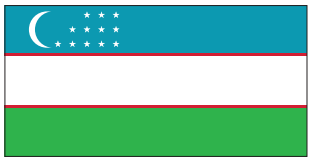
2024 Edition

Health Systems in Action

Uzbekistan



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Health Systems in Action (HSiA) Insights

Uzbekistan

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Editorial Team

This edition of the Health Systems in Action Insight for Uzbekistan was written by Susannah Robinson and Jessika Yin.

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 Europe's Programme of Work is set;
- flag key concerns, progress and challenges; and
- 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 WHO 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).

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HEALTH SYSTEMS IN ACTION INSIGHTS: UZBEKISTAN

Key points

- Uzbekistan's health system provides a basic set of publicly financed health services but it does not yet cover all essential services or medicines; a more comprehensive package is currently being piloted.
- Public spending on health is comparatively low and out-of-pocket (OOP) spending high, resulting in challenges for accessing health services and ensuring financial protection.
- Life expectancy in Uzbekistan has improved over the past two decades but suffered a slight decline due to the COVID-19 pandemic.
- Infant and maternal mortality rates remain high but have declined in recent years, and there is good coverage of routine childhood vaccinations.
- Some communicable diseases remain a concern, particularly multidrug-resistant tuberculosis (MDR-TB), where Uzbekistan is considered a high-burden country.
- Noncommunicable diseases (NCDs) continue to be the main cause of mortality and morbidity in Uzbekistan, despite a decline in rates. Cardiovascular disease is the leading cause of death for both men and women.
- Key risk factors affecting mortality and morbidity are poor diet, high blood pressure, smoking and air pollution. Obesity rates are lower than across the WHO European Region.
- The COVID-19 pandemic did not appear to drastically affect excess mortality, but did have negative effects on other sectors which may affect health in the longer term.
- Uzbekistan has seen a slow increase in health workforce numbers, but their distribution is uneven between regions and the migration of skilled health staff exacerbates shortages.

1 ORGANIZING THE HEALTH SYSTEM

Uzbekistan's health system transformation is expanding across the country after being piloted in Syrdarya region

Health services in Uzbekistan are largely public, with the Ministry of Health leading their organization, planning and management.

Uzbekistan has gradually been introducing elements of decentralization to regional and district levels. Health services are managed through a tripartite model of governance at the national, regional, and district or city level. National-level institutions are managed directly by the Ministry of Health, while subnational institutions tend to be managed by regional or municipal-level authorities. All of these have a similar organizational structure, except for the health department for the capital city Tashkent, which is larger and more complex. State health services are funded through general taxation, and all health workers in the public sector are salaried government employees.

The role of the private sector has expanded in recent years. Private hospitals are often very small, with an average of 30 beds in 2023. Certain services are still legally required to be provided by the public sector, such as those for HIV/AIDS and tuberculosis (TB). Increasingly many doctors work in both public and private clinics.

The health system is regulated by the government, and there has historically been little involvement of other groups in health policy or regulation, such as nongovernmental organizations (NGOs), professional associations or patients. In general, patient involvement and autonomy within the health system is underdeveloped. The Ministry of Health and local health authorities have regulatory powers over the quality of care in the private sector.

Uzbekistan has initiated a number of health system reforms to improve service delivery, health financing and the digitalization of the health care sector. The reforms were set out in high-level legislation in 2018 ("Concept on health development of the Republic of Uzbekistan 2019–2025" approved by Presidential Decree 5590). A new service delivery and financing model has been successfully piloted in the Syrdarya Oblast since 2021, and is currently being expanded to Tashkent and the Republic of Karapalkstan (WHO Regional Office for Europe, 2023c). The government's long-term intention is to expand the new model to the rest of the country by the end of 2026. Digitalizing the health sector is also an important issue within the broader national framework "Digital Uzbekistan – 2030", passed in 2020, and a Presidential Decree has since introduced additional measures to digitalize the health system (Presidential Decree No.140).

The health service structure is moving towards a model centred on primary care

Since 2018, Uzbekistan has embarked on a process to modernize its health system and make progress towards universal health coverage (UHC). This includes expanding access to quality, affordable primary health care (PHC).

The emergency care system is generally considered to be better equipped than other publicly run health facilities. It is also free of charge, which can create incentives for patients to visit emergency care in lieu of secondary or tertiary services that fall outside the scope of the state-guaranteed benefits package.

PHC has been a major focus of health reforms and efforts are being made to improve its accessibility and quality. Particular progress has been made in strengthening PHC in the context of the Syrdarya pilot. This includes shifting to a team-based approach, enhancing the role of family doctors, increasing staffing ratios and strengthening coordination between PHC teams and secondary or tertiary services, as well as with local community organizations (makhallas). Under the pilot, 11 NCD outpatient medicines were added to the basic benefits package, and new prevention procedures were introduced to segment the population into NCD risk category groups and provide follow-up for those at high risk (WHO Regional Office for Europe, 2023c). As the pilot is being scaled up to the national level, political support for strengthening PHC will need to be matched by financial, administrative and coordination capacity.

A state-guaranteed benefits package is provided to the entire population

In line with the 1996 Law on Health Protection, a state-guaranteed benefits package is provided by the government and nominally free of charge for all citizens. The package currently includes primary care, emergency care and specialized care for certain groups of the population classified by the government as vulnerable or with specific diseases such as TB, leprosy, HIV/AIDS and cancer. The benefits package has limited coverage for secondary and tertiary care, as well as outpatient medicines. In practice, many citizens are not aware of what is included within the benefits package and for whom, as the services guaranteed by the government are not clearly defined.

With the exception of facilities in the Syrdarya pilot, most public health facilities are required to use budgeting based on inputs rather than needs and are invariably short of funding. Inpatient public facilities are permitted to charge fees for services provided outside the state-funded package. Shortfalls for health care needs not met by state-funded services are usually paid for out of pocket by individuals, which frequently creates financial barriers to access **(see Section 2)**. Voluntary health insurance is rare.

As part of the intended health system reforms, the national strategic purchaser of health services, the State Health Insurance Fund (SHIF), has been established and new strategic purchasing mechanisms have been piloted in Syrdarya Oblast. The intention is for this to be scaled up nationally to maximize service quality, efficiency, affordability and cost-efficiency.

2 FINANCING AND ENSURING FINANCIAL PROTECTION

Public spending on health per capita is comparatively low

The main source of public revenue for the Uzbek health system is general taxation. In 2021, overall per capita spending on health amounted to US$ 673 PPP (purchasing power parity), representing the third-lowest amount in the region. Of the total amount, US$ 264 PPP came from public spending, roughly in line with the average for lower middle-income countries (LMICs), but below the regional average for Central Asia of US$ 278 PPP and less than a tenth of the WHO European Regional average of US$ 2834 PPP **(Fig.1)**.

In 2021, Uzbekistan's public spending on health amounted to 3% of gross domestic product (GDP). This was an increase from 2.4% in 2019 **(Fig.2)** and brought it in line with the average share for lower middle-income countries (LMICs), and slightly above the regional average for Central Asia (2.9%), although still only about half of the average of the WHO European Region (5.9%). In 2021, spending on health as a share of general government spending was 9.9%. This share was higher than in several neighbouring countries such as Tajikistan, Kyrgyzstan and Turkmenistan, but lower than the average in the WHO European Region (13.9%). This indicates that health is afforded a lower priority than other areas which receive government spending, such as education, which received 21.4% of government expenditure in 2021 (World Bank, 2023).

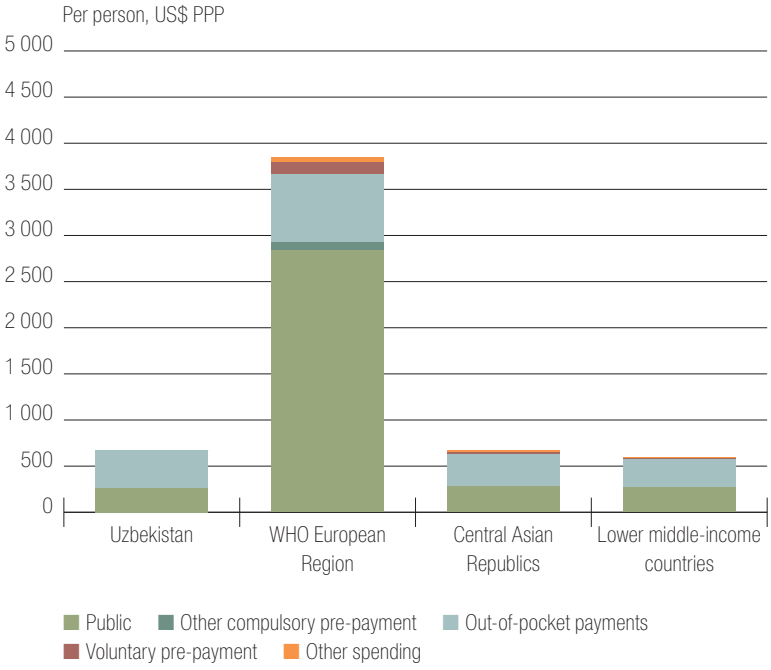
In 2021, public spending on health accounted for 39.2% of health spending, a decline from levels achieved in previous years (WHO, 2024c). The share was still higher than in Tajikistan (24.2%) or Turkmenistan (16.0%), but below the levels in Kyrgyzstan (53.4%), Kazakhstan (65.3%) and the WHO European Region (67.4%).

High levels of OOP spending remain a barrier to accessing services

OOP payments for health care create financial barriers to access and result in financial hardship for people using health services, especially those from poorer households. The limited scope of the state-guaranteed benefits package, coupled with the fact

Fig. 1

Health spending per capita is comparatively low and dominated by OOP spending

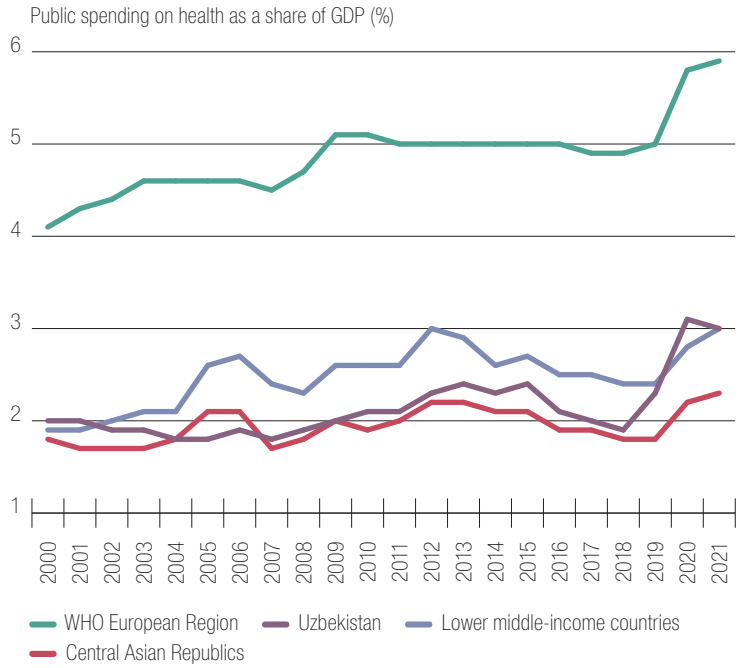


Source: WHO, 2024c.

Notes: 2021 data. Public refers to transfers from government budgets and social health insurance contributions. Other compulsory pre-payment refers to premiums for MHI schemes in Belgium, Finland, France, Germany, the Netherlands (Kingdom of the) and Switzerland. Other spending includes external funding and some other marginal spending. PPP: purchasing power parity.

Fig. 2

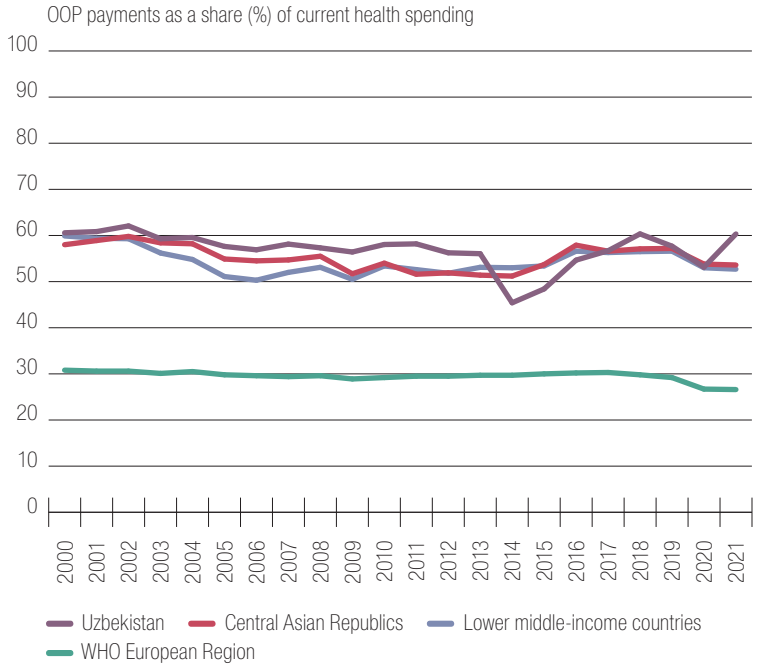
Public spending on health as a share of GDP increased substantially during the COVID-19 pandemic



Source: WHO, 2024c.

Fig. 3

The share of OOP spending has increased in recent years, exceeding comparator averages



Source: WHO, 2024c.

that eligibility criteria are not directly linked to income levels, mean that financial protection for vulnerable households remains a challenge. Informal payments for health services have also been reported, which further diminishes the financial accessibility of health services, particularly for lower income groups.

The share of health spending generated by OOP payments is high. In 2021, OOP payments accounted for 60.3% of health spending, virtually the same level as in 2000. This was higher than the Central Asian average of 53.6% and the LMIC average of 52.7% in 2021, and more than double the WHO European Regional average of 26.6% **(Fig.3)**. In absolute terms, it equated to US$ 406 of health spending per person.

A lack of financial protection jeopardizes health equity and UHC

Improving financial protection is one of the major challenges facing Uzbekistan's health system. The incidence of catastrophic health spending is high and every year 2.5% of households – approximately 800 000 people – are estimated to be impoverished due to OOP spending on health (World Bank, 2022). The poorest groups of the population are affected disproportionately by impoverishing health spending and unmet needs for health care. Within the WHO European Region, key drivers of catastrophic health spending for countries with higher rates tend to be outpatient medications, followed by inpatient care and dentistry (WHO Regional Office for Europe, 2023a).

Based on health spending patterns overall, and the fact that most outpatient medications are not covered in the state-guaranteed benefits package, it seems likely that these are also core drivers in Uzbekistan. Average prices of cancer medicines in 2019–2020, weighted by consumption, increased by 47% in Uzbekistan.

One issue with the state-guaranteed benefits package is that specialized services are hard to access. Under the latest version of the package (approved by the Ministry of Health and the Ministry of Economy and Finance on 10 October 2023) patients must have a referral to access both outpatient and inpatient specialized care services. In addition, whilst specialized services are provided free of charge at district and municipal levels, most patients must pay the full cost of service for health services in oblast and national-level hospitals. Along with excluding low-income individuals, this can create incentives for patients to visit emergency care, which is nominally provided free of charge.

The government is conscious of the need for greater financial protection, in particular for vulnerable groups of the population (WHO Regional Office for Europe, 2023c). In the longer term, however, the country's heavy reliance on OOP spending will only be lessened with an increase in public spending on health.

The largest share of health spending goes to pharmaceuticals

The latest data from the WHO Global Health Expenditure database indicate that in 2019 the largest share of health spending (35.7%) went towards medical goods (mostly medicines). Outpatient curative care accounted for 28.3% of health spending and inpatient curative care for 22.6%. Just 3% of health spending went towards preventive care (WHO, 2024c).

Under the current reform programme, the government is expanding disease prevention and health promotion activities. In 2020, a legislative package was introduced which included a framework for a team-based, community-oriented PHC model, with greater attention to health promotion and disease prevention. There are also several ongoing efforts to improve efficacy in health financing and management **(Box 1)**.

3 GENERATING RESOURCES, PROVIDING SERVICES AND ENSURING ACCESS

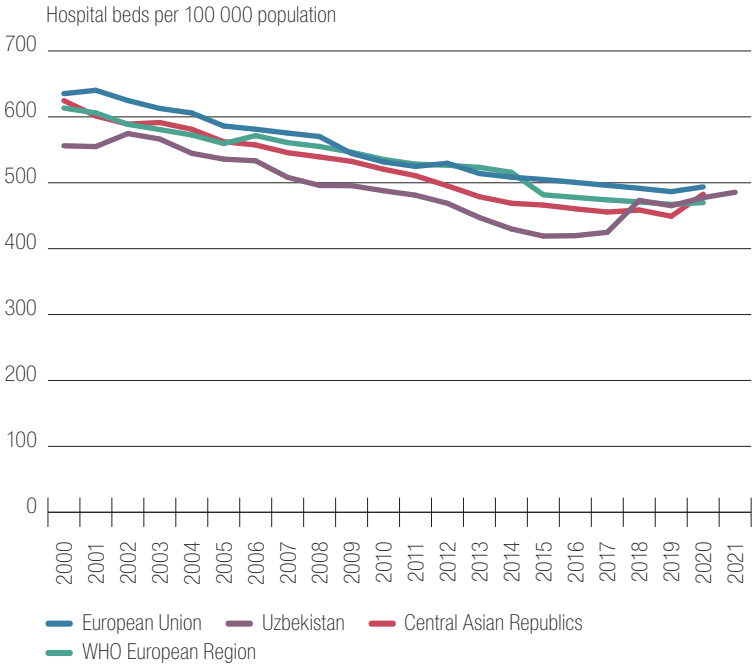
Infrastructure investment is centralized but some areas remain underfunded

At the national level, the Ministry of Finance allocates the budget for health services and health infrastructure, which includes investment for the construction or renovation of public hospitals. Local governments can also provide capital investments in specific areas such as construction and equipment.

Hospital capacity used to be lower compared to most other Central Asian countries, but it has risen in recent years. According to internationally available data, between 2000 and 2014 Uzbekistan saw a decline in the number of hospital beds per 100 000 population, but between 2016 and 2021 the ratio increased from 420 to 486 beds per 100 000 population **(Fig. 4)**, returning to nearly the same rates as in 2010. Some of this increase is likely to have been due to the response to the COVID-19 pandemic. National data for 2023 indicate a subsequent decline to 454 beds per 100 000 population.

Fig. 4

The rate of hospital beds in Uzbekistan has increased since 2016



Source: WHO, 2024a.

While most beds are in public hospitals, the private sector contributes an increasing share of capacity. In 2018, there were reported to be 153 600 hospital beds nationally, of which 117 366 were public, while the rest were private (World Bank, 2022). By 2023, national data indicate an increase to 166 900 hospital beds, of which 124 176 were public and the remainder private. There are more private hospitals than public hospitals, but the former are typically very small (with an average of just 30 beds), limiting their overall contribution to health care capacity. Disparities between regions in access to hospital beds are moderate: all regions have between 268 and 439 public hospital beds per 100 000 population, except Tashkent City, which has a noticeably higher number (around 700) due to the location of tertiary level hospitals in the capital (World Bank, 2022).

Within the current plans for PHC reform, there is a general commitment to optimizing hospital infrastructure, moving away from vertical or specialized hospitals and towards general or multispecialty hospitals.

Box 1

Improving allocative and purchasing efficiency through the SHIF

Uzbekistan's concept for the development of the health sector to 2025 – approved in 2018 by Presidential Decree no. 5590 – aims to transform its health system into a modern and high-performing model, centred around UHC. A core pillar of reform is the introduction of a new single-payer organization: the SHIF. It was formally established in 2020.

The SHIF is responsible for the phased implementation of a state health insurance system. It is intended to act as a single purchasing agency for services under the state-guaranteed benefits package. Since July 2021 it has been active in Syrdarya Oblast as a pilot site, where it has introduced a number of reforms intended to improve efficiency and quality of care, such as case-based payments for inpatient services, the use of per capita financing for PHC services (with age-gender adjustment coefficients) and increased provider autonomy. Since 2024, the SHIF has been under the authority of the Ministry of Health. From 2027 onwards, the SHIF is expected to become an independent entity again. Quantitative impact data are not yet available, but the results are considered a success and the SHIF is expected to be scaled up nationally by the end of 2026.

To effectively implement the new purchasing policy, the fund will require an appropriate level of independence on decision-making, and an adequate number of skilled staff at national and subnational levels.

The national health information system is still largely paper-based, and government investment in health information technology (IT) has previously been limited to basic electronic data collection and entry. However, increasing digitalization is considered an important step for the country's health system, and development of e-health is considered a priority. There are ongoing efforts to digitalize primary and secondary services, especially in the Syrdarya Oblast under the pilot reform project. All health IT developments are coordinated by "UZINFOCOM", a single integrator for the state's information systems.

Despite being seen as a priority, governance and adequate funding for the development of e-health remain challenges. There is no approved national strategy for digital health, and roles and coordination between different authorities are not always clear. There is also weak integration between e-health development and other forms of health information, meaning that facilities often end up maintaining both paper and electronic records (WHO Regional Office for Europe, 2023c).

The number of physicians has increased but is still below the WHO European Region average

Medical education in Uzbekistan is mainly provided by public institutions. It is partly financed by the state and partly by individuals. Each of the four major professional groups (physicians, nurses, dentists and pharmacists) follows a separate training pathway, but all medical training curricula are developed by the Ministry of Health.

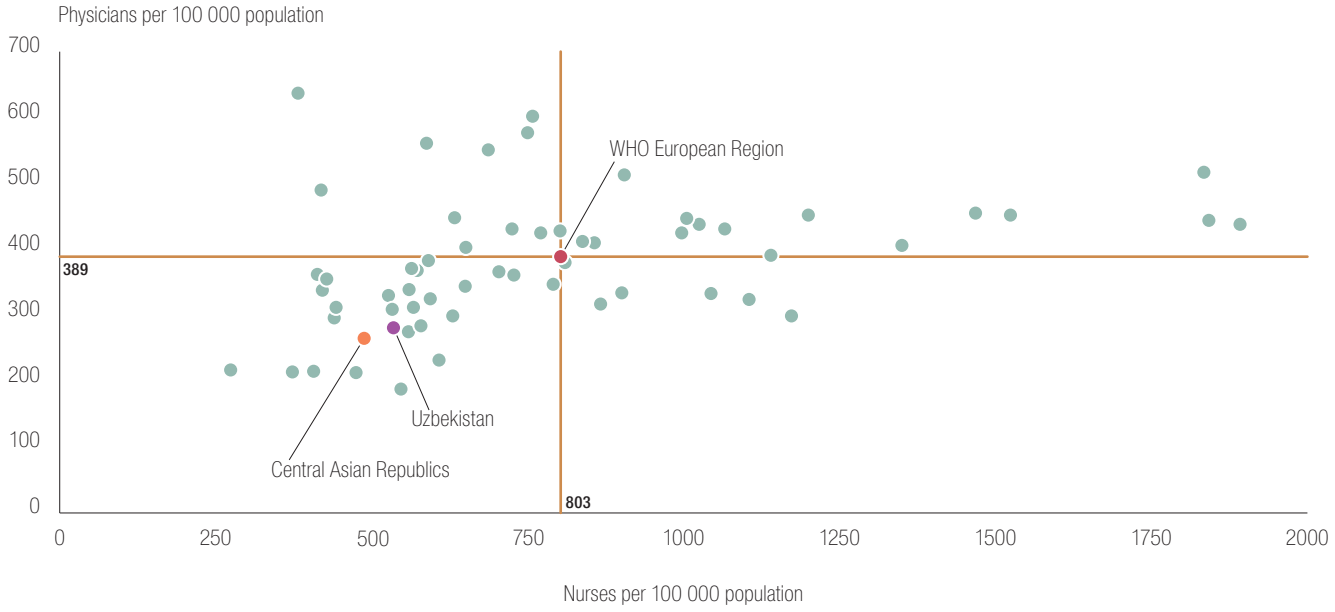
The number of physicians per 100 000 population declined in the 1990s and 2000s, partly due to a perceived surplus of physicians in the early years of independence. In recent years the government has been looking at ways to incentivize the training and retention of more physicians and the ratio of physicians has increased again. There were 281 practising physicians per 100 000 population in 2021. This was below the average of the WHO European Region of 389 per 100 000 population, but above the Central Asian average of 265. National data show that by 2023 this rate had declined slightly to 273 physicians per 100 000 population.

According to internationally available data there were 535 nurses per 100 000 population in 2020. This was lower than the average in the WHO European Region (803 nurses per 100 000 population) but higher than the average in Central Asian countries (488) **(Fig.5)**. However nationally available data indicate a very different picture, with 1040 nurses per 100 000 population in 2023. This large difference might be due to different methodologies of estimating the size of the health workforce.

As in many other countries, there are disparities in the regional distribution of health professionals. In Uzbekistan's case, the distribution does not correlate closely with health needs. Despite over half of the population living in rural areas, there is a much lower concentration of most health professionals in these areas, and a higher concentration in urban areas. Reducing this disparity may require the introduction of stronger attraction and retention policies for staff in more rural or remote areas. There is a particular lack of family doctors, something which workforce planning policies

Fig. 5

Uzbekistan has a higher rate of nurses and doctors than other Central Asian Republics



Source: WHO, 2024b.

Note: Densities were multiplied by 10 to calculate the density per 100 000 population. Averages relate to latest available years.

are endeavouring to correct. In 2022, a Presidential Decree ("On additional measures to bring primary health care closer to the population and improve the efficiency of medical services") introduced additional incentives for family doctors working in remote and rural areas. Nurses are more likely to work in rural and remote areas. Previous evaluations of family health nurses have shown that there is ample room to expand the role of nurses in PHC (Collins, Laatikainen & Farrington, 2020). The government is taking action to reform the education of nurses.

Health workers in the public sector are salaried employees and paid according to strict state guidelines, with very little flexibility. Salaries of physicians are considered to be low and salaries of nurses are even lower, creating incentives for informal payments and for physician migration to neighbouring countries, such as the Russian Federation and Kazakhstan, where there are better earning opportunities.

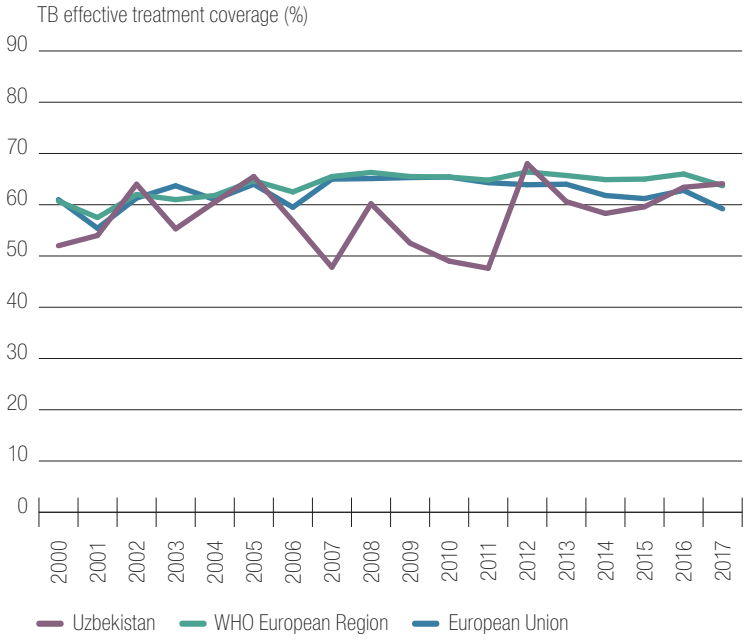
The health system performs well on childhood immunizations, but less well on preventing and treating other communicable diseases

Coverage rates for basic childhood immunization in Uzbekistan are very high. In 2020, internationally available data indicated that 99% of infants received their first dose of the measles vaccine, and 99% of those infants received their second dose. Both rates are in line with rates in neighbouring countries, and higher than the average of the WHO European Region of 95.5% for the first dose (2018) and 91.4% (2019) for the second dose. National data have since reported an even higher rate of 99.7% in 2023. Polio vaccination (DTP3) coverage is also very high – recorded at 99% of infants aged 1 year old in 2022 in internationally available data, and at 99.2% in 2023 in nationally available data. Overall access to effective TB treatment was recorded as 64.1% in 2017 in internationally available data. Whilst this was roughly in line with the average of the WHO European Region of 63.7%, the rate has fluctuated over the past decade **(Fig.6)**. In 2023, national data reported an increased rate of 68%. As of 2023, the country reported a treatment success rate of 92% for new TB cases. A particular challenge is the increasing rate of MDR-TB **(Box 3)**.

Despite some progress, HIV prevention and treatment in Uzbekistan remain challenging. According to government sources, there were approximately 49 000 people currently living with HIV in the country. Antiretroviral treatment is provided by the government, with funding and delivery supported by several international partners, but HIV-related stigma and discrimination continue to be barriers to treatment access, public awareness and monitoring. Adherence is also an issue, although the use of fixed-dose combination treatment is reported to have helped (UNDP, 2024).

Fig. 6

Effective treatment of new, non-drug-resistant TB cases has recently stabilized



Source: WHO, 2024a.

Note: Proportion of TB cases detected and successfully treated (estimate).

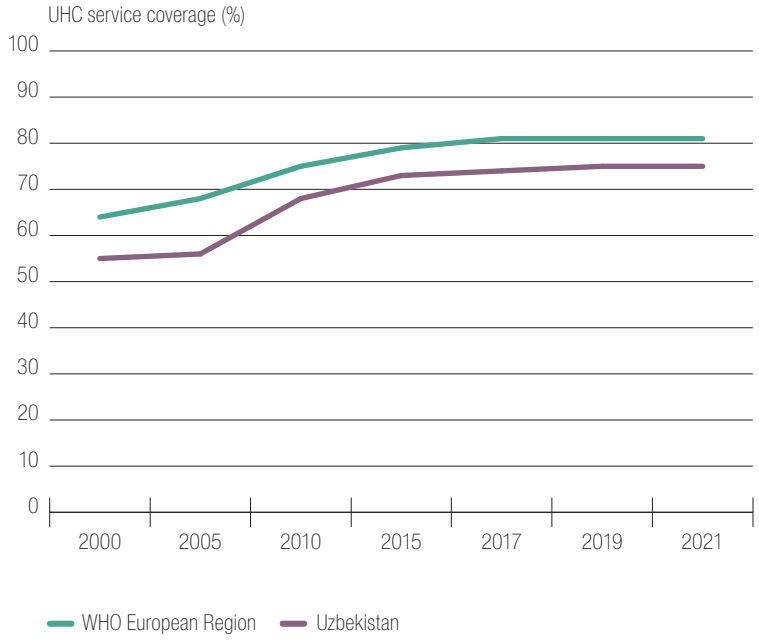
Uzbekistan has relatively good access to essential health services, but there are some gaps

The UHC service coverage index is a global indicator that monitors progress towards Sustainable Development Goal (SDG) 3, target 3.8.1 on coverage of essential health services. The index shows significant improvement in Uzbekistan over the past two decades, increasing from 56 (out of 100) in 2000 to 75 in 2021 **(Fig.7)**. While this is still below the average of 81 for the WHO European Region, it is higher than in neighbouring countries Kyrgyzstan (69) and Tajikistan (67).

However, some access barriers persist and need addressing to see further improvements. One of these is around financial accessibility. Even for services included in the state-guaranteed benefits package there are user charges (both formal and informal), which can limit access to care. Meanwhile health services for conditions not included in the basic benefits package may be entirely unaffordable for some individuals, particularly those in low-income households. This is a particular problem when considering that many patients are not aware of their entitlements under the benefits package. Experiences during the COVID-19 pandemic also highlighted the importance of removing financial barriers for accessing diagnosis and treatment (WHO Regional Office for Europe, 2023c).

Fig. 7

Uzbekistan has made steady improvements in access to essential health services



Source: WHO, 2024a.

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

Another issue is service availability. There are waiting times in public facilities for certain services, and no formal system of waiting lists. Moreover, service access varies considerably between rural and urban areas. In more rural areas, smaller facilities often lack certain diagnostic or treatment capabilities, and specialists for most diseases are usually based in urban centres. In some cases, barriers are more basic, such as unreliable electricity or water supply in more remote PHC facilities.

The government's current health reform agenda is centred on improving UHC and strengthening access to quality health services. In the Syrdarya pilot of the reforms, some efforts are being made to improve access. These include the creation of a consolidated list of services covered by the state-guaranteed benefits package and offering specific outpatient medicines for free in some facilities. However, lessons from the pilot also underscore the need for a more comprehensive PHC package that is free of charge, includes essential diagnostics and medicines, and covers everyone (WHO Regional Office for Europe, 2023c).

4 IMPROVING THE HEALTH OF THE POPULATION

Life expectancy in Uzbekistan has improved over the past two decades

Life expectancy at birth has increased from 69.6 years in 2000 to 73.9 years in 2016, the latest year with internationally available data **(Fig.8)**. This was higher than in neighbouring countries such as Kazakhstan and Kyrgyzstan, but lower than in Tajikistan. In 2023, national data reported that this had increased to 74.7 years.

Female life expectancy was 76.3 years in 2016, compared with 71.6 years for males: a gender gap comparable to several other countries in Central Asia. National data in 2023 showed a similar gap – female life expectancy at 76.9 years compared to 72.5 years for males – indicating that this pattern had not changed.

In 2019, the top three leading causes of death were the same for men and women: ischaemic heart disease, stroke and liver cirrhosis (WHO, 2024a).

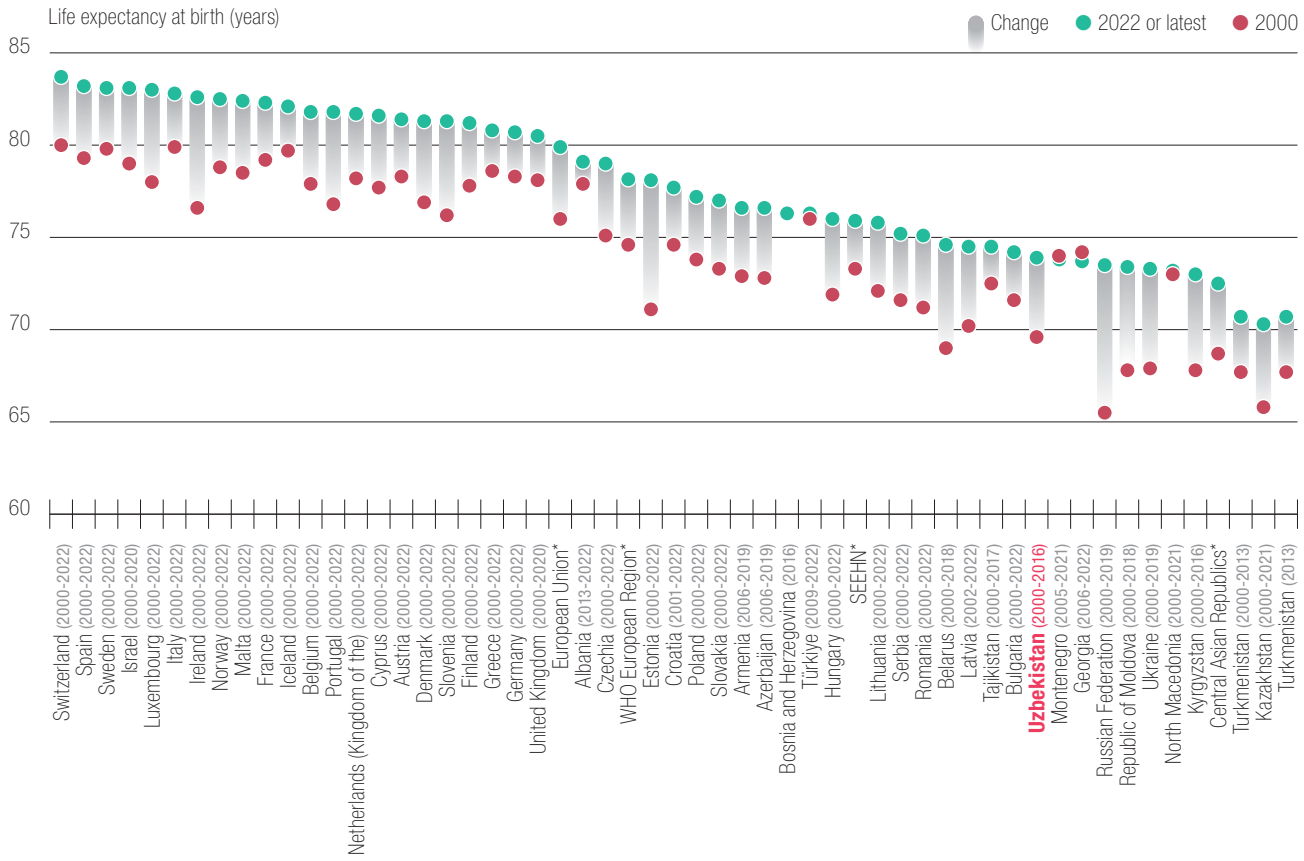
Infant and maternal mortality rates have declined but there is still room for improvement

Having experienced high infant and maternal mortality rates in the past, maternal and child health continue to be a priority. Between 2010 and 2020, maternal mortality is estimated by UN agencies to have declined from 37.8 deaths per 100 000 live births to 30.2 deaths. However, this was still more than twice the average of the WHO European Region (13.2 maternal deaths per 100 000 live births) and also higher than the rates in Tajikistan (16.2) and Kazakhstan (13.4). National data from 2023 showed a substantially lower figure of 14 maternal deaths per 100 000 live births.

Infant mortality has also seen improvements, declining from 22.9 deaths per 1000 live births in 2011 to 12.6 in 2021, according to WHO estimates. This was still high compared to the average of the WHO European Region, but lower than Central Asian neighbours such as Tajikistan and Turkmenistan. National data in 2023 indicated a rate of 8.5 infant deaths per 1000 live births. That said, while overall deaths from neonatal disorders have been declining, specific issues such as neonatal sepsis and encephalitis have increased again in recent years, suggesting a need to further improve the quality of neonatal care. Under the pilot of health reforms in Syrdarya, one of the key PHC performance monitoring indicators looks at planned home nurse visits for pregnant women, newborns and children aged 0–5.

Fig. 8

Life expectancy in Uzbekistan is higher than in Central Asia overall



Sources: Eurostat, 2024, for EU/EEA countries, Albania, Montenegro, North Macedonia, Serbia, Armenia, Azerbaijan, Georgia and Türkiye; WHO Regional Office for Europe, 2024a, for all others.

Notes: * averages are based on years with data available. The South-Eastern Europe Health Network includes Albania, Bosnia and Herzegovina, Bulgaria, Israel, Montenegro, North Macedonia, the Republic of Moldova, Romania and Serbia.

NCDs result in major economic losses

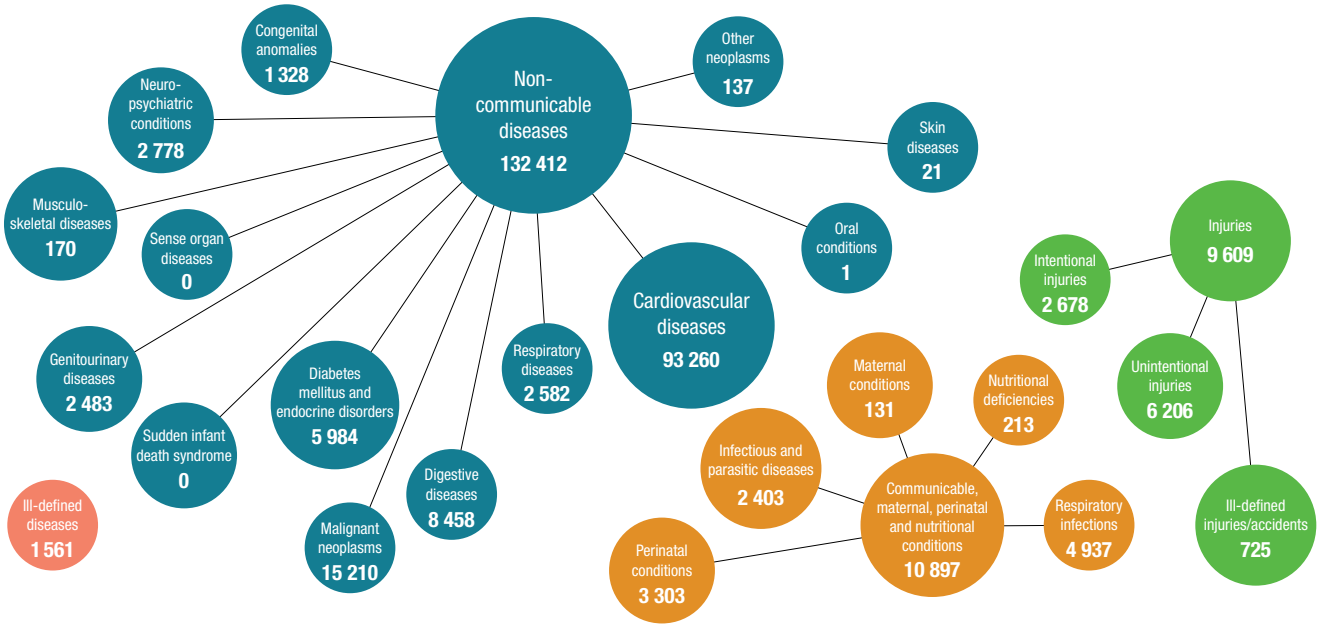
NCDs are the leading cause of mortality and morbidity in Uzbekistan. They were estimated to be responsible for 85% of all deaths in Uzbekistan in 2022, higher than the global average of 74% (WHO, 2022). Newer nationally available data put them at a slightly lower rate of 81% in 2023. Of the top 10 leading causes of deaths in Uzbekistan recorded in 2019, six were due to NCDs. An economic burden analysis in 2018 estimated that economic losses from NCDs represent around 9.3 trillion soms, equivalent to 4.7% of Uzbekistan's GDP in 2016 (WHO Regional Office for Europe, 2018).

Despite a decline in rates, internationally comparable figures show that Uzbekistan still ranks among the countries with the highest age-standardized mortality rates for NCDs in the WHO European Region. In 2019, NCDs accounted for 673 deaths per 100 000 population in Uzbekistan. While this is a clear improvement compared to earlier years, it was still substantially higher than the WHO European Region average of 427 deaths per 100 000 population for the same year. Female deaths from NCDs in 2019 were lower (585 per 100 000 population) than among males (781) but still much higher than the average for the WHO European Region (337). By 2023, national data showed that the rate had continued to decline, with 450 deaths per 100 000 population connected to NCDs. Female deaths connected to NCDs (405 per 100 000 population) continued to be lower than male deaths (479 per 100 000 population).

Premature mortality (referring to deaths in people aged 30–69 years) caused by the major NCDs (cardiovascular diseases, cancers, diabetes mellitus and chronic respiratory diseases) is also high in Uzbekistan. Some improvement has been achieved since 2000, but recent data are lacking **(Fig. 10)**.

Fig. 9

Cardiovascular disease is the primary cause of NCD mortality



Source: WHO, 2024d.

Note: Overview of the distribution of causes of total deaths grouped by category. Data refer to 2019.

Ischaemic heart disease is the leading cause of NCD deaths for both sexes, followed by stroke and liver cirrhosis. Mental, neurological and substance use conditions are also challenges. Given ongoing stigma surrounding mental health conditions, rates of disorders such as anxiety and depression may be higher than indicated in official figures.

To strengthen the primary care response to the national NCD burden, the Ministry of Health has expanded access to 11 NCD medications in the framework of the pilot in the Syrdarya Oblast, and nurses are being given greater training and responsibilities in NCD management. One of the longer-term reform objectives is the ability to segment the population into NCD risk groups with proactive follow-up for those at high risk.

The COVID-19 pandemic did not result in much excess mortality

In the early stages of the pandemic the country focused on expanding capacity for diagnostics and care. Uzbekistan worked with WHO and other international partners to boost laboratory capacity for testing, develop clinical protocols and prepare hospitals for treatment, and communicate measures to reduce the spread of the virus. Both PCR and antigen tests were made available for the population, with results usually available within 72 hours.

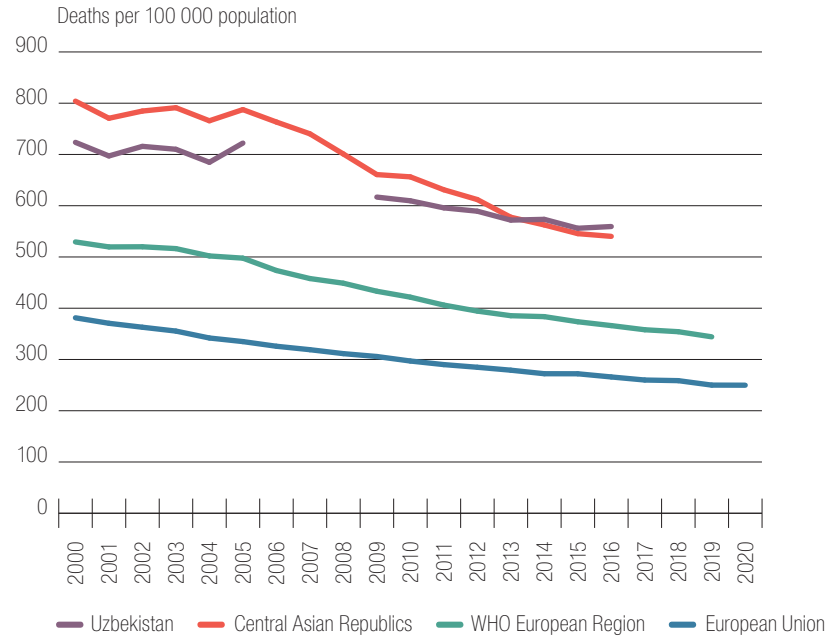
According to official data, Uzbekistan registered just 1016 deaths due to COVID-19 during the pandemic, out of 174 842 confirmed cases of COVID-19 in the country. Estimates of excess mortality associated with the pandemic are some of the lowest in the region. Uzbekistan experienced just 47 excess deaths per 100 000 population in 2020, compared to the regional average of 137, and only a quarter of the regional average in 2022 **(Fig. 11)**.

As in many countries, a few factors may have affected the accuracy of reported case numbers. While testing was available, in the early stages of the pandemic free testing was not available to everyone due to a shortage of diagnostics, and private tests were not always affordable, with an average cost of between 220 000 and 420 000 Som (US$ 20–40). A further disincentive was a policy of hospitalizing all those who tested positive for COVID-19, which may have dissuaded some people from getting tested or from reporting cases. There was also understood to be underreporting of COVID-19 cases from private hospitals.

Although excess mortality figures are comparatively low, COVID-19 did have other negative effects on the country which may affect health and wellbeing in the longer term. For example, the pandemic is considered to have contributed to learning gaps for school-age children, an increase in unemployment rates and the shrinking of specific business sectors (World Bank, 2021). These elements may have longer-term impacts on human capital and household financial resilience, especially against a backdrop of high OOP expenditures on health.

Fig. 10

Premature mortality from NCDs is comparatively high, but data are incomplete



Source: WHO Regional Office for Europe, 2024a.

Note: Premature mortality among those aged 30–69 years from four major NCDs (cardiovascular diseases, cancers, diabetes mellitus and chronic respiratory diseases).

Fig. 11

Excess mortality associated with the COVID-19 pandemic was much lower than the regional average

Source: WHO, 2023.

Note: Excess mortality from all causes of death, defined as the difference between the total number of deaths and the number that would have been expected in the absence of a crisis (for example, the COVID-19 pandemic). This difference is assumed to include deaths attributable directly to COVID-19 as well as deaths indirectly associated with COVID-19 through impacts on health systems and society.

Ischaemic heart disease is the biggest cause of mortality and ill health

As with mortality rates, NCDs are responsible for a significant amount of the overall disease burden. A disability-adjusted life year (DALY) provides an indicator of the burden of disease in a population, as one DALY corresponds to the loss of one year in full health. Within the top ten causes of DALYs in 2021, six of them were connected to NCDs. The biggest drivers of the disease burden were ischaemic heart disease, neonatal conditions and stroke **(Fig. 12)**.

Behavioural risk factors include high blood pressure and poor nutrition

When looking at risk factors, high systolic blood pressure and dietary risks are the two biggest drivers of mortality, estimated to be involved in 26.8% and 23% of all deaths respectively in 2021 **(Fig. 13)**. Unmanaged high blood pressure is a major driver of ill health, and partly due to underdiagnosis and the costs of outpatient pharmaceuticals. According to the 2019 STEPS survey, 38% of the population (including those on therapy) had elevated blood pressure.

The STEPS survey found that 23.5% of adults in Uzbekistan were obese in 2019, compared to 23.3% in the WHO European Region in 2016. Levels of low physical activity (19.1% in 2016) were also below the average of the WHO European Region (29.3%), but rates of inactivity were also much higher for women than for men, putting them at greater risk.

National data indicate lower levels of obesity. In 2023, levels of adult obesity were recorded as 15.2%, with rates for women (16.9%) and men (12.1%) showing a decline, although still following the same pattern of a higher rate amongst women. Levels of low physical activity were reported to have reduced to 17.6%.

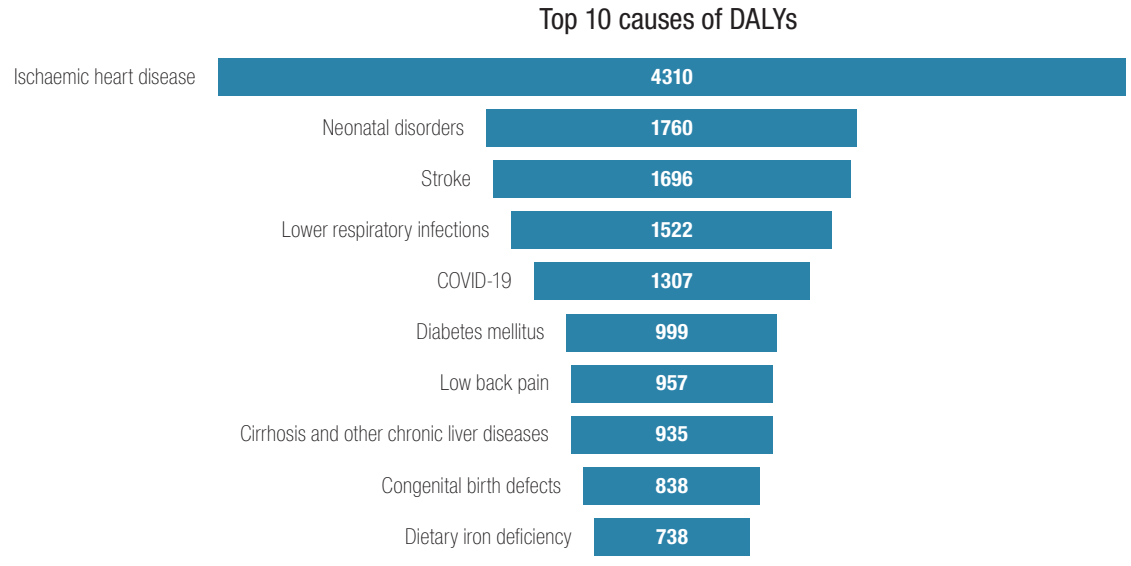
Smoking prevalence among those aged 15 years and over has declined from an estimated 16% in 2000 to 10.6% in 2020. Compared to a prevalence rate of 25% in the WHO European Region and 14.9% in Central Asia in 2020, this makes it one of the lowest rates in the WHO European Region. The rate is even lower among females, amounting to only 0.9% in 2020. Male smoking prevalence is much higher, but still declined from 30.6% in 2000 to 20.3% in 2020. Yet tobacco use was still estimated to contribute to 8.5% of deaths in 2021. Alcohol consumption per capita per year among those aged 15 and over was 2.5 litres in 2019. This was low compared to the average of 7.9 litres in the WHO European Region, but in line with the Central Asian average of 2.8 litres.

Air pollution is a major challenge

Air pollution is a major risk factor to health in Uzbekistan. Primary sources of emissions include mining enterprises, power stations, petrochemical plants and vehicles. In cities such as Tashkent, Ferghana and Olmaliq, nitrogen dioxide and particulates exceed WHO recommended levels, particularly during winter months, while in rural areas the heavy use of agricultural chemicals contributes to poor air quality. Environmental issues in general are not a high priority, but there have been some government efforts to reduce air pollution. These

Fig. 12

Over half of the leading drivers of the burden of disease are NCDs



Source: IHME, 2024.

Note: Top 10 causes of DALYs per 100 000 population for both sexes and all ages. Data refer to 2021.

Box 2

Collaboration is key to addressing NCD risk factors

Many of the risk factors facing Uzbekistan – especially those connected to NCDs – require collaboration with sectors beyond health. In its day-to-day operations, the government has begun using an intersectoral approach to tackle some of these health issues.

There is ongoing collaboration between government departments responsible for health, taxation and trade. In alcohol, for example, excise duties exist and – while low compared to others in the WHO European Region – are increased annually. The introduction of front-of-package food labelling, intended to become mandatory from January 2025, is the result of collaboration with multiple national and international stakeholders. To improve nutrition for women and children and protect them from issues such as anaemia, a Presidential Resolution in 2020 mandated that they be provided with micronutrients and vitamins free of charge to support healthy pregnancy, maternity and early childhood development (WHO Regional Office for Europe, 2021).

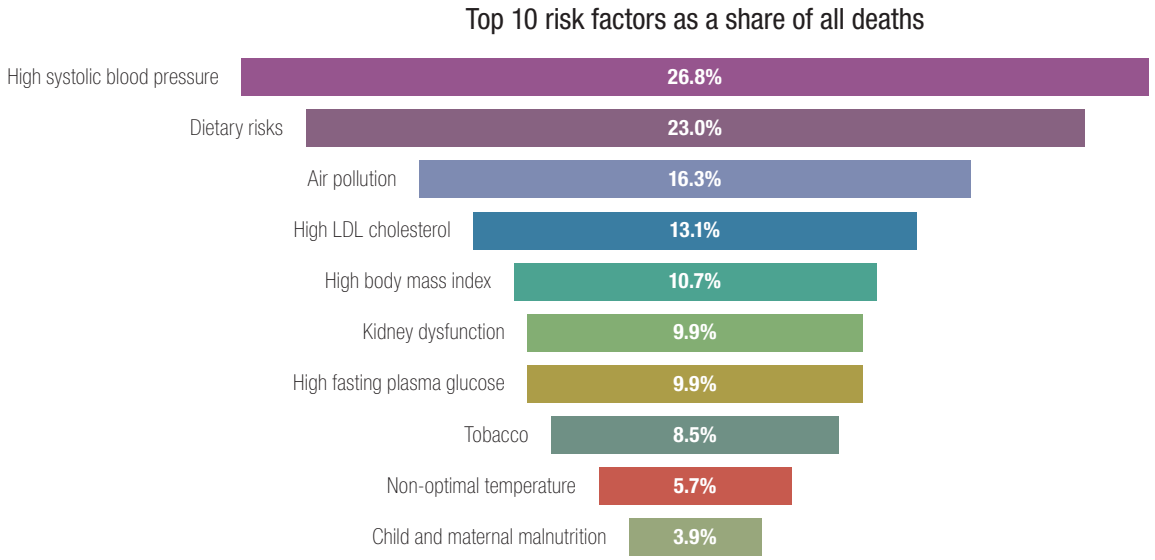
In future, multisectoral interaction and collaboration will continue to play an important role in addressing risk factors for health and wellbeing. For example, departments responsible for health, environment and transport will be key to improving air quality and promoting physical activity, through measures such as increasing the use of public transport and expanding green spaces in urban areas (Government of the Republic of Uzbekistan, 2024).

include fitting industries and vehicles with pollution-reduction technologies, expanding urban green zones and setting targets for expanding the use of public transport (Government of the Republic of Uzbekistan, 2024).

A cross-cutting risk factor for health is water and sanitation. Uzbekistan's infrastructure was built decades ago and is in need of extensive rehabilitation and renewal. There are still issues with access in rural areas, and water and sanitation service quality has declined in both urban and rural areas. In recent years there has been an increase in government spending on water and sanitation, along with support from international partners, but universal access has not yet been attained (World Bank, 2022).

Fig. 13

High blood pressure and dietary risks are leading risk factors contributing to deaths in Uzbekistan



Source: IHME, 2024.

Note: Percentage of all deaths attributable to risk factors for both sexes and all ages. Shares overlap and therefore add up to more than 100%.

Poverty levels remain high, affecting health service access and exposure to risk factors

Against a backdrop of high OOP spending on health, poverty is a major issue affecting access. In 2022, an estimated 14.1% of the population was living below the national poverty line, compared to 14.9% in the WHO European Region in 2018 (WHO Regional Office for Europe, 2024a; World Bank, 2024b). In 2018, 2.5% of the population was estimated to have been impoverished due to OOP spending on health (World Bank, 2022).

Poverty is also an issue for health risk factors. For example, it is known to affect exposure to risk factors for NCDs, such as poor diet, which is a significant issue given the national disease burden. With regional economic disparities widening, and urban-rural gaps persisting, this creates additional risks for specific areas of the country. The COVID-19 pandemic has exacerbated the issue by reportedly pushing an additional 1 million people into poverty (UNDP, 2022). Under the New Uzbekistan Development Strategy, the government has ambitious aims of halving national poverty by 2026 (World Bank, 2022).

5 SPOTLIGHT ON HEALTH WORKFORCE TRENDS

Uzbekistan has seen mixed trends in health workforce numbers, and their distribution is uneven

After years of steady decline, the rate of doctors in Uzbekistan has slowly started to increase. Between 2013 and 2022, the number of physicians recorded in international databases increased from 240 to 281 per 100 000 population **(Fig.14)**. Nationally available data indicate a slight decline since then to 273 doctors per 100 000 population in 2023. The overall increase during the past decade is partly due to government efforts to incentivize the training and retention of doctors over the past decade. Internationally available data on the number of graduates in medicine over this period are limited, but national data show a substantial increase in the absolute number of medical students, from 1249 in 2012 to 5747 in 2022 (State Committee on Statistics, 2023).

There were 535 nurses per 100 000 population in Uzbekistan in 2020, according to internationally available data. However, national data indicated a significantly higher rate of 1040 nurses per 100 000 population in 2023. The skills mix among nurses is heavily skewed towards general nurses, as opposed to nurses with more advanced or specialized training (World Bank, 2022).

The distribution of Uzbekistan's health workforce does not consistently correlate with health needs. Rural areas have a significantly lower number of doctors, which often necessitates that patients depend on health

Box 3

The complex challenge of MDR-TB

Since 2000, the share of DALYs due to TB has been declining in Uzbekistan. However, multidrug- and rifampicin-resistant TB (MDR/RR-TB) still presents a serious challenge. It has not followed similar rates of decline, having only slightly decreased, and there is a risk of seeing it increase in the future if effective action is not taken. In 2020, Uzbekistan was one of 30 high-burden MDR-TB countries in the world.

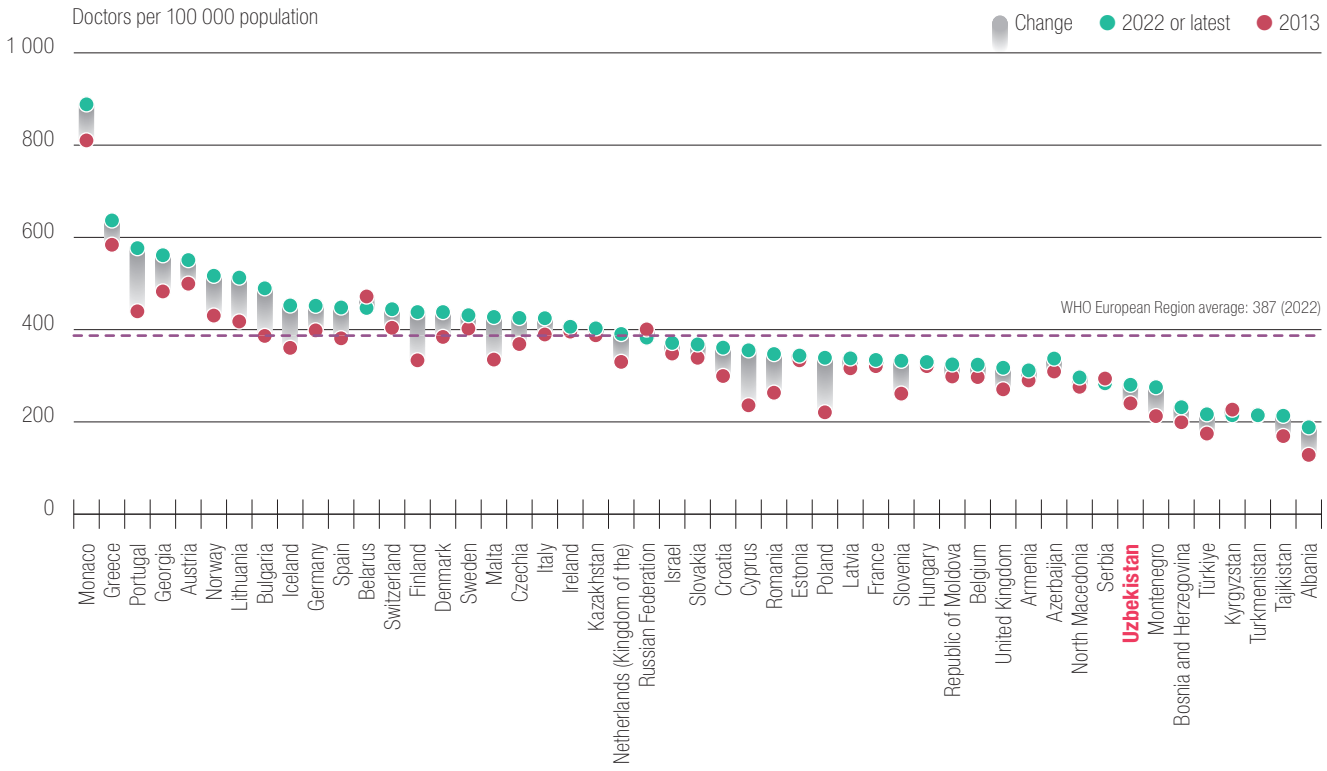
While the government recognizes MDR-TB as a public health priority, treating MDR-TB is difficult, lengthy and expensive. In 2019, the national MDR-TB treatment success rate was 70% for MDR-TB cases and 66% for extensively drug-resistant TB. The National Strategy Concept of Healthcare Improvement for 2019–2025 sets out targets for reducing the incidence and prevalence of TB, and Uzbekistan is committed to eliminating the disease by 2050. There are some positive signs: in 2021 and 2022, 100% of all new cases of TB were reportedly tested by rapid diagnostic systems for drug resistance (WHO, 2024a).

Implementing fully oral modified short treatment regimens (mSTR) for MDR/RR-TB cases and increasing access to new drugs could be important next steps for the country. Since 2020, new fully oral mSTR for treatment of MDR/RR-TB under operational research have been introduced and scaled up countrywide. The treatment success rate of patients with MDR/RR-TB under mSTR increased from 71% to 86% as compared to standard treatment regimens.

Another key element will be strengthening national MDR-TB surveillance, to understand the extent of existing cases and target efforts. Between 2022 and 2023, the government worked with WHO and the United States Agency for International Development (USAID) to conduct a drug-resistance survey on TB. The results are intended to help estimate the number of future patients with drug-resistant TB, forecast needs for diagnostics and drugs procurement, and identify gaps in routine surveillance capabilities (WHO Regional Office for Europe, 2023b).

Fig. 14

The rate of doctors per population has increased in Uzbekistan



Source: WHO, 2024b.

Note: The number of nurses plotted for Austria has to be treated with caution, due to breaks in the time series and switching between "licensed to practise" and "practising" workforce numbers.

workers with less specialized training or travel long distances to access medical care. There is a particular lack of family doctors across all areas of the country. Although there is no shortage of nurses in terms of absolute numbers, there is an uneven distribution due to higher workforce concentration in urban areas.

The health workforce is younger than in many other countries and most are women

The age and gender distribution of a country's workforce is useful for assessing future workforce planning and any risks connected to attrition rates. Recent internationally available data on the age and gender composition of Uzbekistan's health workforce are limited, but data for 2014 indicate that 52.7% of doctors were women and that 19.3% of doctors were aged between 55 and 64 years in 2014, which was a lower share than in most other European countries. More recent national data show that this share has since declined to 16.9% in 2023.

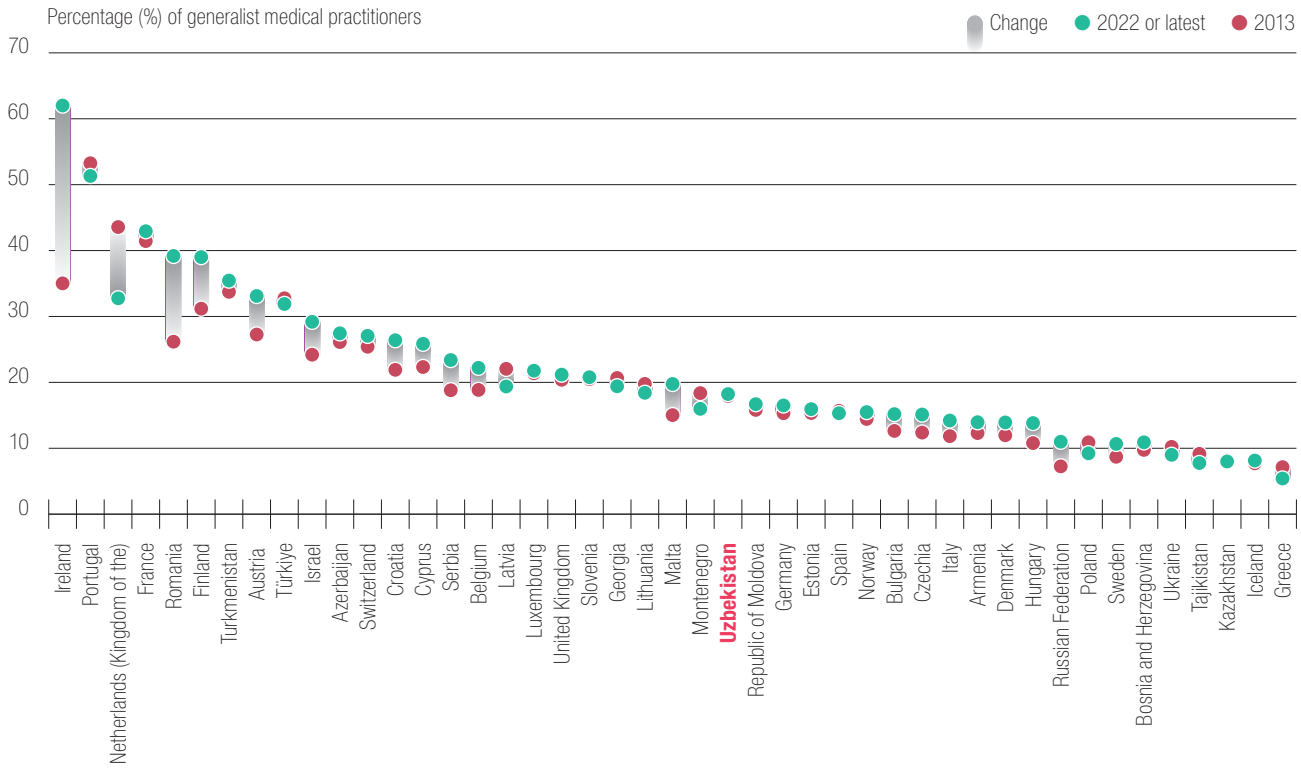
For nurses this proportion was even lower in 2014, with just 9.2% aged over 55 years old, and 3.1% aged above 65 years. Given that in 2013, 100% of Uzbekistan's nursing workforce were reported as female, this comparatively low rate may be connected to the national retirement age for women, which is 55 years (WHO, 2024b). National statistics from 2023 showed changes to all these figures: 8.1% of nurses were aged over 55 years old, 2.7% were aged above 65, and 94.4% of the nursing workforce was female.

The share of generalist medical practitioners has declined

The number of generalist medical practitioners in Uzbekistan as a share of all doctors has declined very slightly over the past decade **(Fig.15)**. In 2012, 18.2% of doctors were generalist medical practitioners. By 2021, this share had declined to 17.9% according to internationally available data, and by 2023 national data showed a slight further decline to 17.1%. A declining percentage of general medical practitioners compared to total doctors can be seen as a concern for PHC.

Fig. 15

Uzbekistan has seen a marginal decline in the share of generalist medical practitioners



Source: WHO Regional Office for Europe, 2024b.

Note: Generalist medical practitioners (ISCO-08 code: 2211) are physicians who do not limit their practice to certain disease categories or methods of treatment and may assume responsibility for the provision of continuing and comprehensive medical care to individuals, families and communities. They include general practitioners, district medical doctors, therapists, family medical practitioners, PHC physicians, medical doctors (general), medical officers (general), and medical interns or residents specializing in general practice or without any area of specialization yet. Although in some countries "general practice" and "family medicine" may be considered as medical specializations, these occupations are also classified here. The data for Ireland should be treated with caution due to a break in series.

Many skilled health workers are migrating

Uzbekistan sees a relatively high rate of economic migration across various sectors. Net migration in 2022 accounted for a loss of just under 20 000 people (World Bank, 2024a). Based on official figures, Uzbekistan has a relatively low migration rate of doctors. According to OECD data, the country saw an emigration rate of just 1% for native-born doctors in 2015–2016, which put it alongside several other Central Asian countries such as Tajikistan and Turkmenistan. Unofficial rates of migration are understood to be substantially higher, with a major factor being the promise of higher salaries abroad. This is particularly the case for specialist doctors, where even the official emigration rate (2%) was double the rate for all native-born doctors (OECD, 2021). For many years a major net recipient of migration has been the Russian Federation, but since 2022 there has been an increase to other countries such as Germany.

The migration of skilled health staff abroad exacerbates physician shortages across the country. There are also issues with internal migration, with health workers attracted towards urban centres such as Tashkent and away from more rural areas, increasing barriers for the rural population in accessing health care.

6 EUROPEAN PROGRAMME OF WORK (EPW)

Moving towards universal health coverage

Uzbekistan is striving to move towards UHC, and a range of initiatives is ongoing or planned with support from WHO. A major area of work is health system strengthening, especially around primary care and health financing reform. Through its Universal Health Coverage Partnership, WHO supported the development of the legal foundation for new reforms in primary care and financing, and their piloting in Syrdarya. This included contributing to an implementation review that is being used to guide the scale-up of the pilot in other areas of the country (WHO Regional Office for Europe, 2023c). Another priority area is health workforce development. WHO has supported the establishment of a Technical Working Group on the Health Workforce, and by 2025 a new national health workforce strategy is anticipated to be developed based on a health labour market analysis conducted in April 2024. To build country capacity in health data and innovation, health information systems are also being strengthened, and trainings are planned on mortality and morbidity data collection and compilation. Data quality webinars for NCDs have already been held in Syrdarya Oblast, and an electronic TB surveillance system (using DHIS2, an open-source software platform) is being introduced in pilot regions.

Along with cross-cutting support, WHO provides Uzbekistan with targeted assistance on specific disease areas. This includes communicable diseases such as hepatitis, HIV and TB (especially drug-resistant TB). WHO has organized capacity building activities on hepatitis C case management for general practitioners across the country, and leads surveys to determine the prevalence of drug-resistant TB in Uzbekistan. WHO works with the government to maintain high vaccination rates for vaccine-preventable diseases, especially for high-risk populations. Anti-microbial resistance continues to be an important focus, and WHO's Better Labs for Better Health initiative has been used to strengthen the quality and safety of laboratory services in the country.

For NCDs, WHO supports strengthening national capacity for treatment and diagnosis, encompassing training for clinical staff and the development of postgraduate training. An important priority area is cancer control. Uzbekistan is a focus country for WHO's Global Initiative for Childhood Cancer, Global Platform for Access to Childhood Cancer Medicines and the WHO global initiative for cervical cancer elimination (Kadyrova et al., 2023). The WHO country and regional offices support the national team to improve access to and quality of cancer early detection, diagnosis, treatment and palliative care for children and adults. By 2027 the country will be supported by WHO to develop a new national plan on cancer control, to strengthen the prevention, early detection and treatment of breast, cervical, gastroenterological and childhood cancers, as well as cancer registration and data collection to improve screening quality. WHO also provides technical support for service delivery systems in reproductive, sexual, women, newborn, child and adolescent health at all levels of care.

Protecting against health emergencies

In light of the COVID-19 pandemic, and to reinforce the country's protection against future health emergencies, WHO supports the development and endorsement of a National Action Plan for Health Security, based on recommendations from a Joint External Evaluation of

COUNTRY DATA SUMMARY

	Uzbekistan	Central Asian Republics	WHO European Region	European Union
Life expectancy at birth, both sexes combined (years)	73.9 (2016)	72.5 [a]	78.2 [a]	79.9 [a]
Estimated maternal mortality per 100 000 live births (2020)	30.2	24.3	12.6	6.4
Estimated infant mortality per 1 000 live births (2021)	12.6	15.5	6.3	3.2
Population size, in millions (2022)	34.6	77.1	929.1	512.7
GDP per capita, PPP$ (2021)	8 497	13 327	38 936	48 615
Poverty rate at national poverty lines (% of population)	14.1 [b] (2022)	14.1 (2017)	14.9 (2018)	17.0 (2018)

Sources: WHO Regional Office for Europe, 2024a;
[a] Eurostat, 2024, for EU/EEA countries, Albania, Montenegro, North Macedonia, Serbia, Armenia, Azerbaijan, Georgia and Türkiye; [b] World Bank, 2024b.

Notes: Life expectancy averages refer to latest available years; this table reports data that are publicly available from international sources.
The latest national statistics for some indicators are included in the text.

International Health Regulations (IHR). WHO also continues to support the Ministry of Health as the National Focal Point on IHR, through activities such as an annual self-assessment, and on health emergency preparedness, surveillance and laboratory system strengthening.

Promoting health and wellbeing

WHO works with the government of Uzbekistan to promote opportunities for healthy choices for all socioeconomic groups, including through approaches such as healthy settings and working with other sectors to promote health.

Environmental health is a growing priority. In 2023 Uzbekistan became the first country in Central Asia to endorse the WHO Protocol on Water and Health and is currently implementing many of its measures. The WHO guideline for PM 10 levels has been adopted as a national standard, and WHO is supporting the government to develop and implement a national adaptation plan for air pollution reduction. The WHO guideline for levels of PM 2.5 has not yet been adopted, but efforts to change this are ongoing.

Tobacco control is also an ongoing focus. WHO is assisting Uzbekistan to move towards ratification of the WHO Framework Convention on Tobacco Control, and the country also receives support to strengthen tobacco control policies, including capacity building for health professions and advocacy around tobacco taxation. Nutrition continues to be an important area of work and actions are being taken to improve the nutritional environment of the population, including through the implementation of new front-of-pack labelling and the design and implementation of a technical support package on salt reduction based on the WHO SHAKE package. WHO is also helping to strengthen the national food standards.

Other areas of cooperation include engagement with the WHO European Programme of Work regional flagship initiatives on digital health, mental health, immunization and promoting healthier behaviours.

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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.

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