Health Systems in Action

Serbia
Keywords

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Health Systems in Action

Serbia
The Health Systems in Action series

The Health Systems in Action Insights series supports Member States in the WHO European Region that are not in the European Union. The Insights for each country are intended to:

- provide core information and data on health systems succinctly and accessibly
- outline the country health system context in which WHO's European Programme of Work is set
- flag key concerns, progress and challenges health system by health system
- build a baseline for comparisons, so that Member States can see how their health systems develop over time and in relation to other countries.

The series is co-produced by the WHO Regional Office for Europe and the European Observatory on Health Systems and Policies. It draws on the knowledge and understanding of the WHO Country Offices and of the Division of Country Health Policies and Systems (CPS), the Barcelona Office for Health Systems Financing and other WHO/Europe technical programmes; as well as the Health Systems in Transition series and the work of the European Observatory on Health Systems and Policies.

The Insights follow a common template that provides detailed guidance and allows comparison across countries. The series is publicly available on the websites of the WHO Regional Office for Europe and the European Observatory on Health Systems and Policies (eurohealthobservatory.who.int).

This edition of the Health Systems in Action Insight for Serbia was written by Erica Richardson and Vesna Bjegovic-Mikanovic.
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HEALTH SYSTEMS IN ACTION: SERBIA

Key points

- The health system was recentralized in 2019 and the Ministry of Health is largely responsible for organization and governance.

- Health care facilities are predominantly state-owned and Serbia has extensive health infrastructure.

- Maintaining sufficient health workforce capacity across the country is a challenge.

- The Serbian health system is based on compulsory health insurance, with payroll contributions the main source of public financing.

- Public spending on health as a share of GDP is above the average for South-Eastern European (SEE) countries. The benefits package covers a wide scope of services and 98% of the population, but financial protection is limited by co-payments.

- The high incidence of catastrophic and impoverishing out-of-pocket (OOP) payments reflects major gaps in de facto health coverage.

- Catastrophic spending on health is heavily concentrated in the poorest consumption quintile. Outpatient medicines and medical products are the largest drivers of catastrophic spending on health.

- Life expectancy in Serbia has increased, but remains below the average of the WHO European Region.

- Circulatory diseases and cancers are the most important causes of adult mortality and morbidity and uncontrolled hypertension is by far the leading risk factor affecting population health.

- Serbia has made progress towards combating antimicrobial resistance (AMR) by taking a One Health approach, but the country still has one of the higher rates of antimicrobial consumption in the WHO European Region.

- The COVID-19 pandemic has resulted in excess mortality and, according to data reported by Serbia to Eurostat, life expectancy at birth declined by 1.5 years between 2019 and 2020.

- AMR is a public health priority in Serbia and the sale of antibiotics in community pharmacies is now closely regulated.

This report looks at the action Serbia is taking to strengthen its health system; to achieve the Sustainable Development Goals; to address the priorities of the European Programme of Work; and to ensure that no one is left behind.
1 ORGANIZING THE HEALTH SYSTEM

The Serbian health system is based on compulsory health insurance, with payroll contributions as the main source of public financing

The main purchaser of publicly funded health services is the National Health Insurance Fund (NHIF). The state owns most health facilities and equipment. The basic infrastructure and organization of the health system were inherited from the period when the country was part of the former Yugoslavia. Health system reform has been embedded in wider public sector reforms and since 2000 significant progress has been made in the development of health policy, supported by extensive international assistance. After 2012 reforms focused on improving infrastructure, technology and payment mechanisms, and implementing an integrated health information system. The health system is administratively centralized. There is a largely unregulated private sector, which has developed without much control or state support. Privately provided health services are covered predominantly by out-of-pocket payments; voluntary health insurance plays only a marginal role, accounting for less than 1% of current spending on health in 2019.

The health system was recentralized in 2019 and the Ministry of Health is largely responsible for organization and governance

Although the system is now highly centralized, before 2019 ownership of primary care facilities and equipment had been transferred to local government, so management and capital investment decisions were decentralized. Local government was also made responsible for drafting specific health care plans and local public health programmes aligned to the needs of the local population. However, the Health Care Law (2019) recentralized primary care by transferring ownership of buildings and equipment to the national level. The Ministry of Health and related agencies now oversee the administrative and regulatory functions of the health system, with only some functions devolved to the local level. The health system is improving information for patients on their rights and entitlements, but the person-centredness of the system has scope for future development.

The benefits package covers a wide scope of services and 98% of the population but financial protection is limited by co-payments

All citizens, as well as people with permanent or temporary residence, have the right to access publicly financed health services in Serbia. In 2017, 98% of the population was covered by compulsory health insurance, including the non-working population whose health insurance contributions are financed from the central state budget (RFHI, 2017). Care for uninsured citizens is financed from the state budget, so entitlement to benefits is not strictly linked to the payment of contributions. The package of benefits is very precisely defined, covering nearly all health services, as well as salary reimbursement during temporary work disability and the reimbursement of health-related travel costs. However, financial protection is limited by out-of-pocket costs. The proportion of costs covered under compulsory health insurance ranges from 65% to 95%, depending on the type of service. For some services the co-payment is defined as a fixed amount and varies from €0.5 to €9. Out-of-pocket spending accounted for 37% of current health expenditure in 2019, representing the main challenge to equity in health financing and financial protection. The system of mandatory health insurance financing is also highly regressive regarding self-employed, placing most of the financial burden on employees and the same percentage burden on low- and high-income self-employed.

Health care facilities are predominantly state-owned

Primary care services are provided by a state-owned network of primary health care centres (“dom zdravlja”) and patients are assigned to their local centre. Secondary care is provided as outpatient or inpatient care in mainly state-owned hospitals. Tertiary care facilities have the most specialized personnel and medical equipment and provide both diagnostic and curative services. All three levels are closely interconnected, and patient pathways are well organized. However, the system relies on inpatient care, admitting patients to hospitals for procedures that could be handled in primary care. Both the Health Care Law (2019) and the Health Insurance Law (2019) reinforced the need for patients to have a “chosen doctor”, that is, a designated primary care doctor who provides them with health services and acts as a gatekeeper to higher levels of care. One aim is to rebalance the system in favour of primary care, as around 51% of the NHIF budget is spent on secondary and tertiary level care, while only 31% goes to primary care (RFHI, 2020).

2 FINANCING AND ENSURING FINANCIAL PROTECTION

Public spending on health as a share of GDP is above the average for SEE countries

Throughout the 2000s public spending as a share of GDP fluctuated in Serbia, peaking at 5.9% in 2008, but falling to 4.7% in 2017, then increasing to 5.1% in 2019 (Fig. 1).
Health spending as a proportion of GDP used to be high in Serbia compared with other SEE countries and around the same level as the EU average, but has declined since 2012 and is now close to the SEE average. In real terms, both public and private spending are increasing over time (Atanasijević, Križnik & Zubović, forthcoming).

Current spending on health per person in international USD (purchasing power parity = PPP) is far below the EU average, but higher than in SEE overall and in upper-middle-income countries (UMIC) of the WHO European Region (Fig. 2). Breaking this down by funding source highlights the sizeable role played by out-of-pocket (OOP) payments in total health expenditure and the small role played by VHI.

Most health spending comes from compulsory health insurance but OOP spending is high

The main public revenue source for health financing in Serbia is the compulsory health insurance contributions paid from employee and employer contributions. Contributions for the non-working population come from general taxation. Public spending on health constituted 58.4% of current health expenditure in 2019.

OOP payments are the most dominant private source of expenditure. Although consistently quite high, OOP spending on health has fluctuated over time (Fig. 3). Since 2000 the lowest proportion of health spending coming from OOP payments was 23.8% in 2002, but the share crept up to a peak of 40.6% in 2017, falling back to 37% in 2019.

OOP spending on health is a combination of user fees and direct formal and informal payments for services, but over half of OOP spending is for medicines (Bjegović-Mikanović et al., 2019). User fees are applied to almost all health services, a combination of fixed and percentage co-payments. The type of user fee and proportion of cost covered under mandatory health insurance varies from 65% to 100%, depending on the service. Exemptions are applied for vulnerable population groups and, in practice, apply to up to 50–60% of the population (Bjegović-Mikanović et al., 2019). For some health services, the total amount of user fees for one person in a calendar year is not supposed to exceed half their monthly income (salary or pension). For insured persons with no salary or pension (e.g. unemployed persons), the highest annual amount of co-payments should not exceed half of their average monthly income for that year. However, this cap may not include co-payments paid for implants, medical devices or medicines. Outpatient medicines and medical products are the biggest drivers of catastrophic spending on health (Atanasijević, Križnik & Zubović, forthcoming).

Direct payments are for services not included in the package of benefits (see above), but mostly they are for accessing private services. Since 1989 medical professionals have been allowed to open private practices. Civilians also pay out of pocket to access care in facilities under the parallel military health system when these services are not covered by the NHIF.
Informal payments are also a feature of the system, although their true extent is hard to ascertain. However, anti-corruption efforts and a ‘zero tolerance’ approach to informal payments mean that patients are now more likely to refuse to pay informally – particularly in the bigger cities (Bjegovic-Mikanovic et al., 2019).

High OOP spending is the main challenge to improving financial protection

The limited depth of public coverage, particularly for pharmaceuticals, with the associated high levels of OOP spending, negatively impacts financial protection. Although there are exemptions to official user fees, in practice vulnerable groups are still paying out of pocket to access goods and services and this negatively impacts equity in the system (Arsenijevic, Pavlova & Groot, 2015). Financial barriers are the main cause of unmet needs for health care in Serbia. National Health Survey data from 2019 indicate that 31.3% of respondents could not afford health care for financial reasons. Affording dental care was the most difficult (13.9%) followed by medical health care (12.2%) and prescribed medicines (9.9%) (IPH Batut, 2021a). Income inequality in unmet needs is also high, for both health care and dental care. In 2020, 7.8% of the poorest income quintile experienced unmet needs for health care; this is more than eight times that of the richest quintile (0.9%) (Atanasijevic, Križnik & Zubović, forthcoming).

On average, OOP spending accounted for 4.5% of household budgets in 2019 and 13.5% of households were further impoverished, impoverished or at risk of impoverishment after OOP health spending (Fig. 4). Households with catastrophic levels of OOP spending

Box 1
There is considerable scope for improving efficiency in the health system

There are currently no systems in place to monitor the performance of the health system in general, and to assess its allocative efficiency. The provider payment systems for primary and hospital care remain largely input-based, with few if any incentives for quality improvement or efficiency gains. Output-based payment reforms for acute care at hospitals have been piloted since 2015 and implemented since 2019, but only for a small fraction of total payment, so that hospitals are still largely paid according to line-item budgets. However, the introduction of diagnosis-related groups (DRGs) should enable policy-makers to incentivize more efficient resource allocation between levels of care in the future (Bjegovic-Mikanovic et al., 2019).

Through 2021 the Ministry of Health, with support from the World Bank, has been training hospital management teams to support better implementation of DRG payments. In total, 186 members of management teams from 58 hospitals had an opportunity to increase skills in utilization of primary classifications, coding standards, coding quality, DRG system design and grouping algorithms, costing and tariff setting, reporting and DRG-specific performance monitoring.

A study evaluating the technical efficiency of different hospitals in Serbia using DRG data found that there was considerable scope for improving efficiency in the hospital network through greater use of day surgery, for example. Hospitals covering an older cohort were found to be less efficient, as they had longer lengths of stay due to weaknesses in the provision of social care for older people. Size was also an important factor, and the study noted that it would be very hard for smaller hospitals (with fewer than 200 beds) in remote areas to increase efficiency, as they served fewer patients relative to their fixed operating costs (Medarević & Vuković, 2021).
Health Systems in Action: Serbia

are defined as those which spend more than 40% of their capacity to pay for health care. In 2019 this applied to 12.2% of households in Serbia and about 80% of all households with catastrophic spending were in the poorest quintile (Atanasijević, Križnik & Zubović, forthcoming).

High levels of OOP spending on health that cause unmet needs and financial hardship are an indication that public financing for health care is insufficient. Where the gap in funding is not covered by OOP payments, care is rationed and waiting times increase. Indeed, long waiting times are another barrier to access in Serbia and result in unmet needs. In 2019, 15.4% of National Health Survey respondents reported unmet needs due to waiting times (IPH Batut, 2021a). Long waiting times in Serbia are associated with poorer health outcomes, particularly in cancer care, as waiting times for radiotherapy are even longer than for other health services (Bjegović-Mikanović et al., 2019).

Fig. 4
Share of households with catastrophic health spending by risk of impoverishment and OOP payments as a share of current spending on health

Notes: The data on OOP payments are for the same year as the data on catastrophic health spending. A household is impoverished if its total spending falls below the poverty line after OOPs; further impoverished if its total spending is below the poverty line before OOPs; and at risk of impoverishment if its total spending after OOPs comes within 120% of the poverty line. The poverty line used here is a relative line reflecting basic needs (food, housing, utilities).

Source: WHO Barcelona Office for Health Systems Financing.

3 GENERATING RESOURCES, PROVIDING SERVICES AND ENSURING ACCESS

Primary care is accessible but underutilized

Services at the primary care level are provided by an extensive state-owned network of primary health care centres and financed using capitation. Primary care is provided by a “chosen doctor” and almost 95% of the population have registered their chosen doctor to provide primary care services. Nevertheless, a lack of trust in primary care has persisted and patients often self-refer to private medical institutions and pay out of pocket for their care (Atanasijević, Križnik & Zubović, forthcoming).
Serbia has extensive hospital infrastructure across the country

Most hospitals are public and under the Ministry of Health, although there is also a network of parallel providers under the Ministry of Defence. Over the past decade the number of hospital beds per 100,000 population in Serbia has been gradually increasing (Fig. 5). However, the actual number of hospital beds in the health system has been falling and in 2016 the number of beds was 15% lower than it had been in 1990. The main reduction in capacity was during the public health care sector reform (2003–2006), which encompassed the implementation of hospital care restructuring projects. The steady increase in the number of hospital beds per 100,000 population is due to the falling population numbers in Serbia (Bjegovic-Mikanovic et al., 2019). There is at least one hospital in each district in Serbia and smaller towns may have their own hospitals (see also Box 1). This ensures good geographical coverage.

As part of the COVID-19 response, the Government of Serbia built three new facilities specifically for the treatment of COVID-19 (in Batajnica, Krusevac and Novi Sad), which are departments of existing clinical centres. The Ministry of Health estimates what expensive medical equipment and capital investments are needed, sets criteria, prepares national investment plans and tender procedures, and approves costs. Expensive medical equipment and capital investment is covered from the national health budget, whereas cheaper medical
Maintaining sufficient health workforce capacity across the country is a challenge

As with hospital beds, the numbers of doctors and nurses per 100,000 population in Serbia have been stable since 1990, but this is largely due to demographic changes and the size of the population contracting; the size of the health workforce has also been contracting (IPH Batut, 2001, 2021b). The numbers of doctors and nurses are above the averages for the WHO European Region and the EU (Fig. 6). However, these numbers refer to licensed rather than practising doctors and nurses and may thus overestimate the size of the health workforce. Furthermore, there is considerable variation across the country. The medical workforce tends to be concentrated in urban areas with better infrastructure, medical universities and highly specialized medical centres (Bjegovic-Mikanovic et al., 2019). Significant migration of health workers has increased waiting times for some elective procedures such as hip and knee replacement, cataract surgery and diagnostic imaging (Atanasijević, Križnik & Zubović, forthcoming).

In primary care a system of referral via the “chosen doctor” was introduced in a team with nurses at health centres in 2005; although the “chosen doctors” providing primary care services for adults do not require a specialization in general practice, most have it. In addition, patients choose a dentist, parents choose a paediatrician for their children, and women also choose a gynaecologist to provide primary care services such as screening and health checks.

There are shortages of some specialists, such as anaesthetists in the hospital sector, that make it harder for the Serbian health system to respond to the population’s health needs effectively. Staffing shortages are one of the reasons for long waiting times to access certain health services. Despite these challenges, Serbia currently does not have an official health workforce strategy (Bjegovic-Mikanovic et al., 2019).

The accessibility of essential services is relatively good, but ensuring access for the Roma population is a challenge

The universal health coverage (UHC) service coverage index measures access to essential services. It increased swiftly between 2000 and 2005, from 49 to 68 out of 100, but progress then slowed, reaching 71 in 2019, while the WHO European Regional average continued to improve steadily (Fig. 7). Service capacity and access have remained stable and high over the same time period, but the UHC service coverage sub-index on noncommunicable diseases has only improved from 44 in 2000 to 46 in 2019. The strong overall improvements between 2000 and 2005 were driven by gains in service coverage for infectious diseases. The sub-index on infectious diseases increased from 20 in 2000 to 77 by 2005, reaching 82 by 2019. However, the COVID-19 pandemic inevitably had a negative impact on waiting times and access to services. Of the 24% of respondents to the sixth round of the Behavioural Insights Survey on COVID-19 conducted in June 2021 who had been denied health care in the past three months, 79.9% said they were not able to get an appointment.

Serbia is one of the few countries in Europe where the number of new HIV infections has been increasing over the past decade (UNAIDS, 2021). However, the country is making progress towards the UNAIDS 95-95-95 target of ensuring 95% of people living with HIV are aware of their status, 95% of these are on treatment and 95% of those on treatment will achieve viral suppression by 2025 (Fig. 8). In Serbia in 2020, 87% of people living with HIV were aware of their status and of these 76% were on treatment, with 90% of those on treatment achieving viral suppression (UNAIDS, 2022).

Routine childhood vaccination services are provided in primary care by the chosen paediatricians. Despite good coverage, the national targets of 95% for some mandatory vaccines (such as measles, mumps and rubella) have not been reached. In 2019 only 87% of infants had received the first dose of the measles vaccine, although 91% had received their second dose. However, for the

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**Fig. 7**

The UHC service coverage index has remained stable since 2005

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**Note:** The UHC service coverage index is defined as the average estimated coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health; infectious diseases; noncommunicable diseases; and service capacity and access; among the general and the most disadvantaged population.

**Source:** WHO, 2022b.
full course of three vaccinations against diphtheria, tetanus and pertussis, 97% of children were covered in 2019. Vaccination coverage level is not available per birth cohort to check for possible immunization gaps because an electronic immunization register is not fully functional (Bjegovic-Mikanovic et al., 2019).

For the Roma population, the role of Roma health mediators was established in 2008 with the aim of improving access to primary care services including vaccination. The mediators are assigned to the multidisciplinary teams of primary care centres in 59 towns and municipalities that are home to most of the Roma population. Despite progress in immunization of Roma children, still only 63% of children aged 24–35 months living in Roma settlements received all the vaccines recommended in Serbia, compared to a national average of 80% (UNICEF, 2020).

Serbia has also made progress in improving access to tuberculosis (TB) services (Box 2).
**4 IMPROVING THE HEALTH OF THE POPULATION**

**Life expectancy in Serbia has increased, but remains below the average of the WHO European Region**

The latest mortality data reported by Serbia to WHO refer to 2017. According to these data, life expectancy at birth stood at 75.7 years and had been steadily improving over time. This was above the average for South-Eastern Europe but below the average for the WHO European Region and far below the average for the European Union (Fig. 9). On average, females live five years longer than males (78.2 years compared to 73.2 years), a gender gap which is below the average in the WHO European Region (6.3 years). Newer data were reported by Serbia to Eurostat, indicating a life expectancy at birth of 76.0 years in 2019, declining to 74.5 years in 2020 (Eurostat, 2022).

The COVID-19 pandemic has resulted in excess mortality

According to data reported by Serbia to Eurostat, life expectancy at birth declined by 1.5 years between 2019 and 2020, most likely due to the direct and indirect effects of the COVID-19 pandemic. Excess mortality, that is, those deaths over and above what would normally be expected in a country over a specific time period, increased markedly in 2020 and 2021, and is estimated to have peaked in December 2020 (WHO, 2022c).

Infant and maternal mortality have fallen consistently

According to analysis by the Institute of Public Health, using death certificates, birth registrations and hospitalization reports, the maternal mortality rate declined from 14.5 maternal deaths per 100,000 live births in 2008 to 9.7 in 2020. In 2019 all births in Serbia were attended by a skilled birth attendant and 97% of pregnant women attended at least four antenatal visits, although this fell to 83% for mothers living in Roma settlements (UNICEF, 2020).
Infant mortality fell consistently between 2000 and 2019, from an estimated 11 to 4.6 deaths per 1000 live births. This is higher than the EU average mortality rate of 3.4 per 1000 live births, but lower than the average for SEE countries, which was 5.2 per 1000 live births in 2019. However, estimated infant mortality rates for the Serbian Roma community were considerably higher than the national average; in 2019 it was 8 per 1000 live births (UNICEF, 2020). Babies born to households in Roma settlements were twice as likely to have a low birthweight (12% rather than 6% weighing under 2500g in 2019). Nevertheless, this marks a steady improvement in infant mortality rates for Serbian Roma communities, decreasing from 25.9 in 2005 to 14 in 2010 (UNICEF, 2007; UNICEF, 2011).

Circulatory diseases and cancers are the most important causes of adult mortality and morbidity

Deaths from cerebrovascular disease have more than halved since 2000 (down 52.4%) and deaths from ischaemic heart disease (IHD) have fallen by 39.1% (Fig. 10). These improvements are likely the result of increased access to effective treatments and preventive programmes to control risk factors (e.g. routine use of anti-hypertensives, cholesterol-reducing medication and stronger tobacco control) (Ilic, Ilic & Sipetic Grujicic, 2019). National guidelines for the prevention of arterial hypertension, ischaemic stroke and CVDs were introduced in 2005, and these set out both primary and secondary prevention targets and practical guidelines. The Ministry of Health is currently working on developing a new national programme for the prevention, treatment and rehabilitation of stroke. In contrast, there has been no reduction of age-standardized cancer mortality rates in the last two decades (Fig. 10). A quarter of cancer deaths are due to lung cancer, and the lung cancer mortality rate has remained relatively steady over the last decade. Premature mortality (among those aged 30–69 years) from four major noncommunicable diseases in Serbia has fallen steadily since 2000 from 650, but it remains relatively high at 474 per 100 000 population in 2017, exceeding rates seen in the EU and the WHO European Region (Fig. 11). This suggests that there is much scope to further improve preventive and curative interventions.

Uncontrolled hypertension is by far the leading risk factor affecting population health

Despite the introduction of programmes to improve the control of hypertension, in 2019 high systolic blood pressure was estimated to contribute to a third (33.6%) of all deaths in Serbia (Fig. 12). This is much higher than the averages for the EU (20.8%) and the WHO European Region as a whole (25%) (WHO Regional Office for Europe, 2022a). The high share in Serbia is potentially linked to the high cost of pharmaceuticals, most of which are purchased out of pocket (Bjegovic-
Mikanovic et al., 2019). Unhealthy diet is the next biggest risk factor, estimated to contribute to 23.4% of all deaths in Serbia, while tobacco was estimated to contribute to 22.6% of all deaths (Fig. 12), which is also very high in international comparison.

In 2020, 39.8% of those aged 15 years and over smoked tobacco regularly, which was the highest smoking rate in the whole WHO European Region (WHO Regional Office for Europe, 2022a). Unlike in most countries, in Serbia smoking prevalence among males is almost the same as among females – 40.5% compared to 39.1% in 2020 (WHO Regional Office for Europe, 2022a). Smoking rates have fallen since 2000, when 45.1% of those aged 15 years and over smoked regularly, but these gains have been driven by a drop in smoking prevalence among males which was 51% in 2000, while it was 39.1% among females in the same year. Stronger tobacco control measures are required to address the public health impact of these high smoking rates (Box 3).

The core social determinant of health in Serbia is poverty

In 2017, 24.3% of the population was living in poverty, a share that has been relatively steady over time. Moreover, Serbia has high rates of income inequality. Serbia’s Gini index in 2019 was 34.5, meaning that the gap between rich and poor is relatively wide for a European country (World Bank, 2022). Poverty is a key risk factor for most diseases.

Notes: LDL: low-density lipoprotein. Shares overlap and therefore add up to more than 100%.

Box 3

The full implementation of the Framework Convention on Tobacco Control (FCTC) would bring substantial health benefits

Addressing the heavy burden of tobacco-related deaths (over 15 000 in 2020) requires the implementation of a wide range of tobacco control policies as recommended in the FCTC (WHO Regional Office for Europe, 2022a). Serbia has been a party to the FCTC since 2006 and the intersectoral National Tobacco Control Strategy was introduced in 2007.

The Government has introduced a smoking ban in public places, workplaces and on public transport, but the ban’s potential impact has been limited by the exclusion of the hospitality sector – it does not apply in bars, restaurants, etc. Higher cigarette prices have also been imposed through increased taxation, along with health warnings on cigarette packs and a ban on advertising and sponsorship by the tobacco industry. However, a key challenge in Serbia is that the country is a relatively large tobacco producer and, as in other European countries where tobacco is grown, this limits the willingness of policy-makers to reduce tobacco consumption.

5 SPOTLIGHT ON ANTIMICROBIAL RESISTANCE

Serbia has made progress towards combating AMR by taking a One Health approach

Based on the most recent TrACSS survey (2020/21), Serbia has a multisectoral working group in place with clear terms of reference, regular meetings and defined funding, and the national AMR plan is being implemented. A legislative framework is in place to regulate prescriptions and the sale of antimicrobials for human and animal use. AMR is also systematically and formally incorporated into training curricula for health workers and graduating veterinarians. Guidelines to enable the appropriate use of antimicrobials are implemented in most health facilities nationwide, but scope remains for strengthening prescribing practices to combat AMR.

Serbia has one of the higher rates of antimicrobial consumption in the WHO European Region

The country’s monitoring systems for antimicrobial consumption (AMC) and resistance (AMR) are well developed and Serbia has been a part of the Central Asian and European Surveillance of AMR (CAESAR) Network since 2013, as well as the Antimicrobial Medicines Consumption (AMC) Network. AMC is monitored using sales records of marketing authorization holders provided by the drug agency. These data show that the country did meet the WHO national monitoring target of at least 60% of total AMC being from the “Access” category in 2014–2017, but that it did not meet the target in 2018 (Fig. 13) (WHO Regional Office for Europe, 2021). Serbia has also an established system of data collection on the reimbursement of medicines, including antimicrobials, which facilitates monitoring of antimicrobial use.

Notes: Consumption of antibacterials in 2018. DDD: daily defined dose. Access, Watch and Reserve (AWaRe) classification of antibiotics as follows: Access: First and second-choice antibiotics that should be widely available in all countries; Watch: Antibiotics that should only be used for a specific, limited number of indications; Reserve: Last-resort antibiotics for cases where other antibiotics have failed or for infections of multi-resistant bacteria; Unclassified: Antibiotics which are not yet classified. Countries for which hospital sector data were not included.

Sources: European Centre for Disease Prevention and Control, WHO Regional Office for Europe.
Rates of AMR are higher in Serbia than in Western and Northern Europe

The rate of bloodstream infections due to Methicillin-resistant Staphylococcus aureus (MRSA) in Serbia is higher than the EU/EEA average and very high compared to the AMR incidence found in Northern Europe (Fig. 14).

AMR is a public health priority in Serbia and the sale of antibiotics in community pharmacies is now closely regulated

National enforcement of regulations that require a prescription for antimicrobials means that very few sales of antimicrobials occur over-the-counter without prescription (WHO Regional Office for Europe, 2022b). The widespread use of e-prescribing reinforces this regulation and generates data for the monitoring of antimicrobial prescribing practices. These data have shown that there are further opportunities to promote the AWaRe classification as a tool to guide national stewardship efforts to promote the responsible use of antibiotics and slow the spread of antibiotic resistance in Serbia (WHO Regional Office for Europe, 2022b).

6 EUROPEAN PROGRAMME OF WORK (EPW)

Moving towards universal health coverage

Serbia has embraced the goal of moving towards UHC and is supported in these efforts by WHO. A study on financial protection (Atanasijević, Križnik & Zubović, forthcoming) is currently under way which will strengthen the evidence base on UHC and health systems financing and support national policy development.

Fig. 14
Bloodstream infections due to MRSA (%) in Serbia are above the EU/EEA average


Sources: European Centre for Disease Prevention and Control, World Health Organization Regional Office for Europe.
Protecting against health emergencies

WHO collaborated closely with its national partners in Serbia to respond to the complex epidemiological situation with the COVID-19 pandemic, and focused continued technical support on priority areas such as the national immunization programme (in conjunction with the COVID-19 vaccine roll-out). WHO supported the COVID-19 response through procurement of test kits and medical equipment, but also through technical guidance on transforming the health sector and building health workforce capacity to respond better to future health emergencies.

Promoting health and well-being

Under the WHO Framework Convention on Tobacco Control, WHO supported the first Serbian economic assessment of the burden of tobacco-related health conditions in relation to the profits generated for the national economy by the tobacco industry, resulting in an investment case for tobacco control. Early results indicate that there are more than 19 000 premature deaths annually due to tobacco smoke, and that tobacco-related health care costs amount to approximately 4.9% of Serbia’s GDP.

WHO and IPHS also implemented a national dietary salt consumption survey to enable salt intake targets for the general population and build consensus around the benefits of salt reduction for cardiovascular disease prevention.

COUNTRY DATA SUMMARY

<table>
<thead>
<tr>
<th></th>
<th>Serbia</th>
<th>SEE</th>
<th>WHO European Region</th>
<th>EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life expectancy at birth, both sexes combined (years) (2017)</td>
<td>75.7</td>
<td>76.7</td>
<td>78.3</td>
<td>81.2</td>
</tr>
<tr>
<td>Estimated maternal mortality per 100 000 live births (2017)</td>
<td>12</td>
<td>11.7</td>
<td>12.7</td>
<td>6.3</td>
</tr>
<tr>
<td>Estimated infant mortality per 1000 live births (2019)</td>
<td>4.6</td>
<td>5.2</td>
<td>7</td>
<td>3.4</td>
</tr>
<tr>
<td>Population size, in millions (2020)</td>
<td>6.9</td>
<td>57.7</td>
<td>928</td>
<td>512</td>
</tr>
<tr>
<td>GDP per capita, PPP$ (2020)</td>
<td>19 231</td>
<td>27 356</td>
<td>35 340</td>
<td>44 421</td>
</tr>
<tr>
<td>Poverty rate at national poverty lines (2017)</td>
<td>24.3</td>
<td>22.6</td>
<td>14.9</td>
<td>17.1</td>
</tr>
</tbody>
</table>

Notes: EU: the 28 EU Member States until 2020; GDP: gross domestic product; PPP: purchasing power parity; SEE: South-Eastern Europe.

Source: WHO Regional Office for Europe, 2022a.
References


WHO Regional Office for Europe

WHO is the authority responsible for public health within the United Nations system. The WHO Regional Office for Europe (WHO/Europe) covers 53 countries, from the Atlantic to the Pacific oceans.

To support countries, WHO/Europe seeks to deliver a new vision for health, building a pan-European culture of health, where health and well-being goals guide public and private decision-making, and everyone can make healthy choices. WHO/Europe aims to inspire and support all its Member States to improve the health of their populations at all ages. WHO/Europe does this by providing a roadmap for the Region’s future to better health; ensuring health security in the face of emergencies and other threats to health; empowering people and increasing health behaviour insights; supporting health transformation at all levels of health systems; and by leveraging strategic partnerships for better health.

European Programme of Work ‘United Action for Better Health in Europe’

The European Programme of Work (EPW) sets out a vision of how the WHO Regional Office for Europe can better support countries in our region in meeting citizens’ expectations about health.

The social, political, economic and health landscape in the WHO European Region is changing. United action for better health is the new vision that aims to support countries in these changing times. “United”, because partnership is an ethical duty and essential for success, and “action” because countries have stressed their wish to see WHO move from the “what” to the “how”, exchanging knowledge to solve real problems. The WHO European Region’s solidarity is a precious asset to be nurtured and preserved and, through the EPW, WHO/Europe supports countries as they work together to serve their citizens, learning from their challenges and successes.

The European Observatory on Health Systems and Policies

The European Observatory on Health Systems and Policies supports and promotes evidence-based health policy-making so that countries can take more informed decisions to improve the health of their populations. It brings together a wide range of policy-makers, academics and practitioners, drawing on their knowledge and experience to offer comprehensive and rigorous analysis of health systems in Europe. The Observatory is a partnership hosted by WHO/Europe. Partners include the governments of Austria, Belgium, Finland, Ireland, Norway, Slovenia, Spain, Sweden, Switzerland, the United Kingdom, and the Veneto Region of Italy (with Agenas); the European Commission; the French National Union of Health Insurance Funds (UNCAM), the Health Foundation; the London School of Economics and Political Science (LSE) and the London School of Hygiene & Tropical Medicine (LSHTM). The Observatory is based in Brussels with hubs in London (at LSE and LSHTM) and at the Berlin University of Technology.