

Munich Cancer Registry



- ▶ Survival
- ▶ Selection Matrix
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- ▶ *Deutsch*

ICD-10 C49: Soft tissue cancer

Incidence and Mortality

Year of diagnosis	1998-2016
Patients	2,363
Diseases	2,375
Creation date	08/21/2018
Export date	08/09/2018
Population	4.81 m



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<https://www.tumorregister-muenchen.de/en>

https://www.tumorregister-muenchen.de/en/facts/base/bC49__E-ICD-10-C49-Soft-tissue-cancer-incidence-and-mortality.pdf

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**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 4.69 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, August 2018

[#] 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 2.65 million to 4.10 in 2002, and to 4.69 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
C49.-	Malignant neoplasm of other connective and soft tissue
C49.0	Connective and soft tissue of head, face and neck
C49.1	Connective and soft tissue of upper limb, including shoulder
C49.2	Connective and soft tissue of lower limb, including hip
C49.3	Connective and soft tissue of thorax
C49.4	Connective and soft tissue of abdomen
C49.5	Connective and soft tissue of pelvis
C49.6	Connective and soft tissue of trunk, unspecified
C49.8	Overlapping lesion of connective and soft tissue
C49.9	Connective and soft tissue, unspecified

INCIDENCE

Table 1

Cases with invasive cancer by year of diagnosis, proportions of DCO, further malignancies, deaths, and active follow-up (ALL PATIENTS) (incl. DCO)

Year of diagnosis	All cases n	DCO cases n	Prop. DCO %	Prop. at least 1 further malign. prior + synchron. %	Prop. at least 1 further malign. after %	Prop. deaths %	Prop. actively followed %
1998	83	6	7.2	14.5	9.8	79.5	98.8
1999	85	5	5.9	14.9	9.7	57.6	94.1
2000	90	9	10.0	14.7	9.2	56.7	95.6
2001	71	9	12.7	12.5	9.1	60.6	94.4
2002	111	8	7.2	12.5	9.0	64.9	97.3 #
2003	138	15	10.9	12.6	9.1	63.8	91.3
2004	119	12	10.1	12.6	9.0	58.0	95.8
2005	152	7	4.6	12.4	8.7	57.9	90.1
2006	106	9	8.5	13.5	8.3	61.3	93.4
2007	154	5	3.2	13.3	7.8	46.8	68.2 #
2008	157	6	3.8	13.3	7.4	55.4	75.2
2009	160	7	4.4	14.4	6.8	58.1	76.3
2010	146	5	3.4	14.9	6.5	51.4	71.2
2011	167	8	4.8	16.2	6.6	46.1	72.5
2012	135	9	6.7	16.4	6.1	41.5	65.9
2013	182	8	4.4	17.5	6.3	40.7	65.9
2014	154	5	3.2	17.9	6.0	41.6	78.6
2015	97	8	8.2	18.4	5.5	44.3	96.9
2016	68	7	10.3	18.9	4.4	33.8	70.6 ##
1998-2016	2375	148	6.2	18.9	9.8	52.8	81.7

2,375 cases diagnosed 1998-2016 are related to a total of 2,363 patients. Currently, in 656 (27.8 %) of these 2,363 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 512 / 101 / 43 (21.7 % / 4.3 % / 1.8 %) patients exist having 2 / 3 / 4+ malignancies.

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 retrieved from the respective headings.

How to interpret:

In 2014, a subgroup of 154 cases has been diagnosed, of which 17.9 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 6.0 % of cases, at least one new malignancy has occurred during the follow-up period (all numbers refer to the date of the database export, see cover sheet).

Table 1a

Cases with invasive cancer by year of diagnosis, proportions of DCO, further malignancies, deaths, and active follow-up (MALES) (incl. DCO)

Year of diagnosis	Males n	Males %	DCO cases n	Prop. DCO %	Prop. at least 1 further malign. prior + synchron. %	Prop. at least 1 further malign. after %	Prop. deaths %	Prop. actively followed %
1998	41	49.4	3	7.3	12.2	11.5	82.9	100.0
1999	48	56.5	3	6.3	11.2	11.4	66.7	97.9
2000	43	47.8	5	11.6	12.1	10.6	62.8	95.3
2001	33	46.5	5	15.2	10.9	10.6	63.6	93.9
2002	67	60.4	4	6.0	10.8	10.5	67.2	98.5 #
2003	61	44.2	5	8.2	10.6	10.8	55.7	91.8
2004	67	56.3	8	11.9	10.6	10.5	62.7	98.5
2005	77	50.7	3	3.9	10.8	10.6	54.5	90.9
2006	60	56.6	2	3.3	11.5	9.7	66.7	95.0
2007	74	48.1	3	4.1	11.0	9.3	52.7	70.3 #
2008	82	52.2	2	2.4	11.2	8.7	45.1	67.1
2009	84	52.5	3	3.6	12.8	7.7	60.7	77.4
2010	74	50.7	2	2.7	13.2	7.4	48.6	70.3
2011	86	51.5	3	3.5	14.7	7.0	51.2	75.6
2012	69	51.1	3	4.3	14.9	6.7	39.1	56.5
2013	107	58.8	4	3.7	16.1	6.9	33.6	65.4
2014	82	53.2	1	1.2	16.7	7.6	37.8	82.9
2015	52	53.6	5	9.6	17.0	6.7	59.6	98.1
2016	39	57.4	4	10.3	17.8	7.7	30.8	66.7 ##
1998-2016	1246	52.5	68	5.5	17.8	11.5	53.0	81.7

1,246 cases diagnosed 1998-2016 are related to a total of 1,238 patients. Currently, in 350 (28.3 %) of these 1,238 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 269 / 57 / 24 (21.7 % / 4.6 % / 1.9 %) patients exist having 2 / 3 / 4+ malignancies.

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 retrieved from the respective headings.

How to interpret:

In 2014, a subgroup of 82 cases has been diagnosed, of which 16.7 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 7.6 % of cases, at least one new malignancy has occurred during the follow-up period (all numbers refer to the date of the database export, see cover sheet).

Table 1b

Cases with invasive cancer by year of diagnosis, proportions of DCO, further malignancies, deaths, and active follow-up (FEMALES) (incl. DCO)

Year of diagnosis	Females n	Females %	DCO cases n	Prop. DCO %	Prop. at least 1 further malign. prior + synchron. %	Prop. at least 1 further malign. after %	Prop. deaths %	Prop. actively followed %
1998	42	50.6	3	7.1	16.7	7.9	76.2	97.6
1999	37	43.5	2	5.4	19.0	7.8	45.9	89.2
2000	47	52.2	4	8.5	17.5	7.8	51.1	95.7
2001	38	53.5	4	10.5	14.0	7.4	57.9	94.7
2002	44	39.6	4	9.1	14.4	7.3	61.4	95.5 #
2003	77	55.8	10	13.0	14.7	7.2	70.1	90.9
2004	52	43.7	4	7.7	14.8	7.3	51.9	92.3
2005	75	49.3	4	5.3	14.1	6.6	61.3	89.3
2006	46	43.4	7	15.2	15.7	6.6	54.3	91.3
2007	80	51.9	2	2.5	15.8	6.2	41.3	66.3 #
2008	75	47.8	4	5.3	15.5	5.8	66.7	84.0
2009	76	47.5	4	5.3	16.3	5.9	55.3	75.0
2010	72	49.3	3	4.2	16.7	5.5	54.2	72.2
2011	81	48.5	5	6.2	17.7	6.0	40.7	69.1
2012	66	48.9	6	9.1	18.0	5.3	43.9	75.8
2013	75	41.2	4	5.3	18.9	5.5	50.7	66.7
2014	72	46.8	4	5.6	19.2	4.1	45.8	73.6
2015	45	46.4	3	6.7	20.0	4.1	26.7	95.6
2016	29	42.6	3	10.3	20.2	0.0	37.9	75.9 ##
1998-2016	1129	47.5	80	7.1	20.2	7.9	52.6	81.8

1,129 cases diagnosed 1998-2016 are related to a total of 1,125 patients. Currently, in 306 (27.2 %) of these 1,125 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 243 / 44 / 19 (21.6 % / 3.9 % / 1.7 %) patients exist having 2 / 3 / 4+ malignancies.

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 retrieved from the respective headings.

How to interpret:

In 2014, a subgroup of 72 cases has been diagnosed, of which 19.2 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 4.1 % of cases, at least one new malignancy has occurred during the follow-up period (all numbers refer to the date of the database export, see cover sheet).

Table 2

Incidence measures by year of diagnosis including DCO cases
(with respect to registry area expansion from 2.65 to 4.10 m as of 2002,
and from 4.10 to 4.81 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	41	42	3.7	3.6	2.7	2.2	3.5	2.6	4.3	3.1
1999	48	37	4.3	3.1	3.0	2.1	3.9	2.6	4.6	2.9
2000	43	47	3.8	3.9	2.8	2.9	3.5	3.3	4.1	3.7
2001	33	38	2.8	3.1	2.2	2.0	2.8	2.6	3.3	2.9
2002	67	44	3.6	2.2	2.7	1.4	3.3	1.7	3.7	1.9
2003	61	77	3.3	3.9	2.4	2.1	3.0	2.8	3.5	3.4
2004	67	52	3.6	2.6	2.5	1.8	3.1	2.1	3.5	2.4
2005	77	75	4.1	3.8	3.3	2.3	3.8	2.8	3.9	3.4
2006	60	46	3.1	2.3	1.8	1.6	2.6	1.9	3.2	2.0
2007	74	80	3.3	3.5	2.1	2.1	2.7	2.6	3.3	2.9
2008	82	75	3.7	3.2	2.4	1.8	3.1	2.3	3.5	2.8
2009	84	76	3.8	3.3	2.1	1.8	3.0	2.5	3.7	2.9
2010	74	72	3.3	3.1	2.2	1.6	2.8	2.2	3.2	2.6
2011	86	81	3.8	3.5	2.2	1.9	3.0	2.4	3.7	2.8
2012	69	66	3.0	2.8	1.8	1.5	2.4	2.0	2.8	2.3
2013	107	75	4.6	3.1	3.0	1.6	3.8	2.1	4.5	2.5
2014	82	72	3.5	3.0	1.9	1.7	2.6	2.1	3.2	2.5
2015	52	45	2.2	1.8	1.1	0.9	1.6	1.2	2.0	1.5
2016	39	29	1.6	1.2	0.8	0.7	1.2	0.8	1.4	0.9
1998-2016	1246	1129	3.4	2.9	2.2	1.7	2.8	2.2	3.3	2.5

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

Table 3

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

Year of diagnosis	Cases n	Std.		Median						
		Mean	dev.	Min.	Max.	10%	25%	50%	75%	90%
1998	83	60.2	23.3	0.4	93.2	28.3	45.4	66.8	77.2	85.7
1999	85	59.8	17.1	3.5	97.4	38.5	49.6	62.0	72.0	78.6
2000	90	55.7	23.2	0.2	97.1	25.4	37.5	60.0	75.1	82.5
2001	71	59.0	18.4	11.8	95.4	38.0	47.1	58.8	73.0	82.0
2002	111	58.3	23.1	0.0	93.0	30.3	43.2	63.3	76.7	83.9
2003	138	61.6	20.9	5.3	92.5	26.6	52.2	66.1	77.7	84.0
2004	119	58.2	21.3	1.3	96.1	25.6	44.2	64.3	74.0	81.9
2005	152	57.2	22.0	0.2	92.0	28.4	45.8	62.0	73.2	81.9
2006	106	61.1	21.0	1.6	103	33.8	51.5	63.2	78.2	83.9
2007	154	61.7	19.7	0.2	96.4	35.9	52.0	66.3	75.0	81.8
2008	157	62.0	19.7	0.3	101	33.7	50.0	65.2	76.4	85.5
2009	160	65.2	17.7	5.2	94.3	39.8	57.6	68.3	78.1	84.6
2010	146	61.6	19.4	3.4	97.3	33.9	50.1	65.3	75.4	82.1
2011	167	63.6	19.3	0.0	96.8	38.6	50.7	67.7	77.9	86.7
2012	135	64.1	18.9	0.7	98.4	40.1	53.7	66.4	78.0	84.7
2013	182	63.2	21.0	0.0	96.7	34.5	50.5	68.5	77.6	86.2
2014	154	64.8	18.1	1.7	97.1	39.2	54.2	67.7	78.3	85.3
2015	97	68.8	16.9	0.9	96.2	46.9	61.7	72.0	81.1	87.0
2016	68	66.4	19.6	0.0	93.1	34.7	56.8	71.8	78.5	87.9
1998–2016	2375	61.9	20.2	0.0	103	34.1	50.7	65.9	76.7	84.4

Table 3a

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

Year of diagnosis	Cases n	Std.		Median						
		Mean	dev.	Min.	Max.	10%	25%	50%	75%	90%
1998	41	56.9	22.8	0.4	90.8	28.3	40.9	63.3	73.8	82.5
1999	48	60.6	17.5	3.5	97.4	37.2	52.7	62.0	72.1	78.6
2000	43	56.6	22.8	0.2	88.5	28.9	40.2	59.7	71.6	84.3
2001	33	58.8	22.2	11.8	95.4	32.2	47.0	58.1	76.1	87.1
2002	67	55.5	23.6	0.1	92.4	24.5	37.7	60.8	73.6	81.3
2003	61	56.4	22.7	8.1	89.5	21.6	40.4	59.5	70.7	84.0
2004	67	57.6	20.1	1.3	85.8	32.1	44.6	64.3	71.7	78.7
2005	77	52.4	22.6	0.2	90.9	9.2	39.9	58.8	66.9	74.1
2006	60	63.0	17.0	15.9	86.9	37.9	54.4	63.8	77.7	82.6
2007	74	62.4	20.4	0.2	96.4	35.9	54.2	67.9	75.3	80.5
2008	82	59.5	19.3	0.3	95.2	33.7	46.6	62.5	73.2	79.8
2009	84	66.9	19.3	5.2	93.0	36.2	62.1	70.5	79.3	86.9
2010	74	59.1	21.0	3.4	92.7	31.9	47.4	60.1	74.5	82.8
2011	86	63.2	17.9	16.7	95.0	37.2	51.7	67.3	76.0	83.5
2012	69	63.1	18.3	1.3	95.5	32.9	51.5	66.4	75.2	84.4
2013	107	60.7	21.0	0.0	95.9	31.1	46.4	66.0	76.5	83.2
2014	82	65.4	16.4	2.3	87.9	49.8	54.9	67.0	77.5	84.5
2015	52	70.0	18.0	0.9	94.3	46.9	65.5	72.5	82.9	88.5
2016	39	68.9	16.1	29.9	93.1	42.7	59.2	73.1	78.6	89.4
1998–2016	1246	60.9	20.3	0.0	97.4	33.0	50.0	65.1	75.4	83.7

Table 3b

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

Year of diagnosis	Cases n	Std. dev.		Min. Max.		10% 25%		Median		
		Mean	dev.	Min.	Max.	10%	25%	50%	75%	90%
1998	42	63.4	23.7	3.4	93.2	33.0	50.8	72.8	77.9	86.2
1999	37	58.9	16.7	17.4	87.7	38.5	47.1	63.2	69.9	83.0
2000	47	54.8	23.8	0.4	97.1	20.6	34.8	60.3	75.8	80.7
2001	38	59.1	14.5	26.1	85.9	39.8	48.6	60.0	70.1	81.0
2002	44	62.5	21.9	0.0	93.0	33.1	49.3	67.8	79.1	85.7
2003	77	65.6	18.6	5.3	92.5	38.2	58.3	67.8	78.9	84.0
2004	52	59.0	22.9	2.4	96.1	21.5	42.0	64.2	74.7	84.4
2005	75	62.2	20.4	2.8	92.0	28.7	52.5	67.3	78.8	82.6
2006	46	58.5	25.2	1.6	103	17.1	40.8	61.7	79.1	86.5
2007	80	61.1	19.2	0.3	88.2	37.4	50.3	66.0	74.1	82.7
2008	75	64.7	20.0	6.1	101	35.3	52.0	67.3	80.0	86.7
2009	76	63.3	15.7	24.9	94.3	41.1	56.4	64.1	74.9	81.9
2010	72	64.3	17.3	21.8	97.3	40.8	52.5	67.6	76.7	81.8
2011	81	64.0	20.7	0.0	96.8	39.7	49.9	68.0	78.6	87.3
2012	66	65.2	19.5	0.7	98.4	41.4	54.7	67.7	81.4	84.9
2013	75	66.7	20.6	0.0	96.7	42.9	54.3	71.8	81.5	88.7
2014	72	64.0	19.9	1.7	97.1	35.9	51.3	68.6	78.5	86.3
2015	45	67.3	15.7	22.0	96.2	47.0	55.4	72.0	80.3	84.6
2016	29	63.1	23.4	0.0	90.7	31.4	44.2	69.5	78.4	86.7
1998-2016	1129	62.9	20.0	0.0	103	34.6	51.6	66.7	77.9	85.1

Table 4

Age distribution by 5-year age group and sex for period 2007-2016
(incl. DCO)

Age at diagnosis Years	Cases			Males			Females		
	n	%	Cum.%	n	%	Cum.%	n	%	Cum.%
0-4	17	1.2	1.2	10	1.3	1.3	7	1.0	1.0
5-9	6	0.4	1.6	3	0.4	1.7	3	0.4	1.5
10-14	9	0.6	2.3	6	0.8	2.5	3	0.4	1.9
15-19	15	1.1	3.3	8	1.1	3.6	7	1.0	3.0
20-24	17	1.2	4.5	9	1.2	4.8	8	1.2	4.2
25-29	16	1.1	5.6	7	0.9	5.7	9	1.3	5.5
30-34	44	3.1	8.7	26	3.5	9.2	18	2.7	8.2
35-39	52	3.7	12.4	34	4.5	13.8	18	2.7	10.9
40-44	63	4.4	16.8	27	3.6	17.4	36	5.4	16.2
45-49	67	4.7	21.5	28	3.7	21.1	39	5.8	22.1
50-54	87	6.1	27.7	53	7.1	28.2	34	5.1	27.1
55-59	108	7.6	35.3	54	7.2	35.4	54	8.0	35.2
60-64	119	8.4	43.7	63	8.4	43.8	56	8.3	43.5
65-69	170	12.0	55.6	94	12.6	56.3	76	11.3	54.8
70-74	189	13.3	68.9	103	13.8	70.1	86	12.8	67.7
75-79	163	11.5	80.4	93	12.4	82.5	70	10.4	78.1
80-84	133	9.4	89.8	63	8.4	90.9	70	10.4	88.5
85+	145	10.2	100.0	68	9.1	100.0	77	11.5	100.0
All ages	1420	100.0		749	100.0		671	100.0	

Table 5

Age-specific incidence, DCO rate and proportion of all cancers
for period 2007–2016

Age at diagnosis Years	Males n	Females n	Males Age- spec. incid.	Females Age- spec. incid.	Males DCO rate n=30 %	Females DCO rate n=38 %	Males	Females
							Prop.all cancers n=113978 %	Prop.all cancers n=112253 %
0– 4	10	7	0.9	0.7		14.3	5.1	4.7
5– 9	3	3	0.3	0.3			2.9	3.6
10–14	6	3	0.5	0.3			5.2	3.0
15–19	8	7	0.7	0.6			3.2	3.4
20–24	9	8	0.6	0.6			2.0	2.1
25–29	7	9	0.4	0.6			1.0	1.1
30–34	26	18	1.6	1.1			2.7	1.2
35–39	34	18	2.1	1.1		5.6	2.5	0.7
40–44	27	36	1.4	2.0			1.2	0.8
45–49	28	39	1.4	2.0		2.6	0.7	0.6
50–54	53	34	3.1	2.0	3.8		0.9	0.4
55–59	53	54	3.7	3.7	1.9	1.9	0.6	0.6
60–64	62	56	5.1	4.2	3.2	1.8	0.5	0.5
65–69	93	76	7.8	5.9	3.2		0.5	0.5
70–74	103	86	9.3	6.8	4.9	5.8	0.5	0.6
75–79	93	69	11.7	6.9	5.4	4.3	0.6	0.5
80–84	63	70	13.7	9.9	7.9	7.1	0.6	0.6
85+	67	77	21.9	10.5	10.4	26.0	0.8	0.6
All ages	745	670			4.0	5.7	0.7	0.6
Incidence								
Raw			3.3	2.8				
WS			1.9	1.6				
ES			2.6	2.0				
BRD-S			3.1	2.3				

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).

ICD-10 C49: Malignant neoplasm of other connective and soft tissue

Age distribution and age-specific incidence 2007 - 2016 (Males: 745, Females: 670)

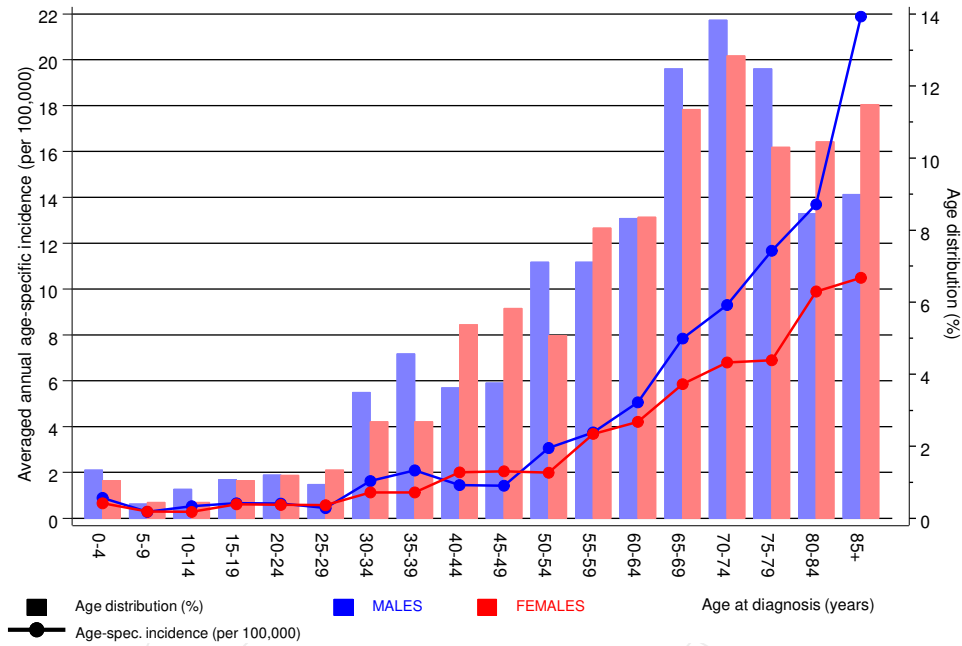


Figure 6. Age distribution (males: mean=63.3 yrs, median=67.6 yrs; females: mean=64.3 yrs, median=67.9 yrs) and age-specific incidence.

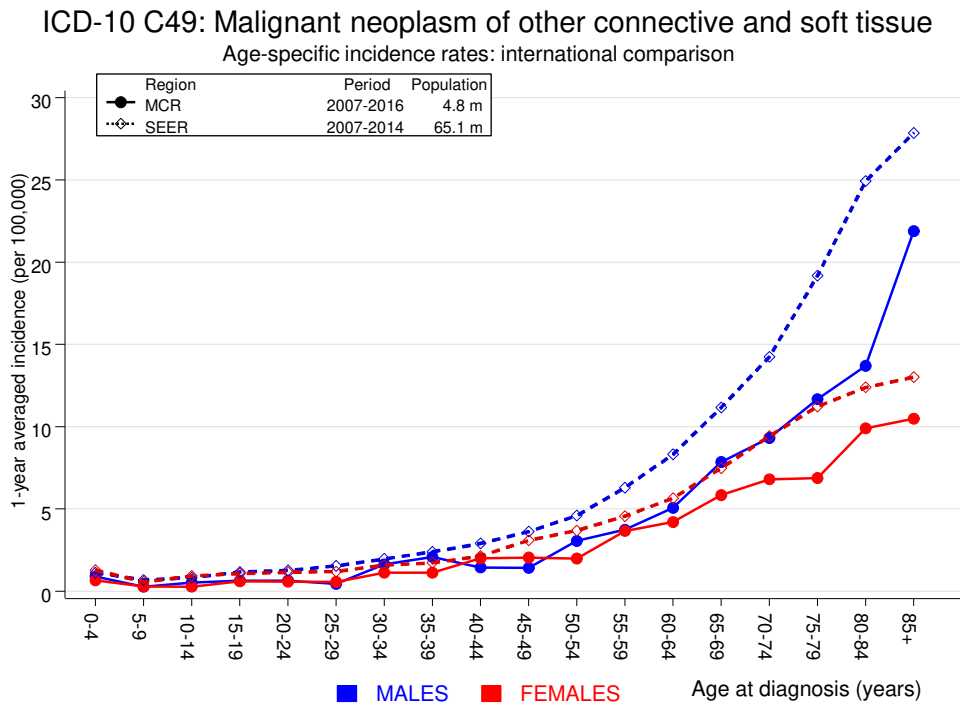


Figure 6a. Age-specific incidence in MCR registry areas compared to SEER (Surveillance, Epidemiology, and End Results, USA).

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>.

Table 7a

Standardized incidence ratio (SIR, with 95% confidence limits), excess absolute risk (EAR) and DCO rate of further malignancies for period 1998–2016

MALES

Diagnosis	Observed n	Expected n	SIR	CI 95%	CI 95%	EAR	DCO %
C09–C10 Oropharynx	2	0.5	3.9	0.5	14.1	3.9	
C15 Oesophagus	3	0.9	3.2	0.7	9.5	5.5	33.3
C16 Stomach	5	2.2	2.3	0.8	5.4	7.5	
C17 Small intestine	4	0.3	14.6	4.0	37.4 #	9.8	
C18 Colon	6	5.0	1.2	0.4	2.6	2.6	
C19–C20 Rectum	2	2.7	0.7	0.1	2.7	-1.9	
C23–C24 Bile	2	0.5	3.9	0.5	14.2	3.9	
C25 Pancreas	2	1.9	1.0	0.1	3.7	0.2	50.0
C30–C31 Sinuses	2	0.1	21.9	2.6	78.9 #	5.0	
C33–C34 Lung	14	5.9	2.4	1.3	4.0 #	21.3	7.1
C38,C45 Mesothelioma	2	0.3	6.0	0.7	21.8	4.4	
C43 Malign. melanoma	9	2.2	4.1	1.9	7.7 #	17.9	
C46,C49 Soft tissue	8	0.3	26.0	11.2	51.2 #	20.3	
C61 Prostate	31	14.5	2.1	1.5	3.0 #	43.5	
C64 Kidney	12	1.7	6.9	3.5	12.0 #	27.0	
C67 Bladder	8	2.4	3.3	1.4	6.6 #	14.7	12.5
C82–C85 NHL	10	2.1	4.7	2.3	8.7 #	20.8	10.0
C91–C96 Leukaemia	4	0.9	4.5	1.2	11.5 #	8.2	
Others, specified	10	5.3	1.9	0.9	3.4	12.3	20.0
Not observed	0	1.7	0.0	0.0	2.2	-4.4	
All further malignancies	136	51.6	2.6	2.2	3.1 #	222.4	5.1

Patients 1151
 Median age at next malignancy (years) 71.6
 Person-years 3796
 Mean observation time (years) 3.3
 Median observation time (years) 1.7

The occurrence of further malignancy listed is statistically significant.

Observed further malignancies with count 1 are pooled in category “Others, specified”.

Table 7b

Standardized incidence ratio (SIR, with 95% confidence limits),
excess absolute risk (EAR) and DCO rate of further malignancies
for period 1998–2016

FEMALES

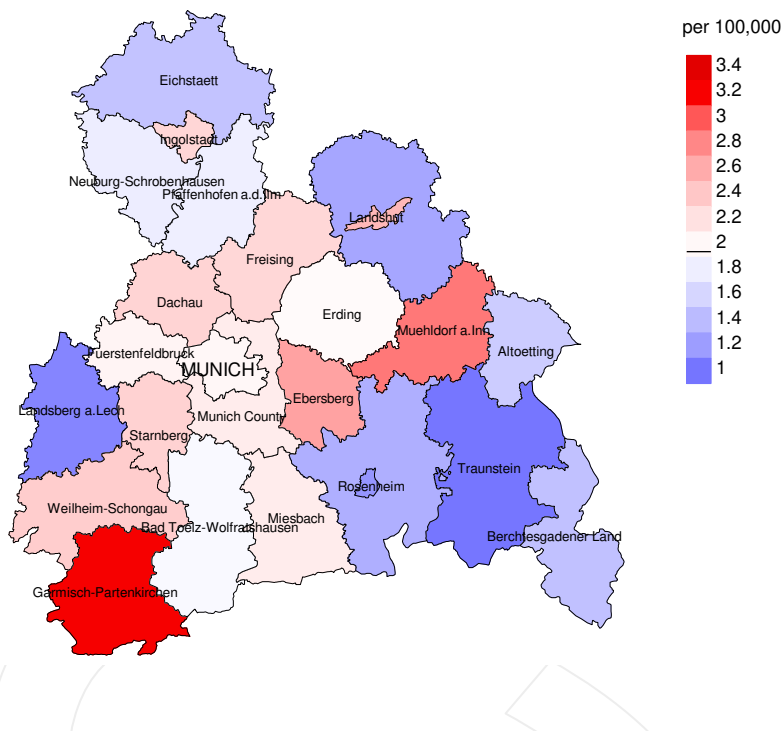
Diagnosis	Observed n	Expected n	SIR	CI 95%	CI 95%	EAR	DCO %
C18 Colon	5	3.3	1.5	0.5	3.5	4.7	
C19-C20 Rectum	6	1.4	4.3	1.6	9.4 #	13.1	
C23-C24 Bile	2	0.5	4.2	0.5	15.1	4.3	50.0
C25 Pancreas	2	1.5	1.3	0.2	4.7	1.3	50.0
C33-C34 Lung	4	2.5	1.6	0.4	4.2	4.4	
C43 Malign. melanoma	5	1.3	3.8	1.2	9.0 #	10.5	20.0
C46,C49 Soft tissue	4	0.2	19.6	5.4	50.3 #	10.8	
C50 Breast	20	10.2	2.0	1.2	3.0 #	27.8	5.0
C53 Cervix uteri	2	0.5	4.1	0.5	14.7	4.3	
C54 Corpus uteri	3	1.8	1.7	0.3	4.8	3.4	
C64 Kidney	6	0.8	7.4	2.7	16.1 #	14.8	16.7
C70-C72 CNS cancer	2	0.5	4.3	0.5	15.5	4.4	
C73 Thyroid	4	0.6	6.4	1.7	16.4 #	9.6	
C82-C85 NHL	5	1.3	3.8	1.2	8.9 #	10.5	
C91-C96 Leukaemia	3	0.6	5.4	1.1	15.8 #	7.0	
Others, specified	9	3.8	2.4	1.1	4.5 #	14.8	22.2
Not observed	0	3.3	0.0	0.0	1.1	-9.3	
All further malignancies	82	34.0	2.4	1.9	3.0 #	136.3	8.5

Patients 1021
 Median age at next malignancy (years) 74.0
 Person-years 3518
 Mean observation time (years) 3.4
 Median observation time (years) 1.8

The occurrence of further malignancy listed is statistically significant.

Observed further malignancies with count 1 are pooled in category "Others, specified".

Average incidence (world standard population) 2007 - 2016: Males



Average incidence (world standard population) 2007 - 2016: Females

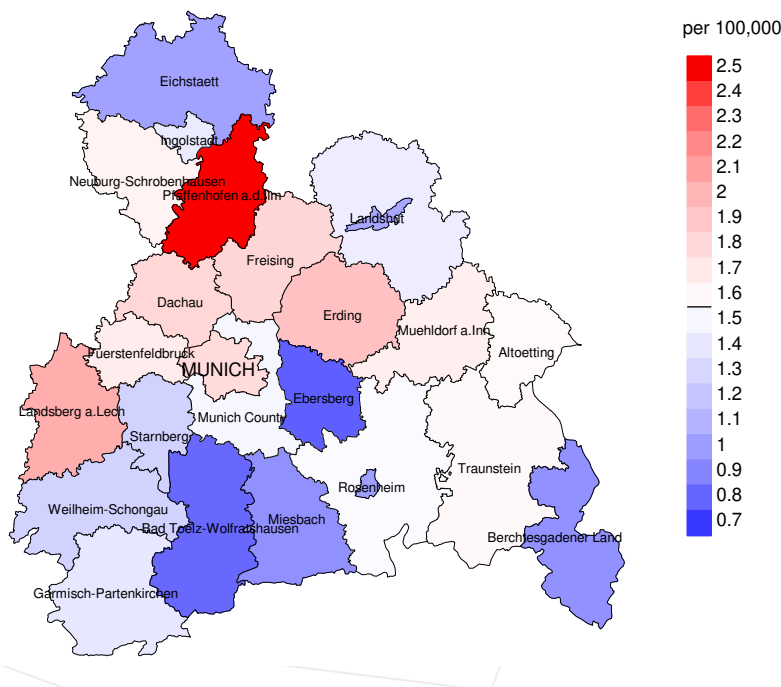
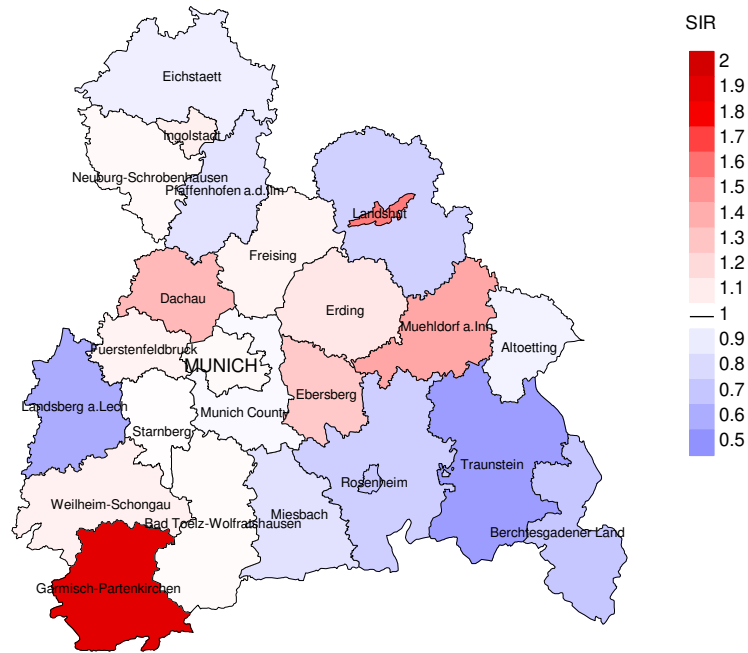


Figure 8a. Map of cancer incidence (world standard population, incl. DCO cases) by county averaged for period 2007 to 2016. According to their individual incidence rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 1.9/100,000 WS N=745, females 1.6/100,000 WS N=670).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 66,416 female residents (averaged) in the period from 2007 to 2016 a total of 11 women were identified with newly diagnosed soft tissue cancer. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 0.8/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.3 and 2.0/100,000.

Standardized incidence ratio (SIR) 2007 - 2016: Males



Standardized incidence ratio (SIR) 2007 - 2016: Females

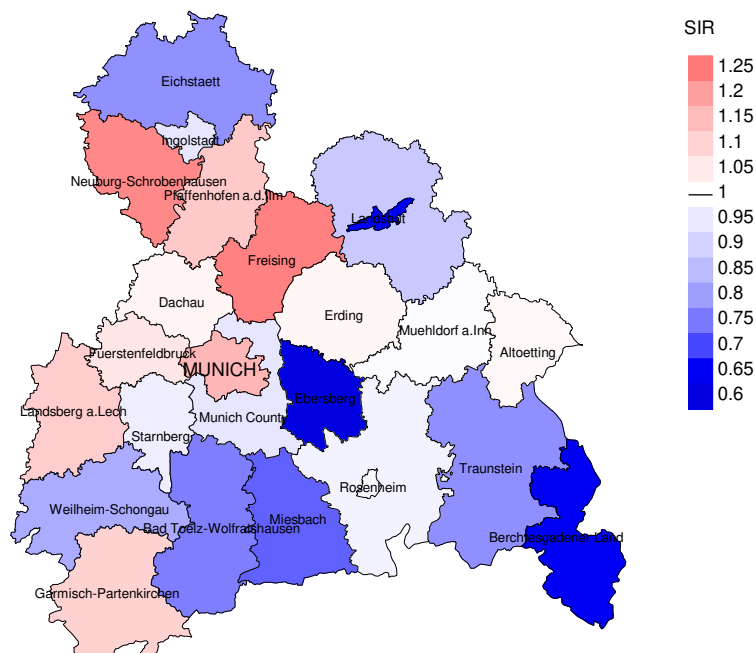


Figure 8b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2007 to 2016. According to their individual SIR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=745, females N=670).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 66,416 female residents (averaged) in the period from 2007 to 2016 a total of 11 women were identified with newly diagnosed soft tissue cancer. Therefore, the mean standardized incidence ratio (SIR) for this cancer type in this area can be calculated at 0.60. Though, the value of this parameter may vary with an underlying probability of 99% between 0.24 and 1.24, and is therefore not statistically striking.

MORTALITY

Table 9a

Annual cohorts: Incident cancers, follow-up status, proportion of DCO, deaths among the annual cohorts and proportion of available death certificates (with respect to registry area expansion from 2.65 to 4.10 m as of 2002, and from 4.10 to 4.81 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	83	98.8	7.2	66	79.5	95.5
1999	85	94.1	5.9	49	57.6	95.9
2000	90	95.6	10.0	51	56.7	100.0
2001	71	94.4	12.7	43	60.6	97.7
2002	111	97.3	7.2	72	64.9	94.4
2003	138	91.3	10.9	88	63.8	96.6
2004	119	95.8	10.1	69	58.0	100.0
2005	152	90.1	4.6	88	57.9	97.7
2006	106	93.4	8.5	65	61.3	100.0
2007	154	68.2	3.2	72	46.8	97.2
2008	157	75.2	3.8	87	55.4	96.6
2009	160	76.3	4.4	93	58.1	96.8
2010	146	71.2	3.4	75	51.4	98.7
2011	167	72.5	4.8	77	46.1	97.4
2012	135	65.9	6.7	56	41.5	96.4
2013	182	65.9	4.4	74	40.7	100.0
2014	154	78.6	3.2	64	41.6	92.2
2015	97	96.9	8.2	43	44.3	95.3
2016	68	70.6	10.3	23	33.8	73.9
1998-2016	2375	81.7	6.2	1255	52.8	96.7

Table 9b

Annual cohorts of incident cancers and deaths, proportion of death certificates and cases deceased within the same year of being diagnosed with cancer (incl. DCO)

(with respect to registry area expansion from 2.65 to 4.10 m as of 2002, and from 4.10 to 4.81 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	83	56	94.6	13	15.7
1999	85	49	93.9	11	12.9
2000	90	46	93.5	15	16.7
2001	71	40	97.5	12	16.9
2002	111	68	95.6	21	18.9
2003	138	71	95.8	31	22.5
2004	119	79	97.5	25	21.0
2005	152	82	98.8	21	13.8
2006	106	83	95.2	20	18.9
2007	154	88	98.9	20	13.0
2008	157	74	97.3	22	14.0
2009	160	106	98.1	30	18.8
2010	146	97	99.0	22	15.1
2011	167	93	98.9	31	18.6
2012	135	93	98.9	21	15.6
2013	182	98	98.0	30	16.5
2014	154	88	97.7	22	14.3
2015	97	123	100.0	31	32.0
2016	68	84	98.8	17	25.0
1998-2016	2375	1518	97.6	415	17.5

Table 9c

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 2.65 to 4.10 m as of 2002,
and from 4.10 to 4.81 m as of 2007, respectively)

Year of death	Deaths n	Prop. cancer- related %	Prop. non-cancer- related %	Prop. cancer recorded on death certificate %
1998	56	71.4	28.6	90.6
1999	49	79.6	20.4	91.3
2000	46	78.3	21.7	90.7
2001	40	90.0	10.0	94.9
2002	68	76.5	23.5	86.2
2003	71	85.9	14.1	88.2
2004	79	79.7	20.3	87.0
2005	82	82.9	17.1	88.9
2006	83	78.3	21.7	82.3
2007	88	84.1	15.9	90.8
2008	74	79.7	20.3	81.9
2009	106	80.2	19.8	83.7
2010	97	81.4	18.6	84.4
2011	93	77.4	22.6	83.7
2012	93	76.3	23.7	88.0
2013	98	81.6	18.4	87.5
2014	88	69.3	30.7	70.9
2015	123	76.4	23.6	78.0
2016	84	65.5	34.5	78.3
1998-2016	1518	78.4	21.6	84.8

Table 10a

Medians of age at death according to the grouping in Table 9
 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	30	71.4	69.3	82.2	72.4
1999	29	64.8	56.7	74.1	61.4
2000	24	65.3	62.8	79.9	62.8
2001	22	61.8	50.2	80.4	61.3
2002	36	73.3	67.1	88.3	70.9
2003	29	72.5	67.6	90.7	66.1
2004	43	71.3	69.9	83.0	71.2
2005	47	67.7	67.3	69.6	67.7
2006	40	70.5	69.1	71.4	69.3
2007	53	71.8	68.9	82.4	69.2
2008	35	77.1	74.8	89.9	73.9
2009	59	74.5	74.0	87.1	74.2
2010	53	73.3	73.0	78.0	73.0
2011	45	75.9	75.0	84.8	75.0
2012	45	76.8	73.1	86.0	75.5
2013	54	74.6	72.6	86.1	72.9
2014	46	80.6	79.6	88.3	80.1
2015	70	76.3	73.3	88.6	74.0
2016	46	76.8	75.2	79.8	75.7
1998–2016	806	73.3	71.1	82.9	71.8

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 10b

Medians of age at death according to the grouping in Table 9
FEMALES

Year of death	Deaths n	Age at death (all causes) Years	Age at death (cancer-related) Years	Age at death (non-cancer-related) Years	Age at death (according to death certificate) Years
1998	26	73.1	66.6	85.4	71.6
1999	20	71.7	70.3	72.5	73.2
2000	22	76.3	75.5	77.2	76.3
2001	18	68.8	68.8		68.8
2002	32	71.9	63.2	81.3	71.9
2003	42	75.6	72.5	85.1	74.0
2004	36	75.0	69.9	87.6	72.4
2005	35	76.0	73.3	77.5	73.5
2006	43	77.9	74.1	83.4	74.9
2007	35	73.7	69.7	88.4	71.1
2008	39	82.9	76.7	89.3	77.1
2009	47	74.4	73.3	86.2	73.3
2010	44	73.1	69.7	87.7	69.7
2011	48	80.0	76.3	84.8	77.6
2012	48	79.5	74.0	85.0	78.1
2013	44	79.1	73.4	93.7	76.8
2014	42	82.9	78.4	86.5	77.4
2015	53	76.9	75.3	92.6	75.5
2016	38	77.9	75.0	84.7	76.8
1998–2016	712	76.2	73.3	85.6	74.8

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 11a

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	21	1.9	0.51	1.3	0.47	1.7	0.50	2.2	0.52
1999	23	2.1	0.48	1.6	0.52	2.0	0.50	2.2	0.48
2000	19	1.7	0.44	1.2	0.43	1.5	0.45	1.8	0.44
2001	18	1.6	0.55	1.2	0.55	1.4	0.51	1.5	0.47
2002	25	1.3	0.37	0.8	0.30	1.2	0.35	1.5	0.39
2003	24	1.3	0.39	0.8	0.34	1.1	0.37	1.4	0.42
2004	35	1.9	0.52	1.2	0.47	1.6	0.50	2.1	0.60
2005	38	2.0	0.49	1.3	0.39	1.7	0.44	2.0	0.51
2006	31	1.6	0.52	1.1	0.57	1.4	0.54	1.6	0.50
2007	46	2.1	0.62	1.2	0.58	1.7	0.63	2.1	0.63
2008	28	1.3	0.34	0.6	0.26	1.0	0.31	1.3	0.37
2009	45	2.0	0.54	1.0	0.47	1.5	0.50	2.0	0.53
2010	40	1.8	0.54	0.8	0.38	1.3	0.45	1.7	0.53
2011	36	1.6	0.42	0.8	0.36	1.2	0.40	1.6	0.44
2012	37	1.6	0.54	0.8	0.45	1.2	0.50	1.6	0.56
2013	44	1.9	0.42	1.2	0.39	1.5	0.40	1.8	0.42
2014	34	1.5	0.41	0.6	0.33	1.0	0.37	1.4	0.43
2015	49	2.1	0.96	1.0	0.90	1.5	0.95	1.9	0.95
2016	29	1.2	0.74	0.7	0.84	0.9	0.75	1.1	0.77
1998-2016	622	1.7	0.50	1.0	0.44	1.3	0.48	1.7	0.51

Table 11b

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	19	1.6	0.45	1.0	0.48	1.3	0.48	1.4	0.47
1999	16	1.3	0.43	0.8	0.39	1.0	0.39	1.2	0.42
2000	17	1.4	0.36	0.6	0.20	0.9	0.26	1.2	0.32
2001	18	1.5	0.47	1.0	0.49	1.1	0.44	1.3	0.47
2002	27	1.4	0.61	0.9	0.64	1.1	0.63	1.2	0.62
2003	37	1.9	0.48	0.9	0.46	1.2	0.43	1.5	0.43
2004	28	1.4	0.54	0.7	0.38	1.0	0.45	1.2	0.51
2005	30	1.5	0.40	0.7	0.29	0.9	0.33	1.2	0.35
2006	34	1.7	0.74	0.8	0.47	1.1	0.58	1.4	0.68
2007	28	1.2	0.35	0.6	0.27	0.8	0.31	1.0	0.35
2008	31	1.3	0.42	0.6	0.32	0.8	0.34	1.0	0.36
2009	40	1.7	0.53	0.7	0.40	1.1	0.43	1.4	0.46
2010	39	1.7	0.54	0.9	0.56	1.2	0.55	1.5	0.56
2011	36	1.5	0.44	0.6	0.29	0.8	0.34	1.1	0.40
2012	34	1.4	0.52	0.6	0.41	0.9	0.44	1.1	0.47
2013	36	1.5	0.48	0.6	0.37	0.9	0.43	1.1	0.45
2014	27	1.1	0.38	0.4	0.22	0.6	0.26	0.7	0.30
2015	45	1.8	1.00	0.7	0.85	1.1	0.88	1.4	0.92
2016	26	1.1	0.90	0.6	0.81	0.7	0.80	0.8	0.84
1998-2016	568	1.5	0.50	0.7	0.40	0.9	0.44	1.2	0.47

Table 12

Age distribution of age at death (cancer-related) for period 2007-2016
(incl. multiple malignancies)

Age at death Years	Cases			Males			Females		
	n	%	Cum.%	n	%	Cum.%	n	%	Cum.%
0-4	4	0.5	0.5	3	0.8	0.8	1	0.3	0.3
5-9	2	0.3	0.8			0.8	2	0.6	0.9
10-14	2	0.3	1.1			0.8	2	0.6	1.5
15-19	3	0.4	1.5	2	0.5	1.3	1	0.3	1.8
20-24	10	1.4	2.9	7	1.8	3.1	3	0.9	2.6
25-29	7	1.0	3.8	4	1.0	4.1	3	0.9	3.5
30-34	12	1.6	5.5	8	2.1	6.2	4	1.2	4.7
35-39	8	1.1	6.6	7	1.8	8.0	1	0.3	5.0
40-44	17	2.3	8.9	10	2.6	10.6	7	2.0	7.0
45-49	25	3.4	12.3	13	3.4	13.9	12	3.5	10.5
50-54	28	3.8	16.2	19	4.9	18.8	9	2.6	13.2
55-59	36	4.9	21.1	17	4.4	23.2	19	5.6	18.7
60-64	60	8.2	29.3	31	8.0	31.2	29	8.5	27.2
65-69	77	10.5	39.9	39	10.1	41.2	38	11.1	38.3
70-74	101	13.8	53.7	57	14.7	55.9	44	12.9	51.2
75-79	104	14.2	67.9	52	13.4	69.3	52	15.2	66.4
80-84	100	13.7	81.6	56	14.4	83.8	44	12.9	79.2
85+	134	18.4	100.0	63	16.2	100.0	71	20.8	100.0
All ages	730	100.0		388	100.0		342	100.0	

Table 13

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007–2016
(incl. multiple malignancies)

Age at death Years	Males		Females		Males		Females	
	n	n	Age- spec. mortal.	MI-index	Age- spec. mortal.	MI-index	Prop.all cancers %	Prop.all cancers %
0– 4	3	1	0.3	0.30	0.1	0.14	20.0	6.7
5– 9		2			0.2	0.67		11.1
10–14		2			0.2	0.67		8.3
15–19	2	1	0.2	0.25	0.1	0.14	4.5	4.5
20–24	7	3	0.5	0.78	0.2	0.38	12.3	9.1
25–29	4	3	0.3	0.57	0.2	0.33	5.4	4.1
30–34	8	4	0.5	0.31	0.3	0.22	7.7	3.3
35–39	7	1	0.4	0.21	0.1	0.06	3.5	0.4
40–44	10	7	0.5	0.37	0.4	0.19	2.0	1.0
45–49	13	12	0.7	0.46	0.6	0.31	1.1	0.9
50–54	19	9	1.1	0.36	0.5	0.26	0.9	0.5
55–59	17	19	1.2	0.32	1.3	0.35	0.5	0.7
60–64	31	29	2.5	0.50	2.2	0.52	0.6	0.8
65–69	39	38	3.3	0.42	2.9	0.50	0.5	0.7
70–74	57	44	5.2	0.55	3.5	0.51	0.6	0.6
75–79	52	52	6.5	0.56	5.2	0.75	0.6	0.7
80–84	56	44	12.2	0.89	6.2	0.63	0.7	0.6
85+	63	71	20.6	0.94	9.7	0.92	1.0	0.8
All ages	388	342					0.7	0.7
Mortality								
Raw			1.7	0.52	1.4	0.51		
WS			0.9	0.45	0.6	0.40		
ES			1.3	0.49	0.9	0.43		
BRD-S			1.6	0.53	1.1	0.47		
PYLL-70								
per 100,000			13.8		9.9			
ES			13.3		9.7			
AYLL-70			17.4		15.1			

Table 14a

Further malignancies in deaths in period 1998–2016
MALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn- chron ±30d n	Syn- chron ±30d ←%	Post n	Post ←%
C09–C10 Oropharynx	5	2.0	2	40.0			3	60.0
C15 Oesophagus	6	2.4	1	16.7			5	83.3
C16 Stomach	4	1.6	1	25.0	1	25.0	2	50.0
C18 Colon	17	6.9	13	76.5	1	5.9	3	17.6
C19–C20 Rectum	6	2.4	4	66.7			2	33.3
C25 Pancreas	5	2.0	2	40.0	1	20.0	2	40.0
C30–C31 Sinuses	3	1.2	2	66.7			1	33.3
C33–C34 Lung	19	7.7	5	26.3	3	15.8	11	57.9
C40–C41 Bone	4	1.6	1	25.0			3	75.0
C43 Malign. melanoma	23	9.3	15	65.2	2	8.7	6	26.1
C44 Skin others	32	13.0	17	53.1			15	46.9
C46,C49 Soft tissue	4	1.6			2	50.0	2	50.0
C61 Prostate	38	15.4	24	63.2	1	2.6	13	34.2
C62 Testis	5	2.0	3	60.0			2	40.0
C64 Kidney	12	4.9	7	58.3	1	8.3	4	33.3
C67 Bladder	9	3.6	3	33.3	1	11.1	5	55.6
C70–C72 CNS cancer	4	1.6	2	50.0			2	50.0
C73 Thyroid	4	1.6	3	75.0			1	25.0
C76–C79 CUP	4	1.6			2	50.0	2	50.0
C82–C85 NHL	19	7.7	9	47.4	1	5.3	9	47.4
C90 Mult. myeloma	3	1.2	2	66.7	1	33.3		
C91–C96 Leukaemia	5	2.0	2	40.0			3	60.0
Others, specified	16	6.5	6	37.5	1	6.3	9	56.3
All further malignancies	247	100.0	124	50.2	18	7.3	105	42.5

Further malignancies with number of cases 1 to 2 are pooled in category "Others, specified".

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 further malignancy.

Table 14b

Further malignancies in deaths in period 1998–2016
FEMALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn- chron ±30d n	Syn- chron ±30d ←%	Post n	Post ←%
C18 Colon	9	4.5	4	44.4			5	55.6
C19–C20 Rectum	5	2.5	2	40.0	1	20.0	2	40.0
C23–C24 Bile	3	1.5					3	100.0
C25 Pancreas	3	1.5					3	100.0
C33–C34 Lung	7	3.5	1	14.3	1	14.3	5	71.4
C43 Malign. melanoma	13	6.5	8	61.5	2	15.4	3	23.1
C44 Skin others	6	3.0	2	33.3	1	16.7	3	50.0
C46,C49 Soft tissue	4	2.0					4	100.0
C50 Breast	79	39.3	61	77.2			18	22.8
C51 Vulva	4	2.0	2	50.0	1	25.0	1	25.0
C53 Cervix uteri	8	4.0	7	87.5			1	12.5
C54 Corpus uteri	10	5.0	7	70.0			3	30.0
C56 Ovary	6	3.0	4	66.7	1	16.7	1	16.7
C64 Kidney	6	3.0	2	33.3	1	16.7	3	50.0
C67 Bladder	3	1.5	1	33.3			2	66.7
C70–C72 CNS cancer	5	2.5	2	40.0			3	60.0
C73 Thyroid	3	1.5	3	100.0				
C82–C85 NHL	7	3.5	4	57.1	2	28.6	1	14.3
C91–C96 Leukaemia	4	2.0	2	50.0			2	50.0
Others, specified	16	8.0	9	56.3	3	18.8	4	25.0
All further malignancies	201	100.0	121	60.2	13	6.5	67	33.3

Further malignancies with number of cases 1 to 2 are pooled in category "Others, specified".

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 further malignancy.

Table 15

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007-2016
(First primaries only *)

Age at death Years	Males		Females		Males		Females	
	n	n	Age- spec. mortal.	MI-index	Age- spec. mortal.	MI-index	Prop.all cancers %	Prop.all cancers %
0- 4	3	1	0.3	0.30	0.1	0.14	21.4	6.7
5- 9		2			0.2	0.67		11.1
10-14		1			0.1	0.50		4.8
15-19	2	1	0.2	0.25	0.1	0.14	4.8	5.0
20-24	6	3	0.4	0.75	0.2	0.38	11.8	9.7
25-29	4	3	0.3	0.67	0.2	0.33	6.0	4.5
30-34	7	4	0.4	0.28	0.3	0.24	6.9	3.8
35-39	6	1	0.4	0.19	0.1	0.07	3.2	0.4
40-44	10	6	0.5	0.43	0.3	0.19	2.2	1.0
45-49	12	11	0.6	0.48	0.6	0.32	1.1	1.0
50-54	15	9	0.9	0.34	0.5	0.38	0.8	0.5
55-59	15	11	1.1	0.33	0.7	0.26	0.5	0.5
60-64	23	24	1.9	0.47	1.8	0.56	0.6	0.8
65-69	31	28	2.6	0.44	2.2	0.50	0.5	0.7
70-74	41	33	3.7	0.55	2.6	0.54	0.6	0.6
75-79	35	35	4.4	0.64	3.5	0.88	0.5	0.6
80-84	42	31	9.1	0.91	4.4	0.65	0.8	0.6
85+	46	56	15.0	1.02	7.6	0.92	1.0	0.8
All ages	298	260					0.7	0.7
Mortality								
Raw			1.3	0.52	1.1	0.51		
WS			0.7	0.44	0.5	0.39		
ES			1.0	0.48	0.7	0.43		
BRD-S			1.3	0.53	0.8	0.47		
PYLL-70								
per 100,000			12.2		8.6			
ES			11.9		8.4			
AYLL-70			18.4		16.3			

* See corresponding tables with multiple malignancies.

Table 16

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007-2016
(**Single primaries only** *)

Age at death Years	Males		Males		Females		Females	
	n	n	Age- spec. mortal.	MI-index	Age- spec. mortal.	MI-index	Prop.all cancers %	Prop.all cancers %
0- 4	3	1	0.3	0.30	0.1	0.17	21.4	6.7
5- 9		2			0.2	1.00		11.1
10-14								
15-19	2	1	0.2	0.25	0.1	0.14	4.8	5.3
20-24	5	2	0.4	0.63	0.1	0.25	9.8	6.5
25-29	4	3	0.3	0.80	0.2	0.33	6.0	4.6
30-34	7	4	0.4	0.29	0.3	0.27	6.9	3.8
35-39	6	1	0.4	0.19	0.1	0.07	3.2	0.4
40-44	10	5	0.5	0.50	0.3	0.19	2.2	0.8
45-49	9	10	0.5	0.38	0.5	0.30	0.9	0.9
50-54	14	9	0.8	0.35	0.5	0.39	0.8	0.5
55-59	12	10	0.8	0.29	0.7	0.26	0.4	0.4
60-64	23	22	1.9	0.52	1.7	0.54	0.6	0.7
65-69	27	25	2.3	0.45	1.9	0.48	0.5	0.6
70-74	32	26	2.9	0.49	2.1	0.46	0.5	0.5
75-79	28	33	3.5	0.57	3.3	0.97	0.4	0.6
80-84	35	26	7.6	0.81	3.7	0.57	0.7	0.5
85+	35	50	11.4	0.85	6.8	0.85	0.8	0.7
All ages	252	230					0.6	0.6
Mortality								
Raw			1.1	0.48	1.0	0.49		
WS			0.6	0.41	0.4	0.37		
ES			0.8	0.45	0.6	0.41		
BRD-S			1.1	0.49	0.7	0.44		
PYLL-70								
per 100,000			11.3		7.6			
ES			11.1		7.4			
AYLL-70			18.7		16.0			

* See corresponding tables with multiple malignancies.

ICD-10 C49: Malignant neoplasm of other connective and soft tissue
 Age distribution and age-specific mortality 2007 - 2016 (Males: 388, Females: 342)

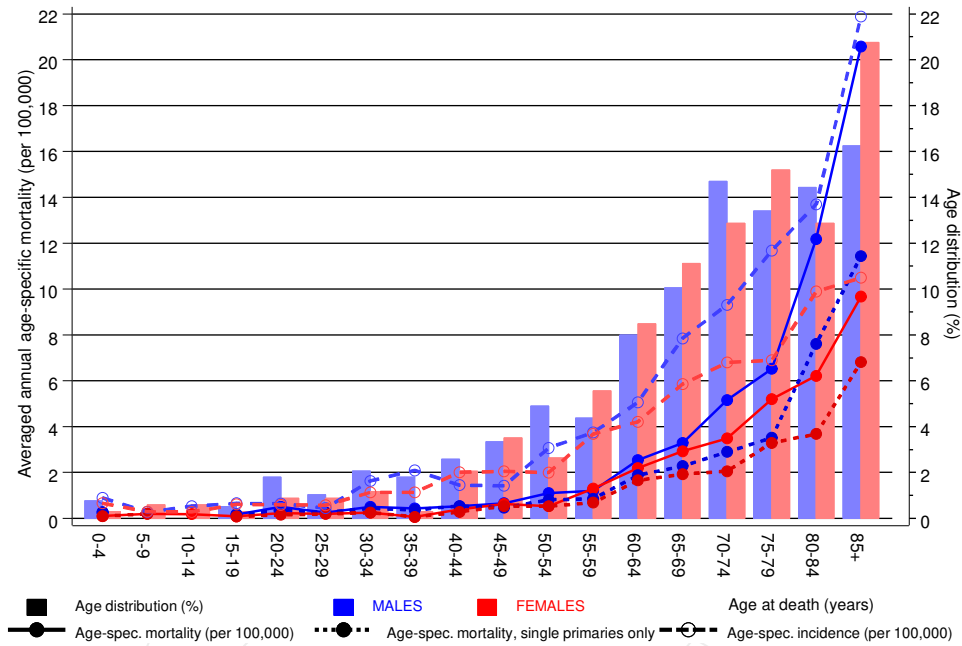
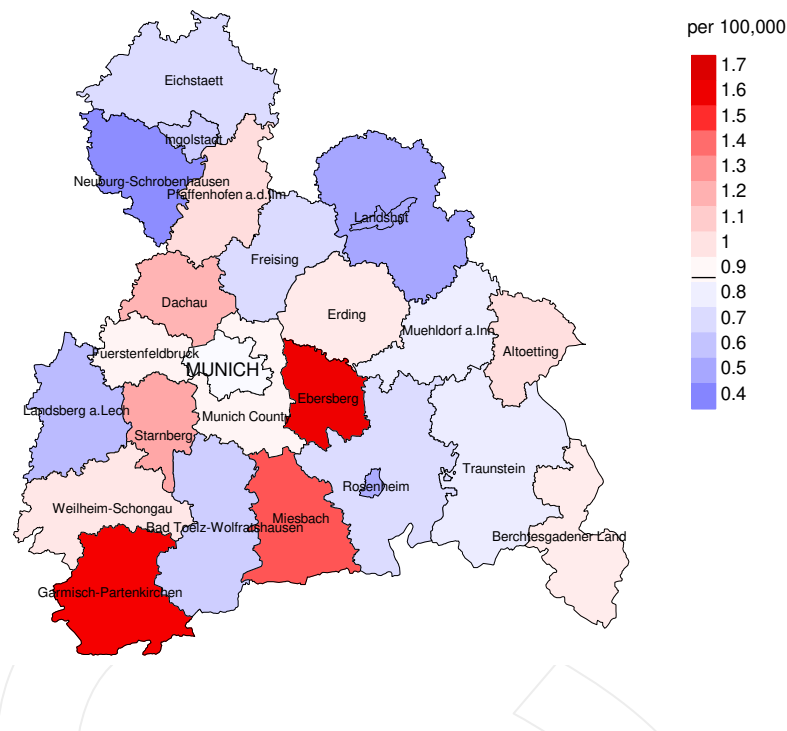


Figure 17. Distribution of age at death (bars; males: mean=65.3 yrs, median=69.3 yrs; females: mean=67.5 yrs, median=70.1 yrs) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

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

Average mortality (world standard population) 2007 - 2016: Males



Average mortality (world standard population) 2007 - 2016: Females

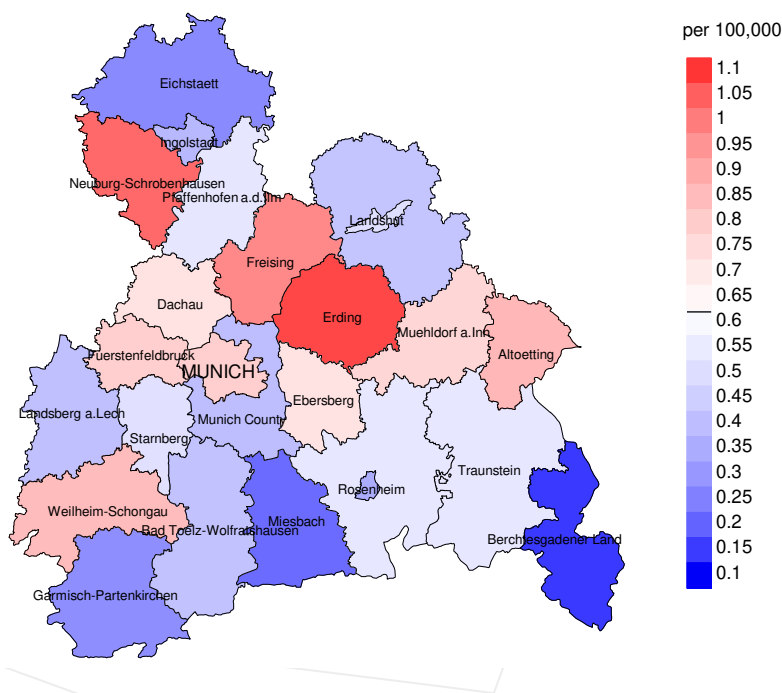
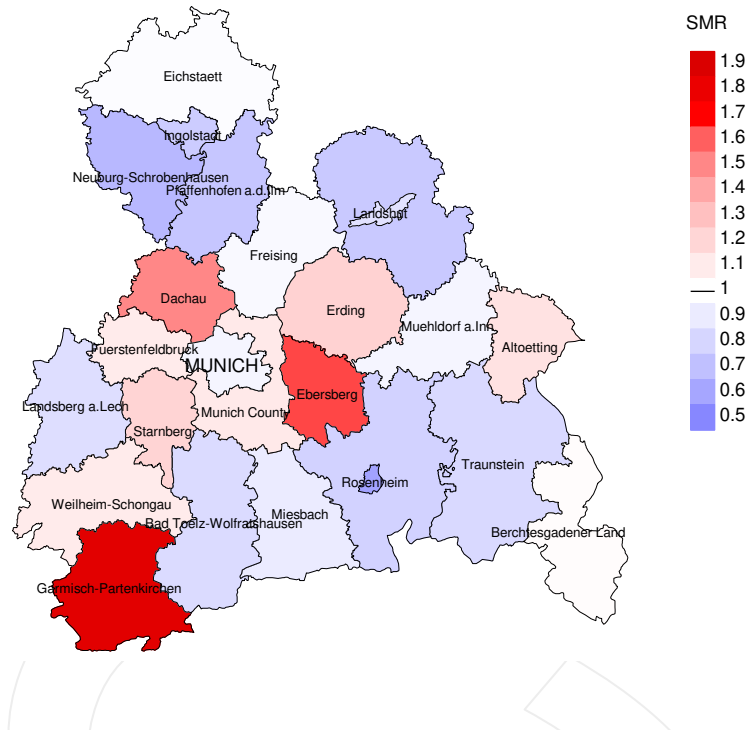


Figure 18a. Map of cancer mortality (world standard population) by county averaged for period 2007 to 2016. According to their individual mortality rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 0.9/100,000 WS N=388, females 0.6/100,000 WS N=342).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 66,416 female residents (averaged) in the period from 2007 to 2016 a total of 10 women died from soft tissue 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 0.2 and 2.1/100,000.

Standardized mortality ratio (SMR) 2007 - 2016: Males



Standardized mortality ratio (SMR) 2007 - 2016: Females

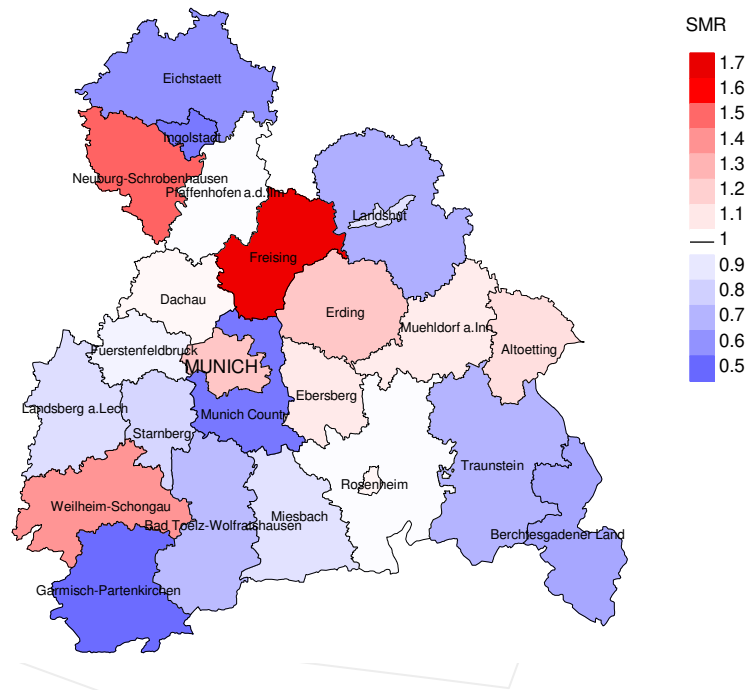


Figure 18b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2007 to 2016. According to their individual SMR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=388, females N=342).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 66,416 female residents (averaged) in the period from 2007 to 2016 a total of 10 women died from soft tissue cancer. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 1.09. Though, the value of this parameter may vary with an underlying probability of 99% between 0.41 and 2.34, 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

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

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