



# State of Health in the EU

# Croatia

Country Health Profile 2019

## The Country Health Profile series

The *State of Health in the EU's Country Health Profiles* provide a concise and policy-relevant overview of health and health systems in the EU/European Economic Area. They emphasise the particular characteristics and challenges in each country against a backdrop of cross-country comparisons. The aim is to support policymakers and influencers with a means for mutual learning and voluntary exchange.

The 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 the Health Systems and Policy Monitor network, the OECD Health Committee and the EU Expert Group on Health Information.

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## Data and information sources

The data and information in the Country Health Profiles are based mainly on national official statistics provided to Eurostat and the OECD, which were validated 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. These EU averages do not include Iceland and Norway.

This profile was completed in August 2019, based on data available in July 2019.

To download the Excel spreadsheet matching all the tables and graphs in this profile, just type the following URL into your Internet browser: <http://www.oecd.org/health/Country-Health-Profiles-2019-Croatia.xls>

## Demographic and socioeconomic context in Croatia, 2017

### Demographic factors

	Croatia	EU
Population size (mid-year estimates)	4 130 000	511 876 000
Share of population over age 65 (%)	19.6	19.4
Fertility rate <sup>1</sup>	1.4	1.6

### Socioeconomic factors

GDP per capita (EUR PPP <sup>2</sup> )	18 500	30 000
Relative poverty rate <sup>3</sup> (%)	20.0	16.9
Unemployment rate (%)	11.0	7.6

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 60 % of median equivalised disposable income.

Source: Eurostat Database.

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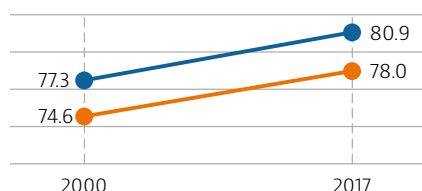
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# 1 Highlights

Life expectancy in Croatia is improving but continues to lag behind the EU average. Social inequalities in life expectancy appear to be less pronounced in Croatia than in many other EU countries. A mandatory health insurance system provides a broad range of benefits to the whole population, some of which are subject to cost-sharing. Recent reform efforts have targeted both primary and secondary care, but with limited success so far. The need to improve quality of care has been recognised, but requires a tangible policy response. Some of the Croatia's counties lack health workers, and migration abroad is another concern.

● HR ● EU

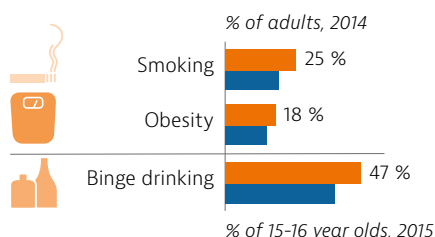


Life expectancy at birth, years

## Health status

Life expectancy at birth in Croatia increased to 78 years in 2017, below the EU average of 80.9 years. Ischaemic heart disease and stroke are the two main causes of death. Lung cancer is the most frequent cause of death by cancer and there has been no reduction in its mortality rate since 2000. The death rate from diabetes has increased. Croatians aged 65 could expect to live an additional 17.4 years, two years more than in 2000, albeit more than 12 of those years are spent with some chronic diseases.

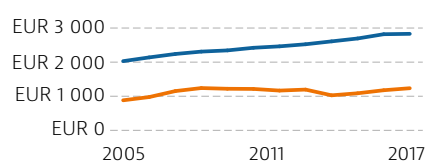
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## Risk factors

There is much scope to address modifiable risk factors. In 2014, one in four adults in Croatia smoked daily, which is above the EU average. While binge drinking is below the EU average for adults, it is a problem among adolescents: a much higher proportion of teenagers report at least one episode of heavy alcohol drinking in the past month than in most other EU countries. Obesity rates are above the EU average and rising, particularly among children.

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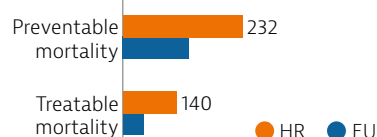
Per capita spending (EUR PPP)

## Health system

Health expenditure per capita, at EUR 1 272, was among the lowest in the EU in 2017, where the average was EUR 2 884. Croatia devotes 6.8 % of its GDP to health compared to an EU average of 9.8 %. Nevertheless, the share of public expenditure, at 83 %, is above the EU average. The benefit package is broad, but services require co-payments, for which many Croatians take out voluntary health insurance. Overall, out-of-pocket payments, excluding voluntary health insurance, accounted for 10.5 % of health expenditure in 2017, below the EU average of 15.8 %.

## Effectiveness

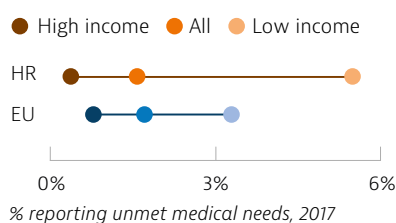
Weak intersectoral policies to address key determinants of ill health contribute to high rates of deaths from preventable and treatable causes. The quality of care is also an issue, which a national strategy is trying to address.



Age-standardised mortality rate per 100 000 population, 2016

## Accessibility

Self-reported access to health care is good, with low unmet needs for medical care. However, there is substantial variation between income groups and unmet needs are high among older people. Geographical distance is also an access barrier.



% reporting unmet medical needs, 2017

## Resilience

The small pool of social health insurance contributors, combined with high hospital debt levels, raise concerns about the financial sustainability of the health system. Strengthening governance and building support among stakeholders will be crucial to implementing reforms.



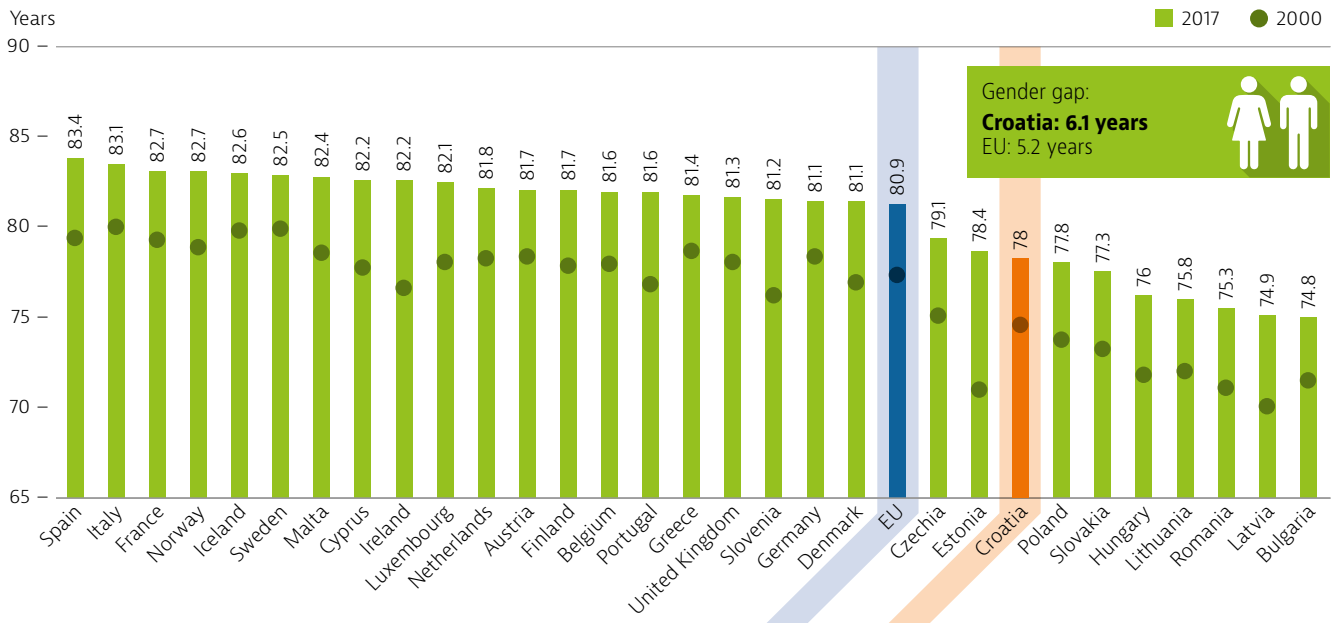
# 2 Health in Croatia

## Life expectancy is below the EU average

Although life expectancy at birth in Croatia increased by 3.4 years between 2000 and 2017, from 74.6 to 78 years, the distance to the EU average remained

almost unchanged, amounting to 2.9 years (Figure 1). The gender gap in life expectancy in Croatia is greater than for the EU overall, with women on average living 6.1 years longer than men, compared to an EU average of 5.2 years.

**Figure 1. Life expectancy at birth is about three years below the EU average**



Source: Eurostat Database.

## Social inequalities in life expectancy differ greatly for men and women

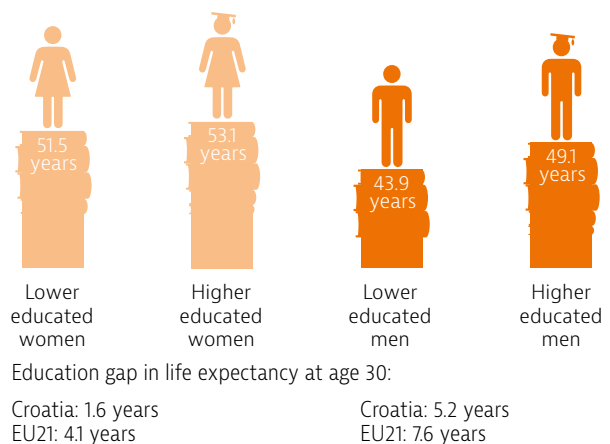
Social inequalities in life expectancy appear to be less pronounced in Croatia than in many other EU countries. Yet, men with low education live on average 5.2 years less than those who completed tertiary education (Figure 2). The gap for women (1.6 years) is far below the EU average (4.1 years).

## Mortality due to diabetes, chronic obstructive pulmonary disease and some cancers is growing

In 2016, ischaemic heart disease represented more than one fifth of all deaths (Figure 3). In contrast to most other EU countries, the mortality rate from this disease decreased only slightly between 2000 and 2016 (Figure 3). Despite a substantial reduction in the mortality rate, stroke is still the second cause of death in the country. Lung cancer is the most frequent cause of death by cancer among Croatians and there has been no reduction in its mortality rate since 2000. In fact, mortality rates from lung, breast and colorectal cancer in Croatia are among the highest in the EU. Moreover, mortality rates from diabetes and chronic

obstructive pulmonary disease (COPD) have increased greatly since 2000. The rise in mortality from treatable conditions – COPD, diabetes, breast and colorectal cancer – is a cause for concern (Section 5.1).

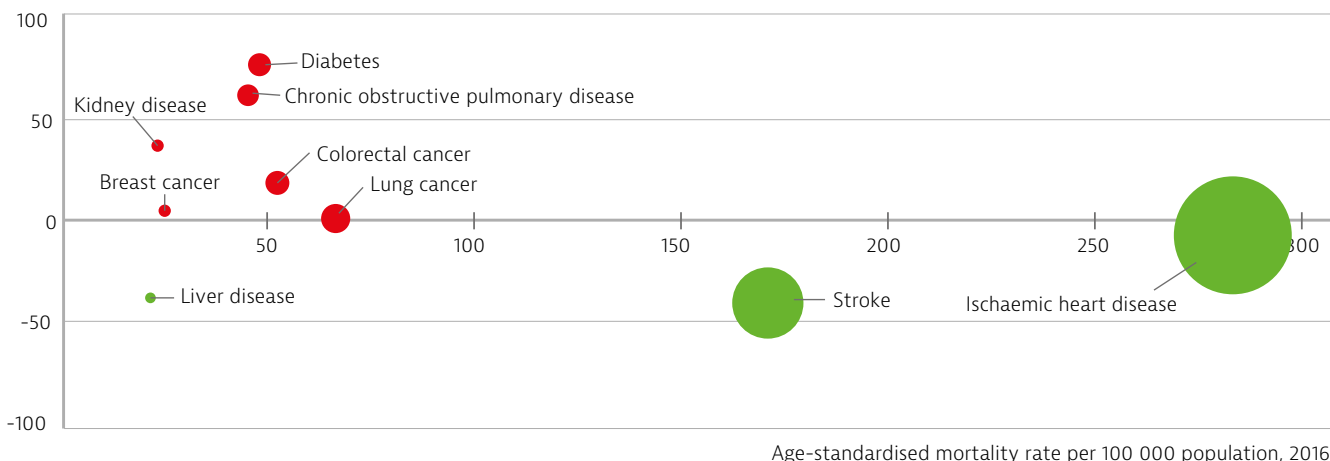
**Figure 2. The education gap in life expectancy at age 30 is more than five years for men**



Note: Data refer to life expectancy at age 30. High education is defined as people who have completed a tertiary education (ISCED 5-8) whereas low education is defined as people who have not completed their secondary education (ISCED 0-2). Source: Eurostat database (data refer to 2016).

**Figure 3. Cardiovascular diseases are the main causes of deaths in Croatia**

% change 2000-16 (or nearest year)



Note: The size of the bubbles is proportional to the mortality rates in 2016.  
Source: Eurostat Database.

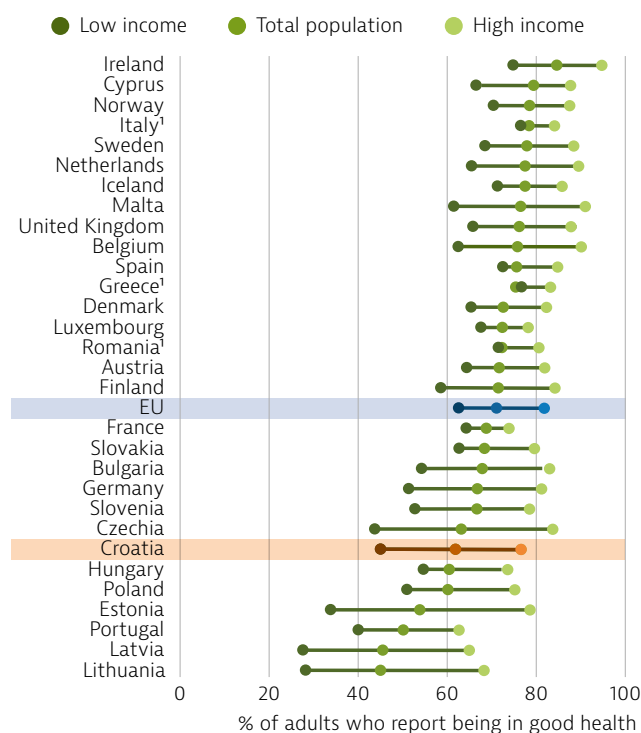
### The proportion of Croatians reporting to be in good health is lower than in most other EU countries

In Croatia, the share of people (61 %) reporting in 2017 to be in good health was below the EU average (70 %). Additionally, disparities in self-rated health between people in different income groups are comparatively large (Figure 4). Three quarters of those in the highest income quintile considered themselves to be in good health compared to less than half (44 %) of those in the lowest income quintile.

### More than 70 % of life after 65 is lived with health issues and disabilities

In 2017, Croatians aged 65 could expect to live an additional 17.4 years, 2 years more than in 2000. However, more than 12 years of life of this period is spent with disabilities (Figure 5). The gender gap in life expectancy at age 65 is about 3.5 years in favour of women (18.9 years compared to 15.5 for men). However, there is no gender difference in the number of healthy life years<sup>1</sup> because women tend to live a greater proportion of their lives after age 65 with health issues and disabilities.

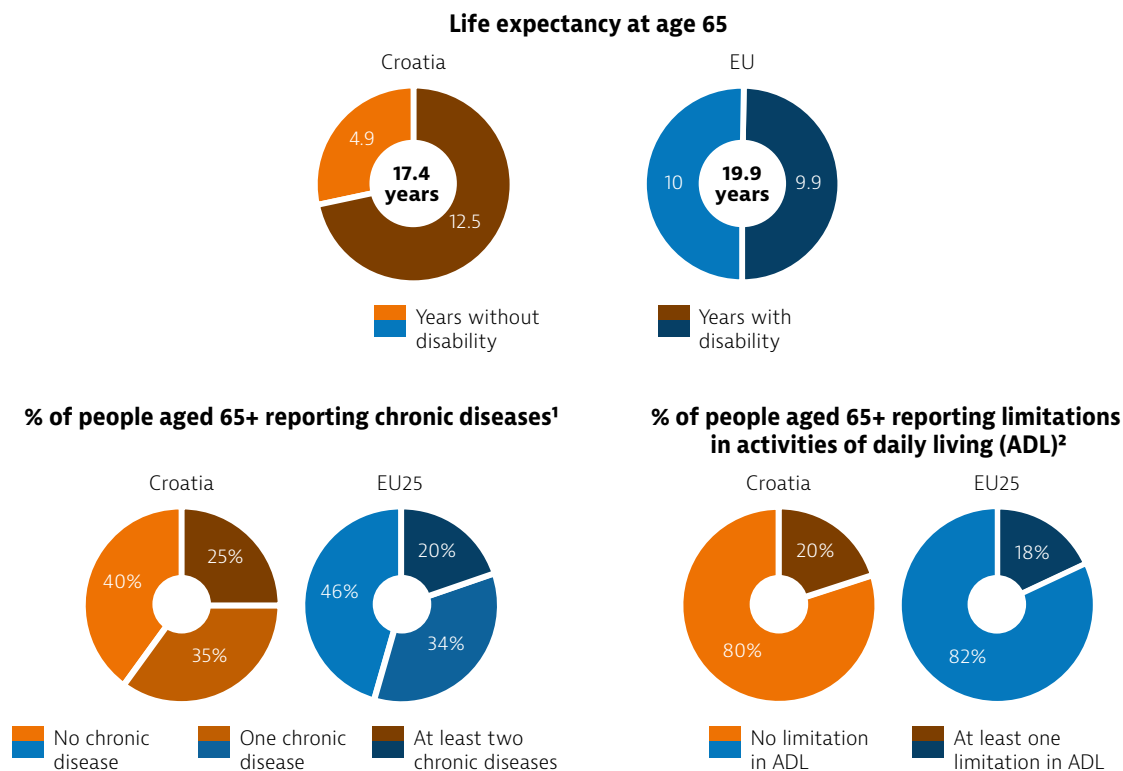
Three in five (60 %) Croatians aged 65 and over report having at least one chronic condition, which is higher than the average across the EU. Most people are able to continue to live independently in old age, but one in five people report some limitations in basic activities of daily living (ADL; such as bathing, dressing or getting out of bed) that may require long-term care. This proportion is similar to the EU average.

**Figure 4. Inequalities in self-reported health by income level are substantial in Croatia**

Note: 1. The shares for the total population and the population on low incomes are roughly the same.  
Source: Eurostat Database, based on EU-SILC (data refer to 2017).

1: 'Healthy life years' measure the number of years that people can expect to live free of disability at different ages.

Figure 5. Three in five people aged 65 and over report having at least one chronic disease



Notes: 1. Chronic diseases include heart attack, stroke, diabetes, Parkinson's disease, Alzheimer's disease and rheumatoid arthritis or osteoarthritis.  
 2. Basic activities of daily living include dressing, walking across a room, bathing or showering, eating, getting in or out of bed and using the toilet.  
 Sources: Eurostat Database for life expectancy and healthy life years (data refer to 2017); SHARE survey for other indicators (data refer to 2017).



## 3 Risk factors

### Behavioural risk factors account for more than half of all deaths

Slightly more than half of all deaths in Croatia can be attributed to behavioural risk factors, including dietary factors, tobacco smoking, alcohol consumption and low physical activity, exceeding the EU average in particular for dietary risks and tobacco (Figure 6). One-quarter of all deaths in 2017

can be attributed to dietary risks (including low fruit and vegetable consumption, and high sugar and salt consumption). Tobacco consumption (including direct and second-hand smoking) is the second major behavioural risk factor to health, being responsible for an estimated one fifth of deaths. About 7 % of deaths can be attributed to alcohol consumption, and 3 % of deaths are related to low physical activity.

**Figure 6. Dietary risks and tobacco are major contributors to mortality**



*Note: The overall number of deaths related to these risk factors (24 281) is lower than the sum of each one taken individually (28 899) because the same death can be attributed to more than one risk factor. Dietary risks include 14 components such as low fruit and vegetable consumption and high sugar-sweetened beverage consumption.*

*Source: IHME (2018), Global Health Data Exchange (estimates refer to 2017).*

### Croatia has the third highest rate of teenage smoking in the EU

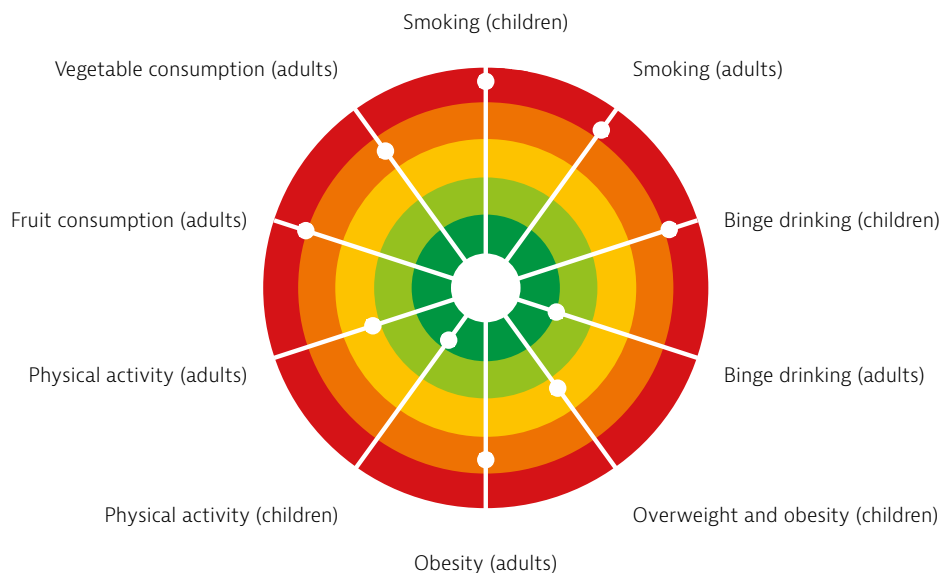
Tobacco consumption represents a serious public health issue in Croatia among both adults and children. Little progress has been made in reducing smoking rates because of generally weak anti-smoking policies (Section 5.1). Some 25 % of Croatian adults reported to be daily smokers in 2014, which was above the EU average (19 %). One in five women reported smoking daily in 2014, the third highest rate in the EU after Austria and Greece. Regular tobacco consumption in teenagers is also a concern. In 2015, one third of 15- to 16-year-old boys and girls reported that they smoked in the past month, the third highest rate in the EU (Figure 7).

### While overall alcohol consumption has declined, half of adolescents engage in binge drinking

In 2015, more than half (51 %) of 15- to 16-year-old boys reported at least one episode of binge drinking<sup>2</sup> during the past month (42 % among girls). These proportions are much greater than their respective EU averages. Among adults, 1 in 10 reported at least 1 episode of binge drinking per month, which is clearly below the EU average (10.9 % compared to 19.9 %). However, as is the case with many other risk factors, the difference between men and women is very marked (19 % for men compared to 4 % for women). Alcohol consumption per capita in Croatia declined from 14 litres in 2000 to 10 litres in 2016, close to the EU average (9.9 litres per capita).

<sup>2</sup>: Binge drinking is defined as consuming six or more alcoholic drinks on a single occasion for adults, and five or more alcoholic drinks for children.

**Figure 7. Many risk factors to health are greater in Croatia than in most EU countries**



*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.  
Sources: OECD calculations based on ESPAD survey 2015 and HBSC survey 2013–14 for children indicators; and EU-SILC 2017, EHIS 2014 and OECD Health Statistics 2019 for adults indicators.*

**One fifth of adults are obese and childhood obesity rates are rapidly increasing**

In 2017, nearly one in five adults in Croatia were obese, a proportion higher than the EU average (18 % compared to 15 %). Obesity is also a growing issue in children. While the overweight and obesity rate among 15-year-olds is comparable to the EU average, it reached 16.5 % in 2013-14, a substantial increase since 2001–02. Nutrition in Croatia can be improved in multiple ways, including by reducing salt and fat (and in particular trans-fat) food consumption, and increasing fruit and vegetables intake. More than half of the adult population (54 %) do not eat fruit daily and vegetable consumption is very low as well, since around 45 % of adults do not eat vegetables every day (Figure 7).

**Socioeconomic inequality impacts adversely on health risks**

As in many other EU countries, there are large disparities in obesity rates between people with the lowest and highest levels of education or income. People with only a low level of secondary education are almost twice as likely to be obese than those with a university education (22.5 % compared to 12 % in 2017). Similarly, smoking prevalence in the lowest income quintile (30.1 %) in 2014 was much higher than in the highest income quintile (21.5 %). Several national health policy documents have acknowledged health inequalities, but so far these have been followed up with few specific measures.





# 4 The health system

## Mandatory public insurance is complemented by voluntary health insurance

The Ministry of Health holds the stewardship role in the health system and is the main regulatory body, responsible for an array of functions, including health policy development, planning and evaluation, public health programmes, regulatory standards and the training of health professionals. The Croatian Health Insurance Fund (CHIF) is the sole insurer and main purchaser in the mandatory health insurance system. It plays a key role in contracting health services. Complementary health insurance, mainly to cover co-payments for services in the benefit package, is voluntary and purchased individually from either the CHIF (the main provider) or a private insurer: over 60 % of the population has this additional insurance. Several health reforms have been initiated in recent years but implementation is often stalled (Box 1).

## Population coverage is universal and the benefit package is relatively broad

The CHIF provides health insurance coverage to the whole population and it is not possible to opt out of the system. Dependent family members are covered through the contributions made by working family members, while those who are not economically active (such as pensioners and the unemployed), as well as vulnerable groups (people with disabilities, those on low incomes) are exempt from contributions and are covered through state budget transfers. The benefit package is broad, covering most types of health services. While co-payments have been introduced in recent years, exemptions for vulnerable groups ensure a good degree of financial protection (Section 5.2).

### Box 1. Reforms have targeted both primary and secondary care

Croatia's reform attempts have been guided by the National Health Care Strategy 2012–2020, which identified strategic problems and reform priorities in the health sector. In addition, national reform programmes (the most recent adopted in April 2019) enlist concrete actions that the government plans to take on an annual basis. The 2012-2020 Strategy anticipated developing and implementing a hospital master plan to rationalise and modernise hospital services, but implementation has lagged behind and health reform initiatives have been poorly coordinated (Section 5.3). In primary care, the newest initiative (in 2018) further regulates private practices in primary care and states that up to 75 % of practices in any region can be run privately.

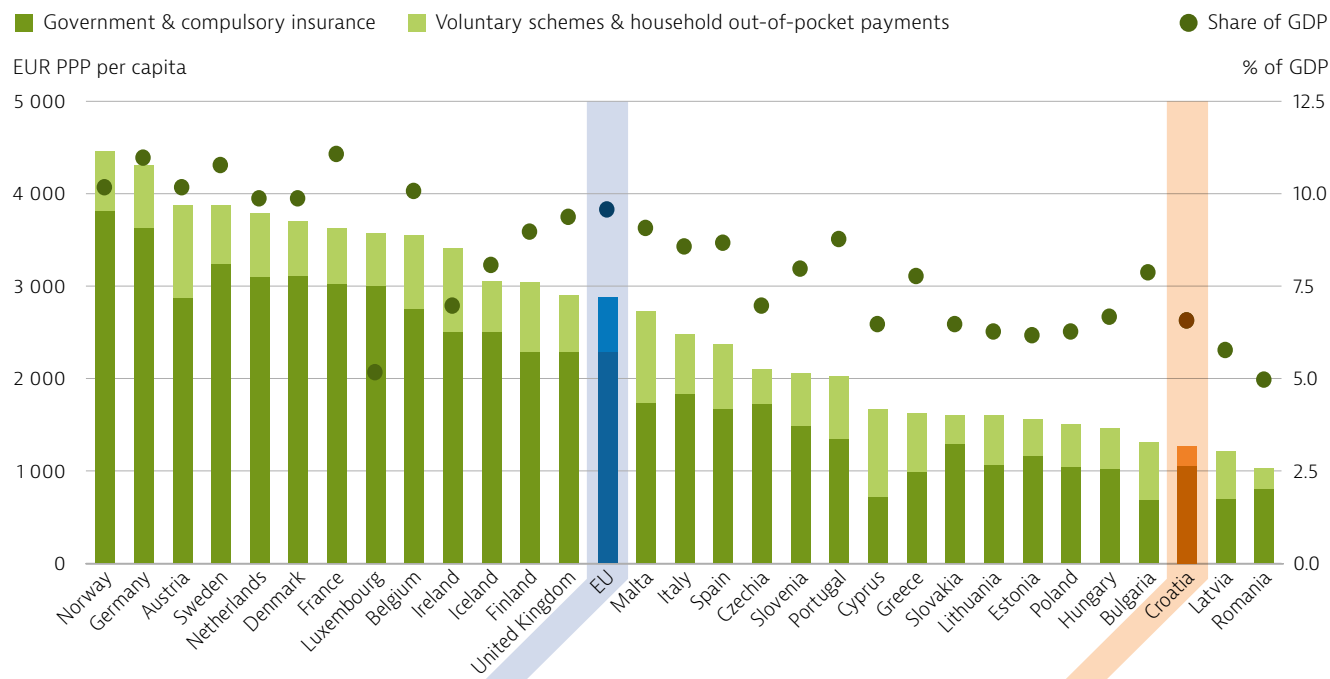


### Health spending per capita remains low compared to most other EU countries

Over the last few years, Croatia has seen large fluctuations in health expenditure per capita. In 2017, it was among the three lowest spenders in the EU, reaching EUR 1 272 (adjusted for differences in purchasing power). Expenditure as a percentage of GDP was 6.8 % in 2017, below the EU average of 9.8 %,

but higher than eight other EU countries (Figure 8). The public share of health expenditure was 83 %, higher than most countries with comparative levels of expenditure (Section 5.2). Overall, out-of-pocket (OOP) payments accounted for 10.5 % of health spending in 2017 (clearly below the EU average of 15.8 %), while the voluntary health insurance component of health expenditure accounted for a much larger share than is usual for EU countries (6.5 % in 2017).

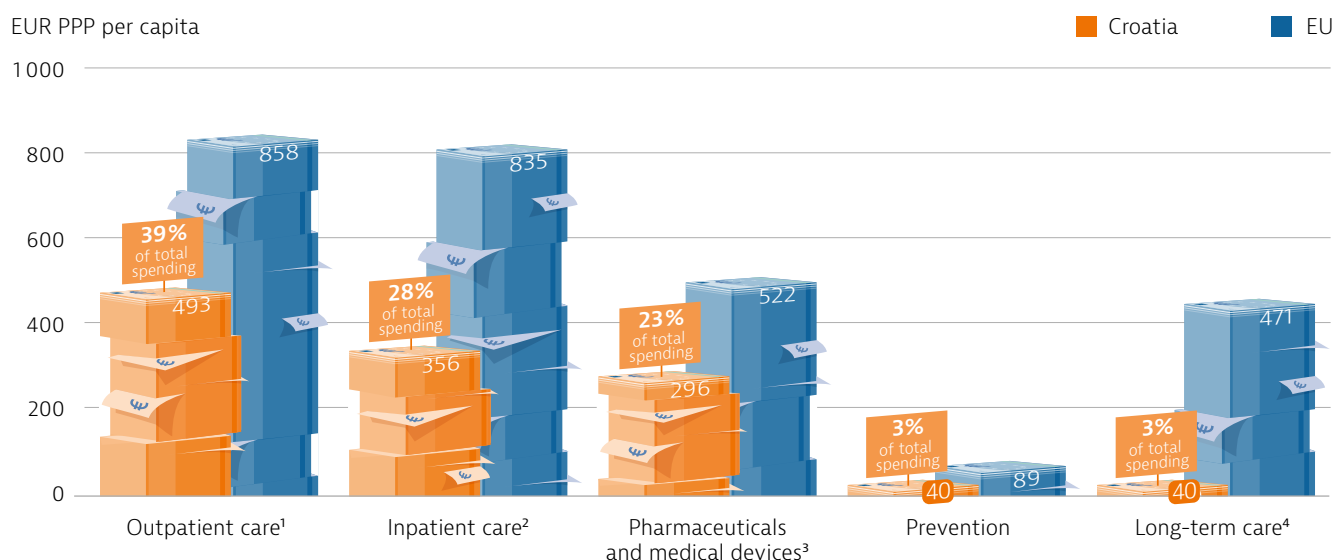
**Figure 8. Croatia spends less than half the EU average on health per capita**



Source: OECD Health Statistics 2019 (data refer to 2017).

### Health expenditure is skewed towards pharmaceuticals

Over one third (38.8 %) of total health expenditure in Croatia is spent on outpatient (or ambulatory) services (consisting of primary care and specialist outpatient care mostly provided by hospital outpatient departments). However, the country spends a much larger share of its health expenditure on pharmaceuticals and medical devices than many other EU countries, although in absolute terms (EUR 296 per person) it is below the EU average (Figure 9; see Section 5.2). Such spending amounted to 23.3 % of health expenditure in 2017 (compared to an EU average of 18.1 %). In contrast, funds for long-term care only made up 3.1 % of health expenditure in Croatia, much lower than the EU average of 16.3 %, reflecting the fact that formal long-term care is still underdeveloped and mostly provided in institutional settings. On a per capita basis, spending on prevention is less than half the EU average, but this translates to 3.1 % of expenditure, equal to the EU average.

**Figure 9. A large share of health resources goes to outpatient care and pharmaceuticals**

Notes: Administration costs are not included. 1. Includes home care; 2. Includes curative–rehabilitative care in hospital and other settings; 3. Includes only the outpatient market; 4. Includes only the health component.

Sources: OECD Health Statistics 2019; Eurostat Database (data refer to 2017).

### The health system is still reliant on hospital care

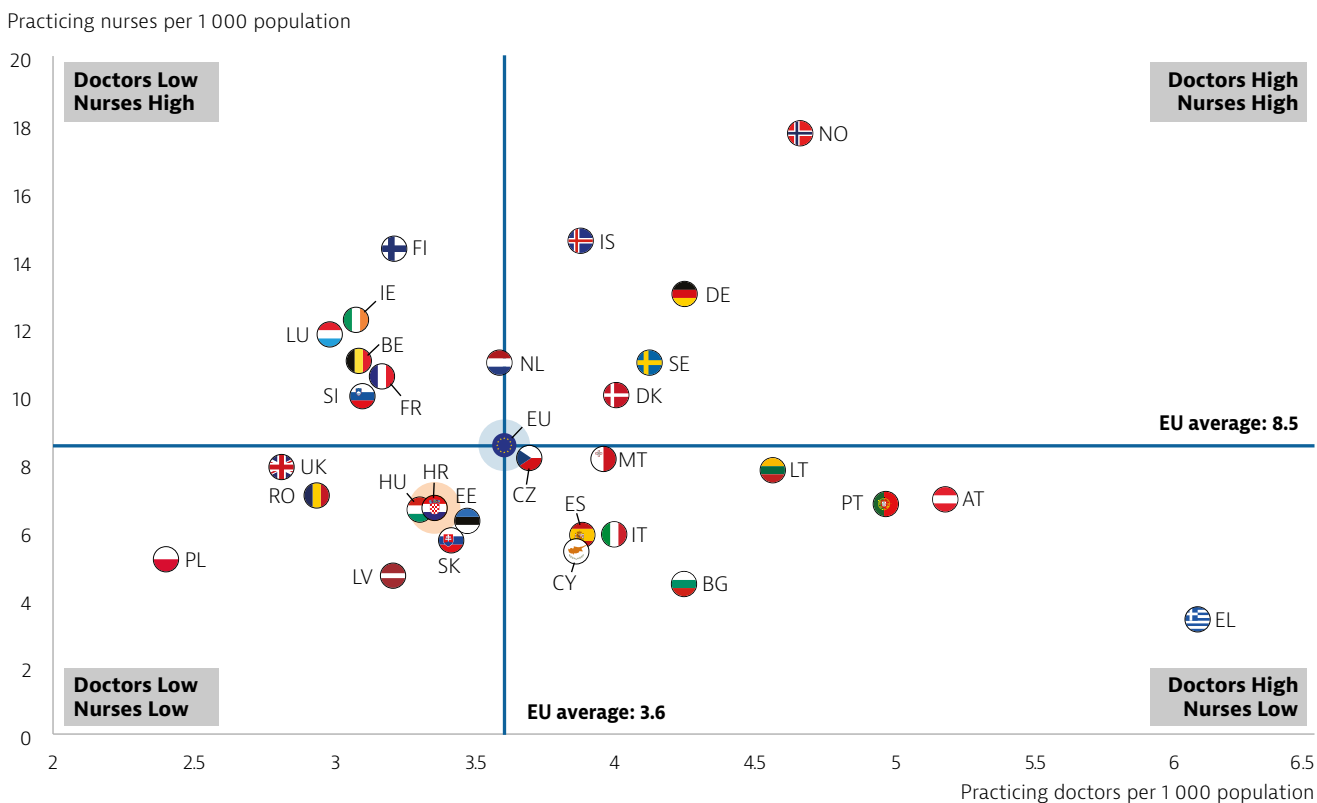
The number of hospital beds has only recently decreased to 5.5 per 1 000 population in 2017, down from 6.0 in 2000. In the same period, hospital beds in the EU overall declined from 6.3 to 5.0, indicating further scope in Croatia for shifting services out of hospitals (Section 5.3). In comparison with other EU Member States, Croatia has high numbers of beds in rehabilitative and long-term care hospitals. There are also challenges related to hospital discharges from acute to long-term or home care, which are still underdeveloped.

The average length of stay (ALOS) for hospital care has declined continuously in recent years, reaching 8.4 days in 2017, although this was still above the EU average of 7.9 and further reductions should be possible. For example, for discharges related to pregnancy, childbirth and recovery, the ALOS in hospitals exceeds that in all other EU Member States. Hospital discharges per 1 000 population are close to the EU average, but Croatia has fewer doctor consultations per person and year (6.4 compared to an EU average of 7.2), suggesting scope for shifting more services to primary care.

### Numbers of doctors and particularly nurses are increasing

Historically, Croatia has had fewer numbers of doctors and nurses than many other EU countries, with only 6.6 nurses per 1 000 population in 2016 (compared to an EU average of 8.5) and 3.4 doctors, compared to an EU average of 3.6 (Figure 10). Despite concerns over the effects of Croatia's EU accession in 2013 and potential outmigration of health professionals, the ratio of doctors and nurses to population increased between 2013 and 2017.

**Figure 10. Croatia has fewer nurses and doctors than many other EU countries**



Note: In Portugal and Greece, data refer to all doctors licensed to practise, resulting in a large overestimation (e.g. of around 30 % in Portugal). In Austria and Greece, the number of nurses is underestimated as it only includes those working in hospitals.  
 Source: Eurostat Database (data refer to 2017 or the nearest year).

**Primary care doctors act as gatekeepers to higher levels of care**

Primary care doctors, such as general practitioners (GPs), paediatricians and gynaecologists, are usually patients’ first point of contact with the health system and act as gatekeepers to specialist and hospital care (Section 5.2). Patients must register with a GP (for adults) or a paediatrician (for children), but they are free to choose whichever doctor they wish. Most primary care doctors are self-employed and work in solo practices. Their services are contracted by the CHIF and the payment framework includes mixed payments which include performance and quality indicators. There have been several attempts to reform the primary care sector and overcome fragmentation. According to the most recent reform, from the beginning of 2019, up to 25 % of doctors in primary care have to be employed by publicly run health centres, rather than working independently in solo practices.

**Most secondary care hospitals are owned by the counties**

Hospital care is delivered through a network of general and specialist hospitals, most of which are owned by the counties. Highly specialised tertiary care is provided by hospitals owned by the central government. Specialised outpatient services, such as consultations provided by secondary care specialists, are mostly delivered in hospital outpatient departments. Since 2009, hospitals contracted by the CHIF have been paid using a diagnosis-related group (DRG) system and spending limits, with the aim of reducing costs and increasing efficiency.

**Palliative care has been strengthened in recent years**

A Strategy for Palliative Care was adopted for the period 2014–16, followed by a new strategy for the period 2017-20. The strategies greatly enhanced capacity for palliative care by improving integration and coordination, rather than developing new structures. Guidelines have been adopted and palliative care services established in inpatient and outpatient settings. The strategy for 2017-20 envisages that all counties adopt county-level palliative care plans.

# 5 Performance of the health system

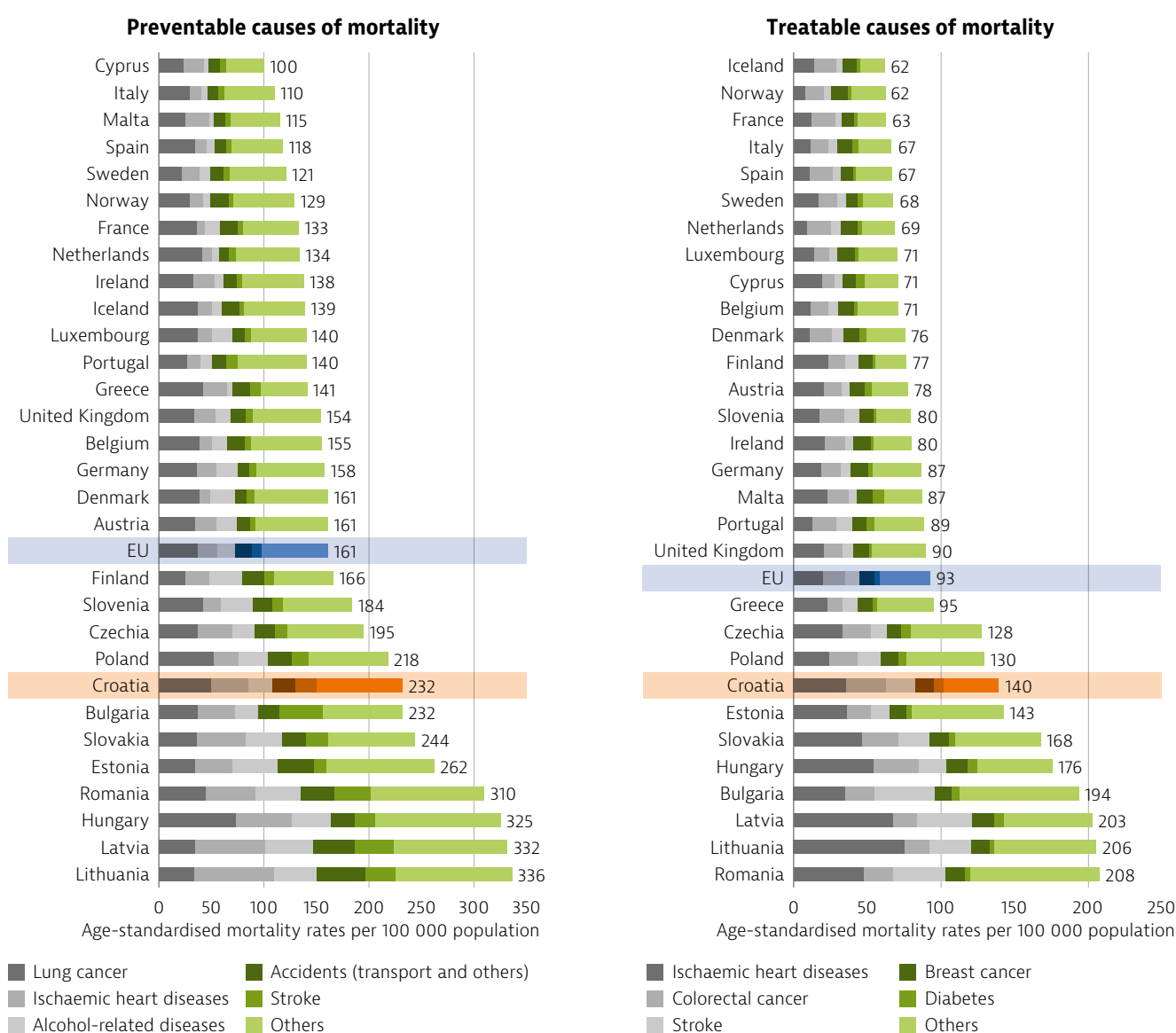
## 5.1. Effectiveness

### Preventable mortality is particularly high for lung cancer

Mortality from preventable causes is far above the EU average (232 compared to 161 per 100 000; Figure 11). This is partly due to weak intersectoral policies to address key determinants of ill health, such as

smoking and poor nutrition (Section 3). As mentioned in Section 2, lung cancer is a concern. The preventable mortality rate from lung cancer is the third highest in the EU at 49 per 100 000 population in 2016, exceeding the EU average of 37. This high rate is partly linked to the fact that anti-smoking policies in Croatia are still weak, with a lack of smoke-free places and underdeveloped media campaigns against tobacco use (WHO, 2017).

Figure 11. Mortality from preventable and treatable causes is high compared to most other EU countries



Note: Preventable mortality is defined as death that can be mainly avoided through public health and primary preventive interventions. Mortality from treatable (or amenable) causes is defined as death that can be mainly avoided through health care interventions, including screening and treatment. Both indicators refer to premature mortality (under age 75). The data are based on the revised OECD/Eurostat lists.  
Source: Eurostat Database (data refer to 2016).

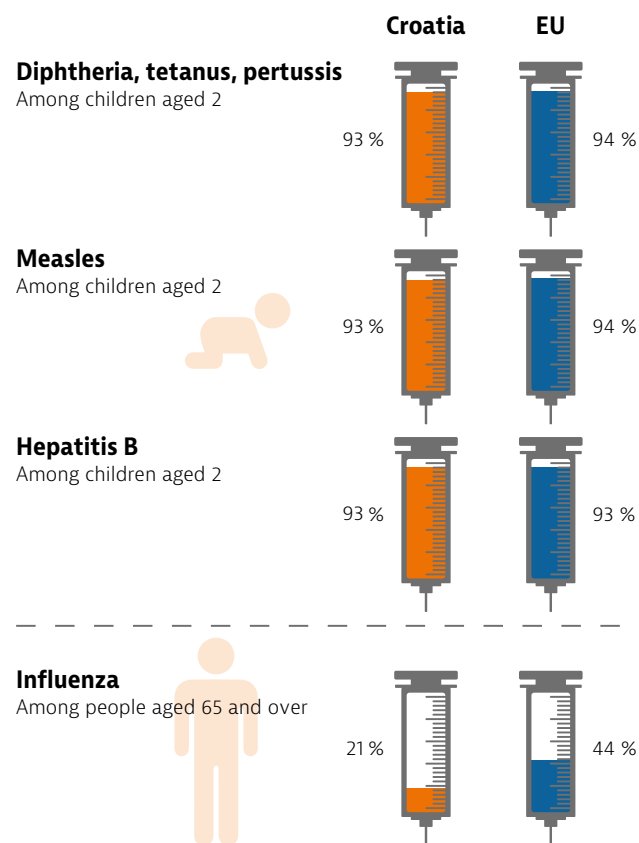
## Heart disease, alcohol use and accidents are other important causes of preventable mortality

The preventable mortality rates from ischaemic heart disease and stroke are double the EU average, which partly reflects the high and growing prevalence of obesity in Croatia. A Centre for Healthy Eating and Physical Activity was opened in 2014 and a National Plan for the Reduction of Salt Intake for the period 2015-2019 was adopted in 2014, but there is much more scope for stepping up preventive programmes. Deaths from alcohol-related causes and transport accidents also exceed the EU average. Alcohol control policies have been adopted, including a minimum age of 18 years for sales on or off the premises, but there is scope for implementing further restrictions. Croatia has adopted a National Programme for Road Safety for 2011-2020, with a range of measures to combat road accident fatalities.

### Vaccination rates are low for older people and declining for children

Vaccination coverage for children has been declining in recent years, to 93 % for the first dose of the measles vaccine among two-year-olds in 2018 and 93 % of the vaccination against diphtheria, tetanus and pertussis (Figure 12), both below the EU average and the WHO recommended target rate of 95 % needed to achieve herd immunity. This is despite the fact that childhood immunisations in Croatia are mandatory and fully covered by the health insurance system. Influenza vaccinations for people over 65 years are also covered by the CHIF. However, coverage remains low, reaching 21 % in 2016, well below the EU average of 44 % and even further from the WHO recommended target of 75 % (Figure 12). One of the main barriers to improved vaccination coverage is the emergence of a strong anti-vaccination movement in recent years. So far, there is no clear strategy on how to deal with this situation (Rechel, Richardson & McKee, 2018).

Figure 12. Vaccination rates in 2018 were low



Note: Data refer to the third dose for diphtheria, tetanus, pertussis and hepatitis B, and the first dose for measles.

Sources: WHO/UNICEF Global Health Observatory Data Repository for children (data refer to 2018); OECD Health Statistics 2019 and Eurostat Database for people aged 65 and over (data refer to 2017 or the nearest year).

### Mortality from treatable causes has decreased but is still higher than in most EU Member States

Mortality rates from treatable (amenable) causes are very high in Croatia and well above the EU average (140 compared to 93 per 100 000 population), but have declined since 2011. As with mortality from preventable causes, cardiovascular diseases play a big role, accounting for 40 % of deaths that could be avoided through timely and appropriate treatment. Colorectal and breast cancer also contribute substantially – making up a further 28 % of deaths from treatable causes (Figure 11).

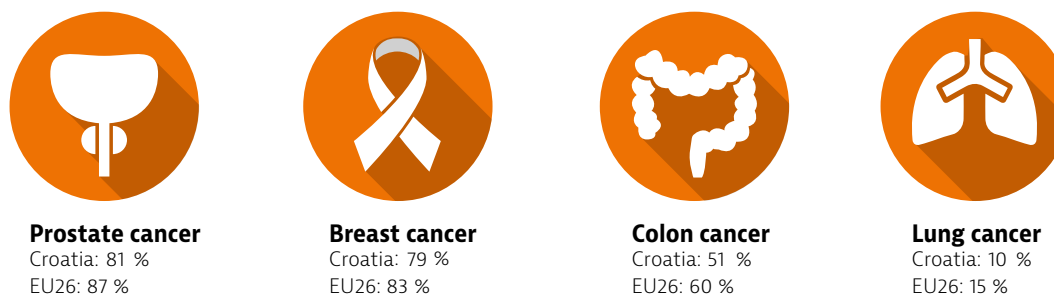
## Coverage of cancer screening programmes varies and survival rates have seen modest improvements

In 2006, Croatia introduced its first cancer screening programme, which focused on breast cancer. Screening programmes for colorectal and cervical cancer were launched in 2007 and 2012, respectively. A new national cancer plan is under development and is anticipated to be launched in 2019. Screening coverage rates for breast cancer in 2017 were around the EU average (60 % of women aged 50-69 reported having been examined in the last 24 months). For cervical cancer, screening rates were higher than the EU average (in 2014, 77.1 % of women aged 20-69 reported having had a cervical smear test in the last 24 months, compared to 66 % in the EU), but for

colorectal cancer, screening rates were lower (13.4 % of people aged 50-74 reporting in 2014 colorectal cancer screening in the last 12 months, compared to an EU average of 18.7 %, based on EHIS data). However, according to data for the third cycle of Croatia's colorectal cancer screening programme (starting in April 2016 and ending in October 2018, for people born between 1941 and 1965), 31 % of the target population was tested.

Five-year cancer survival rates in Croatia are below the EU average (Figure 13), although there were improvements between 2000-04 and 2010-14: rates increased from 47 % to 51 % for colorectal cancer, from 74 % to 79 % for breast cancer and from 66 % to 81 % for prostate cancer.

Figure 13. Five-year cancer survival rates in Croatia are below the EU average



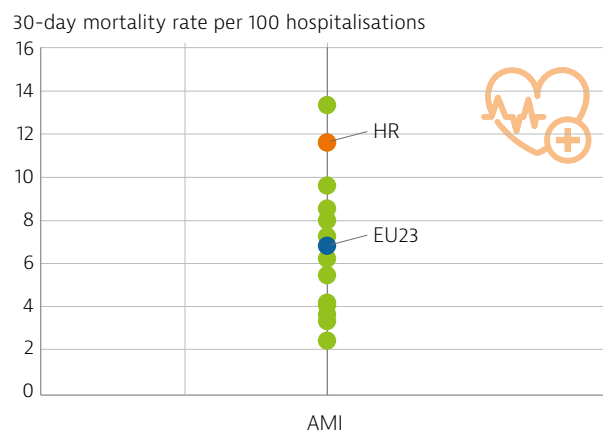
Note: Data refer to people diagnosed between 2010 and 2014.

Source: CONCORD Programme, London School of Hygiene & Tropical Medicine.

## There is considerable scope to improve the quality of care

One of the strategic goals of the National Health Care Strategy 2012-2020 is to improve the efficiency and effectiveness of the health system, and one of its priorities is to improve quality of care, including through monitoring, education, clinical guidelines, accreditation, payment in relation to quality, and health technology assessment (HTA). Although few of these measures have been implemented, in 2018, the Agency for Quality and Accreditation (now subsumed under the Ministry of Health) published the results of an audit of 28 hospitals, conducted in 2016-17. Information on the in-hospital case fatality rate for acute myocardial infarction (AMI; or heart attack) indicates a mortality rate that is higher than in many other EU countries (Figure 14). This suggests substantial scope for improvements in the quality of hospital care. In addition, antimicrobial resistance (e.g. for *Acinetobacter* spp., resistance in Croatia is higher than in any other EU country) continues to be an area of concern (ECDC, 2018).

Figure 14. The 30-day mortality rate following hospital admission for heart attack is high



Note: Figure is based on admission data and has been age-sex standardised to the 2010 OECD population aged 45+ admitted to hospital for AMI.

Source: OECD Health Statistics 2019 (data refer to 2017 or nearest year).

## 5.2. Accessibility

### The benefit package is comprehensive

There is a broad benefit package covered through the mandatory health insurance system, with most types of health services included (Section 4). Excluded services are specified in a negative list, with the exception of pharmaceuticals, where positive lists specify which pharmaceuticals are provided free of charge and those that require patient co-payments (Section 5.3). Outpatient pharmaceuticals not included in the positive list have to be covered fully by patients.

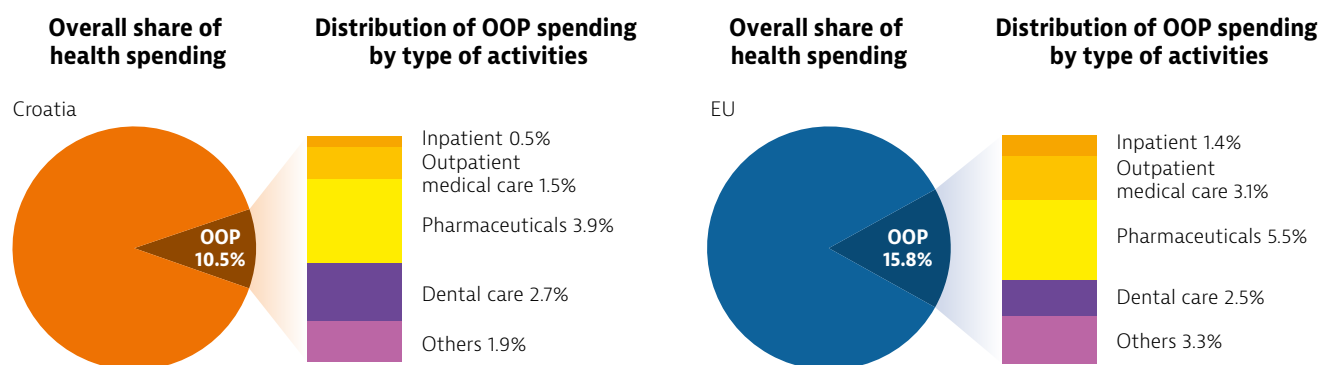
### Co-payments have been introduced, but generally do not have a negative effect on access

Cost-sharing was introduced in 2003, reducing the depth of the benefit package (Section 4). Co-payments are now required for days of hospitalisation, visits to primary care doctors and pharmaceuticals prescribed

outside of hospitals. However, pharmaceuticals provided in hospitals are free of charge, and cost-sharing is capped at HRK 2 000 (approximately EUR 264) per episode of illness in secondary or tertiary care. Around 20 % of the Croatian population is exempt from paying user charges. Co-payment exemptions are given to certain population groups (e.g. children, students, people with disabilities, and those on low incomes) and people on certain treatments (cancer, infectious diseases, chronic psychiatric illness, fertility treatment and antenatal care).

As mentioned in Section 4, despite its overall low health expenditure, Croatia has a high share of public expenditure on health and OOP expenditure (10.5 %) is clearly below the EU average (Figure 15).

Figure 15. OOP spending in Croatia is lower than the EU average



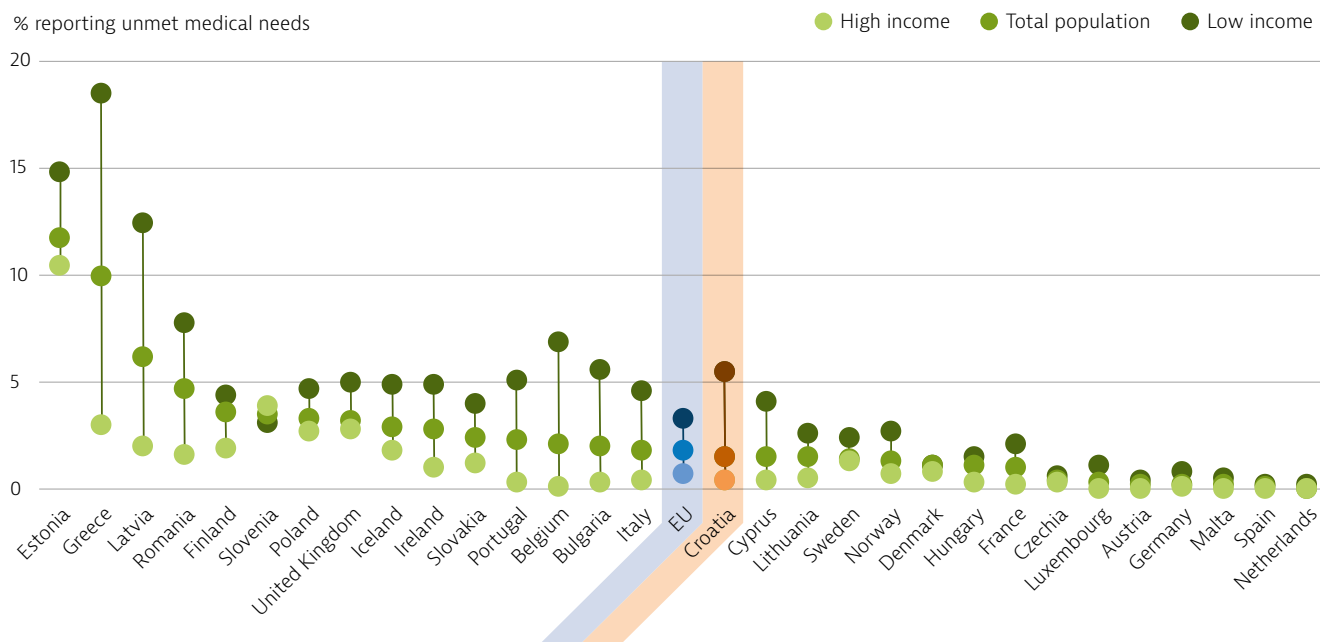
Sources: OECD Health Statistics 2019 (data refer to 2017).

### Unmet needs for medical care and catastrophic spending are generally low

Croatia shows a very low rate for self-reported unmet needs for medical care (1.6 %). Despite exemptions from co-payments, the unmet needs rate is much higher in low-income groups than in high-income groups (Figure 16). Apart from income level, self-reported unmet needs for medical care also vary by education, age and gender. For example, unmet needs for people aged 65 and over are among the highest in the EU. These variations might indicate problems in access.



**Figure 16. Unmet needs for medical care are lower than in the EU on average, but there is greater variation across income groups**

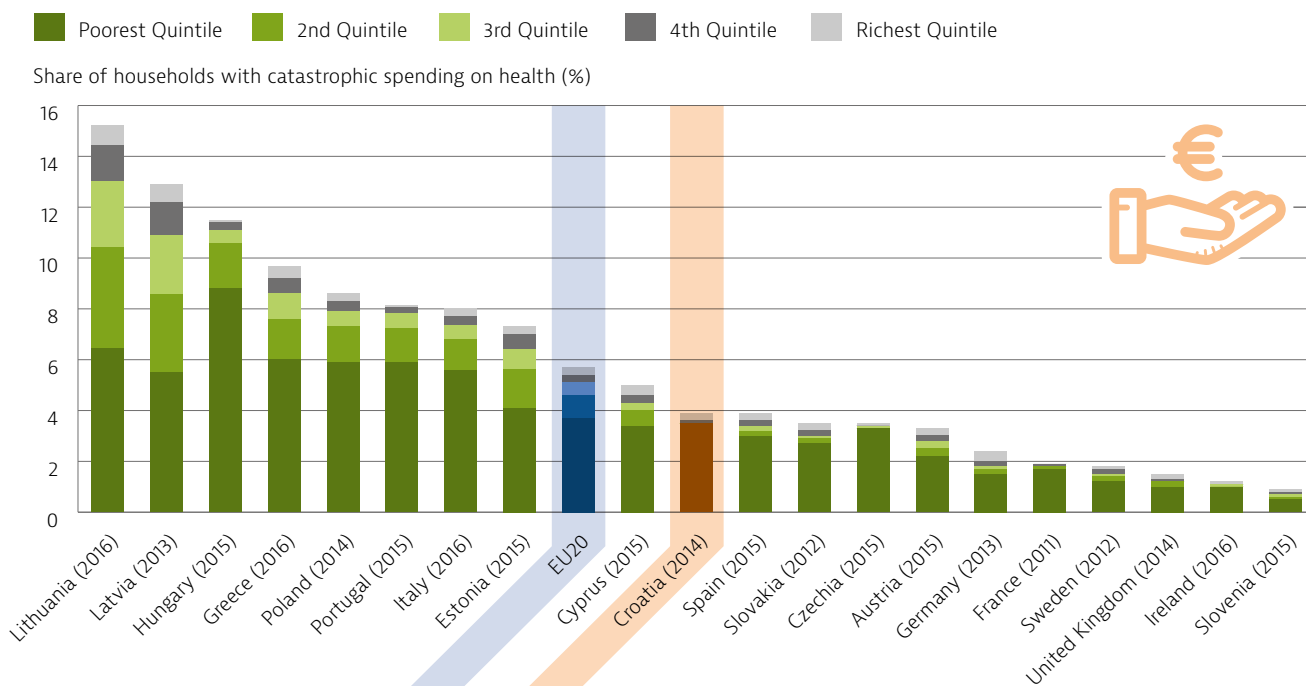


Note: Data refer to unmet needs for a medical examination or treatment due to costs, distance to travel or waiting times. Caution is required in comparing the data across countries as there are some variations in the survey instrument used. Source: Eurostat Database, based on EU-SILC (data refer to 2017).

The overall prevalence of catastrophic health expenditure<sup>3</sup> in Croatia is comparatively low, amounting to 4.0 % in 2014 (the latest year for which Croatian data are available) (Figure 17). It is likely that

the low cost-sharing levels, exemptions and extensive uptake of voluntary health insurance to cover co-payments account for this low level (Thomson, Cylus & Evetovits, 2019).

**Figure 17. Catastrophic spending on health is relatively low in Croatia thanks to financial protection tools**



Source: WHO Regional Office for Europe, 2019.

<sup>3</sup>: Catastrophic expenditure is defined as household OOP spending exceeding 40 % of total household spending net of subsistence needs (i.e. food, housing and utilities).

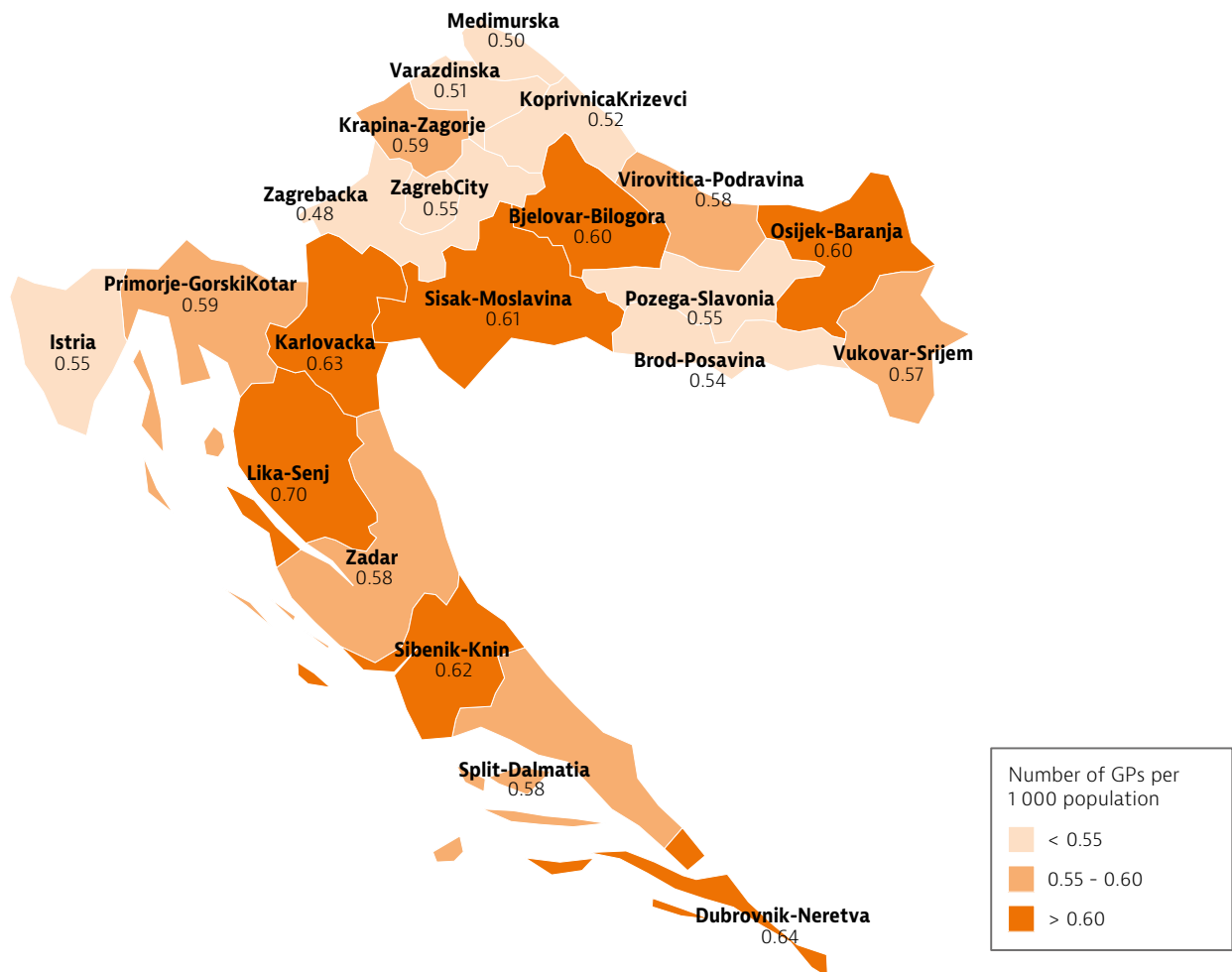
### Peripheral areas have fewer facilities and health workers

The geographical distribution of health care infrastructure and human resources for health varies considerably. Central Croatia (mainly Zagreb county and the city of Zagreb) has the largest number of facilities and health workers, while there are fewer facilities and health personnel in more remote areas, such as the islands off the Adriatic coast and rural areas in central and eastern Croatia. The distribution of GPs also differs substantially across the country (Figure 18). Out of 20 counties, 3 counties lack primary care doctors, causing the remaining doctors to work overtime. More people in Croatia (0.7 %) report unmet medical needs due to distance than in any other EU Member State, with an EU average of 0.1 % in 2017. At the same time, there are a number of hospitals in close proximity to each other offering the same types of services. Several reforms have been initiated to address this issue, but have not been implemented (Section 5.3).

### Access to primary care in underserved areas is being improved

Croatia has taken a number of initiatives to improve access to care in underserved areas. A grant from the European Social Fund is being used to finance medical training and increase the number of specialists in family medicine, paediatrics, clinical radiology, emergency medicine, and gynaecology and obstetrics in those areas. Co-financing from the European Fund for Regional Development is being used to improve the delivery of primary care services in 4 out of 20 counties. At the local level, the CHIF has special standards for small communities and counties have taken additional measures to attract and retain health workers, such as offering higher salaries or providing apartments, but the effect of these measures has so far not been evaluated.

Figure 18. GPs are unevenly distributed throughout the country



Note: The graph shows the number of GPs contracted by the CHIF per 1 000 population in 2019. Source: CHIF, Data on medical doctors (GPs), 2019.

## Human resources planning is in an early stage of development

Human resources planning is still limited, despite Croatia facing a shortage of doctors and nurses in some parts of the country and an oversupply of some other types of health professionals. The potential outmigration of health professionals following the country's accession to the EU in 2013 and low salaries are additional concerns. Croatia has started to address these issues through attempts to encourage young people to study medicine, and salary increases. In May 2015, the government adopted the Strategic Plan for Human Resources in Health Care for 2015–2020, which aims to establish a human resources management system, although so far with limited success.

## 5.3. Resilience<sup>4</sup>

### Public debt constrains public spending

Croatia is still recovering from the impact of the economic crisis that saw its GDP fall by more than 12 % between 2008 and 2014 and steep rises in the unemployment rate. Although the economy has recovered and unemployment levels decreased to 11 % in 2017, high levels of public debt still exert significant constraints on public spending. Population ageing plays less of a role, although it is projected to increase health care expenditure by 0.7 % of GDP by 2070 (European Commission-EPC, 2018). The European Commission concluded that, overall, Croatia's economy does not face fiscal risks in the short term, but there is a risk in the medium- and long-term due to a high debt-to-GDP ratio and sensitivity to possible macro-fiscal shocks (European Commission, 2019a).

### Financial sustainability is compromised by hospital debts

It has been recognised for some time in Croatia that the hospital payment system needs further reform (European Commission, 2019b). The health insurance system is underfunded to pay for publicly funded hospital services, resulting in debts for both the CHIF and the hospitals, amounting to EUR 1.1 billion in mid-2017. The debts are then paid off by periodic state budget transfers into the system. The situation raises concerns that the financial sustainability of the health system may be threatened by the accumulation of these debts (European Commission, 2019c).

## Accelerated waiting lists for specialist care have been introduced

Long waiting lists for specialised and hospital treatment are another challenge. The Ministry of Health introduced in 2017 a priority waiting list to address this problem. In this new system, patients with suspected serious illnesses (such as cancer) receive accelerated access to specialist care, following referral from their GP. Specialist consultation must take place within three days of referral and treatment must start within one month. Information available so far indicates that the system is working as it should and that most patients referred to specialist care under the new system are indeed suffering from serious illnesses.

## The hospital sector is a key target for efficiency reforms but little progress has been made

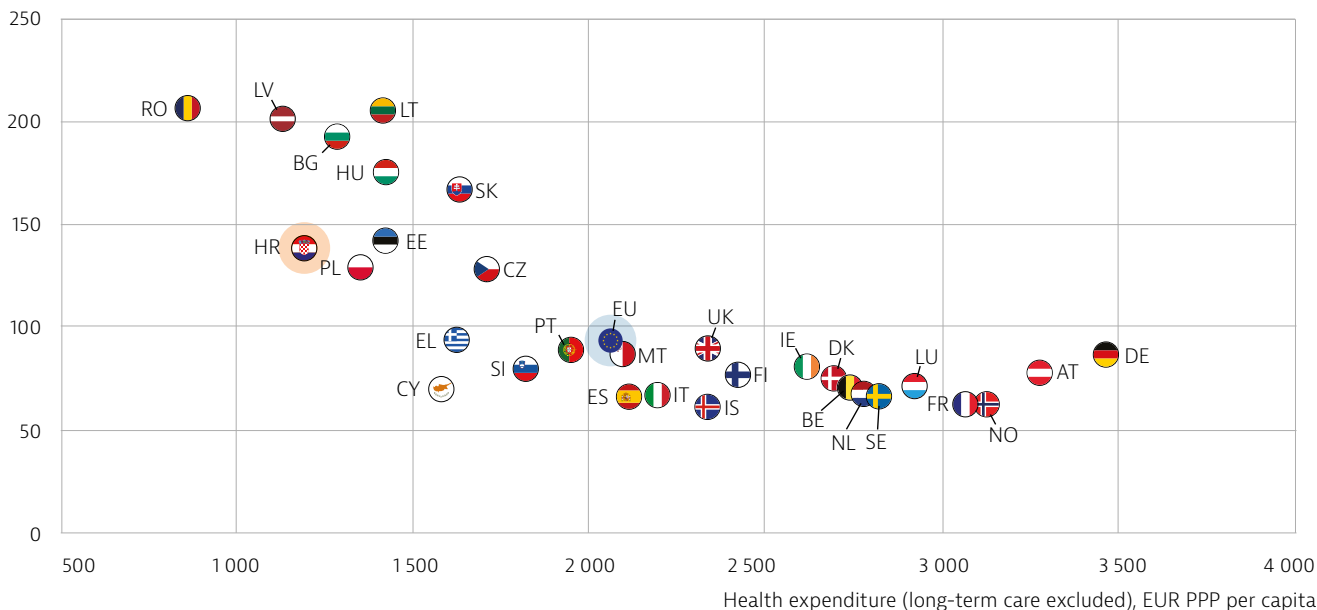
Figure 19 highlights that Croatia is doing reasonably well when considering levels of mortality from treatable causes in relation to health expenditure per capita. Nevertheless, there is clear scope for improving health system efficiency. One of the most vital areas needing reform is the hospital sector. Several national plans targeting hospitals have been produced, but with very limited success due to very slow implementation (European Commission, 2019c).

The national hospital plan for 2015–16, developed with the support of EU and World Bank, aimed to improve effectiveness and efficiency through the principles of 'functional integration' (reducing organisational complexity, fixed and variable costs) and 'subsidiarity' (shifting services from inpatient to outpatient facilities). Furthermore, there were plans to reorganise hospital care around four clinical centres (Zagreb, Rijeka, Split and Osijek). Because implementation stalled, in 2018 the government issued a new hospital plan for the period 2018–20, which restates these principles and aims to improve quality.

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

**Figure 19. Croatia's health system does reasonably well with its levels of expenditure, but there is room for efficiency gains**

Treatable mortality per 100 000 population



Note: The EU average is unweighted only for health expenditure data.  
Source: Eurostat Database; OECD Health Statistics 2019.

### Hospital payment systems have been reformed

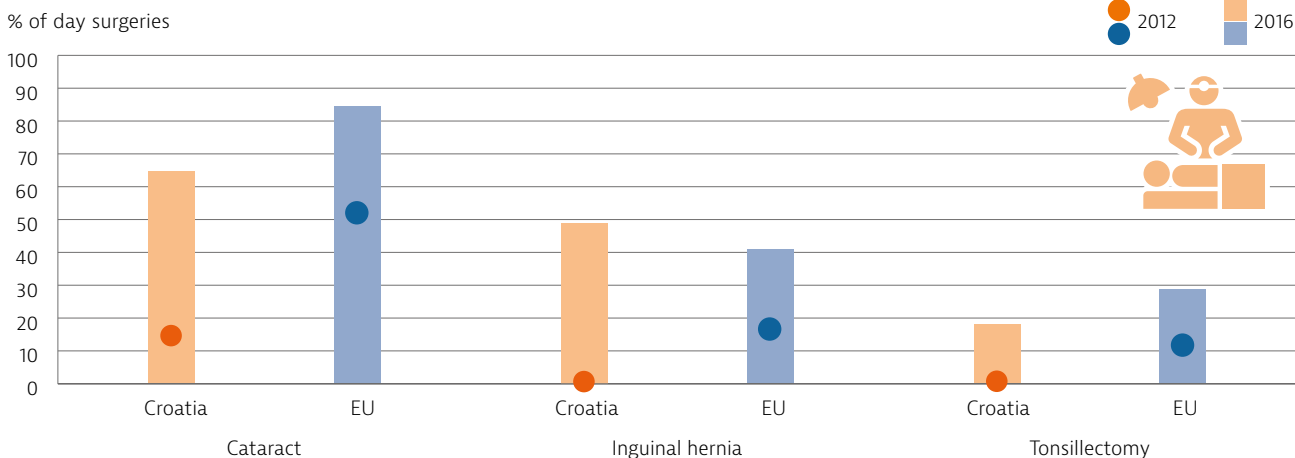
An area where changes have been successfully introduced is the hospital payment system, where case-based payments were introduced in 2002. However, these changes on their own have not been sufficient to yield major efficiency savings. A study published 10 years later found that the new payment system resulted in reductions in ALOS, but few changes in the number of cases treated or the quality of services when measured by readmissions. In 2015, the hospital payment mechanism was altered and hospitals are now paid only part of their monthly revenue upfront (currently 90 % of the hospital's

limit), with the remainder paid after services have been delivered. As a result, hospitals have further reduced ALOS. There was also a marked increase in day surgery (Figure 20), as well as in the number of outpatients.

### Health technology assessment and accreditation are still at an early stage of development

In 2007, Croatia set up a health quality and accreditation agency with HTA as one of its responsibilities. Formal HTA activities began in 2009, but with limited resources to assess new medicines or medical devices.<sup>5</sup> In January 2019, the agency was

**Figure 20. Day surgery has risen rapidly in Croatia**



Note: Data refer to 2012 and 2016 or the nearest year.  
Sources: OECD Health Statistics 2018; Eurostat Database.

5: The agency was supposed to play a key role in hospital accreditation, but this function was never launched.

subsumed under the Ministry of Health and its future role remains to be clarified. Currently, decisions on the pricing and reimbursement of medicines are taken by the CHIF based on defined criteria. The further development of HTA could be an important means of improving the efficiency and transparency of the health system, and with this in mind Croatia is participating in the EUnetHTA Joint Action, the European collaboration promoting HTA activities.

### **Policies aimed at reducing pharmaceutical expenditure have had mixed results**

Despite its comparatively high share of spending on pharmaceuticals (Section 4), Croatia still struggles to include access to very expensive medicines (Box 2). The high share of expenditure is also indicative of inefficiencies. However, part of the evidence base for action is missing, as comparable data on the volume of generics in the pharmaceutical market are not readily available for Croatia.

Some actions have been taken to tackle pharmaceutical expenditure. This includes changes to pricing and reimbursement, updating the list of benchmark countries for external price referencing, as well as monitoring and correcting the prescription levels of doctors. Croatia is also taking part in cross-border cooperation to jointly negotiate with the pharmaceutical industry on drug pricing through the Valletta Group (with Cyprus, Greece, Ireland, Italy, Malta, Portugal, Romania, Slovenia and Spain). However, the centralised procurement of hospital medicines, which was an important measure recommended in the 2014-2018 Health System Quality and Efficiency Improvement Project supported by the World Bank, has only partially been achieved so far.

### **There is no strategy for the provision of long-term care**

One area that requires attention is the development of a comprehensive strategy on long-term care. The system of long-term care is spread across different health and social welfare institutions and the fragmentation of the system often leads to inefficiencies which, combined with an ageing population, are likely to pose increased financial burdens. The scarce availability of community-based services leads to a situation where family members, mostly women, take on the burden of care provision, which reduces their availability on the labour market (European Commission, 2019b). In addition, hospitals are being used to provide long-term care, which might be an inefficient use of resources.

#### **Box 2. A national fund aims to help the purchasing of very expensive medicines**

In 2017, the government established a special state budget account where individuals and organisations can make private donations to help finance the reimbursement of very expensive medicines that are not covered by the CHIF. The funds collected are strictly earmarked to be spent on defined medicines for the treatment of rare or serious diseases, and a special commission evaluates and approves the purchase of these medicines for each patient.

### **E-health solutions are underdeveloped**

There has been major progress in some e-health solutions, such as e-prescriptions, which are now operational and widespread, with 80 % of prescriptions in community pharmacies being electronic. E-referrals and electronic health records, however, are still under development. Planned investment in health centres is expected to improve capacity for further development of e-health services (European Commission 2019c).

### **National health plans steer the delivery of services**

The National Health Care Strategy 2012–2020 sets out the overall vision, priorities and goals for the health system until 2020. However, its implementation has so far not been evaluated and several reform initiatives (e.g. with regard to hospitals and primary care) have addressed subsections of the health system in an uncoordinated manner. In particular, there have been few concrete results in restructuring the hospital sector, one of the main areas targeted by the strategy.

The medium-term planning tool (with a time frame of about three years) is the National Health Plan (NHP), specifying broad tasks and goals, priority areas and the health needs of particular population groups. The NHP also identifies implementation responsibilities, deadlines and benchmarking criteria. These objectives are based on basic health monitoring and existing health care structures, rather than more detailed health needs assessments, but nevertheless are the basis for specifying the health services that should be delivered to the population through annual planning instruments.

## 6 Key Findings

- Life expectancy in Croatia is increasing, but still lags about three years behind the EU average. One of the reasons for this persistent gap is the low effectiveness of public health interventions. Anti-tobacco policies are underdeveloped, indoor smoking in public places is still widespread, and rates of teenage smoking are the third highest in the EU. Obesity rates are rising, particularly among children. Preventable mortality is well above the EU average.
- Croatia spent 6.8 % of its GDP on health in 2017, much less than the EU average of 9.8 %. Although it is also among the three lowest spenders in the EU in terms of health spending per capita, Croatia has maintained a relatively high share of public spending, resulting in high levels of financial protection. However, levels of public debt still exert constraints on public spending on health. In addition, only around one third of the population is liable to pay health insurance contributions, thereby limiting the revenue base available to the health system.
- A large share of health expenditure goes to pharmaceuticals, far exceeding the EU average. Policy initiatives to address this include evolving centralised procurement for hospitals, but there is large scope for further action, such as increasing the share of generics. In contrast, a very small share of health expenditure is spent on long-term care, which is generally underdeveloped. In view of the ageing of the population, it will be important to increase the availability of community-based long-term care.
- There are fewer unmet needs for medical care in Croatia than on average in the EU, yet variations across income groups are substantial, pointing to potential problems in accessibility. In particular, unmet needs due to geographical distance are higher in Croatia than in any other EU Member State; moreover, unmet needs among older people are higher than the EU average. The strategic planning of human resources could be improved. Although the number of doctors and nurses has increased in recent years, they are unevenly distributed across the country, and many are either moving abroad or nearing retirement.
- Primary care is fragmented and seems to be underutilised compared to inpatient and hospital outpatient care. Long waiting lists for secondary and tertiary care are also a challenge. In 2017, the Ministry of Health introduced a system that provides patients with suspected serious illnesses (such as cancer) accelerated access to specialist care, following referral from their general practitioner. Information available so far indicates that the system has been successfully implemented.
- There is a lack of data on quality of care and on the effectiveness of health technologies. An Agency for Quality and Accreditation was established in 2007, but it has recently been subsumed under the Ministry of Health and its role has been limited in terms of both quality assurance and accreditation. The information that does exist on quality of care points to substantial scope for health system improvement.
- The strategic planning and financing of hospitals are key problems, with hospitals routinely accruing substantial debts. While the payment system for hospitals has been reformed, several attempts to rationalise and restructure the sector as a whole have stalled, prompting a new hospital plan for the period 2018-20.



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### Country abbreviations

Austria	AT	Denmark	DK	Hungary	HU	Luxembourg	LU	Romania	RO
Belgium	BE	Estonia	EE	Iceland	IS	Malta	MT	Slovakia	SK
Bulgaria	BG	Finland	FI	Ireland	IE	Netherlands	NL	Slovenia	SI
Croatia	HR	France	FR	Italy	IT	Norway	NO	Spain	ES
Cyprus	CY	Germany	DE	Latvia	LV	Poland	PL	Sweden	SE
Czechia	CZ	Greece	EL	Lithuania	LT	Portugal	PT	United Kingdom	UK

# State of Health in the EU

## Country Health Profile 2019

The Country Health Profiles are an important step in the European Commission's ongoing *State of Health in the EU* cycle of knowledge brokering, produced with the financial assistance of the European Union. The profiles 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, in cooperation with the European Commission.

The concise, policy-relevant profiles are based on a transparent, consistent methodology, using both quantitative and qualitative data, yet flexibly adapted to the context of each EU/EEA country. The aim is to create a means for mutual learning and voluntary exchange that can be used by policymakers and policy influencers alike.

Each country profile provides a short synthesis of:

- health status in the country
- the determinants of health, focussing on behavioural risk factors
- the organisation of the health system
- the effectiveness, accessibility and resilience of the health system

The Commission is complementing the key findings of these country profiles with a Companion Report.

For more information see: [ec.europa.eu/health/state](http://ec.europa.eu/health/state)

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