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ANNALS OF ONCOLOGY DRIVING INNOVATION IN ONCOLOGY

ORIGINAL ARTICLE

European cancer mortality predictions for the year 2025 with focus on breast cancer

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Background: We predicted the number of cancer deaths and rates for 2025 in the European Union (EU), its five most populous countries, and the UK, focusing on breast cancer.

Materials and methods: We derived population data and death certificates for all cancers and major sites for the EU, France, Germany, Italy, Poland, Spain, and the UK since 1970, from the World Health Organization and United Nations databases. Estimates for 2025 were computed by linear regression on recent trends identified through Poisson joinpoint regression, considering the slope of the most recent trend segment. Deaths averted from 1989 to 2025 were calculated by applying the 1988 peak rate to subsequent population data.

Results: We estimated 1 280 000 cancer deaths in the EU in 2025, corresponding to age-standardised rates (ASRs) of 120.9/100 000 males (−3.5% versus 2020) and 79.1/100 000 females (−1.2%). In the UK, we predicted 173 000 cancer deaths and ASRs of 101.2/100 000 males (−10.1%) and 82.1/100 000 females (−6.3%). In the EU, favourable trends are predicted for major neoplasms, except pancreatic cancer, in males (+2.0%) and females (+3.0%), and lung (+3.8%) and bladder (+1.9%) cancers among females. Breast cancer mortality showed favourable trends in all countries. Substantial decreases were predicted for EU females aged 50-69 years (−9.8%) and 70-79 years (−12.4%). Between 1989 and 2025, we estimated about 6.8 million averted cancer deaths in the EU, including over 373 000 breast cancer deaths. Corresponding numbers for the UK were 1 500 000 and 197 000.

Conclusion: EU breast cancer rates have fallen by 30% since 1990, due to advances in prevention, treatment, and early detection. Contrasting trends in lung cancer among males and females reflect differing tobacco smoking patterns. Female lung cancer mortality is still increasing in the EU, though less than in the previous decade. Persistent unfavourable pancreatic cancer trends can be related to the increasing prevalence of obesity and limited therapeutic advances, requiring continued attention.

Key words: cancer mortality, predictions, breast cancer, European Union, UK

INTRODUCTION

Predicting numbers and trends in cancer mortality is relevant for assessing burden of disease, and provides insight into the impact of prevention, screening programmes and advances in treatment for cancer. Since 2011,[1] we have been projecting cancer mortality figures for the current year in major European countries and in the European Union (EU) as a whole. Over the past 15 years, mortality rates have decreased in both sexes and in all countries considered, more in males than in females, due to more widespread smoking cessation. However, the total number of cancer deaths, and therefore the public health burden of cancer, has not decreased due to population ageing. In addition, there are still considerable differences in cancer mortality between countries, with higher rates in Central and Eastern Europe.[2,3]

In this article, we provide an up-to-date projection of mortality patterns for the year 2025 in the EU, its five most populous countries, and the UK. In addition, we focus on female breast cancer mortality, providing a detailed analysis and discussion of results. Despite continued medical advances, decades of declining mortality, and a mortality to incidence ratio of 0.2 in Europe in 2022,[4,5] breast cancer remains a major health problem, affecting one in eight women and is still the leading cause of cancer death among females.[2,6,7]

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MATERIALS AND METHODS

Mortality data for stomach, colorectal, pancreas, lung, female breast, uterus (cervix and corpus), ovary, prostate, and bladder cancer, leukaemias, and all cancers combined were obtained from the World Health Organization (WHO) database.[8] The list of corresponding International Classification of Diseases codes according to the 10th revision is available in Supplementary Table S1, available at https://doi.org/10.1016/j.annonc.2025.01.014. We retrieved resident population data and population projections from the United Nations database.[9]

We considered the five most populous European countries (France, Germany, Italy, Poland, and Spain), the EU as a whole, as well as the UK. These countries have good data coverage (≥90%) and high data quality (medium for Poland), as defined by the WHO.[10] Figures were derived from 1970 to 2021 or the most recently available calendar year (i.e. 2020 for the EU, France, Germany, Italy, and the UK, 2021 for Poland and Spain). We computed sex- and age-specific mortality rates for quinquennium of age, ranging from 0-4 years up to 85+ years, for each cancer site and selected country, and for each calendar year or quinquennium. We derived age-standardised, mortality rates (ASRs), based on the world standard population. To identify significant changes in the linear slope (on a log scale) of ASRs over the considered period, we fitted joinpoint regression models,[11,12] allowing up to five joinpoints. The optimised number of joinpoints is selected by the Joinpoint software and varies between 1 and 5, depending on the country and cancer site, as shown in Supplementary Tables S2A and S2B, available at https://doi.org/10.1016/j.annonc.2025.01.014.

We further focused on breast cancer, for which we calculated the ASR for specific age groups (20-49, 50-69, 70-79, and ≥80 years).

To predict 2025 mortality estimates, we applied a logarithmic Poisson joinpoint regression model on death numbers in each 5-year age group, testing up to five joinpoints. Considering the slope of the most recent trend segment identified by the joinpoint model for each age group, we fitted linear regression models and we obtained an estimate of age-specific numbers of deaths and their corresponding 95% prediction intervals (PIs) for the year 2025. We then computed both age-specific and age-standardised death rates, along with their related 95% PIs using corresponding population data from official projections. To estimate the number of deaths avoided from all cancers and from breast cancer in the EU and the UK for the period 1988-2025, we compared observed and predicted deaths with those expected based on the 1988 age-specific peak rate.

Analyses were carried out using the R software version 4.2.0 (R Development Core Team, 2022), SAS version 9.4 (SAS Institute Inc., Cary, NC), and Joinpoint Regression Program, Version 5.2.0.0. April, 2024 (Statistical Research and Applications Branch, National Cancer Institute).

Ethics committee approval was not required as only anonymous public data were used.

RESULTS

Table 1 gives numbers of predicted deaths and rates from all cancers and selected cancer sites, along with their corresponding 95% PIs for 2025, in comparison with observed figures for 2020 for both the EU and the UK. Figure 1 shows the corresponding information in bar plots, according to sex and cancer site.

Comparing the EU projected rates in 2025 with those in 2020, ASRs from all cancers combined are expected to decline from 125.4/100 000 to 120.9/100 000 (−3.5%) in males and from 80.1/100 000 to 79.1/100 000 (−1.2%) in females. The number of cancer deaths is, however, expected to grow in the EU, increasing from 671 963 in 2020 to 709 400 in 2025 among males and from 537 866 to 570 500 among females.

Similarly in the UK, predicted ASRs from all cancers combined are favourable, declining from 112.6/100 000 in 2020 to 101.2/100 000 in 2025 (−10.1%) in males and from 87.6/100 000 to 82.1/100 000 (−6.3%) in females. The number of deaths from cancer is predicted to increase from 91 923 in 2020 to 92 200 in 2025 among males and from 80 378 in 2020 to 81 100 in 2025 among females.

In the EU, ASRs are expected to decrease in 2025 for all cancer sites considered and for both sexes, except for pancreatic cancer (+2.0% for males and +3.0% for females, compared with 2020) and for lung (+3.8%) and bladder (+1.9%) cancers among females. In the EU, the leading cause of cancer death among males in 2025 is lung cancer (27.1/100 000), followed by colorectal cancer (14.5/100 000). Among females, the highest ASRs in 2025 are for lung (13.7/100 000) and breast cancer (13.3/100 000). In the UK, favourable rates for 2025 are predicted for all cancer sites considered and both sexes, with the exception of colorectal (+0.2%) and uterine (cervix and corpus combined) (+1.0%) cancers in females.

In the UK, lung cancer is projected to remain the first cause of cancer death among males in 2025, with an ASR of 18.6/100 000, followed by colorectal cancer at 14.3/100 000. Among females, lung cancer is also expected to be the leading cause of cancer death, with an ASR of 15.1/100 000, followed by breast cancer at 13.2/100 000. Lung cancer mortality is expected to decline from 17.4/100 000 in 2020 to 15.1/100 000 in 2025 among UK females, while it is expected to rise from 13.2/100 000 in 2020 to 13.7/100 000 in 2025 among EU females. Country-specific ASR projections for 2025 according to sex and cancer site are provided in Supplementary Tables S3-S7, while Supplementary Tables S2A and S2B, available at https://doi.org/10.1016/j.annonc.2025.01.014, display the results from joinpoint analyses for males and females.

Figure 2 gives the trends in total cancer mortality rates for males and females, from 1970-1974 to 2015-2019, and the predicted ASRs for 2025 with the corresponding PIs. Among males, mortality from stomach cancer declined over the whole period, while most other cancer sites began showing a downward trend in the late 1980s or early 1990s.

Table 1. Number of predicted deaths and mortality rates for the year 2025 and comparison figures for 2020, for the EU and for the UK, with 95% prediction intervals and the percentage differences between 2020 and 2025

Country	Sex	Cancer	Observed number of deaths 2020	Predicted number of deaths 2025 (95% PI)	Observed ASR 2020	Predicted ASR 2025 (95% PI)	% Difference 2025 versus 2020
EU	Males	Stomach	29 279	28 600 (27 722-29 411)	5.60	5.01 (4.84-5.18)	−10.55
		Colorectum	81 835	87 000 (85 105-88 833)	14.64	14.50 (14.17-14.82)	−1.01
		Pancreas	42 165	46 500 (45 948-47 095)	8.17	8.34 (8.22-8.45)	2.04
		Lung	152 677	151 900 (148 777-155 015)	30.11	27.10 (26.42-27.77)	−10.01
		Prostate	68 368	73 000 (71 704-74 281)	9.81	9.43 (9.26-9.61)	−3.89
		Bladder	28 730	29 400 (28 209-30 685)	4.55	4.14 (3.99-4.29)	−8.90
		Leukaemias	22 070	23 200 (22 636-23 747)	4.03	3.57 (3.37-3.77)	−11.41
		All cancers	671 963	709 400 (697 450-721 387)	125.38	120.94 (118.5-123.39)	−3.54
	Females	Stomach	18 490	16 000 (15 300-16 712)	2.63	2.17 (2.07-2.27)	−17.73
		Colorectum	66 424	65 800 (64 677-67 022)	8.59	7.93 (7.78-8.07)	−7.77
		Pancreas	41 903	46 000 (45 283-46 812)	5.78	5.95 (5.82-6.09)	2.99
		Lung	77 759	85 800 (84 023-87 631)	13.24	13.74 (13.34-14.14)	3.75
		Breast	85 006	90 100 (88 545-91 561)	13.81	13.31 (13.02-13.60)	−3.62
		Uterus	27 250	28 700 (28 064-29 284)	4.75	4.64 (4.52-4.76)	−2.24
		Ovary	25 952	26 800 (26 110-27 435)	4.41	4.22 (4.08-4.36)	−4.27
		Bladder	9588	10 000 (9493-10 561)	1.08	1.10 (1.05-1.15)	1.93
		Leukaemias	17 039	18 200 (17 807-18 691)	2.32	2.14 (2.04-2.25)	−7.55
		All cancers	537 866	570 500 (562 789-578 116)	80.05	79.1 (78.1-80.09)	−1.19
UK	Males	Stomach	2615	2200 (2097-2365)	3.28	2.67 (2.47-2.86)	−18.69
		Colorectum	11 580	12 300 (12 003-12 637)	14.38	14.27 (13.85-14.70)	−0.74
		Pancreas	5042	5400 (5171-5633)	6.57	6.36 (6.01-6.71)	−3.18
		Lung	17 796	16 700 (16 323-17 152)	22.27	18.62 (18.06-19.18)	−16.39
		Prostate	12 275	12 800 (12 150-13 357)	11.99	10.95 (10.46-11.43)	−8.71
		Bladder	3852	4100 (3917-4215)	3.89	3.65 (3.48-3.82)	−6.02
		Leukaemias	2724	2800 (2610-2926)	3.38	2.96 (2.72-3.19)	−12.47
		All cancers	91 923	92 200 (90 727-93 762)	112.58	101.24 (99.03-103.46)	−10.07
	Females	Stomach	1381	1200 (1056-1308)	1.48	1.34 (1.19-1.48)	−9.87
		Colorectum	9935	10 500 (10 134-10 806)	9.96	9.97 (9.62-10.32)	0.16
		Pancreas	4906	5100 (4910-5322)	5.22	4.96 (4.69-5.23)	−5.10
		Lung	15 853	15 500 (14 981-15 979)	17.41	15.12 (14.57-15.66)	−13.16
		Breast	11 547	11 400 (11 060-11 830)	14.11	13.22 (12.68-13.77)	−6.26
		Uterus	3434	3700 (3591-3863)	4.31	4.35 (4.14-4.57)	0.96
		Ovary	4132	4200 (3967-4357)	4.99	4.69 (4.41-4.97)	−6.16
		Bladder	1793	1900 (1765-1975)	1.54	1.51 (1.41-1.60)	−2.22
		Leukaemias	1881	1900 (1743-2012)	2.03	1.74 (1.54-1.94)	−14.12
		All cancers	80 378	81 100 (79 585-82 535)	87.61	82.08 (80.28-83.88)	−6.32

ASR, age-standardised rate; PI, prediction interval.

Among females, the ASRs for stomach, colorectal, leukaemias, and uterine cancers have exhibited a decline since 1970, whereas mortality from ovarian cancers have started to decline since the early 1990s. Upward mortality trends were observed for pancreatic and lung cancer over the whole period.

The corresponding figures for the UK are reported in Supplementary Figure S1, available at https://doi.org/10.1016/j.annonc.2025.01.014. Supplementary Figures S2 and S3, available at https://doi.org/10.1016/j.annonc.2025.01.014, provide results for cancer-specific trends and predictions in the selected countries analysed according to sex. Mortality from all cancers was initially higher in the UK than in the EU, largely due to the earlier tobacco-related cancers epidemic among British males and females. The decline in rates, particularly for lung cancer, has been greater in the UK for both sexes than in the EU.

Table 2 gives the observed female ASRs for breast cancer in the six European countries considered and the EU in 2010-2014, 2015-2019, and the projected rates for 2025 with the 95% PIs for all ages, and for the EU also by age group. For all the selected countries and the EU, favourable predicted overall ASRs are predicted for 2025 as compared with the observed ones in 2015-2019. Predicted ASRs varied around 13.0-14.0/100 000 in all countries except Spain (10.0/100 000). In the EU, the only age group that showed an increase compared with 2015-2019 was the ≥80 years age group (+9.8%). Detailed results for breast cancer by age group, sex, and country are shown in Supplementary Table S8, available at https://doi.org/10.1016/j.annonc.2025.01.014. The reduction in breast cancer mortality is greater in the UK (−10.4% between 2025 and 2015-2019) than in the EU (−7.3% between 2025 and 2015-2019). In addition, breast cancer rate in the UK is expected to be favourable for females aged ≥80 years, in contrast to the trends in most other countries considered.

Figure 3 gives the results of joinpoint analysis for annual breast cancer ASRs for all ages, as well as for selected age groups, in the EU and the UK between 1970 and 2025. In the EU, breast cancer mortality decreased at all ages and for all age groups since 1990, except at age ≥80 years, which has slowly increased over the whole period. In the UK, breast cancer mortality decreased for all ages in the past decades. Supplementary Table S9, available at

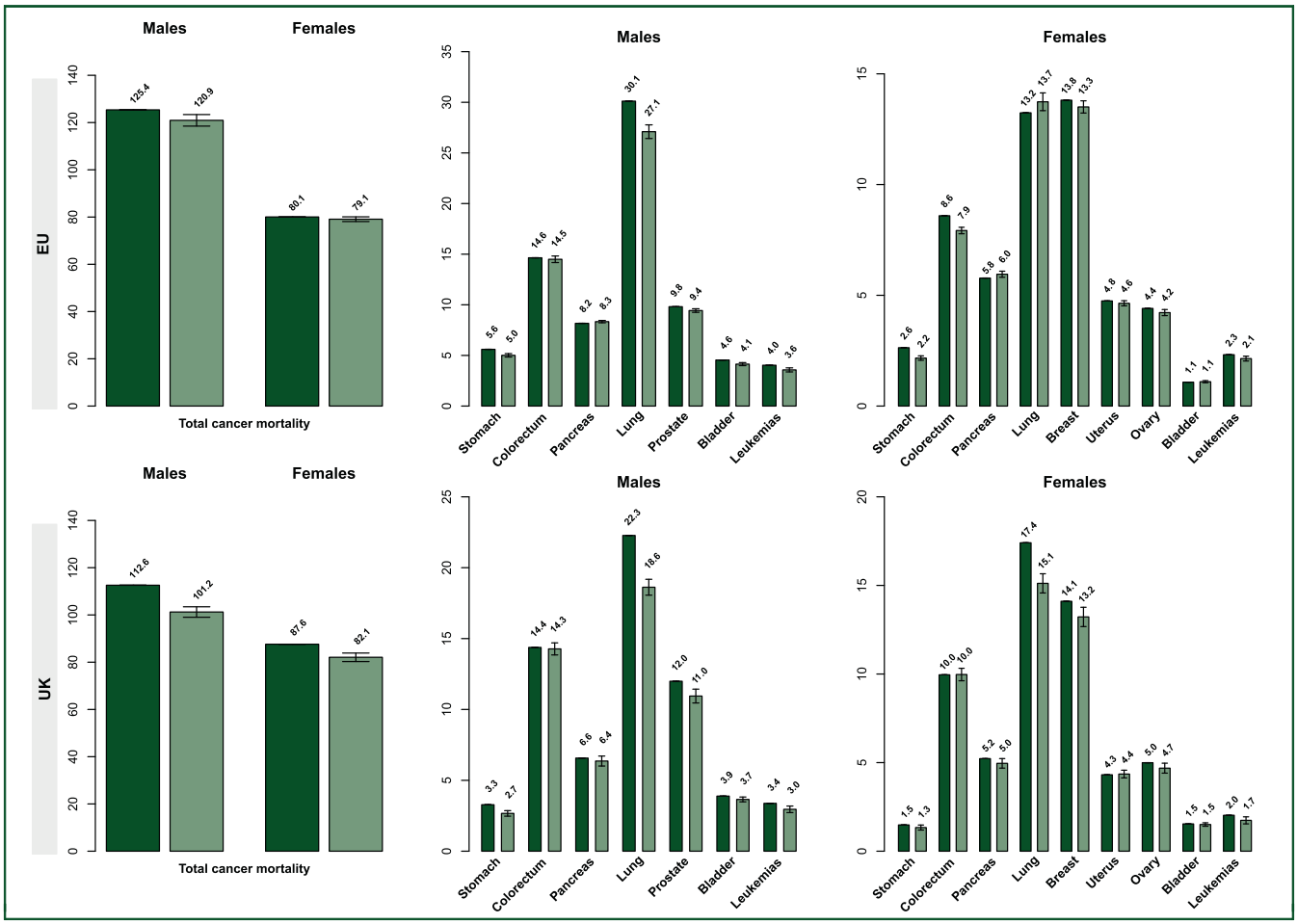

Figure 1. **Bar plots of age-standardised mortality rates per 100 000 persons for the year 2020 (dark green) and predicted rates for 2025 (light green) with 95% prediction intervals for all cancers combined and major cancer sites according to sex in the EU (top panels) and the UK (bottom panels).**

https://doi.org/10.1016/j.annonc.2025.01.014, shows the joinpoint analysis results for all ages and truncated age groups 20-49, 50-69, 70-79, and ≥80 years.

Figure 4 displays the estimated number of avoided deaths from all cancers combined for both sexes and from breast cancers for females in the EU and the UK and between 1988 and 2025, assuming constant age-specific rates in 1988 (light grey area). During the 37-year period, a total of almost 6 800 000 deaths from all cancers have been avoided in the EU (4 700 000 in males and 2 100 000 in females). The corresponding number for the UK was 1 500 000 (1 000 000 in males and 500 000 in females). During the same period, 373 000 deaths from breast cancer have been avoided in the EU and 197 000 in the UK. This is due to the greater reduction in breast cancer mortality in the UK compared with the EU and other EU countries. The UK had the highest ASR in 1988, about a third higher than the EU. Our projection of the ASR for breast cancer in the UK in 2025 is similar to the EU one, around 13.2/100 000.

DISCUSSION

Cancer mortality prediction for 2025 continues to show favourable trends in the EU, its five most populous countries, and the UK. In the EU, over a 5-year period (2020-2025), overall cancer mortality rates were predicted to fall by 3.5% and 1.2% for males and females, respectively. However, population growth and ageing will lead to an increase in cancer death numbers, with a total of 1 280 000 deaths expected in the EU in 2025. Corresponding figures for the UK are more favourable, with projected falls in rates of 10.1% among males and 6.3% among females, and modest increases in the number of cancer deaths.

Despite the favourable mortality trend since the 1990s, breast cancer represents the leading cause of cancer death among women in the EU. Again, the absolute number of deaths has not decreased due to the increase and the ageing of the population (85 000 in 2020, 90 000 predicted in 2025). Thus, the public health burden of breast cancer in Europe is unlikely to decrease. The incidence of breast cancer has increased in some northern and eastern European countries and remained stable in many others.[13] Consequently, the fall in breast cancer mortality is attributable to improvements in organised screening, earlier diagnosis, and advancements in management and treatment. No single intervention has provided a resolutive effect, but a combination of improvements in chemotherapy, endocrine therapy, taxane, trastuzumab, and other

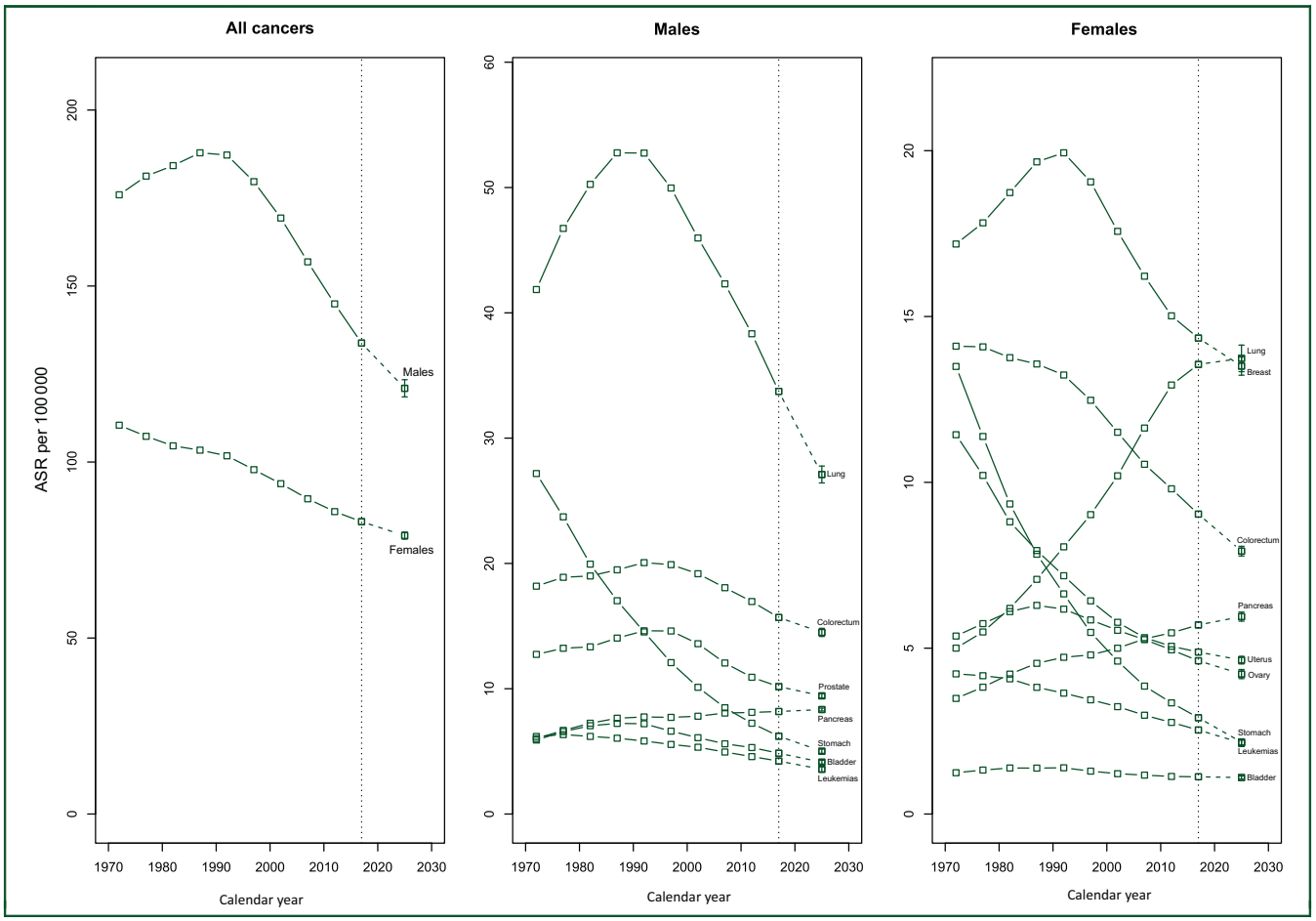

Figure 2. Quinquennial age-standardised cancer mortality rate trends from 1970-1974 to 2015-2019 and predicted rates for 2025 with 95% prediction intervals, for all cancers combined and both sexes (left) and for major cancer sites in males (centre) and females (right), in the EU.
ASR, age-standardised (world population) rate.

monoclonal antibodies, the introduction of novel adjuvant therapies, as well as improvements in radiotherapy and surgery have led to substantial changes in breast cancer prognosis. Incidence, however, is substantially affected by (organised) screening and early diagnosis. Diagnostic anticipations, as well as some over-diagnosis, may have contributed to inflate incidence, while reducing mortality, particularly at age 50-79 years. Reproductive and hormonal factors, overweight and obesity, and alcohol are the main recognised risk factors for breast cancer.[14,15] Older age at menarche and breastfeeding are associated with a reduced risk of breast cancer.[16] However, in recent decades, there have been no favourable changes in breastfeeding and parity patterns, age at menarche, and age at menopause,[17] and the prevalence of overweight and obesity, the major risk factors for breast cancer in postmenopausal women,[18] has been increasing.[19] Declining mortality trends are therefore largely due to both organised and spontaneous

Table 2. Age-standardised breast cancer mortality rates for all ages for females in selected European countries, and for the EU as a whole at all ages, 20-49, 50-69, 70-79, and ≥80 years in the 2010-2014 and 2015-2019 quinquennia and predicted rates for 2025, with percentage differences between 2015-2019 and 2025

Country	Age	ASR 2010-2014	ASR 2015-2019	Predicted ASR 2025 (95% PI)	% Difference 2025 versus 2015-2019
France	All ages	15.42	14.87	13.61 (12.94-14.28)	−8.48
Germany		16.15	15.36	13.20 (12.46-13.94)	−14.07
Italy		14.78	14.31	13.99 (13.45-14.54)	−2.23
Poland		14.22	14.82	13.45 (12.63-14.26)	−9.25
Spain		11.70	10.79	9.90 (9.45-10.35)	−8.22
UK		16.18	14.76	13.22 (12.68-13.77)	−10.43
EU	All ages	15.02	14.35	13.31 (13.02-13.60)	−7.25
	20-49 years	6.75	6.52	6.06 (5.76-6.37)	−6.94
	50-69 years	48.58	44.70	40.34 (38.79-41.89)	−9.75
	70-79 years	92.31	90.86	79.58 (77.04-82.12)	−12.41
	≥80 years	176.98	185.89	204.14 (199.36-208.92)	9.82

ASR, age-standardised (world population) rate; PI, prediction interval.

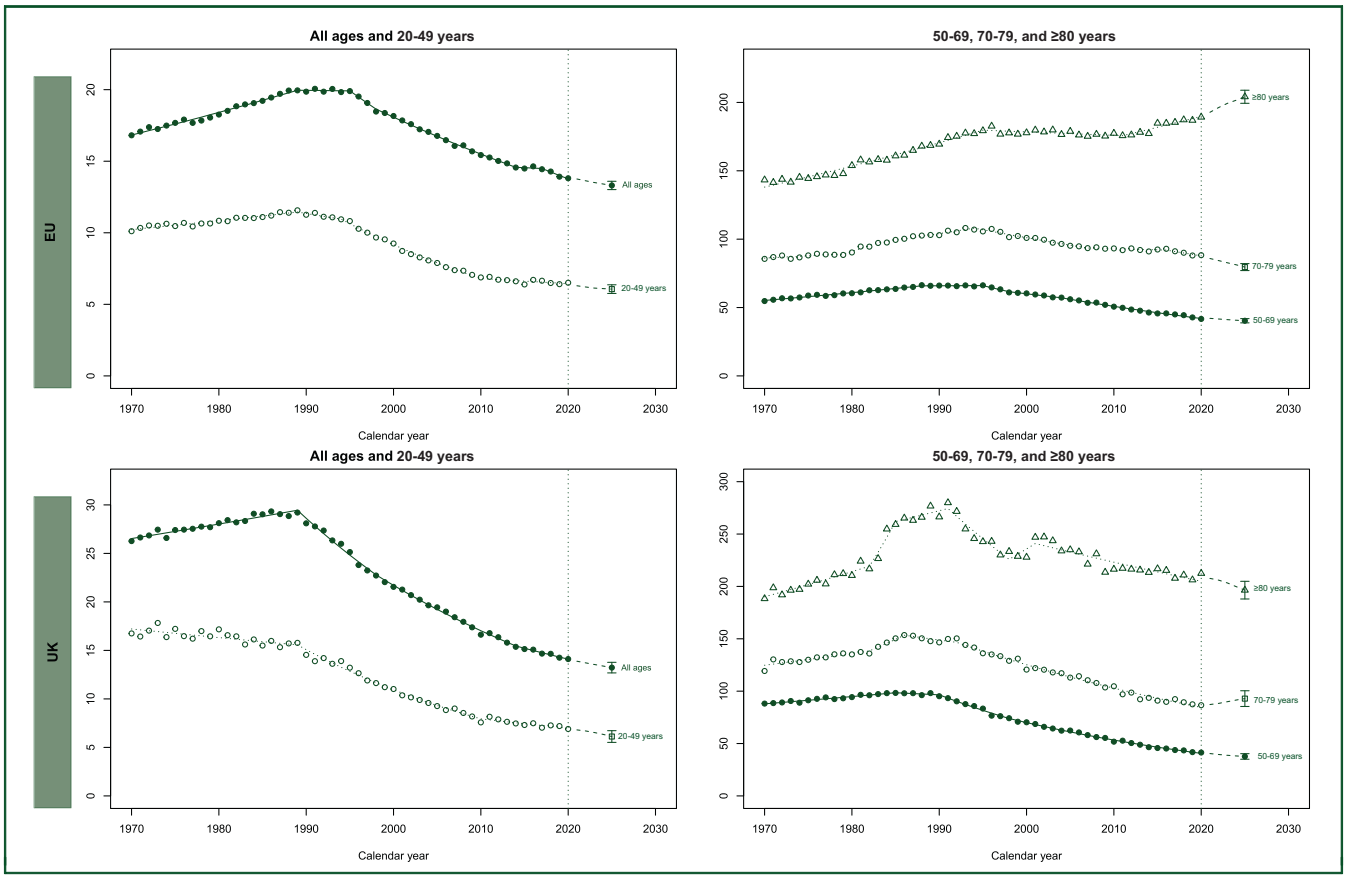

Figure 3. **Joinpoint analysis for female mortality from breast cancer for all ages and 20-49 years (left), 50-69, 70-79, and ≥80 years age groups (right) during the period 1970-2020, the predicted rates for the year 2025 with 95% prediction intervals in the EU (top panels) and the UK (bottom panels).**

screening, early detection, and treatment improvements in breast cancer.[5] The reduction has been greater in the UK than in the EU, and the UK rate is now similar to or lower than the overall EU rate, with a general levelling of breast cancer rates across Europe.

Stomach cancer continues to decline in mortality in the EU, as in most countries worldwide.[20] This favourable trend is mainly due to control of stomach cancer risk factors, in particular *Helicobacter pylori* infection,[21] to the adoption of richer and healthier dietary habits and modern food preservation methods, and tobacco control.[22-25]

Long-term reductions in mortality for colorectal cancer, the second most common cause of cancer death in males and females combined, can be largely explained by an improved diagnosis of colorectal lesions, the removal of adenomas and neoplastic lesions through colonoscopy, and advancement in management and therapy.[26,27] For the UK we predicted stable mortality rates for 2025 in both sexes, likely due to increased mortality in young and middle-aged ($\leq$50 years) patients.[28] These unfavourable trends among young people are in fact a reflection of increased prevalence of overweight and obesity.[29,30]

Mortality from pancreatic cancer did not decrease in recent decades in both sexes. Mortality trends in the United States have shown stable rates in recent years in spite of rising incidence.[31] By 2025, pancreatic cancer is estimated to be the third leading cause of cancer death in males and females combined. Patterns of smoking prevalence, which is the main risk factor for pancreatic cancer, appear to be inconsistent with trends in mortality, at least in males.[32] Other risk factors include overweight and obesity[14] and heavy alcohol drinking,[33] and they partly explain the lack of improvement in mortality from pancreatic cancer.[19] Progress in the early diagnosis, treatment, and management of pancreatic cancer remains limited. This highlights the essential role of national networks and clinical trial programmes in improving and standardising care for this disease.[34]

Reflecting past smoking trends, lung cancer mortality rates for men remain more favourable, but are still projected to be twice as high as for women by 2025. Although rates continue to rise slightly for females in the EU, the increase is less marked than in the previous decade and there are signs of levelling off in some individual countries. Tobacco control is the key factor to reduce lung cancer mortality, but it remains inadequate in many EU countries, particularly in Central and Eastern Europe.[35] In addition, reduced occupational and environmental exposures to lung carcinogens,[36] the adoption of low-dose computed tomography screening programmes, and advances in treatment may have contributed to some reductions in lung cancer mortality,[37-39] although their impact is small as compared with tobacco control.

The downward trends in prostate cancer mortality in the EU and in all major European countries are primarily due to

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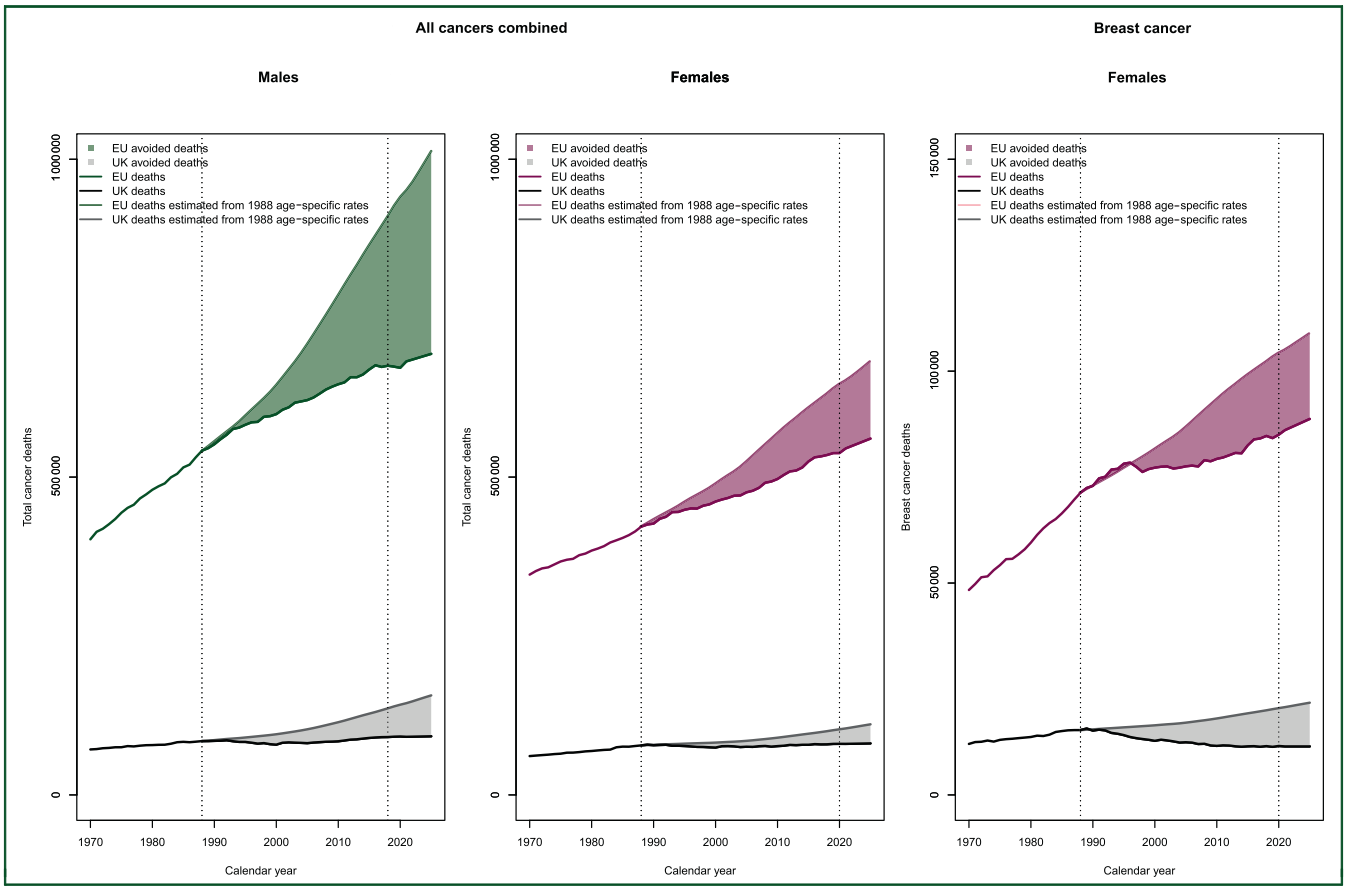

Figure 4. Total avoided cancer deaths for males (left) and females (centre) and breast cancer avoided deaths for females (right) in the EU and the UK between the top rate in 1988 and 2025; observed numbers of cancer deaths from 1970 to 2020 and predicted cancer deaths from 2021 to 2025; estimated numbers of total cancer deaths by applying 1988 age-specific peak mortality rate. During the 37-year period, 6 796 000 deaths from cancer have been avoided (4 677 000 in males and 2 120 000 in females) in the EU. The corresponding number for the UK was 1 449 700 (998 000 in males and 451 700 in females). During the 37-year period, 373 300 female deaths from breast cancer have been avoided in the EU. The corresponding number for the UK was 196 800.

advances in treatment and disease management; a role of early detection, particularly through prostate-specific antigen testing, has been suggested,[40] but the evidence is still inconclusive. Similar trends are reported in the United States.[31]

Smoking, past occupational exposure to aromatic amines and urinary tract infections are established risk factors for bladder cancer.[36,41] Mortality in men continues to be favourable, while no improvement has been observed in women in the EU and also in France and Italy. Changes in exposure to tobacco and other risk factors are therefore consistent with the different bladder cancer trends between sexes.

The favourable trend for uterine cancer (cervix and corpus combined) seems to have come to a halt, with estimates for 2025 remaining stable in the EU and the countries analysed. In the United States, cervical cancer mortality rates did not further decrease over recent years.[31] The increasing prevalence of overweight and obesity, key risk factors for endometrial cancer, explains the recent unfavourable trends.[14] Also in the UK, mortality from this cancer is predicted to increase, reflecting the increased prevalence of overweight and obesity in older females.

Ovarian cancer mortality trends are favourable throughout Europe.[42] This is largely due to the widespread use of combined oral contraceptives in the post-1950 generations in Europe.[43] Advances in surgery and novel chemotherapeutic regimens, as well as diagnosis and management may have had some additional impact on these favourable trends,[44] though these cannot be quantified now.

Mortality projections for leukaemias remain positive, likely due to continued improvements in treatment and disease management, particularly through access to high-quality specialised care centres.[45,46]

We utilised official WHO death certificates from the most populous European countries, all of which have high coverage, good quality, and usability.[10] However, our projections should be interpreted with caution, as they assume no changes in the factors driving recent trends. The projection method is based on age-specific joinpoint models, which are less sensitive to detecting significant shifts in cohort effect trends. Despite these limitations, our previous cancer mortality projections for Europe have been reliable. When comparing observed cancer deaths in 2020 with our earlier projections, the errors were $<4\%$ for most neoplasms in all countries considered.[47] The coronavirus disease 2019 (COVID-19) pandemic may have influenced cancer mortality after 2020 due to delays in screening, diagnosis, and treatment.[48] However, current mortality data

indicate that the pandemic impact on cancer has been less pronounced than on vascular, metabolic, and neurological diseases.[49]

In conclusion, cancer mortality projections for the EU and the UK in 2025 remain favourable, with the exception of pancreatic cancer for both sexes and lung and bladder cancer for EU women, and for colorectal cancer in the UK. Besides the levelling off of the tobacco-related cancer epidemic, this is due to improved diagnosis and innovative cancer treatments in Europe, although disparities remain across Europe, particularly in central and eastern European countries.[50]

As in the United States,[51] to maintain and improve the favourable trends in cancer mortality in Europe, it is important to continue tobacco control. In 2023, a smoking prevalence of 24% was reported for the EU as a whole,[52] indicating the need for strong and continued action on tobacco control measures. The increasing prevalence of overweight requires monitoring and control. In addition, controlling alcohol consumption and optimising population screening for early detection of cervical, breast, and colorectal cancer remain key strategies for cancer control.

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DISCLOSURE

The authors have declared no conflicts of interest.

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