European Commission

State of Health in the EU

Luxembourg

Country Health Profile 2017

OECD
BETTER POLICIES FOR BETTER LIVES

European Observatory on Health Systems and Policies
a partnership hosted by WHO

The Country Health Profile series

The *State of Health in the EU* profiles provide a concise and policy-relevant overview of health and health systems in the EU Member States, emphasising the particular characteristics and challenges in each country. They are designed to support the efforts of Member States in their evidence-based policy making.

The Country Health Profiles are the joint work of the OECD and the European Observatory on Health Systems and Policies, in cooperation with the European Commission. The team is grateful for the valuable comments and suggestions provided by Member States and the Health Systems and Policy Monitor network.

Contents

Data and information sources

The data and information in these Country Health Profiles are based mainly on national official statistics provided to Eurostat and the OECD, which were validated in June 2017 to ensure the highest standards of data comparability. The sources and methods underlying these data are available in the Eurostat Database and the OECD health database. Some additional data also come from the Institute for Health Metrics and Evaluation (IHME), the European Centre for Disease Prevention and Control (ECDC), the Health Behaviour in School-Aged Children (HBSC) surveys and the World Health Organization (WHO), as well as other national sources.

The calculated EU averages are weighted averages of the 28 Member States unless otherwise noted.

To download the Excel spreadsheet matching all the tables and graphs in this profile, just type the following StatLinks into your Internet browser:
http://dx.doi.org/10.1787/888933593684

Demographic and socioeconomic context in Luxembourg, 2015

		Luxembourg	EU
Demographic factors	Population size (thousands)	570	509 394
	Share of population over age 65 (%)	14.2	18.9
	Fertility rate[1]	1.5	1.6
Socioeconomic factors	GDP per capita (EUR PPP[2])	77 800	28 900
	Relative poverty rate[3] (%)	8.2	10.8
	Unemployment rate (%)	6.4	9.4

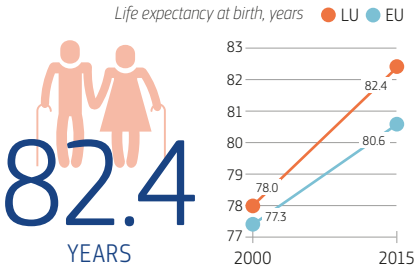
1. Number of children born per woman aged 15–49.
2. Purchasing power parity (PPP) is defined as the rate of currency conversion that equalises the purchasing power of different currencies by eliminating the differences in price levels between countries.
3. Percentage of persons living with less than 50% of median equivalised disposable income.

Source: Eurostat Database.

1 Highlights

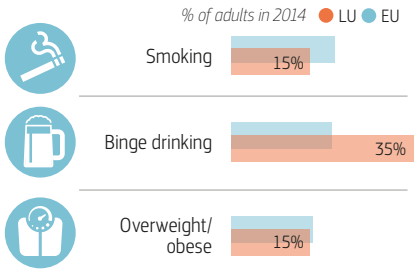
People in Luxembourg live longer than most Europeans but do not always spend the additional years after age 65 in good health. The health system has not changed substantially over the last decade. However, concerns around fiscal sustainability have triggered awareness about the efficiency of the health system and from 2010 led to reform and cost-containment policies.

Health status



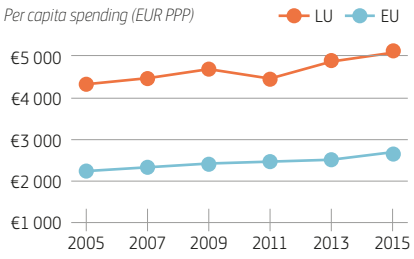
Life expectancy at birth was 82.4 years in 2015, compared to 78.0 years in 2000 and is well above the EU average. Most of the gains in life expectancy have been after the age of 65 and are the result of a reduction of deaths from cardiovascular diseases. However, these are still the leading cause of death among women, while second to cancer for men.

Risk factors



In 2014, 15% of adults in Luxembourg smoked tobacco every day, down from 23% in 2005. Overall alcohol consumption per adult has decreased but binge drinking is among the highest in the EU. Obesity rates among adults are close to the EU average, but the share of obese 15-year-olds has been on the rise since 2005.

Health system

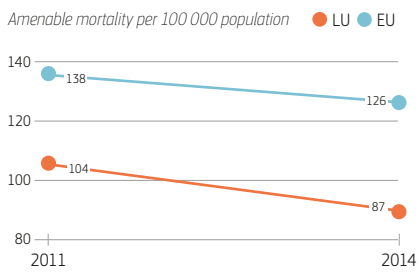


Health spending in Luxembourg is the highest among EU countries. In 2015, Luxembourg spent EUR 5 090 per head on health care, compared to the EU average of EUR 2 797. This equals 6.0% of GDP. Some 82% of health spending is publicly funded and out-of-pocket spending is one of the lowest in the EU. Health insurance covers a generous benefits package.

Health system performance

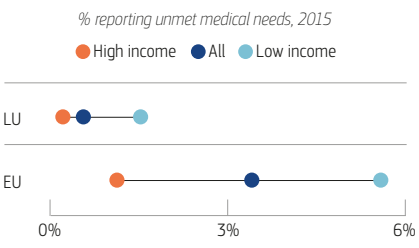
Effectiveness

Very low amenable mortality rates show that the system is effective in treating life-threatening conditions.



Access

Access to health care in Luxembourg is good, with low numbers of people reporting unmet needs for medical care and little variation between income groups.



Resilience

Despite stable funding, there are concerns over growing costs, with efforts to improve efficiency. Governance arrangements seem to respond to health challenges appropriately yet they fail to carry out systematic performance assessment.

2 Health in Luxembourg

Life expectancy at birth is rising and is nearly two years above the EU average

Life expectancy at birth in Luxembourg is among the highest in Europe, with only three other EU countries recording higher rates (Figure 1). It increased by more than four years between 2000 and 2015, to 82.4 years, which is nearly two years above the EU average. Similar to other Member States, a substantial gap persists between men and women, with men (80.0) living, on average, nearly five years less than women (84.7 years).

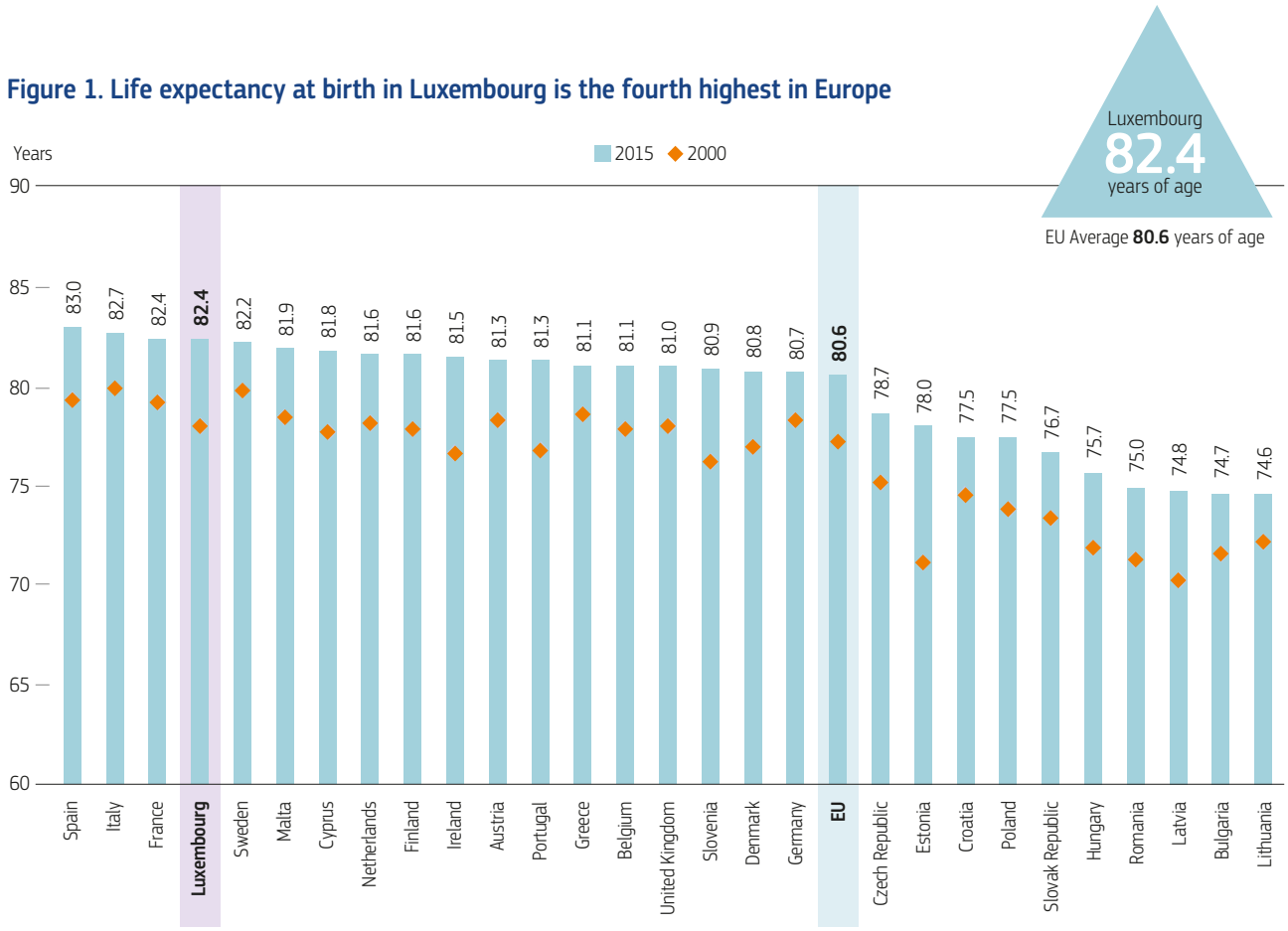
Most of the gains in life expectancy in Luxembourg since 2000 have been after the age of 65, with the life expectancy of women at age 65 reaching 21.8 years in 2015 (up from 20.1 years in 2000) and that of men reaching 18.9 years (up from 15.5 years in 2000). At age 65, men can expect to live approximately 11 years of their remaining years free of disability, while women can expect to live only nine years of their remaining years in good health.[1]

Growing mortality from pancreatic cancer and diabetes give cause for concern

Despite reductions since 2006, cardiovascular diseases are the leading cause of death among women in Luxembourg, and second to cancer for men (Figure 2). Looking at more specific causes of death, lung cancer is the main cause after ischaemic and other heart diseases, replacing stroke in the 'top three' of the ranking (Figure 3). The number of people dying from Alzheimer's and other dementias has more than doubled since 2000 and standardised death rates stood above the EU average between 2004 and 2013. This rise is caused by population ageing, better diagnosis and lack of effective treatments. The numbers of deaths caused by pancreatic cancer and by diabetes have also grown since 2005, with death rates for pancreatic cancer the highest in the EU in 2014.

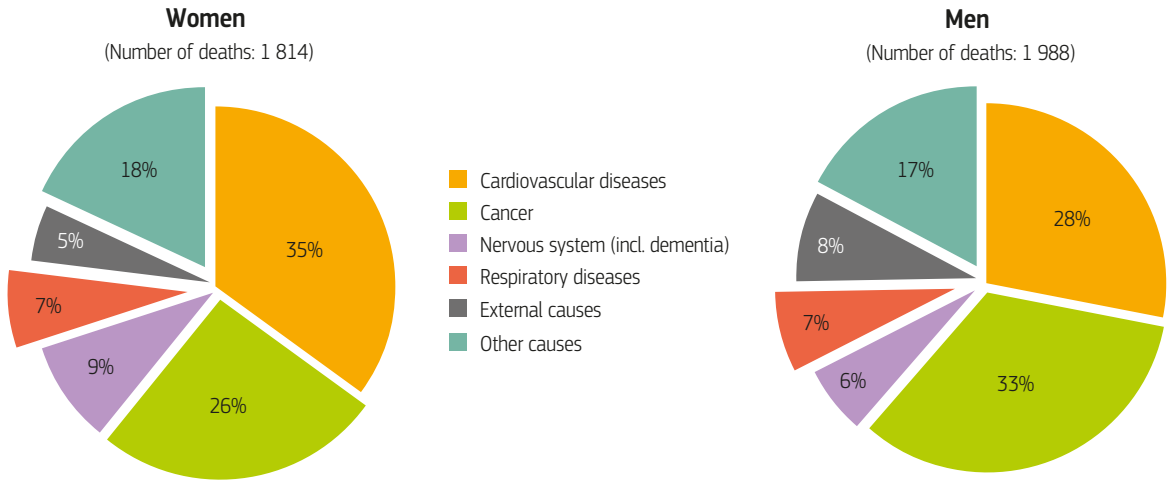
1. These are based on the indicator of 'healthy life years', which measures the number of years that people can expect to live free of disability at different ages.

Figure 1. Life expectancy at birth in Luxembourg is the fourth highest in Europe



Source: Eurostat Database.

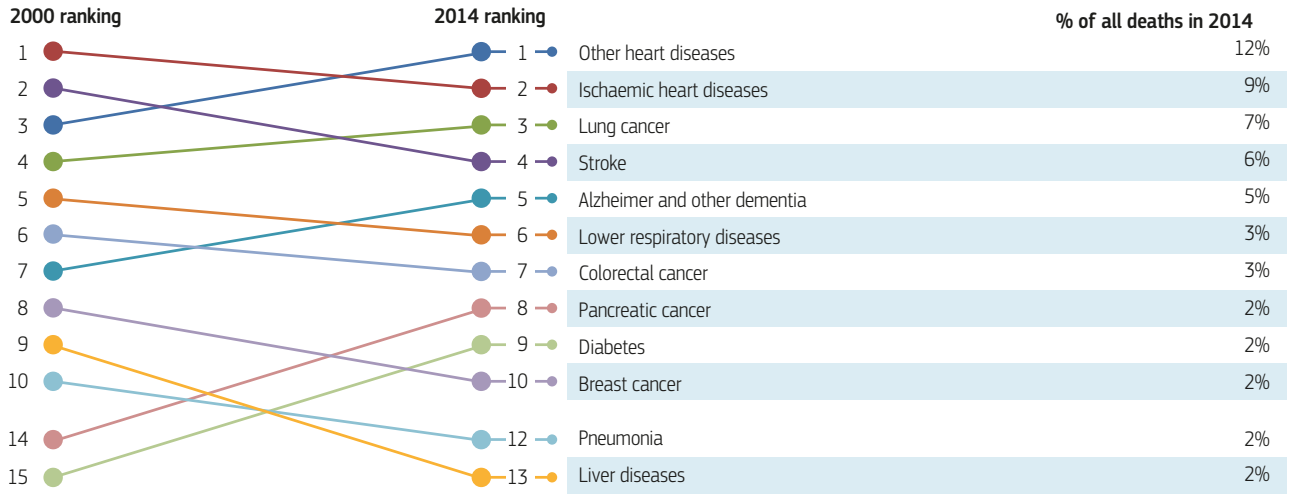
Figure 2. Cardiovascular diseases and cancer account for the majority of all deaths



Note: The data are presented by broad ICD chapter. Dementia was added to the nervous system diseases' chapter to include it with Alzheimer's disease (the main form of dementia).

Source: Eurostat Database (data refer to 2014).

Figure 3. Heart diseases remain the most common cause of death, followed by lung cancer and stroke



Source: Eurostat Database.

Many chronic conditions are among the leading contributors to poor health

Second to the burden caused by cardiovascular diseases are musculoskeletal problems (including low back and neck pain), which are an important and increasing contributor to disability-adjusted life years[2] (DALYs) (IHME, 2016). According to data from the European Health Interview Survey (EHIS), nearly one in ten people in Luxembourg lives with chronic depression, one in fourteen lives with asthma, and one in six lives with hypertension. People with the lowest level of education[3] are 15% more likely to live with hypertension, compared to people with the highest level of education.[4]

2. DALY is an indicator used to estimate the total number of years lost due to specific diseases and risk factors. One DALY equals one year of healthy life lost (IHME)..

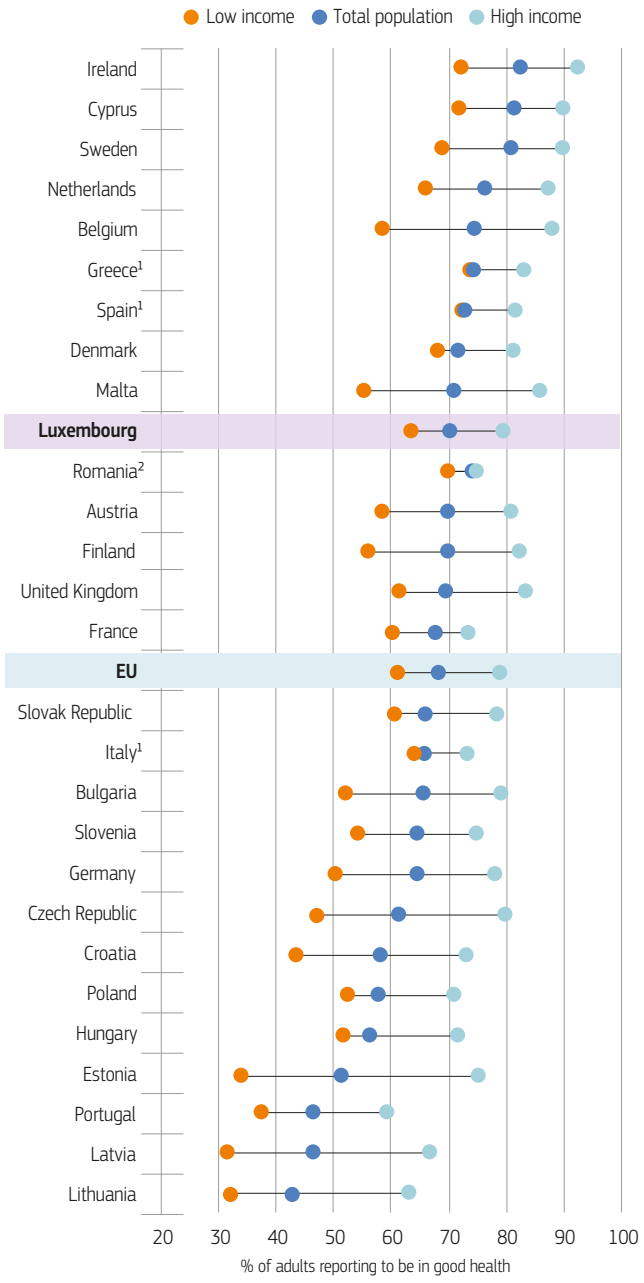
3. Lower education levels refer to people with less than primary, primary or lower secondary education (ISCED levels 0–2) while higher education levels refer to people with tertiary education (ISCED levels 5–8).

4. Inequalities by education may partially be attributed to the higher proportion of older people with lower educational levels; however, this alone does not account for all socioeconomic disparities.

Most people report being in good health, but a gap exists between income groups

Most people in Luxembourg report being in good health (70.5% in 2015), higher than the EU average (67%). However, as in other EU countries, there is a gap in self-rated health by socioeconomic status, with 80% of people in the highest income quintile reporting that they are in good health, compared with 64% of the population in the lowest income quintile (Figure 4).

Figure 4. Most people in Luxembourg report being in good health, but there are disparities by income groups



1. The shares for the total population and the low-income population are roughly the same.
2. The shares for the total population and the high-income population are roughly the same.

Source: Eurostat Database, based on EU-SILC (data refer to 2015).

3 Risk factors

Behavioural risk factors are major public health issues in Luxembourg

Data from the Institute for Health Metrics and Evaluation (IHME) estimate that slightly over 25% of the overall burden of disease in Luxembourg in 2015 (measured in terms of DALYs) could be attributed to behavioural risk factors – including smoking, alcohol use, diet, and physical inactivity, with smoking and dietary risks contributing the most (IHME, 2016).

Smoking rates and alcohol consumption continue to decline but binge drinking is a problem

The share of regular smokers among adults in Luxembourg has decreased sharply by nearly 8 percentage points since 2005, and is now among the lowest (15.3%) in the EU (2014). This decline was less pronounced for 15-year-olds, in particular for girls.

Nearly every fifth girl was a regular smoker (18%) compared to 14% at EU level in 2013–14. Because lung cancer is the third leading cause of death, and mortality from lung cancer in women is rising, Luxembourg has made further efforts to strengthen tobacco control laws (see Section 5.1).

Although alcohol consumption has been falling, it is still 1 litre above the EU average, with adults consuming 11.1 litres per capita in 2014. Moreover, much larger shares of adults (35%) as well as young adults (18–24 years, 41%) engage in binge drinking[5] compared to the EU average (20% and 31% respectively). More encouragingly, only 14% of 15-year-old girls and 15% of 15-year-old boys reported having been drunk at least twice in their life (2013–14), which is the lowest rate among EU countries for boys and second lowest for girls (see also Figure 5).

Rising rates of overweight and obesity among children may present a future challenge

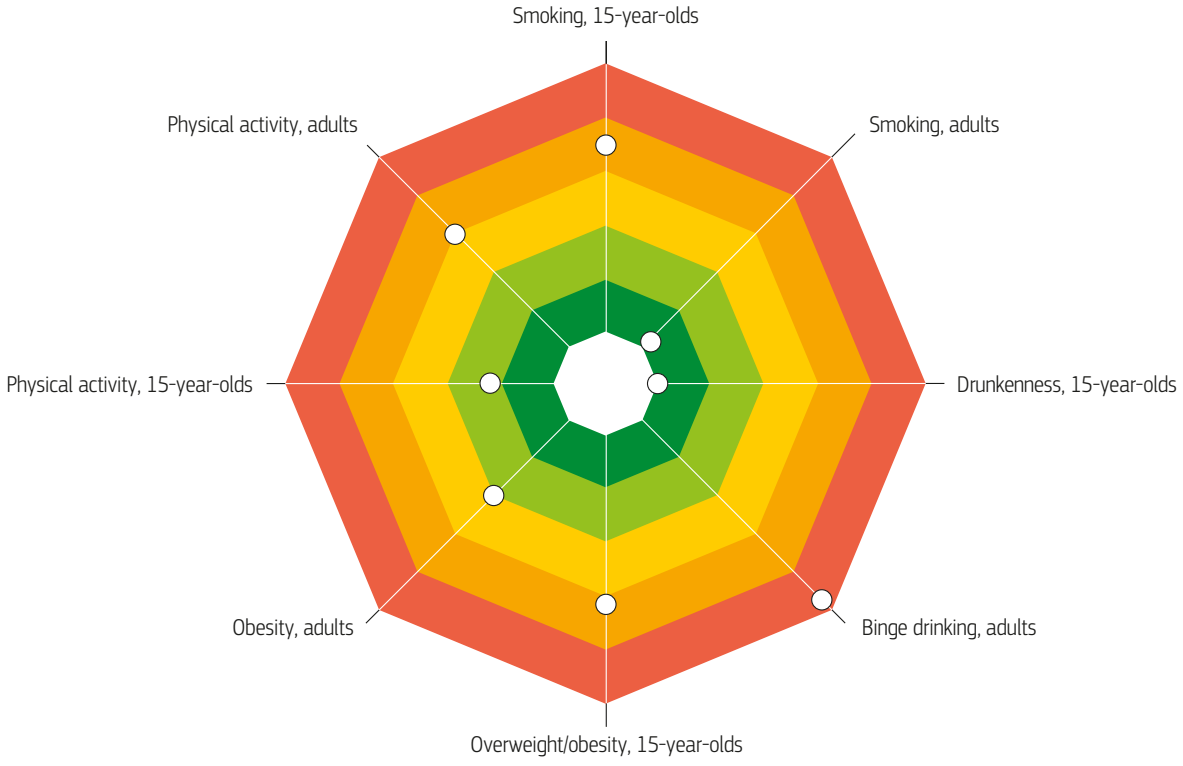
Based on self-reported data (which tend to under-estimate the true prevalence of obesity), close to one in seven adults (15%) in Luxembourg were obese in 2014, which equals the EU average.

While the prevalence of overweight and obesity amongst 15-year-olds also remains close to the EU average, it grew over 40% between 2005–06 and 2013–14. This is particularly worrying given that being overweight or obese during childhood is a strong predictor of continuing into adulthood. Responding to this challenge, ten years ago Luxembourg started to implement national strategies on nutrition, preventing and treating obesity, and promoting physical activity and healthy diet, with a particular focus on children and the young.

Many behavioural risk factors are more common among disadvantaged populations

Many behavioural risk factors in Luxembourg are much more prevalent among populations disadvantaged by income or education, with the exception of binge drinking among adults which is slightly more prevalent in more highly educated people. The prevalence of smoking is more than twice as high among those with the lowest level of education. More dramatically, the level of obesity among the population with the lowest level of education is nearly three times higher than those with the highest level of education.

Figure 5. Luxembourg shows mixed results on behavioural health risk factors



Note: The closer the dot is to the centre the better the country performs compared to other EU countries. No country is in the white 'target area' as there is room for progress in all countries in all areas. Comparable data on a comprehensive measure of physical activity among adults are not available for Luxembourg.

Source: OECD calculations based on Eurostat Database (EHIS in or around 2014), OECD Health Statistics and HBSC survey in 2013–14. (Chart design: Laboratorio MeS).

5. Binge drinking behaviour is defined as consuming six or more alcoholic beverages in a single occasion, at least once a month over the past year.

4 The health system

Two ministries share the governance of a single payer social insurance system

Luxembourg's health system is characterised by a compulsory social insurance system relying on substantial inputs from the central budget. The single-payer fund (*Caisse National de Santé* – National Health Insurance, CNS) is responsible for two schemes: health care insurance and sickness leave insurance. On top of this, CNS is also responsible for the financing of long-term care insurance. The Ministry of Social Security and the Ministry of Health are jointly responsible for health system governance. The Ministry of Health develops health policy and legislation, organises the delivery of care, authorises large hospital investments and directly co-finances public health programmes. The Ministry of Social Security is responsible for social policy and oversees public institutions funding health care, sickness leave and long-term care.

Luxembourg has by far the most expensive health system in Europe

Luxembourg's health system is expensive. Since 2012, which saw a significant increase, per capita spending has consistently been the highest in the EU and was 82% higher than the EU average in 2015 (see Figure 6). However, as a share of GDP, Luxembourg spent significantly less on health than most other EU countries (6.0% compared to 9.9% of GDP in EU), which reflects its strong economic performance.[6]

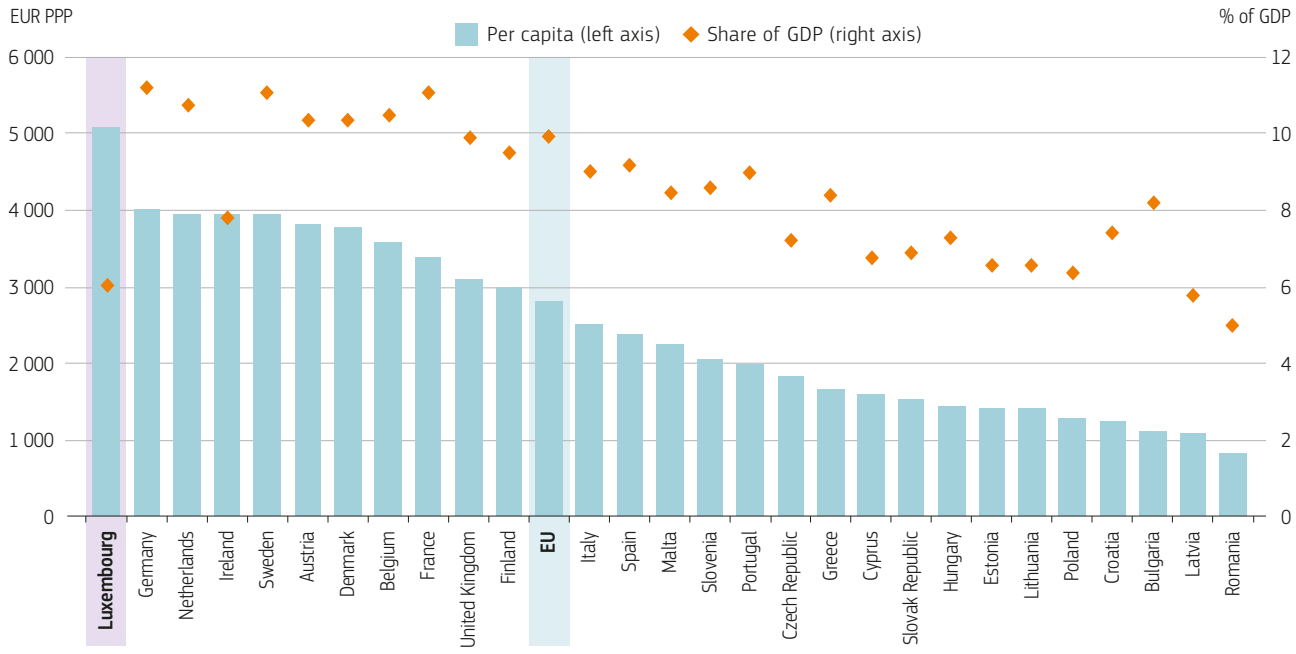
Even after decreasing continuously (if gradually) since 2008, the share of public spending on health still ranks fifth (82.0%) in the EU in 2015. Financing of health care insurance is based on a system of shared charges with 40% of contributions paid by the state and the rest being shared between the insured population and employers.

Insurance covers non-residents

In 2015, 95.2% of the resident population were covered by the compulsory health insurance scheme, with more than half of the population having complementary Voluntary Health Insurance (VHI). As nearly half of Luxembourg's workforce are cross-border employees, one third of those insured with the CNS actually live outside the country (Box 1; ADEM, 2017; IGSS, 2016). The number of uninsured seems to relate to people working for the European Commission as well as residents working abroad who are not part of the system (see Section 5.2).

6. Because a significant proportion of GDP in Luxembourg refers to profits that are exported, the Gross National Income (GNI) may be a more meaningful measure for the capacity to pay for health care. However, one should take into account that the Luxembourg health care insurance finances services for a high and increasing number of (non-resident) cross-border workers and their families (see Box 1).

Figure 6. Luxembourg has the highest level of per capita health spending in the EU



Source: OECD Health Statistics, Eurostat Database, WHO Global Health Expenditure Database (data refer to 2015).

BOX 1. MANY CNS-INSURED INDIVIDUALS ARE TREATED ABROAD

In 2014, 16% of patients insured with the CNS sought care abroad, by far the highest share in the EU (European Commission, 2015). Two groups can be distinguished. First, Luxembourg attracts a large number of non-resident cross-border workers from the French-Belgian-German border region. As they work in Luxembourg they are automatically insured with the CNS but, understandably, they seek care mostly in their country of residence. This group represents the largest share of cross-border patients. The second and much smaller group comprises Luxembourg residents who seek specialised health services that are unavailable in Luxembourg (e.g. paediatric cancer care, organ transplant). They are treated in neighbouring countries and in general the CNS is very generous in pre-authorising care abroad. In 2015, costs amounted to EUR 435 million, representing 20.7% of the CNS's total costs.

Service payment is dominated by fee-for-service

Nearly all doctors in the country are self-employed and are paid by fee-for-service, irrespective of whether they practice in hospital or in their own outpatient practice. Only physicians working in the Centre Hospitalier du Luxembourg (CHL) and two other inpatient facilities are salaried by the hospital and even then the CNS pays the hospital a fee-for-service for all the medical services they provide. Fee-for-service payments create no incentives to moderate activity or control cost and help explain the high volume of treatment and high costs. All other hospital services, like hospital stays, nursing services, laboratory analyses, drugs, etc., are financed from global budgets based on the number of patient days and other allocation formula for specific hospital services.

The workforce is heavily dependent on foreign-national nurses and on foreign-trained doctors

The number of practising doctors per population remained below the EU average in 2015 (2.9 per 1 000 versus 3.6). Luxembourg's dependence on foreign-trained doctors is explained by the fact that there is no education in medicine (nor in dentistry or pharmacy) available in the country. In addition, the physician workforce is ageing, with the average age of GPs being 50 and that of specialists 52 (in 2015), suggesting that there may be further supply issues in the years to come (IGSS, 2016).

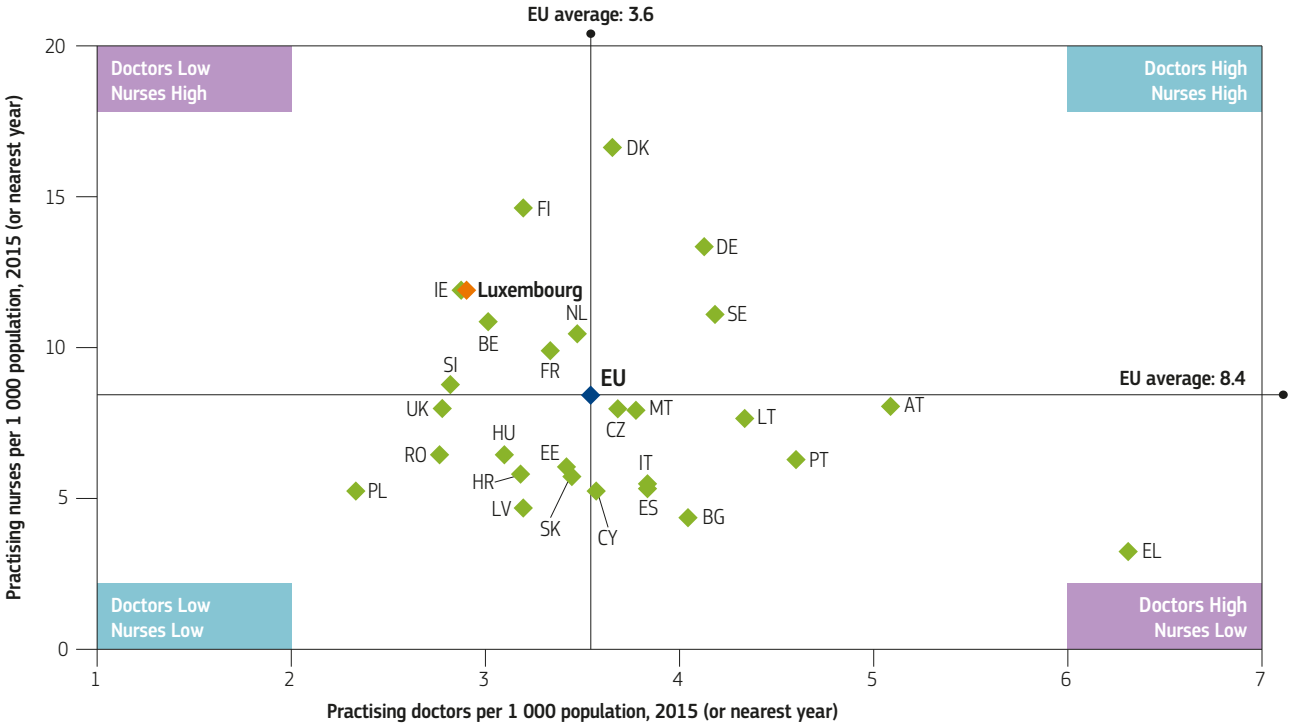
The low number of physicians contrasts with the number of nurses per population, which is one of the highest in the EU (Figure 7) and increasing. Approximately two thirds of active nurses were foreign-nationals in 2008 and nearly half were foreign-trained (Maier et al., 2014). Luxembourg attracts both student and qualified nurses, who are attracted by the higher wages and good working conditions.

Efforts are under way to strengthen primary care

Luxembourg is one of the few older Member States with a 'weak' primary care system. Patients can choose any GP but as there is no gatekeeping system they can also choose to visit any medical specialist directly. There are low outpatient contacts per person (5.8 in 2015) and weak primary care governance (e.g. lack of state inspection, supportive primary care policies). There is also relative underdevelopment of the primary care workforce with low income levels relative to specialists. More positively, the primary care system has been judged to be relatively effective and efficient in regard to coordination and comprehensiveness of care (Kringos et al., 2015; Kringos et al, 2013).

In 2010, reform legislation sought to strengthen primary care and introduced a pilot programme aimed at coordinating care, especially for chronic patients. This allowed patients to choose a GP who would act as a personal care coordinator responsible for organising their care pathway, ensuring 'joined up' medical records. The reform also envisaged the creation of special 'competence networks' bridging primary and secondary care that would focus on the needs of people with multimorbidity and with specific diseases. Unfortunately, implementation of this initiative has stagnated.

Figure 7. Luxembourg has a low physician density but high numbers of nurses



Note: In Portugal and Greece, data refer to all doctors licensed to practice, resulting in a large overestimation of the number of practising doctors (e.g. of around 30% in Portugal). In Austria and Greece, the number of nurses is underestimated as it only includes those working in hospital.

Source: Eurostat Database.

5 Performance of the health system

5.1 EFFECTIVENESS

Amenable mortality is among the best in the EU, pointing to very effective care

Luxembourg reports the second best overall total amenable mortality[7] in the EU after France, and is third when men and women are considered separately (see Figure 8). Furthermore, only 10% of all cause mortality is seen as avoidable, one of the best rates in Europe and below the EU average of 11%. This shows that overall Luxembourg's health system is very effective in treating life-threatening conditions.

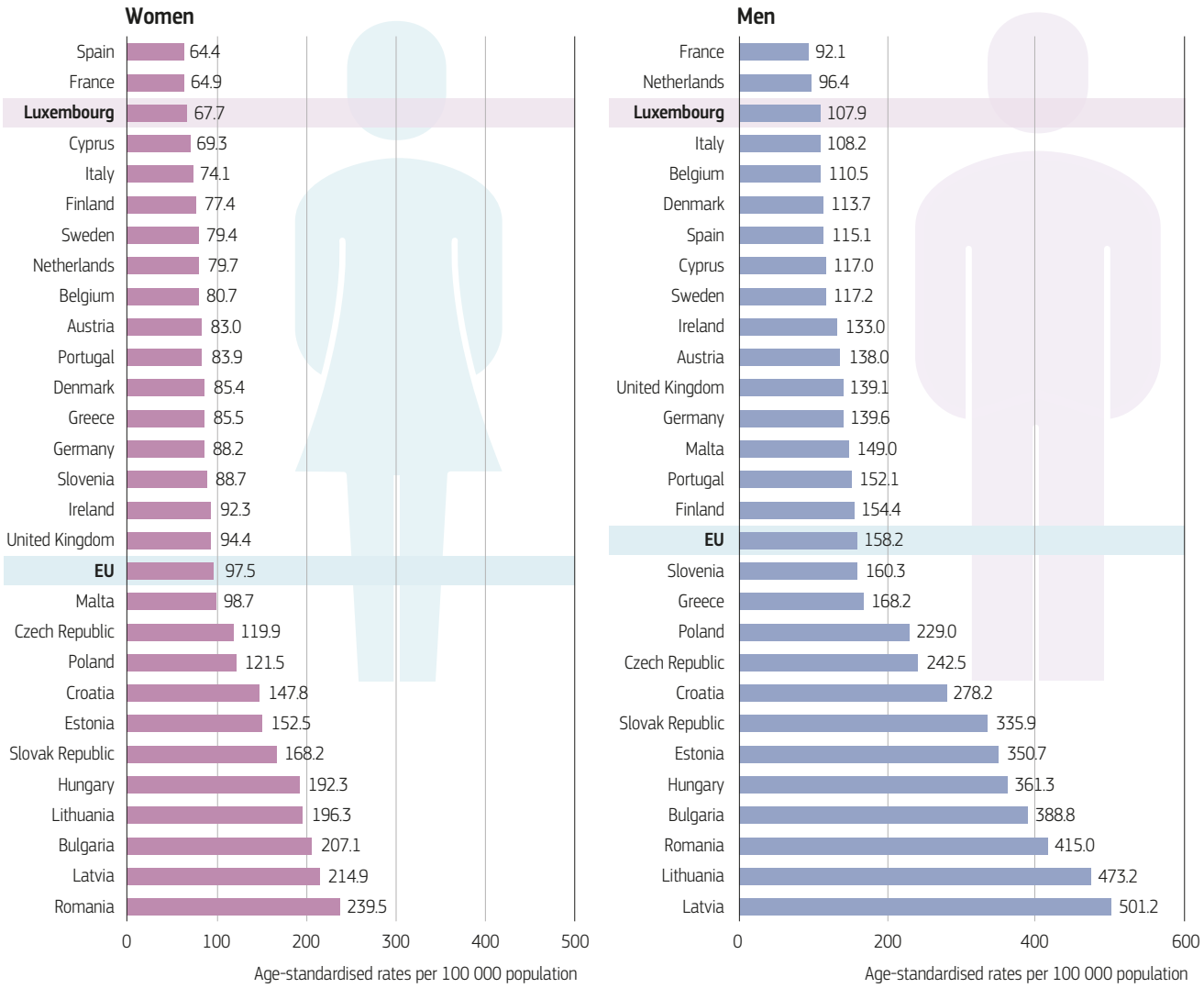
Diabetes care and HIV care need careful monitoring

Mortality due to diabetes increased substantially between 2000 and 2014 (see Section 2), in sharp contrast with a decreasing trend in all neighbouring countries and surpassing the EU average slightly in 2014. Furthermore, the number of avoidable hospital admissions for people with diabetes is higher than in much of the EU. Recognising that deaths from diabetes can typically be prevented with timely (primary) health care, Luxembourg is currently developing strategies and programmes that will target diabetes patients more effectively.

Similarly, acknowledging that HIV infection is a public health issue in Luxembourg, the government has set up public health campaigns and expanded screening centres and low-threshold testing for HIV as part of the national HIV Action Plan 2012–2015. This has increased the identification and notification of HIV cases.

7. Amenable mortality refers to premature deaths that could have been avoided through timely and effective health care.

Figure 8. Amenable mortality rates in Luxembourg are the third lowest in the EU



Source: Eurostat Database (data refer to 2014).

Tobacco control has become a spearhead of public health policy

Many deaths are related to lifestyle and risky behaviours, such as lung cancer, transport injuries and alcohol-attributed mortality, and it might be expected that these could be prevented through better public health policies. International comparisons show that the death rate in Luxembourg due to lung cancer, the most common cause of cancer death, has remained relatively stable over the last decade and was close to the EU average. However, in women, death rates increased slightly in the last decade compared to a decreasing trend in men, reflecting the long-term consequences of increased smoking among women in previous generations.

Historically, tobacco taxes have been substantially lower than in neighbouring countries and it was not until June 2017 that the government raised the legal age for purchasing tobacco products to 18. Luxembourg has also been comparatively late to transpose the EU Tobacco Products Directive and to regulate the use of e-cigarettes. Nonetheless, the government has recognised tobacco consumption as a principal cause of mortality and prohibited public advertisement (1989) and smoking in certain public places (2006), extending this to a ban on smoking in bars and cafés (2014). Luxembourg's Anti-Tobacco Plan 2016–2020 also involves public awareness campaigns and tax increases starting from 2018. The effects of these policies on lung cancer death rates remain to be seen over the coming decades.

A national alcohol strategy is being developed but excise taxes on alcohol remain low

The alcohol-related death rate in Luxembourg was slightly above the EU average in 2014, but has been decreasing over the last decade, as in most EU countries. However, excessive alcohol consumption among adults and young adults (see Section 3) remains a concern and may also be partly driven by the comparatively low excise tax on beer, wine and spirits, which makes

Luxembourg a destination for alcohol tourism. In 2012–14, the government established several small-scale programmes to fight excessive alcohol misuse among young adults through awareness-raising activities which are part of the National Action Plan 2015–2019 in the fight against drugs and related addictions. A national alcohol strategy is currently under development.

Alcohol is also the second leading cause of road accidents, with about 30% of fatal accidents in 2015 related to alcohol. The government tries to reduce the number of fatal road traffic accidents by awareness-raising campaigns in public places and a national day of road safety. In addition, a national injury surveillance system was established in 2013 to collect information on the causes and circumstances of injuries presenting at the emergency departments of all hospitals, and is being used to estimate the burden of injuries in terms of morbidity by prevention domain.

Data indicate good quality of care in both the primary and acute sectors

Overall, health care quality indicators suggest effective primary care despite the weaknesses identified (see Section 4). The vaccination coverage rate against DTP3, measles and Hepatitis B for infants stood at 99% in 2015, while vaccination coverage for influenza among people above 65 years stood at only 41%, but this is comparable to rates in neighbouring countries.

Moreover, primary care also seems to be effective in preventing unnecessary admissions: avoidable hospital admission rates for chronic obstructive pulmonary disease (COPD) and asthma are similar or below those in neighbouring countries (Figure 9). The rates might also be explained by the fact that most hospital doctors also work in outpatient practices and provide ambulatory (or outpatient) care (which may be primary or specialist). This model ensures co-operation, coordination and comprehensiveness of treatment (Kringos et al., 2013).

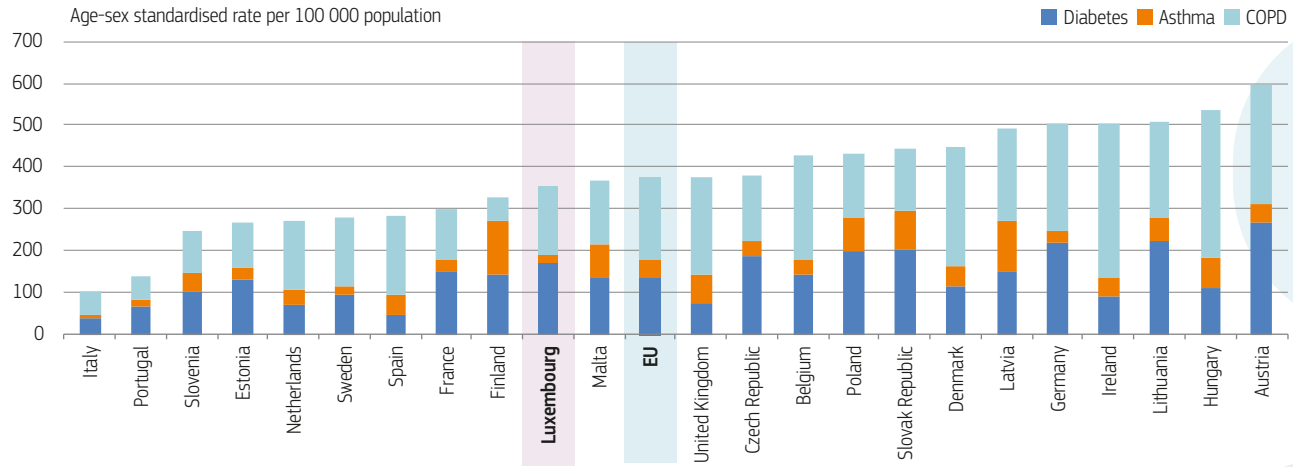
Similarly, the 30-day case fatality rate for stroke is below the average of countries for which data are available, indicating good quality treatment in the acute sector. However, there seems to be room for improvement regarding care of acute myocardial infarction (AMI), as the 30-day case fatality rate is above the average.

Integration and coordination of care for chronic patients is still lagging behind

Luxembourg's health system currently has no clinical pathways for patients with chronic conditions (e.g. diabetes and hypertension). The government has taken several steps to improve the quality and effectiveness of care for people with chronic conditions in recent years, but implementation is slow and no formal evaluation of the level of integration for this group of patients has been carried out. Nevertheless, a national electronic health record (DSP) was introduced in 2015 for patients who sign up with a care-coordinating GP as part of primary care strengthening reforms in 2010 (see Section 4). The DSP enables patients and professionals to access all relevant medical data. It is currently in a pilot phase involving patients with multimorbidity and chronic diseases before being extended to all insured people (see also Box 3 below).

Also, given the high death rate related to dementia (see Section 2), there has been increased attention to the issue and the development of an interministerial Dementia Action Plan launched in 2014, aiming at preventing and recognising early dementia as well as improving care for people living with the disease. A secondary prevention programme for people with mild cognitive impairment was set up in 2015, with the objective to slow disease progression.

Figure 9. Luxembourg has lower avoidable hospital admissions than its neighbours



Note: Rates are not adjusted by health care needs and health risk factors.

Source: OECD Health Statistics (data refer to 2015 or latest year).

5.2 ACCESSIBILITY

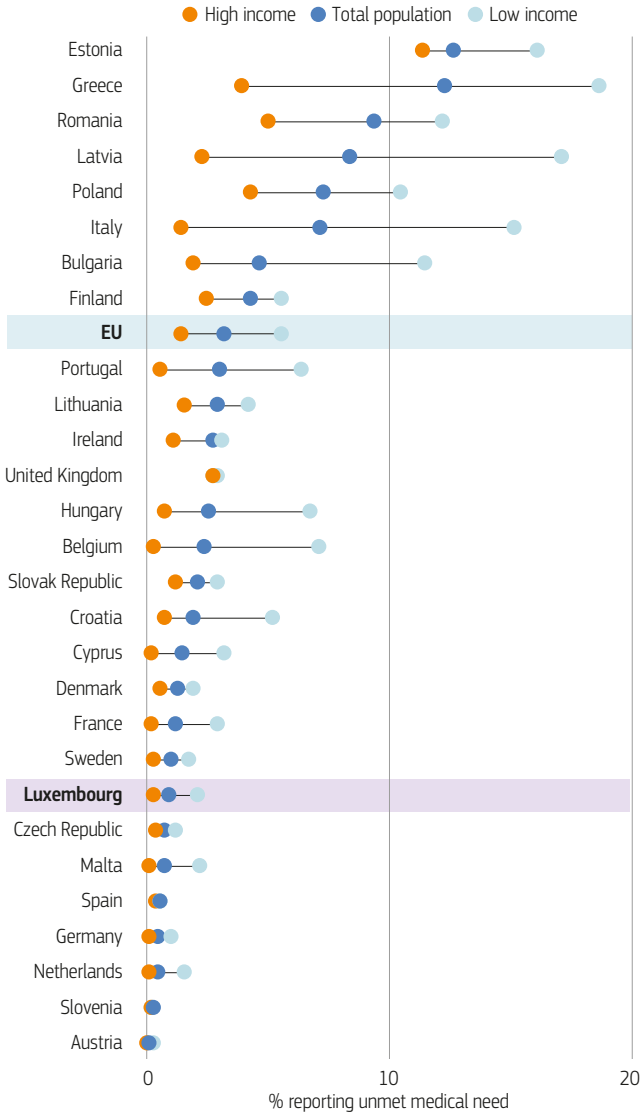
There are low levels of unmet needs for medical care despite a nominal decrease in insurance coverage

Luxembourg's residents report very low levels of unmet needs for medical care due to cost, distance or waiting times. Overall, there is little variation across income levels, with lower income groups reporting only slightly higher levels of unmet needs (Figure 10). The compulsory social health insurance coverage rate stood at 95.2% in 2015, which reflects a gradual but continuous decrease from nearly 99% in 2002. However, this is not perceived as a problem in the country, nor is it something that features on the agenda of policy-makers. It is most probably due to residents working abroad and an increase in the numbers of people working for EU institutions who are outside the national health insurance scheme (CNS). Otherwise, only people working occasionally in Luxembourg, i.e. less than three months per calendar year, are exempted from compulsory health insurance. These people may, however, choose to pay voluntary contributions to the statutory scheme.

Despite a generous benefits package, more than half of the population has complementary Voluntary Health Insurance

The compulsory health insurance entitles the insured population to a very broad benefits package, which covers more services than those in neighbouring countries (Box 2). Nonetheless, complementary VHI is purchased by around 56% of the resident population to cover expenses for cost sharing for certain types of hospital care, dental treatment, visual aids and other services. Between 2008 and 2015 health spending on VHI increased sharply and by 2015 represented 6% of total health spending (Figure 11). This was a response to the increases in cost sharing mandated in the compulsory insurance scheme as part of the cost-containment policies introduced in 2010 (see Section 5.3; Box 3).

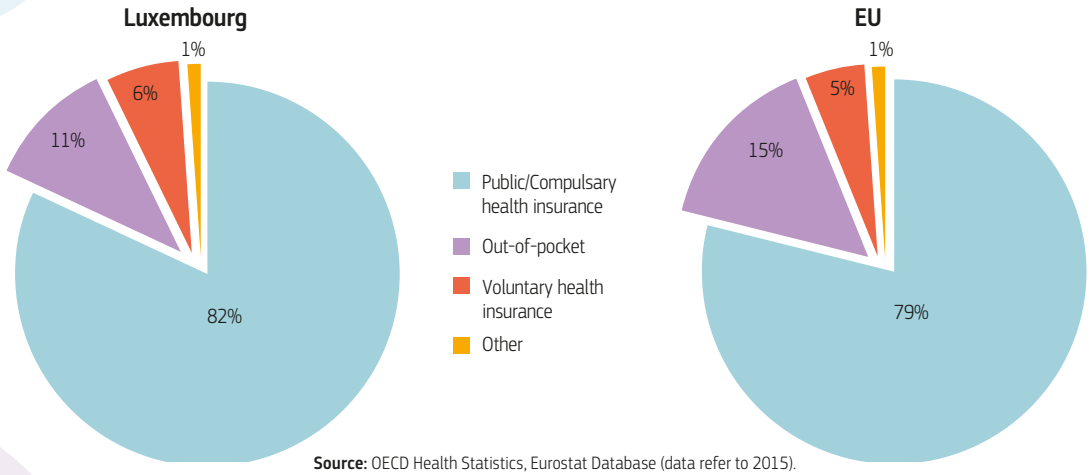
Figure 10. The low level of self-reported unmet needs also shows small variations across income groups



Note: The data refer to unmet needs for a medical examination or treatment due to costs, distance to travel or waiting times. Caution is required in comparing the data across countries as there are some variations in the survey instrument used.

Source: Eurostat Database, based on EU-SILC (data refer to 2015).

Figure 11. Despite recent rises in cost sharing, private expenditure on health is low



Source: OECD Health Statistics, Eurostat Database (data refer to 2015).

Luxembourg has the second lowest level in out-of-pocket spending but some early signs of rising inequalities

The health system is based on reimbursement: costs for outpatient health services are paid by the insured to the providers and are then reimbursed by the CNS covering 60% to 100% of total costs. Hospital treatment costs are paid directly by the CNS, with the exemption of a per diem levied on all adults (EUR 21, except for childbirth). The CNS also directly pays the costs for laboratory tests, pharmaceuticals and long-term care. If cost sharing exceeds 2.5% of annual gross income, it is covered by the CNS. Because of the generally low level of cost sharing and the important role of complementary VHI, out-of-pocket spending as a share of total expenditure decreased from 13% in 2006 to 11% in 2015. As a share of final household consumption, it is now the lowest in the EU, together with France (Figure 12).

However, this low share of out-of-pocket spending is only an average. The share of people within the lowest income quintile reporting unmet needs for medical care due to financial reasons has increased, from 0.6% to 2.0% in the same period (2006–15). Although it is still far below the EU average (4.1%), this needs to be closely monitored.

There is good availability of health services despite the reliance on specialised care in neighbouring countries

Availability of health care services seems to be very good, although many complex treatments and diagnostic procedures are routinely provided in neighbouring countries because the size of Luxembourg's population makes it inefficient to offer services domestically (see Section 4; Box 1). The share of people in the highest and lowest income quintiles reporting unmet needs for medical care due to reasons of distance or waiting times is very low, which is partly due to the good availability of services outside of the country and the coverage of medical transport costs.

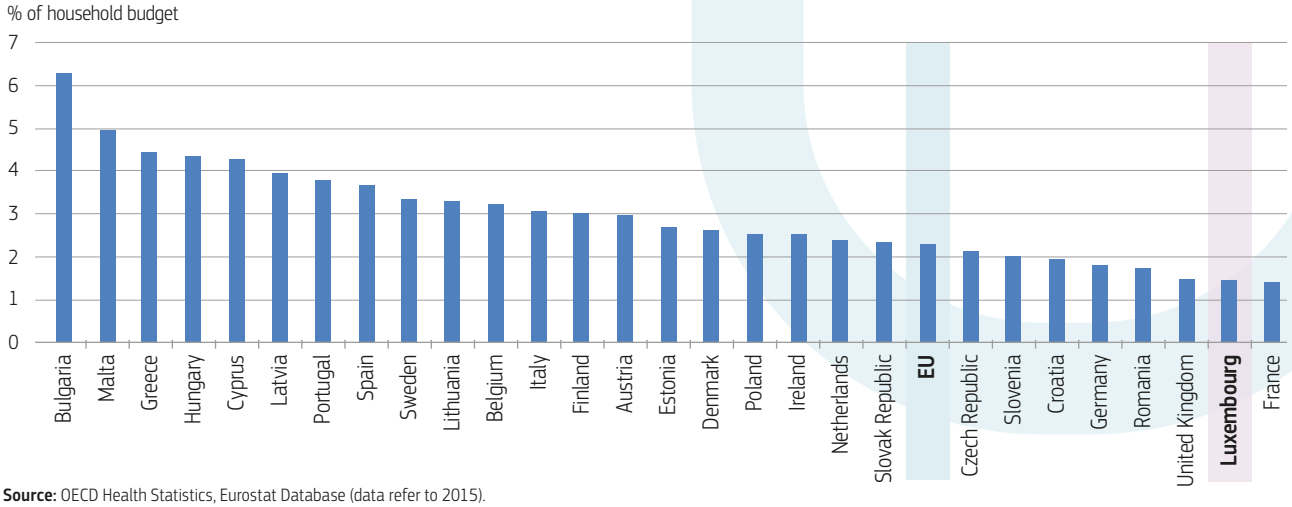
BOX 2. THE BROAD BENEFITS PACKAGE OFFERS COMPREHENSIVE SERVICES, ESPECIALLY FOR DENTAL CARE

The benefits package of compulsory insurance is very generous. It includes primary, secondary and tertiary care, laboratory tests, medical imagery, medical devices, psychiatric and geriatric functional rehabilitation, spa therapies, and patient transportation, as well as palliative care. Preventive medicine programmes cover services for specific population groups (prenatal and postnatal care, free contraceptive services for women under 25, smoking cessation, back pain treatment, etc.).

Dental care is covered for preservative treatment, extractions, orthodontic treatment, and prostheses. These services are reimbursed at an 88% cost-sharing rate after the first EUR 60 is also paid by health insurance. Preventive dental services and dental care for children are exempted from cost-sharing. Prostheses are 100% covered, unless the insured person did not consult a dentist regularly for routine preventive care. Supplements for prostheses and benefits that go beyond what is deemed useful and necessary are not covered. In 2017, the benefits package will be slightly enlarged, mainly by reimbursement of additional dental services and visual aids.

Drugs included in a positive list are reimbursed at three different rates (100%, 80% and 40%), using criteria such as severity of illness, availability of substitutes, the importance in the therapeutic process and financial burden.

Figure 12. People in Luxembourg spend the second least in terms of final household budget on medical care



Source: OECD Health Statistics, Eurostat Database (data refer to 2015).

5.3 **RESILIENCE**[8]

Luxembourg enjoys strong medium-term fiscal stability but expenditure growth needs careful monitoring

Currently, Luxembourg performs very well economically with continuous job growth, a fiscal surplus, and above EU average GDP growth. The contribution from the central budget to the CNS is legally determined at 40% of its total resources (with no budget cap). Given the resilience of public finances and the favourable labour market situation, the financial resources for health care are expected to be stable in the medium term. However, a major health reform in 2010 introduced a number of cost-containment measures to prevent shortfalls in the health insurance budget that had been projected (Box 3). Despite this, Luxembourg's economy weathered the financial crisis quite well and revenue from health insurance contributions increased more than expected. As a result, the CNS experienced a surplus throughout 2014 to 2016, so that in 2016 its reserve amounted to 23.6% of its current expenditure.

Despite a favourable economic climate, public health expenditure as a share of GDP is expected to increase in the coming decades. Moreover, public long-term care spending is projected to rise steeply from 1.6% in 2020 to 3.2% of GDP in 2060 as a consequence of the growing number of older people in need of care, faster than in many other EU countries (European Commission and Economic Policy Committee, 2015). This could pose risks to fiscal sustainability in the medium and long term. The long-term care reform to be adopted in 2018 aims to sustain the current expenditure levels and to introduce regular assessment of eligibility criteria.

Dependency on foreign health professionals could pose a problem as the workforce ages

Luxembourg relies heavily on the recruitment of nursing staff from France, Belgium and Germany. Its medical doctors are also recruited from abroad (because there is no medical school in Luxembourg) and are ageing. Although Luxembourg residents tend to come back after professional education and training abroad, this creates a strong dependency on neighbouring countries and competition for scarce health professionals.

8. Resilience refers to health systems' capacity to adapt effectively to changing environments, sudden shocks or crises.

BOX 3. THE 2010 REFORM ON COST CONTAINMENT SOUGHT TO IMPROVE EFFICIENCY AND PREVENT FINANCIAL INSTABILITY

The health reform law of 2010 aimed to improve the efficiency of the health system and contain increasing costs. Cost-containment measures focused on capping hospital expenditure by introducing global hospital budgets, substituting pharmaceuticals with less expensive alternatives and temporary freezing of service providers' tariffs. There were also steps to increase: cost-sharing rates; the contribution rate (from 5.4% to 5.6% of gross income); and state funding of Social Health Insurance (to 40%). Combined, these efforts contributed to balancing the CNS budget.

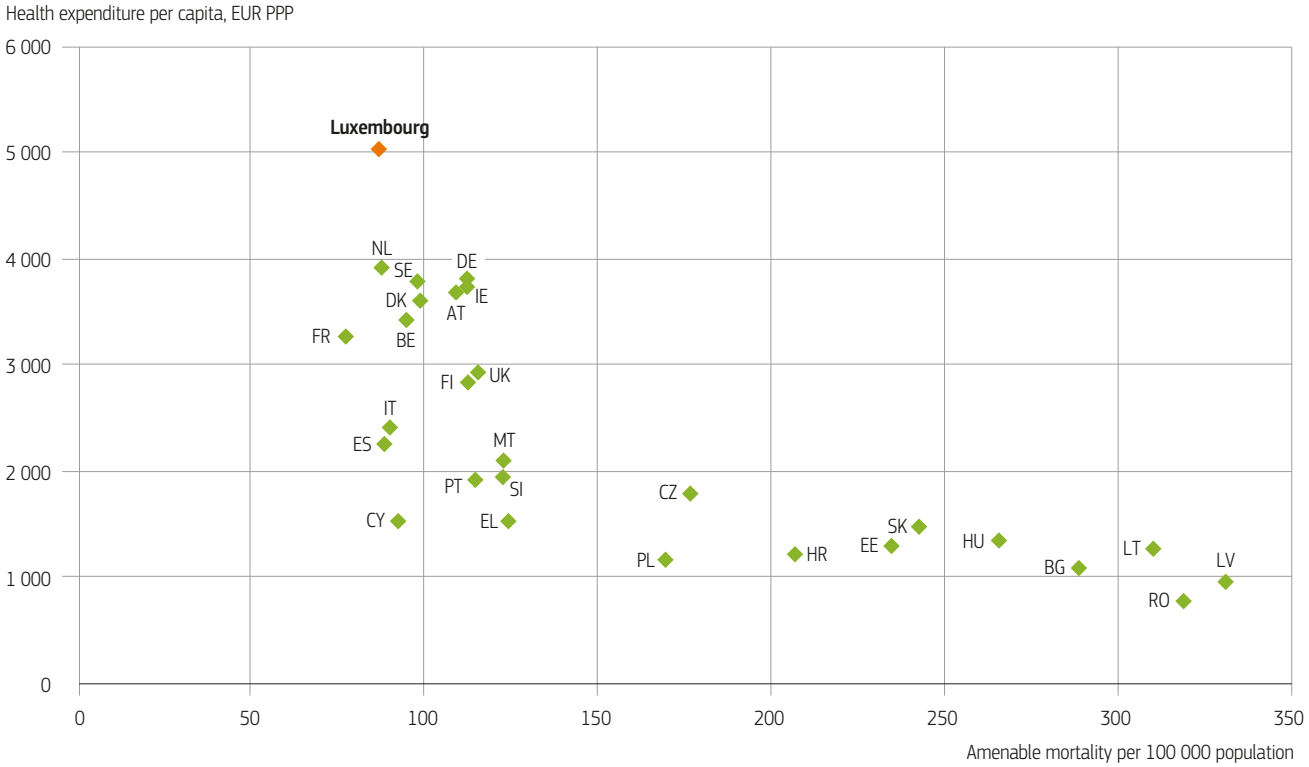
Efficiency improvements mandated by the 2010 health reform included greater care coordination, transparency on hospital activity with the introduction of a national information system for inpatient care, and the creation of a medical expert board that regularly reviews proposed additions and modifications to the benefits basket. In this context the National eHealth agency (eSanté) was created and has been working on the shared electronic health records (DSP) pilot since 2011.

The health system's cost-effectiveness could be improved, particularly with greater use of generics

Although Luxembourg's amenable mortality is among the best in Europe, its health system is comparatively expensive. In comparison, relative to levels of health spending, a number of countries such as Spain and France achieve similar or even lower amenable mortality rates at much lower costs per capita (Figure 13), albeit on this measure it is not possible to effectively disentangle the role of health behaviours and other determinants irrespective of the health care system in influencing the level of amenable mortality.

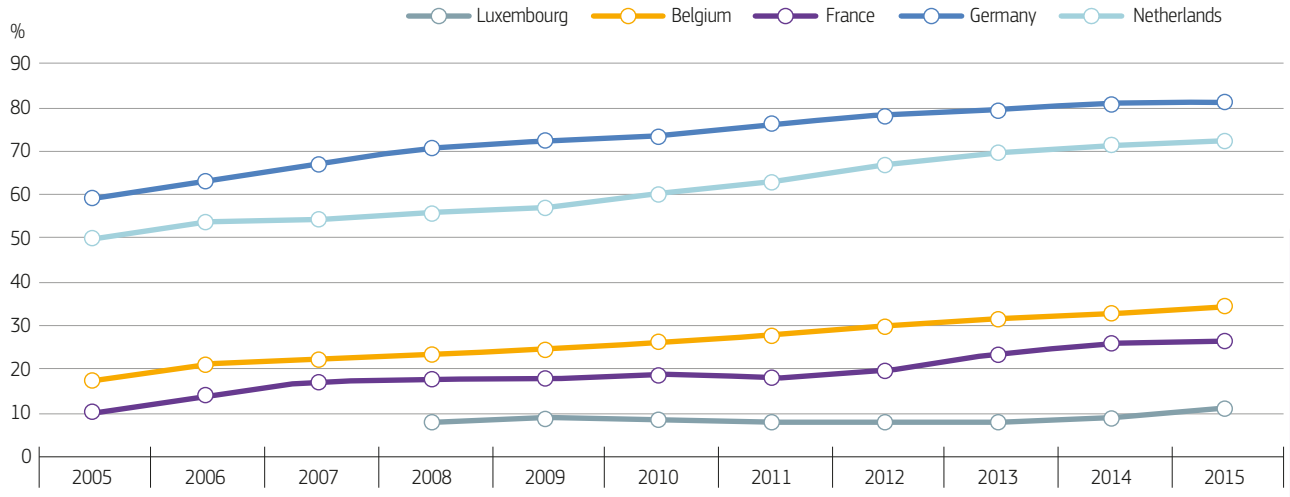
Luxembourg's low penetration of generics in the pharmaceutical sector is a good example of how cost-effectiveness could be improved. The country has by far the lowest penetration of generic drugs in the EU (11% of the total volume of reimbursed pharmaceuticals versus 49% in Member States with available data in 2015) (Figure 14). To increase the use of generics, the Ministry of Health introduced a generic substitution policy in late 2014. Two pharmacotherapeutic groups for approximately 400 medical products (accounting for nearly 10% of the total expenses of the CNS) were specified eligible for generic substitution. This new policy led to a modest increase (4%) of the reimbursement of generics between 2013 and 2016.

Figure 13. Luxembourg has low amenable mortality but at very high cost



Sources: OECD Health Statistics, Eurostat Database, WHO Global Health Expenditure Database (data refer to 2014).

Figure 14. Luxembourg has the lowest market share for generics among EU countries



Note: Data for Belgium, Germany, Luxembourg and the Netherlands are for reimbursed pharmaceutical market; data for France are for total pharmaceutical market.
Source: OECD Health Statistics 2017.

Hospital indicators signal room to improve efficiency and treat more people in day care

Hospital care in Luxembourg is provided by 10 hospitals[9] with 482 beds per 100 000 population (compared to the EU average of 515 beds). Although there is no gatekeeping and outpatient contacts are low, it does not seem to lead to elevated numbers of hospital cases. On the contrary, the number of hospital beds per 1 000 population for Luxembourg decreased by 25% between 2004 and 2015 (Figure 15), mostly due to population growth. Hospital discharges also declined by 20% in the same period, and became among the lowest in the EU, contributing to a relatively low bed occupancy (72% versus 77% at EU level). These low utilisation levels in inpatient and ambulatory care do reflect, however, the high share of patients seeking care abroad.

That said, the average length of stay (ALOS) in Luxembourg's hospitals has remained stable over the last ten years (Figure 15), in contrast to decreasing ALOS in neighbouring countries, and is among the highest in the EU in 2015. The absence of DRG-based payment and the underdevelopment of day case surgery are likely contributors to this. For example, although the share for cataract surgery performed as ambulatory cases (79%) is slightly below the EU average, ambulatory tonsillectomy care (7%) is among the lowest in Europe.

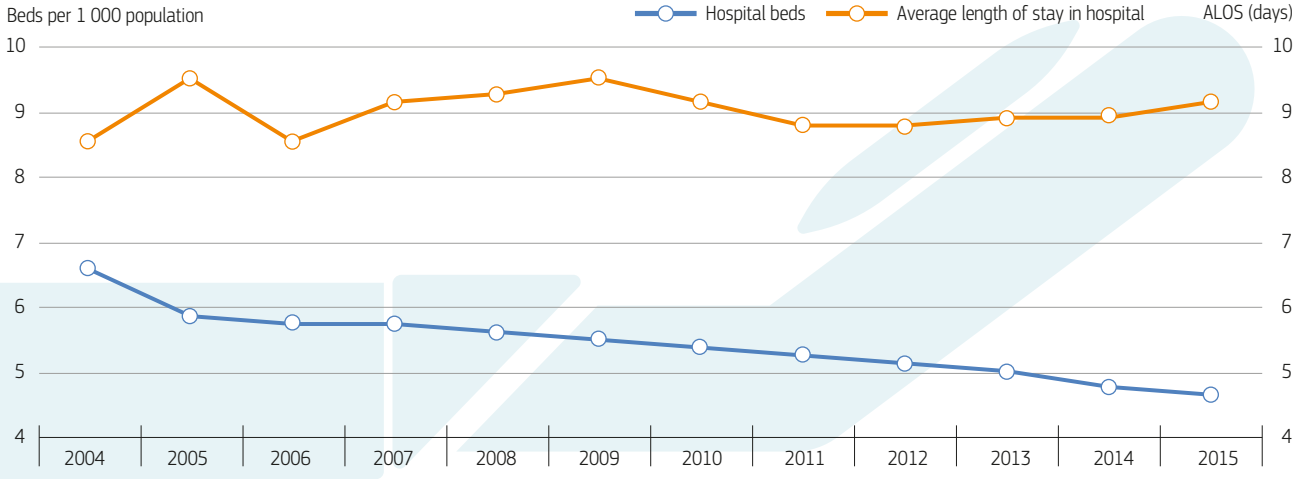
Improvements to efficiency and accountability are needed

Several attempts to improve transparency, accountability, documentation of service costs and the efficiency of service provision in hospitals have failed in recent years. In particular, the setting of classifications and standards for accurate description of hospital services were, until recently, consistently met with opposition from medical doctors. Consequently, implementation of proposed reforms, including the introduction of case-based (DRG) payments, lags behind. However, one initiative, the establishment of the *Carte Sanitaire*, provides an inventory of all hospitals, their services, resources, equipment, etc., and is expected to contribute to developing a future hospital plan.

Information systems and performance assessment are lacking

A comprehensive information system is needed that can help improve monitoring of health system resources, costs and quality of care. Most importantly, there is currently no systematic performance evaluation of the health system. Having such assessments done periodically could inform policy-making and help achieve the shift that is needed from excessive capacity and overprovision of inpatient care towards services at ambulatory and primary care services.

Figure 15. There has been a fall in numbers of beds but average length of stay remains high



Source: Eurostat Database.

9. After several hospital mergers in 2014, Luxembourg has four general and six specialised hospitals providing acute, rehabilitative and palliative care.

6 Key findings

- The Luxembourg health system provides good quality care and has made a major contribution to improving population health. Life expectancy in Luxembourg is among the highest in the EU and amenable mortality rates are among the lowest. Yet there is room for making prevention and treatment of diseases such as diabetes more effective.

- Behavioural risk factors – smoking, drinking and obesity – are important challenges for the health system and reveal substantial inequalities according to education and income status. Preventable mortality indicators reveal a mixed picture of the effectiveness of prevention policies and suggest that these can be improved further. A comprehensive set of health strategies, targeted health promotion and prevention activities aims to address these risks through raising awareness and public health campaigns. However, careful monitoring will be needed to demonstrate the effectiveness of these programmes and to detect health inequalities within the population.

- Per capita health care spending in Luxembourg is the highest among EU countries. This allows for a very generous benefits package with low cost-sharing and high quality of health care services. The population benefits from good financial and geographic access to services, which is reflected in the low level of unmet needs and out-of-pocket expenditure. However, the level of unmet needs for financial reasons is slowly creeping up in the lowest income groups.

- Questions have been raised about the long-term stability of resources. Financial resources for the health care system are currently stable and have enabled expansions of the benefits basket. However, health expenditure growth, especially in long-term care, might pose a challenge to the future fiscal sustainability of the system. In terms of human resources, although Luxembourg does not face worrying shortages today, it does depend on graduates from other countries, leading to some uncertainty. This is also true for the provision of specialised care services, where Luxembourg relies on neighbouring countries for treatment.

- The efficient allocation and use of health care resources could receive higher policy priority. Several efficiency indicators and structural challenges signal room for improvement, as the system is very costly and payment methods do not promote efficiency in service provision. Pharmaceutical spending could also provide more value for money by increasing generic penetration and substitution. Similarly, the definition and setting of tariffs for medical services and Health Technology Assessment could be prioritised.

- To improve efficiency in hospital care, further development of day care surgery is needed and, in the absence of case-based payments, increased transparency and accountability have to be implemented. Efficiency could also be improved by using compatible information technology solutions for hospital administration and management, as well as centralised public procurement systems. Stronger collaboration between the four general hospitals would be a possible way forward, with competence networks involving voluntary hospitals as well as other providers.

- Finally, there is considerable room to do more with regular health system performance assessments, particularly when it comes to the monitoring of inputs, processes, outputs and outcomes. Setting up appropriate information systems will be key in this effort.

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Country abbreviations

Austria	AT	Denmark	DK	Hungary	HU	Malta	MT	Slovenia	SI
Belgium	BE	Estonia	EE	Ireland	IE	Netherlands	NL	Spain	ES
Bulgaria	BG	Finland	FI	Italy	IT	Poland	PL	Sweden	SE
Croatia	HR	France	FR	Latvia	LV	Portugal	PT	United Kingdom	UK
Cyprus	CY	Germany	DE	Lithuania	LT	Romania	RO		
Czech Republic	CZ	Greece	EL	Luxembourg	LU	Slovak Republic	SK		

European Commission

State of Health in the EU

Country Health Profile 2017

The Country Health Profiles are an important step in the European Commission's two-year *State of Health in the EU* cycle and are the result of joint work between the Organisation for Economic Co-operation and Development (OECD) and the European Observatory on Health Systems and Policies. This series was co-ordinated by the Commission and produced with the financial assistance of the European Union.

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- the organisation of the health system
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