

Munich Cancer Registry



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

ICD-10 C82-C85: NHL

Incidence and Mortality

Year of diagnosis	1998-2016
Patients	9,952
Diseases	10,039
Creation date	08/21/2018
Export date	08/09/2018
Population	4.81 m



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

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

<https://www.tumorregister-muenchen.de/en/facts/base/bC8285E-ICD-10-C82-C85-NHL-incidence-and-mortality.pdf>

Index of figures and tables

Fig./Tbl.		Page
1	Annual cases, DCO, mult. malignancies, follow-up / yr	5
2	Incidence by year of diagnosis	8
3	Age distribution parameters by year of diagnosis	9
4	Age distribution by 5-year age group and sex	10
5	Age-specific incidence, DCO rate, proportion malignancies	11
6	Age distribution and age-specific incidence (chart)	12
6a	Age-specific incidence internationally (chart)	13
7	Standardized incidence ratio of further malignancies	14
8a	Map of cancer incidence (WS) by county (chart)	16
8b	Standardized incidence ratio (SIR) by county (chart)	17
9a	Pts incident cohorts and mortality / yr	18
9b	Incidence and mortality by year of diagnosis	19
9c	Cancer-related deaths, death certification available / yr	20
10	Medians of age at death / yr	21
11	Mortality by year of death	23
12	Distribution of age at death	24
13	Age-specific mortality	25
14	Further malignancies in deaths	26
15	Age-specific mortality (first primaries)	28
16	Age-specific mortality (single primaries)	29
17	Age distribution and age-specific mortality (chart)	30
18a	Map of cancer mortality (WS) by county (chart)	31
18b	Standardized mortality ratio (SMR) by county (chart)	32

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, August 2018

- [#] 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 2015) used for specifying cancer site

Code	Description
C82.-	Follicular lymphoma
C82.0	Follicular lymphoma grade I
C82.1	Follicular lymphoma grade II
C82.2	Follicular lymphoma grade III, unspecified
C82.3	Follicular lymphoma grade IIIa
C82.4	Follicular lymphoma grade IIIb
C82.5	Diffuse follicle centre lymphoma
C82.6	Cutaneous follicle centre lymphoma
C82.7	Other types of follicular lymphoma
C82.9	Follicular lymphoma, unspecified
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
C84.-	Mature T/NK-cell lymphomas
C84.0	Mycosis fungoides
C84.1	Sézary disease
C84.4	Peripheral T-cell lymphoma, not elsewhere classified
C84.5	Other mature T/NK-cell lymphomas
C84.6	Anaplastic large cell lymphoma, ALK-positive
C84.7	Anaplastic large cell lymphoma, ALK-negative
C84.8	Cutaneous T-cell lymphoma, unspecified
C84.9	Mature T/NK-cell lymphoma, unspecified
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

... **if not existing** ...

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

Code	Description
9823/3	B-cell lymphocytic leukemia/small lymphocytic lymphoma

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	323	39	12.1	9.0	11.4	77.1	98.1
1999	327	54	16.5	8.3	11.3	74.6	97.9
2000	287	41	14.3	8.5	11.2	71.8	95.1
2001	326	44	13.5	9.5	11.1	67.8	94.8
2002	527	101	19.2	10.6	10.9	70.6	97.3 #
2003	540	68	12.6	11.5	10.8	64.3	95.6
2004	579	61	10.5	11.8	10.6	60.8	93.4
2005	528	58	11.0	11.9	10.1	58.1	89.0
2006	574	47	8.2	12.1	9.7	58.7	91.6
2007	663	67	10.1	12.6	9.4	60.3	80.4 #
2008	632	47	7.4	13.1	8.8	55.5	71.7
2009	694	44	6.3	13.8	8.2	49.7	68.3
2010	660	51	7.7	14.2	7.9	51.2	74.2
2011	679	62	9.1	14.7	7.4	50.2	70.7
2012	632	40	6.3	15.2	6.8	46.0	68.5
2013	687	41	6.0	16.0	6.2	44.7	71.0
2014	612	38	6.2	16.5	5.7	41.0	71.6
2015	449	44	9.8	16.9	5.4	43.0	97.6
2016	320	46	14.4	17.1	3.5	36.9	76.9 ##
1998-2016	10039	993	9.9	17.1	11.4	55.5	82.3

10,039 cases diagnosed 1998-2016 are related to a total of 9,952 patients. Currently, in 2,675 (26.9 %) of these 9,952 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 2,016 / 493 / 166 (20.3 % / 5.0 % / 1.7 %) 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 2014, a subgroup of 612 cases has been diagnosed, of which 16.5 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 5.7 % 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	168	52.0	19	11.3	8.3	11.8	78.6	98.8
1999	165	50.5	25	15.2	7.8	11.7	78.8	98.8
2000	149	51.9	22	14.8	8.7	11.7	73.2	94.0
2001	163	50.0	19	11.7	9.3	11.5	68.1	93.9
2002	276	52.4	49	17.8	11.1	11.3	71.7	97.8 #
2003	262	48.5	36	13.7	12.1	11.1	64.9	95.0
2004	304	52.5	29	9.5	12.4	10.9	59.5	93.4
2005	268	50.8	24	9.0	12.6	10.3	57.5	90.3
2006	324	56.4	25	7.7	12.8	10.0	60.8	92.6
2007	353	53.2	36	10.2	13.1	9.6	61.5	81.6 #
2008	352	55.7	27	7.7	13.9	8.9	58.0	74.4
2009	377	54.3	25	6.6	14.6	8.2	48.5	68.7
2010	353	53.5	28	7.9	15.2	7.9	54.4	74.5
2011	375	55.2	26	6.9	15.6	7.2	50.7	71.5
2012	328	51.9	22	6.7	16.1	6.5	47.9	69.2
2013	378	55.0	26	6.9	17.0	6.2	48.4	74.1
2014	350	57.2	18	5.1	17.3	6.5	42.9	72.6
2015	248	55.2	22	8.9	17.9	5.1	43.5	97.6
2016	189	59.1	27	14.3	18.2	2.1	38.6	75.7 ##
1998-2016	5382	53.6	505	9.4	18.2	11.8	56.5	82.7

5,382 cases diagnosed 1998-2016 are related to a total of 5,336 patients. Currently, in 1,527 (28.6 %) of these 5,336 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 1,153 / 282 / 92 (21.6 % / 5.3 % / 1.7 %) 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 2014, a subgroup of 350 cases has been diagnosed, of which 17.3 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 6.5 % 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 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	155	48.0	20	12.9	9.7	11.0	75.5	97.4
1999	162	49.5	29	17.9	8.8	10.9	70.4	96.9
2000	138	48.1	19	13.8	8.4	10.7	70.3	96.4
2001	163	50.0	25	15.3	9.7	10.6	67.5	95.7
2002	251	47.6	52	20.7	10.1	10.4	69.3	96.8 #
2003	278	51.5	32	11.5	10.9	10.4	63.7	96.0
2004	275	47.5	32	11.6	11.1	10.3	62.2	93.5
2005	260	49.2	34	13.1	11.1	9.8	58.8	87.7
2006	250	43.6	22	8.8	11.4	9.4	56.0	90.4
2007	310	46.8	31	10.0	12.1	9.1	59.0	79.0 #
2008	280	44.3	20	7.1	12.3	8.6	52.5	68.2
2009	317	45.7	19	6.0	12.9	8.3	51.1	67.8
2010	307	46.5	23	7.5	13.2	8.0	47.6	73.9
2011	304	44.8	36	11.8	13.7	7.5	49.7	69.7
2012	304	48.1	18	5.9	14.3	7.1	44.1	67.8
2013	309	45.0	15	4.9	14.9	6.3	40.1	67.3
2014	262	42.8	20	7.6	15.5	4.6	38.5	70.2
2015	201	44.8	22	10.9	15.8	5.8	42.3	97.5
2016	131	40.9	19	14.5	15.8	5.4	34.4	78.6 ##
1998-2016	4657	46.4	488	10.5	15.8	11.0	54.3	81.7

4,657 cases diagnosed 1998-2016 are related to a total of 4,616 patients. Currently, in 1,148 (24.9 %) of these 4,616 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 863 / 211 / 74 (18.7 % / 4.6 % / 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 2014, a subgroup of 262 cases has been diagnosed, of which 15.5 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 4.6 % 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 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 4.81 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	168	155	15.2	13.2	10.0	6.7	14.0	9.3	17.9	11.5
1999	165	162	14.7	13.7	9.7	6.9	13.3	9.6	16.6	11.9
2000	149	138	13.1	11.5	8.3	5.7	11.7	8.2	14.9	10.3
2001	163	163	14.1	13.4	8.9	6.6	12.6	9.3	15.8	11.4
2002	276	251	14.8	12.8	8.9	5.8	12.6	8.4	15.8	10.7
2003	262	278	14.0	14.1	8.6	7.3	12.0	10.1	15.0	12.1
2004	304	275	16.2	13.9	9.9	6.6	13.8	9.2	16.5	11.6
2005	268	260	14.1	13.1	8.5	6.3	11.8	8.8	14.7	10.8
2006	324	250	16.9	12.4	9.6	6.0	13.6	8.5	17.2	10.4
2007	353	310	15.9	13.4	8.9	6.4	12.8	9.0	16.2	11.2
2008	352	280	15.8	12.1	8.8	5.4	12.2	7.7	15.5	9.7
2009	377	317	16.9	13.6	9.5	6.2	13.1	8.7	16.2	10.9
2010	353	307	15.7	13.1	8.4	6.2	11.9	8.6	15.1	10.6
2011	375	304	16.8	13.0	8.9	5.8	12.5	8.1	15.8	10.0
2012	328	304	14.5	12.9	6.9	5.9	10.2	8.3	13.5	10.2
2013	378	309	16.4	13.0	8.7	5.9	12.0	8.3	15.4	10.3
2014	350	262	15.0	10.9	7.7	4.7	11.0	6.7	13.7	8.5
2015	248	201	10.4	8.3	5.0	3.2	7.3	4.7	9.6	6.3
2016	189	131	7.9	5.3	3.7	2.1	5.4	3.1	7.1	4.1
1998-2016	5382	4657	14.6	12.1	8.2	5.6	11.5	7.9	14.5	9.9

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.		Median				Median		
		Mean	dev.	Min.	Max.	10%	25%	50%	75%	90%
1998	323	65.0	17.0	5.9	100	42.3	55.2	67.6	77.8	84.2
1999	327	64.3	17.4	2.8	93.9	41.3	55.3	65.8	77.9	84.5
2000	287	65.0	16.1	11.0	91.6	41.8	56.1	67.9	76.6	82.8
2001	326	64.3	16.7	4.9	98.7	38.5	54.4	66.0	77.0	84.7
2002	527	66.9	15.5	1.2	95.5	44.4	58.8	69.2	78.8	84.7
2003	540	65.0	16.1	1.7	96.3	42.2	55.9	66.9	76.9	83.0
2004	579	66.0	15.1	8.0	97.8	47.4	57.0	66.8	77.3	83.4
2005	528	65.9	15.7	3.4	98.4	44.9	57.7	68.1	77.3	84.0
2006	574	66.3	15.4	1.9	98.5	43.8	59.6	68.6	77.1	82.9
2007	663	66.9	15.9	4.0	101	45.5	57.4	69.5	78.3	84.6
2008	632	67.3	15.8	2.3	96.2	45.7	60.1	70.2	77.9	84.3
2009	694	66.7	15.8	4.3	95.2	45.1	59.2	69.2	78.0	84.4
2010	660	67.5	15.7	0.1	96.7	44.5	60.2	70.4	78.4	85.1
2011	679	67.4	15.9	7.8	99.2	45.7	59.1	71.0	78.1	84.8
2012	632	68.8	14.2	6.4	97.7	49.5	61.2	71.3	79.0	84.4
2013	687	67.7	16.5	1.0	96.3	45.1	59.6	71.8	78.9	85.1
2014	612	68.3	14.8	4.5	97.5	48.4	59.1	71.5	78.5	85.2
2015	449	70.5	14.9	17.7	98.5	49.0	62.9	74.5	80.9	86.4
2016	320	70.0	14.7	5.2	96.4	51.6	61.9	72.9	80.4	85.3
1998-2016	10039	67.0	15.8	0.1	101	45.6	58.4	69.8	78.3	84.5

Table 3a

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

Year of diagnosis	Cases n	Std.		Median				Median		
		Mean	dev.	Min.	Max.	10%	25%	50%	75%	90%
1998	168	62.7	17.4	6.6	91.4	37.6	53.1	66.0	76.5	82.7
1999	165	61.7	17.5	2.8	93.8	37.6	55.1	63.3	74.4	82.5
2000	149	63.1	16.5	11.0	90.0	38.0	56.1	65.3	75.3	81.3
2001	163	62.2	16.2	4.9	90.3	38.5	54.3	64.8	74.7	79.8
2002	276	64.8	15.1	1.2	95.5	43.8	57.0	66.3	74.8	82.0
2003	262	63.4	16.4	1.7	94.3	39.7	55.2	66.5	75.3	81.9
2004	304	63.4	14.6	9.1	97.8	45.1	54.4	64.4	73.7	81.7
2005	268	63.6	16.1	3.4	90.9	42.8	55.0	65.4	75.7	81.7
2006	324	65.3	16.1	1.9	98.5	42.5	58.4	68.0	77.0	81.1
2007	353	65.4	15.7	10.6	94.8	43.3	55.1	68.7	76.8	82.7
2008	352	65.4	16.2	2.3	93.1	43.3	57.3	68.9	76.1	82.1
2009	377	64.2	16.1	6.6	94.8	42.7	53.4	67.9	75.6	82.0
2010	353	66.9	15.7	0.1	92.2	45.0	58.3	70.1	78.2	85.0
2011	375	65.8	15.6	7.8	94.6	44.0	56.8	69.8	77.2	82.7
2012	328	68.4	14.0	11.5	96.0	48.6	60.0	71.8	78.3	83.2
2013	378	67.2	17.0	1.0	96.3	45.1	59.3	71.2	78.7	84.2
2014	350	67.1	14.9	4.5	97.5	47.7	57.3	69.7	77.7	83.7
2015	248	69.4	15.4	17.7	92.2	47.3	61.0	72.7	80.7	86.1
2016	189	69.3	15.3	5.2	93.5	50.8	61.6	73.0	79.7	84.9
1998-2016	5382	65.5	15.9	0.1	98.5	44.1	56.6	68.4	77.1	82.9

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	155	67.5	16.3	5.9	100	46.4	58.4	69.4	79.6	85.8
1999	162	67.0	16.9	4.2	93.9	45.0	56.1	71.9	79.3	87.3
2000	138	67.0	15.6	15.7	91.6	48.6	57.2	71.7	78.8	84.7
2001	163	66.4	16.8	27.1	98.7	40.7	55.0	69.1	79.9	86.6
2002	251	69.3	15.6	6.6	94.6	45.6	60.5	73.1	80.3	87.1
2003	278	66.4	15.6	10.9	96.3	45.7	56.7	67.4	78.6	84.6
2004	275	68.9	15.1	8.0	94.2	49.7	62.0	70.3	79.7	84.5
2005	260	68.2	15.0	10.7	98.4	48.9	61.2	69.3	79.0	85.3
2006	250	67.6	14.5	19.9	95.8	46.7	61.1	69.3	77.5	84.8
2007	310	68.6	16.0	4.0	101	47.1	60.2	71.3	80.5	85.9
2008	280	69.8	15.0	5.4	96.2	51.4	63.6	71.4	80.2	85.8
2009	317	69.6	15.1	4.3	95.2	49.9	63.1	70.9	80.4	85.9
2010	307	68.2	15.7	10.6	96.7	44.0	61.4	71.1	79.2	85.4
2011	304	69.4	16.1	14.1	99.2	47.8	61.9	72.4	80.5	88.4
2012	304	69.3	14.3	6.4	97.7	50.2	61.6	71.0	80.1	86.7
2013	309	68.3	15.9	3.3	92.0	44.9	61.1	72.2	79.2	85.9
2014	262	69.8	14.5	15.7	96.9	50.2	61.7	73.6	79.3	86.5
2015	201	71.9	14.2	26.1	98.5	51.7	63.3	76.0	81.1	86.7
2016	131	71.0	13.8	28.3	96.4	52.2	62.5	72.6	80.7	86.6
1998-2016	4657	68.7	15.4	3.3	101	48.2	60.5	71.3	79.7	85.9

Table 4

Age distribution by 5-year age group and sex for period 2007-2016
(incl. DCO)

Age at diagnosis Years	Cases n	Males			Females				
		%	Cum.%	n	%	Cum.%	n	%	Cum.%
0-4	10	0.2	0.2	7	0.2	0.2	3	0.1	0.1
5-9	12	0.2	0.4	8	0.2	0.5	4	0.1	0.3
10-14	15	0.2	0.6	9	0.3	0.7	6	0.2	0.5
15-19	28	0.5	1.1	17	0.5	1.2	11	0.4	0.9
20-24	37	0.6	1.7	25	0.8	2.0	12	0.4	1.3
25-29	59	1.0	2.7	34	1.0	3.0	25	0.9	2.2
30-34	67	1.1	3.8	41	1.2	4.3	26	1.0	3.2
35-39	118	2.0	5.7	65	2.0	6.2	53	1.9	5.1
40-44	174	2.9	8.6	107	3.2	9.5	67	2.5	7.6
45-49	261	4.3	13.0	176	5.3	14.8	85	3.1	10.7
50-54	354	5.9	18.8	213	6.4	21.3	141	5.2	15.9
55-59	385	6.4	25.2	219	6.6	27.9	166	6.1	22.0
60-64	528	8.8	34.0	278	8.4	36.3	250	9.2	31.2
65-69	787	13.1	47.0	448	13.6	49.9	339	12.4	43.6
70-74	958	15.9	62.9	523	15.8	65.7	435	16.0	59.6
75-79	922	15.3	78.2	512	15.5	81.2	410	15.0	74.6
80-84	720	11.9	90.2	374	11.3	92.5	346	12.7	87.3
85+	593	9.8	100.0	247	7.5	100.0	346	12.7	100.0
All ages	6028	100.0		3303	100.0		2725	100.0	

Table 5

Age-specific incidence, DCO rate and proportion of all cancers for period 2007-2016

Age at diagnosis Years	Males n	Females n	Males Age- spec. incid.	Females Age- spec. incid.	Males DCO rate n=257 %	Females DCO rate n=223 %	Males	Females
							Prop.all cancers n=113978 %	Prop.all cancers n=112253 %
0- 4	7	3	0.6	0.3	14.3		3.6	2.0
5- 9	8	4	0.7	0.4			7.7	4.8
10-14	9	6	0.8	0.6			7.8	5.9
15-19	17	11	1.4	1.0	5.9		6.7	5.3
20-24	25	12	1.8	0.9			5.4	3.2
25-29	34	25	2.2	1.6			5.0	3.0
30-34	41	26	2.6	1.6	4.9		4.3	1.8
35-39	65	53	4.0	3.3		1.9	4.7	2.1
40-44	106	67	5.7	3.7	0.9		4.9	1.5
45-49	176	85	8.9	4.5	0.6		4.5	1.2
50-54	213	141	12.3	8.2	3.3	1.4	3.5	1.6
55-59	217	166	15.3	11.3	1.8	2.4	2.4	1.8
60-64	278	249	22.7	18.7	4.7	2.0	2.1	2.2
65-69	448	339	37.8	26.1	4.5	4.1	2.4	2.4
70-74	522	434	47.2	34.3	7.5	5.3	2.5	2.9
75-79	510	409	64.0	40.8	9.2	8.1	3.1	3.1
80-84	373	345	81.1	48.8	13.1	14.8	3.4	3.2
85+	247	346	80.7	47.1	29.1	26.0	3.1	2.7
All ages	3296	2721			7.8	8.2	2.9	2.4
Incidence								
Raw			14.4	11.5				
WS			7.6	5.2				
ES			10.8	7.3				
BRD-S			13.6	9.1				

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).

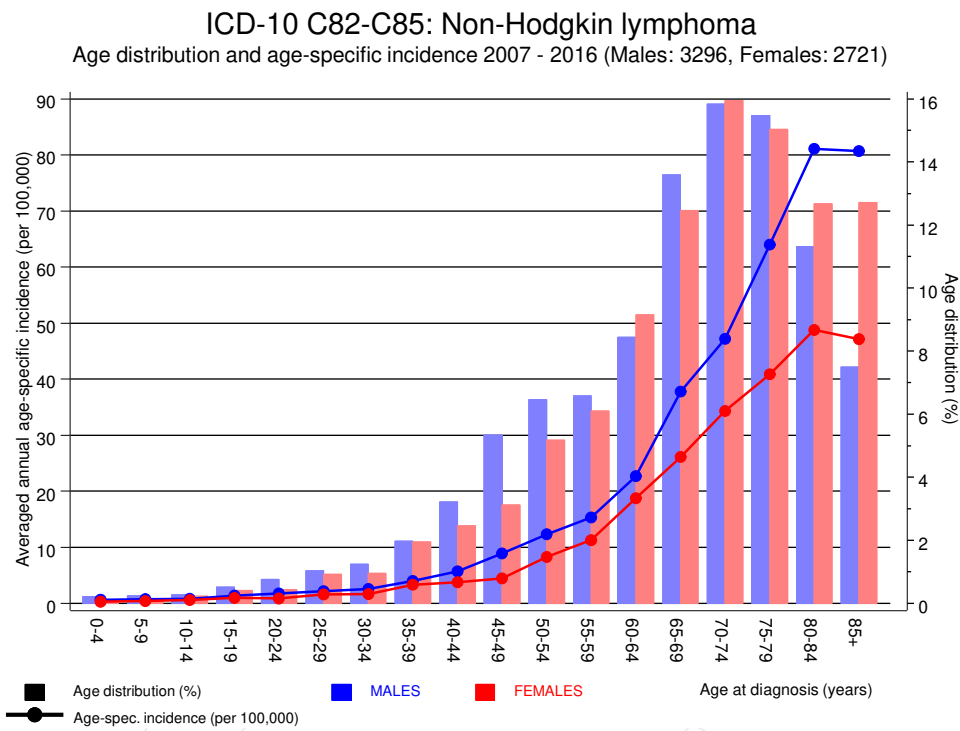


Figure 6. Age distribution (males: mean=66.7 yrs, median=70.0 yrs; females: mean=69.4 yrs, median=72.1 yrs) and age-specific incidence.

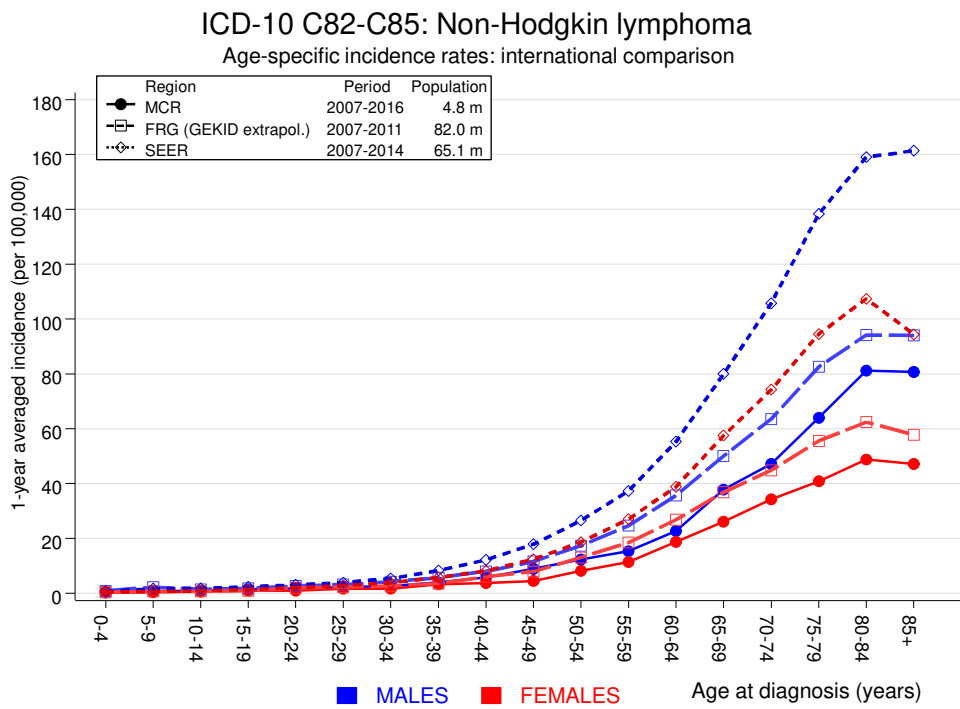


Figure 6a. Age-specific incidence in MCR registry areas compared to Germany (FRG, GEKID extrapolation) and SEER (Surveillance, Epidemiology, and End Results, USA).

Reference:

Extrapolated age-specific patient population of Germany, data status middle of 2010. Association of Population-based Cancer Registries in Germany (GEKID e.V.). Berlin, 2014. <http://www.gekid.de>. Last access: 02/11/2015
 Surveillance, Epidemiology, and End Results (SEER) Program SEER*Stat Database: Incidence - SEER 18 Regs Research Data, released April 2014, based on the November 2013 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 1998–2016

MALES

Diagnosis	Observed n	Expected n	SIR	CI 95%	CI 95%	EAR	DCO %
C03-C06 Oral cavity	12	1.9	6.3	3.2	10.9 #	6.7	
C07-C08 Salivary gland	3	0.5	5.7	1.2	16.7 #	1.6	
C09-C10 Oropharynx	3	2.4	1.3	0.3	3.7	0.4	
C14 ENT cancer	2	0.1	34.4	4.2	124.4 #	1.3	50.0
C15 Oesophagus	6	4.2	1.4	0.5	3.1	1.2	
C16 Stomach	17	9.1	1.9	1.1	3.0 #	5.2	5.9
C17 Small intestine	3	1.2	2.4	0.5	7.1	1.2	
C18 Colon	39	21.8	1.8	1.3	2.4 #	11.4	5.1
C19-C20 Rectum	22	12.0	1.8	1.1	2.8 #	6.6	4.5
C21 Anus/canal	5	0.5	9.8	3.2	22.9 #	3.0	
C22 Liver	9	6.4	1.4	0.6	2.7	1.7	
C23-C24 Bile	5	2.2	2.2	0.7	5.2	1.8	
C25 Pancreas	13	8.5	1.5	0.8	2.6	3.0	
C32 Larynx	8	2.3	3.5	1.5	6.8 #	3.8	12.5
C33-C34 Lung	78	26.6	2.9	2.3	3.7 #	34.0	7.7
C37 Thymus	2	0.1	16.5	2.0	59.5 #	1.2	
C38,C45 Mesothelioma	6	1.5	3.9	1.4	8.6 #	3.0	
C43 Malign. melanoma	34	10.0	3.4	2.4	4.8 #	15.9	
C46,C49 Soft tissue	9	1.3	7.0	3.2	13.2 #	5.1	
C61 Prostate	108	63.8	1.7	1.4	2.0 #	29.2	3.7
C64 Kidney	27	7.9	3.4	2.3	5.0 #	12.7	
C66 Ureter	4	0.5	7.3	2.0	18.7 #	2.3	
C67 Bladder	20	10.3	2.0	1.2	3.0 #	6.4	
C68 Urethra	2	0.2	10.8	1.3	39.1 #	1.2	
C69 Eye lymphoma	3	0.1	59.9	12.4	175.1 #	2.0	
C70-C72 CNS cancer	6	3.0	2.0	0.7	4.4	2.0	33.3
C76-C79 CUP	10	3.9	2.6	1.2	4.8 #	4.1	
C81 Hodgkin lymphoma	13	0.6	23.2	12.3	39.6 #	8.2	7.7
C82-C85 NHL	54	9.3	5.8	4.3	7.6 #	29.6	3.7
C90 Mult. myeloma	11	3.0	3.7	1.9	6.7 #	5.3	
C91-C96 Leukaemia	28	3.8	7.4	4.9	10.7 #	16.0	14.3
Others, specified	8	5.3	1.5	0.7	3.0	1.8	
Not observed	0	3.1	0.0	0.0	1.2	-2.1	
All further malignancies	570	227.2	2.5	2.3	2.7 #	226.7	4.4
Patients		4714					
Median age at next malignancy (years)		71.8					
Person-years		15116					
Mean observation time (years)		3.2					
Median observation time (years)		1.6					

The occurrence of further malignancy listed is statistically significant.

Observed further 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 1998–2016

FEMALES

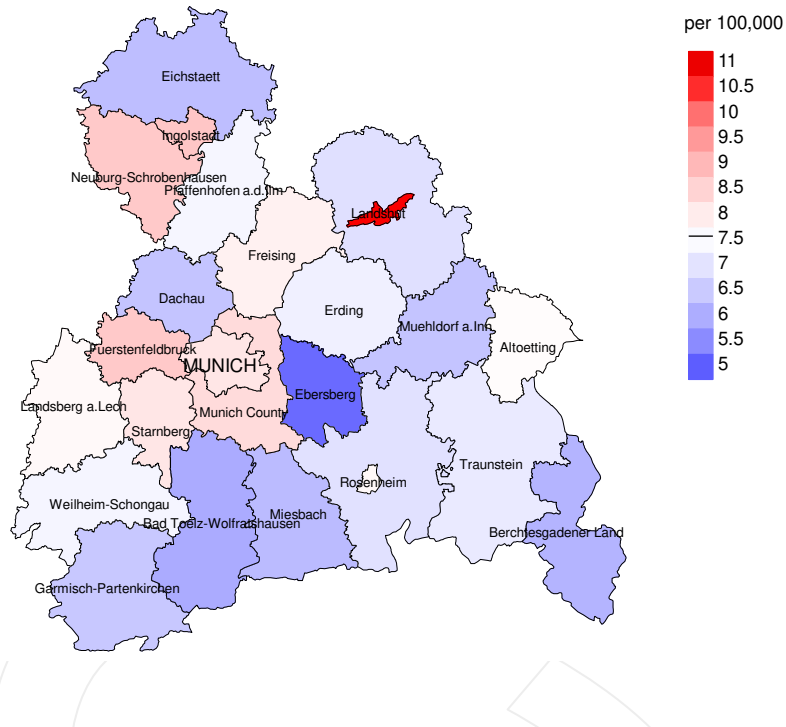
Diagnosis	Observed n	Expected n	SIR	CI 95%	CI 95%	EAR	DCO %
C07–C08 Salivary gland	3	0.3	11.1	2.3	32.3 #	1.9	33.3
C09–C10 Oropharynx	3	0.7	4.6	0.9	13.4	1.6	
C15 Oesophagus	2	1.0	1.9	0.2	6.9	0.6	
C16 Stomach	11	5.8	1.9	0.9	3.4	3.5	9.1
C17 Small intestine	5	0.8	6.0	2.0	14.1 #	2.8	
C18 Colon	34	16.3	2.1	1.4	2.9 #	12.1	8.8
C19–C20 Rectum	8	6.8	1.2	0.5	2.3	0.8	12.5
C21 Anus/canal	4	0.9	4.6	1.3	11.8 #	2.1	
C22 Liver	7	2.0	3.5	1.4	7.1 #	3.4	14.3
C23–C24 Bile	7	2.4	2.9	1.2	6.1 #	3.1	14.3
C25 Pancreas	13	7.6	1.7	0.9	2.9	3.6	23.1
C33–C34 Lung	35	12.2	2.9	2.0	4.0 #	15.5	5.7
C38,C45 Mesothelioma	2	0.3	6.4	0.8	23.2	1.1	
C43 Malign. melanoma	17	6.2	2.8	1.6	4.4 #	7.4	
C46,C49 Soft tissue	5	1.0	5.2	1.7	12.2 #	2.7	
C50 Breast	100	49.1	2.0	1.7	2.5 #	34.6	2.0
C51 Vulva	5	1.7	2.9	1.0	6.9	2.2	
C53 Cervix uteri	5	2.1	2.4	0.8	5.5	2.0	20.0
C54 Corpus uteri	15	9.1	1.7	0.9	2.7	4.0	
C56 Ovary	10	6.7	1.5	0.7	2.8	2.3	
C64 Kidney	8	4.1	2.0	0.9	3.9	2.7	
C65 Renal pelvis	2	0.5	3.8	0.5	13.7	1.0	
C67 Bladder	8	3.2	2.5	1.1	5.0 #	3.3	
C70–C72 CNS cancer	2	2.2	0.9	0.1	3.2	-0.2	50.0
C73 Thyroid	12	2.8	4.4	2.3	7.6 #	6.3	8.3
C76–C79 CUP	5	3.0	1.6	0.5	3.8	1.3	
C81 Hodgkin lymphoma	3	0.3	9.6	2.0	28.1 #	1.8	
C82–C85 NHL	56	6.5	8.6	6.5	11.2 #	33.6	
C90 Mult. myeloma	4	2.1	1.9	0.5	4.9	1.3	
C91–C96 Leukaemia	19	2.7	7.0	4.2	11.0 #	11.1	15.8
Others, specified	4	1.8	2.3	0.6	5.8	1.5	
Not observed	0	3.3	0.0	0.0	1.1	-2.3	
All further malignancies	414	165.4	2.5	2.3	2.8 #	169.0	5.1

Patients	4067
Median age at next malignancy (years)	74.5
Person-years	14714
Mean observation time (years)	3.6
Median observation time (years)	2.0

The occurrence of further malignancy listed is statistically significant.

Observed further malignancies with count 1 are pooled in category "Others, specified".

Average incidence (world standard population) 2007 - 2016: Males



Average incidence (world standard population) 2007 - 2016: Females

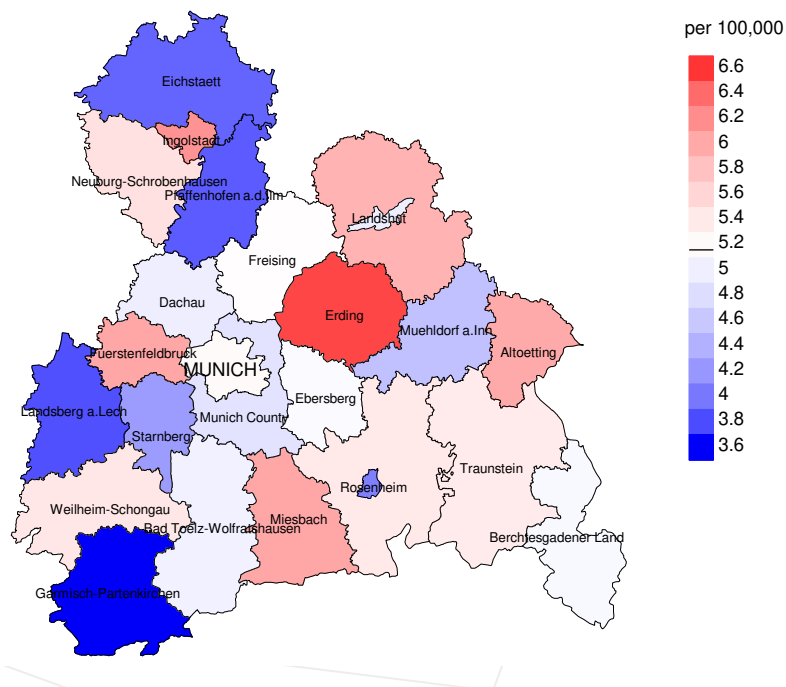
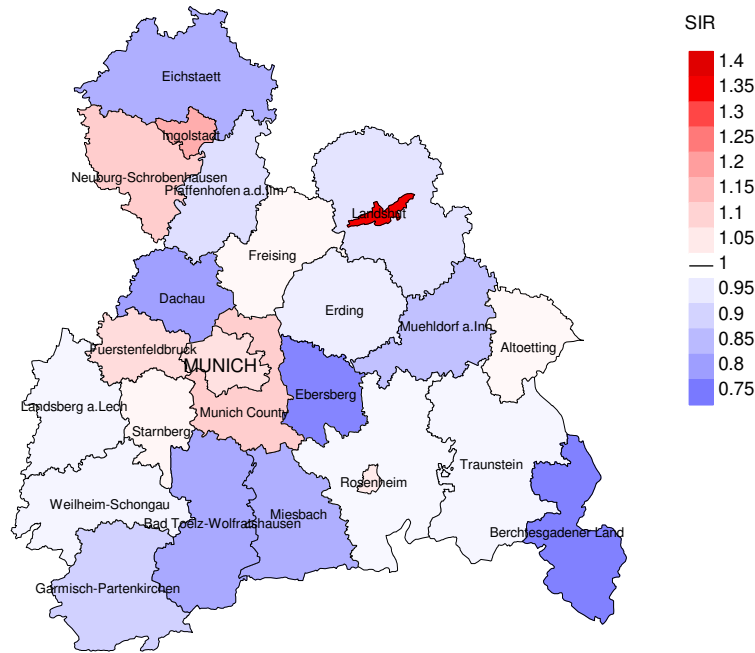


Figure 8a. Map of cancer incidence (world standard population, incl. DCO cases) by county averaged for period 2007 to 2016. According to their individual incidence rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 7.6/100,000 WS N=3,296, females 5.2/100,000 WS N=2,721).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 66,416 female residents (averaged) in the period from 2007 to 2016 a total of 62 women were identified with newly diagnosed NHL. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 5.1/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 3.4 and 7.6/100,000.

Standardized incidence ratio (SIR) 2007 - 2016: Males



Standardized incidence ratio (SIR) 2007 - 2016: Females

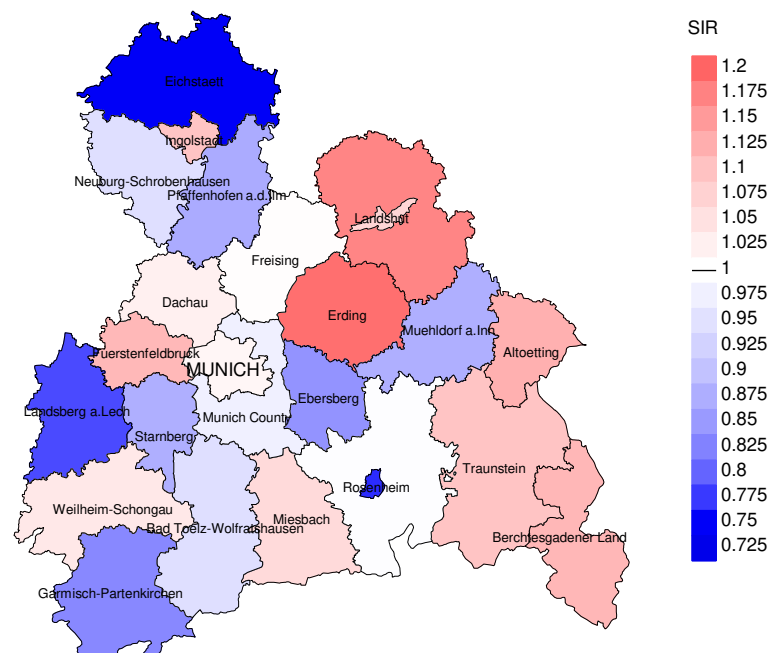


Figure 8b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2007 to 2016. According to their individual SIR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=3,296, females N=2,721).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 66,416 female residents (averaged) in the period from 2007 to 2016 a total of 62 women were identified with newly diagnosed NHL. Therefore, the mean standardized incidence ratio (SIR) for this cancer type in this area can be calculated at 0.84. Though, the value of this parameter may vary with an underlying probability of 99% between 0.59 and 1.16, 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 4.81 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	323	98.1	12.1	249	77.1	93.6
1999	327	97.9	16.5	244	74.6	95.1
2000	287	95.1	14.3	206	71.8	98.5
2001	326	94.8	13.5	221	67.8	95.9
2002	527	97.3	19.2	372	70.6	96.8
2003	540	95.6	12.6	347	64.3	98.3
2004	579	93.4	10.5	352	60.8	98.3
2005	528	89.0	11.0	307	58.1	99.0
2006	574	91.6	8.2	337	58.7	97.0
2007	663	80.4	10.1	400	60.3	98.0
2008	632	71.7	7.4	351	55.5	98.6
2009	694	68.3	6.3	345	49.7	97.4
2010	660	74.2	7.7	338	51.2	97.3
2011	679	70.7	9.1	341	50.2	98.2
2012	632	68.5	6.3	291	46.0	96.2
2013	687	71.0	6.0	307	44.7	94.5
2014	612	71.6	6.2	251	41.0	98.0
2015	449	97.6	9.8	193	43.0	92.2
2016	320	76.9	14.4	118	36.9	84.7
1998-2016	10039	82.3	9.9	5570	55.5	96.8

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 4.81 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	323	190	95.8	75	23.2
1999	327	222	92.8	85	26.0
2000	287	185	96.2	63	22.0
2001	326	207	96.6	73	22.4
2002	527	303	97.0	147	27.9
2003	540	310	98.1	129	23.9
2004	579	331	97.6	127	21.9
2005	528	314	97.1	113	21.4
2006	574	343	98.8	118	20.6
2007	663	390	96.7	160	24.1
2008	632	358	98.0	132	20.9
2009	694	406	98.0	151	21.8
2010	660	384	97.9	134	20.3
2011	679	390	98.5	135	19.9
2012	632	437	98.4	132	20.9
2013	687	440	98.2	135	19.7
2014	612	456	97.4	138	22.5
2015	449	446	98.4	134	29.8
2016	320	339	98.2	101	31.6
1998-2016	10039	6451	97.6	2282	22.7

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 4.81 m as of 2007, respectively)

Year of death	Deaths n	Prop. cancer- related %	Prop. non-cancer- related %	Prop. cancer recorded on death certificate %
1998	190	66.8	33.2	92.3
1999	222	71.2	28.8	92.7
2000	185	81.6	18.4	92.7
2001	207	80.2	19.8	93.5
2002	303	80.2	19.8	91.8
2003	310	81.3	18.7	92.4
2004	331	85.8	14.2	93.8
2005	314	79.9	20.1	92.5
2006	343	80.5	19.5	90.9
2007	390	82.1	17.9	91.5
2008	358	79.1	20.9	89.5
2009	406	77.8	22.2	87.7
2010	384	76.3	23.7	84.3
2011	390	76.2	23.8	85.9
2012	437	76.9	23.1	85.3
2013	440	74.3	25.7	84.5
2014	456	71.5	28.5	86.9
2015	446	74.4	25.6	82.7
2016	339	70.2	29.8	81.1
1998-2016	6451	77.1	22.9	88.3

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	92	73.4	71.8	80.2	73.1
1999	124	71.8	66.7	77.0	71.8
2000	96	69.2	67.7	72.5	69.4
2001	93	68.4	67.6	77.3	68.1
2002	159	73.2	72.8	75.7	73.0
2003	157	71.8	69.9	78.9	71.5
2004	172	73.9	73.9	73.9	74.1
2005	170	74.9	74.9	73.8	74.9
2006	180	72.3	71.7	77.3	72.2
2007	212	72.3	72.2	73.9	71.8
2008	192	73.8	73.2	76.5	73.5
2009	225	75.5	74.9	80.3	74.9
2010	216	75.2	73.6	78.1	73.5
2011	213	75.4	73.9	79.8	74.4
2012	233	75.8	75.6	76.5	75.6
2013	249	77.4	77.0	80.0	77.3
2014	257	76.2	75.3	79.0	75.7
2015	246	78.3	76.6	83.0	77.3
2016	186	78.3	76.6	81.8	77.4
1998-2016	3472	74.9	73.7	78.6	74.1

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	98	80.1	74.7	84.6	80.2
1999	98	78.4	76.5	83.7	79.1
2000	89	77.6	76.9	84.5	75.9
2001	114	78.2	77.2	83.8	77.9
2002	144	78.1	77.5	81.3	78.1
2003	153	78.2	76.0	82.9	77.0
2004	159	78.0	77.9	82.6	78.3
2005	144	79.0	75.3	84.6	78.3
2006	163	77.9	77.2	82.3	76.5
2007	178	79.4	78.6	81.7	78.6
2008	166	80.5	78.4	84.6	79.7
2009	181	80.8	79.8	84.2	80.1
2010	168	78.8	77.3	84.2	78.1
2011	177	79.2	78.2	83.2	77.9
2012	204	79.5	78.4	84.5	78.8
2013	191	78.6	76.2	83.2	77.3
2014	199	78.4	77.2	82.3	78.0
2015	200	79.0	78.6	82.4	78.8
2016	153	81.6	81.6	81.8	80.3
1998-2016	2979	78.9	77.8	83.3	78.4

By 2010, life expectancy at birth was 77.5 years for boys and 82.6 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	59	5.3	0.35	3.3	0.33	5.0	0.36	6.9	0.39
1999	90	8.0	0.55	4.9	0.51	7.2	0.54	9.1	0.55
2000	78	6.8	0.52	4.2	0.50	6.1	0.52	8.0	0.54
2001	76	6.6	0.47	4.1	0.45	5.9	0.47	7.5	0.48
2002	132	7.1	0.48	3.9	0.44	6.0	0.48	8.2	0.52
2003	133	7.1	0.51	3.9	0.46	5.9	0.49	7.9	0.53
2004	144	7.7	0.47	3.9	0.40	6.2	0.45	8.6	0.52
2005	142	7.5	0.53	3.6	0.42	5.8	0.49	8.3	0.56
2006	143	7.5	0.44	3.7	0.39	5.8	0.42	7.8	0.45
2007	174	7.9	0.49	4.1	0.46	6.2	0.48	8.3	0.51
2008	156	7.0	0.44	3.4	0.38	5.2	0.43	7.2	0.46
2009	172	7.7	0.46	3.5	0.37	5.5	0.42	7.8	0.48
2010	173	7.7	0.49	3.5	0.43	5.4	0.45	7.5	0.50
2011	155	6.9	0.42	3.2	0.36	4.9	0.39	6.7	0.42
2012	173	7.6	0.53	3.3	0.48	5.2	0.51	7.3	0.54
2013	185	8.0	0.49	3.3	0.38	5.3	0.44	7.5	0.49
2014	189	8.1	0.54	3.4	0.44	5.4	0.49	7.3	0.53
2015	180	7.6	0.73	3.2	0.64	5.0	0.68	6.9	0.72
2016	127	5.3	0.67	2.1	0.57	3.3	0.62	4.7	0.66
1998-2016	2681	7.3	0.50	3.5	0.43	5.4	0.47	7.4	0.51

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	68	5.8	0.44	2.5	0.37	3.7	0.39	4.9	0.42
1999	68	5.7	0.42	2.2	0.33	3.5	0.37	5.0	0.42
2000	73	6.1	0.53	2.3	0.40	3.7	0.45	4.9	0.47
2001	90	7.4	0.55	3.0	0.45	4.6	0.49	6.2	0.54
2002	111	5.7	0.44	2.1	0.36	3.2	0.39	4.5	0.42
2003	119	6.0	0.43	2.4	0.34	3.6	0.36	4.8	0.40
2004	140	7.1	0.51	2.7	0.41	4.1	0.45	5.8	0.50
2005	109	5.5	0.42	2.1	0.33	3.2	0.36	4.3	0.39
2006	133	6.6	0.53	2.4	0.40	3.8	0.45	5.1	0.49
2007	146	6.3	0.47	2.2	0.35	3.5	0.39	4.7	0.42
2008	127	5.5	0.45	1.9	0.34	2.9	0.38	4.0	0.41
2009	144	6.2	0.46	1.9	0.31	3.1	0.36	4.4	0.41
2010	121	5.2	0.39	1.8	0.29	2.8	0.32	3.9	0.36
2011	142	6.1	0.47	2.0	0.35	3.1	0.39	4.4	0.44
2012	163	6.9	0.54	2.2	0.38	3.5	0.42	4.8	0.47
2013	142	6.0	0.46	2.0	0.34	3.1	0.38	4.4	0.43
2014	137	5.7	0.52	1.8	0.39	2.9	0.43	4.0	0.48
2015	152	6.2	0.76	2.0	0.64	3.2	0.67	4.4	0.71
2016	114	4.6	0.87	1.2	0.57	2.1	0.65	3.0	0.73
1998-2016	2299	6.0	0.49	2.1	0.37	3.3	0.41	4.5	0.45

Table 12

Age distribution of age at death (cancer-related) for period 2007-2016
(incl. multiple malignancies)

Age at death Years	Cases			Males			Females		
	n	%	Cum.%	n	%	Cum.%	n	%	Cum.%
0-4	1	0.0	0.0	1	0.1	0.1			0.0
5-9	1	0.0	0.1	1	0.1	0.1			0.0
10-14	4	0.1	0.2	2	0.1	0.2	2	0.1	0.1
15-19	4	0.1	0.3	4	0.2	0.5			0.1
20-24	4	0.1	0.5	4	0.2	0.7			0.1
25-29	9	0.3	0.7	3	0.2	0.9	6	0.4	0.6
30-34	13	0.4	1.2	9	0.5	1.4	4	0.3	0.9
35-39	17	0.6	1.7	11	0.7	2.1	6	0.4	1.3
40-44	29	0.9	2.7	22	1.3	3.4	7	0.5	1.8
45-49	66	2.1	4.8	51	3.0	6.4	15	1.1	2.9
50-54	99	3.2	8.0	60	3.6	10.0	39	2.8	5.7
55-59	112	3.6	11.7	69	4.1	14.1	43	3.1	8.8
60-64	201	6.5	18.2	126	7.5	21.6	75	5.4	14.2
65-69	330	10.7	29.0	196	11.6	33.2	134	9.7	23.8
70-74	479	15.6	44.6	275	16.3	49.5	204	14.7	38.5
75-79	593	19.3	63.9	343	20.4	69.9	250	18.0	56.6
80-84	538	17.5	81.4	269	16.0	85.9	269	19.4	75.9
85+	572	18.6	100.0	238	14.1	100.0	334	24.1	100.0
All ages	3072	100.0		1684	100.0		1388	100.0	

Table 13

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007-2016
(incl. multiple malignancies)

Age at death Years	Males		Females		Males		Females	
	n	n	Age- spec. mortal.	MI-index	Age- spec. mortal.	MI-index	Prop.all cancers %	Prop.all cancers %
0- 4	1		0.1	0.14			6.7	
5- 9	1		0.1	0.13			4.2	
10-14	2	2	0.2	0.22	0.2	0.33	8.7	8.3
15-19	4		0.3	0.24			9.1	
20-24	4		0.3	0.16			7.0	
25-29	3	6	0.2	0.09	0.4	0.24	4.1	8.2
30-34	9	4	0.6	0.22	0.3	0.15	8.7	3.3
35-39	11	6	0.7	0.17	0.4	0.11	5.5	2.1
40-44	22	7	1.2	0.21	0.4	0.10	4.5	1.0
45-49	51	15	2.6	0.29	0.8	0.18	4.4	1.1
50-54	60	39	3.5	0.28	2.3	0.28	2.9	2.0
55-59	69	43	4.9	0.32	2.9	0.26	2.0	1.5
60-64	126	75	10.3	0.45	5.6	0.30	2.5	2.0
65-69	196	134	16.5	0.44	10.3	0.40	2.7	2.5
70-74	275	204	24.9	0.53	16.1	0.47	3.0	3.0
75-79	343	250	43.0	0.67	25.0	0.61	3.8	3.6
80-84	269	269	58.5	0.72	38.0	0.78	3.6	3.9
85+	238	334	77.7	0.96	45.5	0.97	3.6	3.6
All ages	1684	1388					3.2	3.0
Mortality								
Raw			7.4	0.51	5.9	0.51		
WS			3.3	0.43	1.9	0.37		
ES			5.1	0.48	3.0	0.41		
BRD-S			7.1	0.52	4.2	0.46		
PYLL-70								
per 100,000			32.5		16.8			
ES			29.1		14.5			
AYLL-70			11.7		10.2			

Table 14a

Further malignancies in deaths in period 1998-2016
MALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn- chron ±30d n	Syn- chron ±30d ←%	Post n	Post ←%
C16 Stomach	36	3.2	12	33.3	6	16.7	18	50.0
C18 Colon	71	6.4	34	47.9	15	21.1	22	31.0
C19-C20 Rectum	40	3.6	19	47.5	4	10.0	17	42.5
C22 Liver	16	1.4	2	12.5	2	12.5	12	75.0
C25 Pancreas	22	2.0	2	9.1	3	13.6	17	77.3
C32 Larynx	14	1.3	8	57.1	2	14.3	4	28.6
C33-C34 Lung	109	9.8	17	15.6	11	10.1	81	74.3
C43 Malign. melanoma	46	4.1	21	45.7	3	6.5	22	47.8
C44 Skin others	167	15.0	54	32.3	15	9.0	98	58.7
C46,C49 Soft tissue	14	1.3	9	64.3	1	7.1	4	28.6
C61 Prostate	192	17.3	126	65.6	25	13.0	41	21.4
C64 Kidney	32	2.9	23	71.9	4	12.5	5	15.6
C67 Bladder	33	3.0	14	42.4	4	12.1	15	45.5
C70-C72 CNS cancer	11	1.0	2	18.2	2	18.2	7	63.6
C76-C79 CUP	21	1.9	3	14.3	1	4.8	17	81.0
C81 Hodgkin lymphoma	30	2.7	18	60.0	2	6.7	10	33.3
C82-C85 NHL	79	7.1			3	3.8	76	96.2
C90 Mult. myeloma	27	2.4	13	48.1	7	25.9	7	25.9
C91-C96 Leukaemia	45	4.1	14	31.1	7	15.6	24	53.3
Others, specified	106	9.5	43	40.6	11	10.4	52	49.1
All further malignancies	1111	100.0	434	39.1	128	11.5	549	49.4

Further malignancies with number of cases 1 to 10 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 1998-2016
FEMALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn- chron ±30d n	Syn- chron ±30d ←%	Post n	Post ←%
C16 Stomach	32	4.1	10	31.3	3	9.4	19	59.4
C18 Colon	62	7.9	23	37.1	7	11.3	32	51.6
C19-C20 Rectum	22	2.8	10	45.5	5	22.7	7	31.8
C21 Anus/canal	8	1.0	4	50.0			4	50.0
C22 Liver	9	1.1			2	22.2	7	77.8
C23-C24 Bile	9	1.1					9	100.0
C25 Pancreas	14	1.8			2	14.3	12	85.7
C33-C34 Lung	47	6.0	5	10.6	2	4.3	40	85.1
C43 Malign. melanoma	21	2.7	10	47.6	1	4.8	10	47.6
C44 Skin others	77	9.8	29	37.7	3	3.9	45	58.4
C50 Breast	178	22.6	107	60.1	17	9.6	54	30.3
C51 Vulva	8	1.0	4	50.0			4	50.0
C53 Cervix uteri	13	1.6	8	61.5	1	7.7	4	30.8
C54 Corpus uteri	23	2.9	20	87.0			3	13.0
C56 Ovary	25	3.2	9	36.0	3	12.0	13	52.0
C64 Kidney	19	2.4	9	47.4	2	10.5	8	42.1
C67 Bladder	12	1.5	3	25.0			9	75.0
C70-C72 CNS cancer	9	1.1	4	44.4	1	11.1	4	44.4
C73 Thyroid	11	1.4	9	81.8			2	18.2
C76-C79 CUP	15	1.9	5	33.3	1	6.7	9	60.0
C81 Hodgkin lymphoma	14	1.8	10	71.4	1	7.1	3	21.4
C82-C85 NHL	75	9.5			1	1.3	74	98.7
C90 Mult. myeloma	18	2.3	8	44.4	6	33.3	4	22.2
C91-C96 Leukaemia	24	3.0	1	4.2	3	12.5	20	83.3
Others, specified	44	5.6	16	36.4	5	11.4	23	52.3
All further malignancies	789	100.0	304	38.5	66	8.4	419	53.1

Further malignancies with number of cases 1 to 7 are pooled in category "Others, specified".

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

Table 15

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007-2016
(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	1		0.1	0.13			4.3	
10-14	2	2	0.2	0.22	0.2	0.33	8.7	9.5
15-19	4		0.3	0.24			9.5	
20-24	3		0.2	0.13			5.9	
25-29	3	5	0.2	0.09	0.3	0.24	4.5	7.5
30-34	9	3	0.6	0.22	0.2	0.12	8.8	2.8
35-39	10	5	0.6	0.17	0.3	0.10	5.3	1.9
40-44	15	6	0.8	0.15	0.3	0.10	3.3	1.0
45-49	48	14	2.4	0.30	0.7	0.18	4.6	1.2
50-54	50	30	2.9	0.26	1.8	0.25	2.8	1.8
55-59	54	38	3.8	0.29	2.6	0.27	1.8	1.6
60-64	104	62	8.5	0.47	4.7	0.32	2.5	2.0
65-69	155	94	13.1	0.43	7.2	0.35	2.6	2.2
70-74	202	163	18.3	0.52	12.9	0.52	2.8	3.1
75-79	265	201	33.3	0.78	20.1	0.64	4.0	3.7
80-84	197	211	42.8	0.79	29.8	0.80	3.6	4.0
85+	155	266	50.6	0.97	36.2	0.95	3.2	3.6
All ages	1277	1100					3.1	3.0
Mortality								
Raw			5.6	0.50	4.6	0.51		
WS			2.5	0.41	1.5	0.36		
ES			3.9	0.46	2.4	0.40		
BRD-S			5.4	0.51	3.3	0.46		
PYLL-70								
per 100,000			27.4		13.9			
ES			24.4		12.1			
AYLL-70			12.1		10.7			

* See corresponding tables with multiple malignancies.

Table 16

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007-2016
(**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	1		0.1	0.13			4.3	
10-14	2	2	0.2	0.22	0.2	0.33	8.7	9.5
15-19	4		0.3	0.25			9.5	
20-24	3		0.2	0.13			5.9	
25-29	3	4	0.2	0.09	0.3	0.19	4.5	6.2
30-34	8	3	0.5	0.20	0.2	0.12	7.8	2.9
35-39	10	4	0.6	0.18	0.3	0.08	5.3	1.6
40-44	15	6	0.8	0.16	0.3	0.10	3.3	1.0
45-49	45	13	2.3	0.29	0.7	0.18	4.3	1.2
50-54	45	26	2.6	0.25	1.5	0.23	2.5	1.6
55-59	48	30	3.4	0.29	2.0	0.24	1.7	1.3
60-64	81	49	6.6	0.40	3.7	0.29	2.0	1.6
65-69	128	72	10.8	0.44	5.5	0.30	2.2	1.7
70-74	154	137	13.9	0.45	10.8	0.48	2.2	2.7
75-79	214	160	26.9	0.70	16.0	0.56	3.4	3.0
80-84	165	176	35.9	0.76	24.9	0.72	3.2	3.4
85+	128	231	41.8	0.84	31.5	0.88	2.9	3.3
All ages	1054	913					2.7	2.5
Mortality								
Raw			4.6	0.46	3.9	0.46		
WS			2.1	0.38	1.3	0.32		
ES			3.2	0.42	2.0	0.36		
BRD-S			4.4	0.47	2.8	0.41		
PYLL-70								
per 100,000			24.9		11.8			
ES			22.3		10.3			
AYLL-70			12.8		11.3			

* See corresponding tables with multiple malignancies.

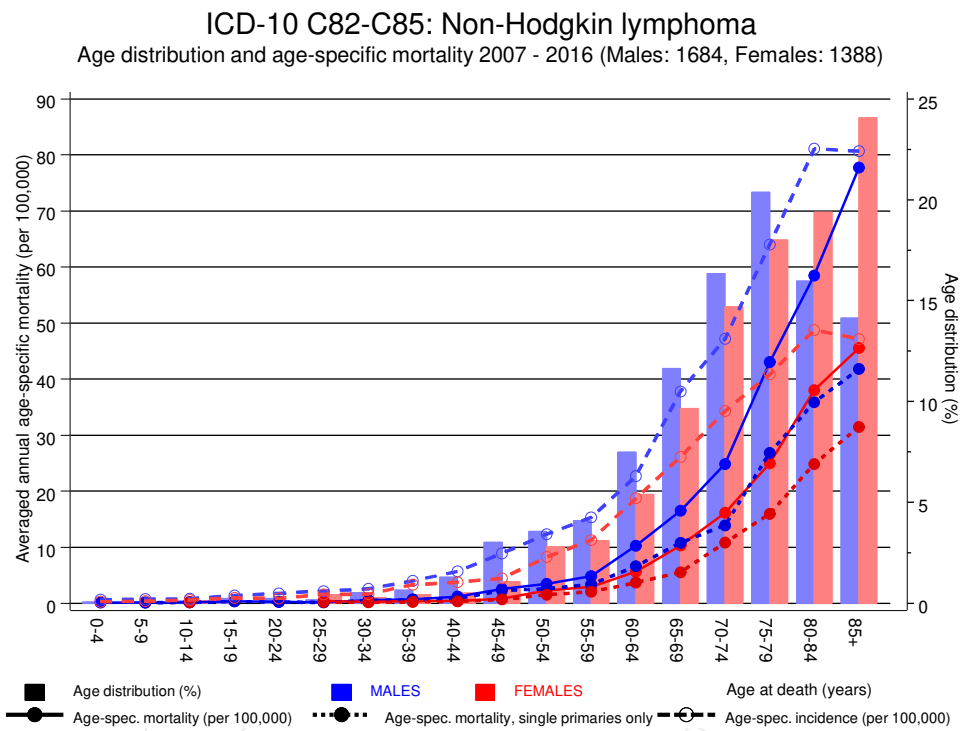
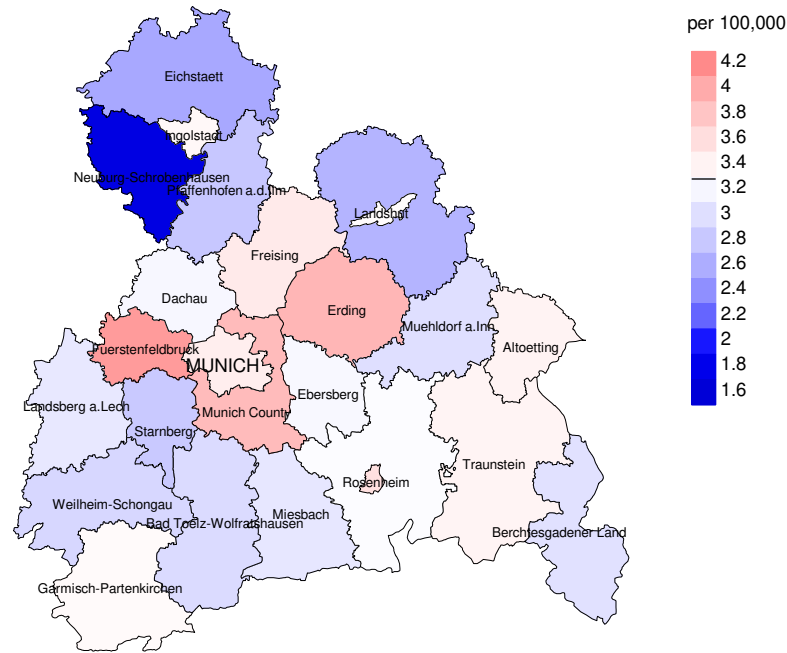


Figure 17. Distribution of age at death (bars; males: mean=68.8 yrs, median=71.2 yrs; females: mean=72.2 yrs, median=74.4 yrs) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

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

Average mortality (world standard population) 2007 - 2016: Males



Average mortality (world standard population) 2007 - 2016: Females

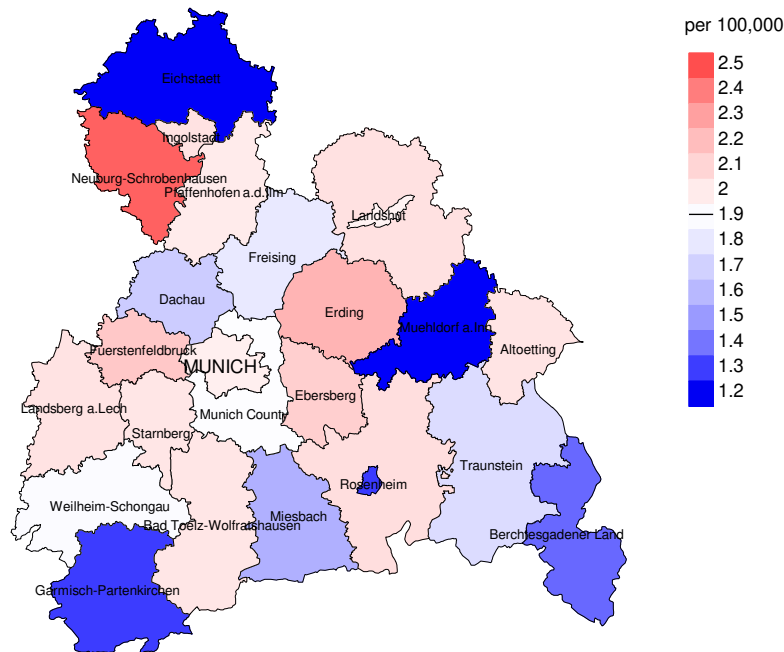
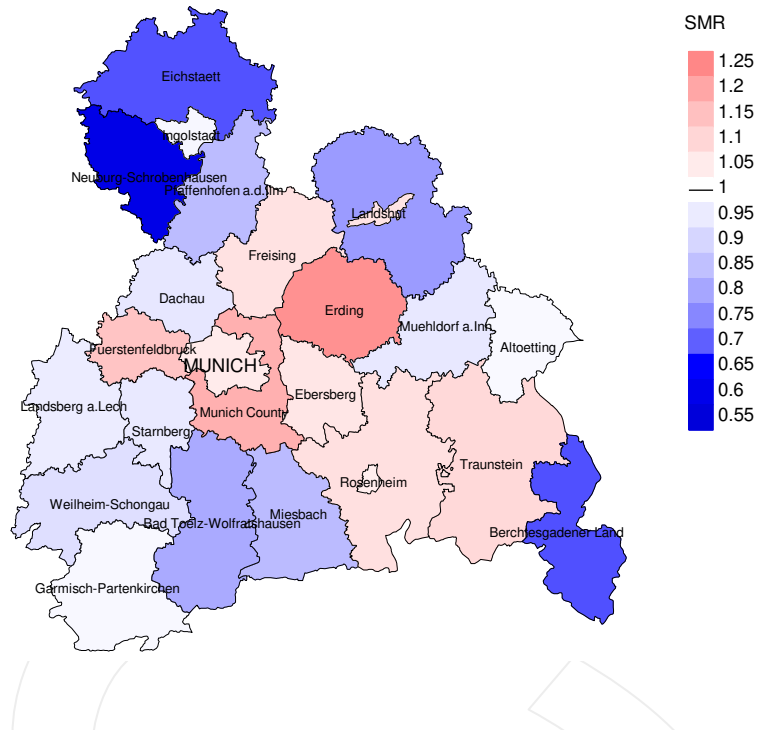


Figure 18a. Map of cancer mortality (world standard population) by county averaged for period 2007 to 2016. According to their individual mortality rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 3.3/100,000 WS N=1,684, females 1.9/100,000 WS N=1,388).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 66,416 female residents (averaged) in the period from 2007 to 2016 a total of 33 women died from NHL. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 2.1/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 1.2 and 3.6/100,000.

Standardized mortality ratio (SMR) 2007 - 2016: Males



Standardized mortality ratio (SMR) 2007 - 2016: Females

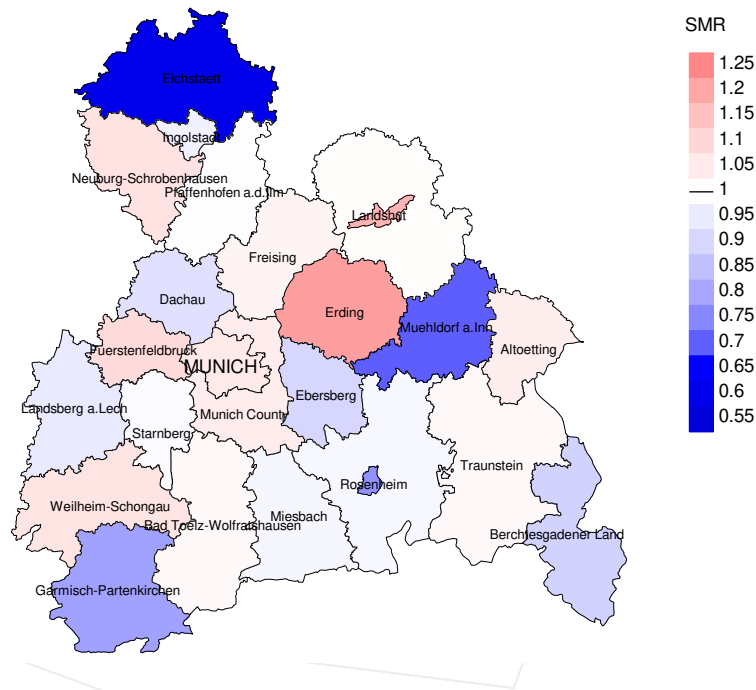


Figure 18b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2007 to 2016. According to their individual SMR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=1,684, females N=1,388).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 66,416 female residents (averaged) in the period from 2007 to 2016 a total of 33 women died from NHL. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 0.90. Though, the value of this parameter may vary with an underlying probability of 99% between 0.55 and 1.39, 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 index from mortality and incidence (Mortality-Incidence ratio, **MI-index**) is a statistic 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 MI- index. 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 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 between mortality and incidence
FRG	Federal Republic of Germany

Recommended Citation

Munich Cancer Registry. ICD-10 C82-C85: NHL - Incidence and Mortality [Internet]. 2018 [updated 2018 Aug 21; cited 2018 Oct 1]. Available from: <https://www.tumorregister-muenchen.de/en/facts/base/bC8285E-ICD-10-C82-C85-NHL-incidence-and-mortality.pdf>

Copyright

The content of the public web site provided by the Munich Cancer Registry is available worldwide and free of charge. All documents are free to download, utilize, copy, print-out and distribute, providing that the MCR is referenced.

Disclaimer

The Munich Cancer Registry reserves the right to not be responsible for the topicality, correctness, completeness or quality of the information provided. Liability claims regarding damage caused by the use of any information provided, including any kind of information which is incomplete or incorrect, will therefore be rejected.