Munich Cancer Registry

- Survival
- Selection Matrix
- Homepage
- *Deutsch*

ICD-10 C05.1, C05.2, C09-C14: Pharynx cancer

Incidence and Mortality

Year of diagnosis	1998-2014
Patients	3,744
Diseases	3,805
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/bC0914E-ICD-10-C05.1-C05.2-C09-C14-Pharynx-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
C05.1	Soft palate
C05.2	Uvula
C09	Tonsil
C10	Oropharynx Excl.: Topography code C10.1 Anterior surface of epiglottis
C11	Nasopharynx
C12	Piriform sinus
C13	Hypopharynx
C14	Other and ill-defined sites in the lip, oral cavity and pharynx

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	145	7	4.8	27.6	84.1	100.0	
1999	162	8	4.9	24.1	81.5	98.8	
2000	138	5	3.6	27.5	82.6	97.1	
2001	146	8	5.5	29.5	78.1	95.9	
2002	229	20	8.7	33.2	79.0	98.3	#
2003	245	5	2.0	31.8	78.4	97.6	
2004	215	8	3.7	28.4	75.8	98.6	
2005	266	14	5.3	32.7	69.2	97.0	
2006	241	5	2.1	27.4	67.6	95.9	
2007	282	25	8.9	29.1	66.0	86.2	#
2008	306	12	3.9	31.0	68.3	84.0	
2009	288	8	2.8	30.2	65.3	84.7	
2010	287	13	4.5	30.3	55.7	78.7	
2011	285	13	4.6	30.9	50.9	83.9	
2012	273	19	7.0	25.6	50.2	86.1	
2013	225	7	3.1	25.3	45.8	98.7	
2014	72	11	15.3	31.9	47.2	95.8	##
1998-2014	3805	188	4.9	29.4	66.4	91.4	

\# 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	145	125	20	86.2
1999	162	134	28	82.7
2000	138	110	28	79.7
2001	146	122	24	83.6
2002	229	197	32	86.0
2003	245	197	48	80.4
2004	215	183	32	85.1
2005	266	214	52	80.5
2006	241	183	58	75.9
2007	282	229	53	81.2
2008	306	235	71	76.8
2009	288	228	60	79.2
2010	287	232	55	80.8
2011	285	223	62	78.2
2012	273	213	60	78.0
2013	225	175	50	77.8
2014	72	55	17	76.4
1998-2014	3805	3055	750	80.3

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	125	20	11.3	1.7	7.6	0.9	10.1	1.4	10.8	1.5
1999	134	28	12.0	2.4	7.9	1.3	10.9	1.8	11.9	2.1
2000	110	28	9.7	2.3	6.4	1.5	8.9	2.0	9.9	2.1
2001	122	24	10.5	2.0	7.1	1.2	9.6	1.7	10.4	1.8
2002	197	32	10.6	1.6	6.9	1.0	9.5	1.3	10.2	1.5
2003	197	48	10.5	2.4	7.0	1.4	9.6	2.0	10.2	2.2
2004	183	32	9.7	1.6	6.4	0.8	8.7	1.2	9.5	1.4
2005	214	52	11.3	2.6	7.3	1.5	9.8	2.1	10.6	2.4
2006	183	58	9.6	2.9	6.1	1.9	8.4	2.5	9.3	2.7
2007	229	53	10.3	2.3	6.3	1.3	8.7	1.8	9.8	2.0
2008	235	71	10.6	3.1	6.6	1.6	9.0	2.2	10.1	2.5
2009	228	60	10.2	2.6	6.2	1.5	8.6	2.0	9.6	2.3
2010	232	55	10.3	2.3	6.3	1.4	8.6	1.9	9.5	2.0
2011	223	62	9.8	2.6	5.7	1.5	7.9	2.1	9.0	2.3
2012	213	60	9.3	2.5	5.5	1.4	7.7	1.9	8.7	2.2
2013	175	50	7.7	2.1	4.6	1.1	6.4	1.6	7.2	1.8
2014	55	17	2.4	0.7	1.4	0.4	1.9	0.6	2.2	0.6
1998-2014	3055	750	9.5	2.2	6.0	1.3	8.2	1.8	9.0	2.0

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	145	57.7	10.7	0.9	87.6	46.9	51.6	57.3	63.5	70.7
1999	162	59.3	11.0	32.7	91.7	48.1	51.3	57.7	65.0	75.2
2000	138	59.1	10.4	31.0	89.6	47.9	51.8	58.0	65.0	74.1
2001	146	59.0	10.4	29.2	94.7	47.5	52.3	58.2	65.4	72.9
2002	229	59.6	9.8	37.3	96.8	47.4	53.2	59.4	64.3	72.9
2003	245	59.8	9.7	38.9	87.5	47.3	53.6	58.7	65.9	73.7
2004	215	59.4	10.6	31.7	87.8	47.0	51.9	58.7	65.3	74.6
2005	266	60.5	10.5	12.8	103	47.8	53.5	61.1	66.2	71.6
2006	241	59.9	10.9	17.6	101	47.6	52.5	58.9	66.4	72.5
2007	282	62.2	10.9	30.1	91.6	48.7	53.0	62.2	68.8	76.3
2008	306	63.0	10.4	28.3	97.0	49.3	56.9	62.0	69.0	76.3
2009	288	62.6	10.7	40.8	95.5	49.6	54.9	61.7	69.6	76.1
2010	287	61.3	10.7	21.3	92.3	47.4	54.1	61.4	69.0	73.6
2011	285	63.3	10.9	24.5	92.0	49.8	55.0	63.0	70.7	75.7
2012	273	63.5	10.6	39.9	98.2	49.4	55.4	63.0	70.5	76.8
2013	225	63.4	10.0	33.2	92.9	51.7	56.0	62.6	69.6	77.0
2014	72	63.0	10.9	31.6	92.4	49.8	55.5	63.2	70.5	74.3
1998-2014	3805	61.2	10.7	0.9	103	48.3	53.7	60.8	67.9	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	125	56.8	10.3	0.9	87.6	46.2	51.1	57.2	62.3	68.6
1999	134	58.6	10.0	37.1	87.0	48.6	51.2	57.0	64.2	73.6
2000	110	59.7	9.8	40.6	89.6	49.5	52.5	58.0	65.8	73.8
2001	122	58.3	9.5	29.2	81.2	47.5	52.0	58.2	65.4	69.9
2002	197	59.2	9.4	38.0	96.8	47.4	53.0	59.1	63.9	71.3
2003	197	59.3	9.0	39.6	87.5	47.7	53.4	58.4	65.6	72.6
2004	183	58.4	10.0	31.7	85.5	46.2	51.3	57.4	64.2	72.4
2005	214	60.0	10.2	12.8	99.0	47.3	53.5	61.0	65.7	70.4
2006	183	60.0	10.2	17.6	86.7	47.6	52.5	59.0	66.4	72.7
2007	229	62.0	10.3	39.1	91.6	48.8	52.9	62.3	68.8	75.6
2008	235	61.8	9.9	28.3	87.0	49.3	55.1	61.1	68.3	74.3
2009	228	62.2	10.1	40.8	90.7	49.6	54.9	61.8	69.5	73.9
2010	232	61.3	10.6	21.3	92.3	47.3	54.2	61.0	69.1	73.6
2011	223	63.1	10.4	32.1	89.2	49.7	54.2	62.7	70.8	75.5
2012	213	62.7	10.0	39.9	91.7	49.3	55.0	62.3	70.2	76.5
2013	175	63.1	9.3	33.2	92.9	52.3	56.6	62.4	68.5	75.0
2014	55	63.5	9.7	44.6	83.9	49.8	56.3	64.2	70.8	74.3
1998-2014	3055	60.8	10.1	0.9	99.0	48.3	53.5	60.5	67.3	74.1

Table 3b

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

Year of diagnosis	Cases n	Mean	Std. dev.	Min.	Max.	Median 10%	25%	50%	75%	90%
1998	20	63.0	12.1	50.7	86.7	51.3	53.8	58.3	72.3	84.0
1999	28	62.7	14.5	32.7	91.7	41.9	52.6	61.1	74.0	82.4
2000	28	56.7	12.6	31.0	81.3	39.8	49.5	57.7	61.0	77.0
2001	24	62.4	13.9	41.3	94.7	49.3	53.7	58.4	73.7	84.8
2002	32	61.9	12.1	37.3	83.6	47.6	53.7	60.8	70.8	78.9
2003	48	61.6	11.8	38.9	84.2	44.7	54.8	59.0	69.9	80.7
2004	32	64.8	12.1	36.3	87.8	50.9	56.2	64.8	75.7	80.5
2005	52	62.6	11.5	44.9	103	49.9	53.4	61.6	66.8	77.5
2006	58	59.6	12.8	34.7	101	45.9	51.6	58.7	65.6	72.5
2007	53	62.8	13.2	30.1	89.4	47.8	53.6	61.9	68.6	83.5
2008	71	66.7	11.4	35.5	97.0	54.4	60.7	66.3	70.8	82.9
2009	60	63.7	12.9	41.0	95.5	49.5	54.9	61.1	71.5	83.8
2010	55	61.5	11.5	33.3	90.0	48.8	53.4	63.0	68.3	71.8
2011	62	63.9	12.4	24.5	92.0	51.9	57.0	63.9	70.6	77.4
2012	60	66.2	12.1	44.0	98.2	52.1	58.0	64.7	72.9	81.0
2013	50	64.5	12.0	44.7	91.4	50.3	54.3	64.8	71.8	79.0
2014	17	61.5	14.3	31.6	92.4	48.3	52.4	61.2	70.1	86.9
1998-2014	750	63.1	12.5	24.5	103	48.7	54.3	61.8	70.3	80.7

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.%
20-24	3	0.1	0.1	2	0.1	0.1	1	0.2	0.2
25-29	1	0.0	0.2	1	0.1	0.2			0.2
30-34	6	0.3	0.5	3	0.2	0.4	3	0.7	0.9
35-39	9	0.4	0.9	6	0.4	0.8	3	0.7	1.6
40-44	48	2.4	3.3	35	2.2	3.0	13	3.0	4.7
45-49	161	8.0	11.3	136	8.6	11.5	25	5.8	10.5
50-54	277	13.7	25.0	221	13.9	25.4	56	13.1	23.6
55-59	303	15.0	40.0	242	15.2	40.6	61	14.3	37.9
60-64	383	19.0	59.0	309	19.4	60.1	74	17.3	55.1
65-69	343	17.0	76.0	267	16.8	76.9	76	17.8	72.9
70-74	241	11.9	88.0	200	12.6	89.4	41	9.6	82.5
75-79	129	6.4	94.4	103	6.5	95.9	26	6.1	88.6
80-84	63	3.1	97.5	44	2.8	98.7	19	4.4	93.0
85+	51	2.5	100.0	21	1.3	100.0	30	7.0	100.0
All ages	2018	100.0		1590	100.0		428	100.0	

Included in the statistics are 36.6% multiple primaries in males and 36.7% 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=72 %	Females DCO rate n=34 %	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	2	1	0.2	0.1			0.5	0.3
25-29	1		0.1	0.0			0.2	
30-34	3	3	0.2	0.2			0.4	0.3
35-39	6	3	0.5	0.2		33.3	0.5	0.2
40-44	33	13	2.0	0.8	3.0	7.7	1.8	0.3
45-49	132	24	8.3	1.6	1.5		4.1	0.4
50-54	219	53	16.9	4.1	2.7	3.8	4.5	0.8
55-59	240	61	22.6	5.4	1.7	3.3	3.3	0.8
60-64	306	73	31.2	6.9	2.9	5.5	2.8	0.8
65-69	265	73	27.5	7.0	5.3	2.7	1.7	0.6
70-74	197	41	21.7	3.9	8.1	4.9	1.2	0.3
75-79	102	26	18.5	3.6	6.9	7.7	0.8	0.3
80-84	44	18	12.6	3.2	11.4	33.3	0.5	0.2
85+	21	30	9.1	5.2	38.1	40.0	0.3	0.3
All ages	1571	419			4.6	8.1	1.7	0.5
Incidence								
Raw			8.7	2.2				
WS			5.2	1.2				
ES			7.2	1.7				
BRD-S			8.1	1.9				

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).

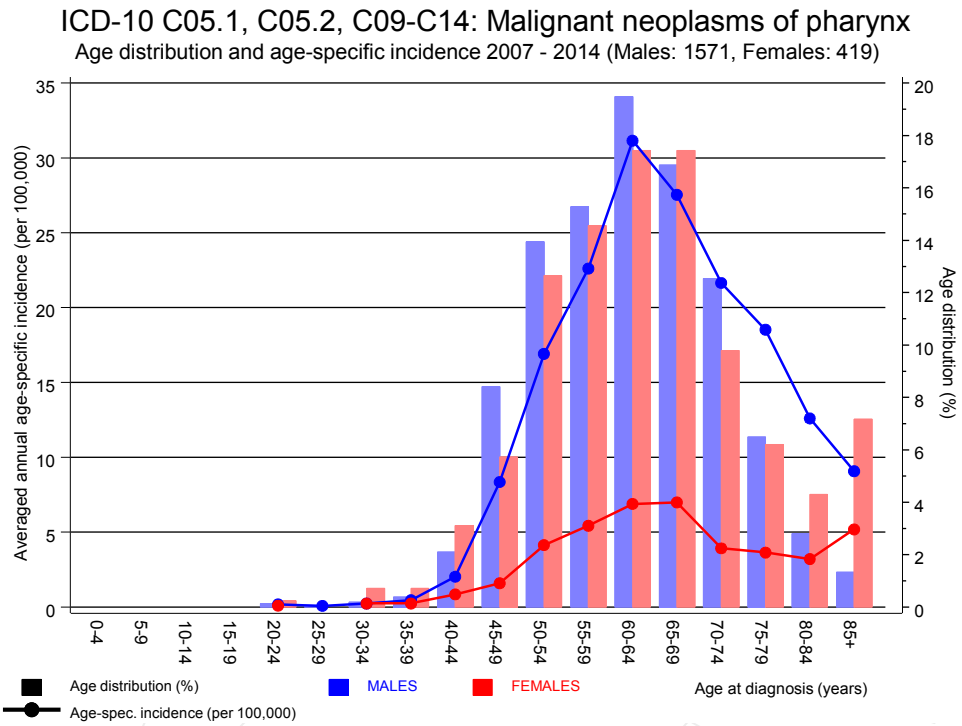


Figure 6. Age distribution and age-specific incidence

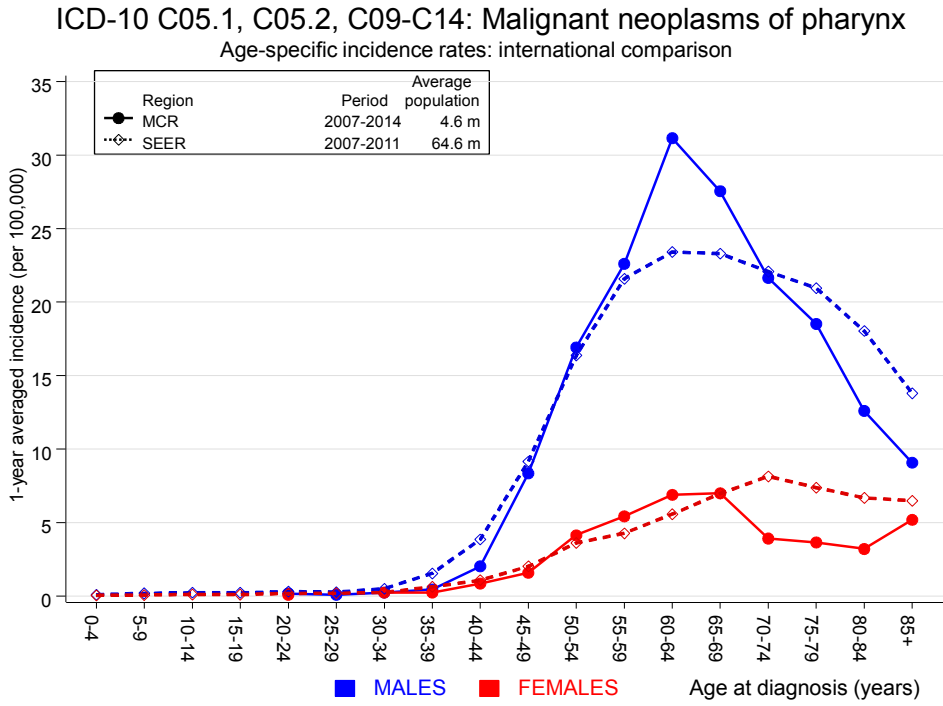


Figure 6a. Age-specific incidence in MCR registry areas compared to SEER (Surveillance, Epidemiology, and End Results, USA).

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.

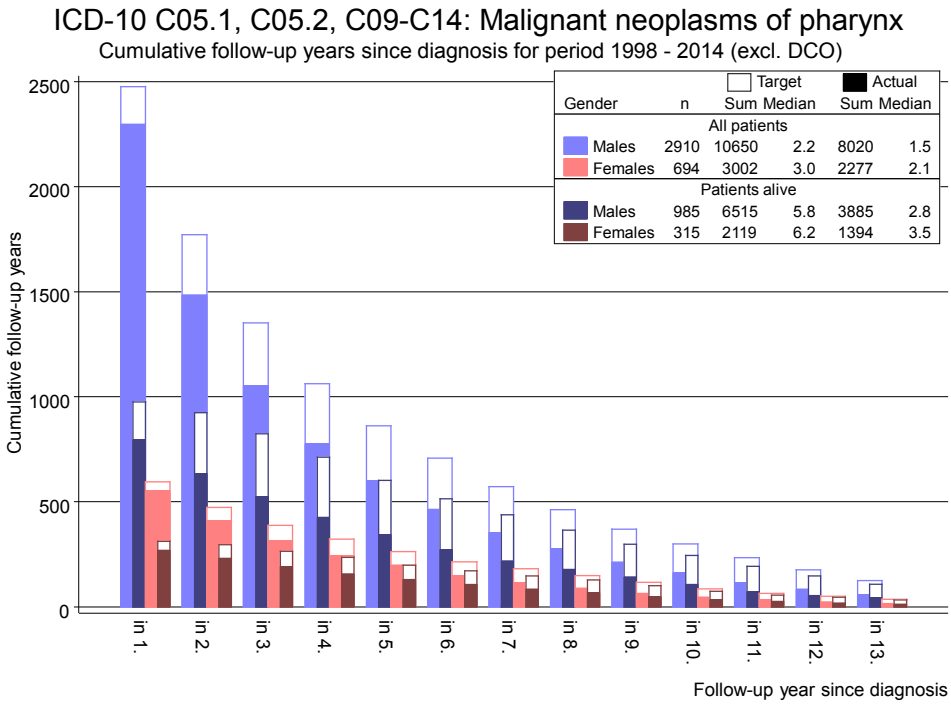


Figure 7. Cumulative follow-up years depending on time since diagnosis

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	48	1.2	40.3	29.7	53.4	#	59.0	10.4
C09-C10	Oropharynx	37	1.6	23.7	16.7	32.7	#	44.7	
C11	Nasopharynx	3	0.1	30.3	6.3	88.6	#	3.7	
C12-C13	Hypopharynx	17	0.8	20.1	11.7	32.1	#	20.4	17.6
C15	Oesophagus	52	2.1	24.9	18.6	32.6	#	62.9	17.3
C16	Stomach	9	3.4	2.6	1.2	5.0	#	7.0	11.1
C18	Colon	18	8.3	2.2	1.3	3.4	#	12.2	
C19-C20	Rectum	6	5.6	1.1	0.4	2.3		0.5	
C21	Anus/canal	2	0.2	8.5	1.0	30.5	#	2.2	
C22	Liver	17	2.7	6.3	3.7	10.1	#	18.0	5.9
C25	Pancreas	13	3.3	4.0	2.1	6.8	#	12.2	23.1
C30-C31	Sinuses	2	0.2	11.0	1.3	39.9	#	2.3	
C32	Larynx	36	1.2	28.9	20.2	40.0	#	43.8	30.6
C33-C34	Lung	123	11.8	10.4	8.7	12.5	#	140.2	8.9
C43	Malign. melanoma	9	4.5	2.0	0.9	3.8		5.7	11.1
C61	Prostate	30	28.0	1.1	0.7	1.5		2.5	6.7
C64	Kidney	10	3.7	2.7	1.3	5.0	#	8.0	20.0
C65	Renal pelvis	2	0.3	5.8	0.7	20.8		2.1	
C67	Bladder	8	3.5	2.3	1.0	4.5		5.6	12.5
C73	Thyroid	6	0.9	6.7	2.5	14.6	#	6.4	16.7
C76-C79	CUP	5	1.5	3.3	1.1	7.7	#	4.4	
C82-C85	NHL	4	3.6	1.1	0.3	2.8		0.5	
C90	Mult. myeloma	2	1.1	1.8	0.2	6.5		1.1	
Other primaries		11	5.4	2.0	1.0	3.7	#	7.1	18.2
Not observed		0	2.3	0.0	0.0	1.6		-2.9	
All mult. primaries		470	97.6	4.8	4.4	5.3	#	469.5	11.3

Patients	2909
Median age at second malignancy (years)	63.5
Person-years	7933
Mean observation time (years)	2.7
Median observation time (years)	1.5

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

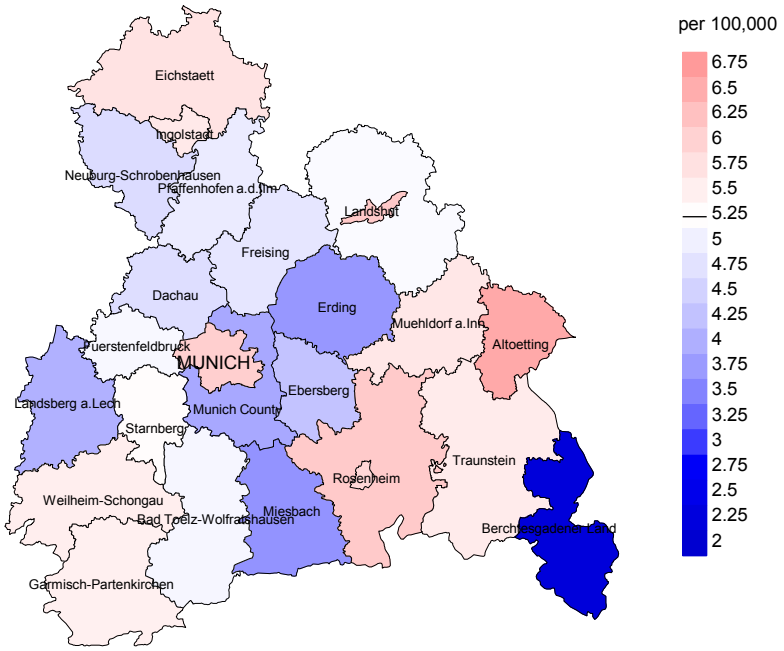
Diagnosis		Observed n	Expected n	SIR	LCL 95%	UCL 95%		EAR	DCO %
C03–C06	Oral cavity	9	0.1	63.0	28.8	119.6	#	39.8	
C09–C10	Oropharynx	11	0.1	95.7	47.8	171.2	#	49.0	
C12–C13	Hypopharynx	6	0.0	191.1	70.1	415.9	#	26.8	
C15	Oesophagus	10	0.1	72.2	34.6	132.8	#	44.4	
C16	Stomach	2	0.6	3.4	0.4	12.1		6.3	
C18	Colon	8	1.7	4.6	2.0	9.1	#	28.2	
C22	Liver	3	0.2	13.9	2.9	40.5	#	12.5	33.3
C25	Pancreas	2	0.8	2.6	0.3	9.3		5.5	
C32	Larynx	6	0.0	127.4	46.7	277.3	#	26.8	
C33–C34	Lung	19	1.6	11.6	7.0	18.1	#	78.1	15.8
C50	Breast	8	7.2	1.1	0.5	2.2		3.5	
C51	Vulva	2	0.2	11.0	1.3	39.8	#	8.2	
C53	Cervix uteri	3	0.3	9.1	1.9	26.7	#	12.0	
C56	Ovary	2	0.9	2.3	0.3	8.5		5.2	50.0
C64	Kidney	2	0.5	4.2	0.5	15.2		6.9	
C70–C72	CNS cancer	2	0.3	7.0	0.8	25.2		7.7	50.0
Other primaries		9	3.9	2.3	1.1	4.4	#	23.0	22.2
Not observed		0	2.5	0.0	0.0	1.5		−11.1	
All mult. primaries		104	21.1	4.9	4.0	6.0	#	372.7	7.7

Patients	694
Median age at second malignancy (years)	63.8
Person-years	2223
Mean observation time (years)	3.2
Median observation time (years)	2.1

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

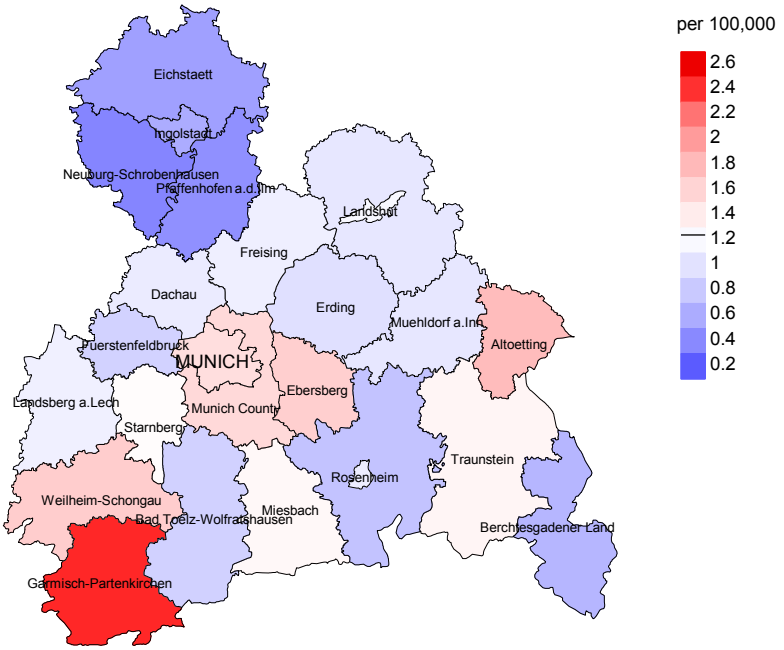
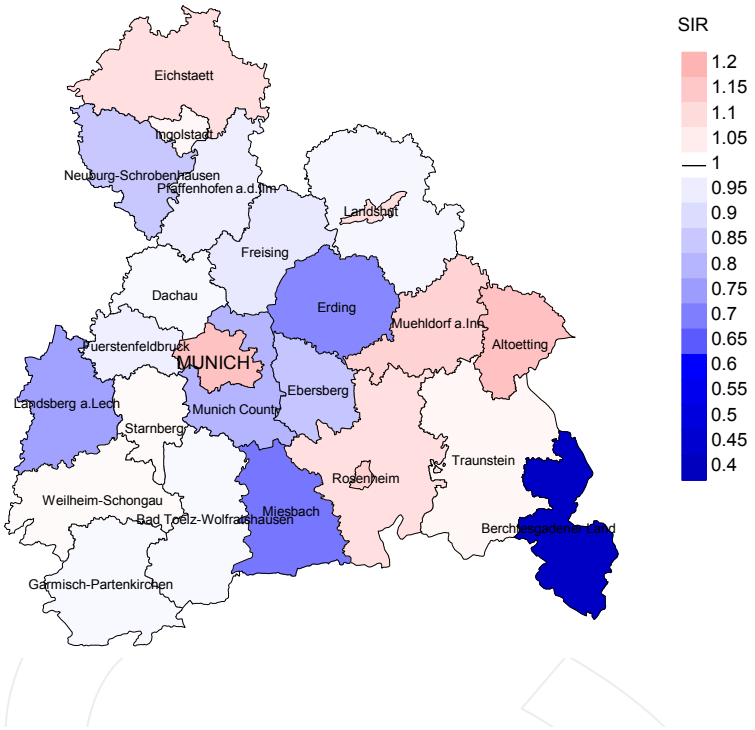


Figure 9a. Map of cancer incidence (world standard population, incl. DCO cases) by county averaged for period 2007 to 2014. According to their individual incidence rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 5.2/100,000 WS N=1,571, females 1.2/100,000 WS N=419).

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 15 women were identified with newly diagnosed pharynx cancer. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 1.7/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.7 and 3.2/100,000.

Standardized incidence ratio (SIR) 2007 - 2014: Males



Standardized incidence ratio (SIR) 2007 - 2014: Females

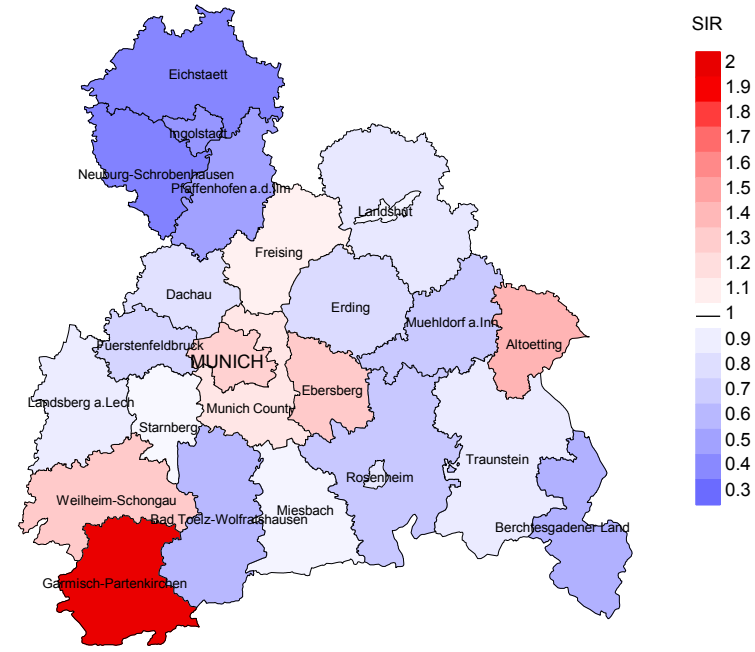


Figure 9b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2007 to 2014. According to their individual SIR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=1,571, females N=419).

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 15 women were identified with newly diagnosed pharynx cancer. Therefore, the mean standardized incidence ratio (SIR) for this cancer type in this area can be calculated at 1.31. Though, the value of this parameter may vary with an underlying probability of 99% between 0.60 and 2.46, 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	145	100.0	4.8	122	84.1	96.7
1999	162	98.8	4.9	132	81.5	90.2
2000	138	97.1	3.6	114	82.6	94.7
2001	146	95.9	5.5	114	78.1	97.4
2002	229	98.3	8.7	181	79.0	96.7
2003	245	97.6	2.0	192	78.4	97.4
2004	215	98.6	3.7	163	75.8	96.3
2005	266	97.0	5.3	184	69.2	98.4
2006	241	95.9	2.1	163	67.6	98.8
2007	282	86.2	8.9	186	66.0	96.2
2008	306	84.0	3.9	209	68.3	98.6
2009	288	84.7	2.8	188	65.3	98.9
2010	287	78.7	4.5	160	55.7	99.4
2011	285	83.9	4.6	145	50.9	95.2
2012	273	86.1	7.0	137	50.2	96.4
2013	225	98.7	3.1	103	45.8	97.1
2014	72	95.8	15.3	34	47.2	91.2
1998-2014	3805	91.4	4.9	2527	66.4	96.9

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	145	116	90.5	27	18.6
1999	162	127	87.4	34	21.0
2000	138	113	95.6	21	15.2
2001	146	112	92.9	27	18.5
2002	229	168	97.6	46	20.1
2003	245	173	96.5	41	16.7
2004	215	178	96.6	31	14.4
2005	266	167	95.8	47	17.7
2006	241	186	98.4	38	15.8
2007	282	230	97.8	58	20.6
2008	306	206	98.5	52	17.0
2009	288	195	99.0	46	16.0
2010	287	207	99.0	44	15.3
2011	285	208	98.1	59	20.7
2012	273	226	97.8	54	19.8
2013	225	229	98.3	44	19.6
2014	72	195	98.5	29	40.3
1998–2014	3805	3036	96.9	698	18.3

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	116	77.6	22.4	94.3
1999	127	68.5	31.5	91.0
2000	113	85.0	15.0	93.5
2001	112	77.7	22.3	92.3
2002	168	81.5	18.5	91.5
2003	173	81.5	18.5	92.8
2004	178	82.6	17.4	91.3
2005	167	85.6	14.4	93.8
2006	186	84.9	15.1	91.3
2007	230	83.0	17.0	92.4
2008	206	82.0	18.0	89.2
2009	195	82.6	17.4	96.9
2010	207	83.6	16.4	92.7
2011	208	76.0	24.0	86.8
2012	226	82.7	17.3	91.9
2013	229	79.5	20.5	89.8
2014	195	79.5	20.5	90.1
1998-2014	3036	81.1	18.9	91.7

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	90	59.2	57.4	64.4	59.3
1999	101	60.5	58.8	62.9	59.0
2000	91	60.4	59.1	65.5	59.7
2001	92	60.1	59.0	65.5	60.3
2002	143	60.2	59.7	63.9	59.8
2003	149	62.3	61.8	67.6	61.8
2004	149	60.7	60.1	63.5	60.2
2005	141	62.1	62.0	64.0	62.4
2006	158	63.8	62.7	66.5	62.9
2007	191	63.4	62.0	69.1	63.0
2008	161	66.9	66.7	68.2	67.0
2009	155	64.5	64.4	67.0	64.5
2010	173	63.9	63.0	72.0	63.7
2011	174	66.4	64.1	70.9	65.4
2012	175	67.6	67.6	68.6	67.3
2013	180	66.6	64.4	69.4	64.9
2014	162	67.9	67.0	74.0	67.6
1998-2014	2485	63.5	62.7	68.4	63.1

Deaths of patients are considered to be cancer-related, in case that fact was recorded on the death certificate, or patients had suffered from metastasis or recurrence.

Table 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	26	71.5	69.6	77.9	71.5
1999	26	62.6	62.9	58.1	60.8
2000	22	55.9	55.6	74.0	55.9
2001	20	64.3	63.4	66.2	63.4
2002	25	66.2	64.9	73.8	66.8
2003	24	62.2	62.2	68.2	63.4
2004	29	73.8	73.8	72.0	74.2
2005	26	64.0	60.3	72.4	63.6
2006	28	67.3	66.9	75.1	67.3
2007	39	67.6	66.9	74.0	67.0
2008	45	66.9	66.9	64.7	66.9
2009	40	68.9	68.5	74.4	68.9
2010	34	64.1	62.7	71.1	63.7
2011	34	66.1	64.9	76.1	64.9
2012	51	71.5	71.5	77.0	70.6
2013	49	68.9	68.1	78.8	68.3
2014	33	75.8	72.0	77.6	75.0
1998-2014	551	67.8	66.9	73.9	67.5

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	70	6.3	0.56	4.4	0.57	5.8	0.57	6.3	0.58
1999	74	6.6	0.55	4.2	0.53	5.9	0.54	6.7	0.56
2000	78	6.8	0.71	4.4	0.68	6.2	0.69	7.1	0.72
2001	72	6.2	0.60	4.1	0.58	5.7	0.60	6.2	0.60
2002	120	6.4	0.61	4.2	0.60	5.8	0.61	6.4	0.63
2003	123	6.6	0.63	4.1	0.59	5.7	0.60	6.4	0.63
2004	124	6.6	0.69	4.2	0.67	5.8	0.69	6.3	0.69
2005	122	6.4	0.57	3.9	0.54	5.5	0.56	6.1	0.58
2006	135	7.0	0.74	4.3	0.70	6.0	0.71	6.8	0.73
2007	158	7.1	0.70	4.3	0.70	6.1	0.71	6.9	0.71
2008	133	6.0	0.57	3.4	0.52	4.8	0.54	5.6	0.56
2009	131	5.9	0.58	3.4	0.55	4.8	0.57	5.6	0.59
2010	148	6.6	0.64	3.8	0.62	5.4	0.64	6.2	0.66
2011	134	5.9	0.61	3.4	0.61	4.7	0.61	5.4	0.62
2012	140	6.1	0.66	3.2	0.59	4.8	0.63	5.8	0.67
2013	144	6.3	0.84	3.4	0.76	5.0	0.79	5.8	0.82
2014	135	5.9	2.50	3.3	2.40	4.6	2.46	5.5	2.55
1998-2014	2041	6.4	0.67	3.8	0.64	5.4	0.66	6.1	0.68

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	20	1.7	1.00	0.8	0.86	1.2	0.88	1.5	1.00
1999	13	1.1	0.46	0.6	0.42	0.8	0.43	1.0	0.46
2000	19	1.6	0.68	1.0	0.67	1.3	0.68	1.5	0.69
2001	15	1.2	0.63	0.6	0.54	0.9	0.53	1.0	0.55
2002	17	0.9	0.53	0.5	0.50	0.7	0.52	0.8	0.51
2003	18	0.9	0.38	0.5	0.36	0.7	0.37	0.8	0.36
2004	23	1.2	0.72	0.5	0.64	0.8	0.63	1.0	0.70
2005	21	1.1	0.41	0.6	0.42	0.9	0.43	1.0	0.41
2006	23	1.1	0.40	0.6	0.30	0.8	0.33	1.0	0.36
2007	33	1.4	0.66	0.7	0.58	1.0	0.60	1.2	0.64
2008	36	1.6	0.51	0.8	0.53	1.2	0.54	1.3	0.51
2009	31	1.3	0.53	0.7	0.47	0.9	0.47	1.1	0.49
2010	25	1.1	0.47	0.6	0.46	0.9	0.47	1.0	0.50
2011	24	1.0	0.39	0.5	0.36	0.8	0.37	0.8	0.38
2012	47	2.0	0.78	0.9	0.65	1.3	0.68	1.5	0.71
2013	38	1.6	0.78	0.8	0.73	1.1	0.73	1.3	0.77
2014	20	0.8	1.18	0.3	0.74	0.5	0.84	0.6	0.97
1998-2014	423	1.3	0.57	0.6	0.51	0.9	0.53	1.1	0.55

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	4	0.3	0.3	1	0.1	0.1	3	1.2	1.2
40-44	14	1.0	1.3	14	1.2	1.3			1.2
45-49	68	4.8	6.1	59	5.1	6.4	9	3.5	4.6
50-54	153	10.8	16.8	132	11.4	17.8	21	8.1	12.7
55-59	226	15.9	32.8	194	16.7	34.5	32	12.3	25.0
60-64	234	16.5	49.3	195	16.8	51.3	39	15.0	40.0
65-69	254	17.9	67.2	197	17.0	68.3	57	21.9	61.9
70-74	218	15.4	82.5	182	15.7	84.0	36	13.8	75.8
75-79	127	8.9	91.5	109	9.4	93.4	18	6.9	82.7
80-84	73	5.1	96.6	55	4.7	98.2	18	6.9	89.6
85+	48	3.4	100.0	21	1.8	100.0	27	10.4	100.0
All ages	1419	100.0		1159	100.0		260	100.0	

Included in the statistics are 36.6% multiple primaries in males and 36.7% 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	1	3	0.1	0.17	0.2	1.00	0.6	1.2
40-44	14		0.9	0.40	0.0		3.0	
45-49	59	9	3.7	0.43	0.6	0.36	5.8	0.7
50-54	132	21	10.2	0.60	1.6	0.38	7.1	1.2
55-59	194	32	18.3	0.80	2.8	0.52	6.3	1.2
60-64	195	39	19.9	0.63	3.7	0.53	4.1	1.1
65-69	197	57	20.5	0.74	5.5	0.75	2.8	1.1
70-74	182	36	20.0	0.91	3.4	0.88	2.0	0.5
75-79	109	18	19.8	1.06	2.5	0.69	1.3	0.3
80-84	55	18	15.7	1.25	3.2	0.95	0.7	0.3
85+	21	27	9.1	1.00	4.7	0.90	0.3	0.3
All ages	1159	260					2.3	0.6
Mortality								
Raw			6.4	0.73	1.4	0.61		
WS			3.7	0.69	0.7	0.54		
ES			5.2	0.71	1.0	0.56		
BRD-S			6.0	0.74	1.1	0.58		
PYLL-70								
per 100,000			52.6		9.5			
ES			46.7		8.1			
AYLL-70			10.7		9.3			

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	112	11.8	46	41.1	15	13.4	51	45.5
C09–C10	Oropharynx	70	7.4			17	24.3	53	75.7
C12–C13	Hypopharynx	61	6.4			27	44.3	34	55.7
C15	Oesophagus	103	10.9	21	20.4	15	14.6	67	65.0
C16	Stomach	16	1.7	4	25.0	2	12.5	10	62.5
C18	Colon	33	3.5	17	51.5	1	3.0	15	45.5
C19–C20	Rectum	14	1.5	7	50.0	1	7.1	6	42.9
C22	Liver	22	2.3	1	4.5	3	13.6	18	81.8
C25	Pancreas	23	2.4	2	8.7	2	8.7	19	82.6
C32	Larynx	33	3.5			5	15.2	28	84.8
C33–C34	Lung	179	18.9	28	15.6	26	14.5	125	69.8
C43	Malign. melanoma	10	1.1	4	40.0	2	20.0	4	40.0
C44	Skin others	61	6.4	17	27.9	8	13.1	36	59.0
C61	Prostate	56	5.9	29	51.8	3	5.4	24	42.9
C64	Kidney	16	1.7	8	50.0	2	12.5	6	37.5
C67	Bladder	27	2.8	15	55.6	1	3.7	11	40.7
C76–C79	CUP	24	2.5	15	62.5			9	37.5
Other primaries		88	9.3	35	39.8	10	11.4	43	48.9
All mult. primaries		948	100.0	249	26.3	140	14.8	559	59.0

Multiple primaries with number of cases 1 to 9 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	29	13.2	19	65.5	3	10.3	7	24.1
C09-C10 Oropharynx	5	2.3			1	20.0	4	80.0
C12-C13 Hypopharynx	7	3.2			4	57.1	3	42.9
C15 Oesophagus	18	8.2	2	11.1	5	27.8	11	61.1
C16 Stomach	3	1.4			1	33.3	2	66.7
C18 Colon	10	4.6	5	50.0	2	20.0	3	30.0
C21 Anus/canal	3	1.4	2	66.7			1	33.3
C30-C31 Sinuses	4	1.8	2	50.0			2	50.0
C32 Larynx	11	5.0	4	36.4	1	9.1	6	54.5
C33-C34 Lung	28	12.8	2	7.1	3	10.7	23	82.1
C44 Skin others	5	2.3					5	100.0
C50 Breast	36	16.4	28	77.8	3	8.3	5	13.9
C53 Cervix uteri	8	3.7	6	75.0			2	25.0
C54 Corpus uteri	4	1.8	3	75.0			1	25.0
C56 Ovary	3	1.4	2	66.7			1	33.3
C67 Bladder	4	1.8	3	75.0			1	25.0
C70-C72 CNS cancer	3	1.4	1	33.3	1	33.3	1	33.3
C73 Thyroid	6	2.7	4	66.7	1	16.7	1	16.7
C76-C79 CUP	9	4.1	5	55.6			4	44.4
C82-C85 NHL	3	1.4	2	66.7			1	33.3
C91-C96 Leukaemia	3	1.4	1	33.3			2	66.7
Other primaries	17	7.8	5	29.4	3	17.6	9	52.9
All mult. primaries	219	100.0	96	43.8	28	12.8	95	43.4

Multiple primaries with number of cases 1 to 2 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			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	0.0		0.1	1.00		0.4
40-44	12		0.7	0.39	0.0		2.8	
45-49	44	8	2.8	0.40	0.5	0.38	4.8	0.8
50-54	108	17	8.3	0.56	1.3	0.40	6.8	1.1
55-59	159	26	15.0	0.80	2.3	0.60	6.1	1.2
60-64	150	25	15.3	0.60	2.4	0.45	3.8	0.9
65-69	141	45	14.7	0.72	4.3	0.79	2.5	1.1
70-74	144	24	15.8	0.99	2.3	0.80	2.1	0.5
75-79	77	9	14.0	1.08	1.3	0.60	1.2	0.2
80-84	37	12	10.6	1.28	2.1	0.92	0.7	0.2
85+	17	14	7.3	1.21	2.4	0.70	0.4	0.2
All ages	889	181					2.3	0.5
Mortality								
Raw			4.9	0.71	1.0	0.57		
WS			2.8	0.67	0.5	0.52		
ES			4.0	0.69	0.7	0.54		
BRD-S			4.6	0.72	0.8	0.55		
PYLL-70								
per 100,000			41.7		7.2			
ES			37.0		6.1			
AYLL-70			10.9		9.3			

* 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	0.0		0.1	1.00		0.5
40-44	10		0.6	0.38	0.0		2.5	
45-49	38	6	2.4	0.36	0.4	0.32	4.4	0.7
50-54	86	16	6.6	0.48	1.2	0.38	6.0	1.2
55-59	132	22	12.4	0.73	2.0	0.58	5.7	1.2
60-64	120	18	12.2	0.51	1.7	0.37	3.5	0.7
65-69	106	37	11.0	0.59	3.5	0.70	2.2	1.1
70-74	99	15	10.9	0.81	1.4	0.54	1.8	0.4
75-79	50	8	9.1	0.81	1.1	0.53	1.0	0.2
80-84	24	9	6.9	0.92	1.6	0.69	0.6	0.2
85+	11	12	4.8	0.85	2.1	0.63	0.3	0.2
All ages	676	144					2.1	0.5
Mortality								
Raw			3.7	0.59	0.8	0.49		
WS			2.2	0.57	0.4	0.46		
ES			3.1	0.58	0.6	0.47		
BRD-S			3.5	0.60	0.6	0.48		
PYLL-70								
per 100,000			34.0		6.0			
ES			30.2		5.2			
AYLL-70			11.1		9.5			

* See corresponding tables with multiple primaries.

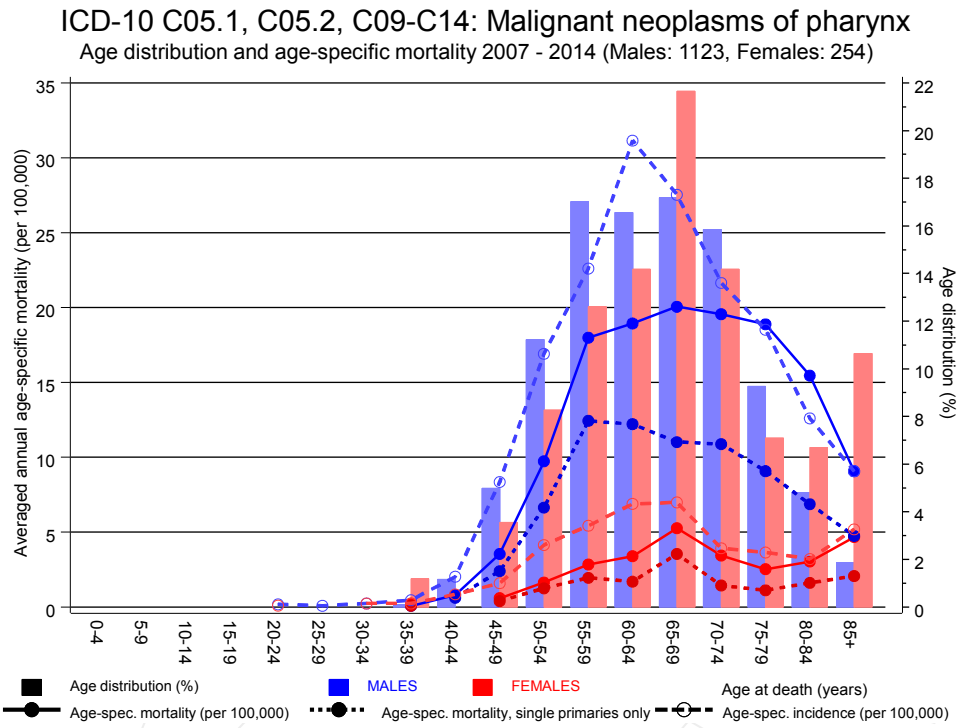
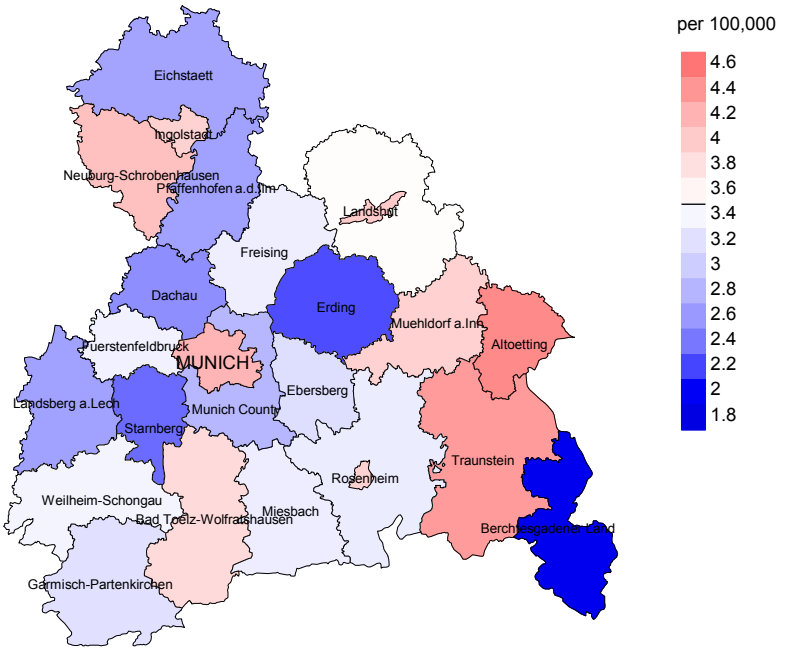


Figure 18. Distribution of age at death (bars) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

The difference between age at diagnosis (Table 3) and age at pharynx 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

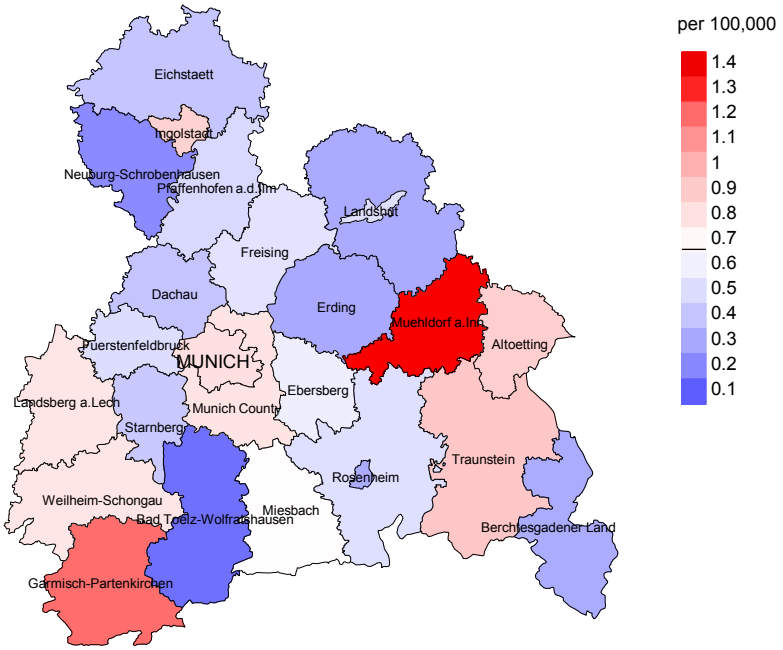
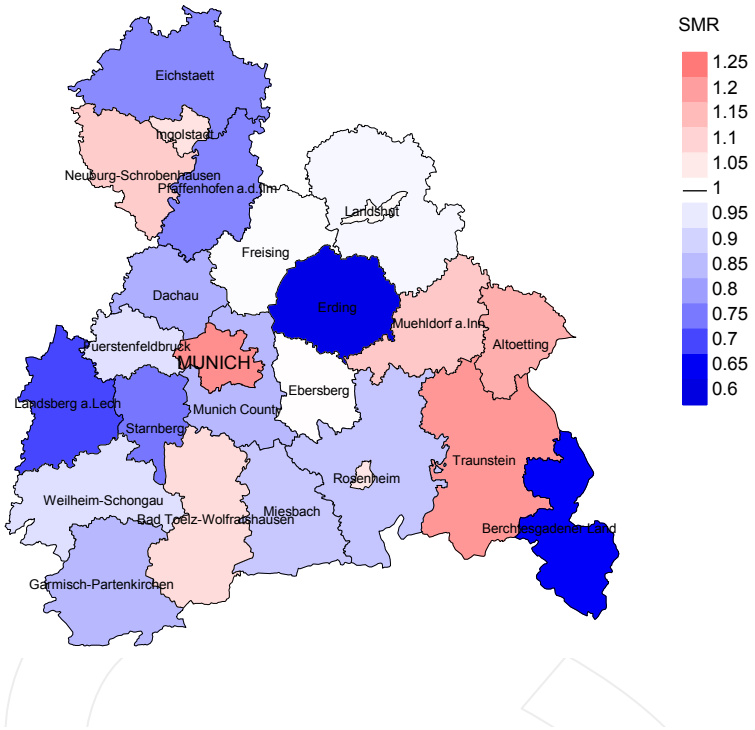


Figure 19a. Map of cancer mortality (world standard population) by county averaged for period 2007 to 2014. According to their individual mortality rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 3.5/100,000 WS N=1,113, females 0.7/100,000 WS N=252).

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 7 women died from pharynx cancer. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 0.6/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.1 and 1.7/100,000.

Standardized mortality ratio (SMR) 2007 - 2014: Males



Standardized mortality ratio (SMR) 2007 - 2014: Females

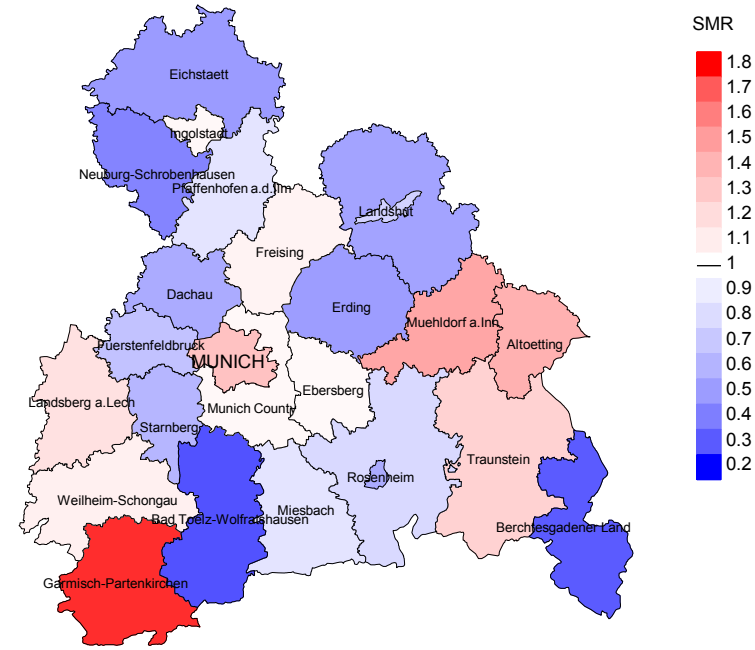


Figure 19b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2007 to 2014. According to their individual SMR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=1,113, females N=252).

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 7 women died from pharynx cancer. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 1.03. Though, the value of this parameter may vary with an underlying probability of 99% between 0.30 and 2.52, 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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Index of figures and tables

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