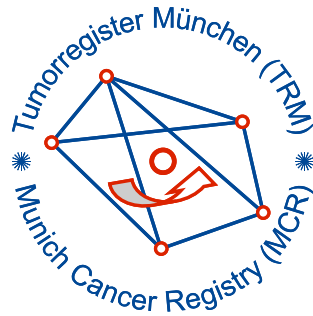


Munich Cancer Registry



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

ICD-10 C85: Non-Hodgkin lymphoma NOS

Incidence and Mortality

Year of diagnosis	1998-2019
Patients	2,671
Diseases	2,672
Creation date	01/26/2021
Database export	01/07/2021
Population	4.92 m





Munich Cancer Registry
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Marchioninstr. 15
Munich, 81377
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<https://www.tumorregister-muenchen.de/en>

https://www.tumorregister-muenchen.de/en/facts/base/bC85__E-ICD-10-C85-Non-Hodgkin-lymphoma-NOS-incidence-and-mortality.pdf

Index of figures and tables

Fig./Tbl.		Page
1	Annual cases, DCO, mult. malignancies, follow-up / yr	4
2	Incidence by year of diagnosis	7
3	Age distribution parameters by year of diagnosis	8
4	Age distribution by 5-year age group and sex	11
5	Age-specific incidence, DCO rate, proportion malignancies	12
6	Age distribution and age-specific incidence (chart)	13
6a	Age-specific incidence internationally (chart)	14
7	Standardized incidence ratio of further malignancies	15
8a	Map of cancer incidence (BRD-S) by county (chart)	17
8b	Standardized incidence ratio (SIR) by county (chart)	18
9a	Pts incident cohorts and mortality / yr	19
9b	Incidence and mortality by year of diagnosis	20
9c	Cancer-related deaths, death certification available / yr	21
10	Medians of age at death / yr	22
11	Mortality by year of death	24
12	Distribution of age at death	26
13	Age-specific mortality	27
14	Further malignancies in deaths	28
15	Age-specific mortality (first primaries)	30
16	Age-specific mortality (single primaries)	31
17	Age distribution and age-specific mortality (chart)	32
18a	Map of cancer mortality (BRD-S) by county (chart)	33
18b	Standardized mortality ratio (SMR) by county (chart)	34

**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, January 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
C85.-	Other and unspecified types of non-Hodgkin lymphoma
C85.1	B-cell lymphoma, unspecified
C85.2	Mediastinal (thymic) large B-cell lymphoma
C85.7	Other specified types of non-Hodgkin lymphoma
C85.9	Non-Hodgkin 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	180	39	21.7	11.1	9.2	81.1	98.9
1999	165	54	32.7	9.0	9.2	82.4	98.2
2000	100	42	42.0	9.7	9.0	84.0	96.0
2001	96	44	45.8	9.6	8.8	87.5	97.9
2002	197	105	53.3	10.8	8.7	91.4	98.5 #
2003	142	67	47.2	11.1	8.9	89.4	99.3
2004	148	59	39.9	11.5	9.1	82.4	98.0
2005	124	59	47.6	11.5	8.8	87.1	100.0
2006	126	49	38.9	11.7	8.7	81.7	98.4
2007	154	65	42.2	12.2	8.7	77.3	94.2 #
2008	120	40	33.3	12.5	8.9	80.0	100.0
2009	126	43	34.1	12.8	8.5	73.0	99.2
2010	115	48	41.7	13.0	8.5	75.7	98.3
2011	132	54	40.9	13.4	8.0	81.8	98.5
2012	122	37	30.3	13.6	7.0	63.9	97.5
2013	104	38	36.5	14.3	7.0	69.2	100.0
2014	112	33	29.5	14.8	6.8	66.1	97.3
2015	128	41	32.0	15.1	5.5	61.7	96.1
2016	111	48	43.2	15.3	5.1	63.1	98.2
2017	81	33	40.7	15.4	4.8	56.8	98.8
2018	50	10	20.0	15.6	5.7	44.0	94.0
2019	39	4	10.3	15.8	2.6	43.6	69.2 ##
1998-2019	2672	1012	37.9	15.8	9.2	76.7	97.6

2,672 cases diagnosed 1998-2019 are related to a total of 2,671 patients. Currently, in 668 (25.0 %) of these 2,671 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 514 / 111 / 43 (19.2 % / 4.2 % / 1.6 %) 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 retrieved from the respective headings.

How to interpret:

In 2017, a subgroup of 81 cases has been diagnosed, of which 15.4 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 4.8 % 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	96	53.3	19	19.8	10.4	9.8	83.3	99.0
1999	87	52.7	25	28.7	9.8	9.9	88.5	98.9
2000	53	53.0	23	43.4	10.2	9.8	81.1	96.2
2001	55	57.3	20	36.4	10.3	9.5	87.3	96.4
2002	98	49.7	50	51.0	12.3	9.3	91.8	98.0 #
2003	68	47.9	36	52.9	12.3	9.5	92.6	98.5
2004	75	50.7	29	38.7	13.2	9.7	80.0	97.3
2005	53	42.7	24	45.3	13.2	9.4	86.8	100.0
2006	76	60.3	27	35.5	13.6	9.4	82.9	98.7
2007	91	59.1	38	41.8	13.4	9.7	75.8	93.4 #
2008	69	57.5	21	30.4	13.9	9.6	79.7	100.0
2009	73	57.9	25	34.2	14.2	9.2	71.2	98.6
2010	57	49.6	25	43.9	14.6	8.8	82.5	100.0
2011	59	44.7	22	37.3	14.7	8.3	83.1	100.0
2012	61	50.0	20	32.8	15.0	7.3	68.9	100.0
2013	64	61.5	24	37.5	16.0	7.0	71.9	100.0
2014	55	49.1	16	29.1	16.5	7.5	63.6	96.4
2015	79	61.7	22	27.8	17.1	4.9	59.5	97.5
2016	67	60.4	27	40.3	17.4	4.1	59.7	97.0
2017	40	49.4	13	32.5	17.4	2.4	47.5	100.0
2018	27	54.0	5	18.5	17.5	2.3	48.1	100.0
2019	17	43.6	3	17.6	17.7	0.0	41.2	64.7 ##
1998-2019	1420	53.1	514	36.2	17.7	9.8	76.8	97.8

1,420 cases diagnosed 1998-2019 are related to a total of 1,420 patients. Currently, in 389 (27.4 %) of these 1,420 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 294 / 70 / 25 (20.7 % / 4.9 % / 1.8 %) 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 retrieved from the respective headings.

How to interpret:

In 2017, a subgroup of 40 cases has been diagnosed, of which 17.4 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 2.4 % 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	84	46.7	20	23.8	11.9	8.6	78.6	98.8
1999	78	47.3	29	37.2	8.0	8.4	75.6	97.4
2000	47	47.0	19	40.4	9.1	8.1	87.2	95.7
2001	41	42.7	24	58.5	8.8	8.0	87.8	100.0
2002	99	50.3	55	55.6	9.2	8.1	90.9	99.0 #
2003	74	52.1	31	41.9	9.9	8.3	86.5	100.0
2004	73	49.3	30	41.1	9.7	8.3	84.9	98.6
2005	71	57.3	35	49.3	9.7	8.0	87.3	100.0
2006	50	39.7	22	44.0	9.7	7.7	80.0	98.0
2007	63	40.9	27	42.9	10.7	7.5	79.4	95.2 #
2008	51	42.5	19	37.3	10.9	8.0	80.4	100.0
2009	53	42.1	18	34.0	11.1	7.8	75.5	100.0
2010	58	50.4	23	39.7	11.2	8.2	69.0	96.6
2011	73	55.3	32	43.8	11.9	7.7	80.8	97.3
2012	61	50.0	17	27.9	12.0	6.6	59.0	95.1
2013	40	38.5	14	35.0	12.3	7.0	65.0	100.0
2014	57	50.9	17	29.8	12.9	6.0	68.4	98.2
2015	49	38.3	19	38.8	12.9	6.3	65.3	93.9
2016	44	39.6	21	47.7	13.0	6.3	68.2	100.0
2017	41	50.6	20	48.8	13.2	7.1	65.9	97.6
2018	23	46.0	5	21.7	13.3	9.1	39.1	87.0
2019	22	56.4	1	4.5	13.6	4.5	45.5	72.7 ##
1998-2019	1252	46.9	498	39.8	13.6	8.6	76.6	97.4

1,252 cases diagnosed 1998-2019 are related to a total of 1,251 patients. Currently, in 279 (22.3 %) of these 1,251 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 220 / 41 / 18 (17.6 % / 3.3 % / 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 retrieved from the respective headings.

How to interpret:

In 2017, a subgroup of 41 cases has been diagnosed, of which 13.2 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 7.1 % 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 4.92 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	96	84	8.7	7.1	5.6	3.6	8.1	4.9	10.8	6.3
1999	87	78	7.8	6.6	4.8	3.0	7.1	4.4	9.6	5.6
2000	53	47	4.7	3.9	2.7	1.6	4.1	2.4	5.4	3.3
2001	55	41	4.7	3.4	3.0	1.2	4.2	1.9	5.4	2.6
2002	98	99	5.3	5.1	3.0	2.0	4.4	3.0	5.9	4.0
2003	68	74	3.6	3.8	2.0	1.5	3.1	2.2	4.2	3.0
2004	75	73	4.0	3.7	2.2	1.6	3.3	2.2	4.4	2.9
2005	53	71	2.8	3.6	1.5	1.4	2.3	2.0	3.2	2.8
2006	76	50	4.0	2.5	2.1	1.1	3.1	1.6	4.3	2.0
2007	91	63	4.1	2.7	2.1	1.2	3.2	1.7	4.3	2.1
2008	69	51	3.1	2.2	1.6	0.8	2.4	1.2	3.2	1.6
2009	73	53	3.3	2.3	1.7	0.8	2.4	1.2	3.1	1.7
2010	57	58	2.5	2.5	1.2	1.0	1.9	1.4	2.5	1.9
2011	59	73	2.6	3.1	1.3	1.1	1.9	1.7	2.7	2.2
2012	61	61	2.7	2.6	1.1	1.1	1.8	1.6	2.6	2.0
2013	64	40	2.8	1.7	1.5	0.6	2.0	0.9	2.7	1.2
2014	55	57	2.4	2.4	1.0	0.9	1.6	1.3	2.2	1.7
2015	79	49	3.3	2.0	1.6	0.7	2.3	1.1	3.1	1.5
2016	67	44	2.8	1.8	1.1	0.6	1.8	0.9	2.5	1.3
2017	40	41	1.7	1.7	0.6	0.6	1.0	0.8	1.4	1.1
2018	27	23	1.1	0.9	0.5	0.4	0.7	0.6	1.0	0.7
2019	17	22	0.7	0.9	0.3	0.4	0.4	0.5	0.6	0.7
1998-2019	1420	1252	3.2	2.7	1.6	1.1	2.4	1.6	3.2	2.1

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	Std.		Min.	Max.	Median				
		Mean	dev.			10%	25%	50%	75%	90%
1998	180	67.1	18.0	5.9	100	43.6	55.9	71.0	80.6	86.6
1999	165	67.9	16.3	2.8	93.9	46.3	57.5	71.8	80.7	87.3
2000	100	69.0	14.1	31.9	91.6	49.2	58.5	72.3	80.4	85.3
2001	96	68.9	16.5	24.8	98.7	43.0	61.9	72.1	80.0	87.2
2002	197	71.4	15.8	1.2	95.5	51.5	64.3	74.3	81.1	89.3
2003	142	72.4	14.1	16.7	96.3	58.0	64.7	74.9	82.2	87.4
2004	148	70.9	16.0	8.4	97.8	49.1	63.7	73.3	82.8	87.0
2005	124	71.7	15.2	12.9	92.9	49.5	64.6	75.6	82.5	86.8
2006	126	70.4	15.5	1.9	98.5	55.8	65.2	72.3	79.2	86.1
2007	154	69.5	17.0	19.4	98.2	43.3	63.2	73.2	81.3	87.6
2008	120	72.0	13.7	25.2	95.6	55.5	63.8	73.9	82.3	87.8
2009	126	70.4	14.7	11.7	92.9	49.0	66.0	73.0	81.3	85.6
2010	115	73.1	15.7	14.3	94.9	52.8	67.7	77.1	84.9	88.9
2011	132	73.0	17.2	11.4	97.7	50.9	67.5	77.3	85.1	90.0
2012	122	72.7	14.8	11.5	96.0	55.5	65.5	76.3	81.8	87.4
2013	104	70.9	18.5	7.0	96.3	47.0	67.7	75.7	83.4	87.7
2014	112	74.0	14.3	15.7	94.7	56.1	67.4	75.8	84.0	89.8
2015	128	71.3	15.9	17.7	97.8	45.7	65.6	75.8	81.8	87.3
2016	111	73.7	15.7	24.3	96.4	46.8	69.1	77.5	83.8	87.7
2017	81	75.5	15.2	25.0	104	52.5	69.4	78.9	84.7	90.7
2018	50	72.2	13.0	34.6	93.7	57.2	66.0	74.0	80.8	87.2
2019	39	70.2	17.4	30.1	98.0	36.8	64.0	74.7	82.5	85.3
1998-2019	2672	71.1	15.9	1.2	104	48.7	63.9	74.6	82.3	87.6

Table 3a

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

Year of diagnosis	Cases n	Std.		Median						
		Mean	dev.	Min.	Max.	10%	25%	50%	75%	90%
1998	96	65.3	17.6	8.3	91.4	40.4	54.9	68.8	78.7	85.8
1999	87	65.8	17.1	2.8	93.8	44.9	57.1	67.1	78.8	84.4
2000	53	66.6	13.5	31.9	90.0	49.8	58.0	65.9	77.9	82.1
2001	55	63.1	16.3	24.8	88.2	38.0	51.9	66.9	75.9	78.4
2002	98	68.3	15.9	1.2	95.5	46.8	61.4	71.1	80.1	82.9
2003	68	71.3	13.4	19.8	94.3	58.5	63.0	73.1	81.8	87.7
2004	75	69.2	15.3	31.8	97.8	48.6	58.9	72.0	80.3	85.5
2005	53	70.0	17.5	12.9	90.9	44.9	61.1	76.1	82.9	85.6
2006	76	70.7	16.1	1.9	98.5	54.1	65.1	75.3	79.4	86.0
2007	91	69.2	15.6	19.4	92.7	48.1	63.7	71.9	79.6	85.2
2008	69	69.6	13.7	25.2	93.1	50.6	62.7	72.2	78.8	84.6
2009	73	68.3	15.4	11.7	92.9	43.8	64.4	72.0	77.7	84.4
2010	57	73.3	15.3	28.2	92.2	52.0	66.5	77.1	85.2	89.1
2011	59	71.6	16.6	11.4	94.6	50.9	66.0	76.9	83.4	86.0
2012	61	73.6	13.7	11.5	96.0	55.7	68.6	77.2	81.9	85.9
2013	64	68.5	21.2	7.0	96.3	23.6	61.7	74.8	82.0	87.4
2014	55	73.9	13.1	36.4	93.4	56.1	65.0	76.3	83.2	90.4
2015	79	69.8	17.1	17.7	91.6	39.5	62.2	75.0	82.0	87.3
2016	67	72.6	15.1	29.1	93.5	46.8	66.3	76.2	82.9	87.0
2017	40	75.5	13.7	41.9	97.4	52.5	68.3	77.2	83.7	93.1
2018	27	72.6	13.3	38.2	90.3	56.6	66.0	76.2	80.8	87.9
2019	17	73.7	14.5	34.0	98.0	57.9	69.3	71.6	81.4	92.5
1998-2019	1420	69.6	16.0	1.2	98.5	47.2	62.1	73.2	80.6	86.4

Table 3b

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

Year of diagnosis	Cases n	Std.		Median						
		Mean	dev.	Min.	Max.	10%	25%	50%	75%	90%
1998	84	69.2	18.4	5.9	100	45.9	60.5	74.4	82.7	88.3
1999	78	70.2	15.3	25.0	93.9	46.4	57.5	72.9	82.8	87.9
2000	47	71.8	14.3	35.9	91.6	48.6	58.9	75.4	83.0	85.7
2001	41	76.7	13.6	40.7	98.7	58.1	71.4	79.5	86.6	88.5
2002	99	74.5	15.0	6.6	94.6	55.0	67.7	77.4	85.8	90.4
2003	74	73.5	14.8	16.7	96.3	51.4	66.9	77.3	83.4	87.4
2004	73	72.6	16.7	8.4	94.1	53.7	67.7	77.2	83.1	87.0
2005	71	73.0	13.3	26.4	92.9	56.1	66.2	74.9	82.5	86.8
2006	50	70.0	14.6	21.8	95.8	59.7	65.9	70.8	79.2	86.2
2007	63	69.9	19.0	22.6	98.2	39.9	59.5	73.7	83.1	89.5
2008	51	75.1	13.2	38.6	95.6	57.5	67.2	78.8	85.4	88.4
2009	53	73.3	13.3	37.1	91.6	51.2	68.8	76.0	83.1	85.9
2010	58	73.0	16.2	14.3	94.9	54.8	69.4	76.5	83.7	88.6
2011	73	74.1	17.6	25.2	97.7	47.8	69.7	77.6	86.5	91.0
2012	61	71.9	15.8	19.9	95.5	55.5	63.4	74.5	81.7	88.6
2013	40	74.7	12.6	41.3	91.8	52.2	70.0	75.9	84.9	87.9
2014	57	74.0	15.5	15.7	94.7	55.5	68.4	75.6	85.0	89.6
2015	49	73.8	13.5	26.1	97.8	53.6	68.3	76.4	81.5	88.4
2016	44	75.4	16.6	24.3	96.4	45.9	71.3	80.1	86.1	90.4
2017	41	75.4	16.7	25.0	104	52.9	70.5	81.0	85.8	88.7
2018	23	71.8	13.0	34.6	93.7	57.8	63.4	72.3	81.9	85.8
2019	22	67.5	19.3	30.1	91.9	36.8	47.9	75.1	82.5	85.2
1998-2019	1252	72.8	15.6	5.9	104	51.2	66.8	76.1	83.9	88.5

Table 4

Age distribution by 5-year age group and sex for period 2007-2019
(incl. DCO)

Age at diagnosis Years	Cases			Males			Females		
	n	%	Cum.%	n	%	Cum.%	n	%	Cum.%
0-4									
5-9	1	0.1	0.1	1	0.1	0.1			0.0
10-14	5	0.4	0.4	4	0.5	0.7	1	0.2	0.2
15-19	6	0.4	0.9	4	0.5	1.2	2	0.3	0.5
20-24	10	0.7	1.6	5	0.7	1.8	5	0.8	1.3
25-29	14	1.0	2.6	7	0.9	2.8	7	1.1	2.4
30-34	18	1.3	3.9	10	1.3	4.1	8	1.3	3.6
35-39	30	2.2	6.0	14	1.8	5.9	16	2.5	6.1
40-44	24	1.7	7.7	14	1.8	7.8	10	1.6	7.7
45-49	28	2.0	9.8	16	2.1	9.9	12	1.9	9.6
50-54	44	3.2	12.9	28	3.7	13.6	16	2.5	12.1
55-59	65	4.7	17.6	38	5.0	18.6	27	4.3	16.4
60-64	72	5.2	22.7	44	5.8	24.4	28	4.4	20.8
65-69	153	11.0	33.7	83	10.9	35.3	70	11.0	31.8
70-74	198	14.2	47.9	111	14.6	49.9	87	13.7	45.5
75-79	228	16.4	64.3	145	19.1	69.0	83	13.1	58.6
80-84	230	16.5	80.8	118	15.5	84.6	112	17.6	76.2
85+	268	19.2	100.0	117	15.4	100.0	151	23.8	100.0
All ages	1394	100.0		759	100.0		635	100.0	

Table 5

Age-specific incidence, DCO rate and proportion of all cancers for period 2007–2019

Age at diagnosis Years	Males n	Females n	Males Age- spec. incid. %	Females Age- spec. incid. %	Males DCO rate n=261 %	Females DCO rate n=233 %	Males Prop.all cancers n=143063 %	Females Prop.all cancers n=144724 %
0- 4								
5- 9	1		0.1				0.9	
10-14	4	1	0.3	0.1			3.0	0.9
15-19	4	2	0.3	0.1	25.0		1.3	0.8
20-24	5	5	0.3	0.3			0.9	1.1
25-29	7	7	0.3	0.3			0.8	0.6
30-34	10	8	0.5	0.4	10.0		0.8	0.4
35-39	14	16	0.7	0.8		6.3	0.8	0.5
40-44	14	10	0.6	0.4	7.1		0.5	0.2
45-49	16	12	0.6	0.5	6.3		0.3	0.1
50-54	28	16	1.2	0.7	21.4	12.5	0.4	0.1
55-59	38	27	2.0	1.4	10.5	7.4	0.3	0.2
60-64	44	28	2.7	1.6	22.7	14.3	0.3	0.2
65-69	83	70	5.5	4.2	30.1	20.0	0.4	0.4
70-74	111	87	7.9	5.4	36.0	23.0	0.4	0.5
75-79	145	83	13.1	6.0	31.7	42.2	0.7	0.5
80-84	118	112	18.0	11.5	40.7	50.0	0.8	0.8
85+	117	151	27.4	15.6	66.7	65.6	1.2	1.0
All ages	759	635			34.4	36.7	0.5	0.4
Incidence								
Raw			2.5	2.0				
WS			1.2	0.8				
ES			1.8	1.1				
BRD-S			2.4	1.5				

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 C85: Other and unspecified types of non-Hodgkin lymphoma

Age distribution and age-specific incidence 2007 - 2019 (Males: 759, Females: 635)

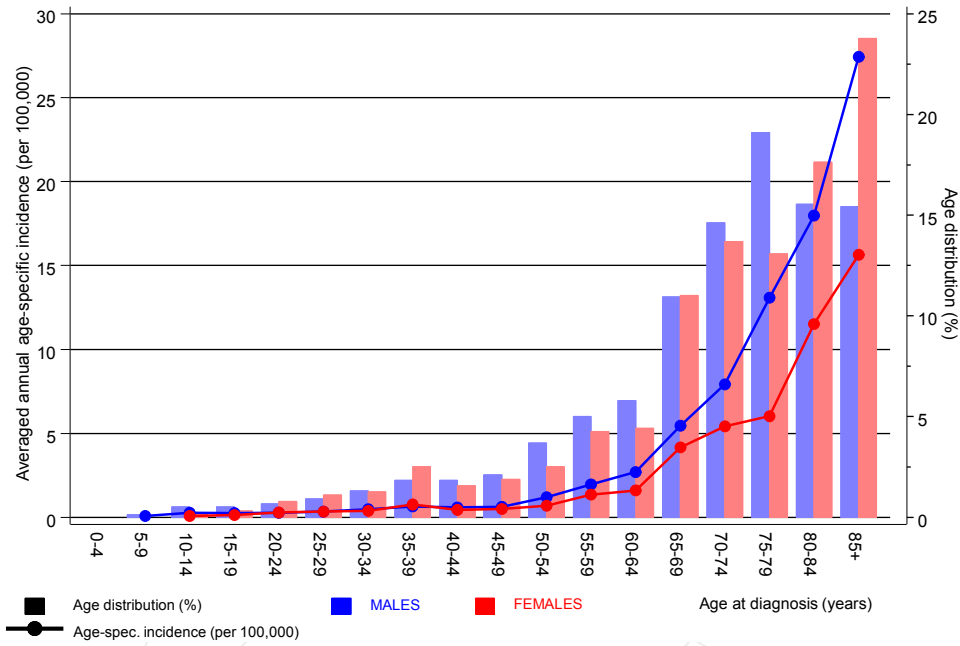


Figure 6. Age distribution (males: mean=71.2 yrs, median=75.1 yrs; females: mean=73.2 yrs, median=76.5 yrs) and age-specific incidence.

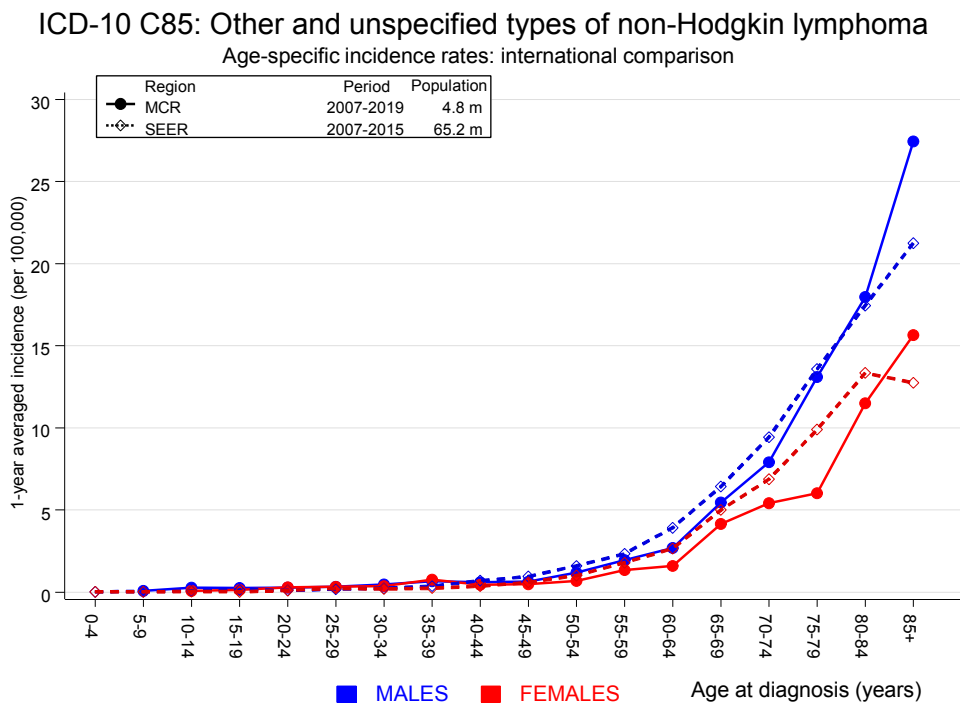


Figure 6a. Age-specific incidence in MCR registry areas compared to SEER (Surveillance, Epidemiology, and End Results, USA).

Reference:

Surveillance, Epidemiology, and End Results (SEER) Program SEER*Stat Database: Incidence - SEER 18 Regs Research Data, released April 2019, based on the November 2018 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 1998–2019

MALES

Diagnosis	Observed n	Expected n	SIR	CI 95%	CI 95%	EAR	DCO %
C03-C06 Oral cavity	1	0.4	2.6	0.1	14.6	2.0	
C07-C08 Salivary gland	1	0.1	9.1	0.2	50.6	2.9	
C09-C10 Oropharynx	2	0.5	4.4	0.5	16.0	5.1	
C15 Oesophagus	1	0.9	1.2	0.0	6.5	0.4	
C16 Stomach	5	2.0	2.5	0.8	5.8	9.8	20.0
C17 Small intestine	1	0.3	3.8	0.1	21.2	2.4	
C18 Colon	8	4.8	1.7	0.7	3.3	10.5	12.5
C19-C20 Rectum	7	2.5	2.8	1.1	5.8 #	14.8	
C21 Anus/canal	1	0.1	9.4	0.2	52.6	2.9	
C22 Liver	3	1.3	2.3	0.5	6.6	5.5	
C23-C24 Bile	1	0.5	2.0	0.1	11.2	1.7	
C25 Pancreas	6	1.8	3.3	1.2	7.1 #	13.7	
C32 Larynx	1	0.5	2.1	0.1	11.9	1.7	
C33-C34 Lung	22	5.6	3.9	2.5	6.0 #	53.9	13.6
C37 Thymus	1	0.0	39.9	1.0	222.4 #	3.2	
C38,C45 Mesothelioma	2	0.3	6.3	0.8	22.8	5.5	
C43 Malign. melanoma	9	2.0	4.5	2.1	8.5 #	23.0	
C46,C49 Soft tissue	2	0.3	7.2	0.9	26.2	5.7	
C50 Breast	1	0.1	8.0	0.2	44.5	2.9	
C60 Penis	1	0.1	8.4	0.2	46.9	2.9	
C61 Prostate	33	13.6	2.4	1.7	3.4 #	63.8	3.0
C64 Kidney	8	1.6	4.9	2.1	9.7 #	21.0	
C66 Ureter	2	0.1	16.4	2.0	59.2 #	6.2	
C67 Bladder	9	2.3	3.9	1.8	7.4 #	22.0	
C68 Urethra	2	0.0	51.0	6.2	184.4 #	6.4	
C69 Eye lymphoma	1	0.0	95.1	2.4	530.0 #	3.2	
C70-C72 CNS cancer	4	0.6	6.6	1.8	16.9 #	11.1	25.0
C76-C79 CUP	2	0.8	2.4	0.3	8.7	3.8	
C81 Hodgkin lymphoma	4	0.1	36.1	9.8	92.3 #	12.8	25.0
C82-C85 NHL	5	2.0	2.4	0.8	5.7	9.7	20.0
C90 Mult. myeloma	1	0.6	1.6	0.0	8.8	1.2	
C91-C96 Leukaemia	9	0.8	12.0	5.5	22.7 #	27.1	22.2
Not observed	0	1.5	0.0	0.0	2.4	-5.0	
All further malignancies	156	48.3	3.2	2.7	3.8 #	353.8	7.1
Patients		974					
Median age at next malignancy (years)		72.8					
Person-years		3046					
Mean observation time (years)		3.1					
Median observation time (years)		1.2					

The occurrence of further specified malignancy is statistically significant.

Table 7b

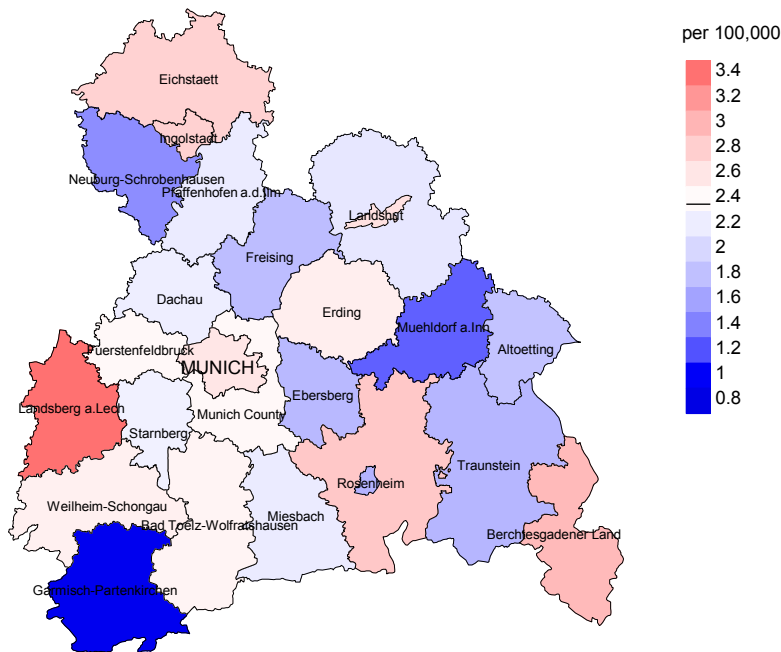
Standardized incidence ratio (SIR, with 95% confidence limits),
excess absolute risk (EAR) and DCO rate of further malignancies
for period 1998-2019

FEMALES

Diagnosis	Observed n	Expected n	SIR	CI 95%	CI 95%	EAR	DCO %
C03-C06 Oral cavity	1	0.2	5.2	0.1	28.7	2.7	
C09-C10 Oropharynx	1	0.1	7.6	0.2	42.3	2.9	
C15 Oesophagus	1	0.2	4.8	0.1	26.7	2.7	
C16 Stomach	2	1.3	1.6	0.2	5.7	2.5	50.0
C18 Colon	7	3.5	2.0	0.8	4.1	11.9	
C19-C20 Rectum	3	1.4	2.1	0.4	6.1	5.3	
C21 Anus/canal	1	0.2	5.6	0.1	31.2	2.8	
C22 Liver	1	0.4	2.4	0.1	13.2	2.0	
C23-C24 Bile	4	0.5	7.8	2.1	20.1 #	11.8	
C25 Pancreas	3	1.6	1.9	0.4	5.6	4.8	
C33-C34 Lung	6	2.5	2.4	0.9	5.3	11.9	
C43 Malign. melanoma	5	1.2	4.1	1.3	9.6 #	12.8	
C46,C49 Soft tissue	2	0.2	10.4	1.3	37.5 #	6.1	
C50 Breast	26	10.0	2.6	1.7	3.8 #	54.1	7.7
C53 Cervix uteri	2	0.4	4.7	0.6	16.9	5.3	50.0
C54 Corpus uteri	8	1.9	4.3	1.9	8.4 #	20.7	
C56 Ovary	2	1.4	1.5	0.2	5.3	2.1	
C69 Eye lymphoma	1	0.0	90.8	2.3	505.7 #	3.3	
C69 Eye melanoma	1	0.0	21.7	0.5	120.7	3.2	
C70-C72 CNS cancer	1	0.5	2.2	0.1	12.2	1.8	100.0
C73 Thyroid	6	0.5	11.5	4.2	25.0 #	18.5	16.7
C76-C79 CUP	1	0.6	1.6	0.0	8.7	1.2	
C82-C85 NHL	6	1.4	4.4	1.6	9.6 #	15.7	
C90 Mult. myeloma	2	0.4	4.6	0.6	16.7	5.3	
C91-C96 Leukaemia	5	0.5	10.0	3.3	23.4 #	15.2	40.0
Not observed	0	3.1	0.0	0.0	1.2	-10.6	
All further malignancies	98	34.0	2.9	2.3	3.5 #	215.7	8.2
Patients		812					
Median age at next malignancy (years)		74.1					
Person-years		2966					
Mean observation time (years)		3.7					
Median observation time (years)		1.6					

The occurrence of further specified malignancy is statistically significant.

Average incidence (Germany 1987 standard population) 2007 - 2019: Males



Average incidence (Germany 1987 standard population) 2007 - 2019: Females

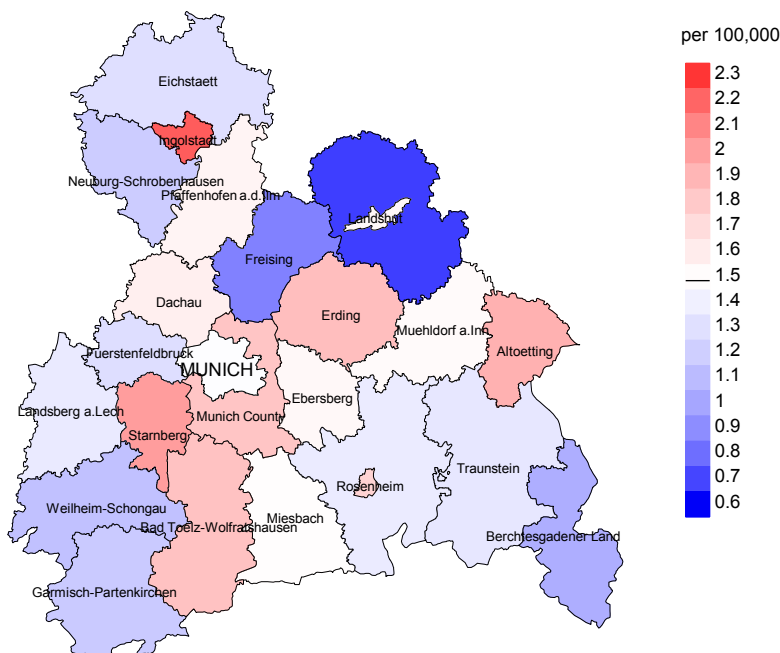
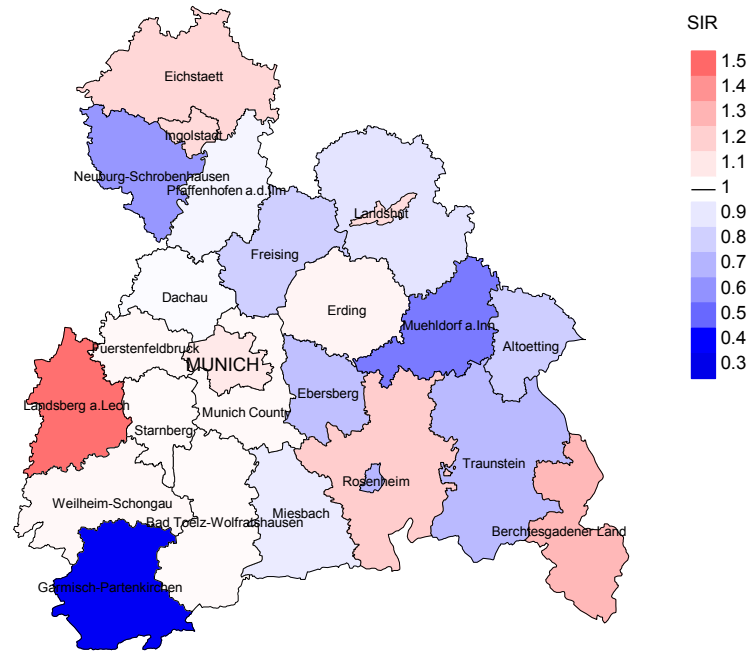


Figure 8a. Map of cancer incidence (german standard population, incl. DCO cases) by county averaged for period 2007 to 2019. According to their individual incidence rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 2.4/100,000 WS N=759, females 1.5/100,000 WS N=635).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 67,462 female residents (averaged) in the period from 2007 to 2019 a total of 17 women were identified with newly diagnosed non-Hodgkin lymphoma NOS. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 1.5/100,000 (german standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.7 and 2.8/100,000.

Standardized incidence ratio (SIR) 2007 - 2019: Males



Standardized incidence ratio (SIR) 2007 - 2019: Females

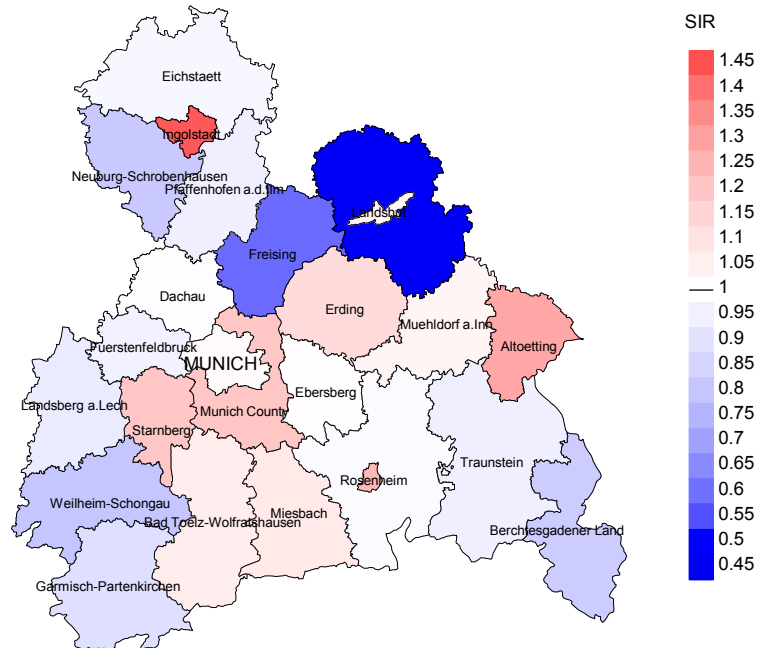


Figure 8b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2007 to 2019. According to their individual SIR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=759, females N=635).

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 2019 a total of 17 women were identified with newly diagnosed non-Hodgkin lymphoma NOS. Therefore, the mean standardized incidence ratio (SIR) for this cancer type in this area can be calculated at 1.00. Though, the value of this parameter may vary with an underlying probability of 99% between 0.49 and 1.82, 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 4.92 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	180	98.9	21.7	146	81.1	93.8
1999	165	98.2	32.7	136	82.4	97.1
2000	100	96.0	42.0	84	84.0	100.0
2001	96	97.9	45.8	84	87.5	96.4
2002	197	98.5	53.3	180	91.4	96.1
2003	142	99.3	47.2	127	89.4	97.6
2004	148	98.0	39.9	122	82.4	99.2
2005	124	100.0	47.6	108	87.1	98.1
2006	126	98.4	38.9	103	81.7	99.0
2007	154	94.2	42.2	119	77.3	99.2
2008	120	100.0	33.3	96	80.0	97.9
2009	126	99.2	34.1	92	73.0	95.7
2010	115	98.3	41.7	87	75.7	95.4
2011	132	98.5	40.9	108	81.8	96.3
2012	122	97.5	30.3	78	63.9	96.2
2013	104	100.0	36.5	72	69.2	95.8
2014	112	97.3	29.5	74	66.1	90.5
2015	128	96.1	32.0	79	61.7	93.7
2016	111	98.2	43.2	70	63.1	97.1
2017	81	98.8	40.7	46	56.8	97.8
2018	50	94.0	20.0	22	44.0	63.6
2019	39	69.2	10.3	17	43.6	64.7
1998-2019	2672	97.6	37.9	2050	76.7	96.1

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 4.92 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	180	123	97.6	59	32.8
1999	165	159	94.3	71	43.0
2000	100	104	97.1	47	47.0
2001	96	109	97.2	44	45.8
2002	197	174	96.6	110	55.8
2003	142	154	97.4	79	55.6
2004	148	131	98.5	69	46.6
2005	124	135	97.0	67	54.0
2006	126	134	100.0	58	46.0
2007	154	122	95.1	78	50.6
2008	120	102	100.0	60	50.0
2009	126	112	98.2	60	47.6
2010	115	98	99.0	58	50.4
2011	132	102	98.0	67	50.8
2012	122	121	97.5	51	41.8
2013	104	88	97.7	43	41.3
2014	112	100	97.0	45	40.2
2015	128	93	97.8	53	41.4
2016	111	84	98.8	56	50.5
2017	81	92	100.0	42	51.9
2018	50	57	47.4	17	34.0
2019	39	41	63.4	15	38.5
1998–2019	2672	2435	95.9	1249	46.7

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 4.92 m as of 2007, respectively)

Year of death	Deaths n	Prop. cancer- related %	Prop. non-cancer- related %	Prop. cancer recorded on death certificate %
1998	123	61.8	38.2	90.8
1999	159	69.8	30.2	93.3
2000	104	81.7	18.3	95.0
2001	109	78.0	22.0	91.5
2002	174	77.0	23.0	90.5
2003	154	76.6	23.4	92.7
2004	131	86.3	13.7	92.2
2005	135	72.6	27.4	91.6
2006	134	75.4	24.6	88.1
2007	122	75.4	24.6	88.8
2008	102	79.4	20.6	87.3
2009	112	72.3	27.7	76.4
2010	98	76.5	23.5	81.4
2011	102	70.6	29.4	87.0
2012	121	73.6	26.4	82.2
2013	88	70.5	29.5	82.6
2014	100	66.0	34.0	85.6
2015	93	67.7	32.3	82.4
2016	84	70.2	29.8	81.9
2017	92	64.1	35.9	85.9
2018	57	38.6	61.4	74.1
2019	41	39.0	61.0	73.1
1998–2019	2435	72.2	27.8	87.6

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	62	74.6	72.7	80.2	74.0
1999	96	73.4	67.4	77.9	72.8
2000	56	71.1	66.7	76.6	69.9
2001	49	70.4	69.5	81.2	69.9
2002	85	72.2	69.2	77.8	70.0
2003	75	72.2	68.0	73.6	71.4
2004	68	75.2	74.8	75.5	75.2
2005	66	77.8	78.2	76.7	78.2
2006	71	75.5	75.0	79.2	75.0
2007	58	73.1	72.3	77.6	72.3
2008	56	75.1	73.9	82.8	73.8
2009	60	76.0	75.4	79.8	75.4
2010	58	77.8	77.2	80.7	75.6
2011	49	77.6	77.2	79.5	76.6
2012	63	77.9	78.1	77.7	78.0
2013	42	79.1	78.3	79.3	78.9
2014	54	78.0	75.1	82.5	78.0
2015	43	82.1	81.3	85.7	81.8
2016	47	80.4	79.1	84.4	79.9
2017	50	82.5	81.1	87.6	81.2
2018	35	80.8	82.8	78.2	83.2
2019	20	82.6	70.2	86.0	70.2
1998-2019	1263	76.4	75.0	79.8	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	61	82.5	81.2	84.6	82.6
1999	63	79.1	76.3	83.7	79.2
2000	48	76.6	75.9	83.9	75.9
2001	60	80.0	79.2	84.1	79.7
2002	89	78.9	77.7	82.8	78.9
2003	79	77.7	73.8	85.2	75.8
2004	63	80.3	79.9	83.2	80.3
2005	69	80.4	75.3	84.5	80.0
2006	63	79.1	78.6	81.3	78.0
2007	64	80.8	79.7	83.7	80.2
2008	46	81.5	81.2	84.8	81.3
2009	52	84.4	83.0	86.8	83.1
2010	40	81.2	80.7	83.7	81.2
2011	53	80.4	79.4	84.4	79.9
2012	58	79.1	77.3	85.2	77.7
2013	46	80.6	79.5	81.4	79.0
2014	46	77.7	75.7	83.2	76.7
2015	50	81.7	81.4	81.9	81.2
2016	37	81.3	83.2	80.7	81.3
2017	42	81.0	81.0	81.0	81.0
2018	22	81.8	82.6	81.1	81.2
2019	21	81.4	80.6	81.5	75.8
1998-2019	1172	80.3	78.9	83.9	79.9

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	37	3.3	0.39	2.0	0.36	3.1	0.38	4.5	0.41
1999	70	6.3	0.80	3.8	0.79	5.6	0.80	7.2	0.75
2000	44	3.9	0.83	2.1	0.79	3.3	0.82	4.5	0.84
2001	38	3.3	0.69	2.0	0.66	2.9	0.69	3.7	0.69
2002	69	3.7	0.70	2.1	0.69	3.2	0.72	4.2	0.71
2003	62	3.3	0.91	1.9	0.95	2.7	0.89	3.6	0.88
2004	57	3.0	0.76	1.6	0.73	2.5	0.76	3.5	0.79
2005	53	2.8	1.00	1.3	0.86	2.2	0.96	3.3	1.03
2006	55	2.9	0.72	1.4	0.68	2.3	0.73	3.1	0.72
2007	43	1.9	0.47	1.0	0.48	1.5	0.48	2.0	0.47
2008	45	2.0	0.65	0.9	0.60	1.5	0.63	2.1	0.65
2009	39	1.7	0.53	0.8	0.47	1.2	0.51	1.8	0.58
2010	47	2.1	0.82	0.9	0.76	1.4	0.77	2.0	0.81
2011	36	1.6	0.61	0.7	0.58	1.1	0.60	1.6	0.61
2012	42	1.9	0.69	0.8	0.69	1.3	0.70	1.8	0.70
2013	28	1.2	0.44	0.5	0.33	0.8	0.40	1.1	0.42
2014	39	1.7	0.71	0.7	0.73	1.1	0.71	1.5	0.70
2015	27	1.1	0.34	0.4	0.22	0.7	0.28	1.0	0.33
2016	32	1.3	0.48	0.5	0.43	0.8	0.47	1.2	0.47
2017	32	1.3	0.80	0.4	0.64	0.7	0.72	1.1	0.79
2018	15	0.6	0.56	0.1	0.31	0.3	0.39	0.5	0.52
2019	9	0.4	0.53	0.2	0.60	0.3	0.58	0.3	0.54
1998-2019	919	2.1	0.65	1.0	0.60	1.5	0.63	2.1	0.65

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	39	3.3	0.46	1.3	0.36	2.0	0.40	2.7	0.44
1999	41	3.5	0.53	1.4	0.45	2.1	0.49	3.0	0.54
2000	41	3.4	0.87	1.4	0.87	2.1	0.88	2.7	0.81
2001	47	3.9	1.15	1.4	1.20	2.2	1.20	3.1	1.19
2002	65	3.3	0.66	1.2	0.63	1.9	0.64	2.6	0.67
2003	56	2.8	0.76	1.3	0.87	1.9	0.84	2.4	0.79
2004	56	2.8	0.77	0.9	0.60	1.5	0.68	2.2	0.75
2005	45	2.3	0.63	0.8	0.60	1.3	0.63	1.7	0.62
2006	46	2.3	0.92	0.8	0.70	1.2	0.79	1.7	0.86
2007	49	2.1	0.78	0.8	0.62	1.2	0.69	1.6	0.73
2008	36	1.6	0.71	0.4	0.57	0.7	0.60	1.1	0.70
2009	42	1.8	0.79	0.5	0.59	0.8	0.65	1.2	0.70
2010	28	1.2	0.48	0.3	0.32	0.5	0.38	0.8	0.44
2011	36	1.5	0.49	0.5	0.44	0.8	0.47	1.0	0.48
2012	47	2.0	0.77	0.6	0.58	1.0	0.63	1.4	0.69
2013	34	1.4	0.85	0.5	0.80	0.7	0.83	1.0	0.88
2014	27	1.1	0.47	0.3	0.38	0.6	0.42	0.7	0.44
2015	36	1.5	0.73	0.4	0.49	0.6	0.57	1.0	0.65
2016	27	1.1	0.61	0.3	0.54	0.5	0.58	0.7	0.56
2017	27	1.1	0.66	0.3	0.52	0.5	0.58	0.7	0.60
2018	7	0.3	0.30	0.1	0.17	0.1	0.21	0.2	0.25
2019	7	0.3	0.32	0.1	0.18	0.1	0.22	0.2	0.29
1998-2019	839	1.8	0.67	0.6	0.57	1.0	0.61	1.3	0.64

Table 12

Age distribution of age at death (cancer-related) for period 2007-2019
 (incl. multiple malignancies)

Age at death Years	Cases			Males			Females		
	n	%	Cum.%	n	%	Cum.%	n	%	Cum.%
0-4									
5-9									
10-14	1	0.1	0.1	1	0.2	0.2			0.0
15-19	2	0.2	0.4	2	0.5	0.7			0.0
20-24	1	0.1	0.5	1	0.2	0.9			0.0
25-29	3	0.4	0.8	1	0.2	1.2	2	0.5	0.5
30-34	3	0.4	1.2	1	0.2	1.4	2	0.5	1.0
35-39	3	0.4	1.6	2	0.5	1.8	1	0.2	1.2
40-44	4	0.5	2.0	3	0.7	2.5	1	0.2	1.5
45-49	11	1.3	3.3	7	1.6	4.1	4	1.0	2.5
50-54	19	2.3	5.6	13	3.0	7.1	6	1.5	4.0
55-59	22	2.6	8.2	12	2.8	9.9	10	2.5	6.5
60-64	38	4.5	12.8	22	5.1	15.0	16	4.0	10.4
65-69	81	9.7	22.5	46	10.6	25.6	35	8.7	19.1
70-74	121	14.5	36.9	64	14.7	40.3	57	14.1	33.3
75-79	158	18.9	55.8	96	22.1	62.4	62	15.4	48.6
80-84	158	18.9	74.7	73	16.8	79.3	85	21.1	69.7
85+	212	25.3	100.0	90	20.7	100.0	122	30.3	100.0
All ages	837	100.0		434	100.0		403	100.0	

Table 13

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007-2019
(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								
10-14	1		0.1	0.25			3.7	
15-19	2		0.1	0.50			4.3	
20-24	1		0.1	0.20			1.5	
25-29	1	2	0.0	0.14	0.1	0.29	1.2	2.2
30-34	1	2	0.0	0.10	0.1	0.25	0.8	1.3
35-39	2	1	0.1	0.14	0.0	0.06	0.8	0.3
40-44	3	1	0.1	0.21	0.0	0.10	0.5	0.1
45-49	7	4	0.3	0.44	0.2	0.33	0.5	0.3
50-54	13	6	0.6	0.46	0.3	0.38	0.5	0.2
55-59	12	10	0.6	0.32	0.5	0.37	0.3	0.3
60-64	22	16	1.3	0.50	0.9	0.57	0.4	0.3
65-69	46	35	3.0	0.55	2.1	0.50	0.5	0.5
70-74	64	57	4.6	0.58	3.5	0.66	0.6	0.7
75-79	96	62	8.7	0.66	4.5	0.75	0.8	0.7
80-84	73	85	11.1	0.62	8.7	0.76	0.8	1.0
85+	90	122	21.1	0.77	12.6	0.81	1.1	1.1
All ages	434	403					0.7	0.7
Mortality								
Raw			1.4	0.57	1.3	0.63		
WS			0.6	0.51	0.4	0.50		
ES			1.0	0.54	0.6	0.55		
BRD-S			1.3	0.57	0.9	0.59		
PYLL-70								
per 100,000			4.7		2.9			
ES			4.3		2.4			
AYLL-70			11.3		9.7			

Table 14a

Further malignancies in deaths in period 1998-2019
MALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn- chron ±30d n	Syn- chron ±30d ←%	Post n	Post ←%
C00 Lip	1	0.3	1	100.0				
C03-C06 Oral cavity	2	0.5	2	100.0				
C07-C08 Salivary gland	1	0.3					1	100.0
C09-C10 Oropharynx	3	0.8	2	66.7			1	33.3
C15 Oesophagus	6	1.6	1	16.7	1	16.7	4	66.7
C16 Stomach	16	4.2	3	18.8	3	18.8	10	62.5
C17 Small intestine	2	0.5					2	100.0
C18 Colon	20	5.3	9	45.0	4	20.0	7	35.0
C19-C20 Rectum	18	4.8	9	50.0			9	50.0
C21 Anus/canal	1	0.3	1	100.0				
C22 Liver	7	1.9			1	14.3	6	85.7
C23-C24 Bile	1	0.3					1	100.0
C25 Pancreas	10	2.6			1	10.0	9	90.0
C30-C31 Sinuses	2	0.5	2	100.0				
C32 Larynx	6	1.6	3	50.0	1	16.7	2	33.3
C33-C34 Lung	46	12.2	4	8.7	5	10.9	37	80.4
C38,C45 Mesothelioma	5	1.3	1	20.0	2	40.0	2	40.0
C40-C41 Bone	1	0.3	1	100.0				
C43 Malign. melanoma	20	5.3	6	30.0	2	10.0	12	60.0
C44 Skin others	45	11.9	14	31.1	4	8.9	27	60.0
C46,C49 Soft tissue	5	1.3	4	80.0	1	20.0		
C48 Peritoneal	1	0.3					1	100.0
C50 Breast	1	0.3					1	100.0
C60 Penis	1	0.3	1	100.0				
C61 Prostate	67	17.7	40	59.7	9	13.4	18	26.9
C64 Kidney	8	2.1	4	50.0	1	12.5	3	37.5
C66 Ureter	3	0.8	1	33.3			2	66.7
C67 Bladder	15	4.0	7	46.7	2	13.3	6	40.0
C68 Urethra	1	0.3			1	100.0		
C70-C72 CNS cancer	5	1.3			1	20.0	4	80.0
C73 Thyroid	2	0.5	1	50.0			1	50.0
C76-C79 CUP	10	2.6	3	30.0	1	10.0	6	60.0
C81 Hodgkin lymphoma	9	2.4	2	22.2	1	11.1	6	66.7
C82-C85 NHL	21	5.6	3	14.3			18	85.7
C90 Mult. myeloma	2	0.5	1	50.0			1	50.0
C91-C96 Leukaemia	14	3.7	2	14.3	7	50.0	5	35.7
All further malignancies	378	100.0	128	33.9	48	12.7	202	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 14b

Further malignancies in deaths in period 1998-2019
FEMALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn- chron ±30d n	Syn- chron ±30d ←%	Post n	Post ←%
C00 Lip	1	0.4					1	100.0
C03-C06 Oral cavity	3	1.1	1	33.3	1	33.3	1	33.3
C07-C08 Salivary gland	1	0.4	1	100.0				
C15 Oesophagus	2	0.7					2	100.0
C16 Stomach	14	5.0	3	21.4	2	14.3	9	64.3
C18 Colon	26	9.2	9	34.6	4	15.4	13	50.0
C19-C20 Rectum	5	1.8	2	40.0	1	20.0	2	40.0
C21 Anus/canal	4	1.4	1	25.0			3	75.0
C22 Liver	3	1.1			2	66.7	1	33.3
C23-C24 Bile	6	2.1			1	16.7	5	83.3
C25 Pancreas	5	1.8					5	100.0
C26 GI cancer	1	0.4					1	100.0
C30-C31 Sinuses	2	0.7	1	50.0			1	50.0
C32 Larynx	1	0.4					1	100.0
C33-C34 Lung	15	5.3	2	13.3	1	6.7	12	80.0
C43 Malign. melanoma	7	2.5	1	14.3	1	14.3	5	71.4
C44 Skin others	18	6.4	8	44.4			10	55.6
C46,C49 Soft tissue	4	1.4			2	50.0	2	50.0
C48 Peritoneal	1	0.4			1	100.0		
C50 Breast	75	26.6	37	49.3	6	8.0	32	42.7
C51 Vulva	2	0.7	1	50.0			1	50.0
C53 Cervix uteri	5	1.8	3	60.0			2	40.0
C54 Corpus uteri	7	2.5	4	57.1			3	42.9
C55,C57 Fem. genitals un	1	0.4	1	100.0				
C56 Ovary	7	2.5			1	14.3	6	85.7
C64 Kidney	4	1.4					4	100.0
C65 Renal pelvis	1	0.4	1	100.0				
C66 Ureter	1	0.4					1	100.0
C67 Bladder	4	1.4	2	50.0			2	50.0
C70-C72 CNS cancer	7	2.5	2	28.6	1	14.3	4	57.1
C73 Thyroid	2	0.7	1	50.0			1	50.0
C76-C79 CUP	6	2.1					6	100.0
C81 Hodgkin lymphoma	6	2.1	4	66.7	1	16.7	1	16.7
C82-C85 NHL	16	5.7					16	100.0
C90 Mult. myeloma	7	2.5	3	42.9	1	14.3	3	42.9
C91-C96 Leukaemia	12	4.3			2	16.7	10	83.3
All further malignancies	282	100.0	88	31.2	28	9.9	166	58.9

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 2007-2019
(**First 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								
10-14	1		0.1	0.25			3.7	
15-19	2		0.1	0.50			4.4	
20-24								
25-29	1	1	0.0	0.14	0.0	0.20	1.3	1.2
30-34	1	1	0.0	0.10	0.0	0.13	0.8	0.7
35-39	2	1	0.1	0.15	0.0	0.06	0.9	0.3
40-44	2	1	0.1	0.14	0.0	0.13	0.4	0.1
45-49	7	3	0.3	0.47	0.1	0.33	0.6	0.2
50-54	11	4	0.5	0.44	0.2	0.29	0.5	0.2
55-59	10	9	0.5	0.29	0.5	0.36	0.3	0.3
60-64	20	14	1.2	0.56	0.8	0.67	0.4	0.4
65-69	37	26	2.4	0.54	1.5	0.43	0.5	0.5
70-74	50	47	3.6	0.63	2.9	0.75	0.6	0.7
75-79	82	53	7.4	0.80	3.8	0.84	1.0	0.8
80-84	54	68	8.2	0.62	7.0	0.76	0.8	1.0
85+	64	103	15.0	0.78	10.7	0.82	1.1	1.2
All ages	344	331					0.7	0.7
Mortality								
Raw			1.1	0.59	1.1	0.64		
WS			0.5	0.50	0.3	0.48		
ES			0.8	0.55	0.5	0.54		
BRD-S			1.1	0.58	0.7	0.59		
PYLL-70								
per 100,000			4.1		2.1			
ES			3.7		1.8			
AYLL-70			11.5		9.3			

* See corresponding tables with multiple malignancies.

Table 16

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007-2019
(**Single 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								
10-14	1		0.1	0.25			3.7	
15-19	2		0.1	0.50			4.4	
20-24								
25-29	1	1	0.0	0.14	0.0	0.20	1.3	1.2
30-34	1	1	0.0	0.11	0.0	0.13	0.8	0.7
35-39	2	1	0.1	0.15	0.0	0.06	0.9	0.3
40-44	2	1	0.1	0.15	0.0	0.13	0.4	0.1
45-49	5	3	0.2	0.36	0.1	0.33	0.4	0.2
50-54	10	2	0.4	0.42	0.1	0.14	0.5	0.1
55-59	7	6	0.4	0.23	0.3	0.32	0.2	0.2
60-64	16	6	1.0	0.53	0.3	0.33	0.3	0.2
65-69	28	18	1.8	0.52	1.1	0.37	0.4	0.4
70-74	31	34	2.2	0.42	2.1	0.59	0.4	0.6
75-79	60	37	5.4	0.64	2.7	0.63	0.8	0.6
80-84	43	56	6.5	0.54	5.8	0.64	0.7	0.9
85+	52	88	12.2	0.67	9.1	0.73	1.0	1.1
All ages	261	254					0.5	0.6
Mortality								
Raw			0.9	0.49	0.8	0.53		
WS			0.4	0.43	0.2	0.38		
ES			0.6	0.46	0.4	0.43		
BRD-S			0.8	0.49	0.5	0.48		
PYLL-70								
per 100,000			3.5		1.6			
ES			3.3		1.3			
AYLL-70			12.4		10.4			

* See corresponding tables with multiple malignancies.

ICD-10 C85: Other and unspecified types of non-Hodgkin lymphoma

Age distribution and age-specific mortality 2007 - 2019 (Males: 434, Females: 403)

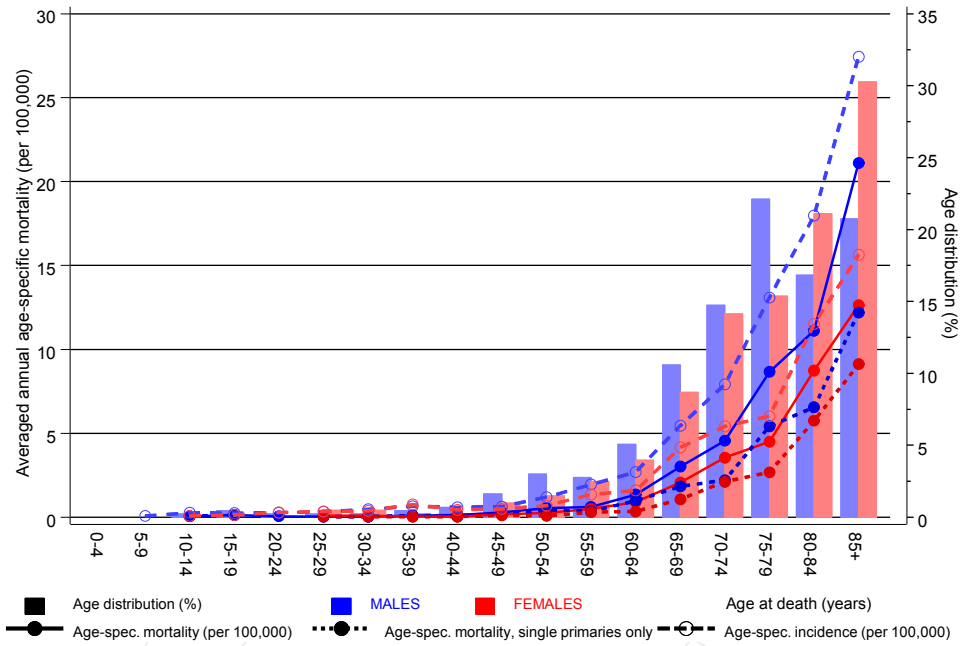
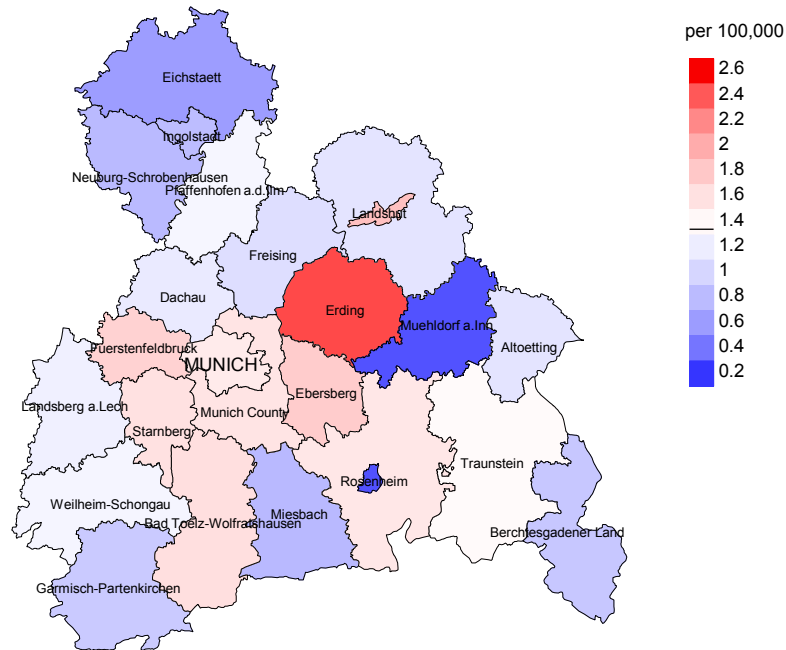


Figure 17. Distribution of age at death (bars; males: mean=69.2 yrs, median=72.2 yrs; females: mean=71.7 yrs, median=74.1 yrs) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

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

Average mortality (Germany 1987 standard population) 2007 - 2019: Males



Average mortality (Germany 1987 standard population) 2007 - 2019: Females

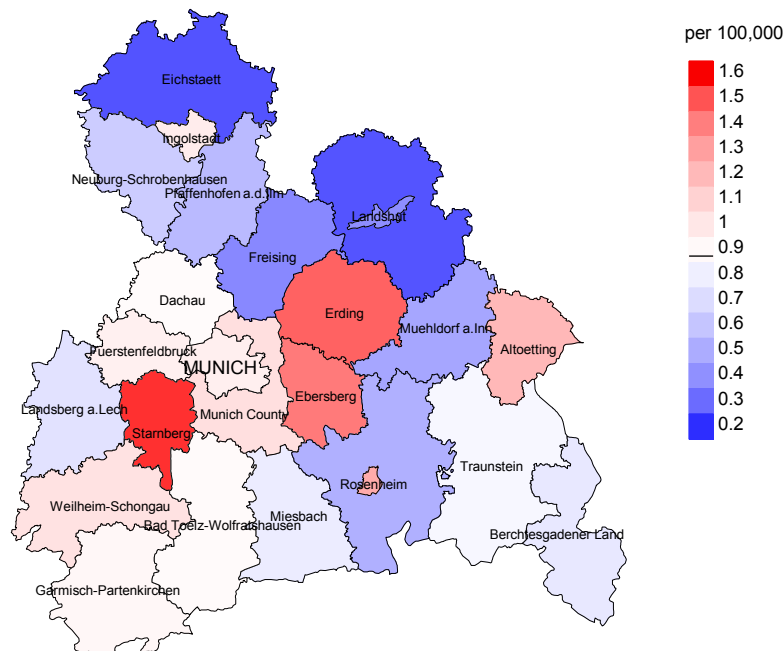
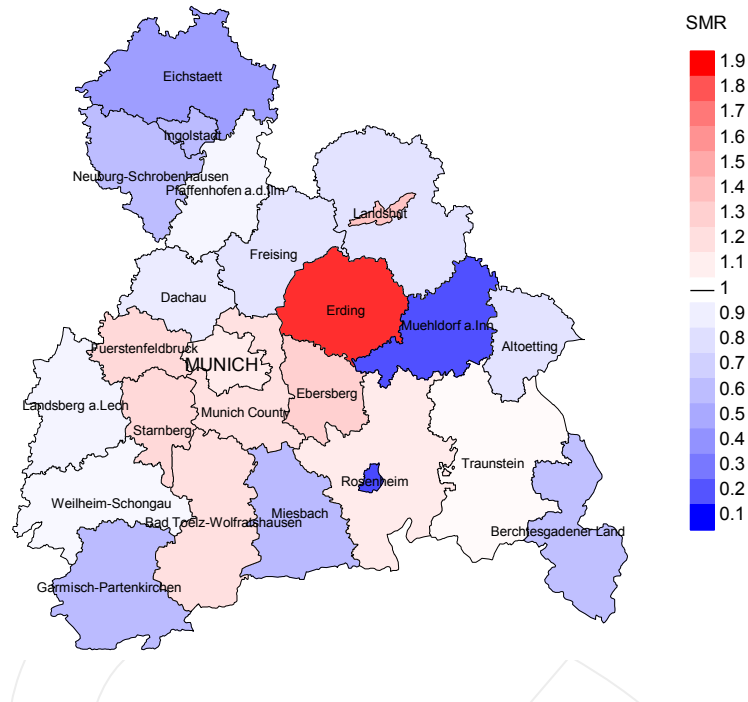


Figure 18a. Map of cancer mortality (german standard population) by county averaged for period 2007 to 2019. According to their individual mortality rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 1.3/100,000 WS N=434, females 0.9/100,000 WS N=403).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 67,462 female residents (averaged) in the period from 2007 to 2019 a total of 17 women died from non-Hodgkin lymphoma NOS. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 1.4/100,000 (german standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.7 and 2.7/100,000.

Standardized mortality ratio (SMR) 2007 - 2019: Males



Standardized mortality ratio (SMR) 2007 - 2019: Females

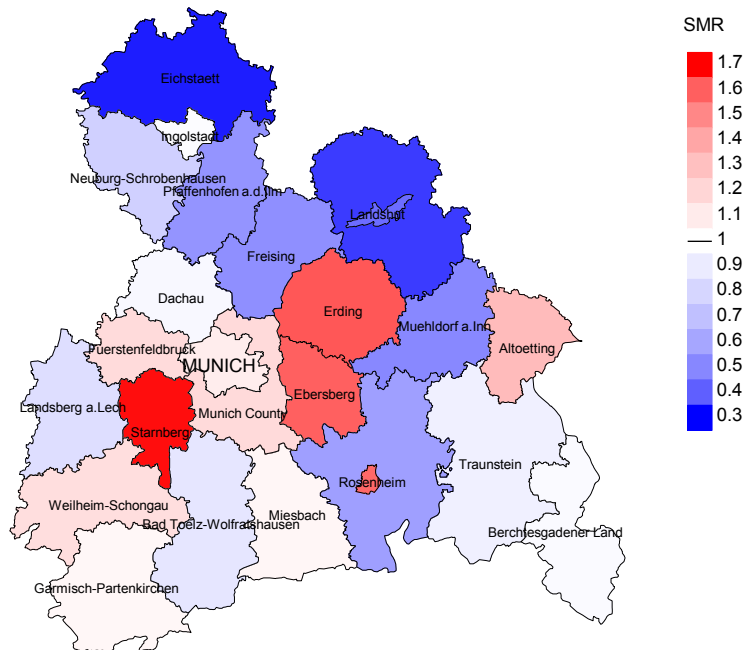


Figure 18b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2007 to 2019. According to their individual SMR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=434, females N=403).

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 2019 a total of 17 women died from non-Hodgkin lymphoma NOS. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 1.60. Though, the value of this parameter may vary with an underlying probability of 99% between 0.78 and 2.89, 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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