Munich Cancer Registry

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ICD-10 C15: Oesophagus cancer

Incidence and Mortality

Year of diagnosis	1998-2014
Patients	3,896
Diseases	3,897
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/bC15__E-ICD-10-C15-Oesophagus-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.

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

Code	Description
C15.-	Malignant neoplasm of oesophagus
	Note: Two alternative subclassifications are given: .0–.2 by anatomical description .3–.5 by thirds This departure from the principle that categories should be mutually exclusive is deliberate, since both forms of terminology are in use but the resulting anatomical divisions are not analogous.
C15.0	Cervical part of oesophagus
C15.1	Thoracic part of oesophagus
C15.2	Abdominal part of oesophagus
C15.3	Upper third of oesophagus
C15.4	Middle third of oesophagus
C15.5	Lower third of oesophagus
C15.8	Overlapping lesion of oesophagus
C15.9	Oesophagus, unspecified

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	138	15	10.9	18.1	97.8	99.3	
1999	132	9	6.8	18.2	91.7	100.0	
2000	130	11	8.5	23.1	91.5	99.2	
2001	144	6	4.2	26.4	92.4	99.3	
2002	268	31	11.6	25.4	90.3	100.0	#
2003	219	24	11.0	24.2	90.0	98.2	
2004	221	19	8.6	26.7	88.7	99.1	
2005	266	21	7.9	29.7	88.7	99.2	
2006	231	7	3.0	28.1	85.7	98.3	
2007	292	9	3.1	28.1	86.3	93.8	#
2008	282	11	3.9	28.4	81.9	87.6	
2009	302	15	5.0	26.5	77.5	90.1	
2010	295	16	5.4	21.7	77.3	86.8	
2011	301	20	6.6	34.2	78.7	93.0	
2012	298	18	6.0	27.5	71.1	89.3	
2013	238	11	4.6	26.1	60.1	100.0	
2014	140	19	13.6	34.3	46.4	97.9	##
1998-2014	3897	262	6.7	26.7	81.6	95.0	

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	138	107	31	77.5
1999	132	111	21	84.1
2000	130	101	29	77.7
2001	144	112	32	77.8
2002	268	212	56	79.1
2003	219	177	42	80.8
2004	221	177	44	80.1
2005	266	219	47	82.3
2006	231	178	53	77.1
2007	292	237	55	81.2
2008	282	228	54	80.9
2009	302	236	66	78.1
2010	295	217	78	73.6
2011	301	245	56	81.4
2012	298	223	75	74.8
2013	238	170	68	71.4
2014	140	108	32	77.1
1998-2014	3897	3058	839	78.5

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	107	31	9.7	2.6	6.0	1.2	8.7	1.7	10.4	2.3
1999	111	21	9.9	1.8	6.0	1.0	8.7	1.4	10.2	1.6
2000	101	29	8.9	2.4	5.4	1.3	7.8	1.9	9.6	2.1
2001	112	32	9.7	2.6	5.9	1.2	8.6	1.8	10.4	2.2
2002	212	56	11.4	2.9	7.0	1.3	9.8	1.9	11.5	2.4
2003	177	42	9.4	2.1	5.6	1.1	8.0	1.6	9.5	1.8
2004	177	44	9.4	2.2	5.5	1.1	7.9	1.6	9.3	1.8
2005	219	47	11.6	2.4	6.5	1.0	9.4	1.5	11.4	1.9
2006	178	53	9.3	2.6	5.2	1.3	7.5	1.9	8.9	2.2
2007	237	55	10.7	2.4	6.0	1.2	8.7	1.7	10.4	2.0
2008	228	54	10.2	2.3	5.7	1.1	8.3	1.6	9.9	2.0
2009	236	66	10.6	2.8	5.6	1.4	8.2	2.0	9.9	2.3
2010	217	78	9.6	3.3	5.3	1.4	7.6	2.1	9.2	2.6
2011	245	56	10.7	2.4	5.6	1.1	8.2	1.6	10.0	1.9
2012	223	75	9.8	3.2	5.4	1.6	7.6	2.2	9.0	2.6
2013	170	68	7.4	2.9	3.9	1.3	5.7	1.9	6.8	2.3
2014	108	32	4.7	1.4	2.3	0.6	3.5	0.8	4.6	1.0
1998-2014	3058	839	9.6	2.5	5.4	1.2	7.7	1.7	9.3	2.1

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	138	64.3	12.5	35.7	93.8	49.5	56.1	63.0	74.9	80.4
1999	132	63.6	10.4	37.6	89.6	52.6	56.7	61.7	71.7	77.2
2000	130	64.0	11.7	39.6	92.2	49.7	56.0	61.8	72.6	79.7
2001	144	65.4	11.2	38.9	97.2	52.6	57.1	63.7	73.4	82.1
2002	268	65.2	11.7	33.5	95.5	50.1	57.9	64.1	73.5	80.8
2003	219	65.5	11.1	39.0	92.5	50.5	57.8	64.9	73.4	81.3
2004	221	65.7	10.9	36.5	97.2	52.7	59.2	64.8	71.9	80.1
2005	266	66.6	10.7	34.8	96.0	54.1	58.7	66.1	74.8	80.6
2006	231	66.2	9.8	38.4	94.3	54.1	59.6	65.8	71.9	80.3
2007	292	66.1	10.6	33.4	89.9	52.8	59.6	65.9	73.3	80.2
2008	282	67.3	10.6	32.2	96.2	54.1	60.2	66.3	74.3	82.0
2009	302	67.1	10.8	35.6	94.4	52.0	59.2	68.0	74.1	80.7
2010	295	67.1	11.8	32.0	96.3	53.1	59.7	67.2	75.5	83.2
2011	301	68.5	10.5	44.0	94.6	55.0	61.1	68.6	75.8	83.0
2012	298	66.7	10.5	34.0	93.7	52.4	60.0	66.9	73.3	80.4
2013	238	67.9	10.7	35.6	99.8	54.2	59.8	69.5	74.9	80.1
2014	140	70.5	11.0	41.0	103	56.4	63.4	70.7	77.8	83.7
1998-2014	3897	66.5	11.0	32.0	103	52.7	58.9	66.2	74.1	81.4

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	107	62.4	12.1	35.7	93.8	47.9	53.2	60.4	70.9	78.1
1999	111	63.5	10.8	37.6	89.6	51.9	56.2	62.2	71.7	77.2
2000	101	64.1	10.9	39.6	92.2	49.8	56.8	62.5	72.3	78.1
2001	112	64.2	10.7	38.9	97.2	51.5	56.7	62.6	70.3	79.8
2002	212	63.8	11.0	33.5	92.4	50.1	57.3	63.4	71.4	77.5
2003	177	65.2	10.5	39.0	92.5	50.4	58.0	64.9	71.8	79.4
2004	177	64.9	10.5	36.5	94.7	52.3	58.6	64.1	71.4	79.7
2005	219	65.7	10.4	34.8	96.0	53.6	58.1	65.5	74.0	79.6
2006	178	66.0	9.1	38.4	94.3	54.4	59.7	65.9	71.7	77.8
2007	237	65.8	10.4	38.7	89.9	52.6	59.2	66.0	73.2	79.8
2008	228	66.8	10.4	32.2	91.6	53.3	60.0	65.7	73.7	81.9
2009	236	66.7	10.3	35.6	89.0	52.7	59.1	68.0	73.7	80.1
2010	217	65.8	11.5	32.0	91.0	51.6	57.6	66.0	73.8	81.7
2011	245	68.2	10.2	44.0	94.6	55.3	61.1	68.5	74.7	82.1
2012	223	66.3	9.7	39.2	90.1	53.2	59.5	66.3	73.0	78.7
2013	170	66.9	10.5	43.5	99.8	54.1	58.6	68.5	74.3	79.5
2014	108	69.8	10.6	41.0	90.4	56.2	61.5	70.6	78.3	83.0
1998-2014	3058	65.8	10.6	32.0	99.8	52.4	58.4	65.7	73.2	79.9

Table 3b

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

Year of diagnosis	Cases n	Mean	Std. dev.	Min.	Max.	10%	25%	Median 50%	75%	90%
1998	31	71.0	11.7	48.1	91.6	56.4	61.4	72.4	81.0	87.2
1999	21	63.9	8.4	52.6	80.1	54.0	58.7	61.5	70.5	74.8
2000	29	63.7	14.1	40.6	89.8	46.8	54.8	58.7	78.1	85.2
2001	32	69.9	12.1	52.6	91.4	54.3	60.4	68.5	81.0	86.3
2002	56	70.6	13.0	44.7	95.5	49.8	61.2	72.2	80.5	87.7
2003	42	67.2	13.5	42.8	92.4	52.6	56.9	63.7	78.8	84.4
2004	44	69.1	11.8	46.4	97.2	56.5	61.9	66.8	75.7	87.2
2005	47	70.8	11.4	40.6	91.4	55.9	62.2	71.3	79.2	85.9
2006	53	66.8	11.8	44.7	92.5	51.6	59.4	65.4	75.9	82.7
2007	55	67.4	11.1	33.4	85.5	52.9	61.6	65.8	78.2	83.6
2008	54	69.5	10.9	46.3	96.2	57.9	61.5	68.1	79.5	83.2
2009	66	68.5	12.5	44.1	94.4	51.4	59.2	68.2	77.9	86.1
2010	78	70.7	11.8	33.3	96.3	57.0	63.7	71.0	78.9	85.8
2011	56	70.1	11.6	47.1	91.5	53.8	61.3	70.0	79.9	83.9
2012	75	67.9	12.6	34.0	93.7	51.4	60.4	68.2	75.5	86.5
2013	68	70.3	10.8	35.6	90.3	54.3	64.0	71.3	77.6	85.3
2014	32	72.6	12.0	52.8	103	56.5	65.5	71.4	77.8	89.7
1998-2014	839	69.0	12.0	33.3	103	53.1	60.7	68.8	78.1	85.3

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.%
30-34	5	0.2	0.2	2	0.1	0.1	3	0.6	0.6
35-39	10	0.5	0.7	9	0.5	0.7	1	0.2	0.8
40-44	27	1.3	2.0	22	1.3	2.0	5	1.0	1.9
45-49	76	3.5	5.5	62	3.7	5.7	14	2.9	4.8
50-54	163	7.6	13.1	127	7.6	13.3	36	7.4	12.2
55-59	246	11.5	24.5	214	12.9	26.2	32	6.6	18.8
60-64	339	15.8	40.3	260	15.6	41.8	79	16.3	35.1
65-69	401	18.7	59.0	314	18.9	60.7	87	18.0	53.1
70-74	355	16.5	75.5	282	16.9	77.6	73	15.1	68.2
75-79	239	11.1	86.6	182	10.9	88.6	57	11.8	80.0
80-84	172	8.0	94.6	125	7.5	96.1	47	9.7	89.7
85+	115	5.4	100.0	65	3.9	100.0	50	10.3	100.0
All ages	2148	100.0		1664	100.0		484	100.0	

Included in the statistics are 35.6% multiple primaries in males and 39.9% in females.

Table 5

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

Age at diagnosis Years	Males n	Females n	Males Age-spec. incid.	Females Age-spec. incid.	Males DCO rate n=84 %	Females DCO rate n=35 %	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			0.0	0.0				
30-34	2	3	0.2	0.2			0.3	0.3
35-39	9	1	0.7	0.1			0.8	0.1
40-44	22	5	1.4	0.3			1.2	0.1
45-49	62	14	3.9	0.9	3.2		1.9	0.3
50-54	127	36	9.8	2.8	3.9	2.8	2.6	0.5
55-59	214	32	20.2	2.8	1.4		2.9	0.4
60-64	260	79	26.5	7.5	3.5		2.4	0.9
65-69	314	87	32.6	8.3	3.2	3.4	2.0	0.8
70-74	282	73	31.0	7.0	6.4	6.8	1.7	0.6
75-79	182	57	33.0	8.0	3.3	1.8	1.5	0.6
80-84	125	47	35.8	8.4	15.2	23.4	1.5	0.5
85+	65	50	28.1	8.7	18.5	28.0	1.1	0.5
All ages	1664	484			5.0	7.2	1.8	0.5
Incidence								
Raw			9.2	2.6				
WS			5.0	1.2				
ES			7.2	1.7				
BRD-S			8.7	2.1				

The age-specific incidence characterizes the disease risk in a particular age group. The age distribution depends on the patient population frequency in each age group and reflects the tangible clinical picture of everyday patients care (see following chart).

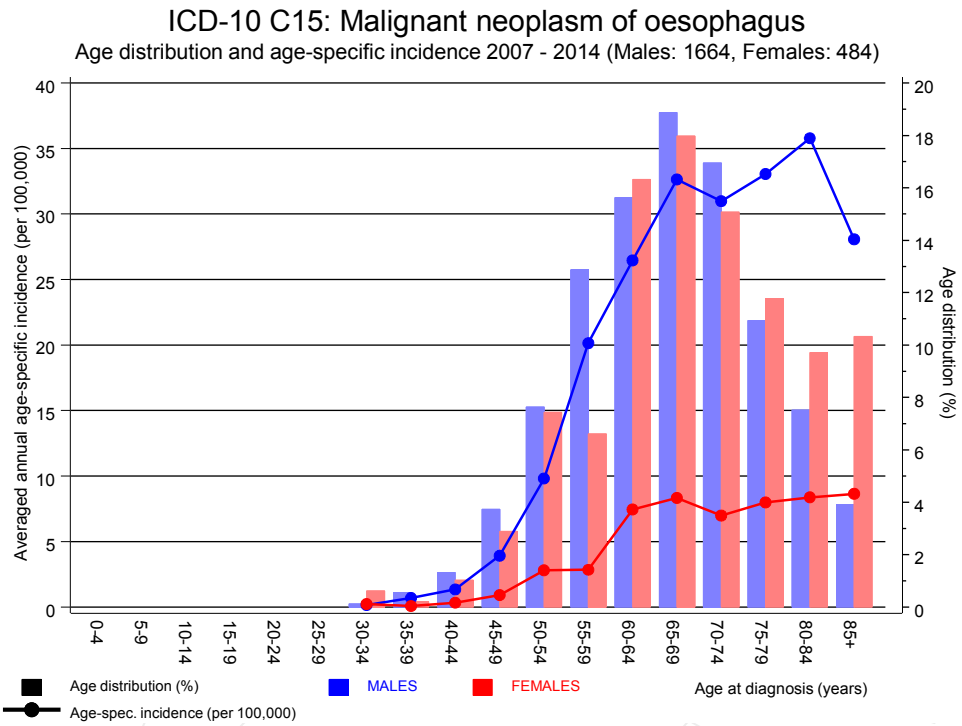


Figure 6. Age distribution and age-specific incidence

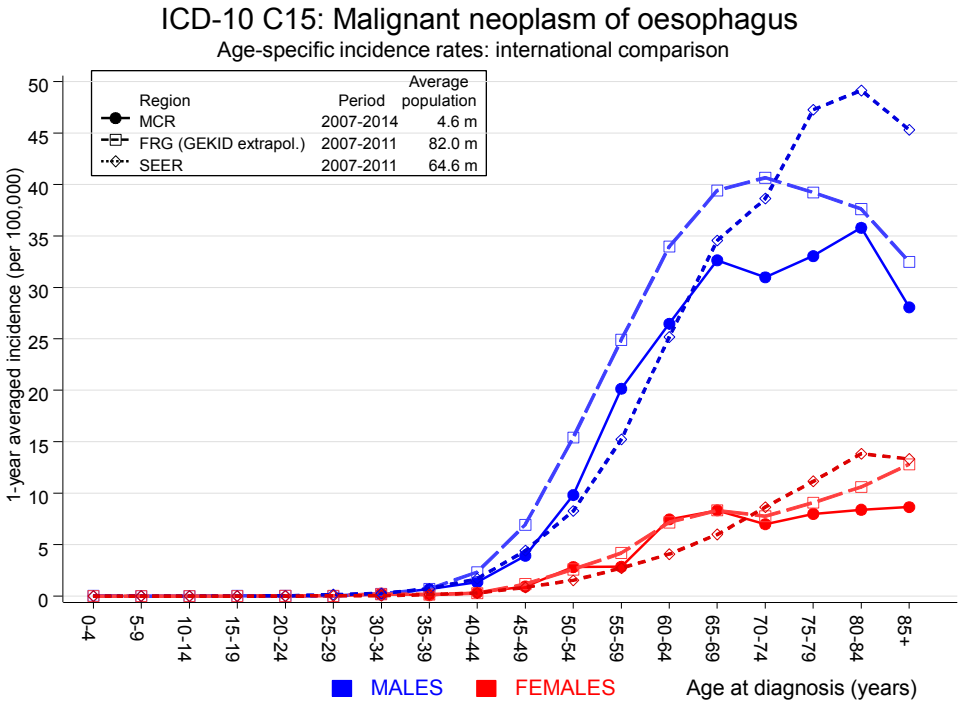


Figure 6a. Age-specific incidence in MCR registry areas compared to Germany (FRG, GEKID extrapolation) and SEER (Surveillance, Epidemiology, and End Results, USA).

Reference:

Extrapolated age-specific patient population of Germany, data status middle of 2010. Association of Population-based Cancer Registries in Germany (GEKID e.V.). Berlin, 2014. http://www.gekid.de. Last access: 02/11/2015

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

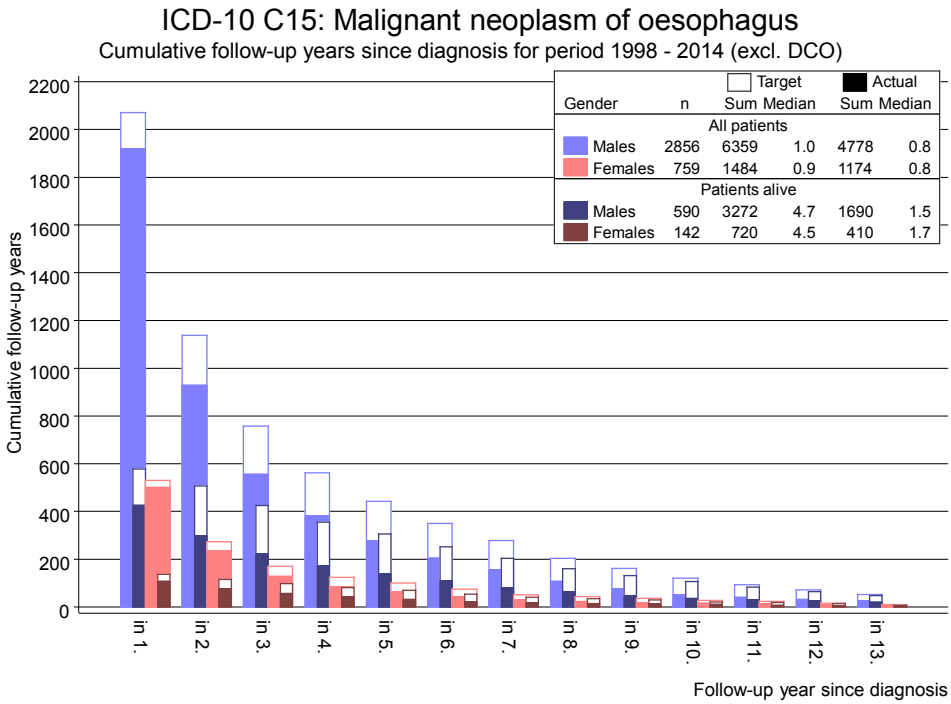


Figure 7. Cumulative follow-up years depending on time since diagnosis

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	18	0.7	25.4	15.1	40.2	#	36.2	5.6
C09-C10	Oropharynx	24	0.9	26.7	17.1	39.7	#	48.4	
C12-C13	Hypopharynx	10	0.5	20.3	9.7	37.4	#	19.9	
C14	ENT cancer	2	0.0	103.8	12.6	374.8	#	4.1	50.0
C16	Stomach	26	2.9	9.1	6.0	13.4	#	48.5	3.8
C17	Small intestine	5	0.4	13.0	4.2	30.4	#	9.7	
C18	Colon	23	6.9	3.3	2.1	5.0	#	33.7	8.7
C19-C20	Rectum	7	4.1	1.7	0.7	3.5		6.0	
C21	Anus/canal	3	0.2	18.1	3.7	52.9	#	5.9	
C22	Liver	20	2.0	9.8	6.0	15.1	#	37.6	30.0
C25	Pancreas	9	2.6	3.4	1.6	6.5	#	13.4	33.3
C32	Larynx	9	0.8	10.9	5.0	20.7	#	17.1	
C33-C34	Lung	53	8.8	6.0	4.5	7.9	#	92.6	13.2
C43	Malign. melanoma	4	3.2	1.3	0.3	3.2		1.7	25.0
C50	Breast	3	0.2	15.7	3.2	45.8	#	5.9	66.7
C61	Prostate	33	21.7	1.5	1.0	2.1	#	23.7	15.2
C62	Testis	2	0.2	9.9	1.2	35.7	#	3.8	
C64	Kidney	12	2.6	4.5	2.3	7.9	#	19.6	16.7
C67	Bladder	8	3.1	2.6	1.1	5.1	#	10.3	12.5
C73	Thyroid	4	0.5	7.5	2.0	19.2	#	7.3	
C76-C79	CUP	3	1.2	2.5	0.5	7.2		3.7	
C82-C85	NHL	4	2.9	1.4	0.4	3.6		2.4	25.0
C90	Mult. myeloma	4	0.9	4.4	1.2	11.3	#	6.5	25.0
Other primaries		4	2.8	1.4	0.4	3.6		2.5	50.0
Not observed		0	4.2	0.0	0.0	0.9	#	-8.8	
All mult. primaries		290	74.3	3.9	3.5	4.4	#	451.7	12.4

Patients	2924
Median age at second malignancy (years)	66.8
Person-years	4775
Mean observation time (years)	1.6
Median observation time (years)	0.8

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

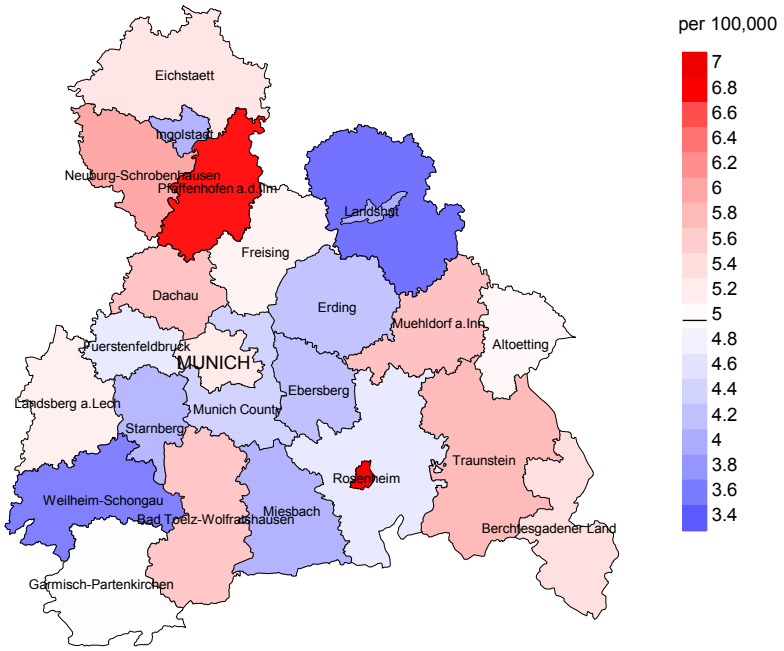
Diagnosis	Observed n	Expected n	SIR	LCL 95%	UCL 95%		EAR	DCO %
C03–C06 Oral cavity	2	0.1	24.3	2.9	87.6	#	16.1	
C09–C10 Oropharynx	7	0.1	117.2	47.1	241.5	#	58.4	14.3
C12–C13 Hypopharynx	2	0.0	119.3	14.4	430.9	#	16.7	
C16 Stomach	3	0.4	7.2	1.5	21.0	#	21.7	
C18 Colon	6	1.2	4.9	1.8	10.8	#	40.3	16.7
C25 Pancreas	2	0.6	3.6	0.4	12.9		12.1	50.0
C32 Larynx	3	0.0	113.5	23.4	331.7	#	25.0	
C33–C34 Lung	11	1.0	11.1	5.5	19.8	#	84.3	18.2
C43 Malign. melanoma	3	0.5	6.0	1.2	17.6	#	21.1	
C50 Breast	13	4.2	3.1	1.7	5.3	#	74.2	7.7
C76–C79 CUP	3	0.2	13.8	2.8	40.2	#	23.4	
Other primaries	7	1.8	3.8	1.5	7.9	#	43.6	14.3
Not observed	0	3.1	0.0	0.0	1.2		-26.5	
All mult. primaries	62	13.2	4.7	3.6	6.0	#	410.5	11.3

Patients	787
Median age at second malignancy (years)	67.4
Person-years	1188
Mean observation time (years)	1.5
Median observation time (years)	0.7

The occurrence of second malignancy is statistically significant.

Observed second primaries with count 1 are pooled in category “Other primaries”

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



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

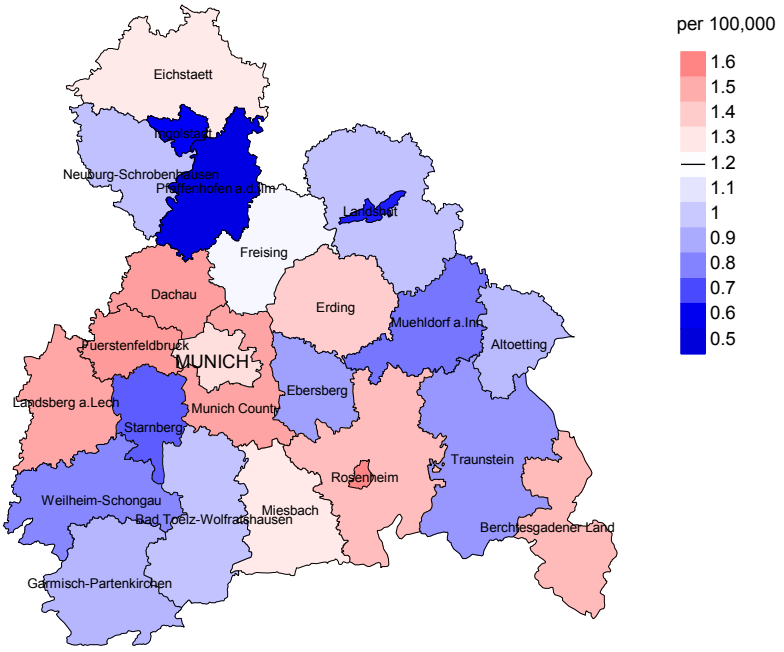
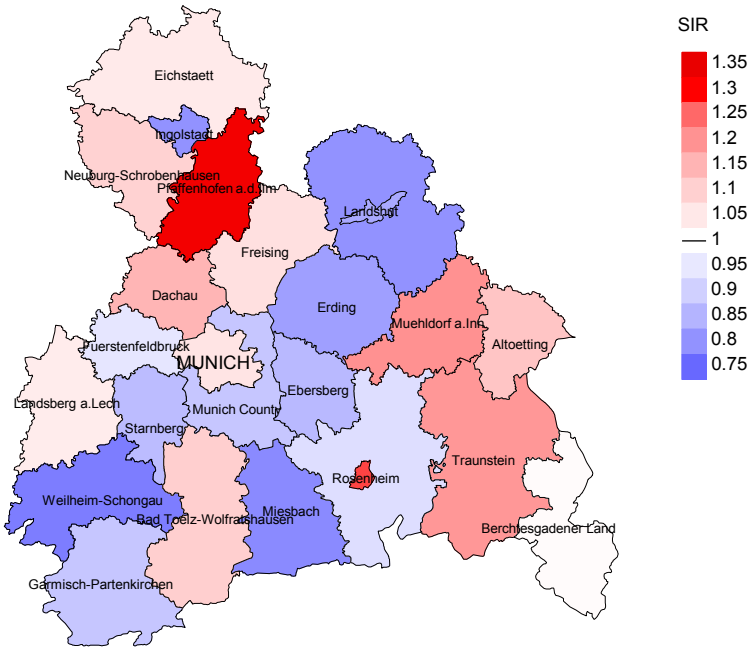


Figure 9a. Map of cancer incidence (world standard population, incl. DCO cases) by county averaged for period 2007 to 2014. According to their individual incidence rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 5.0/100,000 WS N=1,664, females 1.2/100,000 WS N=484).

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 8 women were identified with newly diagnosed oesophagus cancer. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 0.9/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.3 and 2.2/100,000.

Standardized incidence ratio (SIR) 2007 - 2014: Males



Standardized incidence ratio (SIR) 2007 - 2014: Females

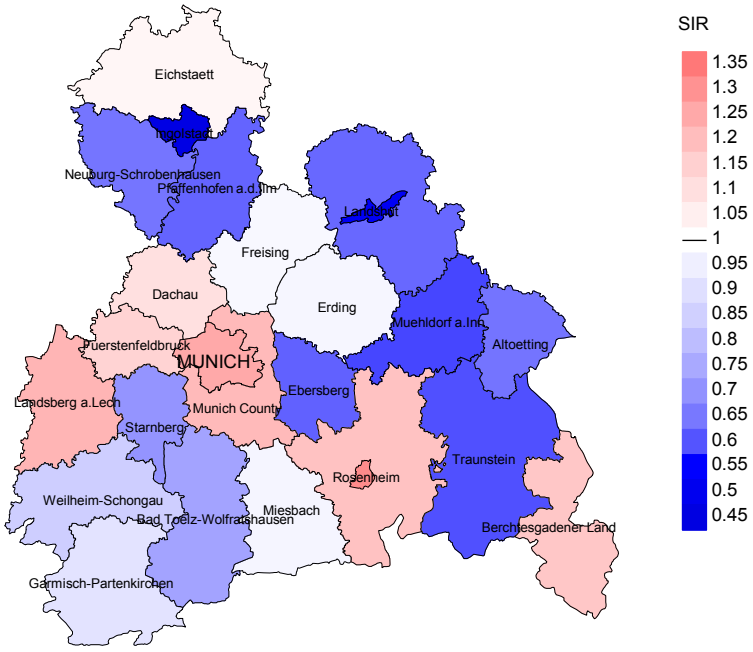


Figure 9b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2007 to 2014. According to their individual SIR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=1,664, females N=484).

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 8 women were identified with newly diagnosed oesophagus cancer. Therefore, the mean standardized incidence ratio (SIR) for this cancer type in this area can be calculated at 0.62. Though, the value of this parameter may vary with an underlying probability of 99% between 0.20 and 1.43, 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	138	99.3	10.9	135	97.8	91.9
1999	132	100.0	6.8	121	91.7	95.0
2000	130	99.2	8.5	119	91.5	95.8
2001	144	99.3	4.2	133	92.4	97.0
2002	268	100.0	11.6	242	90.3	97.9
2003	219	98.2	11.0	197	90.0	98.0
2004	221	99.1	8.6	196	88.7	98.0
2005	266	99.2	7.9	236	88.7	98.3
2006	231	98.3	3.0	198	85.7	98.5
2007	292	93.8	3.1	252	86.3	98.4
2008	282	87.6	3.9	231	81.9	99.6
2009	302	90.1	5.0	234	77.5	99.1
2010	295	86.8	5.4	228	77.3	97.8
2011	301	93.0	6.6	237	78.7	98.7
2012	298	89.3	6.0	212	71.1	96.2
2013	238	100.0	4.6	143	60.1	95.8
2014	140	97.9	13.6	65	46.4	93.8
1998-2014	3897	95.0	6.7	3179	81.6	97.5

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	138	110	91.8	60	43.5
1999	132	106	91.5	38	28.8
2000	130	99	97.0	30	23.1
2001	144	136	94.9	56	38.9
2002	268	219	98.6	111	41.4
2003	219	188	98.4	84	38.4
2004	221	189	97.4	71	32.1
2005	266	214	98.1	94	35.3
2006	231	199	97.0	77	33.3
2007	292	228	97.8	85	29.1
2008	282	217	98.6	78	27.7
2009	302	237	99.2	83	27.5
2010	295	238	98.7	76	25.8
2011	301	276	97.8	110	36.5
2012	298	242	97.5	91	30.5
2013	238	249	98.0	78	32.8
2014	140	211	99.1	59	42.1
1998-2014	3897	3358	97.6	1281	32.9

Table 10c

Annual cohorts of deaths, proportion of cancer-related and non-cancer-related deaths, and cancer recorded on death certificates (incl. DCO)
(with respect to registry area expansion from 2.51 to 3.96 m as of 2002, and from 3.96 to 4.64 m as of 2007, respectively)

Year of death	Deaths n	Prop. cancer-related %	Prop. non-cancer-related %	Prop. cancer recorded on death certificate %
1998	110	82.7	17.3	94.1
1999	106	90.6	9.4	97.9
2000	99	87.9	12.1	95.8
2001	136	80.1	19.9	96.9
2002	219	92.2	7.8	97.2
2003	188	90.4	9.6	95.7
2004	189	92.1	7.9	97.3
2005	214	95.8	4.2	98.6
2006	199	94.0	6.0	98.4
2007	228	88.2	11.8	94.2
2008	217	91.2	8.8	96.3
2009	237	88.2	11.8	93.2
2010	238	89.5	10.5	95.3
2011	276	86.6	13.4	94.1
2012	242	90.1	9.9	94.9
2013	249	87.1	12.9	94.7
2014	211	81.0	19.0	91.4
1998-2014	3358	89.0	11.0	95.5

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	79	60.6	60.5	72.7	60.7
1999	86	64.4	64.3	70.7	64.6
2000	83	61.9	60.7	74.5	61.2
2001	102	63.4	62.7	64.0	62.8
2002	169	65.8	65.3	73.5	65.5
2003	160	65.1	65.0	65.9	65.2
2004	148	64.6	64.6	65.4	64.5
2005	170	66.8	66.5	75.8	66.9
2006	159	66.8	66.9	66.7	67.0
2007	186	67.1	66.3	71.0	66.7
2008	166	68.2	68.0	72.1	68.0
2009	190	68.9	68.6	70.6	68.8
2010	181	68.5	68.5	69.9	68.5
2011	219	69.5	68.5	76.5	69.1
2012	183	68.9	68.8	75.9	68.4
2013	186	69.3	68.6	72.6	69.2
2014	157	72.7	71.8	75.5	72.7
1998-2014	2624	67.5	67.0	71.6	67.2

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	31	74.3	72.5	80.8	74.7
1999	20	73.1	68.2	82.6	68.2
2000	16	66.1	67.5	58.0	66.1
2001	34	73.9	72.7	78.5	74.4
2002	50	73.6	72.7	85.2	73.6
2003	28	65.2	62.8	78.5	62.8
2004	41	64.9	65.2	62.7	64.9
2005	44	67.5	67.1	70.2	67.5
2006	40	76.4	76.5	61.4	76.5
2007	42	65.9	65.8	83.4	65.9
2008	51	66.3	66.3	66.2	66.3
2009	47	67.3	67.2	69.5	67.9
2010	57	72.2	72.1	72.7	72.1
2011	57	71.0	71.3	68.3	71.0
2012	59	69.5	68.4	72.8	70.0
2013	63	72.1	70.0	79.9	71.0
2014	54	73.7	72.7	76.7	72.5
1998-2014	734	70.5	69.9	75.4	70.5

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	65	5.9	0.61	3.6	0.60	5.2	0.60	6.3	0.60
1999	78	7.0	0.70	4.2	0.69	6.1	0.70	7.4	0.73
2000	72	6.3	0.71	3.9	0.73	5.6	0.73	6.6	0.69
2001	85	7.3	0.76	4.4	0.75	6.5	0.75	7.9	0.75
2002	156	8.4	0.74	5.0	0.71	7.1	0.72	8.5	0.74
2003	144	7.7	0.81	4.5	0.80	6.5	0.82	7.9	0.83
2004	136	7.2	0.77	4.2	0.76	6.0	0.76	7.3	0.79
2005	162	8.6	0.74	4.8	0.75	7.0	0.74	8.5	0.74
2006	150	7.8	0.84	4.3	0.83	6.2	0.83	7.6	0.85
2007	163	7.4	0.69	4.1	0.68	5.9	0.68	7.2	0.69
2008	151	6.8	0.66	3.6	0.63	5.3	0.65	6.5	0.66
2009	170	7.6	0.72	4.0	0.71	5.8	0.71	7.1	0.72
2010	164	7.3	0.76	3.9	0.73	5.6	0.74	6.9	0.75
2011	190	8.3	0.78	4.3	0.77	6.3	0.77	7.8	0.78
2012	164	7.2	0.74	3.7	0.70	5.5	0.72	6.7	0.74
2013	161	7.0	0.95	3.7	0.94	5.3	0.93	6.5	0.94
2014	128	5.6	1.19	2.7	1.16	4.1	1.18	5.4	1.18
1998-2014	2339	7.3	0.76	4.0	0.75	5.9	0.76	7.2	0.77

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	26	2.2	0.84	1.0	0.85	1.5	0.86	2.0	0.87
1999	18	1.5	0.86	0.7	0.72	1.0	0.72	1.3	0.82
2000	15	1.2	0.52	0.6	0.45	0.9	0.47	1.1	0.53
2001	24	2.0	0.75	0.9	0.72	1.3	0.72	1.6	0.73
2002	46	2.3	0.82	1.1	0.79	1.6	0.83	2.0	0.83
2003	26	1.3	0.62	0.6	0.58	0.9	0.58	1.1	0.61
2004	38	1.9	0.86	0.9	0.85	1.3	0.86	1.6	0.89
2005	43	2.2	0.91	1.0	0.98	1.5	0.98	1.8	0.90
2006	37	1.8	0.70	0.7	0.53	1.1	0.58	1.5	0.66
2007	38	1.6	0.69	0.8	0.65	1.1	0.68	1.4	0.70
2008	47	2.0	0.87	1.0	0.88	1.4	0.86	1.7	0.85
2009	39	1.7	0.59	0.8	0.62	1.2	0.59	1.4	0.60
2010	49	2.1	0.63	0.9	0.61	1.3	0.61	1.6	0.61
2011	49	2.1	0.88	0.8	0.80	1.3	0.81	1.6	0.80
2012	54	2.3	0.72	1.1	0.67	1.5	0.69	1.8	0.70
2013	56	2.4	0.82	1.1	0.84	1.5	0.83	1.9	0.83
2014	43	1.8	1.34	0.7	1.28	1.1	1.28	1.3	1.32
1998-2014	648	1.9	0.77	0.9	0.74	1.3	0.75	1.6	0.76

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.%
30-34	3	0.2	0.2	1	0.1	0.1	2	0.5	0.5
35-39	0	0.0	0.2			0.1			0.5
40-44	14	0.8	1.0	13	1.0	1.1	1	0.3	0.8
45-49	57	3.4	4.4	46	3.6	4.6	11	2.9	3.7
50-54	90	5.4	9.8	67	5.2	9.8	23	6.1	9.9
55-59	187	11.2	21.0	166	12.8	22.7	21	5.6	15.5
60-64	253	15.2	36.2	185	14.3	37.0	68	18.1	33.6
65-69	322	19.3	55.5	259	20.0	57.0	63	16.8	50.4
70-74	294	17.6	73.1	235	18.2	75.2	59	15.7	66.1
75-79	187	11.2	84.4	149	11.5	86.7	38	10.1	76.3
80-84	149	8.9	93.3	108	8.4	95.1	41	10.9	87.2
85+	112	6.7	100.0	64	4.9	100.0	48	12.8	100.0
All ages	1668	100.0		1293	100.0		375	100.0	

Included in the statistics are 35.6% multiple primaries in males and 39.9% in females.

Table 14

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

Age at death Years	Males n	Females n	Males Age-spec. mortal.	MI-index	Females Age-spec. mortal.	MI-index	Males Prop.all cancers %	Females Prop.all cancers %
0- 4			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	1	2	0.1	0.50	0.2	0.67	1.1	1.8
35-39			0.0		0.0			
40-44	13	1	0.8	0.59	0.1	0.20	2.8	0.2
45-49	46	11	2.9	0.74	0.7	0.79	4.5	0.9
50-54	67	23	5.2	0.53	1.8	0.64	3.6	1.3
55-59	166	21	15.6	0.78	1.9	0.66	5.4	0.8
60-64	185	68	18.8	0.71	6.4	0.86	3.9	1.9
65-69	259	63	26.9	0.82	6.0	0.72	3.6	1.2
70-74	235	59	25.8	0.83	5.6	0.81	2.6	0.9
75-79	149	38	27.1	0.82	5.3	0.67	1.8	0.6
80-84	108	41	30.9	0.86	7.3	0.87	1.5	0.6
85+	64	48	27.6	0.98	8.3	0.96	1.1	0.6
All ages	1293	375					2.6	0.9
Mortality								
Raw			7.2	0.78	2.0	0.77		
WS			3.8	0.75	0.9	0.75		
ES			5.5	0.76	1.3	0.75		
BRD-S			6.8	0.78	1.6	0.76		
PYLL-70								
per 100,000			41.9		10.6			
ES			36.7		8.9			
AYLL-70			9.1		8.9			

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	67	8.2	48	71.6	10	14.9	9	13.4
C09-C10 Oropharynx	86	10.5	56	65.1	12	14.0	18	20.9
C12-C13 Hypopharynx	51	6.2	36	70.6	7	13.7	8	15.7
C16 Stomach	34	4.2	11	32.4	17	50.0	6	17.6
C18 Colon	45	5.5	30	66.7	6	13.3	9	20.0
C19-C20 Rectum	29	3.5	18	62.1	5	17.2	6	20.7
C22 Liver	22	2.7	4	18.2	10	45.5	8	36.4
C25 Pancreas	13	1.6	2	15.4	4	30.8	7	53.8
C32 Larynx	42	5.1	31	73.8	7	16.7	4	9.5
C33-C34 Lung	98	12.0	32	32.7	28	28.6	38	38.8
C43 Malign. melanoma	12	1.5	10	83.3	1	8.3	1	8.3
C44 Skin others	42	5.1	23	54.8	4	9.5	15	35.7
C61 Prostate	111	13.6	85	76.6	7	6.3	19	17.1
C64 Kidney	20	2.4	14	70.0	1	5.0	5	25.0
C67 Bladder	45	5.5	31	68.9	2	4.4	12	26.7
C76-C79 CUP	12	1.5	7	58.3	4	33.3	1	8.3
C82-C85 NHL	13	1.6	10	76.9	1	7.7	2	15.4
C91-C96 Leukaemia	12	1.5	6	50.0	3	25.0	3	25.0
Other primaries	63	7.7	33	52.4	8	12.7	22	34.9
All mult. primaries	817	100.0	487	59.6	137	16.8	193	23.6

Multiple primaries with number of cases 1 to 8 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	14	6.0	13	92.9			1	7.1
C09-C10	Oropharynx	26	11.2	16	61.5	4	15.4	6	23.1
C12-C13	Hypopharynx	8	3.4	3	37.5	5	62.5		
C16	Stomach	4	1.7			1	25.0	3	75.0
C18	Colon	15	6.5	10	66.7	2	13.3	3	20.0
C19-C20	Rectum	6	2.6	5	83.3	1	16.7		
C25	Pancreas	4	1.7	2	50.0			2	50.0
C32	Larynx	4	1.7	2	50.0			2	50.0
C33-C34	Lung	15	6.5	4	26.7	2	13.3	9	60.0
C43	Malign. melanoma	6	2.6	5	83.3			1	16.7
C44	Skin others	3	1.3	3	100.0				
C50	Breast	71	30.6	61	85.9	4	5.6	6	8.5
C53	Cervix uteri	8	3.4	7	87.5			1	12.5
C54	Corpus uteri	5	2.2	5	100.0				
C67	Bladder	8	3.4	7	87.5	1	12.5		
C70-C72	CNS cancer	3	1.3	3	100.0				
C73	Thyroid	5	2.2	5	100.0				
C76-C79	CUP	3	1.3	1	33.3	1	33.3	1	33.3
C82-C85	NHL	3	1.3	2	66.7	1	33.3		
C91-C96	Leukaemia	3	1.3	3	100.0				
Other primaries		18	7.8	11	61.1	5	27.8	2	11.1
All mult. primaries		232	100.0	168	72.4	27	11.6	37	15.9

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	1	2	0.1	0.50	0.2	0.67	1.2	2.1
35-39			0.0		0.0			
40-44	13	1	0.8	0.59	0.1	0.25	3.1	0.2
45-49	40	8	2.5	0.71	0.5	0.67	4.4	0.8
50-54	52	17	4.0	0.51	1.3	0.59	3.3	1.1
55-59	128	18	12.1	0.74	1.6	0.75	4.9	0.8
60-64	152	49	15.5	0.73	4.6	0.84	3.9	1.7
65-69	210	41	21.8	0.85	3.9	0.73	3.7	1.0
70-74	180	43	19.8	0.85	4.1	0.80	2.6	0.8
75-79	106	26	19.2	0.80	3.6	0.59	1.7	0.5
80-84	74	28	21.2	1.00	5.0	0.82	1.4	0.6
85+	48	37	20.7	1.07	6.4	0.97	1.1	0.5
All ages	1004	270					2.6	0.8
Mortality								
Raw			5.6	0.78	1.4	0.76		
WS			3.0	0.75	0.7	0.74		
ES			4.3	0.76	0.9	0.74		
BRD-S			5.2	0.78	1.1	0.74		
PYLL-70								
per 100,000			34.1		8.1			
ES			29.8		6.8			
AYLL-70			9.2		9.4			

* 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	1	2	0.1	0.50	0.2	1.00	1.2	2.4
35-39			0.0		0.0			
40-44	12	1	0.7	0.55	0.1	0.25	3.0	0.2
45-49	38	8	2.4	0.75	0.5	0.67	4.4	0.9
50-54	49	16	3.8	0.50	1.2	0.62	3.4	1.2
55-59	118	16	11.1	0.70	1.4	0.73	5.1	0.9
60-64	137	48	13.9	0.72	4.5	0.86	4.0	2.0
65-69	192	37	20.0	0.83	3.5	0.69	4.0	1.1
70-74	162	40	17.8	0.81	3.8	0.78	2.9	1.0
75-79	96	26	17.4	0.76	3.6	0.60	2.0	0.7
80-84	65	24	18.6	0.92	4.3	0.80	1.6	0.6
85+	42	35	18.1	0.98	6.1	0.97	1.2	0.6
All ages	912	253					2.9	0.9
Mortality								
Raw			5.0	0.75	1.4	0.75		
WS			2.7	0.73	0.6	0.74		
ES			3.9	0.74	0.9	0.74		
BRD-S			4.7	0.75	1.1	0.74		
PYLL-70								
per 100,000			31.6		7.7			
ES			27.5		6.5			
AYLL-70			9.3		9.5			

* See corresponding tables with multiple primaries.

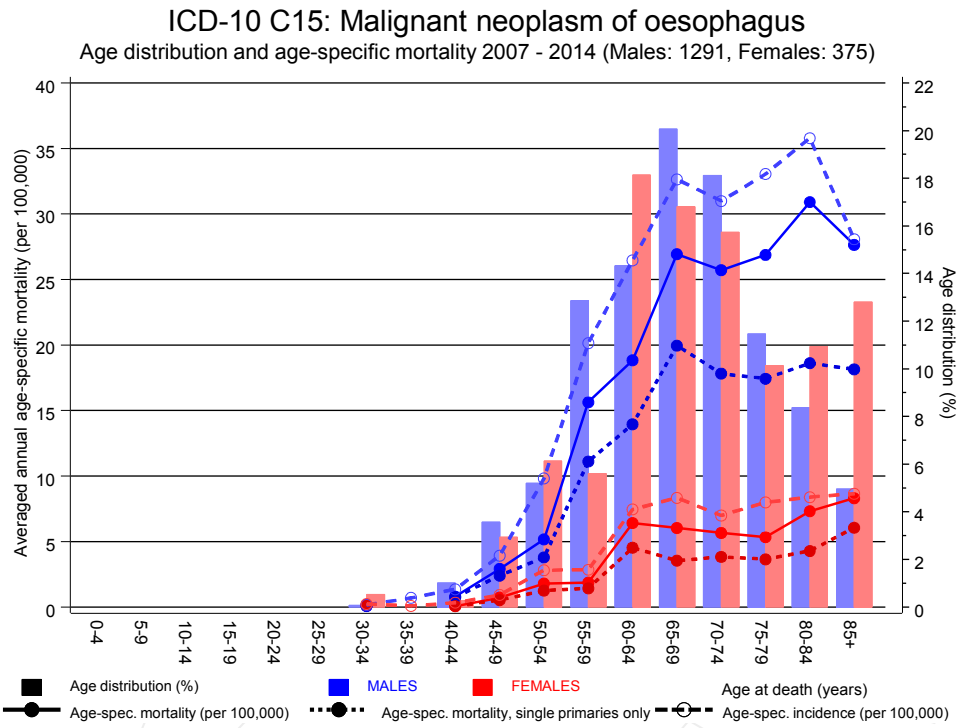
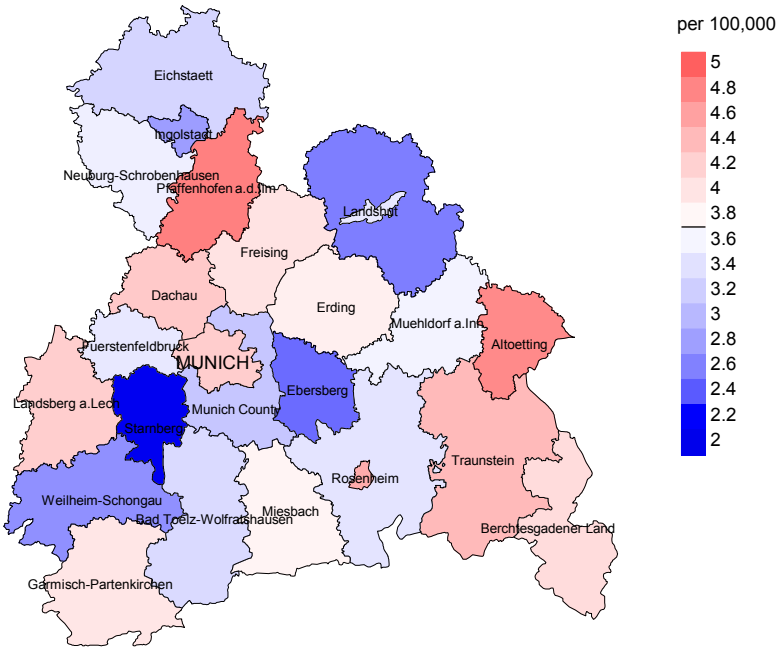


Figure 18. Distribution of age at death (bars) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

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

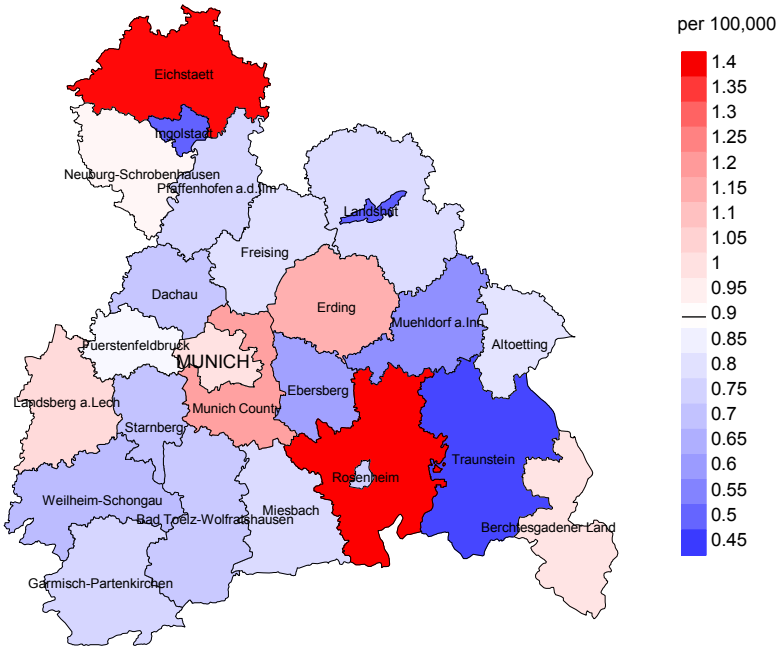
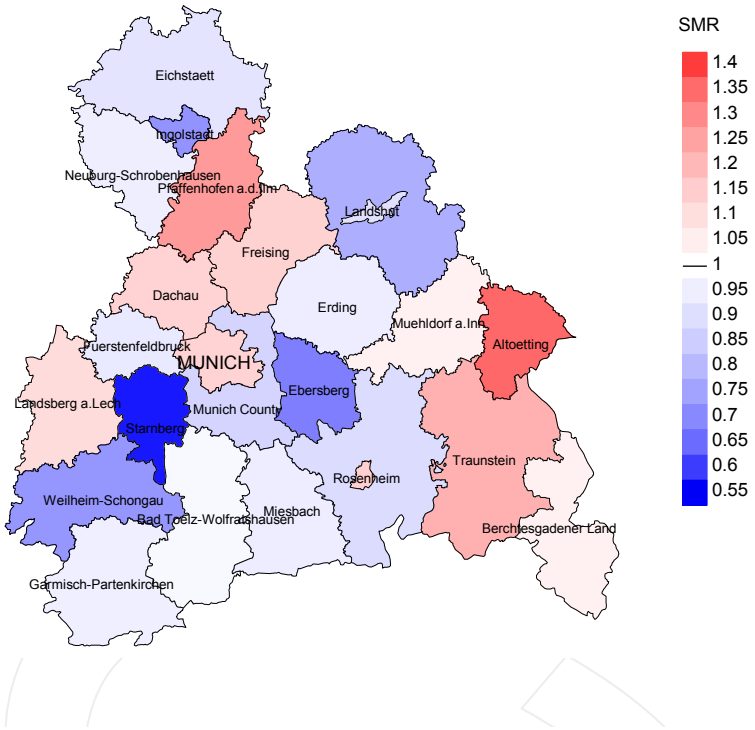


Figure 19a. Map of cancer mortality (world standard population) by county averaged for period 2007 to 2014. According to their individual mortality rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 3.7/100,000 WS N=1,284, females 0.9/100,000 WS N=373).

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 oesophagus 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 1.8/100,000.

Standardized mortality ratio (SMR) 2007 - 2014: Males



Standardized mortality ratio (SMR) 2007 - 2014: Females

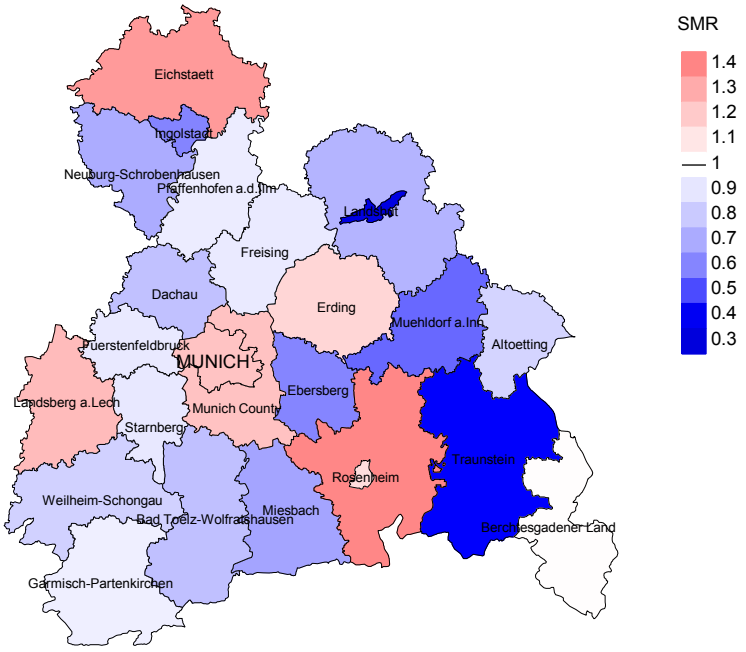


Figure 19b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2007 to 2014. According to their individual SMR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=1,284, females N=373).

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 oesophagus cancer. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 0.60. Though, the value of this parameter may vary with an underlying probability of 99% between 0.15 and 1.58, and is therefore not statistically striking.

Statistical Notes

In all tables and figures the respective reference values should be carefully considered. The incidence rates include diagnoses (with multiple primary), and death certificate only (DCO) cases, where applicable. For mortality statistics patients, diagnoses and progressive course of disease are presented. In the calculations, all courses of disease are considered whereby progressions occurred and/or death certificate identified progressive cancers were ascertained. Additionally there are three groups of disease course to consider:

1. **All multiple primaries included**

   The mortality statistic describes the tumor-specific death, independent of any malignancy. The patient perspective, induced secondary malignancies, and the problem of multiple malignancies from the same primary tumor all have reasons for their inclusion.

2. **First singular primary** (no information about other prior or synchronous malignancy)

   The mortality statistic describes the cancer-related death for patients who have no therapeutic restrictions due to a previous or synchronous cancer. These statistics are comparable to studies that have exclusion criteria based on a second malignancy.

3. **Single primary** (no information about other prior, syn- or metachronous malignancy)

   The mortality statistic describes the tumor-specific death that occurs without any impact through secondary primaries, earlier, synchronous, later or induced. Precisely the difference between disease group 1 and 2 highlight the magnitude of the problem of secondary malignancies.

For this reason differences appear concerning official mono-causal mortality statistics. To judge the maximum deviation, 2 further tables are presented. In the first table the distribution of secondary malignancies before, at or after the described cancer are shown, that could be an alternative cause of death. In the second table, the age-specific mortality rates for all courses of disease, without designation of secondary malignancies are shown.

A previously minimally acknowledged statistic is the **age at death**, which allows for a good assessment of the quality of classification of the apparent tumor-specific death. For assumed tumor-independent deaths, the age of death should be estimated from the age of diagnosis and the normal life expectancy, whereas tumor-dependent deaths can be estimated from the age of diagnosis plus the average tumor-specific life expectancy. The comparison of different tumors demonstrates this association, if the causes of cancer and the competing cause of death are independent of each other (e.g. breast and colon versus head/neck and lung).

The index from mortality and incidence (Mortality-Incidence ratio, **MI-index**) is a statistic that allows for the evaluation of the quality of data. For diseases with poor prognoses, comparable values are obtained from all age groups, because to a large extent, the numerator and denominator contain the same cases. For tumors with a good prognosis, increasing and decreasing incidence and age-specific differences in prognosis can more strongly alter the MI- index. Additionally, attention should be paid to the confidence intervals where fewer cases are reported.

The complexity of problems identified here emphasizes the importance of relative survival data for the appropriate analysis of long term results.

As a measurement of the burden of disease, the number of potential life years loss due to premature deaths in a cohort can be calculated (**PYLL**, potential years of life lost, standardized per 100,000 persons or per European standard) as well as the average loss of life years per individual (**AYLL**, average years of life lost). Depending upon the analytic aim (health economy, prevention, health care research) different methods exist for the generation of these measurements. In the results presented here, the age for a premature death is considered to be before 70 years, according to the guidelines of the OECD and the WHO (as seen in the abbreviation PYLL-70 or AYLL-70).

Shortcuts

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

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