Munich Cancer Registry

- Survival
- Selection Matrix
- Homepage
- *Deutsch*

ICD-10 C17: Small intestine cancer

Incidence and Mortality

Year of diagnosis	1998-2014
Patients	1,631
Diseases	1,635
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/bC17__E-ICD-10-C17-Small-intestine-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
C17.-	Malignant neoplasm of small intestine
C17.0	Duodenum
C17.1	Jejunum
C17.2	Ileum
C17.3	Meckel diverticulum
C17.8	Overlapping lesion of small intestine
C17.9	Small intestine, 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	27	1	3.7	25.9	77.8	100.0	
1999	50	3	6.0	26.0	76.0	96.0	
2000	39	2	5.1	30.8	66.7	97.4	
2001	44	2	4.5	45.5	61.4	100.0	
2002	66	8	12.1	34.8	59.1	97.0	#
2003	76	7	9.2	35.5	53.9	94.7	
2004	104	4	3.8	32.7	55.8	96.2	
2005	89	5	5.6	29.2	58.4	94.4	
2006	99	1	1.0	39.4	55.6	93.9	
2007	121	2	1.7	36.4	46.3	79.3	#
2008	114	6	5.3	28.9	40.4	75.4	
2009	126	7	5.6	30.2	49.2	78.6	
2010	144	3	2.1	30.6	37.5	71.5	
2011	142	1	0.7	35.2	40.8	78.2	
2012	155	4	2.6	34.8	26.5	72.9	
2013	139	3	2.2	31.7	21.6	100.0	
2014	100	2	2.0	31.0	12.0	98.0	##
1998-2014	1635	61	3.7	33.0	43.8	86.5	

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	27	16	11	59.3
1999	50	24	26	48.0
2000	39	24	15	61.5
2001	44	25	19	56.8
2002	66	32	34	48.5
2003	76	41	35	53.9
2004	104	67	37	64.4
2005	89	44	45	49.4
2006	99	53	46	53.5
2007	121	73	48	60.3
2008	114	59	55	51.8
2009	126	71	55	56.3
2010	144	74	70	51.4
2011	142	70	72	49.3
2012	155	85	70	54.8
2013	139	89	50	64.0
2014	100	52	48	52.0
1998-2014	1635	899	736	55.0

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	16	11	1.4	0.9	0.9	0.5	1.3	0.7	1.8	0.8
1999	24	26	2.1	2.2	1.4	1.0	1.9	1.5	2.1	1.9
2000	24	15	2.1	1.2	1.3	0.7	1.8	1.0	2.1	1.1
2001	25	19	2.2	1.6	1.3	0.9	1.9	1.2	2.2	1.4
2002	32	34	1.7	1.7	1.0	0.9	1.5	1.3	1.8	1.6
2003	41	35	2.2	1.8	1.2	1.0	1.8	1.3	2.2	1.5
2004	67	37	3.6	1.9	2.1	1.0	2.9	1.4	3.6	1.6
2005	44	45	2.3	2.3	1.3	1.0	1.8	1.5	2.4	1.9
2006	53	46	2.8	2.3	1.5	1.2	2.3	1.6	2.8	1.9
2007	73	48	3.3	2.1	1.9	1.0	2.7	1.4	3.2	1.8
2008	59	55	2.7	2.4	1.5	1.2	2.1	1.7	2.6	1.9
2009	71	55	3.2	2.4	1.7	1.1	2.6	1.6	3.2	2.0
2010	74	70	3.3	3.0	1.9	1.7	2.6	2.3	3.1	2.6
2011	70	72	3.1	3.1	1.5	1.5	2.2	2.1	3.0	2.4
2012	85	70	3.7	3.0	1.9	1.4	2.8	2.0	3.4	2.4
2013	89	50	3.9	2.1	2.1	1.0	3.0	1.4	3.7	1.6
2014	52	48	2.3	2.0	1.1	1.0	1.6	1.5	2.1	1.7
1998-2014	899	736	2.8	2.2	1.6	1.1	2.2	1.6	2.8	1.8

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

Table 3

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

Year of diagnosis	Cases n	Mean	Std. dev.	Min.	Max.	10%	25%	Median 50%	75%	90%
1998	27	66.9	12.3	45.1	90.0	50.5	55.9	66.2	74.6	85.1
1999	50	65.1	13.2	32.7	93.0	49.0	54.2	64.9	73.5	83.2
2000	39	62.8	13.9	34.4	93.2	42.9	53.7	64.3	73.1	77.4
2001	44	65.6	12.9	29.6	99.2	53.9	57.4	66.3	74.2	80.4
2002	66	66.3	13.1	28.7	101	47.7	58.9	67.7	74.8	82.7
2003	76	65.8	10.9	31.2	89.2	52.7	60.1	64.8	73.4	79.7
2004	104	64.9	12.4	36.6	94.4	47.7	56.3	66.3	72.8	81.2
2005	89	67.7	12.7	28.5	88.5	50.6	61.4	68.2	78.1	82.2
2006	99	66.4	12.6	38.6	93.7	49.1	56.2	66.2	75.6	83.0
2007	121	66.0	12.6	24.5	93.4	49.2	58.9	66.7	74.8	81.4
2008	114	65.2	12.7	27.2	88.0	49.2	57.6	66.4	73.4	80.2
2009	126	67.4	14.0	22.0	92.0	49.8	58.7	68.3	77.8	84.9
2010	144	63.8	12.4	26.3	90.1	48.1	55.7	63.9	72.3	80.1
2011	142	68.3	13.9	33.3	91.9	50.3	59.6	70.0	79.2	84.8
2012	155	68.4	12.6	30.9	94.4	52.1	59.5	69.7	77.0	84.8
2013	139	66.8	12.7	38.6	92.4	48.5	57.2	68.0	75.5	84.0
2014	100	67.1	12.8	36.4	91.5	47.7	57.8	69.7	76.7	82.3
1998-2014	1635	66.4	12.9	22.0	101	49.2	58.0	67.1	75.6	82.7

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	16	66.2	12.7	45.1	85.7	46.1	57.2	65.8	74.6	83.1
1999	24	59.6	11.4	32.7	85.3	47.5	52.3	60.2	67.2	73.5
2000	24	63.1	13.1	37.6	92.1	43.1	55.8	63.9	73.2	74.8
2001	25	65.2	11.1	31.9	85.2	53.9	60.0	65.9	72.5	77.8
2002	32	65.1	13.9	28.7	90.4	47.7	58.6	63.6	75.5	83.2
2003	41	66.4	8.9	45.3	85.0	55.0	61.1	65.6	73.1	76.9
2004	67	64.1	12.3	36.6	88.0	47.1	56.3	64.6	73.4	81.2
2005	44	67.0	12.8	28.5	87.0	50.6	60.8	67.2	77.3	82.2
2006	53	66.3	11.3	38.6	88.1	53.2	59.0	66.3	74.8	80.3
2007	73	64.0	13.1	24.5	93.4	44.7	57.1	65.2	73.6	79.2
2008	59	63.2	12.7	29.8	80.8	45.1	53.5	65.6	73.4	79.3
2009	71	66.3	13.8	31.4	90.1	50.6	56.6	65.3	77.8	83.0
2010	74	63.9	13.6	26.3	90.1	48.1	55.6	64.3	73.2	80.4
2011	70	70.1	13.0	33.3	91.9	52.5	62.3	70.7	80.7	84.2
2012	85	68.0	12.2	40.1	91.0	51.5	59.2	69.8	75.1	83.2
2013	89	65.3	12.7	38.6	92.3	48.0	55.8	63.9	74.8	83.1
2014	52	68.8	13.0	37.8	91.5	47.4	64.4	71.1	77.0	83.7
1998-2014	899	65.7	12.7	24.5	93.4	48.5	57.4	66.5	75.0	81.5

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	11	67.9	12.2	51.6	90.0	54.3	54.8	67.1	74.6	85.1
1999	26	70.2	12.8	46.8	93.0	52.5	61.7	70.8	78.7	88.5
2000	15	62.3	15.6	34.4	93.2	40.6	49.0	64.3	73.1	81.0
2001	19	66.2	15.1	29.6	99.2	51.5	56.9	66.9	78.6	83.3
2002	34	67.4	12.4	44.1	101	49.4	58.9	68.9	74.8	81.0
2003	35	65.2	12.9	31.2	89.2	51.5	59.4	64.5	73.6	80.6
2004	37	66.4	12.8	38.7	94.4	51.8	57.7	67.2	72.5	83.9
2005	45	68.5	12.7	33.7	88.5	55.4	62.3	70.4	78.8	81.2
2006	46	66.4	14.1	42.7	93.7	46.1	56.0	65.8	78.0	84.8
2007	48	69.2	11.3	41.7	89.5	53.5	61.5	69.0	79.1	83.6
2008	55	67.4	12.3	27.2	88.0	52.6	58.8	67.4	78.5	84.7
2009	55	68.7	14.3	22.0	92.0	49.4	61.1	70.0	78.4	85.9
2010	70	63.7	11.2	39.7	89.6	48.1	56.5	63.4	71.0	78.8
2011	72	66.6	14.6	34.3	91.1	44.4	56.0	68.1	77.3	86.5
2012	70	68.8	13.2	30.9	94.4	52.7	60.4	69.6	77.7	85.9
2013	50	69.4	12.5	42.6	92.4	53.8	61.2	70.8	77.0	85.8
2014	48	65.3	12.4	36.4	91.0	48.7	55.5	66.9	74.4	78.9
1998-2014	736	67.1	13.0	22.0	101	50.1	58.6	67.8	76.7	84.1

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	2	0.2	0.2	1	0.2	0.2	1	0.2	0.2
25-29	3	0.3	0.5	2	0.3	0.5	1	0.2	0.4
30-34	11	1.1	1.5	7	1.2	1.7	4	0.9	1.3
35-39	12	1.2	2.7	6	1.0	2.8	6	1.3	2.6
40-44	35	3.4	6.1	23	4.0	6.8	12	2.6	5.1
45-49	48	4.6	10.7	29	5.1	11.9	19	4.1	9.2
50-54	86	8.3	18.9	50	8.7	20.6	36	7.7	16.9
55-59	103	9.9	28.8	54	9.4	30.0	49	10.5	27.4
60-64	140	13.4	42.3	76	13.3	43.3	64	13.7	41.0
65-69	157	15.1	57.3	83	14.5	57.8	74	15.8	56.8
70-74	153	14.7	72.0	85	14.8	72.6	68	14.5	71.4
75-79	129	12.4	84.4	72	12.6	85.2	57	12.2	83.5
80-84	88	8.5	92.9	55	9.6	94.8	33	7.1	90.6
85+	74	7.1	100.0	30	5.2	100.0	44	9.4	100.0
All ages	1041	100.0		573	100.0		468	100.0	

Included in the statistics are 49.7% multiple primaries in males and 34.6% 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=13 %	Females DCO rate n=15 %	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	1	1	0.1	0.1			0.3	0.3
25-29	2	1	0.2	0.1			0.4	0.2
30-34	7	4	0.6	0.3			0.9	0.3
35-39	6	6	0.5	0.5			0.5	0.3
40-44	23	12	1.4	0.8			1.3	0.3
45-49	29	19	1.8	1.3			0.9	0.3
50-54	50	36	3.9	2.8			1.0	0.5
55-59	54	49	5.1	4.4			0.7	0.7
60-64	76	64	7.7	6.0			0.7	0.7
65-69	83	73	8.6	7.0	1.2	1.4	0.5	0.6
70-74	85	68	9.3	6.5	2.4	1.5	0.5	0.6
75-79	72	57	13.1	8.0	5.6	3.5	0.6	0.6
80-84	55	33	15.7	5.9	3.6	12.1	0.6	0.4
85+	30	43	13.0	7.4	13.3	16.3	0.5	0.4
All ages	573	466			2.3	3.2	0.6	0.5
Incidence								
Raw			3.2	2.5				
WS			1.7	1.2				
ES			2.5	1.7				
BRD-S			3.0	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).

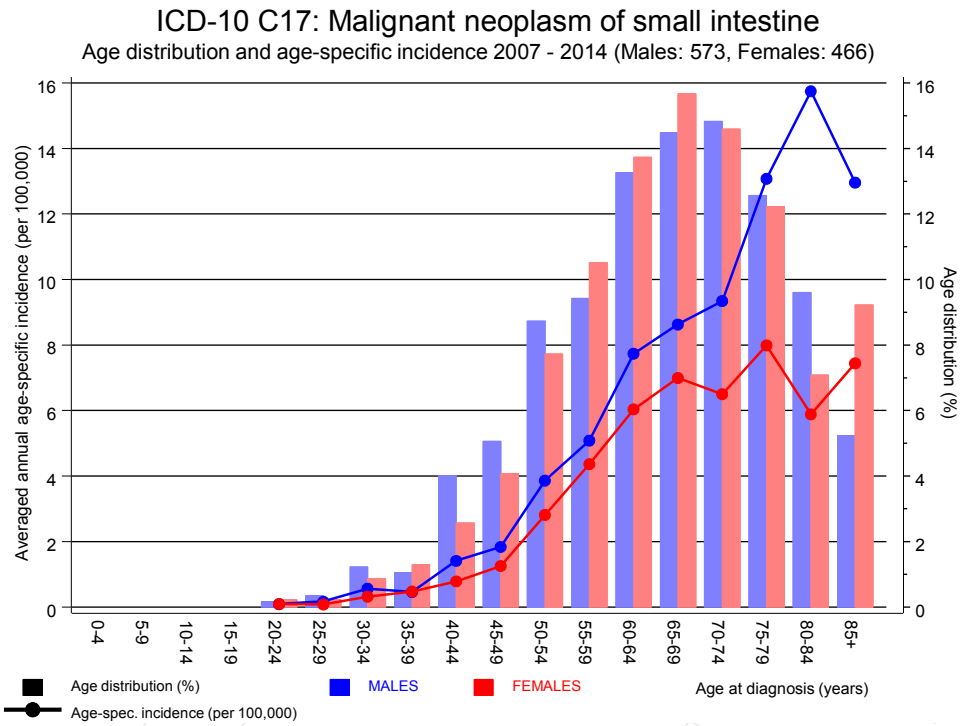


Figure 6. Age distribution and age-specific incidence

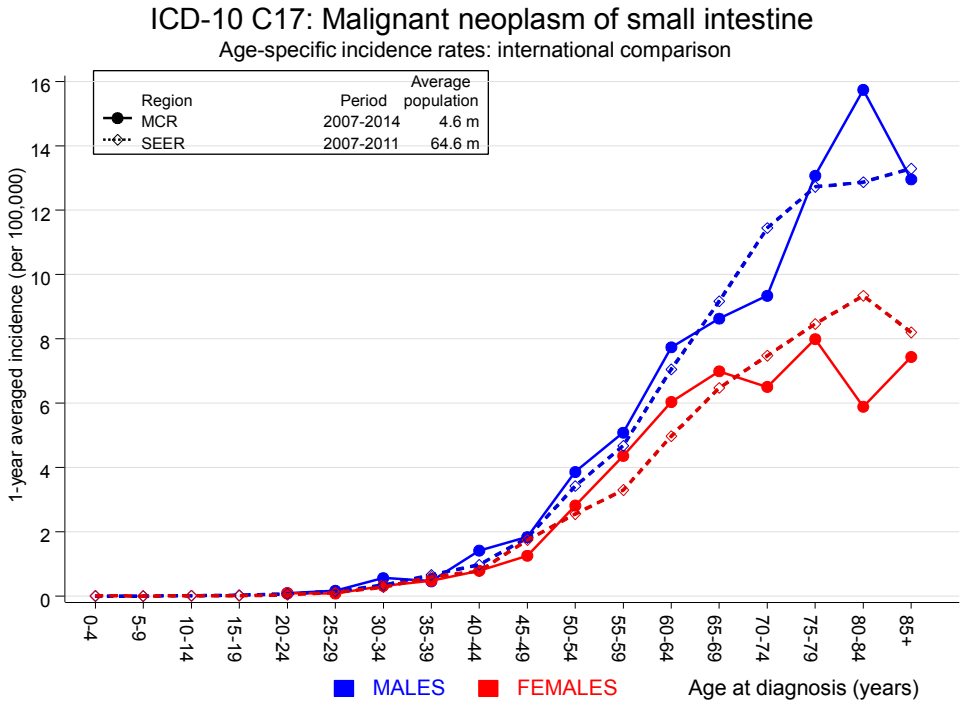


Figure 6a. Age-specific incidence in MCR registry areas compared to SEER (Surveillance, Epidemiology, and End Results, USA).

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.

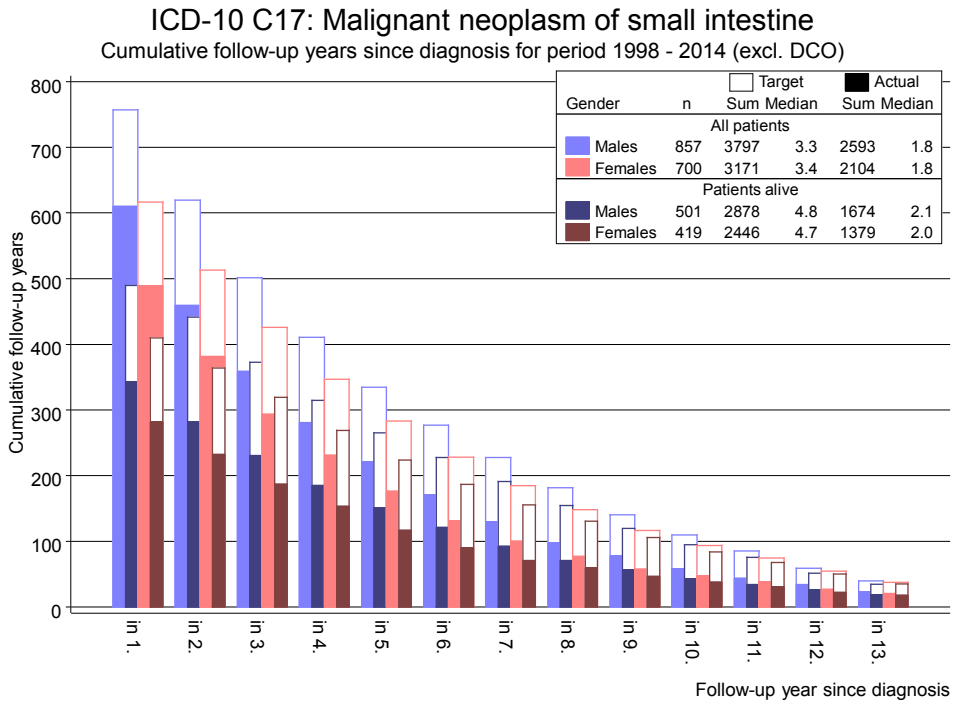


Figure 7. Cumulative follow-up years depending on time since diagnosis

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	2	0.4	5.7	0.7	20.6		6.4	
C12-C13	Hypopharynx	2	0.2	8.4	1.0	30.5	#	6.8	
C15	Oesophagus	2	0.8	2.6	0.3	9.5		4.8	
C16	Stomach	8	1.6	4.9	2.1	9.7	#	24.7	
C18	Colon	24	3.9	6.1	3.9	9.1	#	77.6	
C19-C20	Rectum	7	2.2	3.2	1.3	6.5	#	18.5	
C22	Liver	2	1.1	1.8	0.2	6.3		3.3	
C23-C24	Bile	2	0.4	5.0	0.6	18.1		6.2	
C25	Pancreas	6	1.5	4.0	1.5	8.7	#	17.4	
C33-C34	Lung	8	4.8	1.7	0.7	3.3		12.3	12.5
C43	Malign. melanoma	10	1.8	5.6	2.7	10.2	#	31.7	
C46,C49	Soft tissue	5	0.2	22.8	7.4	53.2	#	18.5	20.0
C61	Prostate	16	11.8	1.4	0.8	2.2		16.1	
C64	Kidney	4	1.4	2.8	0.8	7.1		9.9	
C65	Renal pelvis	2	0.2	11.5	1.4	41.7	#	7.1	
C66	Ureter	2	0.1	19.8	2.4	71.7	#	7.3	
C67	Bladder	2	1.8	1.1	0.1	4.0		0.7	
C70-C72	CNS cancer	2	0.5	3.7	0.4	13.3		5.6	
C73	Thyroid	2	0.3	7.2	0.9	26.0		6.7	
C82-C85	NHL	7	1.6	4.3	1.7	8.9	#	20.8	
C90	Mult. myeloma	2	0.5	3.9	0.5	14.0		5.7	
C91-C96	Leukaemia	2	0.7	3.0	0.4	10.7		5.1	100.0
Other primaries		4	0.7	5.9	1.6	15.2	#	12.9	
Not observed		0	2.5	0.0	0.0	1.5		-9.6	
All mult. primaries		123	41.2	3.0	2.5	3.6	#	316.5	3.3

Patients	862
Median age at second malignancy (years)	71.1
Person-years	2585
Mean observation time (years)	3.0
Median observation time (years)	1.7

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

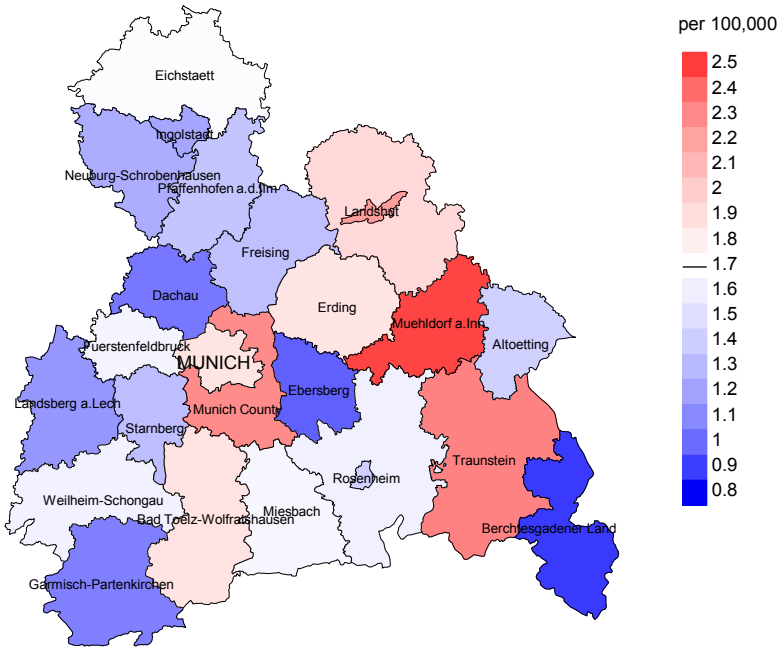
Diagnosis		Observed n	Expected n	SIR	LCL 95%	UCL 95%		EAR	DCO %
C16	Stomach	6	0.7	8.2	3.0	17.9	#	25.3	
C17	Small intestine	3	0.1	25.5	5.3	74.6	#	13.8	
C18	Colon	20	2.1	9.7	5.9	14.9	#	86.0	
C19–C20	Rectum	3	0.9	3.3	0.7	9.5		10.0	
C25	Pancreas	9	1.0	9.4	4.3	17.9	#	38.6	
C33–C34	Lung	5	1.7	2.9	0.9	6.8		15.7	
C43	Malign. melanoma	2	0.9	2.3	0.3	8.5		5.5	
C50	Breast	10	7.1	1.4	0.7	2.6		14.1	
C53	Cervix uteri	3	0.3	10.0	2.1	29.4	#	13.0	33.3
C54	Corpus uteri	7	1.3	5.4	2.2	11.1	#	27.4	
C56	Ovary	9	0.9	9.7	4.4	18.4	#	38.7	
C64	Kidney	2	0.6	3.6	0.4	13.0		6.9	
C70–C72	CNS cancer	2	0.3	6.5	0.8	23.4		8.1	
C82–C85	NHL	4	0.8	4.7	1.3	12.1	#	15.1	
Other primaries		8	1.3	6.1	2.6	12.0	#	32.1	12.5
Not observed		0	2.6	0.0	0.0	1.4		-12.4	
All mult. primaries		93	22.6	4.1	3.3	5.0	#	337.8	2.2

Patients	696
Median age at second malignancy (years)	68.7
Person-years	2085
Mean observation time (years)	3.0
Median observation time (years)	1.8

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

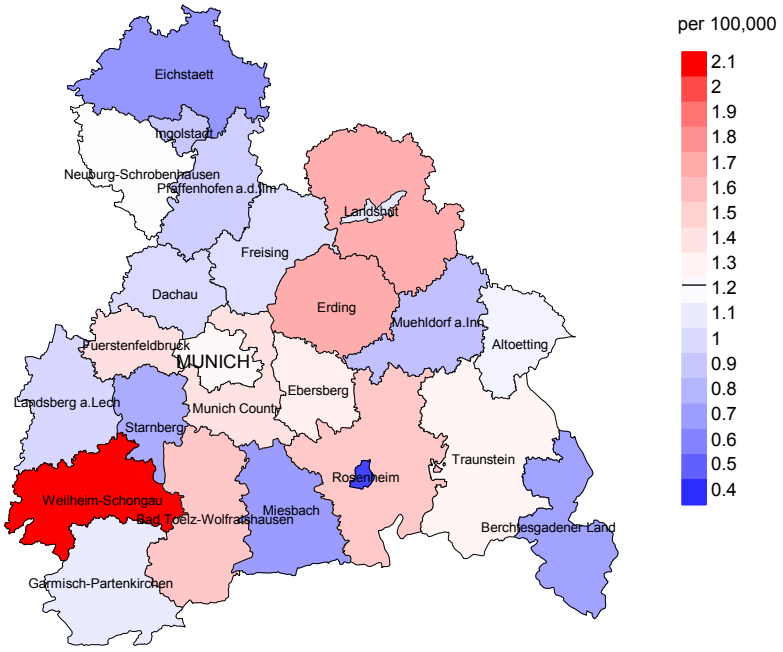
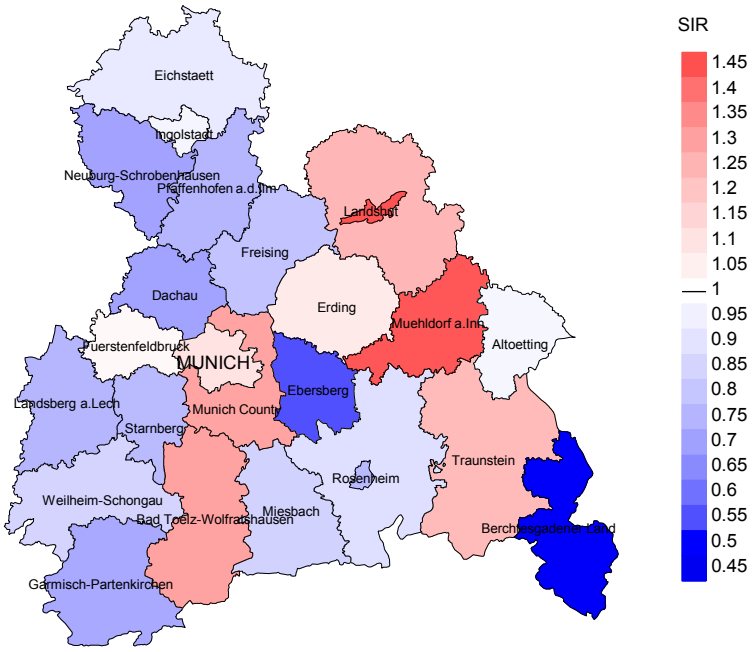


Figure 9a. Map of cancer incidence (world standard population, incl. DCO cases) by county averaged for period 2007 to 2014. According to their individual incidence rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 1.7/100,000 WS N=573, females 1.2/100,000 WS N=466).

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 11 women were identified with newly diagnosed small intestine cancer. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 1.3/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.5 and 2.8/100,000.

Standardized incidence ratio (SIR) 2007 - 2014: Males



Standardized incidence ratio (SIR) 2007 - 2014: Females

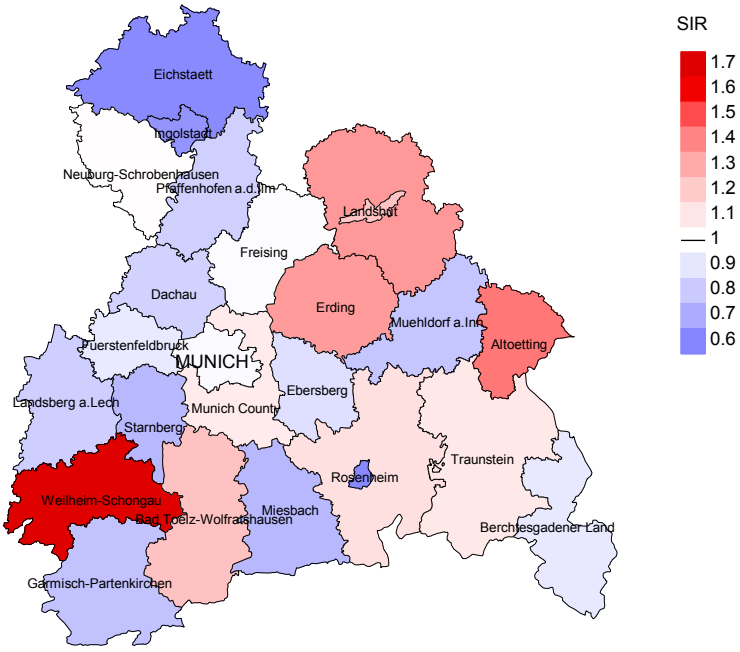


Figure 9b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2007 to 2014. According to their individual SIR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=573, females N=466).

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 11 women were identified with newly diagnosed small intestine cancer. Therefore, the mean standardized incidence ratio (SIR) for this cancer type in this area can be calculated at 0.87. Though, the value of this parameter may vary with an underlying probability of 99% between 0.34 and 1.81, 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	27	100.0	3.7	21	77.8	90.5
1999	50	96.0	6.0	38	76.0	100.0
2000	39	97.4	5.1	26	66.7	92.3
2001	44	100.0	4.5	27	61.4	100.0
2002	66	97.0	12.1	39	59.1	97.4
2003	76	94.7	9.2	41	53.9	97.6
2004	104	96.2	3.8	58	55.8	96.6
2005	89	94.4	5.6	52	58.4	98.1
2006	99	93.9	1.0	55	55.6	98.2
2007	121	79.3	1.7	56	46.3	98.2
2008	114	75.4	5.3	46	40.4	100.0
2009	126	78.6	5.6	62	49.2	100.0
2010	144	71.5	2.1	54	37.5	94.4
2011	142	78.2	0.7	58	40.8	96.6
2012	155	72.9	2.6	41	26.5	97.6
2013	139	100.0	2.2	30	21.6	100.0
2014	100	98.0	2.0	12	12.0	91.7
1998-2014	1635	86.5	3.7	716	43.8	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	27	10	90.0	3	11.1
1999	50	24	91.7	11	22.0
2000	39	22	90.9	6	15.4
2001	44	17	100.0	6	13.6
2002	66	29	96.6	15	22.7
2003	76	28	96.4	12	15.8
2004	104	56	98.2	22	21.2
2005	89	35	97.1	11	12.4
2006	99	40	97.5	11	11.1
2007	121	44	100.0	9	7.4
2008	114	54	96.3	12	10.5
2009	126	62	100.0	20	15.9
2010	144	55	96.4	21	14.6
2011	142	66	98.5	19	13.4
2012	155	76	98.7	19	12.3
2013	139	78	98.7	16	11.5
2014	100	79	98.7	8	8.0
1998-2014	1635	775	97.7	221	13.5

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	10	70.0	30.0	66.7
1999	24	75.0	25.0	95.5
2000	22	72.7	27.3	85.0
2001	17	76.5	23.5	64.7
2002	29	82.8	17.2	92.9
2003	28	71.4	28.6	85.2
2004	56	82.1	17.9	85.5
2005	35	91.4	8.6	91.2
2006	40	87.5	12.5	92.3
2007	44	86.4	13.6	84.1
2008	54	85.2	14.8	92.3
2009	62	79.0	21.0	87.1
2010	55	76.4	23.6	83.0
2011	66	83.3	16.7	90.8
2012	76	71.1	28.9	80.0
2013	78	79.5	20.5	84.4
2014	79	79.7	20.3	84.6
1998-2014	775	80.0	20.0	86.0

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	6	63.1	66.8	59.3	66.8
1999	9	73.1	73.4	57.6	73.1
2000	14	67.6	66.3	79.6	66.3
2001	12	63.7	64.6	60.3	63.7
2002	17	72.0	72.0	69.4	72.0
2003	14	71.9	70.6	73.2	73.9
2004	32	69.6	65.3	78.6	66.4
2005	15	70.8	70.8	75.3	74.8
2006	20	72.3	72.3	69.2	72.9
2007	25	72.8	72.8	75.0	73.1
2008	29	72.1	72.0	77.0	72.0
2009	38	77.7	73.5	80.0	75.0
2010	34	73.5	74.0	73.1	73.5
2011	31	73.6	71.1	84.7	72.3
2012	39	77.9	77.7	79.8	77.7
2013	40	77.3	72.9	83.8	73.8
2014	50	76.8	74.1	85.5	74.1
1998-2014	425	73.3	72.0	79.7	72.5

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	4	79.4	71.9	83.3	85.1
1999	15	76.5	73.1	79.7	75.3
2000	8	72.6	64.0	77.4	68.4
2001	5	83.7	83.5	92.2	83.3
2002	12	77.7	77.7	77.8	77.7
2003	14	79.3	80.6	78.1	80.6
2004	24	72.6	72.9	66.1	72.9
2005	20	70.7	70.6	83.6	70.6
2006	20	73.2	72.0	75.1	72.0
2007	19	74.2	74.2	73.3	73.8
2008	25	71.6	67.9	84.3	68.8
2009	24	77.4	77.8	77.1	76.5
2010	21	73.2	72.3	80.7	73.2
2011	35	69.3	68.5	82.7	69.0
2012	37	81.1	74.2	91.1	77.1
2013	38	75.2	73.8	84.0	74.7
2014	29	76.6	75.2	85.0	76.6
1998-2014	350	74.9	73.1	81.3	73.6

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	5	0.5	0.31	0.3	0.32	0.4	0.30	0.6	0.34
1999	8	0.7	0.33	0.5	0.33	0.7	0.35	0.8	0.39
2000	12	1.1	0.50	0.7	0.55	1.0	0.54	1.2	0.60
2001	9	0.8	0.36	0.5	0.35	0.7	0.37	0.8	0.37
2002	14	0.8	0.44	0.4	0.41	0.6	0.44	0.8	0.46
2003	9	0.5	0.22	0.3	0.20	0.4	0.22	0.5	0.23
2004	25	1.3	0.37	0.7	0.35	1.0	0.35	1.3	0.36
2005	13	0.7	0.30	0.4	0.28	0.6	0.31	0.7	0.31
2006	18	0.9	0.34	0.4	0.29	0.7	0.32	1.0	0.36
2007	21	0.9	0.29	0.4	0.23	0.7	0.26	1.0	0.30
2008	25	1.1	0.42	0.6	0.38	0.9	0.42	1.2	0.46
2009	28	1.3	0.39	0.6	0.35	1.0	0.37	1.3	0.41
2010	24	1.1	0.32	0.5	0.27	0.8	0.30	1.0	0.33
2011	24	1.1	0.34	0.5	0.36	0.8	0.36	1.0	0.33
2012	28	1.2	0.33	0.6	0.29	0.9	0.32	1.2	0.36
2013	30	1.3	0.34	0.6	0.28	0.9	0.30	1.3	0.34
2014	41	1.8	0.79	0.8	0.72	1.3	0.78	1.8	0.83
1998-2014	334	1.0	0.37	0.5	0.34	0.8	0.36	1.1	0.39

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	2	0.2	0.18	0.1	0.15	0.1	0.16	0.2	0.20
1999	10	0.8	0.38	0.3	0.31	0.5	0.33	0.6	0.32
2000	4	0.3	0.27	0.2	0.22	0.2	0.25	0.3	0.23
2001	4	0.3	0.21	0.1	0.11	0.1	0.13	0.2	0.17
2002	10	0.5	0.29	0.2	0.19	0.3	0.21	0.4	0.25
2003	11	0.6	0.31	0.2	0.20	0.3	0.22	0.4	0.27
2004	21	1.1	0.57	0.4	0.45	0.7	0.47	0.8	0.51
2005	19	1.0	0.42	0.4	0.40	0.6	0.40	0.8	0.39
2006	17	0.8	0.37	0.4	0.31	0.6	0.35	0.7	0.36
2007	17	0.7	0.35	0.3	0.27	0.4	0.30	0.6	0.34
2008	21	0.9	0.38	0.4	0.35	0.6	0.36	0.7	0.37
2009	21	0.9	0.38	0.3	0.28	0.5	0.32	0.7	0.32
2010	18	0.8	0.26	0.3	0.20	0.5	0.21	0.6	0.25
2011	31	1.3	0.44	0.6	0.42	0.9	0.41	1.0	0.42
2012	26	1.1	0.37	0.4	0.30	0.6	0.31	0.8	0.32
2013	32	1.4	0.64	0.5	0.55	0.8	0.57	1.0	0.61
2014	22	0.9	0.46	0.3	0.31	0.5	0.34	0.7	0.41
1998-2014	286	0.9	0.39	0.3	0.31	0.5	0.33	0.7	0.36

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.%
25-29	1	0.2	0.2			0.0	1	0.5	0.5
30-34	1	0.2	0.5			0.0	1	0.5	1.1
35-39	1	0.2	0.7			0.0	1	0.5	1.6
40-44	7	1.7	2.4	6	2.7	2.7	1	0.5	2.1
45-49	6	1.5	3.9	2	0.9	3.6	4	2.1	4.3
50-54	19	4.6	8.6	12	5.4	9.0	7	3.7	8.0
55-59	43	10.5	19.1	25	11.3	20.4	18	9.6	17.6
60-64	35	8.6	27.6	20	9.0	29.4	15	8.0	25.5
65-69	50	12.2	39.9	24	10.9	40.3	26	13.8	39.4
70-74	63	15.4	55.3	32	14.5	54.8	31	16.5	55.9
75-79	63	15.4	70.7	42	19.0	73.8	21	11.2	67.0
80-84	60	14.7	85.3	34	15.4	89.1	26	13.8	80.9
85+	60	14.7	100.0	24	10.9	100.0	36	19.1	100.0
All ages	409	100.0		221	100.0		188	100.0	

Included in the statistics are 49.7% multiple primaries in males and 34.6% 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.	Males MI-index	Females Age-spec. mortal.	Females MI-index	Males Prop.all cancers %	Females Prop.all cancers %
0- 4			0.0		0.0			
5- 9			0.0		0.0			
10-14			0.0		0.0			
15-19			0.0		0.0			
20-24			0.0		0.0			
25-29		1	0.0		0.1	1.00		1.6
30-34		1	0.0		0.1	0.25		0.9
35-39		1	0.0		0.1	0.17		0.4
40-44	6	1	0.4	0.26	0.1	0.08	1.3	0.2
45-49	2	4	0.1	0.07	0.3	0.21	0.2	0.3
50-54	12	7	0.9	0.24	0.5	0.19	0.6	0.4
55-59	25	18	2.4	0.46	1.6	0.37	0.8	0.7
60-64	20	15	2.0	0.26	1.4	0.23	0.4	0.4
65-69	24	26	2.5	0.29	2.5	0.35	0.3	0.5
70-74	32	31	3.5	0.38	3.0	0.46	0.4	0.5
75-79	42	21	7.6	0.58	2.9	0.37	0.5	0.3
80-84	34	26	9.7	0.62	4.6	0.79	0.5	0.4
85+	24	36	10.4	0.80	6.2	0.82	0.4	0.4
All ages	221	188					0.4	0.4
Mortality								
Raw			1.2	0.39	1.0	0.40		
WS			0.6	0.34	0.4	0.33		
ES			0.9	0.37	0.6	0.34		
BRD-S			1.2	0.40	0.8	0.37		
PYLL-70								
per 100,000			5.9		4.8			
ES			5.2		4.1			
AYLL-70			10.6		10.2			

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 ←%
C12-C13 Hypopharynx	3	1.5	1	33.3			2	66.7
C15 Oesophagus	4	2.0	3	75.0	1	25.0		
C16 Stomach	5	2.5	3	60.0	2	40.0		
C18 Colon	45	22.4	21	46.7	18	40.0	6	13.3
C19-C20 Rectum	14	7.0	10	71.4	2	14.3	2	14.3
C22 Liver	4	2.0	2	50.0			2	50.0
C23-C24 Bile	4	2.0	1	25.0	1	25.0	2	50.0
C25 Pancreas	11	5.5	1	9.1	6	54.5	4	36.4
C32 Larynx	3	1.5	3	100.0				
C33-C34 Lung	12	6.0	5	41.7	3	25.0	4	33.3
C43 Malign. melanoma	3	1.5	2	66.7			1	33.3
C44 Skin others	8	4.0	3	37.5			5	62.5
C61 Prostate	27	13.4	20	74.1			7	25.9
C62 Testis	4	2.0	4	100.0				
C64 Kidney	8	4.0	5	62.5	2	25.0	1	12.5
C67 Bladder	14	7.0	10	71.4			4	28.6
C70-C72 CNS cancer	3	1.5	1	33.3	1	33.3	1	33.3
C82-C85 NHL	8	4.0	3	37.5			5	62.5
C91-C96 Leukaemia	5	2.5	2	40.0			3	60.0
Other primaries	16	8.0	5	31.3	2	12.5	9	56.3
All mult. primaries	201	100.0	105	52.2	38	18.9	58	28.9

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 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 ←%
C16	Stomach	6	4.5	1	16.7	4	66.7	1	16.7
C18	Colon	17	12.8	9	52.9	7	41.2	1	5.9
C19–C20	Rectum	7	5.3	2	28.6	5	71.4		
C21	Anus/canal	2	1.5	1	50.0	1	50.0		
C23–C24	Bile	2	1.5	1	50.0			1	50.0
C25	Pancreas	7	5.3	1	14.3	3	42.9	3	42.9
C33–C34	Lung	7	5.3	2	28.6	2	28.6	3	42.9
C43	Malign. melanoma	4	3.0	3	75.0			1	25.0
C44	Skin others	7	5.3	5	71.4			2	28.6
C50	Breast	32	24.1	25	78.1	2	6.3	5	15.6
C54	Corpus uteri	6	4.5	2	33.3	3	50.0	1	16.7
C56	Ovary	9	6.8	3	33.3	3	33.3	3	33.3
C67	Bladder	4	3.0	3	75.0			1	25.0
C70–C72	CNS cancer	3	2.3	1	33.3			2	66.7
C76–C79	CUP	3	2.3	1	33.3	1	33.3	1	33.3
C82–C85	NHL	4	3.0	1	25.0	1	25.0	2	50.0
C91–C96	Leukaemia	2	1.5	1	50.0			1	50.0
Other primaries		11	8.3	4	36.4	2	18.2	5	45.5
All mult. primaries		133	100.0	66	49.6	34	25.6	33	24.8

Multiple primaries with number of cases 1 are pooled in category “Other primaries”

ICD-10 C44 (Other malignant neoplasms of skin) is not systematically recorded by MCR and therefore not considered for evaluation as a particular primary but at least as a multiple malignancy.

Table 16

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007-2014
(**First primaries only** *)

Age at death Years	Males n	Females n	Males Age-spec. mortal.	Males MI-index	Females Age-spec. mortal.	Females MI-index	Males Prop.all cancers %	Females Prop.all cancers %
0- 4			0.0		0.0			
5- 9			0.0		0.0			
10-14			0.0		0.0			
15-19			0.0		0.0			
20-24			0.0		0.0			
25-29			0.0		0.0			
30-34		1	0.0		0.1	0.25		1.1
35-39		1	0.0		0.1	0.17		0.4
40-44	6	1	0.4	0.30	0.1	0.10	1.4	0.2
45-49	2	4	0.1	0.07	0.3	0.25	0.2	0.4
50-54	11	5	0.8	0.26	0.4	0.16	0.7	0.3
55-59	20	12	1.9	0.49	1.1	0.31	0.8	0.6
60-64	16	13	1.6	0.28	1.2	0.25	0.4	0.5
65-69	17	18	1.8	0.30	1.7	0.35	0.3	0.4
70-74	19	20	2.1	0.40	1.9	0.39	0.3	0.4
75-79	23	16	4.2	0.59	2.2	0.38	0.4	0.3
80-84	16	18	4.6	0.67	3.2	0.78	0.3	0.4
85+	15	25	6.5	0.71	4.3	0.86	0.3	0.4
All ages	145	134					0.4	0.4
Mortality								
Raw			0.8	0.37	0.7	0.37		
WS			0.4	0.33	0.3	0.30		
ES			0.6	0.35	0.4	0.32		
BRD-S			0.8	0.38	0.5	0.34		
PYLL-70								
per 100,000			5.1		3.6			
ES			4.5		3.1			
AYLL-70			11.3		10.3			

* 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.	Males MI-index	Females Age-spec. mortal.	Females MI-index	Males Prop.all cancers %	Females Prop.all cancers %
0- 4			0.0		0.0			
5- 9			0.0		0.0			
10-14			0.0		0.0			
15-19			0.0		0.0			
20-24			0.0		0.0			
25-29			0.0		0.0			
30-34		1	0.0		0.1	0.33		1.2
35-39		1	0.0		0.1	0.17		0.5
40-44	6	1	0.4	0.30	0.1	0.11	1.5	0.2
45-49	2	4	0.1	0.07	0.3	0.25	0.2	0.4
50-54	10	5	0.8	0.25	0.4	0.17	0.7	0.4
55-59	19	10	1.8	0.46	0.9	0.27	0.8	0.5
60-64	14	12	1.4	0.26	1.1	0.23	0.4	0.5
65-69	13	17	1.4	0.27	1.6	0.37	0.3	0.5
70-74	13	18	1.4	0.31	1.7	0.36	0.2	0.4
75-79	18	13	3.3	0.47	1.8	0.35	0.4	0.3
80-84	14	14	4.0	0.67	2.5	0.67	0.3	0.3
85+	13	25	5.6	0.62	4.3	0.86	0.4	0.4
All ages	122	121					0.4	0.4
Mortality								
Raw			0.7	0.33	0.6	0.36		
WS			0.3	0.30	0.3	0.29		
ES			0.5	0.32	0.4	0.30		
BRD-S			0.7	0.34	0.5	0.33		
PYLL-70								
per 100,000			4.7		3.4			
ES			4.2		2.9			
AYLL-70			11.9		10.4			

* See corresponding tables with multiple primaries.

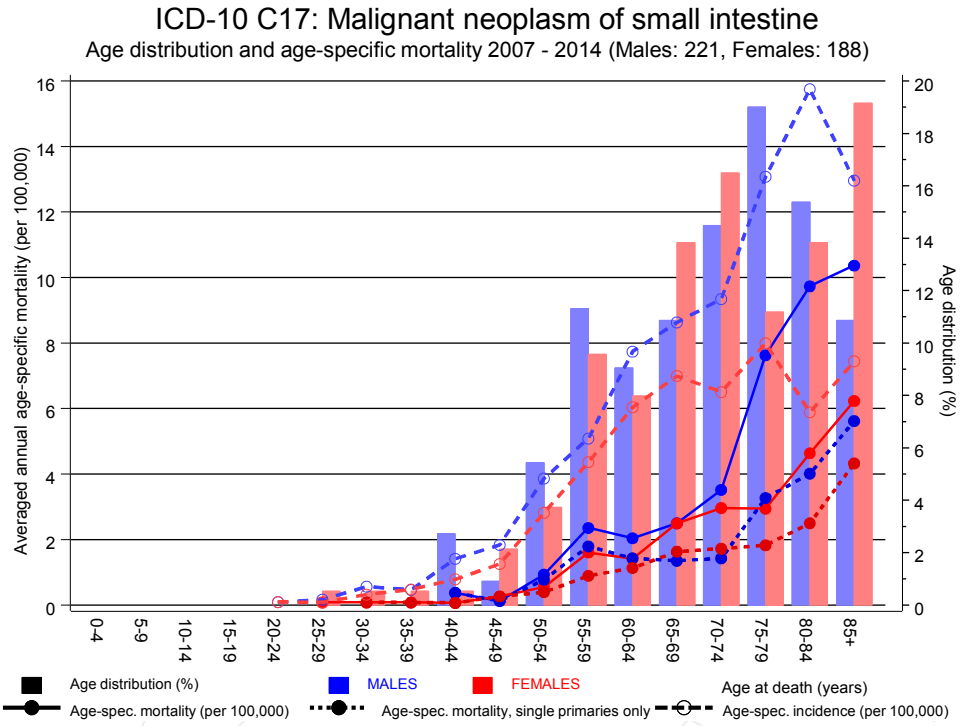


Figure 18. Distribution of age at death (bars) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

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

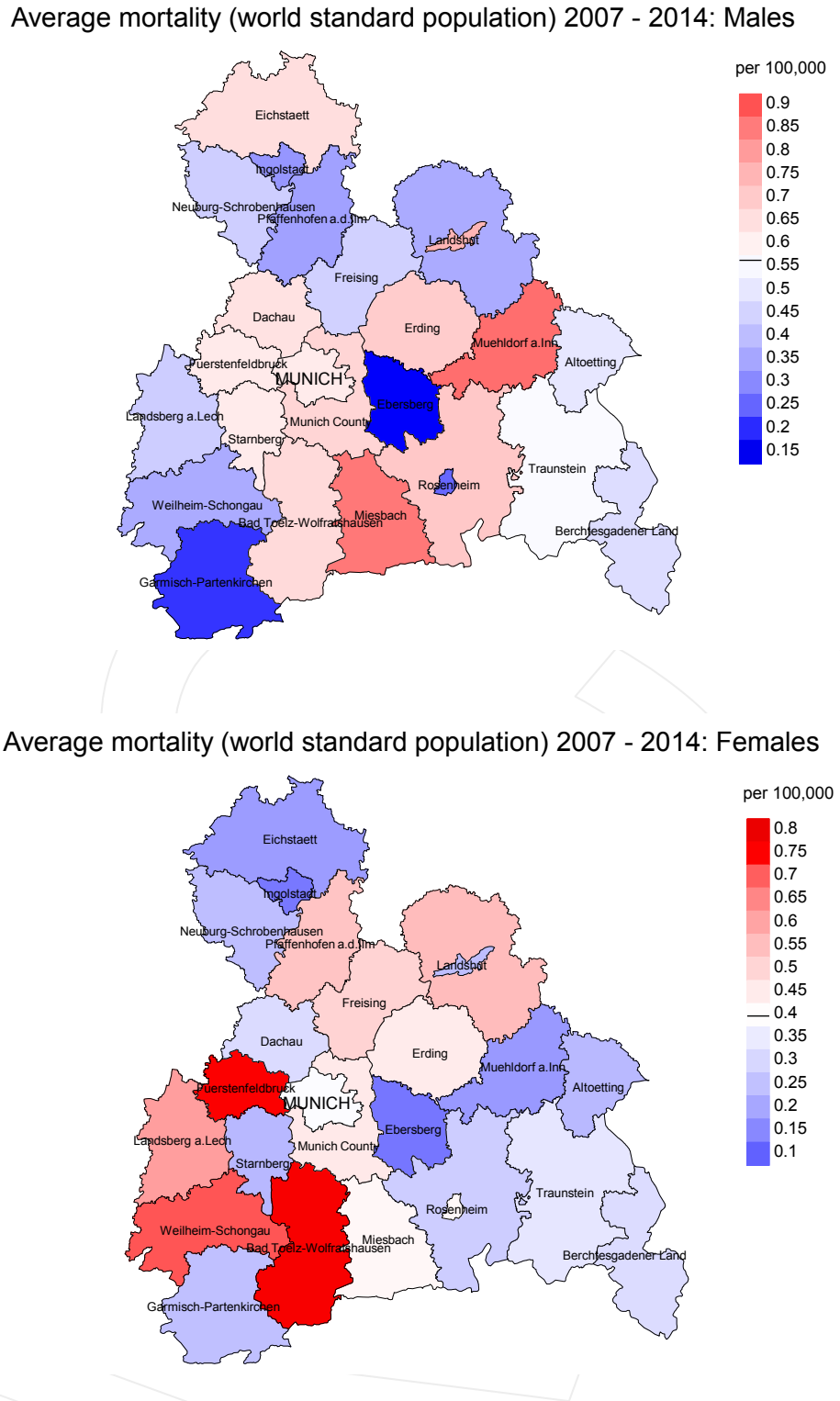
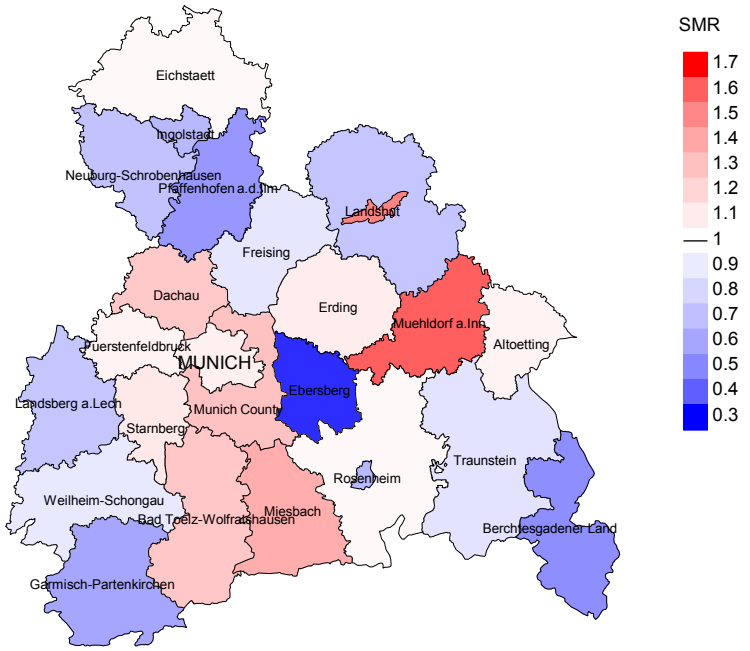


Figure 19a. Map of cancer mortality (world standard population) by county averaged for period 2007 to 2014. According to their individual mortality rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 0.6/100,000 WS N=218, females 0.4/100,000 WS N=186).

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 1 women died from small intestine cancer. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 0.1/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.0 and 0.9/100,000.

Standardized mortality ratio (SMR) 2007 - 2014: Males



Standardized mortality ratio (SMR) 2007 - 2014: Females

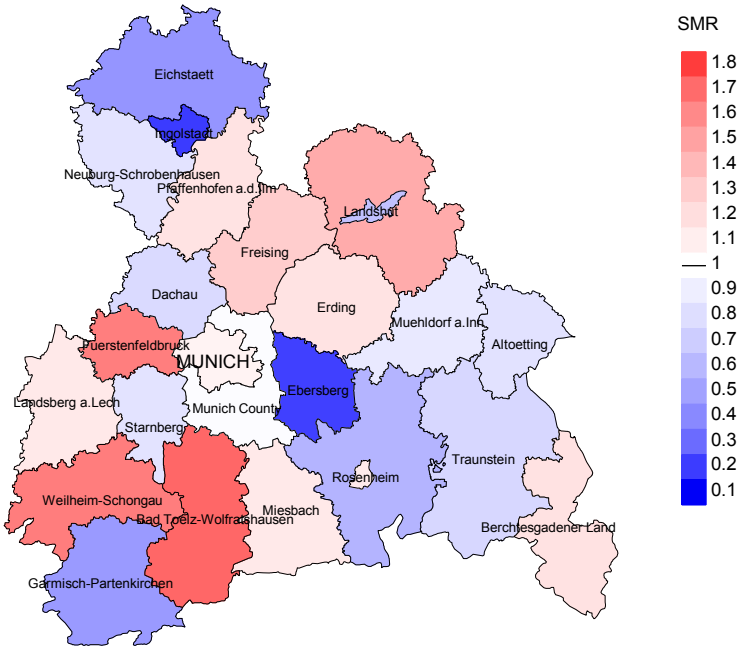


Figure 19b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2007 to 2014. According to their individual SMR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=218, females N=186).

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 1 women died from small intestine cancer. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 0.20. Though, the value of this parameter may vary with an underlying probability of 99% between 0.00 and 1.52, 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

Munich Cancer Registry. ICD-10 C17: Small intestine cancer - Incidence and Mortality [Internet]. 2016 [updated 2016 Apr 13; cited 2016 Jun 1]. Available from: http://www.tumorregister-muenchen.de/en/facts/base/bC17__E-ICD-10-C17-Small-intestine-cancer-incidence-and-mortality.pdf

Copyright

Disclaimer

Index of figures and tables