Munich Cancer Registry

- Survival
- Selection Matrix
- Homepage
- *Deutsch*

ICD-10 C83: Non-follic. lymphoma

Incidence and Mortality

Year of diagnosis	1998-2020
Patients	6,706
Diseases	6,742
Creation date	12/21/2021
Database export	12/20/2021
Population	4.95 m

Munich Cancer Registry
Cancer Registry Bavaria - Upper Bavaria Regional Center
at Klinikum Grosshadern/IBE
Marchioninistr. 15
Munich, 81377
Germany

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

https://www.tumorregister-muenchen.de/en/facts/base/bC83__E-ICD-10-C83-Non-follic.-lymphoma-incidence-and-mortality.pdf

Index of figures and tables

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
C83.-	Non-follicular lymphoma
C83.0	Small cell B-cell lymphoma
C83.1	Mantle cell lymphoma
C83.3	Diffuse large B-cell lymphoma
C83.5	Lymphoblastic (diffuse) lymphoma
C83.7	Burkitt lymphoma
C83.8	Other non-follicular lymphoma
C83.9	Non-follicular (diffuse) lymphoma, unspecified

INCIDENCE

Table 1

Cases by year of diagnosis, proportions of DCO, further malignancies, deaths, and active follow-up (ALL PATIENTS) (incl. DCO)

Year of diagnosis	All cases n	DCO cases n	Prop. DCO %	Prop. at least 1 further malign. prior + synchron. %	Prop. at least 1 further malign. after %	Prop. deaths %	Prop. actively followed %
1998	111	1	0.9	6.3	12.5	81.1	97.3
1999	110			7.2	12.3	73.6	98.2
2000	129			8.0	12.3	75.2	99.2
2001	162			8.6	12.1	72.2	95.7
2002	220			10.2	11.9	70.5	98.6 #
2003	265			12.0	11.7	70.2	97.0
2004	286			12.4	11.6	67.5	97.6
2005	263			12.4	11.2	66.5	94.7
2006	306			13.1	10.7	69.0	96.4
2007	351	1	0.3	13.4	10.4	66.1	94.6 #
2008	341			13.9	9.9	66.0	98.2
2009	399			14.7	9.3	59.4	98.5
2010	407			15.3	8.7	63.4	97.8
2011	378	1	0.3	15.8	8.4	62.4	99.5
2012	392			16.7	8.5	58.4	99.7
2013	464			17.5	7.6	53.4	97.0
2014	388	1	0.3	18.0	7.3	54.4	95.4
2015	381			18.6	7.2	51.4	97.9
2016	354	1	0.3	18.9	5.6	53.1	99.4
2017	339	8	2.4	19.3	5.0	42.5	98.8
2018	260	1	0.4	19.5	4.5	32.7	99.2
2019	201			19.7	2.8	29.9	98.0
2020	235			20.2	1.7	28.5	99.1 ##
1998-2020	6742	14	0.2	20.2	12.5	58.2	97.7

6,742 cases diagnosed 1998-2020 are related to a total of 6,706 patients. Currently, in 2,046 (30.5 %) of these 6,706 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 1,497 / 394 / 155 (22.3 % / 5.9 % / 2.3 %) 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 260 cases has been diagnosed, of which 19.5 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 4.5 % 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 by year of diagnosis, proportions of
DCO, further malignancies, deaths, and active follow-up (MALES)
(incl. DCO)

Year of diagnosis	Males n	Males %	DCO cases n	Prop. DCO %	Prop. at least 1 further malign. prior + synchron. %	Prop. at least 1 further malign. after %	Prop. deaths %	Prop. actively followed %
1998	53	47.7	1	1.9	5.7	13.2	86.8	100.0
1999	49	44.5			5.9	13.1	71.4	98.0
2000	74	57.4			8.0	13.1	77.0	98.6
2001	80	49.4			8.6	12.9	71.3	96.3
2002	118	53.6			10.7	12.7	72.9	99.2 #
2003	140	52.8			12.6	12.4	65.7	97.9
2004	157	54.9			12.8	12.3	67.5	98.1
2005	146	55.5			13.1	11.8	64.4	93.8
2006	172	56.2			13.3	11.4	69.2	96.5
2007	196	55.8			13.5	11.0	66.3	94.4 #
2008	184	54.0			14.0	10.5	66.3	98.9
2009	220	55.1			14.9	9.9	57.7	99.1
2010	228	56.0			15.6	9.3	64.5	97.4
2011	230	60.8	1	0.4	16.3	8.8	63.9	99.1
2012	219	55.9			17.1	8.8	57.5	99.5
2013	253	54.5			17.9	7.6	56.5	96.4
2014	232	59.8	1	0.4	18.1	7.4	57.8	94.8
2015	219	57.5			18.8	6.9	53.0	97.7
2016	209	59.0	1	0.5	19.3	5.0	51.2	99.0
2017	190	56.0	4	2.1	19.6	4.4	41.6	98.9
2018	156	60.0	1	0.6	19.7	3.6	33.3	100.0
2019	114	56.7			19.8	2.3	27.2	99.1
2020	146	62.1			20.3	2.1	28.1	99.3 ##
1998-2020	3785	56.1	9	0.2	20.3	13.2	58.0	97.8

3,785 cases diagnosed 1998-2020 are related to a total of 3,765 patients. Currently, in 1,192 (31.7 %) of these 3,765 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 881 / 218 / 93 (23.4 % / 5.8 % / 2.5 %) 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 156 cases has been diagnosed, of which 19.7 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 3.6 % 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 1b

Cases by year of diagnosis, proportions of
DCO, further malignancies, deaths, and active follow-up (FEMALES)
(incl. DCO)

Year of diagnosis	Females n	Females %	DCO cases n	Prop. DCO %	Prop. at least 1 further malign. prior + synchron. %	Prop. at least 1 further malign. after %	Prop. deaths %	Prop. actively followed %	
1998	58	52.3			6.9	11.5	75.9	94.8	
1999	61	55.5			8.4	11.3	75.4	98.4	
2000	55	42.6			8.0	11.3	72.7	100.0	
2001	82	50.6			8.6	11.1	73.2	95.1	
2002	102	46.4			9.8	10.9	67.6	98.0	#
2003	125	47.2			11.4	10.8	75.2	96.0	
2004	129	45.1			11.9	10.7	67.4	96.9	
2005	117	44.5			11.5	10.4	69.2	95.7	
2006	134	43.8			12.7	9.9	68.7	96.3	
2007	155	44.2	1	0.6	13.3	9.6	65.8	94.8	#
2008	157	46.0			13.7	9.0	65.6	97.5	
2009	179	44.9			14.4	8.5	61.5	97.8	
2010	179	44.0			14.9	7.8	62.0	98.3	
2011	148	39.2			15.2	7.8	60.1	100.0	
2012	173	44.1			16.3	8.0	59.5	100.0	
2013	211	45.5			17.0	7.6	49.8	97.6	
2014	156	40.2			17.9	7.3	49.4	96.2	
2015	162	42.5			18.3	7.6	49.4	98.1	
2016	145	41.0			18.4	6.6	55.9	100.0	
2017	149	44.0	4	2.7	19.0	6.0	43.6	98.7	
2018	104	40.0			19.3	5.9	31.7	98.1	
2019	87	43.3			19.6	3.6	33.3	96.6	
2020	89	37.9			20.0	1.1	29.2	98.9	##
1998-2020	2957	43.9	5	0.2	20.0	11.5	58.4	97.6	

2,957 cases diagnosed 1998-2020 are related to a total of 2,941 patients. Currently, in 854 (29.0 %) of these 2,941 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 616 / 176 / 62 (20.9 % / 6.0 % / 2.1 %) 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 104 cases has been diagnosed, of which 19.3 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 5.9 % 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 2

Incidence measures by year of diagnosis including DCO cases
(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)

Year of diagnosis	Males n	Females n	Males Inc. raw	Fem. Inc. raw	Males Inc. WS	Fem. Inc. WS	Males Inc. ES	Fem. Inc. ES	Males Inc. BRD-S	Fem. Inc. BRD-S
1998	53	58	4.8	4.9	3.2	2.6	4.3	3.6	5.2	4.4
1999	49	61	4.4	5.1	3.0	2.6	4.0	3.6	4.7	4.5
2000	74	55	6.5	4.6	4.5	2.3	6.0	3.4	7.6	4.1
2001	80	82	6.9	6.7	4.3	3.6	6.1	4.9	7.6	6.0
2002	118	102	6.3	5.2	3.8	2.5	5.4	3.6	6.7	4.5
2003	140	125	7.5	6.3	4.8	3.3	6.4	4.6	7.9	5.6
2004	157	129	8.3	6.5	5.2	3.1	7.1	4.3	8.5	5.5
2005	146	117	7.7	5.9	4.7	2.9	6.4	4.0	7.8	5.0
2006	172	134	9.0	6.7	5.2	3.2	7.2	4.4	9.1	5.6
2007	196	155	8.8	6.7	5.2	3.1	7.2	4.4	8.9	5.6
2008	184	157	8.3	6.8	4.6	3.3	6.3	4.5	8.1	5.6
2009	220	179	9.9	7.7	5.6	3.5	7.7	4.9	9.6	6.3
2010	228	179	10.1	7.6	5.4	3.6	7.6	5.0	9.7	6.1
2011	230	148	10.3	6.3	5.4	2.9	7.5	4.1	9.5	5.1
2012	219	173	9.6	7.3	4.6	3.2	6.8	4.6	9.0	5.7
2013	253	211	11.0	8.9	5.7	4.0	8.0	5.6	10.3	7.1
2014	232	156	10.0	6.5	5.2	2.7	7.4	4.0	9.0	5.0
2015	219	162	9.2	6.7	4.7	2.7	6.6	4.0	8.6	5.1
2016	209	145	8.7	5.9	4.3	2.6	6.1	3.7	7.9	4.7
2017	190	149	7.9	6.0	3.7	2.7	5.5	3.7	7.0	4.7
2018	156	104	6.4	4.2	3.1	1.6	4.4	2.4	5.8	3.1
2019	114	87	4.7	3.5	2.3	1.4	3.3	2.0	4.2	2.6
2020	146	89	6.0	3.6	2.8	1.4	4.2	2.1	5.2	2.7
1998-2020	3785	2957	8.1	6.1	4.5	2.8	6.2	3.9	7.9	5.0

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

Table 3

Age distribution parameters by year of diagnosis (ALL PATIENTS)
(incl. DCO)

Year of diagnosis	Cases n	Mean	Std. dev.	Min.	Max.	10%	25%	Median 50%	75%	90%
1998	111	62.9	16.3	6.6	90.5	38.1	55.6	64.4	74.4	82.6
1999	110	63.1	18.0	4.2	90.7	34.6	54.3	65.7	77.0	82.1
2000	129	63.7	16.2	3.8	88.9	43.3	55.0	67.2	75.3	81.3
2001	162	63.2	16.5	4.9	90.3	38.5	54.9	64.8	76.8	81.8
2002	220	65.0	14.8	18.8	89.9	43.4	56.3	66.7	76.6	81.8
2003	265	63.1	16.9	19.0	93.7	38.8	53.5	66.4	76.5	81.3
2004	286	65.5	15.1	3.8	94.2	47.4	56.7	67.5	75.8	83.0
2005	263	65.1	15.9	4.8	98.4	45.7	56.8	67.8	76.1	83.1
2006	306	66.2	16.4	3.6	93.8	42.7	59.4	69.8	77.5	82.8
2007	351	66.2	16.7	4.0	101	43.5	56.8	69.8	77.9	84.8
2008	341	66.5	16.8	2.3	96.2	44.2	60.3	70.1	77.7	83.6
2009	399	66.6	16.1	4.3	95.2	44.5	59.1	69.1	78.2	84.4
2010	407	67.1	16.0	0.3	96.1	43.9	60.2	70.7	77.9	83.9
2011	378	66.9	15.5	7.8	94.8	44.3	58.8	70.8	77.2	83.6
2012	392	69.2	14.2	1.5	97.7	50.4	62.1	72.0	78.8	84.0
2013	464	68.0	15.7	1.0	92.2	46.9	61.0	71.7	79.0	84.6
2014	388	68.1	14.9	2.5	97.5	48.3	59.3	71.6	78.1	85.1
2015	381	69.0	15.9	1.5	98.5	46.8	62.2	72.8	80.0	84.8
2016	354	68.5	15.3	5.2	92.9	48.7	61.0	72.5	79.3	84.5
2017	339	69.7	14.4	19.5	97.8	49.8	61.9	72.9	80.0	85.8
2018	260	69.2	15.2	21.0	94.2	46.4	62.7	73.6	80.0	83.4
2019	201	69.5	14.8	20.3	98.3	49.2	60.1	72.8	79.8	85.0
2020	235	69.9	13.7	27.7	94.7	51.4	59.9	72.4	80.5	85.8
1998-2020	6742	67.1	15.7	0.3	101	45.2	58.8	70.5	78.3	83.9

Table 3a

Age distribution parameters by year of diagnosis (MALES)
(incl. DCO)

Year of diagnosis	Cases n	Mean	Std. dev.	Min.	Max.	10%	25%	Median 50%	75%	90%
1998	53	59.6	17.1	6.6	84.7	33.9	46.7	62.0	72.0	79.2
1999	49	58.3	17.8	5.9	90.7	28.9	52.1	59.9	69.5	80.4
2000	74	61.0	18.6	3.8	88.8	37.7	47.1	65.5	75.3	81.3
2001	80	62.9	16.0	4.9	90.3	39.6	56.0	64.4	75.0	80.0
2002	118	63.5	14.6	18.8	89.9	43.0	55.5	65.0	73.8	82.0
2003	140	60.6	17.4	19.0	93.7	34.8	47.8	65.3	73.7	80.2
2004	157	62.6	14.3	8.4	92.0	43.0	54.5	65.2	73.5	79.0
2005	146	62.5	15.8	4.8	88.2	41.7	54.6	65.0	73.9	80.5
2006	172	64.6	16.7	3.6	92.0	42.1	57.5	68.0	77.1	80.6
2007	196	63.7	16.3	11.8	94.8	39.9	53.0	66.8	75.3	82.0
2008	184	65.3	16.8	2.3	91.7	42.9	57.9	69.0	76.4	82.4
2009	220	64.0	16.5	6.6	91.9	41.4	53.5	67.8	75.6	82.2
2010	228	66.2	16.0	3.7	90.4	42.4	58.7	70.5	77.3	83.6
2011	230	65.9	15.1	7.8	92.1	43.9	57.9	70.4	76.1	82.3
2012	219	68.5	14.4	1.5	91.2	50.2	62.2	71.8	78.1	83.1
2013	253	67.5	15.8	1.0	92.2	46.7	60.2	70.9	78.7	83.9
2014	232	66.5	15.7	2.5	97.5	47.5	57.2	70.1	77.2	83.4
2015	219	67.1	16.6	7.8	92.2	41.9	59.6	71.0	79.7	83.9
2016	209	68.1	15.4	5.2	88.0	49.2	59.4	72.5	78.7	84.3
2017	190	69.9	13.6	24.6	93.0	50.2	62.3	72.3	79.7	85.2
2018	156	68.4	15.3	21.0	94.2	46.2	62.1	72.4	78.8	83.3
2019	114	67.7	15.6	20.3	98.3	45.7	56.8	71.3	79.1	84.1
2020	146	68.8	13.6	28.1	92.1	50.9	58.6	70.8	80.0	85.8
1998-2020	3785	65.7	15.9	1.0	98.3	43.6	56.8	69.2	77.2	82.7

Table 3b

Age distribution parameters by year of diagnosis (FEMALES)
(incl. DCO)

Year of diagnosis	Cases n	Mean	Std. dev.	Min.	Max.	10%	25%	Median 50%	75%	90%
1998	58	66.0	15.0	18.1	90.5	49.9	58.6	66.0	77.4	83.8
1999	61	66.9	17.3	4.2	88.7	44.5	57.3	72.7	78.1	84.5
2000	55	67.3	11.6	33.3	88.9	51.8	58.2	69.2	75.3	80.0
2001	82	63.5	17.0	27.1	88.8	35.8	51.5	65.6	77.0	84.6
2002	102	66.7	15.0	23.1	89.4	44.3	57.9	69.2	79.0	81.3
2003	125	65.9	15.9	22.9	93.5	42.1	56.7	68.4	78.4	83.1
2004	129	69.0	15.4	3.8	94.2	49.4	63.1	70.3	79.4	85.4
2005	117	68.4	15.5	24.4	98.4	49.2	61.2	70.4	78.5	85.5
2006	134	68.3	15.9	19.9	93.8	43.8	61.4	71.3	80.0	85.3
2007	155	69.4	16.8	4.0	101	47.0	63.9	72.6	79.9	86.0
2008	157	67.9	16.7	5.4	96.2	45.7	63.3	71.0	78.9	85.0
2009	179	69.7	15.0	4.3	95.2	50.3	62.5	71.6	80.3	86.7
2010	179	68.2	16.0	0.3	96.1	44.0	60.4	71.2	79.7	85.4
2011	148	68.4	16.1	14.1	94.8	44.3	62.1	72.3	78.9	84.8
2012	173	70.0	13.9	6.4	97.7	53.6	62.1	72.3	80.1	86.6
2013	211	68.6	15.6	3.3	92.0	47.7	61.1	72.7	79.7	85.4
2014	156	70.5	13.2	30.5	96.9	52.3	62.7	73.7	79.1	85.4
2015	162	71.4	14.5	1.5	98.5	50.2	64.4	74.8	81.2	86.5
2016	145	69.2	15.2	16.6	92.9	47.9	62.6	72.5	79.8	84.9
2017	149	69.4	15.4	19.5	97.8	48.3	61.4	73.1	80.2	86.1
2018	104	70.5	14.9	32.6	93.5	46.6	63.4	75.9	80.8	85.1
2019	87	71.9	13.3	31.8	92.6	53.5	65.8	74.6	81.4	85.7
2020	89	71.6	13.9	27.7	94.7	54.0	63.7	73.6	80.9	86.2
1998-2020	2957	68.9	15.3	0.3	101	48.0	61.3	72.1	79.6	85.4

Table 4

Age distribution by 5-year age group and sex for period 2007-2020 (incl. DCO)

Age at diagnosis Years	Cases n	%	Cum.%	Males n	%	Cum.%	Females n	%	Cum.%
0-4	13	0.3	0.3	8	0.3	0.3	5	0.2	0.2
5-9	11	0.2	0.5	8	0.3	0.6	3	0.1	0.4
10-14	6	0.1	0.6	3	0.1	0.7	3	0.1	0.5
15-19	19	0.4	1.0	9	0.3	1.0	10	0.5	1.0
20-24	34	0.7	1.7	24	0.9	1.9	10	0.5	1.5
25-29	52	1.1	2.8	36	1.3	3.1	16	0.8	2.2
30-34	55	1.1	3.9	32	1.1	4.3	23	1.1	3.3
35-39	94	1.9	5.8	55	2.0	6.3	39	1.9	5.2
40-44	145	3.0	8.8	89	3.2	9.4	56	2.7	7.9
45-49	201	4.1	12.9	141	5.0	14.5	60	2.9	10.7
50-54	266	5.4	18.3	176	6.3	20.8	90	4.3	15.0
55-59	305	6.2	24.6	176	6.3	27.1	129	6.2	21.2
60-64	426	8.7	33.3	243	8.7	35.8	183	8.7	29.9
65-69	593	12.1	45.4	362	12.9	48.7	231	11.0	41.0
70-74	806	16.5	61.9	443	15.8	64.6	363	17.3	58.3
75-79	810	16.6	78.4	467	16.7	81.3	343	16.4	74.7
80-84	623	12.7	91.2	332	11.9	93.1	291	13.9	88.6
85+	431	8.8	100.0	192	6.9	100.0	239	11.4	100.0
All ages	4890	100.0		2796	100.0		2094	100.0	

Table 5

Age-specific incidence, DCO rate and proportion of all cancers
for period 2007-2020

Age at diagnosis Years	Males n	Females n	Males Age-spec. incid.	Females Age-spec. incid.	Males DCO rate n=8 %	Females DCO rate n=5 %	Males Prop.all cancers n=153686 %	Females Prop.all cancers n=155051 %
0- 4	8	5	0.5	0.3			3.6	2.9
5- 9	8	3	0.5	0.2			6.8	3.0
10-14	3	3	0.2	0.2			2.2	2.3
15-19	9	10	0.5	0.6			2.8	3.8
20-24	24	10	1.2	0.5			3.8	1.9
25-29	36	16	1.6	0.7			3.8	1.4
30-34	32	23	1.4	1.0			2.5	1.1
35-39	55	39	2.4	1.7			3.0	1.1
40-44	88	56	3.5	2.3			3.2	0.9
45-49	141	60	5.3	2.3			2.8	0.6
50-54	175	90	6.9	3.6			2.1	0.7
55-59	176	129	8.3	5.9			1.4	1.0
60-64	243	183	13.7	9.6		0.5	1.4	1.2
65-69	362	230	22.2	12.7	0.3		1.5	1.2
70-74	443	363	29.5	21.1	0.2	0.3	1.6	1.8
75-79	466	343	38.5	22.8	0.6	0.3	1.9	1.8
80-84	332	291	45.8	27.3	0.6		2.2	1.9
85+	192	239	41.1	22.9	0.5	0.8	1.8	1.5
All ages	2793	2093			0.3	0.2	1.8	1.3
Incidence								
Raw			8.6	6.2				
WS			4.4	2.8				
ES			6.3	3.9				
BRD-S			8.0	4.9				

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).

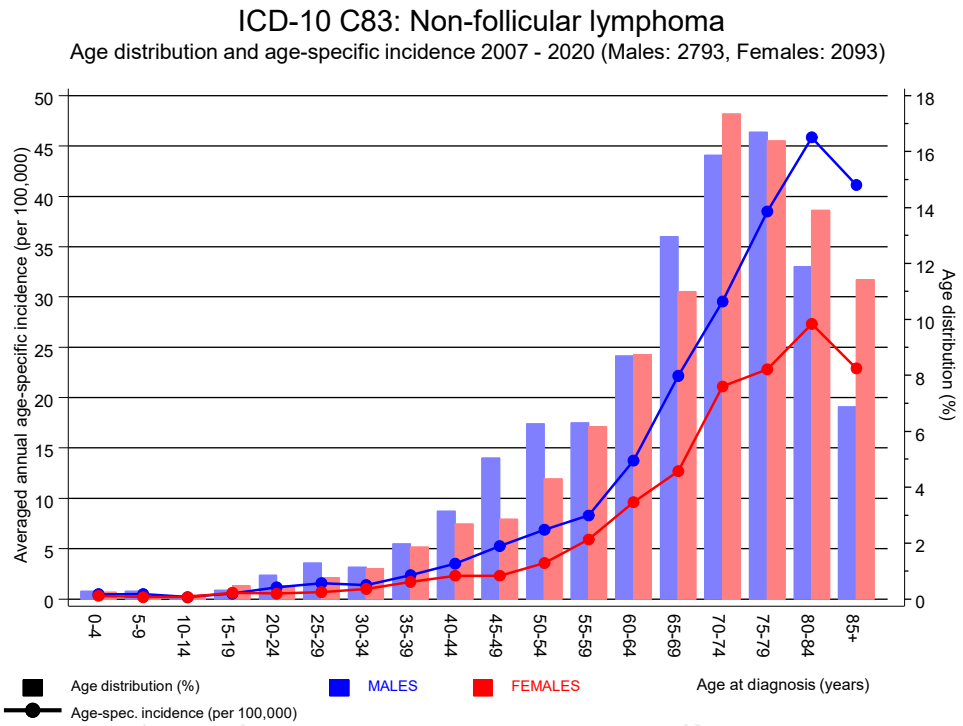


Figure 6. Age distribution (males: mean=66.9 yrs, median=70.4 yrs; females: mean=69.6 yrs, median=72.7 yrs) and age-specific incidence.

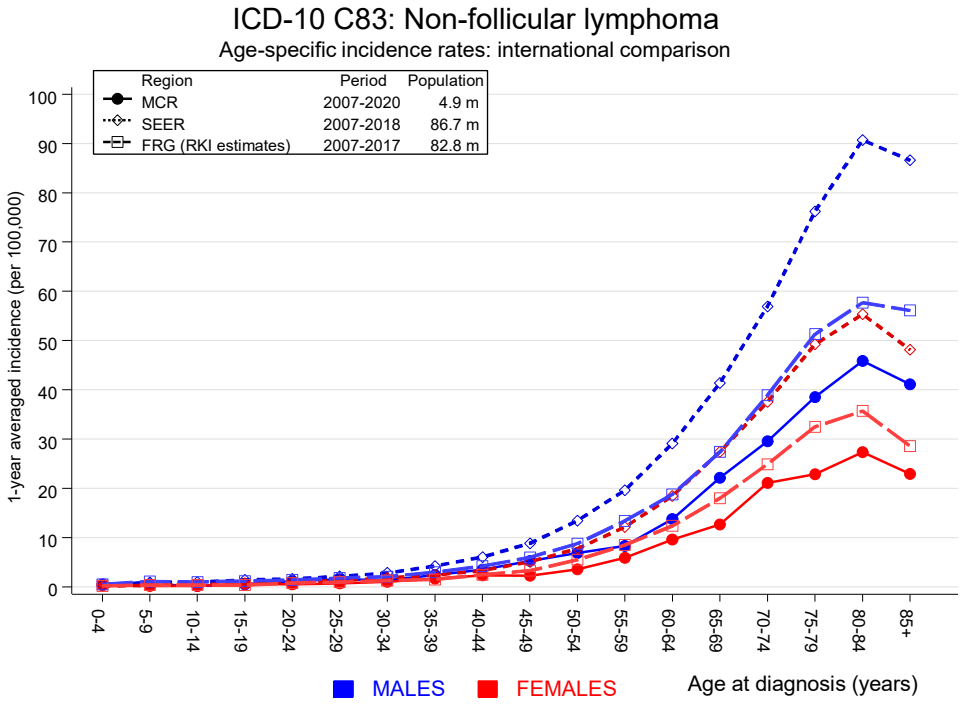


Figure 6a. Age-specific incidence in MCR registry areas compared to Germany (FRG, RKI estimates) and SEER (Surveillance, Epidemiology, and End Results, USA).

Reference:

Estimated age-specific patient population of Germany, latest update: 16 March 2021. German Centre for Cancer Registry Data, Robert Koch Institute (RKI), based on data of the population based cancer registries. http://www.krebsdaten.de. Last access: 08/17/2021
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

Diagnosis		Observed n	Expected n	SIR	CI 95%	CI 95%		EAR	DCO %
C03–C06	Oral cavity	7	1.5	4.6	1.8	9.5	#	4.2	
C07–C08	Salivary gland	3	0.5	6.2	1.3	18.2	#	1.9	
C09–C10	Oropharynx	4	1.8	2.2	0.6	5.5		1.6	
C15	Oesophagus	5	3.8	1.3	0.4	3.0		0.9	
C16	Stomach	16	7.6	2.1	1.2	3.4	#	6.4	
C17	Small intestine	5	1.2	4.1	1.3	9.6	#	2.9	20.0
C18	Colon	34	18.9	1.8	1.2	2.5	#	11.6	
C19–C20	Rectum	15	10.0	1.5	0.8	2.5		3.8	6.7
C21	Anus/canal	5	0.5	10.5	3.4	24.6	#	3.5	
C22	Liver	6	5.7	1.1	0.4	2.3		0.2	16.7
C23–C24	Bile	3	2.1	1.4	0.3	4.1		0.7	
C25	Pancreas	12	7.9	1.5	0.8	2.7		3.2	
C32	Larynx	7	1.8	3.9	1.6	8.0	#	4.0	14.3
C33–C34	Lung	53	22.5	2.4	1.8	3.1	#	23.3	5.7
C38,C45	Mesothelioma	2	1.4	1.4	0.2	5.2		0.5	
C43	Malign. melanoma	33	9.1	3.6	2.5	5.1	#	18.3	
C46,C49	Soft tissue	10	1.1	8.7	4.2	16.0	#	6.8	
C60	Penis	2	0.5	3.9	0.5	14.3		1.1	
C61	Prostate	95	53.0	1.8	1.5	2.2	#	32.1	4.2
C64	Kidney	19	6.6	2.9	1.7	4.5	#	9.5	
C66	Ureter	5	0.5	9.2	3.0	21.4	#	3.4	
C67	Bladder	18	9.5	1.9	1.1	3.0	#	6.5	
C69	Eye carcinoma	2	0.1	27.2	3.3	98.4	#	1.5	
C69	Eye lymphoma	2	0.0	50.2	6.1	181.3	#	1.5	
C70–C72	CNS cancer	2	2.4	0.8	0.1	3.0		−0.3	50.0
C73	Thyroid	4	1.2	3.2	0.9	8.3		2.1	
C76–C79	CUP	10	3.3	3.0	1.5	5.6	#	5.1	
C81	Hodgkin lymphoma	6	0.5	12.6	4.6	27.4	#	4.2	
C82–C85	NHL	41	8.4	4.9	3.5	6.6	#	24.9	2.4
C90	Mult. myeloma	6	2.6	2.3	0.9	5.1		2.6	
C91–C96	Leukaemia	19	3.1	6.2	3.7	9.7	#	12.2	5.3
Others, specified		8	2.1	3.9	1.7	7.7	#	4.5	12.5
Not observed		0	3.6	0.0	0.0	1.0		−2.8	
All further malignancies		459	194.9	2.4	2.1	2.6	#	201.8	3.3

Patients	3705
Median age at next malignancy (years)	73.9
Person-years	13088
Mean observation time (years)	3.5
Median observation time (years)	1.7

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

Diagnosis		Observed n	Expected n	SIR	CI 95%	CI 95%		EAR	DCO %
C00	Lip	1	0.1	10.6	0.3	59.3		0.8	
C07-C08	Salivary gland	2	0.2	9.7	1.2	35.1	#	1.7	50.0
C09-C10	Oropharynx	2	0.5	4.3	0.5	15.7		1.4	
C15	Oesophagus	2	0.8	2.4	0.3	8.8		1.1	
C16	Stomach	11	4.4	2.5	1.3	4.5	#	6.1	
C17	Small intestine	3	0.7	4.5	0.9	13.2		2.2	
C18	Colon	25	12.5	2.0	1.3	3.0	#	11.5	12.0
C19-C20	Rectum	4	4.9	0.8	0.2	2.1		-0.8	
C21	Anus/canal	2	0.7	3.0	0.4	10.8		1.2	
C22	Liver	8	1.6	5.0	2.1	9.8	#	5.9	37.5
C23-C24	Bile	3	1.8	1.6	0.3	4.8		1.1	
C25	Pancreas	10	6.2	1.6	0.8	3.0		3.5	10.0
C33-C34	Lung	31	9.3	3.3	2.3	4.7	#	20.1	6.5
C37	Thymus	2	0.1	27.8	3.4	100.3	#	1.8	
C43	Malign. melanoma	16	4.7	3.4	2.0	5.6	#	10.5	
C44	Skin others	1	0.0	58.6	1.5	326.4	#	0.9	
C46,C49	Soft tissue	2	0.7	2.8	0.3	10.0		1.2	
C50	Breast	70	36.4	1.9	1.5	2.4	#	31.1	5.7
C51	Vulva	4	1.4	2.9	0.8	7.3		2.4	
C53	Cervix uteri	4	1.5	2.7	0.7	6.9		2.3	
C54	Corpus uteri	11	6.7	1.6	0.8	2.9		4.0	
C56	Ovary	7	4.9	1.4	0.6	3.0		2.0	14.3
C64	Kidney	7	2.9	2.4	1.0	4.9		3.8	
C65	Renal pelvis	2	0.4	4.8	0.6	17.5		1.5	
C67	Bladder	7	2.6	2.7	1.1	5.5	#	4.1	
C70-C72	CNS cancer	1	1.6	0.6	0.0	3.5		-0.5	
C73	Thyroid	3	1.8	1.7	0.3	4.9		1.1	
C76-C79	CUP	5	2.4	2.1	0.7	4.9		2.4	
C81	Hodgkin lymphoma	3	0.2	13.3	2.7	38.9	#	2.6	
C82-C85	NHL	30	5.0	6.1	4.1	8.6	#	23.1	
C90	Mult. myeloma	5	1.6	3.2	1.0	7.5	#	3.2	
C91-C96	Leukaemia	17	1.9	8.9	5.2	14.3	#	14.0	5.9
Not observed		0	3.9	0.0	0.0	0.9	#	-3.6	
All further malignancies		301	124.1	2.4	2.2	2.7	#	163.5	5.3

Patients	2904
Median age at next malignancy (years)	75.6
Person-years	10821
Mean observation time (years)	3.7
Median observation time (years)	1.8

The occurrence of further specified malignancy is statistically significant.

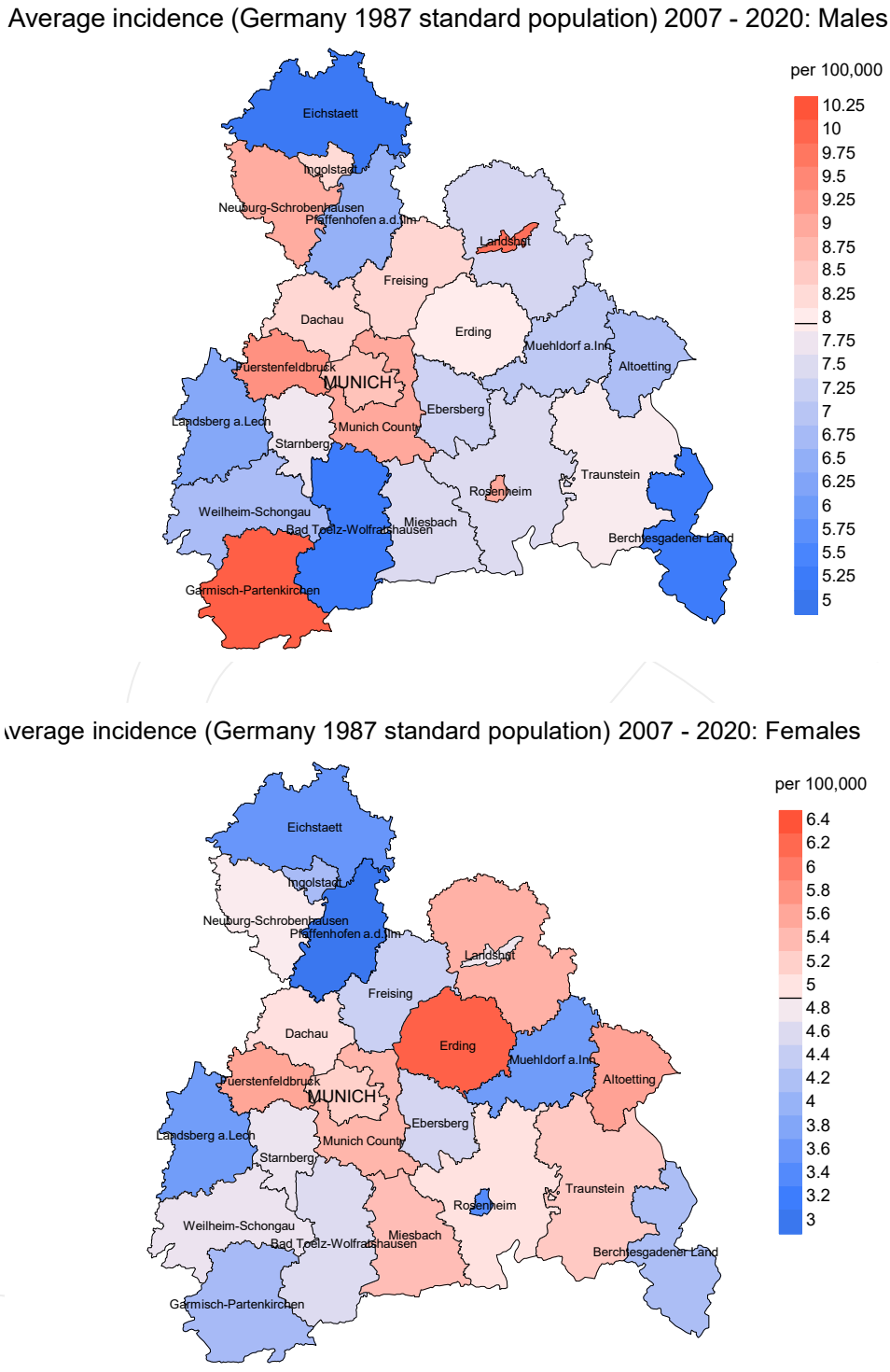
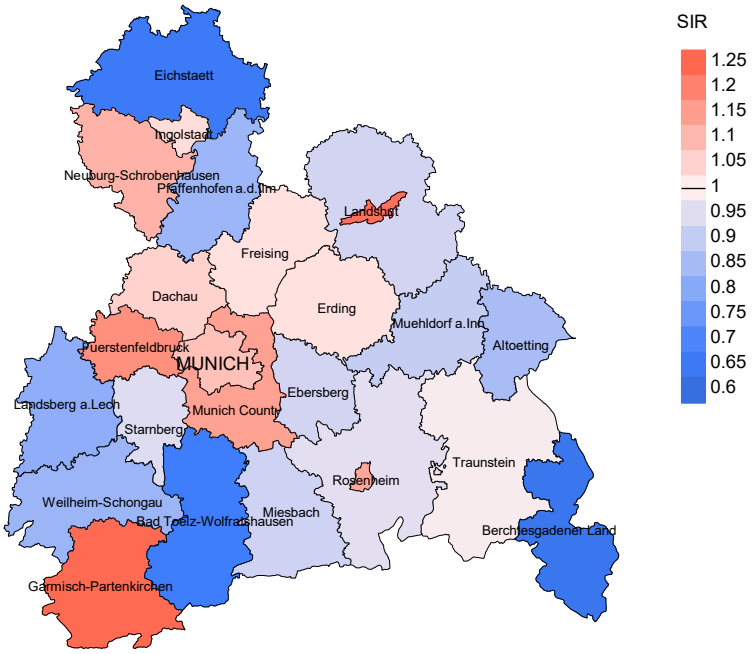


Figure 8a. Map of cancer incidence (german standard population, incl. DCO cases) by county averaged for period 2007 to 2020. According to their individual incidence rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 8.0/100,000 WS N=2,793, females 4.9/100,000 WS N=2,093).

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 50 women were identified with newly diagnosed non-follic. lymphoma. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 4.5/100,000 (german standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 3.0 and 6.5/100,000.

Standardized incidence ratio (SIR) 2007 - 2020: Males



Standardized incidence ratio (SIR) 2007 - 2020: Females

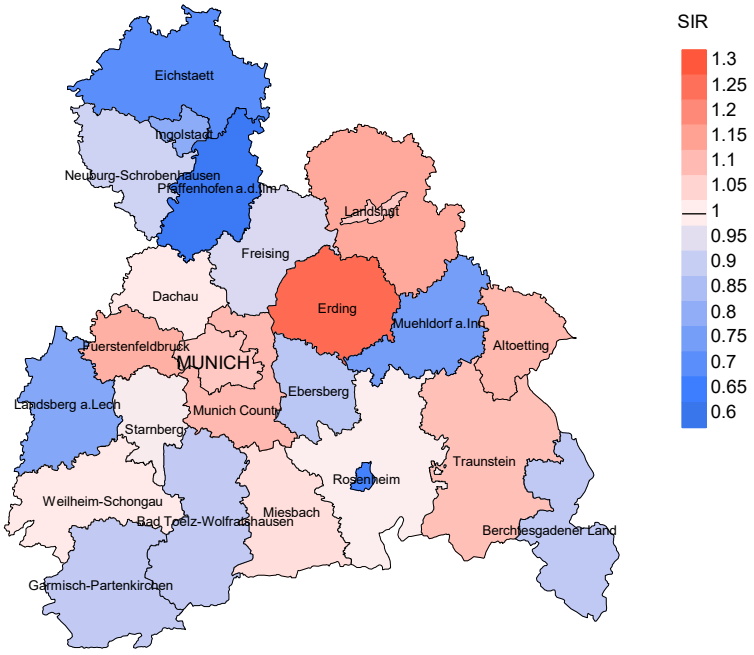


Figure 8b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2007 to 2020. According to their individual SIR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=2,793, females N=2,093).

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 50 women were identified with newly diagnosed non-follic. lymphoma. 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 0.59 and 1.25, and is therefore not statistically striking.

MORTALITY

Table 9a

Annual cohorts: Incident cancers, follow-up status, proportion of DCO, deaths among the annual cohorts and proportion of available death certificates (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)

Year of diagnosis	Incident cases n	Prop. actively followed %	Prop. DCO %	Deaths n	Prop. deaths %	Prop. deaths with death certific. %
1998	111	97.3	0.9	90	81.1	94.4
1999	110	98.2		81	73.6	90.1
2000	129	99.2		97	75.2	94.8
2001	162	95.7		117	72.2	94.9
2002	220	98.6		155	70.5	95.5
2003	265	97.0		186	70.2	96.8
2004	286	97.6		193	67.5	96.4
2005	263	94.7		175	66.5	94.9
2006	306	96.4		211	69.0	94.8
2007	351	94.6	0.3	232	66.1	94.0
2008	341	98.2		225	66.0	95.6
2009	399	98.5		237	59.4	95.4
2010	407	97.8		258	63.4	94.2
2011	378	99.5	0.3	236	62.4	93.2
2012	392	99.7		229	58.4	95.2
2013	464	97.0		248	53.4	93.1
2014	388	95.4	0.3	211	54.4	94.8
2015	381	97.9		196	51.4	89.8
2016	354	99.4	0.3	188	53.1	88.8
2017	339	98.8	2.4	144	42.5	88.2
2018	260	99.2	0.4	85	32.7	69.4
2019	201	98.0		60	29.9	85.0
2020	235	99.1		67	28.5	91.0
1998-2020	6742	97.7	0.2	3921	58.2	93.2

Table 9b

Annual cohorts of incident cancers and deaths, proportion of death certificates and cases deceased within the same year of being diagnosed with cancer (incl. DCO)
(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)

Year of diagnosis/ death	Incident cases n	Deaths n	Prop. deaths with death certific. %	Deaths in same year n	Prop. deaths in same year %
1998	111	65	95.4	14	12.6
1999	110	60	88.3	14	12.7
2000	129	68	95.6	13	10.1
2001	162	72	94.4	21	13.0
2002	220	104	97.1	28	12.7
2003	265	133	98.5	44	16.6
2004	286	155	97.4	44	15.4
2005	263	148	97.3	36	13.7
2006	306	166	98.2	46	15.0
2007	351	204	96.6	64	18.2
2008	341	182	97.3	52	15.2
2009	399	229	97.8	70	17.5
2010	407	224	96.9	61	15.0
2011	378	218	97.7	48	12.7
2012	392	238	99.2	61	15.6
2013	464	276	98.2	72	15.5
2014	388	283	98.2	75	19.3
2015	381	267	98.9	67	17.6
2016	354	277	98.9	65	18.4
2017	339	327	97.9	73	21.5
2018	260	242	69.8	36	13.8
2019	201	218	50.9	26	12.9
2020	235	214	91.6	41	17.4
1998–2020	6742	4370	93.5	1071	15.9

Table 9c

Annual cohorts of deaths, proportion of cancer-related and non-cancer-related deaths, and cancer recorded on death certificates (incl. DCO)
(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)

Year of death	Deaths n	Prop. cancer-related %	Prop. non-cancer-related %	Prop. cancer recorded on death certificate %
1998	65	76.9	23.1	95.2
1999	60	75.0	25.0	90.6
2000	68	80.9	19.1	89.2
2001	72	83.3	16.7	94.1
2002	104	81.7	18.3	92.1
2003	133	85.0	15.0	91.6
2004	155	85.2	14.8	92.7
2005	148	85.1	14.9	92.4
2006	166	82.5	17.5	89.6
2007	204	83.3	16.7	92.9
2008	182	83.0	17.0	92.7
2009	229	79.9	20.1	92.4
2010	224	78.1	21.9	84.3
2011	218	76.6	23.4	85.4
2012	238	78.6	21.4	86.0
2013	276	74.6	25.4	82.3
2014	283	73.5	26.5	87.8
2015	267	75.3	24.7	81.1
2016	277	69.3	30.7	79.2
2017	327	76.8	23.2	84.1
2018	242	57.4	42.6	72.2
2019	218	49.1	50.9	78.4
2020	214	54.2	45.8	76.0
1998-2020	4370	74.5	25.5	85.9

Table 10a

Medians of age at death according to the grouping in Table 9
MALES

Year of death	Deaths n	Age at death (all causes) Years	Age at death (cancer-related) Years	Age at death (non-cancer-related) Years	Age at death (according to death certificate) Years
1998	29	71.8	70.4	84.2	71.8
1999	25	69.9	69.1	73.4	72.6
2000	33	69.4	70.9	67.9	70.1
2001	31	67.4	66.3	71.0	67.4
2002	60	73.1	73.2	71.5	73.3
2003	70	72.4	71.6	81.2	71.7
2004	86	72.2	72.2	72.4	72.5
2005	83	73.7	74.1	73.6	73.8
2006	89	71.0	70.7	78.3	71.1
2007	113	73.0	73.1	70.4	72.5
2008	97	73.1	72.7	75.0	73.1
2009	130	75.5	75.3	83.3	75.3
2010	128	75.9	75.4	78.0	75.5
2011	129	73.2	72.3	77.5	72.8
2012	122	75.8	75.7	75.9	76.1
2013	166	77.7	77.1	81.6	77.7
2014	154	76.3	75.3	78.9	75.6
2015	151	78.1	76.2	81.7	76.6
2016	152	78.7	78.0	81.5	78.1
2017	180	78.7	77.6	82.7	77.6
2018	141	79.0	78.4	80.1	77.8
2019	126	79.5	79.4	79.5	79.1
2020	122	80.6	80.6	80.6	80.6
1998-2020	2417	76.2	75.3	79.3	75.5

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 10b

Medians of age at death according to the grouping in Table 9
FEMALES

Year of death	Deaths n	Age at death (all causes) Years	Age at death (cancer-related) Years	Age at death (non-cancer-related) Years	Age at death (according to death certificate) Years
1998	36	72.9	69.7	82.0	72.9
1999	35	78.1	76.1	78.3	78.1
2000	35	77.6	76.9	85.9	75.6
2001	41	75.9	75.6	81.8	76.0
2002	44	78.8	79.7	78.2	79.1
2003	63	78.9	79.0	75.5	78.7
2004	69	75.1	75.8	70.9	75.8
2005	65	79.2	77.7	90.8	78.3
2006	77	77.4	76.2	83.6	76.4
2007	91	78.6	78.2	79.7	78.3
2008	85	82.0	79.8	84.7	81.5
2009	99	78.8	77.4	79.7	79.4
2010	96	78.7	76.1	84.9	78.1
2011	89	78.9	77.8	82.8	77.5
2012	116	80.7	79.6	81.3	79.5
2013	110	79.7	76.1	83.4	77.5
2014	129	78.5	78.0	81.3	78.3
2015	116	78.7	77.9	83.2	78.7
2016	125	80.3	79.1	83.8	79.1
2017	147	80.8	79.1	85.6	79.1
2018	101	81.4	81.3	81.8	80.8
2019	92	81.0	77.9	83.7	80.6
2020	92	82.5	80.6	88.0	82.1
1998-2020	1953	79.2	78.1	83.2	78.5

By 2018, Bavarians' life expectancy at birth is estimated at 79.3 years for boys and 83.8 years for girls.

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

Mortality measures (cancer-related death) and mortality-incidence-index
by year of death
MALES

Year of death	Deaths n	Mort. raw	MI-Index raw	Mort. WS	MI-Index WS	Mort. ES	MI-Index ES	Mort. BRD-S	MI-Index BRD-S
1998	22	2.0	0.42	1.2	0.39	1.8	0.43	2.5	0.47
1999	17	1.5	0.35	0.9	0.31	1.4	0.35	1.7	0.36
2000	28	2.5	0.38	1.6	0.36	2.3	0.38	2.9	0.39
2001	26	2.2	0.33	1.5	0.34	2.1	0.34	2.7	0.35
2002	49	2.6	0.42	1.4	0.37	2.2	0.40	3.1	0.46
2003	60	3.2	0.43	1.8	0.37	2.7	0.42	3.7	0.46
2004	72	3.8	0.46	2.0	0.39	3.1	0.43	4.2	0.50
2005	70	3.7	0.48	1.8	0.38	2.9	0.45	4.0	0.52
2006	74	3.9	0.43	2.0	0.38	3.0	0.42	3.9	0.43
2007	94	4.2	0.48	2.1	0.41	3.3	0.46	4.5	0.51
2008	84	3.8	0.46	1.8	0.40	2.8	0.44	3.8	0.47
2009	106	4.7	0.48	2.1	0.38	3.4	0.44	4.8	0.50
2010	103	4.6	0.45	2.0	0.37	3.1	0.42	4.6	0.47
2011	91	4.1	0.40	1.9	0.36	2.9	0.39	3.9	0.42
2012	94	4.1	0.43	1.8	0.38	2.8	0.41	3.9	0.44
2013	122	5.3	0.49	2.1	0.38	3.5	0.44	5.0	0.49
2014	111	4.8	0.48	2.0	0.38	3.1	0.43	4.3	0.48
2015	110	4.6	0.50	2.0	0.42	3.1	0.47	4.2	0.49
2016	98	4.1	0.47	1.5	0.36	2.5	0.41	3.6	0.46
2017	143	5.9	0.75	2.3	0.63	3.8	0.69	5.1	0.73
2018	80	3.3	0.51	1.3	0.41	2.0	0.45	2.8	0.49
2019	63	2.6	0.55	1.0	0.43	1.6	0.48	2.2	0.53
2020	66	2.7	0.45	0.8	0.28	1.4	0.34	2.3	0.43
1998-2020	1783	3.8	0.47	1.7	0.39	2.7	0.44	3.8	0.48

Table 11b

Mortality measures (cancer-related death) and mortality-incidence-index
by year of death
FEMALES

Year of death	Deaths n	Mort. raw	MI-Index raw	Mort. WS	MI-Index WS	Mort. ES	MI-Index ES	Mort. BRD-S	MI-Index BRD-S
1998	28	2.4	0.48	1.1	0.44	1.6	0.46	2.1	0.47
1999	28	2.4	0.46	0.9	0.36	1.5	0.41	2.0	0.45
2000	27	2.2	0.49	0.8	0.36	1.3	0.39	1.9	0.45
2001	34	2.8	0.41	1.1	0.31	1.8	0.36	2.4	0.41
2002	36	1.8	0.35	0.6	0.26	1.0	0.27	1.4	0.31
2003	53	2.7	0.42	1.0	0.29	1.5	0.32	2.0	0.37
2004	60	3.0	0.47	1.2	0.40	1.9	0.43	2.6	0.47
2005	56	2.8	0.48	1.0	0.33	1.5	0.37	2.1	0.42
2006	63	3.1	0.47	1.2	0.37	1.8	0.42	2.4	0.44
2007	76	3.3	0.49	1.2	0.37	1.8	0.42	2.5	0.45
2008	67	2.9	0.43	1.0	0.29	1.5	0.34	2.0	0.36
2009	77	3.3	0.43	1.1	0.31	1.7	0.35	2.4	0.39
2010	72	3.1	0.40	1.1	0.30	1.7	0.34	2.4	0.38
2011	76	3.3	0.51	1.1	0.36	1.7	0.41	2.4	0.47
2012	93	3.9	0.54	1.2	0.37	1.9	0.42	2.7	0.48
2013	84	3.5	0.40	1.1	0.28	1.8	0.32	2.6	0.36
2014	97	4.0	0.63	1.2	0.46	2.0	0.51	2.9	0.58
2015	91	3.7	0.56	1.3	0.46	1.9	0.49	2.7	0.52
2016	94	3.8	0.65	1.1	0.42	1.8	0.49	2.6	0.54
2017	108	4.4	0.72	1.3	0.49	2.1	0.55	3.0	0.64
2018	61	2.5	0.59	0.6	0.39	1.1	0.44	1.5	0.49
2019	44	1.8	0.51	0.5	0.38	0.8	0.42	1.2	0.46
2020	50	2.0	0.56	0.5	0.37	0.9	0.42	1.3	0.49
1998-2020	1475	3.1	0.50	1.0	0.36	1.6	0.40	2.2	0.45

Table 12

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

Age at death Years	Cases n	%	Cum.%	Males n	%	Cum.%	Females n	%	Cum.%
0-4									
5-9	2	0.1	0.1	2	0.1	0.1			0.0
10-14	2	0.1	0.2			0.1	2	0.2	0.2
15-19	3	0.1	0.3	2	0.1	0.3	1	0.1	0.3
20-24	2	0.1	0.4	2	0.1	0.4			0.3
25-29	4	0.2	0.5	2	0.1	0.6	2	0.2	0.5
30-34	7	0.3	0.8	5	0.4	1.0	2	0.2	0.6
35-39	8	0.3	1.1	6	0.4	1.4	2	0.2	0.8
40-44	25	1.0	2.2	20	1.5	2.9	5	0.5	1.3
45-49	49	2.0	4.2	39	2.9	5.7	10	0.9	2.2
50-54	66	2.7	6.8	36	2.6	8.4	30	2.8	5.0
55-59	91	3.7	10.5	62	4.5	12.9	29	2.7	7.6
60-64	145	5.9	16.5	88	6.4	19.3	57	5.2	12.8
65-69	227	9.2	25.7	141	10.3	29.7	86	7.9	20.7
70-74	366	14.9	40.6	201	14.7	44.4	165	15.1	35.9
75-79	507	20.7	61.3	288	21.1	65.5	219	20.1	56.0
80-84	480	19.6	80.8	254	18.6	84.1	226	20.7	76.7
85+	471	19.2	100.0	217	15.9	100.0	254	23.3	100.0
All ages	2455	100.0		1365	100.0		1090	100.0	

Table 13

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

Age at death Years	Males n	Females n	Males Age-spec. mortal.	Males MI-index	Females Age-spec. mortal.	Females MI-index	Males Prop.all cancers %	Females Prop.all cancers %
0- 4								
5- 9	2		0.1	0.25			7.1	
10-14		2			0.1	0.67		8.7
15-19	2	1	0.1	0.22	0.1	0.10	4.2	4.0
20-24	2		0.1	0.08			2.7	
25-29	2	2	0.1	0.06	0.1	0.13	2.2	2.0
30-34	5	2	0.2	0.16	0.1	0.09	3.5	1.1
35-39	6	2	0.3	0.11	0.1	0.05	2.2	0.5
40-44	20	5	0.8	0.23	0.2	0.09	3.3	0.6
45-49	39	10	1.5	0.28	0.4	0.17	2.8	0.6
50-54	36	30	1.4	0.21	1.2	0.33	1.4	1.1
55-59	62	29	2.9	0.35	1.3	0.22	1.4	0.8
60-64	88	57	5.0	0.36	3.0	0.31	1.4	1.1
65-69	141	86	8.6	0.39	4.7	0.37	1.5	1.2
70-74	201	165	13.4	0.45	9.6	0.45	1.7	1.9
75-79	288	219	23.8	0.62	14.6	0.64	2.3	2.2
80-84	254	226	35.1	0.77	21.2	0.78	2.4	2.4
85+	217	254	46.5	1.13	24.4	1.06	2.4	2.1
All ages	1365	1090					2.0	1.8
Mortality								
Raw			4.2	0.49	3.2	0.52		
WS			1.8	0.40	1.0	0.37		
ES			2.8	0.44	1.6	0.41		
BRD-S			3.9	0.49	2.3	0.47		
PYLL-70								
per 100,000			16.2		8.1			
ES			14.2		7.0			
AYLL-70			11.5		10.1			

Table 14a

Further malignancies in deaths in period 1998–2020
MALES

Diagnosis		Total n	Total %↓	Pre n	Pre ←%	Syn-chron ±30d n	Syn-chron ±30d ←%	Post n	Post ←%
C00	Lip	5	0.6	2	40.0			3	60.0
C03–C06	Oral cavity	6	0.7			2	33.3	4	66.7
C07–C08	Salivary gland	4	0.5	1	25.0			3	75.0
C09–C10	Oropharynx	6	0.7	3	50.0			3	50.0
C15	Oesophagus	5	0.6	1	20.0			4	80.0
C16	Stomach	20	2.4	6	30.0	3	15.0	11	55.0
C17	Small intestine	8	1.0	4	50.0			4	50.0
C18	Colon	55	6.6	27	49.1	10	18.2	18	32.7
C19–C20	Rectum	24	2.9	12	50.0	4	16.7	8	33.3
C22	Liver	10	1.2	2	20.0			8	80.0
C23–C24	Bile	4	0.5	2	50.0			2	50.0
C25	Pancreas	14	1.7	2	14.3			12	85.7
C32	Larynx	7	0.8	4	57.1			3	42.9
C33–C34	Lung	57	6.9	12	21.1	6	10.5	39	68.4
C38,C45	Mesothelioma	4	0.5	1	25.0	1	25.0	2	50.0
C43	Malign. melanoma	34	4.1	15	44.1	1	2.9	18	52.9
C44	Skin others	136	16.4	47	34.6	9	6.6	80	58.8
C46,C49	Soft tissue	8	1.0	4	50.0	1	12.5	3	37.5
C60	Penis	2	0.2			1	50.0	1	50.0
C61	Prostate	143	17.2	103	72.0	11	7.7	29	20.3
C62	Testis	7	0.8	4	57.1	1	14.3	2	28.6
C64	Kidney	27	3.3	20	74.1	5	18.5	2	7.4
C65	Renal pelvis	2	0.2			1	50.0	1	50.0
C66	Ureter	4	0.5			1	25.0	3	75.0
C67	Bladder	26	3.1	9	34.6	3	11.5	14	53.8
C68	Urethra	2	0.2	1	50.0			1	50.0
C69	Eye carcinoma	2	0.2					2	100.0
C69	Eye lymphoma	2	0.2	1	50.0			1	50.0
C69	Eye melanoma	2	0.2	2	100.0				
C70–C72	CNS cancer	3	0.4	1	33.3			2	66.7
C73	Thyroid	4	0.5	3	75.0			1	25.0
C76–C79	CUP	16	1.9	2	12.5	1	6.3	13	81.3
C81	Hodgkin lymphoma	18	2.2	14	77.8	1	5.6	3	16.7
C82–C85	NHL	104	12.5			3	2.9	101	97.1
C90	Mult. myeloma	21	2.5	11	52.4	6	28.6	4	19.0
C91–C96	Leukaemia	29	3.5	11	37.9	1	3.4	17	58.6
Others, specified		8	1.0	2	25.0			6	75.0
All further malignancies		829	100.0	329	39.7	72	8.7	428	51.6

Further malignancies with number of cases 1 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 14b

Further malignancies in deaths in period 1998-2020
FEMALES

Diagnosis		Total n	Total %↓	Pre n	Pre ←%	Syn-chron ±30d n	Syn-chron ±30d ←%	Post n	Post ←%
C03-C06	Oral cavity	4	0.7	4	100.0				
C07-C08	Salivary gland	5	0.9	3	60.0			2	40.0
C09-C10	Oropharynx	4	0.7	2	50.0	1	25.0	1	25.0
C12-C13	Hypopharynx	1	0.2					1	100.0
C15	Oesophagus	2	0.3					2	100.0
C16	Stomach	16	2.7	5	31.3	2	12.5	9	56.3
C17	Small intestine	4	0.7	3	75.0	1	25.0		
C18	Colon	35	6.0	15	42.9	3	8.6	17	48.6
C19-C20	Rectum	18	3.1	9	50.0	3	16.7	6	33.3
C21	Anus/canal	4	0.7	3	75.0			1	25.0
C22	Liver	6	1.0					6	100.0
C23-C24	Bile	6	1.0	1	16.7			5	83.3
C25	Pancreas	10	1.7	1	10.0	2	20.0	7	70.0
C32	Larynx	2	0.3	2	100.0				
C33-C34	Lung	29	4.9	2	6.9	1	3.4	26	89.7
C43	Malign. melanoma	19	3.2	11	57.9	1	5.3	7	36.8
C44	Skin others	73	12.4	24	32.9	1	1.4	48	65.8
C46,C49	Soft tissue	3	0.5			1	33.3	2	66.7
C50	Breast	120	20.4	73	60.8	14	11.7	33	27.5
C51	Vulva	7	1.2	3	42.9			4	57.1
C53	Cervix uteri	9	1.5	7	77.8			2	22.2
C54	Corpus uteri	19	3.2	14	73.7	1	5.3	4	21.1
C55,C57	Fem. genitals un	5	0.9	5	100.0				
C56	Ovary	10	1.7	4	40.0			6	60.0
C64	Kidney	18	3.1	11	61.1	3	16.7	4	22.2
C65	Renal pelvis	1	0.2					1	100.0
C67	Bladder	6	1.0	1	16.7			5	83.3
C69	Eye lymphoma	1	0.2			1	100.0		
C70-C72	CNS cancer	1	0.2	1	100.0				
C73	Thyroid	8	1.4	6	75.0			2	25.0
C76-C79	CUP	10	1.7	5	50.0	1	10.0	4	40.0
C81	Hodgkin lymphoma	7	1.2	5	71.4			2	28.6
C82-C85	NHL	95	16.2	1	1.1	1	1.1	93	97.9
C90	Mult. myeloma	13	2.2	6	46.2	5	38.5	2	15.4
C91-C96	Leukaemia	16	2.7	2	12.5	2	12.5	12	75.0
C96	Systemic	1	0.2	1	100.0				
All further malignancies		588	100.0	230	39.1	44	7.5	314	53.4

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** *)

Age at death Years	Males n	Females n	Males Age-spec. mortal.	MI-index	Females Age-spec. mortal.	MI-index	Males Prop.all cancers %	Females Prop.all cancers %
0- 4								
5- 9	2		0.1	0.25			7.4	
10-14		2			0.1	0.67		10.5
15-19	2	1	0.1	0.25	0.1	0.11	4.3	4.3
20-24	2		0.1	0.09			3.0	
25-29	2	2	0.1	0.06	0.1	0.13	2.4	2.2
30-34	5	2	0.2	0.16	0.1	0.09	3.6	1.3
35-39	5	2	0.2	0.10	0.1	0.06	2.0	0.5
40-44	13	4	0.5	0.17	0.2	0.08	2.3	0.5
45-49	36	9	1.3	0.28	0.3	0.16	2.8	0.6
50-54	29	21	1.1	0.19	0.8	0.29	1.2	0.9
55-59	48	24	2.3	0.33	1.1	0.23	1.2	0.8
60-64	70	44	4.0	0.35	2.3	0.32	1.3	1.1
65-69	112	56	6.9	0.40	3.1	0.34	1.5	1.0
70-74	147	130	9.8	0.44	7.6	0.51	1.6	1.9
75-79	206	162	17.0	0.67	10.8	0.65	2.3	2.2
80-84	180	171	24.9	0.83	16.1	0.81	2.4	2.4
85+	141	197	30.2	1.17	18.9	1.06	2.2	2.1
All ages	1000	827					1.9	1.7
Mortality								
Raw			3.1	0.47	2.5	0.52		
WS			1.3	0.37	0.8	0.36		
ES			2.1	0.42	1.2	0.41		
BRD-S			2.9	0.47	1.7	0.46		
PYLL-70								
per 100,000			13.4		6.5			
ES			11.8		5.8			
AYLL-70			11.8		11.0			

* 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** *)

Age at death Years	Males n	Females n	Males Age-spec. mortal.	Males MI-index	Females Age-spec. mortal.	Females MI-index	Males Prop.all cancers %	Females Prop.all cancers %
0- 4								
5- 9	2		0.1	0.25			7.4	
10-14		1			0.1	0.33		5.3
15-19	2	1	0.1	0.25	0.1	0.11	4.3	4.5
20-24	2		0.1	0.09			3.0	
25-29	2	1	0.1	0.07	0.0	0.07	2.4	1.1
30-34	5	2	0.2	0.16	0.1	0.10	3.6	1.3
35-39	5	2	0.2	0.11	0.1	0.06	2.0	0.5
40-44	13	2	0.5	0.18	0.1	0.04	2.3	0.3
45-49	35	8	1.3	0.28	0.3	0.16	2.7	0.6
50-54	25	19	1.0	0.18	0.8	0.27	1.1	0.9
55-59	43	20	2.0	0.34	0.9	0.22	1.1	0.6
60-64	59	39	3.3	0.33	2.1	0.31	1.1	1.0
65-69	94	42	5.8	0.41	2.3	0.29	1.3	0.8
70-74	123	111	8.2	0.43	6.5	0.48	1.4	1.7
75-79	165	139	13.6	0.62	9.3	0.62	1.9	1.9
80-84	149	139	20.6	0.80	13.1	0.72	2.1	2.0
85+	111	170	23.8	0.96	16.3	0.96	1.9	1.9
All ages	835	696					1.6	1.5
Mortality								
Raw			2.6	0.44	2.1	0.48		
WS			1.1	0.35	0.6	0.32		
ES			1.7	0.40	1.0	0.37		
BRD-S			2.4	0.44	1.5	0.42		
PYLL-70								
per 100,000			12.4		5.3			
ES			11.0		4.6			
AYLL-70			12.4		11.0			

* See corresponding tables with multiple malignancies.

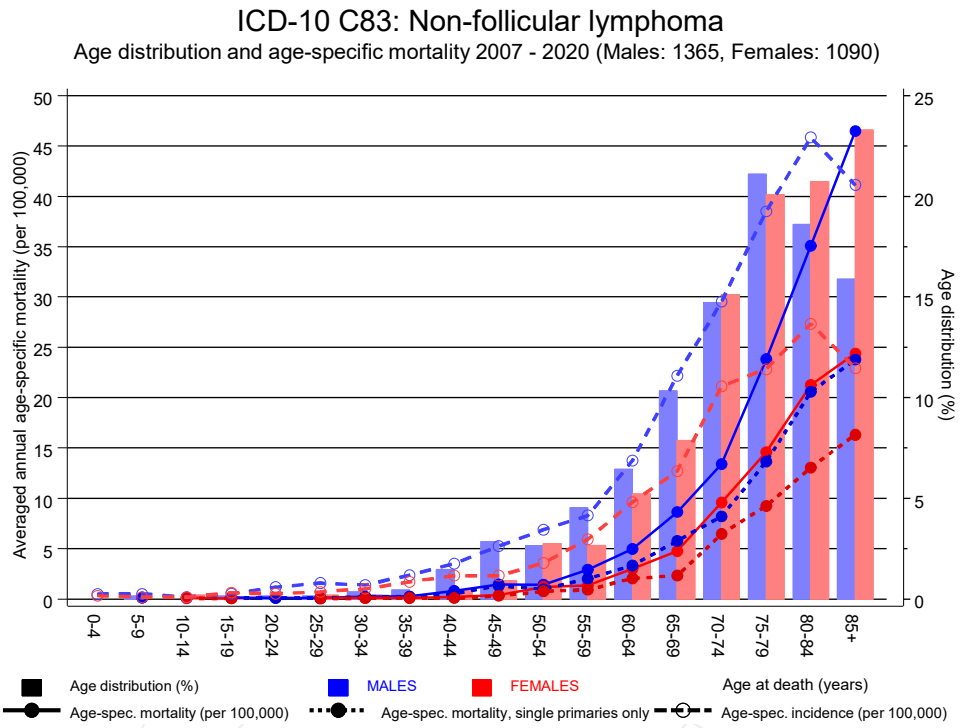


Figure 17. Distribution of age at death (bars; males: mean=70.2 yrs, median=72.4 yrs; females: mean=73.3 yrs, median=75.2 yrs) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

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

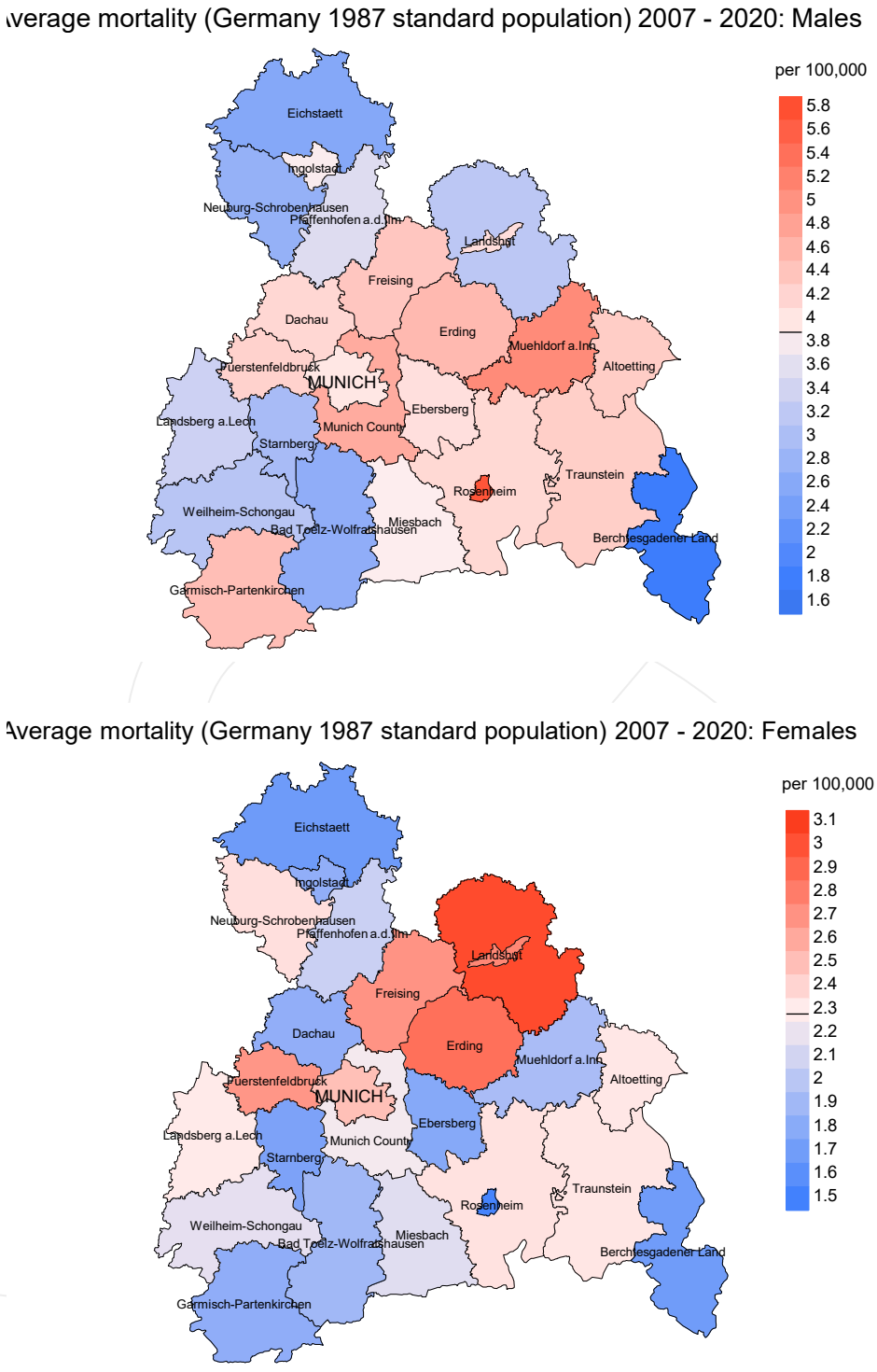
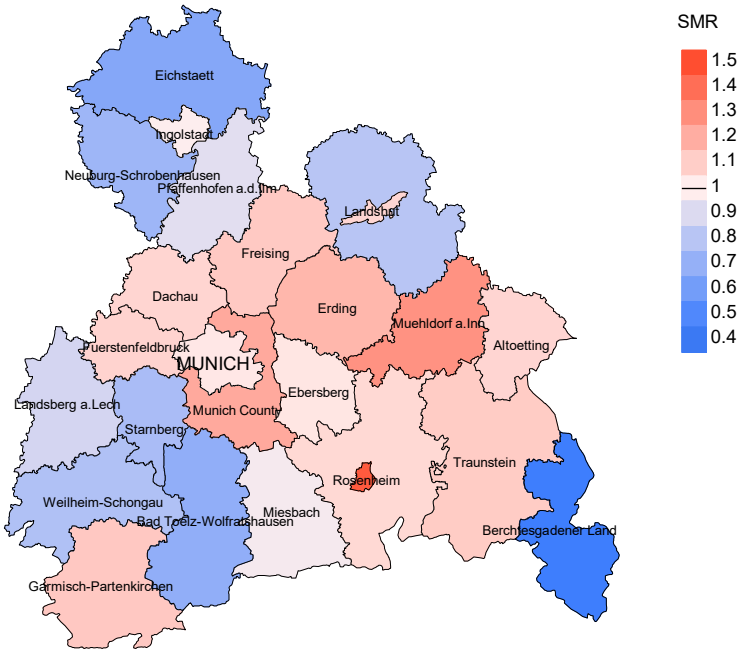


Figure 18a. Map of cancer mortality (german standard population) by county averaged for period 2007 to 2020. According to their individual mortality rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 3.9/100,000 WS N=1,365, females 2.3/100,000 WS N=1,090).

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 22 women died from non-follic. lymphoma. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 1.8/100,000 (german standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.9 and 3.1/100,000.

Standardized mortality ratio (SMR) 2007 - 2020: Males



Standardized mortality ratio (SMR) 2007 - 2020: Females

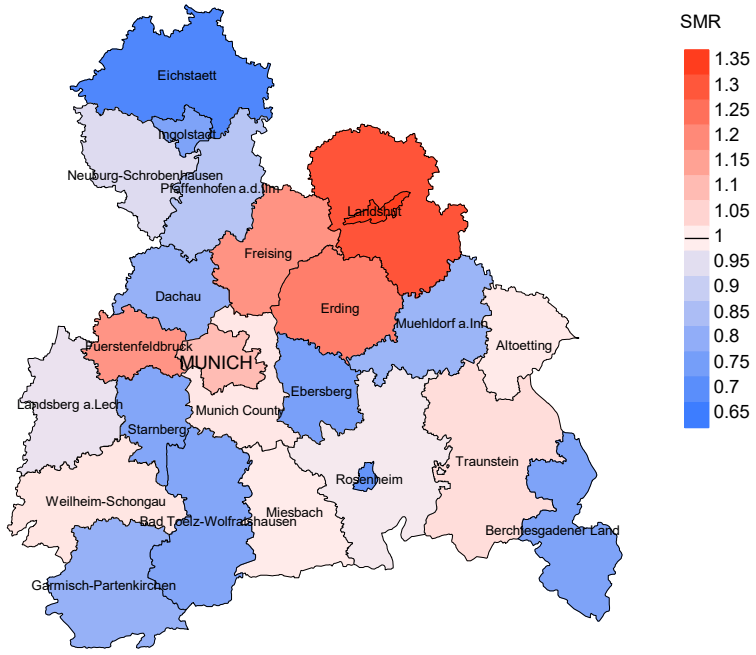


Figure 18b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2007 to 2020. According to their individual SMR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=1,365, females N=1,090).

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 22 women died from non-follic. lymphoma. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 0.76. Though, the value of this parameter may vary with an underlying probability of 99% between 0.41 and 1.28, 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

Recommended Citation

Munich Cancer Registry. ICD-10 C83: Non-follic. lymphoma - Incidence and Mortality [Internet]. 2021 [updated 2021 Dec 21; cited 2022 Feb 1]. Available from: https://www.tumorregister-muenchen.de/en/facts/base/bC83__E-ICD-10-C83-Non-follic.-lymphoma-incidence-and-mortality.pdf

Copyright

Disclaimer