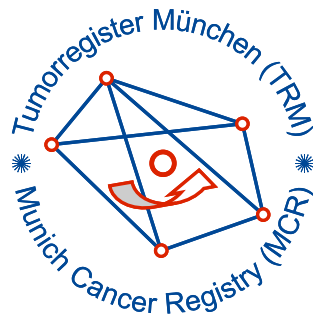


Munich Cancer Registry



- ▶ [Survival](#)
- ▶ [Selection Matrix](#)
- ▶ [Homepage](#)
- ▶ [Deutsch](#)

ICD-10 C81-C96: Systemic neoplasms

Incidence and Mortality

Year of diagnosis	1998-2014
Patients	23,999
Diseases	24,414
Creation date	04/13/2016
Export date	12/23/2015
Population	4.64 m



Munich Cancer Registry at Munich Cancer Center
Marchioninstr. 15
Munich, 81377
Germany

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

<http://www.tumorregister-muenchen.de/en/facts/base/bC8196E-ICD-10-C81-C96-Systemic-neoplasms-incidence-and-mortality.pdf>

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 4.64 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, April 2016

- [#] 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 2.51 million to 3.96 in 2002, and to 4.52 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
C81.-	Hodgkin lymphoma
C82.-	Follicular lymphoma
C83.-	Non-follicular lymphoma
C84.-	Mature T/NK-cell lymphomas
C85.-	Other and unspecified types of non-Hodgkin lymphoma
C86.-	Other specified types of T/NK-cell Lymphoma
C88.-	Malignant immunoproliferative diseases
C90.-	Multiple myeloma and malignant plasma cell neoplasms
C91.-	Lymphoid leukaemia
C92.-	Myeloid leukaemia
C93.-	Monocytic leukaemia
C94.-	Other leukaemias of specified cell type
C95.-	Leukaemia of unspecified cell type
C96.-	Other and unspecified malignant neoplasms of lymphoid, haematopoietic and related tissue

INCIDENCE

Table 1

All patients by year of diagnosis,
proportions of DCO, multiple primaries, deaths, and active follow-up
(incl. DCO)

Year of diagnosis	Cases n	DCO cases n	Prop. DCO %	Prop. mult. primaries %	Prop. deaths %	Prop. actively followed %
1998	855	159	18.6	20.2	73.9	97.1
1999	859	168	19.6	20.6	73.7	97.6
2000	833	180	21.6	22.0	72.6	97.6
2001	894	206	23.0	24.4	70.8	96.6
2002	1485	378	25.5	24.3	71.2	96.0 #
2003	1521	323	21.2	24.1	66.1	95.6
2004	1600	323	20.2	25.6	62.6	94.9
2005	1528	286	18.7	27.6	62.1	92.8
2006	1581	268	17.0	29.3	63.6	92.7
2007	1818	298	16.4	26.1	60.3	80.7 #
2008	1805	271	15.0	26.9	56.1	74.5
2009	1803	249	13.8	27.0	52.9	74.9
2010	1829	260	14.2	27.9	52.1	75.2
2011	1829	267	14.6	27.6	49.1	75.3
2012	1787	260	14.5	29.7	46.6	79.1
2013	1575	263	16.7	30.4	43.2	99.0
2014	812	254	31.3	35.7	46.4	96.2 ##
1998–2014	24414	4413	18.1	26.8	58.7	87.2

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 found in the respective headings.

Table 1a

All patients
by year of diagnosis and gender
(incl. DCO)

Year of diagnosis	All n	Males n	Females n	Prop. males %
1998	855	469	386	54.9
1999	859	449	410	52.3
2000	833	451	382	54.1
2001	894	452	442	50.6
2002	1485	792	693	53.3
2003	1521	816	705	53.6
2004	1600	841	759	52.6
2005	1528	828	700	54.2
2006	1581	898	683	56.8
2007	1818	993	825	54.6
2008	1805	997	808	55.2
2009	1803	967	836	53.6
2010	1829	1005	824	54.9
2011	1829	1009	820	55.2
2012	1787	975	812	54.6
2013	1575	881	694	55.9
2014	812	443	369	54.6
1998–2014	24414	13266	11148	54.3

Table 2

Incidence measures by year of diagnosis including DCO cases
(with respect to registry area expansion from 2.51 to 3.96 m as of 2002,
and from 3.96 to 4.64 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	469	386	42.3	32.8	29.2	18.8	39.2	24.3	48.2	29.1
1999	449	410	40.1	34.6	27.0	19.6	36.7	25.3	45.9	30.6
2000	451	382	39.6	31.8	26.6	17.9	36.2	23.6	45.5	28.4
2001	452	442	39.0	36.3	25.8	19.2	35.2	25.8	43.5	31.4
2002	792	693	42.5	35.4	27.0	17.4	36.8	23.9	45.6	29.6
2003	816	705	43.5	35.8	27.4	19.8	37.4	25.8	46.6	30.9
2004	841	759	44.7	38.4	28.7	20.2	38.3	26.6	46.4	32.5
2005	828	700	43.7	35.2	27.8	18.6	36.7	24.3	46.0	29.9
2006	898	683	46.9	34.0	28.4	17.1	38.6	22.7	47.9	28.3
2007	993	825	44.8	35.7	26.8	18.3	36.5	24.3	46.0	29.7
2008	997	808	44.8	34.8	27.0	17.4	35.6	23.2	44.1	28.8
2009	967	836	43.3	35.9	24.5	17.5	33.6	23.5	41.8	28.9
2010	1005	824	44.6	35.2	25.7	17.7	34.8	23.3	43.4	28.6
2011	1009	820	44.2	34.8	25.2	17.2	33.9	22.8	42.0	27.5
2012	975	812	42.7	34.4	23.6	18.0	32.0	23.2	41.1	28.1
2013	881	694	38.6	29.4	21.4	14.6	29.1	19.5	37.3	24.0
2014	443	369	19.4	15.6	9.6	6.4	14.3	9.3	18.7	12.2
1998-2014	13266	11148	41.4	33.4	25.0	17.1	33.8	22.7	42.2	27.8

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

Table 3

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

Year of diagnosis	Cases n	Mean	Std. dev.	Min.	Max.	10%	25%	Median 50%	75%	90%
1998	855	62.3	19.7	0.9	100	33.4	53.3	65.0	76.9	85.0
1999	859	63.3	19.4	0.3	104	35.3	55.0	66.0	77.3	84.4
2000	833	63.3	19.0	0.4	97.6	35.7	54.7	67.0	77.0	84.4
2001	894	63.8	18.2	1.4	98.7	37.9	56.0	66.5	77.0	84.0
2002	1485	65.4	18.1	1.0	99.3	39.9	57.8	68.5	78.5	85.1
2003	1521	64.1	18.7	0.3	99.0	37.8	55.3	67.2	77.6	83.7
2004	1600	64.4	18.5	0.4	98.6	38.4	56.1	67.3	77.7	84.0
2005	1528	64.5	19.5	0.0	102	36.5	56.5	68.8	78.1	84.2
2006	1581	65.8	18.5	0.6	98.5	40.1	58.9	69.6	78.3	84.7
2007	1818	65.5	18.3	0.1	101	39.9	57.1	69.3	78.6	84.4
2008	1805	65.7	18.9	0.4	98.1	39.6	58.7	69.7	78.6	84.6
2009	1803	66.4	17.6	1.3	100	42.7	58.7	69.8	78.8	85.5
2010	1829	66.3	18.7	0.1	101	41.1	58.1	70.6	79.3	86.1
2011	1829	66.1	18.7	0.3	101	41.6	56.5	70.8	78.8	85.5
2012	1787	66.2	19.1	0.0	102	39.4	57.5	71.4	79.4	85.0
2013	1575	66.8	18.9	0.0	100	39.8	58.5	71.9	79.7	85.9
2014	812	70.9	16.1	0.5	99.6	48.4	63.1	74.3	82.6	87.9
1998-2014	24414	65.5	18.7	0.0	104	39.4	57.0	69.5	78.5	85.0

Table 3a

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

Year of diagnosis	Cases n	Mean	Std. dev.	Min.	Max.	10%	25%	Median 50%	75%	90%
1998	469	60.6	19.5	0.9	95.8	33.3	50.1	63.2	74.9	83.9
1999	449	61.5	18.9	0.3	94.1	33.3	54.3	64.0	74.8	82.8
2000	451	62.6	18.8	0.4	97.6	36.1	55.1	66.0	75.4	82.5
2001	452	61.4	17.5	1.4	96.4	37.7	53.4	63.9	74.5	79.9
2002	792	63.0	17.9	1.0	98.3	37.1	55.4	66.2	75.0	81.9
2003	816	63.0	18.1	1.6	99.0	36.4	55.0	66.3	75.9	82.2
2004	841	62.4	18.4	0.4	97.8	37.0	53.9	65.2	74.9	82.4
2005	828	63.0	19.8	0.0	102	35.1	54.9	67.4	76.9	83.0
2006	898	64.4	18.3	1.0	98.5	39.7	57.3	68.2	76.6	82.2
2007	993	64.0	18.3	0.1	97.8	38.1	54.3	68.6	77.2	82.7
2008	997	64.0	19.3	0.4	98.1	37.5	56.8	68.9	76.5	82.9
2009	967	64.9	17.0	2.2	97.0	42.2	56.2	69.0	76.4	83.1
2010	1005	65.4	18.6	0.1	101	41.1	55.9	69.9	78.0	84.9
2011	1009	64.9	18.3	2.5	101	40.6	55.6	69.7	77.4	83.6
2012	975	65.8	18.6	1.5	96.0	40.7	56.9	71.2	78.7	83.9
2013	881	66.2	19.0	0.5	100	39.2	58.1	71.7	78.7	84.8
2014	443	70.3	16.3	0.5	99.6	47.0	61.4	73.7	82.7	87.8
1998-2014	13266	64.1	18.5	0.0	102	38.3	55.5	68.3	77.0	83.4

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	386	64.4	19.7	1.3	100	33.4	55.6	67.9	78.7	85.8
1999	410	65.2	19.9	1.5	104	39.0	56.1	70.2	78.8	87.1
2000	382	64.2	19.3	2.1	95.1	35.1	54.6	68.6	77.7	85.4
2001	442	66.4	18.5	2.8	98.7	39.1	58.0	70.2	79.6	86.8
2002	693	68.2	17.9	2.9	99.3	43.0	59.9	71.8	80.9	87.9
2003	705	65.4	19.3	0.3	98.9	38.8	55.6	68.5	79.9	85.6
2004	759	66.6	18.4	0.7	98.6	41.0	59.4	69.9	79.9	85.1
2005	700	66.3	19.0	0.6	98.4	39.3	59.0	70.1	79.6	85.1
2006	683	67.8	18.6	0.6	95.8	40.9	61.2	71.8	80.6	86.0
2007	825	67.3	18.2	1.0	101	43.8	60.0	71.0	80.1	85.9
2008	808	67.8	18.3	1.4	97.4	42.3	60.4	70.9	80.7	86.4
2009	836	68.3	18.1	1.3	100	43.2	60.6	71.5	81.4	87.1
2010	824	67.4	18.9	0.6	98.7	41.2	59.5	71.5	80.7	87.0
2011	820	67.6	19.0	0.3	99.2	43.1	57.9	72.3	80.7	87.8
2012	812	66.7	19.7	0.0	102	39.4	57.9	71.9	80.8	86.9
2013	694	67.6	18.8	0.0	97.9	40.4	58.9	72.4	81.1	86.9
2014	369	71.6	15.8	9.9	98.4	48.9	64.3	75.0	82.4	88.7
1998-2014	11148	67.1	18.7	0.0	104	41.0	58.9	71.2	80.3	86.6

Table 4

Age distribution by 5-year age group and gender for period 2007–2014
(incl. DCO)

Age at diagnosis Years	Cases			Males			Females		
	n	%	Cum.%	n	%	Cum.%	n	%	Cum.%
0–4	125	0.9	0.9	73	1.0	1.0	52	0.9	0.9
5–9	90	0.7	1.6	51	0.7	1.7	39	0.7	1.5
10–14	84	0.6	2.3	48	0.7	2.4	36	0.6	2.1
15–19	139	1.0	3.3	81	1.1	3.5	58	1.0	3.1
20–24	163	1.2	4.5	89	1.2	4.7	74	1.2	4.3
25–29	196	1.5	6.0	108	1.5	6.2	88	1.5	5.8
30–34	182	1.4	7.4	109	1.5	7.7	73	1.2	7.0
35–39	261	2.0	9.4	157	2.2	9.8	104	1.7	8.8
40–44	394	3.0	12.3	240	3.3	13.1	154	2.6	11.3
45–49	545	4.1	16.4	346	4.8	17.9	199	3.3	14.6
50–54	664	5.0	21.4	389	5.4	23.3	275	4.6	19.2
55–59	779	5.9	27.3	408	5.6	28.9	371	6.2	25.4
60–64	1053	7.9	35.3	582	8.0	36.9	471	7.9	33.3
65–69	1665	12.6	47.8	961	13.2	50.1	704	11.8	45.1
70–74	2043	15.4	63.2	1191	16.4	66.5	852	14.2	59.3
75–79	1837	13.9	77.1	1020	14.0	80.5	817	13.6	72.9
80–84	1569	11.8	88.9	810	11.1	91.7	759	12.7	85.6
85+	1469	11.1	100.0	607	8.3	100.0	862	14.4	100.0
All ages	13258	100.0		7270	100.0		5988	100.0	

Included in the statistics are 36.7% multiple primaries in males and 31.9% in females.

Table 5

Age-specific incidence, DCO rate and proportion of all cancers
for period 2007-2014

Age at diagnosis Years	Males n	Females n	Males Age- spec. incid.	Females Age- spec. incid.	Males DCO rate n=1074 %	Females DCO rate n=1031 %	Males Prop.all cancers n=91183 %	Females Prop.all cancers n=89596 %
0- 4	73	52	8.4	6.3	1.4		41.0	37.7
5- 9	51	39	5.8	4.7			53.1	50.0
10-14	48	36	5.2	4.1			48.0	40.4
15-19	81	58	8.4	6.3	1.2		37.5	35.2
20-24	89	74	8.0	6.8		2.7	23.9	23.8
25-29	107	88	8.9	7.1		1.1	19.1	13.3
30-34	108	73	8.7	5.9	3.7	1.4	14.0	6.3
35-39	156	104	12.0	8.2	1.9	3.8	13.5	5.2
40-44	238	154	14.6	10.1	1.3	2.6	13.0	4.1
45-49	345	197	21.8	13.0	1.7	5.1	10.7	3.6
50-54	387	274	29.9	21.4	6.2	3.6	7.9	4.0
55-59	407	371	38.3	33.0	6.6	3.5	5.6	5.0
60-64	580	469	59.0	44.2	7.2	5.1	5.4	5.1
65-69	956	699	99.4	67.0	9.8	9.7	6.1	6.1
70-74	1179	845	129.6	80.8	12.2	10.3	7.0	7.1
75-79	1010	809	183.4	113.4	18.5	17.3	8.1	8.1
80-84	803	750	229.9	133.8	29.1	28.9	9.4	8.5
85+	602	857	260.0	148.3	50.5	52.5	9.9	8.4
All ages	7220	5949			14.9	17.3	7.9	6.6
Incidence								
Raw			40.0	31.8				
WS			22.8	15.8				
ES			31.0	21.0				
BRD-S			38.9	25.8				

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).

CD-10 C81-C96: Malignant neoplasms of lymphoid, haematopoietic and related tissue
Age distribution and age-specific incidence 2007 - 2014 (Males: 7220, Females: 5949)

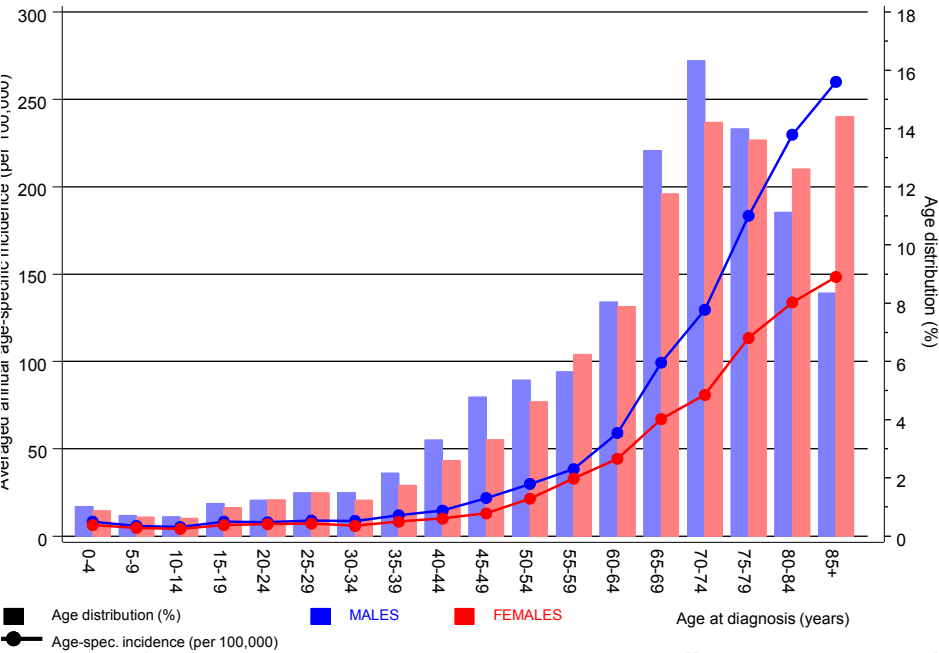


Figure 6. Age distribution and age-specific incidence

ICD-10 C81-C96: Malignant neoplasms of lymphoid, haematopoietic and related tissue

Age-specific incidence rates: international comparison

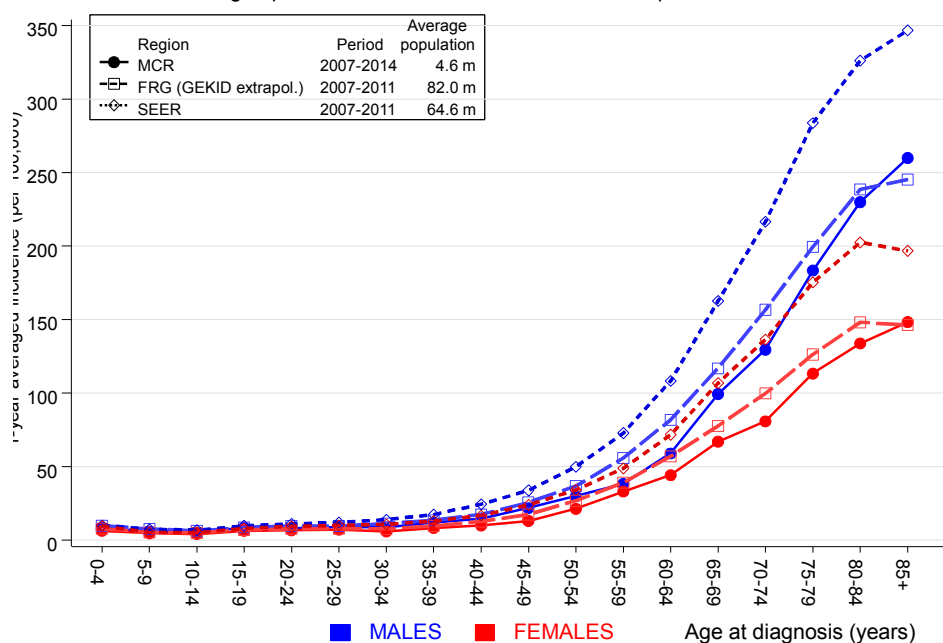


Figure 6a. Age-specific incidence in MCR registry areas compared to Germany (FRG, GEKID extrapolation) and SEER (Surveillance, Epidemiology, and End Results, USA).

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>.

CD-10 C81-C96: Malignant neoplasms of lymphoid, haematopoietic and related tissue
Cumulative follow-up years since diagnosis for period 1998 - 2014 (excl. DCO)

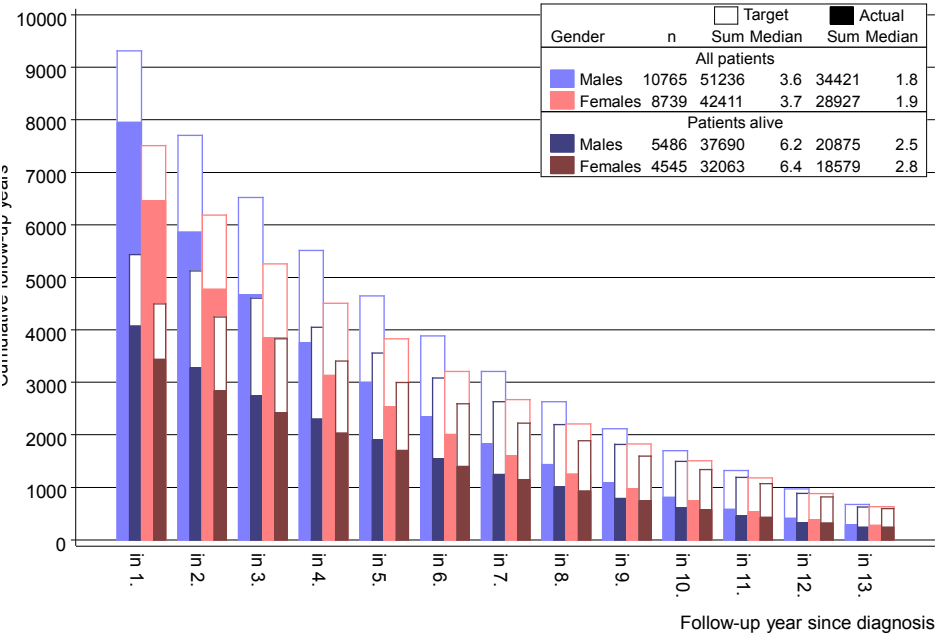


Figure 7. Cumulative follow-up years depending on time since diagnosis

The increase of the lost to follow-up rate can be interpreted as a consequence of a declining number of survivors over time.

Table 8a

Standardized incidence ratio (SIR, with 95% confidence limits),
excess absolute risk (EAR) and DCO rate of second primaries
for period 1998–2014

MALES

Diagnosis		Observed n	Expected n	SIR	LCL 95%	UCL 95%	EAR	DCO %
C00	Lip	3	0.6	5.3	1.1	15.5 #	0.7	
C03-C06	Oral cavity	14	4.2	3.4	1.8	5.6 #	2.8	
C07-C08	Salivary gland	8	1.1	7.4	3.2	14.7 #	2.0	
C09-C10	Oropharynx	9	5.1	1.8	0.8	3.3	1.1	
C15	Oesophagus	18	8.8	2.1	1.2	3.2 #	2.7	5.6
C16	Stomach	41	19.4	2.1	1.5	2.9 #	6.3	2.4
C17	Small intestine	5	2.5	2.0	0.7	4.7	0.7	
C18	Colon	85	46.7	1.8	1.5	2.3 #	11.1	3.5
C19-C20	Rectum	53	26.3	2.0	1.5	2.6 #	7.7	1.9
C21	Anus/canal	5	1.1	4.8	1.5	11.1 #	1.1	
C22	Liver	24	13.3	1.8	1.2	2.7 #	3.1	16.7
C23-C24	Bile	7	4.7	1.5	0.6	3.1	0.7	
C25	Pancreas	33	17.4	1.9	1.3	2.7 #	4.5	6.1
C32	Larynx	7	5.0	1.4	0.6	2.9	0.6	14.3
C33-C34	Lung	141	56.7	2.5	2.1	2.9 #	24.4	5.7
C37	Thymus	3	0.3	11.6	2.4	33.8 #	0.8	
C38,C45	Mesothelioma	11	3.2	3.4	1.7	6.2 #	2.3	9.1
C40-C41	Bone	3	0.4	7.0	1.4	20.5 #	0.7	
C43	Malign. melanoma	86	20.9	4.1	3.3	5.1 #	18.9	
C46,C49	Soft tissue	16	2.6	6.1	3.5	9.8 #	3.9	
C50	Breast	3	1.2	2.4	0.5	7.0	0.5	
C60	Penis	3	1.1	2.7	0.6	8.0	0.6	
C61	Prostate	272	140.6	1.9	1.7	2.2 #	38.1	4.4
C64	Kidney	54	17.0	3.2	2.4	4.1 #	10.7	1.9
C65	Renal pelvis	4	2.0	2.0	0.5	5.1	0.6	
C66	Ureter	5	1.1	4.4	1.4	10.2 #	1.1	
C67	Bladder	42	21.3	2.0	1.4	2.7 #	6.0	2.4
C68	Urethra	3	0.4	8.1	1.7	23.8 #	0.8	
C70-C72	CNS cancer	19	6.6	2.9	1.7	4.5 #	3.6	21.1
C73	Thyroid	11	3.4	3.3	1.6	5.9 #	2.2	
C76-C79	CUP	23	8.1	2.9	1.8	4.3 #	4.3	
C81	Hodgkin lymphoma	17	1.2	14.0	8.2	22.5 #	4.6	5.9
C82-C85	NHL	103	19.4	5.3	4.3	6.4 #	24.2	5.8
C90	Mult. myeloma	16	6.2	2.6	1.5	4.2 #	2.9	6.3
C91-C96	Leukaemia	83	8.0	10.4	8.3	12.9 #	21.7	21.7
Other primaries		11	7.4	1.5	0.7	2.6	1.0	9.1
Not observed		0	2.3	0.0	0.0	1.6	-0.7	
All mult. primaries		1241	487.4	2.5	2.4	2.7 #	218.4	5.4

Patients 11100

Median age at second malignancy (years) 71.5

Person-years 34508

Mean observation time (years) 3.1

Median observation time (years) 1.7

The occurrence of second malignancy is statistically significant.

Observed second primaries with count 1 to 2 are pooled in category "Other primaries"

Table 8b

Standardized incidence ratio (SIR, with 95% confidence limits),
excess absolute risk (EAR) and DCO rate of second primaries
for period 1998-2014

FEMALES

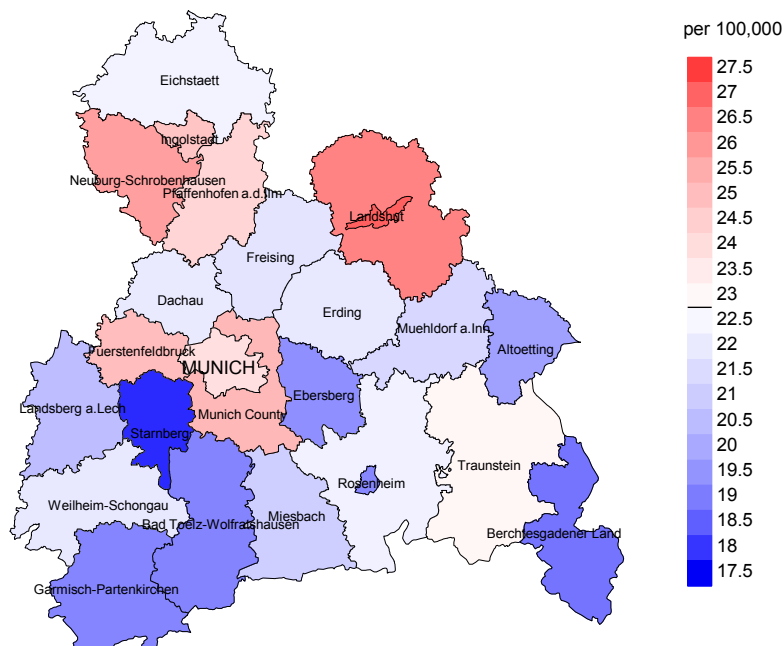
Diagnosis		Observed n	Expected n	SIR	LCL 95%	UCL 95%	EAR	DCO %
C00	Lip	3	0.2	14.7	3.0	42.8 #	1.0	
C03-C06	Oral cavity	3	1.8	1.7	0.4	5.0	0.4	
C07-C08	Salivary gland	3	0.5	6.2	1.3	18.2 #	0.9	33.3
C09-C10	Oropharynx	7	1.2	6.0	2.4	12.3 #	2.0	
C15	Oesophagus	4	1.8	2.3	0.6	5.8	0.8	
C16	Stomach	21	10.4	2.0	1.2	3.1 #	3.6	4.8
C17	Small intestine	5	1.4	3.5	1.1	8.2 #	1.2	
C18	Colon	57	29.2	2.0	1.5	2.5 #	9.6	7.0
C19-C20	Rectum	14	12.5	1.1	0.6	1.9	0.5	7.1
C21	Anus/canal	6	1.5	3.9	1.4	8.5 #	1.5	
C22	Liver	11	3.4	3.2	1.6	5.7 #	2.6	18.2
C23-C24	Bile	11	4.2	2.6	1.3	4.7 #	2.3	18.2
C25	Pancreas	21	13.1	1.6	1.0	2.4	2.7	19.0
C33-C34	Lung	64	21.3	3.0	2.3	3.8 #	14.7	4.7
C38,C45	Mesothelioma	3	0.5	5.5	1.1	16.0 #	0.8	
C43	Malign. melanoma	33	11.1	3.0	2.0	4.2 #	7.5	
C46,C49	Soft tissue	5	1.7	3.0	1.0	6.9	1.1	
C48	Peritoneal	4	1.1	3.5	1.0	8.9	1.0	
C50	Breast	170	89.3	1.9	1.6	2.2 #	27.8	2.4
C51	Vulva	5	3.0	1.7	0.5	3.9	0.7	
C53	Cervix uteri	11	4.0	2.7	1.4	4.9 #	2.4	27.3
C54	Corpus uteri	30	16.6	1.8	1.2	2.6 #	4.6	
C56	Ovary	20	12.1	1.6	1.0	2.5 #	2.7	10.0
C64	Kidney	16	7.4	2.2	1.2	3.5 #	3.0	6.3
C65	Renal pelvis	2	0.9	2.1	0.3	7.8	0.4	
C67	Bladder	7	5.5	1.3	0.5	2.6	0.5	14.3
C69	Eye lymphoma	4	0.1	37.1	10.1	95.0 #	1.3	
C70-C72	CNS cancer	4	4.2	1.0	0.3	2.5	-0.1	50.0
C73	Thyroid	19	5.3	3.6	2.2	5.6 #	4.7	5.3
C76-C79	CUP	11	5.2	2.1	1.1	3.8 #	2.0	
C81	Hodgkin lymphoma	2	0.6	3.2	0.4	11.6	0.5	
C82-C85	NHL	99	11.5	8.6	7.0	10.5 #	30.1	5.1
C90	Mult. myeloma	11	3.7	3.0	1.5	5.4 #	2.5	9.1
C91-C96	Leukaemia	48	4.8	10.0	7.3	13.2 #	14.9	16.7
Other primaries		8	3.9	2.0	0.9	4.0	1.4	25.0
Not observed		0	2.0	0.0	0.0	1.9	-0.7	
All mult. primaries		742	297.1	2.5	2.3	2.7 #	153.1	6.5

Patients 9052
 Median age at second malignancy (years) 72.4
 Person-years 29061
 Mean observation time (years) 3.2
 Median observation time (years) 1.7

The occurrence of second malignancy is statistically significant.

Observed second primaries with count 1 are pooled in category "Other primaries"

Average incidence (world standard population) 2007 - 2014: Males



Average incidence (world standard population) 2007 - 2014: Females

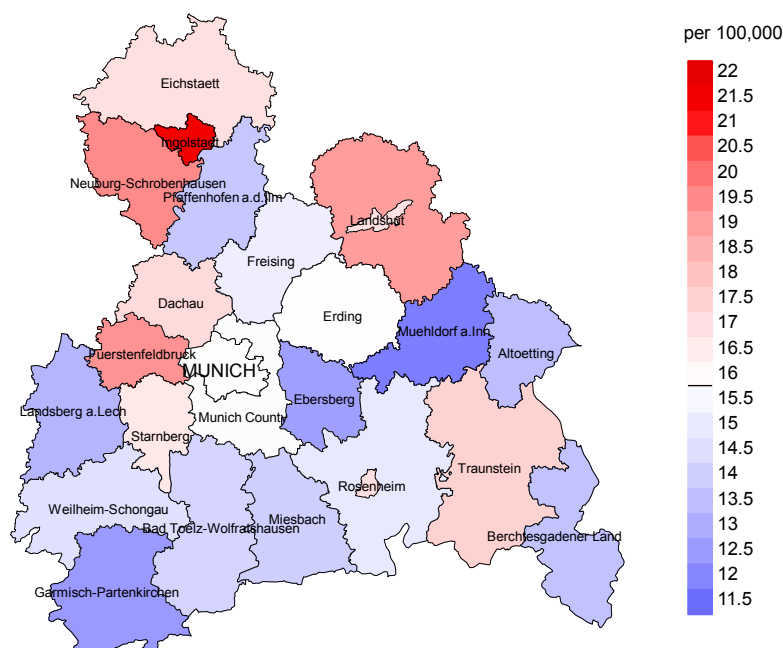
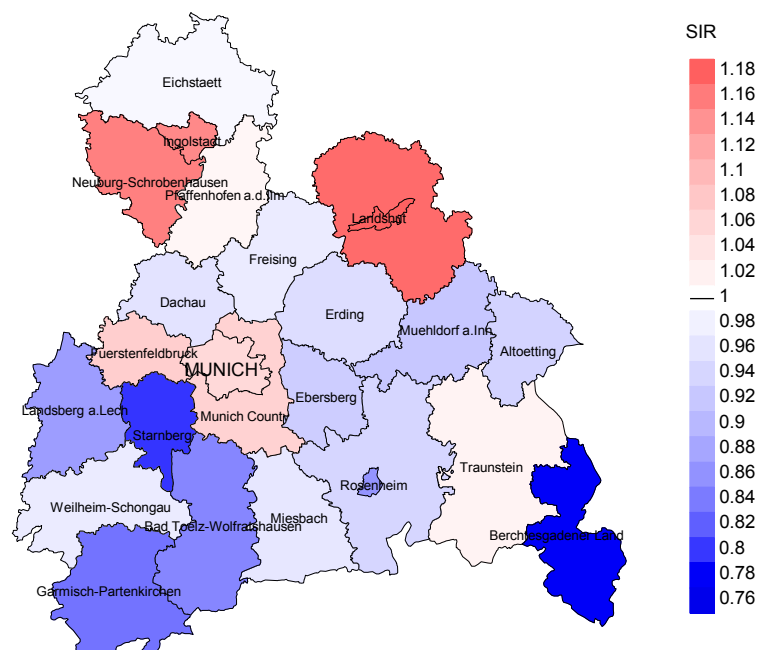


Figure 9a. Map of cancer incidence (world standard population, incl. DCO cases) by county averaged for period 2007 to 2014. According to their individual incidence rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 22.8/100,000 WS N=7,220, females 15.8/100,000 WS N=5,949).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 65,347 female residents (averaged) in the period from 2007 to 2014 a total of 126 women were identified with newly diagnosed systemic neoplasms. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 12.6/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 9.3 and 17.2/100,000.

Standardized incidence ratio (SIR) 2007 - 2014: Males



Standardized incidence ratio (SIR) 2007 - 2014: Females

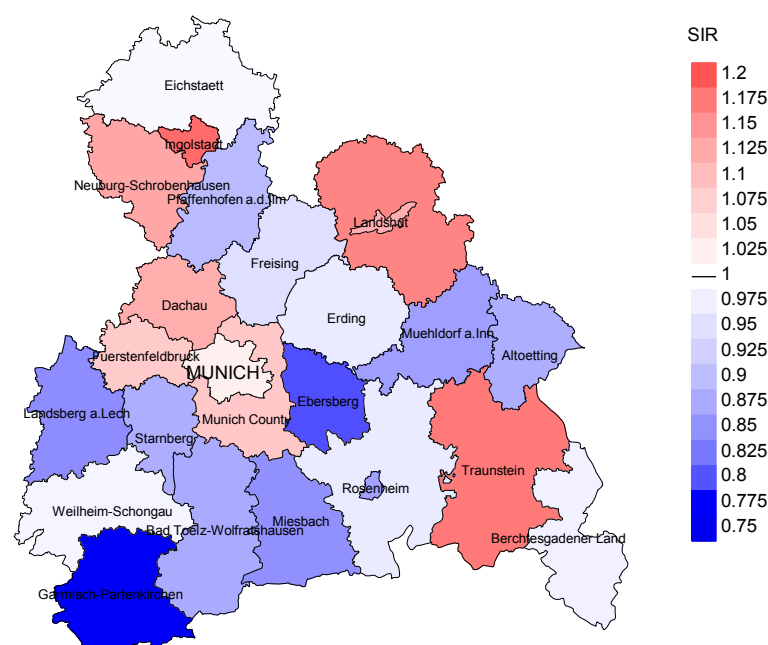


Figure 9b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2007 to 2014. According to their individual SIR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=7,220, females N=5,949).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 64,924 female residents (averaged) in the period from 2007 to 2014 a total of 126 women were identified with newly diagnosed systemic neoplasms. Therefore, the mean standardized incidence ratio (SIR) for this cancer type in this area can be calculated at 0.80. Though, the value of this parameter may vary with an underlying probability of 99% between 0.63 and 1.00, and is therefore not statistically striking.

MORTALITY

Table 10a

Patient cohorts of incident cancers by year of diagnosis, follow-up status, proportion of DCO, deaths among the annual cohorts and proportion of available death certificates (with respect to registry area expansion from 2.51 to 3.96 m as of 2002, and from 3.96 to 4.64 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	855	97.1	18.6	632	73.9	95.7
1999	859	97.6	19.6	633	73.7	95.7
2000	833	97.6	21.6	605	72.6	97.2
2001	894	96.6	23.0	633	70.8	97.0
2002	1485	96.0	25.5	1057	71.2	97.5
2003	1521	95.6	21.2	1005	66.1	98.2
2004	1600	94.9	20.2	1002	62.6	98.4
2005	1528	92.8	18.7	949	62.1	99.1
2006	1581	92.7	17.0	1006	63.6	98.0
2007	1818	80.7	16.4	1096	60.3	98.2
2008	1805	74.5	15.0	1012	56.1	98.5
2009	1803	74.9	13.8	954	52.9	98.0
2010	1829	75.2	14.2	953	52.1	98.1
2011	1829	75.3	14.6	898	49.1	98.7
2012	1787	79.1	14.5	832	46.6	98.1
2013	1575	99.0	16.7	681	43.2	97.2
2014	812	96.2	31.3	377	46.4	97.6
1998-2014	24414	87.2	18.1	14325	58.7	97.9

Table 10b

Annual cohorts of incident cancers and deaths, proportion of death certificates and cases deceased the same year of cancer diagnosis
(incl. DCO)
(with respect to registry area expansion from 2.51 to 3.96 m as of 2002,
and from 3.96 to 4.64 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	855	520	95.8	228	26.7
1999	859	556	94.8	234	27.2
2000	833	541	95.7	232	27.9
2001	894	602	96.3	249	27.9
2002	1485	832	97.5	472	31.8
2003	1521	844	98.2	450	29.6
2004	1600	893	98.1	445	27.8
2005	1528	904	98.5	422	27.6
2006	1581	921	98.5	438	27.7
2007	1818	1030	97.8	482	26.5
2008	1805	1038	98.2	447	24.8
2009	1803	1067	97.8	464	25.7
2010	1829	1116	98.1	476	26.0
2011	1829	1160	98.3	458	25.0
2012	1787	1197	98.2	468	26.2
2013	1575	1232	98.5	479	30.4
2014	812	1073	98.0	359	44.2
1998-2014	24414	15526	97.8	6803	27.9

Table 10c

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 2.51 to 3.96 m as of 2002, and from 3.96 to 4.64 m as of 2007, respectively)

Year of death	Deaths n	Prop. cancer- related %	Prop. non-cancer- related %	Prop. cancer recorded on death certificate %
1998	520	64.0	36.0	94.2
1999	556	72.3	27.7	94.1
2000	541	74.7	25.3	95.4
2001	602	72.8	27.2	94.8
2002	832	81.0	19.0	94.8
2003	844	80.6	19.4	94.3
2004	893	85.2	14.8	94.5
2005	904	83.2	16.8	94.9
2006	921	83.0	17.0	93.2
2007	1030	82.7	17.3	92.9
2008	1038	80.7	19.3	90.2
2009	1067	81.5	18.5	91.3
2010	1116	80.0	20.0	89.7
2011	1160	79.8	20.2	89.3
2012	1197	80.3	19.7	89.5
2013	1232	76.4	23.6	87.7
2014	1073	74.7	25.3	88.5
1998-2014	15526	79.2	20.8	91.8

Table 11a

Medians of age at death according to the grouping in Table 10

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	261	71.0	68.1	76.7	71.9
1999	309	71.7	69.9	79.2	71.7
2000	301	71.3	70.2	75.0	71.6
2001	285	71.9	71.2	75.5	71.9
2002	428	73.0	72.5	74.8	73.1
2003	448	71.7	70.8	74.5	71.6
2004	469	73.9	73.5	77.8	74.2
2005	487	74.5	74.1	76.8	74.3
2006	510	73.3	72.4	77.4	73.0
2007	551	73.1	72.8	78.0	72.9
2008	573	73.3	72.9	77.3	73.1
2009	578	74.8	74.0	79.7	74.3
2010	614	75.1	74.0	78.3	74.8
2011	643	75.2	74.4	78.8	74.9
2012	663	75.8	75.0	78.3	75.4
2013	717	76.5	75.6	79.1	76.1
2014	597	76.9	75.9	79.9	76.7
1998-2014	8434	74.3	73.5	78.0	74.0

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 11b

Medians of age at death according to the grouping in Table 10
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	259	77.2	72.9	81.8	77.4
1999	247	77.4	76.2	83.2	77.3
2000	240	77.3	75.9	83.9	76.8
2001	317	77.5	76.2	81.3	77.1
2002	404	77.7	75.0	83.3	77.7
2003	396	76.9	75.2	82.8	76.2
2004	424	77.0	76.1	82.4	77.0
2005	417	77.9	75.9	84.9	77.5
2006	411	77.6	77.2	81.3	77.2
2007	479	77.9	76.6	82.1	77.5
2008	465	78.4	76.4	84.2	77.2
2009	489	78.4	77.4	83.1	78.0
2010	502	78.6	77.5	83.5	78.2
2011	517	77.6	75.7	83.6	76.6
2012	534	77.9	76.9	82.3	77.3
2013	515	78.8	77.4	81.7	78.0
2014	476	78.5	77.0	82.5	78.4
1998-2014	7092	77.9	76.4	82.9	77.4

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 12a

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	174	15.7	0.37	10.4	0.36	14.6	0.37	18.7	0.39
1999	224	20.0	0.50	12.7	0.47	18.3	0.50	23.4	0.51
2000	224	19.7	0.50	12.1	0.46	17.8	0.49	23.9	0.52
2001	216	18.6	0.48	10.9	0.42	16.5	0.47	22.5	0.52
2002	351	18.8	0.45	10.4	0.39	16.1	0.44	21.9	0.48
2003	370	19.7	0.46	10.9	0.40	16.4	0.44	22.0	0.47
2004	398	21.2	0.48	11.0	0.39	17.1	0.45	23.7	0.51
2005	406	21.4	0.49	10.7	0.39	16.8	0.46	23.5	0.52
2006	419	21.9	0.47	10.9	0.38	16.8	0.44	22.9	0.48
2007	462	20.9	0.47	10.7	0.40	16.1	0.44	22.0	0.48
2008	475	21.3	0.48	10.4	0.39	15.9	0.45	21.5	0.49
2009	466	20.9	0.48	9.7	0.40	15.1	0.45	20.9	0.50
2010	490	21.7	0.49	9.8	0.38	15.2	0.44	21.2	0.49
2011	522	22.8	0.52	10.4	0.42	16.0	0.47	22.1	0.53
2012	514	22.5	0.53	9.9	0.42	15.5	0.48	21.6	0.53
2013	541	23.7	0.62	10.0	0.47	16.0	0.56	22.9	0.62
2014	450	19.7	1.03	8.3	0.88	13.5	0.95	19.1	1.03
1998-2014	6702	20.9	0.51	10.4	0.42	16.0	0.48	22.0	0.52

Table 12b

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	159	13.5	0.41	6.9	0.36	9.3	0.38	11.6	0.40
1999	178	15.0	0.44	6.2	0.32	9.4	0.37	12.8	0.42
2000	181	15.1	0.47	6.4	0.36	9.5	0.40	12.4	0.44
2001	222	18.2	0.50	7.6	0.40	11.5	0.45	15.6	0.50
2002	324	16.5	0.47	6.8	0.39	10.0	0.42	13.4	0.46
2003	310	15.7	0.44	6.4	0.33	9.6	0.37	12.8	0.41
2004	364	18.4	0.48	7.2	0.36	10.9	0.41	14.9	0.46
2005	347	17.4	0.50	6.8	0.37	10.2	0.42	13.6	0.46
2006	345	17.2	0.51	6.5	0.38	9.8	0.44	13.6	0.48
2007	390	16.9	0.48	6.4	0.35	9.7	0.40	13.0	0.44
2008	365	15.7	0.45	5.9	0.34	8.9	0.39	12.0	0.42
2009	404	17.4	0.48	6.3	0.36	9.6	0.41	13.0	0.45
2010	405	17.3	0.50	6.1	0.34	9.2	0.40	12.8	0.45
2011	406	17.2	0.50	6.3	0.37	9.6	0.42	12.8	0.47
2012	447	18.9	0.55	6.7	0.37	10.2	0.44	13.8	0.50
2013	401	17.0	0.58	5.9	0.40	9.1	0.47	12.5	0.53
2014	354	15.0	0.98	5.2	0.82	8.0	0.88	11.0	0.92
1998-2014	5602	16.8	0.50	6.4	0.37	9.6	0.43	13.0	0.47

Table 13

Age distribution of age at death (cancer-related) for period 2007-2014
(incl. multiple primaries)

Age at death Years	Cases			Males			Females		
	n	%	Cum.%	n	%	Cum.%	n	%	Cum.%
0-4	4	0.1	0.1	1	0.0	0.0	3	0.1	0.1
5-9	9	0.1	0.2	5	0.1	0.1	4	0.1	0.2
10-14	16	0.2	0.4	6	0.1	0.3	10	0.3	0.5
15-19	17	0.2	0.6	11	0.3	0.6	6	0.2	0.7
20-24	17	0.2	0.9	12	0.3	0.9	5	0.2	0.9
25-29	29	0.4	1.2	17	0.4	1.3	12	0.4	1.2
30-34	30	0.4	1.7	18	0.4	1.7	12	0.4	1.6
35-39	45	0.6	2.3	26	0.6	2.3	19	0.6	2.2
40-44	98	1.3	3.6	62	1.5	3.9	36	1.1	3.3
45-49	158	2.1	5.7	98	2.4	6.3	60	1.8	5.1
50-54	227	3.1	8.8	140	3.4	9.7	87	2.7	7.7
55-59	308	4.2	13.0	168	4.1	13.8	140	4.3	12.0
60-64	476	6.5	19.5	297	7.3	21.1	179	5.5	17.5
65-69	876	11.9	31.4	513	12.6	33.6	363	11.1	28.6
70-74	1288	17.5	48.9	758	18.5	52.2	530	16.2	44.7
75-79	1357	18.4	67.3	808	19.8	71.9	549	16.7	61.5
80-84	1239	16.8	84.1	641	15.7	87.6	598	18.2	79.7
85+	1171	15.9	100.0	506	12.4	100.0	665	20.3	100.0
All ages	7365	100.0		4087	100.0		3278	100.0	

Included in the statistics are 36.7% multiple primaries in males and 31.9% in females.

Table 14

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007-2014
(incl. multiple primaries)

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	1	3	0.1	0.01	0.4	0.06	8.3	20.0
5- 9	5	4	0.6	0.10	0.5	0.10	23.8	22.2
10-14	6	10	0.6	0.13	1.1	0.28	33.3	50.0
15-19	11	6	1.1	0.14	0.7	0.10	30.6	27.3
20-24	12	5	1.1	0.13	0.5	0.07	25.0	17.9
25-29	17	12	1.4	0.16	1.0	0.14	27.4	18.8
30-34	18	12	1.4	0.17	1.0	0.16	20.5	10.9
35-39	26	19	2.0	0.17	1.5	0.18	14.7	7.4
40-44	62	36	3.8	0.26	2.4	0.23	13.5	5.7
45-49	98	60	6.2	0.28	4.0	0.30	9.6	4.9
50-54	140	87	10.8	0.36	6.8	0.32	7.5	4.9
55-59	168	140	15.8	0.41	12.5	0.38	5.4	5.4
60-64	297	179	30.2	0.51	16.9	0.38	6.2	5.0
65-69	513	363	53.3	0.53	34.8	0.52	7.2	7.0
70-74	758	530	83.3	0.64	50.7	0.62	8.3	8.1
75-79	808	549	146.7	0.79	77.0	0.67	9.5	8.7
80-84	641	598	183.5	0.79	106.6	0.79	8.7	9.1
85+	506	665	218.6	0.83	115.1	0.77	8.4	7.7
All ages	4087	3278					8.2	7.5
Mortality								
Raw			22.6	0.56	17.5	0.55		
WS			10.4	0.45	6.3	0.40		
ES			16.1	0.52	9.6	0.46		
BRD-S			22.4	0.57	13.1	0.51		
PYLL-70								
per 100,000			100.4		69.6			
ES			91.3		64.2			
AYLL-70			11.7		11.8			

The rates underestimate the prognosis if other synchronous cancers are prognostic unfavorable.

Table 15a

Multiple primaries in deaths in period 1998-2014

MALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn- chron ±30d n	Syn- chron ±30d ←%	Post n	Post ←%
C03-C06 Oral cavity	23	0.8	8	34.8	4	17.4	11	47.8
C15 Oesophagus	28	0.9	3	10.7	3	10.7	22	78.6
C16 Stomach	80	2.7	29	36.3	12	15.0	39	48.8
C18 Colon	188	6.3	87	46.3	28	14.9	73	38.8
C19-C20 Rectum	114	3.8	49	43.0	16	14.0	49	43.0
C22 Liver	35	1.2	7	20.0	4	11.4	24	68.6
C25 Pancreas	52	1.7	2	3.8	9	17.3	41	78.8
C32 Larynx	25	0.8	16	64.0	4	16.0	5	20.0
C33-C34 Lung	260	8.7	43	16.5	40	15.4	177	68.1
C43 Malign. melanoma	134	4.5	71	53.0	9	6.7	54	40.3
C44 Skin others	424	14.2	96	22.6	29	6.8	299	70.5
C46,C49 Soft tissue	33	1.1	17	51.5	2	6.1	14	42.4
C61 Prostate	543	18.2	353	65.0	55	10.1	135	24.9
C62 Testis	21	0.7	16	76.2	2	9.5	3	14.3
C64 Kidney	94	3.2	61	64.9	12	12.8	21	22.3
C67 Bladder	143	4.8	84	58.7	11	7.7	48	33.6
C70-C72 CNS cancer	58	1.9	15	25.9	12	20.7	31	53.4
C76-C79 CUP	46	1.5	5	10.9	6	13.0	35	76.1
C82-C85 NHL	155	5.2			33	21.3	122	78.7
C90 Mult. myeloma	52	1.7			6	11.5	46	88.5
C91-C96 Leukaemia	279	9.4			74	26.5	205	73.5
Other primaries	191	6.4	67	35.1	16	8.4	108	56.5
All mult. primaries	2978	100.0	1029	34.6	387	13.0	1562	52.5

Multiple primaries with number of cases 1 to 20 are pooled in category "Other primaries"

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 multiple malignancy.

Table 15b

Multiple primaries in deaths in period 1998-2014
FEMALES

Diagnosis		Total n	Total %↓	Pre n	Pre ←%	Syn- chron ±30d n	Syn- chron ±30d ←%	Post n	Post ←%
C16	Stomach	56	2.7	18	32.1	9	16.1	29	51.8
C18	Colon	130	6.3	55	42.3	17	13.1	58	44.6
C19-C20	Rectum	60	2.9	35	58.3	7	11.7	18	30.0
C25	Pancreas	37	1.8	1	2.7	7	18.9	29	78.4
C33-C34	Lung	102	5.0	16	15.7	10	9.8	76	74.5
C43	Malign. melanoma	71	3.5	47	66.2	1	1.4	23	32.4
C44	Skin others	187	9.1	66	35.3	9	4.8	112	59.9
C50	Breast	502	24.5	348	69.3	35	7.0	119	23.7
C53	Cervix uteri	42	2.0	31	73.8	3	7.1	8	19.0
C54	Corpus uteri	75	3.7	59	78.7	4	5.3	12	16.0
C56	Ovary	54	2.6	19	35.2	8	14.8	27	50.0
C64	Kidney	35	1.7	18	51.4	7	20.0	10	28.6
C67	Bladder	43	2.1	22	51.2	5	11.6	16	37.2
C70-C72	CNS cancer	50	2.4	24	48.0	4	8.0	22	44.0
C73	Thyroid	34	1.7	27	79.4			7	20.6
C76-C79	CUP	30	1.5	8	26.7	2	6.7	20	66.7
C82-C85	NHL	109	5.3			14	12.8	95	87.2
C90	Mult. myeloma	44	2.1			4	9.1	40	90.9
C91-C96	Leukaemia	212	10.3			54	25.5	158	74.5
Other primaries		179	8.7	68	38.0	12	6.7	99	55.3
All mult. primaries		2052	100.0	862	42.0	212	10.3	978	47.7

Multiple primaries with number of cases 1 to 19 are pooled in category "Other primaries"

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 multiple malignancy.

Table 16

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007-2014
(First primaries only *)

Age at death Years	Males n	Females n	Males Age- spec. mortal.	MI-index	Females Age- spec. mortal.	MI-index	Males Prop.all cancers %	Females Prop.all cancers %
0- 4		3	0.0		0.4	0.06		23.1
5- 9	5	4	0.6	0.10	0.5	0.11	25.0	22.2
10-14	6	10	0.6	0.13	1.1	0.28	33.3	52.6
15-19	11	5	1.1	0.14	0.5	0.09	33.3	25.0
20-24	11	4	1.0	0.13	0.4	0.05	25.6	15.4
25-29	16	10	1.3	0.15	0.8	0.12	29.1	16.9
30-34	18	11	1.4	0.17	0.9	0.16	20.9	11.6
35-39	23	18	1.8	0.16	1.4	0.18	13.9	7.9
40-44	53	31	3.3	0.24	2.0	0.23	12.5	5.6
45-49	87	51	5.5	0.28	3.4	0.30	9.5	5.0
50-54	116	69	9.0	0.34	5.4	0.30	7.3	4.6
55-59	143	116	13.5	0.40	10.3	0.38	5.5	5.4
60-64	231	145	23.5	0.51	13.7	0.40	5.9	5.1
65-69	395	268	41.1	0.54	25.7	0.50	7.0	6.5
70-74	563	397	61.9	0.66	38.0	0.64	8.1	7.8
75-79	590	422	107.1	0.88	59.2	0.70	9.5	8.7
80-84	448	464	128.3	0.86	82.7	0.82	8.4	9.2
85+	325	508	140.4	0.82	87.9	0.76	7.4	7.5
All ages	3041	2536					7.9	7.4
Mortality								
Raw			16.8	0.55	13.5	0.54		
WS			7.9	0.42	5.0	0.38		
ES			12.1	0.49	7.5	0.44		
BRD-S			16.6	0.56	10.2	0.50		
PYLL-70								
per 100,000			86.2		58.8			
ES			78.8		54.9			
AYLL-70			12.4		12.5			

* See corresponding tables with multiple primaries.

Table 17

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007-2014
(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		3	0.0		0.4	0.06		23.1
5- 9	5	4	0.6	0.10	0.5	0.11	25.0	22.2
10-14	6	9	0.6	0.13	1.0	0.25	33.3	50.0
15-19	11	4	1.1	0.14	0.4	0.07	33.3	22.2
20-24	9	3	0.8	0.10	0.3	0.04	23.1	12.5
25-29	13	8	1.1	0.12	0.6	0.10	25.5	14.3
30-34	17	9	1.4	0.17	0.7	0.13	20.0	10.8
35-39	20	14	1.5	0.14	1.1	0.15	12.7	6.8
40-44	43	26	2.6	0.20	1.7	0.19	10.8	5.1
45-49	70	36	4.4	0.23	2.4	0.23	8.1	3.9
50-54	90	54	7.0	0.29	4.2	0.25	6.3	4.1
55-59	112	94	10.5	0.34	8.4	0.34	4.8	5.0
60-64	169	111	17.2	0.41	10.5	0.34	5.0	4.6
65-69	310	209	32.2	0.49	20.0	0.43	6.5	6.2
70-74	448	332	49.2	0.60	31.8	0.58	7.9	8.0
75-79	453	342	82.3	0.75	47.9	0.62	9.4	8.6
80-84	367	394	105.1	0.77	70.3	0.75	9.0	9.6
85+	266	448	114.9	0.70	77.5	0.69	7.8	8.0
All ages	2409	2100					7.6	7.3
Mortality								
Raw			13.3	0.47	11.2	0.48		
WS			6.3	0.36	4.1	0.33		
ES			9.6	0.42	6.2	0.38		
BRD-S			13.1	0.48	8.4	0.43		
PYLL-70								
per 100,000			70.4		47.1			
ES			65.0		44.6			
AYLL-70			12.9		12.8			

* See corresponding tables with multiple primaries.

CD-10 C81-C96: Malignant neoplasms of lymphoid, haematopoietic and related tissue
Age distribution and age-specific mortality 2007 - 2014 (Males: 3920, Females: 3172)

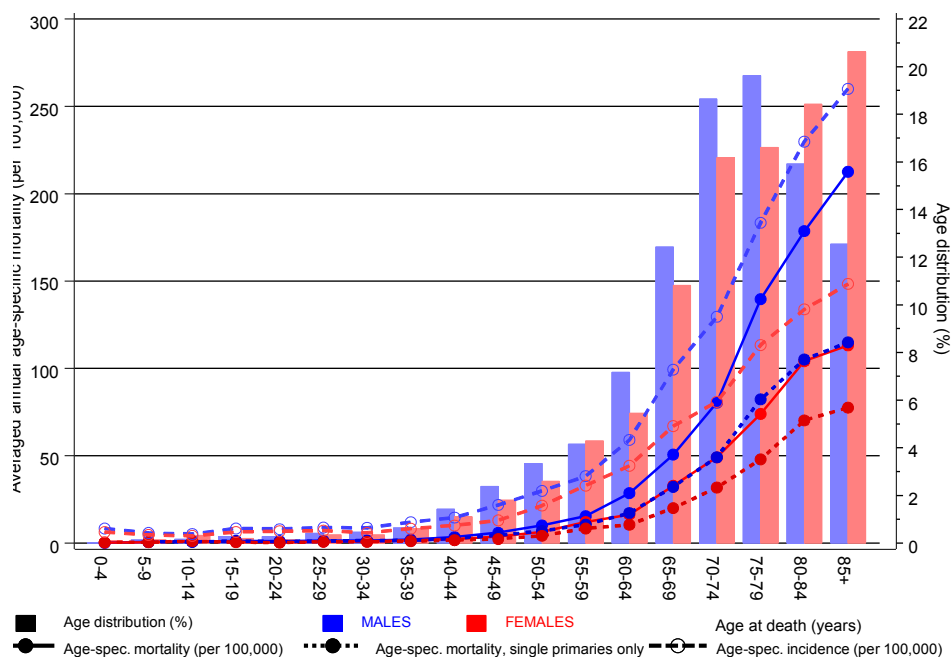
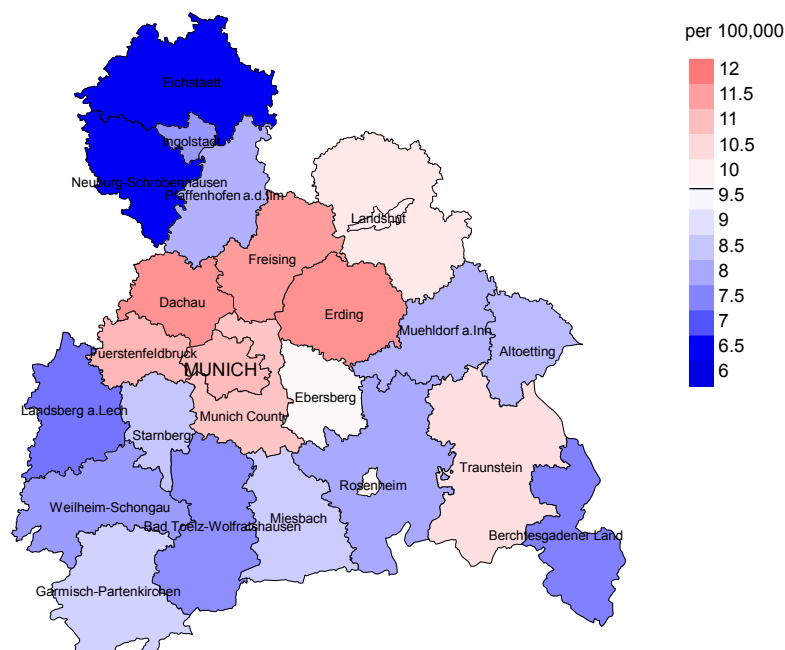


Figure 18. Distribution of age at death (bars) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

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

Average mortality (world standard population) 2007 - 2014: Males



Average mortality (world standard population) 2007 - 2014: Females

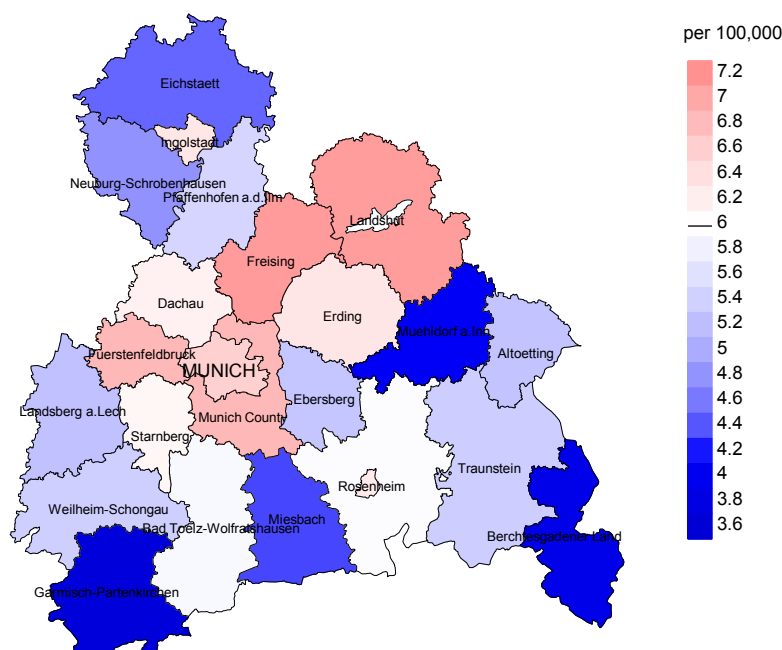
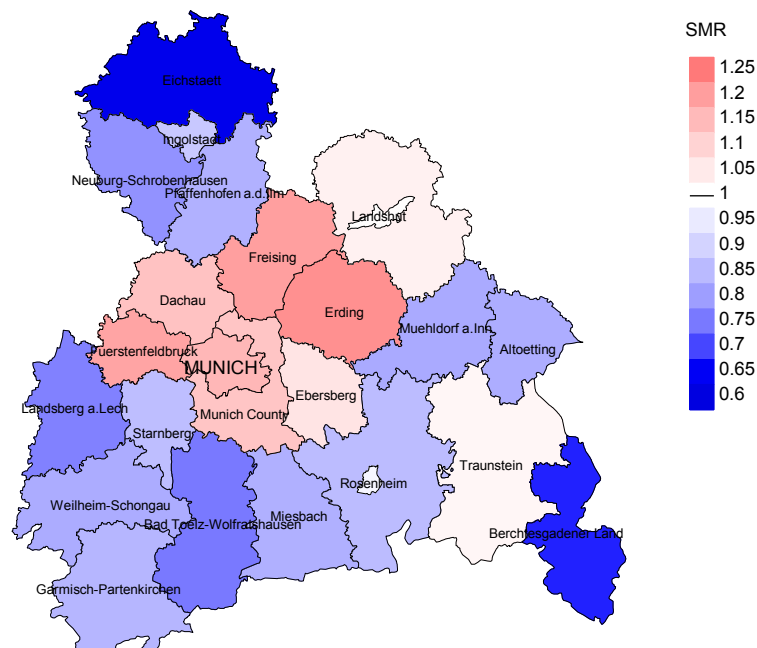


Figure 19a. Map of cancer mortality (world standard population) by county averaged for period 2007 to 2014. According to their individual mortality rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 9.7/100,000 WS N=3,857, females 6.0/100,000 WS N=3,126).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 65,347 female residents (averaged) in the period from 2007 to 2014 a total of 73 women died from systemic neoplasms. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 5.3/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 3.6 and 7.5/100,000.

Standardized mortality ratio (SMR) 2007 - 2014: Males



Standardized mortality ratio (SMR) 2007 - 2014: Females

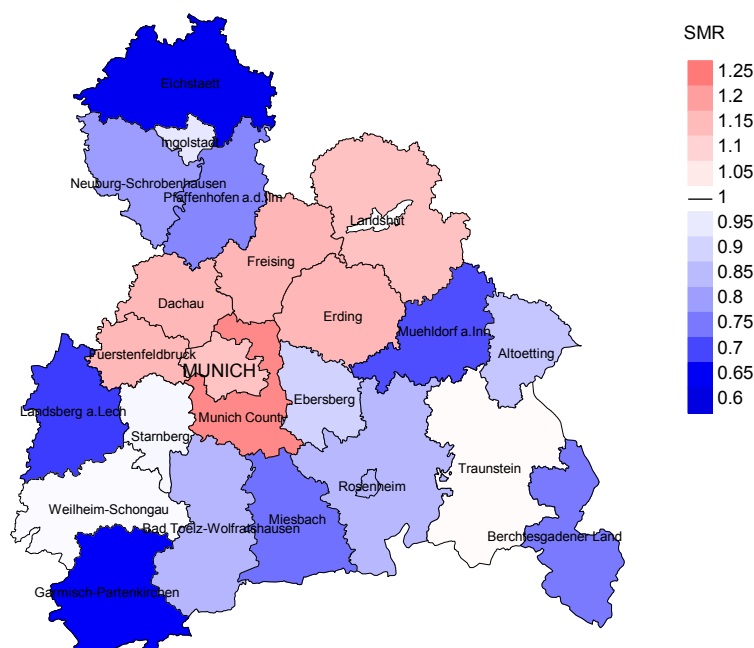


Figure 19b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2007 to 2014. According to their individual SMR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=3,857, females N=3,126).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 64,924 female residents (averaged) in the period from 2007 to 2014 a total of 73 women died from systemic neoplasms. 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 0.65 and 1.20, 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

FRG	Federal Republic of Germany
GEKID	Association of Population-based Cancer Registries in Germany (Gesellschaft der epidemiologischen Krebsregister in Deutschland e.V.)
MCR	Munich Cancer Registry (Tumorregister München)
SEER	Surveillance, Epidemiology, and End Results (USA)
AYLL-70	Average years of life lost prior to age 70 given a person dies before that age
BRD-S	German standard population
DCO	Death certificate only
EAR	Excess absolute risk = excess cancer cases (O - E) per 10,000 person-years
ES	European standard population (old)
LCL	Lower confidence limit
MI-index	Ratio between mortality and incidence
PYLL-70	Potential years of life lost prior to age 70 given a person dies before that age
SIR	Standardized incidence ratio
SMR	Standardized mortality ratio
UCL	Upper confidence limit
WS	World standard population

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