Munich Cancer Registry

- Survival
- Selection Matrix
- Homepage

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

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

Cancer statistics: Baseline statistics

C77-C79: Unknown primary

Year of diagnosis	1998-2011
Patients	3994
Diseases	3997
Creation date	04/02/2013
Export date	01/03/2013
Population	4.5 m

http://www.tumorregister-muenchen.de/en/facts/base/base_C7779E.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 4.5 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. The time-delayed acquisition of data and the occasionally high DCO-rates indicate optimizing reserves, among others, because of current financial and legal conditions that hinder the analyses.

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 2013

[#] 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). Death certificates from 2011 are incorporated into these analyses.

[##] 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. A high proportion of DCO cases (≥5%) in particular cancer types indicate insufficient participation of specific cancer specializations.

INCIDENCE

Table 1

Patient cohorts by year of diagnosis including DCO cases and multiple primaries, and with proportion of deaths and active follow-up

Year of diagnosis	Cases # n	DCO cases n	Prop. DCO %	Prop. mult. primaries %	Prop. deaths %	Prop. actively followed %
1998	241	35	14.5	15.8	95.4	98.8
1999	198	46	23.2	17.2	97.5	99.5
2000	192	54	28.1	14.6	95.3	99.5
2001	186	58	31.2	16.7	94.1	99.5
2002	343	108	31.5	17.8	96.2	99.7
2003	356	117	32.9	15.7	94.4	100.0
2004	368	79	21.5	17.9	90.8	98.4
2005	332	81	24.4	25.3	93.7	98.2
2006	313	81	25.9	23.0	87.5	98.7
2007	376	94	25.0	20.5	88.8	96.3 ##
2008	354	91	25.7	19.5	88.4	94.1
2009	286	76	26.6	21.7	84.3	93.0
2010	269	89	33.1	18.6	83.6	97.8
2011	183	72	39.3	14.8	80.3	92.9 ###
1998-2011	3997	1081	27.0	18.9	90.7	97.6

The increases of incident cases in 2002 and 2007 reflect the expansion to additional registry areas.

Since 2007 the percentage of actively followed patients sharply declined compared to the previous years. This is a consequence of ambiguous data protection rules that currently forbid cancer registries in Bavaria to obtain the essential life status informations from competent registration offices.

Please be aware that data of recent annual patient cohorts may not yet be fully processed. Therefore, the presented figures and tables are potentially related to different time periods as pointed out in the respective headlines or legends.

Table 1a

Patient cohorts by year of diagnosis and gender
including DCO cases

Year of diagnosis	All n	Males n	Females n	Prop. males %
1998	241	119	122	49.4
1999	198	97	101	49.0
2000	192	88	104	45.8
2001	186	97	89	52.2
2002	343	167	176	48.7
2003	356	184	172	51.7
2004	368	200	168	54.3
2005	332	162	170	48.8
2006	313	175	138	55.9
2007	376	207	169	55.1
2008	354	207	147	58.5
2009	286	147	139	51.4
2010	269	136	133	50.6
2011	183	91	92	49.7
1998-2011	3997	2077	1920	52.0

Table 2

Incidence measures by year of diagnosis and gender including DCO cases
(with respect to registry area expansion from 2.51 to 3.96 m as of 2002,
and from 3.96 to 4.52 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	119	122	10.7	10.4	6.8	3.8	9.9	6.1	12.5	8.6
1999	97	101	8.7	8.5	5.2	3.7	7.8	5.5	9.9	7.0
2000	88	104	7.7	8.7	4.7	3.7	7.0	5.5	8.9	6.9
2001	97	89	8.4	7.3	4.9	3.0	7.5	4.6	10.0	5.8
2002	167	176	9.0	9.0	5.1	3.2	7.8	5.0	10.1	6.8
2003	184	172	9.8	8.7	5.4	3.3	8.3	5.1	10.9	6.7
2004	200	168	10.6	8.5	5.7	3.3	8.7	5.0	11.5	6.6
2005	162	170	8.6	8.5	4.7	3.2	6.9	5.1	8.8	6.7
2006	175	138	9.1	6.9	4.8	2.5	7.3	3.8	9.6	5.1
2007	207	169	9.3	7.3	5.0	2.7	7.4	4.1	9.6	5.6
2008	207	147	9.3	6.3	4.7	2.4	7.1	3.6	9.1	4.8
2009	147	139	6.6	6.0	3.2	2.4	4.9	3.6	6.6	4.5
2010	136	133	6.0	5.7	2.9	2.0	4.5	3.0	5.9	4.0
2011	91	92	4.0	3.9	1.9	1.2	2.9	1.9	3.9	2.7
1998-2011	2077	1920	8.3	7.3	4.4	2.7	6.7	4.2	8.6	5.6

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)
(incl. DCO)

Year of diagnosis	Cases n	Mean	Std. dev.	Min.	Max.	10%	25%	Median 50%	75%	90%
1998	241	70.9	13.2	30.2	99.6	53.7	61.0	71.5	81.5	86.5
1999	198	70.5	12.2	23.4	94.9	54.6	62.4	69.7	78.3	87.3
2000	192	69.1	15.4	28.6	99.2	48.4	57.3	69.8	81.0	88.3
2001	186	70.7	13.4	36.8	97.6	53.5	60.8	71.5	80.2	87.8
2002	343	72.4	13.3	30.7	97.2	53.7	63.3	74.3	82.2	88.6
2003	356	72.1	13.6	27.7	101	55.0	62.4	73.2	82.1	89.6
2004	368	70.6	13.3	32.9	97.4	52.5	61.8	71.6	81.3	85.4
2005	332	71.0	13.3	22.5	101	54.6	62.9	72.0	80.6	87.5
2006	313	72.1	14.5	0.2	97.9	53.6	63.6	74.5	83.1	88.2
2007	376	72.0	13.2	16.5	99.2	54.0	63.3	72.9	82.6	87.3
2008	354	71.8	12.2	31.9	99.5	55.6	64.3	72.4	80.9	87.1
2009	286	72.6	12.9	31.6	98.0	54.5	63.8	73.8	82.9	88.3
2010	269	73.6	13.2	27.1	99.2	56.0	64.2	75.7	84.6	89.0
2011	183	76.1	11.0	44.3	99.8	62.0	68.7	76.1	84.1	89.8
1998-2011	3997	71.8	13.3	0.2	101	54.1	62.8	73.0	82.1	88.1

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	119	66.4	12.8	30.2	93.3	49.3	57.2	67.9	74.7	84.7
1999	97	67.9	12.0	23.4	94.9	54.0	59.3	66.8	75.9	85.0
2000	88	66.2	13.8	39.6	96.8	49.0	55.4	64.2	77.6	86.4
2001	97	68.7	11.8	36.8	97.6	53.5	59.8	68.4	78.1	82.4
2002	167	68.4	13.3	30.7	93.6	50.6	58.8	69.4	79.2	86.0
2003	184	69.2	13.4	27.7	91.2	52.6	59.9	69.4	80.0	86.6
2004	200	68.4	12.3	34.4	94.0	51.3	60.0	68.7	78.1	82.7
2005	162	66.9	13.1	22.5	97.0	49.7	58.6	67.2	75.9	82.4
2006	175	69.9	14.5	0.2	97.1	53.3	61.8	70.5	81.2	86.5
2007	207	69.4	12.7	16.5	94.1	52.4	61.1	69.0	79.7	85.7
2008	207	70.0	11.0	31.9	95.7	55.6	62.7	69.4	78.6	84.8
2009	147	72.2	11.5	41.3	92.4	55.9	64.3	73.0	81.7	86.8
2010	136	70.9	12.8	31.5	93.2	55.2	61.7	71.4	81.3	86.3
2011	91	73.8	9.5	52.5	95.7	62.5	67.4	72.8	80.6	86.6
1998-2011	2077	69.2	12.7	0.2	97.6	53.0	60.7	69.4	78.9	85.2

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	122	75.2	12.1	43.7	99.6	58.4	66.0	77.3	83.7	90.3
1999	101	73.1	11.9	44.9	94.3	57.9	64.9	72.7	83.6	88.5
2000	104	71.6	16.3	28.6	99.2	47.7	59.0	75.3	85.4	89.3
2001	89	72.9	14.8	39.6	96.1	50.9	60.9	75.8	85.4	91.0
2002	176	76.2	12.3	38.9	97.2	59.2	68.2	79.5	84.7	90.1
2003	172	75.2	13.2	36.2	101	56.7	65.1	77.4	84.7	90.7
2004	168	73.2	14.1	32.9	97.4	53.8	64.6	76.0	83.2	90.1
2005	170	74.9	12.3	35.1	101	56.8	65.7	76.4	83.6	90.3
2006	138	75.1	14.0	23.8	97.9	54.5	67.6	79.3	85.3	90.4
2007	169	75.1	13.2	22.0	99.2	57.3	66.5	77.1	84.9	89.6
2008	147	74.3	13.4	33.8	99.5	55.5	66.8	76.1	84.9	88.3
2009	139	72.9	14.3	31.6	98.0	53.5	63.0	74.4	85.6	89.9
2010	133	76.3	13.1	27.1	99.2	58.6	66.9	80.1	87.0	90.0
2011	92	78.5	11.9	44.3	99.8	61.2	72.6	80.5	87.4	91.9
1998-2011	1920	74.7	13.4	22.0	101	55.9	65.6	77.2	84.9	90.1

Table 4

Age distribution by 5-year age group and gender for period 1998-2011 (incl. DCO)

Age at diagnosis Years	Cases n	%	Cum.%	Males n	%	Cum.%	Females n	%	Cum.%
0-4	1	0.0	0.0	1	0.0	0.0			0.0
5-9	0	0.0	0.0			0.0			0.0
10-14	0	0.0	0.0			0.0			0.0
15-19	1	0.0	0.1	1	0.0	0.1			0.0
20-24	4	0.1	0.2	2	0.1	0.2	2	0.1	0.1
25-29	6	0.2	0.3	4	0.2	0.4	2	0.1	0.2
30-34	18	0.5	0.8	13	0.6	1.0	5	0.3	0.5
35-39	31	0.8	1.5	15	0.7	1.7	16	0.8	1.3
40-44	52	1.3	2.8	28	1.3	3.1	24	1.3	2.6
45-49	130	3.3	6.1	82	3.9	7.0	48	2.5	5.1
50-54	205	5.1	11.2	130	6.3	13.3	75	3.9	9.0
55-59	335	8.4	19.6	210	10.1	23.4	125	6.5	15.5
60-64	416	10.4	30.0	249	12.0	35.4	167	8.7	24.2
65-69	521	13.0	43.0	351	16.9	52.3	170	8.9	33.0
70-74	470	11.8	54.8	254	12.2	64.5	216	11.3	44.3
75-79	543	13.6	68.4	274	13.2	77.7	269	14.0	58.3
80-84	577	14.4	82.8	249	12.0	89.7	328	17.1	75.4
85+	687	17.2	100.0	214	10.3	100.0	473	24.6	100.0
All ages	3997	100.0		2077	100.0		1920	100.0	

Included in the statistics are 27.0% multiple primaries in males and 17.5% in females.

Table 5

Age-specific incidence, DCO rate and proportion of all cancers
for period 1998-2011

Age at diagnosis Years	Males n	Females n	Males Age-spec. incid.	Females Age-spec. incid.	Males DCO rate n=472 %	Females DCO rate n=608 %	Males Prop.all cancers n=132509 %	Females Prop.all cancers n=129521 %
0- 4	1		0.1	0.0	100.0		0.4	
5- 9			0.0	0.0				
10-14			0.0	0.0				
15-19	1		0.1	0.0			0.3	
20-24	2	2	0.1	0.1		50.0	0.4	0.5
25-29	4	2	0.2	0.1			0.5	0.2
30-34	13	5	0.7	0.3			1.0	0.3
35-39	15	16	0.7	0.8	13.3		0.8	0.5
40-44	28	24	1.3	1.1			1.0	0.5
45-49	82	48	4.2	2.5	7.3	6.3	1.8	0.7
50-54	130	75	7.8	4.4	7.7	6.7	1.8	0.8
55-59	210	124	13.5	7.6	9.0	5.6	1.7	1.1
60-64	248	167	16.3	10.4	12.9	13.2	1.3	1.1
65-69	351	170	25.8	11.4	13.4	15.9	1.5	1.0
70-74	254	216	24.6	17.5	23.6	19.9	1.2	1.4
75-79	273	269	40.4	27.1	32.2	27.9	1.6	1.8
80-84	249	328	61.3	41.3	35.3	41.8	2.3	2.4
85+	214	473	77.2	63.7	55.6	60.9	2.6	3.3
All ages	2075	1919			22.7	31.7	1.6	1.5
Incidence								
Raw			8.3	7.3				
WS			4.4	2.7				
ES			6.6	4.2				
BRD-S			8.6	5.6				

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).

Table 6a

Standardized incidence ratio (SIR, with 95% confidence limits), excess absolute risk (EAR) and DCO rate of second primaries for period 1998-2011
MALES

Diagnosis	Observed n	Expected n	SIR	LCL 95%	UCL 95%		EAR	DCO %
C03-C06 Oral cavity	3	0.2	12.4	2.6	36.2	#	16.7	
C09-C10 Oropharynx	8	0.3	26.3	11.3	51.7	#	46.5	
C12-C13 Hypopharynx	5	0.2	28.7	9.3	67.1	#	29.2	20.0
C15 Oesophagus	4	0.5	8.7	2.4	22.4	#	21.4	
C16 Stomach	6	1.1	5.5	2.0	12.0	#	29.7	33.3
C18 Colon	10	2.5	3.9	1.9	7.2	#	45.1	20.0
C22 Liver	5	0.7	7.3	2.4	16.9	#	26.1	40.0
C23-C24 Bile	4	0.2	16.7	4.6	42.8	#	22.7	50.0
C25 Pancreas	4	0.9	4.6	1.3	11.8	#	18.9	50.0
C26 GI cancer	3	0.0	101.3	20.9	296.0	#	18.0	33.3
C32 Larynx	5	0.3	17.3	5.6	40.3	#	28.5	
C33-C34 Lung	33	3.1	10.7	7.4	15.1	#	180.9	30.3
C38,C45 Mesothelioma	3	0.2	19.0	3.9	55.6	#	17.2	
C48 Peritoneal	2	0.0	113.3	13.7	409.3	#	12.0	100.0
C61 Prostate	27	7.6	3.5	2.3	5.1	#	117.1	11.1
C64 Kidney	9	0.9	10.0	4.6	18.9	#	48.9	11.1
C65 Renal pelvis	2	0.1	20.7	2.5	74.6	#	11.5	50.0
C67 Bladder	4	1.1	3.7	1.0	9.6	#	17.7	
C73 Thyroid	4	0.2	22.1	6.0	56.5	#	23.1	
C76-C79 CUP	2	0.4	4.5	0.5	16.3		9.4	50.0
C82-C85 NHL	5	1.0	5.1	1.7	11.9	#	24.3	20.0
C91-C96 Leukaemia	2	0.4	5.3	0.6	19.1		9.8	
Other primaries	11	3.5	3.2	1.6	5.7	#	45.5	18.2
Not observed	0	0.6	0.0	0.0	6.6		-3.4	
All mult. primaries	161	25.9	6.2	5.3	7.3	#	816.5	20.5

Patients	1354
Mean age at second malignancy (years)	66.3
Person-years	1655
Mean observation time (years)	1.2
Median observation time (years)	0.5

The occurrence of second malignancy is statistically significant.

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

Table 6b

Standardized incidence ratio (SIR, with 95% confidence limits),
excess absolute risk (EAR) and DCO rate of second primaries
for period 1998-2011
FEMALES

Diagnosis		Observed n	Expected n	SIR	LCL 95%	UCL 95%		EAR	DCO %
C09-C10	Oropharynx	4	0.1	60.0	16.4	153.7	#	27.3	
C16	Stomach	3	0.7	4.1	0.8	12.0		15.7	
C18	Colon	7	1.9	3.6	1.5	7.5	#	35.2	57.1
C22	Liver	3	0.2	15.0	3.1	43.9	#	19.4	66.7
C23-C24	Bile	2	0.3	7.2	0.9	26.2		11.9	100.0
C25	Pancreas	5	0.8	6.7	2.2	15.5	#	29.4	40.0
C33-C34	Lung	11	1.1	9.8	4.9	17.5	#	68.5	54.5
C43	Malign. melanoma	3	0.5	5.5	1.1	16.1	#	17.0	33.3
C50	Breast	27	5.0	5.4	3.6	7.9	#	152.4	11.1
C53	Cervix uteri	2	0.2	8.4	1.0	30.5	#	12.2	
C54	Corpus uteri	3	0.9	3.3	0.7	9.6		14.4	
C56	Ovary	9	0.7	12.4	5.7	23.6	#	57.3	33.3
C64	Kidney	3	0.4	7.1	1.5	20.8	#	17.9	33.3
Other primaries		15	2.8	5.3	3.0	8.7	#	84.2	26.7
Not observed		0	1.5	0.0	0.0	2.4		-10.6	
All mult. primaries		97	17.3	5.6	4.6	6.8	#	552.4	28.9

Patients	1151
Mean age at second malignancy (years)	71.0
Person-years	1443
Mean observation time (years)	1.3
Median observation time (years)	0.4

The occurrence of second malignancy is statistically significant.

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

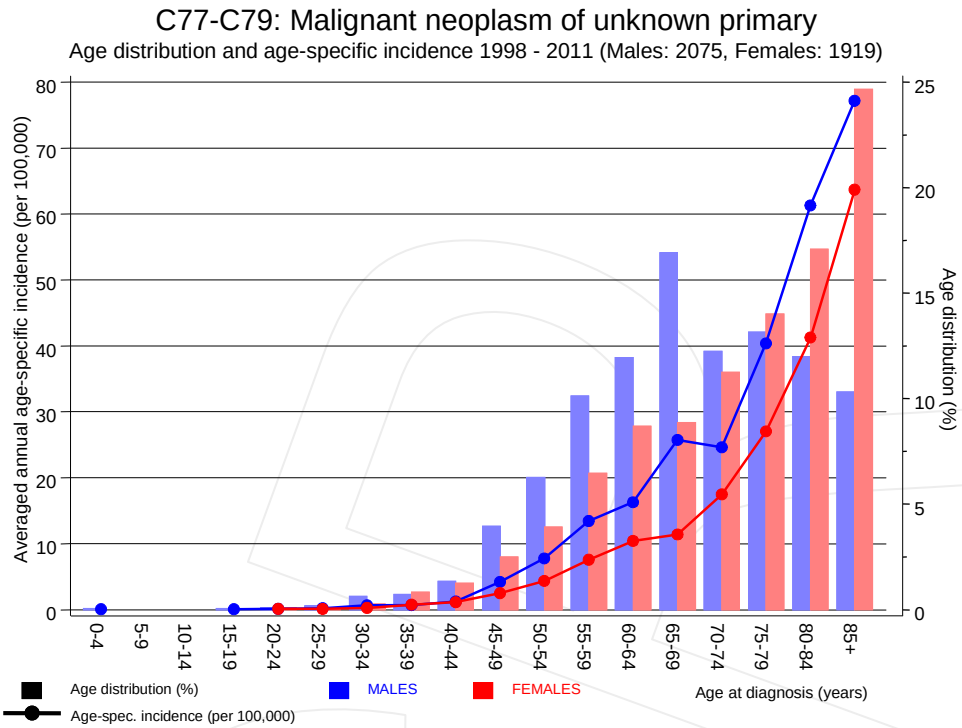


Figure 7. Age distribution and age-specific incidence

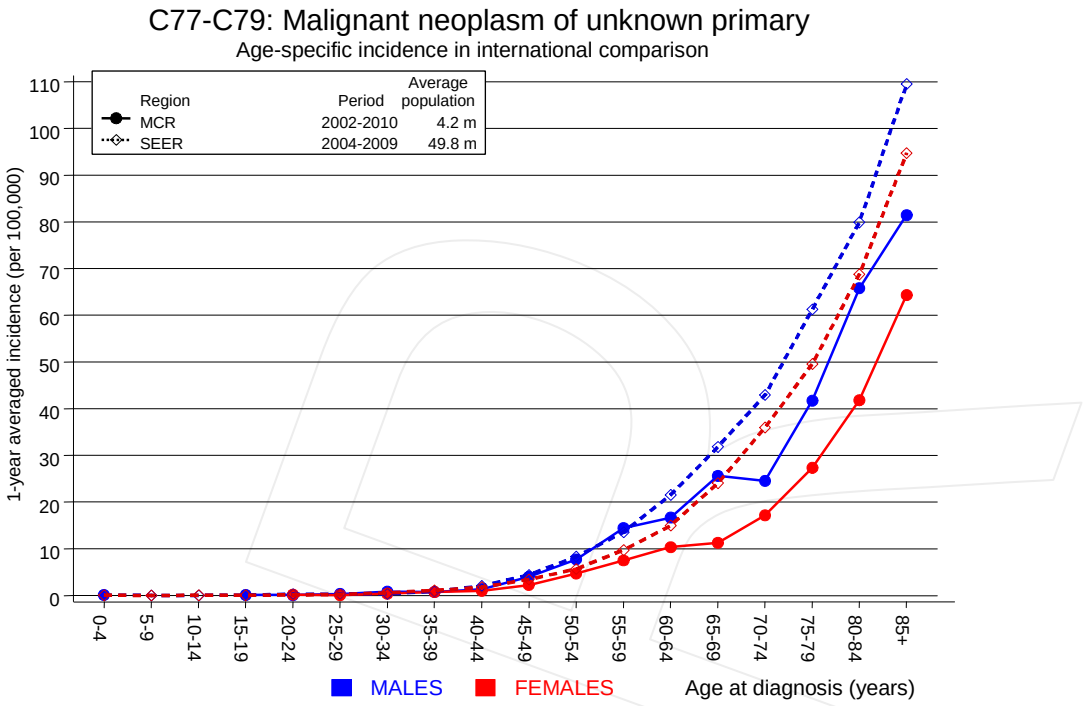


Figure 7a. Age-specific incidence in MCR registry areas compared to SEER (Surveillance, Epidemiology, and End Results, USA).

Reference:

Surveillance, Epidemiology, and End Results (SEER) Program SEER*Stat Database: Incidence - SEER 18 Regs Research Data, released April 2012, based on the November 2011 submission. http://www.seer.cancer.gov.

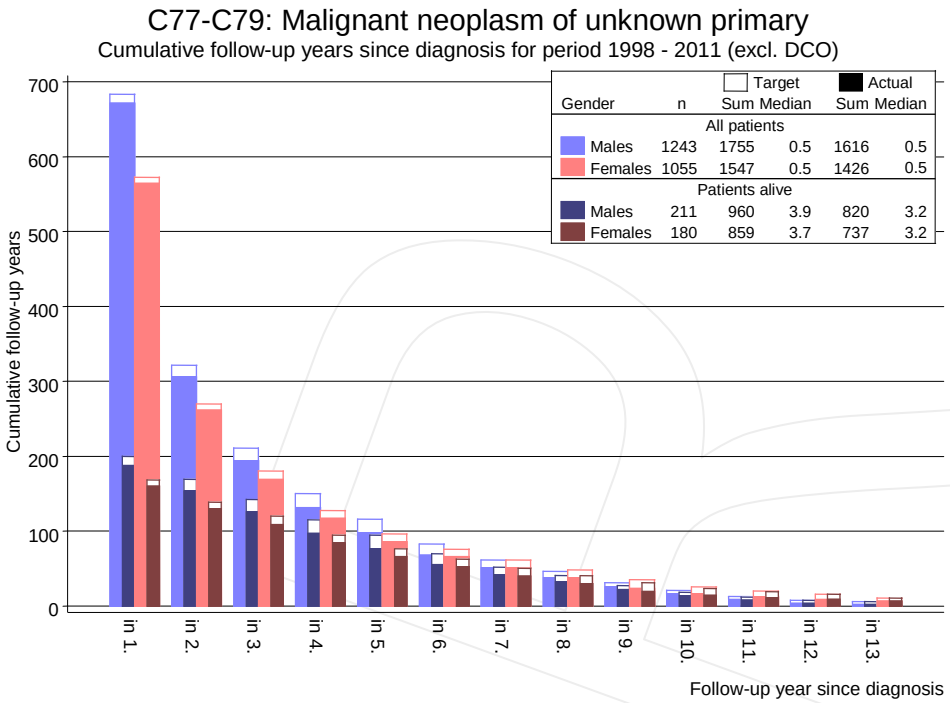
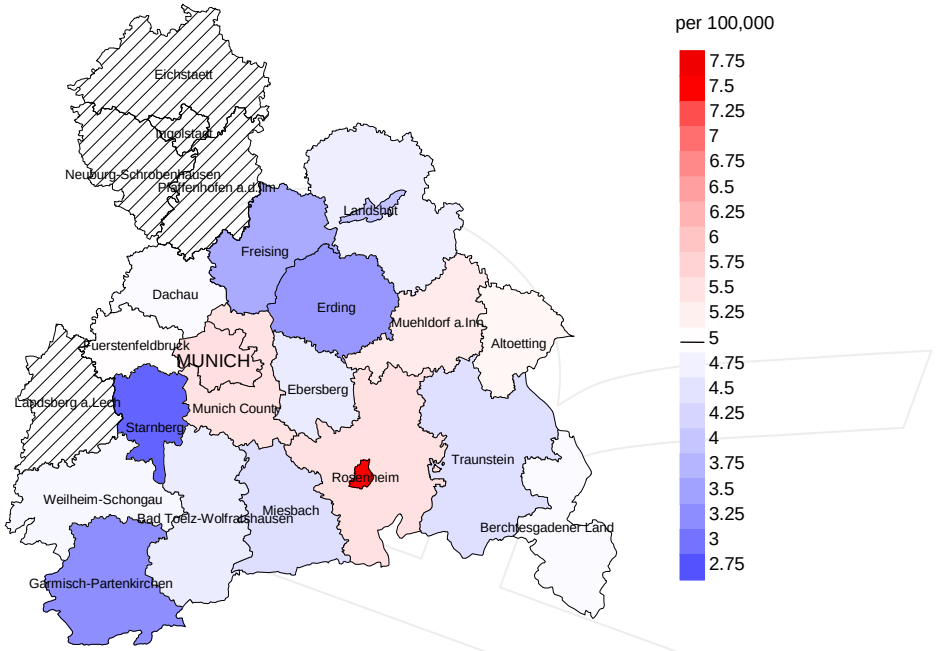


Figure 8. Cumulative follow-up years depending on time since diagnosis

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

Average incidence (world standard population) 2003 - 2008: Males



Average incidence (world standard population) 2003 - 2008: Females

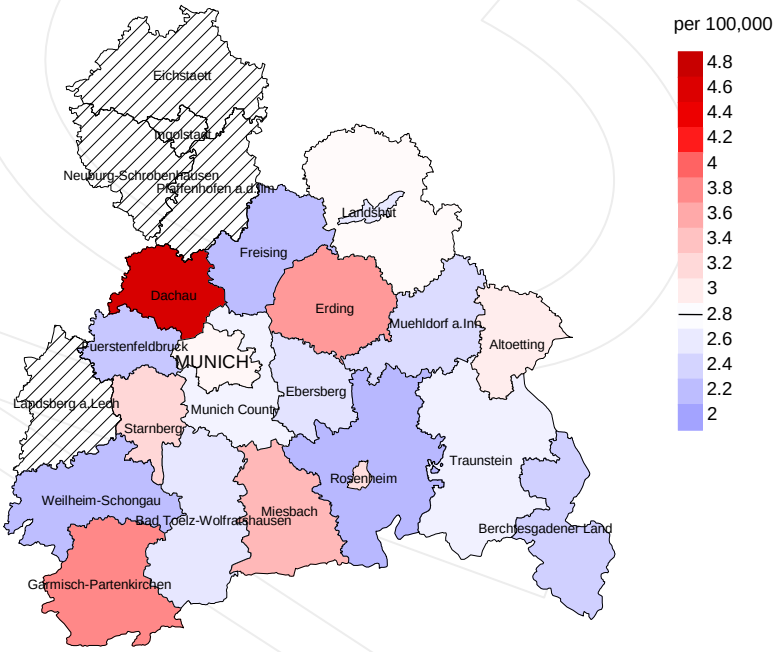
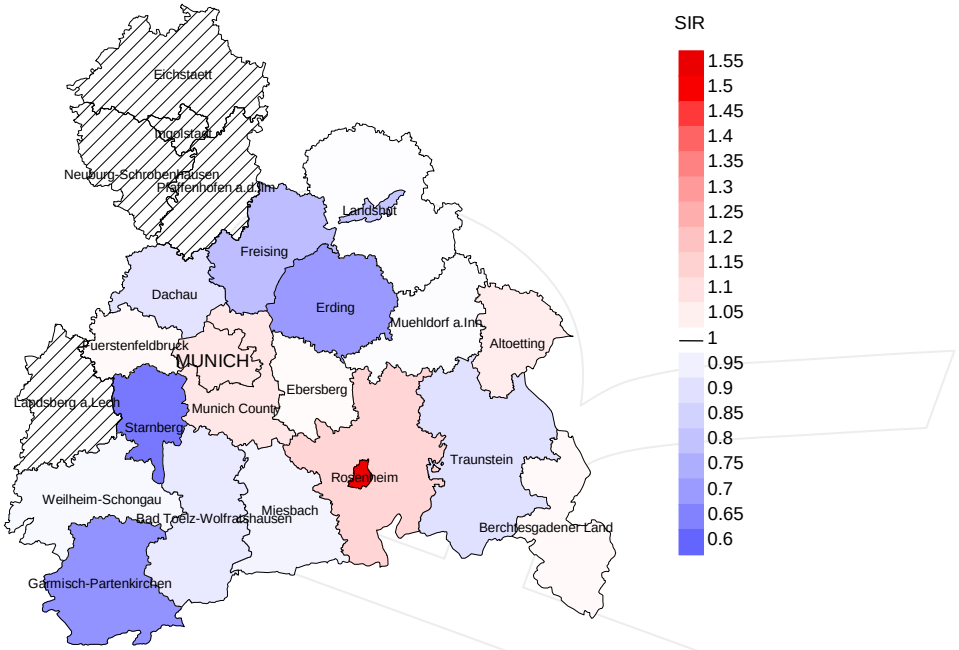


Figure 9a. Map of cancer incidence (world standard population, incl. DCO cases) by county averaged for period 2003 to 2008. According to their individual incidence rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 5.0/100,000 WS N=1,071, females 2.8/100,000 WS N=911). Since cancer data are not available in some counties until 2007, the local incidence rates were not calculated, and the map tiles show as shaded.

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 63,131 female residents (averaged) in the period from 2003 to 2008 a total of 24 women were identified with newly diagnosed unknown primary. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 2.5/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 1.3 and 4.6/100,000.

Standardized incidence ratio (SIR) 2003 - 2008: Males



Standardized incidence ratio (SIR) 2003 - 2008: Females

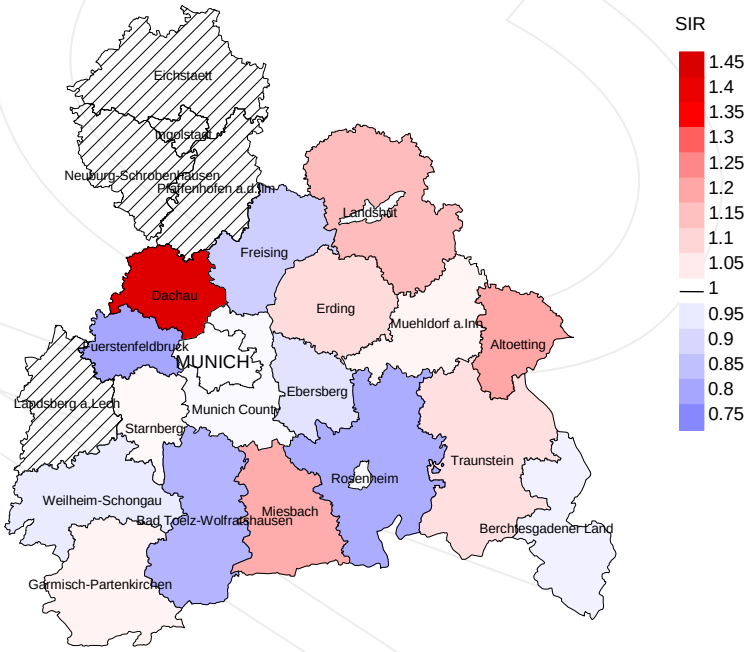


Figure 9b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2003 to 2008. According to their individual SIR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=1,071, females N=911). Since cancer data are not available in some counties until 2007, the local SIR values were not calculated, and the map tiles show as shaded.

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 63,131 female residents (averaged) in the period from 2003 to 2008 a total of 24 women were identified with newly diagnosed unknown primary. Therefore, the mean standardized incidence ratio (SIR) for this cancer type in this area can be calculated at 0.93. Though, the value of this parameter may vary with an underlying probability of 99% between 0.51 and 1.54, 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 4.52 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	241	98.8	14.5	230	95.4	93.5
1999	198	99.5	23.2	193	97.5	92.2
2000	192	99.5	28.1	183	95.3	96.7
2001	186	99.5	31.2	175	94.1	98.9
2002	343	99.7	31.5	330	96.2	98.2
2003	356	100.0	32.9	336	94.4	99.1
2004	368	98.4	21.5	334	90.8	98.8
2005	332	98.2	24.4	311	93.7	99.0
2006	313	98.7	25.9	274	87.5	99.3
2007	376	96.3	25.0	334	88.8	98.5
2008	354	94.1	25.7	313	88.4	98.7
2009	286	93.0	26.6	241	84.3	98.8
2010	269	97.8	33.1	225	83.6	99.1
2011	183	92.9	39.3	147	80.3	98.0
1998-2011	3997	97.6	27.0	3626	90.7	98.0

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 4.52 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	241	201	94.0	141	58.5
1999	198	196	92.3	120	60.6
2000	192	197	96.4	124	64.6
2001	186	169	96.4	116	62.4
2002	343	231	98.3	197	57.4
2003	356	278	97.8	213	59.8
2004	368	300	98.7	193	52.4
2005	332	277	98.2	181	54.5
2006	313	288	98.3	178	56.9
2007	376	291	99.0	208	55.3
2008	354	319	98.1	218	61.6
2009	286	246	99.2	154	53.8
2010	269	258	99.2	173	64.3
2011	183	197	99.0	139	76.0
1998-2011	3997	3448	97.7	2355	58.9

Table 10c

Annual cohorts of deaths, proportion of cancer-related and not 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 4.52 m as of 2007, respectively)

Year of death	Deaths n	Prop. cancer-related %	Prop. not cancer-related %	Prop. cancer recorded on death certificate %
1998	201	94.5	5.5	96.3
1999	196	99.0	1.0	96.7
2000	197	100.0		95.8
2001	169	98.8	1.2	95.7
2002	231	99.1	0.9	96.5
2003	278	100.0		96.7
2004	300	98.7	1.3	95.9
2005	277	99.3	0.7	95.2
2006	288	99.3	0.7	95.4
2007	291	99.7	0.3	96.2
2008	319	98.7	1.3	95.8
2009	246	99.2	0.8	97.1
2010	258	98.8	1.2	95.3
2011	197	99.0	1.0	94.4
1998-2011	3448	98.9	1.1	95.9

Table 11a

Means 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 (not cancer-related) Years	Age at death (according to death certificate) Years
1998	103	67.7	67.8	65.0	67.4
1999	96	68.1	67.8	95.0	67.6
2000	97	68.4	68.4		67.5
2001	81	69.2	69.2		69.1
2002	120	69.7	69.7	67.1	69.7
2003	142	70.3	70.3		70.0
2004	162	69.7	69.6	89.3	69.2
2005	149	67.5	67.4	91.8	67.7
2006	142	68.3	68.4	54.7	68.0
2007	155	70.3	70.2	85.6	70.3
2008	182	70.5	70.5	76.3	70.4
2009	143	72.2	72.2	73.0	71.8
2010	127	72.4	72.4	75.0	72.0
2011	108	72.5	72.5		72.1
1998-2011	1807	69.9	69.8	74.0	69.6

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

Means 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 (not cancer-related) Years	Age at death (according to death certificate) Years
1998	98	75.3	74.5	87.3	75.2
1999	100	75.5	75.4	81.6	75.5
2000	100	73.7	73.7		73.6
2001	88	75.2	75.5	66.3	75.8
2002	111	76.5	76.4	87.3	76.6
2003	136	74.5	74.5		75.0
2004	138	76.5	76.4	83.2	76.6
2005	128	75.1	75.0	91.0	75.3
2006	146	74.7	74.6	84.8	74.4
2007	136	76.6	76.6		76.4
2008	137	75.1	74.9	86.8	74.9
2009	103	73.7	73.7	73.0	73.9
2010	131	74.8	74.8	70.9	74.7
2011	89	77.1	76.9	85.6	76.9
1998-2011	1641	75.3	75.2	82.8	75.3

By 2010, life expectancy for a newborn male in Germany is 77.5 years compared with 82.6 years for his female counterpart.

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	98	8.8	0.82	5.3	0.79	8.0	0.81	10.4	0.83
1999	95	8.5	0.98	5.2	1.01	7.9	1.01	10.0	1.02
2000	97	8.5	1.10	5.0	1.06	7.6	1.09	9.9	1.11
2001	81	7.0	0.84	4.1	0.84	6.3	0.85	8.5	0.85
2002	119	6.4	0.72	3.6	0.70	5.5	0.71	7.3	0.72
2003	142	7.6	0.77	4.1	0.75	6.3	0.76	8.4	0.77
2004	161	8.6	0.81	4.6	0.79	7.0	0.81	9.4	0.82
2005	148	7.8	0.92	4.3	0.91	6.3	0.91	8.0	0.92
2006	141	7.4	0.81	4.0	0.83	5.9	0.81	7.7	0.81
2007	154	7.0	0.74	3.6	0.72	5.4	0.73	7.2	0.75
2008	180	8.1	0.87	4.0	0.85	6.0	0.85	7.9	0.87
2009	142	6.4	0.97	3.1	0.99	4.9	0.99	6.3	0.96
2010	125	5.5	0.92	2.6	0.89	4.0	0.90	5.3	0.90
2011	108	4.8	1.19	2.2	1.20	3.5	1.20	4.6	1.20
1998-2011	1791	7.1	0.86	3.7	0.85	5.7	0.86	7.5	0.87

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	92	7.8	0.75	2.9	0.76	4.6	0.75	6.2	0.73
1999	99	8.3	0.98	3.3	0.89	5.1	0.92	6.7	0.95
2000	100	8.3	0.96	3.4	0.92	5.1	0.93	6.6	0.95
2001	86	7.1	0.97	2.6	0.85	4.1	0.90	5.5	0.94
2002	110	5.6	0.63	2.0	0.64	3.2	0.64	4.3	0.62
2003	136	6.9	0.79	2.7	0.83	4.2	0.82	5.5	0.81
2004	135	6.8	0.81	2.3	0.71	3.7	0.74	5.1	0.78
2005	127	6.4	0.75	2.4	0.74	3.7	0.73	4.8	0.73
2006	145	7.2	1.05	2.7	1.10	4.2	1.09	5.5	1.07
2007	136	5.9	0.80	2.0	0.77	3.2	0.78	4.3	0.77
2008	135	5.8	0.92	2.2	0.93	3.3	0.92	4.4	0.90
2009	102	4.4	0.73	1.7	0.70	2.5	0.70	3.3	0.75
2010	130	5.6	0.98	2.0	1.00	3.1	1.00	4.1	1.02
2011	87	3.7	0.95	1.3	1.04	2.0	1.02	2.6	0.99
1998-2011	1620	6.2	0.84	2.3	0.83	3.5	0.83	4.7	0.84

Table 13

Age distribution of age at death (cancer-related) for period 1998-2011
(**incl. multiple primaries**)

Age at death Years	Cases n	%	Cum.%	Males n	%	Cum.%	Females n	%	Cum.%
0-4	1	0.0	0.0	1	0.1	0.1			0.0
5-9	0	0.0	0.0			0.1			0.0
10-14	0	0.0	0.0			0.1			0.0
15-19	1	0.0	0.1	1	0.1	0.1			0.0
20-24	2	0.1	0.1	2	0.1	0.2			0.0
25-29	4	0.1	0.2	2	0.1	0.3	2	0.1	0.1
30-34	15	0.4	0.7	11	0.6	0.9	4	0.2	0.4
35-39	22	0.6	1.3	11	0.6	1.6	11	0.7	1.0
40-44	36	1.1	2.4	20	1.1	2.7	16	1.0	2.0
45-49	95	2.8	5.2	59	3.3	6.0	36	2.2	4.3
50-54	149	4.4	9.5	95	5.3	11.3	54	3.3	7.6
55-59	268	7.8	17.4	172	9.6	20.9	96	5.9	13.5
60-64	359	10.5	27.9	214	11.9	32.8	145	8.9	22.4
65-69	454	13.3	41.2	297	16.6	49.4	157	9.7	32.1
70-74	441	12.9	54.1	257	14.3	63.7	184	11.3	43.4
75-79	482	14.1	68.2	243	13.6	77.2	239	14.7	58.2
80-84	480	14.1	82.2	218	12.2	89.4	262	16.1	74.3
85+	607	17.8	100.0	190	10.6	100.0	417	25.7	100.0
All ages	3416	100.0		1793	100.0		1623	100.0	

Included in the statistics are 27.0% multiple primaries in males and 17.5% in females.

Table 14

Age-specific mortality (cancer-related) and proportion of all cancers
for period 1998-2011
(**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		0.1	1.00	0.0		3.4	
5- 9			0.0		0.0			
10-14			0.0		0.0			
15-19	1		0.1	1.00	0.0		2.6	
20-24	2		0.1	1.00	0.0		2.5	
25-29	2	2	0.1	0.50	0.1	1.00	2.3	2.0
30-34	11	4	0.6	0.85	0.2	0.80	6.5	2.0
35-39	11	11	0.5	0.73	0.5	0.69	3.0	2.4
40-44	20	16	0.9	0.71	0.8	0.67	2.6	1.6
45-49	59	36	3.0	0.72	1.9	0.75	3.8	2.1
50-54	95	54	5.7	0.73	3.1	0.72	3.4	2.1
55-59	172	96	11.0	0.82	5.9	0.77	3.3	2.4
60-64	214	145	14.1	0.86	9.0	0.87	2.8	2.6
65-69	297	157	21.8	0.85	10.5	0.92	2.9	2.2
70-74	257	184	24.9	1.01	14.9	0.85	2.3	2.3
75-79	243	239	36.0	0.89	24.0	0.89	2.2	2.7
80-84	218	262	53.7	0.88	33.0	0.80	2.5	2.7
85+	190	417	68.5	0.89	56.1	0.88	2.7	3.7
All ages	1793	1623					2.7	2.7
Mortality								
Raw			7.1	0.86	6.2	0.85		
WS			3.7	0.85	2.3	0.83		
ES			5.7	0.86	3.5	0.84		
BRD-S			7.5	0.87	4.7	0.84		
PYLL-70								
per 100,000			40.0		24.2			
ES			35.8		20.7			
AYLL-70			10.3		10.5			

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

Table 15a

Multiple primaries in deaths in period 1998-2011
MALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn-chron ±30d n	Syn-chron ±30d ←%	Post n	Post ←%
C03-C06 Oral cavity	9	1.8	4	44.4	1	11.1	4	44.4
C09-C10 Oropharynx	21	4.1	4	19.0	4	19.0	13	61.9
C12-C13 Hypopharynx	10	2.0	1	10.0	1	10.0	8	80.0
C15 Oesophagus	10	2.0	2	20.0	3	30.0	5	50.0
C16 Stomach	15	2.9	6	40.0	2	13.3	7	46.7
C18 Colon	34	6.6	17	50.0	10	29.4	7	20.6
C19-C20 Rectum	12	2.3	8	66.7	3	25.0	1	8.3
C22 Liver	8	1.6	2	25.0	2	25.0	4	50.0
C25 Pancreas	5	1.0	1	20.0	1	20.0	3	60.0
C32 Larynx	15	2.9	11	73.3			4	26.7
C33-C34 Lung	42	8.2	4	9.5	13	31.0	25	59.5
C43 Malign. melanoma	23	4.5	21	91.3	1	4.3	1	4.3
C44 Skin others	43	8.4	26	60.5	5	11.6	12	27.9
C61 Prostate	114	22.3	81	71.1	16	14.0	17	14.9
C62 Testis	6	1.2	6	100.0				
C64 Kidney	15	2.9	4	26.7	2	13.3	9	60.0
C67 Bladder	35	6.8	27	77.1	4	11.4	4	11.4
C70-C72 CNS cancer	13	2.5	6	46.2	1	7.7	6	46.2
C82-C85 NHL	24	4.7	17	70.8	4	16.7	3	12.5
C90 Mult. myeloma	7	1.4	5	71.4	1	14.3	1	14.3
C91-C96 Leukaemia	11	2.1	4	36.4	5	45.5	2	18.2
Other primaries	40	7.8	12	30.0	8	20.0	20	50.0
All mult. primaries	512	100.0	269	52.5	87	17.0	156	30.5

Multiple primaries with number of cases n<5 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 1998-2011
FEMALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn-chron ±30d n	Syn-chron ±30d ←%	Post n	Post ←%
C09-C10 Oropharynx	10	3.0	2	20.0			8	80.0
C15 Oesophagus	3	0.9	1	33.3	1	33.3	1	33.3
C16 Stomach	5	1.5	1	20.0	1	20.0	3	60.0
C17 Small intestine	3	0.9	1	33.3	1	33.3	1	33.3
C18 Colon	15	4.5	6	40.0	2	13.3	7	46.7
C19-C20 Rectum	6	1.8	3	50.0	3	50.0		
C22 Liver	6	1.8	1	16.7	3	50.0	2	33.3
C23-C24 Bile	3	0.9	1	33.3			2	66.7
C25 Pancreas	7	2.1	1	14.3	2	28.6	4	57.1
C26 GI cancer	3	0.9	2	66.7	1	33.3		
C32 Larynx	4	1.2	4	100.0				
C33-C34 Lung	24	7.2	6	25.0	3	12.5	15	62.5
C43 Malign. melanoma	13	3.9	9	69.2	2	15.4	2	15.4
C44 Skin others	13	3.9	12	92.3	1	7.7		
C50 Breast	81	24.4	47	58.0	7	8.6	27	33.3
C51 Vulva	3	0.9	1	33.3	2	66.7		
C53 Cervix uteri	10	3.0	6	60.0	2	20.0	2	20.0
C54 Corpus uteri	23	6.9	20	87.0			3	13.0
C55,C57 Fem. genitals un	7	2.1	5	71.4	2	28.6		
C56 Ovary	21	6.3	8	38.1	3	14.3	10	47.6
C64 Kidney	12	3.6	8	66.7	2	16.7	2	16.7
C67 Bladder	11	3.3	10	90.9			1	9.1
C70-C72 CNS cancer	7	2.1	4	57.1	2	28.6	1	14.3
C73 Thyroid	5	1.5	5	100.0				
C74-C80 Cancer others	3	0.9	1	33.3	1	33.3	1	33.3
C76-C79 CUP	3	0.9			2	66.7	1	33.3
C82-C85 NHL	12	3.6	8	66.7			4	33.3
C90 Mult. myeloma	4	1.2	2	50.0			2	50.0
C91-C96 Leukaemia	5	1.5	2	40.0	2	40.0	1	20.0
Other primaries	10	3.0	6	60.0	1	10.0	3	30.0
All mult. primaries	332	100.0	183	55.1	46	13.9	103	31.0

Multiple primaries with number of cases n<3 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 1998-2011
(**Singular 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	1		0.1	1.00	0.0		4.2	
5- 9			0.0		0.0			
10-14			0.0		0.0			
15-19	1		0.1	1.00	0.0		2.9	
20-24	2		0.1	1.00	0.0		2.7	
25-29	2	2	0.1	0.50	0.1	1.00	2.5	2.1
30-34	11	2	0.6	0.85	0.1	0.67	6.7	1.1
35-39	10	11	0.5	0.77	0.5	0.69	2.9	2.6
40-44	18	15	0.8	0.67	0.7	0.71	2.6	1.7
45-49	53	28	2.7	0.73	1.5	0.68	3.8	1.9
50-54	86	50	5.2	0.72	2.9	0.75	3.5	2.2
55-59	149	87	9.6	0.83	5.3	0.80	3.3	2.5
60-64	182	124	12.0	0.89	7.7	0.87	2.8	2.7
65-69	232	129	17.0	0.84	8.7	0.88	2.8	2.3
70-74	217	149	21.0	1.02	12.1	0.83	2.5	2.3
75-79	192	209	28.4	0.86	21.0	0.90	2.3	2.9
80-84	170	231	41.9	0.85	29.1	0.77	2.6	3.0
85+	159	380	57.3	0.84	51.2	0.86	2.9	4.1
All ages	1485	1417					2.7	2.8
Mortality								
Raw			5.9	0.85	5.4	0.83		
WS			3.1	0.85	2.0	0.82		
ES			4.8	0.85	3.0	0.83		
BRD-S			6.2	0.85	4.0	0.83		
PYLL-70								
per 100,000			35.3		21.2			
ES			31.8		18.1			
AYLL-70			10.8		10.7			

* See corresponding tables with multiple primaries.

Table 17

Age-specific mortality (cancer-related) and proportion of all cancers
for period 1998-2011
(**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	1		0.1	1.00	0.0		4.3	
5- 9			0.0		0.0			
10-14			0.0		0.0			
15-19	1		0.1	1.00	0.0		2.9	
20-24	2		0.1	1.00	0.0		2.9	
25-29	2	2	0.1	0.50	0.1	1.00	2.7	2.2
30-34	11	2	0.6	0.85	0.1	0.67	6.9	1.2
35-39	10	11	0.5	0.83	0.5	0.69	3.1	2.9
40-44	17	13	0.8	0.68	0.6	0.68	2.6	1.6
45-49	51	25	2.6	0.77	1.3	0.74	3.9	1.8
50-54	76	47	4.6	0.75	2.7	0.73	3.4	2.4
55-59	132	77	8.5	0.83	4.7	0.81	3.2	2.5
60-64	163	111	10.7	0.89	6.9	0.84	2.8	2.8
65-69	215	119	15.8	0.84	8.0	0.86	2.9	2.4
70-74	201	141	19.5	1.01	11.4	0.83	2.7	2.6
75-79	176	199	26.0	0.82	20.0	0.90	2.6	3.3
80-84	158	219	38.9	0.82	27.5	0.75	2.9	3.4
85+	151	370	54.4	0.82	49.8	0.85	3.4	4.6
All ages	1367	1336					3.0	3.1
Mortality								
Raw			5.4	0.84	5.1	0.82		
WS			2.9	0.84	1.8	0.81		
ES			4.4	0.84	2.8	0.82		
BRD-S			5.7	0.84	3.8	0.82		
PYLL-70								
per 100,000			32.5		19.3			
ES			29.2		16.5			
AYLL-70			10.9		10.7			

* See corresponding tables with multiple primaries.

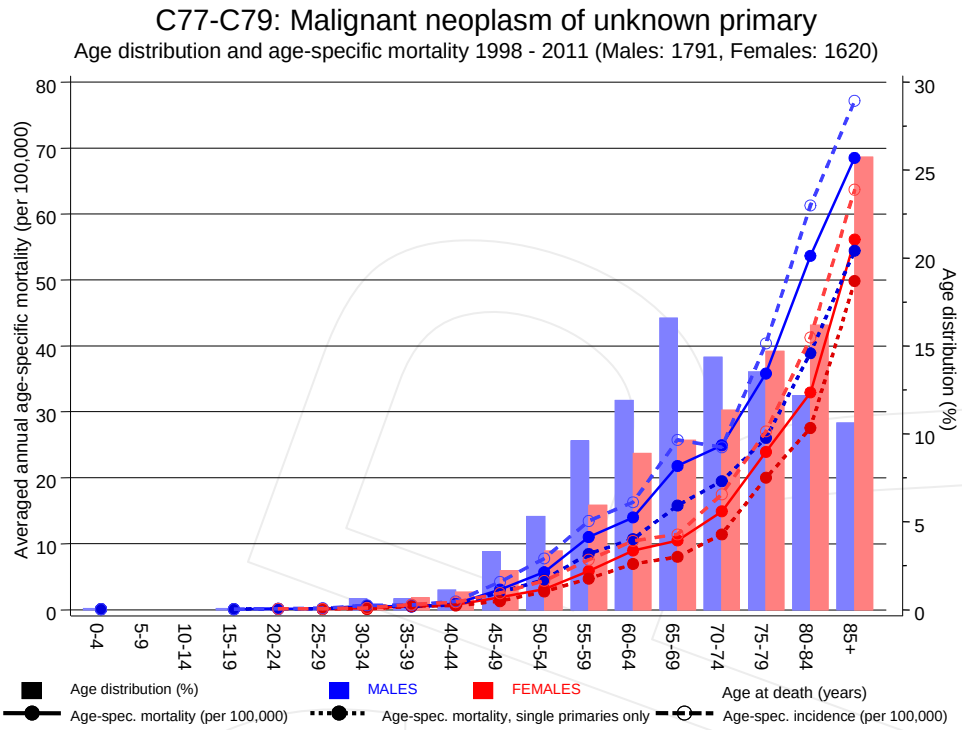
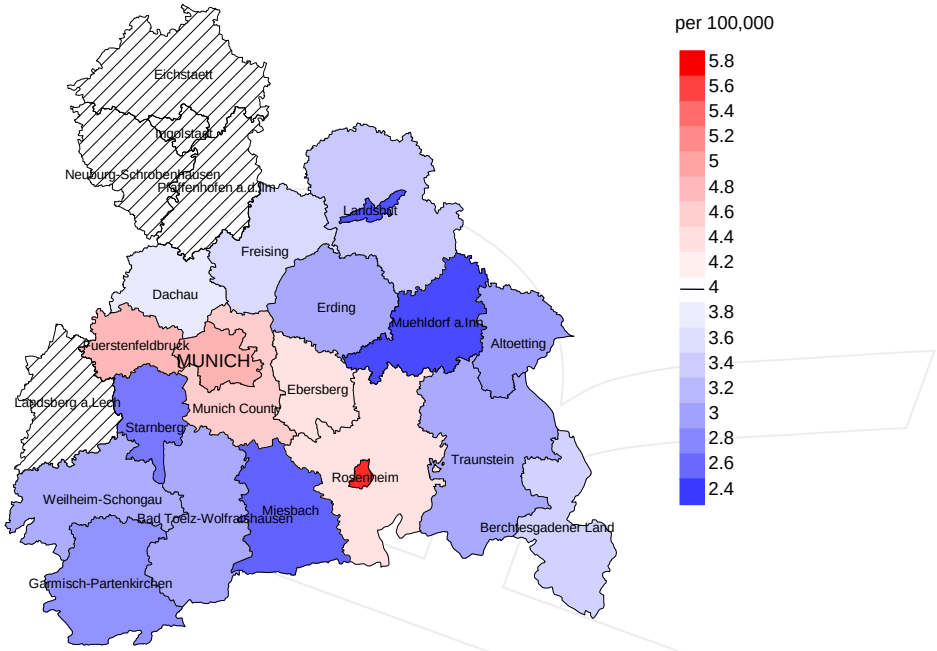


Figure 18. Distribution of age at death (bars) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

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

Average mortality (world standard population) 2003 - 2008: Males



Average mortality (world standard population) 2003 - 2008: Females

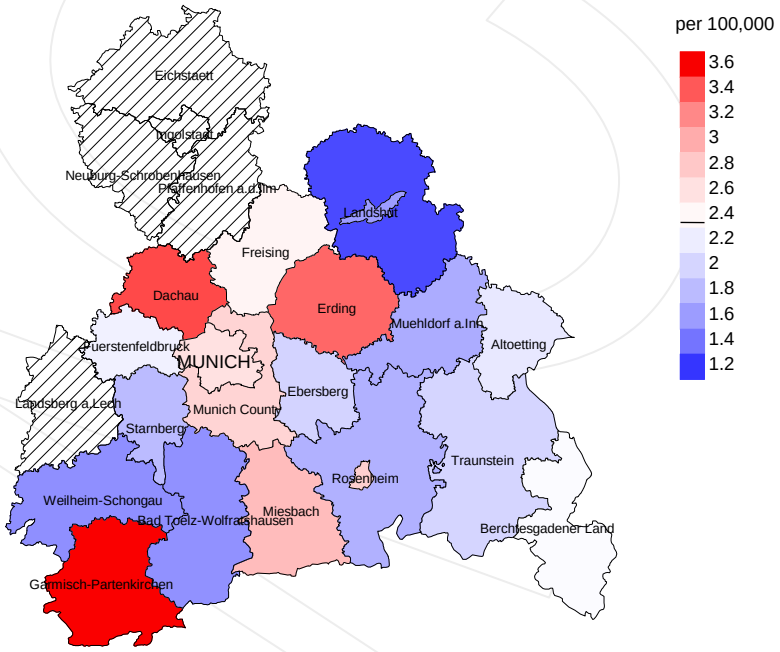
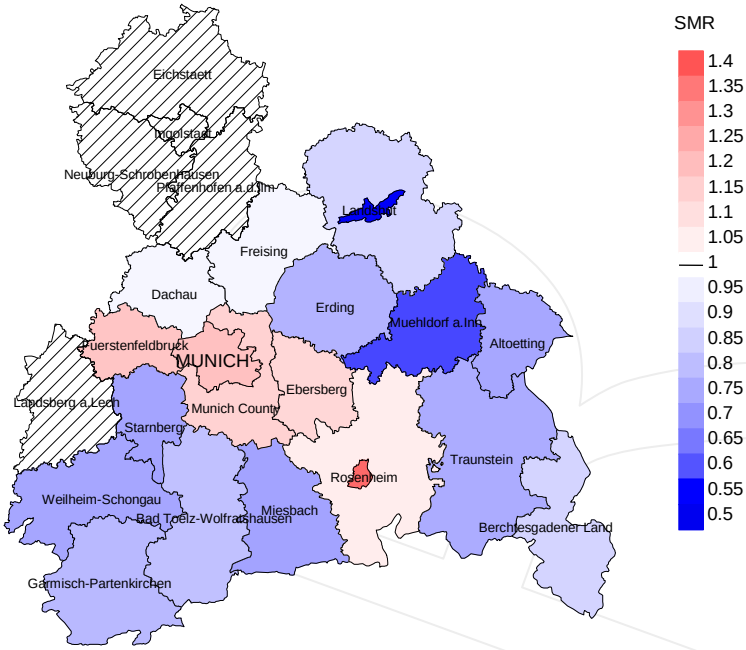


Figure 19a. Map of cancer mortality (world standard population) by county averaged for period 2003 to 2008. According to their individual mortality rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 4.0/100,000 WS N=876, females 2.3/100,000 WS N=774). Since cancer data are not available in some counties until 2007, the local mortality rates were not calculated, and the map tiles show as shaded.

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 63,131 female residents (averaged) in the period from 2003 to 2008 a total of 22 women died from unknown primary. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 2.0/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 1.0 and 3.7/100,000.

Standardized mortality ratio (SMR) 2003 - 2008: Males



Standardized mortality ratio (SMR) 2003 - 2008: Females

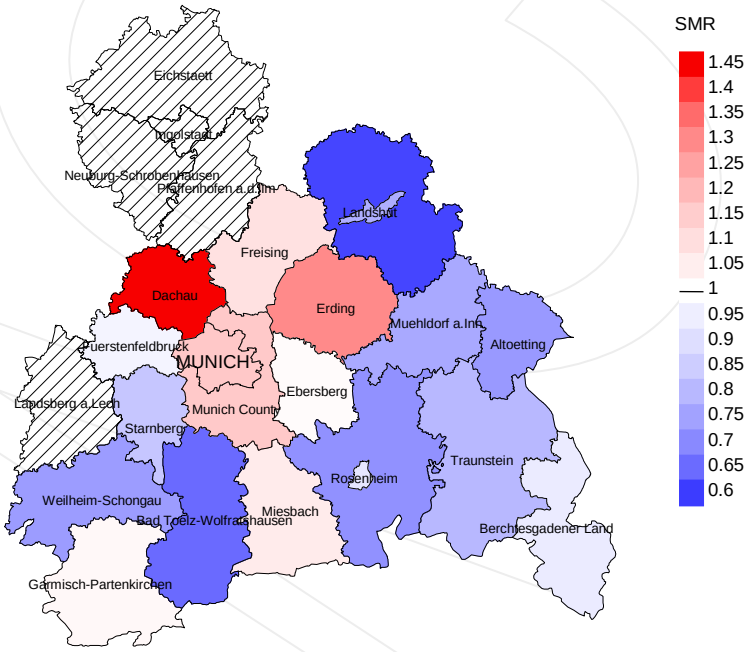


Figure 19b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2003 to 2008. According to their individual SMR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=876, females N=774). Since cancer data are not available in some counties until 2007, the local SMR values were not calculated, and the map tiles show as shaded.

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 63,131 female residents (averaged) in the period from 2003 to 2008 a total of 22 women died from unknown primary. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 1.01. Though, the value of this parameter may vary with an underlying probability of 99% between 0.54 and 1.70, 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. 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 tumor-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

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)
FRG	Federal Republic of Germany
GEKID	Association of Population-based Cancer Registries in Germany (Gesellschaft der epidemiologischen Krebsregister in Deutschland e.V.)
LCL	Lower confidence limit
MI-index	Ratio between mortality and incidence
MCR	Munich Cancer Registry (Tumorregister München)
PYLL-70	Potential years of life lost prior to age 70 given a person dies before that age
SEER	Surveillance, Epidemiology, and End Results (USA)
SIR	Standardized incidence ratio
SMR	Standardized mortality ratio
UCL	Upper confidence limit
WS	World standard population

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