Belgian Cancer Registry

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Cancer Incidence Projections in Belgium 2015 to 2025

Colophon

Stichting Kankerregister – Fondation Registre du Cancer – Stiftung Krebsregister

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1. Summary

1.1. Aim and interpretation

At the time of writing, nationwide cancer registration in Belgium is available for 2004 to 2014. This report presents cancer incidence projections in Belgium for 2015 to 2025.
The cancer incidence projections obtained are derived from mathematical extrapolations of past trends in incidence and population growth, using methods described in detail further in this report. These results are not be taken as true forecasts, but represent what can be expected if these past trends and the assumptions of the projection method were to be accurate over the projection time period.

1.2. General overview

In the period 2014 to 2025, the yearly number of new invasive tumour diagnoses (excl. non-melanoma skin cancer) in Belgium is projected to rise from 67,820 to 79,140, an increase of about 17%. The number of new cancer diagnoses in 2014 among males was 35,950 and is projected to reach 40,110 in 2025, an increase of 12%. In females the incidence projection 2014-2025 runs from 31,870 to 39,030, an increase of about 22%. The relative increase in incidence count in females is almost twice as large compared to males.
The age-standardised cancer incidence rate (using the world standard population, WSR) in males is expected to decrease from 350 to about 327 cases per 100,000 men between 2014 and 2025, a reduction of 6.6%. This decreasing cancer risk indicates that the projected increasing incidence count in males can be fully attributed to the ageing and increasing male population.
In contrast, the WSR in females is projected to increase from 299 to 326 per 100,000 women between 2014 and 2025, an increase of 9.2%. Both the increasing cancer risk and the ageing and growing female population drive the projected increase in the number of diagnosed cancer cases in females.
For almost all cancer sites examined in this report, the projected number of new invasive tumour diagnoses (excl. non-melanoma skin cancer) is expected to increase from 2014 to 2025, with the exception of stomach and prostate cancer in males and ovarian cancer in females. An overview of the projected number of cancer cases diagnosed and age-standardised incidence rate in 2025 per cancer is given in Table 1.

1.3. Most common cancers expected in 2025

For males in 2025, prostate cancer is projected to be the most common cancer diagnosed (6,590 cases) directly followed by lung cancer (6,490 cases). Together these cancer sites are expected to represent 33% of the total projected invasive tumour incidence count (excl. non-melanoma skin cancer) in males by 2025. For females in 2025, breast cancer remains the most common cancer diagnosed (12,130 cases) followed by lung cancer (4,190 cases), representing together 42% of the total projected invasive tumour incidence (excl. non-melanoma skin cancer) count.

Table 1: Number of cancer cases, *N*, observed in 2014 in males and females and projected to be diagnosed in Belgium in 2025 with their corresponding age standardised rates, (*WSR*, per 100,000 persons). The "up" and "down" arrows in the *Δ* columns indicate significant increasing or decreasing trends from 2014 to 2025.

	Males								Females							
	Number of Cases				Age standardised rate				Number of Cases				Age standardised rate			
	Observed 2014	Projected 2025			Observed 2014	Projected 2025			Observed 2014	Projected 2025			Observed 2014	Projected 2025		
Cancer site	**N**	**N[(a)]**	**95% PI[(b)]**	**Δ[(c)]**	**WSR**	**WSR**	**95% PI[(b)]**	**Δ[(c)]**	**N**	**N**	**95% PI[(b)]**	**Δ[(c)]**	**WSR**	**WSR**	**95% PI[(b)]**	**Δ[(c)]**
All invasive (excl. non-melanoma)	35,948	40,110	[39,550; 40,670]	↗	350.3	327.3	[322.6; 331.9]	↘	31,872	39,030	[38,460; 39,590]	↗	298.9	326.3	[321.6; 331.1]	↗
Head & Neck	1,992	2,180	[2,080; 2,270]	↗	21.3	19.5	[18.6; 20.4]	↘	679	875	[805; 945]	↗	6.7	7.8	[7.1; 8.4]	↗
Oesophagus	1,068	1,340	[1,280; 1,410]	↗	10.2	10.8	[10.2; 11.3]	–	383	445	[410; 480]	↗	2.9	3.0	[2.8; 3.3]	↗
Stomach	540	470	[415; 520]	↘	4.8	3.6	[3.3; 4.0]	↘	479	460	[430; 490]	–	3.7	3.3	[3.2; 3.4]	↘
Colon[(d)]	3,931	/			36.2	/			3,173	/			23.7	/		
Rectum	1,644	1,960	[1,860; 2,060]	↗	15.9	15.7	[14.9; 16.4]	↗	946	1,070	[1,030; 1,110]	↗	7.7	7.8	[7.6; 8.1]	–
Liver	596	1,190	[1,110; 1,280]	↗	5.8	9.6	[8.9; 10.3]	↗	268	440	[390; 485]	↗	2.2	3.0	[2.7; 3.4]	↗
Gallbladder & biliary tract	194	260	[235; 285]	↗	1.6	1.9	[1.7; 2.1]	↗	209	230	[220; 240]	↗	1.4	1.3	[1.3; 1.4]	↘
Pancreas	871	1,400	[1,300; 1,500]	↗	8.1	10.7	[9.9; 11.5]	↗	844	1,320	[1,220; 1,410]	↗	6.4	8.6	[7.9; 9.2]	↗
Lung	5,797	6,490	[6,280; 6,710]	↗	53.7	48.0	[46.4; 49.7]	↘	2,655	4,190	[4,040; 4,350]	↗	24.1	33.4	[32.1; 34.6]	↗
Mesothelioma	246	290	[270; 315]	↗	2.1	2.0	[1.8; 2.1]	–	48	65	[50; 75]	↗	0.3	0.4	[0.3; 0.4]	–
Melanoma	1,193	1,890	[1,780; 1,990]	↗	13.5	18.4	[17.3; 19.4]	↗	1,732	2,470	[2,350; 2,580]	↗	20.1	27.1	[25.8; 28.4]	↗
Breast	.	.			.	.			10,466	12,130	[11,830; 12,420]	↗	106.4	108.6	[106.1; 111.2]	–
Cervix	.	.			.	.			653	665	[645; 685]	↗	8.0	7.8	[7.5; 8.1]	↘
Corpus Uteri	.	.			.	.			1,457	1,450	[1,380; 1,530]	–	11.9	9.9	[9.2; 10.5]	↘
Ovary	.	.			.	.			848	775	[735; 820]	↘	7.6	5.9	[5.5; 6.4]	↘
Prostate	7,953	6,590	[6,370; 6,810]	↘	73.4	51.2	[49.4; 53.0]	↘	.	.			.	.		
Testis	359	460	[415; 500]	↗	6.6	8.1	[7.4; 8.7]	↗	.	.			.	.		
Kidney	1,075	1,360	[1,280; 1,440]	↗	11.2	11.6	[11.1; 12.2]	↗	613	740	[700; 780]	↗	5.4	5.7	[5.5; 5.9]	↗
Bladder	1,909	2,230	[2,150; 2,300]	↗	15.8	14.9	[14.4; 15.3]	↘	508	600	[555; 640]	↗	3.1	3.2	[3.1; 3.3]	↗
CNS	502	575	[550; 600]	↗	6.5	6.6	[6.3; 7.0]	↗	359	360	[350; 375]	↗	4.3	4.1	[3.9; 4.3]	↘
Thyroid	267	385	[345; 430]	↗	3.5	4.4	[3.9; 4.9]	↗	805	1,100	[1,020; 1,180]	↗	10.9	14.3	[13.2; 15.4]	↗

[(a)] Predicted incidence counts below 1,000 were rounded to the nearest 5, predicted incidence counts above 1,000 were rounded to the nearest 10.

[(b)] The prediction interval gives the uncertainty on the projected incidence count and WSR from the regression model.

[(c)] Δ indicates if an increasing, "↗", or decreasing, "↘", trend from 2014 to 2025 is detected. No significant difference between 2014 and 2025 is represented by a "–". This significance test is based on the regression model output, see the appendix.

[(d)] From 2013 to 2014 a strong increase in colon cancer is observed as a result of the implementation of the Flemish regional screening program. The model assumption of a constant trend 2004 to 2014 is therefore violated and no valid projection could be obtained for colon cancer.

1.4. Evolution of projected cancer risk 2014-2025[1]

Cancer sites showing a strong reduction in age-standardised cancer rate are prostate cancer (-24%) and lung cancer in males (-5.4%). Cancer sites showing a strong increase in age-standardised cancer rate are lung cancer in females (+9.0%), malignant melanoma of skin in females (+8.3%) and males (+5.5%), thyroid cancer in females (+4.0%) and liver cancer in males (+3.3%).

1.5. Stronger increase in projected incidence count in females explained

The larger increase in projected total cancer diagnoses from 2014 to 2025 for females compared to males is mainly driven by (1) a decrease in prostate cancer cases in males combined with (2) an increase in female breast cancer cases and (3) a stronger increase in lung cancer cases in females than in males.

[1] Expressed as the difference between the model prediction for 2025 and 2014, relative to the one for 2014.

2. Introduction and aim

Cancer incidence, or the number of new cancer diagnoses within a time period, is one of the most important measures of cancer burden. Cancer registration is compulsory in Belgium at the national level since 2004. The Belgian Cancer Registry centralises the cancer incidence data and reports regularly on cancer incidence and cancer survival [1-4]. At the time of writing of this report, incidence data at the national level was available for a relatively short time period of 11 years: from 2004 to 2014.
The goal of this report is to extrapolate the observed 2004-2014 trends in cancer incidence to obtain incidence projections for the period 2015-2025 in Belgium.

After part 1 and 2 (summary and introduction) of this document, part 3 discusses the methods used to obtain these cancer incidence projections and the key assumptions that underline these methods. Part four presents the incidence projection results for Belgium by cancer site. The appendix provides more technical details on the regression models applied.

3. Methods

3.1. Introduction and disclaimer

The cancer incidence projections presented in this work result from mathematical extrapolations of past trends in incidence and population growth. The extrapolation methods are based on regression models and assume that these trends will continue in the projection period. In other words, the projections are a reasonable estimate of cancer incidence if both the trends and the regression model assumptions apply over the projection period. Future changes in cancer detection methods (e.g. introduction of new screening programs), changes in cancer risk factors (e.g. due to new vaccination programmes) are not, and cannot be, taken into account. Likewise, future non-demographic factors, such as major government policy decisions, economic factors, catastrophes, wars, epidemics or significant health treatment improvements, may influence future incidence numbers and rates and cannot be incorporated in the projection method.

As is the case for any result based on extrapolation, care should be taken when using and interpreting the projection results presented in this work. No liability will be accepted by the Belgian Cancer Registry for any damages arising from decisions or actions based upon these cancer incidence projections.

3.2. Data sources

3.2.1. Cancer data

Cancer registration data were obtained from the population-based Belgian Cancer Registry (BCR). The following inclusion and exclusion criteria were applied:

- All invasive cancer cases recorded in the incidence period 2004-2014 were considered, for all ages at diagnosis.
- Non-melanoma skin cancer cases were excluded, resulting in the following included ICD 10 codes: C00-C43, C45-C96, MPD (myeloproliferative diseases) or MDS (Myelodysplastic syndrome).
- First as well as subsequent primary cancer diagnoses were included.
- For breast cancer, only the first occurring primary invasive breast tumour per patient was taken into account; subsequent primary breast tumours from the same person were excluded.

Besides this group of all invasive tumours, projections were also considered for a selection of tumour sites, covering most of the solid tumours.

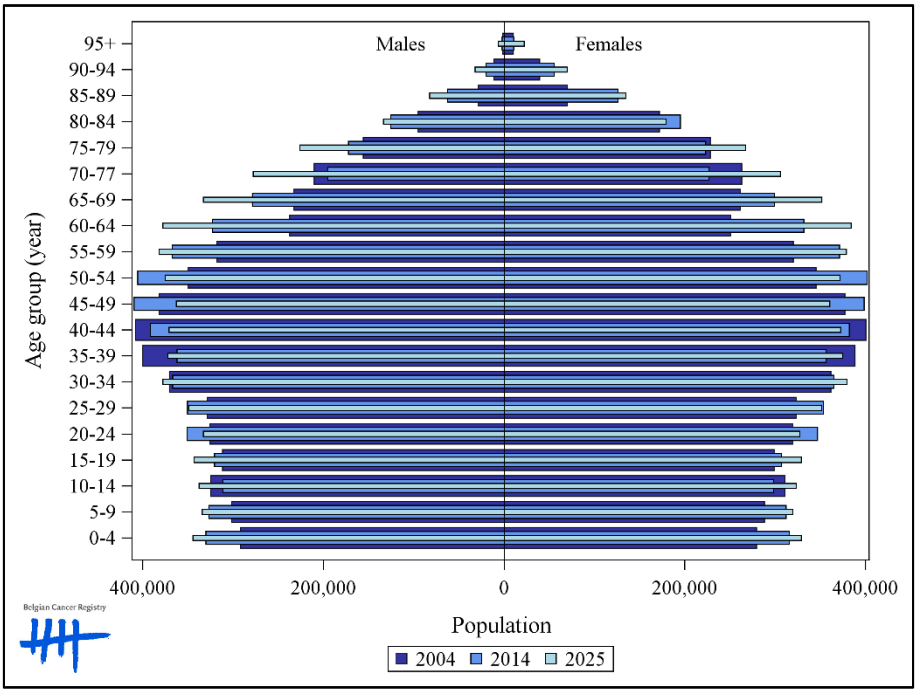
3.2.2. Population data

Observed and projected population numbers by age and gender were obtained from Statistics Belgium, the Directorate-general Statistics [5]. The projected population results from a collaboration between Statistics Belgium, who delivers the data, and the Federal Planning

Bureau who performs the extrapolation model. The population projections take into account the expected number of births, the expected number of deaths, the projected internal and external migration count and naturalisations. The projected death rates, fertility per female and the internal and external migration count are based on extrapolations of the observed rates over the calendar period 1991-2014. More details can be found in [6].

The observed Belgian population for the years 2004 (the first incidence year) and 2014 (the last incidence year available at the time of writing) and the projected population for the year 2025 (the last year of the projection period considered) are shown in the butterfly plot of Figure 1.

***Figure 1*:** Observed (2004, 2014) and projected (2025) Belgian population distribution by gender and 5-year age groups.



3.3. Cancer incidence rates

Annual crude incidence rates are obtained by dividing the observed number of diagnoses within a calendar year by the population size present at the start of that year and are expressed in cases per 100,000 persons.

Age-standardised rates are calculated as a weighted average of the estimated age-specific rates $r_i(t)$ (in 5-year wide age classes: 0-4, 5-9, …, 80-84, 85+ years):

$$asr(t) = \sum_{i=1}^{18} w_i r_i(t). \qquad (1)$$

Both the European and the World standard population weights (see Table 2) were used to calculate age-standardised incidence rates, ESR and WSR respectively.

Table 2: European (EU) and World standard population weights used to calculate the age-standardised incidence rates.

age group (year)	EU	World
0-4	0.08	0.12
5-9	0.07	0.10
10-14	0.07	0.09
15-19	0.07	0.09
20-24	0.07	0.08
25-29	0.07	0.08
30-34	0.07	0.06
35-39	0.07	0.06
40-44	0.07	0.06
45-49	0.07	0.06
50-54	0.07	0.05
55-59	0.06	0.04
60-64	0.05	0.04
65-69	0.04	0.03
70-74	0.03	0.02
75-79	0.02	0.01
80-84	0.01	0.005
85+	0.01	0.005

3.4. Regression models applied for cancer incidence projection

3.4.1. Choice of regression models

The incidence projections for the period 2015-2025 were obtained from linear and log-linear regression models by extrapolating the observed incidence trends 2004-2014.
As commonly applied in cancer incidence projections, a log-linear model was selected in case of a significant decreasing trend, see Figure 2. This was done to avoid that projections would result in negative incidence numbers. A linear model was selected in case of an increasing time trend to avoid exponential extrapolation which could result from a log-linear model [7-9]. When no significant trend is observed, a constant rate model is applied. Details on the regression model selection procedure are given in the next subsection.
The observed number of cancer diagnoses can be considered as the result of a random counting variable. Poisson models were therefore used to model the relation between the crude incidence rate and the incidence year, in accordance with [7].

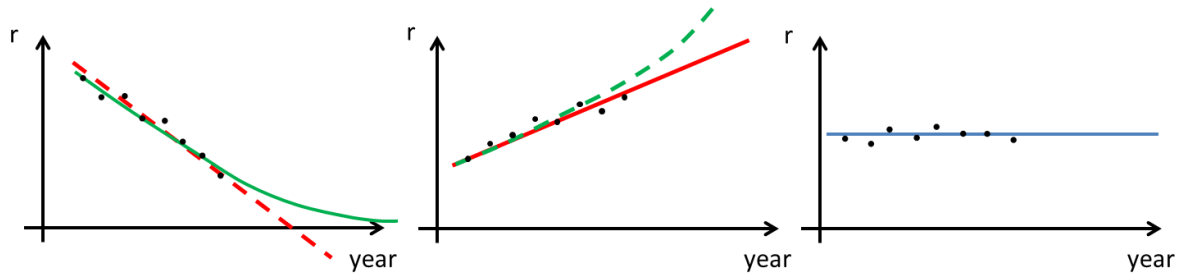


Figure 2: Visualisation of the Poisson regression model selection applied for the incidence rate versus incidence year. Left: when a decreasing trend is observed, a linear model (dashed red) could result in negative projections, so a log-linear model (solid green) is selected. Middle: when an increasing trend is observed, a linear model (solid red) is selected, as a log-linear model (dashed green) could result in exponential extrapolations. Right: when no trend with time is observed, a constant incidence rate as function of calendar year is considered.

3.4.2. Model selection

The model building process consisted of the following steps:

1. A log-linear Poisson model was estimated.
2. If a significant slope at the 5% level was obtained (2-sided test), then
    a. the estimated log-linear Poisson model was selected as the final model in case of a decreasing time trend
    b. a linear Poisson model was estimated as the final model in case of a significant increasing time trend.
3. When the estimated slope coefficient of the initial log-linear Poisson model was found to be non-significant, the average annual crude incidence rate was estimated over the available time period.

The mathematical formulation of these three Poisson models is given below. Model predictions outside the observed time period are called “projections”.

Let *t* represent the calendar year, *c(t)* the number of cancer diagnoses observed in year *t* and *N(t)* the population size at the start of calendar year *t*. The log-linear model for the crude cancer rate *r(t)=c(t)/N(t)* versus calendar year is given by

$$\log(r(t)) = \log\left(\frac{c(t)}{N(t)}\right) = \beta_0 + \beta_1 t\,, \qquad (2)$$

which can be written as:

$$\log(c(t)) = \log(N(t)) + \beta_0 + \beta_1 t\,. \qquad (3)$$

This is a generalised linear regression model with the number of cancer diagnoses as dependent variable following a Poisson distribution, a log-link, log(*N(t)*) as offset and *t* as independent variable.

The linear model for the crude cancer rate is given by

$$r(t) = \frac{c(t)}{N(t)} = \beta_1 + \beta_2 t\,, \qquad (4)$$

which can be written as:

$$c(t) = \beta_1 N(t) + \beta_2 N(t)t\,. \qquad (5)$$

This is a generalised linear regression model with the number of cancer diagnoses as dependent variable following a Poisson distribution, *N(t)* and *N(t)t* as independent variables and no intercept.

When the number of cancer diagnoses shows no significant trend over time, a constant annual crude rate is assumed, and model (5) simplifies to:

$$c(t) = \beta_1 N(t). \qquad (6)$$

This is a generalised linear regression model with the number of cancer diagnoses as dependent variable following a Poisson distribution, a single independent variable *N(t)* and no intercept.

3.4.3. Age and sex dependence

Evolutions in the size and age distribution of the population were taken into account by estimating the gender-specific crude incidence rates per 5-year age category (0-4, 5-9, …, 80-84, 85+), requiring 18 regression models per combination of gender and cancer site. The resulting gender and age specific projected rates were then applied to the projected population to obtain age-sex specific projected incidence counts. Finally these age-sex cancer incidence counts were summed to obtain the overall projected numbers of cancer diagnoses and crude incidence rates. Projected age-standardised rates (ESR and WSR) were directly calculated using the age-sex specific projected cancer incidence rates.

3.4.4. Prediction intervals

The 95% prediction interval (PI) and the variance for the predicted number of new cancer diagnoses in the calendar year *t* taking into account the Poisson distribution follows directly from the regression output: $[\hat{c}_{ll}(t), \hat{c}_{ul}(t)]$ and $\mathrm{Var}(\hat{c}(t))$. The corresponding 95% PI and variance on the predicted crude rate $\hat{r}(t)$ then equals $[\hat{c}_{ll}(t)/N(t), \hat{c}_{ul}(t)/N(t)]$ and $\mathrm{Var}(\hat{c}(t))/N(t)$.

The predicted age-standardised rates are calculated as a weighted average of the estimated age-specific rates $\hat{r}_i(t)$ (in 5-year wide age classes).

$$\hat{asr}(t) = \sum_{i=1}^{18} w_i \hat{r}_i(t). \qquad (7)$$

Both the European (ESR) and World Standardised incidence Rates (WSR) were calculated using the weights given in Table 2.

The variance of the predicted age-standardised rates is given by a linear combination of the age-specific rate variances, as these are estimated independently:

$$\mathrm{Var}(\hat{asr}(t)) = \sum_{i=1}^{18} {w_i}^2 \mathrm{Var}(\hat{r}_i(t)). \qquad (8)$$

To construct a prediction interval for the age-standardised rates, a normal approximation is assumed: $[\hat{asr}(t) - 1.96 \times SE(\hat{asr}(t)), \hat{asr}(t) + 1.96 \times SE(\hat{asr}(t))]$ with $SE(\hat{asr}(t))$ the standard error of the age-standardised rate, which equals the square root of the variance. The larger the number of diagnoses within an age group, the more accurate this approximation will be.

3.4.5. Key assumptions of the projection method

The projection results are based on a number of assumptions that must be considered when interpreting the results:

Assumption 1: Constant age effect per 5-year wide age class.
Cancer incidence rates depend strongly on age. Age-sex specific projection results are therefore calculated in 5-year wide age groups. This approach assumes that each 5-year age group is homogeneous and that the obtained average trend is representative for each individual age in that age group.

Assumption 2: Age-sex specific crude incidence rates are nationally homogeneous.
Although regional differences exist in the age-standardised cancer incidence rates for many cancer sites in Belgium, the projection results are based on a national model using national age-sex specific incidence rates. Compared to a regional model, the national model is based on higher observed counts and has therefore more power to detect existing trends over time.

Assumption 3: Constant time trend.
Because the observed time period (i.e. 2004-2014) is relatively short, a constant linear or log-linear time trend over this time period is assumed. Hence, no piecewise modes are applied. Each age-sex specific model was visually checked for this assumption and no violations could be noted.

Assumption 4: The observed past trend will continue in the near future.
The observed data is used to estimate the trend over the 2004-2014 period and it is assumed that this trend will continue into the near future (2015-2025). As life style, screening and detection methods influence cancer incidence rates, any substantial change in the near future at the population level in these factors will impact the cancer incidence rates. These possible future changes are yet unknown and, consequently, are not taken into account in the prediction results.

Assumption 5: Data representativeness and adequate model fitting.
The projection results are conditional on the observed data and the model choice, both should be adequate to obtain reasonable projection results.
The observed data should be adequate to allow reliable estimations of the cancer incidence rates and the time trend. This will be the case for cancers with a sufficient annual number of cancer diagnoses. The results for cancers with small incidence numbers will represent large uncertainty and possibly incorrect prediction intervals for the rates.
The applied regression models should be adequate to capture the time trend and extrapolate this trend into the near future. Our regression models were selected with a focus on simplicity, in order to minimise the risk of exponential extrapolation.

3.4.6. Accuracy of the projection method

The future will show how close the incidence projections in this report will be to the actual values. In order to obtain a feeling for the accuracy of the projection results on very short term, the projection for the year 2014 based on the incidence period 2004-2013 has been compared to the actual observed incidence in 2014. The comparison is given in Table 3 and summarised in Figure 3. Most of the projected values are within a relative error of 10% around the observed value, except for colon cancer in males (-18%), malignant melanoma of skin in females (-13%) and Thyroid cancer in females (-11%) which are all underprojected.

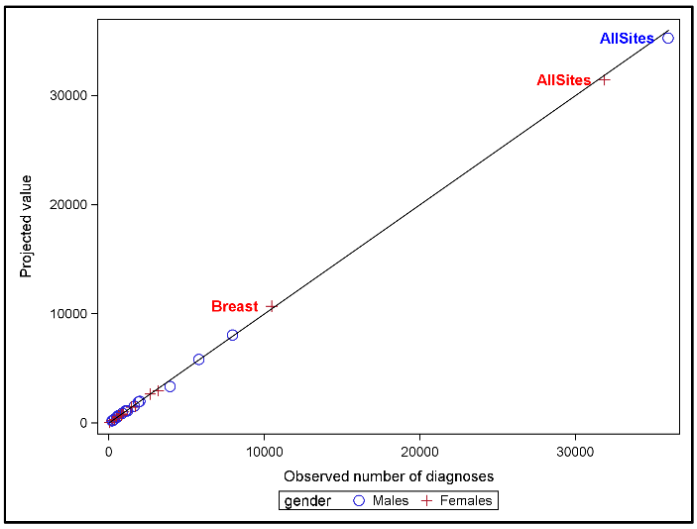
Table 3: Observed number of new cancer diagnoses in the year 2014 and the corresponding projection based on the incidence period 2004-2013 by cancer site and gender.

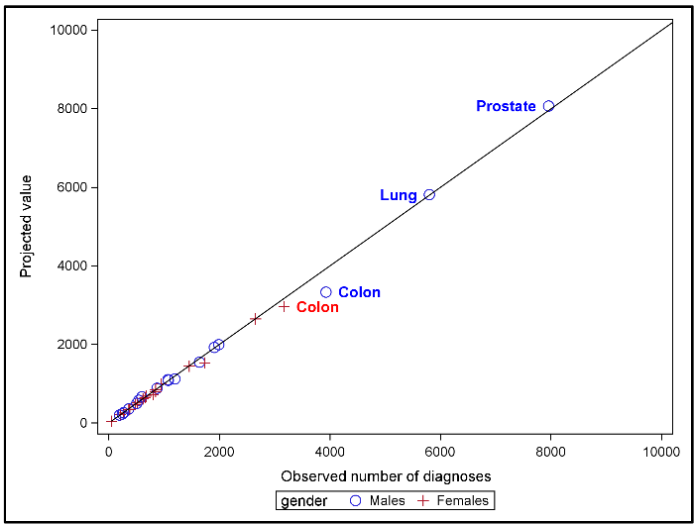
	Observed	**Projected**		**Projection minus observation**	
Cancer site	**N**	**N**	**95% PI**	**absolute**	**relative (%)**
Invasive tumours (excl. non-melanoma skin cancers)					
Males	35,948	35,269	[35,043; 35,494]	-679	-1.9
Females	31,872	31,442	[31,224; 31,660]	-430	-1.4
Head & Neck					
Males	1,992	1,993	[1,945; 2,040]	1	0.0
Females	679	685	[655; 715]	6	0.9
Oesophagus					
Males	1,068	1,102	[1,071; 1,133]	34	3.1
Females	383	353	[338; 368]	-30	-8.4
Stomach					
Males	540	576	[549; 604]	36	6.3
Females	479	470	[450; 490]	-9	-1.9
Colon					
Males	3,931	3,336	[3,285; 3,386]	-595	-17.9
Females	3,173	2,962	[2,917; 3,007]	-211	-7.1
Rectum					
Males	1,644	1,552	[1,526; 1,578]	-92	-5.9
Females	946	998	[978; 1,018]	52	5.2
Liver					
Males	596	665	[634; 697]	69	10.4
Females	268	257	[238; 277]	-11	-4.1
Gallbladder					
Males	194	201	[190; 213]	7	3.6
Females	209	215	[202; 227]	6	2.6
Pancreas					
Males	871	887	[851; 923]	16	1.8
Females	844	836	[802; 871]	-8	-0.9
Lung					
Males	5,797	5,811	[5,727; 5,895]	14	0.2
Females	2,655	2,649	[2,588; 2,711]	-6	-0.2
Mesothelioma					

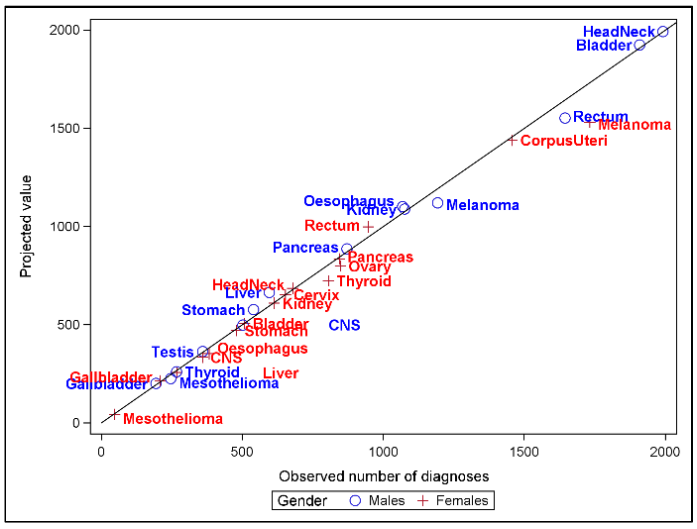
	Observed	Projected		Projection minus observation	
Cancer site	**N**	**N**	**95% PI**	**absolute**	**relative (%)**
Males	246	226	[214; 239]	-20	-8.6
Females	48	44	[40; 49]	-4	-8.5
Melanoma					
Males	1,193	1,121	[1,080; 1,162]	-72	-6.4
Females	1,732	1,531	[1,484; 1,578]	-201	-13.1
Breast					
Females	10,466	10,716	[10,591; 10,841]	250	2.3
Cervix					
Females	653	652	[636; 669]	-1	-0.1
Corpus Uteri					
Females	1,457	1,439	[1,403; 1,475]	-18	-1.2
Ovary					
Females	848	798	[768; 828]	-50	-6.2
Prostate					
Males	7,953	8,071	[7,954; 8,188]	118	1.5
Testis					
Males	359	363	[345; 382]	4	1.2
Kidney					
Males	1,075	1,089	[1,054; 1,123]	14	1.2
Females	613	610	[591; 629]	-3	-0.5
Bladder					
Males	1,909	1,925	[1,887; 1,964]	16	0.8
Females	508	507	[486; 528]	-1	-0.2
CNS					
Males	502	499	[483; 515]	-3	-0.7
Females	359	334	[322; 346]	-25	-7.5
Thyroid					
Males	267	261	[245; 277]	-6	-2.4
Females	805	723	[694; 753]	-82	-11.3

Among all cancers for both men and women, colon cancer incidence is the strongest underprojected. This can be explained by the sudden increase in colon cancer incidence in the year 2014, as a result of the start of the implementation of the Flemish screening program for colorectal cancer. The assumption of a constant time trend is therefore violated for colon cancer. No projection result for colon cancer will therefore be given in this report (see section 4.5). The impact of the screening program on rectal cancer incidence is much more limited and projection results are reported.

Figure 3: Projected number of new cancer diagnoses for the incidence year 2014 based on the incidence period 2004-2013 versus the effective observed incidence count.







3.5. Presentation and interpretation of projection results

The projection results reported per cancer site are:

- Observed, modelled and projected values versus calendar year for
  - the number of new diagnoses,
  - the crude incidence rate, and
  - the age-standardised incidence rate (using the European standard population, ESR, and the world standard population, WSR).
- Projected number of new cases by broad age groups. The specific age classes depend on the cancer site, e.g. 30-49, 50-64 and 65+ years.
- Evolution of age-specific incidence rates with time in broad and 5-year age groups.

The predicted number of diagnoses, crude rates and age-standardised incidence rates (ESR and WSR) form the main results of the projection method applied and are visualised in graphs. The projection results for Head & Neck cancers are given in Figure 4 as an example. The top left panel of Figure 4 shows the observed and projected number of new diagnoses. The projected number of new cancer diagnoses results from the combination of three main factors: population growth, aging of the population and the cancer risk. Moving to the crude rate (top right panel Figure 4), the effect of population size is eliminated, leaving the impact of the aging of the population and the change in cancer risk with calendar year. Finally the evolution of the cancer risk is visualised in the age-standardised results (lower panels Figure 4). The 95% prediction interval (PI) is given by the light shaded red band and is an indication of the range of uncertainty around the predicted values.

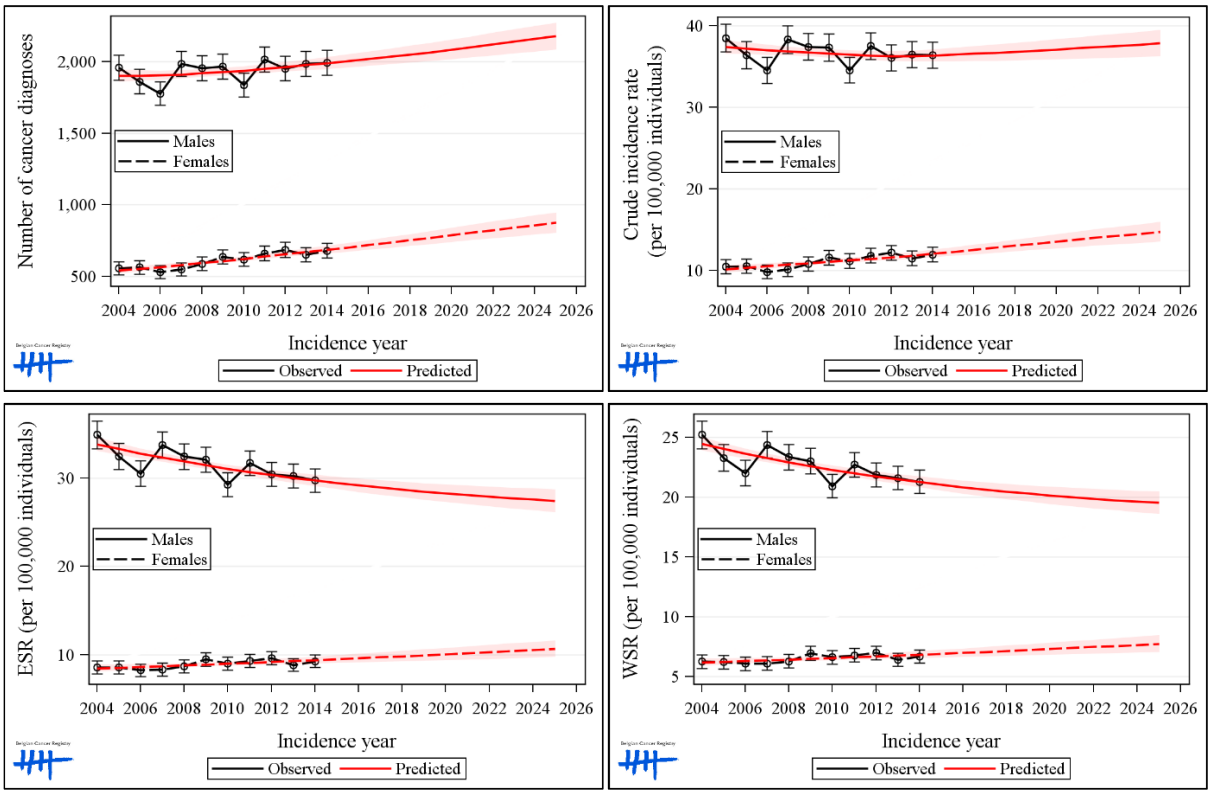
Why confidence intervals on the observed incidence count?

Because of the national coverage of cancer registration in Belgium, the observed number of new diagnoses represents the complete cancer burden at the national level. The observed number of new cases is therefore exactly known. This observed value is however the result or the realisation of an underlying random process with an unknown fixed mean population value. The error bars around the observed number of cases in the top left panel of Figure 4 represent the 95% confidence interval (CI) for that underlying population value based on the observed incidence count. In the absence of any trend, each year can be regarded as a realisation of this random process and the observed incidence count in each year will vary around the population value. When comparing the effective observed number of diagnoses of one year with another in search of a trend, this variability should be taken into account. Similarly, the calculated observed crude and age-standardised rates can be seen as an estimate of the true underlying population rates and the CI represent the range of uncertainty around the estimated value. The 95% CI on the observed values are therefore added to Figure 4 to guide the eye in the search for a trend.

3.6. Software

The regression models were estimated using SAS software version 9.3 (SAS Institute, Cary, NC, USA). The corresponding PROC GENMOD calls applied can be found in the appendix. *P*-values below 0.05 were considered statistically significant.

Figure 4: Head & Neck cancers (C00-C14, C30-C32). Observed (black line) and modelled and projected (red line) number of diagnoses (top left), crude incidence rates (top right) and European (ESR) and World Standardised incidence Rates (WSR) (bottom) versus calendar year in males (solid lines) and females (dashed lines). The light shaded red area represents the 95% prediction interval. The vertical error bars show the 95% confidence intervals around the observed values assuming a Poisson distribution for the number of observed diagnoses.



4. Projections by cancer site

4.1. All invasive tumours (excl.. non-melanoma skin cancer; C00-C43, C45-C96, MPD, MDS)

- In the period 2014 to 2025, the yearly number of new invasive tumour diagnoses (excl.. non-melanoma skin cancer) in Belgium is projected to rise from 67,820 to 79,135, an increase of about 17%.
- In males, the incidence projection 2014-2025 runs from 35,948 to 40,107, an increase of 12%. The increase in projected number of diagnoses in males from 2014 to 2025 can be found in the oldest age group (65+ years), while a weak decrease in the youngest (30-49 years) and the 50-64 years age groups is expected.
- In females, the incidence projection 2014-2025 runs from 31,872 to 39,028, an increase of about 22%. The relative increase in projected incidence count in females is almost twice as large compared to males. The increasing projected number of diagnoses in females from 2014 to 2025 is expected in all broad age groups.

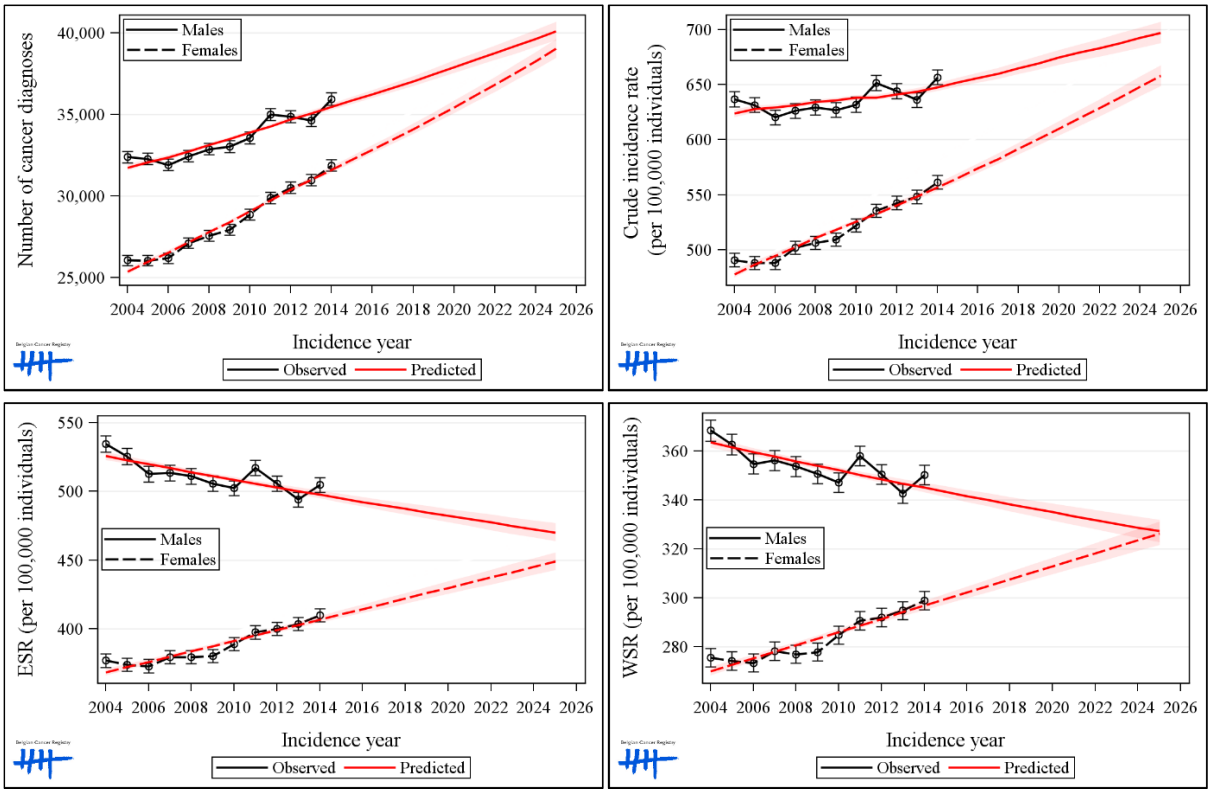
- The age-standardised cancer incidence rate (WSR) in males is projected to decrease from 350 to about 327 cases per 100,000 men between 2014 and 2025, a decrease of 6.6%. A decrease in age-specific incidence rate in males is projected from the age of 70 years onward.
- In contrast, the WSR in females is expected to increase from 299 to 326 cases per 100,000 women between 2014 and 2025, an increase of 9.0%, approaching the same risk level as in males by 2025. The projected age-specific incidence rate in females starts to increase from the age of 60 years onward.

- The decreasing cancer risk indicates that the projected increasing incidence count in males can be fully attributed to a growing and ageing male population.
- Both the increasing cancer risk and the ageing and growing population drive the projected increase in the number of diagnosed cancer cases in females.

- The larger increase in projected cancer diagnoses from 2014 to 2025 for females compared to males is mainly driven by (1) a decrease in prostate cancer cases in males, (2) an increase in female breast cancer cases and (3) a stronger increase in lung cancer cases in females than in males.

4.1.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 5: Invasive tumours (excl.. non-melanoma skin cancer): Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.1.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 4: Invasive tumours (excl.. non-melanoma skin cancer): Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Invasive tumours (excl. non-melanoma skin cancer)							
	Predicted number of cases		**Predicted crude rate (per 100,000)**		**Predicted ESR (per 100,000)**		**Predicted WSR (per 100,000)**	
Gender year	**Estimate**	**95% PI**	**Estimate**	**95% PI**	**Estimate**	**95% PI**	**Estimate**	**95% PI**
Males								
2015	35,863	[35,651; 36,075]	652.0	[648.1; 655.8]	495.0	[491.9; 498.0]	343.4	[341.2; 345.5]
2016	36,241	[36,001; 36,481]	655.9	[651.6; 660.2]	492.4	[489.0; 495.8]	341.7	[339.3; 344.1]
2017	36,628	[36,357; 36,899]	660.0	[655.1; 664.9]	489.8	[486.0; 493.6]	340.0	[337.3; 342.7]
2018	37,038	[36,734; 37,341]	664.6	[659.2; 670.1]	487.2	[483.1; 491.4]	338.3	[335.4; 341.3]
2019	37,469	[37,132; 37,807]	669.5	[663.4; 675.5]	484.7	[480.2; 489.2]	336.7	[333.5; 339.9]
2020	37,912	[37,540; 38,284]	674.5	[667.8; 681.1]	482.2	[477.4; 487.1]	335.1	[331.7; 338.5]
2021	38,339	[37,931; 38,747]	678.9	[671.7; 686.1]	479.8	[474.6; 485.0]	333.5	[329.8; 337.2]
2022	38,763	[38,318; 39,208]	683.3	[675.4; 691.1]	477.3	[471.8; 482.9]	331.9	[328.0; 335.8]
2023	39,195	[38,712; 39,679]	687.7	[679.2; 696.1]	474.9	[469.0; 480.8]	330.3	[326.2; 334.5]
2024	39,642	[39,121; 40,163]	692.2	[683.1; 701.3]	472.6	[466.3; 478.8]	328.8	[324.4; 333.2]
2025	40,107	[39,547; 40,666]	697.0	[687.3; 706.7]	470.2	[463.6; 476.8]	327.3	[322.6; 331.9]
Trend	↗		↗		↘		↘	
Females								
2015	32,232	[32,020; 32,445]	565.5	[561.7; 569.2]	410.5	[407.7; 413.2]	299.5	[297.4; 301.6]
2016	32,851	[32,608; 33,094]	574.0	[569.8; 578.2]	414.3	[411.2; 417.4]	302.2	[299.9; 304.5]
2017	33,478	[33,204; 33,752]	582.7	[577.9; 587.5]	418.2	[414.7; 421.6]	304.9	[302.3; 307.5]
2018	34,113	[33,807; 34,420]	591.6	[586.3; 596.9]	422.0	[418.2; 425.8]	307.6	[304.7; 310.4]
2019	34,771	[34,431; 35,112]	600.7	[594.9; 606.6]	425.9	[421.7; 430.0]	310.3	[307.1; 313.4]
2020	35,448	[35,072; 35,824]	610.1	[603.6; 616.6]	429.7	[425.2; 434.2]	312.9	[309.6; 316.3]
2021	36,131	[35,720; 36,543]	619.3	[612.3; 626.4]	433.5	[428.7; 438.4]	315.6	[312.0; 319.3]
2022	36,831	[36,382; 37,279]	628.7	[621.1; 636.4]	437.4	[432.2; 442.6]	318.3	[314.4; 322.2]
2023	37,541	[37,055; 38,027]	638.2	[629.9; 646.4]	441.2	[435.6; 446.9]	321.0	[316.8; 325.2]
2024	38,272	[37,747; 38,796]	647.9	[639.0; 656.8]	445.1	[439.1; 451.1]	323.7	[319.2; 328.2]
2025	39,028	[38,464; 39,593]	657.9	[648.4; 667.4]	448.9	[442.6; 455.3]	326.3	[321.6; 331.1]
Trend	↗		↗		↗		↗	

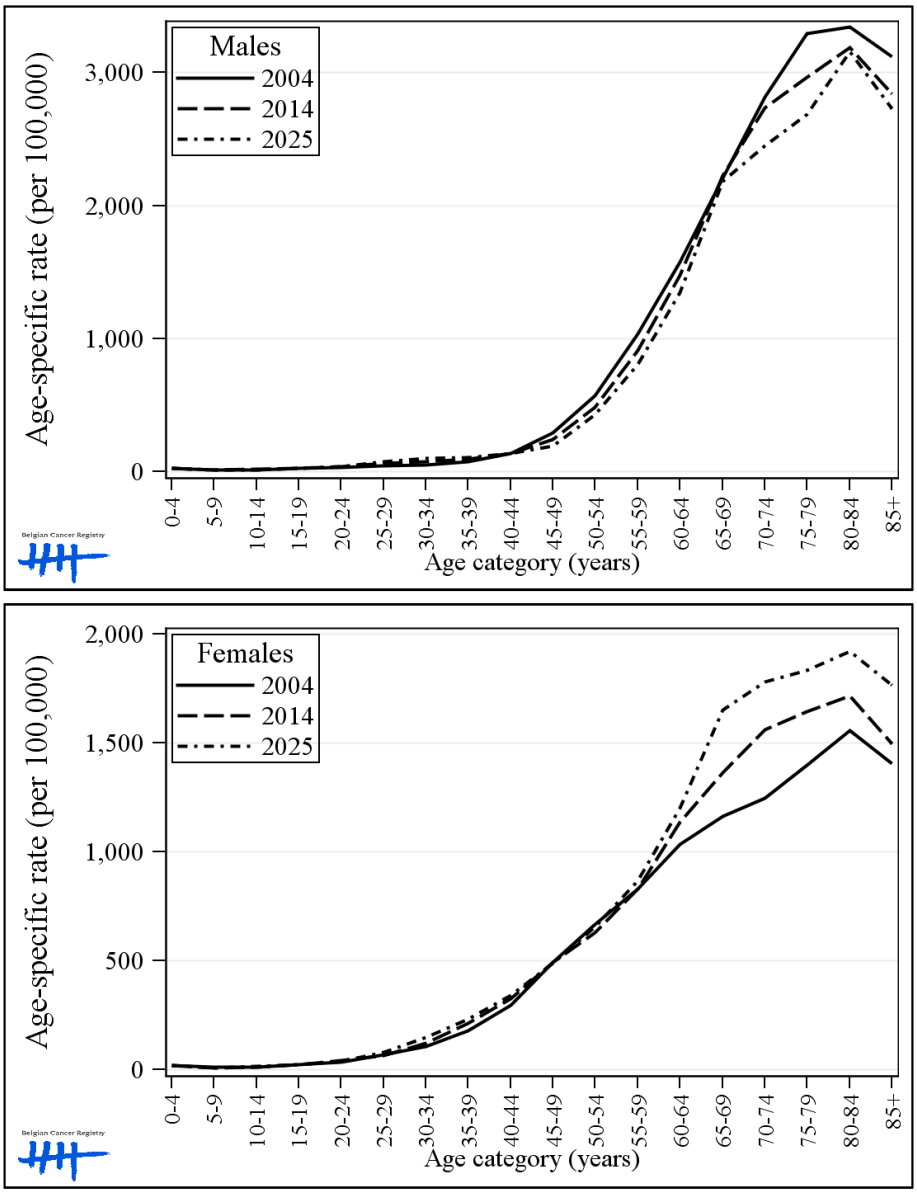
4.1.3. Number of new diagnoses by age group projected to 2025

Table 5: Invasive tumours (excl.. non-melanoma skin cancer): Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Invasive tumours (excl. non-melanoma skin cancer)					
	Projected number of cases					
	30-49 years		50-64 years		65+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Males						
2015	2,075	[2,025; 2,125]	10,175	[10,046; 10,304]	23,015	[22,856; 23,174]
2016	2,052	[1,997; 2,107]	10,200	[10,053; 10,347]	23,384	[23,204; 23,564]
2017	2,036	[1,975; 2,096]	10,227	[10,061; 10,392]	23,755	[23,550; 23,960]
2018	2,022	[1,956; 2,087]	10,215	[10,032; 10,399]	24,184	[23,953; 24,415]
2019	2,010	[1,939; 2,081]	10,207	[10,005; 10,408]	24,631	[24,372; 24,890]
2020	1,998	[1,923; 2,074]	10,195	[9,974; 10,415]	25,094	[24,806; 25,383]
2021	1,986	[1,905; 2,066]	10,162	[9,924; 10,401]	25,562	[25,243; 25,881]
2022	1,979	[1,894; 2,064]	10,108	[9,852; 10,365]	26,045	[25,693; 26,396]
2023	1,975	[1,885; 2,065]	10,022	[9,748; 10,295]	26,564	[26,177; 26,950]
2024	1,976	[1,881; 2,071]	9,915	[9,625; 10,205]	27,112	[26,691; 27,533]
2025	1,980	[1,879; 2,081]	9,791	[9,486; 10,096]	27,690	[27,235; 28,146]
Trend	↘		↘		↗	
Females						
2015	4,342	[4,275; 4,408]	9,555	[9,443; 9,666]	17,735	[17,568; 17,902]
2016	4,333	[4,260; 4,406]	9,698	[9,571; 9,825]	18,213	[18,022; 18,404]
2017	4,334	[4,254; 4,415]	9,841	[9,697; 9,985]	18,691	[18,474; 18,907]
2018	4,345	[4,257; 4,433]	9,944	[9,783; 10,105]	19,208	[18,965; 19,451]
2019	4,353	[4,257; 4,449]	10,051	[9,872; 10,230]	19,749	[19,478; 20,020]
2020	4,360	[4,255; 4,464]	10,146	[9,948; 10,343]	20,322	[20,022; 20,622]
2021	4,365	[4,252; 4,478]	10,221	[10,006; 10,436]	20,923	[20,593; 21,253]
2022	4,376	[4,253; 4,498]	10,289	[10,055; 10,522]	21,544	[21,183; 21,904]
2023	4,396	[4,264; 4,527]	10,329	[10,078; 10,579]	22,192	[21,799; 22,585]
2024	4,428	[4,287; 4,568]	10,342	[10,074; 10,609]	22,875	[22,449; 23,302]
2025	4,466	[4,317; 4,615]	10,327	[10,044; 10,611]	23,603	[23,141; 24,065]
Trend	↗		↗		↗	

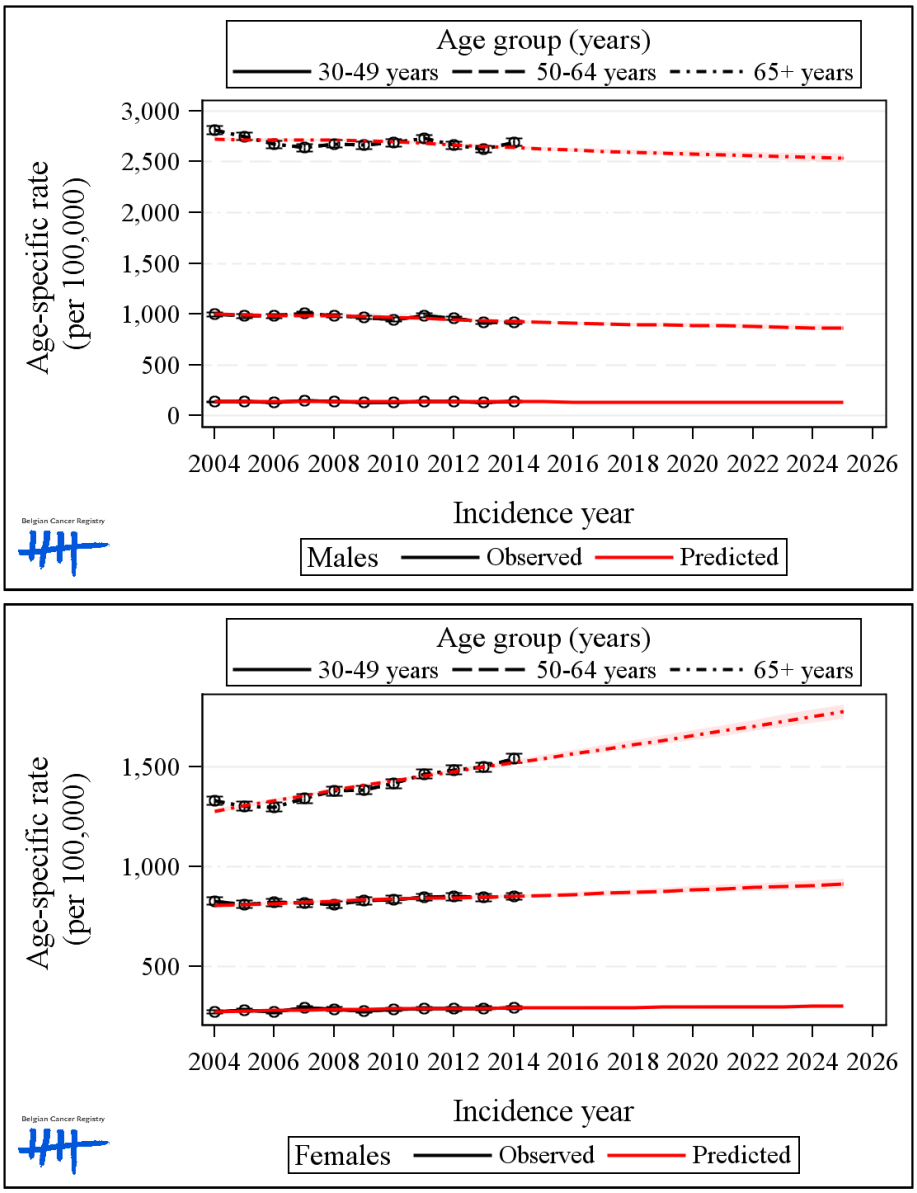
4.1.4. Observed and projected age-specific incidence rates

Figure 6: Invasive tumours (excl.. non-melanoma skin cancer): Observed (2004 to 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.1.5. Trends in age-specific incidence rates

Figure 7: Invasive tumours (excl.. non-melanoma skin cancer): Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.2. Head and neck cancer (C00-C14, C30-C32)

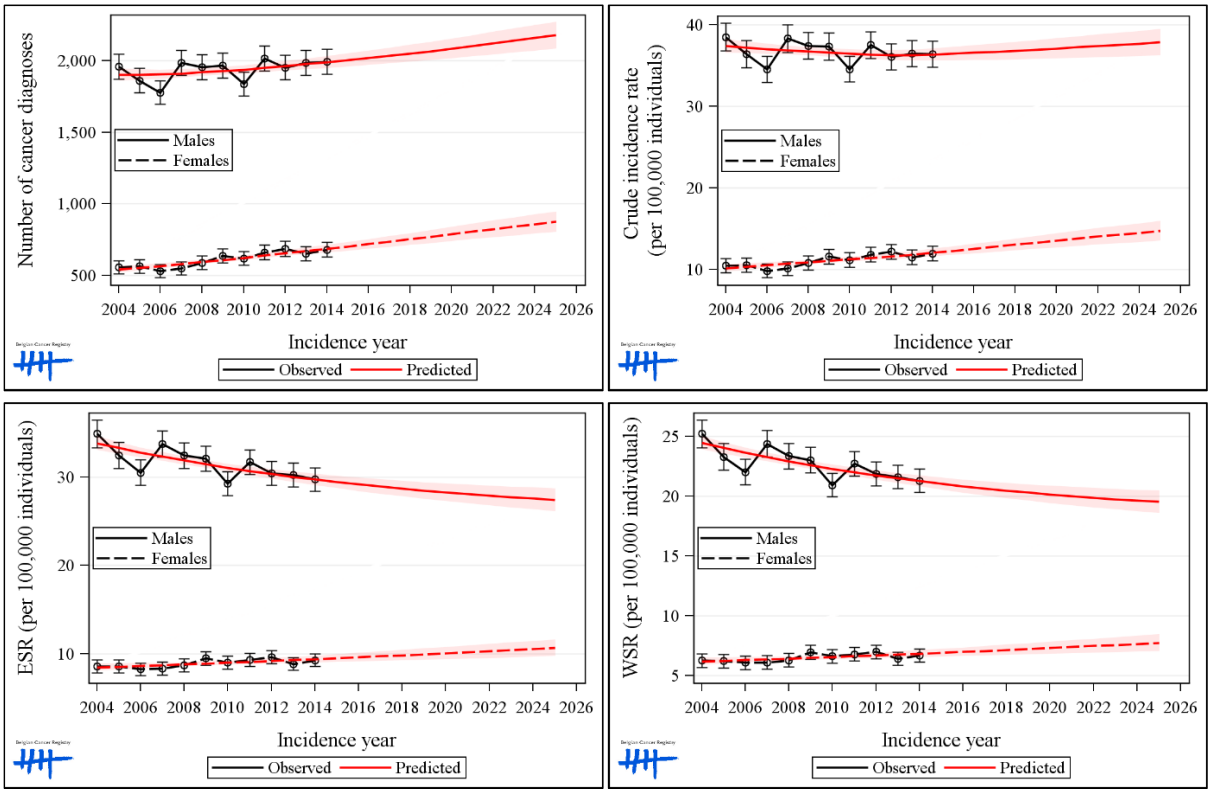
- In the period 2014 to 2025, the yearly number of new head and neck cancer diagnoses in Belgium is projected to rise from 2,671 to 3,050, an increase of about 14%.
- In males, the incidence projection 2014-2025 runs from 1,992 to 2,177, an increase of 9.3%. This projected increase in number of diagnoses in males mainly originates from an increase in the oldest age category (75+ years) and, to a lesser extent, the 50-74 years age group. In the youngest patients (30-49 years), a decrease is expected.
- In females, the incidence projection 2014-2025 runs from 679 to 874, an increase of almost 29%. The relative increase in projected incidence count in females is about three times as large compared to males. In terms of age groups, it is mostly observed in the 50-74 years age group. Head and neck cancer diagnoses in elderly females (75+ years) are projected to increase less pronounced, and in young patients (30-49 years), a decrease is expected.

- The projected age-standardised cancer incidence rate (WSR) in males decreases from 21.3 to 19.5 cases per 100,000 men between 2014 and 2025.
- In contrast, the WSR in females is projected to increase from 6.7 to 7.8 cases per 100,000 women. The projected age-specific incidence rates show that this increase mainly starts from the age of 55 years onward.

- The projected decreasing head and neck cancer risk in males indicates that the expected rise in incidence count can be fully attributed to the ageing and increasing male population.
- In females, an increase in the number of head and neck cancers as well as in the cancer risk is projected, suggesting that besides the ageing and growing female population, supplementary factors are at play. Head and neck cancers are known to be life-style related cancers, with smoking and alcohol usage as well known risk factors. The projected increase in female head and neck cancers might therefore to a large extent be the consequence of the smoking epidemic in Belgian women, which started off later than in men.

4.2.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 8: Head and neck cancer: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.2.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 6: Head and neck cancer: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Head and neck cancer							
	Predicted number of cases		**Predicted crude rate (per 100,000)**		**Predicted ESR (per 100,000)**		**Predicted WSR (per 100,000)**	
Gender year	**Estimate**	**95% PI**	**Estimate**	**95% PI**	**Estimate**	**95% PI**	**Estimate**	**95% PI**
Males								
2015	2,004	[1,959; 2,048]	36.4	[35.6; 37.2]	29.5	[28.8; 30.1]	21.0	[20.5; 21.5]
2016	2,020	[1,970; 2,069]	36.6	[35.7; 37.5]	29.2	[28.4; 29.9]	20.8	[20.3; 21.4]
2017	2,034	[1,980; 2,088]	36.7	[35.7; 37.6]	28.9	[28.1; 29.8]	20.6	[20.0; 21.2]
2018	2,049	[1,991; 2,108]	36.8	[35.7; 37.8]	28.7	[27.8; 29.6]	20.5	[19.8; 21.1]
2019	2,066	[2,002; 2,129]	36.9	[35.8; 38.0]	28.5	[27.6; 29.4]	20.3	[19.6; 21.0]
2020	2,084	[2,016; 2,152]	37.1	[35.9; 38.3]	28.3	[27.3; 29.3]	20.1	[19.4; 20.9]
2021	2,103	[2,029; 2,176]	37.2	[35.9; 38.5]	28.1	[27.0; 29.1]	20.0	[19.2; 20.8]
2022	2,121	[2,043; 2,199]	37.4	[36.0; 38.8]	27.9	[26.8; 29.0]	19.9	[19.1; 20.7]
2023	2,139	[2,056; 2,222]	37.5	[36.1; 39.0]	27.7	[26.6; 28.9]	19.7	[18.9; 20.6]
2024	2,158	[2,070; 2,245]	37.7	[36.1; 39.2]	27.6	[26.4; 28.8]	19.6	[18.7; 20.5]
2025	2,177	[2,084; 2,269]	37.8	[36.2; 39.4]	27.5	[26.2; 28.7]	19.5	[18.6; 20.4]
Trend	↗		↗		↘		↘	
Females								
2015	701	[672; 730]	12.3	[11.8; 12.8]	9.5	[9.0; 9.9]	6.9	[6.6; 7.2]
2016	718	[685; 751]	12.5	[12.0; 13.1]	9.6	[9.1; 10.1]	7.0	[6.6; 7.3]
2017	735	[698; 772]	12.8	[12.2; 13.4]	9.7	[9.2; 10.2]	7.1	[6.7; 7.5]
2018	752	[711; 793]	13.0	[12.3; 13.8]	9.8	[9.2; 10.4]	7.2	[6.7; 7.6]
2019	770	[724; 815]	13.3	[12.5; 14.1]	9.9	[9.3; 10.6]	7.2	[6.8; 7.7]
2020	788	[738; 837]	13.6	[12.7; 14.4]	10.0	[9.4; 10.7]	7.3	[6.8; 7.8]
2021	806	[752; 860]	13.8	[12.9; 14.7]	10.2	[9.4; 10.9]	7.4	[6.9; 7.9]
2022	823	[765; 881]	14.1	[13.1; 15.0]	10.3	[9.5; 11.1]	7.5	[6.9; 8.1]
2023	840	[777; 902]	14.3	[13.2; 15.3]	10.4	[9.6; 11.2]	7.6	[7.0; 8.2]
2024	857	[790; 923]	14.5	[13.4; 15.6]	10.5	[9.6; 11.4]	7.7	[7.0; 8.3]
2025	874	[803; 944]	14.7	[13.5; 15.9]	10.7	[9.7; 11.6]	7.8	[7.1; 8.4]
Trend	↗		↗		↗		↗	

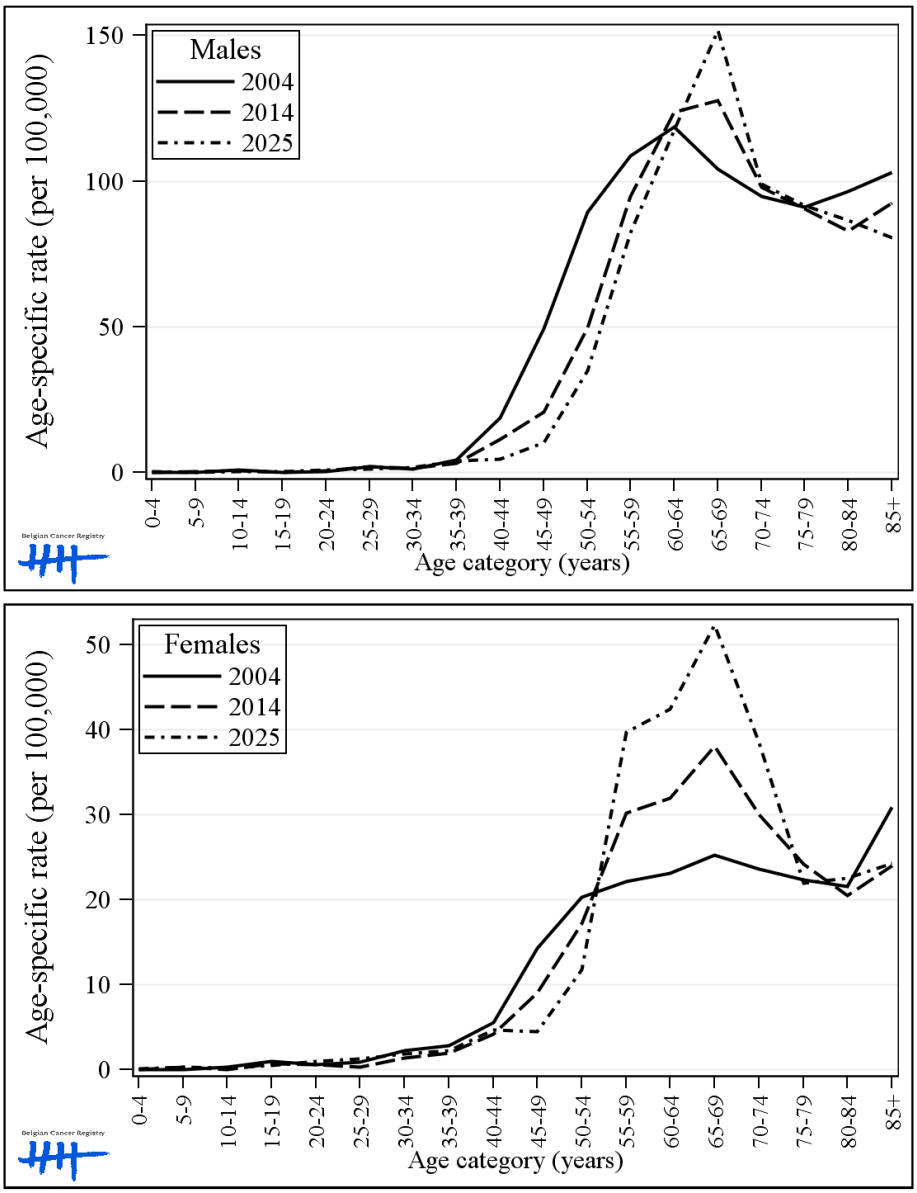
4.2.3. Number of new diagnoses by age group projected to 2025

Table 7: Head and neck cancer: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Head and neck cancer					
	Projected number of cases					
	30-49 years		50-74 years		75+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Males						
2015	139	[127; 151]	1,514	[1,472; 1,555]	341	[329; 352]
2016	130	[117; 142]	1,537	[1,491; 1,583]	343	[331; 355]
2017	121	[108; 135]	1,561	[1,510; 1,612]	342	[330; 354]
2018	114	[101; 127]	1,582	[1,526; 1,638]	343	[331; 355]
2019	107	[94; 121]	1,599	[1,538; 1,660]	349	[337; 361]
2020	100	[87; 114]	1,616	[1,550; 1,682]	357	[344; 369]
2021	94	[81; 108]	1,634	[1,563; 1,705]	364	[352; 377]
2022	89	[75; 102]	1,643	[1,567; 1,719]	379	[366; 392]
2023	84	[70; 97]	1,652	[1,571; 1,733]	393	[380; 407]
2024	80	[66; 93]	1,660	[1,575; 1,746]	407	[393; 421]
2025	76	[63; 89]	1,670	[1,579; 1,760]	421	[406; 435]
Trend	↘		↗		↗	
Females						
2015	61	[54; 68]	488	[461; 516]	141	[133; 148]
2016	59	[52; 66]	507	[476; 538]	141	[133; 148]
2017	58	[50; 65]	527	[491; 562]	140	[132; 147]
2018	56	[48; 64]	546	[506; 585]	139	[132; 147]
2019	55	[47; 63]	564	[520; 607]	140	[133; 147]
2020	54	[45; 62]	582	[534; 630]	141	[134; 149]
2021	53	[44; 61]	600	[547; 653]	142	[135; 150]
2022	52	[43; 60]	615	[558; 672]	145	[138; 153]
2023	51	[42; 59]	630	[569; 691]	148	[140; 156]
2024	50	[41; 59]	644	[579; 710]	151	[143; 159]
2025	49	[40; 58]	659	[589; 729]	154	[146; 162]
Trend	↘		↗		↗	

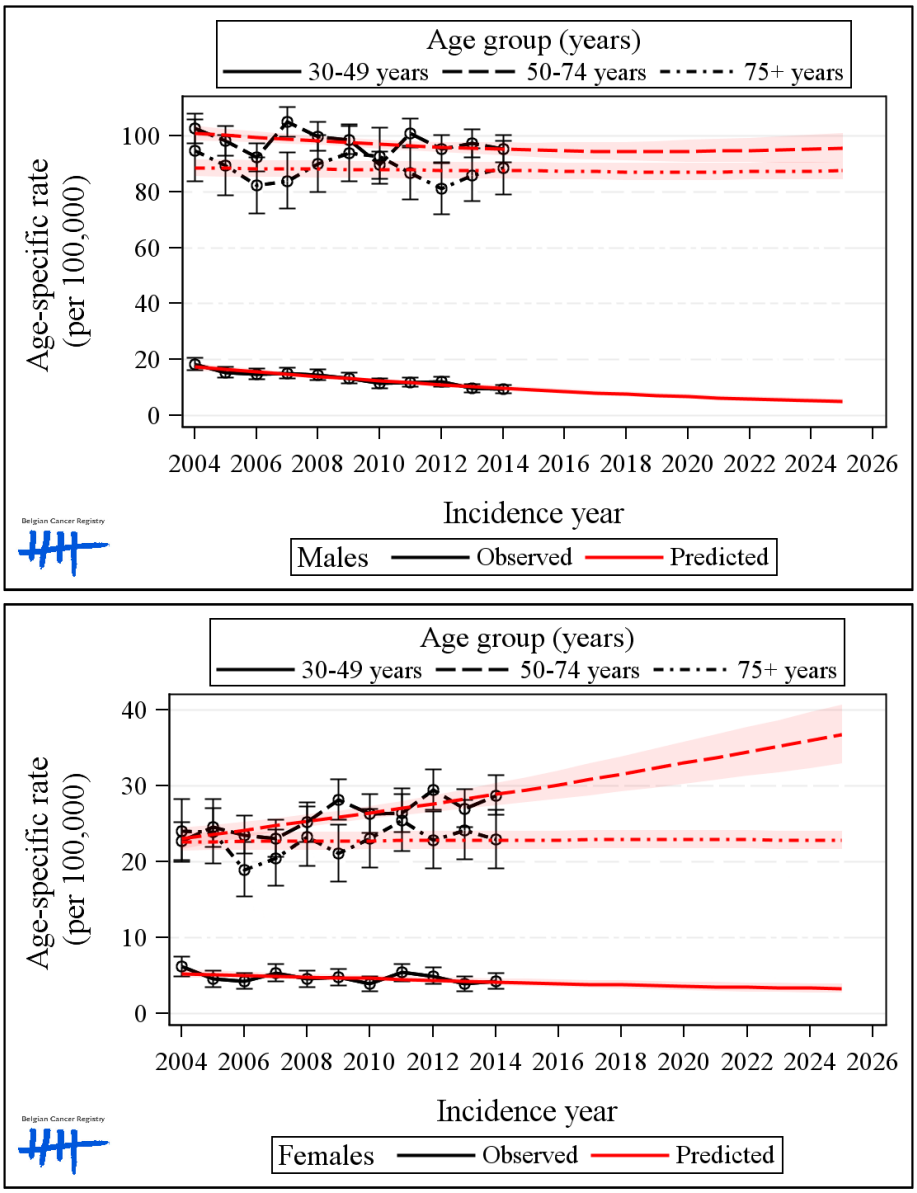
4.2.4. Observed and projected age-specific incidence rates

Figure 9: Head and neck cancer: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.2.5. Trends in age-specific incidence rates

Figure 10: Head and neck cancer: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.3. Oesophageal cancer (C15-C16.0)

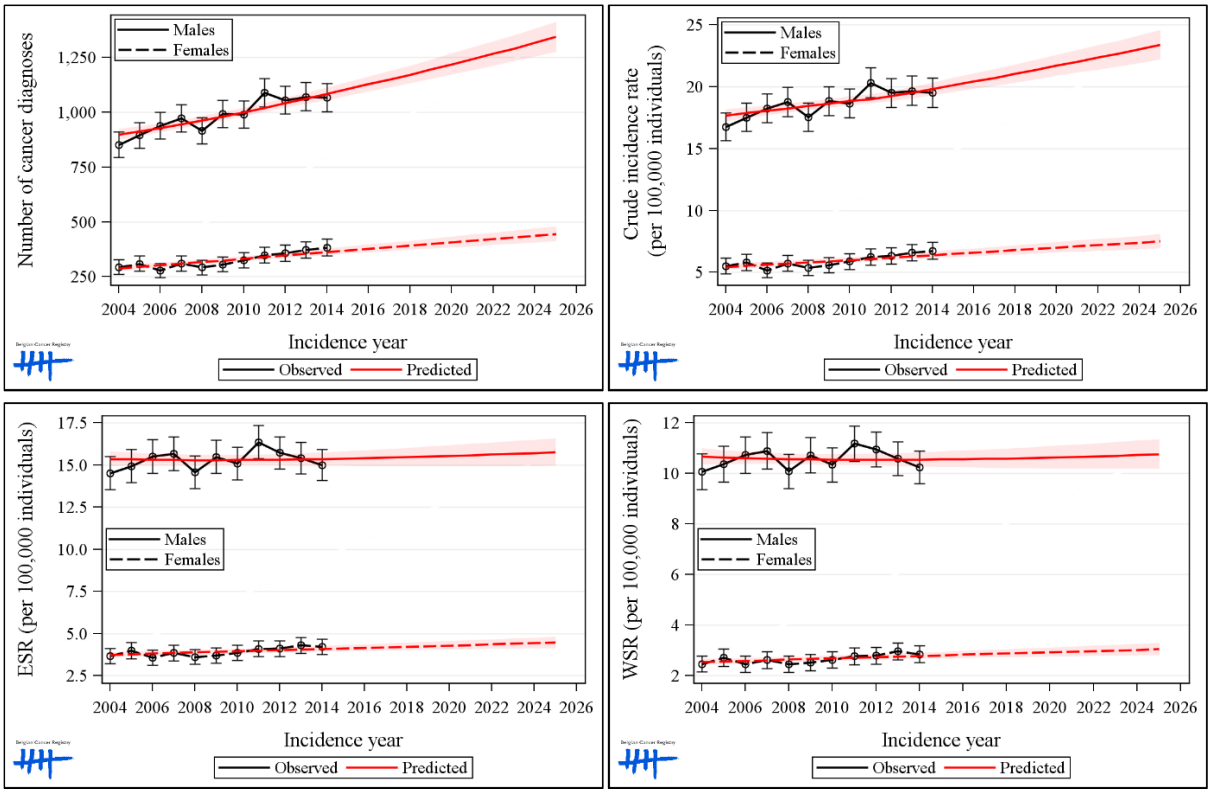
- In the period 2014 to 2025, the yearly number of new oesophageal cancer diagnoses in Belgium is projected to rise from 1,451 to 1,790, an increase of about 24%.
- In males, the incidence projection 2014-2025 runs from 1,068 to 1,344, an increase of about 26%.
- In females, the projected incidence 2014-2025 rises from 383 to 445, an increase of 16%, a lower relative increase compared to males.
- The projected increase in number of diagnoses from 2014 to 2025 can be found in the 50-74 years and 75+ years age groups, while a weak decrease in the youngest age group (30-49 years) is expected for both sexes.

- No difference in the age-standardised cancer incidence rate (WSR) in males is expected between 2014 and 2025, reaching 10.8 cases per 100,000 men. A slight decrease in age-specific incidence rate can be noted for males between 40 and 59 years of age, whereas an increase is expected from the age of 70 years onward.
- In females, a weak increase in the WSR from 2.9 to 3.0 cases per 100,000 women between 2014 and 2025 is expected. The age-specific incidence rate is projected to increase from the age of 60 years onward.

- As there is no increase in oesophageal cancer risk expected in males, the projected increasing incidence count in males is attributed to the ageing and growing population.
- Both the slightly increasing cancer risk and the ageing and growing female population drive the increase in the projected number of new oesophageal cancer diagnoses in females.

4.3.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 11: Oesophageal cancer: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.3.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 8: Oesophageal cancer: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Oesophageal cancer							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Males								
2015	1,106	[1,075; 1,137]	20.1	[19.5; 20.7]	15.4	[14.9; 15.8]	10.5	[10.2; 10.9]
2016	1,128	[1,094; 1,163]	20.4	[19.8; 21.0]	15.4	[14.9; 15.9]	10.6	[10.2; 10.9]
2017	1,150	[1,112; 1,187]	20.7	[20.0; 21.4]	15.4	[14.9; 15.9]	10.6	[10.2; 10.9]
2018	1,172	[1,131; 1,213]	21.0	[20.3; 21.8]	15.5	[14.9; 16.0]	10.6	[10.2; 11.0]
2019	1,195	[1,151; 1,240]	21.4	[20.6; 22.2]	15.5	[14.9; 16.1]	10.6	[10.2; 11.0]
2020	1,220	[1,172; 1,268]	21.7	[20.8; 22.6]	15.5	[14.9; 16.1]	10.6	[10.2; 11.1]
2021	1,244	[1,192; 1,296]	22.0	[21.1; 22.9]	15.6	[14.9; 16.2]	10.6	[10.2; 11.1]
2022	1,268	[1,212; 1,323]	22.3	[21.4; 23.3]	15.6	[14.9; 16.3]	10.7	[10.2; 11.2]
2023	1,292	[1,233; 1,351]	22.7	[21.6; 23.7]	15.7	[14.9; 16.4]	10.7	[10.2; 11.2]
2024	1,317	[1,254; 1,381]	23.0	[21.9; 24.1]	15.7	[14.9; 16.5]	10.7	[10.2; 11.3]
2025	1,344	[1,276; 1,413]	23.4	[22.2; 24.6]	15.8	[14.9; 16.6]	10.8	[10.2; 11.3]
Trend	↗		↗		–		–	
Females								
2015	371	[355; 387]	6.5	[6.2; 6.8]	4.1	[3.9; 4.3]	2.8	[2.7; 2.9]
2016	378	[360; 396]	6.6	[6.3; 6.9]	4.2	[4.0; 4.4]	2.8	[2.7; 3.0]
2017	385	[366; 405]	6.7	[6.4; 7.0]	4.2	[4.0; 4.4]	2.9	[2.7; 3.0]
2018	392	[371; 413]	6.8	[6.4; 7.2]	4.2	[4.0; 4.4]	2.9	[2.7; 3.0]
2019	400	[377; 422]	6.9	[6.5; 7.3]	4.3	[4.0; 4.5]	2.9	[2.7; 3.1]
2020	407	[383; 432]	7.0	[6.6; 7.4]	4.3	[4.0; 4.5]	2.9	[2.7; 3.1]
2021	415	[388; 441]	7.1	[6.7; 7.6]	4.3	[4.1; 4.6]	3.0	[2.8; 3.1]
2022	422	[394; 450]	7.2	[6.7; 7.7]	4.4	[4.1; 4.6]	3.0	[2.8; 3.2]
2023	429	[399; 458]	7.3	[6.8; 7.8]	4.4	[4.1; 4.7]	3.0	[2.8; 3.2]
2024	437	[405; 469]	7.4	[6.9; 7.9]	4.4	[4.1; 4.7]	3.0	[2.8; 3.3]
2025	445	[411; 479]	7.5	[6.9; 8.1]	4.5	[4.1; 4.8]	3.0	[2.8; 3.3]
Trend	↗		↗		↗		↗	

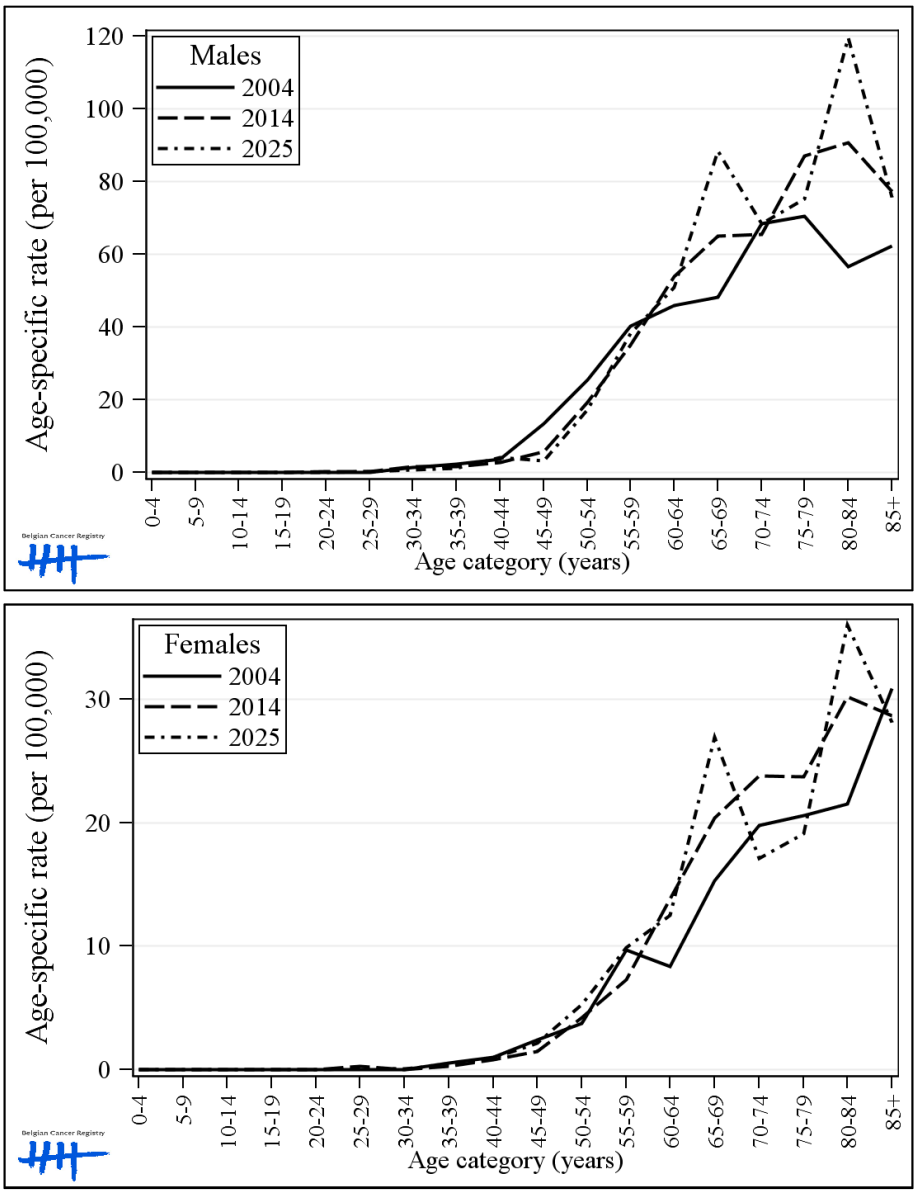
4.3.3. Number of new diagnoses by age group projected to 2025

Table 9: Oesophageal cancer: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Oesophageal cancer					
	Projected number of cases					
	30-49 years		50-74 years		75+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Males						
2015	50	[43; 56]	741	[715; 766]	314	[298; 331]
2016	47	[41; 54]	760	[731; 788]	320	[302; 338]
2017	45	[38; 52]	780	[749; 811]	323	[304; 342]
2018	43	[36; 50]	799	[765; 833]	329	[308; 350]
2019	41	[34; 48]	815	[778; 852]	338	[315; 361]
2020	39	[33; 46]	830	[790; 870]	349	[323; 374]
2021	38	[31; 45]	846	[803; 889]	359	[332; 386]
2022	37	[30; 43]	856	[809; 903]	374	[345; 402]
2023	35	[29; 42]	866	[816; 917]	388	[358; 419]
2024	34	[28; 41]	877	[823; 931]	405	[372; 438]
2025	34	[27; 40]	888	[830; 945]	422	[386; 458]
Trend	↘		↗		↗	
Females						
2015	14	[12; 16]	202	[190; 214]	155	[144; 166]
2016	14	[12; 16]	208	[195; 221]	156	[144; 168]
2017	14	[12; 16]	214	[200; 229]	157	[144; 170]
2018	14	[12; 16]	220	[205; 236]	158	[144; 172]
2019	14	[11; 16]	226	[209; 242]	160	[145; 175]
2020	14	[11; 16]	231	[213; 249]	163	[147; 179]
2021	13	[11; 15]	236	[216; 256]	165	[148; 182]
2022	13	[11; 15]	240	[219; 262]	168	[150; 186]
2023	13	[11; 15]	244	[221; 267]	171	[153; 190]
2024	13	[11; 15]	248	[223; 273]	175	[155; 195]
2025	13	[11; 15]	252	[226; 279]	180	[158; 201]
Trend	↘		↗		↗	

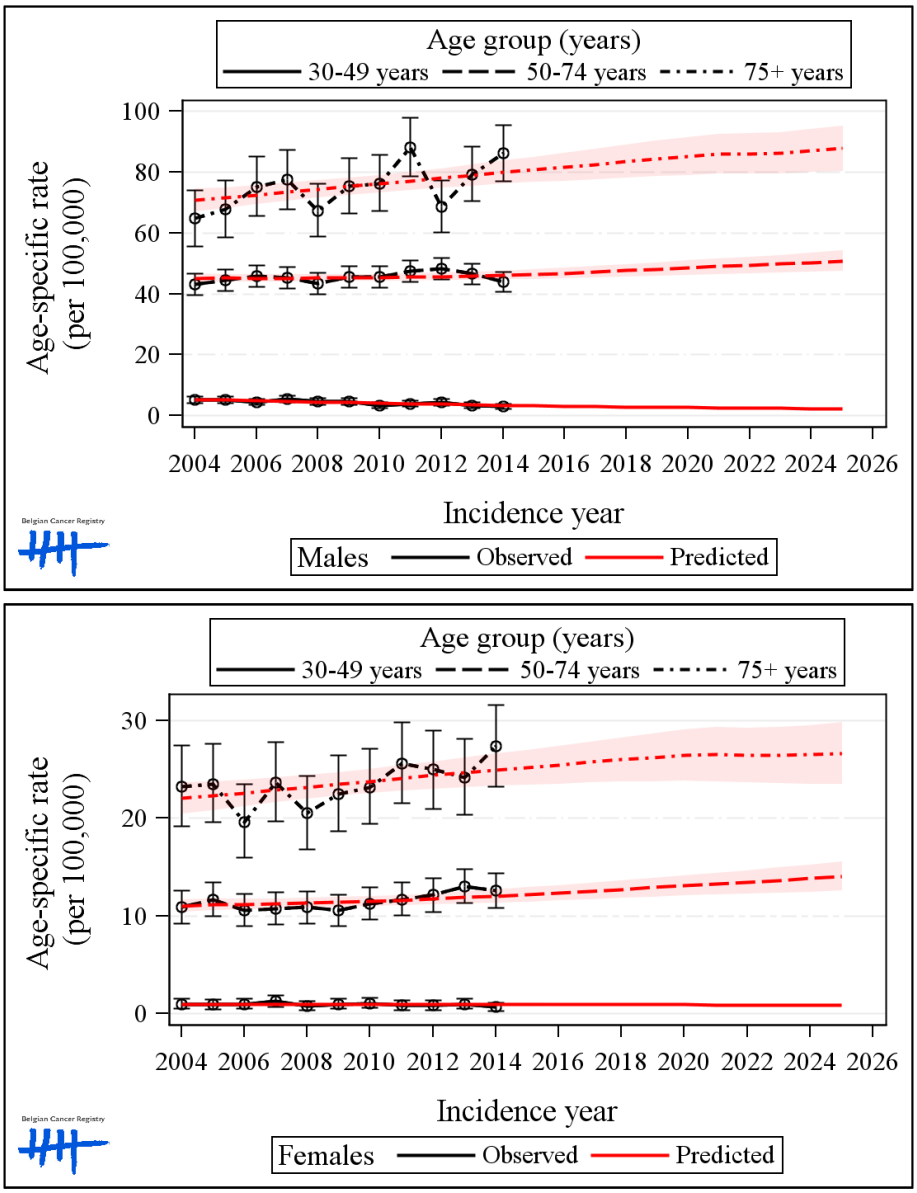
4.3.4. Observed and projected age-specific incidence rates

Figure 12: Oesophageal cancer: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.3.5. Trends in age-specific incidence rates

Figure 13: Oesophageal cancer: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.4. Stomach cancer (C16.1-C16.9)

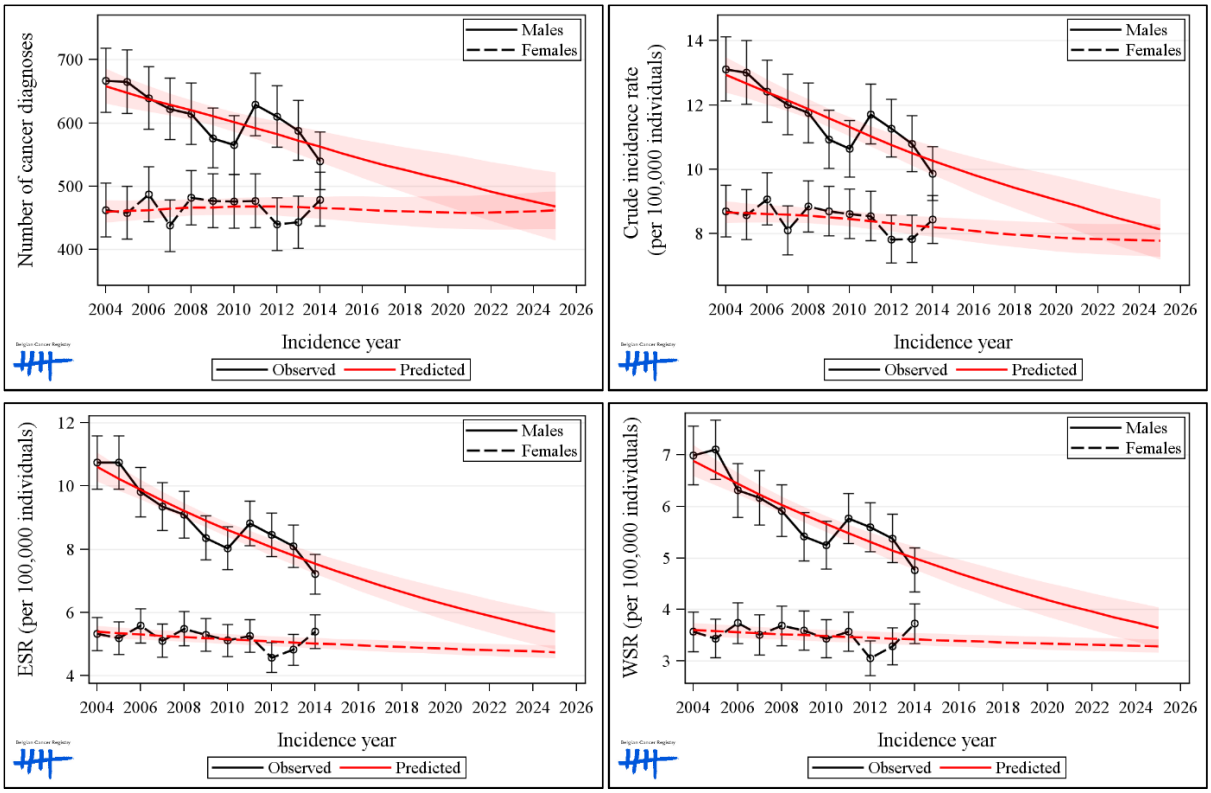
- In the period 2014 to 2025, the yearly number of new gastric cancer diagnoses in Belgium is projected to drop from 1,019 to 930, a decline of 8.7%.
- In males, the incidence projection 2014-2025 runs from 540 to 468 new cases, a decrease of about 13%. This decrease can be expected in the younger (30-59 years) and older (75+ years) age groups.
- No trend is expected in the projected incidence count 2014-2025 in females, with a projected yearly incidence count of about 460 cases. The projected number of diagnoses from 2014 to 2025 show a slight decrease in the youngest (30-59 years) and oldest (75+ years) age groups, whereas an increase is expected in the 60-74 years age group. By 2025, the overall projected number of cases for both sexes is expected to be the same.

- The age-standardised cancer incidence rate (WSR) in males will decrease from 4.8 to 3.6 cases per 100,000 men between 2014 and 2025, a decrease of 25%. A decrease in age-specific incidence rate in males is expected from the age of 60 years onward.
- In females, the WSR is expected to decrease from 3.7 to 3.3 cases per 100,000 women between 2014 and 2025, a decrease of 11%. The age-specific incidence rate in females shows a decrease at the age of 80 years onward.

- In males, the strong decrease in projected stomach cancer risk from 2014 to 2025 results in a decrease in the projected incidence count in that time period.
- In females, the slight decrease in stomach cancer risk combined with an aging and growing population result in a more or less constant projected incidence count from 2014 to 2025.

4.4.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 14: Stomach cancer: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.4.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 10: Stomach cancer: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Stomach cancer							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Males								
2015	553	[526; 580]	10.0	[9.6; 10.5]	7.3	[7.0; 7.7]	4.8	[4.6; 5.1]
2016	543	[513; 573]	9.8	[9.3; 10.4]	7.1	[6.7; 7.5]	4.7	[4.4; 5.0]
2017	534	[501; 567]	9.6	[9.0; 10.2]	6.9	[6.4; 7.3]	4.6	[4.3; 4.8]
2018	525	[490; 561]	9.4	[8.8; 10.1]	6.6	[6.2; 7.1]	4.4	[4.1; 4.7]
2019	517	[479; 556]	9.2	[8.6; 9.9]	6.4	[6.0; 6.9]	4.3	[4.0; 4.6]
2020	509	[468; 551]	9.1	[8.3; 9.8]	6.3	[5.8; 6.7]	4.2	[3.9; 4.5]
2021	501	[457; 545]	8.9	[8.1; 9.6]	6.1	[5.6; 6.6]	4.1	[3.7; 4.4]
2022	492	[445; 538]	8.7	[7.9; 9.5]	5.9	[5.4; 6.4]	4.0	[3.6; 4.3]
2023	484	[435; 532]	8.5	[7.6; 9.3]	5.7	[5.2; 6.3]	3.8	[3.5; 4.2]
2024	476	[424; 527]	8.3	[7.4; 9.2]	5.6	[5.0; 6.1]	3.7	[3.4; 4.1]
2025	468	[415; 522]	8.1	[7.2; 9.1]	5.4	[4.8; 6.0]	3.6	[3.3; 4.0]
Trend	↘		↘		↘		↘	
Females								
2015	465	[446; 483]	8.2	[7.8; 8.5]	5.0	[4.8; 5.2]	3.4	[3.3; 3.5]
2016	463	[443; 483]	8.1	[7.7; 8.4]	5.0	[4.8; 5.1]	3.4	[3.3; 3.5]
2017	461	[440; 483]	8.0	[7.7; 8.4]	4.9	[4.8; 5.1]	3.4	[3.3; 3.5]
2018	460	[437; 483]	8.0	[7.6; 8.4]	4.9	[4.7; 5.1]	3.4	[3.2; 3.5]
2019	459	[435; 484]	7.9	[7.5; 8.4]	4.9	[4.7; 5.1]	3.4	[3.2; 3.5]
2020	459	[433; 484]	7.9	[7.5; 8.3]	4.9	[4.7; 5.0]	3.3	[3.2; 3.5]
2021	458	[432; 485]	7.9	[7.4; 8.3]	4.8	[4.6; 5.0]	3.3	[3.2; 3.5]
2022	459	[432; 486]	7.8	[7.4; 8.3]	4.8	[4.6; 5.0]	3.3	[3.2; 3.4]
2023	460	[432; 488]	7.8	[7.3; 8.3]	4.8	[4.6; 5.0]	3.3	[3.2; 3.4]
2024	461	[432; 490]	7.8	[7.3; 8.3]	4.8	[4.6; 5.0]	3.3	[3.2; 3.4]
2025	462	[432; 492]	7.8	[7.3; 8.3]	4.8	[4.6; 5.0]	3.3	[3.2; 3.4]
Trend	–		↘		↘		↘	

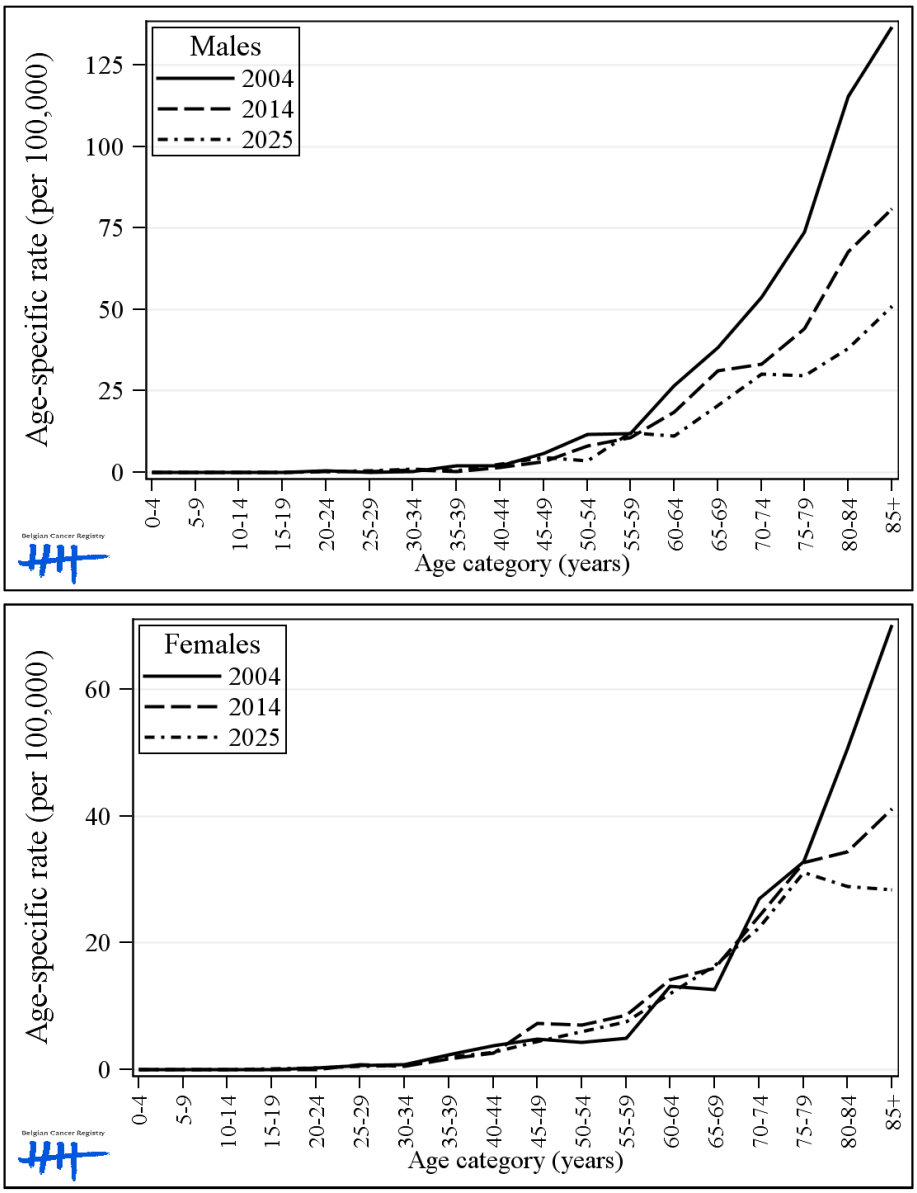
4.4.3. Number of new diagnoses by age group projected to 2025

Table 11: Stomach cancer: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Stomach cancer					
	Projected number of cases					
	30-59 years		60-74 years		75+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Males						
2015	104	[96; 113]	210	[192; 228]	236	[217; 254]
2016	103	[95; 112]	209	[189; 229]	227	[207; 248]
2017	102	[93; 111]	211	[188; 234]	218	[196; 240]
2018	101	[92; 110]	212	[186; 237]	210	[186; 233]
2019	100	[90; 109]	211	[183; 239]	204	[178; 229]
2020	98	[89; 108]	209	[179; 239]	198	[171; 225]
2021	97	[88; 107]	208	[176; 240]	193	[164; 221]
2022	96	[86; 105]	204	[170; 238]	189	[159; 219]
2023	94	[85; 104]	200	[164; 236]	186	[154; 218]
2024	92	[83; 102]	197	[159; 235]	183	[150; 216]
2025	91	[81; 100]	195	[155; 234]	180	[145; 215]
Trend	↘		–		↘	
Females						
2015	90	[85; 96]	142	[135; 149]	229	[213; 246]
2016	91	[85; 96]	145	[138; 153]	224	[206; 242]
2017	91	[85; 96]	150	[143; 158]	217	[198; 237]
2018	91	[85; 96]	155	[147; 163]	212	[191; 232]
2019	90	[85; 96]	158	[150; 167]	207	[185; 230]
2020	90	[84; 96]	162	[153; 170]	204	[181; 228]
2021	90	[84; 95]	165	[156; 173]	201	[176; 225]
2022	89	[83; 95]	166	[158; 175]	200	[175; 225]
2023	89	[83; 94]	168	[159; 176]	200	[174; 226]
2024	88	[83; 94]	170	[161; 178]	200	[173; 227]
2025	87	[82; 93]	172	[163; 181]	199	[171; 227]
Trend	↘		↗		↘	

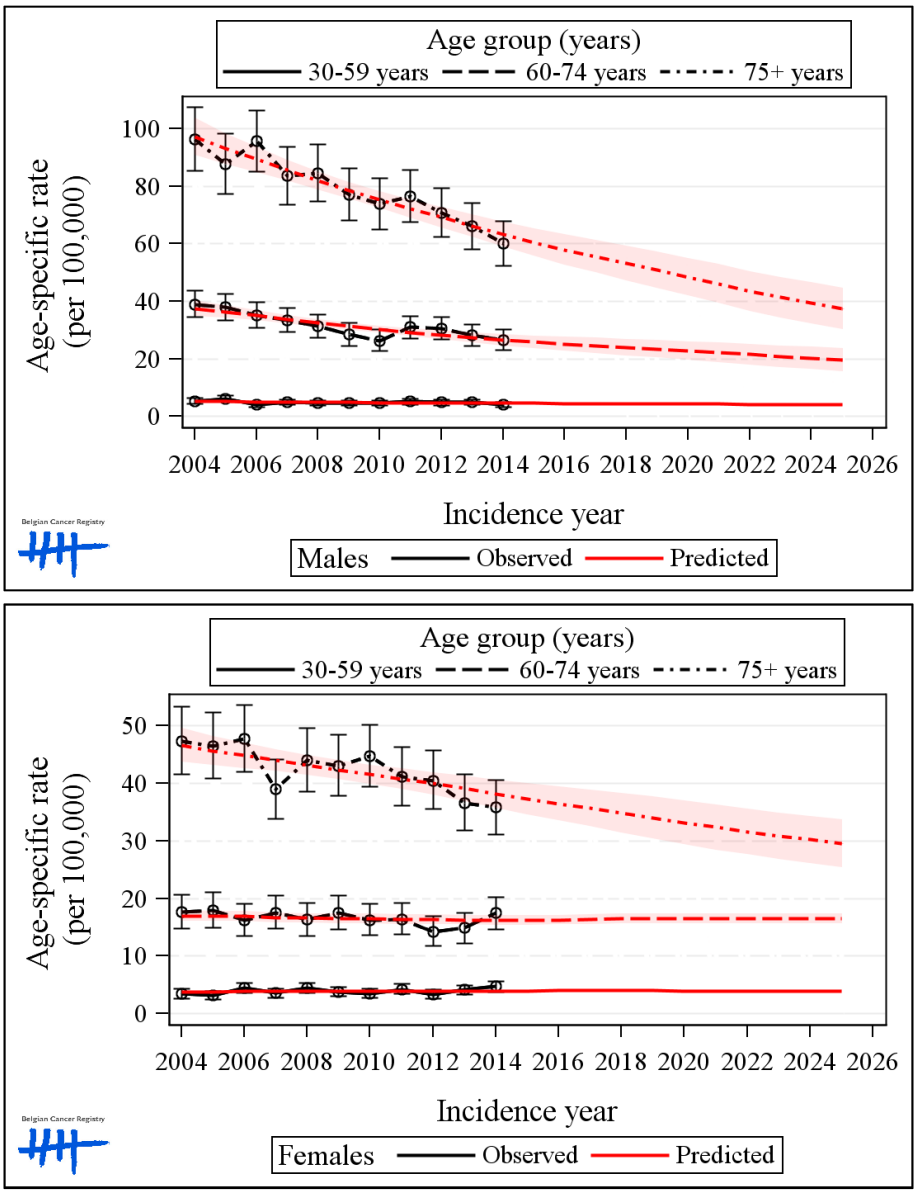
4.4.4. Observed and projected age-specific incidence rates

Figure 15: Stomach cancer: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.4.5. Trends in age-specific incidence rates

Figure 16: Stomach cancer: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.5. Colon cancer (C18-C19)

The yearly number of new colon diagnoses in males increased from 3,297 in 2013 to 3,931 in 2014, an increase of about 630, while the average yearly increase over the 2004-2013 period was only about 50. The number of new colon diagnoses in females increased from 2,919 in 2013 to 3,173 in 2014, an increase of about 250, while the average yearly increase over the 2004-2013 period was only about 30.

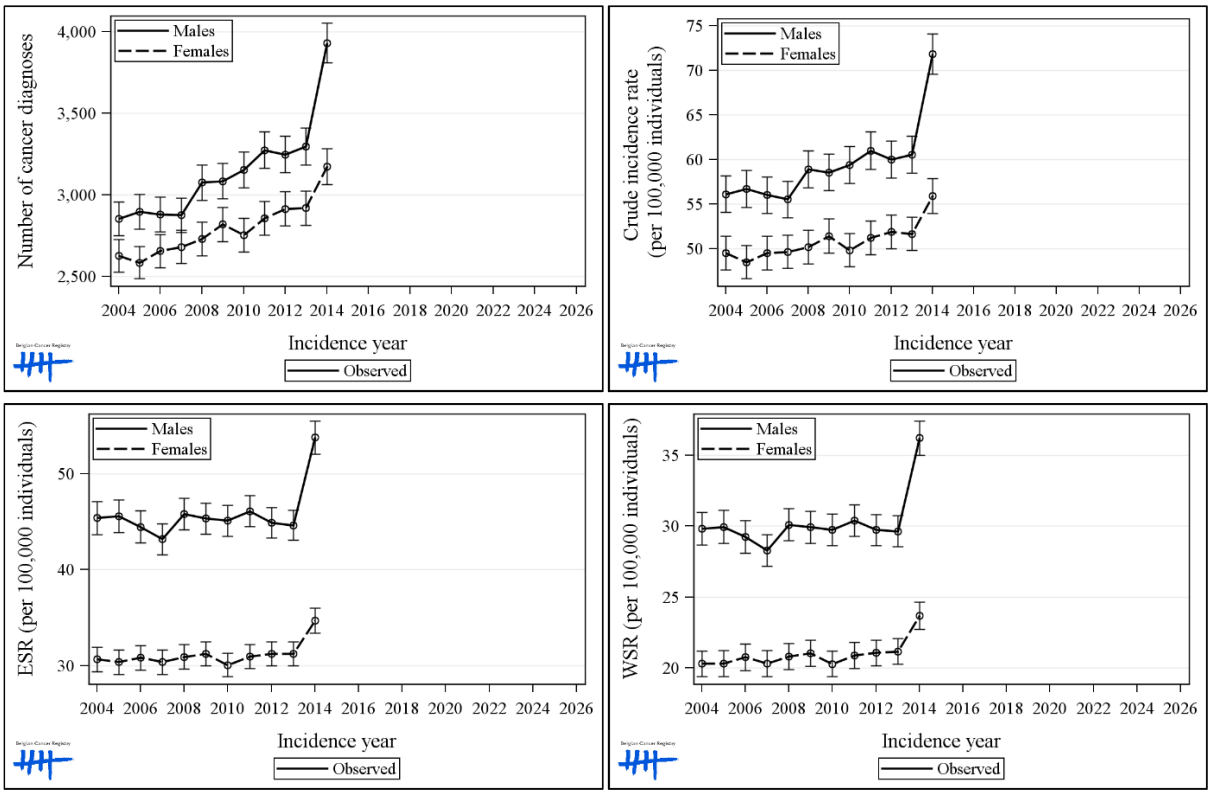
This sharp increase in yearly colon cancer incidence in both males and females can be attributed to the implementation of the Flemish regional screening program. Indeed, from 2013 to 2014, the age-specific incidence rate in both males and females increased mainly in the 55-74 age groups, the screening target population.

As a result, the model assumption of a constant trend in the crude cancer incidence rate over the 2004 to 2014 interval is violated and **no valid projection results** could therefore be obtained for colon cancer with the methods applied in this study. The coming years will show how this increase will further evolve.

Therefore, only observed incidence numbers for the incidence period 2004-2014 are given in the tables and figures.

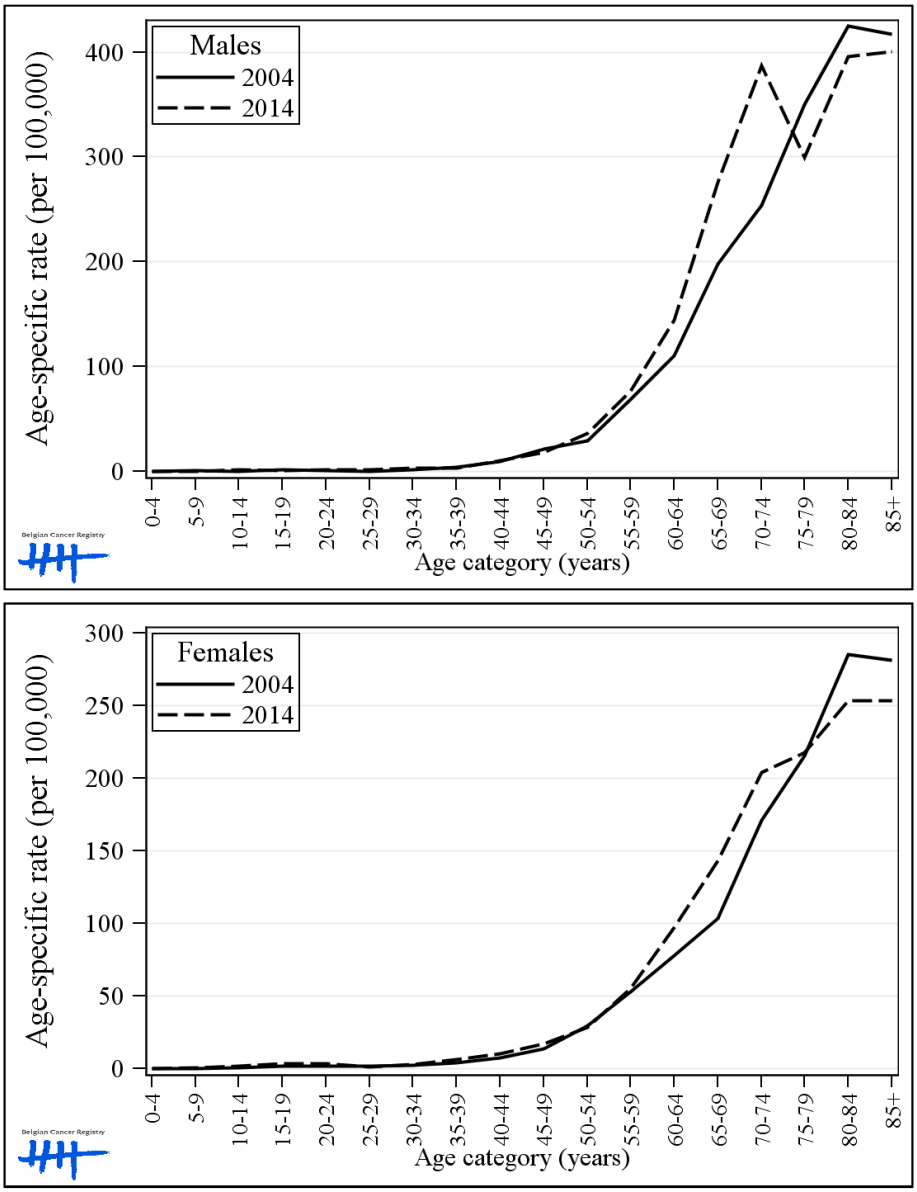
4.5.1. Trends in observed number of new diagnoses, crude and age-standardised rates

Figure 17: Colon cancer: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014.



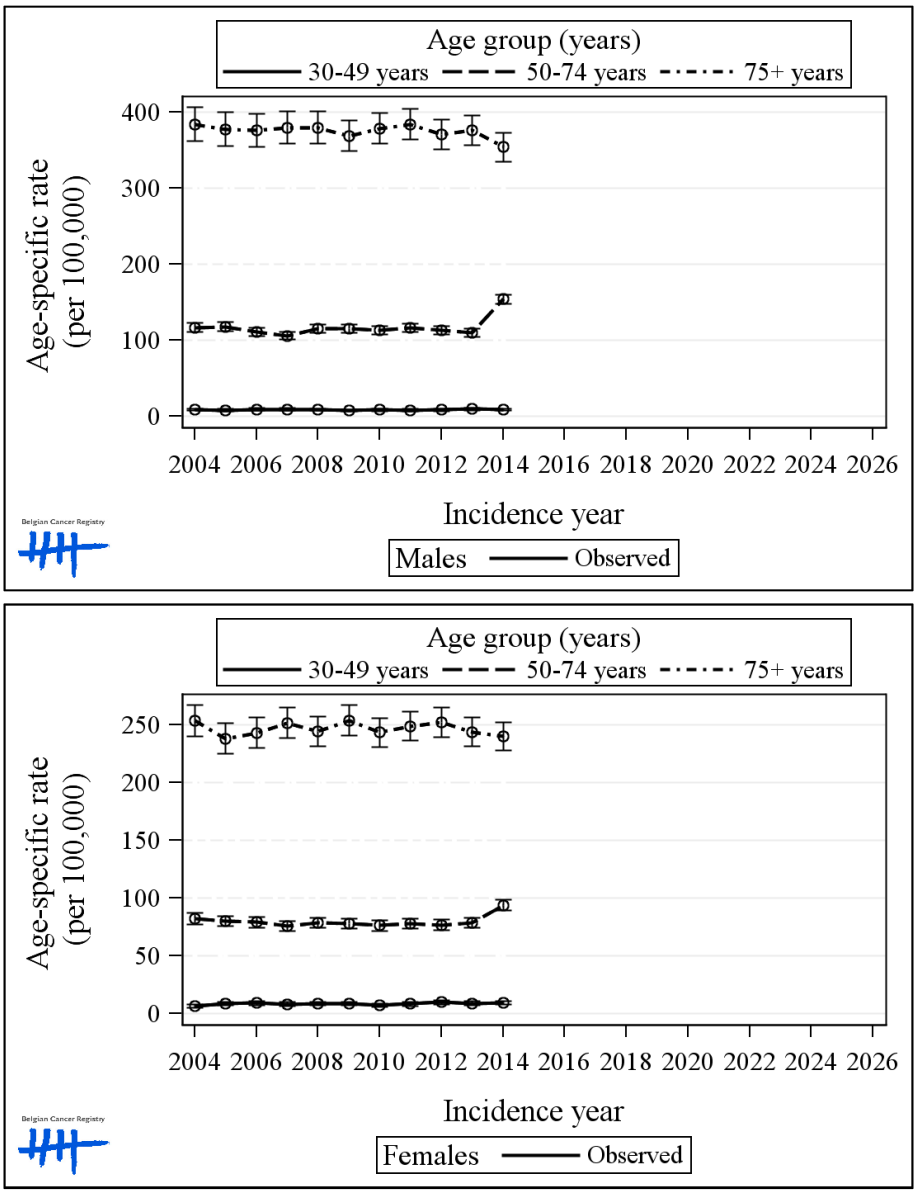
4.5.2. Observed age-specific incidence rates

Figure 18: Colon cancer: Observed age-specific incidence rates for males (top) and females (bottom).



4.5.3. Trends in age-specific incidence rates

Figure 19: Colon cancer: Trends in age-specific incidence rates by age group for the years 2004 to 2014 for males (top) and females (bottom).



4.6. Rectal cancer (C20)

- In the period 2014 to 2025, the yearly number of new rectal cancer diagnoses in Belgium is projected to rise from 2,590 to 3,028, an increase of about 17%.
- In males, the incidence projection 2014-2025 runs from 1,644 to 1,961 cases, an increase of 19%. The increase in projected number of diagnoses in males from 2014 to 2025 can be found in the oldest (75+ years) and 50-74 year age groups, while a weak decrease in the youngest (30-49 years) age group is expected.
- In females, the incidence projection 2014-2025 runs from 946 to 1,067 diagnoses, an increase of about 13%. This increase in projected numbers of diagnosis can be found in the 50-74 year and 75+ year age groups. In the age group 30-49 years, no significant difference is expected. The projected incidence count for the year 2025 in females is half as large compared to males.

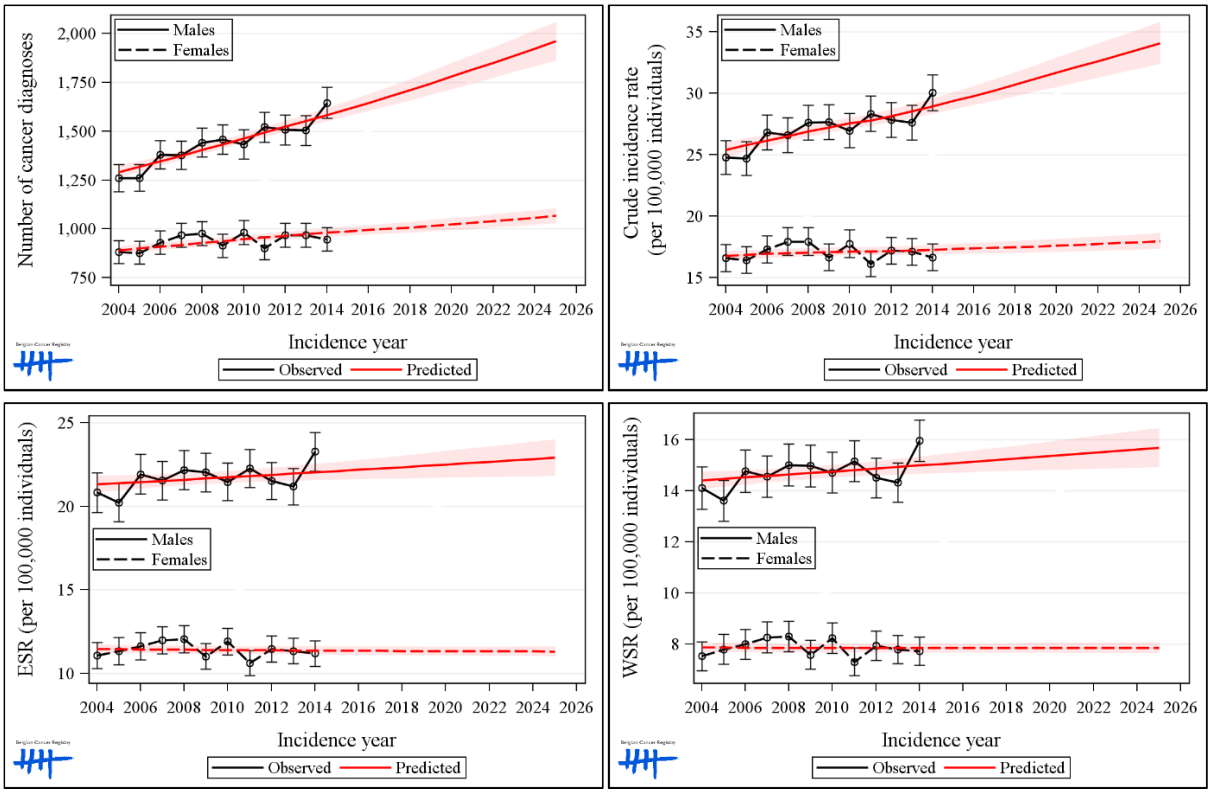
- The age-standardised cancer incidence rate (WSR) in males is projected to be about 16 cases per 100,000 men in 2025. An increase in age-specific incidence rate in males is expected from the age of 65 years onward.
- In contrast, the WSR in females is projected to remain stable between 2014 and 2025, about 7.8 cases per 100,000 women. This is half of the risk level as in males by 2025.

- Both the increasing cancer risk and the ageing and growing population drive the projected increase in the number of diagnosed rectal cancer cases in males.
- The rather stable cancer risk in females indicates that the projected increasing incidence count in females can be fully attributed to the ageing and growing female population.

- A clear increase in the number of colon cancer diagnoses was observed from 2013 to 2014 both in males and in females due to the implementation of the Flemish regional screening program (see §4.5). No increase in the number of rectal cancer cases from 2013 to 2014 can be seen in females due to this screening program. Rectal cancer incidence does increase in males from 2013 to 2014, however this increase is not extreme compared to the overall variation around the estimated trend line in rectal cancer incidence 2004-2014. We therefore are able to present cancer incidence projections for rectal cancer. The coming years will show if the 2013-2014 increase in rectal cancer incidence is the onset of a trend change or not.

4.6.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 20: Rectal cancer: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.6.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 12: Rectal cancer: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Rectal cancer							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Males								
2015	1,615	[1,577; 1,653]	29.4	[28.7; 30.0]	22.1	[21.6; 22.6]	15.0	[14.7; 15.4]
2016	1,646	[1,603; 1,688]	29.8	[29.0; 30.6]	22.2	[21.6; 22.8]	15.1	[14.7; 15.5]
2017	1,677	[1,629; 1,725]	30.2	[29.4; 31.1]	22.3	[21.6; 22.9]	15.2	[14.7; 15.6]
2018	1,711	[1,657; 1,764]	30.7	[29.7; 31.7]	22.3	[21.7; 23.0]	15.2	[14.8; 15.7]
2019	1,745	[1,685; 1,805]	31.2	[30.1; 32.2]	22.4	[21.7; 23.2]	15.3	[14.8; 15.8]
2020	1,780	[1,714; 1,846]	31.7	[30.5; 32.8]	22.5	[21.7; 23.3]	15.4	[14.8; 15.9]
2021	1,815	[1,743; 1,888]	32.1	[30.9; 33.4]	22.6	[21.7; 23.4]	15.4	[14.8; 16.0]
2022	1,851	[1,772; 1,929]	32.6	[31.2; 34.0]	22.7	[21.7; 23.6]	15.5	[14.8; 16.1]
2023	1,886	[1,802; 1,971]	33.1	[31.6; 34.6]	22.7	[21.8; 23.7]	15.5	[14.9; 16.2]
2024	1,923	[1,831; 2,014]	33.6	[32.0; 35.2]	22.8	[21.8; 23.9]	15.6	[14.9; 16.3]
2025	1,961	[1,862; 2,059]	34.1	[32.4; 35.8]	22.9	[21.8; 24.0]	15.7	[14.9; 16.4]
Trend	↗		↗		↗		↗	
Females								
2015	988	[965; 1,011]	17.3	[16.9; 17.7]	11.4	[11.1; 11.6]	7.8	[7.7; 8.0]
2016	995	[970; 1,019]	17.4	[17.0; 17.8]	11.4	[11.1; 11.6]	7.8	[7.7; 8.0]
2017	1,001	[975; 1,027]	17.4	[17.0; 17.9]	11.4	[11.1; 11.6]	7.8	[7.7; 8.0]
2018	1,008	[980; 1,035]	17.5	[17.0; 18.0]	11.4	[11.1; 11.6]	7.8	[7.7; 8.0]
2019	1,016	[986; 1,045]	17.5	[17.0; 18.0]	11.3	[11.1; 11.6]	7.8	[7.7; 8.0]
2020	1,024	[993; 1,054]	17.6	[17.1; 18.1]	11.3	[11.1; 11.6]	7.8	[7.7; 8.0]
2021	1,032	[1,000; 1,064]	17.7	[17.1; 18.2]	11.3	[11.1; 11.6]	7.8	[7.6; 8.0]
2022	1,040	[1,006; 1,074]	17.8	[17.2; 18.3]	11.3	[11.0; 11.6]	7.8	[7.6; 8.0]
2023	1,049	[1,014; 1,084]	17.8	[17.2; 18.4]	11.3	[11.0; 11.6]	7.8	[7.6; 8.0]
2024	1,058	[1,021; 1,094]	17.9	[17.3; 18.5]	11.3	[11.0; 11.6]	7.8	[7.6; 8.1]
2025	1,067	[1,029; 1,105]	18.0	[17.3; 18.6]	11.3	[11.0; 11.6]	7.8	[7.6; 8.1]
Trend	↗		↗		–		–	

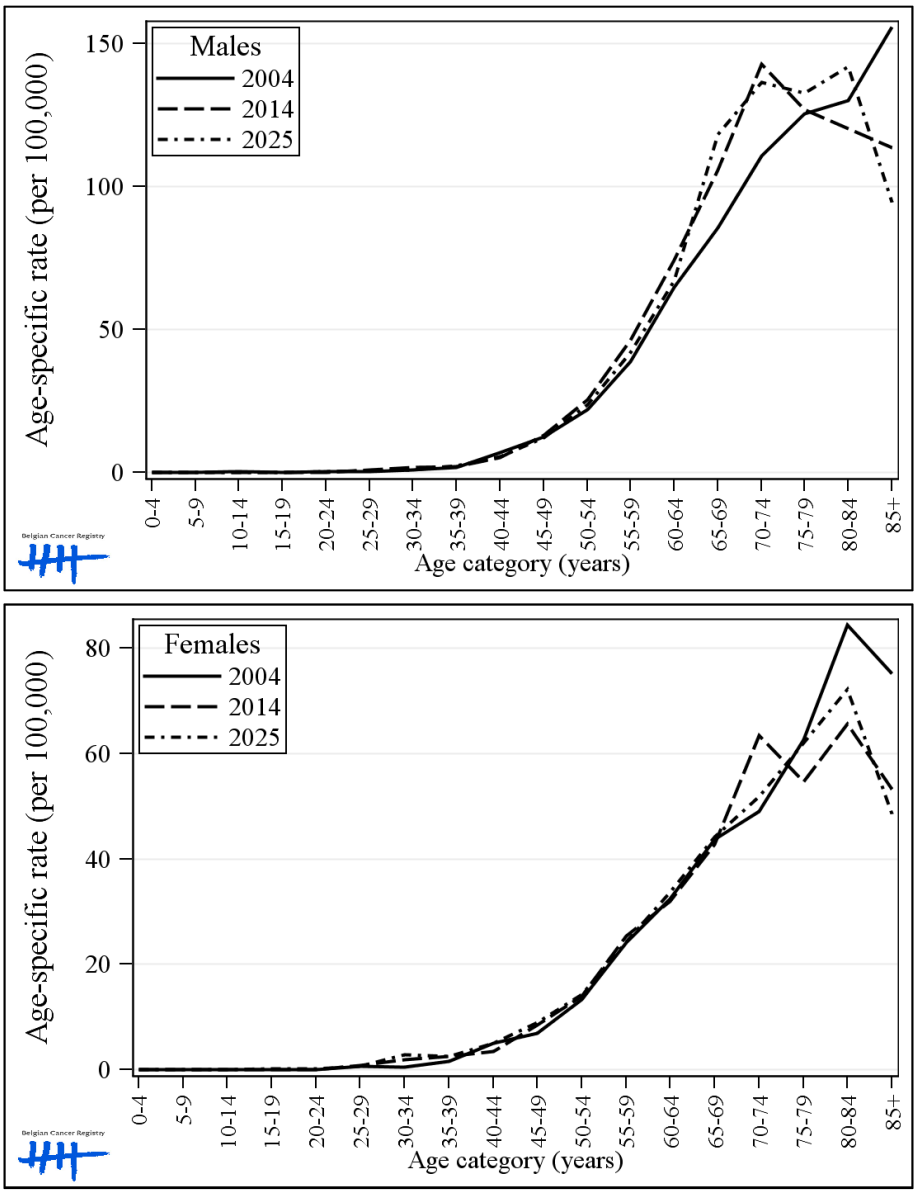
4.6.3. Number of new diagnoses by age group projected to 2025

Table 13: Rectal cancer: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Rectal cancer					
	Projected number of cases					
	30-49 years		50-74 years		75+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Males						
2015	81	[76; 87]	1,012	[980; 1,045]	517	[499; 536]
2016	81	[75; 86]	1,043	[1,006; 1,080]	518	[498; 539]
2017	80	[75; 85]	1,080	[1,038; 1,122]	514	[492; 536]
2018	79	[74; 84]	1,114	[1,066; 1,162]	514	[489; 538]
2019	79	[74; 84]	1,143	[1,090; 1,197]	520	[493; 546]
2020	78	[73; 83]	1,171	[1,111; 1,230]	528	[499; 557]
2021	77	[72; 82]	1,199	[1,134; 1,265]	536	[505; 566]
2022	76	[72; 81]	1,217	[1,146; 1,288]	554	[521; 587]
2023	76	[71; 81]	1,236	[1,159; 1,313]	571	[535; 606]
2024	76	[71; 81]	1,255	[1,172; 1,339]	588	[550; 626]
2025	76	[71; 81]	1,276	[1,187; 1,366]	605	[565; 645]
Trend	↘		↗		↗	
Females						
2015	69	[64; 75]	517	[503; 531]	399	[382; 416]
2016	69	[63; 75]	527	[513; 541]	396	[377; 414]
2017	69	[63; 75]	540	[525; 554]	389	[368; 410]
2018	69	[63; 75]	551	[536; 566]	384	[362; 407]
2019	69	[63; 75]	560	[544; 575]	383	[359; 408]
2020	69	[63; 76]	567	[552; 583]	384	[358; 410]
2021	69	[63; 76]	575	[559; 590]	384	[357; 412]
2022	69	[62; 76]	578	[563; 594]	389	[360; 418]
2023	70	[62; 77]	581	[566; 597]	394	[364; 425]
2024	70	[63; 78]	584	[568; 600]	400	[368; 432]
2025	71	[63; 79]	588	[572; 604]	405	[372; 439]
Trend	–		↗		–	

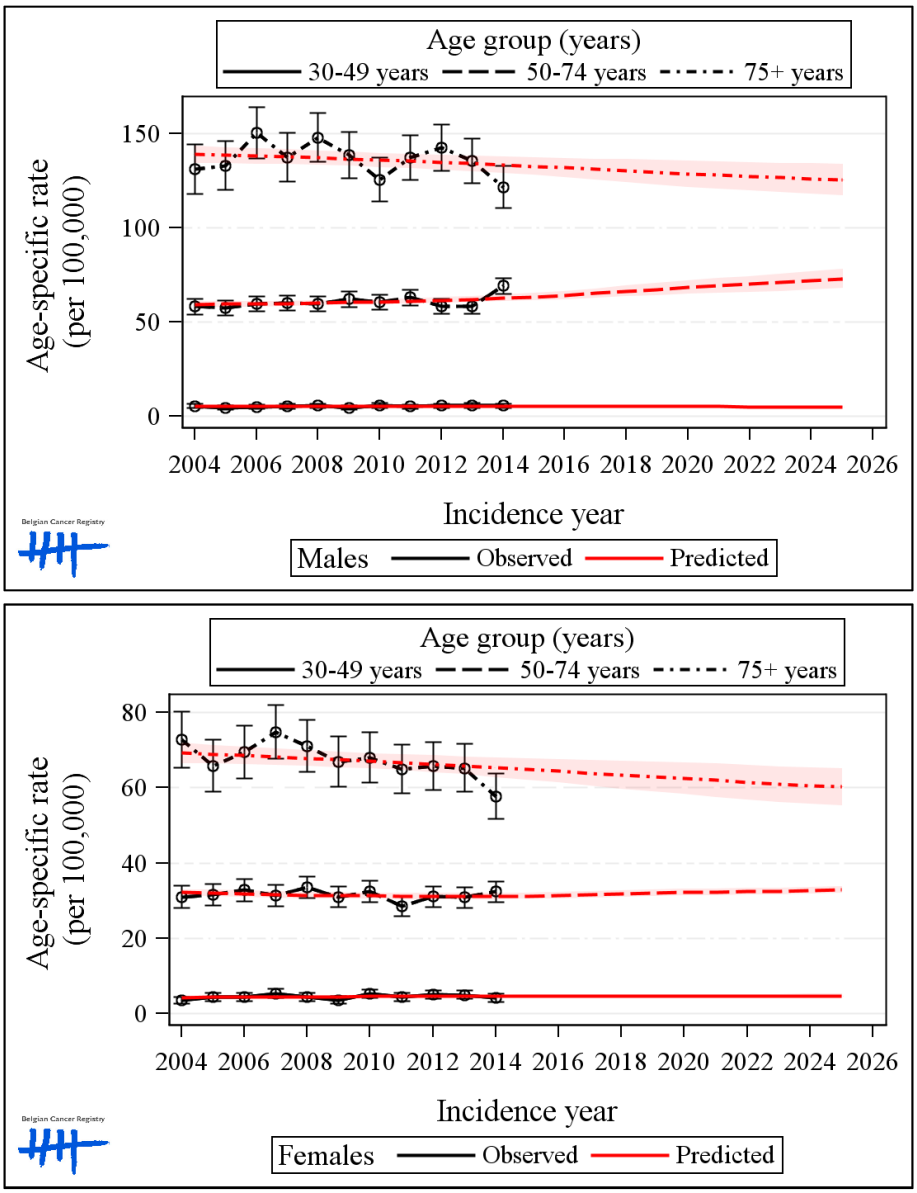
4.6.4. Observed and projected age-specific incidence rates

Figure 21: Rectal cancer: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.6.5. Trends in age-specific incidence rates

Figure 22: Rectal cancer: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.7. Liver cancer (C22)

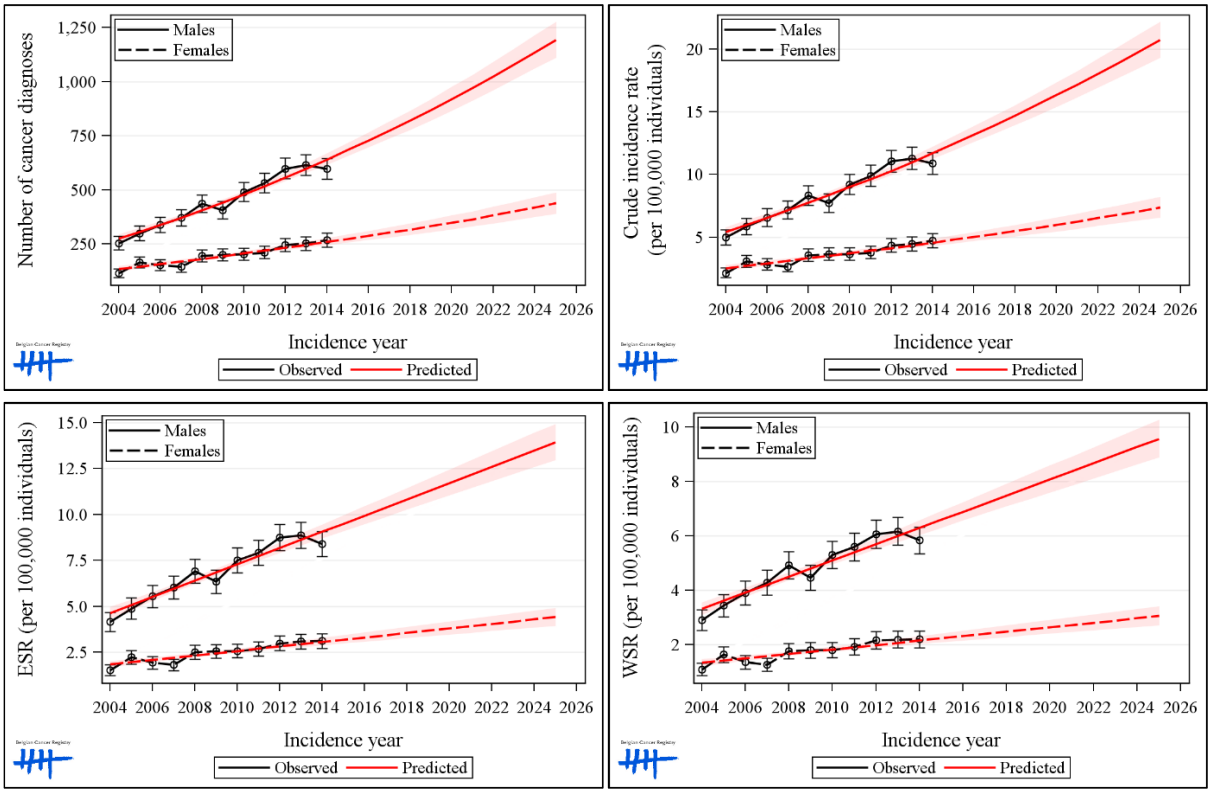
- The yearly number of new diagnoses of liver cancer in Belgium is projected to almost double from 864 in 2014 to 1,630 cases in 2025.
- The incidence 2014-2025 in males is expected to double from 596 to 1,192 new diagnoses.
- In females, the number of cases is expected to rise from 268 to 438, an increase of 63%.
- The number of liver cancer diagnoses in both males and females increases in the 50-74 years and 75+ years age groups. Under the age of 50 years, the number of new diagnoses of liver cancer is low and no major changes are expected by 2025.

- The age-standardised cancer incidence rates (WSR) between 2014 and 2025 will increase in males and females.
- The age-standardised cancer incidence rate (WSR) in males is expected to increase from 5.8 to 9.6 cases per 100,000 men, an increase of 66%.
- In females, the WSR is projected to increase from 2.2 to 3.0 cases per 100,000 women, an increase of 36%.

- The projected increasing liver cancer incidence count in males and females is for a large proportion attributed to a strong increasing cancer risk. The ageing and increasing population additionally contribute to the increase in the projected number of cases by 2025.

4.7.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 23: Liver cancer: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.7.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 14: Liver cancer: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Liver cancer							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Males								
2015	684	[654; 715]	12.4	[11.9; 13.0]	9.5	[9.1; 9.9]	6.6	[6.3; 6.9]
2016	729	[694; 764]	13.2	[12.6; 13.8]	9.9	[9.5; 10.4]	6.9	[6.5; 7.2]
2017	773	[734; 813]	13.9	[13.2; 14.6]	10.4	[9.9; 10.9]	7.2	[6.8; 7.6]
2018	820	[776; 864]	14.7	[13.9; 15.5]	10.8	[10.2; 11.4]	7.5	[7.1; 7.9]
2019	868	[819; 917]	15.5	[14.6; 16.4]	11.3	[10.6; 11.9]	7.8	[7.3; 8.2]
2020	918	[864; 973]	16.3	[15.4; 17.3]	11.7	[11.0; 12.4]	8.1	[7.6; 8.6]
2021	970	[910; 1,030]	17.2	[16.1; 18.2]	12.2	[11.4; 12.9]	8.4	[7.8; 8.9]
2022	1,024	[959; 1,089]	18.0	[16.9; 19.2]	12.6	[11.8; 13.4]	8.7	[8.1; 9.2]
2023	1,079	[1,008; 1,150]	18.9	[17.7; 20.2]	13.1	[12.2; 13.9]	9.0	[8.4; 9.6]
2024	1,135	[1,058; 1,212]	19.8	[18.5; 21.2]	13.5	[12.6; 14.4]	9.3	[8.6; 9.9]
2025	1,192	[1,109; 1,275]	20.7	[19.3; 22.2]	13.9	[13.0; 14.9]	9.6	[8.9; 10.3]
Trend	↗		↗		↗		↗	
Females								
2015	274	[256; 292]	4.8	[4.5; 5.1]	3.2	[3.0; 3.4]	2.2	[2.1; 2.4]
2016	288	[267; 309]	5.0	[4.7; 5.4]	3.3	[3.1; 3.6]	2.3	[2.1; 2.5]
2017	302	[279; 326]	5.3	[4.9; 5.7]	3.4	[3.2; 3.7]	2.4	[2.2; 2.6]
2018	317	[291; 343]	5.5	[5.0; 6.0]	3.6	[3.3; 3.8]	2.5	[2.3; 2.7]
2019	332	[303; 361]	5.7	[5.2; 6.2]	3.7	[3.4; 4.0]	2.6	[2.3; 2.8]
2020	348	[316; 380]	6.0	[5.4; 6.5]	3.8	[3.4; 4.1]	2.6	[2.4; 2.9]
2021	365	[330; 400]	6.3	[5.7; 6.8]	3.9	[3.5; 4.3]	2.7	[2.5; 3.0]
2022	383	[344; 421]	6.5	[5.9; 7.2]	4.0	[3.6; 4.4]	2.8	[2.5; 3.1]
2023	401	[359; 442]	6.8	[6.1; 7.5]	4.2	[3.7; 4.6]	2.9	[2.6; 3.2]
2024	419	[374; 464]	7.1	[6.3; 7.9]	4.3	[3.8; 4.8]	3.0	[2.6; 3.3]
2025	438	[389; 486]	7.4	[6.6; 8.2]	4.4	[3.9; 4.9]	3.0	[2.7; 3.4]
Trend	↗		↗		↗		↗	

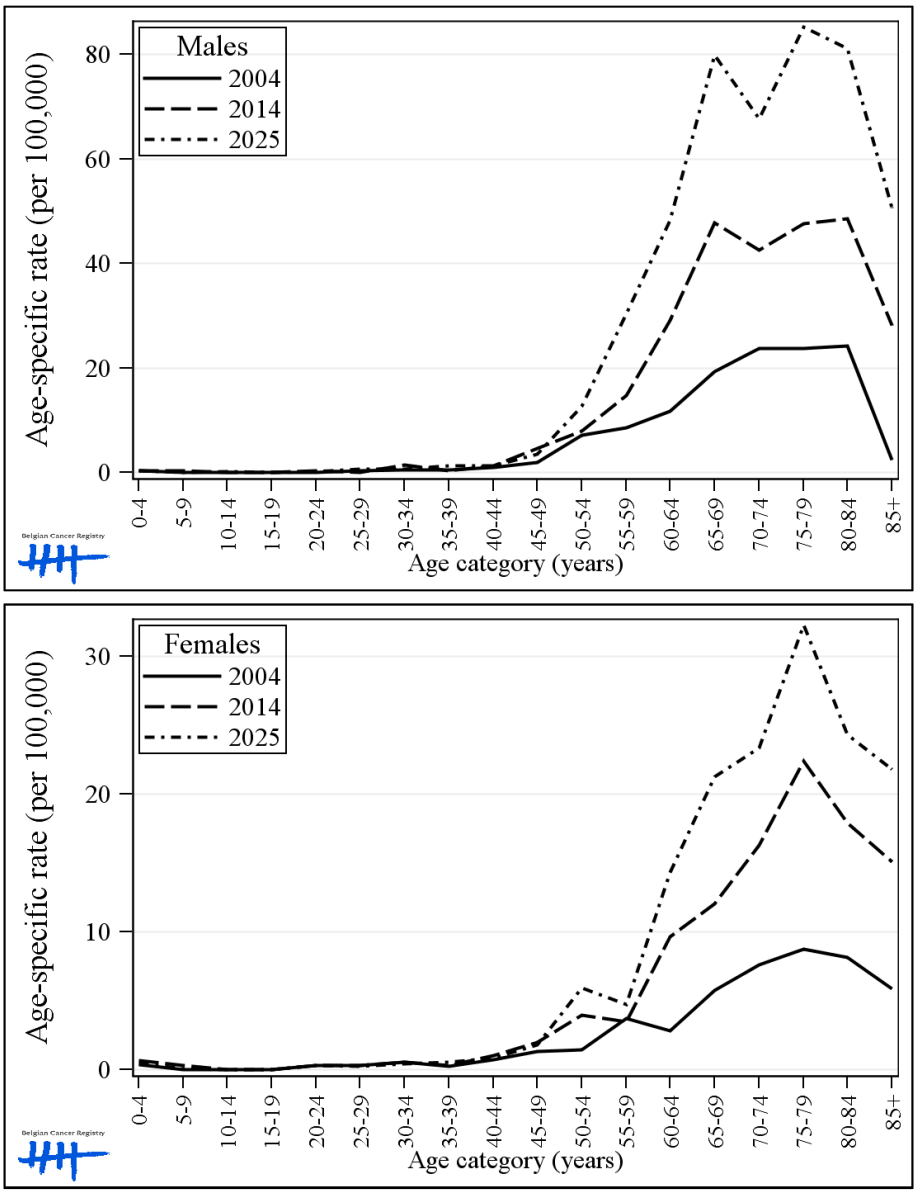
4.7.3. Number of new diagnoses by age group projected to 2025

Table 15: Liver cancer: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Liver cancer					
	Projected number of cases					
	30-49 years		50-74 years		75+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Males						
2015	26	[23; 29]	465	[439; 490]	189	[173; 205]
2016	26	[23; 28]	498	[468; 528]	200	[183; 218]
2017	25	[22; 28]	534	[500; 567]	210	[190; 229]
2018	25	[22; 28]	569	[531; 607]	221	[199; 242]
2019	25	[22; 28]	603	[561; 646]	235	[211; 259]
2020	25	[22; 28]	638	[591; 685]	251	[224; 278]
2021	25	[22; 27]	673	[621; 725]	268	[238; 297]
2022	24	[22; 27]	704	[648; 760]	291	[258; 324]
2023	24	[22; 27]	735	[675; 796]	314	[277; 351]
2024	24	[21; 27]	767	[702; 832]	338	[297; 379]
2025	24	[22; 27]	800	[731; 870]	363	[318; 407]
Trend	↘		↗		↗	
Females						
2015	14	[12; 16]	147	[134; 161]	109	[97; 121]
2016	14	[11; 16]	157	[141; 172]	114	[100; 127]
2017	14	[11; 16]	167	[149; 185]	118	[103; 133]
2018	14	[11; 16]	177	[157; 198]	122	[106; 139]
2019	13	[11; 16]	187	[164; 210]	128	[110; 146]
2020	13	[11; 16]	196	[171; 221]	134	[115; 154]
2021	13	[11; 15]	206	[179; 234]	141	[120; 163]
2022	13	[11; 15]	215	[185; 244]	151	[127; 175]
2023	13	[11; 15]	223	[191; 255]	160	[134; 186]
2024	13	[11; 15]	232	[197; 266]	170	[142; 198]
2025	13	[11; 15]	241	[204; 278]	179	[149; 210]
Trend	↘		↗		↗	

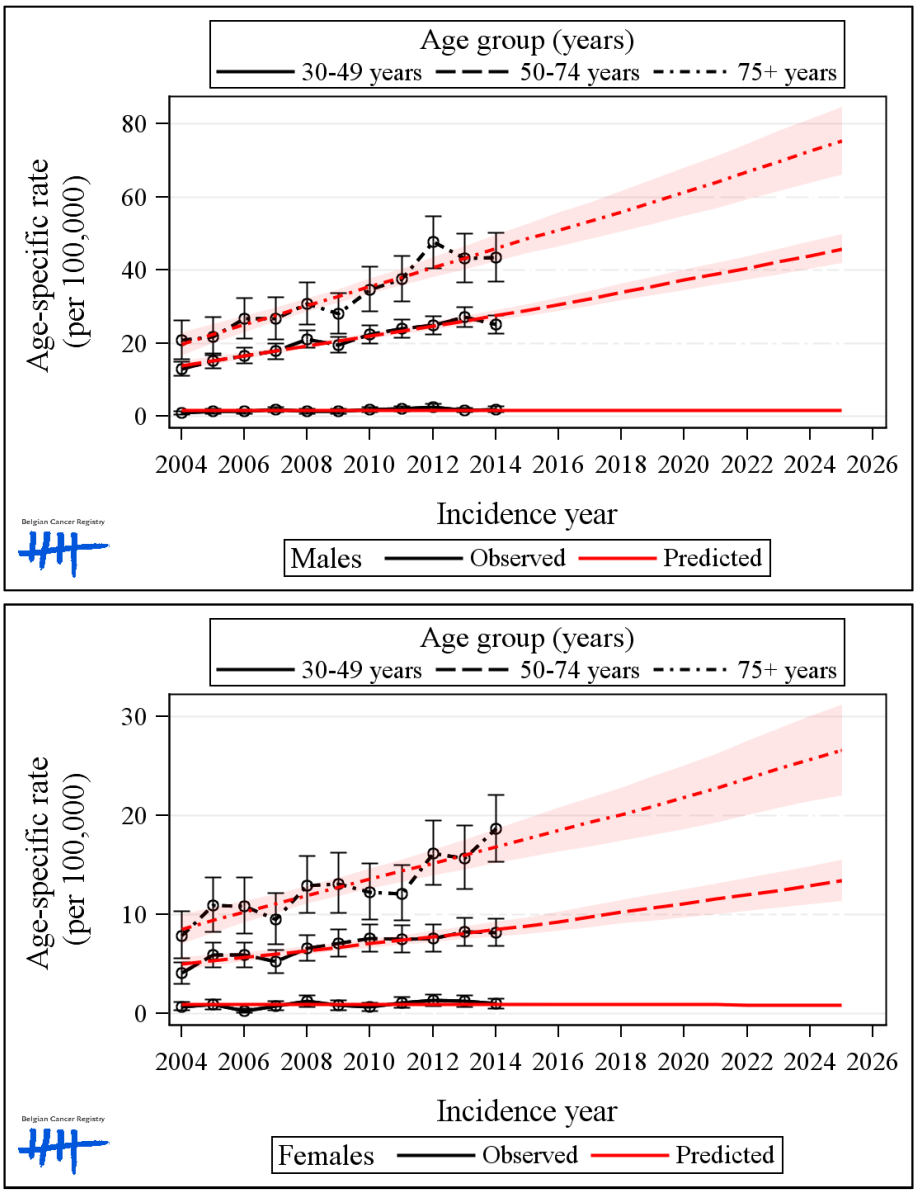
4.7.4. Observed and projected age-specific incidence rates

Figure 24: Liver cancer: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.7.5. Trends in age-specific incidence rates

Figure 25: Liver cancer: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.8. Cancer of the gallbladder and the biliary tract (C23-C24)

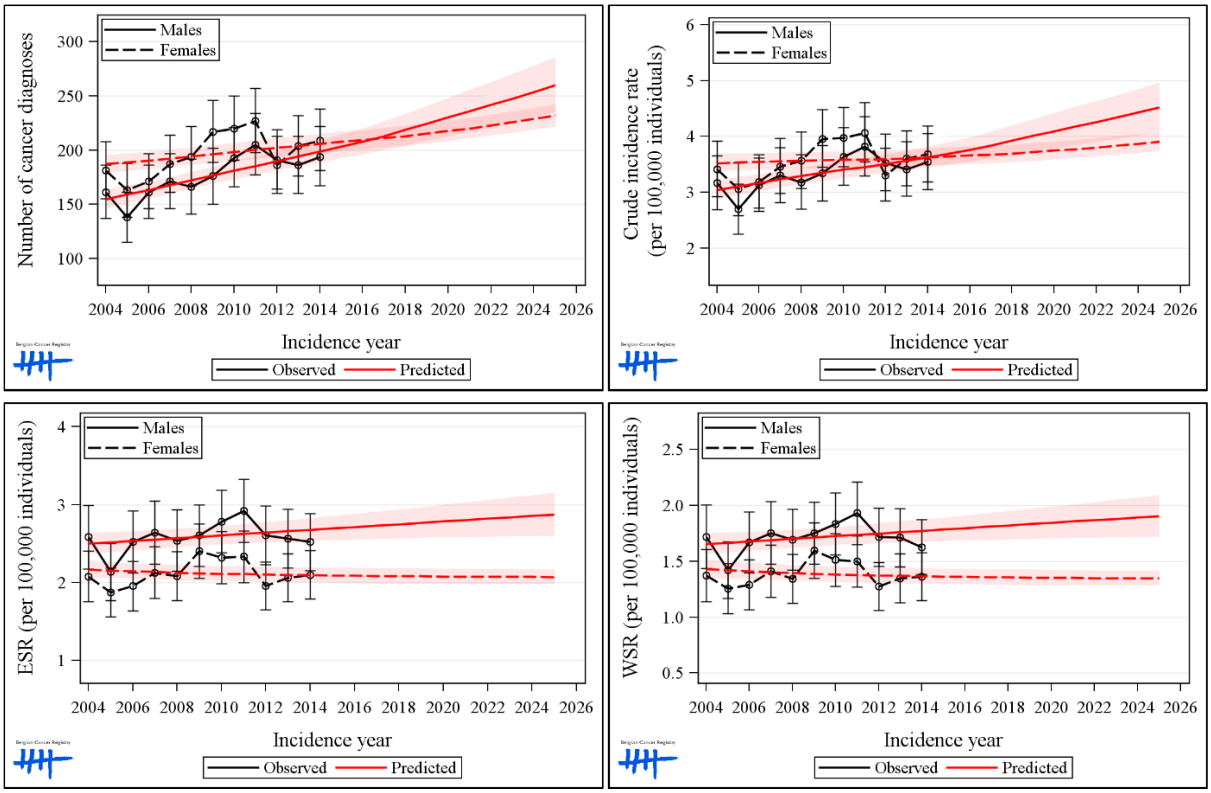
- In the period 2014 to 2025, the yearly number of new gallbladder and biliary tract cancers in Belgium is projected to rise from 403 to 492, an increase of about 22%.
- In males, the incidence projection 2014-2025 runs from 194 to 260, an increase of 34%. The increase in projected number of diagnoses in males from 2014 to 2025 is expected in the 2 oldest age groups (50-74 years and 75+ years).
- In females, the incidence projection 2014-2025 runs from 209 to 232, an increase of about 11%. The increase in projected number of diagnoses from 2014 to 2025 is, as in males, expected in the 50-74 years and 75+ years age groups.

- The age-standardised cancer incidence rate (WSR) in males is projected to increase from 1.6 to about 1.9 cases per 100,000 men between 2014 and 2025, an increase of 19%.
- In contrast, the WSR, in females is expected to slightly decrease from 1.4 to 1.3 cases per 100,000 women between 2014 and 2025, a decrease of 7.1%.

- Both the increasing cancer risk and the ageing and growing male population drive the projected increase in the number of diagnosed cancer cases in males from 2014 to 2025.
- The decreasing cancer risk for females indicates that the projected increasing incidence count can be fully attributed to the ageing and increasing female population from 2014 to 2025.
- The yearly number of diagnoses for cancer of the gallbladder and the biliary tract is relatively low (<250 cases), the projection results should be interpreted with caution.

4.8.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 26: Cancer of the gallbladder and the biliary tract: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.8.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 16: Cancer of the gallbladder and the biliary tract: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Cancer of the gallbladder and the biliary tract							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Males								
2015	203	[192; 214]	3.7	[3.5; 3.9]	2.7	[2.5; 2.8]	1.8	[1.7; 1.9]
2016	208	[196; 220]	3.8	[3.5; 4.0]	2.7	[2.6; 2.9]	1.8	[1.7; 1.9]
2017	213	[200; 226]	3.8	[3.6; 4.1]	2.7	[2.6; 2.9]	1.8	[1.7; 1.9]
2018	219	[204; 233]	3.9	[3.7; 4.2]	2.7	[2.6; 2.9]	1.8	[1.7; 1.9]
2019	224	[208; 241]	4.0	[3.7; 4.3]	2.8	[2.6; 3.0]	1.8	[1.7; 2.0]
2020	230	[212; 248]	4.1	[3.8; 4.4]	2.8	[2.6; 3.0]	1.8	[1.7; 2.0]
2021	236	[217; 256]	4.2	[3.8; 4.5]	2.8	[2.6; 3.0]	1.9	[1.7; 2.0]
2022	242	[221; 262]	4.3	[3.9; 4.6]	2.8	[2.6; 3.1]	1.9	[1.7; 2.0]
2023	248	[225; 270]	4.3	[4.0; 4.7]	2.8	[2.6; 3.1]	1.9	[1.7; 2.0]
2024	254	[230; 277]	4.4	[4.0; 4.8]	2.9	[2.6; 3.1]	1.9	[1.7; 2.1]
2025	260	[235; 285]	4.5	[4.1; 5.0]	2.9	[2.6; 3.2]	1.9	[1.7; 2.1]
Trend	↗		↗		↗		↗	
Females								
2015	208	[199; 217]	3.6	[3.5; 3.8]	2.1	[2.0; 2.2]	1.4	[1.3; 1.4]
2016	210	[201; 219]	3.7	[3.5; 3.8]	2.1	[2.0; 2.2]	1.4	[1.3; 1.4]
2017	211	[202; 220]	3.7	[3.5; 3.8]	2.1	[2.0; 2.2]	1.4	[1.3; 1.4]
2018	213	[204; 222]	3.7	[3.5; 3.9]	2.1	[2.0; 2.2]	1.4	[1.3; 1.4]
2019	215	[206; 225]	3.7	[3.6; 3.9]	2.1	[2.0; 2.2]	1.4	[1.3; 1.4]
2020	218	[208; 227]	3.7	[3.6; 3.9]	2.1	[2.0; 2.2]	1.4	[1.3; 1.4]
2021	220	[211; 230]	3.8	[3.6; 3.9]	2.1	[2.0; 2.2]	1.4	[1.3; 1.4]
2022	223	[213; 232]	3.8	[3.6; 4.0]	2.1	[2.0; 2.2]	1.4	[1.3; 1.4]
2023	226	[216; 235]	3.8	[3.7; 4.0]	2.1	[2.0; 2.2]	1.3	[1.3; 1.4]
2024	229	[219; 238]	3.9	[3.7; 4.0]	2.1	[2.0; 2.2]	1.3	[1.3; 1.4]
2025	232	[222; 242]	3.9	[3.7; 4.1]	2.1	[2.0; 2.2]	1.3	[1.3; 1.4]
Trend	↗		↗		↘		↘	

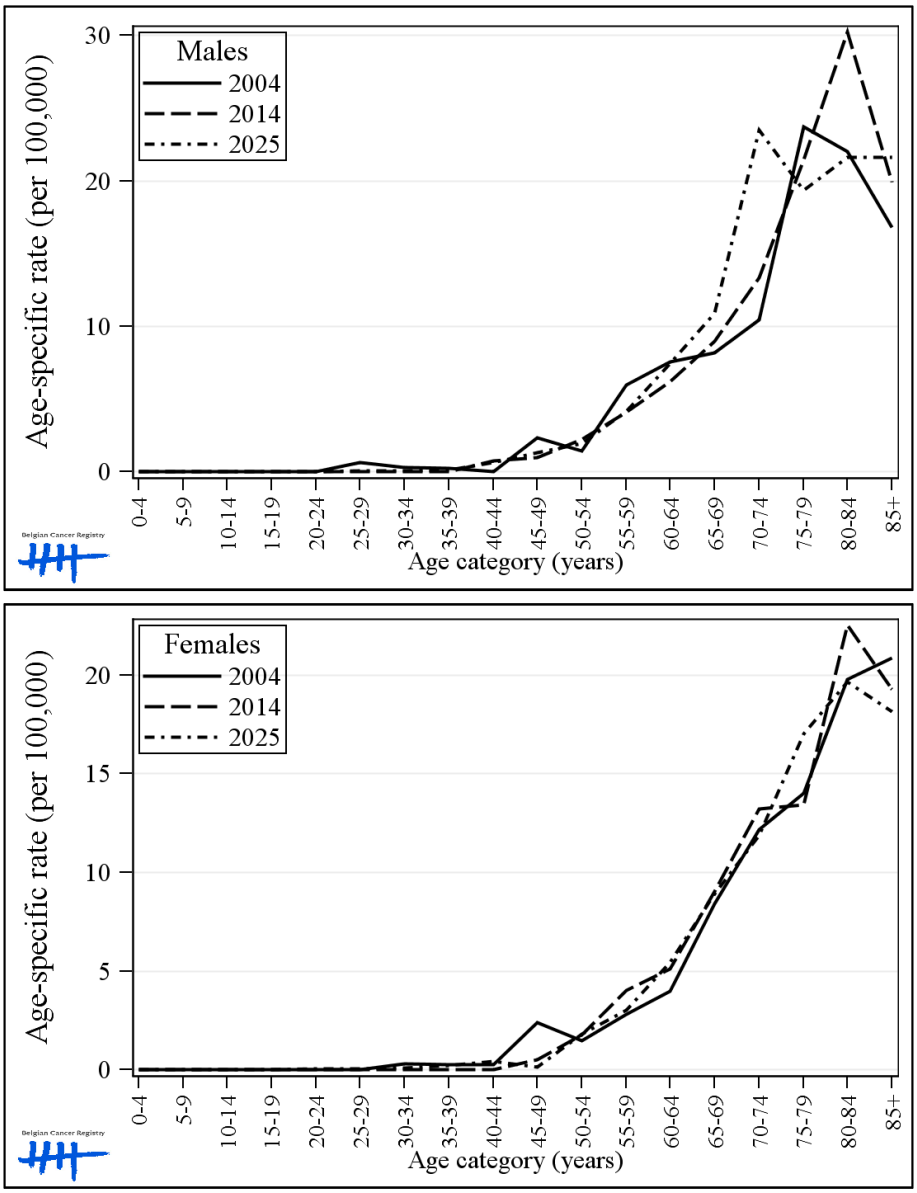
4.8.3. Number of new diagnoses by age group projected to 2025

Table 17: Cancer of the gallbladder and the biliary tract: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Cancer of the gallbladder and the biliary tract					
	Projected number of cases					
	30-49 years		50-74 years		75+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Males						
2015	9	[7; 10]	114	[105; 123]	80	[75; 86]
2016	8	[7; 10]	118	[108; 128]	81	[75; 87]
2017	8	[7; 10]	123	[112; 135]	81	[75; 87]
2018	8	[7; 10]	128	[115; 142]	82	[76; 87]
2019	8	[7; 10]	133	[118; 148]	83	[77; 89]
2020	8	[7; 10]	137	[120; 154]	85	[79; 91]
2021	8	[6; 10]	141	[123; 160]	86	[80; 93]
2022	8	[6; 10]	144	[124; 163]	90	[83; 96]
2023	8	[6; 10]	147	[126; 168]	93	[86; 99]
2024	8	[6; 10]	150	[127; 172]	96	[89; 103]
2025	8	[6; 10]	153	[129; 177]	99	[92; 106]
Trend	–		↗		↗	
Females						
2015	4	[3; 6]	91	[86; 97]	112	[105; 118]
2016	4	[2; 6]	93	[87; 99]	112	[105; 118]
2017	4	[2; 5]	96	[90; 102]	111	[104; 117]
2018	4	[2; 5]	98	[92; 105]	111	[104; 117]
2019	4	[2; 5]	100	[94; 107]	111	[105; 118]
2020	3	[2; 5]	102	[95; 108]	112	[106; 119]
2021	3	[2; 5]	104	[97; 110]	113	[106; 120]
2022	3	[2; 5]	104	[98; 111]	115	[108; 122]
2023	3	[2; 4]	105	[98; 112]	117	[110; 124]
2024	3	[2; 4]	106	[99; 112]	120	[113; 127]
2025	3	[2; 4]	107	[100; 113]	122	[115; 129]
Trend	–		↗		↗	

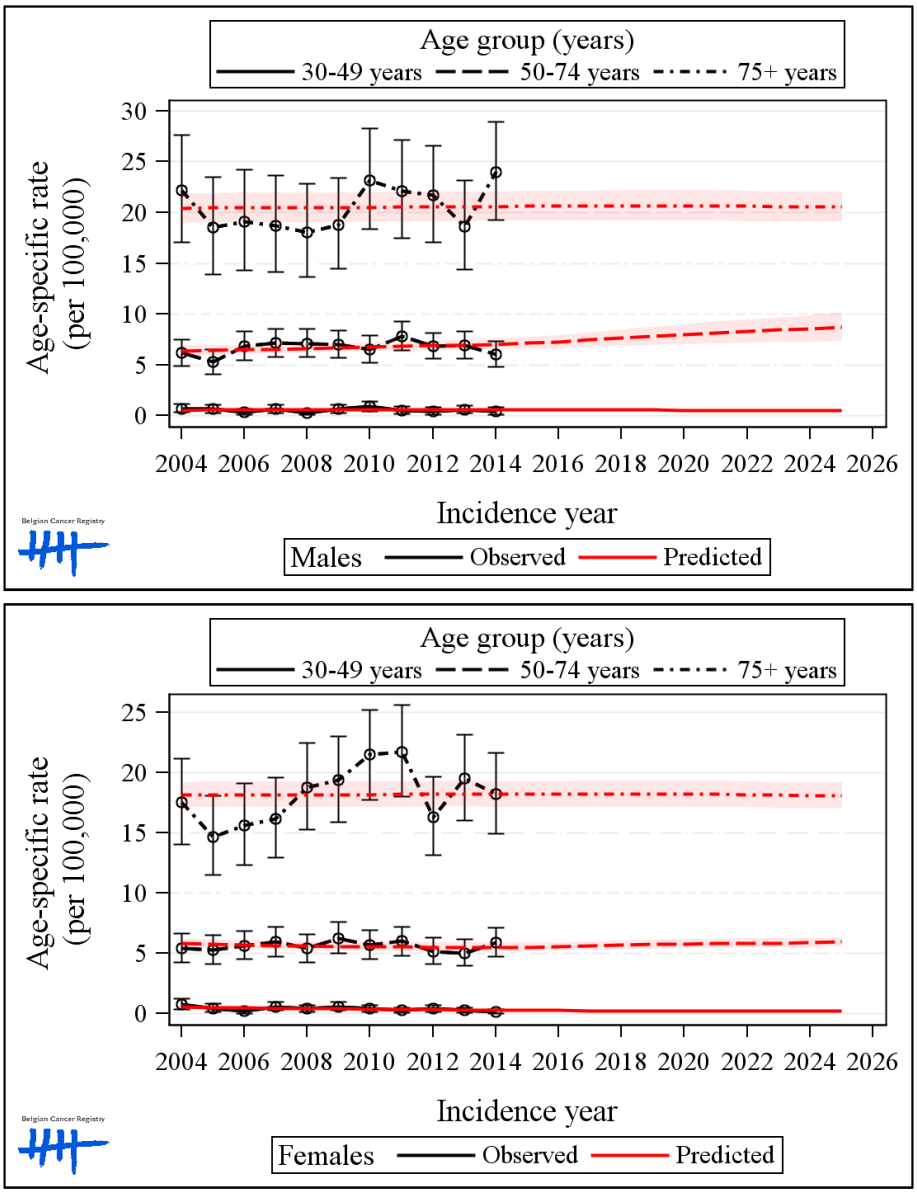
4.8.4. Observed and projected age-specific incidence rates

Figure 27: Cancer of the gallbladder and the biliary tract: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.8.5. Trends in age-specific incidence rates

Figure 28: Cancer of the gallbladder and the biliary tract: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.9. Pancreatic cancer (C25)

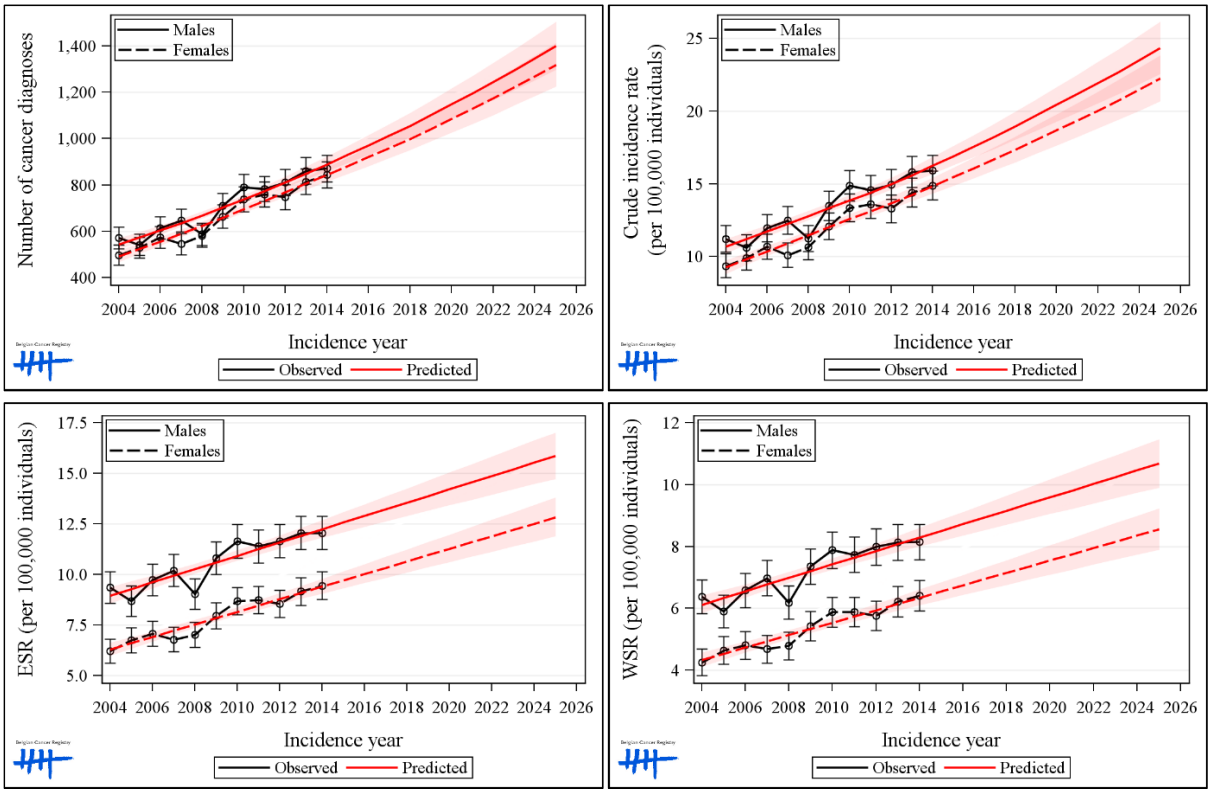
- The yearly number of new pancreatic cancer diagnoses in Belgium is projected to reach 2,717 cases in 2025, while 1,715 cases were diagnosed in the incidence year 2014, an increase of about 58%.
- In males, the incidence projection 2014-2025 runs from 871 to 1,399, an increase of about 61%. The increase in projected number of diagnoses in males can be found in the two oldest age groups (50-74 years and 75+ years) while no change in the 30-49 years age group is expected.
- In females, an increase of about 56% of new diagnoses (from 844 cases in 2014 to 1,317 in 2025) is expected. A very small decrease in incidence for females aged 30-49 years is expected followed by an increasing projected number of diagnoses for the two oldest age groups (50-74 years and 75+ years).

- The age-standardised cancer incidence rate (WSR) in males is projected to rise from 8 to about 11 cases per 100,000 men in the calendar period 2014 to 2025, an increase of about 38%.
- Similarly WSR in females will increase with 50%: from 6 to about 9 cases per 100,000 women in the calendar period 2014 to 2025.
- In both males and females, the projected increase in age-standardised cancer incidence rate is mainly noted in the oldest age group (75+ years).

- The general tendency to an increased projected number of pancreatic cancer can be attributed to both the aging and growing population and an increased cancer risk.

4.9.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 29: Pancreatic cancer: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.9.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 18: Pancreatic cancer: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Pancreatic cancer							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Males								
2015	930	[894; 966]	16.9	[16.2; 17.6]	12.6	[12.1; 13.1]	8.5	[8.2; 8.8]
2016	971	[929; 1,012]	17.6	[16.8; 18.3]	12.9	[12.4; 13.4]	8.7	[8.3; 9.1]
2017	1,012	[965; 1,059]	18.2	[17.4; 19.1]	13.2	[12.6; 13.8]	8.9	[8.5; 9.4]
2018	1,056	[1,002; 1,109]	18.9	[18.0; 19.9]	13.6	[12.9; 14.2]	9.2	[8.7; 9.6]
2019	1,101	[1,042; 1,161]	19.7	[18.6; 20.7]	13.9	[13.1; 14.6]	9.4	[8.9; 9.9]
2020	1,148	[1,082; 1,214]	20.4	[19.3; 21.6]	14.2	[13.4; 15.0]	9.6	[9.0; 10.1]
2021	1,196	[1,123; 1,269]	21.2	[19.9; 22.5]	14.5	[13.7; 15.4]	9.8	[9.2; 10.4]
2022	1,244	[1,164; 1,323]	21.9	[20.5; 23.3]	14.9	[13.9; 15.8]	10.0	[9.4; 10.7]
2023	1,293	[1,206; 1,380]	22.7	[21.2; 24.2]	15.2	[14.2; 16.2]	10.2	[9.6; 10.9]
2024	1,345	[1,250; 1,440]	23.5	[21.8; 25.1]	15.5	[14.5; 16.6]	10.5	[9.7; 11.2]
2025	1,399	[1,297; 1,502]	24.3	[22.5; 26.1]	15.9	[14.7; 17.0]	10.7	[9.9; 11.5]
Trend	↗		↗		↗		↗	
Females								
2015	882	[846; 917]	15.5	[14.8; 16.1]	9.7	[9.3; 10.1]	6.5	[6.3; 6.8]
2016	920	[880; 960]	16.1	[15.4; 16.8]	10.0	[9.6; 10.5]	6.7	[6.4; 7.1]
2017	959	[914; 1,004]	16.7	[15.9; 17.5]	10.3	[9.8; 10.9]	6.9	[6.6; 7.3]
2018	999	[949; 1,050]	17.3	[16.5; 18.2]	10.7	[10.1; 11.2]	7.1	[6.8; 7.5]
2019	1,041	[985; 1,097]	18.0	[17.0; 19.0]	11.0	[10.3; 11.6]	7.4	[6.9; 7.8]
2020	1,085	[1,023; 1,146]	18.7	[17.6; 19.7]	11.3	[10.6; 11.9]	7.6	[7.1; 8.0]
2021	1,129	[1,061; 1,196]	19.3	[18.2; 20.5]	11.6	[10.9; 12.3]	7.8	[7.2; 8.3]
2022	1,174	[1,100; 1,248]	20.0	[18.8; 21.3]	11.9	[11.1; 12.7]	8.0	[7.4; 8.5]
2023	1,220	[1,140; 1,300]	20.7	[19.4; 22.1]	12.2	[11.4; 13.0]	8.2	[7.6; 8.7]
2024	1,268	[1,182; 1,354]	21.5	[20.0; 22.9]	12.5	[11.6; 13.4]	8.4	[7.7; 9.0]
2025	1,317	[1,224; 1,410]	22.2	[20.6; 23.8]	12.8	[11.9; 13.8]	8.6	[7.9; 9.2]
Trend	↗		↗		↗		↗	

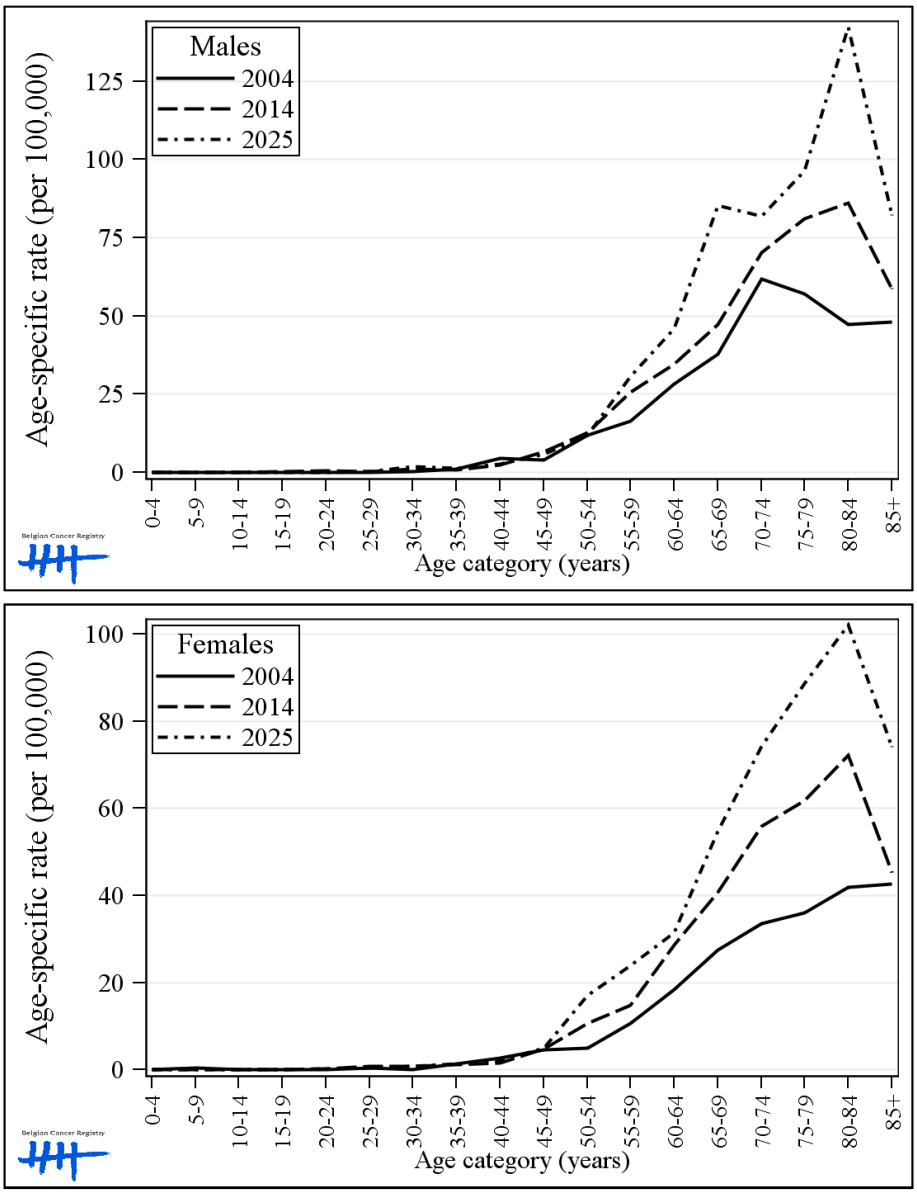
4.9.3. Number of new diagnoses by age group projected to 2025

Table 19: Pancreatic cancer: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Pancreatic cancer					
	Projected number of cases					
	30-49 years		50-74 years		75+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Males						
2015	43	[39; 47]	570	[542; 599]	315	[293; 337]
2016	43	[39; 47]	599	[566; 632]	327	[302; 352]
2017	43	[38; 47]	631	[593; 669]	337	[309; 364]
2018	43	[38; 47]	662	[619; 705]	349	[318; 380]
2019	43	[38; 48]	691	[643; 739]	366	[331; 401]
2020	43	[38; 48]	719	[666; 773]	385	[346; 423]
2021	43	[38; 48]	748	[690; 807]	403	[360; 446]
2022	43	[37; 48]	772	[708; 836]	427	[380; 475]
2023	43	[37; 48]	796	[727; 865]	452	[399; 506]
2024	43	[37; 49]	820	[746; 895]	480	[421; 538]
2025	44	[38; 50]	846	[766; 926]	508	[444; 573]
Trend	–		↗		↗	
Females						
2015	34	[31; 38]	454	[428; 480]	391	[367; 414]
2016	34	[31; 38]	479	[449; 508]	405	[378; 431]
2017	34	[31; 37]	507	[473; 542]	415	[386; 445]
2018	34	[31; 37]	535	[496; 574]	428	[396; 460]
2019	34	[30; 37]	560	[517; 604]	445	[409; 480]
2020	34	[30; 37]	585	[538; 633]	464	[425; 503]
2021	33	[30; 37]	610	[558; 663]	483	[440; 525]
2022	33	[30; 36]	631	[574; 687]	508	[461; 555]
2023	33	[30; 36]	651	[590; 712]	534	[482; 585]
2024	33	[30; 36]	672	[606; 737]	561	[505; 617]
2025	33	[30; 36]	694	[623; 764]	588	[527; 649]
Trend	↘		↗		↗	

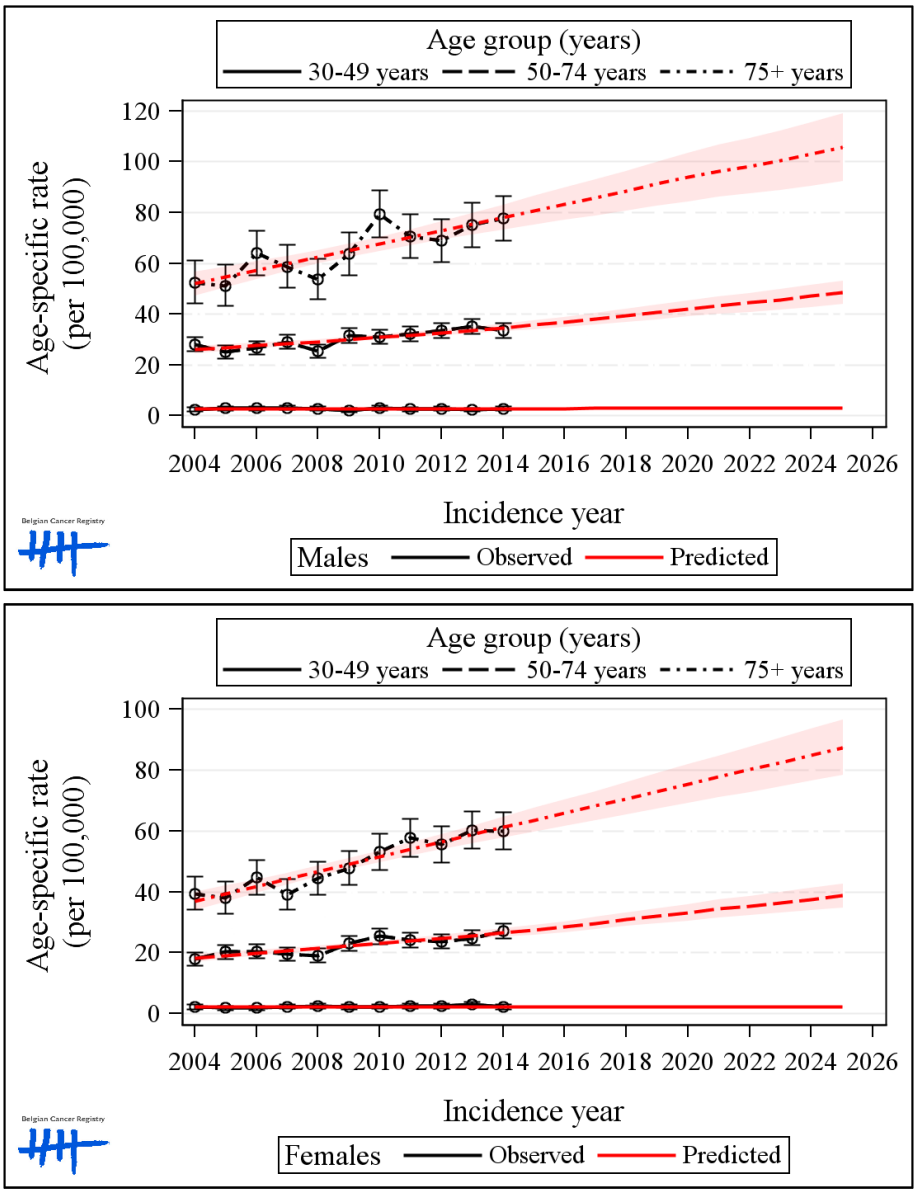
4.9.4. Observed and projected age-specific incidence rates

Figure 30: Pancreatic cancer: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.9.5. Trends in age-specific incidence rates

Figure 31: Pancreatic cancer: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.10. Lung cancer (C34)

The lung cancer incidence projections are presented for all morphology types combined and separately for the following three morphology groups:

1. Adenocarcinoma (ICD-O-3 codes: 8140, 8211, 8230-8231, 8250-8260, 8323, 8480-8490, 8550-8551, 8570-8574, 8576),
2. Small cell carcinoma (8041-8045, 8246),
3. Squamous cell carcinoma & large cell carcinoma (8010-8012, 8014-8031, 8035, 8050-8078, 8083-8084, 8310).

4.10.1. Lung cancer, all morphologies

- In the period 2014 to 2025, the yearly number of new lung cancer diagnoses in Belgium is projected to rise from 8,452 to 10,687, an increase of 26%.
- In males, the incidence projection 2014-2025 runs from 5,797 to 6,494 cases, an increase of 12%.
- In females, the incidence projection 2014-2025 is expected to increase from 2,655 to 4,193 cases, an increase of 58%. As in males, the projected number of diagnoses from 2014 to 2025 shows a decrease in the youngest age group (30-49 years), whereas a strong increase is expected in the 50-74 years and 75+ years age groups.

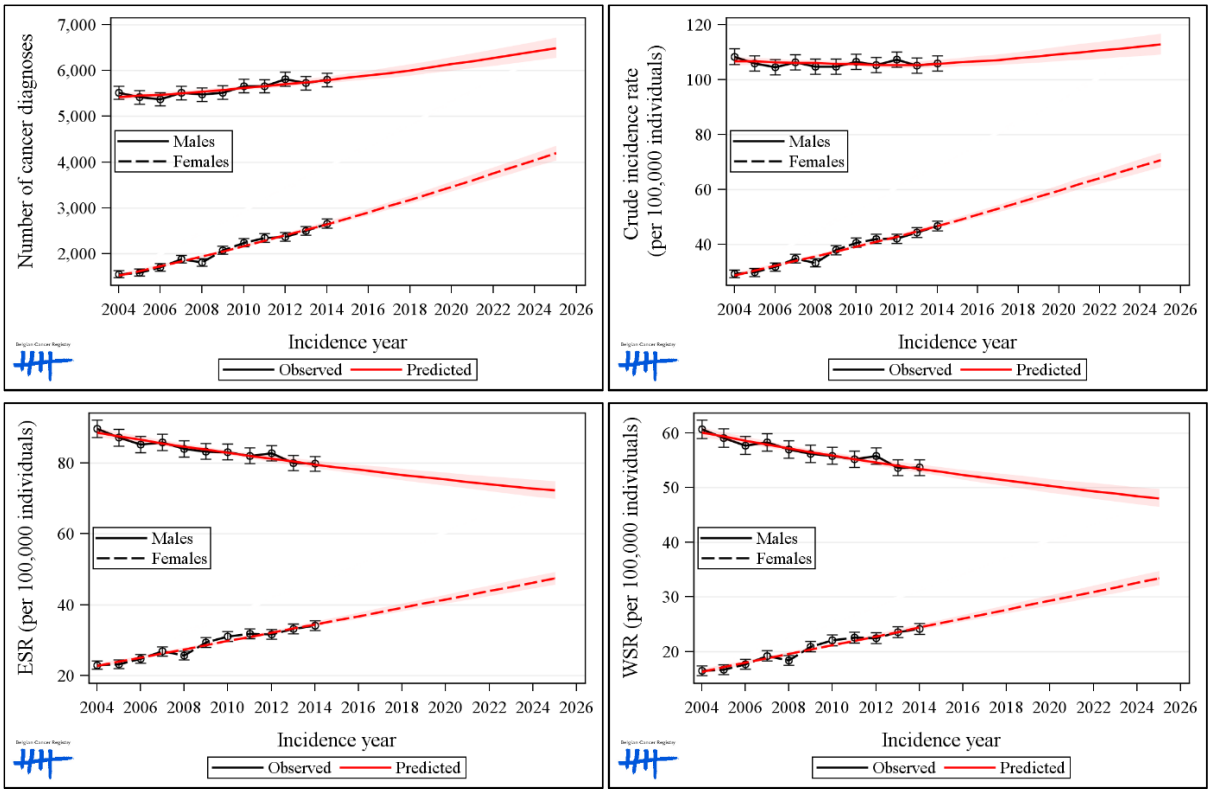
- The age-standardised cancer incidence rate (WSR) in males will decrease from 53.7 to 48.0 cases per 100,000 men between 2014 and 2025, a decrease of about 11%. This projected decrease in age-specific incidence rate in males can be noted in the 40 to 80 years age range.
- In females, the WSR is projected to increase from 24.1 to 33.4 cases per 100,000 women between 2014 and 2025, an increase of 39%. The age-specific incidence rate in females is projected to dramatically increase from the age of 50 years onward.

- In males, the moderate increase in the projected lung cancer incidence count is explained by the growth and ageing of the population in combination with a decrease in cancer risk.
- In contrast, the projected strong increase in cancer risk along with the foreseen growth and ageing of the population result in a striking increase in the projected incidence count of lung cancer in females.

- Lung cancer incidence in males is expected to rise for adenocarcinoma and small cell carcinoma of the lung, while to decrease for squamous and large cell carcinoma. Lung cancer risk in males is expected to rise only for adenocarcinoma of the lung and to drop for the other two morphology groups.
- In females, both cancer incidence and cancer risk are expected to increase for the three morphology groups. Details are given in the next three sections.

4.10.1.1 Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 32: Lung cancer, all morphologies: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.10.1.2 Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 20: Lung cancer, all morphologies: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Lung cancer							
	Predicted number of cases		**Predicted crude rate (per 100,000)**		**Predicted ESR (per 100,000)**		**Predicted WSR (per 100,000)**	
Gender year	**Estimate**	**95% PI**	**Estimate**	**95% PI**	**Estimate**	**95% PI**	**Estimate**	**95% PI**
Males								
2015	5,845	[5,760; 5,929]	106.3	[104.7; 107.8]	78.9	[77.7; 80.1]	52.9	[52.1; 53.7]
2016	5,895	[5,799; 5,990]	106.7	[105.0; 108.4]	78.1	[76.8; 79.4]	52.3	[51.4; 53.2]
2017	5,949	[5,841; 6,056]	107.2	[105.2; 109.1]	77.4	[75.9; 78.9]	51.8	[50.8; 52.8]
2018	6,008	[5,888; 6,128]	107.8	[105.7; 110.0]	76.7	[75.1; 78.3]	51.3	[50.2; 52.4]
2019	6,074	[5,941; 6,207]	108.5	[106.1; 110.9]	76.0	[74.3; 77.7]	50.8	[49.6; 51.9]
2020	6,143	[5,996; 6,289]	109.3	[106.7; 111.9]	75.3	[73.5; 77.2]	50.3	[49.0; 51.5]
2021	6,210	[6,049; 6,370]	110.0	[107.1; 112.8]	74.7	[72.7; 76.7]	49.8	[48.5; 51.1]
2022	6,277	[6,103; 6,452]	110.6	[107.6; 113.7]	74.1	[72.0; 76.2]	49.3	[47.9; 50.8]
2023	6,347	[6,157; 6,536]	111.3	[108.0; 114.7]	73.5	[71.2; 75.7]	48.9	[47.4; 50.4]
2024	6,419	[6,215; 6,623]	112.1	[108.5; 115.6]	72.9	[70.5; 75.2]	48.5	[46.9; 50.0]
2025	6,494	[6,276; 6,712]	112.9	[109.1; 116.7]	72.3	[69.8; 74.7]	48.0	[46.4; 49.7]
Trend	↗		↗		↘		↘	
Females								
2015	2,775	[2,715; 2,835]	48.7	[47.6; 49.7]	35.7	[34.9; 36.4]	25.2	[24.6; 25.8]
2016	2,906	[2,837; 2,974]	50.8	[49.6; 52.0]	36.8	[36.0; 37.7]	26.0	[25.4; 26.7]
2017	3,041	[2,964; 3,118]	52.9	[51.6; 54.3]	38.0	[37.0; 39.0]	26.8	[26.1; 27.5]
2018	3,178	[3,092; 3,264]	55.1	[53.6; 56.6]	39.2	[38.1; 40.3]	27.7	[26.9; 28.4]
2019	3,318	[3,222; 3,413]	57.3	[55.7; 59.0]	40.4	[39.2; 41.5]	28.5	[27.6; 29.3]
2020	3,462	[3,357; 3,567]	59.6	[57.8; 61.4]	41.5	[40.3; 42.8]	29.3	[28.4; 30.2]
2021	3,609	[3,494; 3,723]	61.9	[59.9; 63.8]	42.7	[41.4; 44.1]	30.1	[29.1; 31.1]
2022	3,753	[3,628; 3,878]	64.1	[61.9; 66.2]	43.9	[42.4; 45.4]	30.9	[29.9; 32.0]
2023	3,897	[3,762; 4,032]	66.3	[64.0; 68.5]	45.1	[43.5; 46.7]	31.7	[30.6; 32.9]
2024	4,043	[3,898; 4,188]	68.4	[66.0; 70.9]	46.3	[44.6; 47.9]	32.6	[31.4; 33.8]
2025	4,193	[4,037; 4,349]	70.7	[68.0; 73.3]	47.5	[45.7; 49.2]	33.4	[32.1; 34.6]
Trend	↗		↗		↗		↗	

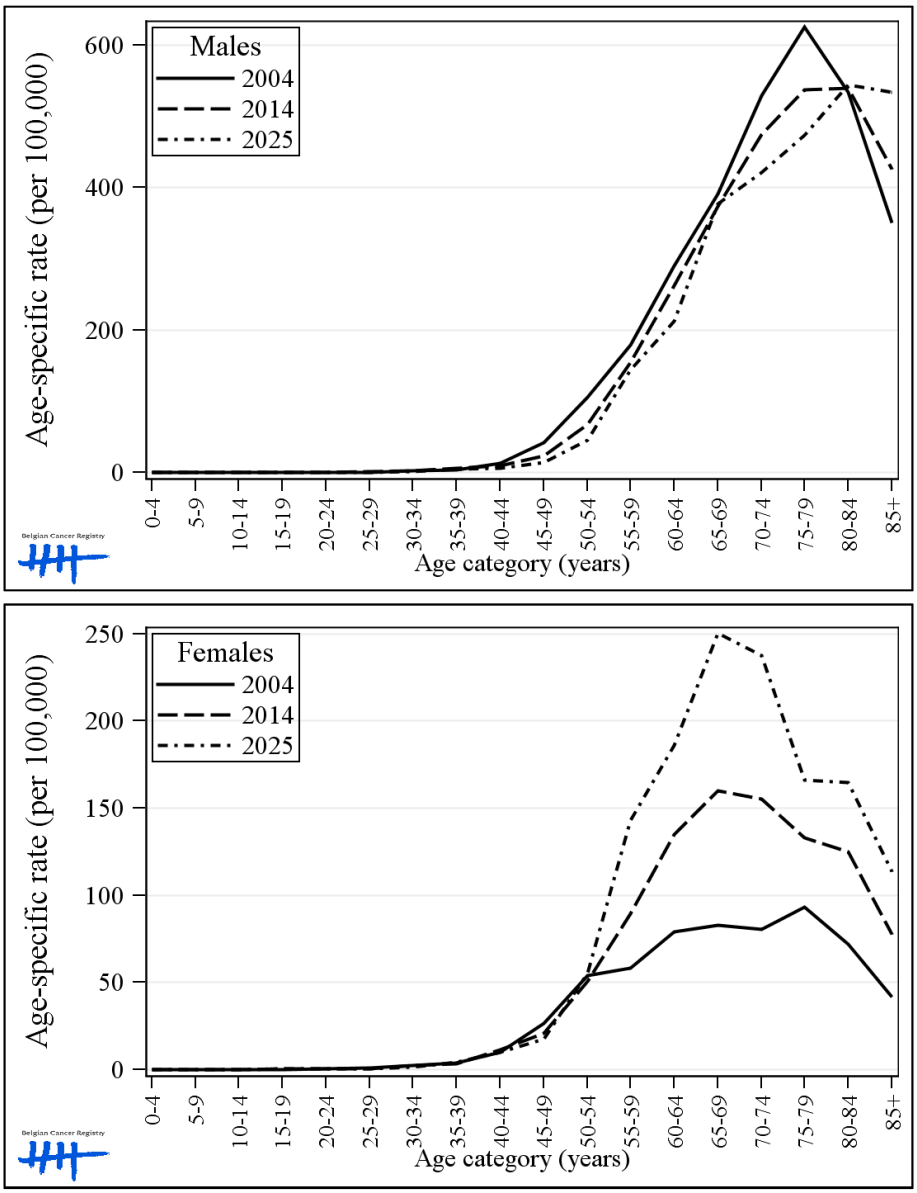
4.10.1.3 Number of new diagnoses by age group projected to 2025

Table 21: Lung cancer, all morphologies: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Lung cancer					
	Projected number of cases					
	30-49 years		50-74 years		75+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Males						
2015	153	[139; 166]	3,683	[3,615; 3,751]	2,004	[1,955; 2,053]
2016	145	[131; 159]	3,731	[3,654; 3,807]	2,014	[1,959; 2,070]
2017	137	[123; 152]	3,800	[3,713; 3,887]	2,007	[1,945; 2,068]
2018	131	[115; 146]	3,856	[3,758; 3,954]	2,017	[1,949; 2,085]
2019	124	[108; 140]	3,893	[3,785; 4,002]	2,051	[1,976; 2,127]
2020	118	[102; 134]	3,924	[3,805; 4,043]	2,096	[2,012; 2,179]
2021	112	[96; 128]	3,955	[3,825; 4,085]	2,138	[2,045; 2,231]
2022	107	[90; 123]	3,949	[3,811; 4,088]	2,217	[2,111; 2,322]
2023	102	[85; 119]	3,948	[3,801; 4,095]	2,292	[2,174; 2,410]
2024	98	[81; 115]	3,946	[3,790; 4,103]	2,370	[2,240; 2,500]
2025	94	[77; 111]	3,950	[3,784; 4,115]	2,446	[2,304; 2,587]
Trend	↘		↗		↗	
Females						
2015	147	[135; 159]	1,949	[1,899; 1,999]	674	[643; 705]
2016	144	[130; 157]	2,063	[2,005; 2,120]	695	[660; 729]
2017	141	[127; 155]	2,187	[2,121; 2,252]	709	[670; 747]
2018	138	[123; 153]	2,308	[2,234; 2,381]	727	[685; 769]
2019	135	[119; 151]	2,424	[2,342; 2,506]	754	[707; 800]
2020	133	[116; 149]	2,540	[2,450; 2,631]	784	[733; 835]
2021	130	[113; 147]	2,658	[2,559; 2,757]	816	[760; 871]
2022	127	[110; 145]	2,760	[2,653; 2,868]	860	[799; 922]
2023	125	[107; 144]	2,862	[2,747; 2,977]	905	[838; 973]
2024	124	[105; 143]	2,963	[2,839; 3,087]	951	[877; 1,025]
2025	123	[103; 143]	3,069	[2,937; 3,201]	996	[917; 1,076]
Trend	↘		↗		↗	

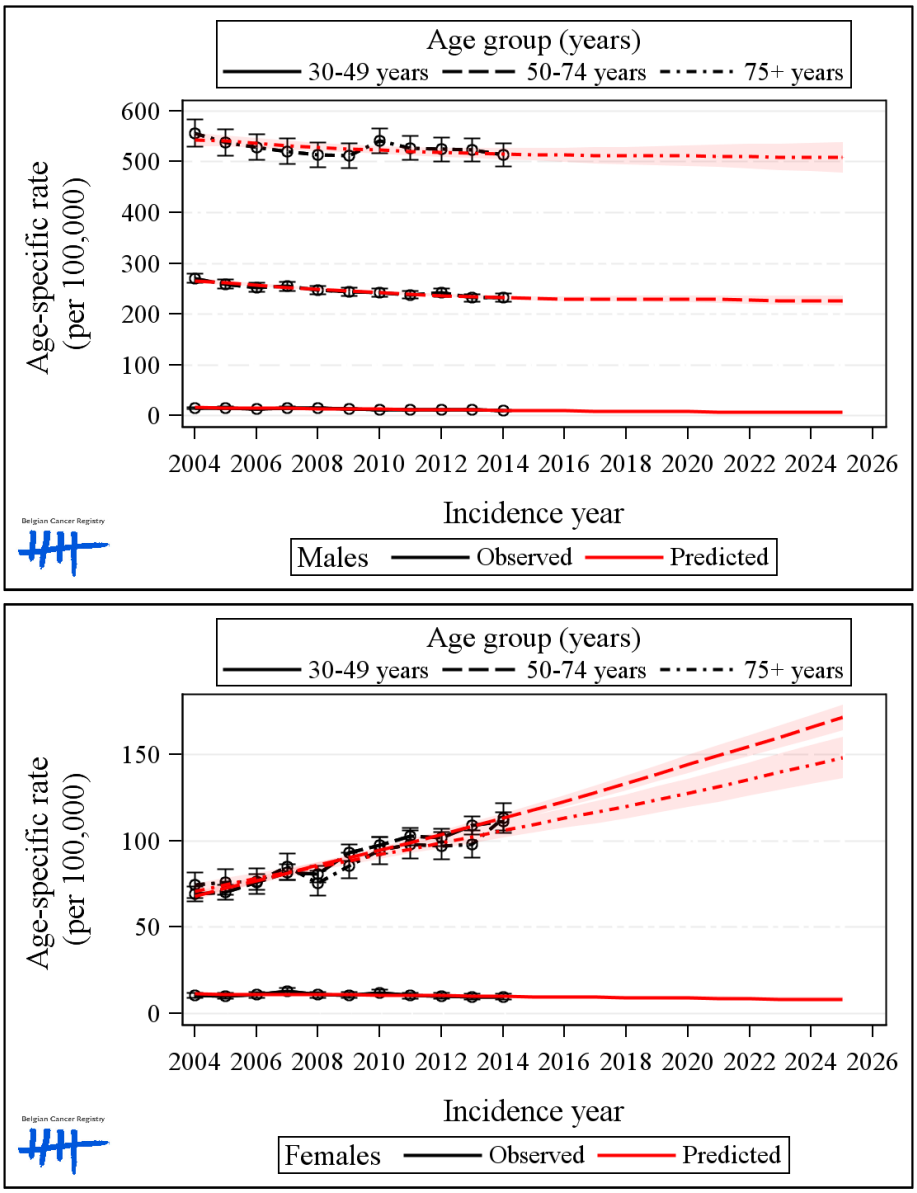
4.10.1.4 Observed and projected age-specific incidence rates

Figure 33: Lung cancer, all morphologies: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.10.1.5 Trends in age-specific incidence rates

Figure 34: Lung cancer, all morphologies: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.10.2. Lung cancer, adenocarcinoma

- In the period 2014 to 2025, the yearly number of new lung adenocarcinoma diagnoses in Belgium is projected to rise substantially from 3,693 to 6,077, an increase of 65%.
- In males, the incidence projection 2014-2025 runs from 2,282 to 3,601 cases, an increase of 58%. The projected number of diagnoses from 2014 to 2025 shows a decrease in the youngest age group (30-49 years), whereas an increase is observed in the older age groups (50-74 years and 75+ years).
- In females, the incidence projection 2014-2025 runs from 1,411 to 2,476 cases, an increase of 58%. This projected increase in incidence count is expected in the two oldest age groups (50-74 years and 75+ years).

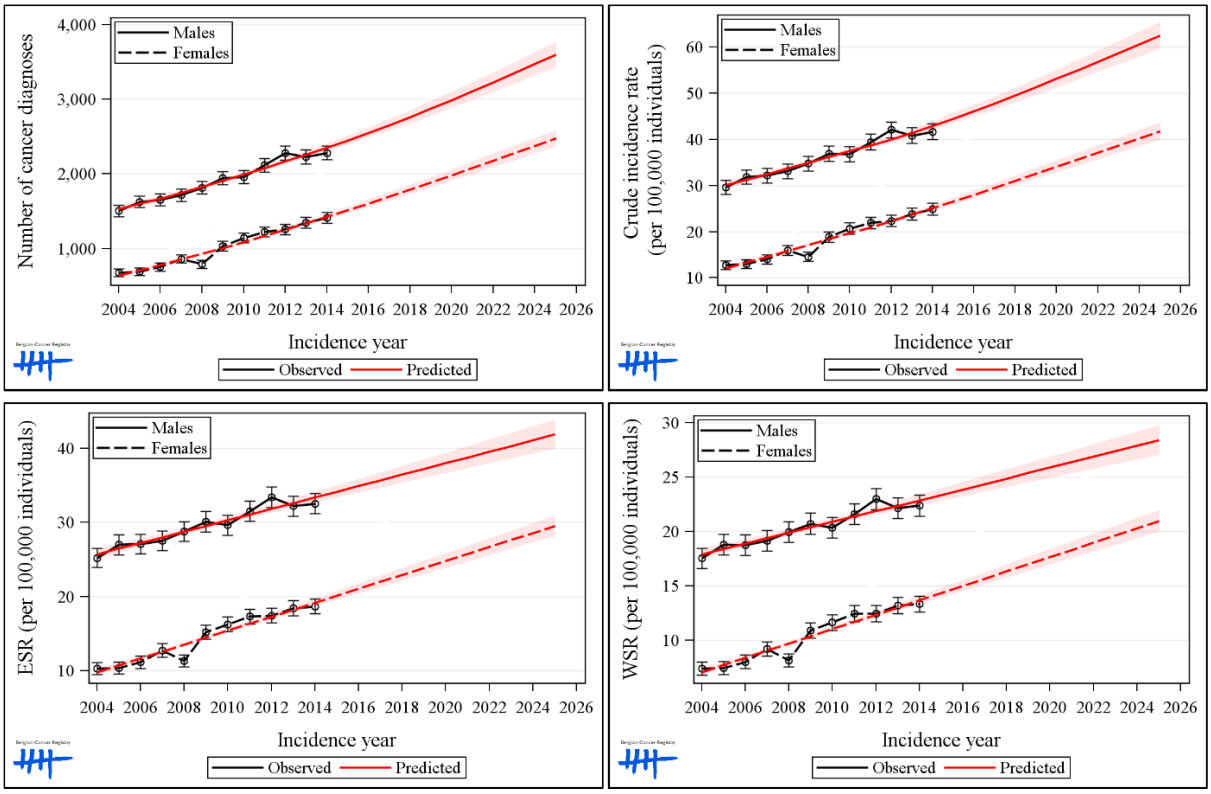
- The age-standardised lung adenocarcinoma cancer incidence rate (WSR) in males will increase from 22.4 to 28.4 cases per 100,000 men between 2014 and 2025, an increase of 27%.
- In females, the WSR will increase from 13.3 to 21.0 cases per 100,000 women between 2014 and 2025, an increase of 58%.
- The age-specific incidence rate in both, males and females is projected to increase from the age of 50 years onward.

- The steep rise in projected lung adenocarcinoma incidence in both males and females in the period 2014 to 2025 is mainly driven by a projected strong increase in cancer risk.

- Of the three histological subgroups considered for lung cancer, adenocarcinoma is the only histological group for which the cancer risk is expected to increase in males and thus for which the cancer risk raises in both sexes.

4.10.2.1 Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 35: Lung cancer, adenocarcinoma: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.10.2.2 Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 22: Lung cancer, adenocarcinoma: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Lung cancer - Adenocarcinoma							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Males								
2015	2,450	[2,390; 2,509]	44.5	[43.5; 45.6]	34.1	[33.3; 34.9]	23.4	[22.8; 24.0]
2016	2,550	[2,481; 2,618]	46.1	[44.9; 47.4]	34.9	[33.9; 35.8]	23.9	[23.2; 24.5]
2017	2,654	[2,576; 2,732]	47.8	[46.4; 49.2]	35.7	[34.6; 36.7]	24.4	[23.6; 25.1]
2018	2,762	[2,675; 2,849]	49.6	[48.0; 51.1]	36.4	[35.3; 37.6]	24.9	[24.1; 25.7]
2019	2,874	[2,776; 2,972]	51.3	[49.6; 53.1]	37.2	[35.9; 38.5]	25.4	[24.5; 26.3]
2020	2,990	[2,881; 3,098]	53.2	[51.3; 55.1]	38.0	[36.6; 39.3]	25.9	[24.9; 26.8]
2021	3,108	[2,989; 3,228]	55.0	[52.9; 57.2]	38.7	[37.3; 40.2]	26.4	[25.3; 27.4]
2022	3,228	[3,097; 3,359]	56.9	[54.6; 59.2]	39.5	[37.9; 41.1]	26.9	[25.8; 28.0]
2023	3,349	[3,207; 3,492]	58.8	[56.3; 61.3]	40.3	[38.6; 42.0]	27.4	[26.2; 28.6]
2024	3,473	[3,318; 3,628]	60.6	[57.9; 63.3]	41.1	[39.2; 42.9]	27.9	[26.6; 29.2]
2025	3,601	[3,433; 3,768]	62.6	[59.7; 65.5]	41.8	[39.9; 43.8]	28.4	[27.0; 29.8]
Trend	↗		↗		↗		↗	
Females								
2015	1,512	[1,468; 1,556]	26.5	[25.8; 27.3]	20.1	[19.5; 20.7]	14.4	[13.9; 14.8]
2016	1,603	[1,553; 1,653]	28.0	[27.1; 28.9]	21.1	[20.4; 21.7]	15.0	[14.5; 15.5]
2017	1,695	[1,639; 1,751]	29.5	[28.5; 30.5]	22.0	[21.3; 22.8]	15.7	[15.1; 16.2]
2018	1,789	[1,726; 1,851]	31.0	[29.9; 32.1]	22.9	[22.1; 23.8]	16.3	[15.7; 16.9]
2019	1,884	[1,815; 1,953]	32.5	[31.4; 33.7]	23.9	[23.0; 24.8]	17.0	[16.3; 17.7]
2020	1,982	[1,906; 2,057]	34.1	[32.8; 35.4]	24.8	[23.8; 25.8]	17.7	[17.0; 18.4]
2021	2,081	[1,998; 2,164]	35.7	[34.3; 37.1]	25.8	[24.7; 26.8]	18.3	[17.6; 19.1]
2022	2,180	[2,090; 2,269]	37.2	[35.7; 38.7]	26.7	[25.6; 27.8]	19.0	[18.2; 19.8]
2023	2,278	[2,181; 2,374]	38.7	[37.1; 40.4]	27.6	[26.4; 28.9]	19.6	[18.8; 20.5]
2024	2,376	[2,272; 2,480]	40.2	[38.5; 42.0]	28.6	[27.3; 29.9]	20.3	[19.4; 21.2]
2025	2,476	[2,365; 2,587]	41.7	[39.9; 43.6]	29.5	[28.1; 30.9]	21.0	[20.0; 22.0]
Trend	↗		↗		↗		↗	

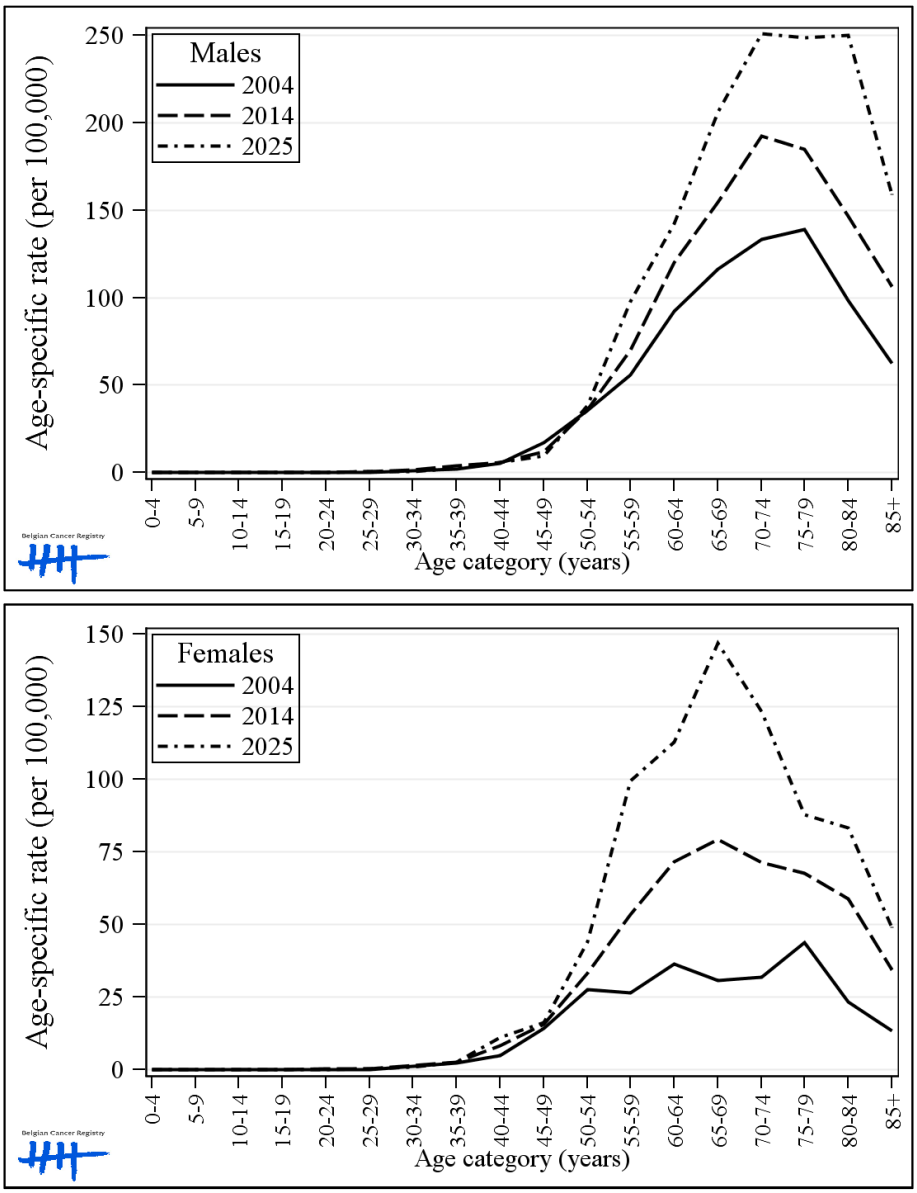
4.10.2.3 Number of new diagnoses by age group projected to 2025

Table 23: Lung cancer, adenocarcinoma: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Lung cancer - Adenocarcinoma					
	Projected number of cases					
	30-49 years		50-74 years		75+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Males						
2015	85	[76; 94]	1,700	[1,650; 1,749]	664	[633; 696]
2016	82	[72; 92]	1,777	[1,720; 1,834]	689	[653; 725]
2017	80	[70; 91]	1,866	[1,801; 1,932]	706	[667; 746]
2018	78	[67; 89]	1,952	[1,877; 2,026]	731	[687; 775]
2019	76	[64; 88]	2,031	[1,947; 2,114]	766	[716; 815]
2020	74	[62; 86]	2,109	[2,016; 2,201]	806	[751; 861]
2021	72	[60; 84]	2,188	[2,086; 2,290]	847	[786; 908]
2022	70	[58; 83]	2,249	[2,138; 2,360]	907	[839; 976]
2023	69	[56; 82]	2,312	[2,192; 2,432]	967	[891; 1,043]
2024	68	[54; 81]	2,376	[2,247; 2,505]	1,028	[944; 1,112]
2025	67	[53; 80]	2,442	[2,304; 2,581]	1,090	[998; 1,183]
Trend	↘		↗		↗	
Females						
2015	105	[97; 113]	1,095	[1,057; 1,134]	311	[291; 331]
2016	105	[97; 114]	1,173	[1,130; 1,217]	323	[301; 346]
2017	106	[97; 115]	1,256	[1,207; 1,306]	332	[308; 357]
2018	106	[97; 116]	1,338	[1,282; 1,393]	344	[316; 371]
2019	107	[97; 117]	1,417	[1,356; 1,478]	359	[329; 389]
2020	108	[97; 118]	1,497	[1,430; 1,564]	376	[343; 409]
2021	108	[96; 120]	1,578	[1,504; 1,651]	394	[358; 430]
2022	109	[96; 121]	1,651	[1,571; 1,730]	419	[379; 459]
2023	110	[96; 123]	1,723	[1,638; 1,808]	444	[401; 488]
2024	111	[97; 125]	1,794	[1,703; 1,885]	470	[422; 517]
2025	113	[98; 127]	1,868	[1,771; 1,965]	495	[443; 547]
Trend	–		↗		↗	

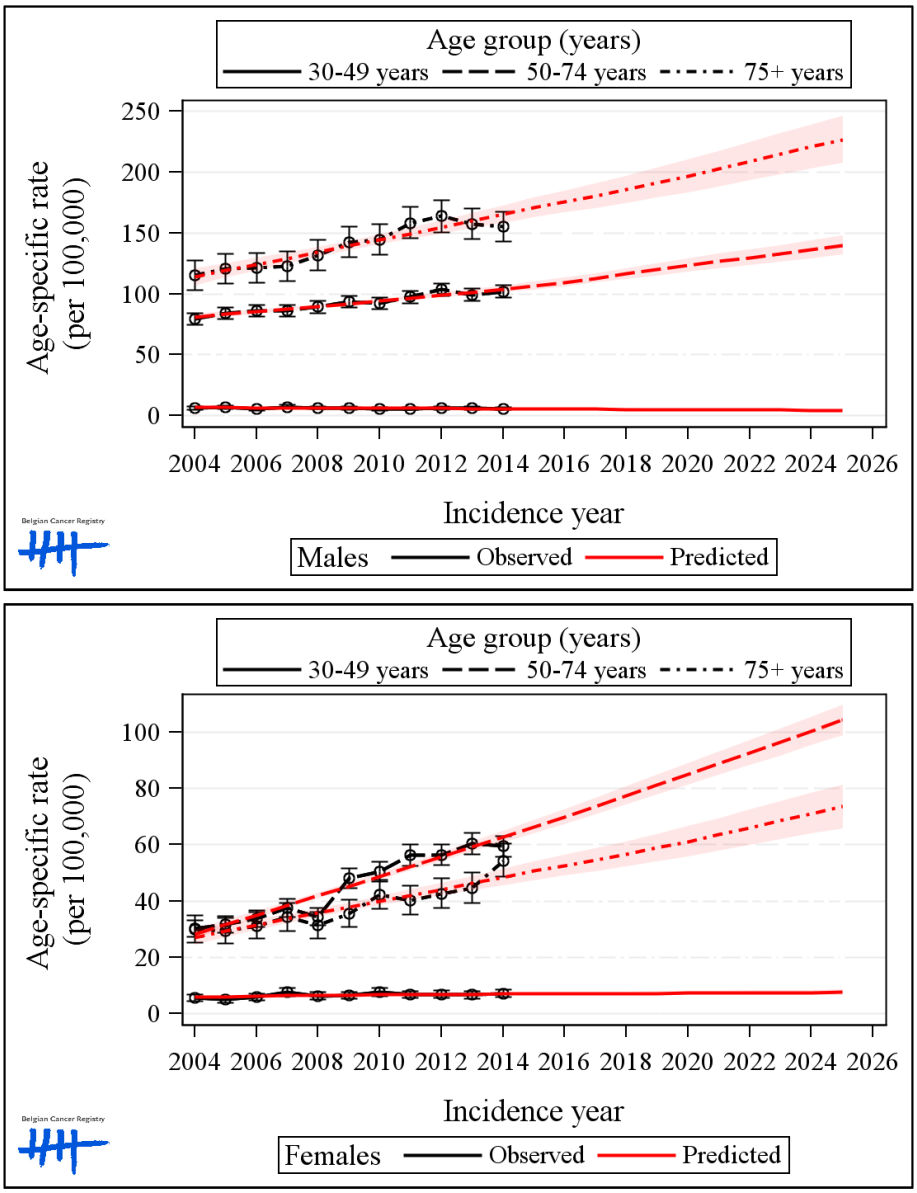
4.10.2.4 Observed and projected age-specific incidence rates

Figure 36: Lung cancer, adenocarcinoma: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.10.2.5 Trends in age-specific incidence rates

Figure 37: Lung cancer, adenocarcinoma: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.10.3. Lung cancer, small cell carcinoma

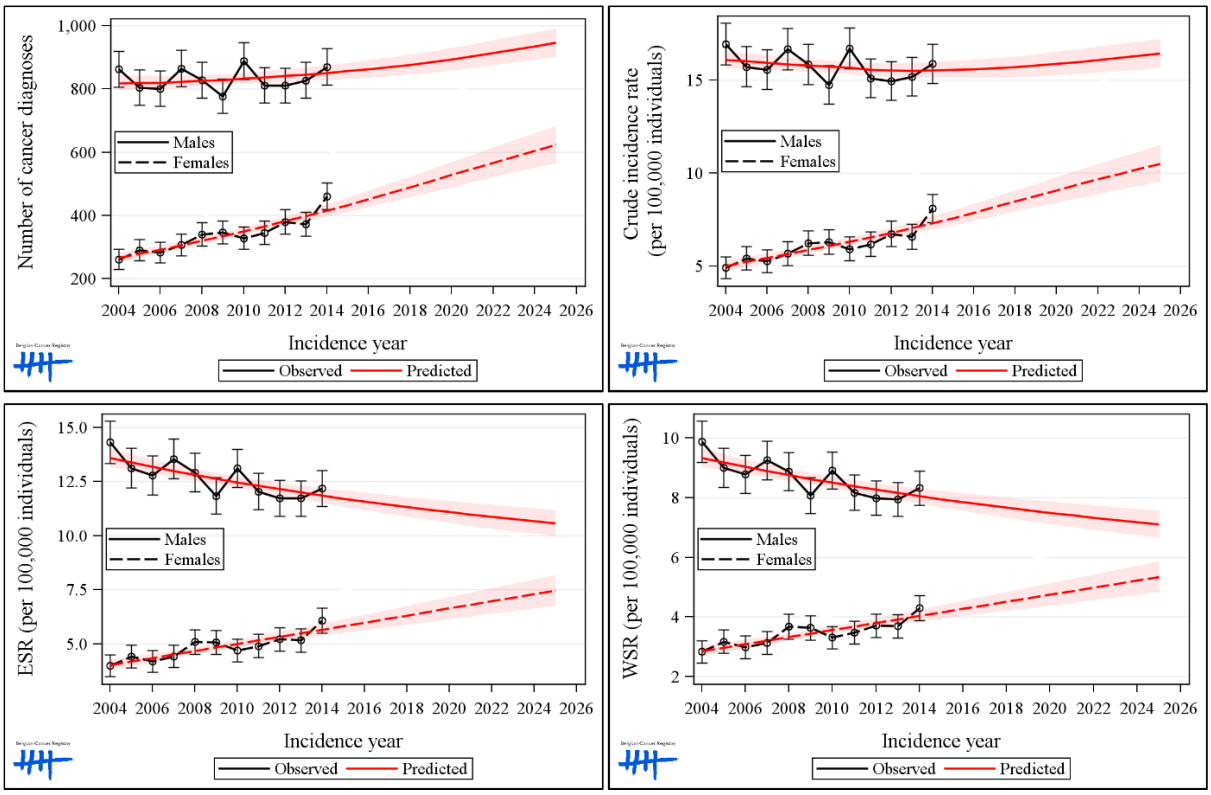
- In the period 2014 to 2025, the yearly number of new small cell lung cancer diagnoses in Belgium is projected to rise from 1,330 to 1,570, an increase of 18%.
- In males, the incidence projection 2014-2025 runs from 870 to 946 cases, an increase of 8.7%.
- In females, the incidence projection 2014-2025 increases from 460 to 624 cases, an increase of about 36%. In both males and females, the projected number of diagnoses from 2014 to 2025 shows a decrease in the youngest age group (30-49 years), whereas an increase is expected in the 50-74 years and 75+ years age groups.

- The age-standardised incidence rate (WSR) in males will decrease from 8.3 to 7.1 cases per 100,000 men between 2014 and 2025, a decrease of 14%. The projected decline in age-specific incidence in males can be observed in the 45-70 years age group.
- In contrast, the WSR is expected to rise from 4.3 to 5.3 cases per 100,000 women between 2014 and 2025, an increase of 23.3%. The age-specific incidence in females is projected to increase within the 50 to 70 years age range.

- Although the cancer risk in males is expected to decrease substantially, in combination with the growing and aging population an increasing number of small cell lung cancers is projected from 2014 to 2025.
- In females, both the increasing cancer risk and the aging and growing population drive the projected increasing number of small cell carcinoma diagnoses of the lung from 2014 to 2025.

4.10.3.1 Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 38: Lung cancer, small cell carcinoma: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.10.3.2 Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 24: Lung cancer, small cell carcinoma: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Lung cancer - Small cell carcinoma							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Males								
2015	857	[832; 882]	15.6	[15.1; 16.0]	11.7	[11.3; 12.1]	7.9	[7.7; 8.2]
2016	863	[835; 890]	15.6	[15.1; 16.1]	11.6	[11.2; 12.0]	7.8	[7.6; 8.1]
2017	869	[840; 898]	15.7	[15.1; 16.2]	11.5	[11.0; 11.9]	7.8	[7.4; 8.1]
2018	876	[845; 907]	15.7	[15.2; 16.3]	11.3	[10.9; 11.8]	7.7	[7.3; 8.0]
2019	884	[851; 918]	15.8	[15.2; 16.4]	11.2	[10.7; 11.7]	7.6	[7.2; 7.9]
2020	893	[858; 929]	15.9	[15.3; 16.5]	11.1	[10.6; 11.6]	7.5	[7.1; 7.9]
2021	903	[866; 940]	16.0	[15.3; 16.7]	11.0	[10.5; 11.5]	7.4	[7.0; 7.8]
2022	914	[874; 953]	16.1	[15.4; 16.8]	10.9	[10.3; 11.4]	7.3	[6.9; 7.7]
2023	924	[883; 965]	16.2	[15.5; 16.9]	10.8	[10.2; 11.3]	7.3	[6.8; 7.7]
2024	935	[892; 977]	16.3	[15.6; 17.1]	10.7	[10.1; 11.3]	7.2	[6.7; 7.6]
2025	946	[902; 990]	16.4	[15.7; 17.2]	10.6	[10.0; 11.2]	7.1	[6.7; 7.6]
Trend	↗		↗		↘		↘	
Females								
2015	433	[411; 456]	7.6	[7.2; 8.0]	5.8	[5.5; 6.1]	4.2	[3.9; 4.4]
2016	451	[426; 477]	7.9	[7.4; 8.3]	6.0	[5.6; 6.3]	4.3	[4.0; 4.5]
2017	470	[441; 499]	8.2	[7.7; 8.7]	6.1	[5.8; 6.5]	4.4	[4.1; 4.7]
2018	489	[457; 522]	8.5	[7.9; 9.1]	6.3	[5.9; 6.7]	4.5	[4.2; 4.8]
2019	508	[472; 544]	8.8	[8.2; 9.4]	6.5	[6.0; 6.9]	4.6	[4.3; 5.0]
2020	528	[488; 568]	9.1	[8.4; 9.8]	6.6	[6.1; 7.1]	4.7	[4.4; 5.1]
2021	548	[504; 592]	9.4	[8.6; 10.1]	6.8	[6.3; 7.3]	4.9	[4.5; 5.3]
2022	567	[520; 614]	9.7	[8.9; 10.5]	7.0	[6.4; 7.6]	5.0	[4.6; 5.4]
2023	586	[535; 637]	10.0	[9.1; 10.8]	7.1	[6.5; 7.8]	5.1	[4.6; 5.6]
2024	605	[550; 659]	10.2	[9.3; 11.2]	7.3	[6.6; 8.0]	5.2	[4.7; 5.7]
2025	624	[566; 682]	10.5	[9.5; 11.5]	7.5	[6.7; 8.2]	5.3	[4.8; 5.9]
Trend	↗		↗		↗		↗	

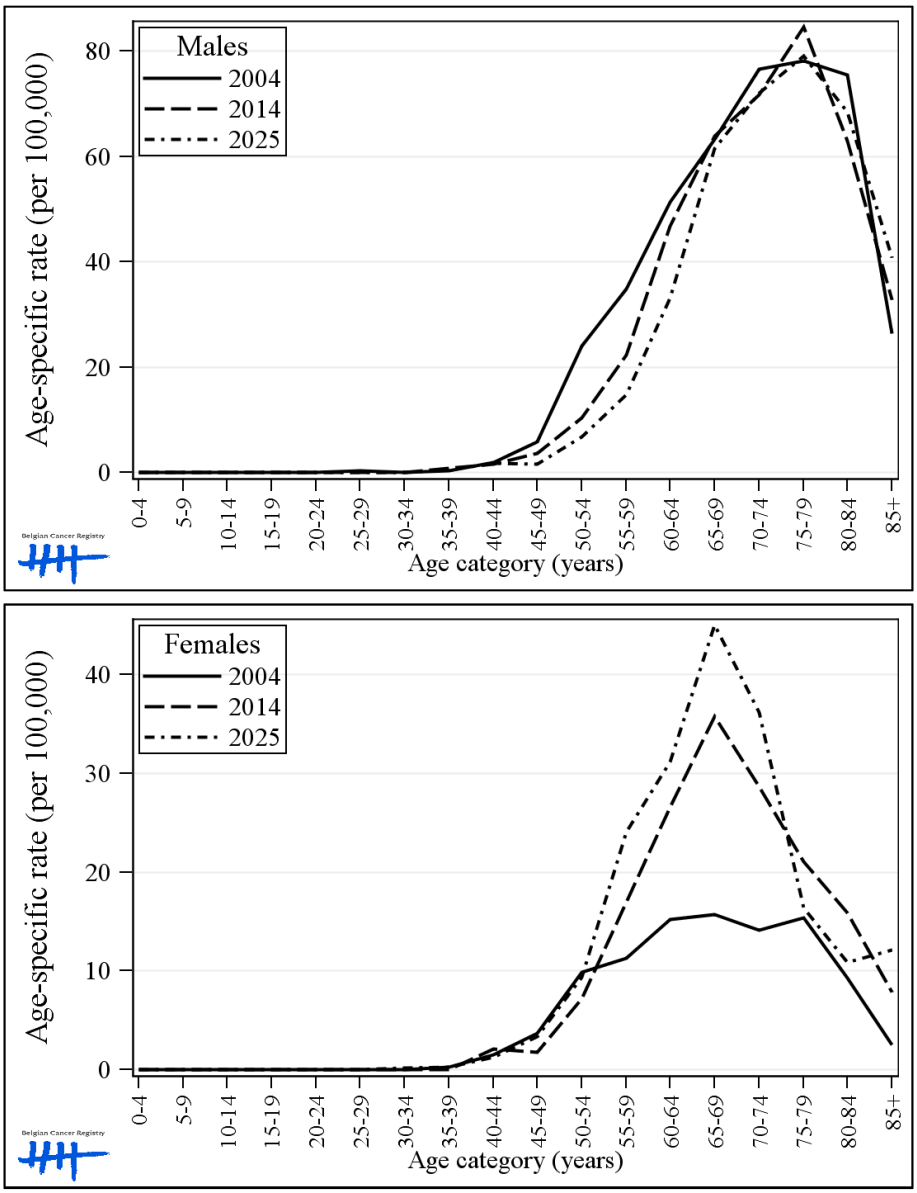
4.10.3.3 Number of new diagnoses by age group projected to 2025

Table 25: Lung cancer, small cell carcinoma: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Lung cancer - Small cell carcinoma					
	Projected number of cases					
	30-49 years		50-74 years		75+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Males						
2015	20	[15; 25]	575	[550; 600]	260	[250; 270]
2016	20	[15; 25]	580	[555; 605]	260	[250; 270]
2017	20	[15; 25]	590	[565; 620]	260	[250; 270]
2018	20	[15; 25]	600	[570; 630]	260	[250; 270]
2019	15	[15; 20]	605	[570; 635]	265	[255; 275]
2020	15	[10; 20]	610	[575; 640]	270	[260; 280]
2021	15	[10; 20]	610	[575; 645]	275	[265; 285]
2022	15	[10; 20]	610	[575; 650]	285	[275; 300]
2023	15	[10; 20]	610	[570; 650]	300	[285; 310]
2024	15	[10; 20]	610	[570; 650]	310	[295; 320]
2025	15	[10; 20]	610	[570; 655]	320	[305; 330]
Trend	↘		↗		↗	
Females						
2015	20	[15; 20]	340	[320; 360]	75	[65; 80]
2016	20	[15; 20]	360	[335; 385]	75	[65; 80]
2017	20	[15; 20]	380	[350; 405]	75	[65; 80]
2018	20	[15; 20]	395	[365; 430]	75	[65; 80]
2019	20	[15; 20]	415	[380; 450]	75	[65; 85]
2020	20	[15; 20]	435	[395; 470]	75	[65; 85]
2021	20	[15; 20]	450	[410; 495]	80	[70; 90]
2022	20	[15; 20]	465	[420; 515]	80	[70; 95]
2023	20	[15; 20]	485	[435; 530]	85	[75; 95]
2024	20	[15; 20]	500	[445; 550]	90	[75; 100]
2025	20	[15; 20]	515	[460; 570]	90	[75; 105]
Trend	↘		↗		↗	

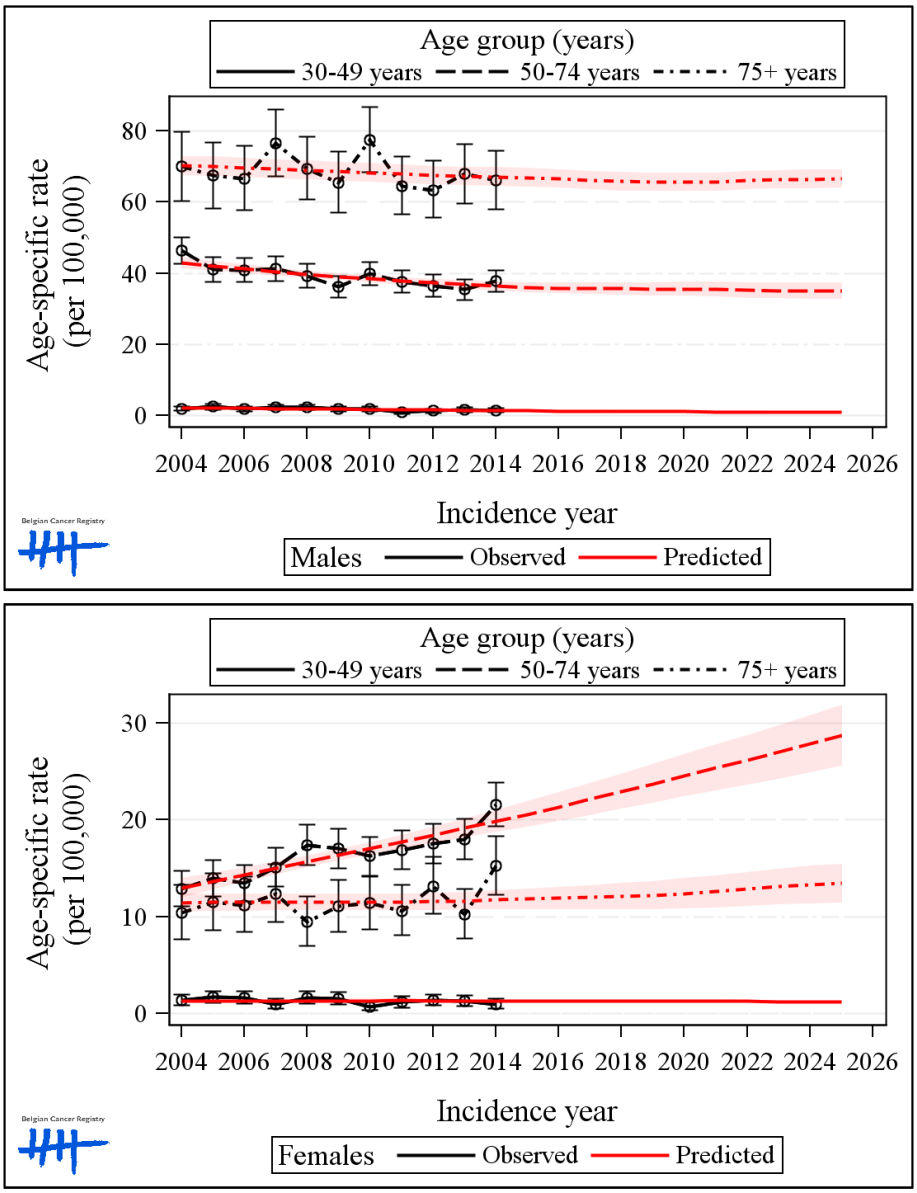
4.10.3.4 Observed and projected age-specific incidence rates

Figure 39: Lung cancer, small cell carcinoma: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.10.3.5 Trends in age-specific incidence rates

Figure 40: Lung cancer, small cell carcinoma: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.10.4. Lung cancer, squamous cell carcinoma & large cell carcinoma

- In the period 2014 to 2025, the yearly number of squamous and large cell carcinoma of the lung diagnoses in Belgium is projected to drop from 2,208 to 1,975 cases, a decrease of 11%.
- In males, the incidence projection 2014-2025 drops from 1,797 to 1,445 cases, a decrease of 20%. This decrease in projected number of diagnoses can be observed within all broad age groups.
- In contrast, the incidence projection 2014-2025 in females runs from 411 to 531 cases, an increase of about 29%. This projected increase in the number of diagnoses is expected in the 50-74 years and 75+ years age groups.

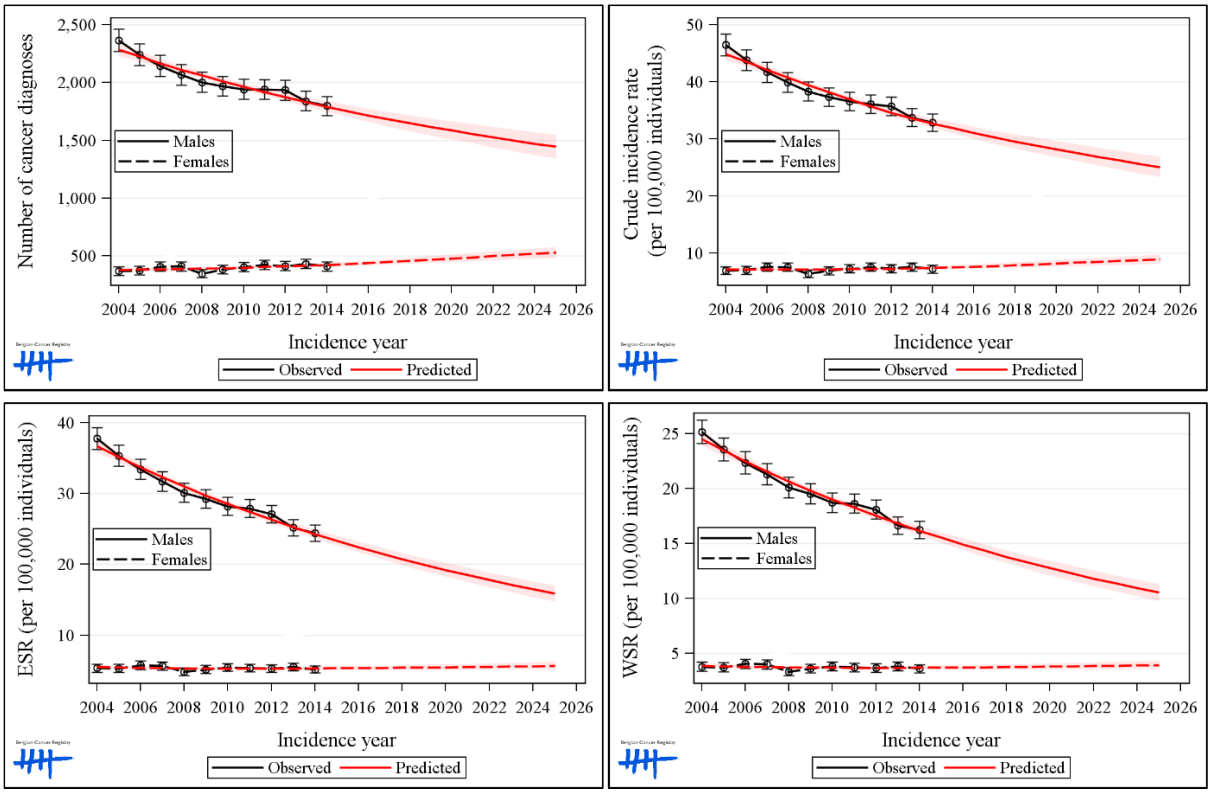
- The age-standardised cancer incidence rate (WSR) in males will decrease from 16.2 to 10.5 cases per 100,000 men between 2014 and 2025, a decrease of about 35%. The projected decrease in age-specific incidence in males can be observed from the age of 45 years onward.
- In contrast, no trend in WSR is projected in females between 2014 and 2025, expected to become 3.9 cases per 100,000 females. The age-specific incidence in females is projected to decrease in younger patients and to increase from the age of 60 years onward.

- The projected decreasing number of new squamous and large cell lung cancers in males in the period 2014-2025 is mainly driven by the expected strong reduction in cancer risk.
- The projected constant cancer risk in females shows that the moderate increase in projected new squamous and large cell carcinoma of the lung diagnoses in females can be attributed to the growing and aging population.

- Of the three histological subgroups considered for lung cancer, squamous and large cell carcinoma is the only group for which the cancer risk in females is not expected to increase.

4.10.4.1 Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 41: Lung cancer, squamous cell & large cell carcinoma: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.10.4.2 Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 26: Lung cancer, squamous cell & large cell carcinoma: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Lung cancer - Squamous & Large cell carcinoma							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Males								
2015	1,754	[1,703; 1,806]	31.9	[31.0; 32.8]	23.3	[22.7; 24.0]	15.5	[15.0; 16.0]
2016	1,716	[1,659; 1,773]	31.1	[30.0; 32.1]	22.4	[21.7; 23.2]	14.9	[14.4; 15.4]
2017	1,680	[1,618; 1,742]	30.3	[29.2; 31.4]	21.6	[20.8; 22.4]	14.3	[13.8; 14.9]
2018	1,647	[1,579; 1,714]	29.5	[28.3; 30.8]	20.7	[19.9; 21.6]	13.8	[13.2; 14.4]
2019	1,615	[1,542; 1,689]	28.9	[27.6; 30.2]	20.0	[19.1; 20.9]	13.3	[12.6; 13.9]
2020	1,586	[1,507; 1,664]	28.2	[26.8; 29.6]	19.2	[18.2; 20.2]	12.8	[12.1; 13.4]
2021	1,556	[1,472; 1,640]	27.6	[26.1; 29.0]	18.5	[17.5; 19.5]	12.3	[11.6; 12.9]
2022	1,527	[1,438; 1,615]	26.9	[25.4; 28.5]	17.8	[16.8; 18.8]	11.8	[11.1; 12.5]
2023	1,498	[1,405; 1,591]	26.3	[24.7; 27.9]	17.1	[16.1; 18.2]	11.4	[10.6; 12.1]
2024	1,471	[1,373; 1,568]	25.7	[24.0; 27.4]	16.5	[15.4; 17.6]	10.9	[10.2; 11.7]
2025	1,445	[1,342; 1,547]	25.1	[23.3; 26.9]	15.9	[14.7; 17.0]	10.5	[9.8; 11.3]
Trend	↘		↘		↘		↘	
Females								
2015	431	[411; 450]	7.6	[7.2; 7.9]	5.3	[5.1; 5.6]	3.7	[3.5; 3.9]
2016	439	[417; 460]	7.7	[7.3; 8.0]	5.4	[5.1; 5.7]	3.7	[3.5; 3.9]
2017	448	[424; 472]	7.8	[7.4; 8.2]	5.4	[5.1; 5.7]	3.7	[3.5; 4.0]
2018	458	[431; 485]	7.9	[7.5; 8.4]	5.4	[5.1; 5.8]	3.8	[3.5; 4.0]
2019	468	[438; 498]	8.1	[7.6; 8.6]	5.5	[5.1; 5.8]	3.8	[3.5; 4.0]
2020	478	[446; 511]	8.2	[7.7; 8.8]	5.5	[5.1; 5.9]	3.8	[3.5; 4.1]
2021	489	[454; 525]	8.4	[7.8; 9.0]	5.5	[5.1; 5.9]	3.8	[3.5; 4.1]
2022	499	[461; 538]	8.5	[7.9; 9.2]	5.6	[5.1; 6.0]	3.9	[3.5; 4.2]
2023	509	[468; 551]	8.7	[8.0; 9.4]	5.6	[5.1; 6.1]	3.9	[3.5; 4.2]
2024	520	[475; 564]	8.8	[8.0; 9.5]	5.6	[5.1; 6.1]	3.9	[3.6; 4.3]
2025	531	[483; 578]	8.9	[8.1; 9.7]	5.7	[5.2; 6.2]	3.9	[3.6; 4.3]
Trend	↗		↗		↗		–	

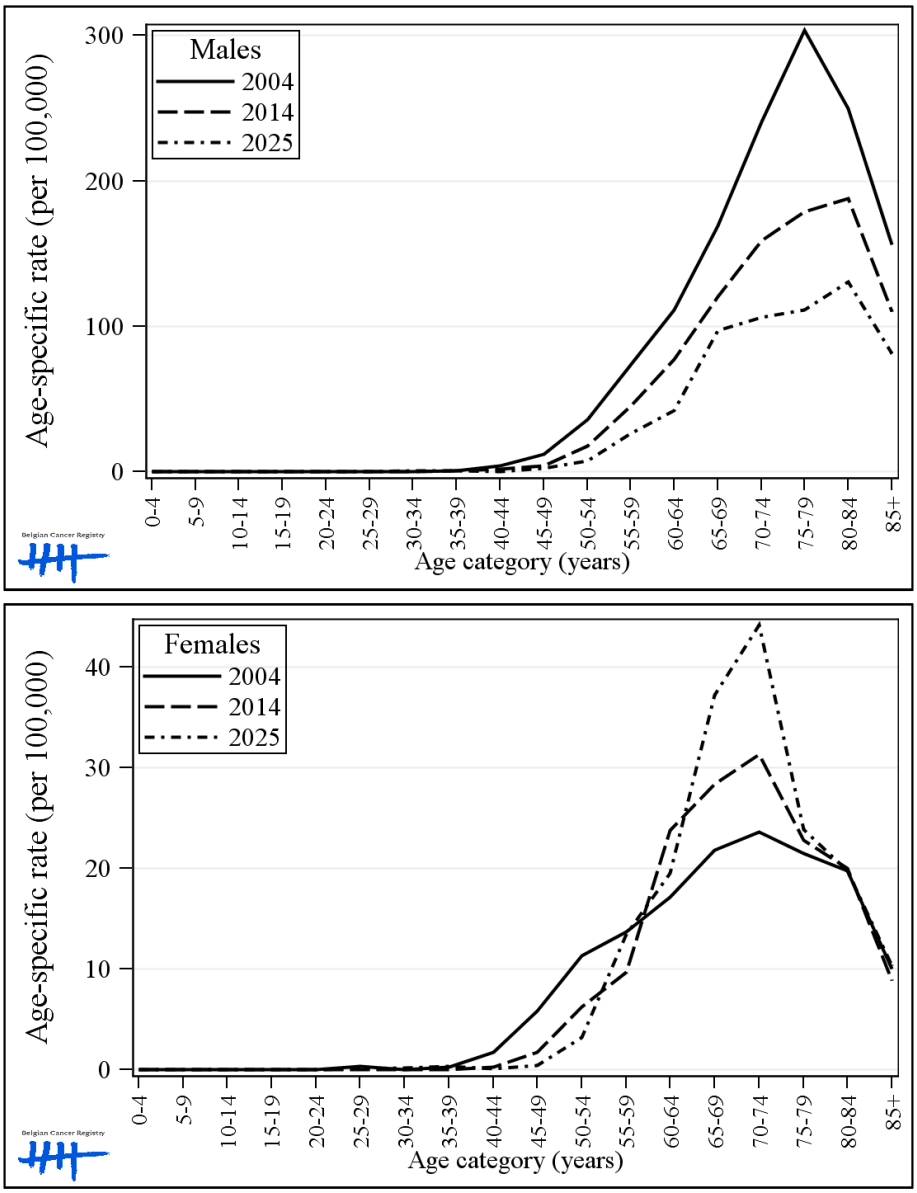
4.10.4.3 Number of new diagnoses by age group projected to 2025

Table 27: Lung cancer, squamous cell & large cell carcinoma: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Lung cancer - Squamous & Large cell carcinoma					
	Projected number of cases					
	30-49 years		**50-74 years**		**75+ years**	
Gender year	**Cases**	**95% PI**	**Cases**	**95% PI**	**Cases**	**95% PI**
Males						
2015	29	[24; 35]	1,093	[1,053; 1,134]	631	[601; 662]
2016	27	[21; 32]	1,079	[1,034; 1,124]	610	[576; 644]
2017	25	[19; 30]	1,071	[1,021; 1,121]	584	[548; 620]
2018	23	[17; 28]	1,059	[1,004; 1,114]	564	[525; 603]
2019	21	[16; 27]	1,042	[983; 1,102]	552	[510; 594]
2020	19	[14; 25]	1,023	[960; 1,087]	543	[497; 588]
2021	18	[13; 23]	1,005	[937; 1,073]	533	[485; 581]
2022	17	[11; 22]	977	[906; 1,049]	532	[481; 584]
2023	15	[11; 20]	952	[877; 1,027]	530	[475; 585]
2024	14	[10; 19]	928	[850; 1,006]	528	[469; 587]
2025	14	[9; 18]	906	[824; 987]	525	[463; 587]
Trend	↘		↘		↘	
Females						
2015	10	[7; 12]	309	[290; 327]	112	[106; 119]
2016	9	[6; 11]	318	[298; 339]	111	[105; 118]
2017	8	[5; 10]	331	[307; 354]	110	[103; 116]
2018	7	[4; 10]	342	[316; 368]	108	[102; 115]
2019	6	[4; 9]	353	[324; 381]	109	[102; 115]
2020	6	[3; 8]	363	[331; 394]	110	[103; 116]
2021	5	[3; 8]	373	[338; 408]	111	[105; 117]
2022	5	[3; 7]	380	[342; 418]	114	[108; 121]
2023	5	[3; 7]	387	[347; 428]	117	[111; 124]
2024	4	[2; 6]	395	[351; 439]	120	[113; 127]
2025	4	[2; 6]	404	[357; 451]	123	[116; 130]
Trend	↘		↗		↗	

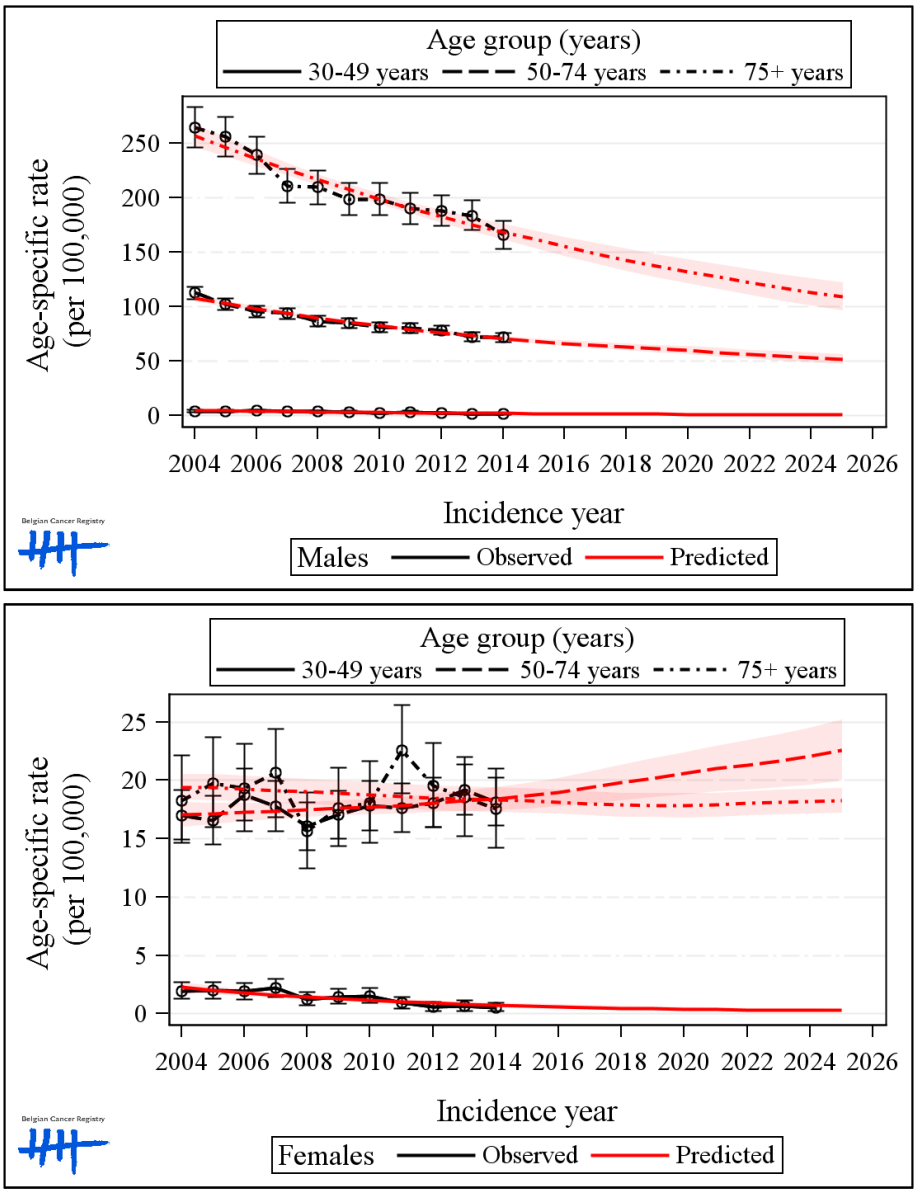
4.10.4.4 Observed and projected age-specific incidence rates

Figure 42: Lung cancer, squamous cell & large cell carcinoma: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.10.4.5 Trends in age-specific incidence rates

Figure 43: Lung cancer, squamous cell & large cell carcinoma: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.11. Mesothelioma (C45)

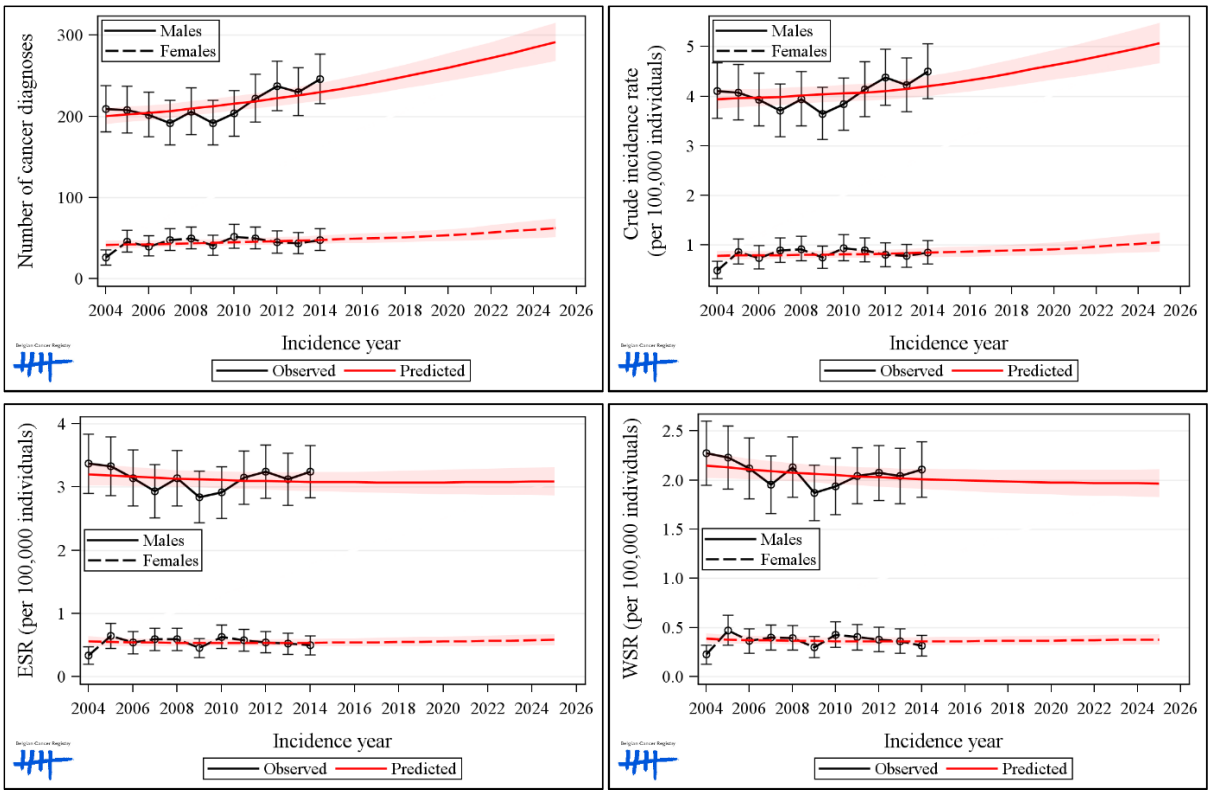
- In the period 2014 to 2025, the yearly number of new mesothelioma diagnoses in Belgium is projected to rise from 294 to 354, an increase of about 20%
- In males, the incidence projection 2014-2025 runs from 246 to 292, an increase of about 19%.
- In females, the incidence projection 2014-2025 increases from 48 to 65, an increase of about 35%.

- No trend is projected in the age-standardised mesothelioma incidence rates (WSR) in the 2014-2025 period, showing no change in mesothelioma incidence risk of about 2.0 and 0.4 cases per 100,000 persons for males and females respectively in that period. The projected incidence increase is therefore attributed to the growing and ageing population.
- Mesothelioma is almost exclusively caused by asbestos, with a delay of some decades between exposure and disease development. Given the prohibition on asbestos usage in Belgium since the late nineties, the newly diagnosed cases mainly originate from exposure of years ago.

- Broad age groups are not considered for mesothelioma.

4.11.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 44: Mesothelioma: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.11.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 28: Mesothelioma: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Mesothelioma							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Males								
2015	234	[223; 246]	4.3	[4.0; 4.5]	3.1	[2.9; 3.2]	2.0	[1.9; 2.1]
2016	239	[226; 251]	4.3	[4.1; 4.5]	3.1	[2.9; 3.2]	2.0	[1.9; 2.1]
2017	244	[230; 257]	4.4	[4.1; 4.6]	3.1	[2.9; 3.2]	2.0	[1.9; 2.1]
2018	249	[234; 264]	4.5	[4.2; 4.7]	3.1	[2.9; 3.2]	2.0	[1.9; 2.1]
2019	255	[239; 270]	4.5	[4.3; 4.8]	3.1	[2.9; 3.3]	2.0	[1.9; 2.1]
2020	260	[243; 277]	4.6	[4.3; 4.9]	3.1	[2.9; 3.3]	2.0	[1.9; 2.1]
2021	266	[248; 284]	4.7	[4.4; 5.0]	3.1	[2.9; 3.3]	2.0	[1.8; 2.1]
2022	272	[253; 291]	4.8	[4.5; 5.1]	3.1	[2.9; 3.3]	2.0	[1.8; 2.1]
2023	278	[258; 299]	4.9	[4.5; 5.2]	3.1	[2.9; 3.3]	2.0	[1.8; 2.1]
2024	285	[263; 307]	5.0	[4.6; 5.4]	3.1	[2.9; 3.3]	2.0	[1.8; 2.1]
2025	292	[268; 315]	5.1	[4.7; 5.5]	3.1	[2.9; 3.3]	2.0	[1.8; 2.1]
Trend	↗		↗		–		–	
Females								
2015	49	[43; 54]	0.9	[0.8; 1.0]	0.5	[0.5; 0.6]	0.4	[0.3; 0.4]
2016	50	[44; 56]	0.9	[0.8; 1.0]	0.5	[0.5; 0.6]	0.4	[0.3; 0.4]
2017	50	[44; 57]	0.9	[0.8; 1.0]	0.5	[0.5; 0.6]	0.4	[0.3; 0.4]
2018	51	[45; 58]	0.9	[0.8; 1.0]	0.6	[0.5; 0.6]	0.4	[0.3; 0.4]
2019	52	[45; 59]	0.9	[0.8; 1.0]	0.6	[0.5; 0.6]	0.4	[0.3; 0.4]
2020	53	[46; 61]	0.9	[0.8; 1.0]	0.6	[0.5; 0.6]	0.4	[0.3; 0.4]
2021	55	[47; 63]	0.9	[0.8; 1.1]	0.6	[0.5; 0.6]	0.4	[0.3; 0.4]
2022	57	[48; 66]	1.0	[0.8; 1.1]	0.6	[0.5; 0.6]	0.4	[0.3; 0.4]
2023	59	[49; 69]	1.0	[0.8; 1.2]	0.6	[0.5; 0.7]	0.4	[0.3; 0.4]
2024	61	[50; 71]	1.0	[0.8; 1.2]	0.6	[0.5; 0.7]	0.4	[0.3; 0.4]
2025	63	[51; 74]	1.1	[0.9; 1.2]	0.6	[0.5; 0.7]	0.4	[0.3; 0.4]
Trend	↗		↗		–		–	

4.12. Malignant melanoma (C43)

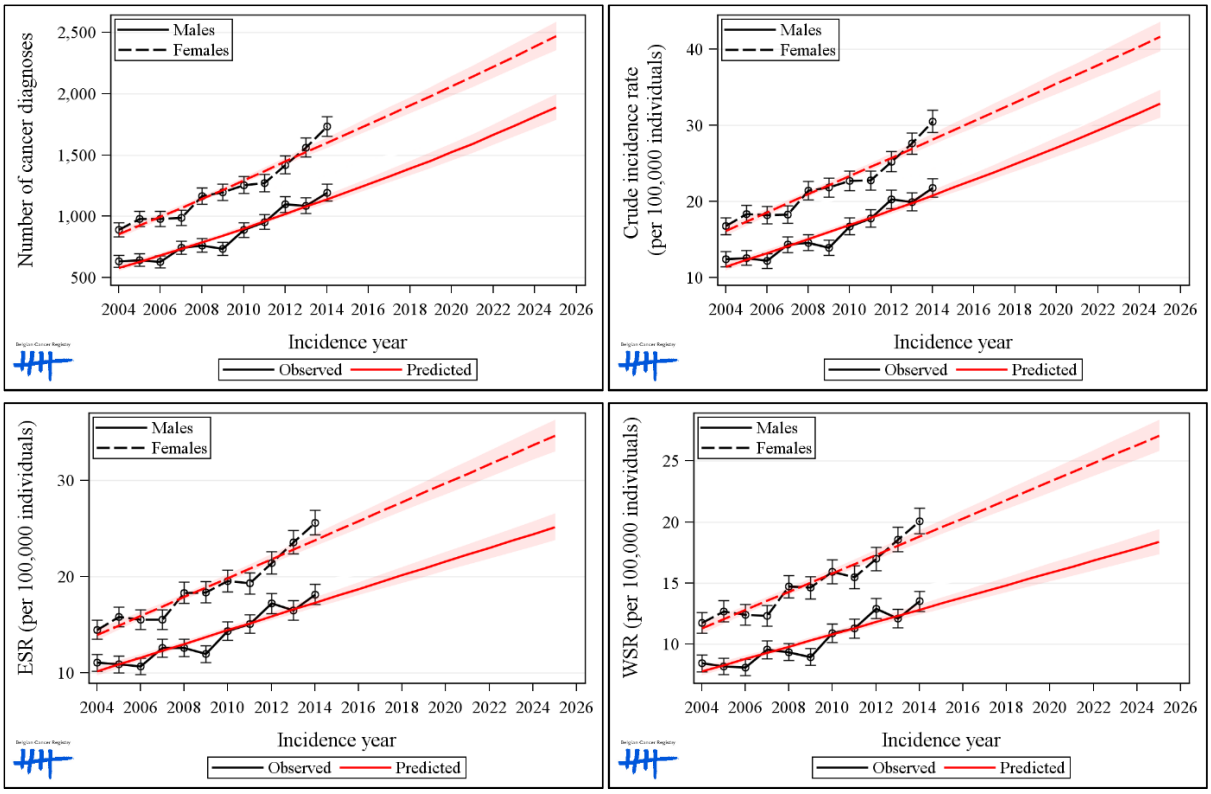
- In the period 2014 to 2025, the yearly number of new malignant melanoma in Belgium is projected to rise from 2,925 to 4,356, an increase of about 49%.
- In males, the incidence projection 2014-2025 runs from 1,193 to 1,888, an increase of 58%. The increasing projected number of diagnoses in males from 2014 to 2025 is more pronounced in the 40-74 year and 75+ years age groups.
- In females, the incidence projection 2014-2025 runs from 1,732 to 2,468, an increase of about 43%. The relative increase in projected number of diagnoses in the oldest two age groups (40-74 years, 75+ years) is roughly twice as high compared to the 15-39 years age group.

- The age-standardised cancer incidence rate (WSR) in males will increase from 13.5 to about 18.4 cases per 100,000 men between 2014 and 2025, an increase of 36%.
- The same trend is observed in females. The WSR in females is expected increase from 20.1 to 27.1 cases per 100,000 women between 2014 and 2025, an increase of 35%.

- Both the increasing cancer risk and the ageing and growing population drive the projected increase in the number of diagnosed cancer cases in males and in females in the 2014-2025 period.

4.12.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 45: Malignant melanoma: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.12.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 29: Malignant melanoma: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Malignant melanoma							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Males								
2015	1,201	[1,161; 1,241]	21.8	[21.1; 22.6]	18.0	[17.4; 18.6]	13.3	[12.9; 13.8]
2016	1,263	[1,218; 1,308]	22.9	[22.0; 23.7]	18.7	[18.1; 19.4]	13.8	[13.3; 14.3]
2017	1,326	[1,275; 1,377]	23.9	[23.0; 24.8]	19.4	[18.7; 20.2]	14.3	[13.8; 14.9]
2018	1,390	[1,333; 1,447]	24.9	[23.9; 26.0]	20.2	[19.3; 21.0]	14.8	[14.2; 15.5]
2019	1,456	[1,392; 1,519]	26.0	[24.9; 27.1]	20.9	[20.0; 21.8]	15.3	[14.7; 16.0]
2020	1,523	[1,453; 1,593]	27.1	[25.9; 28.3]	21.6	[20.6; 22.6]	15.8	[15.1; 16.6]
2021	1,592	[1,516; 1,668]	28.2	[26.8; 29.5]	22.3	[21.2; 23.3]	16.3	[15.6; 17.1]
2022	1,664	[1,581; 1,747]	29.3	[27.9; 30.8]	23.0	[21.9; 24.1]	16.9	[16.0; 17.7]
2023	1,738	[1,648; 1,828]	30.5	[28.9; 32.1]	23.7	[22.5; 24.9]	17.4	[16.5; 18.3]
2024	1,813	[1,715; 1,910]	31.7	[30.0; 33.3]	24.4	[23.1; 25.7]	17.9	[16.9; 18.8]
2025	1,888	[1,784; 1,993]	32.8	[31.0; 34.6]	25.1	[23.8; 26.5]	18.4	[17.3; 19.4]
Trend	↗		↗		↗		↗	
Females								
2015	1,673	[1,627; 1,720]	29.4	[28.5; 30.2]	24.8	[24.1; 25.5]	19.6	[19.0; 20.1]
2016	1,749	[1,697; 1,802]	30.6	[29.6; 31.5]	25.8	[25.0; 26.6]	20.3	[19.7; 20.9]
2017	1,826	[1,767; 1,885]	31.8	[30.8; 32.8]	26.8	[25.9; 27.6]	21.1	[20.4; 21.8]
2018	1,904	[1,838; 1,969]	33.0	[31.9; 34.2]	27.7	[26.8; 28.7]	21.8	[21.0; 22.6]
2019	1,981	[1,909; 2,054]	34.2	[33.0; 35.5]	28.7	[27.7; 29.8]	22.6	[21.7; 23.4]
2020	2,060	[1,981; 2,139]	35.4	[34.1; 36.8]	29.7	[28.5; 30.9]	23.3	[22.4; 24.2]
2021	2,139	[2,053; 2,225]	36.7	[35.2; 38.1]	30.7	[29.4; 31.9]	24.1	[23.1; 25.1]
2022	2,220	[2,127; 2,313]	37.9	[36.3; 39.5]	31.7	[30.3; 33.0]	24.8	[23.8; 25.9]
2023	2,301	[2,201; 2,401]	39.1	[37.4; 40.8]	32.7	[31.2; 34.1]	25.6	[24.4; 26.7]
2024	2,384	[2,277; 2,492]	40.4	[38.5; 42.2]	33.6	[32.1; 35.2]	26.3	[25.1; 27.5]
2025	2,468	[2,353; 2,583]	41.6	[39.7; 43.5]	34.6	[33.0; 36.3]	27.1	[25.8; 28.4]
Trend	↗		↗		↗		↗	

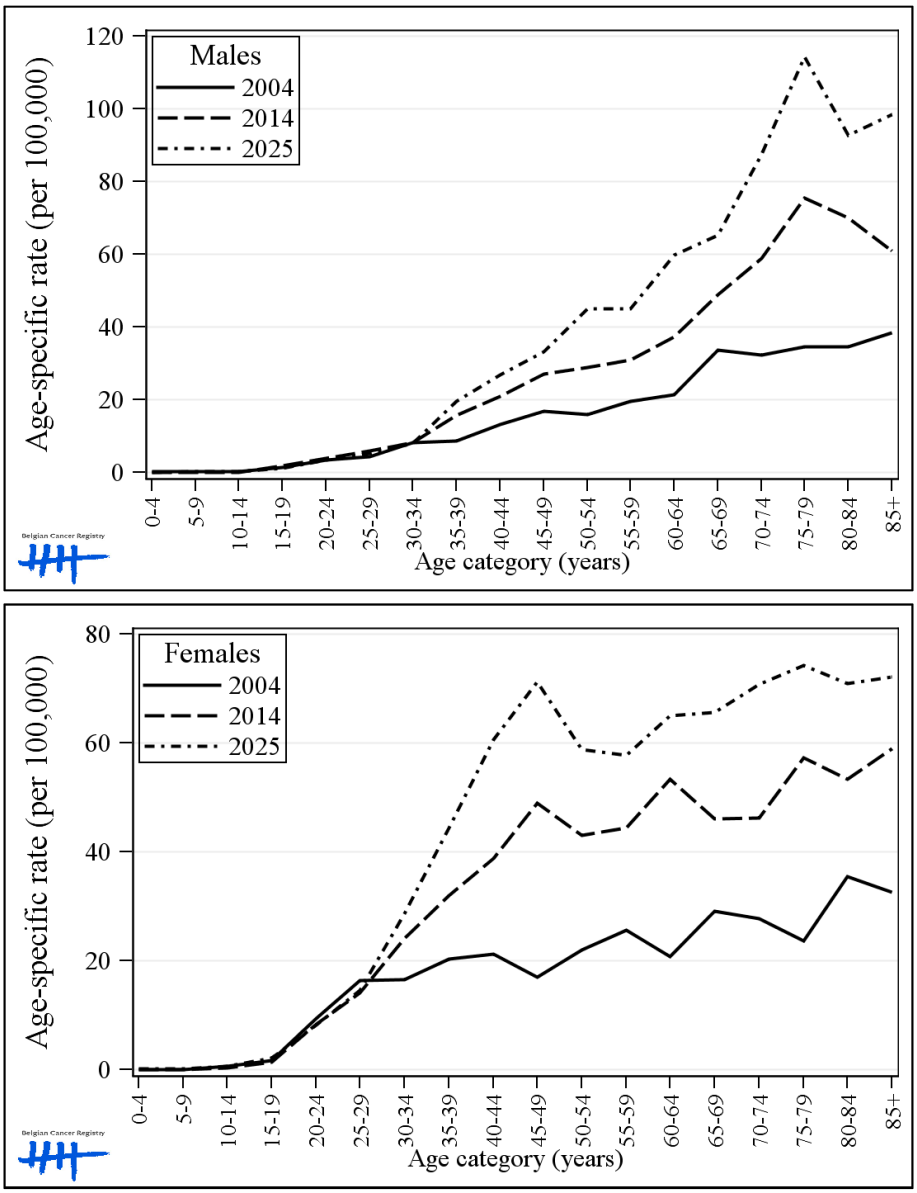
4.12.3. Number of new diagnoses by age group projected to 2025

Table 30: Malignant melanoma: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Malignant melanoma					
	Projected number of cases					
	15-39 years		40-74 years		75+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Males						
2015	117	[107; 126]	807	[774; 841]	275	[256; 295]
2016	119	[108; 130]	852	[814; 890]	290	[268; 313]
2017	121	[109; 133]	900	[857; 943]	302	[278; 327]
2018	123	[110; 136]	948	[900; 996]	317	[289; 345]
2019	125	[111; 139]	994	[940; 1,047]	335	[304; 366]
2020	127	[111; 142]	1,039	[980; 1,097]	356	[322; 391]
2021	128	[112; 144]	1,084	[1,020; 1,148]	378	[339; 416]
2022	130	[113; 147]	1,125	[1,055; 1,194]	408	[366; 451]
2023	132	[113; 150]	1,166	[1,091; 1,240]	439	[392; 486]
2024	134	[114; 154]	1,206	[1,127; 1,286]	470	[418; 522]
2025	137	[116; 158]	1,248	[1,163; 1,333]	502	[445; 559]
Trend	↗		↗		↗	
Females						
2015	289	[271; 307]	1,061	[1,023; 1,098]	321	[300; 343]
2016	297	[277; 317]	1,116	[1,074; 1,159]	334	[309; 358]
2017	305	[283; 327]	1,176	[1,128; 1,224]	343	[316; 370]
2018	312	[288; 337]	1,235	[1,182; 1,288]	354	[324; 384]
2019	319	[292; 346]	1,292	[1,233; 1,350]	368	[335; 401]
2020	326	[296; 355]	1,348	[1,284; 1,412]	384	[348; 420]
2021	332	[300; 363]	1,405	[1,335; 1,475]	400	[360; 439]
2022	338	[304; 372]	1,457	[1,382; 1,532]	421	[378; 464]
2023	345	[309; 382]	1,510	[1,429; 1,590]	443	[396; 491]
2024	353	[314; 392]	1,562	[1,476; 1,648]	466	[415; 518]
2025	361	[319; 402]	1,616	[1,524; 1,708]	489	[434; 545]
Trend	↗		↗		↗	

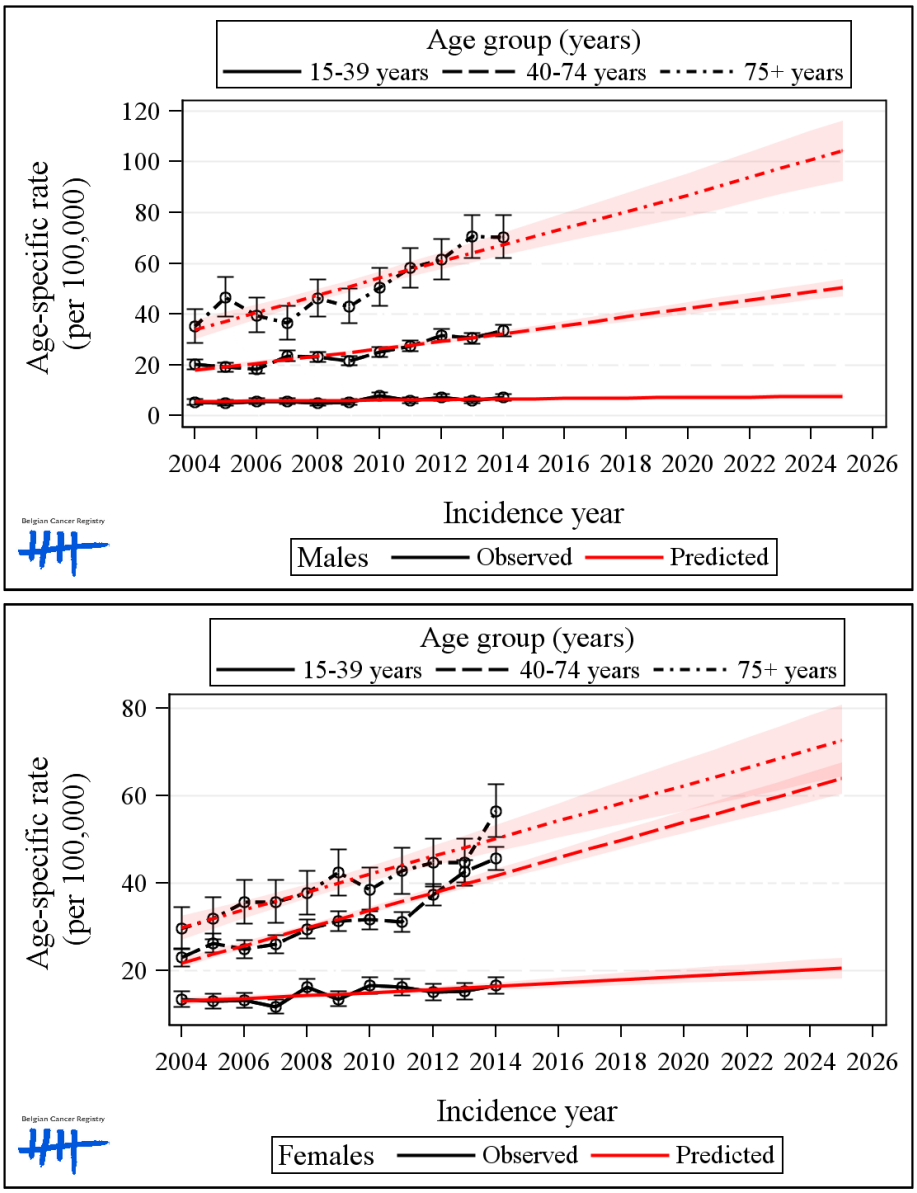
4.12.4. Observed and projected age-specific incidence rates

Figure 46: Malignant melanoma: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.12.5. Trends in age-specific incidence rates

Figure 47: Malignant melanoma: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.13. Female breast cancer (C50)

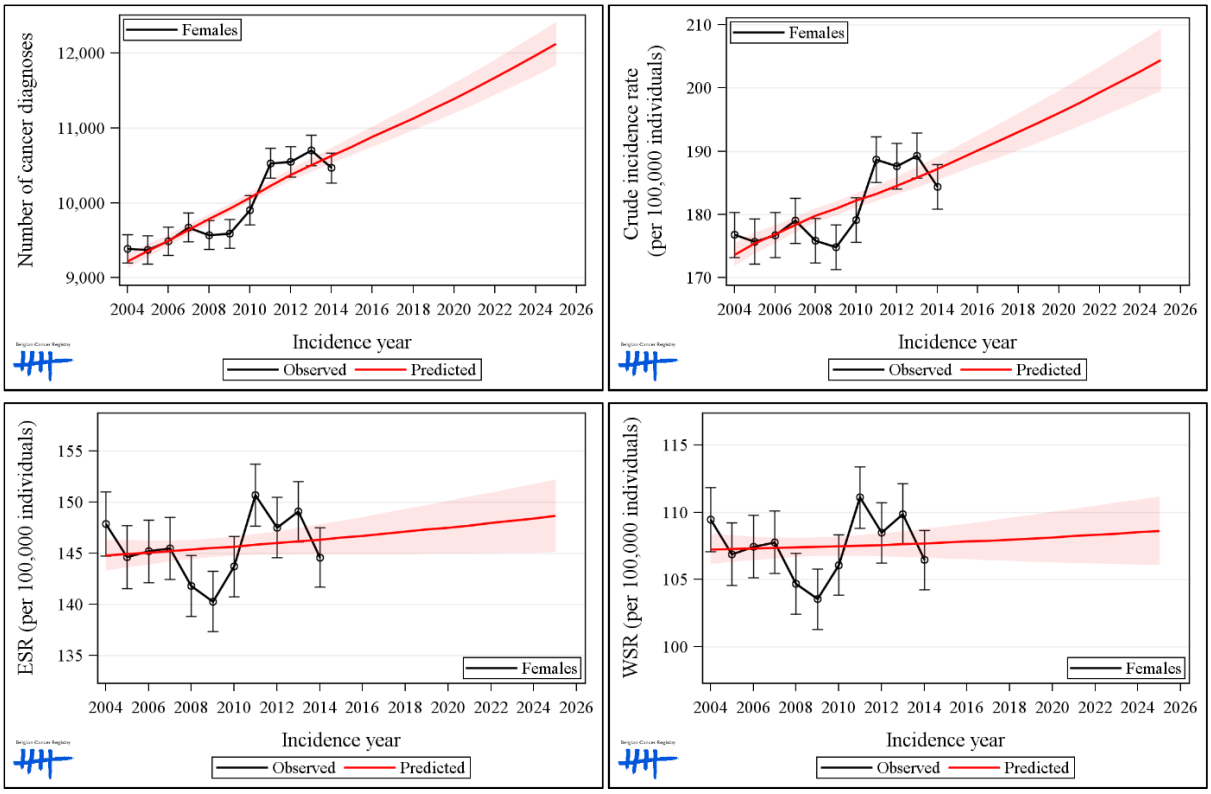
- In the period 2014 to 2025, the yearly number of new female breast cancer diagnoses in Belgium is projected to rise from 10,466 to 12,125, an increase of about 16%.
- The strongest increase in projected number of diagnoses from 2014 to 2025 is expected in the oldest age group (70+ years), followed by a weak increase in the middle age group (50-69 years), while a weak decrease is expected in the youngest age group (25-49 years).

- The age-standardised cancer incidence rate (WSR) does not show a statistical significant increase between 2014 (106.4 cases per 100,000 women) and 2025 (108.6 cases per 100,000 women).
- The age-specific incidence rate starts to increase from the age of 65 years onward.

- The non-significant increase in cancer risk, indicate that the projected increasing incidence count 2014-2025 for female breast cancer can be fully attributed to the ageing and increasing female population.

4.13.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 48: Female breast cancer: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.13.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 31: Female breast cancer: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Female breast cancer							
	Predicted number of cases		**Predicted crude rate (per 100,000)**		**Predicted ESR (per 100,000)**		**Predicted WSR (per 100,000)**	
Gender year	**Estimate**	**95% PI**	**Estimate**	**95% PI**	**Estimate**	**95% PI**	**Estimate**	**95% PI**
Females								
2015	10,754	[10,636; 10,873]	188.7	[186.6; 190.7]	146.5	[144.9; 148.2]	107.7	[106.6; 108.9]
2016	10,881	[10,747; 11,015]	190.1	[187.8; 192.5]	146.7	[144.9; 148.5]	107.8	[106.5; 109.1]
2017	11,007	[10,857; 11,157]	191.6	[189.0; 194.2]	146.9	[144.9; 148.9]	107.9	[106.4; 109.4]
2018	11,133	[10,966; 11,299]	193.1	[190.2; 195.9]	147.1	[144.9; 149.3]	108.0	[106.4; 109.6]
2019	11,261	[11,078; 11,444]	194.5	[191.4; 197.7]	147.3	[144.9; 149.7]	108.0	[106.3; 109.8]
2020	11,393	[11,193; 11,593]	196.1	[192.6; 199.5]	147.5	[144.9; 150.1]	108.1	[106.3; 110.0]
2021	11,531	[11,314; 11,748]	197.7	[193.9; 201.4]	147.7	[145.0; 150.5]	108.2	[106.2; 110.2]
2022	11,675	[11,441; 11,910]	199.3	[195.3; 203.3]	148.0	[145.0; 150.9]	108.3	[106.2; 110.5]
2023	11,821	[11,569; 12,074]	201.0	[196.7; 205.3]	148.2	[145.0; 151.3]	108.4	[106.1; 110.7]
2024	11,970	[11,699; 12,241]	202.6	[198.0; 207.2]	148.4	[145.1; 151.7]	108.5	[106.1; 110.9]
2025	12,125	[11,835; 12,415]	204.4	[199.5; 209.3]	148.6	[145.1; 152.2]	108.6	[106.1; 111.2]
Trend	↗		↗		↗		–	

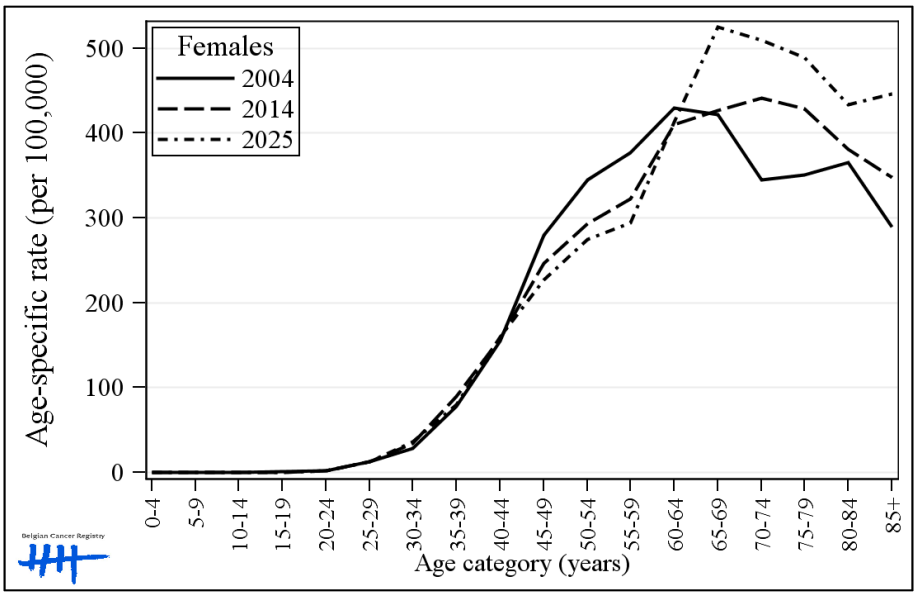
4.13.3. Number of new diagnoses by age group projected to 2025

Table 32: Female breast cancer: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Female breast cancer					
	Projected number of cases					
	25-49 years		50-69 years		70+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Females						
2015	2,044	[2,001; 2,087]	5,248	[5,165; 5,331]	3,456	[3,383; 3,530]
2016	2,019	[1,972; 2,066]	5,322	[5,228; 5,416]	3,534	[3,450; 3,617]
2017	1,999	[1,948; 2,050]	5,352	[5,247; 5,456]	3,650	[3,555; 3,745]
2018	1,983	[1,928; 2,039]	5,377	[5,263; 5,492]	3,766	[3,658; 3,873]
2019	1,966	[1,907; 2,025]	5,403	[5,278; 5,527]	3,885	[3,765; 4,005]
2020	1,948	[1,886; 2,011]	5,438	[5,302; 5,573]	4,001	[3,868; 4,134]
2021	1,930	[1,864; 1,995]	5,473	[5,327; 5,620]	4,122	[3,975; 4,268]
2022	1,914	[1,845; 1,982]	5,513	[5,355; 5,670]	4,243	[4,083; 4,403]
2023	1,902	[1,830; 1,974]	5,538	[5,369; 5,706]	4,375	[4,201; 4,549]
2024	1,897	[1,821; 1,973]	5,557	[5,378; 5,736]	4,510	[4,321; 4,699]
2025	1,896	[1,816; 1,976]	5,568	[5,379; 5,758]	4,654	[4,450; 4,859]
Trend	↘		↗		↗	

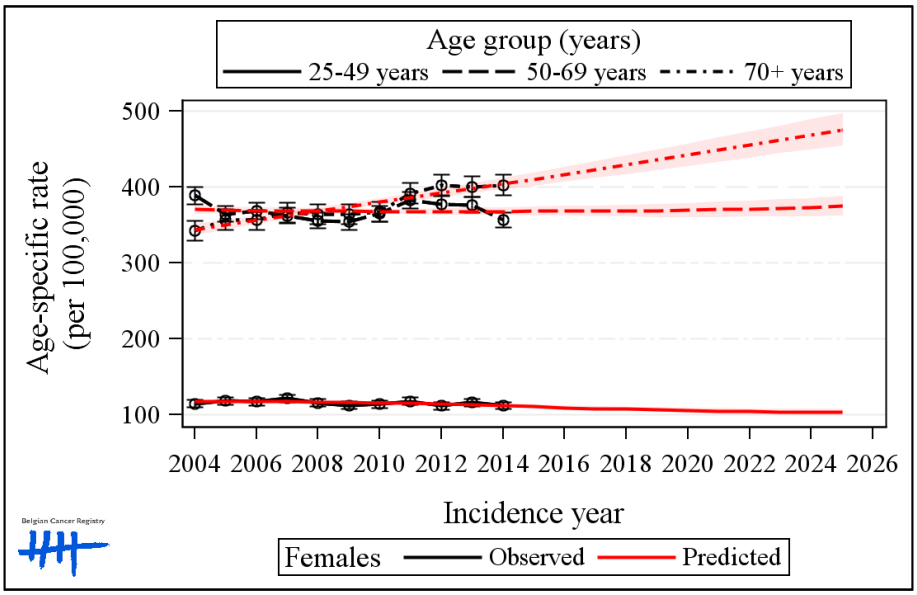
4.13.4. Observed and projected age-specific incidence rates

Figure 49: Female breast cancer: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.13.5. Trends in age-specific incidence rates

Figure 50: Female breast cancer: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.14. Cervical cancer (C53)

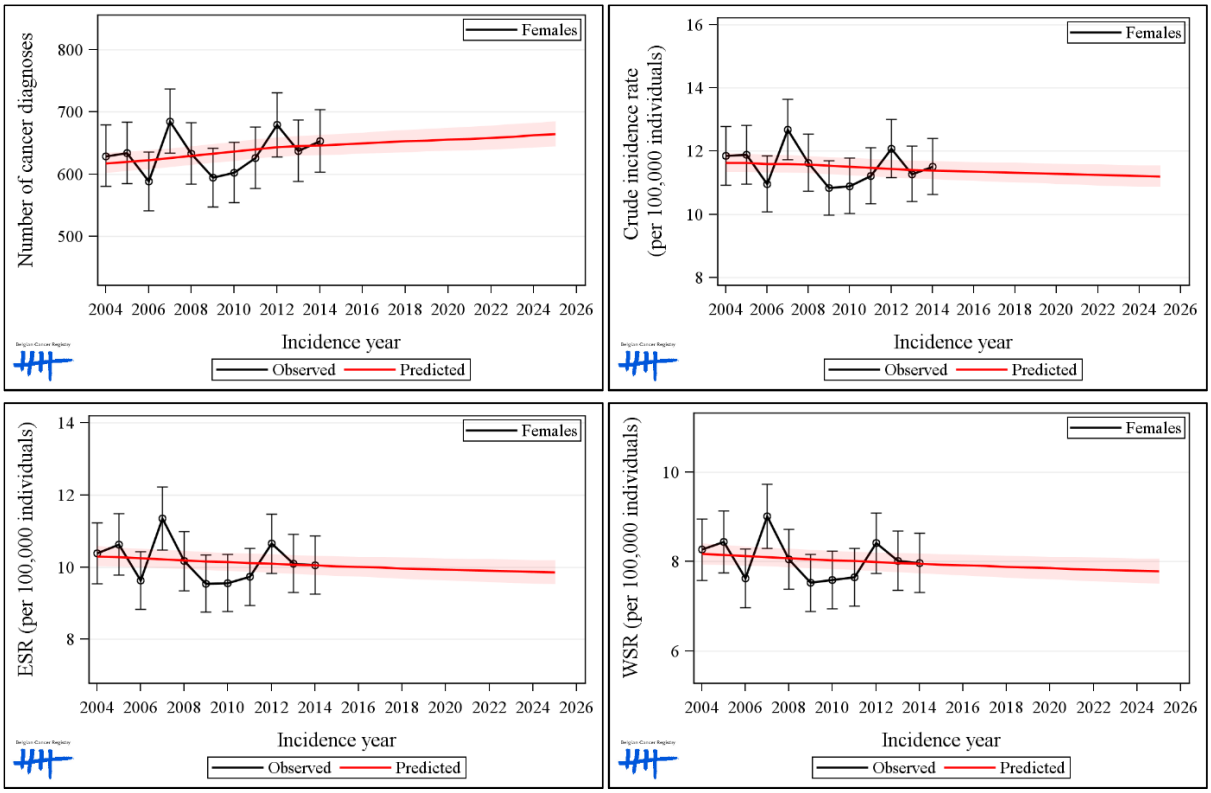
- In the period 2014 to 2025, the yearly number of new cervical cancer diagnoses in Belgium is projected to slightly increase from 653 to 665 (+2%).
- The increase in projected incidence number is observed in the 65+ years age group, while a very weak decrease is expected in the 25-64 years age group.

- The age-standardised cervical cancer incidence rate (WSR) is expected to decrease from 8.0 to 7.8 cases per 100,000 women from 2014 to 2025, a decrease of 2.5%.
- The age-specific incidence rate in the 65+ years age group remains stable, whereas a slight decrease is expected in the 25-64 years age group. This might be due to the cervical cancer screening in the latter age group which detects precancerous lesions.

- The decreasing cancer risk indicates that the 2014-2025 projected increasing incidence count can be fully attributed to the ageing and growing female population.

4.14.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 51: Cervical cancer: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.14.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 33: Cervical cancer: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Cervical cancer							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Females								
2015	648	[631; 665]	11.4	[11.1; 11.7]	10.0	[9.8; 10.3]	7.9	[7.7; 8.2]
2016	650	[633; 667]	11.4	[11.1; 11.6]	10.0	[9.7; 10.3]	7.9	[7.7; 8.1]
2017	651	[634; 669]	11.3	[11.0; 11.6]	10.0	[9.7; 10.3]	7.9	[7.7; 8.1]
2018	653	[635; 670]	11.3	[11.0; 11.6]	10.0	[9.7; 10.3]	7.9	[7.6; 8.1]
2019	654	[636; 672]	11.3	[11.0; 11.6]	10.0	[9.7; 10.2]	7.9	[7.6; 8.1]
2020	656	[637; 674]	11.3	[11.0; 11.6]	9.9	[9.6; 10.2]	7.9	[7.6; 8.1]
2021	657	[638; 676]	11.3	[10.9; 11.6]	9.9	[9.6; 10.2]	7.8	[7.6; 8.1]
2022	659	[639; 678]	11.2	[10.9; 11.6]	9.9	[9.6; 10.2]	7.8	[7.6; 8.1]
2023	660	[641; 680]	11.2	[10.9; 11.6]	9.9	[9.6; 10.2]	7.8	[7.5; 8.1]
2024	662	[643; 682]	11.2	[10.9; 11.6]	9.9	[9.5; 10.2]	7.8	[7.5; 8.1]
2025	665	[645; 685]	11.2	[10.9; 11.5]	9.9	[9.5; 10.2]	7.8	[7.5; 8.1]
Trend	↗		↘		↘		↘	

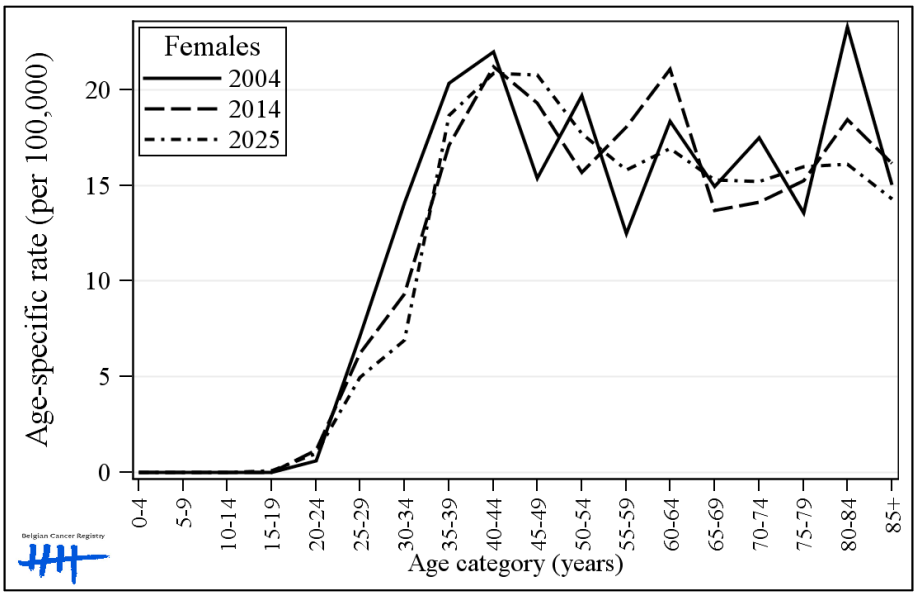
4.14.3. Number of new diagnoses by age group projected to 2025

Table 34: Cervical cancer: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Cervical cancer			
	Projected number of cases			
	25-64 years		65+ years	
Gender year	Cases	95% PI	Cases	95% PI
Females				
2015	467	[453; 482]	177	[169; 185]
2016	467	[452; 482]	179	[171; 187]
2017	467	[452; 482]	181	[173; 189]
2018	466	[451; 481]	183	[175; 192]
2019	465	[449; 481]	186	[177; 194]
2020	464	[448; 480]	188	[180; 197]
2021	462	[446; 479]	191	[182; 200]
2022	461	[444; 478]	194	[185; 203]
2023	460	[442; 477]	197	[188; 206]
2024	458	[441; 476]	201	[191; 210]
2025	457	[439; 475]	204	[195; 214]
Trend	↘		↗	

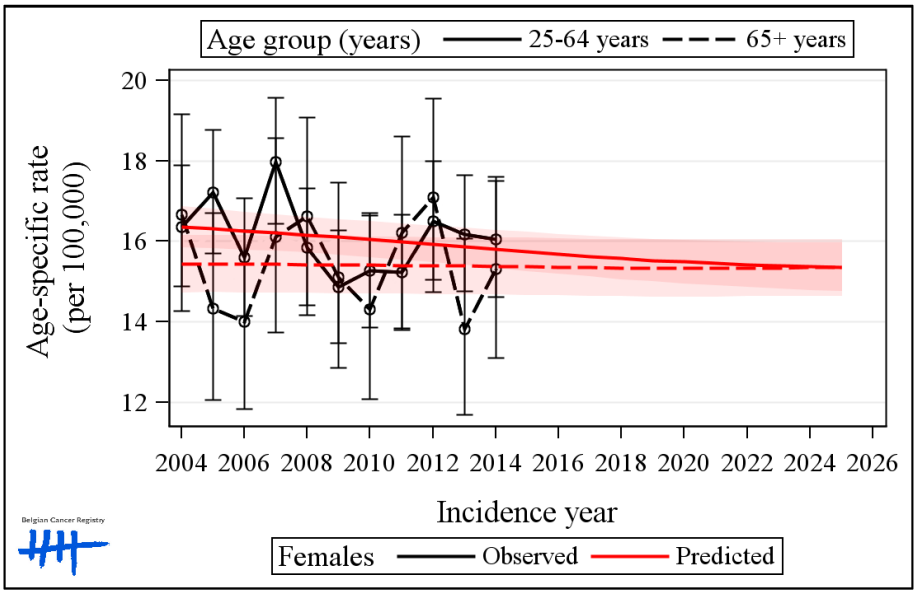
4.14.4. Observed and projected age-specific incidence rates

Figure 52: Cervical cancer: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.14.5. Trends in age-specific incidence rates

Figure 53: Cervical cancer: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.15. Corpus uteri cancer (C54)

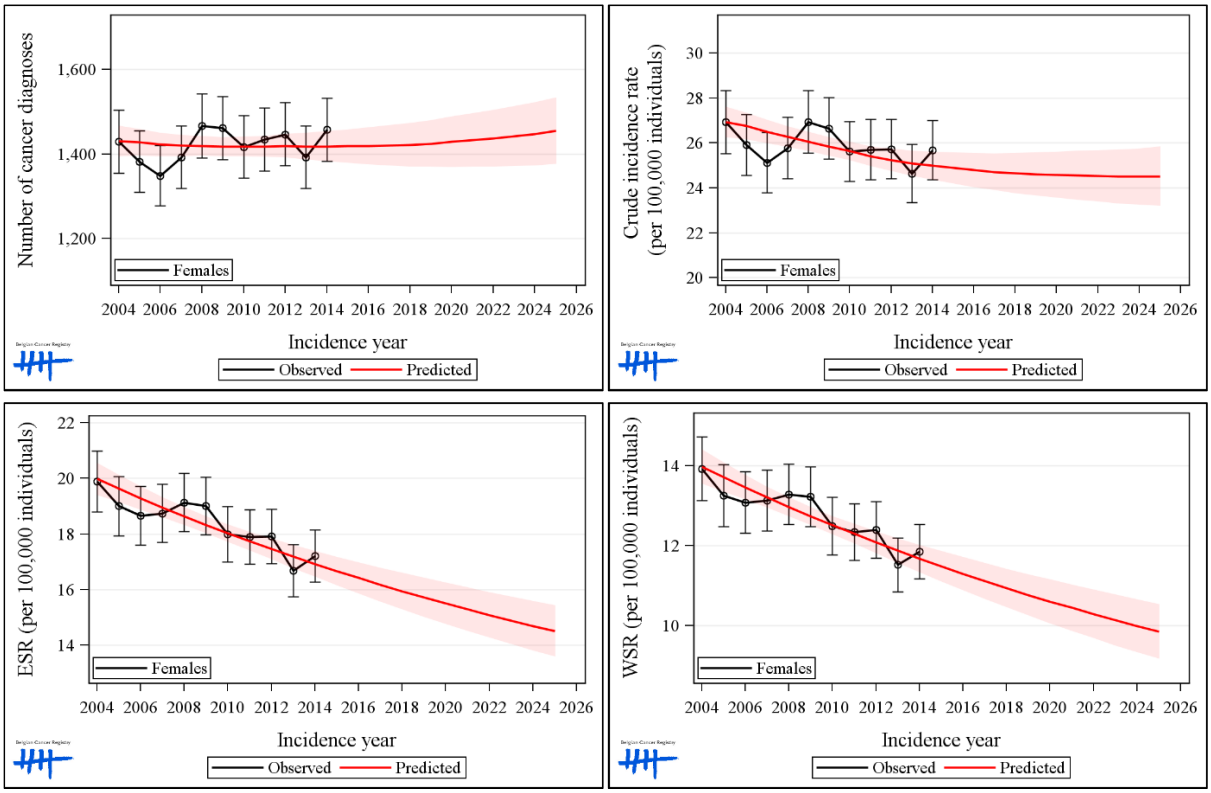
- There is no significant increase in projected yearly number of new corpus uteri cancer diagnoses in Belgium in the period 2014 to 2025, expected to be 1,454 cases in 2025.
- However, differences are observed between the broad age groups considered. An increase in projected number of corpus uteri cancer diagnoses is expected in the oldest age group (70+ years), while a decrease is expected in the 30-49 years and 50-69 years age groups.

- The age-standardised cancer incidence rates (WSR) will decrease from 11.8 to 9.9 cases per 100,000 women between 2014 and 2025, a decrease of 19%.
- The age-specific incidence rate is expected to decrease in the 50 to 69 years age range and to slightly increase in the 70+ years age group.

- The overall constant projected incidence count results from an ageing and growing population and a decreasing cancer risk. An increasing cancer risk is however expected in 70+ years age group resulting in an increasing projected number of diagnosed corpus uteri cancer cases in this age group from 2014 to 2025.

4.15.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 54: Corpus uteri cancer: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.15.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 35: Corpus uteri cancer: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Corpus uteri cancer							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Females								
2015	1,419	[1,379; 1,458]	24.9	[24.2; 25.6]	16.7	[16.2; 17.2]	11.5	[11.1; 11.9]
2016	1,419	[1,375; 1,462]	24.8	[24.0; 25.5]	16.4	[15.9; 17.0]	11.3	[10.9; 11.7]
2017	1,420	[1,373; 1,467]	24.7	[23.9; 25.5]	16.2	[15.6; 16.8]	11.1	[10.7; 11.6]
2018	1,421	[1,370; 1,472]	24.6	[23.8; 25.5]	15.9	[15.3; 16.6]	10.9	[10.5; 11.4]
2019	1,424	[1,369; 1,480]	24.6	[23.7; 25.6]	15.7	[15.0; 16.4]	10.8	[10.3; 11.3]
2020	1,428	[1,369; 1,488]	24.6	[23.6; 25.6]	15.5	[14.8; 16.2]	10.6	[10.1; 11.2]
2021	1,433	[1,370; 1,496]	24.6	[23.5; 25.6]	15.3	[14.5; 16.1]	10.4	[9.9; 11.0]
2022	1,437	[1,370; 1,504]	24.5	[23.4; 25.7]	15.1	[14.3; 15.9]	10.3	[9.7; 10.9]
2023	1,441	[1,371; 1,512]	24.5	[23.3; 25.7]	14.9	[14.0; 15.7]	10.1	[9.5; 10.8]
2024	1,447	[1,373; 1,521]	24.5	[23.2; 25.8]	14.7	[13.8; 15.6]	10.0	[9.3; 10.7]
2025	1,454	[1,376; 1,533]	24.5	[23.2; 25.8]	14.5	[13.6; 15.4]	9.9	[9.2; 10.5]
Trend	–		–		↘		↘	

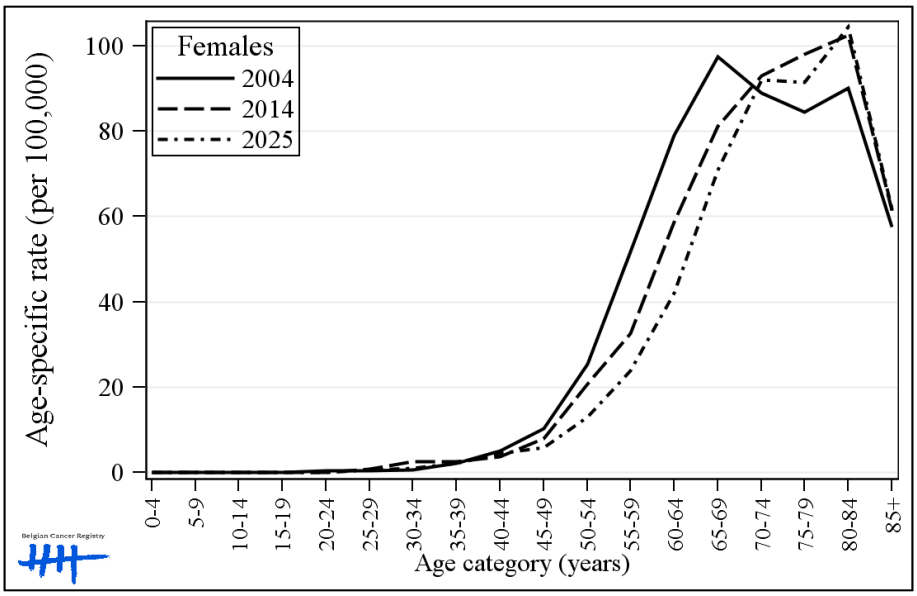
4.15.3. Number of new diagnoses by age group projected to 2025

Table 36: Corpus uteri cancer: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Corpus uteri cancer					
	Projected number of cases					
	30-49 years		50-69 years		70+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Females						
2015	59	[52; 67]	644	[612; 676]	713	[692; 735]
2016	58	[50; 66]	639	[603; 675]	720	[697; 743]
2017	56	[48; 65]	627	[587; 666]	734	[710; 759]
2018	55	[47; 64]	616	[573; 659]	748	[722; 774]
2019	54	[45; 63]	605	[559; 651]	763	[735; 791]
2020	53	[44; 63]	596	[546; 646]	777	[746; 807]
2021	52	[42; 62]	587	[534; 641]	791	[759; 823]
2022	51	[41; 61]	579	[522; 636]	804	[771; 838]
2023	50	[40; 61]	569	[509; 630]	820	[785; 855]
2024	50	[39; 60]	560	[496; 623]	836	[799; 872]
2025	49	[38; 60]	550	[483; 616]	853	[814; 893]
Trend	↘		↘		↗	

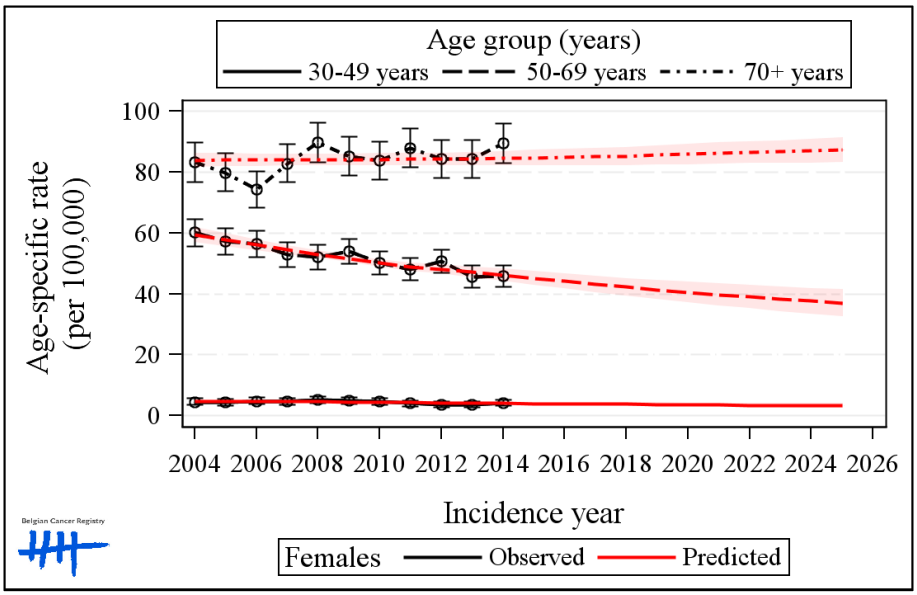
4.15.4. Observed and projected age-specific incidence rates

Figure 55: Corpus uteri cancer: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.15.5. Trends in age-specific incidence rates

Figure 56: Corpus uteri cancer: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.16. Ovarian cancer (C56)

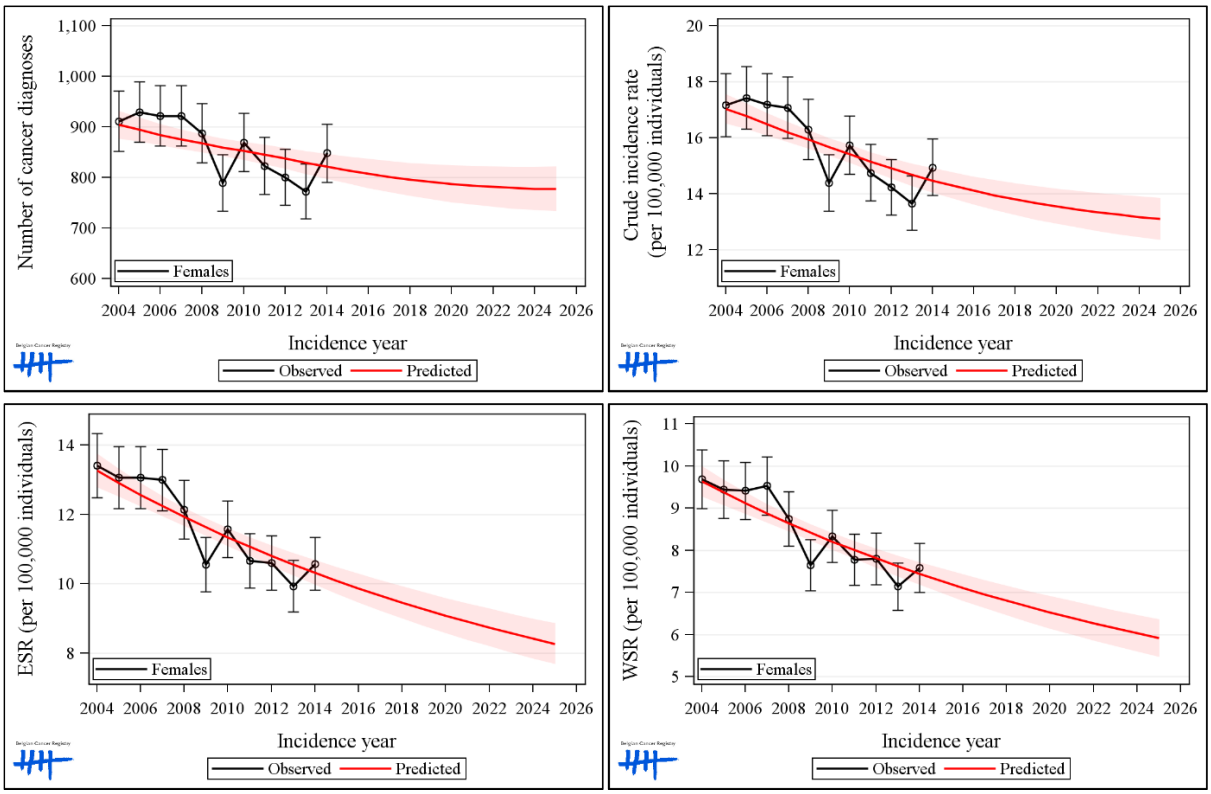
- In 2014 the observed number of newly diagnosed ovarian tumours was 848, which is projected to drop to 777 in 2025, a decrease of about 8.4%.
- The projected yearly number of new ovarian cancer cases for 3 broad age groups shows a decrease in females younger than 70 years, and an increase in the 70+ years age group.

- The age-standardised ovarian cancer incidence rate (WSR) is expected decreases from 7.5 (observed in 2014) to about 5.9 cases per 100,000 women (projected in 2025), a decrease of about 21%, pointing toward a decreasing ovarian cancer risk.
- A decrease in the age-specific incidence rate is projected for the 45-69 years age range and a more or less constant risk in the other 5-year age groups.

- The ovarian cancer risk is projected to decrease in the incidence period 2014 to 2025, resulting in an overall decreasing projected number of new ovarian tumours. The decreasing incidence risk is specifically observed in the 45-69 years age range. In contrast, an increasing incidence for the 70+ years age group is expected, which is, in combination with a more or less constant age-specific incidence rate for this age group in 2014-2025, attributed to the aging population.

4.16.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 57: Ovarian cancer: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.16.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 37: Ovarian cancer: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Ovarian cancer							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Females								
2015	815	[788; 841]	14.3	[13.8; 14.8]	10.1	[9.7; 10.5]	7.3	[7.0; 7.6]
2016	807	[779; 836]	14.1	[13.6; 14.6]	9.9	[9.5; 10.3]	7.1	[6.8; 7.4]
2017	801	[771; 832]	13.9	[13.4; 14.5]	9.7	[9.2; 10.1]	7.0	[6.6; 7.3]
2018	796	[763; 829]	13.8	[13.2; 14.4]	9.5	[9.0; 9.9]	6.8	[6.5; 7.2]
2019	791	[757; 826]	13.7	[13.1; 14.3]	9.3	[8.8; 9.8]	6.7	[6.3; 7.0]
2020	787	[751; 824]	13.6	[12.9; 14.2]	9.1	[8.6; 9.6]	6.5	[6.1; 6.9]
2021	784	[746; 822]	13.4	[12.8; 14.1]	8.9	[8.4; 9.4]	6.4	[6.0; 6.8]
2022	782	[742; 822]	13.3	[12.7; 14.0]	8.7	[8.2; 9.3]	6.3	[5.9; 6.7]
2023	780	[738; 821]	13.3	[12.6; 14.0]	8.6	[8.0; 9.1]	6.1	[5.7; 6.6]
2024	778	[735; 821]	13.2	[12.4; 13.9]	8.4	[7.9; 9.0]	6.0	[5.6; 6.5]
2025	777	[733; 822]	13.1	[12.4; 13.9]	8.3	[7.7; 8.9]	5.9	[5.5; 6.4]
Trend	↘		↘		↘		↘	

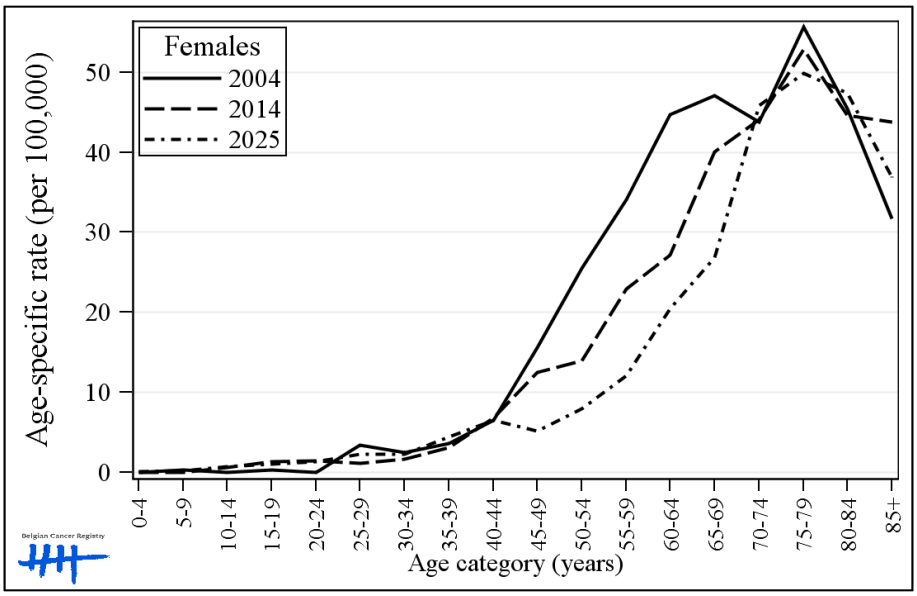
4.16.3. Number of new diagnoses by age group projected to 2025

Table 38: Ovarian cancer: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Ovarian cancer					
	Projected number of cases					
	30-49 years		50-69 years		70+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Females						
2015	83	[75; 91]	331	[309; 354]	381	[369; 393]
2016	81	[73; 89]	324	[300; 349]	383	[371; 395]
2017	79	[70; 87]	315	[288; 342]	389	[377; 401]
2018	77	[68; 86]	305	[276; 334]	395	[382; 407]
2019	75	[66; 84]	296	[265; 327]	401	[389; 413]
2020	74	[65; 83]	288	[255; 321]	407	[394; 419]
2021	72	[63; 81]	280	[245; 314]	413	[400; 426]
2022	71	[62; 80]	272	[236; 309]	419	[407; 432]
2023	70	[61; 79]	264	[226; 302]	427	[414; 440]
2024	69	[60; 78]	256	[217; 296]	434	[421; 447]
2025	68	[59; 78]	248	[207; 289]	442	[428; 456]
Trend	↘		↘		↗	

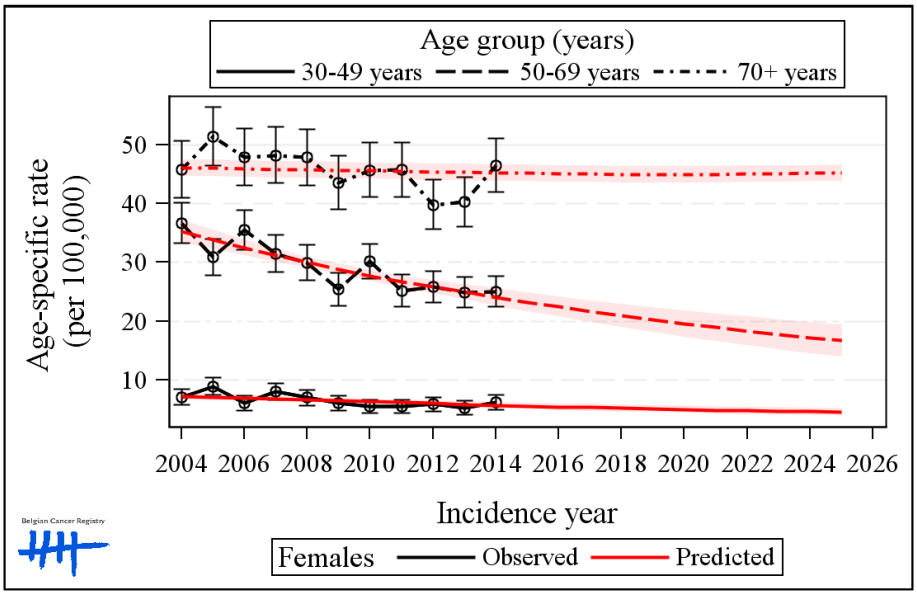
4.16.4. Observed and projected age-specific incidence rates

Figure 58: Ovarian cancer: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.16.5. Trends in age-specific incidence rates

Figure 59: Ovarian cancer: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.17. Prostate cancer (C61)

- The yearly number of new invasive prostate cancer diagnoses is projected to decrease from 7,953 to 6,590 in the period from 2014 to 2025, a decrease of about 17%.
- Prostate cancer is projected to be the most commonly diagnosed invasive cancer in males in 2025, representing 16% of all invasive malignancies.
- The decrease in the projected number of diagnoses in males from 2014 to 2025 is expected in all broad age groups and is mostly present in the 60-74 years age group and the oldest (75+ years) age group.

- The crude prostate cancer incidence rate is projected to decrease from 145 to 115 cases per 100,000 men in 2025, a decrease of about 21%.

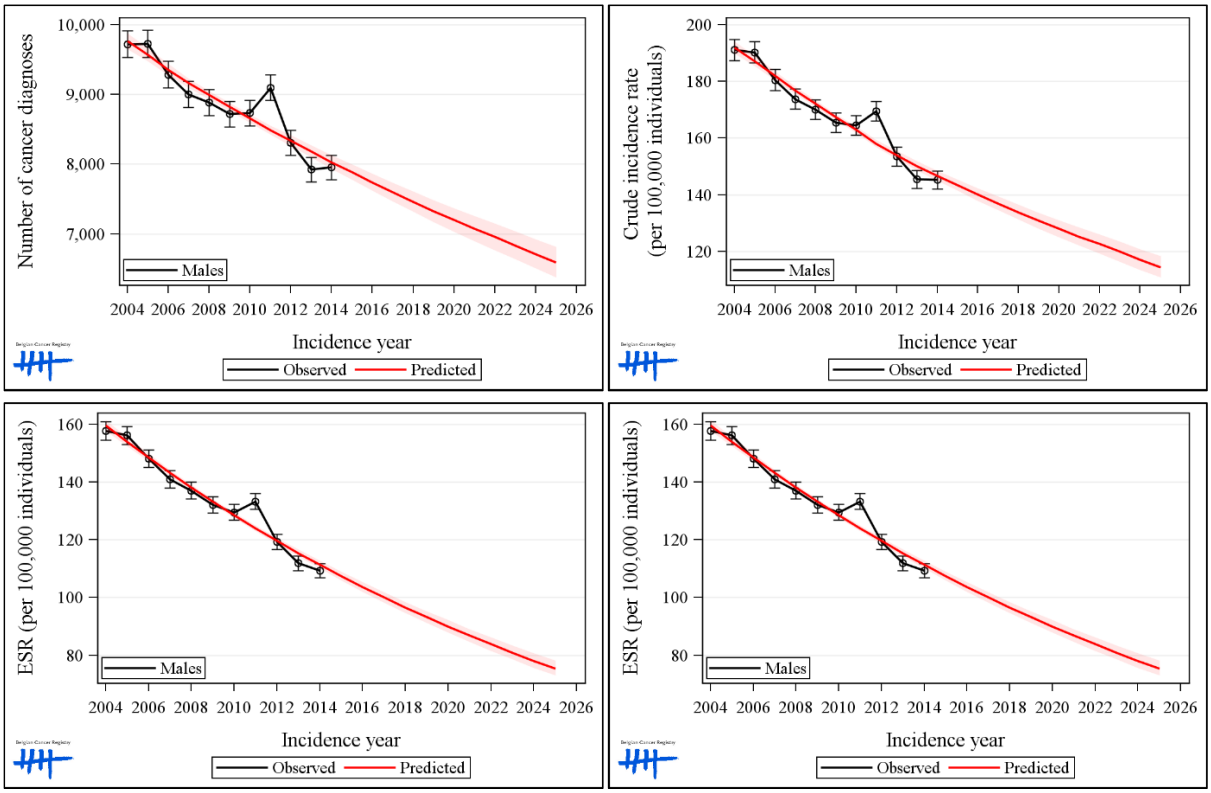
- The age-standardised cancer incidence rate (WSR) is projected to decrease from 73 to 51 cases per 100,000 men from 2014 to 2025, a decrease of 30%.

- The decreasing number of invasive prostate cancer diagnoses can be attributed to a reduced prostate cancer risk. This reduced risk outweighs the increase in prostate cancer diagnoses expected due to the growth and ageing of the population.

- Changes in the use of prostate-specific antigen (PSA) and diagnostic procedures could further influence these projections.

4.17.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 60: Prostate cancer: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.17.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 39: Prostate cancer: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Prostate cancer							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Males								
2015	7,888	[7,778; 7,997]	143.4	[141.4; 145.4]	107.4	[105.9; 108.9]	72.6	[71.5; 73.6]
2016	7,741	[7,620; 7,862]	140.1	[137.9; 142.3]	103.7	[102.0; 105.3]	70.1	[68.9; 71.2]
2017	7,597	[7,464; 7,730]	136.9	[134.5; 139.3]	100.1	[98.3; 101.8]	67.7	[66.4; 68.9]
2018	7,459	[7,314; 7,603]	133.8	[131.2; 136.4]	96.6	[94.7; 98.5]	65.3	[64.0; 66.6]
2019	7,325	[7,169; 7,481]	130.9	[128.1; 133.7]	93.2	[91.2; 95.2]	63.1	[61.7; 64.5]
2020	7,197	[7,030; 7,364]	128.0	[125.1; 131.0]	90.0	[87.9; 92.1]	60.9	[59.4; 62.4]
2021	7,073	[6,895; 7,251]	125.3	[122.1; 128.4]	86.9	[84.6; 89.1]	58.8	[57.3; 60.4]
2022	6,955	[6,767; 7,144]	122.6	[119.3; 125.9]	83.8	[81.5; 86.1]	56.8	[55.2; 58.4]
2023	6,835	[6,636; 7,034]	119.9	[116.4; 123.4]	80.9	[78.6; 83.3]	54.9	[53.2; 56.5]
2024	6,711	[6,503; 6,920]	117.2	[113.6; 120.8]	78.1	[75.7; 80.6]	53.0	[51.3; 54.7]
2025	6,589	[6,371; 6,807]	114.5	[110.7; 118.3]	75.5	[72.9; 78.0]	51.2	[49.4; 53.0]
Trend	↘		↘		↘		↘	

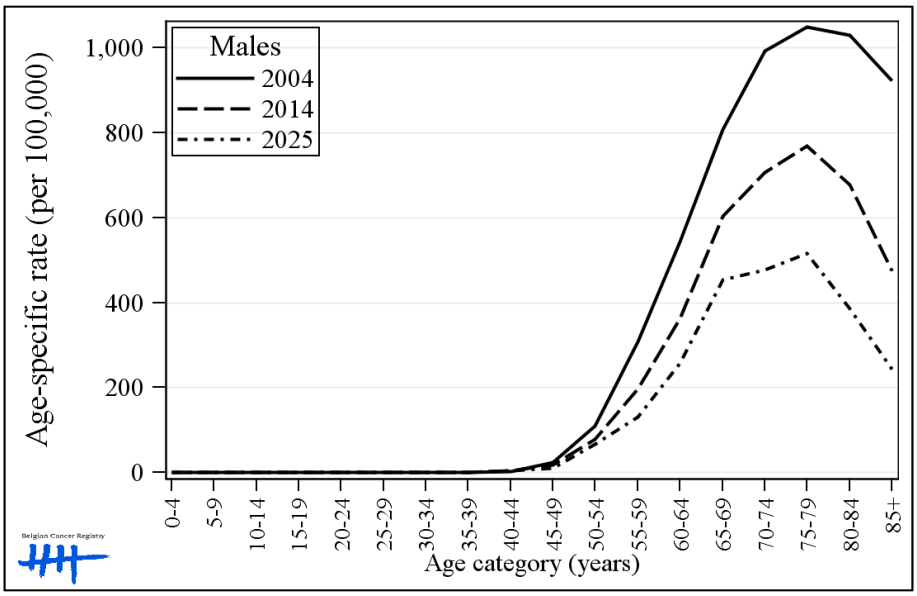
4.17.3. Number of new diagnoses by age group projected to 2025

Table 40: Prostate cancer: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Prostate cancer					
	Projected number of cases					
	40-59 years		60-74 years		75+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Males						
2015	1,198	[1,156; 1,240]	4,289	[4,208; 4,370]	2,398	[2,338; 2,457]
2016	1,164	[1,119; 1,210]	4,263	[4,172; 4,354]	2,311	[2,246; 2,376]
2017	1,129	[1,079; 1,178]	4,264	[4,162; 4,366]	2,202	[2,132; 2,271]
2018	1,090	[1,037; 1,143]	4,250	[4,138; 4,362]	2,117	[2,043; 2,191]
2019	1,050	[994; 1,107]	4,209	[4,087; 4,331]	2,063	[1,983; 2,142]
2020	1,011	[952; 1,070]	4,161	[4,029; 4,292]	2,023	[1,938; 2,108]
2021	972	[911; 1,033]	4,113	[3,973; 4,254]	1,986	[1,895; 2,076]
2022	931	[868; 994]	4,025	[3,877; 4,173]	1,997	[1,899; 2,095]
2023	889	[825; 954]	3,946	[3,790; 4,102]	1,997	[1,892; 2,102]
2024	846	[780; 911]	3,872	[3,709; 4,036]	1,991	[1,879; 2,103]
2025	802	[736; 868]	3,807	[3,636; 3,977]	1,978	[1,860; 2,097]
Trend	↘		↘		↘	

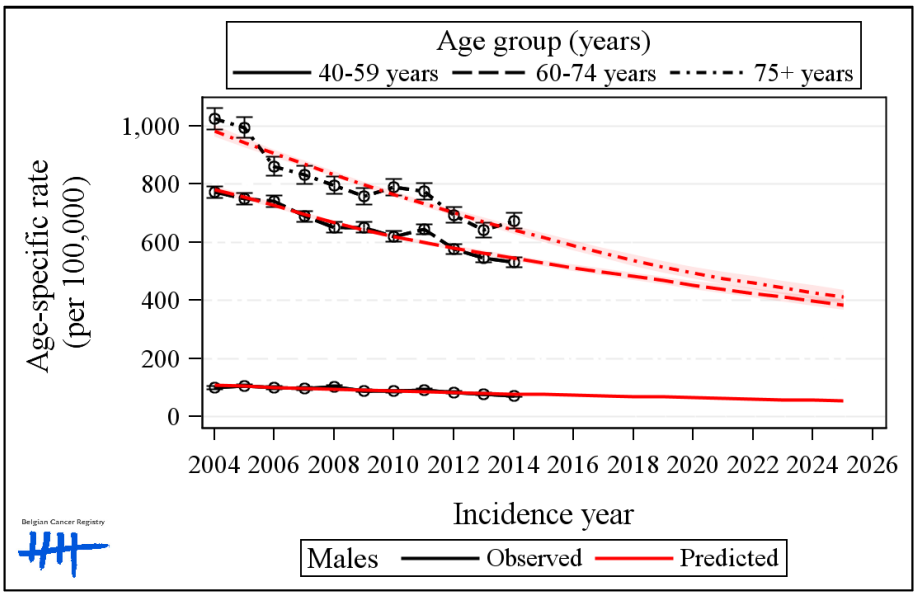
4.17.4. Observed and projected age-specific incidence rates

Figure 61: Prostate cancer: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.17.5. Trends in age-specific incidence rates

Figure 62: Prostate cancer: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.18. Testicular cancer (C62)

- The yearly number of new testicular cancer diagnoses in Belgium is projected to rise from 359 to 460 in the calendar period 2014 to 2025, an increase of about 28%.
- The increasing projected number of testicular cancer diagnoses from 2014 to 2025 is only expected in the youngest age group (15-49 years), which contains 92% of the projected number of new diagnoses in 2025.

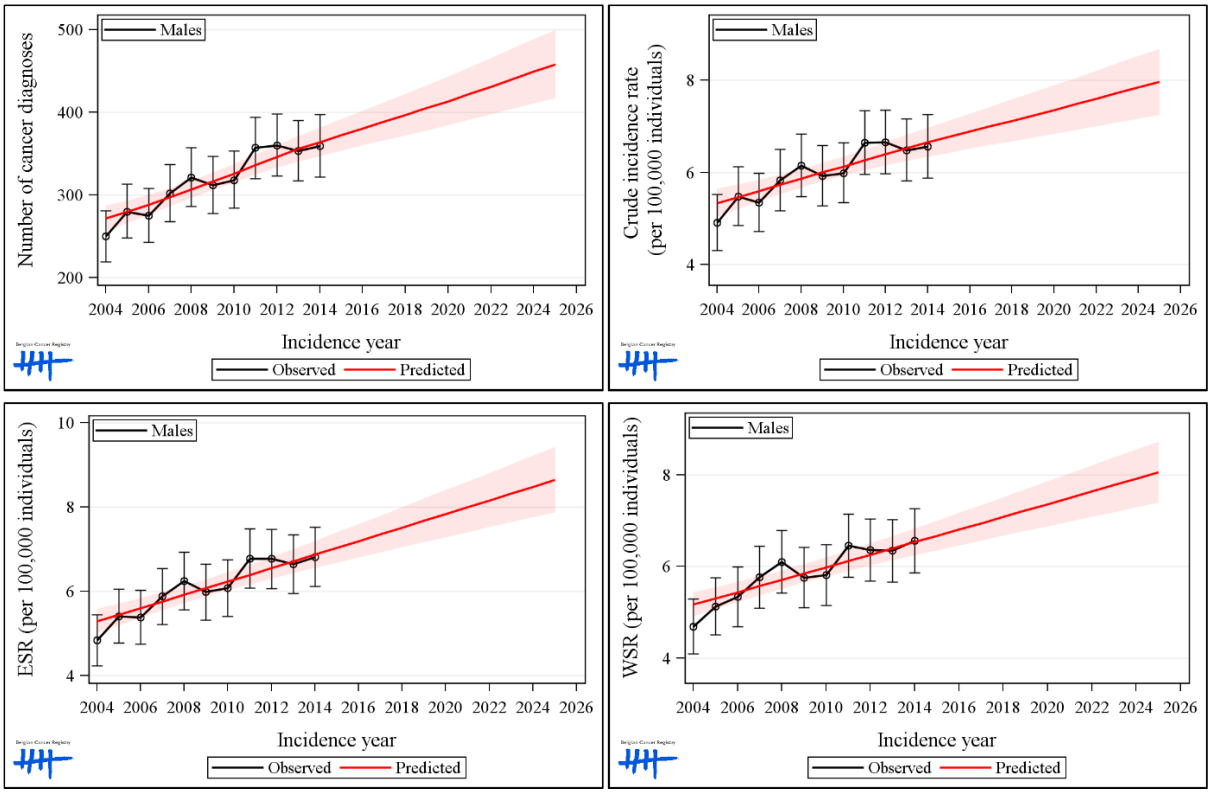
- The crude incidence rate is projected to run from 6.6 to 8.0 cases per 100,000 men in 2025, an increase of about 23%.

- The age-standardised cancer incidence rate (WSR) will increase from 6.6 to 8.1 cases per 100,000 men from 2014 to 2025, a projected increase of 23%.

- The projected increase in testicular cancer incidence in the 2014-2025 calendar period can be mostly attributed to an increased risk of developing testicular cancer.

4.18.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 63: Testicular cancer: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.18.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 41: Testicular cancer: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Testicular cancer							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Males								
2015	372	[353; 391]	6.8	[6.4; 7.1]	7.0	[6.7; 7.4]	6.7	[6.3; 7.0]
2016	380	[360; 401]	6.9	[6.5; 7.3]	7.2	[6.8; 7.6]	6.8	[6.5; 7.2]
2017	389	[366; 412]	7.0	[6.6; 7.4]	7.4	[6.9; 7.8]	6.9	[6.6; 7.3]
2018	397	[372; 422]	7.1	[6.7; 7.6]	7.5	[7.0; 8.0]	7.1	[6.7; 7.5]
2019	405	[378; 432]	7.2	[6.8; 7.7]	7.7	[7.2; 8.2]	7.2	[6.8; 7.7]
2020	413	[384; 443]	7.4	[6.8; 7.9]	7.8	[7.3; 8.4]	7.4	[6.9; 7.9]
2021	422	[390; 454]	7.5	[6.9; 8.0]	8.0	[7.4; 8.6]	7.5	[7.0; 8.0]
2022	431	[397; 465]	7.6	[7.0; 8.2]	8.2	[7.5; 8.8]	7.6	[7.1; 8.2]
2023	440	[404; 477]	7.7	[7.1; 8.4]	8.3	[7.6; 9.0]	7.8	[7.2; 8.4]
2024	449	[410; 488]	7.8	[7.2; 8.5]	8.5	[7.8; 9.2]	7.9	[7.3; 8.5]
2025	458	[417; 499]	8.0	[7.2; 8.7]	8.6	[7.9; 9.4]	8.1	[7.4; 8.7]
Trend	↗		↗		↗		↗	

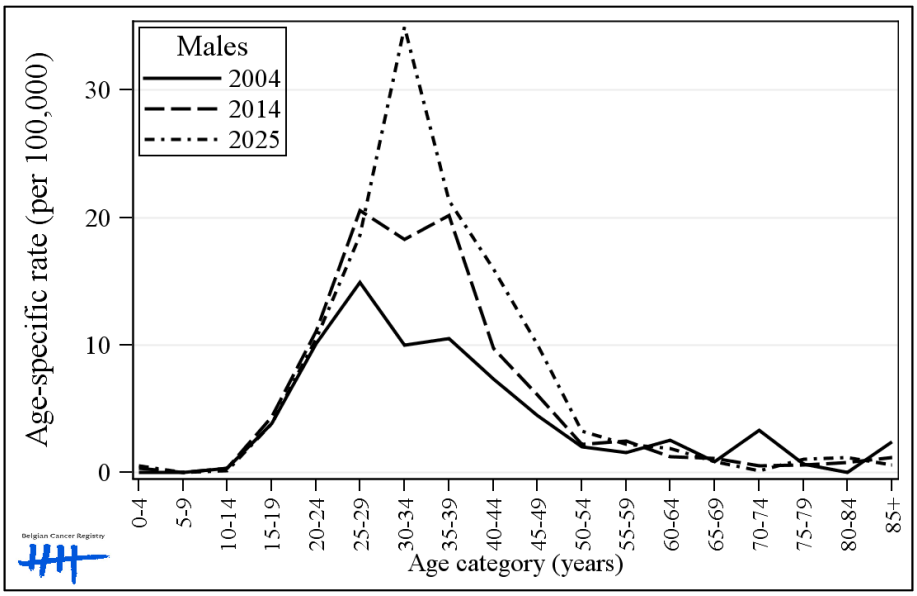
4.18.3. Number of new diagnoses by age group projected to 2025

Table 42: Testicular cancer: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Testicular cancer			
	Projected number of cases			
	15-49 years		50+ years	
Gender year	Cases	95% PI	Cases	95% PI
Males				
2015	335	[317; 354]	35	[31; 38]
2016	343	[323; 364]	35	[31; 39]
2017	351	[329; 374]	35	[31; 39]
2018	359	[335; 384]	35	[31; 39]
2019	368	[341; 394]	35	[31; 39]
2020	376	[347; 405]	35	[31; 39]
2021	385	[353; 416]	35	[32; 39]
2022	393	[360; 427]	35	[32; 39]
2023	402	[366; 439]	36	[32; 39]
2024	411	[373; 450]	36	[32; 39]
2025	420	[379; 461]	35	[32; 39]
Trend	↗		↗	

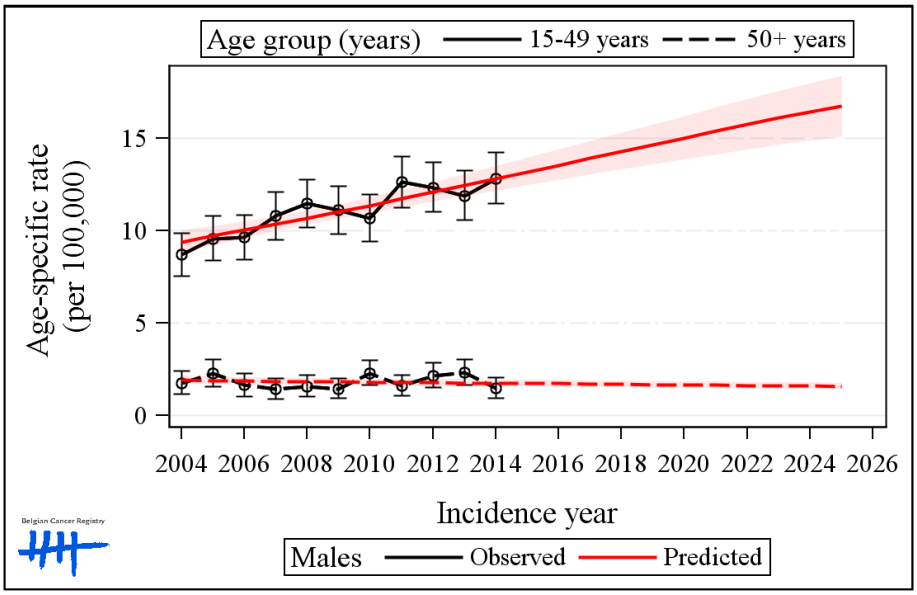
4.18.4. Observed and projected age-specific incidence rates

Figure 64: Testicular cancer: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.18.5. Trends in age-specific incidence rates

Figure 65: Testicular cancer: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.19. Renal cancer (C64)

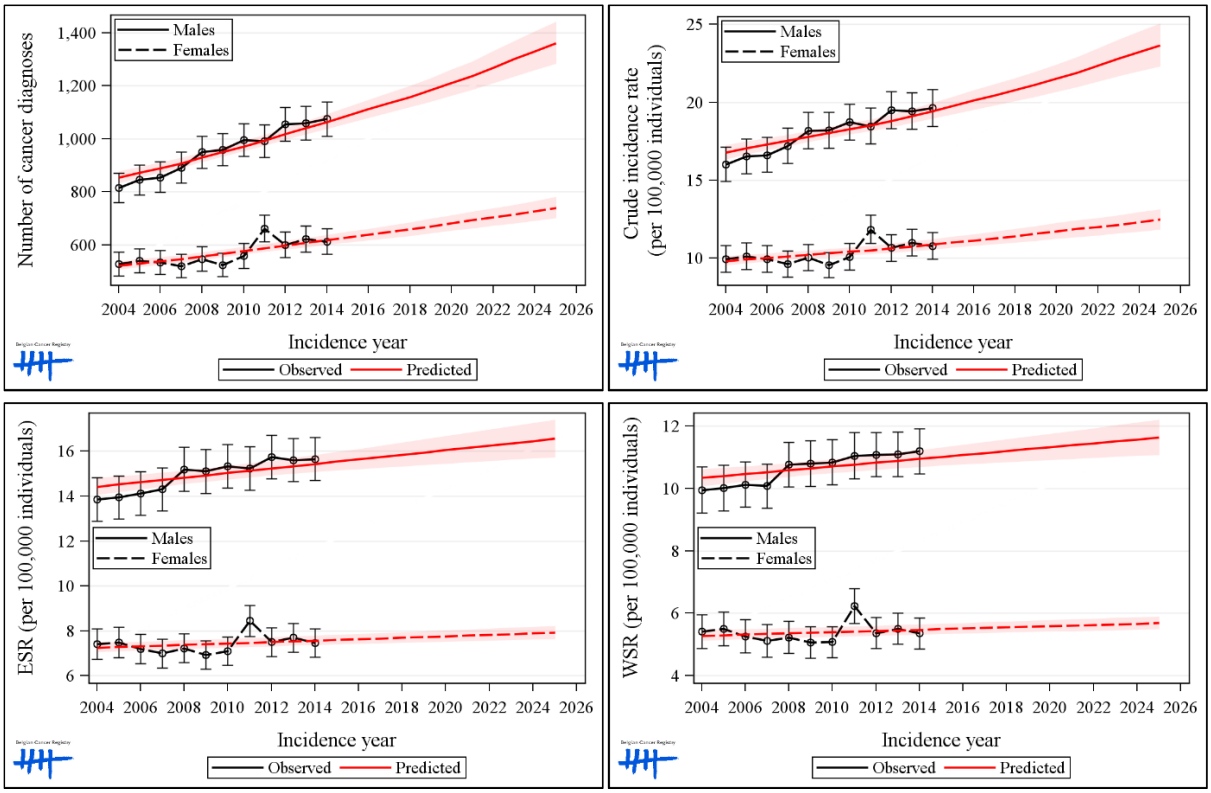
- In the period 2014 to 2025, the yearly number of new diagnoses of renal cancer is projected to rise from 1,688 to 2,102, an increase of about 25%.
- In males, the incidence projection 2014-2025 runs from 1,075 to 1,362 cases, an increase of about 27%. This increase is expected in the 50-74 years and the oldest (75+ years) age groups. A slight decrease is observed for the youngest (30-49 years) age group.
- In females, the incidence projection 2014-2025 runs from 613 to 740 cases, an increase of about 21%. This increase is expected in the 50-74 years and the oldest (75+ years) age groups. The expected increase for the latter age group in females is only about half as large as in males.

- The age-standardised renal cancer incidence rate (WSR) is projected to increases slightly over the period 2014 to 2025 from 11.2 to 11.6 cases per 100,000 men (+3.6%) and from 5.4 to about 5.7 cases per 100,000 women (+5.6%).

- The increase in the projected number of new renal cancer diagnoses is driven by an slightly increased incidence risk and an ageing and growing population. The increased incidence risk might, at least partly, be related to the increasing use of advanced imaging techniques, revealing incident and small renal cancers that otherwise would remain undetected.

4.19.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 66: Renal cancer: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.19.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 43: Renal cancer: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Renal cancer							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Males								
2015	1,089	[1,058; 1,119]	19.8	[19.2; 20.3]	15.5	[15.1; 16.0]	11.0	[10.7; 11.3]
2016	1,112	[1,078; 1,146]	20.1	[19.5; 20.7]	15.6	[15.2; 16.1]	11.1	[10.8; 11.4]
2017	1,135	[1,098; 1,172]	20.5	[19.8; 21.1]	15.7	[15.3; 16.2]	11.1	[10.8; 11.5]
2018	1,159	[1,118; 1,200]	20.8	[20.1; 21.5]	15.8	[15.3; 16.4]	11.2	[10.8; 11.6]
2019	1,184	[1,139; 1,229]	21.2	[20.3; 22.0]	15.9	[15.4; 16.5]	11.3	[10.9; 11.6]
2020	1,210	[1,161; 1,260]	21.5	[20.7; 22.4]	16.0	[15.4; 16.7]	11.3	[10.9; 11.7]
2021	1,238	[1,184; 1,292]	21.9	[21.0; 22.9]	16.2	[15.5; 16.8]	11.4	[10.9; 11.8]
2022	1,270	[1,209; 1,330]	22.4	[21.3; 23.4]	16.3	[15.6; 17.0]	11.4	[11.0; 11.9]
2023	1,301	[1,234; 1,367]	22.8	[21.7; 24.0]	16.4	[15.6; 17.1]	11.5	[11.0; 12.0]
2024	1,331	[1,258; 1,404]	23.2	[22.0; 24.5]	16.5	[15.7; 17.2]	11.6	[11.0; 12.1]
2025	1,362	[1,282; 1,441]	23.7	[22.3; 25.0]	16.6	[15.7; 17.4]	11.6	[11.1; 12.2]
Trend	↗		↗		↗		↗	
Females								
2015	628	[608; 648]	11.0	[10.7; 11.4]	7.6	[7.4; 7.8]	5.5	[5.3; 5.7]
2016	638	[616; 659]	11.1	[10.8; 11.5]	7.6	[7.4; 7.9]	5.5	[5.3; 5.7]
2017	648	[625; 672]	11.3	[10.9; 11.7]	7.7	[7.4; 7.9]	5.5	[5.4; 5.7]
2018	659	[634; 684]	11.4	[11.0; 11.9]	7.7	[7.5; 7.9]	5.6	[5.4; 5.7]
2019	670	[643; 697]	11.6	[11.1; 12.0]	7.7	[7.5; 8.0]	5.6	[5.4; 5.7]
2020	682	[653; 711]	11.7	[11.2; 12.2]	7.8	[7.5; 8.0]	5.6	[5.4; 5.8]
2021	693	[662; 724]	11.9	[11.3; 12.4]	7.8	[7.5; 8.0]	5.6	[5.4; 5.8]
2022	704	[671; 737]	12.0	[11.5; 12.6]	7.8	[7.6; 8.1]	5.6	[5.4; 5.8]
2023	715	[681; 750]	12.2	[11.6; 12.7]	7.9	[7.6; 8.1]	5.6	[5.5; 5.8]
2024	727	[690; 764]	12.3	[11.7; 12.9]	7.9	[7.6; 8.2]	5.7	[5.5; 5.9]
2025	740	[701; 779]	12.5	[11.8; 13.1]	7.9	[7.6; 8.2]	5.7	[5.5; 5.9]
Trend	↗		↗		↗		↗	

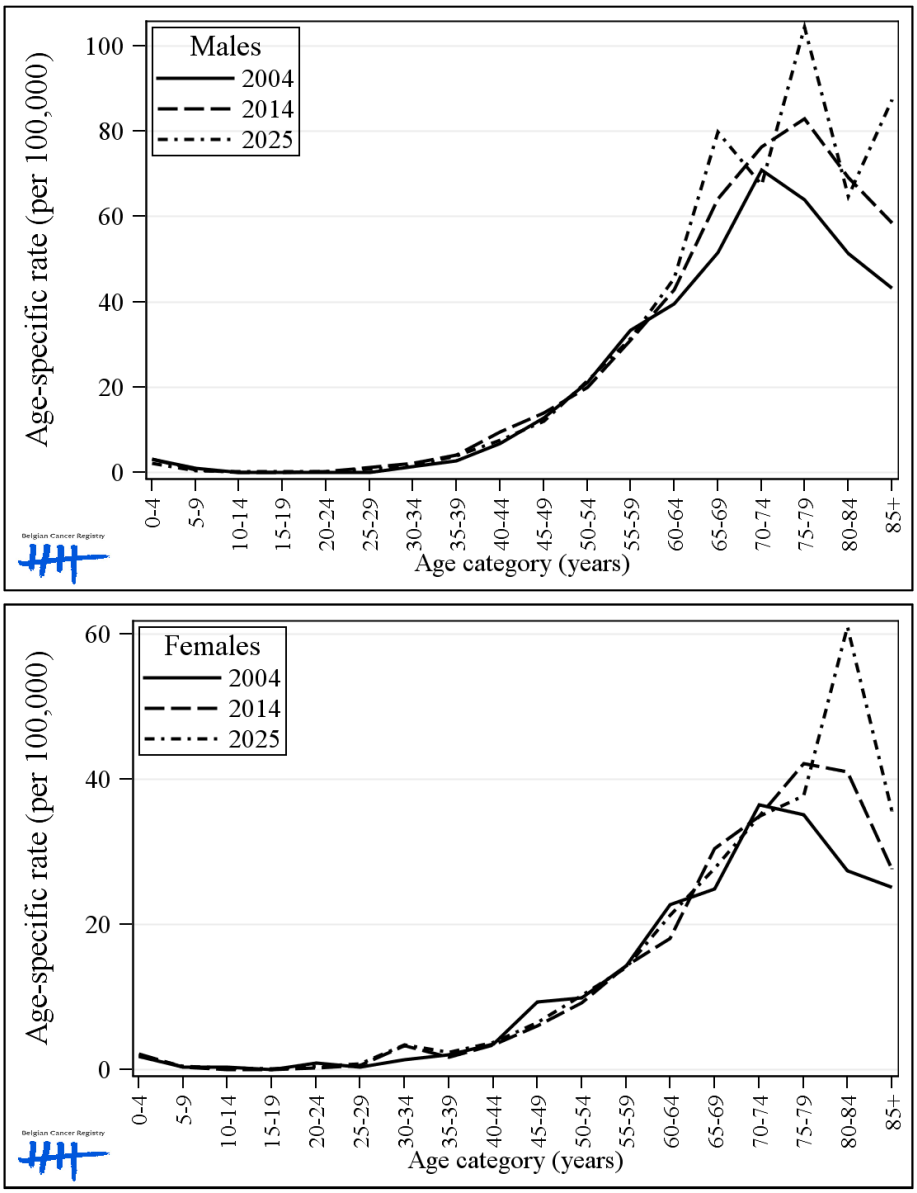
4.19.3. Number of new diagnoses by age group projected to 2025

Table 44: Renal cancer: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Renal cancer					
	Projected number of cases					
	30-49 years		50-74 years		75+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Males						
2015	98	[92; 104]	687	[664; 710]	290	[271; 309]
2016	97	[91; 103]	706	[680; 731]	297	[275; 318]
2017	96	[91; 102]	725	[697; 754]	300	[276; 324]
2018	96	[90; 101]	744	[713; 774]	306	[280; 333]
2019	95	[89; 101]	759	[725; 792]	317	[288; 346]
2020	94	[89; 100]	773	[737; 810]	330	[297; 362]
2021	94	[88; 99]	788	[748; 827]	343	[307; 380]
2022	93	[88; 99]	797	[754; 840]	366	[324; 408]
2023	93	[87; 98]	807	[760; 853]	388	[340; 435]
2024	93	[87; 98]	816	[766; 867]	409	[356; 462]
2025	93	[87; 98]	826	[772; 880]	429	[371; 487]
Trend	↘		↗		↗	
Females						
2015	56	[51; 61]	331	[320; 342]	229	[213; 244]
2016	56	[51; 61]	337	[326; 349]	232	[214; 249]
2017	56	[51; 61]	346	[334; 357]	233	[214; 253]
2018	56	[51; 62]	353	[341; 365]	236	[215; 258]
2019	57	[51; 63]	358	[346; 371]	242	[218; 265]
2020	57	[51; 63]	363	[351; 376]	248	[223; 274]
2021	57	[51; 64]	368	[356; 381]	255	[227; 282]
2022	58	[51; 64]	370	[358; 383]	263	[233; 292]
2023	58	[51; 65]	372	[360; 385]	271	[240; 303]
2024	59	[51; 66]	374	[362; 387]	281	[247; 315]
2025	59	[52; 67]	377	[364; 389]	291	[255; 327]
Trend	–		↗		↗	

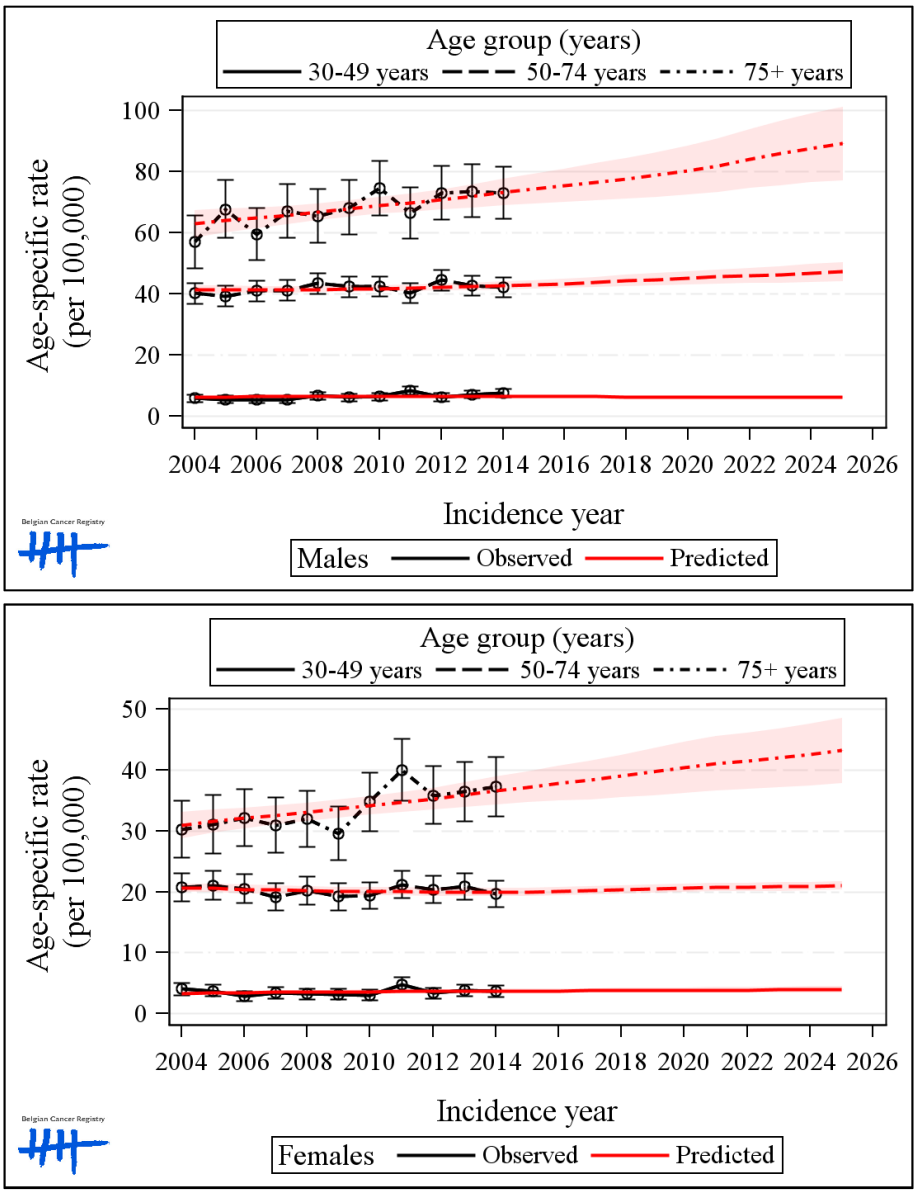
4.19.4. Observed and projected age-specific incidence rates

Figure 67: Renal cancer: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.19.5. Trends in age-specific incidence rates

Figure 68: Renal cancer: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.20. Bladder cancer (C67)

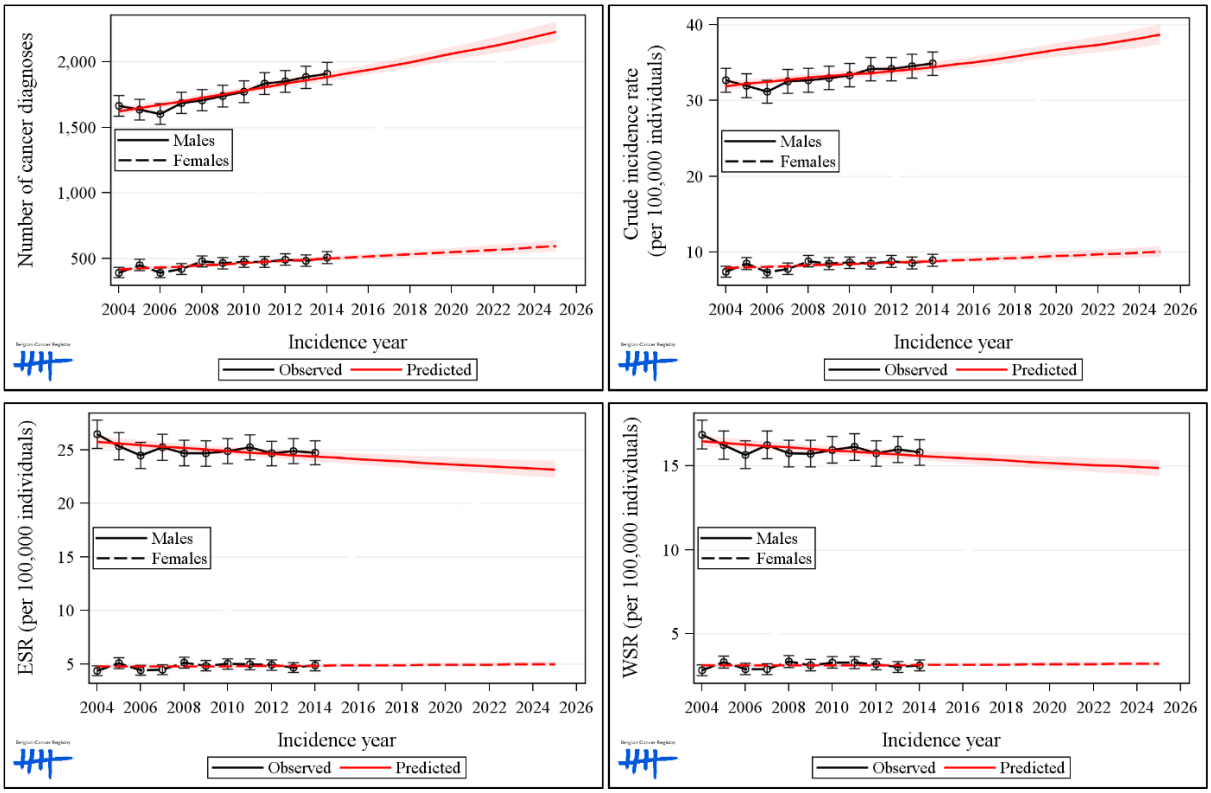
- In the period 2014 to 2025, the yearly number of new diagnoses of bladder cancer is projected to rise from 2,417 to 2,824, an increase of about 17%.
- In males, the incidence projection 2014-2025 runs from 1,909 to 2,227 new cases, an increase of about 17%. This increase can be found in the 50-74 years and 75+ years age groups.
- In females, the incidence projection 2014-2025 runs from 508 to 598 new cases, an increase of about 18%. Similar as in males, this increase can be found in the 50-74 years and 75+ years age groups.

- The age-standardised cancer incidence rate (WSR) in males will slightly decrease from 15.8 to 14.9 cases per 100,000 men between 2014 and 2025, a decrease of 5.7%.
- In contrast, the WSR in females will increase from 3.1 to about 3.2 cases per 100,000 women between 2014 and 2025, a slight increase of 3.2%.

- The decreasing cancer risk in males indicates that the 2014-2025 projected increasing incidence count in males can be fully attributed to a growing and ageing male population.
- In females, the projected increase in the number of diagnosed cancer cases is driven by both the increasing cancer risk and the ageing and growing female population.

4.20.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 69: Bladder cancer: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.20.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 45: Bladder cancer: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Bladder cancer							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Males								
2015	1,912	[1,876; 1,949]	34.8	[34.1; 35.4]	24.2	[23.8; 24.7]	15.5	[15.2; 15.8]
2016	1,938	[1,899; 1,977]	35.1	[34.4; 35.8]	24.1	[23.6; 24.6]	15.5	[15.1; 15.8]
2017	1,965	[1,924; 2,007]	35.4	[34.7; 36.2]	24.0	[23.5; 24.6]	15.4	[15.1; 15.7]
2018	1,996	[1,951; 2,040]	35.8	[35.0; 36.6]	23.9	[23.3; 24.5]	15.3	[15.0; 15.7]
2019	2,028	[1,981; 2,075]	36.2	[35.4; 37.1]	23.8	[23.2; 24.4]	15.3	[14.9; 15.6]
2020	2,061	[2,010; 2,111]	36.7	[35.8; 37.6]	23.7	[23.0; 24.3]	15.2	[14.8; 15.6]
2021	2,091	[2,037; 2,145]	37.0	[36.1; 38.0]	23.6	[22.9; 24.2]	15.1	[14.7; 15.5]
2022	2,119	[2,060; 2,179]	37.4	[36.3; 38.4]	23.5	[22.8; 24.2]	15.1	[14.6; 15.5]
2023	2,152	[2,087; 2,216]	37.7	[36.6; 38.9]	23.4	[22.6; 24.1]	15.0	[14.6; 15.4]
2024	2,188	[2,118; 2,258]	38.2	[37.0; 39.4]	23.3	[22.5; 24.0]	14.9	[14.5; 15.4]
2025	2,227	[2,152; 2,301]	38.7	[37.4; 40.0]	23.2	[22.4; 24.0]	14.9	[14.4; 15.3]
Trend	↗		↗		↘		↘	
Females								
2015	508	[490; 527]	8.9	[8.6; 9.2]	4.9	[4.7; 5.0]	3.1	[3.0; 3.2]
2016	516	[496; 537]	9.0	[8.7; 9.4]	4.9	[4.7; 5.0]	3.1	[3.0; 3.3]
2017	525	[502; 548]	9.1	[8.7; 9.5]	4.9	[4.7; 5.1]	3.2	[3.0; 3.3]
2018	533	[508; 558]	9.2	[8.8; 9.7]	4.9	[4.7; 5.1]	3.2	[3.0; 3.3]
2019	542	[514; 570]	9.4	[8.9; 9.8]	4.9	[4.7; 5.1]	3.2	[3.1; 3.3]
2020	551	[521; 581]	9.5	[9.0; 10.0]	4.9	[4.7; 5.1]	3.2	[3.1; 3.3]
2021	559	[527; 592]	9.6	[9.0; 10.1]	4.9	[4.7; 5.1]	3.2	[3.1; 3.3]
2022	568	[533; 602]	9.7	[9.1; 10.3]	5.0	[4.7; 5.2]	3.2	[3.1; 3.3]
2023	577	[539; 614]	9.8	[9.2; 10.4]	5.0	[4.8; 5.2]	3.2	[3.1; 3.3]
2024	587	[547; 627]	9.9	[9.3; 10.6]	5.0	[4.8; 5.2]	3.2	[3.1; 3.3]
2025	598	[555; 641]	10.1	[9.3; 10.8]	5.0	[4.8; 5.2]	3.2	[3.1; 3.3]
Trend	↗		↗		↗		↗	

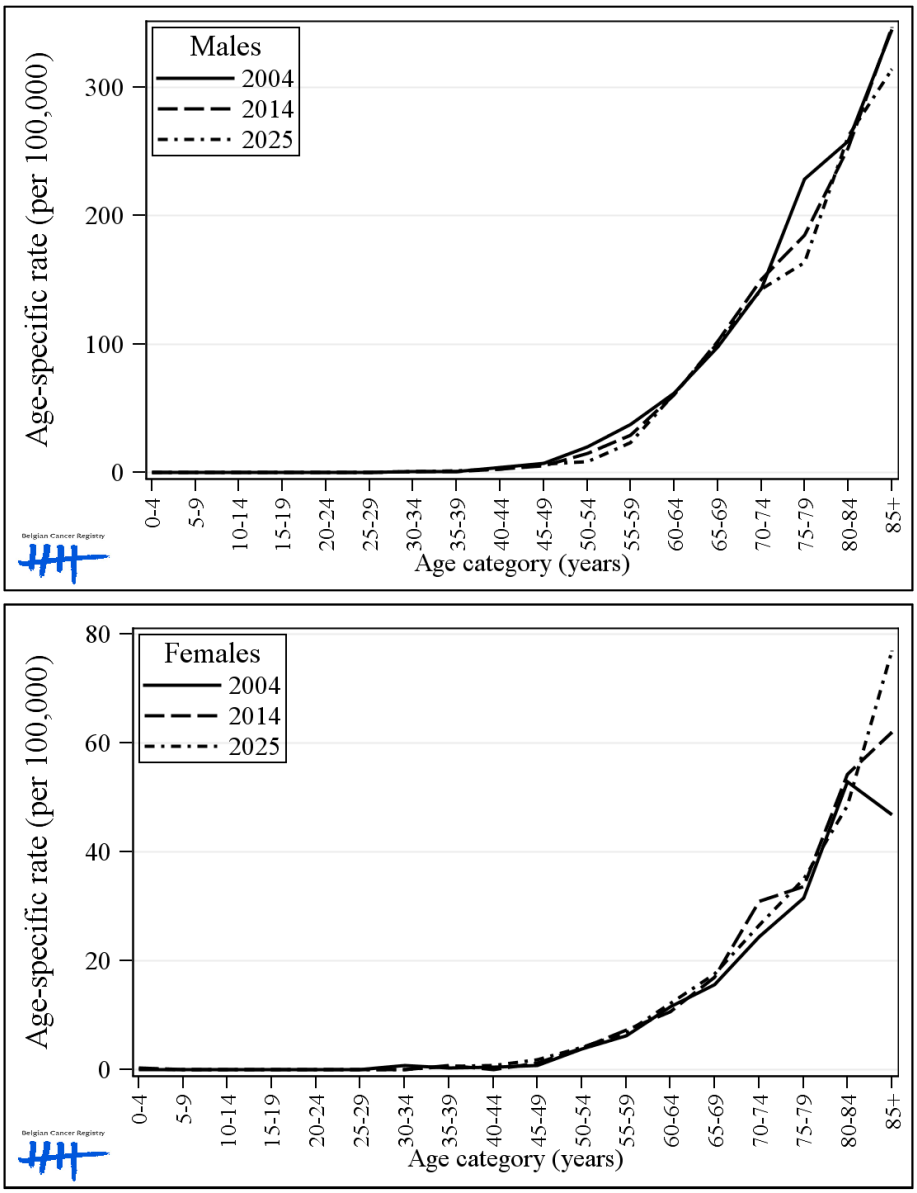
4.20.3. Number of new diagnoses by age group projected to 2025

Table 46: Bladder cancer: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Bladder cancer					
	Projected number of cases					
	30-49 years		50-74 years		75+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Males						
2015	43	[39; 46]	934	[911; 957]	934	[906; 962]
2016	42	[38; 46]	953	[928; 978]	942	[911; 972]
2017	42	[38; 45]	981	[954; 1,007]	942	[910; 974]
2018	41	[38; 45]	1,005	[977; 1,033]	948	[914; 982]
2019	41	[37; 45]	1,023	[993; 1,052]	963	[926; 999]
2020	41	[37; 44]	1,039	[1,008; 1,070]	980	[940; 1,019]
2021	40	[37; 44]	1,056	[1,023; 1,088]	994	[951; 1,037]
2022	40	[36; 43]	1,061	[1,027; 1,094]	1,018	[969; 1,067]
2023	40	[36; 43]	1,068	[1,034; 1,102]	1,043	[988; 1,098]
2024	39	[36; 43]	1,076	[1,041; 1,110]	1,072	[1,011; 1,132]
2025	40	[36; 43]	1,085	[1,049; 1,121]	1,101	[1,035; 1,166]
Trend	–		↗		↗	
Females						
2015	12	[10; 14]	198	[189; 206]	298	[281; 314]
2016	12	[10; 14]	202	[193; 211]	302	[283; 320]
2017	12	[10; 14]	208	[199; 217]	304	[283; 325]
2018	12	[10; 14]	213	[204; 223]	307	[284; 331]
2019	12	[10; 14]	217	[208; 227]	312	[286; 338]
2020	12	[10; 14]	221	[211; 231]	318	[289; 346]
2021	12	[10; 14]	224	[215; 234]	322	[292; 353]
2022	12	[10; 13]	226	[216; 236]	330	[296; 363]
2023	11	[10; 13]	227	[217; 237]	337	[301; 373]
2024	12	[10; 13]	229	[219; 239]	346	[307; 385]
2025	12	[10; 14]	231	[221; 241]	355	[313; 396]
Trend	–		↗		↗	

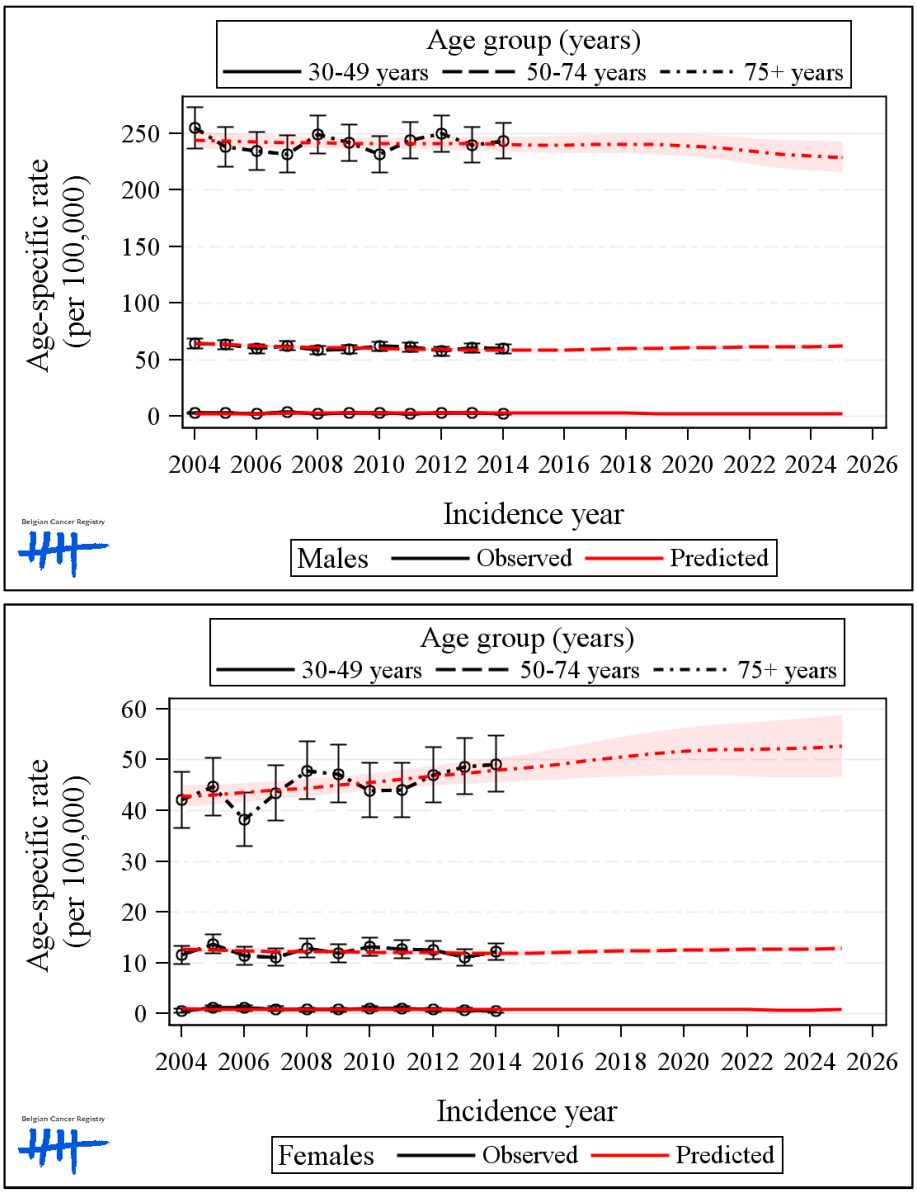
4.20.4. Observed and projected age-specific incidence rates

Figure 70: Bladder cancer: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.20.5. Trends in age-specific incidence rates

Figure 71: Bladder cancer: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.21. Malignant central nervous system tumours (C71-C72)

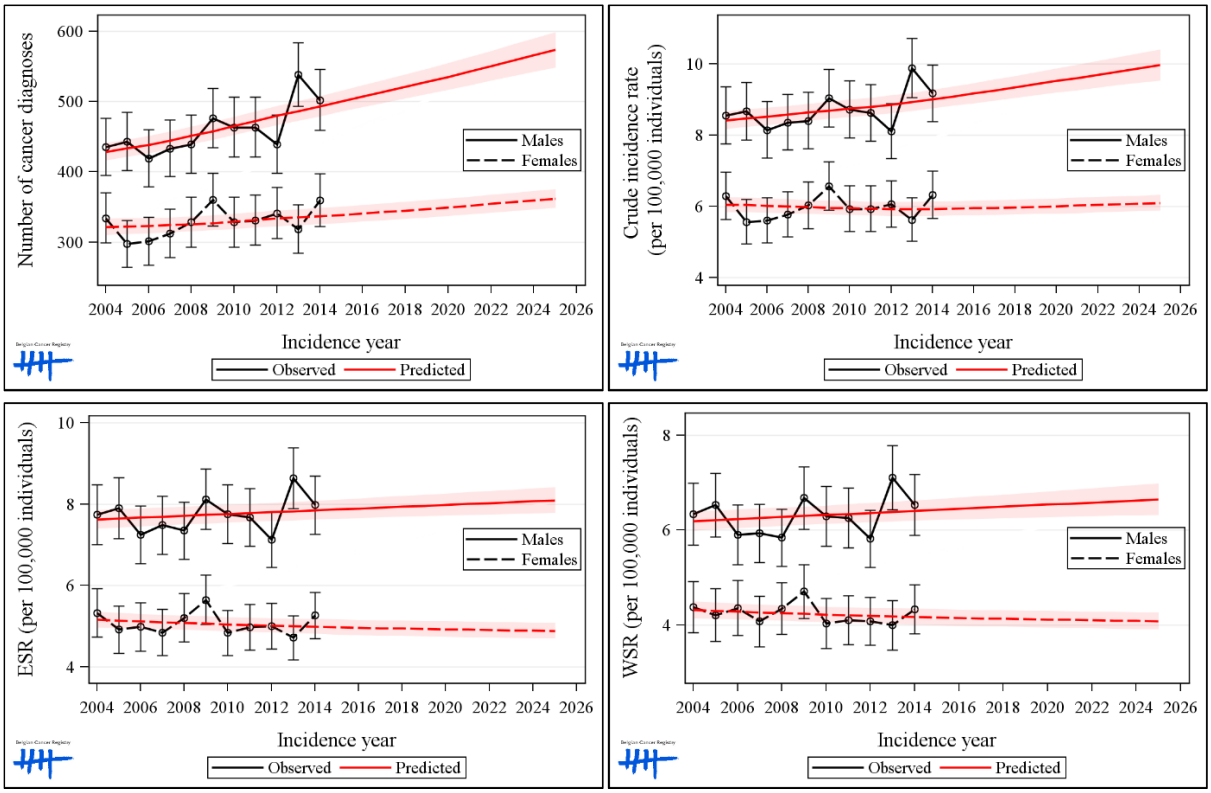
- In the period 2014 to 2025, the yearly number of new malignant central nervous system (CNS) tumour diagnoses is projected to rise from 861 to 935, an increase of about 8.6%.
- In 2014, 502 and 359 CNS cancers were diagnosed in males and females. The incidence projection 2025 is 573 in males and 362 in females, an increase of 14 and 1% respectively.
- For both sexes the increase in projected number of malignant CNS tumour diagnoses is mainly expected in the oldest age group (60+ years). A weak increase is also expected in the youngest age group (0-24 years), while a weak decrease is projected for the 25-59 years age group.

- The projected age-standardised cancer incidence rate (WSR) for males shows a weak increase from 6.5 to 6.6 cases per 100,000 men in the calendar period 2014 to 2025, while for females there is a weak decreasing trend from 4.3 to 4.1 cases per 100,000 women.

- Both the increasing cancer risk and particularly the ageing and growing male population drive the projected increase in the number of malignant CNS tumour cases in males.
- The decreasing malignant CNS tumour risk for females indicates that the projected increasing incidence count can be fully attributed to the ageing and increasing female population.

4.21.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 72: Malignant central nervous system tumours: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.21.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 47: Malignant central nervous system tumours: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Central nervous system cancer							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Males								
2015	500	[485; 515]	9.1	[8.8; 9.4]	7.9	[7.6; 8.1]	6.4	[6.2; 6.6]
2016	507	[491; 522]	9.2	[8.9; 9.5]	7.9	[7.7; 8.1]	6.5	[6.2; 6.7]
2017	514	[498; 530]	9.3	[9.0; 9.6]	7.9	[7.7; 8.2]	6.5	[6.2; 6.7]
2018	521	[504; 538]	9.3	[9.0; 9.7]	7.9	[7.7; 8.2]	6.5	[6.2; 6.7]
2019	528	[510; 546]	9.4	[9.1; 9.8]	8.0	[7.7; 8.2]	6.5	[6.3; 6.8]
2020	535	[516; 554]	9.5	[9.2; 9.9]	8.0	[7.7; 8.3]	6.5	[6.3; 6.8]
2021	543	[523; 563]	9.6	[9.3; 10.0]	8.0	[7.7; 8.3]	6.6	[6.3; 6.8]
2022	550	[529; 572]	9.7	[9.3; 10.1]	8.0	[7.7; 8.3]	6.6	[6.3; 6.9]
2023	558	[536; 580]	9.8	[9.4; 10.2]	8.0	[7.8; 8.3]	6.6	[6.3; 6.9]
2024	566	[542; 589]	9.9	[9.5; 10.3]	8.1	[7.8; 8.4]	6.6	[6.3; 6.9]
2025	573	[548; 598]	10.0	[9.5; 10.4]	8.1	[7.8; 8.4]	6.6	[6.3; 7.0]
Trend	↗		↗		↗		↗	
Females								
2015	339	[327; 350]	5.9	[5.7; 6.1]	5.0	[4.8; 5.2]	4.2	[4.0; 4.3]
2016	341	[329; 352]	6.0	[5.7; 6.2]	5.0	[4.8; 5.1]	4.2	[4.0; 4.3]
2017	343	[331; 355]	6.0	[5.8; 6.2]	5.0	[4.8; 5.1]	4.1	[4.0; 4.3]
2018	345	[333; 357]	6.0	[5.8; 6.2]	4.9	[4.8; 5.1]	4.1	[4.0; 4.3]
2019	347	[335; 359]	6.0	[5.8; 6.2]	4.9	[4.7; 5.1]	4.1	[4.0; 4.3]
2020	349	[337; 362]	6.0	[5.8; 6.2]	4.9	[4.7; 5.1]	4.1	[3.9; 4.3]
2021	352	[339; 364]	6.0	[5.8; 6.2]	4.9	[4.7; 5.1]	4.1	[3.9; 4.3]
2022	354	[342; 367]	6.0	[5.8; 6.3]	4.9	[4.7; 5.1]	4.1	[3.9; 4.3]
2023	357	[344; 370]	6.1	[5.8; 6.3]	4.9	[4.7; 5.1]	4.1	[3.9; 4.3]
2024	359	[346; 372]	6.1	[5.9; 6.3]	4.9	[4.7; 5.1]	4.1	[3.9; 4.3]
2025	362	[349; 375]	6.1	[5.9; 6.3]	4.9	[4.7; 5.1]	4.1	[3.9; 4.3]
Trend	↗		↗		↘		↘	

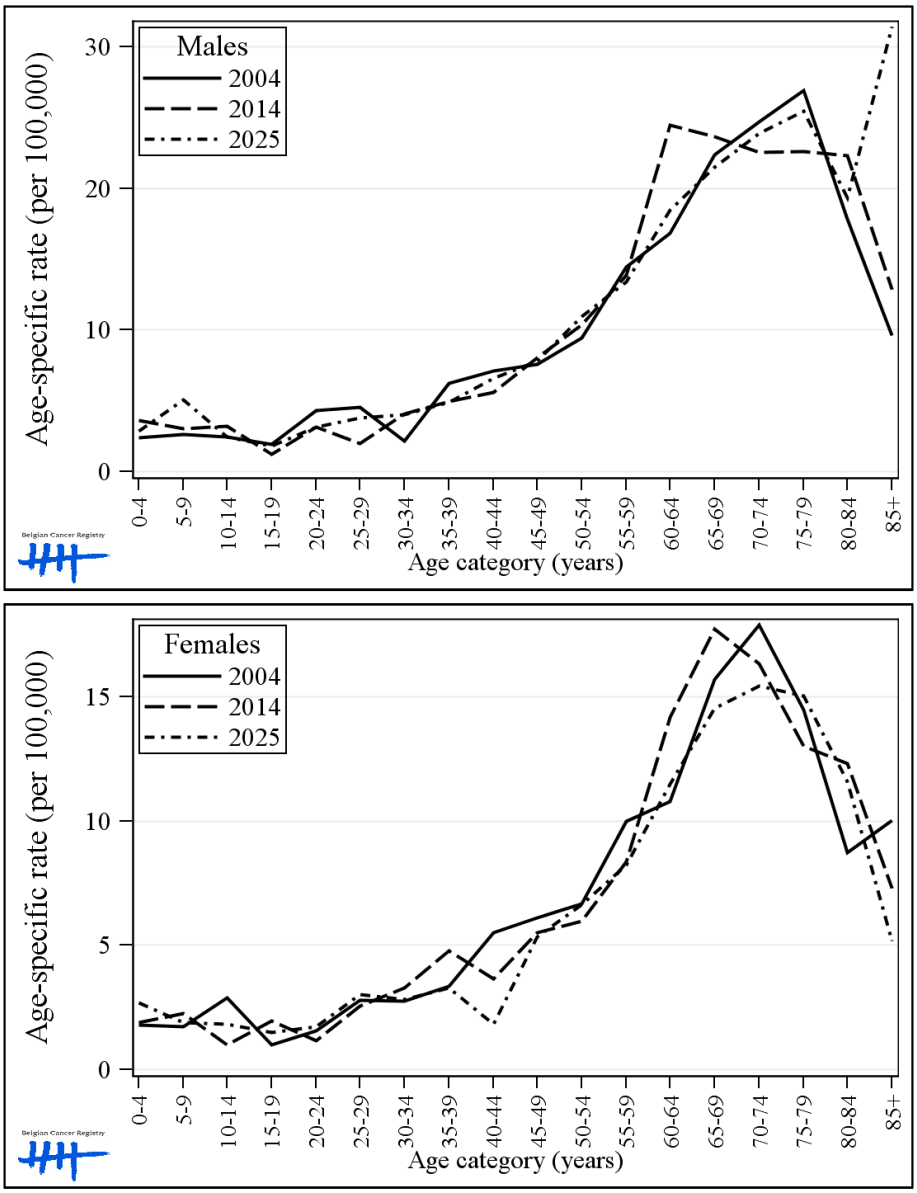
4.21.3. Number of new diagnoses by age group projected to 2025

Table 48: Malignant central nervous system tumours: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Central nervous system cancer					
	Projected number of cases					
	0-24 years		25-59 years		60+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Males						
2015	45	[40; 50]	198	[190; 207]	257	[246; 268]
2016	46	[40; 51]	198	[190; 207]	263	[251; 274]
2017	46	[40; 52]	199	[190; 207]	269	[256; 282]
2018	47	[41; 53]	198	[190; 207]	276	[262; 289]
2019	47	[41; 54]	198	[189; 206]	283	[268; 297]
2020	48	[41; 55]	197	[189; 206]	290	[275; 305]
2021	49	[41; 56]	196	[188; 205]	297	[281; 314]
2022	50	[42; 57]	196	[187; 204]	305	[288; 323]
2023	50	[42; 59]	195	[186; 203]	313	[294; 332]
2024	51	[42; 60]	193	[185; 202]	321	[301; 342]
2025	52	[42; 61]	192	[184; 200]	330	[308; 351]
Trend	↗		↘		↗	
Females						
2015	30	[27; 34]	124	[116; 131]	185	[176; 193]
2016	30	[27; 34]	123	[116; 131]	187	[179; 195]
2017	30	[27; 34]	123	[115; 131]	190	[181; 198]
2018	30	[27; 34]	122	[115; 130]	192	[183; 201]
2019	30	[27; 34]	122	[114; 130]	195	[186; 204]
2020	30	[27; 34]	121	[113; 129]	198	[189; 207]
2021	31	[27; 34]	120	[112; 128]	201	[192; 210]
2022	31	[27; 34]	119	[111; 127]	205	[196; 214]
2023	31	[28; 34]	118	[110; 126]	208	[199; 218]
2024	31	[28; 35]	117	[109; 125]	211	[202; 221]
2025	31	[28; 35]	116	[107; 124]	215	[205; 225]
Trend	↗		↘		↗	

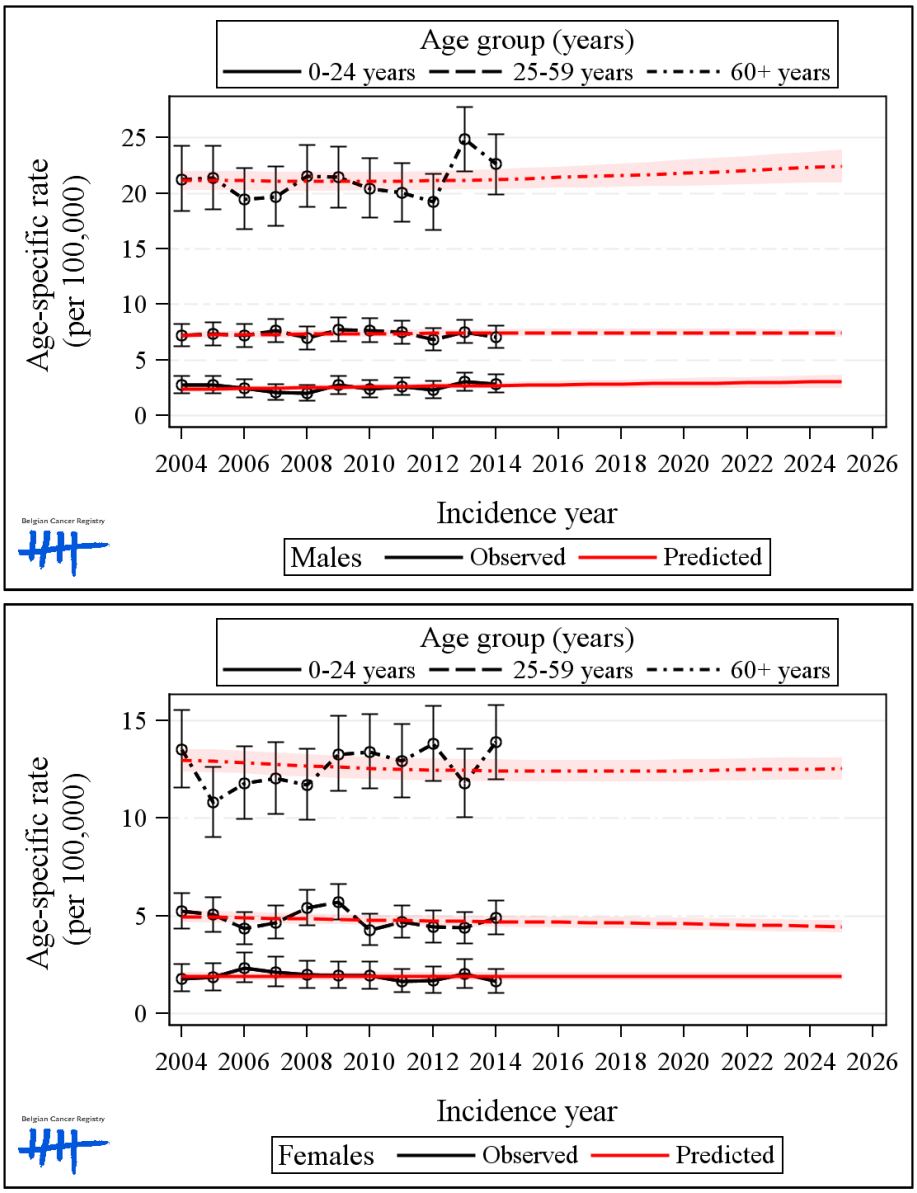
4.21.4. Observed and projected age-specific incidence rates

Figure 73: Malignant central nervous system tumours: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.21.5. Trends in age-specific incidence rates

Figure 74: Malignant central nervous system tumours: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



4.22. Thyroid cancer (C73)

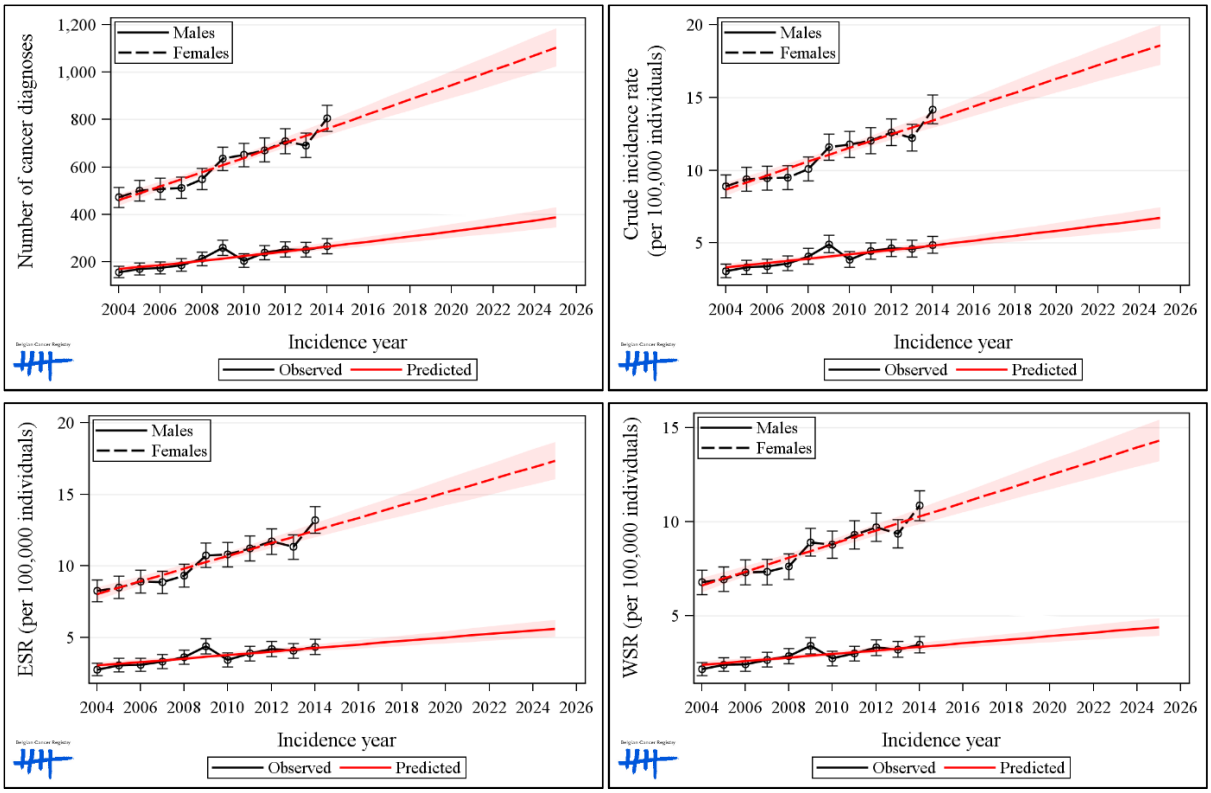
- In the period 2014 to 2025, the yearly number of new thyroid cancer diagnoses in Belgium is projected to rise from 1,072 to 1,490, an increase of about 39%.
- In males, the number of new thyroid cancer diagnoses in 2014 was 267 and is projected to reach 387 in 2025, an increase of 44%. The increase in projected number of diagnoses in males from 2014 to 2025 is observed in all three broad age groups considered and strongest in the 40-69 years and 70+ years age groups.
- In females, the incidence projection 2014-2025 runs from 805 to 1,103, an increase of about 37%. The increasing projected number of diagnoses is highest in the 40-69 years age group.

- The age-standardised cancer incidence rate (WSR) in males will increase from 3.5 to 4.4 cases per 100,000 men between 2014 and 2025, an increase of 26%.
- The same trend is observed in females where the age-standardised cancer incidence rate (WSR) will increase from 10.9 to 14.3 cases per 100,000 women between 2014 and 2025, an increase of 31%. The age-specific incidence rate in females is higher in the age group 40-69 years compared to 15-39 years and 70+ years age groups.

- An increasing cancer risk in combination with an aging and growing population drive the projected increase in thyroid cancer diagnoses from 2014 to 2025.

4.22.1. Trends in observed and projected number of new diagnoses, crude and age-standardised rates

Figure 75: Thyroid cancer: Observed number of new cancer diagnoses (top left), crude rate (top right), and age-standardised incidence rate (ESR and WSR, bottom) in 2004 to 2014, and projected to 2025.



4.22.2. Number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR) projected to 2025

Table 49: Thyroid cancer: Projected number of new cancer diagnoses, crude rate and age-standardised incidence rate (ESR and WSR), 2015 to 2025.

	Thyroid cancer							
	Predicted number of cases		Predicted crude rate (per 100,000)		Predicted ESR (per 100,000)		Predicted WSR (per 100,000)	
Gender year	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI	Estimate	95% PI
Males								
2015	275	[258; 292]	5.0	[4.7; 5.3]	4.4	[4.1; 4.7]	3.4	[3.2; 3.7]
2016	286	[267; 305]	5.2	[4.8; 5.5]	4.5	[4.2; 4.8]	3.5	[3.3; 3.8]
2017	297	[275; 318]	5.3	[5.0; 5.7]	4.6	[4.3; 5.0]	3.6	[3.4; 3.9]
2018	307	[284; 331]	5.5	[5.1; 5.9]	4.8	[4.4; 5.1]	3.7	[3.4; 4.0]
2019	318	[292; 344]	5.7	[5.2; 6.1]	4.9	[4.5; 5.3]	3.8	[3.5; 4.1]
2020	329	[301; 357]	5.9	[5.3; 6.4]	5.0	[4.6; 5.4]	3.9	[3.6; 4.3]
2021	340	[309; 371]	6.0	[5.5; 6.6]	5.1	[4.7; 5.6]	4.0	[3.7; 4.4]
2022	352	[318; 385]	6.2	[5.6; 6.8]	5.3	[4.8; 5.7]	4.1	[3.7; 4.5]
2023	363	[327; 400]	6.4	[5.7; 7.0]	5.4	[4.9; 5.9]	4.2	[3.8; 4.6]
2024	375	[336; 414]	6.6	[5.9; 7.2]	5.5	[4.9; 6.1]	4.3	[3.9; 4.7]
2025	387	[345; 429]	6.7	[6.0; 7.5]	5.6	[5.0; 6.2]	4.4	[3.9; 4.9]
Trend	↗		↗		↗		↗	
Females								
2015	793	[759; 826]	13.9	[13.3; 14.5]	12.9	[12.4; 13.5]	10.6	[10.2; 11.1]
2016	823	[786; 861]	14.4	[13.7; 15.0]	13.4	[12.7; 14.0]	11.0	[10.5; 11.5]
2017	854	[812; 896]	14.9	[14.1; 15.6]	13.8	[13.1; 14.5]	11.4	[10.8; 12.0]
2018	885	[838; 932]	15.3	[14.5; 16.2]	14.2	[13.5; 15.0]	11.8	[11.1; 12.4]
2019	916	[864; 967]	15.8	[14.9; 16.7]	14.7	[13.8; 15.5]	12.1	[11.4; 12.8]
2020	946	[890; 1,003]	16.3	[15.3; 17.3]	15.1	[14.2; 16.0]	12.5	[11.7; 13.3]
2021	978	[917; 1,039]	16.8	[15.7; 17.8]	15.6	[14.6; 16.6]	12.9	[12.0; 13.7]
2022	1,009	[943; 1,075]	17.2	[16.1; 18.3]	16.0	[15.0; 17.1]	13.2	[12.3; 14.1]
2023	1,040	[970; 1,111]	17.7	[16.5; 18.9]	16.5	[15.3; 17.6]	13.6	[12.6; 14.6]
2024	1,072	[996; 1,147]	18.1	[16.9; 19.4]	16.9	[15.7; 18.1]	14.0	[12.9; 15.0]
2025	1,103	[1,022; 1,184]	18.6	[17.2; 20.0]	17.3	[16.1; 18.6]	14.3	[13.2; 15.4]
Trend	↗		↗		↗		↗	

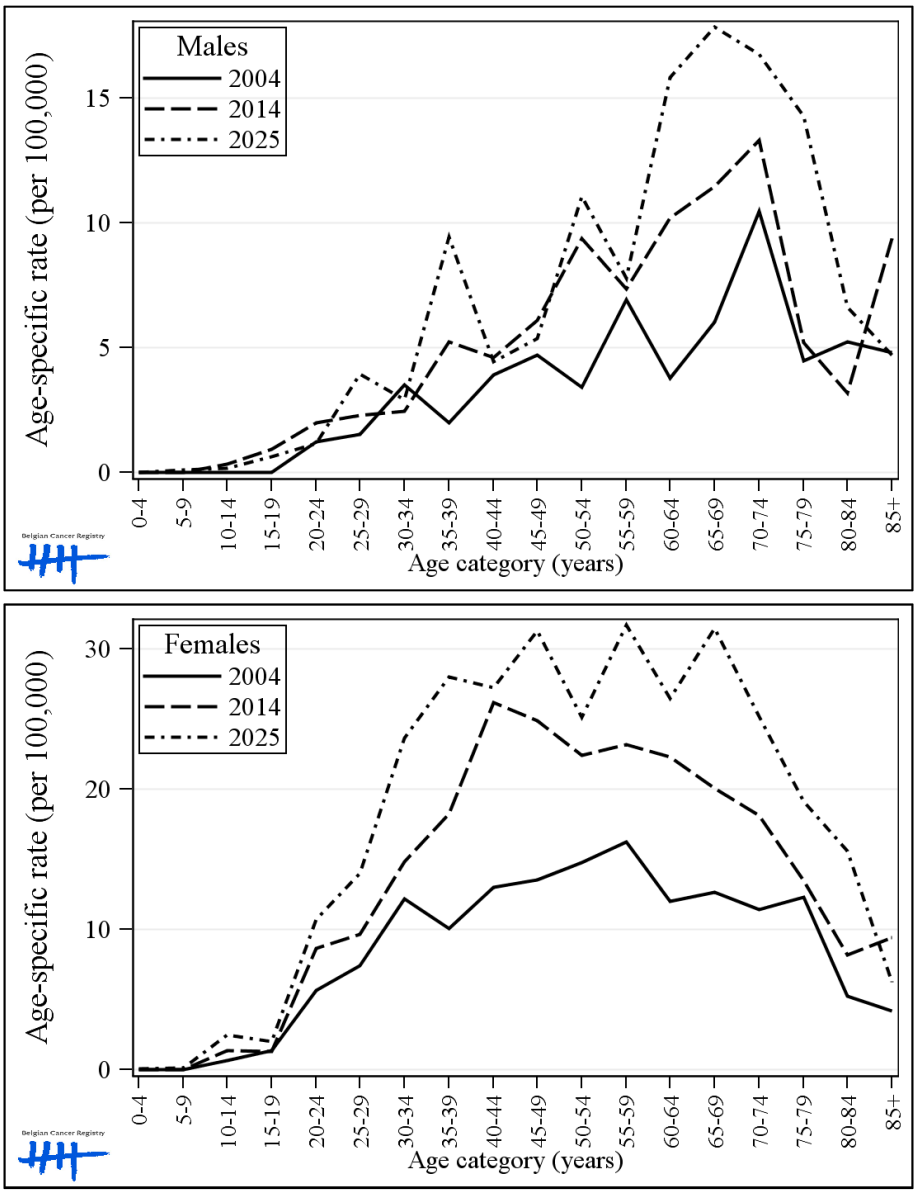
4.22.3. Number of new diagnoses by age group projected to 2025

Table 50: Thyroid cancer: Projected number of new cancer diagnoses by age group, 2015 to 2025.

	Thyroid cancer					
	Projected number of cases					
	15-39 years		40-69 years		70+ years	
Gender year	Cases	95% PI	Cases	95% PI	Cases	95% PI
Males						
2015	49	[42; 56]	172	[159; 186]	53	[45; 61]
2016	51	[43; 58]	178	[163; 194]	56	[47; 65]
2017	53	[44; 61]	183	[167; 200]	60	[50; 70]
2018	54	[45; 64]	188	[170; 207]	64	[52; 75]
2019	56	[46; 66]	194	[173; 214]	68	[55; 80]
2020	58	[47; 69]	199	[177; 221]	72	[57; 86]
2021	59	[48; 71]	204	[180; 228]	76	[60; 92]
2022	61	[48; 73]	210	[184; 236]	80	[62; 98]
2023	62	[49; 75]	216	[188; 244]	84	[65; 104]
2024	64	[50; 78]	221	[191; 251]	89	[68; 110]
2025	66	[51; 81]	227	[195; 259]	93	[70; 117]
Trend	↗		↗		↗	
Females						
2015	202	[185; 218]	477	[451; 503]	109	[97; 121]
2016	211	[192; 229]	494	[464; 524]	113	[100; 126]
2017	219	[199; 240]	510	[477; 543]	119	[104; 134]
2018	228	[205; 251]	526	[489; 563]	125	[108; 142]
2019	236	[211; 261]	542	[502; 582]	131	[112; 150]
2020	244	[216; 271]	558	[514; 602]	137	[116; 158]
2021	252	[222; 281]	575	[527; 623]	144	[120; 167]
2022	260	[228; 292]	592	[540; 644]	150	[124; 175]
2023	268	[234; 302]	608	[553; 663]	156	[129; 184]
2024	276	[240; 313]	624	[565; 683]	163	[133; 193]
2025	285	[246; 324]	640	[577; 702]	170	[138; 202]
Trend	↗		↗		↗	

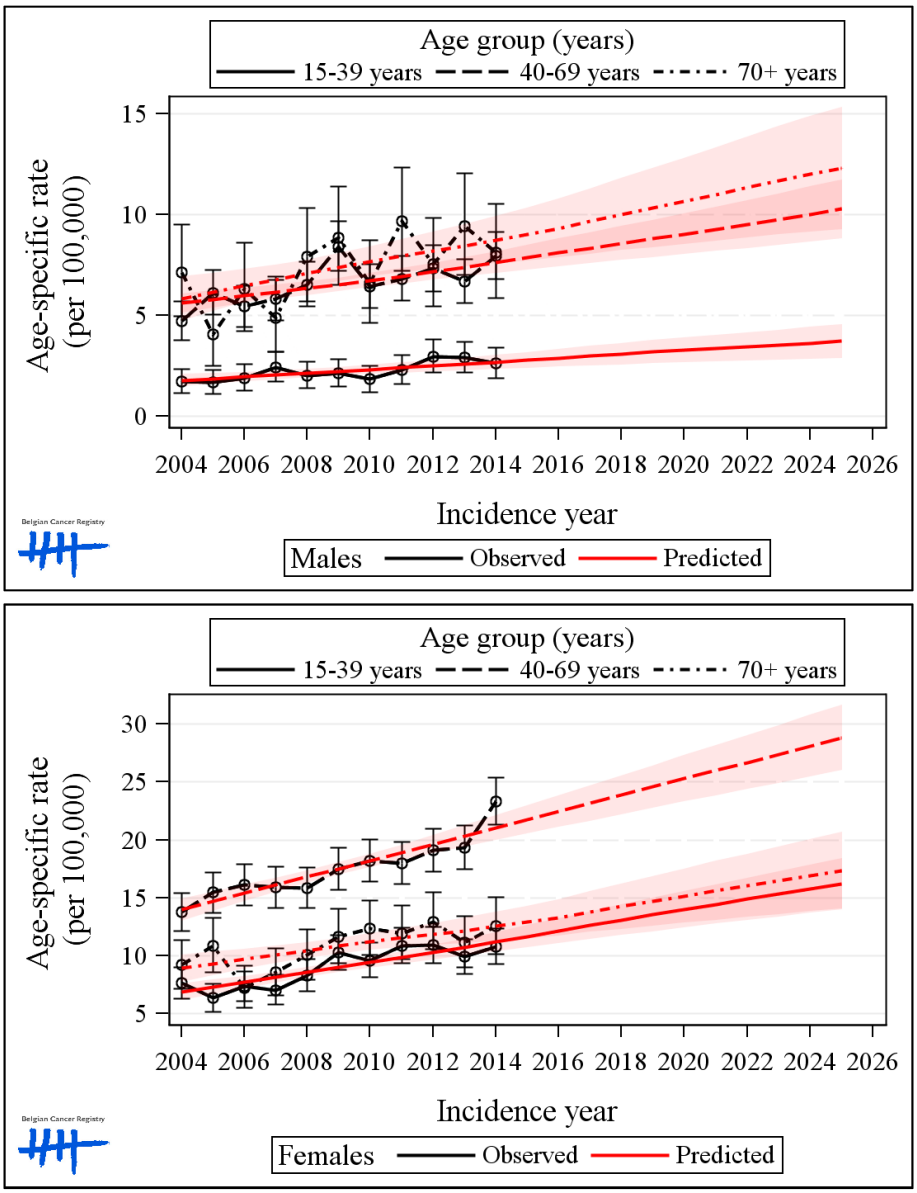
4.22.4. Observed and projected age-specific incidence rates

Figure 76: Thyroid cancer: Observed (2004 and 2014) and projected (2025) age-specific incidence rates for males (top) and females (bottom).



4.22.5. Trends in age-specific incidence rates

Figure 77: Thyroid cancer: Trends in age-specific incidence rates by age group for the years 2004 to 2014 and projected to 2025 for males (top) and females (bottom).



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6. Appendix

6.1. SAS code Poisson models

The log-linear, linear and constant crude rate Poisson models are estimated with the SAS GENMOD procedure. The SAS code used is shown below, the expressions between square brackets refer to the notations applied in the formulas given in section 3.4.2.

`t` represents the calendar year, [t]
`c` represents the number of cancer diagnoses observed in year `t`, [$c(t)$]
`N` represents the population size at the start of calendar year `t`, [$N(t)$]
`logN` represents the natural logarithm of `N`, [$\ln(N(t))$]

```
* log-linear model;
proc genmod;
 model c = t / link=log dist=poisson offset=logN ;
run;

* linear model;
proc genmod;
 model c = N  N*t / link=identity dist=poisson noint;
run;

* constant crude rate;
proc genmod;
 model c = N / link=identity dist=poisson noint;
run;
```

6.2. Inference for the projected trends 2014-2025

The estimated parameters of the Poisson regression model can be used to assess whether the differences in predicted incidence count, crude cancer rate and age-standardised cancer rate between the years 2025 and 2014 are statistically significant. Therefore, the difference between the model prediction for the year 2025 (strictly speaking a "projection") and the model prediction for the year 2014 is considered. (Note here that not the difference between the projection for 2025 and the observed value in 2014 is considered.)

$$\Delta = \hat{Y}(t_2) - \hat{Y}(t_1). \qquad (9)$$

with t_2 = 2025 and t_1 = 2014, and $\hat{Y}(t_j)$ the model prediction for the incidence count, crude cancer rate or age-standardised cancer rate at year t_j (j=1,2).

6.2.1. Inference framework

The predictions $\hat{Y}(t_j)$ are a function of the Poisson model parameter vector $\boldsymbol{\beta}$, so Δ is also a function of these estimates:

$$\Delta(\boldsymbol{\beta}). \qquad (10)$$

Consider the Jacobian with the first order partial derivatives of $\Delta(\boldsymbol{\beta})$ with respect to the β_l

$$\mathbf{J}_{\Delta} = \left(\frac{\partial \Delta(\boldsymbol{\beta})}{\partial \beta_1}, \frac{\partial \Delta(\boldsymbol{\beta})}{\partial \beta_2}, \ldots, \frac{\partial \Delta(\boldsymbol{\beta})}{\partial \beta_l} \right). \tag{11}$$

The estimated variance-covariance matrix on the estimated Poisson model parameters, $\hat{\boldsymbol{\Sigma}}_{\boldsymbol{\beta}}$, is given as part of the PROC GENMOD output. The multivariate delta rule can be applied to obtain the asymptotic variance on Δ:

$$\mathrm{Var}\left\{\Delta(\hat{\boldsymbol{\beta}})\right\} = \mathbf{J}_{\Delta} \hat{\boldsymbol{\Sigma}}_{\boldsymbol{\beta}} \mathbf{J}_{\Delta}^{T} \Big|_{\hat{\boldsymbol{\beta}}}. \tag{12}$$

With the standard error for the difference, *SE*(Δ), a *z*-score

$$z = \Delta / SE(\Delta), \tag{13}$$

can be calculated. Assuming a normal distribution, the asymptotic p-value for the two-sided test is:

$$p = 2 \times \left(1 - F_{N(0,1)}(X \le |z|)\right), \tag{14}$$

with $F_{N(0,1)}$ the cumulative distribution function for the standard normal distribution.

When two functions, $f_1(\boldsymbol{\beta})$ and $f_2(\boldsymbol{\beta})$, of the model parameter vector $\boldsymbol{\beta}$ are considered, the Jacobian becomes a matrix:

$$\mathbf{J}_{f_1, f_2} = \begin{pmatrix} \frac{\partial f_1(\boldsymbol{\beta})}{\partial \beta_1} & \frac{\partial f_1(\boldsymbol{\beta})}{\partial \beta_2} & \cdots & \frac{\partial f_1(\boldsymbol{\beta})}{\partial \beta_l} \\ \frac{\partial f_2(\boldsymbol{\beta})}{\partial \beta_1} & \frac{\partial f_2(\boldsymbol{\beta})}{\partial \beta_2} & \cdots & \frac{\partial f_2(\boldsymbol{\beta})}{\partial \beta_l} \end{pmatrix}. \tag{15}$$

The estimated 2×2 variance-covariance matrix for $f_1(\hat{\boldsymbol{\beta}})$ and $f_2(\hat{\boldsymbol{\beta}})$ is given by:

$$\hat{\boldsymbol{\Sigma}}_{f_1(\hat{\boldsymbol{\beta}}), f_2(\hat{\boldsymbol{\beta}})} = \mathbf{J}_{f_1, f_2} \hat{\boldsymbol{\Sigma}}_{\boldsymbol{\beta}} \mathbf{J}_{f_1, f_2}^{T} \Big|_{\hat{\boldsymbol{\beta}}}. \tag{16}$$

6.2.2. Age-standardised cancer rate

The difference in projected age-standardised cancer rate between year t_2 and t_1 is given by:

$$\Delta \hat{asr} = \hat{asr}(t_2) - \hat{asr}(t_1) = \sum_{i=1}^{18} w_i \left(\hat{r}_i(t_2) - \hat{r}_i(t_1) \right), \tag{17}$$

with w_i the standard population weights (see Table 2) and $\hat{r}_i(t_j)$ the estimated age-specific cancer rate for age group *i* (*i*=1,…,18) in year t_j.

For each age group *i*, an independent Poisson model was estimated, so the terms in the summation (17) are independent. The variance on $\Delta \hat{asr}$ therefore becomes:

$$\mathrm{Var}\left\{\Delta \hat{asr}\right\} = \sum_{i=1}^{18} w_i^{\,2} \mathrm{Var}\left\{\Delta \hat{asr}_i\right\} = \sum_{i=1}^{18} w_i^{\,2} \mathrm{Var}\left\{\hat{r}_i(t_2) - \hat{r}_i(t_1)\right\}. \tag{18}$$

The variance on the difference in age-specific cancer rates depends on the specific Poisson model selected for age group *i*. The three model types applied are therefore considered one by one.

Log-linear Poisson model

In the log-linear Poisson model (2), see §3.4.2, the age-specific rate for each group *i* is estimated as:

$$\hat{r}_i(t) = \exp\left(\hat{\beta}_{i,0} + \hat{\beta}_{i,1} t\right). \tag{19}$$

The difference in estimated age-standardised cancer rate for each age group *i* is given by:

$$\Delta a\hat{s}r_i = \exp\left(\hat{\beta}_{i,0} + \hat{\beta}_{i,1} t_2\right) - \exp\left(\hat{\beta}_{i,0} + \hat{\beta}_{i,1} t_1\right). \tag{20}$$

The corresponding Jacobian is

$$\mathbf{J}_{\Delta a\hat{s}r_i} = \begin{pmatrix} \exp\left(\hat{\beta}_{i,0} + \hat{\beta}_{i,1} t_2\right) - \exp\left(\hat{\beta}_{i,0} + \hat{\beta}_{i,1} t_1\right) \\ t_2 \exp\left(\hat{\beta}_{i,0} + \hat{\beta}_{i,1} t_2\right) - t_1 \exp\left(\hat{\beta}_{i,0} + \hat{\beta}_{i,1} t_1\right) \end{pmatrix}^T. \tag{21}$$

Linear Poisson model

In the linear Poisson model (4), the age-specific rate for each group *i* is estimated as:

$$\hat{r}_i(t) = \hat{\beta}_{i,1} + \hat{\beta}_{i,2} t\,. \tag{22}$$

The difference in estimated age-standardised cancer rate for each age group *i* is given by:

$$\Delta a\hat{s}r_i = \hat{\beta}_{i,2}(t_2 - t_1)\,. \tag{23}$$

So:

$$\mathrm{Var}\left\{\Delta a\hat{s}r_i\right\} = (t_2 - t_1)^2 Var\left\{\hat{\beta}_{i,2}\right\}. \tag{24}$$

Constant rate Poisson model

As the rate is constant, the difference $\Delta a\hat{s}r$ is zero and so is its variance.

6.2.3. Incidence count

The difference in projected number of cancer cases between year t_2 and t_1 is given by:

$$\Delta\hat{c} = \hat{c}(t_2) - \hat{c}(t_1) = \sum_{i=1}^{18} \left(\hat{c}_i(t_2) - \hat{c}_i(t_1)\right), \tag{25}$$

with $\hat{c}_i(t)$ the estimated age-specific incidence count for age group *i*.

For each age group *i*, an independent Poisson model was estimated, so the terms in the summation (25) are independent. The variance on $\Delta\hat{c}$ therefore becomes:

$$\mathrm{Var}\left\{\Delta\hat{c}\right\} = \sum_{i=1}^{18} \mathrm{Var}\left\{\Delta\hat{c}_i\right\} = \sum_{i=1}^{18} \mathrm{Var}\left\{\hat{c}_i(t_2) - \hat{c}_i(t_1)\right\}. \tag{26}$$

The variance on the difference in age-specific incidence counts depends on the specific Poisson model selected for age group *i*, The three model types applied are therefore considered one by one.

Log-linear Poisson model

In the log-linear Poisson model (2), the age-specific incidence count for each group *i* is estimated as:

$$\hat{c}_i(t) = N_i(t)\exp\left(\hat{\beta}_{i,0} + \hat{\beta}_{i,1}t\right), \tag{27}$$

with $N_i(t)$ the population size in age group *i* at the start of calendar year *t*. The difference in estimated age-standardised incidence count is given by:

$$\Delta\hat{c}_i = N_i(t_2)\exp\left(\hat{\beta}_{i,0} + \hat{\beta}_{i,1}t_2\right) - N_i(t_1)\exp\left(\hat{\beta}_{i,0} + \hat{\beta}_{i,1}t_1\right). \tag{28}$$

The corresponding Jacobian is

$$\mathbf{J}_{\Delta\hat{c}_i} = \begin{pmatrix} N_i(t_2)\exp\left(\hat{\beta}_{i,0} + \hat{\beta}_{i,1}t_2\right) - N_i(t_1)\exp\left(\hat{\beta}_{i,0} + \hat{\beta}_{i,1}t_1\right) \\ t_2N_i(t_2)\exp\left(\hat{\beta}_{i,0} + \hat{\beta}_{i,1}t_2\right) - t_1N_i(t_1)\exp\left(\hat{\beta}_{i,0} + \hat{\beta}_{i,1}t_1\right) \end{pmatrix}^T. \tag{29}$$

When considering the crude rate in section 6.2.4, the variance-covariance matrix between $\hat{c}_i(t_1)$ and $\hat{c}_i(t_2)$ is needed. The Jacobian needed to calculate this matrix is given by the 2×2 matrix:

$$\mathbf{J}_{\hat{c}_i(t_1),\hat{c}_i(t_2)} = \begin{pmatrix} N_i(t_1)\exp\left(\hat{\beta}_{i,0} + \hat{\beta}_{i,1}t_1\right) & t_1N_i(t_1)\exp\left(\hat{\beta}_{i,0} + \hat{\beta}_{i,1}t_1\right) \\ N_i(t_2)\exp\left(\hat{\beta}_{i,0} + \hat{\beta}_{i,1}t_2\right) & t_2N_i(t_2)\exp\left(\hat{\beta}_{i,0} + \hat{\beta}_{i,1}t_2\right) \end{pmatrix}. \tag{30}$$

Linear Poisson model

In the linear Poisson model (4), the age-specific incidence count for each age group *i* is estimated as:

$$\hat{c}_i(t) = N_i(t)\left(\hat{\beta}_{i,1} + \hat{\beta}_{i,2}t\right). \tag{31}$$

The difference in estimated age-standardised incidence count for each age group *i* is given by:

$$\Delta\hat{c}_i = \hat{\beta}_{i,1}\left(N_i(t_2) - N_i(t_1)\right) + \hat{\beta}_{i,2}\left(t_2N_i(t_2) - t_1N_i(t_1)\right). \tag{32}$$

The corresponding Jacobian is

$$\mathbf{J}_{\Delta\hat{c}_i} = \begin{pmatrix} N_i(t_2) - N_i(t_1) & t_2N_i(t_2) - t_1N_i(t_1) \end{pmatrix}. \tag{33}$$

When considering the crude rate in section 6.2.4, the variance-covariance matrix between $\hat{c}_i(t_1)$ and $\hat{c}_i(t_2)$ is needed. The Jacobian needed to calculate this matrix is given by the 2×2 matrix:

$$\mathbf{J}_{\hat{c}_i(t_1),\hat{c}_i(t_2)} = \begin{pmatrix} N_i(t_1) & t_1N_i(t_1) \\ N_i(t_2) & t_2N_i(t_2) \end{pmatrix}. \tag{34}$$

Constant rate Poisson model

In the constant rate Poisson model (6), the age-specific incidence count for each age group *i* is estimated as:

$$\hat{c}_i(t) = \hat{\beta}_{i,1} N_i(t). \quad (35)$$

Although the rate is constant over the projection time period, the difference $\Delta\hat{c}_i$ can be different from zero if the populations $N_i(t_1)$ and $N_i(t_2)$ are not equal:

$$\Delta\hat{c}_i = \hat{\beta}_{i,1}(N_i(t_2) - N_i(t_1)). \quad (36)$$

Only one estimated parameter appears in this expression, so the variance on $\Delta\hat{c}_i$ is simply:

$$\mathrm{Var}\{\Delta\hat{c}_i\} = (N_i(t_2) - N_i(t_1))^2 Var\{\hat{\beta}_{i,1}\}. \quad (37)$$

When considering the crude rate in section 6.2.4, the variances of and the covariance between $\hat{c}_i(t_1)$ and $\hat{c}_i(t_2)$ are needed, which are given by:

$$\begin{aligned} &\mathrm{Var}\{\hat{c}_i(t)\} = N_i(t)^2\ \mathrm{Var}\{\hat{\beta}_{i,1}\} \\ &\mathrm{Covar}\{\hat{c}_i(t_1), \hat{c}_i(t_2)\} = N_i(t_1) N_i(t_2) \mathrm{Var}\{\hat{\beta}_{i,1}\}. \end{aligned} \quad (38)$$

6.2.4. Crude rate

In contrast to the age-standardised rates, the difference in overall crude rate (i.e. pooling all ages) between t_2 and t_1 cannot be estimated using the same procedure. The difference in crude rate is given by:

$$\Delta\hat{CR} = \hat{CR}(t_2) - \hat{CR}(t_1) = \frac{\hat{c}(t_2)}{N(t_2)} - \frac{\hat{c}(t_1)}{N(t_1)} = \frac{\sum_{i=1}^{18}\hat{c}_i(t_2)}{N(t_2)} - \frac{\sum_{i=1}^{18}\hat{c}_i(t_1)}{N(t_1)} = \sum_{i=1}^{18}\left(\frac{\hat{c}_i(t_2)}{N(t_2)} - \frac{\hat{c}_i(t_2)}{N(t_2)}\right). \quad (39)$$

Because $\hat{c}_i(t_2)$ and $\hat{c}_i(t_1)$ for the same age group *i* are not independent, the variance on the difference in crude rates becomes:

$$\mathrm{Var}\left\{\Delta\hat{CR}\right\} = \sum_{i=1}^{18}\left(\frac{\mathrm{Var}\{\hat{c}_i(t_2)\}}{(N(t_2))^2} + \frac{\mathrm{Var}\{\hat{c}_i(t_1)\}}{(N(t_1))^2} - \frac{2}{N(t_1)N(t_2)}\mathrm{Covar}\{\hat{c}_i(t_1), \hat{c}_i(t_2)\}\right). \quad (40)$$

The variances and covariance for the age-specific incidence counts $\hat{c}_i(t_2)$ and $\hat{c}_i(t_1)$ depend on the specific Poisson model selected for age group *i*, and were already given in section 6.2.3.

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