

Munich Cancer Registry



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

ICD-10 C14: Other oral and pharynx cancer

Incidence and Mortality

Year of diagnosis	1998-2019
Patients	1,439
Diseases	1,445
Creation date	01/25/2021
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/bC14__E-ICD-10-C14-Other-oral-and-pharynx-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, 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.

Some remarks regarding this cancer type

As a general rule, these few results from the TRM form the basis of sophisticated analyses. For head and neck tumors this is not the case. Therefore the results for head and neck tumors should be interpreted with caution. In part this is due to problems of classification because of limited specific details of locality. Additionally, with advanced tumors in a close topographic location it is often not possible to determine the exact ICD localization of a tumor.

ICD-10 codes (ICD-10 2015) used for specifying cancer site

Code	Description
C14.-	Malignant neoplasm of other and ill-defined sites in the lip, oral cavity and pharynx
C14.0	Pharynx, unspecified
C14.2	Waldeyer ring
C14.8	Overlapping lesion of lip, oral cavity and pharynx

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	59	4	6.8	3.4	16.1	94.9	100.0
1999	75	4	5.3	8.2	16.2	94.7	98.7
2000	60	4	6.7	10.3	16.2	95.0	98.3
2001	64	5	7.8	11.2	16.0	92.2	100.0
2002	69	7	10.1	11.3	15.9	87.0	100.0 #
2003	71	1	1.4	11.6	15.4	78.9	100.0
2004	64	2	3.1	11.3	14.8	87.5	100.0
2005	71	1	1.4	11.3	14.5	77.5	100.0
2006	75	2	2.7	11.0	13.6	81.3	98.7
2007	91	6	6.6	10.7	13.7	81.3	94.5 #
2008	82	4	4.9	10.8	13.0	76.8	100.0
2009	69	1	1.4	10.4	11.8	81.2	98.6
2010	91	3	3.3	10.2	10.7	65.9	96.7
2011	64	6	9.4	10.5	10.4	67.2	98.4
2012	79	6	7.6	11.2	10.2	68.4	96.2
2013	75	2	2.7	11.0	9.6	64.0	97.3
2014	66	3	4.5	11.3	8.1	60.6	92.4
2015	70	3	4.3	11.6	8.1	47.1	100.0
2016	69	1	1.4	12.2	8.5	52.2	97.1
2017	34	1	2.9	12.5	5.5	50.0	100.0
2018	30			12.9	4.5	30.0	96.7
2019	17			13.1	0.0	17.6	82.4 ##
1998-2019	1445	66	4.6	13.1	16.1	73.8	98.0

1,445 cases diagnosed 1998-2019 are related to a total of 1,439 patients. Currently, in 420 (29.2 %) of these 1,439 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 326 / 67 / 27 (22.7 % / 4.7 % / 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 2017, a subgroup of 34 cases has been diagnosed, of which 12.5 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 5.5 % 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	49	83.1	3	6.1	2.0	16.2	93.9	100.0
1999	60	80.0	1	1.7	6.4	16.5	95.0	100.0
2000	51	85.0	2	3.9	9.4	16.5	94.1	98.0
2001	50	78.1	3	6.0	10.0	16.3	90.0	100.0
2002	53	76.8	5	9.4	9.9	16.2	84.9	100.0 #
2003	56	78.9	1	1.8	10.3	15.8	80.4	100.0
2004	54	84.4	2	3.7	10.2	15.3	87.0	100.0
2005	61	85.9	1	1.6	10.1	15.1	75.4	100.0
2006	55	73.3			10.4	13.8	90.9	100.0
2007	73	80.2	4	5.5	10.0	13.7	83.6	97.3 #
2008	66	80.5	4	6.1	10.0	12.9	78.8	100.0
2009	55	79.7			9.8	11.9	80.0	98.2
2010	69	75.8	2	2.9	9.7	10.3	66.7	97.1
2011	48	75.0	4	8.3	10.1	9.9	66.7	97.9
2012	56	70.9	3	5.4	10.5	10.1	67.9	96.4
2013	56	74.7			10.2	8.6	62.5	96.4
2014	59	89.4	3	5.1	10.6	7.4	61.0	91.5
2015	47	67.1	2	4.3	10.9	7.5	44.7	100.0
2016	46	66.7	1	2.2	11.5	6.8	50.0	97.8
2017	23	67.6			11.7	4.8	43.5	100.0
2018	17	56.7			12.1	0.0	41.2	94.1
2019	8	47.1			12.1	0.0	37.5	75.0 ##
1998-2019	1112	77.0	41	3.7	12.1	16.2	75.3	98.2

1,112 cases diagnosed 1998-2019 are related to a total of 1,109 patients. Currently, in 317 (28.6 %) of these 1,109 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 243 / 52 / 22 (21.9 % / 4.7 % / 2.0 %) 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 23 cases has been diagnosed, of which 11.7 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 4.8 % 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	10	16.9	1	10.0	10.0	15.8	100.0	100.0
1999	15	20.0	3	20.0	16.0	15.4	93.3	93.3
2000	9	15.0	2	22.2	14.7	15.5	100.0	100.0
2001	14	21.9	2	14.3	16.7	15.2	100.0	100.0
2002	16	23.2	2	12.5	17.2	15.2	93.8	100.0 #
2003	15	21.1			16.5	14.2	73.3	100.0
2004	10	15.6			15.7	13.5	90.0	100.0
2005	10	14.1			16.2	12.8	90.0	100.0
2006	20	26.7	2	10.0	13.4	12.9	55.0	95.0
2007	18	19.8	2	11.1	13.9	13.6	72.2	83.3 #
2008	16	19.5			13.7	13.2	68.8	100.0
2009	14	20.3	1	7.1	12.6	11.5	85.7	100.0
2010	22	24.2	1	4.5	12.2	11.9	63.6	95.5
2011	16	25.0	2	12.5	12.2	11.6	68.8	100.0
2012	23	29.1	3	13.0	13.6	10.7	69.6	95.7
2013	19	25.3	2	10.5	14.2	11.9	68.4	100.0
2014	7	10.6			14.2	9.8	57.1	100.0
2015	23	32.9	1	4.3	14.1	9.3	52.2	100.0
2016	23	33.3			14.7	11.1	56.5	95.7
2017	11	32.4	1	9.1	15.4	6.5	63.6	100.0
2018	13	43.3			15.4	9.1	15.4	100.0
2019	9	52.9			16.2	0.0		88.9 ##
1998-2019	333	23.0	25	7.5	16.2	15.8	69.1	97.3

333 cases diagnosed 1998-2019 are related to a total of 330 patients. Currently, in 103 (31.2 %) of these 330 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 83 / 15 / 5 (25.2 % / 4.5 % / 1.5 %) 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 11 cases has been diagnosed, of which 15.4 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 6.5 % 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	49	10	4.4	0.9	3.0	0.4	4.0	0.6	4.4	0.7
1999	60	15	5.4	1.3	3.6	0.8	4.9	1.1	5.5	1.2
2000	51	9	4.5	0.7	3.0	0.5	4.1	0.6	4.4	0.7
2001	50	14	4.3	1.2	2.9	0.6	3.9	0.8	4.2	0.9
2002	53	16	2.8	0.8	1.8	0.5	2.6	0.7	2.8	0.7
2003	56	15	3.0	0.8	1.9	0.6	2.7	0.7	2.9	0.7
2004	54	10	2.9	0.5	1.8	0.3	2.5	0.4	2.8	0.5
2005	61	10	3.2	0.5	2.1	0.3	2.8	0.4	3.0	0.5
2006	55	20	2.9	1.0	1.8	0.6	2.5	0.8	2.8	0.9
2007	73	18	3.3	0.8	2.1	0.4	2.9	0.6	3.2	0.7
2008	66	16	3.0	0.7	1.9	0.4	2.6	0.6	2.8	0.6
2009	55	14	2.5	0.6	1.5	0.3	2.1	0.4	2.3	0.5
2010	69	22	3.1	0.9	1.8	0.6	2.5	0.8	2.7	0.8
2011	48	16	2.1	0.7	1.3	0.4	1.8	0.5	2.0	0.6
2012	56	23	2.5	1.0	1.4	0.6	2.0	0.7	2.3	0.9
2013	56	19	2.4	0.8	1.5	0.4	2.0	0.6	2.2	0.6
2014	59	7	2.5	0.3	1.5	0.2	2.0	0.2	2.4	0.3
2015	47	23	2.0	0.9	1.1	0.5	1.6	0.8	1.8	0.8
2016	46	23	1.9	0.9	1.2	0.4	1.6	0.6	1.8	0.7
2017	23	11	1.0	0.4	0.5	0.2	0.8	0.3	0.8	0.4
2018	17	13	0.7	0.5	0.3	0.3	0.5	0.4	0.6	0.5
2019	8	9	0.3	0.4	0.2	0.2	0.3	0.3	0.3	0.3
1998-2019	1112	333	2.5	0.7	1.5	0.4	2.1	0.6	2.3	0.6

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	59	59.9	9.4	42.2	87.6	49.8	52.8	58.0	65.1	71.8
1999	75	58.2	11.8	37.2	86.5	46.6	49.9	56.5	63.4	78.7
2000	60	56.7	9.9	35.6	81.1	44.5	49.3	56.3	61.7	70.7
2001	64	60.5	12.0	28.7	96.4	47.0	52.7	59.5	66.5	72.9
2002	69	59.5	11.0	36.7	91.1	44.7	53.4	58.3	64.2	76.4
2003	71	57.6	11.6	10.7	85.3	44.2	52.7	56.9	64.1	71.9
2004	64	60.8	10.9	38.9	84.5	47.7	52.9	60.1	66.8	77.8
2005	71	59.1	11.6	22.8	99.0	46.6	50.2	59.2	65.6	72.3
2006	75	60.3	11.7	34.7	101	45.7	52.9	58.6	67.7	75.5
2007	91	61.3	10.2	37.1	87.7	50.5	54.7	60.4	66.3	75.3
2008	82	62.3	9.2	41.8	87.8	51.4	56.2	61.6	67.8	73.7
2009	69	61.0	10.7	26.7	84.4	48.0	54.9	61.1	68.7	73.3
2010	91	61.0	10.0	35.2	90.0	47.9	52.8	60.9	69.1	73.0
2011	64	63.8	10.7	43.5	92.0	50.6	56.3	62.9	71.1	77.5
2012	79	63.1	12.4	21.5	98.2	49.3	53.6	62.9	70.2	78.7
2013	75	63.0	9.9	44.2	90.1	51.2	55.3	64.1	69.1	74.2
2014	66	63.7	10.5	33.5	85.5	49.8	56.3	63.1	69.4	78.9
2015	70	62.9	10.2	39.9	86.7	51.2	54.3	61.5	69.3	77.8
2016	69	66.6	11.7	15.0	90.0	55.9	62.2	67.0	71.3	81.0
2017	34	64.1	11.1	32.9	86.0	53.1	56.9	63.0	70.1	78.4
2018	30	66.5	7.7	53.1	79.1	55.5	62.0	65.9	72.8	78.2
2019	17	66.4	7.0	56.5	80.9	58.3	59.3	66.3	71.3	75.1
1998-2019	1445	61.4	11.0	10.7	101	48.4	54.2	60.5	68.2	76.0

Table 3a

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

Year of diagnosis	Cases n	Std.		Min.	Max.	Median				
		Mean	dev.			10%	25%	50%	75%	90%
1998	49	59.2	8.9	42.2	87.6	49.6	52.7	57.6	64.7	70.8
1999	60	57.8	11.5	37.2	86.5	46.5	50.0	56.7	62.3	76.6
2000	51	56.7	8.9	35.6	81.1	45.7	51.5	56.4	61.5	67.2
2001	50	58.0	10.7	28.7	87.4	45.1	51.7	58.2	63.2	72.5
2002	53	59.0	11.0	36.7	91.1	44.7	53.4	56.8	63.7	72.9
2003	56	58.1	10.4	38.2	83.0	44.0	52.0	56.5	65.0	72.7
2004	54	60.1	10.6	38.9	84.5	47.7	52.6	60.0	66.2	73.8
2005	61	58.7	10.2	40.9	99.0	46.7	51.3	59.1	65.3	68.3
2006	55	60.1	9.7	45.0	80.9	45.7	53.2	58.1	67.7	74.7
2007	73	60.5	9.2	40.2	87.7	50.5	54.7	60.3	65.3	72.7
2008	66	61.6	8.9	41.8	86.5	49.5	55.5	61.4	67.8	71.4
2009	55	60.6	9.9	26.7	84.1	50.1	54.9	61.1	68.6	71.4
2010	69	60.6	10.1	35.2	76.6	47.3	51.8	60.4	69.3	73.1
2011	48	62.2	10.4	43.5	86.3	46.7	55.1	61.8	70.4	76.4
2012	56	62.2	10.6	44.9	88.0	49.3	53.2	61.4	70.0	78.5
2013	56	61.5	9.2	44.2	83.1	50.6	54.7	60.1	67.8	74.1
2014	59	63.9	10.2	45.5	85.5	49.8	56.3	62.7	69.4	79.5
2015	47	63.7	10.0	47.7	86.7	51.0	54.3	63.1	73.2	77.7
2016	46	64.3	11.9	15.0	90.0	55.9	59.8	65.5	69.9	76.4
2017	23	62.9	11.6	32.9	86.0	53.1	54.9	61.6	69.5	78.4
2018	17	69.0	8.4	54.1	79.1	55.4	62.7	71.1	74.3	79.0
2019	8	66.8	8.1	56.5	80.9	56.5	60.0	67.0	71.7	80.9
1998-2019	1112	60.7	10.3	15.0	99.0	48.3	53.7	60.0	67.5	74.2

Table 3b

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

Year of diagnosis	Cases n	Mean	Std. dev.	Min.	Max.	Median				
						10%	25%	50%	75%	90%
1998	10	63.7	11.3	51.5	81.8	53.1	55.1	58.5	77.3	79.6
1999	15	59.7	13.3	41.4	86.4	48.7	49.4	56.1	73.4	79.3
2000	9	56.4	15.0	38.5	79.7	38.5	44.5	49.3	71.4	79.7
2001	14	69.5	12.6	51.7	96.4	56.9	62.0	68.8	72.7	94.7
2002	16	60.9	11.5	42.8	81.9	45.0	54.1	60.7	65.9	81.7
2003	15	55.8	15.6	10.7	85.3	44.7	52.7	57.1	63.5	69.0
2004	10	64.4	12.4	47.2	82.3	48.0	55.7	63.8	76.9	80.0
2005	10	61.3	18.6	22.8	81.0	34.1	50.2	62.0	77.4	80.5
2006	20	60.6	16.3	34.7	101	39.8	48.6	60.1	69.0	81.3
2007	18	64.6	13.0	37.1	87.4	47.8	55.7	63.2	76.2	86.6
2008	16	65.2	10.2	54.1	87.8	54.3	57.3	62.3	70.5	83.1
2009	14	62.7	13.5	40.9	84.4	47.6	49.8	63.1	70.0	81.4
2010	22	62.4	9.8	47.4	90.0	50.7	54.8	63.3	67.4	70.2
2011	16	68.3	10.6	58.1	92.0	58.1	59.7	65.0	72.1	85.9
2012	23	65.4	16.1	21.5	98.2	49.9	57.8	64.6	74.8	83.6
2013	19	67.4	10.7	52.0	90.1	54.4	56.7	65.8	71.7	87.7
2014	7	61.6	13.8	33.5	74.9	33.5	56.1	66.4	69.5	74.9
2015	23	61.2	10.6	39.9	84.1	53.3	54.0	59.0	67.2	78.4
2016	23	71.0	10.1	42.4	86.2	61.2	65.4	70.5	80.6	81.5
2017	11	66.6	9.9	51.5	85.0	53.6	60.4	66.8	72.8	77.1
2018	13	63.1	5.4	53.1	70.8	55.5	60.1	64.2	65.5	69.9
2019	9	66.0	6.3	58.3	75.1	58.3	59.3	66.3	71.3	75.1
1998-2019	333	63.8	12.6	10.7	101	49.4	56.1	63.5	70.8	81.0

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									
5-9									
10-14	1	0.1	0.1	1	0.2	0.2			0.0
15-19	0	0.0	0.1			0.2			0.0
20-24	1	0.1	0.2			0.2	1	0.5	0.5
25-29	1	0.1	0.4	1	0.2	0.3			0.5
30-34	3	0.4	0.7	2	0.3	0.6	1	0.5	0.9
35-39	3	0.4	1.1	1	0.2	0.8	2	0.9	1.9
40-44	15	1.8	2.9	13	2.1	2.9	2	0.9	2.8
45-49	51	6.1	9.0	43	6.9	9.8	8	3.7	6.5
50-54	113	13.5	22.5	94	15.1	24.9	19	8.9	15.4
55-59	145	17.3	39.8	108	17.3	42.2	37	17.3	32.7
60-64	148	17.7	57.5	106	17.0	59.2	42	19.6	52.3
65-69	165	19.7	77.2	123	19.7	79.0	42	19.6	72.0
70-74	87	10.4	87.6	64	10.3	89.2	23	10.7	82.7
75-79	56	6.7	94.3	44	7.1	96.3	12	5.6	88.3
80-84	29	3.5	97.7	15	2.4	98.7	14	6.5	94.9
85+	19	2.3	100.0	8	1.3	100.0	11	5.1	100.0
All ages	837	100.0		623	100.0		214	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=23 %	Females DCO rate n=13 %	Males Prop.all cancers n=143063 %	Females Prop.all cancers n=144724 %
0- 4								
5- 9								
10-14	1		0.1				0.8	
15-19								
20-24		1		0.1				0.2
25-29	1		0.0				0.1	
30-34	2	1	0.1	0.0			0.2	0.1
35-39	1	2	0.0	0.1			0.1	0.1
40-44	13	2	0.6	0.1			0.5	0.0
45-49	43	8	1.7	0.3	2.3		0.9	0.1
50-54	94	19	4.0	0.8	1.1		1.2	0.2
55-59	108	37	5.6	1.9		2.7	0.9	0.3
60-64	106	41	6.5	2.3	3.8	2.4	0.6	0.3
65-69	123	42	8.1	2.5	3.3		0.5	0.2
70-74	64	23	4.6	1.4	10.9		0.2	0.1
75-79	44	12	4.0	0.9	4.5		0.2	0.1
80-84	15	14	2.3	1.4	13.3	28.6	0.1	0.1
85+	8	11	1.9	1.1	25.0	63.6	0.1	0.1
All ages	623	213			3.7	6.1	0.4	0.1
Incidence								
Raw			2.1	0.7				
WS			1.2	0.4				
ES			1.7	0.5				
BRD-S			1.9	0.6				

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).

ICD-10 C14: Malignant neoplasm of other and ill-defined sites in the lip, oral cavity and pharynx
 Age distribution and age-specific incidence 2007 - 2019 (Males: 623, Females: 213)

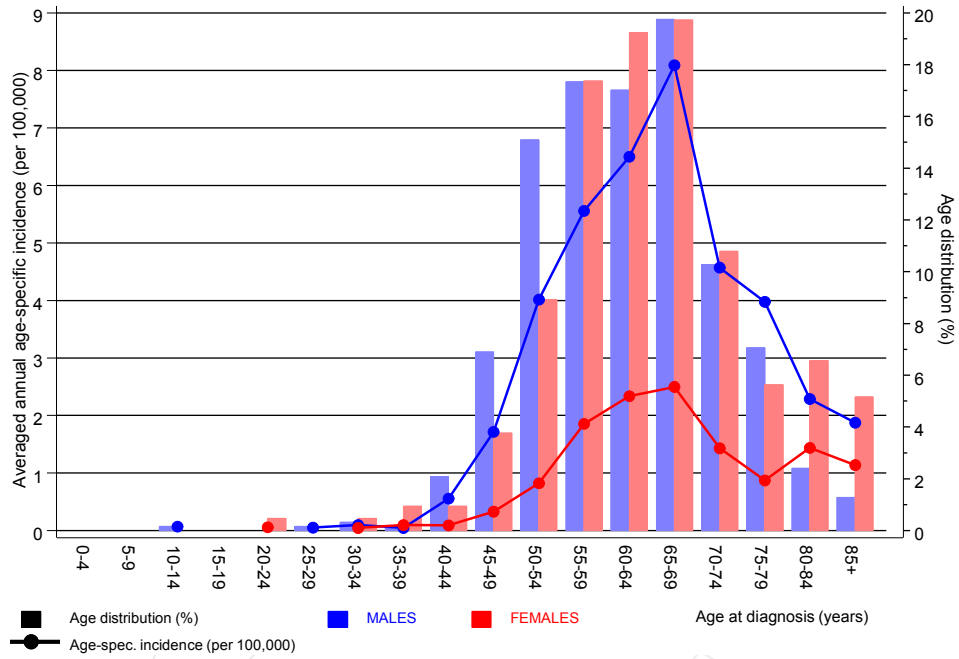


Figure 6. Age distribution (males: mean=62.3 yrs, median=61.9 yrs; females: mean=65.2 yrs, median=64.9 yrs) and age-specific incidence.

ICD-10 C14: Malignant neoplasm of other and ill-defined sites in the lip, oral cavity and pharynx
Age-specific incidence rates: international comparison

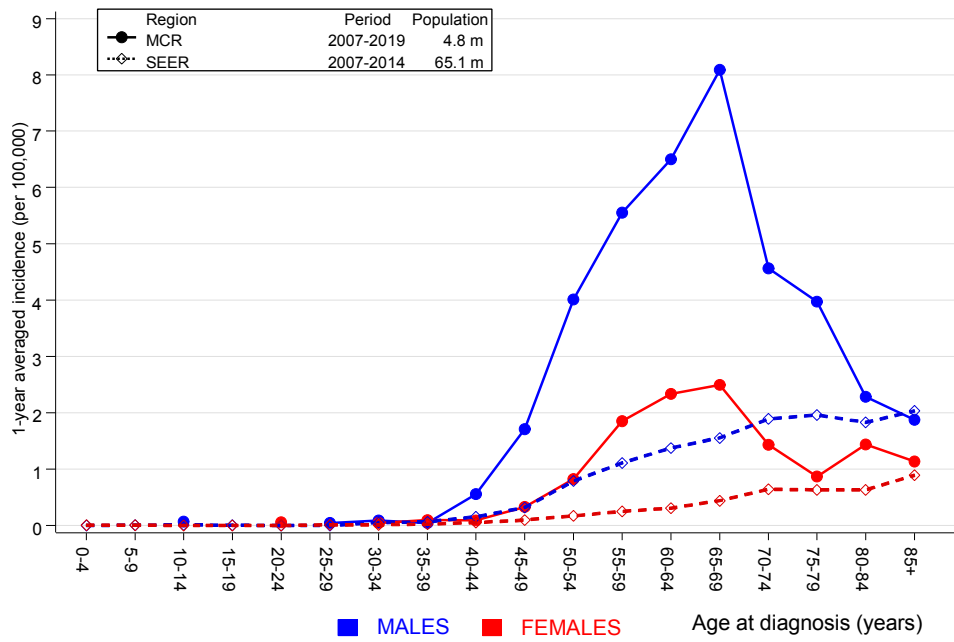


Figure 6a. Age-specific incidence in MCR registry areas compared to SEER (Surveillance, Epidemiology, and End Results, USA).

Reference:

Surveillance, Epidemiology, and End Results (SEER) Program SEER*Stat Database: Incidence - SEER 18 Regs Research Data, released April 2019, based on the November 2018 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 1998–2019

MALES

Diagnosis	Observed n	Expected n	SIR	CI 95%	CI 95%	EAR	DCO %
C03-C06 Oral cavity	17	0.5	31.7	18.5	50.7 #	45.5	
C07-C08 Salivary gland	1	0.1	11.9	0.3	66.3	2.5	
C09-C10 Oropharynx	11	0.7	15.7	7.8	28.1 #	28.4	
C12-C13 Hypopharynx	19	0.4	50.7	30.5	79.1 #	51.4	10.5
C15 Oesophagus	28	1.0	28.7	19.1	41.4 #	74.6	17.9
C16 Stomach	6	1.5	4.1	1.5	8.9 #	12.5	16.7
C18 Colon	13	3.5	3.7	2.0	6.3 #	26.1	15.4
C19-C20 Rectum	7	2.4	2.9	1.2	6.1 #	12.8	
C21 Anus/canal	3	0.1	25.7	5.3	75.0 #	8.0	
C22 Liver	6	1.2	4.9	1.8	10.6 #	13.2	16.7
C25 Pancreas	4	1.5	2.7	0.7	6.9	6.9	25.0
C32 Larynx	17	0.5	31.6	18.4	50.6 #	45.5	23.5
C33-C34 Lung	57	5.2	11.1	8.4	14.3 #	143.2	8.8
C43 Malign. melanoma	2	2.0	1.0	0.1	3.6	0.0	
C60 Penis	1	0.1	9.6	0.2	53.8	2.5	
C61 Prostate	10	11.7	0.9	0.4	1.6	-4.7	
C64 Kidney	5	1.6	3.2	1.0	7.4 #	9.5	
C65 Renal pelvis	1	0.2	6.3	0.2	35.4	2.3	
C66 Ureter	1	0.1	11.3	0.3	62.8	2.5	
C67 Bladder	6	1.6	3.9	1.4	8.4 #	12.3	16.7
C68 Urethra	1	0.0	29.0	0.7	161.8	2.7	
C82-C85 NHL	3	1.7	1.8	0.4	5.2	3.7	
C90 Mult. myeloma	1	0.5	2.0	0.1	11.1	1.4	
C91-C96 Leukaemia	1	0.5	1.9	0.0	10.3	1.3	
Not observed	0	3.7	0.0	0.0	1.0 #	-10.3	
All further malignancies	221	42.2	5.2	4.6	6.0 #	493.7	10.0
Patients		1075					
Median age at next malignancy (years)		62.9					
Person-years		3621					
Mean observation time (years)		3.4					
Median observation time (years)		1.8					

The occurrence of further specified malignancy is statistically significant.

Table 7b

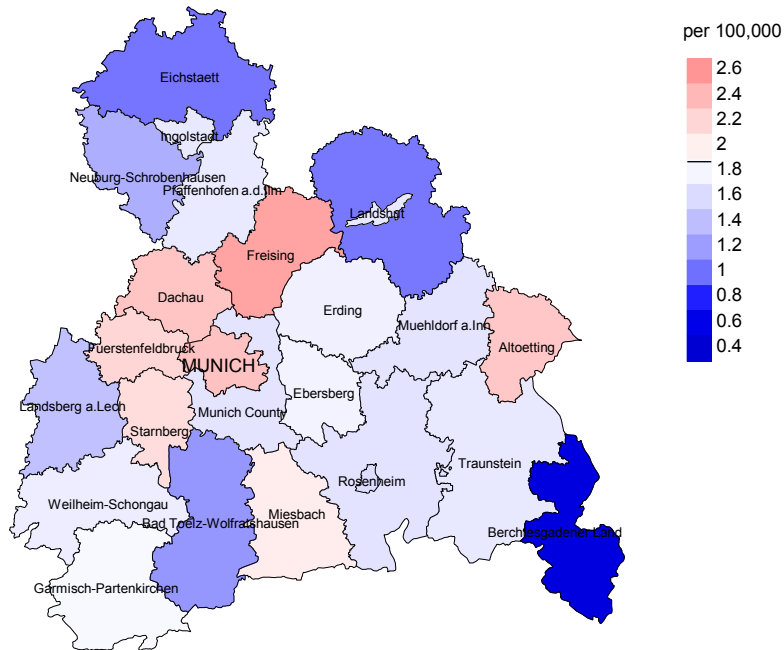
Standardized incidence ratio (SIR, with 95% confidence limits),
excess absolute risk (EAR) and DCO rate of further malignancies
for period 1998–2019

FEMALES

Diagnosis	Observed n	Expected n	SIR	CI 95%	CI 95%	EAR	DCO %
C09–C10 Oropharynx	6	0.1	108.7	39.9	236.5 #	56.2	
C12–C13 Hypopharynx	5	0.0	340.0	110.4	793.5 #	47.1	
C14 ENT cancer	1	0.0	679.7	17.2	3787 #	9.4	
C15 Oesophagus	9	0.1	122.4	56.0	232.4 #	84.4	
C18 Colon	3	0.9	3.4	0.7	9.8	19.9	
C19–C20 Rectum	2	0.4	5.1	0.6	18.3	15.2	
C22 Liver	3	0.1	24.8	5.1	72.6 #	27.2	33.3
C32 Larynx	3	0.0	139.4	28.7	407.4 #	28.2	33.3
C33–C34 Lung	8	0.9	9.2	4.0	18.2 #	67.5	12.5
C43 Malign. melanoma	2	0.4	4.8	0.6	17.4	15.0	50.0
C50 Breast	3	3.5	0.9	0.2	2.5	-4.5	
C51 Vulva	2	0.1	20.0	2.4	72.3 #	18.0	
C56 Ovary	1	0.4	2.3	0.1	13.1	5.4	
C64 Kidney	1	0.2	4.2	0.1	23.5 #	7.2	
C73 Thyroid	1	0.2	4.9	0.1	27.5	7.5	
C90 Mult. myeloma	1	0.1	8.4	0.2	46.8	8.3	100.0
Not observed	0	3.2	0.0	0.0	1.2	-30.0	
All further malignancies	51	10.6	4.8	3.6	6.3 #	382.1	9.8
Patients		310					
Median age at next malignancy (years)		64.0					
Person-years		1057					
Mean observation time (years)		3.4					
Median observation time (years)		2.2					

The occurrence of further specified malignancy is statistically significant.

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



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

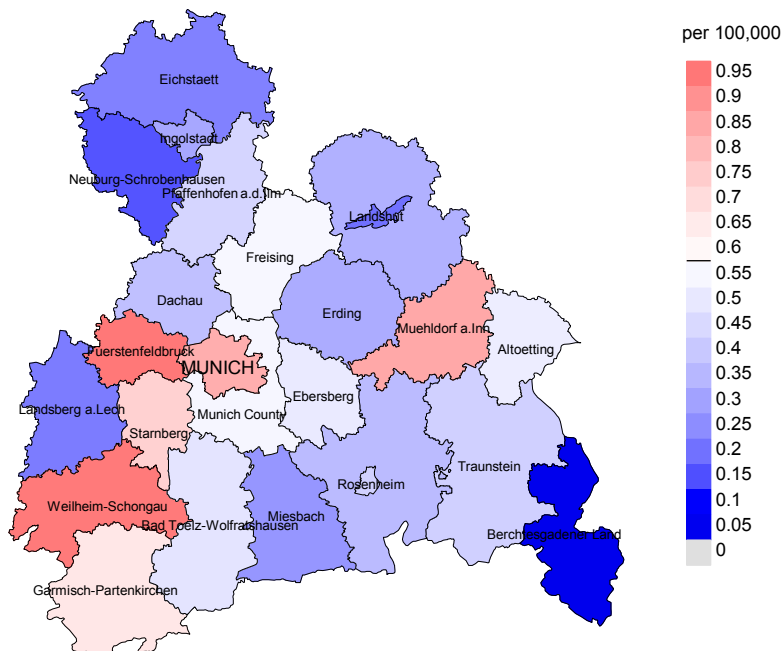
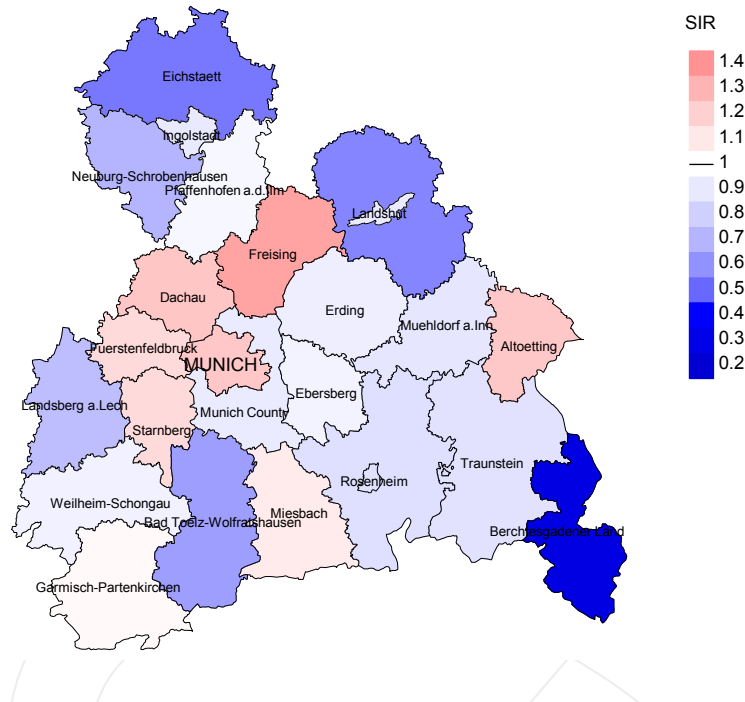


Figure 8a. Map of cancer incidence (german standard population, incl. DCO cases) by county averaged for period 2007 to 2019. According to their individual incidence rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 1.9/100,000 WS N=623, females 0.6/100,000 WS N=213).

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 5 women were identified with newly diagnosed other oral and pharynx cancer. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 0.5/100,000 (german standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.1 and 1.5/100,000.

Standardized incidence ratio (SIR) 2007 - 2019: Males



Standardized incidence ratio (SIR) 2007 - 2019: Females

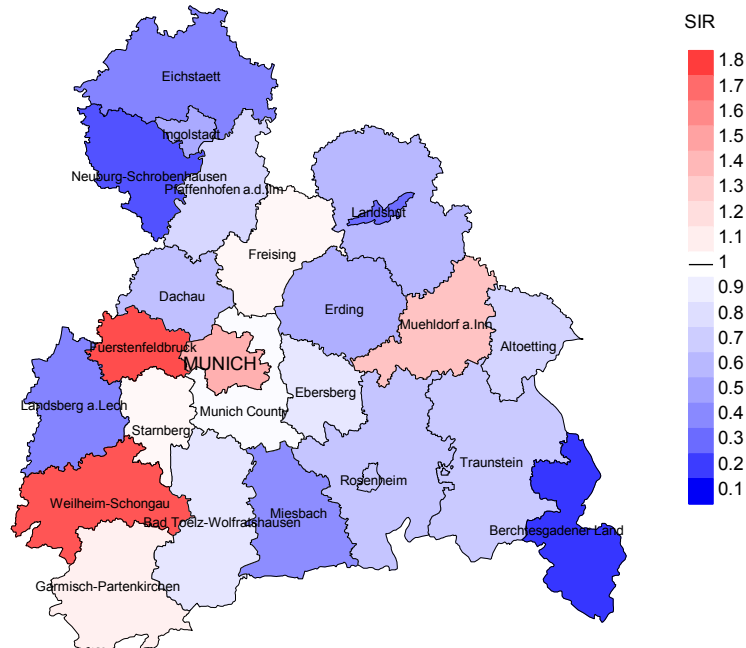


Figure 8b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2007 to 2019. According to their individual SIR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=623, females N=213).

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 5 women were identified with newly diagnosed other oral and pharynx cancer. Therefore, the mean standardized incidence ratio (SIR) for this cancer type in this area can be calculated at 0.85. Though, the value of this parameter may vary with an underlying probability of 99% between 0.18 and 2.41, 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	59	100.0	6.8	56	94.9	94.6
1999	75	98.7	5.3	71	94.7	87.3
2000	60	98.3	6.7	57	95.0	94.7
2001	64	100.0	7.8	59	92.2	94.9
2002	69	100.0	10.1	60	87.0	98.3
2003	71	100.0	1.4	56	78.9	94.6
2004	64	100.0	3.1	56	87.5	96.4
2005	71	100.0	1.4	55	77.5	96.4
2006	75	98.7	2.7	61	81.3	95.1
2007	91	94.5	6.6	74	81.3	93.2
2008	82	100.0	4.9	63	76.8	93.7
2009	69	98.6	1.4	56	81.2	94.6
2010	91	96.7	3.3	60	65.9	95.0
2011	64	98.4	9.4	43	67.2	93.0
2012	79	96.2	7.6	54	68.4	90.7
2013	75	97.3	2.7	48	64.0	91.7
2014	66	92.4	4.5	40	60.6	90.0
2015	70	100.0	4.3	33	47.1	97.0
2016	69	97.1	1.4	36	52.2	83.3
2017	34	100.0	2.9	17	50.0	52.9
2018	30	96.7		9	30.0	55.6
2019	17	82.4		3	17.6	66.7
1998-2019	1445	98.0	4.6	1067	73.8	92.5

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	59	40	92.5	10	16.9
1999	75	48	91.7	14	18.7
2000	60	53	90.6	12	20.0
2001	64	51	88.2	9	14.1
2002	69	65	98.5	13	18.8
2003	71	56	96.4	8	11.3
2004	64	59	98.3	12	18.8
2005	71	61	96.7	9	12.7
2006	75	59	96.6	11	14.7
2007	91	76	97.4	16	17.6
2008	82	73	100.0	16	19.5
2009	69	54	98.1	7	10.1
2010	91	61	100.0	12	13.2
2011	64	60	98.3	11	17.2
2012	79	66	97.0	15	19.0
2013	75	63	100.0	10	13.3
2014	66	56	96.4	11	16.7
2015	70	71	98.6	10	14.3
2016	69	62	95.2	15	21.7
2017	34	51	94.1	6	17.6
2018	30	42	35.7	2	6.7
2019	17	33	51.5	3	17.6
1998–2019	1445	1260	93.3	232	16.1

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	40	77.5	22.5	89.2
1999	48	70.8	29.2	93.2
2000	53	79.2	20.8	93.8
2001	51	70.6	29.4	86.7
2002	65	84.6	15.4	95.3
2003	56	85.7	14.3	92.6
2004	59	86.4	13.6	94.8
2005	61	82.0	18.0	94.9
2006	59	86.4	13.6	93.0
2007	76	78.9	21.1	87.8
2008	73	80.8	19.2	89.0
2009	54	88.9	11.1	98.1
2010	61	83.6	16.4	96.7
2011	60	76.7	23.3	88.1
2012	66	75.8	24.2	84.4
2013	63	81.0	19.0	92.1
2014	56	80.4	19.6	88.9
2015	71	70.4	29.6	90.0
2016	62	72.6	27.4	91.5
2017	51	74.5	25.5	85.4
2018	42	31.0	69.0	80.0
2019	33	36.4	63.6	88.2
1998–2019	1260	76.7	23.3	91.1

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	60.6	60.6	60.1	61.0
1999	40	56.4	56.4	58.7	55.5
2000	42	58.2	57.8	67.4	58.5
2001	43	60.4	60.4	56.2	60.4
2002	52	60.6	60.6	61.0	60.6
2003	39	58.0	57.9	67.0	57.9
2004	48	59.2	58.2	62.3	58.0
2005	46	64.3	63.0	78.5	63.2
2006	49	62.4	62.6	59.7	62.4
2007	66	61.8	60.6	68.7	61.3
2008	61	63.0	61.6	65.2	63.2
2009	41	64.4	64.0	69.1	64.0
2010	53	63.2	61.9	65.4	61.9
2011	48	68.6	67.1	70.4	68.3
2012	51	64.8	65.6	64.0	65.1
2013	45	63.4	63.0	71.4	63.3
2014	45	66.7	66.7	67.9	66.8
2015	48	65.5	66.3	64.5	65.5
2016	47	71.7	66.8	74.3	69.4
2017	37	69.2	64.4	76.0	65.5
2018	32	69.9	63.1	70.9	66.1
2019	25	68.5	65.0	68.9	70.4
1998-2019	988	63.4	62.3	67.0	63.0

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	10	67.5	67.4	67.6	67.6
1999	8	52.6	52.5	54.0	53.3
2000	11	56.8	55.5	80.8	56.8
2001	8	70.6	70.6	70.0	70.6
2002	13	63.0	63.0	71.5	63.0
2003	17	72.4	71.8	73.3	73.1
2004	11	64.7	62.9	66.7	63.8
2005	15	64.2	64.2	65.6	64.2
2006	10	71.8	66.6	85.5	71.8
2007	10	65.6	63.9	84.8	65.6
2008	12	62.7	61.8	63.4	62.5
2009	13	55.3	56.5	51.0	56.5
2010	8	67.1	67.1		67.1
2011	12	68.4	65.9	72.7	68.4
2012	15	69.7	68.7	87.9	68.7
2013	18	69.5	67.3	75.5	67.0
2014	11	66.4	64.0	85.6	66.1
2015	23	71.7	71.3	72.1	71.3
2016	15	69.5	70.8	69.3	69.5
2017	14	73.8	71.8	76.2	71.8
2018	10	72.3	79.0	71.0	75.6
2019	8	64.4	57.9	71.1	59.7
1998-2019	272	67.3	66.4	71.3	66.6

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	22	2.0	0.45	1.3	0.43	1.8	0.44	2.0	0.45
1999	30	2.7	0.50	1.8	0.50	2.4	0.50	2.6	0.47
2000	32	2.8	0.63	1.7	0.57	2.5	0.61	2.7	0.62
2001	30	2.6	0.60	1.6	0.56	2.3	0.59	2.6	0.62
2002	46	2.5	0.87	1.5	0.84	2.2	0.85	2.4	0.87
2003	34	1.8	0.61	1.2	0.61	1.7	0.62	1.8	0.63
2004	42	2.2	0.78	1.4	0.78	2.0	0.79	2.2	0.78
2005	39	2.1	0.64	1.2	0.57	1.7	0.60	2.0	0.66
2006	42	2.2	0.76	1.3	0.75	1.9	0.76	2.1	0.75
2007	51	2.3	0.70	1.4	0.67	2.0	0.67	2.2	0.70
2008	51	2.3	0.77	1.4	0.75	2.0	0.77	2.2	0.80
2009	36	1.6	0.65	1.0	0.63	1.3	0.64	1.5	0.66
2010	43	1.9	0.62	1.2	0.64	1.6	0.64	1.7	0.62
2011	37	1.7	0.77	0.9	0.72	1.3	0.73	1.5	0.75
2012	36	1.6	0.64	0.9	0.61	1.2	0.62	1.4	0.62
2013	38	1.7	0.68	1.0	0.67	1.4	0.67	1.6	0.71
2014	39	1.7	0.66	0.9	0.63	1.3	0.65	1.5	0.65
2015	33	1.4	0.70	0.7	0.64	1.0	0.67	1.3	0.71
2016	33	1.4	0.72	0.7	0.60	1.0	0.64	1.3	0.71
2017	28	1.2	1.22	0.6	1.13	0.9	1.15	1.0	1.23
2018	10	0.4	0.59	0.2	0.59	0.3	0.59	0.4	0.56
2019	9	0.4	1.13	0.2	1.04	0.3	1.08	0.3	1.13
1998-2019	761	1.7	0.68	1.0	0.66	1.4	0.67	1.6	0.69

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	9	0.8	0.90	0.4	0.94	0.5	0.86	0.7	0.98
1999	4	0.3	0.27	0.2	0.28	0.3	0.28	0.3	0.26
2000	10	0.8	1.25	0.6	1.37	0.8	1.36	0.8	1.22
2001	6	0.5	0.43	0.2	0.38	0.4	0.42	0.4	0.45
2002	9	0.5	0.56	0.3	0.52	0.4	0.54	0.4	0.56
2003	14	0.7	0.93	0.3	0.61	0.5	0.68	0.6	0.86
2004	9	0.5	0.90	0.3	0.95	0.3	0.89	0.4	0.83
2005	11	0.6	1.10	0.3	0.98	0.4	1.06	0.5	0.95
2006	9	0.4	0.45	0.2	0.32	0.3	0.34	0.4	0.41
2007	9	0.4	0.50	0.2	0.49	0.3	0.47	0.3	0.47
2008	8	0.3	0.50	0.2	0.48	0.3	0.51	0.3	0.56
2009	12	0.5	0.86	0.3	0.93	0.4	0.97	0.4	0.83
2010	8	0.3	0.36	0.2	0.31	0.2	0.30	0.3	0.36
2011	9	0.4	0.56	0.2	0.56	0.3	0.56	0.3	0.57
2012	14	0.6	0.61	0.3	0.48	0.4	0.50	0.5	0.52
2013	13	0.5	0.68	0.3	0.71	0.4	0.69	0.5	0.70
2014	6	0.2	0.86	0.2	1.09	0.2	0.95	0.3	0.98
2015	17	0.7	0.74	0.3	0.56	0.4	0.57	0.5	0.66
2016	12	0.5	0.52	0.2	0.55	0.3	0.56	0.4	0.54
2017	10	0.4	1.00	0.2	0.86	0.2	0.88	0.3	0.90
2018	3	0.1	0.23	0.0	0.07	0.0	0.11	0.1	0.16
2019	3	0.1	0.33	0.1	0.38	0.1	0.37	0.1	0.34
1998-2019	205	0.4	0.62	0.2	0.56	0.3	0.57	0.4	0.60

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									
5-9									
10-14									
15-19									
20-24	2	0.4	0.4	1	0.2	0.2	1	0.8	0.8
25-29	0	0.0	0.4			0.2			0.8
30-34	1	0.2	0.5			0.2	1	0.8	1.6
35-39	3	0.5	1.1	1	0.2	0.5	2	1.6	3.2
40-44	5	0.9	1.9	4	0.9	1.4	1	0.8	4.0
45-49	28	4.9	6.9	23	5.2	6.5	5	4.0	8.1
50-54	52	9.2	16.0	45	10.1	16.7	7	5.6	13.7
55-59	97	17.1	33.1	84	18.9	35.6	13	10.5	24.2
60-64	96	16.9	50.0	75	16.9	52.5	21	16.9	41.1
65-69	112	19.7	69.7	88	19.8	72.3	24	19.4	60.5
70-74	70	12.3	82.0	56	12.6	84.9	14	11.3	71.8
75-79	52	9.2	91.2	39	8.8	93.7	13	10.5	82.3
80-84	29	5.1	96.3	21	4.7	98.4	8	6.5	88.7
85+	21	3.7	100.0	7	1.6	100.0	14	11.3	100.0
All ages	568	100.0		444	100.0		124	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								
5- 9								
10-14								
15-19								
20-24	1	1	0.1	1.00	0.1	1.00	1.5	2.6
25-29								
30-34		1			0.0	1.00		0.6
35-39	1	2	0.0	1.00	0.1	1.00	0.4	0.5
40-44	4	1	0.2	0.31	0.0	0.50	0.7	0.1
45-49	23	5	0.9	0.53	0.2	0.63	1.7	0.3
50-54	45	7	1.9	0.48	0.3	0.37	1.8	0.3
55-59	84	13	4.3	0.78	0.7	0.35	2.0	0.4
60-64	75	21	4.6	0.71	1.2	0.51	1.3	0.5
65-69	88	24	5.8	0.72	1.4	0.57	1.0	0.4
70-74	56	14	4.0	0.88	0.9	0.61	0.5	0.2
75-79	39	13	3.5	0.89	0.9	1.08	0.3	0.1
80-84	21	8	3.2	1.40	0.8	0.57	0.2	0.1
85+	7	14	1.6	0.88	1.5	1.27	0.1	0.1
All ages	444	124					0.7	0.2
Mortality								
Raw			1.5	0.71	0.4	0.58		
WS			0.8	0.68	0.2	0.53		
ES			1.2	0.69	0.3	0.54		
BRD-S			1.3	0.72	0.3	0.56		
PYLL-70								
per 100,000			12.5		3.0			
ES			10.7		2.6			
AYLL-70			10.4		10.6			

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	1	0.3					1	100.0
C03-C06 Oral cavity	32	10.2	10	31.3	4	12.5	18	56.3
C07-C08 Salivary gland	1	0.3			1	100.0		
C09-C10 Oropharynx	21	6.7	5	23.8	2	9.5	14	66.7
C12-C13 Hypopharynx	18	5.7			8	44.4	10	55.6
C15 Oesophagus	34	10.8	4	11.8	3	8.8	27	79.4
C16 Stomach	6	1.9	3	50.0			3	50.0
C18 Colon	12	3.8	4	33.3			8	66.7
C19-C20 Rectum	15	4.8	4	26.7	1	6.7	10	66.7
C21 Anus/canal	1	0.3			1	100.0		
C22 Liver	7	2.2	1	14.3			6	85.7
C23-C24 Bile	1	0.3	1	100.0				
C25 Pancreas	6	1.9	1	16.7			5	83.3
C30-C31 Sinuses	3	1.0	1	33.3	1	33.3	1	33.3
C32 Larynx	16	5.1	5	31.3	5	31.3	6	37.5
C33-C34 Lung	70	22.3	10	14.3	4	5.7	56	80.0
C43 Malign. melanoma	2	0.6	1	50.0			1	50.0
C44 Skin others	20	6.4	4	20.0	3	15.0	13	65.0
C61 Prostate	16	5.1	10	62.5			6	37.5
C62 Testis	1	0.3	1	100.0				
C64 Kidney	6	1.9	3	50.0	1	16.7	2	33.3
C65 Renal pelvis	3	1.0	1	33.3			2	66.7
C66 Ureter	1	0.3					1	100.0
C67 Bladder	6	1.9	1	16.7			5	83.3
C68 Urinary org.	1	0.3					1	100.0
C76-C79 CUP	3	1.0	3	100.0				
C81 Hodgkin lymphoma	1	0.3	1	100.0				
C82-C85 NHL	8	2.5	3	37.5	3	37.5	2	25.0
C90 Mult. myeloma	1	0.3					1	100.0
C91-C96 Leukaemia	1	0.3	1	100.0				
All further malignancies	314	100.0	78	24.8	37	11.8	199	63.4

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	15	15.0	12	80.0	1	6.7	2	13.3
C09-C10 Oropharynx	7	7.0	3	42.9	2	28.6	2	28.6
C11 Nasopharynx	1	1.0			1	100.0		
C12-C13 Hypopharynx	4	4.0			1	25.0	3	75.0
C15 Oesophagus	8	8.0					8	100.0
C18 Colon	5	5.0	1	20.0			4	80.0
C19-C20 Rectum	1	1.0					1	100.0
C22 Liver	1	1.0					1	100.0
C26 GI cancer	1	1.0					1	100.0
C30-C31 Sinuses	2	2.0	1	50.0			1	50.0
C32 Larynx	7	7.0	3	42.9			4	57.1
C33-C34 Lung	12	12.0	1	8.3			11	91.7
C43 Malign. melanoma	1	1.0					1	100.0
C44 Skin others	6	6.0	1	16.7			5	83.3
C50 Breast	14	14.0	11	78.6			3	21.4
C51 Vulva	1	1.0					1	100.0
C53 Cervix uteri	2	2.0	1	50.0			1	50.0
C54 Corpus uteri	2	2.0	2	100.0				
C56 Ovary	1	1.0					1	100.0
C65 Renal pelvis	1	1.0					1	100.0
C67 Bladder	1	1.0	1	100.0				
C68 Urethra	1	1.0	1	100.0				
C73 Thyroid	1	1.0	1	100.0				
C76-C79 CUP	1	1.0	1	100.0				
C82-C85 NHL	2	2.0					2	100.0
C90 Mult. myeloma	2	2.0	1	50.0			1	50.0
All further malignancies	100	100.0	41	41.0	5	5.0	54	54.0

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 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						
5- 9						
10-14						
15-19						
20-24	1	1	0.1	1.00	1.7	2.7
25-29						
30-34		1		0.0	1.00	0.7
35-39		2		0.1	1.00	0.6
40-44	4	1	0.2	0.33	0.8	0.1
45-49	20	4	0.8	0.57	1.6	0.3
50-54	39	7	1.7	0.45	1.8	0.3
55-59	75	12	3.9	0.76	2.1	0.4
60-64	69	13	4.2	0.78	1.4	0.3
65-69	74	24	4.9	0.76	1.1	0.5
70-74	45	11	3.2	0.94	0.5	0.2
75-79	34	7	3.1	1.00	0.4	0.1
80-84	12	6	1.8	1.33	0.2	0.1
85+	3	13	0.7	1.00	0.1	0.1
All ages	376	102			0.8	0.2
Mortality						
Raw			1.2	0.73		
WS			0.7	0.69		
ES			1.0	0.71		
BRD-S			1.1	0.73		
PYLL-70						
per 100,000			11.0			2.7
ES			9.4			2.3
AYLL-70			10.4			10.7

* 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						
5- 9						
10-14						
15-19						
20-24	1	1	0.1	1.00	1.7	2.8
25-29						
30-34		1		0.0	1.00	0.7
35-39		2		0.1	1.00	0.6
40-44	4	1	0.2	0.33	0.8	0.1
45-49	19	4	0.8	0.61	1.6	0.3
50-54	33	6	1.4	0.42	1.5	0.3
55-59	61	10	3.1	0.74	1.7	0.3
60-64	48	6	2.9	0.62	1.0	0.2
65-69	58	19	3.8	0.70	0.9	0.4
70-74	29	6	2.1	0.73	0.4	0.1
75-79	22	5	2.0	0.76	0.3	0.1
80-84	9	5	1.4	1.13	0.1	0.1
85+	3	9	0.7	1.50	0.1	0.1
All ages	287	75			0.6	0.2
Mortality						
Raw			1.0	0.64		
WS			0.6	0.62		
ES			0.8	0.63		
BRD-S			0.9	0.65		
PYLL-70						
per 100,000			9.2			2.3
ES			7.8			1.9
AYLL-70			10.8			11.8

* See corresponding tables with multiple malignancies.

ICD-10 C14: Malignant neoplasm of other and ill-defined sites in the lip, oral cavity and pharynx
 Age distribution and age-specific mortality 2007 - 2019 (Males: 444, Females: 124)

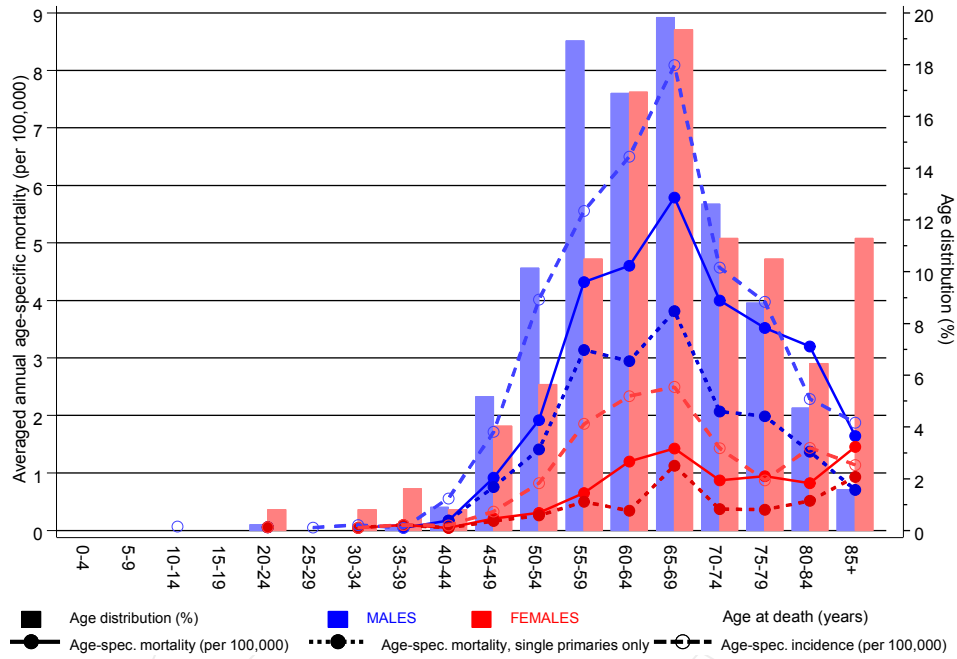
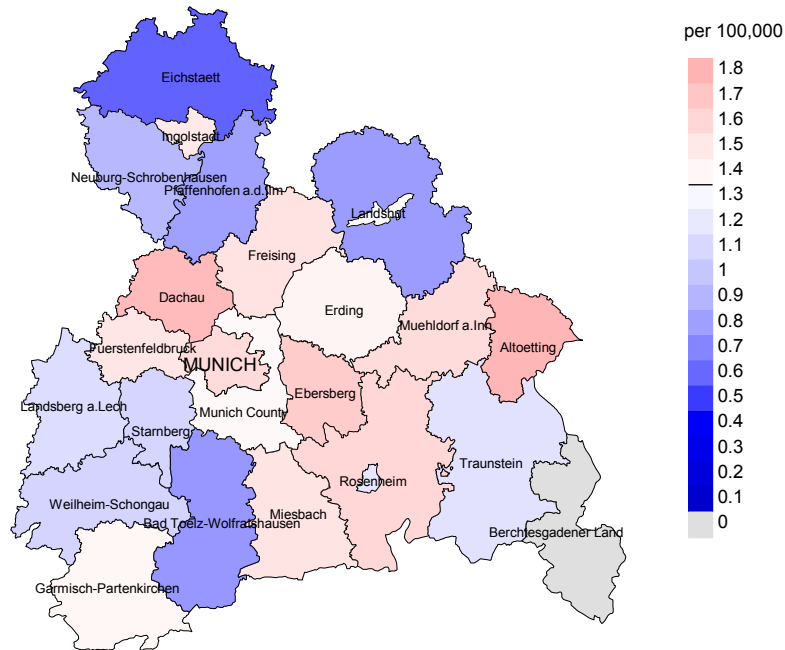


Figure 17. Distribution of age at death (bars; males: mean=60.8 yrs, median=60.1 yrs; females: mean=63.9 yrs, median=63.9 yrs) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

The difference between age at diagnosis (Table 3) and age at other oral and pharynx cancer-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

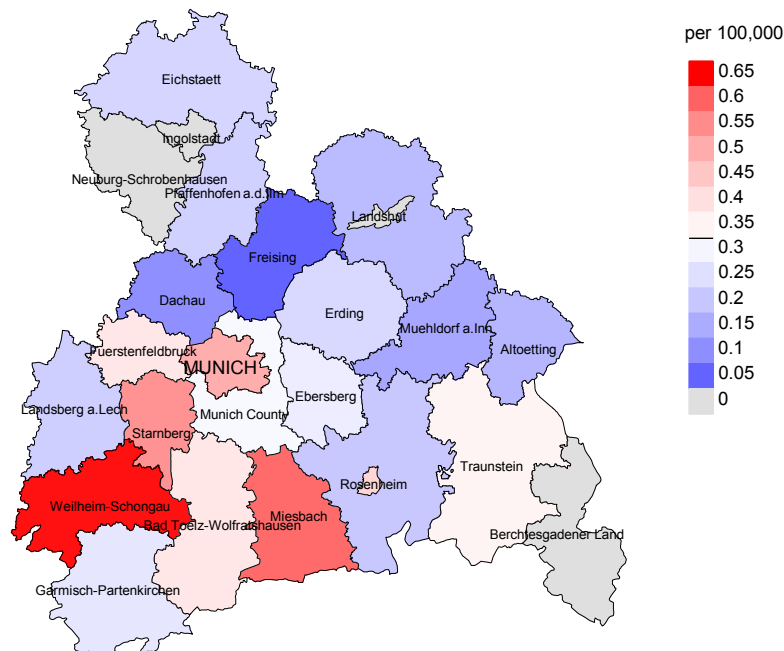
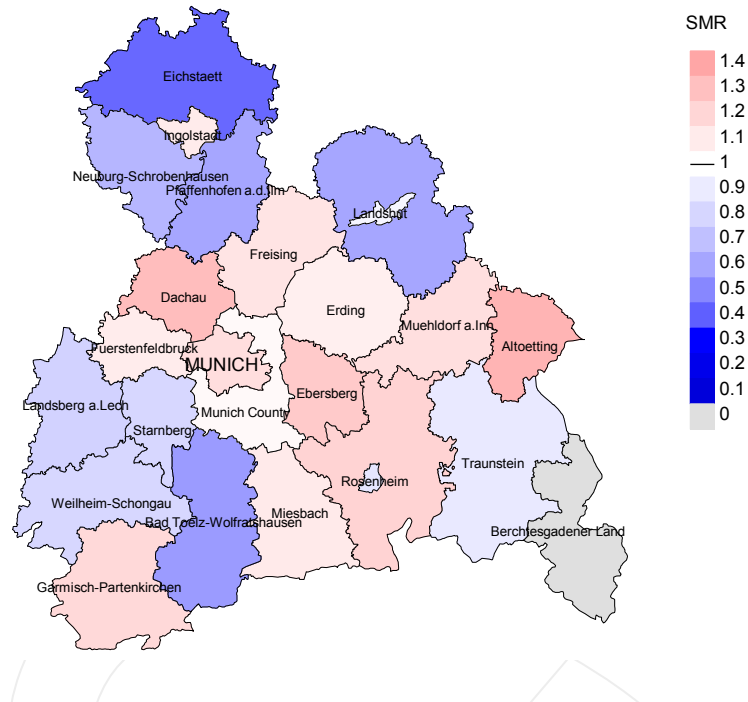


Figure 18a. Map of cancer mortality (german standard population) by county averaged for period 2007 to 2019. According to their individual mortality rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 1.3/100,000 WS N=444, females 0.3/100,000 WS N=124).

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 3 women died from other oral and pharynx cancer. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 0.3/100,000 (german standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.0 and 1.1/100,000.

Standardized mortality ratio (SMR) 2007 - 2019: Males



Standardized mortality ratio (SMR) 2007 - 2019: Females

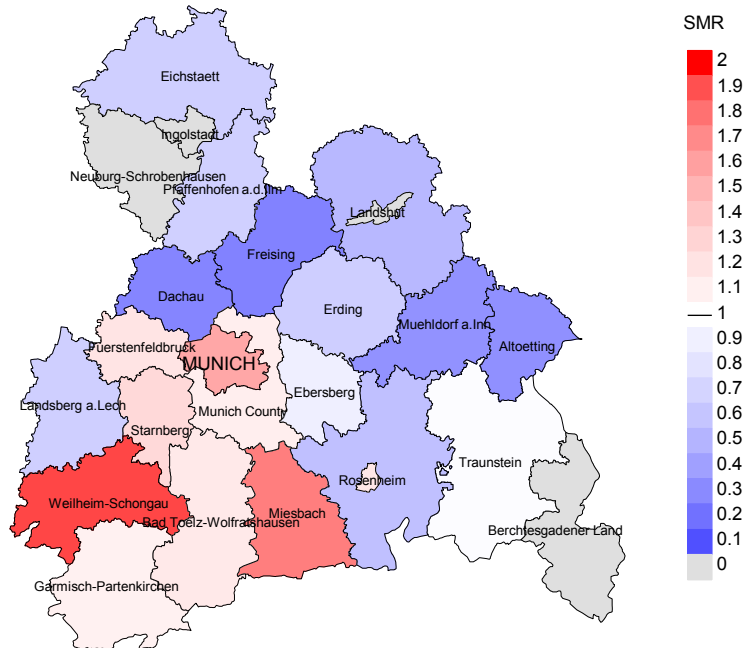


Figure 18b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2007 to 2019. According to their individual SMR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=444, females N=124).

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 3 women died from other oral and pharynx cancer. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 0.89. Though, the value of this parameter may vary with an underlying probability of 99% between 0.10 and 3.24, 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

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