for the best solution in that context. Capacity to undertake these purchasing strategies will take time to develop, however the investment into training is often dwarfed by moderation of spending. For example, in 2013 Serbia saved over 40 million USD in one round of price negotiations on off-patient medications.

When purchasing provider care for an aging population, activity-based payments may not be the optimal model. Many ECA countries are moving towards activity-based payment mechanisms to purchase care from providers. While this can promote efficiency gains over line-item budgets, it can also lead to increased volume of care and fragmented service provision, with little attention to the patient after discharge. As discussed in the next section, this prevents proactive management of the disease burden in elderly patients, where the aim should be the avoidance of acute episodes and hospital admissions as far as possible.

In order to improve chronic disease management and integration of care, purchasers in OECD countries are trialing the use of 'bundled payments'. While the advent of bundled payments dates back to the mid 1980s, the growing demand for coordinated services to manage aging populations with multiple chronic conditions has spurred an increased interest in this payment mechanism (Burns and Baillit, 2012). Bundled payments use a pre-determined fixed amount to cover a set of services for a defined time period, creating the incentive for providers to minimize unnecessary costs. When they cover costs across care settings, this incentive should lead to better care coordination and management across providers in order to deliver care more efficiently. Most experience with bundled payments comes from inpatient procedures such as hip replacement operations, where outpatient services have included physiotherapy to aid post-surgery recovery (see Box 12). Newer models, however, have trialed the care of chronic conditions, such as diabetes, under bundled payments to primary and secondary care providers. Even more innovative approaches have purchased care for defined population groups, covering services from different sectors.

Box 12 *Types of bundled payments*

Currently, there are three types of bundled payments.

The first type covers acute care as well as relevant pre- and post-acute services. For example, the Geisinger Health System's 'Proven Care(SM)' initiative for heart bypass surgery provides a flat rate bundle covering preoperative care, all hospital and professional fees, routine post-discharge care, and management of any related complications. Similar bundled payments have been tested in the U.S.A. for other procedures such as cataract and orthopedic surgery (McCarthy et al. 2009, Hussey et al. 2012).

The second type of bundled payment covers care for chronic conditions in primary care. The Netherlands implemented a bundled payment system for diabetes, chronic obstructive pulmonary disease and vascular risk management in 2010. Under this system, a single payment is made to a "care group"- a new legal entity consisting of different providers – to cover all aspects of primary care for patients with these chronic diseases. Care groups can either deliver the care themselves or subcontract with other providers including specialists, dietitians and laboratories (de Bakker et al. 2012). As a result primary and secondary care providers have incentives to provide well-coordinated, high quality care, which in turn prevents expensive inpatient admissions and stays for avoidable complications.

The third type of bundled payment covers care for specific populations. For example, in 1996 a healthcare insurer in the U.S.A. implemented a "case rate" for mental health services. The case rate is a single payment to providers for all outpatient mental health services over a one-year period following a patient referral for treatment. This includes services provided by psychiatrists, psychologists and social workers (Hussey et al. 2012).

The evidence on the effect of bundled payments on quality and coordination of care is still emerging. While evaluations of bundled payments tend to show reductions in spending and utilization, there are mixed results for effects on quality of care (Hussey et al. 2012). For example, a preliminary evaluation of the Dutch bundled payment system for diabetes care demonstrated better collaboration, adherence to protocols and transparency. However, it also noted some negative consequences including large price variations and a high administrative burden (de Bakker et al. 2012). As a result, while the concept of bundled payments appears encouraging in terms of being able to reorient incentives towards sustainable ways of delivering care to elderly populations, more evidence is needed to shed light on the specific design features that will allow for clear reductions in costs and utilization, without sacrificing quality.

Whatever payment mechanism is used, new models of care are required to deliver care sustainably to aging populations. The final section examines some of the potential solutions to provide services that better meet the needs of elderly people.

12 Delivering care sustainably

ECA's health systems have been slower to respond to changing disease burdens.

While there will always be a need for facilities that can provide intensive treatment to those who are sickest, health services around the world are continuously adapting to changing disease burdens. Compared to other regions, ECA's health systems have often been less dynamic in responding to these challenges. Yet this inertia reinforces a system of service delivery that was appropriate for a young, largely fit population – and not rapidly aging populations that require a very different model of care. Political will is imperative to articulate this vision and drive the necessary integration and investment for the delivery of sustainable, high quality care for older people.

A hospital-dominated health sector is not the best model of care for aging populations.

Surveys show that older people can account for at least half of bed days in hospitals (McKee and Healy, 2002). However, many of the drivers of these high rates of hospitalization can be explained by challenges in independent living – for example difficulty in personal care or mobility. These types of challenges, while very real, are not best managed in the hospital setting. Many ECA countries have made considerable progress in reducing hospital overcapacity. Yet a culture of hospital care and overreliance on specialized care persists, with inpatient care actually increasing in some ECA countries over the last decade (Table 2). It is increasingly clear that the legacy of specialty hospital-orientated health systems of many ECA countries restricts government from making the strategic changes and investments needed to adapt health and social services to population needs (World Bank 2013).

TABLE 2 Hospital discharges per 100 persons, selected EU countries

Countries	1990	2000	2005	2011
Armenia	13.94	5.98	7.89	10.62
Bulgaria	19.02	15.44	20.97	26.69
Croatia	15.35	15.73	16.6	17.03
Poland	12.06	15.7	14.3	16.15
Romania	20.13	21.22	20.31	21.61
Russian Federation	22.77	21.95	22.2	21.95
EU-15	16.64	17.53	16.78	16.75
EU-13	16.7	18.57	18.52	19.24

Source: Health for All database, accessed 2 July 2014

Moreover, elderly patients are often best managed in a primary care or outpatient setting, with the aim to avoid admission through proactive management outside of hospital. A study in Scotland of the growing number of emergency admissions among elderly people concluded that the main contributory factor was not a lack of informal care as commonly perceived, but inappropriate reliance on 'crisis management' because of poorly coordinated preventive care outside hospital (Kendrick and Conway 2006)

(see Box 13). A study in Bulgaria found that of all hospital admissions, 20 percent could have been treated on an outpatient basis, with hospitals in fact providing “de facto” primary care (see Box 14) (World Bank 2013).

Box 13 Primary care ‘virtual wards’ to reduce hospital admissions

Community virtual wards are used in England to proactively identify those at high risk of emergency admissions using a predictive risk tool and manage their care across health and social care. Hospital data is entered into a predictive model to provide each primary care practice with a list of its patients who are most at risk of an emergency hospital admission in the next twelve months. These patients are admitted into a ‘virtual ward’ where they receive proactive case management. Each month, a multidisciplinary team – including representatives from the health, social and voluntary sectors – assesses the complex needs of these patients in order to construct a case management plan that will reduce the likelihood of a crisis. Once the condition of a patient has stabilized, they are ‘discharged’ back to normal care.

Source: Sonola, L., V. Thiel, N. Goodwin and D.L. Kodner. 2013. South Devon and Torbay: Proactive case management using the community virtual ward and the Devon predictive model. London: The King’s Fund

Moving care out of hospitals is of course dependent on coordinated care in other settings. Prolonged hospital stays for elderly patients often arise because of a lack of capacity in home or community-based services or insufficient coordination between health and social services (see Box 15). Provision of rehabilitation services such as physiotherapy, occupational therapy, and home-based services can all hasten discharge and decrease readmission rates. The disconnect between health and social sectors often prevents the implementation of such proactive, cost saving measures, with the result being unnecessary and expensive hospital stays.

Box 14 Moving care out of the hospital in Bulgaria

In Bulgaria, hospital stays are allocated to one of 308 Clinical Care Pathway (CCP) that triggers a flat rate payment to the hospital for a complete stay. The list of 308 CCPs was reviewed by a team of international experts who estimated that 49 of them correspond to cases usually amenable to out-patient care according to international good practices. In other words, in a health system with a well-functioning, properly-staffed primary health care system, effective emergency care and a substantial network of community care plus a balanced payment system with the right incentives, between 60 and 100 percent of these episodes could be managed without an overnight stay. An analysis was then undertaken of hospital stays reported to the National Health Insurance Fund between July 2011 and June 2012, amounting to 1.5 million records from 275 acute and long term care hospitals. The results showed that one in five hospital stays could have been managed outside of hospital. At the end of the spectrum, in 20 percent of hospitals, more than a third of stays were amenable to outpatient care. This suggests that those facilities play a substantive role in the provision of “de facto primary health care” – but in the form of in-patient stays which is sub-optimal.

Source: Couffinhal, A (2013). Health Sector Reform in the Context of an Aging Population. In: “Mitigating the Economic Impact of an Aging Population: Options for Bulgaria.” Washington, D.C.: The World Bank. pp 37-48.

In order to deliver care sustainably to an aging population, primary care must become the mainstay of ECA healthcare services. The primary care team (made up of different health professionals including doctors, nurses, community pharmacists and example, primary care management of cardiovascular disease in ECA countries needs to shift from ‘heart checkup’ to a more formal monitoring of cardiovascular risk factors. Strong preventive care can prevent chronic diseases from progressing, reduce the number and frequency of acute episodes and promptly treat deteriorations when they do occur.

Box 15 *Improving discharge management in Latvia*

In 2011, people aged 65 years and over accounted for nearly one third of the spending of the Latvian health service. A scoping study was carried out to better understand how facilities and communities in Latvia manage the transition of older patients out of acute hospitals and back into the community in order to provide recommendations for a more efficient discharge process.

Facilities in different municipalities were paired in order to make comparisons between quantitative indicators of discharge effectiveness, such as hospitalization and rehospitalization rates, and average length of hospital stay for inpatients aged 65 years and over. While there were no significant pair differences in average length of stay, hospitalization and rehospitalization rates did vary significantly, particularly for those diagnoses that could be managed in primary care.

Qualitative research was then undertaken to better understand the reasons behind the disparities in discharge behavior. The results suggested that lower rates of hospitalizations and re-hospitalizations of elderly patients are associated with stronger promotion of alternatives to hospital care, more refined admission practices, better coordinated care, efficient discharge planning and higher utilization of social and medical home care services.

Source: World Bank (2013). Health Policy for Older Adults with Special Attention to Elderly Patients and Practices in Discharging Older Acute Care Patients: an Exploratory Case Study. Washington, D.C.: World Bank

Primary care providers will also act as the key care coordinator for aging patients.

Aging patients usually require multiple services from different providers and primary care providers are well positioned to act as coordinators for this myriad care. This may include navigating care pathways for several different conditions and ensuring multiple prescriptions by specialists do not cause adverse reactions. For example, a study in Denmark found 34 percent of 75 year olds were using five or more prescription medications (Barat et al. 2000). Most important, primary care providers will need to act as patient advocates, taking a holistic view of the patient’s care needs and communicating between professionals on all levels of care.

Finally, in order to cope with an aging population, health workers will need to be trained to manage the specific health needs of elderly patients. For non-specialist health workers, this includes managing multiple chronic diseases and cognitive decline in mainly ambulatory settings (Warsaw and Bragg 2014). Moreover, shifting the focus of care from hospitals to community settings will require an increase in the absolute number of primary health professionals, particularly family doctors. Several countries in ECA, such as Turkey and Georgia, have been very successful in introducing a family medicine model despite a historical focus on hospital care (Smith and Nguyen 2013). Sustained increments in the proportion of family to specialist doctors will be needed to manage the changing disease burden. Specialized geriatric training is rare in ECA and few ECA countries offer specialized geriatric outpatient or inpatient services (Sidorenko and Zaidi, 2013). The role of the geriatrician in managing the complex health needs of elderly patients, both in and out of hospital, will be essential in order to provide high quality, coordinated care across different specialties. Capacity planning in geriatrics should be part of any health workforce planning for an aging population.

13 Conclusions

Healthy aging is possible for ECA.

While countries in ECA are currently underperforming in terms of life expectancy and disability burden compared to EU-15 neighbors, effective interventions to promote healthy aging are known and achievable. Moreover, implementation now would still pay dividends in terms of reducing the burden of disease suffered by the current middle-aged population when they reach old age.

Reduction of cardiovascular disease, in particular, has allowed OECD countries to leap ahead of ECA in life years gained. Control of key risk factors, such as smoking and high blood pressure, are cheap, effective, and have been achieved by OECD and ECA countries alike. These interventions should be targeted to vulnerable groups, where the majority of excess deaths and disease occur, in order to slow further growth in inequalities and boost life expectancy gains for all.

ECA is aging from a worse starting point than other regions. This is exacerbated by the predicted increase in age-related diseases – such as cancer and dementia – in the future. Without urgent policy action, morbidity may actually expand in older ages in ECA in contrast to other regions. It is important to note that this is not directly because of aging: rather it is because societies in ECA are aging less well than elsewhere.

While aging *per se* is not inexorably linked to rising spending on health or long-term care, the “unhealthy” bulge of ECA’s current middle-aged population is likely to put pressure on public finances. These costs, however, are dwarfed by other drivers of healthcare, in particular technology. Measures to set priorities and use public funding efficiently need to be implemented now in order to control rising health spending.

Delivering healthy aging will require changes to the health system. In particular, the hospital-orientated systems of many ECA countries are not suited to the increasingly complex health and social needs of aging populations. Care provided in the community, coordinated through stronger primary care and integrated social services, will be crucial to keeping older people independent and healthy for longer.

Most of these policy solutions are familiar and well-defined, but politically challenging. Indeed, it could be said that aging simply adds a sense of urgency to a lagging reform agenda. Yet there is still time to make significant changes that will support healthy aging in ECA. Strong political leadership is imperative to articulate and drive this vision of sustainable, holistic care for older people in ECA.

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