Munich Cancer Registry

- Survival
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ICD-10 C01, C05, C09-10: Oropharynx cancer

Incidence and Mortality

Year of diagnosis	1998-2014
Patients	2,855
Diseases	2,880
Creation date	04/13/2016
Export date	12/23/2015
Population	4.64 m

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

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

http://www.tumorregister-muenchen.de/en/facts/base/bC0910E-ICD-10-C01-C05-C09-10-Oropharynx-cancer-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.

Some remarks regarding this cancer type

As a general rule, these few results from the TRM form the basis of sophisticated analyses. For head and neck tumors this is not the case. Therefore the results for head and neck tumors should be interpreted with caution. In part this is due to problems of classification because of limited specific details of locality. Additionally, with advanced tumors in a close topographic location it is often not possible to determine the exact ICD localization of a tumor.

ICD-10 codes (ICD-10 2015) used for specifying cancer site

Code	Description
C01	Base of tongue
C05.1	Soft palate
C05.2	Uvula
C09	Tonsil
C10	Oropharynx Excl.: Topography code C10.1 Anterior surface of epiglottis

INCIDENCE

Table 1

All patients with invasive cancer 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	105	3	2.9	27.6	84.8	100.0	
1999	121			22.3	81.8	99.2	
2000	93	1	1.1	33.3	81.7	98.9	
2001	99	5	5.1	38.4	79.8	96.0	
2002	164	9	5.5	37.8	72.6	98.8	#
2003	196	8	4.1	36.2	77.0	98.0	
2004	180	7	3.9	26.7	71.1	96.7	
2005	200	8	4.0	34.0	64.5	96.0	
2006	184	1	0.5	28.3	64.7	94.0	
2007	199	12	6.0	30.2	58.8	82.9	#
2008	223	5	2.2	32.7	63.2	81.2	
2009	216	2	0.9	35.6	57.4	85.6	
2010	220	4	1.8	27.3	49.1	76.8	
2011	229	6	2.6	30.1	42.8	79.5	
2012	215	8	3.7	25.1	39.1	81.9	
2013	182	5	2.7	24.2	39.0	99.5	
2014	54	6	11.1	31.5	33.3	96.3	##
1998-2014	2880	90	3.1	30.6	60.8	90.1	

\# 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 with invasive cancer
by year of diagnosis and gender
(incl. DCO)

Year of diagnosis	All n	Males n	Females n	Prop. males %
1998	105	83	22	79.0
1999	121	98	23	81.0
2000	93	65	28	69.9
2001	99	76	23	76.8
2002	164	130	34	79.3
2003	196	146	50	74.5
2004	180	146	34	81.1
2005	200	155	45	77.5
2006	184	135	49	73.4
2007	199	158	41	79.4
2008	223	161	62	72.2
2009	216	159	57	73.6
2010	220	168	52	76.4
2011	229	174	55	76.0
2012	215	168	47	78.1
2013	182	140	42	76.9
2014	54	41	13	75.9
1998–2014	2880	2203	677	76.5

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	83	22	7.5	1.9	5.2	1.1	6.8	1.6	7.2	1.7
1999	98	23	8.8	1.9	5.8	1.2	7.8	1.6	8.3	1.8
2000	65	28	5.7	2.3	3.7	1.5	5.1	2.0	5.8	2.2
2001	76	23	6.6	1.9	4.5	1.1	6.1	1.5	6.6	1.7
2002	130	34	7.0	1.7	4.6	1.1	6.3	1.4	6.7	1.6
2003	146	50	7.8	2.5	5.0	1.5	7.0	2.1	7.6	2.3
2004	146	34	7.8	1.7	4.9	0.9	6.8	1.4	7.5	1.5
2005	155	45	8.2	2.3	5.3	1.3	7.2	1.8	7.7	2.0
2006	135	49	7.0	2.4	4.5	1.7	6.2	2.1	6.8	2.3
2007	158	41	7.1	1.8	4.5	1.1	6.1	1.5	6.8	1.6
2008	161	62	7.2	2.7	4.4	1.5	6.2	2.1	7.0	2.3
2009	159	57	7.1	2.5	4.4	1.4	6.1	1.9	6.8	2.1
2010	168	52	7.5	2.2	4.4	1.3	6.1	1.8	6.9	2.0
2011	174	55	7.6	2.3	4.5	1.3	6.3	1.8	7.0	2.0
2012	168	47	7.4	2.0	4.4	1.1	6.1	1.5	6.9	1.7
2013	140	42	6.1	1.8	3.7	1.0	5.2	1.4	5.7	1.5
2014	41	13	1.8	0.6	1.1	0.3	1.5	0.4	1.6	0.4
1998-2014	2203	677	6.9	2.0	4.3	1.2	5.9	1.6	6.5	1.8

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	105	56.7	11.3	0.9	83.1	44.9	50.8	56.4	62.6	71.0
1999	121	58.3	10.3	37.1	91.7	47.1	51.3	57.6	63.6	72.6
2000	93	60.0	10.5	35.6	89.6	48.0	52.4	59.1	66.9	74.1
2001	99	59.3	11.0	28.7	92.5	48.3	51.6	57.7	65.2	74.6
2002	164	58.9	9.8	36.7	96.8	47.4	53.1	58.3	63.0	72.1
2003	196	60.7	9.6	38.3	87.5	49.9	54.3	59.4	65.9	75.0
2004	180	61.1	10.0	38.3	85.5	48.1	54.8	60.7	67.1	75.6
2005	200	60.5	10.4	4.1	103	49.9	54.2	60.6	65.4	71.7
2006	184	59.8	11.0	19.0	90.3	46.3	51.8	59.3	66.7	74.7
2007	199	60.8	11.0	35.2	91.6	47.5	52.8	60.2	68.3	74.8
2008	223	63.3	9.8	38.3	91.8	50.1	56.9	62.4	69.0	76.3
2009	216	62.9	11.2	26.7	95.5	49.8	55.6	61.8	69.9	77.5
2010	220	62.6	9.8	37.1	92.1	49.5	55.1	62.9	69.2	75.0
2011	229	63.1	10.3	40.0	93.8	49.9	55.4	62.7	70.5	76.3
2012	215	62.2	9.9	39.8	91.1	49.4	54.5	61.6	69.4	76.0
2013	182	63.2	9.9	33.2	92.9	51.2	55.6	62.4	69.1	77.1
2014	54	62.1	9.9	46.2	93.5	49.8	55.0	61.1	70.1	73.1
1998-2014	2880	61.2	10.4	0.9	103	48.7	54.1	60.5	67.8	75.1

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	83	56.1	11.2	0.9	81.1	44.4	50.3	56.4	62.6	70.7
1999	98	57.0	9.2	37.1	85.7	46.4	50.9	56.4	62.4	68.2
2000	65	60.4	10.6	35.6	89.6	49.1	52.5	59.1	66.9	74.1
2001	76	57.9	9.7	28.7	85.1	47.0	51.7	57.3	63.6	71.2
2002	130	58.5	9.2	36.7	96.8	47.3	52.9	58.6	62.9	70.2
2003	146	59.8	9.2	38.3	87.5	48.1	53.8	59.2	65.5	73.2
2004	146	60.5	9.8	38.3	85.5	47.9	54.5	60.4	66.2	73.8
2005	155	59.9	9.9	4.1	87.1	49.4	54.0	60.2	65.3	70.7
2006	135	60.7	10.2	38.7	86.7	47.5	52.7	59.6	66.9	74.7
2007	158	60.9	10.7	37.1	91.6	47.6	53.0	60.8	68.3	74.7
2008	161	62.8	9.6	38.3	87.0	50.1	56.5	62.1	68.5	76.3
2009	159	62.5	10.4	26.7	90.7	49.8	56.1	62.1	68.9	75.7
2010	168	62.8	10.0	38.0	92.1	49.1	55.5	63.1	69.5	75.9
2011	174	62.9	10.2	40.0	89.2	49.8	55.0	62.5	70.3	76.3
2012	168	61.6	9.6	39.8	87.9	49.3	54.3	61.4	67.9	75.8
2013	140	63.3	9.6	33.2	92.9	52.3	56.5	62.4	68.1	75.9
2014	41	61.3	10.0	46.2	93.5	49.5	54.8	60.7	68.0	73.1
1998-2014	2203	60.9	10.1	0.9	96.8	48.7	54.0	60.4	67.2	74.2

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	22	59.0	11.6	31.1	83.1	50.8	52.7	56.6	66.0	77.8
1999	23	63.9	12.6	41.9	91.7	48.7	52.1	65.1	74.5	77.9
2000	28	59.0	10.6	38.5	79.7	45.2	51.3	58.8	66.5	74.9
2001	23	64.0	13.7	41.3	92.5	49.6	50.6	63.0	74.5	83.0
2002	34	60.3	11.9	37.3	81.7	47.6	53.3	58.0	68.0	78.9
2003	50	63.3	10.3	43.7	84.2	52.7	55.8	61.3	71.7	79.0
2004	34	63.8	10.5	44.7	82.5	50.9	55.9	61.0	74.3	77.8
2005	45	62.8	11.7	44.9	103	50.2	55.8	61.1	66.5	79.3
2006	49	57.5	12.9	19.0	90.3	45.4	49.5	57.0	64.7	72.5
2007	41	60.5	12.3	35.2	89.4	47.5	51.4	57.9	68.1	76.0
2008	62	64.4	10.5	45.6	91.8	51.5	56.9	64.7	69.3	80.7
2009	57	63.9	13.1	41.0	95.5	49.6	55.1	60.3	72.6	84.4
2010	52	61.8	9.3	37.1	85.1	49.5	54.9	62.3	68.4	72.6
2011	55	64.0	10.6	41.0	93.8	53.4	56.5	63.9	71.4	75.6
2012	47	64.3	10.7	44.0	91.1	51.5	55.7	64.4	71.7	78.7
2013	42	62.7	11.1	44.7	85.7	50.1	53.2	63.6	70.6	78.4
2014	13	64.7	9.4	52.4	86.9	53.1	58.6	63.3	70.2	72.9
1998-2014	677	62.4	11.4	19.0	103	49.4	54.2	61.1	69.6	78.3

Table 4

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

Age at diagnosis Years	Cases n	%	Cum.%	Males n	%	Cum.%	Females n	%	Cum.%
25-29	1	0.1	0.1	1	0.1	0.1			0.0
30-34	1	0.1	0.1	1	0.1	0.2			0.0
35-39	10	0.7	0.8	8	0.7	0.9	2	0.5	0.5
40-44	30	2.0	2.7	21	1.8	2.7	9	2.4	3.0
45-49	122	7.9	10.7	98	8.4	11.0	24	6.5	9.5
50-54	218	14.2	24.8	158	13.5	24.6	60	16.3	25.7
55-59	261	17.0	41.8	200	17.1	41.7	61	16.5	42.3
60-64	287	18.7	60.5	227	19.4	61.1	60	16.3	58.5
65-69	255	16.6	77.0	195	16.7	77.8	60	16.3	74.8
70-74	172	11.2	88.2	133	11.4	89.1	39	10.6	85.4
75-79	101	6.6	94.8	77	6.6	95.7	24	6.5	91.9
80-84	44	2.9	97.7	30	2.6	98.3	14	3.8	95.7
85+	36	2.3	100.0	20	1.7	100.0	16	4.3	100.0
All ages	1538	100.0		1169	100.0		369	100.0	

Included in the statistics are 39.0% multiple primaries in males and 34.2% 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=35 %	Females DCO rate n=13 %	Males Prop.all cancers n=91183 %	Females Prop.all cancers n=89596 %
0- 4			0.0	0.0				
5- 9			0.0	0.0				
10-14			0.0	0.0				
15-19			0.0	0.0				
20-24			0.0	0.0				
25-29	1		0.1	0.0			0.2	
30-34	1		0.1	0.0			0.1	
35-39	7	2	0.5	0.2			0.6	0.1
40-44	21	9	1.3	0.6		11.1	1.1	0.2
45-49	98	23	6.2	1.5	1.0		3.0	0.4
50-54	158	57	12.2	4.5	0.6	3.5	3.2	0.8
55-59	198	60	18.6	5.3	1.5		2.7	0.8
60-64	225	59	22.9	5.6	2.7	1.7	2.1	0.6
65-69	194	60	20.2	5.7	3.6		1.2	0.5
70-74	133	39	14.6	3.7	3.0	7.7	0.8	0.3
75-79	77	24	14.0	3.4	7.8		0.6	0.2
80-84	30	14	8.6	2.5	6.7	21.4	0.4	0.2
85+	20	16	8.6	2.8	25.0	18.8	0.3	0.2
All ages	1163	363			3.0	3.6	1.3	0.4
Incidence								
Raw			6.4	1.9				
WS			3.9	1.1				
ES			5.4	1.5				
BRD-S			6.0	1.7				

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).

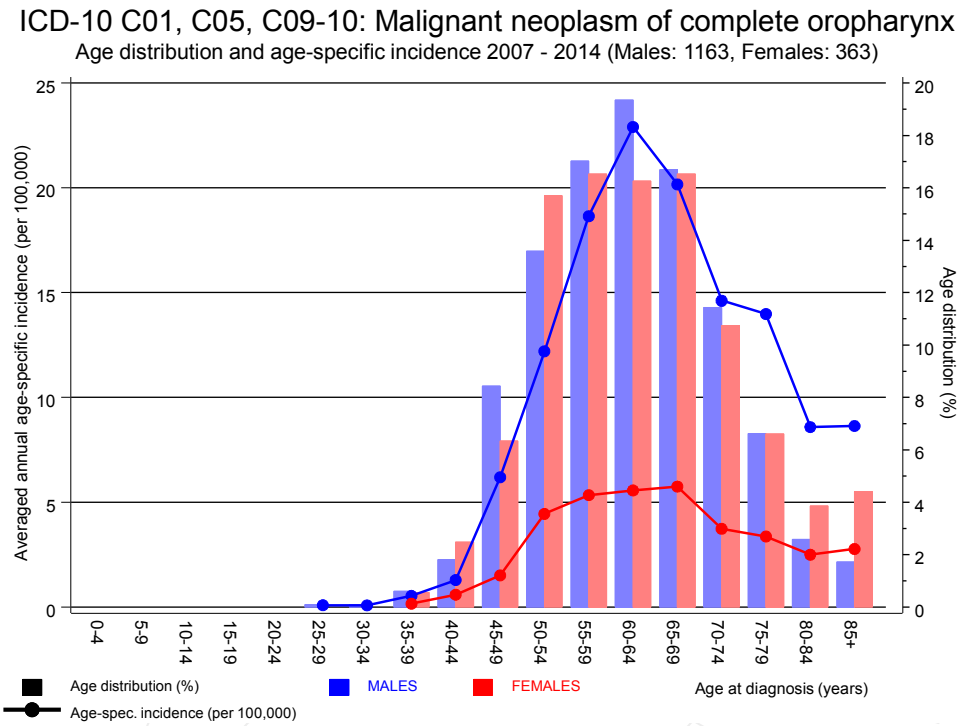


Figure 6. Age distribution and age-specific incidence

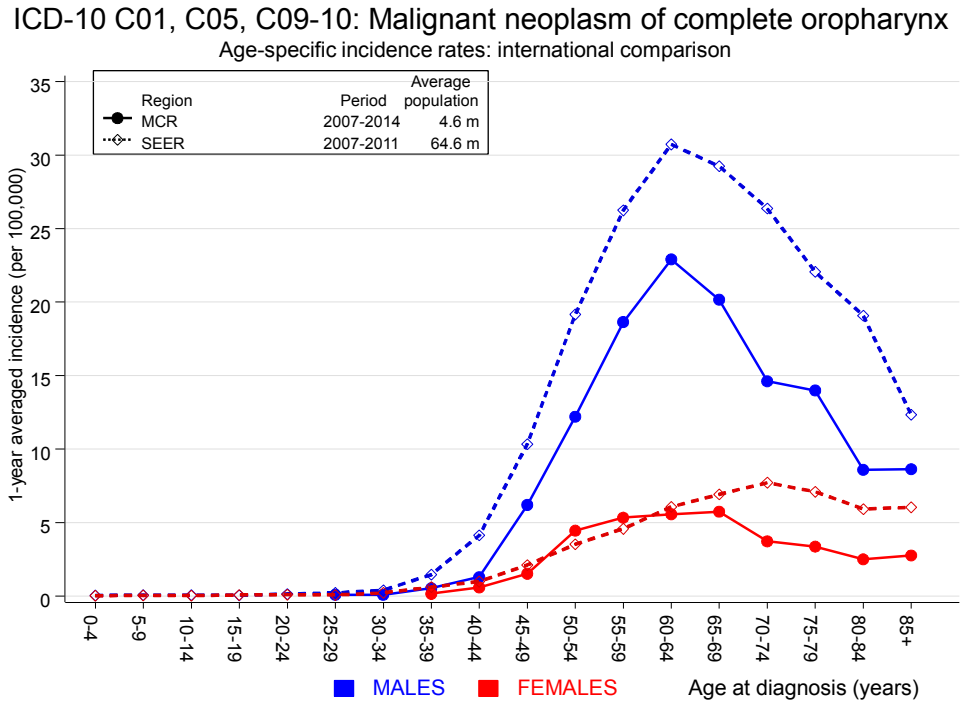


Figure 6a. Age-specific incidence in MCR registry areas compared to SEER (Surveillance, Epidemiology, and End Results, USA).

Reference:

Surveillance, Epidemiology, and End Results (SEER) Program SEER*Stat Database: Incidence - SEER 18 Regs Research Data, released April 2014, based on the November 2013 submission. http://www.seer.cancer.gov.

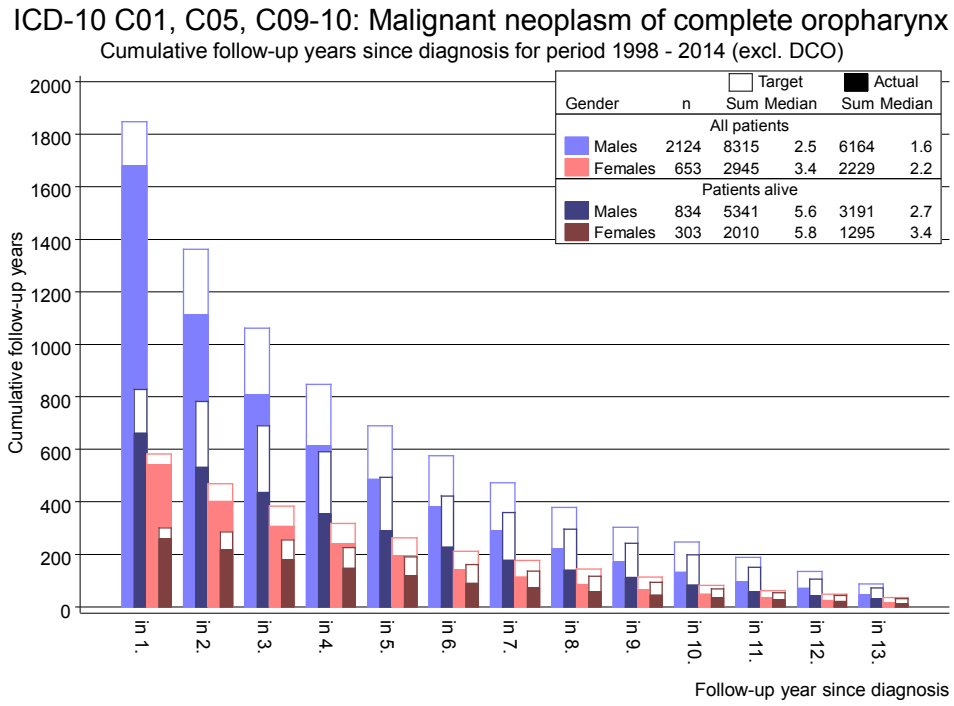


Figure 7. Cumulative follow-up years depending on time since diagnosis

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 %
C03-C06	Oral cavity	38	0.9	41.2	29.1	56.5	#	60.5	5.3
C09-C10	Oropharynx	18	1.2	14.8	8.8	23.5	#	27.4	
C11	Nasopharynx	3	0.1	39.7	8.2	116.1	#	4.8	
C12-C13	Hypopharynx	23	0.6	35.6	22.6	53.4	#	36.5	8.7
C15	Oesophagus	40	1.6	24.4	17.4	33.2	#	62.6	32.5
C16	Stomach	8	2.7	2.9	1.3	5.8	#	8.6	12.5
C18	Colon	16	6.6	2.4	1.4	3.9	#	15.3	6.3
C19-C20	Rectum	4	4.4	0.9	0.2	2.3		-0.6	
C22	Liver	12	2.1	5.6	2.9	9.9	#	16.1	16.7
C25	Pancreas	8	2.6	3.1	1.3	6.0	#	8.8	37.5
C30-C31	Sinuses	2	0.1	14.1	1.7	50.8	#	3.0	
C32	Larynx	36	1.0	37.3	26.1	51.6	#	57.2	44.4
C33-C34	Lung	90	9.2	9.7	7.8	12.0	#	131.9	10.0
C43	Malign. melanoma	7	3.5	2.0	0.8	4.1		5.6	
C61	Prostate	25	21.9	1.1	0.7	1.7		5.0	
C64	Kidney	11	2.9	3.9	1.9	6.9	#	13.3	
C67	Bladder	8	2.8	2.8	1.2	5.5	#	8.4	12.5
C73	Thyroid	4	0.7	5.8	1.6	14.8	#	5.4	
C76-C79	CUP	4	1.2	3.3	0.9	8.4		4.6	
C82-C85	NHL	4	2.9	1.4	0.4	3.6		1.8	
C90	Mult. myeloma	2	0.9	2.3	0.3	8.3		1.8	
C91-C96	Leukaemia	4	1.1	3.7	1.0	9.5	#	4.8	50.0
Other primaries		9	3.5	2.5	1.2	4.8	#	8.9	11.1
Not observed		0	1.9	0.0	0.0	1.9		-3.2	
All mult. primaries		376	76.6	4.9	4.4	5.4	#	488.8	14.1

Patients	2118
Median age at second malignancy (years)	62.8
Person-years	6124
Mean observation time (years)	2.9
Median observation time (years)	1.6

The occurrence of second malignancy is statistically significant.

Observed second primaries with count 1 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

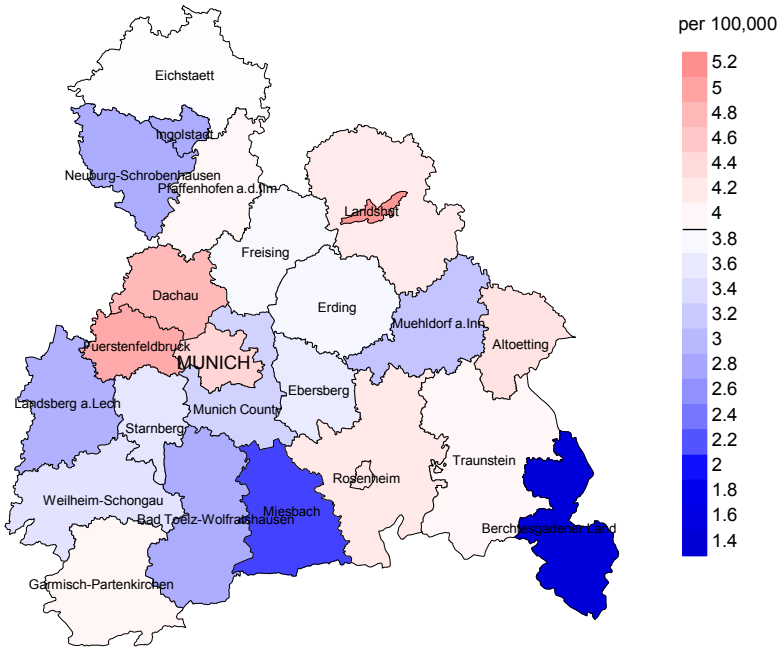
Diagnosis		Observed n	Expected n	SIR	LCL 95%	UCL 95%		EAR	DCO %
C03–C06	Oral cavity	11	0.1	75.8	37.8	135.6	#	49.2	
C09–C10	Oropharynx	8	0.1	68.5	29.6	135.0	#	35.7	
C12–C13	Hypopharynx	8	0.0	259.7	112.1	511.8	#	36.1	
C15	Oesophagus	9	0.1	65.1	29.8	123.6	#	40.2	
C16	Stomach	3	0.6	4.6	1.0	13.6		10.7	
C18	Colon	8	1.8	4.3	1.9	8.6	#	27.9	
C19–C20	Rectum	3	0.9	3.5	0.7	10.3		9.7	
C32	Larynx	10	0.0	208.6	100.0	383.7	#	45.1	20.0
C33–C34	Lung	21	1.7	12.6	7.8	19.3	#	87.7	23.8
C50	Breast	6	7.3	0.8	0.3	1.8		−5.8	16.7
C53	Cervix uteri	4	0.3	12.2	3.3	31.3	#	16.7	
C56	Ovary	2	0.9	2.3	0.3	8.2		5.1	50.0
C82–C85	NHL	2	0.8	2.6	0.3	9.3		5.6	
Other primaries		8	4.1	2.0	0.9	3.9		17.9	12.5
Not observed		0	2.9	0.0	0.0	1.3		−13.3	
All mult. primaries		103	21.7	4.7	3.9	5.7	#	368.5	9.7

Patients	649
Median age at second malignancy (years)	62.8
Person-years	2206
Mean observation time (years)	3.4
Median observation time (years)	2.2

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

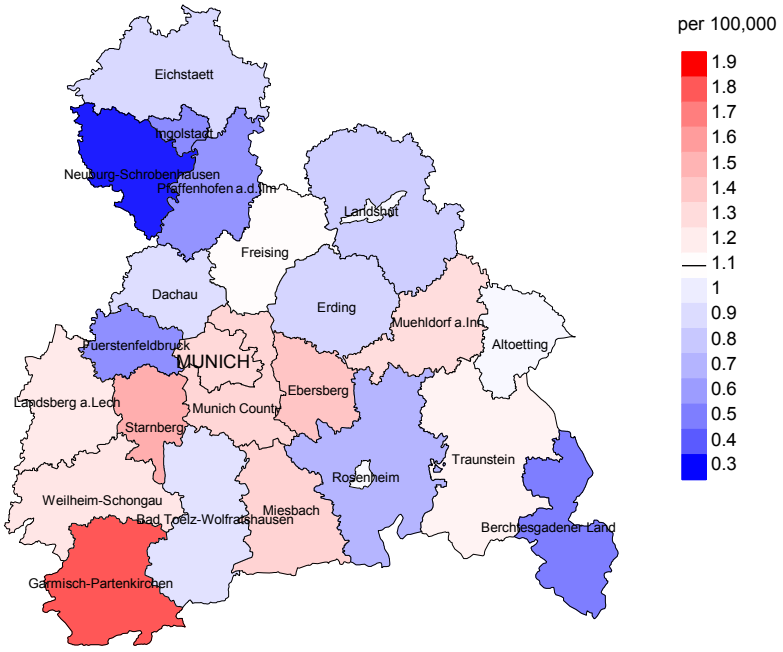
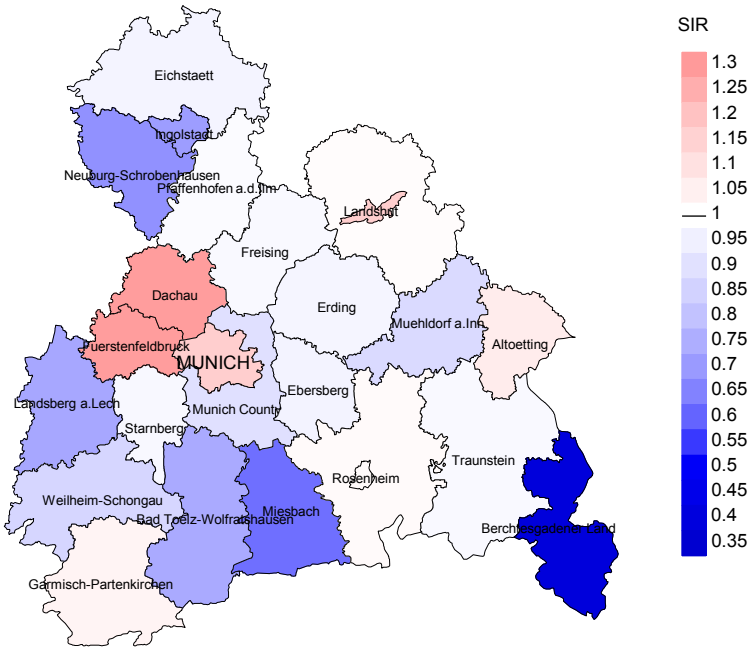


Figure 9a. Map of cancer incidence (world standard population, incl. DCO cases) by county averaged for period 2007 to 2014. According to their individual incidence rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 3.9/100,000 WS N=1,163, females 1.1/100,000 WS N=363).

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 12 women were identified with newly diagnosed oropharynx cancer. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 1.4/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.6 and 3.0/100,000.

Standardized incidence ratio (SIR) 2007 - 2014: Males



Standardized incidence ratio (SIR) 2007 - 2014: Females

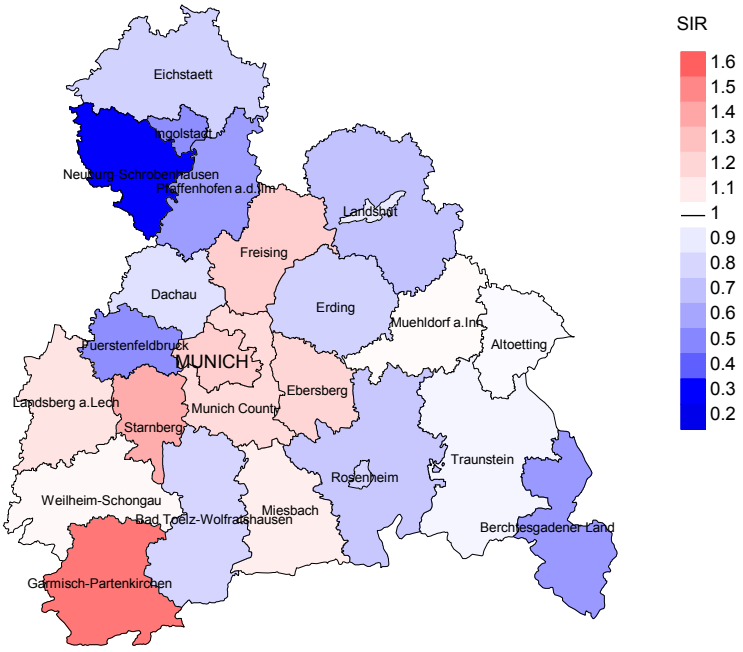


Figure 9b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2007 to 2014. According to their individual SIR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=1,163, females N=363).

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 12 women were identified with newly diagnosed oropharynx cancer. Therefore, the mean standardized incidence ratio (SIR) for this cancer type in this area can be calculated at 1.20. Though, the value of this parameter may vary with an underlying probability of 99% between 0.50 and 2.42, 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	105	100.0	2.9	89	84.8	96.6
1999	121	99.2		99	81.8	86.9
2000	93	98.9	1.1	76	81.7	98.7
2001	99	96.0	5.1	79	79.8	96.2
2002	164	98.8	5.5	119	72.6	97.5
2003	196	98.0	4.1	151	77.0	97.4
2004	180	96.7	3.9	128	71.1	99.2
2005	200	96.0	4.0	129	64.5	98.4
2006	184	94.0	0.5	119	64.7	97.5
2007	199	82.9	6.0	117	58.8	98.3
2008	223	81.2	2.2	141	63.2	98.6
2009	216	85.6	0.9	124	57.4	100.0
2010	220	76.8	1.8	108	49.1	99.1
2011	229	79.5	2.6	98	42.8	95.9
2012	215	81.9	3.7	84	39.1	96.4
2013	182	99.5	2.7	71	39.0	97.2
2014	54	96.3	11.1	18	33.3	88.9
1998-2014	2880	90.1	3.1	1750	60.8	97.2

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	105	78	92.3	12	11.4
1999	121	85	85.9	19	15.7
2000	93	87	94.3	11	11.8
2001	99	76	97.4	20	20.2
2002	164	113	97.3	19	11.6
2003	196	126	95.2	38	19.4
2004	180	129	98.4	24	13.3
2005	200	133	97.0	34	17.0
2006	184	137	97.8	26	14.1
2007	199	149	96.0	30	15.1
2008	223	141	100.0	31	13.9
2009	216	146	99.3	29	13.4
2010	220	152	99.3	27	12.3
2011	229	154	98.7	32	14.0
2012	215	150	98.0	23	10.7
2013	182	180	97.8	32	17.6
2014	54	147	98.6	14	25.9
1998–2014	2880	2183	97.2	421	14.6

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	78	80.8	19.2	91.7
1999	85	68.2	31.8	89.0
2000	87	79.3	20.7	87.8
2001	76	81.6	18.4	95.9
2002	113	81.4	18.6	89.1
2003	126	77.0	23.0	91.7
2004	129	87.6	12.4	95.3
2005	133	88.0	12.0	94.6
2006	137	83.9	16.1	91.0
2007	149	81.9	18.1	89.5
2008	141	78.0	22.0	85.8
2009	146	84.9	15.1	95.9
2010	152	80.3	19.7	92.1
2011	154	77.3	22.7	86.2
2012	150	81.3	18.7	89.1
2013	180	76.7	23.3	87.5
2014	147	75.5	24.5	87.6
1998-2014	2183	80.3	19.7	90.4

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	57	60.5	57.9	70.4	58.9
1999	66	61.3	57.8	67.1	57.8
2000	66	61.0	58.0	70.5	58.8
2001	61	60.3	60.3	59.4	60.4
2002	93	60.2	59.6	63.9	59.6
2003	98	60.1	59.9	62.3	59.5
2004	103	61.7	61.7	62.6	61.7
2005	106	61.9	61.9	61.5	61.9
2006	103	65.2	65.2	65.1	65.1
2007	126	64.0	62.1	70.2	63.2
2008	109	66.3	65.6	67.5	65.9
2009	113	62.6	62.5	67.0	62.6
2010	118	64.7	64.1	70.8	64.1
2011	123	67.3	64.0	73.1	65.0
2012	109	68.5	68.1	68.6	67.3
2013	134	66.6	64.5	69.7	65.4
2014	118	68.0	67.0	74.6	67.6
1998-2014	1703	63.6	62.6	68.9	62.9

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	21	71.7	69.5	83.1	72.2
1999	19	58.4	55.9	70.0	55.9
2000	21	56.9	56.5	74.0	57.0
2001	15	66.2	63.4	74.8	63.6
2002	20	67.8	67.8	65.6	71.9
2003	28	61.8	63.0	59.8	64.3
2004	26	66.9	64.8	76.7	64.9
2005	27	63.4	62.1	73.8	61.5
2006	34	66.1	65.6	78.5	65.6
2007	23	69.3	69.3	67.9	68.1
2008	32	66.9	66.9	77.1	66.8
2009	33	64.8	66.0	62.3	64.8
2010	34	66.6	64.9	72.4	64.9
2011	31	68.3	68.1	83.3	68.1
2012	41	71.5	67.8	76.4	67.8
2013	46	70.6	67.9	81.1	68.3
2014	29	74.3	71.1	83.4	71.8
1998-2014	480	67.1	65.2	76.0	66.0

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	47	4.2	0.57	3.0	0.58	3.9	0.57	4.1	0.56
1999	48	4.3	0.49	2.8	0.49	3.9	0.49	4.3	0.51
2000	51	4.5	0.78	2.9	0.78	4.0	0.77	4.6	0.80
2001	51	4.4	0.67	2.8	0.63	3.8	0.63	4.3	0.64
2002	78	4.2	0.60	2.8	0.60	3.8	0.61	4.4	0.65
2003	79	4.2	0.55	2.7	0.54	3.8	0.55	4.1	0.55
2004	91	4.8	0.63	3.0	0.62	4.2	0.62	4.8	0.64
2005	94	5.0	0.61	3.0	0.57	4.2	0.59	4.7	0.61
2006	87	4.5	0.64	2.6	0.59	3.7	0.60	4.3	0.62
2007	103	4.6	0.66	2.8	0.63	4.0	0.65	4.5	0.67
2008	87	3.9	0.54	2.3	0.51	3.2	0.52	3.6	0.52
2009	97	4.3	0.61	2.6	0.59	3.6	0.60	4.1	0.61
2010	97	4.3	0.58	2.5	0.57	3.5	0.58	4.2	0.60
2011	94	4.1	0.55	2.4	0.53	3.4	0.55	3.9	0.57
2012	88	3.9	0.52	2.0	0.46	3.0	0.49	3.7	0.53
2013	103	4.5	0.74	2.5	0.67	3.6	0.70	4.2	0.74
2014	93	4.1	2.33	2.2	2.07	3.2	2.18	3.7	2.33
1998-2014	1388	4.3	0.63	2.6	0.60	3.6	0.62	4.2	0.64

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	16	1.4	0.73	0.7	0.63	1.0	0.62	1.2	0.74
1999	10	0.8	0.43	0.6	0.48	0.8	0.49	0.8	0.45
2000	18	1.5	0.64	0.9	0.59	1.2	0.60	1.4	0.63
2001	11	0.9	0.48	0.5	0.47	0.7	0.45	0.8	0.46
2002	14	0.7	0.41	0.4	0.36	0.6	0.38	0.7	0.41
2003	18	0.9	0.37	0.5	0.34	0.7	0.34	0.8	0.35
2004	22	1.1	0.65	0.6	0.60	0.8	0.58	1.0	0.62
2005	23	1.2	0.51	0.7	0.52	1.0	0.53	1.1	0.52
2006	28	1.4	0.57	0.7	0.43	1.0	0.47	1.2	0.52
2007	19	0.8	0.48	0.4	0.35	0.5	0.37	0.6	0.41
2008	23	1.0	0.37	0.5	0.36	0.8	0.37	0.8	0.36
2009	28	1.2	0.50	0.6	0.48	0.9	0.48	1.0	0.49
2010	25	1.1	0.50	0.6	0.45	0.8	0.47	0.9	0.49
2011	25	1.1	0.47	0.5	0.40	0.7	0.41	0.8	0.42
2012	34	1.4	0.72	0.7	0.60	1.0	0.63	1.2	0.66
2013	35	1.5	0.83	0.7	0.71	1.0	0.73	1.3	0.83
2014	18	0.8	1.38	0.3	1.13	0.5	1.21	0.5	1.21
1998-2014	367	1.1	0.55	0.6	0.49	0.8	0.50	0.9	0.53

Table 13

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

Age at death Years	Cases n	%	Cum.%	Males n	%	Cum.%	Females n	%	Cum.%
35-39	3	0.3	0.3	3	0.4	0.4			0.0
40-44	10	1.0	1.3	10	1.3	1.7			0.0
45-49	36	3.7	5.0	27	3.5	5.2	9	4.3	4.3
50-54	118	12.0	17.0	95	12.3	17.4	23	11.0	15.2
55-59	166	16.9	33.8	137	17.7	35.1	29	13.8	29.0
60-64	157	16.0	49.8	128	16.5	51.7	29	13.8	42.9
65-69	161	16.4	66.2	128	16.5	68.2	33	15.7	58.6
70-74	145	14.7	80.9	110	14.2	82.4	35	16.7	75.2
75-79	92	9.3	90.2	75	9.7	92.1	17	8.1	83.3
80-84	52	5.3	95.5	39	5.0	97.2	13	6.2	89.5
85+	44	4.5	100.0	22	2.8	100.0	22	10.5	100.0
All ages	984	100.0		774	100.0		210	100.0	

Included in the statistics are 39.0% multiple primaries in males and 34.2% 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			0.0		0.0			
5- 9			0.0		0.0			
10-14			0.0		0.0			
15-19			0.0		0.0			
20-24			0.0		0.0			
25-29			0.0		0.0			
30-34			0.0		0.0			
35-39	3		0.2	0.38	0.0		1.7	
40-44	10		0.6	0.48	0.0		2.2	
45-49	27	9	1.7	0.28	0.6	0.38	2.6	0.7
50-54	95	23	7.3	0.60	1.8	0.38	5.1	1.3
55-59	137	29	12.9	0.69	2.6	0.48	4.4	1.1
60-64	128	29	13.0	0.56	2.7	0.48	2.7	0.8
65-69	128	33	13.3	0.66	3.2	0.55	1.8	0.6
70-74	110	35	12.1	0.83	3.3	0.90	1.2	0.5
75-79	75	17	13.6	0.97	2.4	0.71	0.9	0.3
80-84	39	13	11.2	1.30	2.3	0.93	0.5	0.2
85+	22	22	9.5	1.10	3.8	1.38	0.4	0.3
All ages	774	210					1.6	0.5
Mortality								
Raw			4.3	0.66	1.1	0.57		
WS			2.4	0.62	0.6	0.49		
ES			3.5	0.64	0.8	0.51		
BRD-S			4.1	0.67	0.9	0.54		
PYLL-70								
per 100,000			35.2		8.0			
ES			31.5		6.9			
AYLL-70			10.7		10.3			

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	34	4.8			3	8.8	31	91.2
C09–C10	Oropharynx	66	9.3			18	27.3	48	72.7
C12–C13	Hypopharynx	47	6.6	14	29.8	19	40.4	14	29.8
C15	Oesophagus	74	10.5	16	21.6	9	12.2	49	66.2
C16	Stomach	14	2.0	5	35.7	2	14.3	7	50.0
C18	Colon	22	3.1	7	31.8	2	9.1	13	59.1
C22	Liver	14	2.0			2	14.3	12	85.7
C25	Pancreas	19	2.7	2	10.5	1	5.3	16	84.2
C32	Larynx	68	9.6	28	41.2	13	19.1	27	39.7
C33–C34	Lung	129	18.2	21	16.3	13	10.1	95	73.6
C43	Malign. melanoma	8	1.1	4	50.0			4	50.0
C44	Skin others	39	5.5	9	23.1	7	17.9	23	59.0
C61	Prostate	37	5.2	16	43.2	2	5.4	19	51.4
C64	Kidney	18	2.5	7	38.9	2	11.1	9	50.0
C67	Bladder	25	3.5	12	48.0	1	4.0	12	48.0
C76–C79	CUP	17	2.4	12	70.6	2	11.8	3	17.6
C82–C85	NHL	8	1.1	2	25.0	1	12.5	5	62.5
C91–C96	Leukaemia	8	1.1	3	37.5			5	62.5
Other primaries		61	8.6	28	45.9	5	8.2	28	45.9
All mult. primaries		708	100.0	186	26.3	102	14.4	420	59.3

Multiple primaries with number of cases 1 to 7 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 ←%
C03-C06 Oral cavity	8	4.3					8	100.0
C09-C10 Oropharynx	22	11.8			4	18.2	18	81.8
C11 Nasopharynx	2	1.1			1	50.0	1	50.0
C12-C13 Hypopharynx	5	2.7			2	40.0	3	60.0
C14 ENT cancer	2	1.1			1	50.0	1	50.0
C15 Oesophagus	17	9.1	4	23.5	1	5.9	12	70.6
C16 Stomach	3	1.6			2	66.7	1	33.3
C18 Colon	9	4.8	5	55.6	1	11.1	3	33.3
C19-C20 Rectum	2	1.1	1	50.0			1	50.0
C21 Anus/canal	3	1.6	2	66.7			1	33.3
C32 Larynx	13	7.0	3	23.1	3	23.1	7	53.8
C33-C34 Lung	28	15.1	4	14.3	4	14.3	20	71.4
C44 Skin others	8	4.3	2	25.0			6	75.0
C50 Breast	20	10.8	15	75.0	1	5.0	4	20.0
C53 Cervix uteri	9	4.8	6	66.7			3	33.3
C54 Corpus uteri	3	1.6	3	100.0				
C67 Bladder	2	1.1	1	50.0			1	50.0
C70-C72 CNS cancer	2	1.1	1	50.0			1	50.0
C73 Thyroid	3	1.6	2	66.7	1	33.3		
C76-C79 CUP	13	7.0	9	69.2			4	30.8
C82-C85 NHL	3	1.6	1	33.3			2	66.7
C91-C96 Leukaemia	2	1.1	1	50.0			1	50.0
Other primaries	7	3.8	2	28.6			5	71.4
All mult. primaries	186	100.0	62	33.3	21	11.3	103	55.4

Multiple primaries with number of cases 1 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.	Males MI-index	Females Age-spec. mortal.	Females MI-index	Males Prop.all cancers %	Females Prop.all cancers %
0- 4			0.0		0.0			
5- 9			0.0		0.0			
10-14			0.0		0.0			
15-19			0.0		0.0			
20-24			0.0		0.0			
25-29			0.0		0.0			
30-34			0.0		0.0			
35-39	1		0.1	0.20	0.0		0.6	
40-44	7		0.4	0.44	0.0		1.7	
45-49	17	9	1.1	0.20	0.6	0.47	1.8	0.9
50-54	77	18	5.9	0.55	1.4	0.38	4.8	1.2
55-59	108	23	10.2	0.68	2.0	0.53	4.1	1.1
60-64	94	23	9.6	0.54	2.2	0.46	2.4	0.8
65-69	93	24	9.7	0.61	2.3	0.51	1.6	0.6
70-74	87	24	9.6	0.97	2.3	0.83	1.2	0.5
75-79	54	7	9.8	1.00	1.0	0.50	0.9	0.1
80-84	29	7	8.3	1.71	1.2	0.78	0.5	0.1
85+	17	14	7.3	1.21	2.4	1.17	0.4	0.2
All ages	584	149					1.5	0.4
Mortality								
Raw			3.2	0.64	0.8	0.53		
WS			1.8	0.60	0.4	0.48		
ES			2.6	0.62	0.6	0.49		
BRD-S			3.1	0.65	0.7	0.50		
PYLL-70								
per 100,000			26.5		6.6			
ES			23.8		5.6			
AYLL-70			10.7		10.7			

* 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			0.0		0.0			
5- 9			0.0		0.0			
10-14			0.0		0.0			
15-19			0.0		0.0			
20-24			0.0		0.0			
25-29			0.0		0.0			
30-34			0.0		0.0			
35-39	1		0.1	0.20	0.0		0.6	
40-44	6		0.4	0.40	0.0		1.5	
45-49	13	8	0.8	0.17	0.5	0.42	1.5	0.9
50-54	61	18	4.7	0.48	1.4	0.38	4.3	1.4
55-59	81	18	7.6	0.55	1.6	0.50	3.5	1.0
60-64	75	14	7.6	0.46	1.3	0.33	2.2	0.6
65-69	69	20	7.2	0.52	1.9	0.47	1.5	0.6
70-74	53	15	5.8	0.70	1.4	0.54	0.9	0.4
75-79	38	6	6.9	0.76	0.8	0.43	0.8	0.2
80-84	20	5	5.7	1.33	0.9	0.56	0.5	0.1
85+	12	10	5.2	0.92	1.7	0.91	0.4	0.2
All ages	429	114					1.4	0.4
Mortality								
Raw			2.4	0.52	0.6	0.44		
WS			1.4	0.49	0.3	0.41		
ES			2.0	0.51	0.5	0.42		
BRD-S			2.3	0.53	0.5	0.42		
PYLL-70								
per 100,000			20.6		5.5			
ES			18.6		4.8			
AYLL-70			10.8		11.2			

* See corresponding tables with multiple primaries.

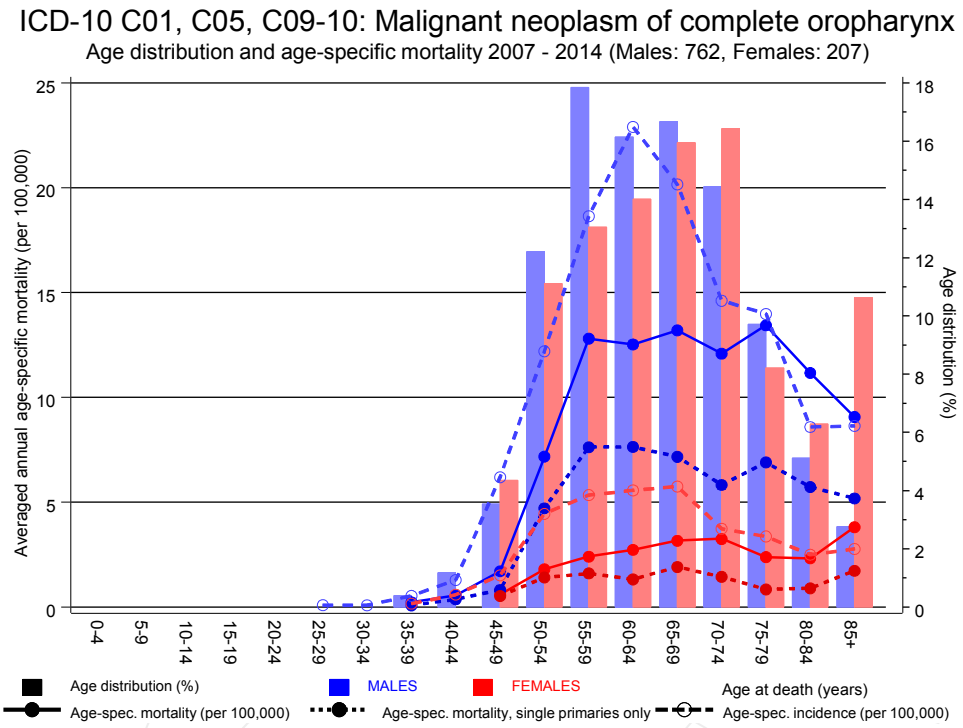
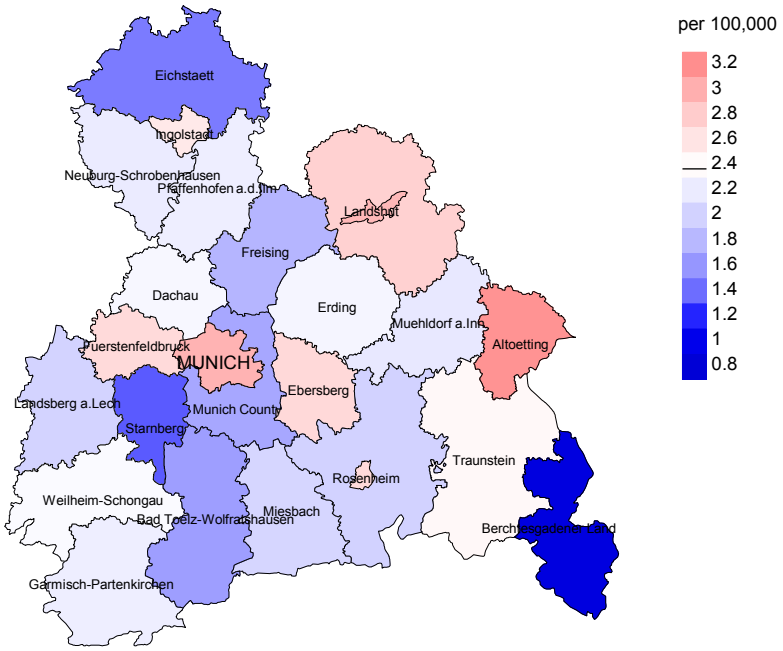


Figure 18. Distribution of age at death (bars) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

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

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



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

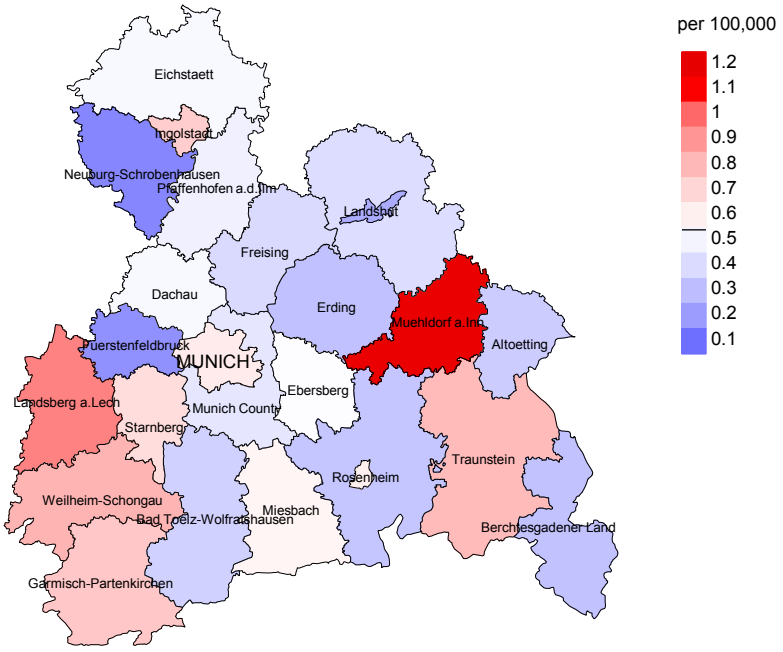
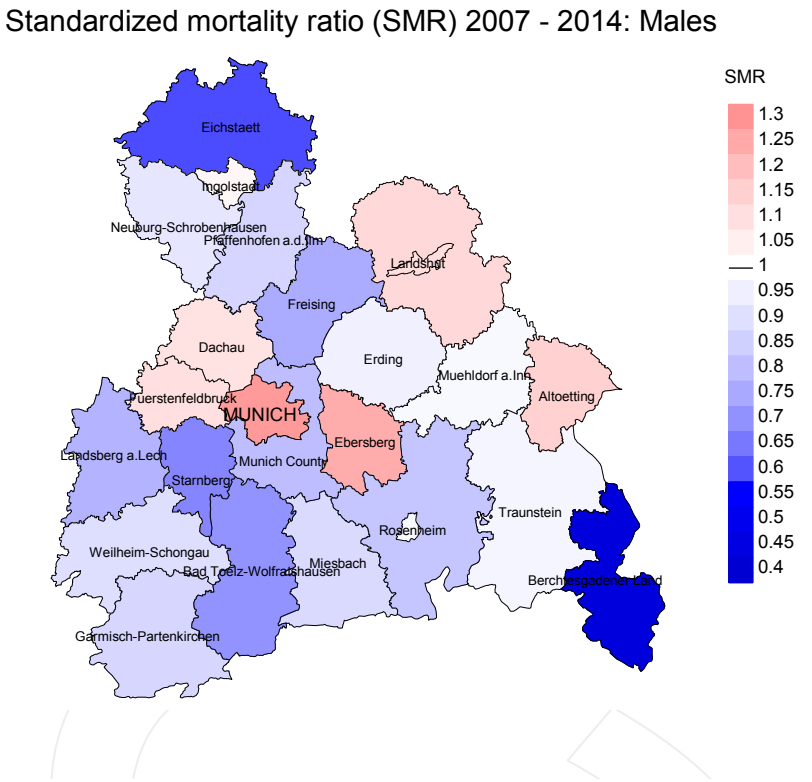


Figure 19a. Map of cancer mortality (world standard population) by county averaged for period 2007 to 2014. According to their individual mortality rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 2.4/100,000 WS N=757, females 0.5/100,000 WS N=207).

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 6 women died from oropharynx cancer. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 0.5/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.1 and 1.6/100,000.



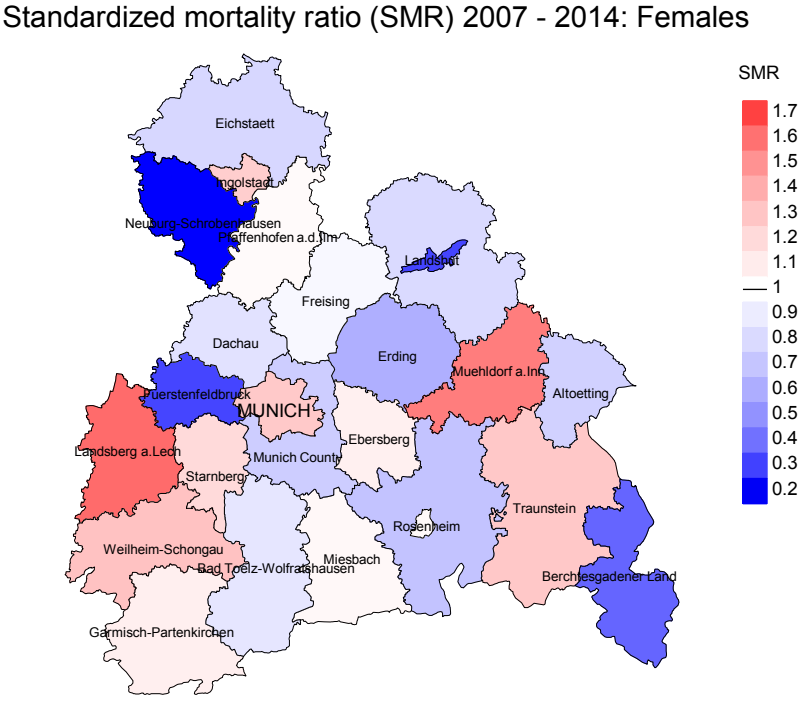


Figure 19b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2007 to 2014. According to their individual SMR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=757, females N=207).

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 6 women died from oropharynx cancer. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 1.07. Though, the value of this parameter may vary with an underlying probability of 99% between 0.28 and 2.80, 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

Recommended Citation

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