

Munich Cancer Registry



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

ICD-10 C76-C80: Secondary and unspecified sites

Incidence and Mortality

Year of diagnosis	1998-2019
Patients	8,129
Diseases	8,137
Creation date	01/26/2021
Database export	01/07/2021
Population	4.92 m





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

<https://www.tumorregister-muenchen.de/en/facts/base/bC7680E-ICD-10-C76-C80-Secondary-and-unspecified-sites-incidence-and-mortality.pdf>

Index of figures and tables

Fig./Tbl.		Page
1	Annual cases, DCO, mult. malignancies, follow-up / yr	4
2	Incidence by year of diagnosis	7
3	Age distribution parameters by year of diagnosis	8
4	Age distribution by 5-year age group and sex	11
5	Age-specific incidence, DCO rate, proportion malignancies	12
6	Age distribution and age-specific incidence (chart)	13
7	Standardized incidence ratio of further malignancies	14
8a	Map of cancer incidence (BRD-S) by county (chart)	16
8b	Standardized incidence ratio (SIR) by county (chart)	17
9a	Pts incident cohorts and mortality / yr	18
9b	Incidence and mortality by year of diagnosis	19
9c	Cancer-related deaths, death certification available / yr	20
10	Medians of age at death / yr	21
11	Mortality by year of death	23
12	Distribution of age at death	25
13	Age-specific mortality	26
14	Further malignancies in deaths	27
15	Age-specific mortality (first primaries)	30
16	Age-specific mortality (single primaries)	31
17	Age distribution and age-specific mortality (chart)	32
18a	Map of cancer mortality (BRD-S) by county (chart)	33
18b	Standardized mortality ratio (SMR) by county (chart)	34

**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, January 2021

[#] 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 2016) used for specifying cancer site

Code	Description
C76.-	Malignant neoplasm of other and ill-defined sites
C77.-	Secondary and unspecified malignant neoplasm of lymph nodes
C78.-	Secondary malignant neoplasm of respiratory and digestive organs
C79.-	Secondary malignant neoplasm of other and unspecified sites
C80.-	Malignant neoplasm, without specification of site

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	353	146	41.4	5.9	6.4	98.3	99.4
1999	269	115	42.8	6.4	6.5	98.1	99.6
2000	258	116	45.0	6.5	6.5	97.3	99.6
2001	230	103	44.8	6.4	6.6	96.1	99.1
2002	443	209	47.2	7.2	6.5	97.7	100.0 #
2003	429	184	42.9	7.7	6.6	96.7	100.0
2004	434	141	32.5	8.2	6.7	93.1	98.2
2005	394	133	33.8	8.9	6.7	95.9	98.2
2006	371	121	32.6	9.5	6.5	91.6	98.9
2007	423	131	31.0	10.1	6.4	93.4	98.3 #
2008	439	134	30.5	10.6	6.3	91.8	99.8
2009	393	109	27.7	10.9	6.1	91.9	99.2
2010	409	131	32.0	11.1	5.5	89.5	99.0
2011	468	115	24.6	11.3	5.1	89.7	99.1
2012	445	114	25.6	11.8	4.7	88.1	99.1
2013	430	111	25.8	12.4	4.6	90.0	99.1
2014	409	106	25.9	12.7	4.4	88.3	98.3
2015	434	125	28.8	12.8	4.3	83.2	97.9
2016	391	129	33.0	13.2	3.9	89.8	99.5
2017	363	103	28.4	13.5	3.9	85.1	100.0
2018	209	23	11.0	13.9	2.6	71.3	100.0
2019	143	7	4.9	14.1	2.1	54.5	88.1 ##
1998-2019	8137	2606	32.0	14.1	6.4	90.8	98.9

8,137 cases diagnosed 1998-2019 are related to a total of 8,129 patients. Currently, in 1,667 (20.5 %) of these 8,129 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 1,319 / 267 / 81 (16.2 % / 3.3 % / 1.0 %) 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 2017, a subgroup of 363 cases has been diagnosed, of which 13.5 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 3.9 % 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	165	46.7	61	37.0	4.8	7.0	98.8	100.0
1999	126	46.8	47	37.3	5.5	7.1	99.2	99.2
2000	121	46.9	56	46.3	5.6	7.1	97.5	100.0
2001	111	48.3	40	36.0	5.9	7.2	97.3	98.2
2002	215	48.5	92	42.8	7.5	7.2	96.7	100.0 #
2003	217	50.6	78	35.9	8.2	7.1	97.2	100.0
2004	216	49.8	53	24.5	9.3	7.2	92.6	99.1
2005	184	46.7	57	31.0	10.0	7.0	96.2	97.3
2006	198	53.4	61	30.8	11.0	6.9	91.4	99.0
2007	226	53.4	60	26.5	12.0	6.8	94.2	99.1 #
2008	248	56.5	59	23.8	12.6	6.5	89.5	99.6
2009	193	49.1	51	26.4	13.0	6.1	93.8	100.0
2010	201	49.1	48	23.9	13.4	5.2	88.6	99.0
2011	240	51.3	40	16.7	13.6	4.8	90.4	99.6
2012	225	50.6	39	17.3	13.7	4.2	82.7	98.2
2013	220	51.2	51	23.2	14.3	4.1	92.3	99.5
2014	199	48.7	43	21.6	14.6	3.9	87.4	98.5
2015	217	50.0	56	25.8	14.6	3.6	79.7	98.2
2016	198	50.6	63	31.8	15.1	2.9	88.9	99.0
2017	174	47.9	44	25.3	15.4	3.7	87.9	100.0
2018	107	51.2	11	10.3	15.8	2.7	71.0	100.0
2019	80	55.9	4	5.0	16.0	3.9	51.3	85.0 ##
1998–2019	4081	50.2	1114	27.3	16.0	7.0	90.3	98.9

4,081 cases diagnosed 1998-2019 are related to a total of 4,076 patients. Currently, in 936 (23.0 %) of these 4,076 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 721 / 158 / 57 (17.7 % / 3.9 % / 1.4 %) 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 2017, a subgroup of 174 cases has been diagnosed, of which 15.4 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 3.7 % 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	188	53.3	85	45.2	6.9	5.7	97.9	98.9
1999	143	53.2	68	47.6	7.3	5.8	97.2	100.0
2000	137	53.1	60	43.8	7.3	5.9	97.1	99.3
2001	119	51.7	63	52.9	6.8	5.9	95.0	100.0
2002	228	51.5	117	51.3	7.0	5.9	98.7	100.0 #
2003	212	49.4	106	50.0	7.2	6.2	96.2	100.0
2004	218	50.2	88	40.4	7.1	6.2	93.6	97.2
2005	210	53.3	76	36.2	7.9	6.3	95.7	99.0
2006	173	46.6	60	34.7	8.1	6.0	91.9	98.8
2007	197	46.6	71	36.0	8.3	6.0	92.4	97.5 #
2008	191	43.5	75	39.3	8.5	6.0	94.8	100.0
2009	200	50.9	58	29.0	8.8	6.0	90.0	98.5
2010	208	50.9	83	39.9	8.9	5.7	90.4	99.0
2011	228	48.7	75	32.9	9.1	5.4	89.0	98.7
2012	220	49.4	75	34.1	9.8	5.3	93.6	100.0
2013	210	48.8	60	28.6	10.5	5.1	87.6	98.6
2014	210	51.3	63	30.0	10.8	5.0	89.0	98.1
2015	217	50.0	69	31.8	11.0	5.0	86.6	97.7
2016	193	49.4	66	34.2	11.3	4.8	90.7	100.0
2017	189	52.1	59	31.2	11.6	4.0	82.5	100.0
2018	102	48.8	12	11.8	12.0	2.5	71.6	100.0
2019	63	44.1	3	4.8	12.2	0.0	58.7	92.1 ##
1998-2019	4056	49.8	1492	36.8	12.2	5.7	91.3	98.9

4,056 cases diagnosed 1998-2019 are related to a total of 4,053 patients. Currently, in 731 (18.0 %) of these 4,053 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 598 / 109 / 24 (14.8 % / 2.7 % / 0.6 %) 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 2017, a subgroup of 189 cases has been diagnosed, of which 11.6 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 4.0 % 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 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 4.92 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	165	188	14.9	16.0	9.2	5.4	13.8	8.8	17.8	12.6
1999	126	143	11.3	12.1	6.6	4.7	10.1	7.2	13.4	9.6
2000	121	137	10.6	11.4	6.3	4.4	9.7	6.7	12.7	8.6
2001	111	119	9.6	9.8	5.5	3.8	8.6	5.8	11.6	7.6
2002	215	228	11.5	11.6	6.4	3.8	9.9	6.1	13.2	8.6
2003	217	212	11.6	10.8	6.2	3.8	9.8	6.0	13.2	8.2
2004	216	218	11.5	11.0	6.2	4.1	9.4	6.3	12.5	8.4
2005	184	210	9.7	10.6	5.3	3.8	7.8	6.0	10.2	8.0
2006	198	173	10.3	8.6	5.4	3.0	8.3	4.7	11.0	6.3
2007	226	197	10.2	8.5	5.4	3.0	8.1	4.7	10.4	6.5
2008	248	191	11.1	8.2	5.6	3.0	8.5	4.6	10.9	6.3
2009	193	200	8.6	8.6	4.2	3.3	6.5	5.1	8.6	6.4
2010	201	208	8.9	8.9	4.3	3.1	6.6	4.8	8.6	6.4
2011	240	228	10.7	9.8	5.1	3.3	7.7	5.1	10.0	6.8
2012	225	220	9.9	9.3	5.0	3.0	7.2	4.8	9.2	6.5
2013	220	210	9.6	8.8	4.5	3.2	6.8	4.8	8.9	6.4
2014	199	210	8.5	8.7	3.8	3.2	5.8	4.8	7.8	6.3
2015	217	217	9.1	8.9	4.3	2.9	6.4	4.5	8.2	6.1
2016	198	193	8.2	7.9	3.7	2.8	5.6	4.3	7.4	5.6
2017	174	189	7.2	7.7	3.0	2.5	4.8	3.9	6.3	5.2
2018	107	102	4.4	4.1	1.9	1.6	2.9	2.4	3.8	3.0
2019	80	63	3.3	2.5	1.4	1.1	2.2	1.6	2.9	1.9
1998-2019	4081	4056	9.3	8.9	4.6	3.1	6.9	4.8	9.0	6.4

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.		Min.	Max.	Median				
		Mean	dev.			10%	25%	50%	75%	90%
1998	353	73.0	13.1	30.2	107	54.6	63.8	74.2	83.4	88.9
1999	269	72.9	12.7	23.4	95.8	56.2	64.1	73.0	84.3	89.1
2000	258	72.1	15.5	28.6	99.5	50.5	60.0	74.8	85.4	90.5
2001	230	72.1	14.2	0.5	97.6	54.0	61.8	74.6	82.4	88.5
2002	443	73.9	13.3	13.1	97.2	55.6	64.4	76.6	83.0	89.3
2003	429	73.5	13.6	21.5	101	55.5	64.6	75.3	83.4	89.8
2004	434	71.8	13.9	32.9	103	52.8	62.7	73.5	82.5	89.6
2005	394	72.2	13.6	16.8	101	55.4	63.5	74.0	82.3	88.7
2006	371	72.9	14.3	0.2	97.9	53.9	64.3	75.8	83.6	88.5
2007	423	72.5	13.3	16.5	99.2	54.3	63.5	74.2	83.3	87.5
2008	439	72.3	12.7	0.6	99.5	55.9	65.2	73.3	81.6	87.2
2009	393	72.5	13.1	31.6	98.0	53.8	63.7	74.3	83.3	88.2
2010	409	73.7	12.9	27.1	99.2	56.3	65.1	75.2	84.3	89.0
2011	468	73.6	13.0	8.1	99.9	57.3	66.0	74.1	83.2	88.7
2012	445	72.9	14.0	0.7	98.1	55.2	65.9	74.0	83.1	88.6
2013	430	72.8	12.7	13.4	96.9	55.7	65.3	74.3	82.3	88.4
2014	409	73.2	12.8	26.0	102	55.2	65.6	74.6	82.8	88.6
2015	434	73.8	13.4	27.0	102	55.5	64.7	75.6	83.4	90.3
2016	391	73.1	12.7	21.1	95.6	55.1	64.5	75.4	82.7	88.2
2017	363	75.0	12.3	22.5	99.3	58.2	67.4	76.7	83.1	90.2
2018	209	71.8	12.5	26.0	94.5	55.8	64.0	74.9	81.3	85.6
2019	143	71.3	12.3	35.8	95.5	52.8	63.2	73.2	79.7	85.1
1998-2019	8137	73.0	13.3	0.2	107	55.1	64.3	74.7	82.9	88.8

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	165	67.8	12.6	30.2	93.3	50.7	59.7	68.8	75.5	85.3
1999	126	70.0	12.7	23.4	94.9	54.4	60.3	69.7	77.9	87.3
2000	121	68.7	14.0	39.6	96.8	50.5	56.9	68.9	78.5	87.2
2001	111	69.4	12.1	36.8	97.6	53.9	59.8	69.6	78.9	83.7
2002	215	69.8	13.6	13.1	95.9	51.8	61.1	70.1	79.9	87.6
2003	217	70.9	13.5	27.7	97.9	54.7	62.0	71.9	81.1	88.9
2004	216	69.1	12.8	34.4	95.3	51.4	60.0	69.1	79.8	84.6
2005	184	67.7	13.8	16.8	97.0	49.7	60.0	68.4	77.1	84.2
2006	198	70.5	14.3	0.2	97.1	53.4	62.2	71.4	81.3	86.5
2007	226	69.7	12.9	16.5	95.2	52.8	62.2	69.1	79.8	85.9
2008	248	70.3	10.8	31.9	95.7	55.7	63.0	69.7	78.7	84.8
2009	193	71.4	12.2	37.4	92.4	55.0	63.6	72.4	81.6	86.7
2010	201	71.2	12.3	31.5	95.4	55.9	63.4	71.9	81.3	86.3
2011	240	71.0	11.8	18.0	96.8	57.4	64.9	71.4	79.4	85.2
2012	225	69.5	14.2	0.7	96.5	54.1	63.3	71.2	78.3	84.3
2013	220	71.1	11.9	26.0	93.9	55.6	63.8	71.9	80.1	84.8
2014	199	71.6	13.2	26.0	102	54.2	63.0	73.7	80.5	86.7
2015	217	70.6	12.7	27.6	97.2	54.7	61.3	71.9	79.6	85.7
2016	198	72.3	12.0	21.1	95.6	56.0	64.4	74.5	80.9	86.9
2017	174	73.4	11.4	39.4	97.5	58.2	64.6	75.2	81.4	88.2
2018	107	71.3	11.8	26.0	88.8	56.5	64.6	71.9	79.7	84.8
2019	80	72.4	10.4	49.1	92.8	58.7	64.6	73.3	79.4	84.5
1998-2019	4081	70.4	12.7	0.2	102	54.1	62.4	71.5	79.8	86.0

Table 3b

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

Year of diagnosis	Cases n	Std.		Min.	Max.	Median				
		Mean	dev.			10%	25%	50%	75%	90%
1998	188	77.6	11.9	43.7	107	59.4	70.8	78.8	85.9	91.3
1999	143	75.5	12.1	41.6	95.8	58.5	67.0	77.4	85.6	90.0
2000	137	75.0	16.2	28.6	99.5	52.1	64.1	78.4	87.8	92.7
2001	119	74.7	15.5	0.5	96.1	55.2	62.7	79.3	87.2	91.0
2002	228	77.8	11.7	38.9	97.2	61.2	71.3	80.7	86.5	90.3
2003	212	76.2	13.2	21.5	101	57.7	66.4	78.9	86.0	90.8
2004	218	74.5	14.4	32.9	103	53.8	65.7	78.4	84.4	90.9
2005	210	76.1	12.1	35.1	101	57.8	67.6	78.3	85.2	90.6
2006	173	75.6	13.8	23.8	97.9	54.8	67.6	79.7	85.7	90.4
2007	197	75.7	13.1	22.0	99.2	57.1	67.5	78.2	85.2	89.6
2008	191	74.8	14.4	0.6	99.5	56.0	68.7	77.6	85.2	88.2
2009	200	73.6	13.8	31.6	98.0	53.7	63.9	75.3	85.5	89.3
2010	208	76.1	13.0	27.1	99.2	57.4	66.8	79.9	86.8	89.9
2011	228	76.3	13.7	8.1	99.9	57.2	68.2	80.0	86.7	90.8
2012	220	76.3	12.9	37.3	98.1	56.3	69.9	78.7	86.2	90.8
2013	210	74.5	13.3	13.4	96.9	55.8	67.3	77.8	84.2	90.0
2014	210	74.8	12.3	34.2	95.1	56.7	67.8	76.3	83.8	89.4
2015	217	77.0	13.3	27.0	102	56.5	69.2	78.9	87.1	92.2
2016	193	74.0	13.4	33.4	95.1	53.4	64.7	76.0	84.6	89.7
2017	189	76.5	12.8	22.5	99.3	58.1	68.8	78.2	86.1	91.5
2018	102	72.3	13.2	33.3	94.5	55.3	63.4	75.6	82.8	86.4
2019	63	69.9	14.3	35.8	95.5	47.1	61.2	73.2	80.5	85.1
1998-2019	4056	75.5	13.4	0.5	107	56.3	67.2	78.1	85.5	90.4

Table 4

Age distribution by 5-year age group and sex for period 2007-2019
(incl. DCO)

Age at diagnosis Years	Cases			Males			Females		
	n	%	Cum.%	n	%	Cum.%	n	%	Cum.%
0-4	4	0.1	0.1	3	0.1	0.1	1	0.0	0.0
5-9	1	0.0	0.1			0.1	1	0.0	0.1
10-14	2	0.0	0.1	1	0.0	0.2	1	0.0	0.1
15-19	2	0.0	0.2	2	0.1	0.2			0.1
20-24	4	0.1	0.3	1	0.0	0.3	3	0.1	0.2
25-29	10	0.2	0.5	8	0.3	0.6	2	0.1	0.3
30-34	10	0.2	0.7	5	0.2	0.8	5	0.2	0.5
35-39	26	0.5	1.2	16	0.6	1.4	10	0.4	0.9
40-44	58	1.2	2.4	21	0.8	2.3	37	1.5	2.5
45-49	131	2.6	5.0	68	2.7	4.9	63	2.6	5.1
50-54	211	4.3	9.3	114	4.5	9.5	97	4.0	9.1
55-59	339	6.8	16.1	209	8.3	17.7	130	5.4	14.4
60-64	447	9.0	25.1	271	10.7	28.4	176	7.2	21.7
65-69	572	11.5	36.7	365	14.4	42.9	207	8.5	30.2
70-74	693	14.0	50.6	411	16.3	59.1	282	11.6	41.8
75-79	788	15.9	66.5	405	16.0	75.2	383	15.8	57.6
80-84	728	14.7	81.2	332	13.1	88.3	396	16.3	73.9
85+	930	18.8	100.0	296	11.7	100.0	634	26.1	100.0
All ages	4956	100.0		2528	100.0		2428	100.0	

Table 5

Age-specific incidence, DCO rate and proportion of all cancers
for period 2007–2019

Age at diagnosis Years	Males n	Females n	Males Age- spec. incid.	Females Age- spec. incid.	Males DCO rate n=567 %	Females DCO rate n=769 %	Males	Females
							Prop.all cancers n=143063 %	Prop.all cancers n=144724 %
0- 4	3	1	0.2	0.1		100.0	1.4	0.6
5- 9		1		0.1				1.1
10-14	1	1	0.1	0.1			0.8	0.9
15-19	2		0.1				0.7	
20-24	1	3	0.1	0.2		33.3	0.2	0.6
25-29	8	2	0.4	0.1	12.5		0.9	0.2
30-34	5	5	0.2	0.2			0.4	0.3
35-39	16	10	0.7	0.5			0.9	0.3
40-44	21	37	0.9	1.6			0.8	0.6
45-49	68	63	2.7	2.6	5.9	6.3	1.4	0.7
50-54	114	97	4.9	4.2	7.0	3.1	1.5	0.8
55-59	209	130	10.8	6.5	5.3	6.9	1.8	1.1
60-64	271	176	16.6	10.0	9.6	10.2	1.7	1.2
65-69	365	207	24.0	12.3	14.8	12.6	1.6	1.2
70-74	411	282	29.3	17.6	19.2	19.9	1.6	1.5
75-79	405	383	36.6	27.8	23.7	26.4	1.8	2.1
80-84	332	396	50.6	40.7	34.3	41.9	2.3	2.8
85+	294	634	68.9	65.7	59.2	60.6	3.0	4.1
All ages	2526	2428			22.4	31.7	1.8	1.7
Incidence								
Raw			8.4	7.8				
WS			4.0	2.7				
ES			6.0	4.2				
BRD-S			7.8	5.6				

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).

CD-10 C76-C80: Malignant neoplasms of ill-defined, secondary and unspecified sites
 Age distribution and age-specific incidence 2007 - 2019 (Males: 2526, Females: 2428)

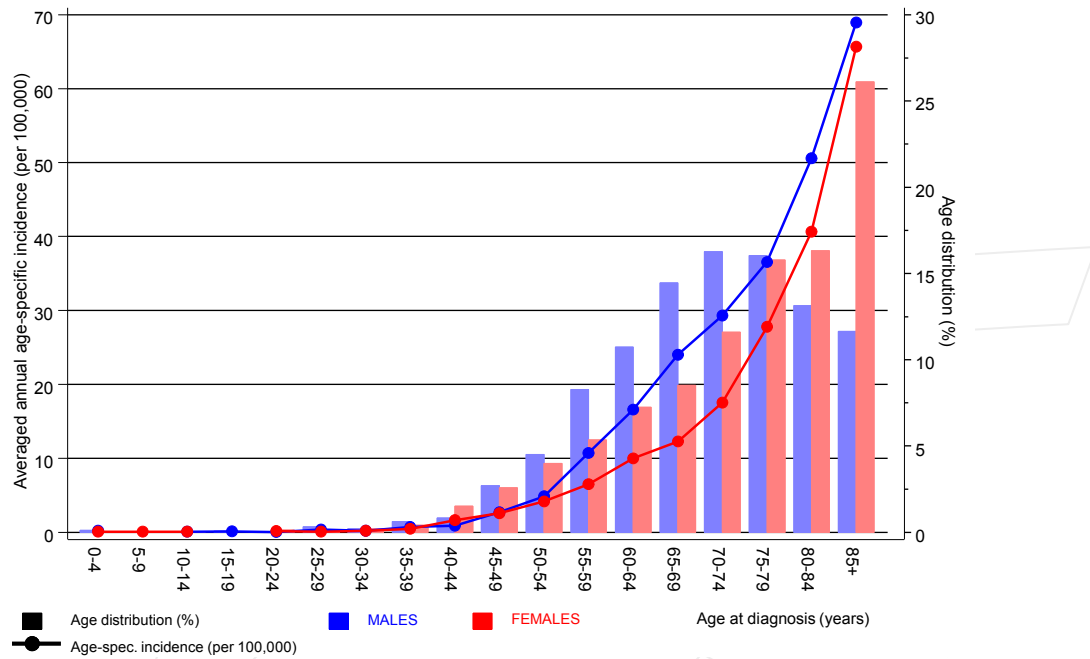


Figure 6. Age distribution (males: mean=71.1 yrs, median=72.2 yrs; females: mean=75.2 yrs, median=77.6 yrs) and age-specific incidence.

Table 7a

Standardized incidence ratio (SIR, with 95% confidence limits),
excess absolute risk (EAR) and DCO rate of further malignancies
for period 1998-2019

MALES

Diagnosis	Observed n	Expected n	SIR	CI 95%	CI 95%	EAR	DCO %
C03-C06 Oral cavity	9	0.6	16.0	7.3	30.4 #	20.4	
C07-C08 Salivary gland	3	0.1	21.8	4.5	63.7 #	6.9	
C09-C10 Oropharynx	21	0.7	30.1	18.6	46.0 #	49.1	
C12-C13 Hypopharynx	12	0.4	31.8	16.4	55.6 #	28.1	16.7
C15 Oesophagus	15	1.3	11.9	6.6	19.6 #	33.2	
C16 Stomach	10	2.5	4.0	1.9	7.4 #	18.2	20.0
C17 Small intestine	3	0.4	8.0	1.7	23.5 #	6.4	
C18 Colon	18	6.0	3.0	1.8	4.8 #	29.1	16.7
C19-C20 Rectum	7	3.4	2.1	0.8	4.3	8.8	14.3
C21 Anus/canal	2	0.2	13.3	1.6	47.9 #	4.5	
C22 Liver	11	1.8	6.0	3.0	10.8 #	22.2	45.5
C23-C24 Bile	10	0.6	15.5	7.4	28.5 #	22.6	30.0
C25 Pancreas	10	2.4	4.2	2.0	7.7 #	18.4	30.0
C26 GI cancer	5	0.1	73.9	24.0	172.5 #	11.9	60.0
C30-C31 Sinuses	3	0.1	26.2	5.4	76.5 #	7.0	
C32 Larynx	9	0.7	13.8	6.3	26.3 #	20.2	
C33-C34 Lung	73	7.5	9.8	7.6	12.3 #	158.4	26.0
C38,C45 Mesothelioma	4	0.4	9.5	2.6	24.4 #	8.7	
C43 Malign. melanoma	5	2.8	1.8	0.6	4.2	5.4	
C46,C49 Soft tissue	2	0.4	5.6	0.7	20.3	4.0	50.0
C48 Peritoneal	2	0.1	40.0	4.8	144.4 #	4.7	100.0
C50 Breast	2	0.2	11.9	1.4	43.0 #	4.4	
C61 Prostate	53	17.9	3.0	2.2	3.9 #	85.0	3.8
C64 Kidney	15	2.2	6.9	3.8	11.3 #	31.0	13.3
C65 Renal pelvis	3	0.3	11.0	2.3	32.1 #	6.6	33.3
C67 Bladder	9	2.8	3.2	1.4	6.0 #	14.9	
C70-C72 CNS cancer	4	0.8	5.0	1.4	12.7 #	7.7	25.0
C73 Thyroid	5	0.4	11.6	3.8	27.0 #	11.0	
C74-C80 Cancer others	3	0.1	20.2	4.2	59.0 #	6.9	66.7
C76-C79 CUP	3	1.1	2.8	0.6	8.2	4.7	33.3
C82-C85 NHL	9	2.6	3.4	1.6	6.5 #	15.4	11.1
C90 Mult. myeloma	2	0.8	2.4	0.3	8.8	2.9	50.0
C91-C96 Leukaemia	3	0.9	3.2	0.7	9.4	5.0	
Others, specified	7	0.6	10.8	4.3	22.2 #	15.4	14.3
Not observed	0	0.5	0.0	0.0	7.8	-1.1	
All further malignancies	352	63.5	5.5	5.0	6.2 #	697.8	15.9
Patients		3073					
Median age at next malignancy (years)		68.3					
Person-years		4135					
Mean observation time (years)		1.3					
Median observation time (years)		0.4					

The occurrence of further specified malignancy is statistically significant.

Further observed 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 1998-2019

FEMALES

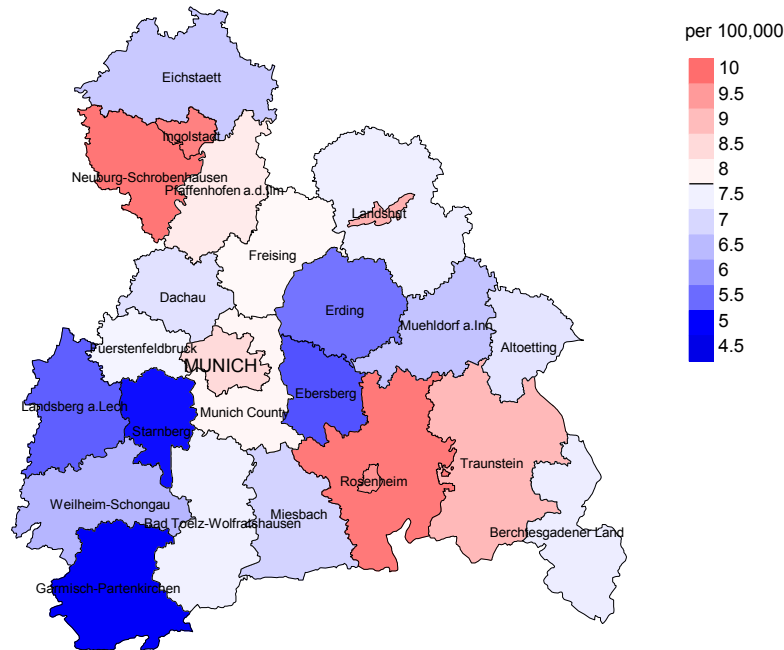
Diagnosis	Observed n	Expected n	SIR	CI 95%	CI 95%	EAR	DCO %
C03-C06 Oral cavity	5	0.2	21.8	7.1	50.9 #	13.5	
C07-C08 Salivary gland	2	0.1	30.2	3.7	109.0 #	5.5	
C09-C10 Oropharynx	9	0.2	55.5	25.4	105.3 #	24.9	
C15 Oesophagus	2	0.3	7.9	1.0	28.6	4.9	
C16 Stomach	11	1.5	7.5	3.8	13.5 #	26.9	18.2
C17 Small intestine	5	0.2	24.2	7.9	56.6 #	13.5	
C18 Colon	16	4.1	3.9	2.3	6.4 #	33.7	37.5
C19-C20 Rectum	3	1.6	1.8	0.4	5.4	3.8	
C22 Liver	5	0.5	10.0	3.3	23.4 #	12.7	60.0
C23-C24 Bile	8	0.6	13.5	5.8	26.7 #	20.9	62.5
C25 Pancreas	14	1.9	7.5	4.1	12.6 #	34.2	50.0
C26 GI cancer	2	0.1	24.2	2.9	87.3 #	5.4	100.0
C33-C34 Lung	40	3.0	13.5	9.6	18.4 #	104.5	22.5
C43 Malign. melanoma	8	1.5	5.5	2.4	10.8 #	18.5	25.0
C48 Peritoneal	3	0.2	19.9	4.1	58.1 #	8.0	
C50 Breast	66	12.1	5.5	4.2	7.0 #	152.1	9.1
C51 Vulva	3	0.4	7.0	1.4	20.5 #	7.3	
C53 Cervix uteri	4	0.5	7.6	2.1	19.5 #	9.8	
C54 Corpus uteri	6	2.2	2.8	1.0	6.0 #	10.8	
C56 Ovary	24	1.6	15.0	9.6	22.3 #	63.2	29.2
C64 Kidney	4	0.9	4.3	1.2	11.0 #	8.7	25.0
C67 Bladder	3	0.8	3.7	0.8	10.8	6.2	33.3
C70-C72 CNS cancer	3	0.5	5.9	1.2	17.1 #	7.0	33.3
C73 Thyroid	2	0.6	3.2	0.4	11.5	3.9	
C74-C80 Cancer others	2	0.2	11.4	1.4	41.0 #	5.1	100.0
C82-C85 NHL	10	1.6	6.4	3.1	11.8 #	23.8	20.0
C90 Mult. myeloma	3	0.5	6.1	1.3	17.9 #	7.1	
Others, specified	10	2.3	4.4	2.1	8.1 #	21.8	10.0
Not observed	0	0.4	0.0	0.0	8.2	-1.3	
All further malignancies	273	40.3	6.8	6.0	7.6 #	656.3	20.9

Patients	2718
Median age at next malignancy (years)	69.9
Person-years	3545
Mean observation time (years)	1.3
Median observation time (years)	0.4

The occurrence of further specified malignancy is statistically significant.

Further observed malignancies with count 1 are pooled in category "Others, specified".

Average incidence (Germany 1987 standard population) 2007 - 2019: Males



Average incidence (Germany 1987 standard population) 2007 - 2019: Females

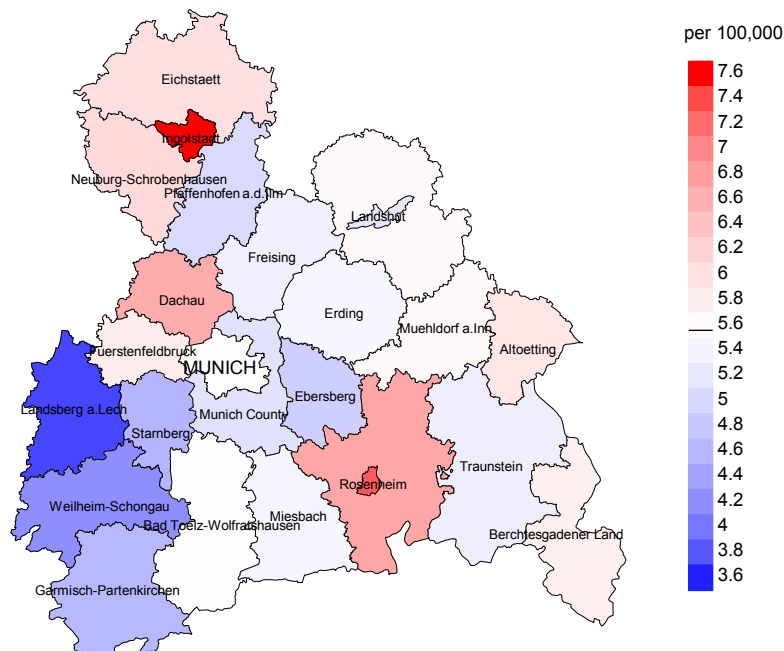
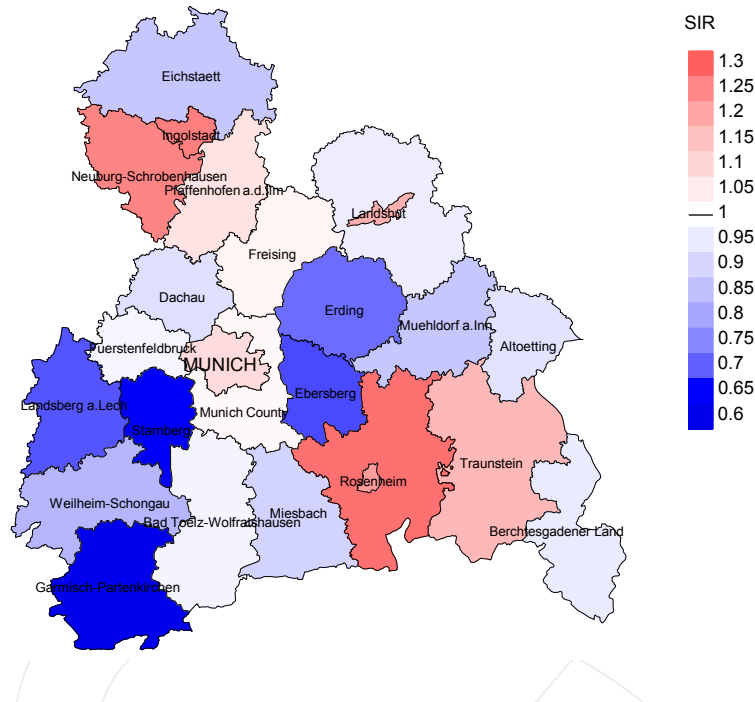


Figure 8a. Map of cancer incidence (german standard population, incl. DCO cases) by county averaged for period 2007 to 2019. According to their individual incidence rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 7.8/100,000 WS N=2,526, females 5.6/100,000 WS N=2,428).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 67,462 female residents (averaged) in the period from 2007 to 2019 a total of 59 women were identified with newly diagnosed secondary and unspecified sites. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 4.9/100,000 (german standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 3.4 and 6.9/100,000.

Standardized incidence ratio (SIR) 2007 - 2019: Males



Standardized incidence ratio (SIR) 2007 - 2019: Females

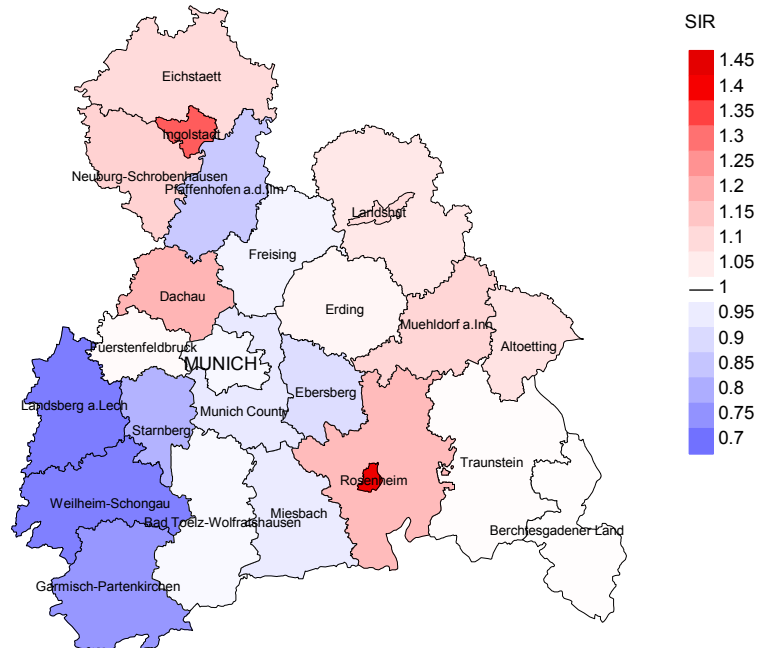


Figure 8b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2007 to 2019. According to their individual SIR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=2,526, females N=2,428).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 67,153 female residents (averaged) in the period from 2007 to 2019 a total of 59 women were identified with newly diagnosed secondary and unspecified sites. Therefore, the mean standardized incidence ratio (SIR) for this cancer type in this area can be calculated at 0.91. Though, the value of this parameter may vary with an underlying probability of 99% between 0.63 and 1.26, 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 4.92 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	353	99.4	41.4	347	98.3	95.7
1999	269	99.6	42.8	264	98.1	94.3
2000	258	99.6	45.0	251	97.3	96.8
2001	230	99.1	44.8	221	96.1	98.6
2002	443	100.0	47.2	433	97.7	98.2
2003	429	100.0	42.9	415	96.7	98.8
2004	434	98.2	32.5	404	93.1	98.8
2005	394	98.2	33.8	378	95.9	98.7
2006	371	98.9	32.6	340	91.6	98.8
2007	423	98.3	31.0	395	93.4	98.2
2008	439	99.8	30.5	403	91.8	98.3
2009	393	99.2	27.7	361	91.9	98.3
2010	409	99.0	32.0	366	89.5	97.5
2011	468	99.1	24.6	420	89.7	97.9
2012	445	99.1	25.6	392	88.1	98.5
2013	430	99.1	25.8	387	90.0	97.7
2014	409	98.3	25.9	361	88.3	96.7
2015	434	97.9	28.8	361	83.2	95.8
2016	391	99.5	33.0	351	89.8	97.2
2017	363	100.0	28.4	309	85.1	86.4
2018	209	100.0	11.0	149	71.3	38.9
2019	143	88.1	4.9	78	54.5	73.1
1998-2019	8137	98.9	32.0	7386	90.8	95.8

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 4.92 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	353	319	95.9	250	70.8
1999	269	263	94.3	183	68.0
2000	258	263	97.0	185	71.7
2001	230	209	97.1	152	66.1
2002	443	292	98.3	289	65.2
2003	429	321	97.8	275	64.1
2004	434	346	98.8	250	57.6
2005	394	309	98.1	230	58.4
2006	371	323	98.1	214	57.7
2007	423	319	99.1	245	57.9
2008	439	353	98.0	260	59.2
2009	393	313	99.4	217	55.2
2010	409	329	98.8	238	58.2
2011	468	358	98.6	281	60.0
2012	445	359	98.1	261	58.7
2013	430	317	98.7	250	58.1
2014	409	339	97.9	227	55.5
2015	434	357	99.2	245	56.5
2016	391	336	99.1	243	62.1
2017	363	339	99.4	225	62.0
2018	209	194	36.1	94	45.0
2019	143	166	50.0	52	36.4
1998–2019	8137	6724	95.2	4866	59.8

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 4.92 m as of 2007, respectively)

Year of death	Deaths n	Prop. cancer- related %	Prop. non-cancer- related %	Prop. cancer recorded on death certificate %
1998	319	89.0	11.0	97.7
1999	263	95.4	4.6	97.6
2000	263	96.6	3.4	96.9
2001	209	96.7	3.3	96.6
2002	292	95.9	4.1	97.2
2003	321	98.4	1.6	96.8
2004	346	97.4	2.6	96.2
2005	309	98.1	1.9	96.0
2006	323	98.8	1.2	95.9
2007	319	99.4	0.6	96.2
2008	353	98.3	1.7	96.2
2009	313	98.7	1.3	96.8
2010	329	99.1	0.9	94.5
2011	358	98.3	1.7	94.3
2012	359	98.6	1.4	93.5
2013	317	99.1	0.9	93.6
2014	339	99.4	0.6	94.6
2015	357	99.7	0.3	95.5
2016	336	99.1	0.9	96.1
2017	339	98.8	1.2	93.5
2018	194	97.9	2.1	95.7
2019	166	98.8	1.2	96.4
1998–2019	6724	97.9	2.1	95.7

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	152	69.2	68.8	73.3	69.7
1999	127	70.8	70.4	86.3	70.6
2000	128	70.5	69.9	78.1	69.7
2001	92	70.5	71.3	66.0	71.5
2002	148	71.6	71.6	79.4	71.7
2003	158	71.1	71.0	89.2	71.0
2004	181	72.5	72.0	82.6	71.3
2005	157	68.4	68.2	80.4	68.5
2006	158	70.9	71.0	54.7	70.9
2007	172	70.6	70.6	85.6	71.1
2008	192	70.4	70.4	76.3	70.3
2009	173	72.7	72.7	84.2	72.7
2010	159	72.2	72.1	94.0	71.9
2011	190	72.6	72.5	81.4	72.3
2012	194	72.7	72.7	74.9	72.6
2013	159	71.9	71.8	78.8	71.8
2014	173	74.1	74.1		74.1
2015	170	73.2	73.2	70.3	72.5
2016	175	74.6	74.7	65.8	74.6
2017	164	74.3	74.2	80.1	74.1
2018	104	75.2	75.2	82.4	74.9
2019	94	75.0	75.0		76.6
1998-2019	3420	72.2	72.1	76.0	72.0

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 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	167	80.5	78.9	84.8	80.3
1999	136	79.0	78.7	85.1	79.1
2000	135	80.2	80.1	93.2	80.1
2001	117	80.4	80.3	81.0	80.7
2002	144	81.2	80.7	88.2	81.0
2003	163	78.5	78.5	81.7	78.8
2004	165	79.7	79.6	81.8	80.0
2005	152	79.1	78.7	91.0	79.2
2006	165	79.4	79.1	83.9	79.4
2007	147	77.4	77.3	101.7	77.2
2008	161	77.2	77.2	84.7	77.2
2009	140	76.7	77.0	73.6	76.7
2010	170	78.9	78.9	80.6	78.3
2011	168	79.6	79.2	87.3	79.5
2012	165	79.5	79.3	89.0	79.3
2013	158	78.4	78.3	85.1	78.2
2014	166	75.6	75.6	83.0	74.7
2015	187	78.8	78.8		78.7
2016	161	77.9	77.9	92.7	77.9
2017	175	78.5	78.5	94.0	77.8
2018	90	74.9	74.8	90.6	75.7
2019	72	75.8	75.0	89.3	74.7
1998-2019	3304	78.6	78.4	86.1	78.6

By 2018, Bavarians' life expectancy at birth is estimated at 79.3 years for boys and 83.8 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	137	12.4	0.83	7.4	0.80	11.2	0.82	14.7	0.83
1999	123	11.0	0.98	6.6	1.01	10.2	1.00	13.3	1.00
2000	124	10.9	1.02	6.3	1.00	9.9	1.02	12.9	1.01
2001	91	7.9	0.82	4.5	0.82	7.1	0.82	9.7	0.84
2002	144	7.7	0.68	4.2	0.67	6.6	0.67	9.0	0.68
2003	156	8.3	0.72	4.4	0.70	6.9	0.70	9.4	0.71
2004	177	9.4	0.82	5.0	0.80	7.8	0.83	10.4	0.84
2005	154	8.1	0.84	4.4	0.84	6.5	0.84	8.4	0.83
2006	157	8.2	0.79	4.4	0.82	6.6	0.80	8.7	0.79
2007	171	7.7	0.76	4.0	0.73	6.0	0.74	8.0	0.76
2008	190	8.5	0.77	4.2	0.75	6.3	0.75	8.4	0.76
2009	171	7.7	0.89	3.7	0.88	5.8	0.89	7.7	0.89
2010	158	7.0	0.79	3.3	0.77	5.1	0.77	6.7	0.78
2011	188	8.4	0.79	3.8	0.74	5.9	0.77	8.0	0.80
2012	192	8.5	0.85	3.8	0.75	5.9	0.82	7.9	0.86
2013	157	6.8	0.71	3.3	0.73	4.9	0.72	6.3	0.70
2014	173	7.4	0.87	3.1	0.82	4.9	0.84	6.7	0.87
2015	169	7.1	0.78	3.3	0.77	5.0	0.78	6.5	0.78
2016	174	7.2	0.88	3.1	0.85	4.9	0.87	6.5	0.87
2017	161	6.7	0.93	2.9	0.94	4.5	0.94	5.8	0.93
2018	102	4.2	0.95	1.7	0.87	2.7	0.92	3.6	0.95
2019	94	3.9	1.17	1.7	1.16	2.5	1.17	3.4	1.17
1998-2019	3363	7.6	0.83	3.7	0.81	5.7	0.82	7.4	0.83

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	147	12.5	0.78	4.3	0.79	6.9	0.78	9.6	0.77
1999	128	10.8	0.90	3.9	0.83	6.2	0.85	8.5	0.88
2000	131	10.9	0.96	4.0	0.93	6.2	0.94	8.1	0.95
2001	111	9.1	0.93	3.1	0.81	5.0	0.87	6.9	0.92
2002	136	6.9	0.60	2.5	0.65	3.8	0.63	5.2	0.61
2003	160	8.1	0.75	3.0	0.77	4.7	0.77	6.3	0.77
2004	160	8.1	0.74	2.7	0.66	4.3	0.68	5.9	0.71
2005	149	7.5	0.71	2.6	0.69	4.2	0.69	5.6	0.70
2006	162	8.1	0.94	2.9	0.95	4.5	0.96	6.0	0.94
2007	146	6.3	0.74	2.2	0.72	3.5	0.73	4.7	0.72
2008	157	6.8	0.82	2.6	0.84	3.8	0.83	5.0	0.80
2009	138	5.9	0.69	2.2	0.66	3.4	0.67	4.6	0.71
2010	168	7.2	0.81	2.5	0.80	3.9	0.81	5.2	0.82
2011	164	7.0	0.72	2.3	0.69	3.6	0.71	5.0	0.74
2012	162	6.9	0.74	2.3	0.76	3.6	0.76	4.9	0.75
2013	157	6.6	0.75	2.1	0.68	3.4	0.70	4.7	0.73
2014	164	6.8	0.78	2.4	0.77	3.7	0.77	4.9	0.79
2015	187	7.7	0.86	2.5	0.86	3.9	0.86	5.2	0.86
2016	159	6.5	0.82	2.1	0.75	3.3	0.77	4.4	0.79
2017	174	7.1	0.92	2.3	0.91	3.5	0.91	4.7	0.91
2018	88	3.5	0.86	1.4	0.88	2.1	0.88	2.6	0.86
2019	70	2.8	1.11	1.2	1.05	1.7	1.06	2.2	1.11
1998-2019	3218	7.0	0.79	2.4	0.78	3.8	0.78	5.1	0.79

Table 12

Age distribution of age at death (cancer-related) for period 2007-2019
(incl. multiple malignancies)

Age at death Years	Cases			Males			Females		
	n	%	Cum.%	n	%	Cum.%	n	%	Cum.%
0-4	1	0.0	0.0			0.0	1	0.1	0.1
5-9	0	0.0	0.0			0.0			0.1
10-14	0	0.0	0.0			0.0			0.1
15-19	1	0.0	0.0	1	0.0	0.0			0.1
20-24	2	0.0	0.1	1	0.0	0.1	1	0.1	0.1
25-29	4	0.1	0.2	2	0.1	0.2	2	0.1	0.2
30-34	8	0.2	0.4	6	0.3	0.5	2	0.1	0.3
35-39	16	0.4	0.8	8	0.4	0.9	8	0.4	0.7
40-44	35	0.9	1.7	17	0.8	1.7	18	0.9	1.7
45-49	81	2.0	3.7	33	1.6	3.2	48	2.5	4.1
50-54	132	3.3	6.9	75	3.6	6.8	57	2.9	7.1
55-59	259	6.4	13.4	159	7.6	14.4	100	5.2	12.3
60-64	355	8.8	22.2	218	10.4	24.8	137	7.1	19.3
65-69	486	12.0	34.2	297	14.1	38.9	189	9.8	29.1
70-74	609	15.1	49.3	375	17.9	56.8	234	12.1	41.2
75-79	674	16.7	66.0	355	16.9	73.7	319	16.5	57.7
80-84	598	14.8	80.8	284	13.5	87.2	314	16.2	73.9
85+	773	19.2	100.0	269	12.8	100.0	504	26.1	100.0
All ages	4034	100.0		2100	100.0		1934	100.0	

Table 13

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007-2019
(incl. multiple malignancies)

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		1			0.1	1.00		6.3
5- 9								
10-14								
15-19	1		0.1	0.50			2.1	
20-24	1	1	0.1	1.00	0.1	0.33	1.5	2.6
25-29	2	2	0.1	0.25	0.1	1.00	2.4	2.2
30-34	6	2	0.3	1.20	0.1	0.40	4.7	1.3
35-39	8	8	0.4	0.50	0.4	0.80	3.3	2.2
40-44	17	18	0.7	0.81	0.8	0.49	3.0	2.2
45-49	33	48	1.3	0.49	2.0	0.76	2.5	3.0
50-54	75	57	3.2	0.66	2.5	0.59	3.0	2.3
55-59	159	100	8.2	0.76	5.0	0.77	3.9	2.8
60-64	218	137	13.4	0.80	7.8	0.78	3.7	3.0
65-69	297	189	19.5	0.81	11.2	0.91	3.5	2.9
70-74	375	234	26.8	0.91	14.6	0.83	3.4	2.9
75-79	355	319	32.1	0.88	23.2	0.83	3.1	3.5
80-84	284	314	43.3	0.86	32.3	0.79	3.0	3.7
85+	269	504	63.1	0.91	52.2	0.79	3.3	4.6
All ages	2100	1934					3.3	3.4
Mortality								
Raw			7.0	0.83	6.2	0.80		
WS			3.2	0.80	2.1	0.78		
ES			4.9	0.82	3.3	0.79		
BRD-S			6.4	0.83	4.4	0.79		
PYLL-70								
per 100,000			28.5		22.4			
ES			24.5		18.7			
AYLL-70			9.3		10.4			

Table 14a

Further malignancies in deaths in period 1998-2019
MALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn- chron ±30d n	Syn- chron ±30d ←%	Post n	Post ←%
C00 Lip	2	0.2	2	100.0				
C03-C06 Oral cavity	27	2.7	16	59.3			11	40.7
C07-C08 Salivary gland	4	0.4			2	50.0	2	50.0
C09-C10 Oropharynx	32	3.2	5	15.6	5	15.6	22	68.8
C11 Nasopharynx	2	0.2	1	50.0			1	50.0
C12-C13 Hypopharynx	20	2.0	4	20.0	2	10.0	14	70.0
C15 Oesophagus	24	2.4	7	29.2	7	29.2	10	41.7
C16 Stomach	22	2.2	9	40.9	2	9.1	11	50.0
C17 Small intestine	6	0.6	1	16.7	1	16.7	4	66.7
C18 Colon	61	6.1	38	62.3	11	18.0	12	19.7
C19-C20 Rectum	32	3.2	23	71.9	3	9.4	6	18.8
C21 Anus/canal	2	0.2	2	100.0				
C22 Liver	18	1.8	5	27.8	2	11.1	11	61.1
C23-C24 Bile	9	0.9			2	22.2	7	77.8
C25 Pancreas	11	1.1	2	18.2	1	9.1	8	72.7
C26 GI cancer	6	0.6			3	50.0	3	50.0
C30-C31 Sinuses	5	0.5	3	60.0	1	20.0	1	20.0
C32 Larynx	27	2.7	17	63.0	1	3.7	9	33.3
C33-C34 Lung	92	9.1	15	16.3	23	25.0	54	58.7
C38,C45 Mesothelioma	5	0.5	1	20.0			4	80.0
C43 Malign. melanoma	43	4.3	35	81.4	1	2.3	7	16.3
C44 Skin others	135	13.4	85	63.0	13	9.6	37	27.4
C46,C49 Soft tissue	4	0.4	2	50.0	2	50.0		
C48 Peritoneal	2	0.2					2	100.0
C61 Prostate	218	21.6	169	77.5	20	9.2	29	13.3
C62 Testis	9	0.9	9	100.0				
C64 Kidney	31	3.1	16	51.6	3	9.7	12	38.7
C65 Renal pelvis	8	0.8	2	25.0	1	12.5	5	62.5
C66 Ureter	2	0.2	1	50.0			1	50.0
C67 Bladder	52	5.2	39	75.0	4	7.7	9	17.3
C69 Eye melanoma	2	0.2	2	100.0				
C70-C72 CNS cancer	8	0.8	3	37.5			5	62.5
C73 Thyroid	16	1.6	12	75.0	1	6.3	3	18.8
C74-C80 Cancer others	4	0.4			3	75.0	1	25.0
C76-C79 CUP	3	0.3			1	33.3	2	66.7
C81 Hodgkin lymphoma	4	0.4	4	100.0				
C82-C85 NHL	42	4.2	30	71.4	6	14.3	6	14.3
C90 Mult. myeloma	6	0.6	4	66.7	1	16.7	1	16.7
C91-C96 Leukaemia	6	0.6	2	33.3	2	33.3	2	33.3
Others, specified	5	0.5	1	20.0	1	20.0	3	60.0

Table 14a

Further malignancies in deaths in period 1998-2019
MALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn- chron ±30d n	Syn- chron ±30d ←%	Post n	Post ←%
All further malignancies	1007	100.0	567	56.3	125	12.4	315	31.3

Further malignancies with number of cases 1 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 1998-2019
FEMALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn- chron ±30d n	Syn- chron ±30d ←%	Post n	Post ←%
C03-C06 Oral cavity	7	1.0	5	71.4			2	28.6
C07-C08 Salivary gland	2	0.3	1	50.0			1	50.0
C09-C10 Oropharynx	15	2.2	5	33.3			10	66.7
C15 Oesophagus	6	0.9	4	66.7	1	16.7	1	16.7
C16 Stomach	13	1.9	3	23.1	5	38.5	5	38.5
C17 Small intestine	5	0.7	1	20.0	1	20.0	3	60.0
C18 Colon	36	5.2	16	44.4	5	13.9	15	41.7
C19-C20 Rectum	13	1.9	6	46.2	6	46.2	1	7.7
C21 Anus/canal	3	0.4	2	66.7			1	33.3
C22 Liver	9	1.3	1	11.1	4	44.4	4	44.4
C23-C24 Bile	12	1.7	2	16.7	3	25.0	7	58.3
C25 Pancreas	18	2.6	2	11.1	6	33.3	10	55.6
C26 GI cancer	5	0.7	2	40.0	2	40.0	1	20.0
C32 Larynx	4	0.6	4	100.0				
C33-C34 Lung	53	7.6	14	26.4	10	18.9	29	54.7
C37 Thymus	2	0.3					2	100.0
C43 Malign. melanoma	25	3.6	17	68.0	5	20.0	3	12.0
C44 Skin others	39	5.6	28	71.8	7	17.9	4	10.3
C48 Peritoneal	2	0.3					2	100.0
C50 Breast	186	26.7	117	62.9	13	7.0	56	30.1
C51 Vulva	8	1.1	3	37.5	2	25.0	3	37.5
C53 Cervix uteri	19	2.7	13	68.4	3	15.8	3	15.8
C54 Corpus uteri	36	5.2	30	83.3	2	5.6	4	11.1
C55,C57 Fem. genitals un	9	1.3	7	77.8	2	22.2		
C56 Ovary	42	6.0	15	35.7	6	14.3	21	50.0
C64 Kidney	24	3.4	18	75.0	2	8.3	4	16.7
C65 Renal pelvis	2	0.3	1	50.0			1	50.0
C67 Bladder	22	3.2	17	77.3	2	9.1	3	13.6
C69 Eye melanoma	3	0.4	2	66.7	1	33.3		
C70-C72 CNS cancer	3	0.4			1	33.3	2	66.7
C73 Thyroid	18	2.6	17	94.4			1	5.6
C74-C80 Cancer others	3	0.4			1	33.3	2	66.7
C76-C79 CUP	3	0.4			2	66.7	1	33.3
C81 Hodgkin lymphoma	5	0.7	5	100.0				
C82-C85 NHL	26	3.7	16	61.5	3	11.5	7	26.9
C90 Mult. myeloma	6	0.9	2	33.3	1	16.7	3	50.0
C91-C96 Leukaemia	6	0.9	2	33.3	1	16.7	3	50.0
Others, specified	6	0.9	1	16.7	2	33.3	3	50.0
All further malignancies	696	100.0	379	54.5	99	14.2	218	31.3

Further malignancies with number of cases 1 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 2007-2019
(First 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		1			0.1	1.00		6.7
5- 9								
10-14								
15-19	1		0.1	0.50			2.2	
20-24	1	1	0.1	1.00	0.1	0.33	1.7	2.7
25-29	2	2	0.1	0.25	0.1	1.00	2.6	2.3
30-34	5	1	0.2	1.00	0.0	0.25	4.0	0.7
35-39	7	8	0.3	0.54	0.4	0.80	3.1	2.4
40-44	14	18	0.6	0.70	0.8	0.56	2.7	2.6
45-49	24	34	1.0	0.46	1.4	0.69	2.0	2.5
50-54	65	46	2.8	0.64	2.0	0.58	2.9	2.2
55-59	137	85	7.0	0.79	4.3	0.79	3.8	2.9
60-64	178	111	10.9	0.83	6.3	0.83	3.6	2.9
65-69	231	150	15.2	0.79	8.9	0.91	3.4	2.9
70-74	285	190	20.3	0.90	11.8	0.83	3.4	3.0
75-79	266	244	24.0	0.85	17.7	0.83	3.2	3.5
80-84	193	270	29.4	0.81	27.7	0.78	2.9	4.1
85+	208	448	48.8	0.86	46.4	0.77	3.5	5.1
All ages	1617	1609					3.3	3.6
Mortality								
Raw			5.4	0.81	5.2	0.79		
WS			2.5	0.79	1.8	0.78		
ES			3.8	0.80	2.7	0.78		
BRD-S			5.0	0.81	3.6	0.79		
PYLL-70								
per 100,000			23.7		18.5			
ES			20.4		15.6			
AYLL-70			9.5		10.6			

* See corresponding tables with multiple malignancies.

Table 16

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007-2019
(**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		1			0.1	1.00		6.7
5- 9								
10-14								
15-19	1		0.1	0.50			2.2	
20-24	1	1	0.1	1.00	0.1	0.33	1.7	2.8
25-29	2	2	0.1	0.25	0.1	1.00	2.6	2.4
30-34	5	1	0.2	1.00	0.0	0.33	4.1	0.7
35-39	7	8	0.3	0.54	0.4	0.89	3.1	2.5
40-44	13	17	0.6	0.76	0.8	0.59	2.5	2.4
45-49	24	29	1.0	0.49	1.2	0.66	2.0	2.2
50-54	59	39	2.5	0.62	1.7	0.57	2.7	1.9
55-59	130	75	6.7	0.82	3.8	0.77	3.7	2.6
60-64	153	99	9.4	0.78	5.6	0.83	3.1	2.7
65-69	211	126	13.9	0.79	7.5	0.87	3.2	2.5
70-74	250	176	17.8	0.84	11.0	0.81	3.1	2.9
75-79	237	228	21.4	0.80	16.6	0.82	3.0	3.4
80-84	184	252	28.0	0.80	25.9	0.75	2.9	4.0
85+	195	423	45.7	0.82	43.8	0.74	3.6	5.1
All ages	1472	1477					3.1	3.4
Mortality								
Raw			4.9	0.78	4.7	0.77		
WS			2.3	0.76	1.6	0.76		
ES			3.5	0.77	2.5	0.77		
BRD-S			4.5	0.78	3.3	0.77		
PYLL-70								
per 100,000			22.0		16.4			
ES			19.0		13.9			
AYLL-70			9.6		10.8			

* See corresponding tables with multiple malignancies.

CD-10 C76-C80: Malignant neoplasms of ill-defined, secondary and unspecified sites
 Age distribution and age-specific mortality 2007 - 2019 (Males: 2100, Females: 1934)

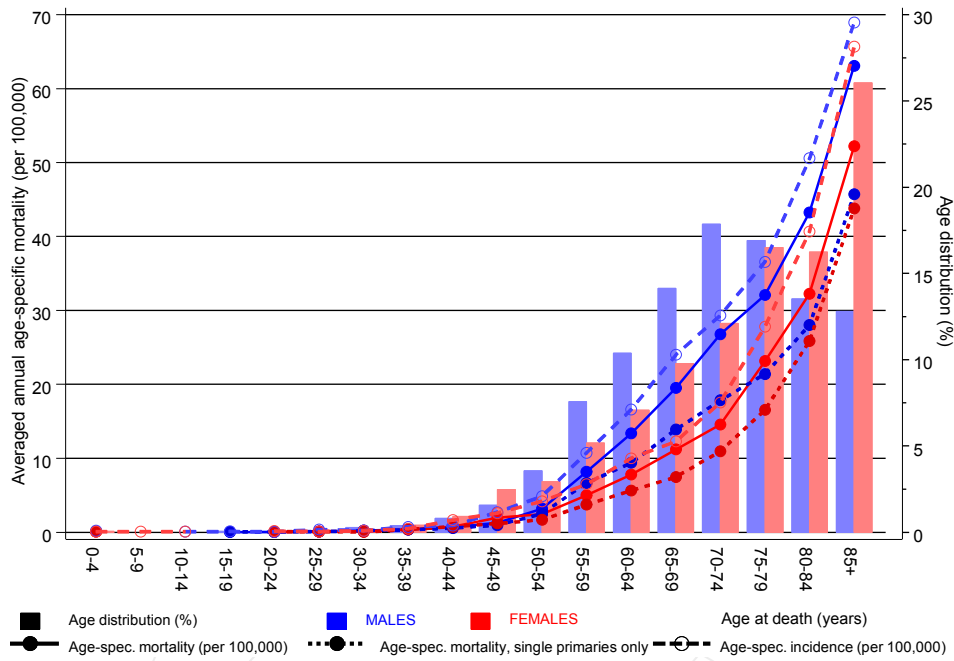
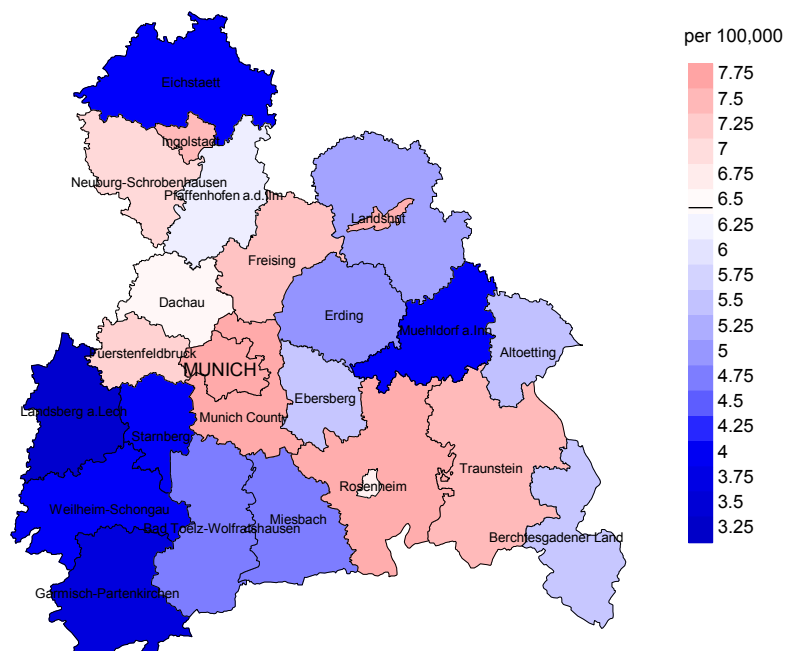


Figure 17. Distribution of age at death (bars; males: mean=70.8 yrs, median=71.6 yrs; females: mean=74.5 yrs, median=76.4 yrs) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

The difference between age at diagnosis (Table 3) and age at secondary and unspecified sites-related death (see Table 10) should be considered.

Average mortality (Germany 1987 standard population) 2007 - 2019: Males



Average mortality (Germany 1987 standard population) 2007 - 2019: Females

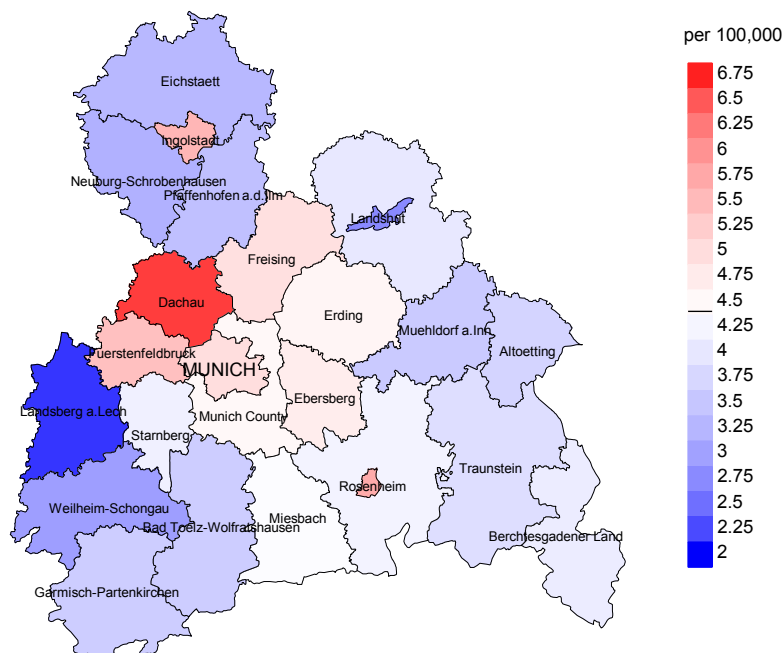
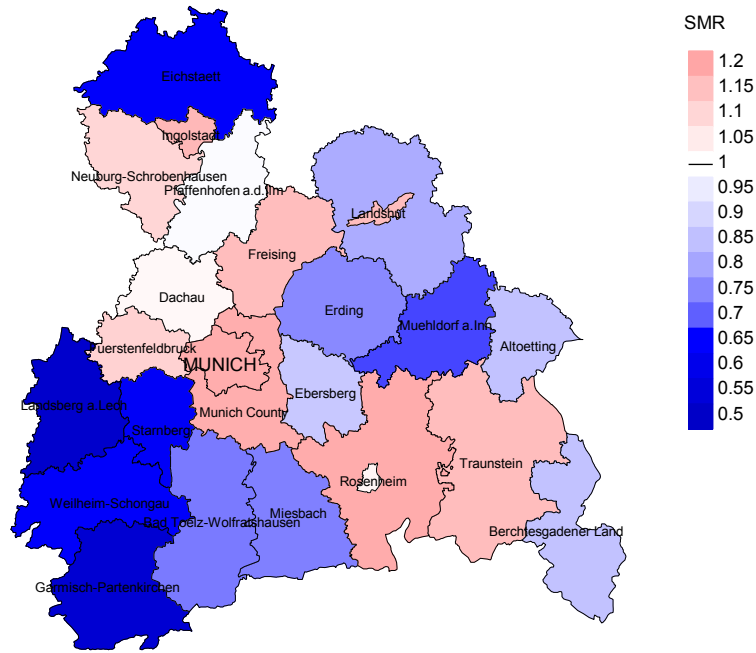


Figure 18a. Map of cancer mortality (german standard population) by county averaged for period 2007 to 2019. According to their individual mortality rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 6.4/100,000 WS N=2,100, females 4.4/100,000 WS N=1,934).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 67,462 female residents (averaged) in the period from 2007 to 2019 a total of 58 women died from secondary and unspecified sites. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 4.7/100,000 (german standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 3.2 and 6.7/100,000.

Standardized mortality ratio (SMR) 2007 - 2019: Males



Standardized mortality ratio (SMR) 2007 - 2019: Females

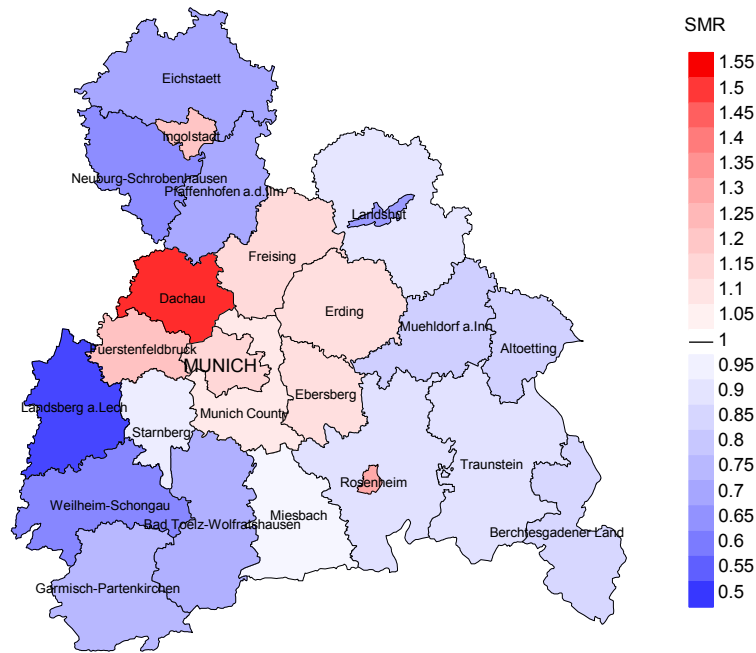


Figure 18b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2007 to 2019. According to their individual SMR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=2,100, females N=1,934).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 67,153 female residents (averaged) in the period from 2007 to 2019 a total of 58 women died from secondary and unspecified sites. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 1.12. Though, the value of this parameter may vary with an underlying probability of 99% between 0.78 and 1.56, 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 ratio of mortality and incidence (mortality-to-incidence ratio, **MIR, MI-Index**) is a statistical index 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 MIR. 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 (FRG) 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 of mortality to incidence, MIR
FRG	Federal Republic of Germany

Recommended Citation

Munich Cancer Registry. ICD-10 C76-C80: Secondary and unspecified sites - Incidence and Mortality [Internet]. 2021 [updated 2021 Jan 26; cited 2021 Mar 1]. Available from: <https://www.tumorregister-muenchen.de/en/facts/base/bC7680E-ICD-10-C76-C80-Secondary-and-unspecified-sites-incidence-and-mortality.pdf>

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