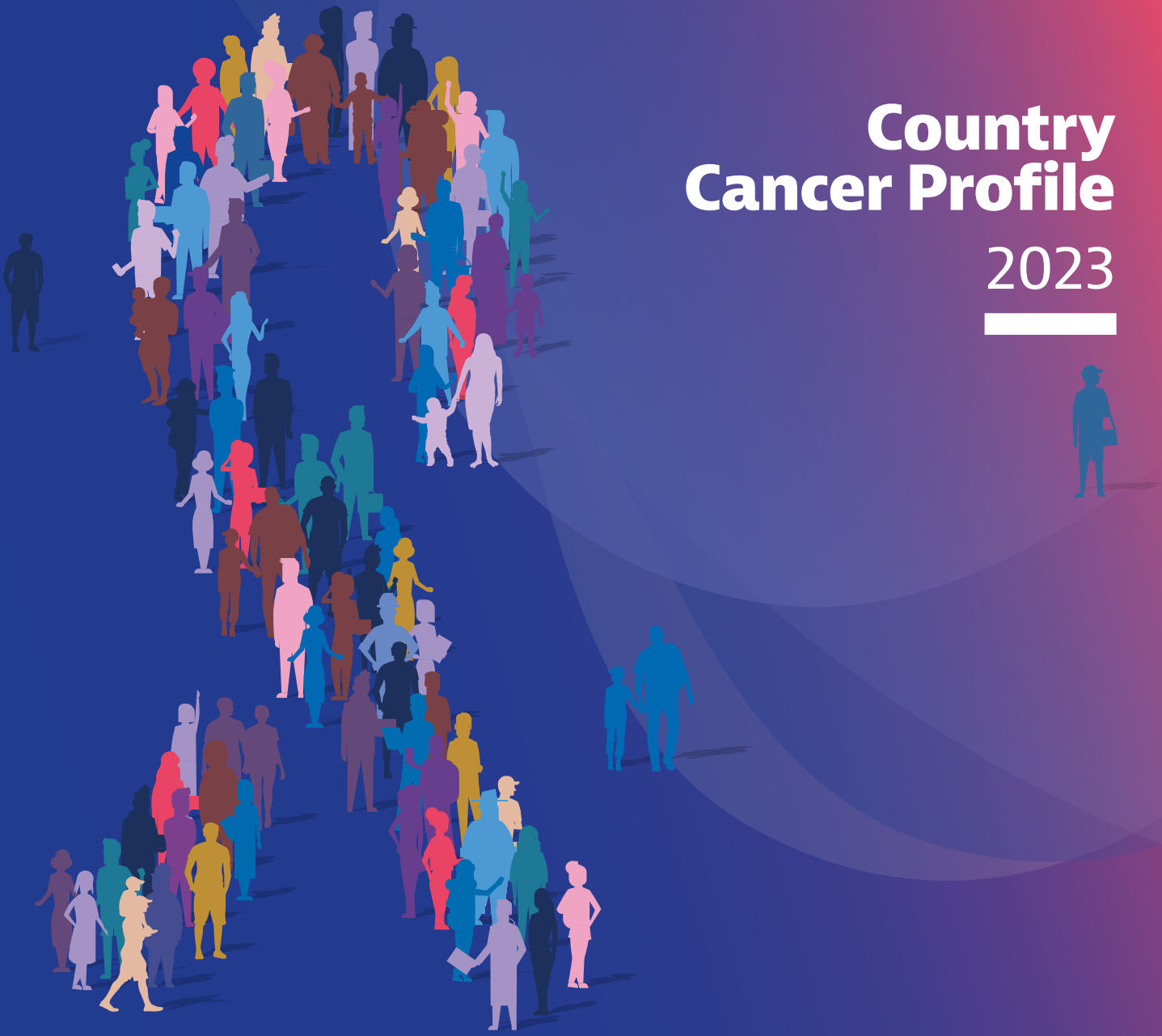




NORWAY

Country Cancer Profile

2023



The Country Cancer Profile Series

The European Cancer Inequalities Registry is a flagship initiative of the Europe's Beating Cancer Plan. It provides sound and reliable data on cancer prevention and care to identify trends, disparities and inequalities between Member States and regions. The Country Cancer Profiles identify strengths, challenges and specific areas of action for each of the 27 EU Member States, Iceland and Norway, to guide investment and interventions at the EU, national and regional levels under the Europe's Beating Cancer Plan. The European Cancer Inequalities Registry also supports Flagship 1 of the Zero Pollution Action Plan.

The Profiles are the work of the OECD in co-operation with the European Commission. The team is grateful for the valuable inputs received from national experts and comments provided by the OECD Health Committee and the EU Expert Thematic Group on Cancer Inequality Registry.

Data and information sources

The data and information in the Country Cancer Profiles are based mainly on national official statistics provided to Eurostat and the OECD, which were validated to ensure the highest standards of data comparability. The sources and methods underlying these data are available in the Eurostat Database and the OECD Health Database.

Additional data also come from the World Health Organization (WHO), the International Agency for Research on Cancer (IARC), the International Atomic Energy Agency (IAEA), the Institute for Health Metrics and Evaluation (IHME) and other national sources (independent of private or commercial interests). The calculated EU averages are weighted averages of the 27 Member States unless otherwise noted. These EU averages do not include Iceland and Norway. Purchasing Power Parity (PPP) is defined as the rate of currency conversion that equalises the purchasing power of different currencies by eliminating the differences in price levels between countries.

Disclaimer: This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of the Member countries of the OECD. This work was produced with the financial assistance of the European Union. The views expressed herein can in no way be taken to reflect the official opinion of the European Union.

This document, as well as any data and map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area. Note by the Republic of Türkiye: The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Türkiye recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Türkiye shall preserve its position concerning the "Cyprus issue".

Note by all the European Union Member States of the OECD and the European Union: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Türkiye. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

©OECD 2023

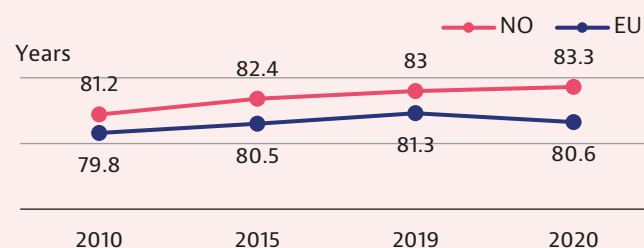
The use of this work, whether digital or print, is governed by the Terms and Conditions to be found at <https://www.oecd.org/termsandconditions>.

Contents

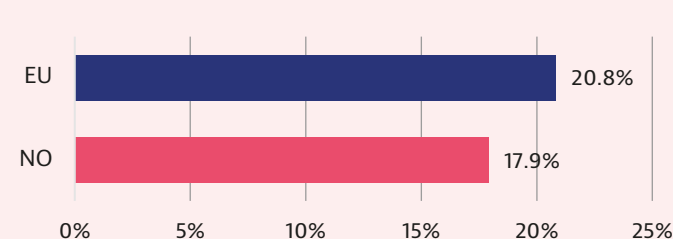
1. HIGHLIGHTS	3
2. CANCER IN NORWAY	4
3. RISK FACTORS AND PREVENTION POLICIES	7
4. EARLY DETECTION	10
5. CANCER CARE PERFORMANCE	13
5.1 Accessibility	13
5.2 Quality	15
5.3 Costs and value for money	16
6. SPOTLIGHT ON INEQUALITIES	18

Summary of the main characteristics of the health system

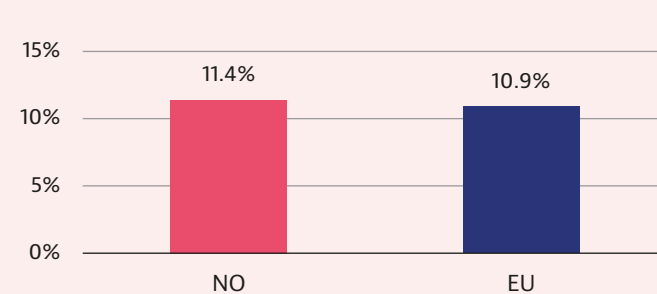
LIFE EXPECTANCY AT BIRTH (YEARS)



SHARE OF POPULATION AGED 65 AND OVER (2021)

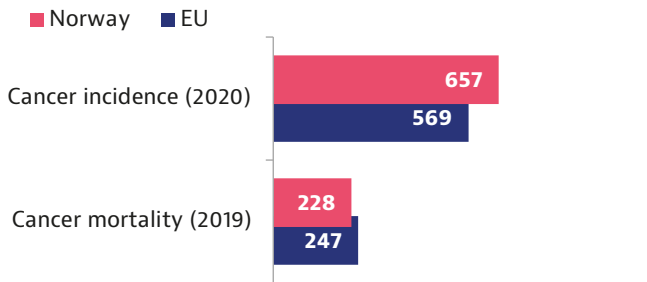


HEALTH EXPENDITURE AS A % OF GDP (2020)

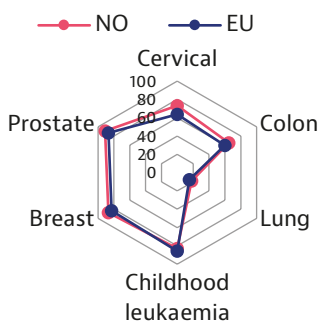
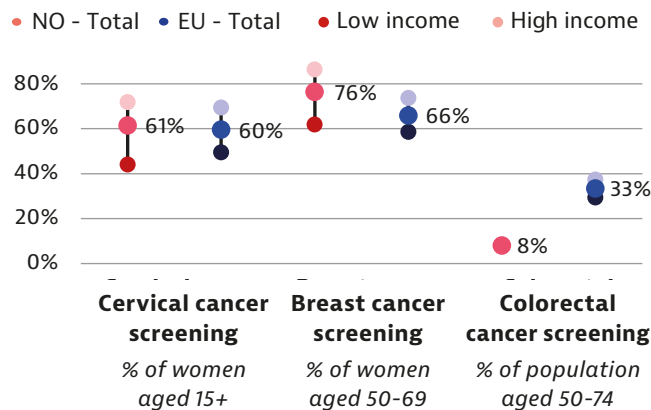
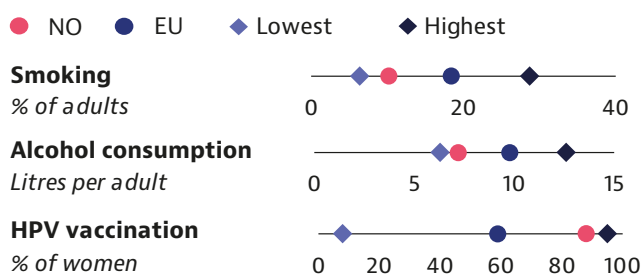


Source: Eurostat Database.

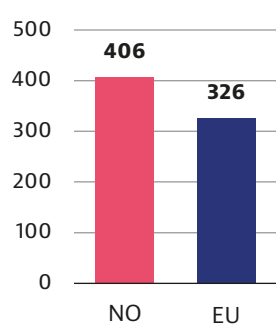
1. Highlights



Age-standardised rate per 100 000 population



Five-year net survival rate by cancer site, 2010-14



Total cost of cancer (EUR per capita PPP), 2018

Cancer in Norway

Estimated cancer incidence rates are higher in Norway than in the EU, while cancer mortality rates are lower and decreasing faster than in many EU countries. Of the 35 515 new cancer cases expected in Norway in 2020, 54.2 % were among men and 46 % among women. The most common cancer types are similar to those in EU countries (prostate, breast, colorectal, melanoma and lung).

Risk factors and prevention policies

Cancer risk factors in Norway are low compared to other Nordic countries and EU countries. Several national policies have been introduced to reduce alcohol consumption, smoking and obesity rates. Human papillomavirus (HPV) vaccination, included in the children's vaccination programme since 2009, has a coverage rate comparable to the best performing EU countries.

Early detection

Norway has a nationwide screening programme for breast and cervical cancer, with participation rates above the EU average. However, as in many EU countries, people with low socioeconomic status have lower participation rates in public screening programmes. Several initiatives to increase screening among vulnerable population groups are being evaluated.

Cancer care performance

Norway performs relatively well on quality of cancer care, with higher five-years survival rates than the EU averages for most cancer types. Several policies and mechanisms to promote equitable cancer care have been introduced, including national treatment guidelines, standardised patient pathways, pathways coordinators and cancer coordinators in municipalities, and initiatives to increase access and quality control using nationwide registries. In 2018, total costs of cancer were higher in Norway than the EU average.

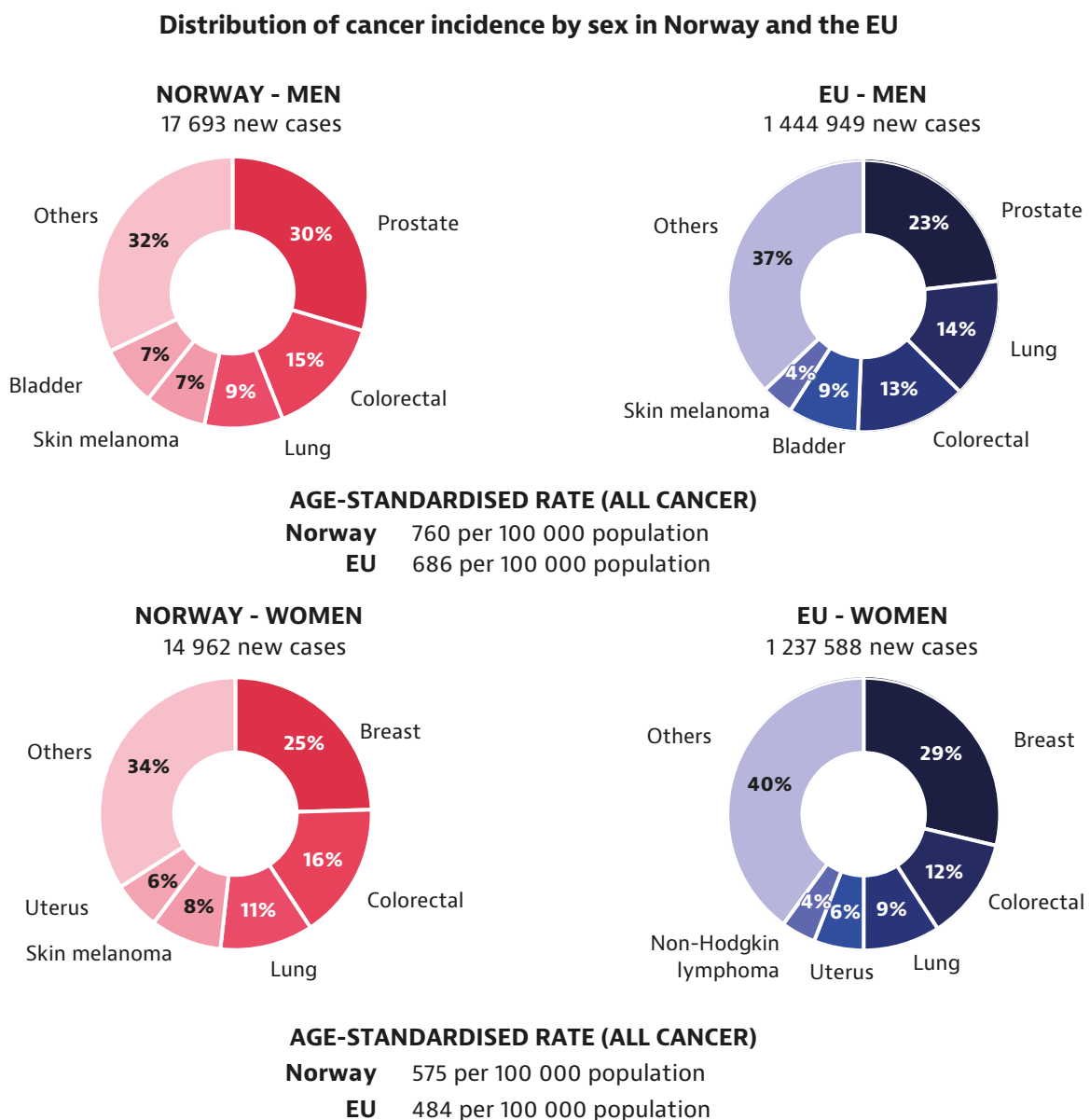
2. Cancer in Norway

Cancer incidence rates are higher in Norway than the EU average

According to European Cancer Information System (ECIS) of the Joint Research Centre based on incidence trends from pre-pandemic years, 35 600 new cancer cases were expected in Norway in 2020 (660 per 100 000 population). Of these, 17 700 (54.1 %) were expected among men and 15 000 (45.9 %) among women¹ (Figure 1). In the same

year, the age-standardised rate for all cancer types was expected to be higher in Norway for both men and women than the EU averages, at 760 per 100 000 population for men (vs. 686 per 100 000 across the EU) and 575 per 100 000 for women (vs. 484 per 100 000 across the EU). Over the past few years, incidence rates for all cancer types have decreased for men and increased for women in Norway (Cancer Registry of Norway, 2021).

Figure 1. Age-standardised incidence rates are higher in Norway than the EU average in 2020



Note: Corpus uteri does not include cancer of the cervix. These estimates were created before the COVID-19 pandemic, based on incidence trends from previous years, and may differ from observed rates in more recent years.
 Source: European Cancer Information System (ECIS). From <https://ecis.jrc.ec.europa.eu>, accessed on 09/05/2022. © European Union, 2022.

¹ According to the Cancer Registry of Norway, 19 223 new cases were detected among men and 16 292 were detected among women in 2020.

The five most common cancer types among men in 2020 were prostate cancer, colorectal cancer, skin melanoma, lung cancer and bladder cancer (Cancer Registry of Norway, 2021). Among women, the five most common types were breast cancer, colorectal cancer, lung cancer, skin melanoma and corpus uteri. Age-standardised incidence rates between 2012–16 and 2017–21 of melanoma have increased for men (+10.3 %), while rates of lung (-8.5 %) and prostate cancer (-12.3 %) have decreased. Among women, the strongest increases in incidence rates were for melanoma (+8.5 %), lung (+3.4 %) and breast cancer (+5.2 %), with a reduction in incidence of ovarian (-9.0 %) and corpus uteri (-4.7 %).

According to ECIS, gastric (stomach) cancer was expected to constitute 2 % of new cancer cases in men and 1 % in women in 2020. Skin melanoma was expected to constitute 7 % of new cancer cases in men and 8 % in women, higher than any rates in the EU. In 2013, the estimated number of new rare cancer cases in Norway was 5 746. In Norway, 216 children under the age of 18 years were diagnosed with cancer in 2021. The prognosis for paediatric cancer is generally better than for cancer among adults, and around 80 % of children diagnosed with cancer survive.

Based on pre-pandemic projections from NORDCAN (Association of the Nordic Cancer Registries), cancer incidence in Norway will rise in the coming years, owing primarily to the ageing of the population, with incidence projected to increase by more than 40 % by 2040 (Danckert et al., 2019).

Fewer cancer cases are diagnosed among immigrants in Norway

While the first-generation immigrant population (Norwegians born to immigrant family members) in Norway comprises 15 % of the total population, they account for just 8 % of all cancer cases diagnosed in Norway in 2020 (Cancer Registry of Norway, 2020). Immigrants from eastern Europe, the Middle East, Africa and Asia have lower incidence of cancer than either the non-immigrant population or immigrants born in the other Nordic or high-income countries (Hjerkind et al., 2020). Several factors explain the lower prevalence among immigrants, including a younger population, underdiagnosis because of lower participation in screening activities and less use of health care services.

Cancer is increasingly becoming a chronic condition

The number of patients surviving following diagnosis with cancer in Norway is increasing

steadily, and cancer is becoming a chronic condition (Cancer Registry of Norway, 2020). At the end of 2020, 5.7 % of the population (305 503 people) had received at least one cancer diagnosis at some point in their lifetime, up from 4.2 % of the population (205 201 people) at the end of 2010. By the end of 2016, average five-year prevalence for all cancer types was 1 844 per 100 000 – a similar rate to that in Sweden (1 837) and lower than that in Denmark (2 096) (Danckert et al., 2019).

Cancer mortality is decreasing much faster than the EU average

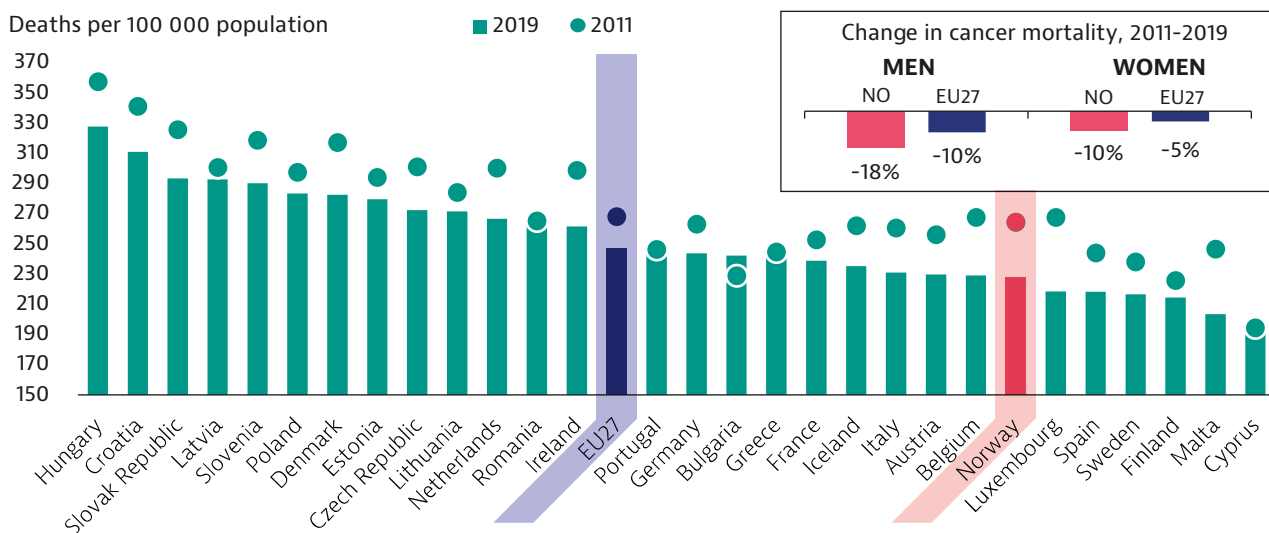
In 2020, 10 981 people died from cancer in Norway (Cancer Registry of Norway, 2020). Lung cancer, the biggest contributor to cancer mortality, accounted for 20 % of cancer deaths, followed by colorectal (11 %), prostate (9 %), pancreatic (7 %), and breast cancer (5 %). Taken together, these five cancer sites accounted for more than 50 % of cancer mortality. The number of cancer deaths per 100 000 inhabitants decreased for men and women in Norway between 2011 and 2019, and the rate per 100 000 population in 2019 was lower in Norway (228 per 100 000) than the EU average (247 per 100 000) in 2019. In Norway, the number of cancer deaths, adjusted for population size and structure, is below the EU average (Figure 2). This represents a significant improvement from 2011, when the mortality rate in Norway (264 per 100 000) was similar to the EU average (268 per 100 000), and 14 countries had lower cancer mortality rates.

Age-standardised mortality rates decreased during 2011-2019 for cancers with some of the highest mortality rates, such as lung, colorectal and prostate cancer. However, mortality rates increased for liver cancer, leukaemia and pancreas cancer (Figure 3).

In 2019, gastric (stomach) cancer accounted for an overall mortality rate of 6 per 100 000 population, which is lower than the EU average (10 per 100 000 population), and skin melanoma accounted for an overall mortality rate of 6 per 100 000 population, double the EU rate of 3 per 100 000 population.



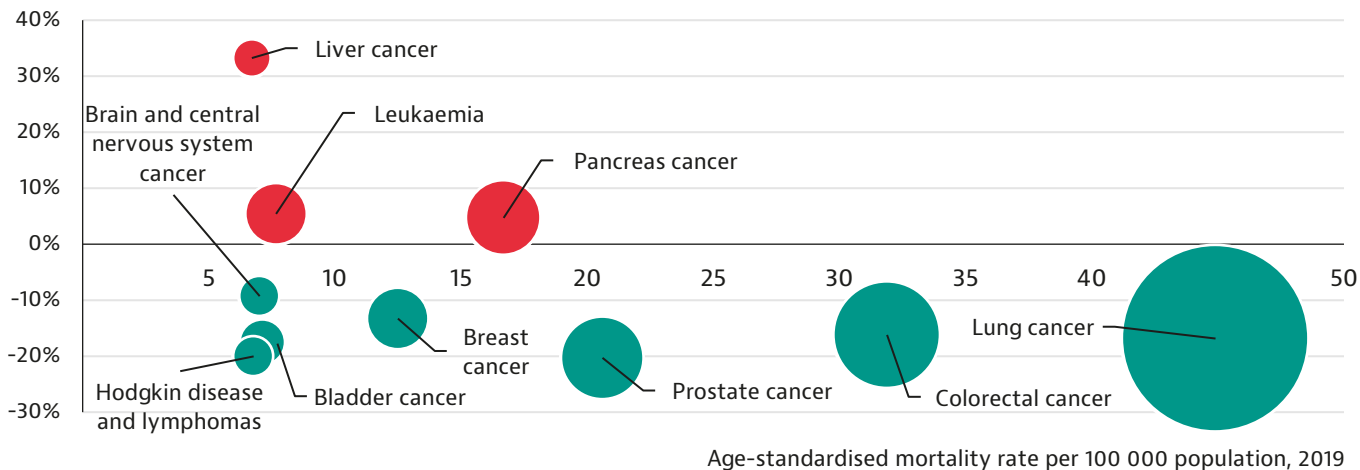
Figure 2. Cancer mortality rates in Norway are decreasing faster than in many EU countries



Note: The EU average is weighted (calculated by Eurostat for 2011-2017 and by the OECD for 2018-2019).
Source: Eurostat Database.

Figure 3. Mortality rates for cancers with high mortality levels are decreasing in Norway

Change in cancer mortality, 2011-2019 (or nearest year)



Note: Red bubbles signal an increase in the percentage change in cancer mortality during 2011-2019; green bubbles signal a decrease. The size of the bubbles is proportional to the mortality rates in 2019. The mortality of some of these cancer types is low; hence, the percentage change should be interpreted with caution. Bubble sizes for mortality rates are not comparable between countries.
Source: Eurostat Database.

Cancer has been the leading cause of death in Norway since 2017

In Norway, the number of deaths due to cancer is slowly increasing, while the number of deaths due to cardiovascular disease has declined in recent years. Cancer overtook cardiovascular disease as the leading cause of death for the first time in 2017 (NIPH, 2022).

The most common types of cancer are prostate and breast cancer (5 030 new cases in 2020) and (3 455 new cases). However, lung cancer has the highest mortality rate, and is associated with the highest number of years of life lost (YLLs), since people diagnosed with lung cancer are relatively young and many die from the disease. It is estimated that

cancer represented on average 35.2 % of all YLLs in Norway in 2012, and the share was slightly higher for women (37.8 %) than men (32.8 %) (Brustugun, Møller & Helland, 2014). Although more men than women die from cancer in Norway, women lose more life years due to cancer (14.9 YLLs) than men (12.7 YLLs). Lung cancer caused almost as many YLLs alone (22.1 %) as colon, prostate and breast cancer combined (23.1 %). The number of disability-adjusted life years (DALYs) due to cancer was in 2019 similar in Norway (4 628 per 100 000), Sweden (4 807 per 100 000) and Finland (4 995 per 100 000). These rates are lower than in many EU countries, including Denmark (6 239 DALYs per 100 000).

The universal health care system in Norway promotes equitable care among cancer patients

The Norwegian health care system is founded on the principles of universal access, decentralisation and free choice of providers. Most public health care services are financed by taxation, and a national insurance system covers all residents, independent of social status, age or income. Norway has introduced several policies and mechanisms to promote equitable cancer care, including national treatment guidelines, standardised patient pathways, pathways coordinators and cancer coordinators in the municipalities, and initiatives to increase access and quality control using nationwide registries.

In 2018, the Norwegian government published an updated national cancer strategy – Living with Cancer (2019-2022) – which was the second in a series that began in 2012. The updated national strategy aims to increase the performance of Norwegian cancer care and is guided by five objectives: a) establishing more patient-oriented cancer care; b) being a pioneer in the study and development of high-quality patient pathways; c) being a pioneer in cancer prevention; d) increasing the share of people who survive, and live longer, with cancer; and e) providing the best possible quality of life for cancer patients, their friends and relatives.

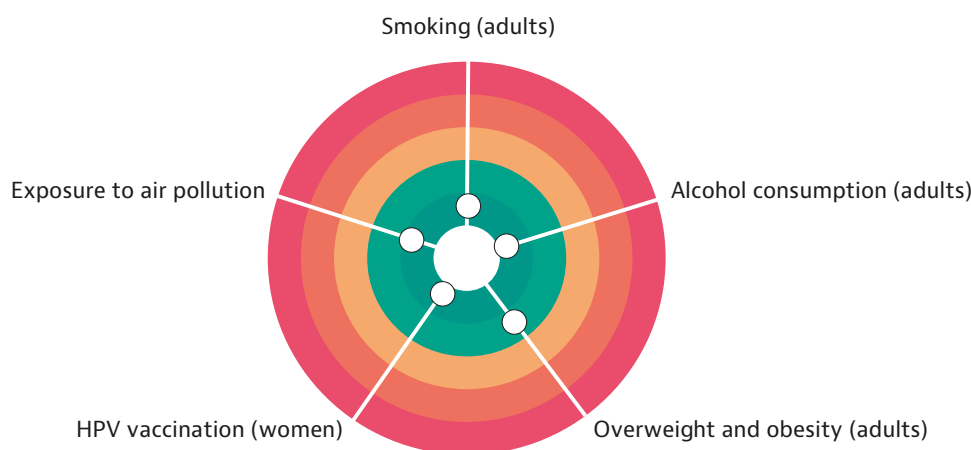
3. Risk factors and prevention policies

Norway performs well compared to EU countries for behavioural and environmental risk factors

Spending on prevention measured as a share of current health care spending was 2.7 % in Norway in 2020. This is lower than the EU average of 3.4 %, and lower than the shares in Norway’s

neighbouring counties Denmark (3.2 %) and Sweden (3.3 %). However, prevalence of behavioural and environmental risk factor for cancer including smoking, alcohol consumption, overweight and obesity and exposure to pollution is lower in Norway than in many EU countries (Figure 4).

Figure 4. Many risk factors for cancer are lower in Norway than in EU countries



Note: The closer the dot is to the centre, the better the country performs compared to EU countries. No country is in the white “target area” as there is room for progress in all countries in all areas.
 Sources: OECD calculations based on the European Health Interview Survey (EHIS) 2019 for smoking and overweight/obesity rates, OECD Health Statistics 2022 and WHO Global Information System on Alcohol and Health (GISAH) for alcohol consumption (2020), WHO for HPV vaccination (through the WHO/UNICEF Joint Reporting Form on Immunization) (2020) and Eurostat for air pollution (2019).

Cigarette smoking rates in Norway are comparable to the best performing EU countries

Norway has low prevalence of daily cigarette smokers compared to the EU average (Figure 5). Only 10 % of the population smoke daily, which is similar to the other Nordic countries, but almost half the EU average (18.4 %).

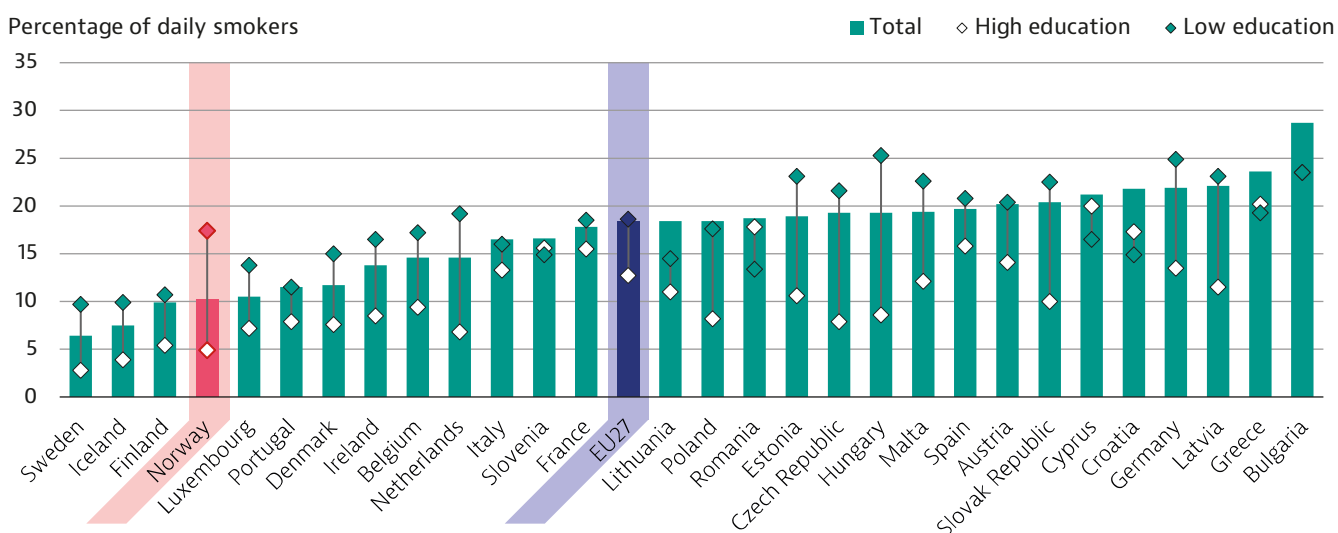
As in many EU countries, lower education levels and lower incomes are associated with higher smoking prevalence in Norway. The gap in prevalence between people with higher (4.9 %) and lower (17.4 %) education levels is much larger than in other Nordic countries and higher than the EU average.

In most EU countries, prevalence of daily smokers is higher among younger populations: 21.5 % of the population aged 15-64 years and 8.5 % of those

aged 65 years and over smoked daily across the EU in 2019. Norway diverges from this trend, with a slightly higher share of daily smokers aged 65 years and over (11.1 %) than those aged 14-64 years (10.0 %). In line with the EU average (22.3 % in men and 14.8 % in women), daily smoking prevalence is higher among men than women in Norway (11.0 % in men and 9.4 % in women).

Policies on tobacco use include smoke-free restaurants, a ban on advertisements, standardised packaging, multiple anti-smoking campaigns and economic instruments such as high taxes on tobacco. In addition to these measures, Norway is an active participant in international co-operation on tobacco control, led by both the EU and WHO.

Figure 5. Prevalence of daily cigarette smokers in Norway is low compared to the EU average



Note: The EU average is weighted (calculated by Eurostat).
Source: Eurostat Database (EHIS). Data refer to 2019.

Overall alcohol consumption is lower in Norway than in the EU

In 2020, Norway has lower alcohol consumption per capita (7.2 litres of pure alcohol on average per year) than the EU average (9.8 litres) (Figure 6). At 2 %, the share of hazardous alcohol drinkers in Norway is also smaller than the EU average of 2.7 %. Those on higher incomes and/or with higher education levels are particularly exposed to hazardous drinking patterns, increasing the risk of cancer for these groups. The education gap in Norway is larger than in EU countries. In Norway, hazardous drinking is more prevalent among people with higher (2.4 %) than lower (1.6 %) education levels, while across the EU the rates are

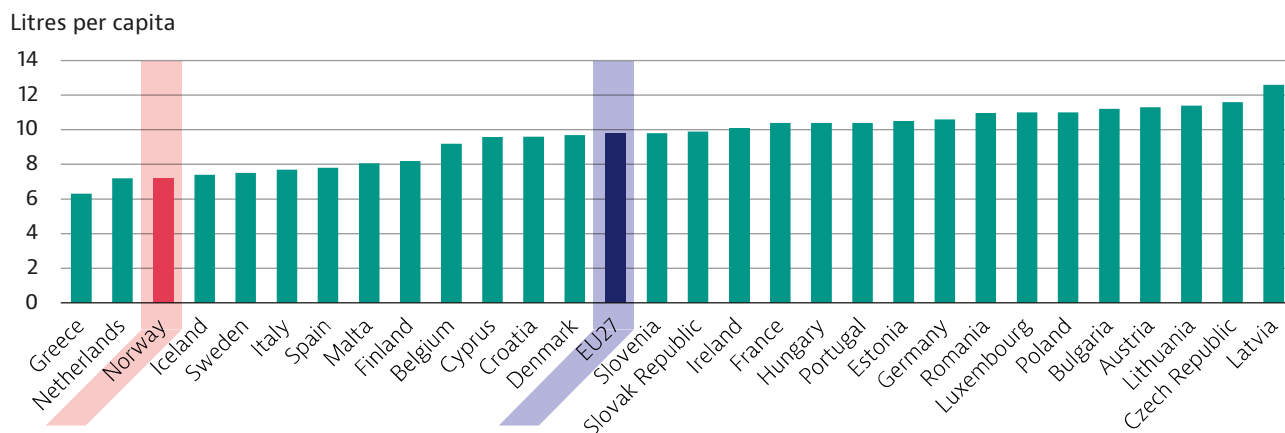
2.7 % among those with higher education levels and 2.6 % among those with lower education levels. As across the EU, prevalence of hazardous drinking is higher among the population aged 65 years and over than among adults aged 15-64 years. However, gender disparities differ from the majority of EU countries, with higher prevalence of hazardous drinking among women (2.5 %) than men (1.5 %).

Moreover, there is a large gap by geographical location, with a higher share of hazardous alcohol consumption in cities (3 %) than rural areas (0.9 %). This difference is particularly prominent compared to the EU averages of 2.8 % in cities and 2.6 % in rural areas.

To reduce alcohol consumption, the Norwegian government has adopted policies that impose high prices, limit access and have a non-profit distribution model through the Wine Monopoly

(the public chain of liquor stores). By law, it is illegal to market alcoholic beverages, or products of the same brand as the alcoholic beverage.

Figure 6. Norway's alcohol consumption is lower than in EU countries



Note: The EU27 average is unweighted (calculated by the OECD). Sources: OECD Health Statistics 2022; WHO GISAH.

Obesity is strongly associated with socioeconomic status in Norway

The overweight rate and obesity pattern of the Norwegian population follows the international pattern, with increasing prevalence over time. However, prevalence of obesity among adults is lower in Norway than in many EU countries. Based on self-reported data from the EHIS, half of the population declared themselves overweight or obese in 2019 (51 % compared to 53 % in the EU), with disparities by gender – the rate was 15 percentage points higher among men (58 %) than women (43 %) – and by education level – 5 percentage points higher among groups with lower (50 %) than higher (45 %) education.

According to the Norwegian Institute of Public Health, approximately 25 % of men and 20 % women are obese. For children, a total of 1 in 6 are overweight or obese. However, this trend seems to be levelling out, despite an increasing trend of overweight among Norwegian adolescents for the past 40 years. Obesity varies across region and level of education. The share of overweight children, for example, is 50 % higher in rural areas than in cities. This indicates that people living in rural areas have a higher risk of developing cancer than those living in more central areas. In addition, Statistics Norway shows that the share of overweight children is 30 % higher among those with a mother with lower education levels than among those with a mother with higher

education levels. Prevalence of obesity also varies significantly by country of origin. Obesity is more prevalent among immigrants from Pakistan, Iraq and Turkey, but less prevalent among immigrants from Viet Nam.

Improving nutrition is a key policy priority in Norway, which implemented a National Action Plan for Better Diets 2017-2023. This was a collaboration between the private, public and voluntary sectors aiming to promote a healthier diet, and setting quantitative goals for changes to Norwegian habits. As part of its efforts, Norway adopted regulations on marketing of food and beverages. These include the introduction of the keyhole label in 2019, which aims to provide easy-to-understand information on the overall nutritional quality of food products to promote healthier nutrition habits.

Exposure to air pollution is lower in Norway than in the EU

In 2019, exposure to PM₁₀² in Norway reached 11.8 µg/m³, which is lower than the EU average (20.5 µg/m³). Norway also had a much lower concentration of PM_{2.5} than in the EU (6.5 µg/m³ vs. 12.6 µg/m³). According to the Institute for Health Metrics and Evaluation, ozone and PM_{2.5} exposure accounted for an estimated 1 % of all deaths in Norway in 2019, on par with the lowest rates in the EU.

2 Particulate matter (PM) is classified according to size: PM₁₀ refers to particles less than 10 micrometres in diameter; PM_{2.5} to particles less than 2.5 micrometres in diameter.

Human papillomavirus vaccination was included in the vaccination programme in 2009-2010

Incidence of cervical cancer in women under the age of 30 years has almost tripled in Norway since the 1950s. Of 21 160 women with cervical cancer during 1953-2013, 5.3 % were younger than 30 years (Gravdal et al., 2021).

The HPV vaccine was introduced to girls aged 12-13 years in 2009-2010 as a prevention measure

against cancers caused by HPV, including cervical cancer. The programme was extended to include boys in the same age group in 2018. To improve accessibility and coverage, the HPV vaccine is included in the children’s vaccination programme and is financed through the state budget. The vaccine is also offered free of charge to women born after 1991. As of 2021, 94 % of girls and 93 % of boys born in 2008 had received at least one dose of the HPV vaccine, higher than any rates in the EU.

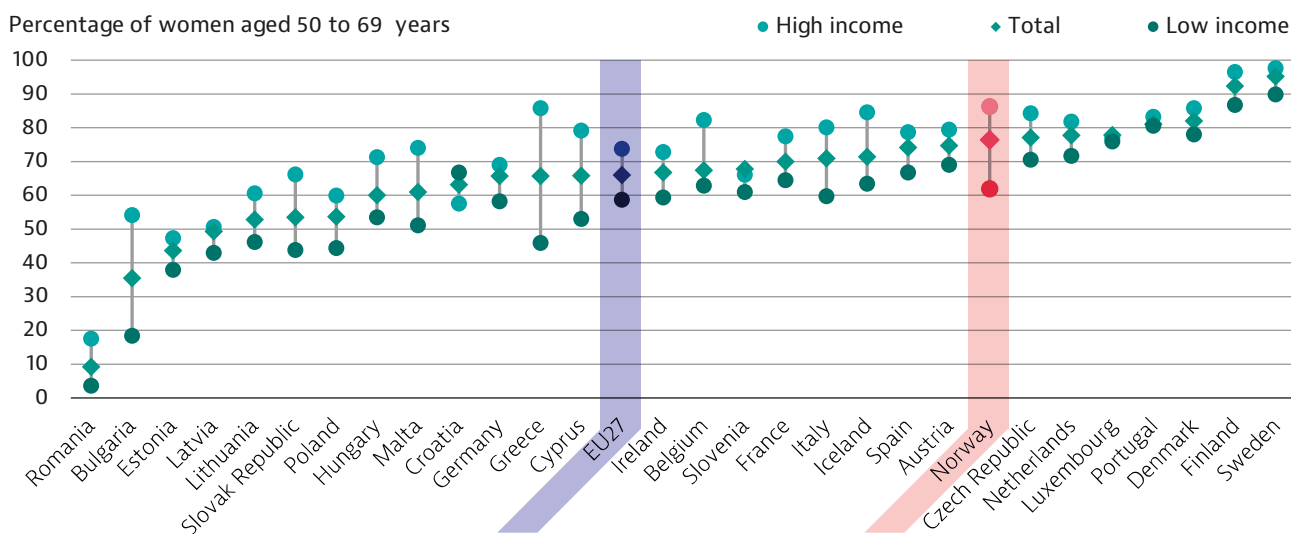
4. Early detection

Norway established population-based screening programmes (screening offered to a specific at-risk target population) for breast and cervical cancer in the 1990s, and screening for colorectal cancer was launched in autumn 2022. To promote equality and maximise screening coverage rates, all national screening programmes in Norway are free of charge, and information related to screening is provided in multiple languages. Specific measures to reduce societal inequality in screening attendance are also being evaluated.

Socioeconomic factors affect participation in breast cancer screening

Nationwide breast cancer screening was introduced in Norway in 1996. The programme is a public health service administered by the Cancer Registry of Norway. All women aged 50-69 years are offered a mammogram every two years, and take-up is voluntary. The programme was evaluated by the Norwegian Research Council in 2015, which found that it reduced breast cancer mortality by between 20 % to 30 %, and that for every death from breast cancer prevented, five women were over diagnosed.

Figure 7. The income gap in breast cancer screening participation rates in Norway is larger than the EU average



Note: The EU average is weighted (calculated by Eurostat). The figure reports the percentage of women aged 50 to 69 years who reported receiving a mammogram in the past two years. Source: Eurostat Database (EHIS). Data refer to 2019.

The proportion of women aged 50 to 69 years screened for breast cancer in Norway (76 %) is above the EU average (66 %) (Figure 7). Women on higher incomes (86 %) are much more likely to be screened than those on lower incomes (62 %) – a gap 9 percentage points larger than the gap across the EU. Studies have shown that immigrant women are less likely to participate in breast cancer screening than non-immigrant women, and that attendance is lower among immigrants with lower education and income levels (Le et al., 2019).

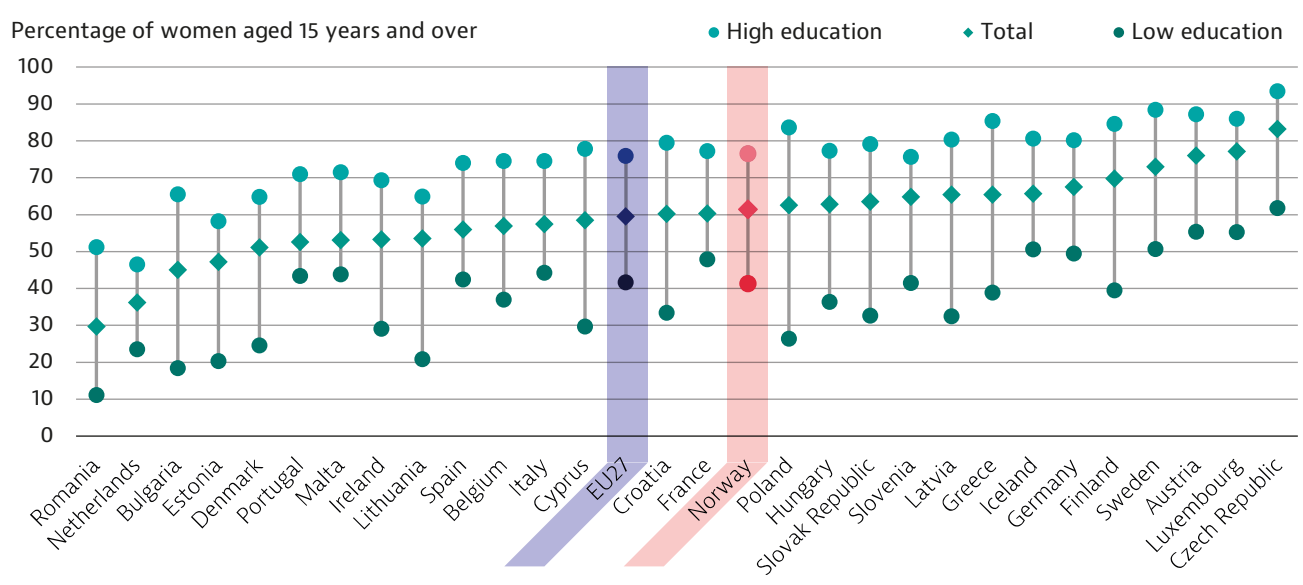
Norway implemented initiatives to increase cervical cancer screening, targeting vulnerable groups

Norway has had a nationwide screening programme for cervical cancer since 1995. The programme is run by the Cancer Registry of Norway, in collaboration with the Norwegian Institute of Public Health and Norwegian Directorate of Health. Norwegian health authorities recommend that all women aged 25-69 years have a smear test every three years.

Norway’s participation rate of cervical cancer screening (61 %) is close to the EU average (60 %), but attendance is lower among women on lower (44 %) than higher incomes (72 %). Uptake is much higher among women with higher (77 %) than lower (41 %) education levels. This education gap is similar to that observed in EU countries (Figure 8).

Immigrant women and women who are currently outside the workforce are less likely to have received a smear test in recent years in Norway (Leinonen et al., 2017). Initiatives targeting vulnerable population groups have been proposed. EQUALSCREEN is an ongoing research project that aims to evaluate the effectiveness of alternative methods for inviting patients to cervical screening tests, with the aim of increasing attendance and reducing social inequality (Box 1).

Figure 8. Norway’s cervical cancer screening rate is close to the EU average



Note: The EU average is weighted (calculated by Eurostat). The figure reports the percentage of women aged 15 years and over who reported having a cervical smear test in the past three years. Source: Eurostat Database (EHIS). Data refer to 2019.

Box 1. EQUALSCREEN aims to increase coverage rates and reduce inequality in cancer screening

EQUALSCREEN, conducted by the Cancer Registry of Norway, examines whether self-sampling can increase screening uptake among women who have not been screened for at least 10 years, and to assess whether self-sampling may reduce social inequality in screening attendance.

The study is designed as randomised control trial, comparing the following three interventions: a) the usual reminder to be screened; b) a self-sampling test sent in the mail; and c) an offer to order a self-sampling test.

Despite high prevalence of colorectal cancer, a screening programme was only launched in 2022

Norway has high prevalence rates of colorectal cancer, yet no national screening programme existed prior to autumn 2022. Everyone between aged 55-65 years will be offered a faecal occult blood test every other year, as well as a colonoscopy. The screening programme will be rolled out gradually and will be contingent on hospitals having enough capacity to offer screening procedures.

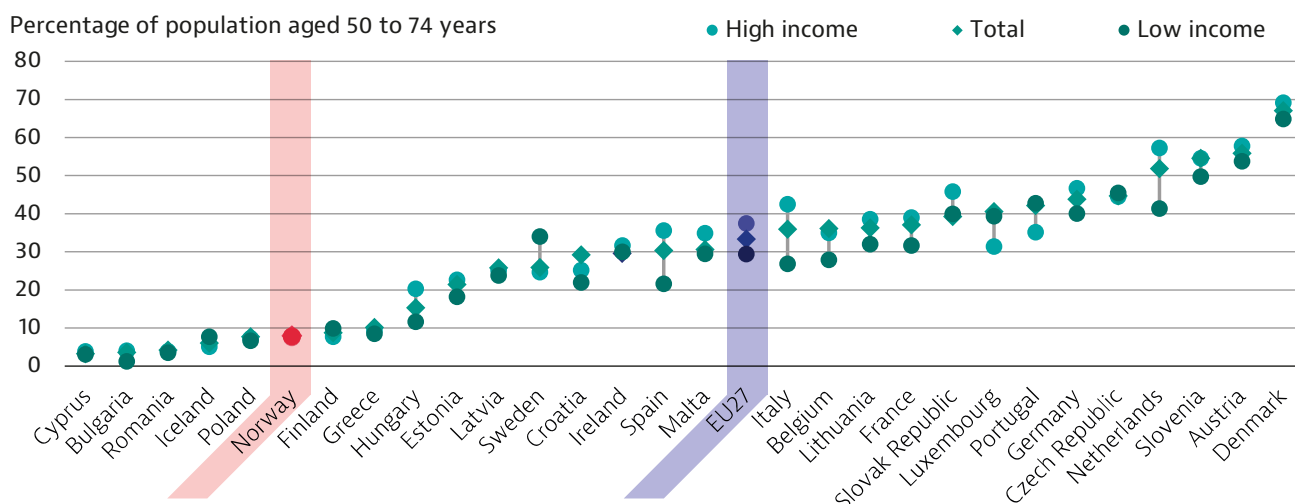
Today, Norway fares relatively poorly in terms of the share of the population who have undergone colorectal cancer screening within the past two years (Figure 9). The proportion of those aged 50-74 years who reported having a faecal occult blood test in the past two years is 8.0 %

in Norway, compared to 25.9 % in Sweden and 67.1 % in Denmark. Unlike breast and cervical cancer screening, disparities in colorectal cancer screening rates are small in relation to gender, education level and income, compared to the EU averages

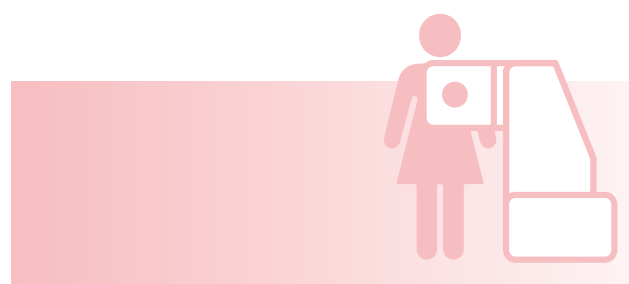
Norway has introduced a pilot project for lung cancer screening

No national screening programmes for lung or prostate cancer are run in Norway. A pilot project for lung cancer screening recently started at Akershus University Hospital, and the first participants were invited for screening in 2022. So far, a total of 125 000 patients living in the south-eastern region of Norway have been invited to participate in the pilot programme.

Figure 9. Colorectal cancer screening rate in Norway is lower than the EU average



Note: The EU average is weighted (calculated by Eurostat). The figure reports the percentage of population aged 50 to 74 years who reported having a faecal occult blood test in the past two years. Source: Eurostat Database (EHIS). Data refer to 2019.



5. Cancer care performance

5.1 Accessibility

Norway has universal access to health care and minimal patient copayments

Norway's health system is funded by taxation, and provides universal health coverage for all residents. Enrolment in the national insurance system is automatic. Everyone living in Norway is entitled to receive medical and care services, including asylum-seekers, refugees and other immigrants who reside lawfully in the country. Services included in national health care coverage include primary, ambulatory and hospital care, as well as outpatient prescription drugs. Patient copayments are capped at approximately EUR 300 per year, and represent less than 15 % of total health care expenditure. Cancer treatment in private hospitals in Norway is rare: virtually all cancer patients receive care in publicly funded hospitals

New treatments are approved at a national level to promote universal access

After receiving market authorisation by the European Medicine Agency, all new cancer treatments are evaluated through the National System for Managed Introduction of New Health Technologies. This assesses the efficacy, safety and cost-effectiveness of each treatment as part of the decision about whether it should become available as a part of the public health care system. Evaluations are performed at the national level. If approved, all patients covered by the proposed indication gain access to the treatment, and the cost is reimbursed by the public health care sector.

Access to radiation centres in Norway is good compared to EU countries

Norway has a high density of radiation centres compared to the EU, after Sweden, Denmark, Cyprus and Ireland (Figure 10), with 11.3 radiotherapy centres per million inhabitants, which is slightly higher than the EU average of 8.9 per million. Norway has a high density of centres providing megavolt (MV) therapy, with 7.8 centres per million population (vs. a EU average of 6.8). Brachytherapy remains a highly specialised technique, and is more available than in most EU countries (2.2 centres per million population vs. 1.8 per million across the EU). Although the country currently has no proton centres, two are currently

being built in the western and south-eastern regions (in Bergen and Oslo).

The number of cancer specialists has increased in recent decades: between 2005 and 2015 the density of oncologists grew by more than 70 % (from 2.4 oncologist per 100 000 population to 4.2 per 100 000). This figure is higher than in most EU countries. In 2020, Norway had 5.1 practising physicians per 1 000 population compared to an average of 4 across EU countries.

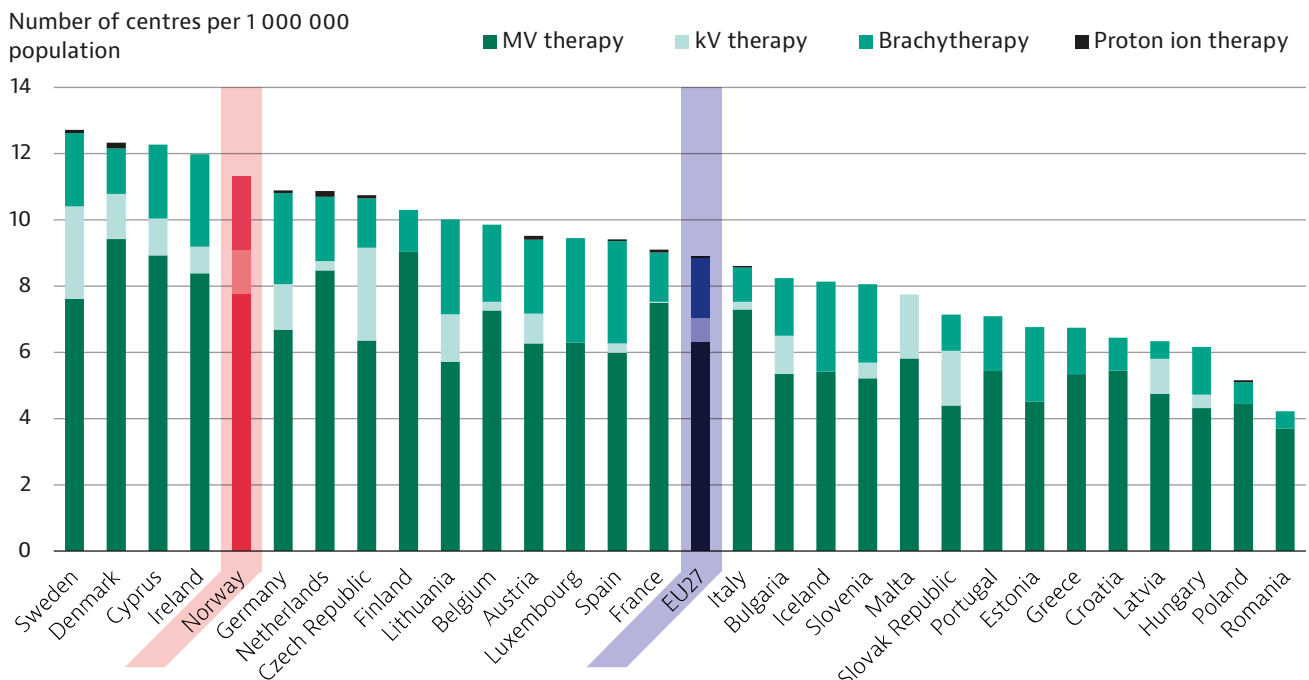
Geographical variations in access to cancer treatment persist

Despite the universality of Norway's health care system, evidence suggests that there are significant disparities in access to treatment among people with a cancer diagnosis. Population density varies widely across the country, and more than 50 % of the population live in the south-eastern region. Previous research has shown that cancer patients living in the northern and western regions receive less cancer treatment during their final weeks of life. Also, some treatments are only offered at university hospitals located in cities or urban areas. Patients living in rural areas must sometimes travel long distances to receive these treatments, which may be a barrier to access.

Evidence exists of delayed treatment in cancer care for immigrants

Concerns have been raised about timely access to appropriate cancer treatment for the growing immigrant population in Norway. Researchers have estimated waiting times between diagnosis and start of treatment, and treatment patterns for cancer patients, and have studied whether these are similar for immigrants and non-immigrants (Thøgersen et al., 2020). The findings indicate delayed treatment for lung and breast cancer among some immigrant groups in Norway. Treatment patterns were found to be similar across the four major cancer types (breast, colorectal, lung and prostate cancer) except for breast cancer, where women from east and south Asia were less likely to receive breast-conserving surgery than the non-immigrant population.

Figure 10. Norway has a high density of radiation centres in the EU



Note: kV stands for kilovolt. The EU27 average is unweighted (calculated by the OECD).
Source: International Atomic Energy Agency.

Access to treatment for rare cancers is a challenge

Debate is ongoing in Norway about the limited access to new treatments for rare diseases, including certain forms of cancer. The established system for assessment and approval of new treatments has been criticised for not being designed for these types of treatment, and calls have been made for new mechanisms for health technology assessment and funding in this area. The experimental nature of the treatments and cost-effectiveness issues appear to be among the key challenges. Several measures have been proposed as potential solutions, including providing conditional or temporary access, retrospective evaluation using registry data and adopting alternative pricing models.

Several initiatives to implement cancer precision medicine have been introduced in Norway

Several public initiatives related to precision medicine have been introduced in Norway in recent years. These aim to increase access to medicines, to increase the precision medicine experience of clinicians and researchers in the country and to support health technology assessments and reimbursement schemes for novel precision medicines. The initiatives are part of the Precision Cancer Medicine (PCM) Project (Box 2).

Box 2. Projects on cancer precision medicine are under way in Norway

CONNECT establishes a structured dialogue between all relevant actors and provides a platform for information sharing and planning for national precision medicine and diagnostics implementation in Norway.

InPreD (Infrastructure for precision diagnostics) is a service for precision diagnostics organised as a national infrastructure unit within the specialist health service. The infrastructure is being set up at all university hospitals, and patients from all Norwegian hospitals can be referred to InPreD.

IMPRESS (Improving public cancer care by implementing precision medicine in Norway) is a prospective, non-randomised clinical trial evaluating the efficacy of anti-cancer drugs on new indications.

INSIGHT (the regulatory framework for implementing precision medicine in the Norwegian health care system) uses data from IMPRESS and InPreD to evaluate the cost-effectiveness of the PCM model and suggest a new reimbursement scheme that reflects the uncertainty in PCM.



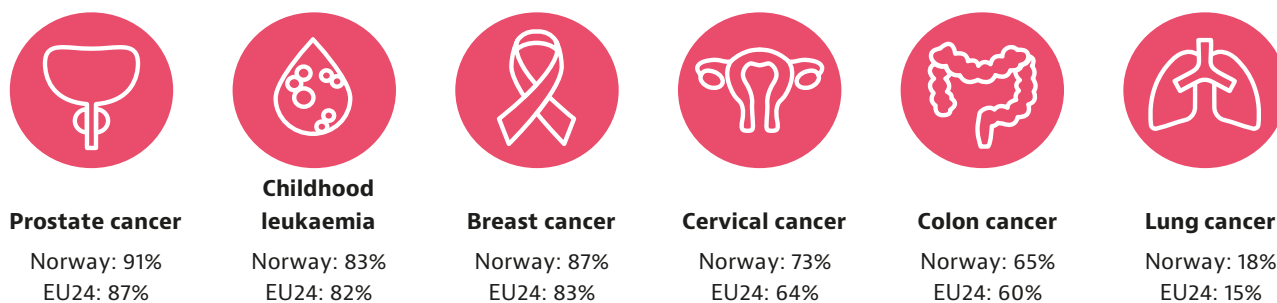
5.2 Quality

The quality of cancer care in Norway is better than in the EU

The mortality rate for cancer patients in Norway has been decreasing among men and has been constant among women over the past 50 years. The overall five-year survival rate for cancer is rising for both genders, indicating progress in cancer prevention and care (Cancer Registry of Norway, 2021).

Five-year survival rates for cancer – a marker of care quality – are higher in Norway than the EU averages for childhood leukaemia and prostate, breast, cervical, colorectal and lung cancer (Figure 11). The survival advantage is particularly high for cervical cancer, with a five-year survival rate of 73 % in Norway compared to 64 % across the EU.

Figure 11. Norway compares well with EU countries on five-year cancer survival rates



Note: Data refer to people diagnosed between 2010 and 2014. Childhood leukaemia refers to acute lymphoblastic cancer. Source: CONCORD Programme, London School of Hygiene and Tropical Medicine.

In 2017, Oslo University Hospital was granted European comprehensive cancer centre status. Its activities extend through several clinics and departments and are organised through regular meetings with representatives from departments and groups involved in cancer research and cancer care. The research includes basic, translational, clinical and epidemiological research.

Several policies to promote equitable cancer care have been introduced in Norway

Several policies concerning the quality of cancer care have been introduced in recent years, with a key aim to promote equitable cancer care in Norway. Standardised cancer patient treatment pathways were implemented in 2015, and patient pathways had been developed for 28 different types of cancer by 2022. Pathway coordinators in hospitals are responsible for arranging individual patient appointments and acting as the patients' contact person. They are responsible for ensuring continuity throughout the pathway, and that all patients receive treatment in line with the most recent national guidelines. An evaluation showed that waiting times for treatment improved for several types of cancer between 2007 and 2016 (Nilssen et al., 2019). Cancer coordinators in municipalities have an overview of services and opportunities offered to patients, and support them during and after treatment.

National treatment guidelines are in place to ensure high-quality and equal access to care

The Norwegian Directorate of Health has developed national treatment guidelines for all major cancers. These aim to ensure that public provision of cancer care is of high quality and equally available to all patients across the country. Target groups for the guidelines are general practitioners and medical specialists in medicine, surgery, oncology, radiology and pathology. The guidelines are developed in close collaboration with clinicians and patient representatives. In cases of expertise gaps in Norway – for instance, in rare cancers – patients are entitled to treatment abroad. The government funds treatment in hospitals abroad if the patient meets the requirements.

Norway has a range of health registries it uses to improve cancer care

Norway is in a unique position when it comes to access to high-quality registry data due to the country's tradition of collecting data through national registries and the ability to link different registries using personal identification numbers. The registries cover virtually all cancer patients in Norway; they include information about diagnosis and treatment, patient characteristics, comorbidities and other clinical variables. In total, Norway has established and runs 17 mandatory and nationwide central health registries.

In addition, there are eight national quality registries for individual cancers.

The data are used to monitor screening results, and to collect and analyse relevant genomic information, stage at diagnosis, treatment (procedures, medication), follow-up care and patient-reported experience and outcome measures (PREMs and PROMs). The registry data are also used to inform clinical practice and assess practice in individual hospitals or across patient groups. They can also be used to explore disparities among population groups. Analyses of data from quality registries are presented in annual reports and are publicly available. These registries are an important measure to monitor the burden of cancer and to inform policy action to promote equitable care. Annual meetings with patient representatives take place to discuss the annual reports and quality indicators. Until recently, overview of hospital-administered cancer medications has been limited in Norwegian registries. The INSPIRE (Increase pharmaceutical reporting) Project was initiated to collect and supply data on cancer medication automatically and electronically from hospital systems to the Cancer Registry of Norway.

Labour market reintegration and psychological support are on the government agenda

Both labour market reintegration and psychological support for patients with a history of cancer are

important aspects highlighted in the current Norwegian cancer strategy Living with Cancer (2019-2022). To ensure a better transition for patients after treatment, the government has introduced standardised post-treatment pathways.

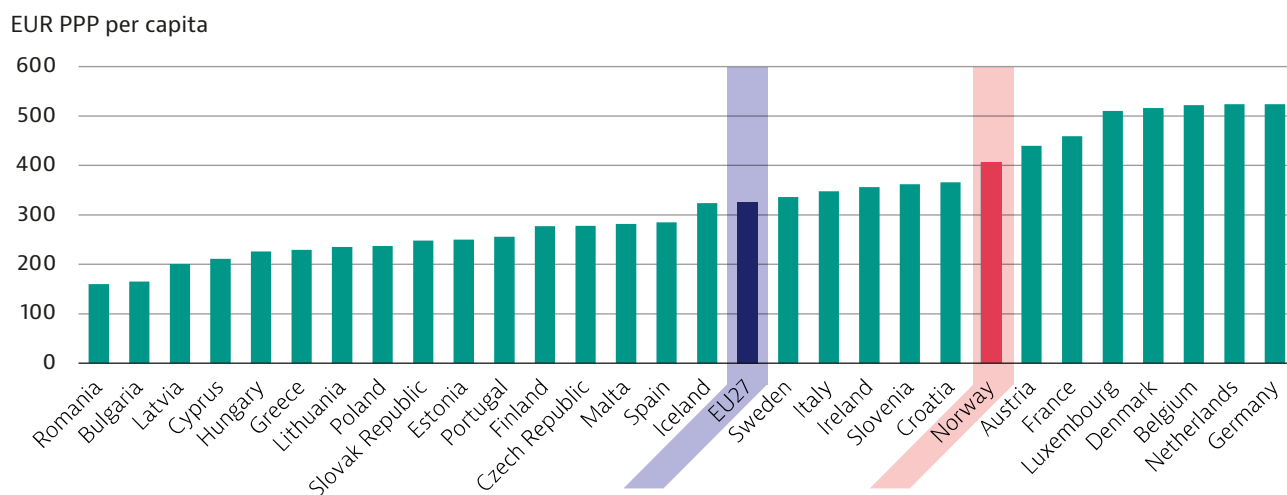
5.3 Costs and value for money

Cancer costs in Norway are higher than the EU average

The total cost of cancer in Norway was estimated at EUR 3 212 million in 2018, compared to EUR 6 129 million in the EU on average. Adjusted for population size and purchasing power parity (PPP), total costs of cancer are somewhat higher in Norway (EUR 406) than the EU average (EUR 326) (Figure 12). The total cost of cancer per capita is lower in Norway than in countries such as Germany, the Netherlands, Belgium, Denmark and Luxembourg, but higher than in Finland and Sweden.

Cancer-related health care costs in Norway (EUR 1 575 million) represented 4.2 % of total health care expenditure in 2018, which is below the average across the EU (6.2 %). Measured as a share of total health care expenditure, cancer-related health care costs are similar to those in other Nordic countries, including Denmark (4.8 %), Finland (4.0 %) and Sweden (3.7 %).

Figure 12. Costs of cancer are higher in Norway than the EU average



Note: The EU27 average is unweighted (calculated by the OECD).
Source: Hofmarcher et al. (2020).

Norway faces higher productivity loss from cancer morbidity than EU countries

Health expenditure on cancer care in Norway (including cancer drugs) (EUR 296) were almost double the EU average (EUR 154). Indirect costs of cancer were also high. The per capita cost of

productivity loss due to cancer morbidity, which includes lost earnings due to sickness absence and permanent incapacity/disability of employed people, was almost three times higher (EUR 126) than the EU average (EUR 42).

Cancer drugs expenditures in Norway was 50 % higher than in the EU (EUR 69 vs. EUR 47 per capita). Treatment costs related to different cancers vary widely (Bugge, 2022). Cancers with a five-year relative survival rate of 50-70 % – including multiple myeloma, mouth/pharynx and non-Hodgkin lymphoma – are associated with higher costs than those with a very good or very poor prognosis. Previous Norwegian studies also indicated disparities in cancer costs and resource utilisation by age, gender and region (Bugge et al., 2021). Patients living in the northern and western regions of Norway are found to have lower odds of receiving anti-cancer treatment at the end of life.

5.4 COVID-19 and cancer: building resilience

Cancer diagnostic rates declined during the pandemic

Diagnosis rates of some cancers decreased in Norway in 2020 compared to 2019 according to the Cancer Registry of Norway (Cancer Registry of Norway, 2021). The rate for breast cancer decreased by 10 %, while the rate for cervical cancer decreased by 15 %. Fewer uterine and ovarian cancers were also diagnosed in 2020 than 2019, while the lung cancer incidence rate in women decreased by 6 %. The decline in diagnoses of breast, ovarian and lung cancer among women in 2020 was followed by increasing rates in 2021. In the second year of the pandemic, cancer diagnostic activity in Norway largely returned to pre-pandemic levels.

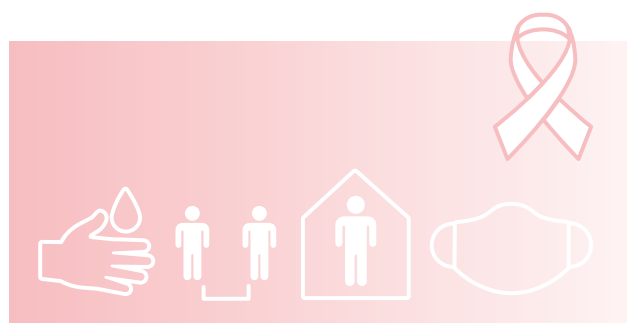
The COVID-19 pandemic disrupted cancer screening programmes

At the start of the pandemic, cancer screening programmes were postponed to prioritise urgent care and reduce the risk of COVID-19 transmission. All breast cancer screening activity ceased in mid-March 2020. It resumed slowly from spring 2020, and all screening centres reopened in August 2020.

Participation rates in the cervical cancer screening programme decreased slightly from 70.2 % in 2019 to 69.1 % in 2020 (the lowest level in the past 10 years).

The pandemic had little impact on cancer treatment in Norwegian hospitals

A recently published evaluation of the handling of the COVID-19 pandemic by the Norwegian Coronavirus Commission specifically discusses the consequences of the pandemic for cancer treatment in Norway (Norwegian Coronavirus Commission, 2022). Several hospitals postponed scheduled surgery and treatment for patients without COVID-19 to increase capacity for infected patients. However, cancer patients and children were given priority, and treatment of these groups was not affected by the pandemic.



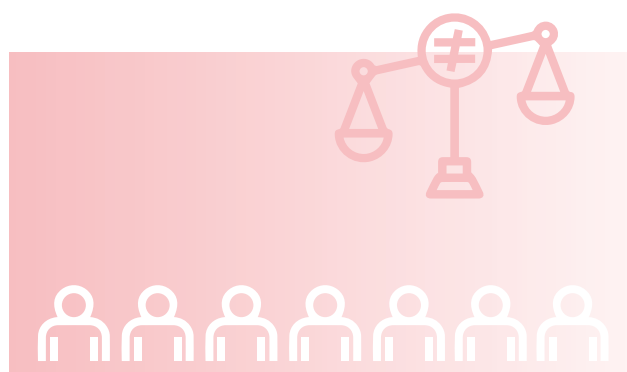
6. Spotlight on inequalities

Norway has universal access to health care, with minimal patient copayments, which ensure equal access to all including for asylum-seekers, refugees and other immigrants who reside lawfully in the country. While in principle everyone in Norway should have equal access to and quality of health services, in practice this is not the case. As in many EU countries, there are marked gender and socioeconomic inequalities in cancer prevention, access to early diagnosis and treatment.

- People with lower socioeconomic status are more exposed to cancer risk factors such as smoking and obesity. The prevalence of daily cigarette smoking is more than three times higher among lower education levels than higher education levels. There are also some gender and education disparities in overweight and obesity rates, with a 15 percentage points higher among men (58 %) than women (43 %) and a 5 percentage points higher among groups with lower (50 %) than higher (45 %) education.
- Breast screening participation rates are nearly 40 % higher among women on higher incomes (86 %) than those on lower incomes (62 %). Similar socioeconomic gaps are also observed for cervical cancer screening participation rates. The EQUALSCREEN initiative aims to evaluate the effectiveness of alternative methods for inviting patients to cervical screening tests, with the aim of increasing attendance and reducing social inequality.
- People living in cities have better access to treatment than those living in more rural areas. This is because some treatments are only offered at university hospitals located in cities or urban areas. Patients living in rural areas must sometimes travel long distances to receive these treatments, which may be a barrier to access.
- Immigrants must wait longer to receive treatment than the host population. This is for example the case for breast cancer: women from east and south Asia are less likely to receive breast-conserving surgery than the non-immigrant population.

Several policies and mechanisms to promote equitable cancer care have been introduced, including national treatment guidelines, standardised patient pathways, pathways coordinators and cancer coordinators in the municipalities, and initiatives to increase access and quality control using nationwide registries. The wide range of health registries in Norway offer good opportunity to monitor and address inequalities in cancer care and inform policy action to promote equitable care.

The COVID-19 pandemic has probably resulted in increased inequalities in Norway. For some cancers, fewer patients were diagnosed in 2020, while activity was back to normal levels in 2021. Screening activity rates decreased during the pandemic, which may lead to increased inequalities in disfavour of vulnerable population.



References

Brustugun OT, Møller B, Helland A (2014), Years of life lost as a measure of cancer burden on a national level, *British Journal of Cancer*, 111(5):1014-20.

Bugge C (2022), *Real world evidence in priority setting and health care planning: an application on the cost of cancer*. PhD thesis, University of Oslo.

Bugge C et al. (2021). *What are determinants of utilisation of pharmaceutical anticancer treatment during the last year of life in Norway? A retrospective registry study*. *BMJ Open*. 2021 Sep 27;11(9):e050564. doi: 10.1136/bmjopen-2021-050564. PMID: 34580099; PMCID: PMC8477316..

Cancer Registry of Norway (2021), *Cancer in Norway 2020: cancer incidence, mortality, survival and prevalence in Norway*. Oslo: Cancer Registry of Norway.

Danckert B et al. (2019), *NORDCAN: cancer incidence, mortality, prevalence and survival in the Nordic Countries*, Version 8.2 (26.03.2019 Association of the Nordic Cancer Registries). Danish Cancer Society. Available from <http://www.ancre.nu>, accessed on 7/6/2022.

Norwegian Institute of Public Health, NIPH (2022). *Figures from the cause of death register 2021*. *Folkehelseinstituttet*. [Tall fra Dødsårsaksregisteret 2021]. <https://www.fhi.no/hn/helseregistre-og-registre/dodsarsaksregisteret/tall-fra-dodsarsaksregisteret-2021/>.

Gravdal BH et al. (2021), Cervical cancer in women under 30 years of age in Norway: a population-based cohort study, *BMC Women's Health*, 21(1):110.

Hjerkind KV et al. (2020), Cancer incidence in non-immigrants and immigrants in Norway, *Acta Oncologica*, 59(11):1275-83.

Hofmarcher T et al. (2020), The cost of cancer in Europe 2018, *European Journal of Cancer*, 129:41-9.

Le M et al. (2019), Lower attendance rates in BreastScreen Norway among immigrants across all levels of socio-demographic factors: a population-based study, *Journal of Public Health*, 27(2):1-12.

Leinonen MK et al. (2017), Barriers to cervical cancer screening faced by immigrants: a registry-based study of 1.4 million women in Norway, *European Journal of Public Health*, 27(5):873-9.

Nilssen Y et al. (2019), Decreasing waiting time for treatment before and during implementation of cancer patient pathways in Norway. *Cancer Epidemiol*. 2019 Aug;61:59-69. doi: 10.1016/j.canep.2019.05.004. Epub 2019 May 27. PMID: 31153048.

Norwegian Coronavirus Commission (2022), *Myndighetenes håndtering av koronapandemien – del 2*. Published by: Departementenes sikkerhets- og serviceorganisasjon Teknisk redaksjon. <https://www.regjeringen.no/contentassets/d0b61f6e1d1b40d1bb92ff9d9b60793d/no/pdfs/nou202220220005000dddpdfs.pdf>

Thøgersen H et al. (2020), Waiting times and treatment following cancer diagnosis: comparison between immigrants and the Norwegian host population, *Acta Oncologica*, 59(4):376-83.

Country abbreviations

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

European Cancer Inequalities Registry

Country Cancer Profile 2023

The European Cancer Inequalities Registry is a flagship initiative of the Europe's Beating Cancer Plan. It provides sound and reliable data on cancer prevention and care to identify trends, disparities and inequalities between Member States and regions. The Registry contains a website and data tool developed by the Joint Research Centre of the European Commission (<https://cancer-inequalities.jrc.ec.europa.eu/>), as well as an alternating series of biennial Country Cancer Profiles and an overarching Report on Cancer Inequalities in Europe.

The Country Cancer Profiles identify strengths, challenges and specific areas of action for each of the 27 EU Member States, Iceland and Norway, to guide investment and interventions at the EU, national and regional levels under the Europe's Beating Cancer Plan. The European Cancer Inequalities Registry also supports Flagship 1 of the Zero Pollution Action Plan.

The Profiles are the work of the OECD in co-operation with the European Commission. The team is grateful for the valuable comments and suggestions provided by national experts, the OECD Health Committee and the EU Expert Thematic Group on Cancer Inequality Registry.

Each Country Cancer Profile provides a short synthesis of:

- the national cancer burden
- risk factors for cancer, focusing on behavioural and environment risk factors
- early detection programmes
- cancer care performance, focusing on accessibility, care quality, costs and the impact of COVID-19 on cancer care.

Please cite this publication as:

OECD (2023), *EU Country Cancer Profile: Norway 2023*, EU Country Cancer Profiles, OECD Publishing, Paris, <https://doi.org/10.1787/0fcf5d28-en>.

ISBN 9789264640443 (PDF)

Series: EU Country Cancer Profiles

