Munich Cancer Registry

- Survival
- Selection Matrix
- Homepage
- *Deutsch*

GEP-NET: Gastr.ent.pancr. neuroend. tumor

Incidence and Mortality

Year of diagnosis	1998-2014
Patients	2,430
Diseases	2,455
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/bhDNETE-GEP-NET-Gastr.ent.pancr.-neuroend.-tumor-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.

Topography codes (ICD-O-3 2000) used for specifying cancer site

Code	Description
C15	Esophagus
C16	Stomach
C17	Small intestine
C18	Colon
C19	Rectosigmoid junction
C20	Rectum
C21	Anus and anal canal
C22	Liver and intrahepatic bile ducts
C23	Gallbladder
C24	Other and unspecified parts of biliary tract
C25	Pancreas
C26	Other and ill-defined digestive organs

... if additionally existing any of ...

Morphology codes (ICD-O-3 2011) used for specifying cancer site

Code	Description
8013/3	Large cell neuroendocrine carcinoma
8041/3	Small cell carcinoma, NOS
8150/3	Pancreatic endocrine tumor, malignant
8151/3	Insulinoma, malignant
8152/1	Glucagonoma, NOS
8152/3	Glucagonoma, malignant
8153/3	Gastrinoma, malignant
8155/3	Vipoma, malignant
8156/3	Somatostatinoma, malignant
8240/3	Carcinoid tumor, NOS
8241/3	Enterochromaffin cell carcinoid
8243/3	Goblet cell carcinoid
8244/3	Mixed adenoneuroendocrine carcinoma
8245/1	Tubular carcinoid
8246/3	Neuroendocrine carcinoma, NOS
8249/3	Atypical carcinoid tumor

Reference:

Bosman FT, Carneiro F, Hruban RH, Theise ND, editors. WHO Classification of Tumours of the Digestive System 4th edition, IARC, Lyon (2010).

INCIDENCE

Table 1

All patients with invasive cancer by year of diagnosis, proportions of multiple primaries, deaths, and active follow-up

Year of diagnosis	Cases n	Prop. mult. primaries %	Prop. deaths %	Prop. actively followed %
1998	56	25.0	64.3	100.0
1999	63	22.2	50.8	92.1
2000	48	25.0	50.0	97.9
2001	54	38.9	51.9	100.0
2002	93	20.4	48.4	95.7 #
2003	97	29.9	55.7	92.8
2004	123	29.3	46.3	94.3
2005	120	34.2	48.3	94.2
2006	153	30.7	48.4	91.5
2007	186	30.6	44.6	74.7 #
2008	185	26.5	40.0	72.4
2009	184	26.1	44.6	73.4
2010	211	29.4	34.1	69.7
2011	228	25.4	31.1	67.1
2012	246	26.8	25.2	72.0
2013	243	23.9	20.2	98.8
2014	165	26.1	18.2	98.8 ##
1998-2014	2455	27.5	37.9	83.5

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

Year of diagnosis	All n	Males n	Females n	Prop. males %
1998	56	31	25	55.4
1999	63	33	30	52.4
2000	48	23	25	47.9
2001	54	30	24	55.6
2002	93	52	41	55.9
2003	97	49	48	50.5
2004	123	70	53	56.9
2005	120	68	52	56.7
2006	153	93	60	60.8
2007	186	119	67	64.0
2008	185	94	91	50.8
2009	184	99	85	53.8
2010	211	106	105	50.2
2011	228	128	100	56.1
2012	246	124	122	50.4
2013	243	130	113	53.5
2014	165	83	82	50.3
1998-2014	2455	1332	1123	54.3

Table 2

Incidence measures by year of diagnosis
(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	31	25	2.8	2.1	1.7	1.3	2.4	1.7	2.9	1.9
1999	33	30	2.9	2.5	2.1	1.6	2.6	2.0	3.0	2.2
2000	23	25	2.0	2.1	1.3	1.2	1.8	1.5	2.2	1.8
2001	30	24	2.6	2.0	1.6	1.2	2.3	1.6	2.6	1.8
2002	52	41	2.8	2.1	1.8	1.3	2.4	1.6	2.7	1.9
2003	49	48	2.6	2.4	1.5	1.5	2.2	2.0	2.6	2.2
2004	70	53	3.7	2.7	2.2	1.6	3.1	2.1	3.8	2.4
2005	68	52	3.6	2.6	2.1	1.4	3.0	1.9	3.6	2.2
2006	93	60	4.9	3.0	2.7	1.7	3.8	2.2	4.7	2.6
2007	119	67	5.4	2.9	3.4	1.7	4.5	2.2	5.2	2.6
2008	94	91	4.2	3.9	2.6	2.2	3.5	2.9	4.1	3.4
2009	99	85	4.4	3.7	2.5	2.2	3.5	2.8	4.2	3.3
2010	106	105	4.7	4.5	2.7	2.7	3.8	3.6	4.5	4.0
2011	128	100	5.6	4.2	3.1	2.6	4.3	3.3	5.3	3.8
2012	124	122	5.4	5.2	3.1	3.3	4.3	4.1	5.1	4.6
2013	130	113	5.7	4.8	3.3	2.8	4.5	3.7	5.4	4.2
2014	83	82	3.6	3.5	2.2	1.9	2.9	2.5	3.5	2.9
1998-2014	1332	1123	4.2	3.4	2.5	2.0	3.4	2.6	4.1	3.0

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

Table 3

Age distribution parameters by year of diagnosis (All patients)

Year of diagnosis	Cases n	Mean	Std. dev.	Min.	Max.	10%	25%	Median 50%	75%	90%
1998	56	62.7	14.8	13.2	87.9	46.6	55.9	63.4	71.2	81.7
1999	63	58.2	15.7	24.9	87.9	29.8	52.2	60.3	67.7	73.7
2000	48	61.4	16.4	24.7	92.1	39.0	49.5	60.5	74.6	80.6
2001	54	61.8	12.6	29.6	88.5	47.7	54.0	62.4	69.1	77.8
2002	93	61.2	15.8	17.7	90.9	37.0	51.2	62.8	72.0	80.3
2003	97	62.7	13.0	23.5	87.5	48.1	56.2	63.5	72.3	78.9
2004	123	61.7	14.6	13.8	93.3	40.8	52.8	63.4	72.3	77.8
2005	120	64.8	14.4	16.1	90.8	45.8	57.2	66.7	74.9	81.7
2006	153	64.4	13.1	16.8	91.9	45.6	57.0	66.7	73.8	79.2
2007	186	61.8	15.0	15.8	91.2	41.0	54.8	64.1	71.2	79.4
2008	185	62.3	15.5	18.9	93.9	40.6	53.0	65.8	72.9	79.9
2009	184	63.7	16.2	12.4	92.6	38.8	55.8	65.9	75.2	84.0
2010	211	62.3	14.2	14.9	92.4	44.6	53.8	62.5	72.7	79.8
2011	228	62.4	15.8	15.5	92.9	41.2	51.5	64.9	73.5	81.1
2012	246	61.5	18.0	9.7	101	31.5	53.1	65.2	74.7	80.7
2013	243	62.0	15.6	15.7	96.5	40.7	52.2	65.1	74.0	78.0
2014	165	62.4	16.5	20.3	91.1	40.6	50.6	65.2	74.4	81.8
1998-2014	2455	62.3	15.4	9.7	101	41.2	53.6	64.4	73.3	79.9

Table 3a

Age distribution parameters by year of diagnosis (MALES)

Year of diagnosis	Cases n	Mean	Std. dev.	Min.	Max.	10%	25%	Median 50%	75%	90%
1998	31	63.1	10.6	32.1	81.7	55.7	58.6	63.6	69.5	76.6
1999	33	56.6	16.5	24.9	85.3	27.6	52.2	59.7	67.7	73.5
2000	23	61.8	14.2	37.4	92.1	43.9	50.0	60.1	73.9	76.6
2001	30	62.6	11.6	34.3	88.5	51.5	54.9	61.2	69.1	78.8
2002	52	60.0	12.5	27.1	88.3	42.3	52.7	61.0	66.6	74.9
2003	49	64.6	9.9	32.4	85.0	52.9	58.8	64.1	70.9	76.9
2004	70	62.5	11.7	27.8	78.9	48.0	54.1	63.6	71.4	76.5
2005	68	64.7	13.5	19.0	87.6	47.7	57.8	66.1	74.8	79.4
2006	93	64.7	12.3	16.8	85.7	48.1	59.1	67.2	73.5	77.0
2007	119	61.3	14.1	15.8	91.2	40.4	54.8	63.2	69.8	78.7
2008	94	62.0	13.8	19.3	85.6	45.1	54.3	64.0	71.5	79.1
2009	99	65.5	13.2	12.4	89.0	50.2	58.1	67.1	74.6	81.8
2010	106	64.1	12.5	26.3	92.4	49.0	56.4	63.5	72.7	80.1
2011	128	64.2	13.2	15.5	89.3	46.3	54.6	66.6	73.5	80.7
2012	124	63.5	14.9	9.7	89.0	42.8	54.4	65.7	74.6	80.4
2013	130	62.5	14.3	19.4	90.4	45.2	52.2	63.9	73.0	78.3
2014	83	60.6	16.8	20.3	87.6	36.7	48.0	64.7	73.2	78.5
1998-2014	1332	62.9	13.6	9.7	92.4	45.2	55.4	64.5	72.5	78.8

Table 3b

Age distribution parameters by year of diagnosis (FEMALES)

Year of diagnosis	Cases n	Mean	Std. dev.	Min.	Max.	10%	25%	Median 50%	75%	90%
1998	25	62.2	19.0	13.2	87.9	32.4	54.3	62.1	77.0	84.2
1999	30	59.9	14.9	26.9	87.9	38.6	52.5	61.6	72.1	76.0
2000	25	61.0	18.4	24.7	92.0	33.1	46.0	63.0	75.5	81.0
2001	24	60.9	13.9	29.6	84.4	38.6	53.7	63.0	70.0	75.7
2002	41	62.9	19.2	17.7	90.9	32.9	49.4	66.3	76.4	84.7
2003	48	60.7	15.4	23.5	87.5	33.3	52.4	62.2	73.0	79.4
2004	53	60.6	17.7	13.8	93.3	35.4	51.7	62.6	74.4	78.9
2005	52	64.9	15.6	16.1	90.8	42.1	56.0	67.8	77.0	82.5
2006	60	64.0	14.4	29.9	91.9	43.8	52.5	64.5	74.0	83.0
2007	67	62.8	16.4	17.8	88.4	41.0	53.5	65.2	74.3	81.7
2008	91	62.6	17.1	18.9	93.9	39.2	48.9	66.9	73.5	81.7
2009	85	61.6	18.9	15.9	92.6	35.0	50.3	62.9	76.5	84.9
2010	105	60.6	15.6	14.9	89.6	39.8	50.9	60.7	72.5	79.8
2011	100	60.1	18.5	17.1	92.9	34.0	46.8	62.8	73.7	82.1
2012	122	59.5	20.5	13.7	101	25.8	46.7	63.5	74.7	83.7
2013	113	61.4	17.0	15.7	96.5	35.1	52.3	66.1	74.0	77.0
2014	82	64.2	16.1	24.4	91.1	43.3	51.5	66.9	76.9	85.3
1998-2014	1123	61.6	17.3	13.2	101	36.3	50.8	64.2	74.3	81.6

Table 4

Age distribution by 5-year age group and gender for period 2007-2014

Age at diagnosis Years	Cases n	%	Cum.%	Males n	%	Cum.%	Females n	%	Cum.%
5-9	1	0.1	0.1	1	0.1	0.1			0.0
10-14	3	0.2	0.2	1	0.1	0.2	2	0.3	0.3
15-19	19	1.2	1.4	4	0.5	0.7	15	2.0	2.2
20-24	26	1.6	3.0	7	0.8	1.5	19	2.5	4.7
25-29	30	1.8	4.8	15	1.7	3.2	15	2.0	6.7
30-34	33	2.0	6.8	11	1.2	4.4	22	2.9	9.5
35-39	45	2.7	9.5	15	1.7	6.1	30	3.9	13.5
40-44	69	4.2	13.7	35	4.0	10.1	34	4.4	17.9
45-49	106	6.4	20.1	57	6.5	16.5	49	6.4	24.3
50-54	135	8.2	28.3	78	8.8	25.4	57	7.5	31.8
55-59	160	9.7	38.0	91	10.3	35.7	69	9.0	40.8
60-64	206	12.5	50.5	131	14.8	50.5	75	9.8	50.6
65-69	238	14.4	65.0	142	16.1	66.6	96	12.5	63.1
70-74	219	13.3	78.3	115	13.0	79.6	104	13.6	76.7
75-79	185	11.2	89.5	97	11.0	90.6	88	11.5	88.2
80-84	98	5.9	95.4	59	6.7	97.3	39	5.1	93.3
85+	75	4.6	100.0	24	2.7	100.0	51	6.7	100.0
All ages	1648	100.0		883	100.0		765	100.0	

Included in the statistics are 39.7% multiple primaries in males and 25.6% in females.

Table 5

Age-specific incidence 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 Prop.all cancers n=91183 %	Females Prop.all cancers n=89596 %
0- 4			0.0	0.0		
5- 9	1		0.1	0.0	1.0	
10-14	1	2	0.1	0.2	1.0	2.2
15-19	4	15	0.4	1.6	1.9	9.1
20-24	7	19	0.6	1.7	1.9	6.1
25-29	15	15	1.2	1.2	2.7	2.3
30-34	11	22	0.9	1.8	1.4	1.9
35-39	15	30	1.2	2.4	1.3	1.5
40-44	35	34	2.2	2.2	1.9	0.9
45-49	57	48	3.6	3.2	1.8	0.9
50-54	78	57	6.0	4.5	1.6	0.8
55-59	91	69	8.6	6.1	1.2	0.9
60-64	128	75	13.0	7.1	1.2	0.8
65-69	138	96	14.3	9.2	0.9	0.8
70-74	112	104	12.3	9.9	0.7	0.9
75-79	97	84	17.6	11.8	0.8	0.8
80-84	58	39	16.6	7.0	0.7	0.4
85+	24	51	10.4	8.8	0.4	0.5
All ages	872	760			1.0	0.8
Incidence						
Raw			4.8	4.1		
WS			2.8	2.4		
ES			3.9	3.1		
BRD-S			4.6	3.6		

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).

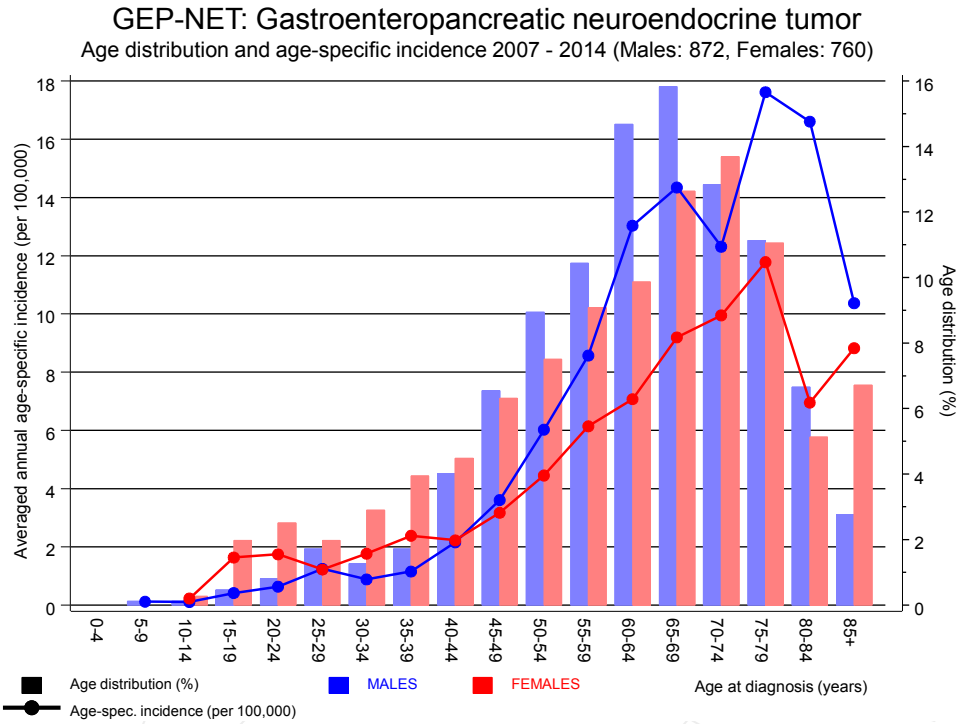


Figure 6. Age distribution and age-specific incidence

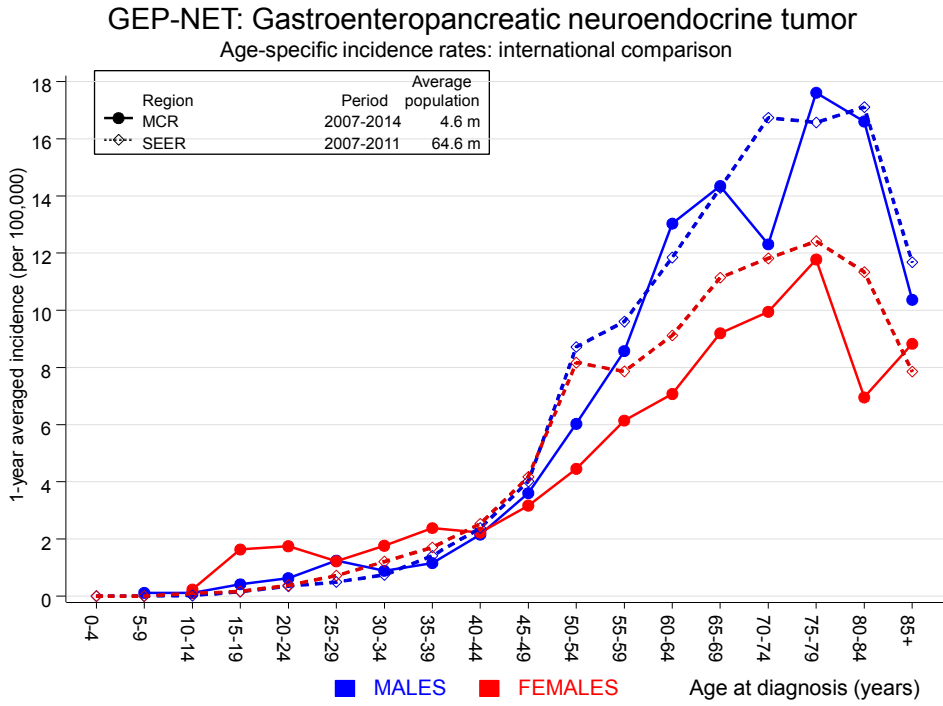


Figure 6a. Age-specific incidence in MCR registry areas compared to SEER (Surveillance, Epidemiology, and End Results, USA).

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.

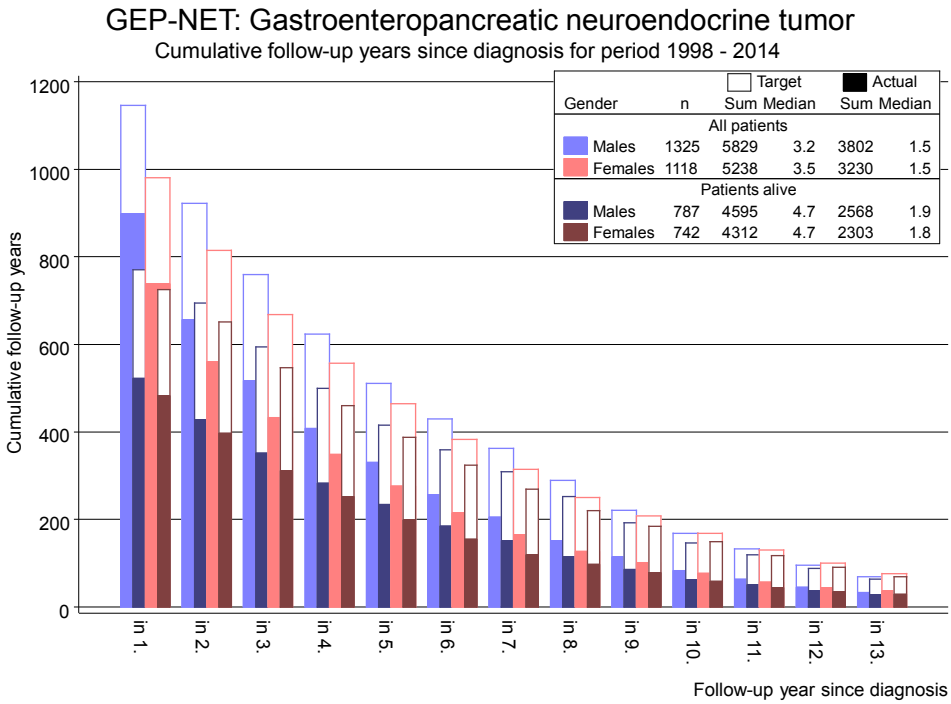


Figure 7. Cumulative follow-up years depending on time since diagnosis

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 %
C12-C13	Hypopharynx	2	0.3	5.9	0.7	21.4		4.5	
C15	Oesophagus	6	1.0	5.8	2.1	12.7	#	13.4	
C16	Stomach	7	2.0	3.5	1.4	7.2	#	13.4	
C17	Small intestine	5	0.3	17.4	5.7	40.7	#	12.7	
C18	Colon	30	4.9	6.1	4.1	8.7	#	67.3	
C19-C20	Rectum	16	2.9	5.5	3.1	8.9	#	35.1	
C22	Liver	6	1.5	4.0	1.5	8.7	#	12.1	16.7
C23-C24	Bile	2	0.5	4.0	0.5	14.4		4.0	
C25	Pancreas	12	1.9	6.3	3.3	11.0	#	27.1	8.3
C33-C34	Lung	13	6.3	2.1	1.1	3.5	#	17.9	15.4
C43	Malign. melanoma	9	2.4	3.7	1.7	7.1	#	17.7	
C46,C49	Soft tissue	2	0.3	7.2	0.9	25.9		4.6	
C61	Prostate	30	15.5	1.9	1.3	2.8	#	38.8	
C64	Kidney	9	1.9	4.7	2.1	8.9	#	19.0	
C65	Renal pelvis	2	0.2	9.2	1.1	33.3	#	4.8	
C66	Ureter	2	0.1	16.0	1.9	57.8	#	5.0	
C67	Bladder	3	2.2	1.4	0.3	4.0		2.1	
C70-C72	CNS cancer	2	0.7	2.7	0.3	9.9		3.4	
C73	Thyroid	2	0.4	5.1	0.6	18.3		4.3	
C76-C79	CUP	2	0.9	2.3	0.3	8.5		3.1	
C82-C85	NHL	10	2.1	4.8	2.3	8.9	#	21.3	
C91-C96	Leukaemia	2	0.8	2.4	0.3	8.6		3.1	100.0
Other primaries		4	1.2	3.5	0.9	8.9		7.6	
Not observed		0	3.1	0.0	0.0	1.2		-8.2	
All mult. primaries		178	53.6	3.3	2.9	3.8	#	334.1	3.4

Patients	1295
Median age at second malignancy (years)	70.0
Person-years	3724
Mean observation time (years)	2.9
Median observation time (years)	1.5

The occurrence of second malignancy is statistically significant.

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

Table 8b

Standardized incidence ratio (SIR, with 95% confidence limits), excess absolute risk (EAR) and DCO rate of second primaries for period 1998–2014
FEMALES

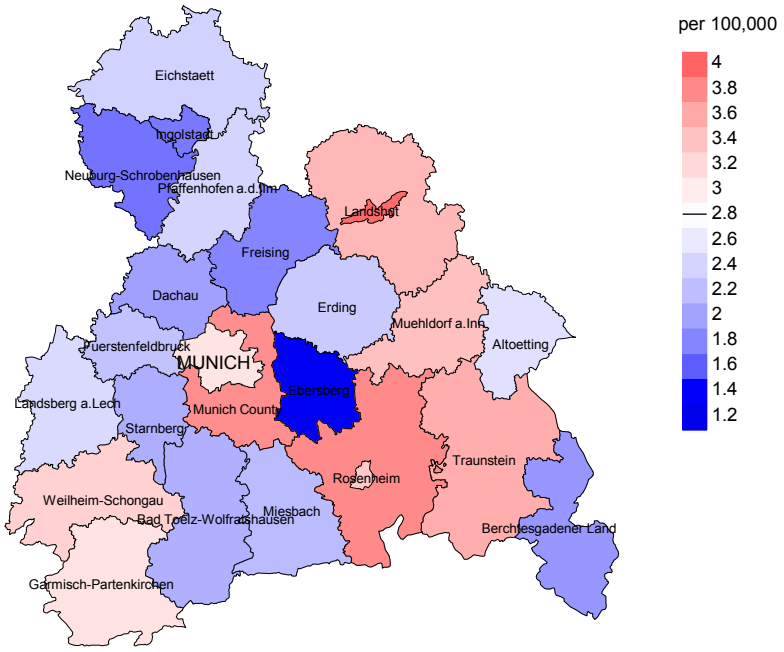
Diagnosis		Observed n	Expected n	SIR	LCL 95%	UCL 95%		EAR	DCO %
C15	Oesophagus	2	0.2	10.5	1.3	38.1	#	5.6	
C16	Stomach	6	1.0	5.8	2.1	12.6	#	15.5	33.3
C17	Small intestine	4	0.2	26.1	7.1	66.7	#	12.0	
C18	Colon	19	2.9	6.5	3.9	10.1	#	50.1	
C19-C20	Rectum	7	1.3	5.5	2.2	11.3	#	17.9	14.3
C25	Pancreas	9	1.3	6.8	3.1	12.9	#	23.9	
C33-C34	Lung	8	2.3	3.5	1.5	6.9	#	17.9	50.0
C43	Malign. melanoma	3	1.2	2.5	0.5	7.2		5.6	
C50	Breast	19	9.7	2.0	1.2	3.0	#	28.9	
C54	Corpus uteri	4	1.7	2.3	0.6	5.9		7.0	
C56	Ovary	5	1.3	4.0	1.3	9.2	#	11.6	20.0
C64	Kidney	4	0.8	5.3	1.4	13.6	#	10.1	25.0
C82-C85	NHL	6	1.2	5.1	1.9	11.2	#	15.1	
Other primaries		8	2.5	3.2	1.4	6.3	#	17.1	12.5
Not observed		0	3.7	0.0	0.0	1.0		-11.4	
All mult. primaries		104	31.2	3.3	2.7	4.0	#	226.9	9.6

Patients	1098
Median age at second malignancy (years)	68.7
Person-years	3208
Mean observation time (years)	2.9
Median observation time (years)	1.5

The occurrence of second malignancy is statistically significant.

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

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



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

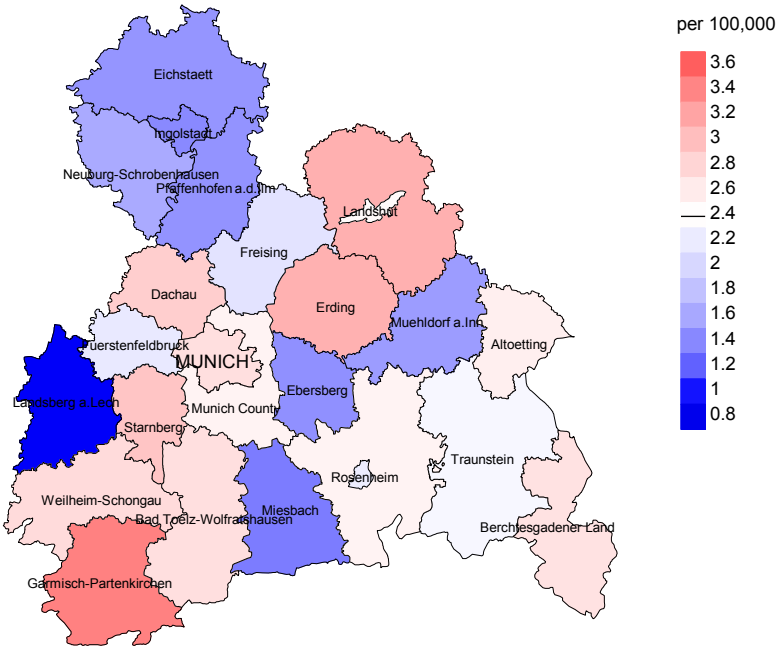
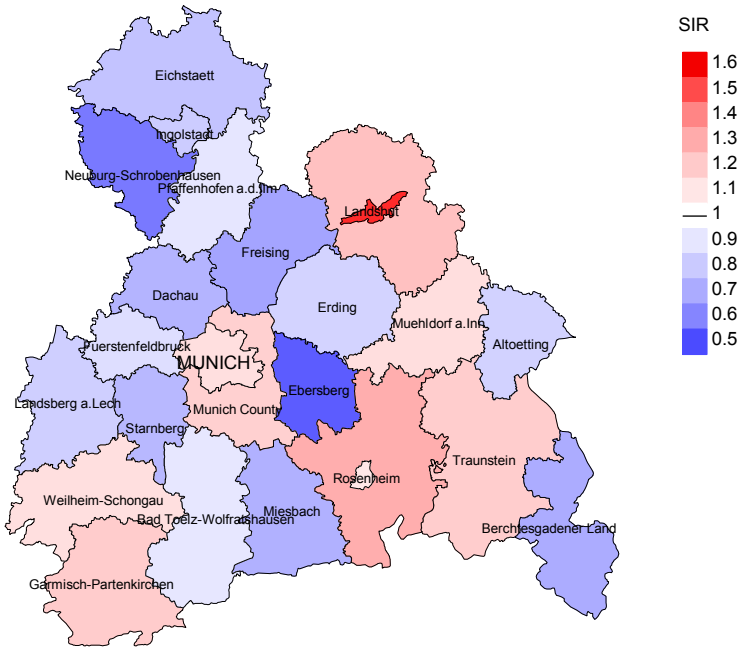


Figure 9a. Map of cancer incidence (world standard population) by county averaged for period 2007 to 2014. According to their individual incidence rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 2.8/100,000 WS N=872, females 2.4/100,000 WS N=760).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 65,347 female residents (averaged) in the period from 2007 to 2014 a total of 12 women were identified with newly diagnosed gastr.ent.pancr. neuroend. tumor. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 1.4/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.6 and 3.1/100,000.

Standardized incidence ratio (SIR) 2007 - 2014: Males



Standardized incidence ratio (SIR) 2007 - 2014: Females

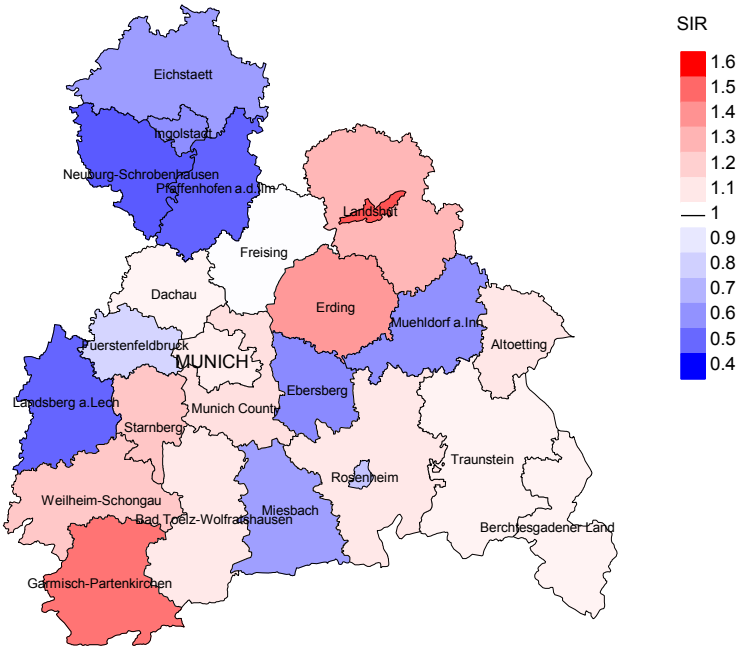


Figure 9b. Map of standardized incidence ratio (SIR) by county averaged for period 2007 to 2014. According to their individual SIR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=872, females N=760).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 64,924 female residents (averaged) in the period from 2007 to 2014 a total of 12 women were identified with newly diagnosed gastr.ent.pancr. neuroend. tumor. Therefore, the mean standardized incidence ratio (SIR) 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 0.24 and 1.17, and is therefore not statistically striking.

MORTALITY

Table 10a

Patient cohorts of incident cancers by year of diagnosis, follow-up status, and deaths among the annual cohorts

(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 %	Deaths n	Prop. deaths %	Prop. deaths with death certific. %
1998	56	100.0	36	64.3	91.7
1999	63	92.1	32	50.8	96.9
2000	48	97.9	24	50.0	91.7
2001	54	100.0	28	51.9	96.4
2002	93	95.7	45	48.4	97.8
2003	97	92.8	54	55.7	100.0
2004	123	94.3	57	46.3	98.2
2005	120	94.2	58	48.3	98.3
2006	153	91.5	74	48.4	98.6
2007	186	74.7	83	44.6	96.4
2008	185	72.4	74	40.0	97.3
2009	184	73.4	82	44.6	98.8
2010	211	69.7	72	34.1	95.8
2011	228	67.1	71	31.1	97.2
2012	246	72.0	62	25.2	91.9
2013	243	98.8	49	20.2	100.0
2014	165	98.8	30	18.2	96.7
1998-2014	2455	83.5	931	37.9	97.0

Table 10b

Annual cohorts of incident cancers and deaths,
and cases deceased the same year of cancer diagnosis

(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	Deaths in same year n	Prop. deaths in same year %
1998	56	11	5	8.9
1999	63	16	7	11.1
2000	48	23	6	12.5
2001	54	15	3	5.6
2002	93	29	11	11.8
2003	97	41	14	14.4
2004	123	45	11	8.9
2005	120	54	20	16.7
2006	153	51	15	9.8
2007	186	72	21	11.3
2008	185	83	23	12.4
2009	184	82	28	15.2
2010	211	84	23	10.9
2011	228	80	23	10.1
2012	246	106	33	13.4
2013	243	124	25	10.3
2014	165	110	25	15.2
1998-2014	2455	1026	293	11.9

Table 10c

Annual cohorts of deaths, and proportion of cancer-related and non-cancer-related deaths

(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	11	81.8	18.2	66.7
1999	16	87.5	12.5	93.8
2000	23	69.6	30.4	77.3
2001	15	80.0	20.0	86.7
2002	29	86.2	13.8	89.7
2003	41	70.7	29.3	82.5
2004	45	73.3	26.7	80.0
2005	54	70.4	29.6	80.4
2006	51	86.3	13.7	89.8
2007	72	83.3	16.7	84.3
2008	83	86.7	13.3	93.8
2009	82	70.7	29.3	79.0
2010	84	76.2	23.8	78.0
2011	80	80.0	20.0	88.5
2012	106	77.4	22.6	81.4
2013	124	80.6	19.4	83.5
2014	110	76.4	23.6	79.1
1998-2014	1026	78.4	21.6	83.3

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	5	70.5	70.9	59.3	68.5
1999	12	67.9	66.5	78.7	67.9
2000	16	68.6	67.8	84.5	67.8
2001	12	68.6	64.9	84.8	65.2
2002	21	66.6	66.1	92.4	66.1
2003	20	74.7	68.3	76.3	72.2
2004	19	69.0	63.7	75.1	64.5
2005	33	74.6	74.6	75.4	74.6
2006	29	73.8	73.3	76.8	73.3
2007	37	69.8	71.1	69.7	71.1
2008	56	68.9	68.1	77.2	68.1
2009	50	70.3	68.3	76.6	68.3
2010	51	72.7	71.3	73.5	69.8
2011	46	71.1	70.3	77.5	70.3
2012	53	76.3	73.2	79.8	73.5
2013	73	73.8	73.1	80.2	73.2
2014	64	72.3	70.7	78.1	70.8
1998-2014	597	71.5	69.9	76.6	70.0

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	6	83.7	83.6	88.1	83.7
1999	4	81.0	81.0		81.0
2000	7	73.7	57.6	77.5	71.6
2001	3	72.0	69.9	92.2	69.9
2002	8	69.4	66.4	72.4	65.6
2003	21	73.2	69.8	75.1	72.4
2004	26	75.8	75.8	72.5	76.1
2005	21	77.9	74.3	86.2	74.9
2006	22	74.8	74.4	75.1	76.1
2007	35	69.4	68.4	83.6	69.4
2008	27	78.9	75.8	90.4	78.9
2009	32	75.8	73.0	85.4	75.0
2010	33	73.2	68.0	81.9	71.2
2011	34	74.4	72.4	81.2	74.2
2012	53	80.1	73.2	89.9	74.8
2013	51	74.3	71.3	88.1	72.4
2014	46	76.3	74.0	85.4	73.9
1998-2014	429	75.2	72.9	84.3	74.1

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	4	0.4	0.13	0.2	0.13	0.3	0.14	0.5	0.16
1999	10	0.9	0.30	0.6	0.28	0.8	0.30	1.0	0.32
2000	13	1.1	0.57	0.7	0.58	1.1	0.59	1.2	0.57
2001	10	0.9	0.34	0.5	0.32	0.7	0.33	1.0	0.38
2002	20	1.1	0.38	0.6	0.35	0.9	0.37	1.1	0.39
2003	13	0.7	0.27	0.4	0.25	0.6	0.27	0.8	0.30
2004	11	0.6	0.16	0.3	0.14	0.5	0.16	0.6	0.17
2005	25	1.3	0.37	0.7	0.31	1.0	0.35	1.4	0.40
2006	25	1.3	0.27	0.6	0.23	1.0	0.26	1.4	0.29
2007	32	1.4	0.28	0.7	0.22	1.1	0.24	1.4	0.28
2008	50	2.2	0.53	1.3	0.49	1.8	0.52	2.2	0.54
2009	34	1.5	0.35	0.8	0.31	1.2	0.33	1.4	0.35
2010	40	1.8	0.38	0.9	0.35	1.3	0.36	1.8	0.40
2011	39	1.7	0.30	0.9	0.28	1.3	0.30	1.6	0.30
2012	40	1.8	0.33	0.8	0.26	1.2	0.29	1.7	0.34
2013	60	2.6	0.47	1.2	0.36	1.9	0.42	2.5	0.48
2014	48	2.1	0.59	1.1	0.48	1.5	0.54	2.0	0.58
1998-2014	474	1.5	0.36	0.8	0.31	1.1	0.34	1.5	0.37

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	5	0.4	0.20	0.1	0.08	0.2	0.12	0.4	0.21
1999	4	0.3	0.13	0.1	0.08	0.2	0.09	0.2	0.10
2000	3	0.2	0.12	0.1	0.11	0.2	0.12	0.2	0.10
2001	2	0.2	0.08	0.1	0.08	0.1	0.08	0.2	0.08
2002	5	0.3	0.12	0.1	0.09	0.2	0.10	0.2	0.10
2003	16	0.8	0.33	0.4	0.28	0.6	0.29	0.7	0.31
2004	22	1.1	0.42	0.5	0.29	0.7	0.34	0.9	0.38
2005	13	0.7	0.25	0.3	0.19	0.4	0.21	0.5	0.24
2006	19	0.9	0.32	0.3	0.21	0.5	0.24	0.7	0.29
2007	28	1.2	0.42	0.6	0.37	0.8	0.39	1.0	0.40
2008	22	0.9	0.24	0.4	0.16	0.5	0.19	0.8	0.22
2009	24	1.0	0.29	0.5	0.21	0.7	0.24	0.8	0.24
2010	24	1.0	0.23	0.5	0.20	0.7	0.20	0.9	0.22
2011	25	1.1	0.25	0.5	0.19	0.7	0.21	0.9	0.23
2012	42	1.8	0.35	0.7	0.22	1.1	0.27	1.3	0.28
2013	40	1.7	0.35	0.7	0.26	1.1	0.29	1.3	0.31
2014	36	1.5	0.44	0.6	0.33	0.9	0.37	1.2	0.42
1998-2014	330	1.0	0.30	0.4	0.22	0.6	0.24	0.8	0.27

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.%
15-19	1	0.2	0.2	1	0.3	0.3			0.0
20-24	0	0.0	0.2			0.3			0.0
25-29	3	0.5	0.7	2	0.6	0.9	1	0.4	0.4
30-34	3	0.5	1.2			0.9	3	1.2	1.7
35-39	5	0.8	2.0	1	0.3	1.2	4	1.7	3.3
40-44	13	2.2	4.2	4	1.2	2.3	9	3.7	7.0
45-49	15	2.5	6.8	5	1.4	3.7	10	4.1	11.2
50-54	33	5.6	12.4	20	5.8	9.5	13	5.4	16.5
55-59	53	9.0	21.4	34	9.8	19.3	19	7.9	24.4
60-64	62	10.5	31.9	41	11.8	31.1	21	8.7	33.1
65-69	88	14.9	46.9	60	17.3	48.4	28	11.6	44.6
70-74	96	16.3	63.2	61	17.6	66.0	35	14.5	59.1
75-79	88	14.9	78.1	57	16.4	82.4	31	12.8	71.9
80-84	76	12.9	91.0	42	12.1	94.5	34	14.0	86.0
85+	53	9.0	100.0	19	5.5	100.0	34	14.0	100.0
All ages	589	100.0		347	100.0		242	100.0	

Included in the statistics are 39.7% multiple primaries in males and 25.6% 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	1		0.1	0.25	0.0		2.8	
20-24			0.0		0.0			
25-29	2	1	0.2	0.13	0.1	0.07	3.2	1.6
30-34		3	0.0		0.2	0.14		2.7
35-39	1	4	0.1	0.07	0.3	0.13	0.6	1.6
40-44	4	9	0.2	0.11	0.6	0.26	0.9	1.4
45-49	5	10	0.3	0.09	0.7	0.20	0.5	0.8
50-54	20	13	1.5	0.26	1.0	0.23	1.1	0.7
55-59	34	19	3.2	0.37	1.7	0.28	1.1	0.7
60-64	41	21	4.2	0.31	2.0	0.28	0.9	0.6
65-69	60	28	6.2	0.42	2.7	0.29	0.8	0.5
70-74	61	35	6.7	0.53	3.3	0.34	0.7	0.5
75-79	57	31	10.4	0.59	4.3	0.35	0.7	0.5
80-84	42	34	12.0	0.71	6.1	0.87	0.6	0.5
85+	19	34	8.2	0.79	5.9	0.67	0.3	0.4
All ages	347	242					0.7	0.6
Mortality								
Raw			1.9	0.39	1.3	0.32		
WS			1.0	0.34	0.6	0.23		
ES			1.4	0.37	0.8	0.26		
BRD-S			1.9	0.40	1.0	0.28		
PYLL-70								
per 100,000			10.1		9.2			
ES			9.1		7.8			
AYLL-70			9.7		13.4			

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	1.3	1	33.3			2	66.7
C16	Stomach	6	2.6			1	16.7	5	83.3
C17	Small intestine	20	8.7			9	45.0	11	55.0
C18	Colon	29	12.7			22	75.9	7	24.1
C19–C20	Rectum	11	4.8			4	36.4	7	63.6
C22	Liver	4	1.7			1	25.0	3	75.0
C23–C24	Bile	3	1.3			1	33.3	2	66.7
C25	Pancreas	13	5.7			5	38.5	8	61.5
C33–C34	Lung	17	7.4	6	35.3	2	11.8	9	52.9
C43	Malign. melanoma	6	2.6	2	33.3	1	16.7	3	50.0
C44	Skin others	10	4.4	6	60.0			4	40.0
C61	Prostate	47	20.5	34	72.3	4	8.5	9	19.1
C64	Kidney	9	3.9	5	55.6	2	22.2	2	22.2
C67	Bladder	13	5.7	10	76.9			3	23.1
C70–C72	CNS cancer	3	1.3			1	33.3	2	66.7
C76–C79	CUP	3	1.3	2	66.7	1	33.3		
C82–C85	NHL	6	2.6	2	33.3	1	16.7	3	50.0
C91–C96	Leukaemia	6	2.6	3	50.0			3	50.0
Other primaries		20	8.7	10	50.0			10	50.0
All mult. primaries		229	100.0	81	35.4	55	24.0	93	40.6

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	7	5.2			2	28.6	5	71.4
C17	Small intestine	5	3.7			3	60.0	2	40.0
C18	Colon	14	10.4			7	50.0	7	50.0
C19–C20	Rectum	5	3.7			2	40.0	3	60.0
C25	Pancreas	5	3.7			2	40.0	3	60.0
C33–C34	Lung	12	8.9	4	33.3			8	66.7
C43	Malign. melanoma	5	3.7	5	100.0				
C44	Skin others	3	2.2	2	66.7			1	33.3
C48	Peritoneal	2	1.5	1	50.0	1	50.0		
C50	Breast	30	22.2	21	70.0	3	10.0	6	20.0
C51	Vulva	2	1.5	2	100.0				
C53	Cervix uteri	2	1.5	1	50.0	1	50.0		
C54	Corpus uteri	7	5.2	3	42.9	3	42.9	1	14.3
C56	Ovary	12	8.9	5	41.7	5	41.7	2	16.7
C64	Kidney	3	2.2	1	33.3	1	33.3	1	33.3
C67	Bladder	4	3.0	3	75.0			1	25.0
C70–C72	CNS cancer	4	3.0			1	25.0	3	75.0
C82–C85	NHL	6	4.4	2	33.3			4	66.7
Other primaries		7	5.2	3	42.9			4	57.1
All mult. primaries		135	100.0	53	39.3	31	23.0	51	37.8

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	1		0.1	0.25	0.0		3.0	
20-24			0.0		0.0			
25-29	2	1	0.2	0.13	0.1	0.07	3.6	1.7
30-34		1	0.0		0.1	0.05		1.1
35-39	1	2	0.1	0.07	0.2	0.07	0.6	0.9
40-44	3	9	0.2	0.09	0.6	0.28	0.7	1.6
45-49	5	9	0.3	0.10	0.6	0.20	0.5	0.9
50-54	19	10	1.5	0.29	0.8	0.20	1.2	0.7
55-59	24	15	2.3	0.33	1.3	0.25	0.9	0.7
60-64	32	20	3.3	0.31	1.9	0.31	0.8	0.7
65-69	44	20	4.6	0.44	1.9	0.31	0.8	0.5
70-74	41	28	4.5	0.55	2.7	0.35	0.6	0.6
75-79	32	20	5.8	0.62	2.8	0.33	0.5	0.4
80-84	22	23	6.3	0.81	4.1	0.79	0.4	0.5
85+	15	25	6.5	1.00	4.3	0.69	0.3	0.4
All ages	241	183					0.6	0.5
Mortality								
Raw			1.3	0.37	1.0	0.30		
WS			0.7	0.32	0.4	0.21		
ES			1.0	0.35	0.6	0.24		
BRD-S			1.3	0.38	0.8	0.26		
PYLL-70								
per 100,000			8.4		7.3			
ES			7.6		6.2			
AYLL-70			10.3		13.3			

* See corresponding tables with multiple primaries.

Table 17

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

Age at death Years	Males n	Females n	Males Age-spec. mortal.	MI-index	Females Age-spec. mortal.	MI-index	Males Prop.all cancers %	Females Prop.all cancers %
0- 4			0.0		0.0			
5- 9			0.0		0.0			
10-14			0.0		0.0			
15-19	1		0.1	0.25	0.0		3.0	
20-24			0.0		0.0			
25-29	2	1	0.2	0.13	0.1	0.07	3.9	1.8
30-34		1	0.0		0.1	0.05		1.2
35-39	1	2	0.1	0.07	0.2	0.07	0.6	1.0
40-44	3	8	0.2	0.09	0.5	0.26	0.8	1.6
45-49	5	8	0.3	0.10	0.5	0.19	0.6	0.9
50-54	19	10	1.5	0.31	0.8	0.21	1.3	0.8
55-59	23	13	2.2	0.32	1.2	0.23	1.0	0.7
60-64	31	19	3.2	0.33	1.8	0.31	0.9	0.8
65-69	36	16	3.7	0.39	1.5	0.26	0.8	0.5
70-74	33	27	3.6	0.49	2.6	0.35	0.6	0.7
75-79	24	16	4.4	0.47	2.2	0.29	0.5	0.4
80-84	20	18	5.7	0.74	3.2	0.67	0.5	0.4
85+	12	24	5.2	0.80	4.2	0.67	0.4	0.4
All ages	210	163					0.7	0.6
Mortality								
Raw			1.2	0.34	0.9	0.27		
WS			0.6	0.30	0.4	0.20		
ES			0.9	0.32	0.6	0.23		
BRD-S			1.1	0.35	0.7	0.24		
PYLL-70								
per 100,000			8.2		6.7			
ES			7.4		5.7			
AYLL-70			10.8		13.7			

* See corresponding tables with multiple primaries.

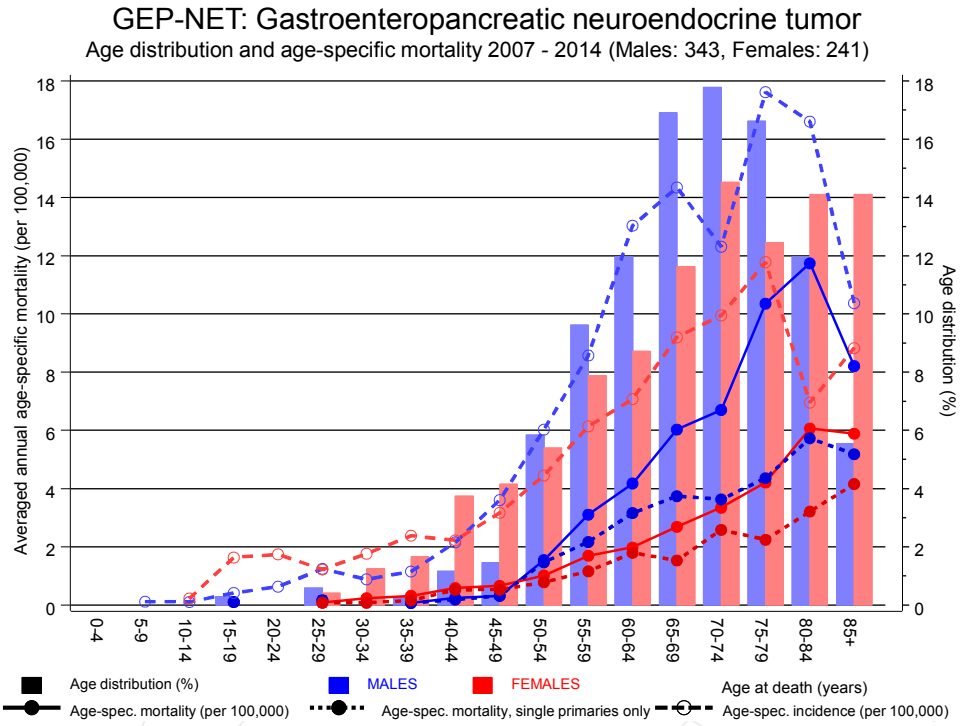
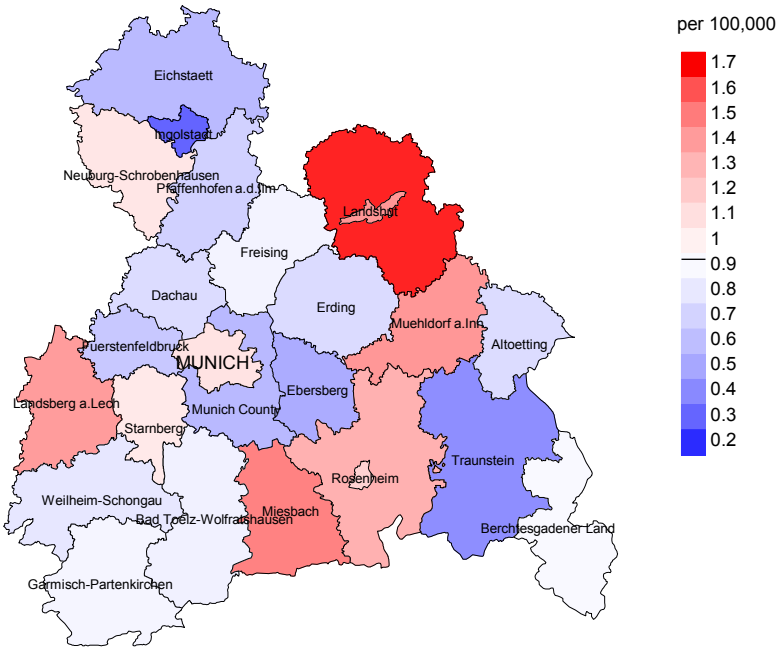


Figure 18. Distribution of age at death (bars) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

The difference between age at diagnosis (Table 3) and age at gastr.ent.pancr. neuroend. tumor-related death (see Table 10) should be considered.

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



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

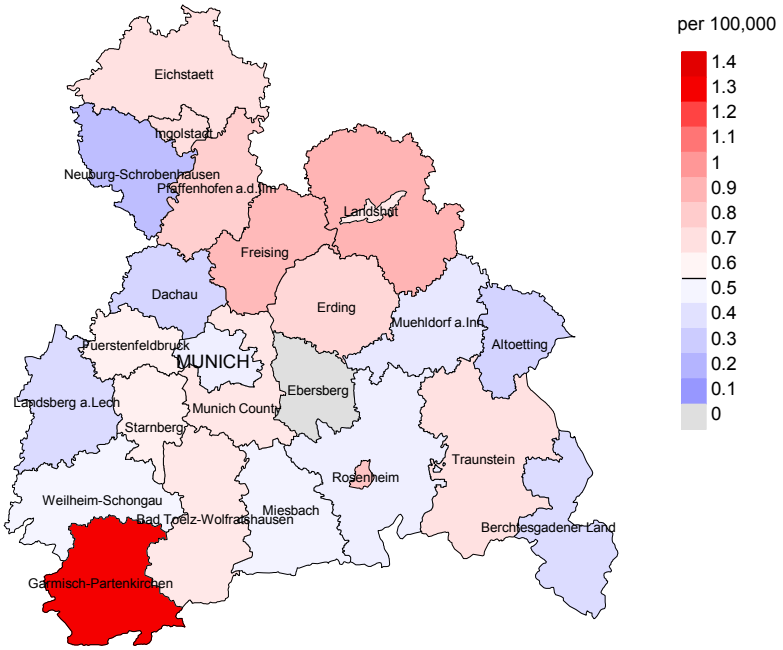
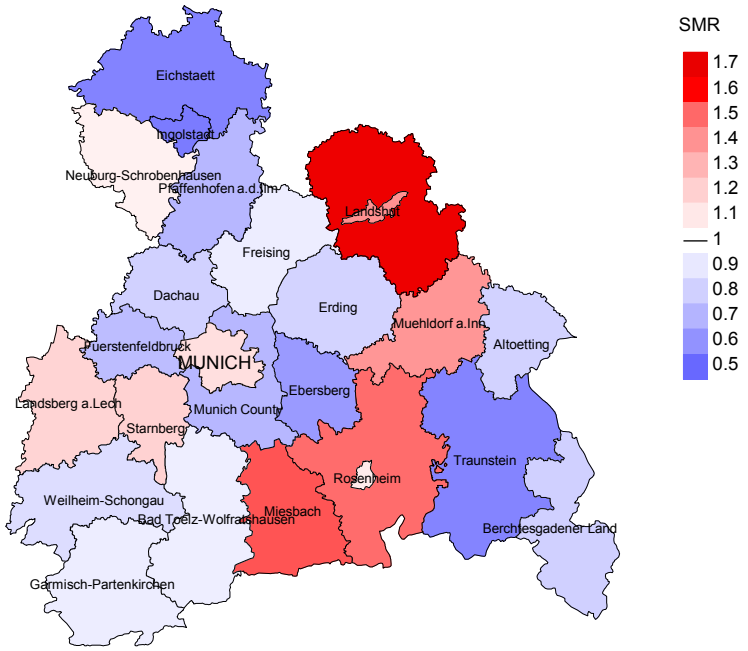


Figure 19a. Map of cancer mortality (world standard population) by county averaged for period 2007 to 2014. According to their individual mortality rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 0.9/100,000 WS N=338, females 0.5/100,000 WS N=236).

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 0 women died from gastr.ent.pancr. neuroend. tumor. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 0.0/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.0 and 1.0/100,000.

Standardized mortality ratio (SMR) 2007 - 2014: Males



Standardized mortality ratio (SMR) 2007 - 2014: Females

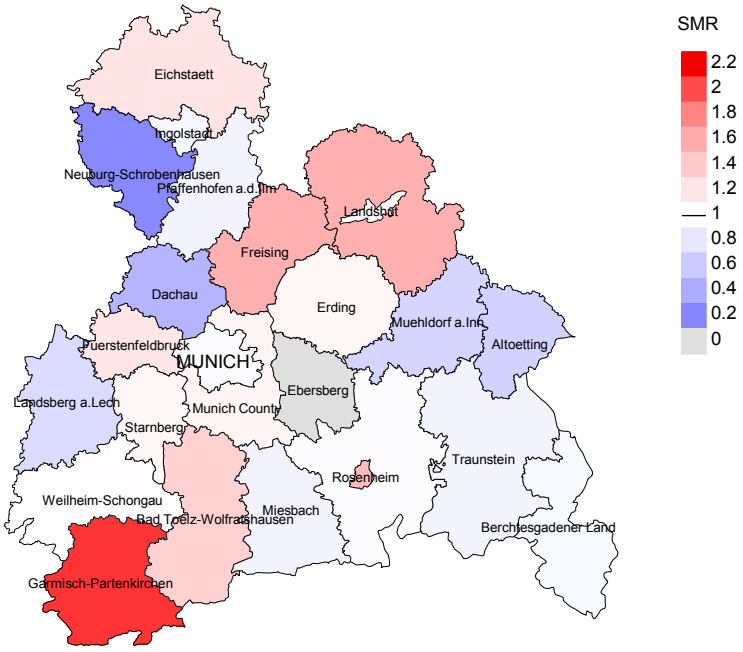


Figure 19b. Map of standardized mortality ratio (SMR) by county averaged for period 2007 to 2014. According to their individual SMR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=338, females N=236).

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 0 women died from gastr.ent.pancr. neuroend. tumor. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 0.00. Though, the value of this parameter may vary with an underlying probability of 99% between 0.00 and 0.84.

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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