Munich Cancer Registry



- ▶ Survival
- ▶ Selection Matrix
- ▶ Homepage
- ▶ Deutsch

ICD-10 C34: Non-small cell LC

Incidence and Mortality

Year of diagnosis	1998-2020
Patients	29,100
Diseases	29,437
Creation date	12/21/2021
Database export	12/20/2021
Population	4.95 m



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https://www.tumorregister-muenchen.de/en

https://www.tumorregister-muenchen.de/en/facts/base/bC34N_E-ICD-10-C34-Non-small-cell-LC-incidence-and-mortality.pdf

Index of figures and tables

Fig./Tbl	I.	Page
1	Annual cases, mult. malignancies, follow-up / yr	5
2	Incidence by year of diagnosis	8
3	Age distribution parameters by year of diagnosis	9
4	Age distribution by 5-year age group and sex	12
5	Age-specific incidence, proportion malignancies	13
6	Age distribution and age-specific incidence (chart)	14
6a	Age-specific incidence internationally (chart)	15
7	Standardized incidence ratio of further malignancies	16
8a	Map of cancer incidence (BRD-S) by county (chart)	18
8b	Standardized incidence ratio (SIR) by county (chart)	19
9a	Pts incident cohorts and mortality / yr	20
9b	Incidence and mortality by year of diagnosis	21
9c	Cancer-related deaths, death certification available / yr	22
10	Medians of age at death / yr	23
11	Mortality by year of death	25
12	Distribution of age at death	27
13	Age-specific mortality	28
14	Further malignancies in deaths	29
15	Age-specific mortality (first primaries)	31
16	Age-specific mortality (single primaries)	32
17	Age distribution and age-specific mortality (chart)	33
18a	Map of cancer mortality (BRD-S) by county (chart)	34
18b	Standardized mortality ratio (SMR) by county (chart)	35

Global Statements about the statistics on the Internet – Baseline Statistics (grey button ——), Survival (red button ——)

In these analyses, the clinics and physicians of Upper Bavaria and the city and county of Landshut[#], with a total of 4.69 million inhabitants, account for the frequency of cancer diseases^{##} and the achieved long term results. Additionally, the long term survival evaluated by the Munich Cancer Registry (MCR) is compared with the results of the population-based registry in the USA (SEER), which is useful for checking the consistency of the data on an international level.

In comparing several tables, inconsistent figures may be detected. This is based on the fact that different patient cohorts are included in the base calculation, for example when proportions of multiple tumors or DCO-cases### are concerned. In other cases the individual tumor diagnosis is the basis for calculation, for example with incidence.

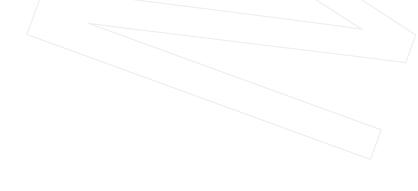
The foot notes describe the currentness of the data. The baseline statistics and survival data are updated annually. This yearly analysis comprises the Annual Report of the MCR.

Clinics and physicians have access to essentially more detailed data, with which they can check, compare and in the best case optimize their own data and results.

We would be pleased to receive corrections, critique and useful suggestions. Just send an e-mail to tumor@ibe.med.uni-muenchen.de.

Munich Cancer Registry, December 2021

- Base data has been collected since 1998. An increase in new diseases is apparent, which is an effect of two extensions in the MCR catchment area (from a base population of 2.65 million to 4.10 in 2002, and to 4.69 million in 2007).
- Due to the high frequency and good prognosis of non-malignant skin cancer (C44), no systematic ascertainment is performed for this diagnosis. C44 is not designated as a primary, but rather as a secondary tumor.
- DCO (death certificate only) identifies a cancer case that first becomes available to the MCR through the death certificate.



ICD-10 codes (ICD-10 2016) used for specifying cancer site

Code	Description
C34	Malignant neoplasm of bronchus and lung
C34.0 C34.1	Main bronchus Upper lobe, bronchus or lung
C34.2	Middle lobe, bronchus or lung
C34.3	Lower lobe, bronchus or lung
C34.8	Overlapping lesion of bronchus and lung
C34.9	Bronchus or lung, unspecified

... in case of morphology recorded and not coexisting any of ...

Morphology codes (ICD-O-3 2011) used for specifying cancer site

Code	Description	
8002/3	Malignant tumor, small cell type	
8041/3	Small cell carcinoma, NOS	
8042/3	Oat cell carcinoma	
8043/3	Small cell carcinoma, fusiform cell	
8044/3	Small cell carcinoma, intermediate cell	
8045/3	Combined small cell carcinoma	

INCIDENCE

Table 1

Cases with invasive cancer by year of diagnosis, proportions of further malignancies, deaths, and active follow-up (ALL PATIENTS)

		Prop.			
		at least	Prop.		
		1 further	at least		
		malign.	1 further		Prop.
	All	prior +	malign.	Prop.	actively
Year of	cases	synchron.	after	deaths	followed
diagnosis	n	%	%	%	%
1998	595	9.7	6.2	94.1	99.3
1999	664	11.4	6.2	92.5	98.5
2000	647	12.0	6.1	92.1	98.6
2001	665	12.5	6.1	93.2	98.6
2002	1029	13.4	6.0	93.2	98.7 #
2003	1115	14.0	5.8	92.5	98.9
2004	1101	14.6	5.7	92.3	98.7
2005	1119	15.3	5.7	92.0	98.2
2006	1176	15.9	5.6	90.7	98.1
2007	1444	16.3	5.6	89.3	97.4 #
2008	1550	17.0	5.5	88.0	99.1
2009	1545	17.4	5.3	87.8	98.4
2010	1598	17.8	5.1	88.0	98.9
2011	1633	18.2	4.8	87.9	99.1
2012	1672	18.7	4.6	85.6	99.1
2013	1653	19.0	4.3	84.2	98.7
2014	1681	19.2	4.1	79.8	98.2
2015	1701	19.5	3.6	78.1	97.8
2016	1625	19.8	3.3	74.3	99.8
2017	1588	20.1	3.0	69.6	99.8
2018	1381	20.5	2.6	57.1	99.7
2019	1171	20.8	2.3	48.1	100.0
2020	1084	21.0	1.5	42.2	99.5 ##
2020	2001		-1.3	7	33.3 ""
1998-2020	29437	21.0	6.2	81.4	98.8

29,437 cases diagnosed 1998-2020 are related to a total of 29,100 patients. Currently, in 7,590 (26.1 %) of these 29,100 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 5,833 / 1,329 / 428 (20.0 % / 4.6 % / 1.5 %) patients exist having 2 / 3 / 4 + malignancies.

- # The increases of incident cases in 2002 and 2007 reflect the expansion to additional registry areas.
- ## Please be aware that data of recent annual patient cohorts may not yet be fully processed. The years under evaluation can be retreived from the respective headings.

How to interpret:

In 2018, a subgroup of 1,381 cases has been diagnosed, of which 20.5 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 2.6 % of cases, at least one new malignancy has occurred during the follow-up period (all numbers refer to the date of the database export, see cover sheet).

Table 1a

Cases with invasive cancer by year of diagnosis, proportions of further malignancies, deaths, and active follow-up (MALES)

			Prop.			
			at least	Prop.		
			1 further	at least		
			malign.	1 further		Prop.
			prior +	malign.	Prop.	actively
Year of	Males	Males	synchron.	after	deaths	followed
diagnosis	n	용	%	%	%	90
1998	411	69.1	9.5	6.5	95.4	99.8
1999	460	69.3	10.3	6.4	92.8	98.5
2000	452	69.9	11.5	6.4	92.9	98.7
2001	470	70.7	12.3	6.3	94.0	98.3
2002	704	68.4	13.3	6.2	95.0	99.1 #
2003	735	65.9	13.9	6.1	93.7	99.2
2004	742	67.4	14.4	6.0	93.5	98.9
2005	752	67.2	15.2	5.9	92.6	98.3
2006	793	67.4	15.7	5.8	91.0	98.1
2007	954	66.1	16.3	5.8	90.4	97.2 #
2008	1013	65.4	17.0	5.7	90.2	99.0
2009	988	63.9	17.3	5.6	89.1	98.6
2010	1012	63.3	17.7	5.4	89.8	98.7
2011	1025	62.8	18.3	5.2	89.8	99.2
2012	1029	61.5	18.9	5.1	88.0	99.4
2013	1026	62.1	19.3	4.8	85.7	99.0
2014	988	58.8	19.6	4.4	81.2	98.8
2015	1042	61.3	19.9	3.9	79.8	98.3
2016	931	57.3	20.1	3.6	77,7	99.7
2017	931	58.6	20.3	3.2	74.9	99.8
2018	794	57.5	20.7	2.9	60.5	99.5
2019	647	55.3	21.1	2.3	54.1	100.0
2020	605	55.8	21.2	2.0	47.4	99.8 ##
1998-2020	18504	62.9	21.2	6.5	84.3	98.9
1990-2020	10204	02.9	21.2	0.5	04.5	20.9

18,504 cases diagnosed 1998-2020 are related to a total of 18,289 patients. Currently, in 4,854 (26.5 %) of these 18,289 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 3,724/853/277 (20.4 % /4.7 % /1.5 %) patients exist having 2/3/4+ malignancies.

- # The increases of incident cases in 2002 and 2007 reflect the expansion to additional registry areas.
- ## Please be aware that data of recent annual patient cohorts may not yet be fully processed. The years under evaluation can be retreived from the respective headings.

How to interpret:

In 2018, a subgroup of 794 cases has been diagnosed, of which 20.7 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 2.9 % of cases, at least one new malignancy has occurred during the follow-up period (all numbers refer to the date of the database export, see cover sheet).

Table 1b

Cases with invasive cancer by year of diagnosis, proportions of further malignancies, deaths, and active follow-up (FEMALES)

			Prop.			
			at least	Prop.		
			1 further	at least		
			malign.	1 further		Prop.
			prior +	malign.	Prop.	actively
Year of	Females	Females	synchron.	after	deaths	followed
diagnosis	n	%	용	%	%	용
1998	184	30.9	10.3	5.8	91.3	98.4
1999	204	30.7	13.9	5.8	91.7	98.5
2000	195	30.1	13.0	5.7	90.3	98.5
2001	195	29.3	13.1	5.7	91.3	99.5
2002	325	31.6	13.4	5.6	89.2	97.8 #
2003	380	34.1	14.4	5.5	90.0	98.4
2004	359	32.6	15.3	5.4	89.7	98.3
2005	367	32.8	15.5	5.3	90.7	98.1
2006	383	32.6	16.3	5.3	90.1	98.2
2007	490	33.9	16.3	5.1	87.3	98.0 #
2008	537	34.6	16.9	5.1	83.8	99.3
2009	557	36.1	17.5	4.8	85.6	98.0
2010	586	36.7	17.9	4.5	85.0	99.1
2011	608	37.2	18.0	4.1	84.9	99.0
2012	643	38.5	18.3	3.9	81.8	98.6
2013	627	37.9	18.3	3.7	81.7	98.1
2014	693	41.2	18.4	3.7	77.8	97.3
2015	659	38.7	19.0	3.2	75.3	97.1
2016	694	42.7	19.3	2.9	69.9	99.9
2017	657	41.4	19.7	2.7	62.1	99.8
2018	587	42.5	20.1	2.2	52.5	100.0
2019	524	44.7	20.3	2.3	40.6	100.0
2020	479	44.2	20.7	0.9	35.5	99.2 ##
1998-2020	10933	37.1	20.7	5.8	76.5	98.7

10,933 cases diagnosed 1998-2020 are related to a total of 10,811 patients. Currently, in 2,736 (25.3 %) of these 10,811 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 2,109/476/151 (19.5 % /4.4 % /1.4 %) patients exist having 2/3/4+ malignancies.

- # The increases of incident cases in 2002 and 2007 reflect the expansion to additional registry areas.
- ## Please be aware that data of recent annual patient cohorts may not yet be fully processed. The years under evaluation can be retreived from the respective headings.

How to interpret:

In 2018, a subgroup of 587 cases has been diagnosed, of which 20.1 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 2.2 % of cases, at least one new malignancy has occurred during the follow-up period (all numbers refer to the date of the database export, see cover sheet).

Table 2

Incidence measures by year of diagnosis (with respect to registry area expansion from 2.65 to 4.10 m as of 2002, and from 4.10 to 4.94 m as of 2007, respectively)

			M-1	П	Malaa		Malaa		Malaa	E
Year of	Malaa	Females	Males		Males Inc.		Males Inc.		Males Inc.	Inc.
				Inc.	WS	Inc. WS	ES	Inc.	BRD-S	
diagnosis	n	n	raw	raw	WS	WS	ES	FO	BKD-2	BKD-2
1998	411	184	37.1	15.6	22.8	8.3	33.1	11.7	40.6	14.1
1999	460	204	41.1	17.2	25.4	9.0	36.5	12.9	44.6	15.8
2000	452	195	39.7	16.2	24.2	9.0	34.8	12.6	42.1	14.9
2000	470	195	40.6	16.0	24.2	8.8	35.6	12.3	43.0	14.9
2002	704	325	37.8	16.6	21.8	8.9	31.9	12.7	40.2	15.0
2003	735	380	39.2	19.3	22.5	10.4	32.9	14.6	40.3	17.3
2004	742	359	39.4	18.2	21.9	9.5	32.2	13.4	40.4	16.0
2005	752	367	39.7	18.4	21.9	10.0	31.8	14.0	39.5	16.3
2006	793	383	41.4	19.1	22.5	9.8	32.8	13.9	40.9	16.5
2007	954	490	43.1	21.2	22.7	11.1	33.4	15.7	43.2	18.7
2008	1013	537	45.5	23.1	23.8	12.1	34.9	17.1	44.2	20.1
2009	988	557	44.3	24.0	23.4	12.0	34.1	17.0	42.1	20.4
2010	1012	586	44.9	25.0	23.1	12.7	33.6	17.9	42.1	21.3
2011	1025	608	45.8	26.0	23.2	12.5	33.8	17.9	42.4	21.5
2012	1029	643	45.3	27.2	22.6	13.1	33.1	18.7	42.1	22.5
2013	1026	627	44.6	26.3	22.2	13.0	32.3	18.3	40.6	21.7
2014	988	693	42.4	28.8	20.3	13.9	29.9	19.6	38.2	23.6
2015	1042	659	43.8	27.1	21.6	12.8	31.6	18.3	39.8	22.1
2016	931	694	38.7	28.3	19.2	13.3	28.1	18.9	35.0	22.9
2017	931	657	38.6	26.7	18.8	12.4	27.4	17.7	34.6	21.6
2018	794	587	32.6	23.6	16.1	11.4	23.5	16.0	29.3	19.3
2019	647	524	26.6	21.1	12.5	9.8	18.6	13.9		16.9
2020	605	479	24.8	19.3	12.0	8.8	17.7	12.5	22.1	15.5
		1,3				3.0		== 1,0		
1998-2020	18504	10933	39.8	22.6	20.7	11.2	30.2	15.9	37.8	19.0

The computation of the incidence measures includes all cancers, irrespective of first or subsequent malignancy.

 $\mbox{Table 3}$ Age distribution parameters by year of diagnosis (ALL PATIENTS)

Year of	Cases		Std.					Median		
diagnosis	n	Mean	dev.	Min.	Max.	10%	25%	50%	75%	90%
1998	595	65.2	10,4	28.1	91.7	51.7	57.6	65.5	73.3	78.0
1999	664	65.6	10.3	32.0	93.0	51.8	58.4	66.7	73.0	78.5
2000	647	64.9	10.7	15.8	88.6	51.1	57.9	65.3	72.7	78.4
2001	665	65.0	10.6	17.0	93.6	50.4	58.5	65.7	72.4	77.9
2002	1029	66.2	10.6	27.5	91.7	52.2	59.3	66.5	74.3	79.3
2003	1115	66.2	10.5	17.5	95.0	52,6	59.2	66.7	73.6	79.5
2004	1101	66.7	10.5	24.4	92.2	53.6	59.9	66.6	74.6	80.2
2005	1119	66.2	10.8	18.1	92.7	52.5	59.5	66.6	74.2	79.4
2006	1176	66.9	10.5	27.5	92.7	53.4	60.2	67.0	74.7	80.3
2007	1444	67.2	10.9	7.5	97.2	53.2	60.6	67.8	75.4	80.6
2008	1550	67.4	10.6	22.3	95.7	53.8	60.9	68.2	75.0	80.3
2009	1545	67.5	10.6	20.3	95.2	53.7	60.6	68.2	74.6	81.0
2010	1598	67.6	10.3	15.6	97.8	53.9	61.3	68.5	75.0	80.3
2011	1633	67.9	10.8	28.9	94.7	53.2	60.8	68.8	75.5	81.7
2012	1672	68.4	10.7	22.9	96.6	54.1	61.8	69.2	76.1	82.1
2013	1653	68.2	10.4	27.9	97.7	53.7	61.6	69.1	75.6	81.0
2014	1681	68.6	10.9	15.9	96.0	53.3	62.1	70.3	76.0	81.5
2015	1701	68.8	10.3	23.7	95.2	54.9	62.0	70.1	76.0	81.1
2016	1625	68.8	10.4	20.9	96.2	54.7	61.7	69.5	76.0	81.4
2017	1588	68.7	10.3	24.2	95.2	54.4	61.3	69.7	76.8	80.7
2018	1381	68.6	10.6	18.5	92.6	54.7	62.0	69.8	76.3	80.6
2019	1171	69.4	10.6	19.7	98.8	56.1	62.6	70.2	77.4	81.4
2020	1084	69.4	10.2	21.5	95.2	56.4	62.8	70.1	77.2	81.5
1998-2020	29437	67.7	10.6	7.5	98.8	53.7	60.8	68.5	75.4	80.6

Table 3a

Age distribution parameters by year of diagnosis (MALES)

90% 77.1 77.6 78.0 77.3 79.3
77.1 77.6 78.0 77.3 79.3
77.6 78.0 77.3 79.3
77.6 78.0 77.3 79.3
78.0 77.3 79.3
77.3 79.3
79.3
78.9
80.0
79.3
79.5
80.6
80.2
80.5
80.2
81.3
82.2
80.7
82.4
81.1
81.2
80.8
80.9
81.8
81.7
80.5

Table 3b

Age distribution parameters by year of diagnosis (FEMALES)

Year of	Cases		Std.					Median		
diagnosis	n	Mean	dev.	Min.	Max.	10%	25%	50%	75%	90%
1998	184	66.0	11,5	35.8	89.6	50.3	57.1	66.8	75.3	79.9
1999	204	66.7	11.2	32.9	93.0	50.9	58.5	68.1	75.7	79.2
2000	195	64.8	12.3	15.8	87.6	49.2	56.0	66.7	74.2	78.7
2001	195	65.3	11.7	31.5	92.6	48.2	56.8	66.9	74.4	80.1
2002	325	65.4	11.7	27.5	89.7	50.7	57.6	67.2	75.1	79.2
2003	380	65.6	11.8	17.5	95.0	50.6	57.2	66.8	74.1	79.8
2004	359	65.8	11.4	24.4	92.1	50.8	58.0	65.5	75.3	80.6
2005	367	64.5	11.6	21.6	89.3	49.9	56.4	65.0	73.4	79.5
2006	383	66.3	11.7	27.5	92.7	51.6	59.0	66.0	75.3	81.9
2007	490	65.6	11.7	22.3	97.2	50.2	57.3	66.0	74.8	80.4
2008	537	66.0	11.4	29.4	95.7	51.7	58.6	66.2	74.3	80.5
2009	557	66.8	11.6	20.3	95.2	51.7	59.8	68.2	75.2	81.6
2010	586	66.9	10.8	33.2	97.8	52.6	60.1	67.2	74.9	80.5
2011	608	67.9	11.3	33.0	94.7	51.9	59.7	68.0	76.3	83.1
2012	643	67.8	10.8	33.3	91.8	53.0	60.0	68.5	75.8	81.6
2013	627	67.2	11.2	30.6	97.7	52.1	59.8	67.3	75.1	81.6
2014	693	67.3	11.5	15.9	95.0	51.0	60.4	69.2	75.5	80.7
2015	659	68.3	10.5	23.7	95.2	54.4	61.6	69.2	75.7	81.2
2016	694	68.4	11.0	20.9	96.2	53.5	61.0	69.2	76.4	81.7
2017	657	68.2	10.8	24.2	95.2	53.3	60.8	69.2	76.8	80.6
2018	587	67.7	11.3	18.5	90.3	52.7	60.8	69.2	75.7	80.4
2019	524	68.4	11.1	19.7	98.8	55.0	61.6	69.4	76.3	81.3
2020	479	69.0	10.8	21.5	95.2	55.5	63.0	70.3	77.2	81.1
1998-2020	10933	67.1	11.3	15.8	98.8	52.0	59.7	68.0	75.5	80.9

 $\label{table 4}$ Age distribution by 5-year age group and sex for period 2007-2020

Age at								
diagnosis	Cases		Males			Females		
Years	n	% Cur	n.% n	%	Cum.%	n	%	Cum.%
0 - 4								
5-9	1	0.0	0.0 / 1	0.0	0.0			0.0
10-14	0	0.0	0.0		0.0			0.0
15-19	5	0.0	2	0.0	0.0	3	0.0	0.0
20-24	11	0.1	0.1 4	0.0	0.1	7	0.1	0.1
25-29	23	0.1	0.2 10	0.1	0.1	13	0.2	0.3
30-34	53	0.2	0.4 22	0.2	0.3	31	0.4	0.6
35-39	103	0.5	53	0.4	0.7	50	0.6	1.2
40 - 44	235	1.1	2.0 105	0.8	1.5	130	1.6	2.8
45-49	662	3.1 5	5.1 357	2.7	4.3	305	3.7	6.5
50-54	1295	6.1 11	L.2 694	5.3	9.6	601	7.2	13.7
55-59	2131	10.0 21	L.2 1267	9.8	19.4	864	10.4	24.0
60-64	2971	13.9 35	5.1 1786	13.8	33.1	1185	14.2	38.2
65-69	3830	18.0 53	3.1 2361	18.2	51.3	1469	17.6	55.8
70-74	3941	18.5 71	L.6 2545	19.6	70.9	1396	16.7	72.6
75-79	3374	15.8 87	7.4 2144	16.5	87.4	1230	14.7	87.3
80-84	1895	8.9 96	5.3 1183	9.1	96.5	712	8.5	95.9
85+	796	3.7 100	0.0 451	3.5	100.0	345	4.1	100.0
All ages	21326	100.0	12985	100.0		8341	100.0	

Table 5 $\label{table 5} \mbox{Age-specific incidence and proportion of all cancers}$ for period 2007-2020

					Males	Females
			Males	Females	Prop.all	Prop.all
Age at			Age-	Age-	cancers	cancers
diagnosis	Males	Females	spec.	spec.	n=153686	n=155051
Years	n	n /	incid.	incid.	%	%
0- 4						
5- 9	1		0.1		0.9	
10-14						
15-19	2	3	0.1	0.2	0.6	1.1
20-24	4	7	0.2	0.4	0.6	1.4
25-29	10	13	0.4	0.6	1.0	1.1
30-34	22	31	1.0	1.4	1.7	1.4
35-39	53	50	2.3	2.2	2.9	1.4
40 - 44	105	130	4.2	5.4	3.8	2.1
45-49	354	304	13.2	11.7	7.0	3.2
50-54	692/	599	27.2	23.8	8.2	4.8
55-59	1262	857	59.5	39.3	9.9	6.4
60-64	1776	1175	100.5	61.9	10.1	7.5
65-69	2339	1460	143.3	80.5	9.6	7.7
70-74	2531	1388	168.8	80.7	9.2	7.0
75-79	2131	1223	176.1	81.4	8.9	6.3
80-84	1179	710	162.8	66.7	7.7	4.6
85+	451	345	96.6	33.1	4.3	2.1
All ages	12912	8295			8.4	5.3
Incidence						
Raw			39.6	24.7		
WS			19.8	11.9		
ES			28.9	16.9		
BRD-S			36.3	20.3		

The age-specific incidence characterizes the disease risk in a particular age group. The age distribution depends on the patient population frequency in each age group and reflects the tangible clinical picture of everyday patients care (see following chart).

ICD-10 C34: Non-small cell lung cancer

Age distribution and age-specific incidence 2007 - 2020 (Males: 12912, Females: 8295)

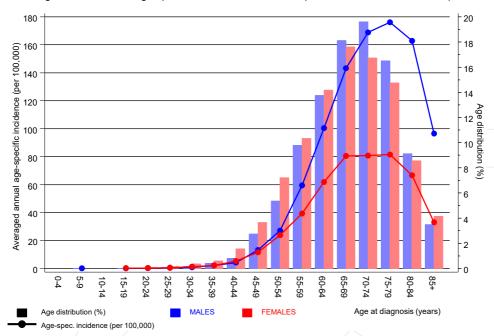


Figure 6. Age distribution (males: mean=68.8 yrs, median=69.7 yrs; females: mean=67.6 yrs, median=68.4 yrs) and age-specific incidence.



ICD-10 C34: Non-small cell lung cancer

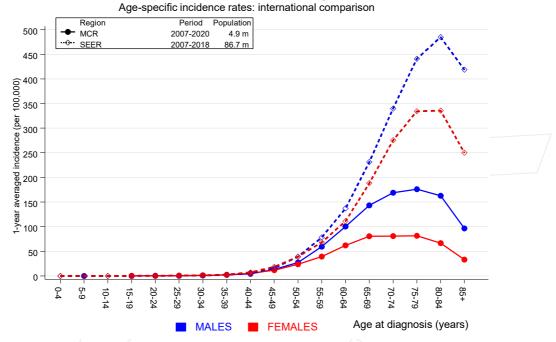


Figure 6a. Age-specific incidence in MCR registry areas compared to SEER (Surveillance, Epidemiology, and End Results, USA).



Reference:

Surveillance, Epidemiology, and End Results (SEER) Program SEER*Stat Database: Incidence - SEER 21 Regs Research Data, released April 2021, based on the November 2020 submission. http://www.seer.cancer.gov.

Table 7a

Standardized incidence ratio (SIR, with 95% confidence limits), excess absolute risk (EAR) and DCO rate of further malignancies for period 1998-2020 MALES

		Observed	Expected		CI	CI		DCO
Diagnosi	S	/ n /	n	SIR	95%	95%	EAR	왕
G0.0	T 1	/ _/	0 5	F (1 0	16.2		22.2
	Lip	3	0.5	5.6		16.3		33.3
	Oral cavity	38	4.3	8.9		12.2		15.8
	Salivary gland	2	1.1	1.8	0.2		0.3	
	Oropharynx	51	5.3	9.6		12.6		3.9
	Hypopharynx	19	2.9	6.6		10.2		5.3
	Oesophagus	49	10.4	4.7	3.5	6.2		4.1
	Stomach	70	19.2	3.6	2.8	4.6		12.9
	Small intestine	13	3.1	4.2	2.3	7.2		7.7
C18	Colon	96	48.0	2.0	1.6			14.6
C19-C20	Rectum	51	27.0	1.9	1.4	2.5	# 7.7	5.9
C21	Anus/canal	2	1.2	1.7	0.2	6.0	0.3	
C22	Liver	49	15.0	3.3	2.4	4.3	# 10.9	12.2
C23-C24	Bile	12	5.3	2.2	_1.2	3.9	# 2.1	16.7
C25	Pancreas	48	19.6	2.4	1.8	3.2	# 9.1	37.5
C26	GI cancer	4	0.5	8.5	2.3	21.8	# 1.1	25.0
	Larynx	57	5.1	11.1		14.4		7.0
C33-C34		289	60.5	4.8	4.2	5.4		1.0
	Mesothelioma	2	3.5	0.6	0.1		-0.5	
C40-C41		3	0.4	7.5			# 0.8	33.3
	Malign. melanoma	36	22.9	1.6	1.1		# 4.2	8.3
	Soft tissue	8	2.8	2.9	1.2	5.6	"	•••
•	Peritoneal	2	0.4	4.8		17.4	0.5	
	Breast	3	1.4	2.2	0.4	6.3	0.5	33.3
	Prostate	183	145.7	1.3	1.1	1.5		13.7
	Testis	4	1.1	3.6	1.0	9.1	0.9	25.0
	Kidney	65	17.6	3.7	2.8	4.7		16.9
	Renal pelvis	11	2.3	4.9	2.4	8.7		10.5
	Bladder	76	22.8	3.3	2.6	4.2		9.2
	Urinary org.	4	0.3	13.8	3.8	35.4		50.0
	CNS cancer	9	6.4	1.4	0.6	2.7	0.8	33.3
		10	3.2	3.1	1.5	5.7		33.3
	Thyroid Cancer others	10	1.0	2.0	0.2	5.7 7.2	# 2.2 0.3	50.0
		15		1.8		3.0		6.7
C76-C79			8.2		1.0			
C82-C85		55	20.9	2.6	2.0	3.4		9.1
	Mult. myeloma	10	6.5	1.5	0.7	2.8	1.1	10.0
C91-C96	Leukaemia	23	7.4	3.1	2.0	4.7	# 5.0	30.4
Others,	specified	7	5.6	1.2	0.5	2.6	0.4	28.6
Not obse		0	1.6	0.0	0.0		-0.5	
All furt	her malignancies	1381	511.3	2.7	2.6	2.8	# 278.2	10.4
Patients			18137					
	at next malignand	cy (years)						
Person-year		1 (123120)	31262					
	ation time (year:	s)	1.7					
	rvation time (year		0.7					
		,	. 1					

The occurrence of further specified malignancy is statistically significant.

Further observed malignancies with count 1 are pooled in category "Others, specified".

Table 7b

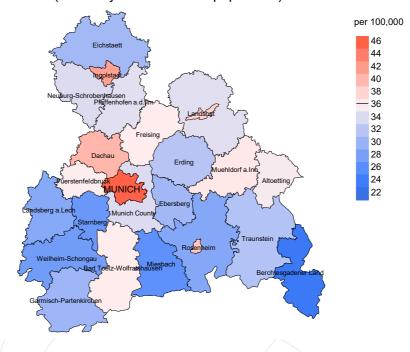
Standardized incidence ratio (SIR, with 95% confidence limits), excess absolute risk (EAR) and DCO rate of further malignancies for period 1998-2020 FEMALES

C16 Stom C17 Smal C18 Colo C19-C20 Rect C21 Anus C22 Live C23-C24 Bile C25 Panc C32 Lary C33-C34 Lung C43 Mali C46,C49 Soft C48 Peri C50 Brea C51 Vulv C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn	charynx pharynx phagus lach l intestine n um /canal r reas nx gn. melanoma	Observed n 7 11 2 13 21 7 43 14 5 10 4 42 5 143 22	Expected n 1.3 1.0 0.3 1.5 6.4 1.3 18.9 8.0 1.2 2.6 2.8 9.5 0.4 17.8	SIR 5.5 10.9 7.7 8.4 3.3 5.6 2.3 1.8 4.0 3.8 1.4 4.4 11.9	CI 95% 2.2 5.4 0.9 4.5 2.0 2.2 1.6 1.0 1.3 1.8 0.4 3.2	CI 95% 11.3 19.4 27.9 14.4 5.0 11.5 3.1 2.9 9.4 7.0 3.7	# # # #	2.8 4.9 0.9 5.6 7.1 2.8 11.8 2.9	50.0 7.5 33.3 11.6 7.1
C03-C06 Oral C09-C10 Orop C12-C13 Hypo C15 Oeso C16 Stom C17 Smal C18 Colo C19-C20 Rect C21 Anus C22 Live C23-C24 Bile C25 Panc C32 Lary C33-C34 Lung C43 Mali C46,C49 Soft C48 Peri C50 Brea C51 Vulv C52 Vagi C51 Vulv C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	charynx pharynx phagus ach l intestine on um /canal r reas nx gn. melanoma tissue	n 7 11 2 13 21 7 43 14 5 10 4 42 5 143 22	n 1.3 1.0 0.3 1.5 6.4 1.3 18.9 8.0 1.2 2.6 2.8 9.5 0.4	5.5 10.9 7.7 8.4 3.3 5.6 2.3 1.8 4.0 3.8 1.4	2.2 5.4 0.9 4.5 2.0 2.2 1.6 1.0 1.3 1.8 0.4	11.3 19.4 27.9 14.4 5.0 11.5 3.1 2.9 9.4 7.0	# # # #	2.8 4.9 0.9 5.6 7.1 2.8 11.8 2.9	50.0 7.7 33.3 11.6
C09-C10 Orop C12-C13 Hypo C15 Oeso C16 Stom C17 Smal C18 Colo C19-C20 Rect C21 Anus C22 Live C23-C24 Bile C25 Panc C32 Lary C33-C34 Lung C43 Mali C46,C49 Soft C50 Brea C51 Vulv C52 Vagi C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	charynx pharynx phagus ach l intestine on um /canal r reas nx gn. melanoma tissue	11 2 13 21 7 43 14 5 10 4 42 5 143 22	1.0 0.3 1.5 6.4 1.3 18.9 8.0 1.2 2.6 2.8 9.5 0.4	10.9 7.7 8.4 3.3 5.6 2.3 1.8 4.0 3.8 1.4 4.4	5.4 0.9 4.5 2.0 2.2 1.6 1.0 1.3 1.8 0.4	19.4 27.9 14.4 5.0 11.5 3.1 2.9 9.4 7.0	# # # #	4.9 0.9 5.6 7.1 2.8 11.8 2.9	7.7 33.3 11.6 7.3
C09-C10 Orop C12-C13 Hypo C15 Oeso C16 Stom C17 Smal C18 Colo C19-C20 Rect C21 Anus C22 Live C23-C24 Bile C25 Panc C32 Lary C33-C34 Lung C43 Mali C46,C49 Soft C50 Brea C51 Vulv C52 Vagi C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	charynx pharynx phagus ach l intestine on um /canal r reas nx gn. melanoma tissue	11 2 13 21 7 43 14 5 10 4 42 5 143 22	1.0 0.3 1.5 6.4 1.3 18.9 8.0 1.2 2.6 2.8 9.5 0.4	10.9 7.7 8.4 3.3 5.6 2.3 1.8 4.0 3.8 1.4 4.4	5.4 0.9 4.5 2.0 2.2 1.6 1.0 1.3 1.8 0.4	19.4 27.9 14.4 5.0 11.5 3.1 2.9 9.4 7.0	# # # #	4.9 0.9 5.6 7.1 2.8 11.8 2.9	7.7 33.3 11.6 7.3
C12-C13 Hypo C15 Oeso C16 Stom C17 Smal C18 Colo C19-C20 Rect C21 Anus C22 Live C23-C24 Bile C25 Panc C32 Lary C33-C34 Lung C43 Mali C46,C49 Soft C48 Peri C50 Brea C51 Vulv C52 Vagi C52 Vagi C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	pharynx phagus ach l intestine um /canal r reas nx gn. melanoma tissue	2 13 21 7 43 14 5 10 4 42 5 143 22	0.3 1.5 6.4 1.3 18.9 8.0 1.2 2.6 2.8 9.5 0.4	7.7 8.4 3.3 5.6 2.3 1.8 4.0 3.8 1.4	0.9 4.5 2.0 2.2 1.6 1.0 1.3 1.8 0.4	27.9 14.4 5.0 11.5 3.1 2.9 9.4 7.0	# # # #	0.9 5.6 7.1 2.8 11.8 2.9	7.33.3 11.6
C15 Oeso C16 Stom C17 Smal C18 Colo C19-C20 Rect C21 Anus C22 Live C23-C24 Bile C25 Panc C32 Lary C33-C34 Lung C43 Mali C46,C49 Soft C48 Peri C50 Brea C51 Vulv C52 Vagi C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	phagus lach l intestine n um /canal r ereas nx gn. melanoma tissue	13 21 7 43 14 5 10 4 42 5 143 22	1.5 6.4 1.3 18.9 8.0 1.2 2.6 2.8 9.5 0.4	8.4 3.3 5.6 2.3 1.8 4.0 3.8 1.4	4.5 2.0 2.2 1.6 1.0 1.3 1.8 0.4	14.4 5.0 11.5 3.1 2.9 9.4 7.0	# # #	5.6 7.1 2.8 11.8 2.9	7. 33. 11. 7.
C16 Stom C17 Smal C18 Colo C19-C20 Rect C21 Anus C22 Live C23-C24 Bile C25 Panc C32 Lary C33-C34 Lung C43 Mali C46,C49 Soft C48 Peri C50 Brea C51 Vulv C52 Vagi C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	ach l intestine n um /canal r ereas nx gn. melanoma tissue	21 7 43 14 5 10 4 42 5 143 22	6.4 1.3 18.9 8.0 1.2 2.6 2.8 9.5 0.4	3.3 5.6 2.3 1.8 4.0 3.8 1.4 4.4	2.0 2.2 1.6 1.0 1.3 1.8 0.4	5.0 11.5 3.1 2.9 9.4 7.0	# # #	7.1 2.8 11.8 2.9	33. 11. 7.
C17 Smal C18 Colo C19-C20 Rect C21 Anus C22 Live C23-C24 Bile C25 Panc C32 Lary C33-C34 Lung C43 Mali C46,C49 Soft C48 Peri C50 Brea C51 Vulv C52 Vagi C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	l intestine n um /canal r ereas nx gn. melanoma tissue	7 43 14 5 10 4 42 5 143 22	1.3 18.9 8.0 1.2 2.6 2.8 9.5 0.4	5.6 2.3 1.8 4.0 3.8 1.4 4.4	2.2 1.6 1.0 1.3 1.8 0.4	11.5 3.1 2.9 9.4 7.0	###	2.8 11.8 2.9	11. 7.
C18 Colo C19-C20 Rect C21 Anus C22 Live C23-C24 Bile C25 Panc C32 Lary C33-C34 Lung C43 Mali C46,C49 Soft C48 Peri C50 Brea C51 Vulv C52 Vagi C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	n um /canal r reas nx gn. melanoma tissue	43 14 5 10 4 42 5 143 22	18.9 8.0 1.2 2.6 2.8 9.5 0.4	2.3 1.8 4.0 3.8 1.4 4.4	1.6 1.0 1.3 1.8 0.4	3.1 2.9 9.4 7.0	#	11.8 2.9	7.
C19-C20 Rect C21 Anus C22 Live C23-C24 Bile C25 Panc C32 Lary C33-C34 Lung C43 Mali C46,C49 Soft C48 Peri C50 Brea C51 Vulv C52 Vagi C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	um /canal r reas nx gn. melanoma tissue	14 5 10 4 42 5 143 22	8.0 1.2 2.6 2.8 9.5 0.4	1.8 4.0 3.8 1.4 4.4	1.0 1.3 1.8 0.4	2.9 9.4 7.0	#	2.9	7.
C21 Anus C22 Live C23-C24 Bile C25 Panc C32 Lary C33-C34 Lung C43 Mali C46,C49 Soft C48 Peri C50 Brea C51 Vulv C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	/canal er ereas nx gn. melanoma tissue	5 10 4 42 5 143 22	1.2 2.6 2.8 9.5 0.4	4.0 3.8 1.4 4.4	1.3 1.8 0.4	9.4 7.0			
C22 Live C23-C24 Bile C25 Panc C32 Lary C33-C34 Lung C43 Mali C46,C49 Soft C48 Peri C50 Brea C51 Vulv C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	reas nx gn. melanoma tissue	10 4 42 5 143 22	2.6 2.8 9.5 0.4	3.8 1.4 4.4	1.8	7.0		1.0	0.0
C23-C24 Bile C25 Panc C32 Lary C33-C34 Lung C43 Mali C46,C49 Soft C48 Peri C50 Brea C51 Vulv C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	reas nx gn. melanoma tissue	4 42 5 143 22	2.8 9.5 0.4	1.4 4.4	0.4		#	3.6	20
C25 Panc C32 Lary C33-C34 Lung C43 Mali C46,C49 Soft C48 Peri C50 Brea C51 Vulv C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	reas nx gn. melanoma tissue	42 5 143 22	9.5 0.4	4.4		3.1			20.
C32 Lary C33-C34 Lung C43 Mali C46,C49 Soft C48 Peri C50 Brea C51 Vulv C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	gn. melanoma tissue	5 143 22	0.4		3.4	6.0	ш	0.6	50.
C33-C34 Lung C43 Mali C46,C49 Soft C48 Peri C50 Brea C51 Vulv C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	gn. melanoma tissue	143 22		11.9		6.0		15.9	31.
C43 Mali C46,C49 Soft C48 Peri C50 Brea C51 Vulv C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	gn. melanoma tissue	22	17.8		3.9	27.8	#	2.2	0
C46,C49 Soft C48 Peri C50 Brea C51 Vulv C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	tissue			8.0	6.8	9.5	#	61.2	0.
C48 Peri C50 Brea C51 Vulv C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret			8.4	2.6	1.6		#	6.7	4.
C50 Brea C51 Vulv C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	toneal	4	1.2	3.4	0.9	8.6		1.4	25.
C51 Vulv C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret		3	1.0	3.0	0.6	8.8		1.0	33.
C52 Vagi C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret		148	69.2	2.1	1.8	2.5		38.5	12.
C53 Cerv C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	-	11	2.2	5.0	2.5	9.0	#	4.3	
C54 Corp C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret		2	0.4	5.2	0.6	18.7		0.8	
C56 Ovar C57.9 Fem. C64 Kidn C65 Rena C66 Uret	ix uteri	14	2.8	5.0	2.7	8.4	#	5.5	14.
C57.9 Fem. C64 Kidn C65 Rena C66 Uret	us uteri	17	12.6	1.4	0.8	2.2		2.2	5.
C64 Kidn C65 Rena C66 Uret	У	15	8.7	1.7	1.0	2.9		3.1	26.
C65 Rena C66 Uret	urogen.	2	0.0	146.8	17.8	530.2	#	1.0	
C66 Uret	еу	14	4.9	2.9	1.6	4.8	#	4.5	35.
	l pelvis	9	0.7	13.8	6.3	26.2	#	4.1	
C67 Blad	er	4	0.4	11.3	3.1	28.9	#	1.8	
	lder	20	3.8	5.2	3.2	8.1	#	7.9	15.
C68 Urin	ary org.	2	0.1	34.3	4.2	124.0	#	0.9	100.
C70-C72 CNS	cancer	4	2.7	1.5	0.4	3.8		0.6	50.
C73 Thyr	oid	15	3.6	4.2	2.3	6.9	#	5.6	13.
C76-C79 CUP		14	3.4	4.1	2.2	6.9	#	5.2	
C82-C85 NHL		16	8.0	2.0	1./1		#	3.9	6.
	. myeloma	8	2.5	3.2	1.4	6.4	#	2.7	37.
C91-C96 Leuk	_	11	2.9	3.8	1.9	6.7		3.9	9.
Others, spec	rified	10	2.4	4.1	2.0	7.6	#	3.7	20.
Not observed		0	1.1		0.0	3.2	"	-0.6	20.
All further	malignancies	692	215.9	3.2	3.0	3.5	#	232.7	12.
tients			1070	15					
		ncv (veare							
_	nevt maliana	ricy (years	204						
rson-years an observati	next maligna			o2 .9					

The occurrence of further specified malignancy is statistically significant.

Further observed malignancies with count 1 are pooled in category "Others, specified".

Average incidence (Germany 1987 standard population) 2007 - 2020: Males



werage incidence (Germany 1987 standard population) 2007 - 2020: Females

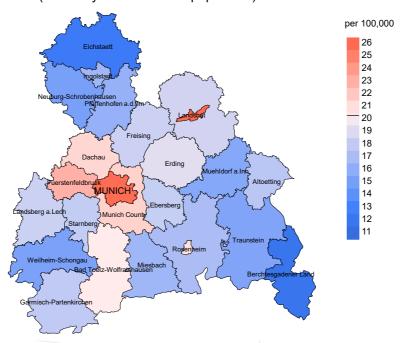
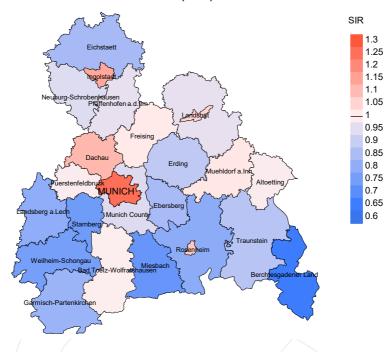


Figure 8a. Map of cancer incidence (german standard population) by county averaged for period 2007 to 2020. According to their individual incidence rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 36.3/100,000 WS N=12,912, females 20.3/100,000 WS N=8,295).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 67,727 female residents (averaged) in the period from 2007 to 2020 a total of 202 women were identified with newly diagnosed non-small cell LC. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 18.1/100,000 (german standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 15.0 and 21.7/100,000.

Standardized incidence ratio (SIR) 2007 - 2020: Males



Standardized incidence ratio (SIR) 2007 - 2020: Females

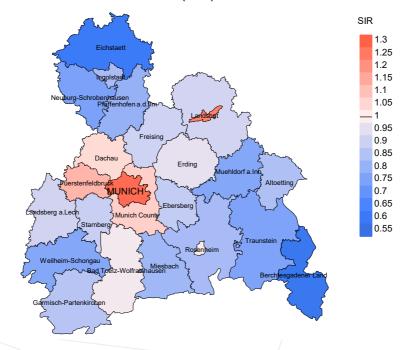


Figure 8b. Map of standardized incidence ratio (SIR) by county averaged for period 2007 to 2020. According to their individual SIR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=12,912, females N=8,295).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 67,153 female residents (averaged) in the period from 2007 to 2020 a total of 202 women were identified with newly diagnosed non-small cell LC. Therefore, the mean standardized incidence ratio (SIR) for this cancer type in this area can be calculated at 0.88. Though, the value of this parameter may vary with an underlying probability of 99% between 0.73 and 1.06, and is therefore not statistically striking.

MORTALITY

Table 9a

Annual cohorts: Incident cancers, follow-up status, and deaths among the annual cohorts

(with respect to registry area expansion from 2.65 to 4.10 m as of 2002, and from 4.10 to 4.94 m as of 2007, respectively)

					Prop.
	Tuestalant	Prop.		D	deaths
	Incident	actively	/,	Prop.	with death
Year of	cases	followed	Deaths	deaths	certific.
diagnosis	n	90	n	%	90
1998	595	99.3	560	94.1	91.3
1999	664	98.5	614	92.5	93.5
2000	647	98.6	596	92.1	94.1
2001	665	98.6	620	93.2	93.4
2002	1029	98.7	959	93.2	96.8
2003	1115	98.9	1031	92.5	96.1
2004	1101	98.7	1016	92.3	97.1
2005	1119	98.2	1029	92.0	97.7
2006	1176	98.1	1067	90.7	97.6
2007	1444	97.4	1290	89.3	97.4
2008	1550	99.1	1364	88.0	98.5
2009	1545	98.4	1357	87.8	98.2
2010	1598	98.9	1407	88.0	97.4
2011	1633	99.1	1436	87.9	97.1
2012	1672	99.1	1432	85.6	96.1
2013	1653	98.7	1391	84.2	96.0
2014	1681	98.2	1341	79.8	95.6
2015	1701	97.8	1328	78.1	94.7
2016	1625	99.8	1208	74.3	91.1
2017	1588	99.8	1105	69.6	82.6
2018	1381	99.7	788	57.1	57.5
2019	1171	100.0	563	48.1	81.3
2020	1084	99.5	457	42.2	95.4
1998-2020	29437	98.8	23959	81.4	93.9

Table 9b

Annual cohorts of incident cancers and deaths, and cases deceased within the same year of being diagnosed with cancer

(with respect to registry area expansion from 2.65 to 4.10 m as of 2002, and from 4.10 to 4.94 m as of 2007, respectively)

				D	
V	T		Daakha	Prop.	
Year of	Incident	D + 1	Deaths in	deaths in	
diagnosis/	cases	Deaths	same year	same year	
death	n	n	n	olo	
1998	595	473	191	32.1	
1999	664	507	202	30.4	
2000	647	538	205	31.7	
2001	665	543	204	30.7	
2002	1029	809	326	31.7	
2003	1115	925	384	34.4	
2004	1101	964	356	32.3	
2005	1119	961	385	34.4	
2006	1176	1023	372	31.6	
2007	1444	1154	444	30.7	
2008	1550	1202	469	30.3	
2009	1545	1276	464	30.0	
2010	1598	1363	502	31.4	
2011	1633	1403	541	33.1	
2012	1672	1404	514	30.7	
2013	1653	1437	519	31.4	
2014	1681	1426	508	30.2	
2015	1701	1458	485	28.5	
2016	1625	1409	464	28.6	
2017	1588	1420	466	29.3	
2018	1381	1156	332	24.0	
2019	1171	916	230	19.6	
2020	1084	1068	263	24.3	
1998-2020	29437	24835	8826	30.0	

Table 9c

Annual cohorts of deaths, and proportion of cancer-related and non-cancer-related deaths

(with respect to registry area expansion from 2.65 to 4.10 m as of 2002, and from 4.10 to 4.94 m as of 2007, respectively)

	Prop.
	cancer
/ / - 7	ecorded
	n death
	rtificate
death %	୦
1998 473 84.1 15.9	95.7
1999 507 88.2 11.8	96.2
2000 538 90.1 9.9	97.6
2001 543 88.2 11.8	95.8
2002 809 91.3 8.7	95.4
2003 925 92.5 7.5	96.5
2004 964 94.0 6.0	97.1
2005 961 92.1 7.9	95.7
2006 1023 92.0 8.0	96.5
2007 1154 92.9 7.1	96.6
2008 1202 93.3 6.7	96.4
2009 1276 92.9 7.1	96.6
2010 1363 92.6 7.4	96.5
2011 1403 93.2 6.8	95.7
2012 1404 92.3 7.7	96.0
2013 1437 93.2 6.8	96.0
2014 1426 92.7 7.3	95.4
2015 1458 91.8 8.2	94.6
2016 1409 91.3 8.7	94.6
2017 1420 88.5 11.5	94.2
2018 1156 79.7 20.3	88.0
2019 916 73.0 27.0	89.7
2020 1068 81.8 18.2	88.9
1998-2020 24835 90.1 9.9	95.2

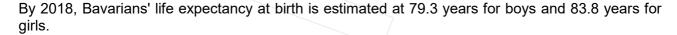
 $\begin{tabular}{ll} Table 10a \\ \hline \begin{tabular}{ll} Medians of age at death according to the grouping in Table 9 \\ \hline \begin{tabular}{ll} MALES \end{tabular}$

					700 2+
		700 2+	700 2+	700 2+	Age at death
		Age at death	Age at death	Age at death	(according
		(all	(cancer-	(non-cancer-	to death
Year of	Deaths	(all causes)	related)	related)	certificate)
death	n n	Years	Years	Years	Years
death	11	iears	ieals	lears	ieals
1998	329	67.9	67.8	69.4	68.1
1999	357	68.4	68.3	68.6	68.7
2000	373	67.0	66.5	71.2	67.1
2001	386	67.4	67.0	71.3	67.8
2002	578	67.2	66.6	74.8	66.8
2003	662	68.0	67.9	71.0	68.0
2004	675	68.8	68.6	72.6	68.8
2005	659	69.2	69.0	75.2	69.2
2006	716	69.8	69.7	71.9	69.7
2007	790	69.4	68.8	74.5	69.3
2008	817	69.7	69.2	76.2	69.5
2009	877	70.5	70.2	74.3	70.2
2010	885	70.9	70.5	75.6	70.6
2011	920	71.1	70.7	75.0	70.8
2012	883	71.4	70.5	80.1	71.1
2013	921	72.2	72.1	76.5	72.1
2014	889	72.7	72.4	75.0	72.6
2015	906	72.6	72.0	77.4	72.2
2016	837	73.3	72.9	76.8	73.2
2017	888	73.6	72.9	77.4	73.0
2018	729	73.1	71.8	76.1	72.9
2019	558	74.6	72.6	76.7	74.8
2020	645	74.2	72.8	79.9	72.9
1998-2020	16280	71.0	70.4	75.4	70.7

Deaths of patients are considered to be cancer-related, in case that fact was recorded on the death certificate, or patients had suffered from metastasis or recurrence.

 $\begin{array}{c} \text{Table 10b} \\ \text{Medians of age at death according to the grouping in Table 9} \\ \text{FEMALES} \end{array}$

					Age at
		Age at	Age at	Age at	death
		death	death	death	(according
		(all	(cancer-	(non-cancer-	to death
Year of	Deaths	causes)	related)	related)	certificate)
death	n	Years	Years	Years	Years
1998	144	67.0	67.4	63.4	68.3
1999	150	70.8	70.6	72.7	70.9
2000	165	68.4	68.0	74.0	68.4
2001	157	70.6	69.6	73.1	70.5
2002	231	69.2	69.1	72.8	69.2
2003	263	68.9	68.8	72.2	68.8
2004	289	69.8	68.7	77.9	69.1
2005	302	66.8	66.6	77.5	66.8
2006	307	70.2	69.7	77.5	69.7
2007	364	69.1	68.3	77.4	68.4
2008	385	69.3	68.2	78.6	68.4
2009	399	68.7	68.3	79.3	68.6
2010	478	69.9	69.6	76.0	69.8
2011	483	69.6	69.3	76.7	69.5
2012	521	71.1	70.7	79.0	71.0
2013	516	71.3	70.5	80.4	70.8
2014	537	71.4	70.7	81.8	70.9
2015	552	71.8	71.3	78.8	71.5
2016	572	71.8	71.2	76.2	71.1
2017	532	71.8	70.9	76.2	71.0
2018	427	73.0	71.8	76.5	72.3
2019	358	71.5	70.3	74.4	70.3
2020	423	74.0	73.3	77.7	73.6
1998-2020	8555	70.6	70.0	76.6	70.2



Deaths of patients are considered to be cancer-related, in case that fact was recorded on the death certificate, or patients had suffered from metastasis or recurrence.

Table 11a $\begin{tabular}{ll} Mortality measures (cancer-related death) and mortality-incidence-index \\ by year of death \\ MALES \end{tabular}$

Year of	Deaths	Mort.	MI-Index	Mort.	MI-Index	Mort.	MI-Index	Mort.	MI-Index
death	n	raw	raw	WS	WS	ES	ES	BRD-S	BRD-S
1998	274	24.7	0.67	15.1	0.66	22.3	0.67	28.4	0.70
1999	315	28.1	0.69	16.8	0.66	25.1	0.69	32.7	0.74
2000	333	29.2	0.74	17.5	0.73	25.7	0.74	32.3	0.77
2001	339	29.3	0.73	17.3	0.70	25.5	0.72	32.2	0.76
2002	522	28.0	0.74	16.0	0.73	23.4	0.74	29.9	0.75
2003	611	32.6	0.83	18.4	0.82	26.9	0.82	34.0	0.85
2004	638	33.9	0.86	18.5	0.85	27.6	0.86	35.3	0.88
2005	596	31.5	0.80	16.6	0.76	24.6	0.78	31.9	0.81
2006	655	34.2	0.83	17.6	0.79	26.5	0.81	34.6	0.85
2007	728	32.9	0.77	16.9	0.75	25.2	0.76	33.1	0.77
2008	758	34.1	0.75	17.5	0.74	26.0	0.75	33.8	0.77
2009	806	36.1	0.82	17.9	0.77	26.9	0.79	35.0	0.83
2010	807	35.8	0.80	17.7	0.77	26.3	0.79	34.0	0.81
2011	850	38.0	0.84	18.4	0.80	27.5	0.82	35.8	0.85
2012	804	35.4	0.79	17.2	0.76	25.4	0.77	32.9	0.78
2013	855	37.1	0.84	17.4	0.79	26.0	0.81	34.2	0.84
2014	815	35.0	0.83	16.1	0.80	24.2	0.81	31.5	0.83
2015	816	34.3	0.79	16.1	0.75	24.0	0.77	31.2	0.79
2016	748	31.1	0.81	14.2	0.74	21.4	0.77	28.0	0.80
2017	782	32.4	0.85	14.5	0.78	21.9	0.81	28.8	0.84
2018	564	23.2	0.72	10.5	0.66	15.8	0.68	20.5	0.70
2019	399	16.4	0.62	7.3	0.58	10.9	0.59	14.5	0.61
2020	512	21.0	0.85	9.3	0.78	14.2	0.80	18.6	0.84
1998-2020	14527	31.2	0.79	15.5	0.75	23.2	0.77	29.9	0.80

Table 11b $\label{lem:mortality} \mbox{Mortality measures (cancer-related death) and mortality-incidence-index } \mbox{by year of death} \mbox{FEMALES}$

Year of	Deaths	Mort.	MI-Index	Mort. 1	MI-Index	Mort.	MI-Index	Mort.	MI-Index
death	n	raw	raw	WS	WS	ES	ES	BRD-S	BRD-S
1998	124	10.5	0.67	5.4	0.66	7.8	0.66	9.3	0.65
1999	132	11.1	0.65	5.5	0.61	8.0	0.63	10.1	0.64
2000	152	12.7	0.78	6.6	0.73	9.4	0.74	11.4	0.77
2001	141	11.6	0.72	5.9	0.67	8.5	0.69	10.5	0.71
2002	217	11.1	0.67	5.6	0.63	8.1	0.64	9.8	0.66
2003	245	12.4	0.64	6.3	0.61	9.2	0.63	11.1	0.64
2004	268	13.6	0.75	6.6	0.69	9.6	0.72	12.0	0.75
2005	289	14.5	0.79	7.4	0.74	10.6	0.75	12.6	0.78
2006	286	14.2	0.75	6.8	0.69	9.8	0.71	12.1	0.73
2007	344	14.9	0.71	7.3	0.67	10.5	0.68	12.8	0.69
2008	363	15.6	0.68	7.4	0.61	10.8	0.63	13.2	0.66
2009	379	16.3	0.68	8.1	0.67	11.5	0.68	13.7	0.67
2010	455	19.4	0.78	9.0	0.72	13.0	0.73	16.0	0.76
2011	457	19.5	0.75	9.0	0.72	12.9	0.72	15.9	0.74
2012	492	20.8	0.77	9.2	0.71	13.4	0.72	16.6	0.75
2013	485	20.3	0.77	9.0	0.69	13.0	0.71	16.0	0.74
2014	507	21.1	0.74	9.2	0.67	13.4	0.69	16.7	0.71
2015	523	21.5	0.80	9.3	0.73	13.6	0.75	17.0	0.77
2016	540	22.0	0.78	9.3	0.70	13.7	0.72	17.2	0.75
2017	477	19.4	0.73	8.5	0.68	12.2	0.69	15.4	0.71
2018	358	14.4	0.61	6.2	0.55	9.1	0.57	11.3	0.59
2019	272	11.0	0.52	4.9	0.50	7.0	0.50	8.8	0.52
2020	362	14.6	0.76	5.8	0.66	8.6	0.69	11.1	0.72
1998-2020	7868	16.3	0.72	7.4	0.67	10.8	0.68	13.4	0.70

Table 12

Age distribution of age at death (cancer-related) for period 2007-2020 (incl. multiple malignancies)

Age at								
death	Cases		Males			Females		
Years	n	% Cum.%	'n	%	Cum.%	n	용	Cum.%
0-4 5-9 10-14								
15-19	1	0.0 / 0.0	1	0.0	0.0			0.0
20-24	2	0.0 0.0		0.0	0.0			0.0
25-29	3	0.0 0.0		0.0	0.1			0.0
30-34	11	0.1 0.1	5	0.0	0,1	6	0.1	0.1
35-39	57	0.4 0.5	29	0.3	0.4	28	0.5	0.6
40 - 44	136	0.8 1.3	73	0.7	1.1	63	1.0	1.6
45-49	394	2.4 3.7	217	2.1	3.2	177	2.9	4.6
50-54	800	4.9 8.6	454	4.4	7.7	346	5.8	10.3
55-59	1341	8.2 16.9	827	8.1	15.7	514	8.5	18.9
60-64	2034	12.5 29.4	1262	12.3	28.0	772	12.8	31.7
65-69	2728	16.8 46.2	1712	16.7	44.8	1016	16.9	48.6
70-74	3052	18.8 64.9	2014	19.7	64.4	1038	17.3	65.8
75-79	2786	17.1 82.1	1836	17.9	82.3	950	15.8	81.6
80-84	1908	11.7 93.8	1230	12.0	94.3	678	11.3	92.9
85+	1005	6.2 100.0	579	5.7	100.0	426	7.1	100.0
All ages	16258	100.0	10244	100.0		6014	100.0	

Table 13

Age-specific mortality (cancer-related) and proportion of all cancers for period 2007-2020 (incl. multiple malignancies)

			Males		Females		Males	Females
Age at			Age-		Age-		Prop.all	Prop.all
death	Males	Females	spec.		spec.		cancers	cancers
Years	n	n		MI-index		MI-index	ે	%
0- 4								
5- 9								
10-14								
15-19	1		0.1	0.50			2.1	
20-24	2		0.1	0.50			2.7	
25-29	3		0.1				3.2	
30-34	5	6	0.2		0.3	0.19	3.5	3.3
35-39	29	28	1.3	0.55	1.2	0.56	10.9	6.9
40-44	73	63	2.9	0.70	2.6		12.0	7.4
45-49	217	177	8.1		6.8	0.58	15.3	10.6
50-54	454	346	17.8		13.8	0.58	17.1	13.1
55-59	827/	514	39.0	0.66	23.6	0.60	18.7	13.5
60-64	1262	772	71.4	0.71	40.7	0.66	19.7	15.5
65-69	1712	1016	104.9	0.73	56.0	0.70	18.6	14.6
70-74	2014	1038	134.3	0.80	60.4	0.75	17.0	11.9
75-79	1836	950	151.7	0.86	63.3	0.78	14.7	9.7
80-84	1230	678	169.9	1.04	63.7	0.95	11.7	7.2
85+	579	426	124.0	1.28	40.9	1.23	6.4	3.6
All ages	10244	6014					14.8	9.7
							/ =	
Mortality								
Raw			31.5	0.79	17.9	0.73		
WS			14.9	0.75	8.0	0.67		
ES			22.2	0.77	11.5	0.68		
BRD-S			28.9	0.80	14.3	0.70		
PYLL-70								
per 100,000			140.7		97.9			
ES			119.4		80.3			
AYLL-70			8.8		9.5			
-								

					Syn-	Syn-		
					chron	chron		
	Total	Total	Pre	Pre	±30d	±30d	Post	Post
Diagnosis	n/	%↓	n	← %	n	← %	n	← %
C00 Lip	/19	0.4	14	73.7	1	5.3	4	21,1
C03-C06 Oral cavity	160	3.7	122	76.3	18	11.3	20	12.5
C07-C08 Salivary gland	/ 11	0.3	10	90.9	1	9.1		
C09-C10 Oropharynx	144	3.3	99	68.8	17	11.8	28	19.4
C12-C13 Hypopharynx	80	1.9	55	68.8	/ 11	13.8	14	17.5
C15 Oesophagus	87	2.0	32	36.8	26	29.9	29	33.3
C16 Stomach	158	3.7	77	48.7	31	19.6	50	31.6
C17 Small intestine	20	0.5	7	35.0	6	30.0	7	35.0
C18 Colon	327	7.6	224	68.5	42	12.8	61	18.7
C19-C20 Rectum	181	4.2	130	71.8	25	13.8	26	14.4
C21 Anus/canal	17	0.4	13	76.5	3	17.6	1	5.9
C22 Liver	67	1.6	21	31.3	16	23.9	30	44.8
C23-C24 Bile	23	0.5	11	47.8	_ 3	13.0	9	39.1
C25 Pancreas	65	1.5	14	21.5	10	15.4	41	63.1
C30-C31 Sinuses	15	0.3	14	93.3			1	6.7
C32 Larynx	196	4.6	141	71.9	23	11.7	32	16.3
C33-C34 Lung	303	7.0			83	27.4	220	72.6
C43 Malign. melanoma	138	3.2	110	79.7	10	7.2	18	13.0
C44 Skin others	378	8.8	245	64.8	41	10.8	92	24.3
C46,C49 Soft tissue	21	0.5	14	66.7	2	9.5	5	23.8
C50 Breast	11	0.3	8	72.7	1	9.1	2	18.2
C61 Prostate	874	20.3	711	81.4	50	5.7	113	12.9
C62 Testis	52	1.2	47	90.4	1	1.9	4	7.7
C64 Kidney	178	4.1	122	68.5	21	11.8	35	19.7
C65 Renal pelvis	24	0.6	13	54.2			11	45.8
C67 Bladder	286	6.7	211	73.8	21	7.3	54	18.9
C69 Eye melanoma	12	0.3	11	91.7			1	8.3
C70-C72 CNS cancer	16	0.4	8	50.0	1	6.3	7	43.8
C73 Thyroid	35	0.8	28	80.0	3	8.6	4	11.4
C76-C79 CUP	49	1.1	29	59.2	10	20.4	10	20.4
C81 Hodgkin lymphoma	50	1.2	50	100.0				
C82-C85 NHL	188	4.4	133	70.7	25	13.3	30	16.0
C90 Mult. myeloma	23	0.5	13	56.5	4	17.4	6	26.1
C91-C96 Leukaemia	32	0.7	11	34.4	3	9.4	18	56.3
Others, specified	60	1.4	33	55.0	8	13.3	19	31.7
All further malignancies	4300	100.0	2781	64.7	517	12.0	1002	23.3

Further malignancies with number of cases 1 to 9 are pooled in category "Others, specified".

ICD-10 C44 (Other malignant neoplasms of skin) is not systematically recorded by MCR and therefore not considered for evaluation as a particular primary but at least as a further malignancy.

					Syn-	Syn-		
					chron	chron		
	Total	Total	Pre	Pre	±30d	±30d	Post	Post
Diagnosis	n	%↓	n	← %	n	← %	n	← %
C03-C06 Oral cavity	39	1.9	34	87.2	3	7.7	2	5.1
C07-C08 Salivary gland	/ 8	0.4	7	87.5	1	12.5		
C09-C10 Oropharynx	32	1.5	24	75.0	2	6.3	6	18.8
C12-C13 Hypopharynx	9	0.4	8	88.9	1	11.1		
C15 Oesophagus	16	0.8	7	43.8	/ 1	6.3	8	50.0
C16 Stomach	41	2.0	18	43.9	9	22.0	14	34.1
C17 Small intestine	11	0.5	6	54.5	3	27.3	2	18.2
C18 Colon	151	7.2	106	70.2	14	9.3	31	20.5
C19-C20 Rectum	51	2.4	38	74.5	5	9.8	8	15.7
C21 Anus/canal	23	1.1	19	82.6	1	4.3	3	13.0
C22 Liver	15	0.7	5	33.3	2	13.3	8	53.3
C23-C24 Bile	13	0.6	6	46.2	2	15.4	5	38.5
C25 Pancreas	51	2.4	9	17.6	_ 13	25.5	29	56.9
C32 Larynx	15	0.7	10	66.7	2	13.3	3	20.0
C33-C34 Lung	143	6.8			31	21.7	112	78.3
C43 Malign. melanoma	63	3.0	58	92.1	1	1.6	4	6.3
C44 Skin others	101	4.8	60	59.4	7	6.9	34	33.7
C50 Breast	637	30.3	521	81.8	49	7.7	67	10.5
C51 Vulva	27	1.3	19	70.4	3	11,1	5	18.5
C53 Cervix uteri	101	4.8	88	87.1	5	5.0	8	7.9
C54 Corpus uteri	124	5.9	114	91.9	2	1.6	8	6.5
C55,C57 Fem. genitals un	12	0.6	11	91.7	1/	8.3		
C56 Ovary	53	2.5	36	67.9	5	9.4	12	22.6
C64 Kidney	50	2.4	33	66.0	8	16.0	9	18.0
C65 Renal pelvis	13	0.6	6	46.2	1	7.7	6	46.2
C67 Bladder	46	2.2	33	71.7	3	6.5	10	21.7
C69 Eye melanoma	7	0.3	4	57.1	1	14.3	2	28.6
C70-C72 CNS cancer	8	0.4	3	37.5			5	62.5
C73 Thyroid	41	2.0	29	70.7	6	14.6	6	14.6
C76-C79 CUP	35	1.7	15	42.9	8	22.9	12	34.3
C81 Hodgkin lymphoma	19	0.9	19	100.0				
C82-C85 NHL	79	3.8	68	86.1	3	3.8	8	10.1
C90 Mult. myeloma	12	0.6	3	25.0	3	25.0	6	50.0
C91-C96 Leukaemia	14	0.7	5	35.7	2	14.3	7	50.0
Others, specified	40	1.9	19	47.5	8	20.0	13	32.5
All further malignancies	2100	100.0	1441	68.6	206	9.8	453	21.6

Further malignancies with number of cases 1 to 6 are pooled in category "Others, specified".

ICD-10 C44 (Other malignant neoplasms of skin) is not systematically recorded by MCR and therefore not considered for evaluation as a particular primary but at least as a further malignancy.

Table 15

Age-specific mortality (cancer-related) and proportion of all cancers for period 2007-2020 (First primaries only *)

			Males		Females		Males	Females
Age at			Age-		Age-		Prop.all	Prop.all
death	Males	Females	spec.		spec.		cancers	cancers
Years	n	n	mortal.	MI-index	mortal.	MI-index	%	%
0- 4								
5- 9								
10-14								
15-19	1		0.1	1.00			2.2	
20-24	1		0.0	0.33			1.5	
25-29	3		0.1	0.30			3.5	
30-34	5	6	0.2	0.26	0.3	0.20	3.6	3.8
35-39	25	22	1.1	0.51	1.0	0.50	10.0	6.0
40-44	67	58	2.7		2.4	0.50	12.0	7.7
45-49	200	148	7.4		5.7	0.57	15.5	10.3
50-54	393	292	15.4		11.6	0.57	16.8	13.0
55-59	711		33.5	0.66	20.7	0.63	18.4	14.1
60-64	1040	638	58.8	0.72	33.6	0.68	19.4	15.7
65-69	1352	785	82.8	0.76	43.3	0.72	18.4	14.2
70-74	1501	759	100.1	0.81	44.1	0.75	16.6	11.2
75-79	1298	713	107.3		47.5	0.80	14.2	9.5
80-84	820	482	113.2		45.3	0.98	11.0	6.7
85+	372	312	79.7		29.9	1.20	5.7	3.3
001	372	312	73.7	1.27	23.3	1.20	3.7	3.3
All ages	7789	4665					14.5	9.5
nii ages	1105	4003					14.5	J. 3
Mortality								
Raw			23.9	0.80	13.9	0.73		
WS			11.7		6.3	0.67		
ES			17.2	0.78	9.1	0.69		
BRD-S			22.0	0.80	11.2	0.71		
DIAD 3			22.0	0.00	11.2	0.71		
PYLL-70								
per 100,000			120.4		82.6			
ES ES			102.2		67.9			
AYLL-70			9.1		9.7			
ATTI / O			~ · · ·		5.7			

^{*} See corresponding tables with multiple malignancies.

Table 16

Age-specific mortality (cancer-related) and proportion of all cancers for period 2007-2020

(Single primaries only *)

			Males		Females		Males	Females
Age at			Age-		Age-		Prop.all	Prop.all
death	Males	Females	spec.		spec.		cancers	cancers
Years	n	n	mortal.	MI-index	mortal.	MI-index	%	%
0- 4								
5- 9								
10-14								
15-19	1		0.1	1.00			2.2	
20-24								
25-29	3		0.1	0.33			3.5	
30-34	5	6	0.2	0.26	0.3	0.20	3.6	3.8
35-39	25	22	1.1	0.52	1.0	0.52	10.1	6.0
40 - 44	67	57	2.7	0.69	2.4	0.52	12.1	7.6
45-49	197	145	7.3	0.65	5.6	0.58	15.4	10.2
50-54	384	287	15.1	0.67	11.4	0.58	16.6	13.0
55-59	700	436	33.0	0.67	20.0	0.65	18.4	13.9
60-64	999	621	56.5	0.74	32.7	0.70	19.0	15.5
65-69	1290	745	79.0	0.78	41.1	0.72	18.0	13.8
70-74	1416	717	94.4	0.81	41.7	0.75	16.2	10.9
75-79	1192	674	98.5	0.88	44.9	0.79	13.7	9.3
80-84	749	461	103.4	1.06	43.3	0.97	10.8	6.6
85+	334	289	71.5		27.7	1.12	5.6	3.2
All ages	7362	4460					14.3	9.4
,								
Mortality								
Raw			22.6	0.80	13.3	0.73		
WS			11.1		6.1	0.68		
ES			16.4		8.8	0.69		
BRD-S			20.7		10.7	0.71		
DIE 5			20.7	0.00	10.	0.71		
PYLL-70								
per 100,000			117.4		80.5			
ES			99.6		66.2			
AYLL-70			9.2		9.8			
, ,			7.2		3.0			

^{*} See corresponding tables with multiple malignancies.

ICD-10 C34: Non-small cell lung cancer

Age distribution and age-specific mortality 2007 - 2020 (Males: 10244, Females: 6014)

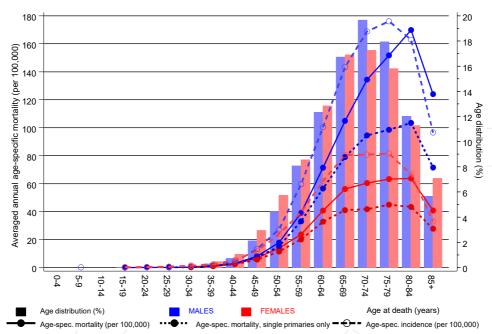
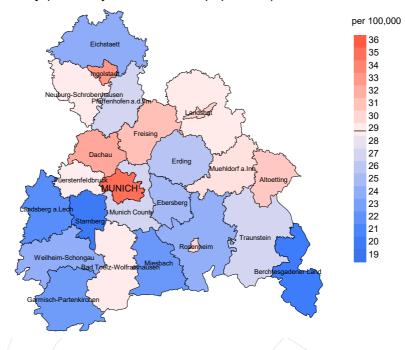


Figure 17. Distribution of age at death (bars; males: mean=68.8 yrs, median=69.6 yrs; females: mean=68.0 yrs, median=68.6 yrs) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

The difference between age at diagnosis (Table 3) and age at non-small cell LC-related death (see Table 10) should be considered.



werage mortality (Germany 1987 standard population) 2007 - 2020: Males



Average mortality (Germany 1987 standard population) 2007 - 2020: Females

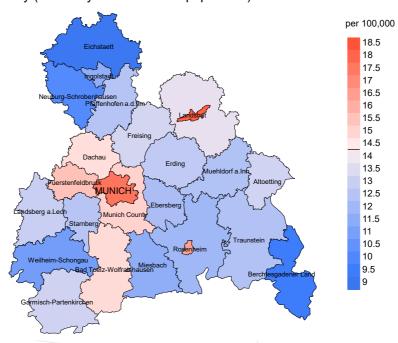
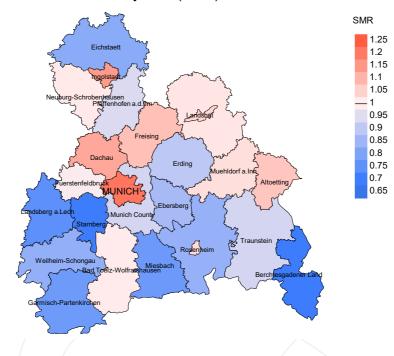


Figure 18a. Map of cancer mortality (german standard population) by county averaged for period 2007 to 2020. According to their individual mortality rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 28.9/100,000 WS N=10,244, females 14.3/100,000 WS N=6,014).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 67,727 female residents (averaged) in the period from 2007 to 2020 a total of 141 women died from non-small cell LC. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 12.3/100,000 (german standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 9.8 and 15.3/100,000.

Standardized mortality ratio (SMR) 2007 - 2020: Males



Standardized mortality ratio (SMR) 2007 - 2020: Females

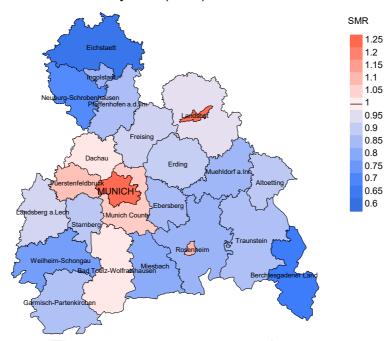


Figure 18b. Map of standardized mortality ratio (SMR) by county averaged for period 2007 to 2020. According to their individual SMR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=10,244, females N=6,014).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 67,153 female residents (averaged) in the period from 2007 to 2020 a total of 141 women died from non-small cell LC. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 0.86. Though, the value of this parameter may vary with an underlying probability of 99% between 0.68 and 1.06, and is therefore not statistically striking.

Statistical Notes

In all tables and figures the respective reference values should be carefully considered. The incidence rates include diagnoses (with multiple primary), and death certificate only (DCO) cases, where applicable. For mortality statistics patients, diagnoses and progressive course of disease are presented. In the calculations, all courses of disease are considered whereby progressions occurred and/or death certificate identified progressive cancers were ascertained. Additionally there are three groups of disease course to consider:

1. All multiple primaries included

The mortality statistic describes the tumor-specific death, independent of any malignancy. The patient perspective, induced secondary malignancies, and the problem of multiple malignancies from the same primary tumor all have reasons for their inclusion.

2. First singular primary (no information about other prior or synchronous malignancy)

The mortality statistic describes the cancer-related death for patients who have no therapeutic restrictions due to a previous or synchronous cancer. These statistics are comparable to studies that have exclusion criteria based on a second malignancy.

3. Single primary (no information about other prior, syn- or metachronous malignancy)

The mortality statistic describes the tumor-specific death that occurs without any impact through secondary primaries, earlier, synchronous, later or induced. Precisely the difference between disease group 1 and 2 highlight the magnitude of the problem of secondary malignancies.

For this reason differences appear concerning official mono-causal mortality statistics. To judge the maximum deviation, 2 further tables are presented. In the first table the distribution of secondary malignancies before, at or after the described cancer are shown, that could be an alternative cause of death. In the second table, the age-specific mortality rates for all courses of disease, without designation of secondary malignancies are shown.

A previously minimally acknowledged statistic is the **age at death**, which allows for a good assessment of the quality of classification of the apparent tumor-specific death. For assumed tumor-independent deaths, the age of death should be estimated from the age of diagnosis and the normal life expectancy, whereas tumor-dependent deaths can be estimated from the age of diagnosis plus the average tumor-specific life expectancy. The comparison of different tumors demonstrates this association, if the causes of cancer and the competing cause of death are independent of each other (e.g. breast and colon versus head&neck and lung).

The ratio of mortality and incidence (mortality-to-incidence ratio, **MIR**, **MI-Index**) is a statistical index that allows for the evaluation of the quality of data. For diseases with poor prognoses, comparable values are obtained from all age groups, because to a large extent, the numerator and denominator contain the same cases. For tumors with a good prognosis, increasing and decreasing incidence and age-specific differences in prognosis can more strongly alter the MIR. Additionally, attention should be paid to the confidence intervals where fewer cases are reported.

The complexity of problems identified here emphasizes the importance of relative survival data for the appropriate analysis of long term results.

As a measurement of the burden of disease, the number of potential life years loss due to premature deaths in a cohort can be calculated (**PYLL**, potential years of life lost, standardized per 100,000 persons or per European standard) as well as the average loss of life years per individual (**AYLL**, average years of life lost). Depending upon the analytic aim (health economy, prevention, health care research) different methods exist for the generation of these measurements. In the results presented here, the age for a premature death is considered to be before 70 years, according to the guidelines of the OECD and the WHO (as seen in the abbreviation PYLL-70 or AYLL-70).

Shortcuts

MCR Munich Cancer Registry (Tumorregister München)

GEKID Association of Population-based Cancer Registries in Germany

(Gesellschaft der epidemiologischen Krebsregister in Deutschland e.V.)

SEER Surveillance, Epidemiology, and End Results (USA)

DCO Death certificate only

BRD-S German (FRG) standard population ES European standard population (old)

WS World standard population

SIR Standardized incidence ratio

CI Confidence interval EAR Excess absolute risk

= excess cancer cases (O - E) per 10,000 person-years

PYLL-70 Potential years of life lost prior to age 70 given a person dies before that age AYLL-70 Average years of life lost prior to age 70 given a person dies before that age

SMR Standardized mortality ratio

MI-index Ratio of mortality to incidence, MIR

FRG Federal Republic of Germany

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