Munich Cancer Registry

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

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

Cancer statistics: Baseline statistics

C15: Oesophagus cancer

Year of diagnosis	1998-2013
Patients	3,687
Diseases	3,688
Creation date	05/19/2015
Export date	12/30/2014
Population	4.64 m

BERLIN

GERMANY

BAVARIA

MUNICH

http://www.tumorregister-muenchen.de/en/facts/base/base_C15__E.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. The time-delayed acquisition of data and the occasionally high DCO-rates indicate optimizing reserves, among others, because of current financial and legal conditions that hinder the analyses.

Clinics and physicians have access to essentially more detailed data, with which they can check, compare and in the best case optimize their own data and results.

We would be pleased to receive corrections, critique and useful suggestions. Just send an e-mail to tumor@ibe.med.uni-muenchen.de.

Munich Cancer Registry, May 2015

[#] Base data has been collected since 1998. An increase in new diseases is apparent, which is an effect of two extensions in the MCR catchment area (from a base population of 2.51 million to 3.96 in 2002, and to 4.52 million in 2007). Death certificates from 2014 are incorporated into these analyses.

[##] Due to the high frequency and good prognosis of non-malignant skin cancer (C44), no systematic ascertainment is performed for this diagnosis. C44 is not designated as a primary, but rather as a secondary tumor.

[###] DCO (death certificate only) identifies a cancer case that first becomes available to the MCR through the death certificate. A high proportion of DCO cases (≥5%) in particular cancer types indicate insufficient participation of specific cancer specializations.

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

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

Year of diagnosis	Cases n	DCO cases n	Prop. DCO %	Prop. mult. primaries %	Prop. deaths %	Prop. actively followed %
1998	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	90.8	99.2
2001	144	6	4.2	26.4	91.7	100.0
2002	268	31	11.6	25.4	90.3	100.0 #
2003	218	24	11.0	23.9	89.9	99.1
2004	219	19	8.7	26.0	88.1	99.1
2005	266	21	7.9	29.7	88.0	98.9
2006	231	7	3.0	28.1	85.3	98.7
2007	292	9	3.1	27.7	84.6	95.5 # ##
2008	282	11	3.9	27.7	79.4	85.1
2009	301	15	5.0	26.6	77.4	89.0
2010	296	16	5.4	21.3	74.7	86.1
2011	297	21	7.1	33.7	74.7	89.2
2012	291	18	6.2	27.5	67.0	87.3
2013	183	10	5.5	27.3	42.1	97.8 ###
1998–2013	3688	243	6.6	26.3	81.0	94.2

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

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

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

Table 1a

Patient cohorts by year of diagnosis and gender
including DCO cases

Year of diagnosis	All n	Males n	Females n	Prop. males %
1998	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	218	176	42	80.7
2004	219	175	44	79.9
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	301	236	65	78.4
2010	296	217	79	73.3
2011	297	243	54	81.8
2012	291	217	74	74.6
2013	183	132	51	72.1
1998-2013	3688	2901	787	78.7

Table 2

Incidence measures by year of diagnosis and gender including DCO cases
(with respect to registry area expansion from 2.51 to 3.96 m as of 2002,
and from 3.96 to 4.64 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	176	42	9.4	2.1	5.6	1.1	7.9	1.6	9.4	1.8
2004	175	44	9.3	2.2	5.5	1.1	7.8	1.6	9.2	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	65	10.6	2.8	5.6	1.3	8.2	1.9	9.9	2.3
2010	217	79	9.6	3.4	5.3	1.5	7.6	2.1	9.2	2.6
2011	243	54	10.6	2.3	5.6	1.0	8.1	1.5	9.9	1.9
2012	217	74	9.5	3.1	5.2	1.6	7.4	2.2	8.8	2.5
2013	132	51	5.8	2.2	3.0	0.9	4.4	1.4	5.3	1.7
1998-2013	2901	787	9.8	2.5	5.5	1.2	7.9	1.7	9.5	2.1

The computation of the incidence measures includes all primaries, irrespective of first or subsequent malignancy.
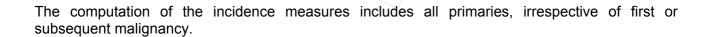
Table 3

Age distribution parameters by year of diagnosis (All)
(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	218	65.5	11.1	39.0	92.5	50.5	57.8	64.8	73.1	81.3
2004	219	65.8	10.9	36.5	97.2	52.4	59.1	64.9	71.9	80.3
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	301	67.0	10.8	35.6	94.4	52.0	59.2	68.0	73.9	80.7
2010	296	67.1	11.8	32.0	96.3	53.1	59.7	67.3	75.5	83.2
2011	297	68.5	10.4	44.0	94.6	54.7	60.9	68.6	75.8	83.0
2012	291	66.7	10.6	34.0	93.7	52.4	60.0	66.9	73.3	80.4
2013	183	67.7	10.5	43.5	99.8	54.0	58.7	69.4	74.8	79.8
1998-2013	3688	66.3	11.0	32.0	99.8	52.5	58.7	66.0	73.8	81.2

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	176	65.1	10.4	39.0	92.5	50.4	57.9	64.9	71.8	78.7
2004	175	65.0	10.6	36.5	94.7	52.3	58.4	64.2	71.5	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	243	68.0	10.1	44.0	94.6	55.3	60.9	68.4	74.5	82.0
2012	217	66.2	9.8	39.2	90.1	53.1	59.5	66.3	73.0	78.7
2013	132	66.7	10.5	43.5	99.8	54.0	58.2	68.5	74.4	79.3
1998-2013	2901	65.6	10.6	32.0	99.8	52.3	58.2	65.6	73.0	79.6

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	65	68.4	12.5	44.1	94.4	51.4	59.2	67.9	77.9	86.1
2010	79	70.7	11.8	33.3	96.3	57.0	63.7	70.8	78.9	85.8
2011	54	70.5	11.6	47.1	91.5	53.8	62.4	71.1	80.0	83.9
2012	74	67.9	12.7	34.0	93.7	51.4	60.5	68.3	75.5	86.5
2013	51	70.1	10.3	46.7	89.4	54.3	62.9	70.6	77.6	84.1
1998-2013	787	68.9	12.0	33.3	97.2	52.9	60.5	68.6	78.1	85.0

Table 4

Age distribution by 5-year age group and gender for period 1998-2013
(incl. DCO)

Age at diagnosis Years	Cases n	%	Cum.%	Males n	%	Cum.%	Females n	%	Cum.%
30-34	7	0.2	0.2	4	0.1	0.1	3	0.4	0.4
35-39	24	0.7	0.8	24	0.8	1.0			0.4
40-44	54	1.5	2.3	42	1.4	2.4	12	1.5	1.9
45-49	158	4.3	6.6	130	4.5	6.9	28	3.6	5.5
50-54	317	8.6	15.2	252	8.7	15.6	65	8.3	13.7
55-59	496	13.4	28.6	422	14.5	30.1	74	9.4	23.1
60-64	644	17.5	46.1	509	17.5	47.7	135	17.2	40.3
65-69	649	17.6	63.7	532	18.3	66.0	117	14.9	55.1
70-74	520	14.1	77.8	420	14.5	80.5	100	12.7	67.9
75-79	381	10.3	88.1	295	10.2	90.7	86	10.9	78.8
80-84	261	7.1	95.2	173	6.0	96.6	88	11.2	90.0
85+	177	4.8	100.0	98	3.4	100.0	79	10.0	100.0
All ages	3688	100.0		2901	100.0		787	100.0	

Included in the statistics are 32.6% multiple primaries in males and 34.7% in females.

Table 5

Age-specific incidence, DCO rate and proportion of all cancers
for period 1998-2013

Age at diagnosis Years	Males n	Females n	Males Age- spec. incid.	Females Age- spec. incid.	Males DCO rate n=175 %	Females DCO rate n=68 %	Males Prop.all cancers n=158258 %	Females Prop.all cancers n=153136 %
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	4	3	0.2	0.1			0.3	0.1
35-39	24		1.0	0.0			1.1	
40-44	42	12	1.6	0.5			1.3	0.2
45-49	130	28	5.5	1.2	4.6	3.6	2.4	0.3
50-54	252	65	12.5	3.2	5.2	3.1	2.9	0.6
55-59	422	74	23.0	3.8	2.1	2.7	2.9	0.5
60-64	509	135	28.7	7.2	5.1	0.7	2.3	0.8
65-69	532	117	33.7	6.8	5.3	4.3	1.9	0.6
70-74	420	100	32.8	6.6	6.2	6.0	1.6	0.5
75-79	295	86	35.7	7.2	6.8	8.1	1.4	0.5
80-84	173	88	34.6	9.4	13.9	21.6	1.3	0.6
85+	98	79	28.7	8.8	23.5	31.6	1.0	0.5
All ages	2901	787			6.0	8.6	1.8	0.5
Incidence								
Raw			9.8	2.5				
WS			5.5	1.2				
ES			7.9	1.7				
BRD-S			9.5	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).

Table 6a

Standardized incidence ratio (SIR, with 95% confidence limits),
excess absolute risk (EAR) and DCO rate of second primaries
for period 1998-2013
MALES

Diagnosis	Observed n	Expected n	SIR	LCL 95%	UCL 95%		EAR	DCO %
C03-C06 Oral cavity	13	0.5	24.0	12.8	41.1	#	35.1	7.7
C09-C10 Oropharynx	18	0.7	26.5	15.7	41.9	#	48.8	
C12-C13 Hypopharynx	6	0.4	15.7	5.8	34.2	#	15.8	
C16 Stomach	10	2.2	4.6	2.2	8.4	#	22.0	10.0
C17 Small intestine	4	0.3	14.7	4.0	37.6	#	10.5	
C18 Colon	13	5.2	2.5	1.3	4.3	#	21.9	15.4
C19-C20 Rectum	3	3.1	1.0	0.2	2.8		-0.4	
C21 Anus/canal	2	0.1	16.8	2.0	60.7	#	5.3	
C22 Liver	10	1.5	6.6	3.2	12.2	#	23.9	40.0
C25 Pancreas	5	1.9	2.6	0.9	6.1		8.7	
C32 Larynx	6	0.6	9.5	3.5	20.7	#	15.1	
C33-C34 Lung	36	6.6	5.5	3.8	7.6	#	82.8	11.1
C43 Malign. melanoma	2	2.2	0.9	0.1	3.3		-0.6	
C50 Breast	3	0.1	21.3	4.4	62.3	#	8.0	66.7
C61 Prostate	27	16.5	1.6	1.1	2.4	#	29.4	18.5
C64 Kidney	7	2.0	3.5	1.4	7.3	#	14.1	
C67 Bladder	7	2.3	3.1	1.2	6.4	#	13.3	14.3
C76-C79 CUP	2	0.9	2.2	0.3	7.9		3.1	
C82-C85 NHL	4	2.1	1.9	0.5	4.8		5.3	25.0
C90 Mult. myeloma	3	0.7	4.4	0.9	12.9		6.5	33.3
Other primaries	3	1.3	2.2	0.5	6.5		4.7	33.3
Not observed	0	4.4	0.0	0.0	0.8	#	-12.3	
All mult. primaries	184	55.8	3.3	2.8	3.8	#	361.0	12.5

Patients	1940
Median age at second malignancy (years)	66.2
Person-years	3552
Mean observation time (years)	1.8
Median observation time (years)	0.9

The occurrence of second malignancy is statistically significant.

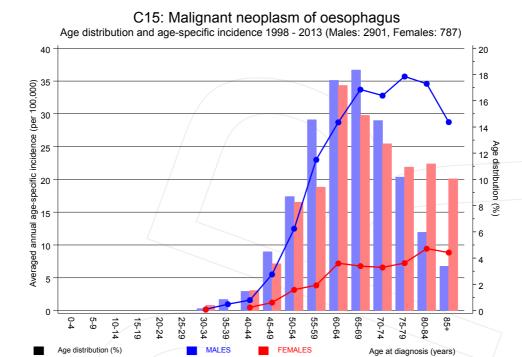Observed second primaries with count 1 are pooled in category "Other primaries".

Table 6b

Standardized incidence ratio (SIR, with 95% confidence limits),
excess absolute risk (EAR) and DCO rate of second primaries
for period 1998-2013
FEMALES

Diagnosis	Observed n	Expected n	SIR	LCL 95%	UCL 95%		EAR	DCO %
C03-C06 Oral cavity	2	0.1	31.3	3.8	113.1	#	21.3	
C09-C10 Oropharynx	5	0.0	107.4	34.9	250.7	#	54.4	
C16 Stomach	2	0.3	6.1	0.7	22.2		18.4	
C18 Colon	5	0.9	5.4	1.7	12.5	#	44.7	20.0
C32 Larynx	3	0.0	145.9	30.1	426.5	#	32.7	
C33-C34 Lung	8	0.7	10.9	4.7	21.5	#	79.8	12.5
C43 Malign. melanoma	3	0.4	8.3	1.7	24.2	#	29.0	
C50 Breast	8	3.2	2.5	1.1	4.9	#	52.5	12.5
C76-C79 CUP	2	0.2	12.4	1.5	44.9	#	20.2	
Other primaries	6	1.2	4.9	1.8	10.8	#	52.6	16.7
Not observed	0	3.0	0.0	0.0	1.2		-32.9	
All mult. primaries	44	10.1	4.4	3.2	5.9	#	372.5	9.1

Patients	546
Median age at second malignancy (years)	65.9
Person-years	911
Mean observation time (years)	1.7
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".

C15: Malignant neoplasm of oesophagus
Age distribution and age-specific incidence 1998 - 2013 (Males: 2901, Females: 787)

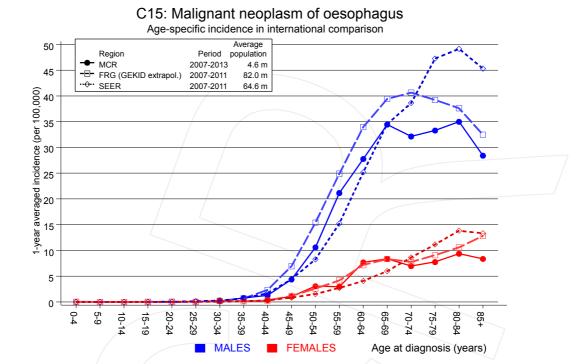**Figure 7.** Age distribution and age-specific incidence

Figure 7a. 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.

C15: Malignant neoplasm of oesophagus

Cumulative follow-up years since diagnosis for period 1998 - 2013 (excl. DCO)

Gender	n	Target Sum	Target Median	Actual Sum	Actual Median
All patients					
Males	1805	3719	1.0	3554	0.9
Females	482	919	0.9	886	0.9
Patients alive					
Males	417	2077	4.1	1913	3.7
Females	102	458	3.3	425	3.1
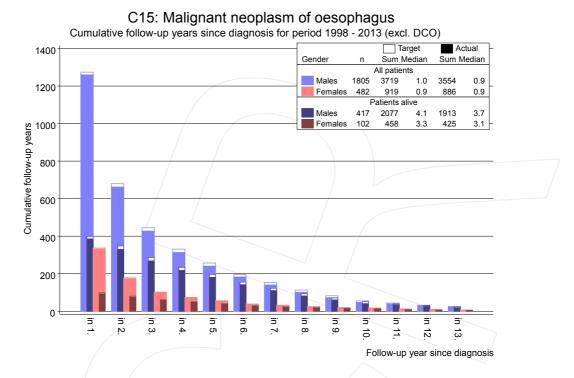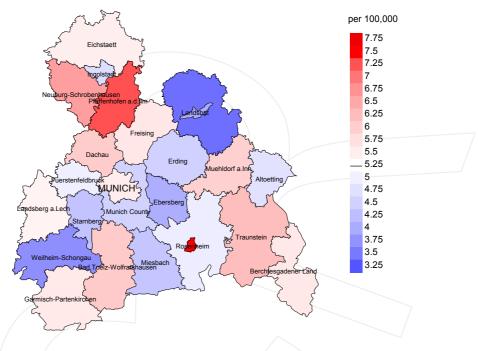
Figure 8. Cumulative follow-up years depending on time since diagnosis

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

Average incidence (world standard population) 2007 - 2013: Males

Average incidence (world standard population) 2007 - 2013: Females
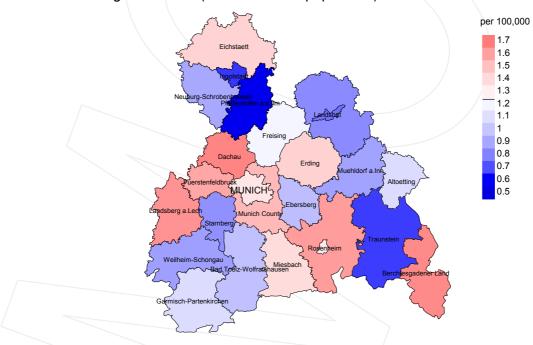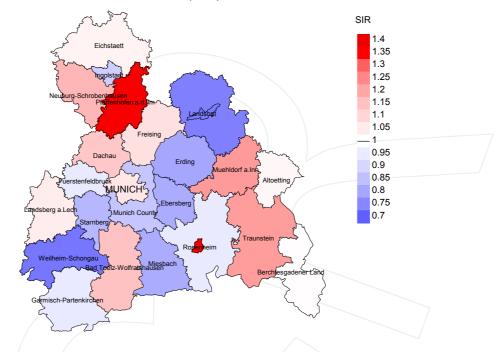
Figure 9a. Map of cancer incidence (world standard population, incl. DCO cases) by county averaged for period 2007 to 2013. According to their individual incidence rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 5.2/100,000 WS N=1,510, females 1.2/100,000 WS N=432).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 64,928 female residents (averaged) in the period from 2007 to 2013 a total of 7 women were identified with newly diagnosed oesophagus cancer. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 1.0/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.3 and 2.5/100,000.

Standardized incidence ratio (SIR) 2007 - 2013: Males

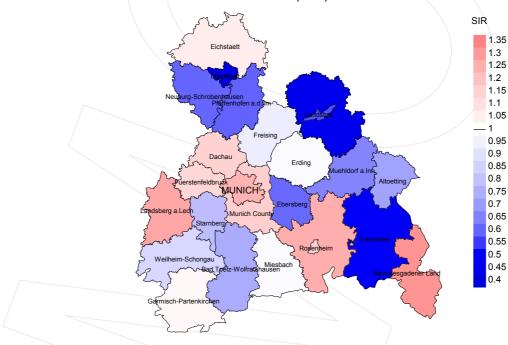## Standardized incidence ratio (SIR) 2007 - 2013: Females

Figure 9b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2007 to 2013. 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=1,510, females N=432).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 64,642 female residents (averaged) in the period from 2007 to 2013 a total of 7 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 0.61. Though, the value of this parameter may vary with an underlying probability of 99% between 0.18 and 1.48, 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	93.4
2000	130	99.2	8.5	118	90.8	95.8
2001	144	100.0	4.2	132	91.7	96.2
2002	268	100.0	11.6	242	90.3	97.9
2003	218	99.1	11.0	196	89.9	98.0
2004	219	99.1	8.7	193	88.1	97.9
2005	266	98.9	7.9	234	88.0	97.9
2006	231	98.7	3.0	197	85.3	98.0
2007	292	95.5	3.1	247	84.6	98.0
2008	282	85.1	3.9	224	79.4	99.1
2009	301	89.0	5.0	233	77.4	98.7
2010	296	86.1	5.4	221	74.7	97.3
2011	297	89.2	7.1	222	74.7	97.7
2012	291	87.3	6.2	195	67.0	94.9
2013	183	97.8	5.5	77	42.1	89.6
1998-2013	3688	94.2	6.6	2987	81.0	97.0

Table 10b

Annual cohorts of incident cancers and deaths, proportion of death certificates
and cases deceased the same year of cancer diagnosis
(incl. DCO)
(with respect to registry area expansion from 2.51 to 3.96 m as of 2002,
and from 3.96 to 4.64 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	218	186	98.4	83	38.1
2004	219	189	97.4	71	32.4
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	301	237	99.2	83	27.6
2010	296	238	98.7	76	25.7
2011	297	276	97.8	110	37.0
2012	291	241	97.5	90	30.9
2013	183	221	98.2	54	29.5
1998-2013	3688	3116	97.5	1196	32.4

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	186	90.3	9.7	95.6
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	86.2	13.8	94.1
2012	241	90.0	10.0	94.9
2013	221	85.5	14.5	94.0
1998-2013	3116	89.3	10.7	95.7

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	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	158	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	68.2	75.9	69.1
2012	182	68.9	68.9	75.9	68.5
2013	165	69.2	68.5	72.6	69.2
1998–2013	2443	67.2	66.8	71.1	67.0

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

Table 11b

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

Year of death	Deaths n	Age at death (all causes) Years	Age at death (cancer-related) Years	Age at death (non-cancer-related) Years	Age at death (according to death certificate) Years
1998	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	56	70.8	70.0	79.9	70.0
1998-2013	673	70.2	69.5	74.2	70.4

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

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

Table 12a

Mortality measures (cancer-related death) and mortality-incidence-index
by year of death

MALES

Year of death	Deaths n	Mort. raw	MI-Index raw	Mort. WS	MI-Index WS	Mort. ES	MI-Index ES	Mort. BRD-S	MI-Index BRD-S
1998	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	142	7.6	0.81	4.4	0.79	6.4	0.81	7.8	0.82
2004	136	7.2	0.78	4.2	0.77	6.0	0.77	7.3	0.80
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	189	8.3	0.78	4.3	0.77	6.3	0.77	7.7	0.78
2012	163	7.1	0.75	3.7	0.71	5.4	0.73	6.6	0.75
2013	140	6.1	1.06	3.2	1.05	4.6	1.05	5.7	1.06
1998-2013	2186	7.4	0.75	4.1	0.74	5.9	0.74	7.2	0.76

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	0.60	0.8	0.63	1.2	0.60	1.4	0.61
2010	49	2.1	0.62	0.9	0.60	1.3	0.61	1.6	0.60
2011	49	2.1	0.91	0.8	0.84	1.3	0.85	1.6	0.84
2012	54	2.3	0.73	1.1	0.68	1.5	0.70	1.8	0.72
2013	49	2.1	0.96	0.9	1.00	1.4	0.98	1.7	0.98
1998-2013	598	1.9	0.76	0.9	0.73	1.3	0.74	1.6	0.75

Table 13

Age distribution of age at death (cancer-related) for period 1998-2013
(**incl. multiple primaries**)

Age at death Years	Cases n	%	Cum.%	Males n	%	Cum.%	Females n	%	Cum.%
30-34	4	0.1	0.1	2	0.1	0.1	2	0.3	0.3
35-39	5	0.2	0.3	5	0.2	0.3			0.3
40-44	30	1.1	1.4	27	1.2	1.6	3	0.5	0.8
45-49	116	4.2	5.6	97	4.4	6.0	19	3.2	4.0
50-54	181	6.5	12.1	143	6.5	12.5	38	6.4	10.4
55-59	366	13.1	25.2	313	14.3	26.8	53	8.9	19.2
60-64	477	17.1	42.3	371	17.0	43.8	106	17.7	37.0
65-69	502	18.0	60.3	416	19.0	62.8	86	14.4	51.3
70-74	427	15.3	75.7	350	16.0	78.8	77	12.9	64.2
75-79	296	10.6	86.3	223	10.2	89.0	73	12.2	76.4
80-84	227	8.1	94.4	152	6.9	95.9	75	12.5	89.0
85+	155	5.6	100.0	89	4.1	100.0	66	11.0	100.0
All ages	2786	100.0		2188	100.0		598	100.0	

Included in the statistics are 32.6% multiple primaries in males and 34.7% in females.

Table 14

Age-specific mortality (cancer-related) and proportion of all cancers
for period 1998-2013
(**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	2	2	0.1	0.50	0.1	0.67	1.1	0.9
35-39	5		0.2	0.21	0.0		1.3	
40-44	27	3	1.0	0.64	0.1	0.25	3.2	0.3
45-49	97	19	4.1	0.75	0.8	0.68	5.4	0.9
50-54	143	38	7.1	0.57	1.8	0.58	4.3	1.2
55-59	313	53	17.1	0.74	2.8	0.72	5.3	1.1
60-64	371	106	20.9	0.73	5.7	0.79	4.2	1.6
65-69	416	86	26.4	0.78	5.0	0.74	3.5	1.0
70-74	350	77	27.3	0.83	5.1	0.77	2.6	0.8
75-79	223	73	27.0	0.76	6.1	0.85	1.7	0.7
80-84	152	75	30.4	0.88	8.0	0.85	1.4	0.7
85+	89	66	26.1	0.91	7.4	0.84	1.0	0.5
All ages	2188	598					2.7	0.8
Mortality								
Raw			7.4	0.75	1.9	0.76		
WS			4.1	0.74	0.9	0.73		
ES			5.9	0.75	1.3	0.74		
BRD-S			7.2	0.76	1.6	0.75		
PYLL-70								
per 100,000			50.0		11.0			
ES			44.2		9.4			
AYLL-70			9.8		9.5			

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

Table 15a

Multiple primaries in deaths in period 1998-2013
MALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn-chron ±30d n	Syn-chron ±30d ←%	Post n	Post ←%
C03-C06 Oral cavity	61	8.1	43	70.5	10	16.4	8	13.1
C09-C10 Oropharynx	82	10.9	54	65.9	10	12.2	18	22.0
C12-C13 Hypopharynx	49	6.5	34	69.4	7	14.3	8	16.3
C16 Stomach	29	3.9	9	31.0	15	51.7	5	17.2
C18 Colon	37	4.9	24	64.9	5	13.5	8	21.6
C19-C20 Rectum	28	3.7	17	60.7	5	17.9	6	21.4
C22 Liver	17	2.3	2	11.8	9	52.9	6	35.3
C25 Pancreas	12	1.6	2	16.7	4	33.3	6	50.0
C32 Larynx	42	5.6	31	73.8	7	16.7	4	9.5
C33-C34 Lung	96	12.8	32	33.3	28	29.2	36	37.5
C43 Malign. melanoma	10	1.3	9	90.0	1	10.0		
C44 Skin others	29	3.9	20	69.0	2	6.9	7	24.1
C61 Prostate	102	13.6	76	74.5	7	6.9	19	18.6
C64 Kidney	20	2.7	14	70.0	1	5.0	5	25.0
C67 Bladder	43	5.7	31	72.1	1	2.3	11	25.6
C76-C79 CUP	12	1.6	7	58.3	4	33.3	1	8.3
C82-C85 NHL	11	1.5	8	72.7	1	9.1	2	18.2
C91-C96 Leukaemia	11	1.5	5	45.5	3	27.3	3	27.3
Other primaries	58	7.7	30	51.7	7	12.1	21	36.2
All mult. primaries	749	100.0	448	59.8	127	17.0	174	23.2

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 1998-2013
FEMALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn- chron ±30d n	Syn- chron ±30d ←%	Post n	Post ←%
C03-C06 Oral cavity	14	6.5	13	92.9			1	7.1
C09-C10 Oropharynx	25	11.6	16	64.0	4	16.0	5	20.0
C12-C13 Hypopharynx	8	3.7	3	37.5	5	62.5		
C16 Stomach	4	1.9			1	25.0	3	75.0
C18 Colon	13	6.0	9	69.2	2	15.4	2	15.4
C19-C20 Rectum	6	2.8	5	83.3	1	16.7		
C25 Pancreas	4	1.9	2	50.0			2	50.0
C32 Larynx	4	1.9	2	50.0			2	50.0
C33-C34 Lung	12	5.6	3	25.0	2	16.7	7	58.3
C43 Malign. melanoma	6	2.8	5	83.3			1	16.7
C44 Skin others	3	1.4	3	100.0				
C50 Breast	68	31.6	59	86.8	4	5.9	5	7.4
C53 Cervix uteri	6	2.8	5	83.3			1	16.7
C54 Corpus uteri	4	1.9	4	100.0				
C67 Bladder	7	3.3	6	85.7	1	14.3		
C70-C72 CNS cancer	3	1.4	3	100.0				
C73 Thyroid	4	1.9	4	100.0				
C82-C85 NHL	3	1.4	2	66.7	1	33.3		
Other primaries	21	9.8	13	61.9	6	28.6	2	9.5
All mult. primaries	215	100.0	157	73.0	27	12.6	31	14.4

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 1998-2013
(**Singular primaries only ***)

Age at death Years	Males n	Females n	Males Age-spec. mortal.	MI-index	Females Age-spec. mortal.	MI-index	Males Prop.all cancers %	Females Prop.all cancers %
0- 4			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	2	0.1	0.50	0.1	0.67	1.1	1.0
35-39	4		0.2	0.20	0.0		1.1	
40-44	24	3	0.9	0.59	0.1	0.30	3.0	0.3
45-49	84	13	3.6	0.71	0.6	0.59	5.1	0.8
50-54	118	30	5.8	0.56	1.5	0.59	4.1	1.2
55-59	252	41	13.7	0.72	2.1	0.75	4.9	1.0
60-64	297	79	16.8	0.73	4.2	0.76	4.0	1.5
65-69	323	61	20.5	0.78	3.5	0.78	3.3	0.9
70-74	272	52	21.2	0.83	3.4	0.70	2.5	0.7
75-79	170	54	20.6	0.77	4.5	0.82	1.7	0.6
80-84	110	55	22.0	0.94	5.9	0.79	1.4	0.6
85+	65	53	19.1	0.90	5.9	0.82	1.0	0.5
All ages	1721	443					2.7	0.8
Mortality								
Raw			5.8	0.75	1.4	0.74		
WS			3.2	0.73	0.7	0.72		
ES			4.7	0.74	0.9	0.72		
BRD-S			5.7	0.75	1.2	0.73		
PYLL-70								
per 100,000			41.1		8.4			
ES			36.3		7.2			
AYLL-70			10.0		9.7			

* See corresponding tables with multiple primaries.

Table 17

Age-specific mortality (cancer-related) and proportion of all cancers
for period 1998-2013
(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	2	2	0.1	0.50	0.1	1.00	1.1	1.1
35-39	4		0.2	0.20	0.0		1.1	
40-44	23	3	0.9	0.61	0.1	0.30	3.1	0.3
45-49	79	13	3.3	0.71	0.6	0.59	5.1	0.8
50-54	113	29	5.6	0.58	1.4	0.60	4.3	1.2
55-59	239	38	13.0	0.73	2.0	0.76	5.2	1.1
60-64	278	75	15.7	0.74	4.0	0.80	4.2	1.6
65-69	300	57	19.0	0.78	3.3	0.75	3.6	1.0
70-74	250	50	19.5	0.82	3.3	0.72	2.8	0.8
75-79	154	51	18.6	0.74	4.3	0.78	1.9	0.7
80-84	95	52	19.0	0.86	5.6	0.79	1.5	0.7
85+	59	53	17.3	0.84	5.9	0.84	1.1	0.6
All ages	1596	423					3.0	0.8
Mortality								
Raw			5.4	0.74	1.4	0.75		
WS			3.0	0.73	0.6	0.73		
ES			4.4	0.73	0.9	0.73		
BRD-S			5.2	0.74	1.1	0.74		
PYLL-70								
per 100,000			38.9		8.1			
ES			34.4		6.9			
AYLL-70			10.0		9.9			

* See corresponding tables with multiple primaries.

C15: Malignant neoplasm of oesophagus
Age distribution and age-specific mortality 1998 - 2013 (Males: 2186, Females: 598)
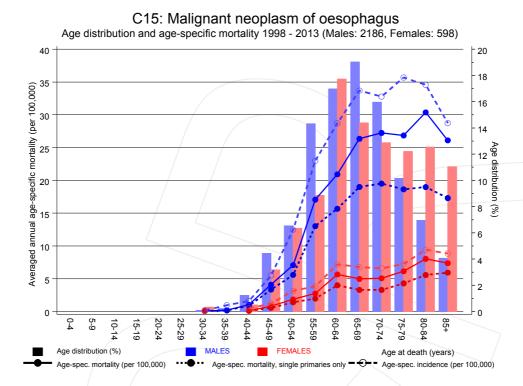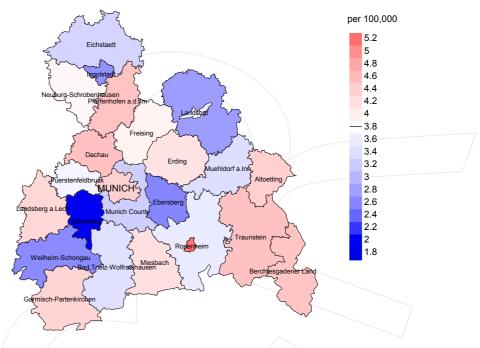
Figure 18. Distribution of age at death (bars) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

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 - 2013: Males

Average mortality (world standard population) 2007 - 2013: Females
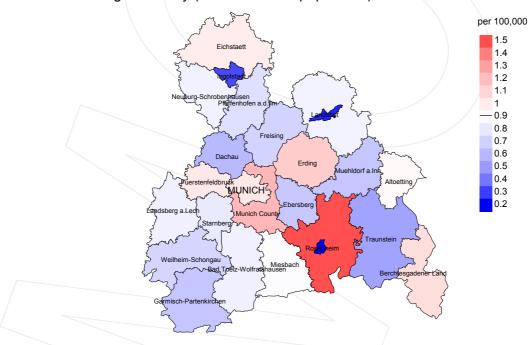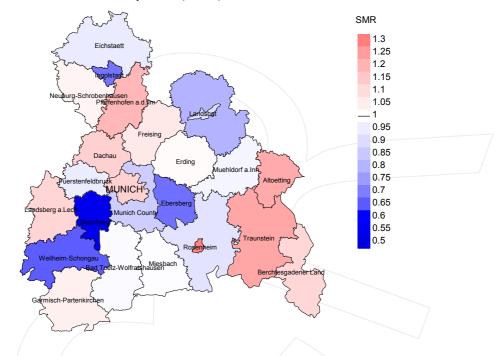
Figure 19a. Map of cancer mortality (world standard population) by county averaged for period 2007 to 2013. According to their individual mortality rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 3.8/100,000 WS N=1,134, females 0.9/100,000 WS N=324).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 64,928 female residents (averaged) in the period from 2007 to 2013 a total of 5 women died from oesophagus cancer. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 0.7/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.1 and 2.0/100,000.

Standardized mortality ratio (SMR) 2007 - 2013: Males

Standardized mortality ratio (SMR) 2007 - 2013: Females
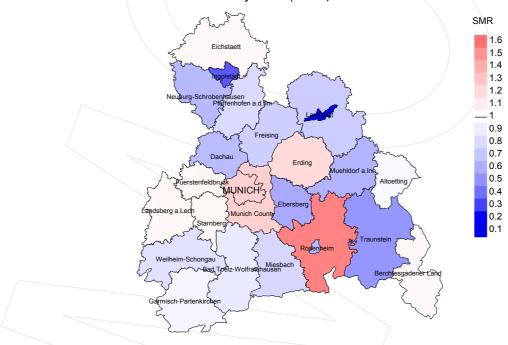
Figure 19b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2007 to 2013. According to their individual SMR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=1,134, females N=324).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 64,642 female residents (averaged) in the period from 2007 to 2013 a total of 5 women died from oesophagus cancer. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 0.58. Though, the value of this parameter may vary with an underlying probability of 99% between 0.13 and 1.64, and is therefore not statistically striking.

Statistical Notes

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

1. **All multiple primaries included**

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

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

   The mortality statistic describes the 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

Munich Cancer Registry. Baseline statistics C15: Oesophagus cancer [Internet]. 2015 [updated 2015 May 19; cited 2015 Jul 1]. Available from: http://www.tumorregister-muenchen.de/en/facts/base/base_C15__E.pdf

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Index of figures and tables