

Munich Cancer Registry



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

ICD-10 C04: Floor of mouth cancer

Incidence and Mortality

Year of diagnosis	1998-2016
Patients	1,017
Diseases	1,018
Creation date	08/21/2018
Export date	08/09/2018
Population	4.81 m





Munich Cancer Registry
Cancer Registry Bavaria - Upper Bavaria Regional Center
at Klinikum Grosshadern/IBE
Marchioninstr. 15
Munich, 81377
Germany

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

https://www.tumorregister-muenchen.de/en/facts/base/bC04__E-ICD-10-C04-Floor-of-mouth-cancer-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	9
5	Age-specific incidence, DCO rate, proportion malignancies	10
6	Age distribution and age-specific incidence (chart)	11
6a	Age-specific incidence internationally (chart)	12
7	Standardized incidence ratio of further malignancies	13
8a	Map of cancer incidence (WS) by county (chart)	15
8b	Standardized incidence ratio (SIR) by county (chart)	16
9a	Pts incident cohorts and mortality / yr	17
9b	Incidence and mortality by year of diagnosis	18
9c	Cancer-related deaths, death certification available / yr	19
10	Medians of age at death / yr	20
11	Mortality by year of death	22
12	Distribution of age at death	23
13	Age-specific mortality	24
14	Further malignancies in deaths	25
15	Age-specific mortality (first primaries)	27
16	Age-specific mortality (single primaries)	28
17	Age distribution and age-specific mortality (chart)	29
18a	Map of cancer mortality (WS) by county (chart)	30
18b	Standardized mortality ratio (SMR) by county (chart)	31

**Global Statements about the statistics on the Internet –
Baseline Statistics** (grey button ) , **Survival** (red button )

In these analyses, the clinics and physicians of Upper Bavaria and the city and county of Landshut[#], with a total of 4.69 million inhabitants, account for the frequency of cancer diseases^{##} and the achieved long term results. Additionally, the long term survival evaluated by the Munich Cancer Registry (MCR) is compared with the results of the population-based registry in the USA (SEER), which is useful for checking the consistency of the data on an international level.

In comparing several tables, inconsistent figures may be detected. This is based on the fact that different patient cohorts are included in the base calculation, for example when proportions of multiple tumors or DCO-cases^{###} are concerned. In other cases the individual tumor diagnosis is the basis for calculation, for example with incidence.

The foot notes describe the currentness of the data. The baseline statistics and survival data are updated annually. This yearly analysis comprises the Annual Report of the MCR.

Clinics and physicians have access to essentially more detailed data, with which they can check, compare and in the best case optimize their own data and results.

We would be pleased to receive corrections, critique and useful suggestions. Just send an e-mail to tumor@ibe.med.uni-muenchen.de.

Munich Cancer Registry, August 2018

- [#] Base data has been collected since 1998. An increase in new diseases is apparent, which is an effect of two extensions in the MCR catchment area (from a base population of 2.65 million to 4.10 in 2002, and to 4.69 million in 2007).
- ^{##} Due to the high frequency and good prognosis of non-malignant skin cancer (C44), no systematic ascertainment is performed for this diagnosis. C44 is not designated as a primary, but rather as a secondary tumor.
- ^{###} DCO (death certificate only) identifies a cancer case that first becomes available to the MCR through the death certificate.

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
C04.-	Malignant neoplasm of floor of mouth
C04.0	Anterior floor of mouth
C04.1	Lateral floor of mouth
C04.8	Overlapping lesion of floor of mouth
C04.9	Floor of mouth, unspecified

INCIDENCE

Table 1

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

Year of diagnosis	All cases n	DCO cases n	Prop. DCO %	Prop. at least 1 further malign. prior + synchron. %	Prop. at least 1 further malign. after %	Prop. deaths %	Prop. actively followed %
1998	33	3	9.1	12.1	19.7	90.9	100.0
1999	44	4	9.1	11.7	19.4	84.1	93.2
2000	40	1	2.5	11.1	18.9	75.0	97.5
2001	47	3	6.4	11.6	18.8	76.6	95.7
2002	51	2	3.9	12.6	17.6	74.5	100.0 #
2003	64	5	7.8	14.0	18.0	73.4	96.9
2004	56	3	5.4	14.3	16.7	75.0	98.2
2005	47	3	6.4	15.2	15.4	72.3	97.9
2006	61	1	1.6	15.6	15.4	72.1	95.1
2007	65	5	7.7	14.8	14.1	73.8	89.2 #
2008	64	3	4.7	16.3	13.2	65.6	79.7
2009	79	3	3.8	16.3	12.7	58.2	75.9
2010	86	6	7.0	16.1	11.8	55.8	81.4
2011	46	3	6.5	16.7	9.7	50.0	67.4
2012	65	5	7.7	17.0	8.9	52.3	73.8
2013	72	5	6.9	16.6	8.1	43.1	76.4
2014	48	6	12.5	16.6	7.6	45.8	93.8
2015	36	5	13.9	17.5	6.4	50.0	97.2
2016	14	2	14.3	17.5	8.3	28.6	57.1 ##
1998-2016	1018	68	6.7	17.5	19.7	64.2	87.5

1,018 cases diagnosed 1998-2016 are related to a total of 1,017 patients. Currently, in 368 (36.2 %) of these 1,017 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 279 / 67 / 22 (27.4 % / 6.6 % / 2.2 %) patients exist having 2 / 3 / 4+ malignancies.

The increases of incident cases in 2002 and 2007 reflect the expansion to additional registry areas.

Please be aware that data of recent annual patient cohorts may not yet be fully processed. The years under evaluation can be retrieved from the respective headings.

How to interpret:

In 2014, a subgroup of 48 cases has been diagnosed, of which 16.6 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 7.6 % of cases, at least one new malignancy has occurred during the follow-up period (all numbers refer to the date of the database export, see cover sheet).

Table 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	29	87.9	3	10.3	13.8	20.0	89.7	100.0
1999	29	65.9	1	3.4	10.3	19.8	82.8	93.1
2000	35	87.5	1	2.9	9.7	19.2	77.1	100.0
2001	35	74.5	3	8.6	10.9	19.4	77.1	97.1
2002	37	72.5	1	2.7	12.7	18.6	78.4	100.0 #
2003	48	75.0	5	10.4	14.1	18.7	79.2	97.9
2004	47	83.9	1	2.1	14.2	17.7	74.5	97.9
2005	37	78.7	2	5.4	14.8	15.9	67.6	97.3
2006	51	83.6	1	2.0	15.2	16.0	76.5	96.1
2007	51	78.5	2	3.9	14.5	14.3	78.4	90.2 #
2008	47	73.4	2	4.3	15.9	12.9	66.0	78.7
2009	61	77.2	2	3.3	16.2	12.5	57.4	70.5
2010	66	76.7	5	7.6	16.2	12.2	56.1	78.8
2011	29	63.0	3	10.3	16.6	11.5	55.2	69.0
2012	44	67.7	3	6.8	17.2	9.7	56.8	75.0
2013	57	79.2	4	7.0	17.1	8.9	43.9	71.9
2014	35	72.9	4	11.4	17.1	7.2	48.6	94.3
2015	28	77.8	4	14.3	18.1	2.7	46.4	96.4
2016	11	78.6	2	18.2	18.0	10.0	36.4	63.6 ##
1998-2016	777	76.3	49	6.3	18.0	20.0	66.0	87.4

777 cases diagnosed 1998-2016 are related to a total of 777 patients. Currently, in 288 (37.1 %) of these 777 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 216 / 54 / 18 (27.8 % / 6.9 % / 2.3 %) patients exist having 2 / 3 / 4+ malignancies.

The increases of incident cases in 2002 and 2007 reflect the expansion to additional registry areas.

Please be aware that data of recent annual patient cohorts may not yet be fully processed. The years under evaluation can be retrieved from the respective headings.

How to interpret:

In 2014, a subgroup of 35 cases has been diagnosed, of which 17.1 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 7.2 % 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	4	12.1			0.0	18.5	100.0	100.0
1999	15	34.1	3	20.0	15.8	18.3	86.7	93.3
2000	5	12.5			16.7	17.8	60.0	80.0
2001	12	25.5			13.9	16.7	75.0	91.7
2002	14	27.5	1	7.1	12.0	14.7	64.3	100.0 #
2003	16	25.0			13.6	15.8	56.3	93.8
2004	9	16.1	2	22.2	14.7	13.7	77.8	100.0
2005	10	21.3	1	10.0	16.5	13.8	90.0	100.0
2006	10	16.4			16.8	13.3	50.0	90.0
2007	14	21.5	3	21.4	15.6	13.5	57.1	85.7 #
2008	17	26.6	1	5.9	17.5	14.0	64.7	82.4
2009	18	22.8	1	5.6	16.7	13.4	61.1	94.4
2010	20	23.3	1	5.0	15.9	10.6	55.0	90.0
2011	17	37.0			17.1	5.3	41.2	64.7
2012	21	32.3	2	9.5	16.3	6.8	42.9	71.4
2013	15	20.8	1	6.7	15.2	5.3	40.0	93.3
2014	13	27.1	2	15.4	15.2	8.7	38.5	92.3
2015	8	22.2	1	12.5	15.5	20.0	62.5	100.0
2016	3	21.4			15.8	0.0		33.3 ##
1998-2016	241	23.7	19	7.9	15.8	18.5	58.5	88.0

241 cases diagnosed 1998-2016 are related to a total of 240 patients. Currently, in 80 (33.3 %) of these 240 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 63 / 13 / 4 (26.3 % / 5.4 % / 1.7 %) patients exist having 2 / 3 / 4+ malignancies.

The increases of incident cases in 2002 and 2007 reflect the expansion to additional registry areas.

Please be aware that data of recent annual patient cohorts may not yet be fully processed. The years under evaluation can be retrieved from the respective headings.

How to interpret:

In 2014, a subgroup of 13 cases has been diagnosed, of which 15.2 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 8.7 % 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 2

Incidence measures by year of diagnosis including DCO cases
(with respect to registry area expansion from 2.65 to 4.10 m as of 2002,
and from 4.10 to 4.81 m as of 2007, respectively)

Year of diagnosis	Males n	Females n	Males Inc. raw	Fem. Inc. raw	Males Inc. WS	Fem. Inc. WS	Males Inc. ES	Fem. Inc. ES	Males Inc. BRD-S	Fem. Inc. BRD-S
1998	29	4	2.6	0.3	1.9	0.2	2.4	0.3	2.6	0.3
1999	29	15	2.6	1.3	1.7	0.7	2.3	1.0	2.4	1.0
2000	35	5	3.1	0.4	2.1	0.2	2.8	0.3	2.9	0.4
2001	35	12	3.0	1.0	2.0	0.6	2.7	0.8	3.0	0.8
2002	37	14	2.0	0.7	1.3	0.4	1.7	0.6	1.9	0.6
2003	48	16	2.6	0.8	1.7	0.5	2.3	0.7	2.4	0.8
2004	47	9	2.5	0.5	1.6	0.2	2.2	0.3	2.5	0.4
2005	37	10	2.0	0.5	1.2	0.3	1.6	0.4	1.9	0.4
2006	51	10	2.7	0.5	1.7	0.3	2.4	0.4	2.6	0.4
2007	51	14	2.3	0.6	1.5	0.3	2.0	0.5	2.2	0.5
2008	47	17	2.1	0.7	1.3	0.4	1.8	0.6	2.0	0.7
2009	61	18	2.7	0.8	1.7	0.4	2.4	0.6	2.5	0.7
2010	66	20	2.9	0.9	1.9	0.5	2.6	0.6	2.7	0.7
2011	29	17	1.3	0.7	0.7	0.4	1.1	0.5	1.2	0.6
2012	44	21	1.9	0.9	1.2	0.5	1.6	0.7	1.7	0.8
2013	57	15	2.5	0.6	1.5	0.3	2.1	0.5	2.3	0.5
2014	35	13	1.5	0.5	0.9	0.3	1.2	0.4	1.4	0.4
2015	28	8	1.2	0.3	0.7	0.2	1.0	0.2	1.1	0.3
2016	11	3	0.5	0.1	0.3	0.1	0.4	0.1	0.4	0.1
1998-2016	777	241	2.1	0.6	1.3	0.3	1.8	0.5	2.0	0.5

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

Table 3

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

Year of diagnosis	Cases n	Std.		Min.	Max.	10%	25%	Median		
		Mean	dev.					50%	75%	90%
1998	33	55.3	13.4	0.9	80.5	45.4	49.6	56.5	58.6	70.8
1999	44	61.7	12.3	42.9	95.7	49.8	54.6	58.9	66.3	77.6
2000	40	56.7	10.3	39.1	85.8	44.3	49.5	57.2	62.2	71.1
2001	47	61.0	11.1	39.4	93.7	46.5	53.5	60.7	68.0	73.2
2002	51	60.0	11.8	38.0	99.0	45.7	51.2	60.3	65.8	75.1
2003	64	57.6	9.6	34.4	82.2	45.4	51.8	57.7	62.7	69.7
2004	56	60.0	10.6	39.4	84.8	46.1	52.8	59.6	66.8	75.0
2005	47	61.8	11.9	40.8	85.9	46.7	54.6	60.8	67.7	81.4
2006	61	60.1	10.6	34.7	91.4	48.4	52.9	58.8	66.3	74.8
2007	65	60.6	12.4	34.0	98.2	46.5	51.4	59.6	67.5	75.4
2008	64	62.8	11.7	41.2	100	49.2	53.4	62.3	69.2	79.4
2009	79	61.2	9.7	41.5	95.3	48.4	53.8	60.7	67.6	73.4
2010	86	58.9	11.0	29.9	90.9	45.2	51.4	59.7	66.9	70.9
2011	46	61.7	10.7	42.5	79.7	49.2	52.6	58.1	71.8	76.7
2012	65	61.4	10.2	43.7	100	48.0	52.1	62.3	67.3	72.2
2013	72	62.0	10.1	44.8	90.5	50.3	54.6	60.4	68.8	75.0
2014	48	64.1	10.7	43.5	90.0	48.6	57.8	64.1	70.3	78.1
2015	36	65.6	9.8	41.5	85.3	51.2	59.7	65.1	73.3	76.1
2016	14	62.1	10.1	46.4	84.4	51.3	53.7	60.9	69.6	72.2
1998-2016	1018	60.7	11.0	0.9	100	47.7	52.9	59.9	67.5	74.7

Table 3a

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

Year of diagnosis	Cases n	Std.		Min.	Max.	10%	25%	Median		
		Mean	dev.					50%	75%	90%
1998	29	55.4	14.3	0.9	80.5	44.0	49.6	56.5	64.6	72.0
1999	29	59.3	11.3	42.9	90.8	45.1	52.8	57.7	62.3	74.0
2000	35	55.6	9.4	39.1	77.5	44.0	49.1	55.5	61.1	68.0
2001	35	59.5	11.5	39.4	93.7	45.4	50.8	59.7	65.6	73.2
2002	37	58.6	10.2	38.0	79.4	45.2	51.2	60.3	63.7	74.8
2003	48	57.5	9.8	34.4	82.2	43.8	52.1	57.7	62.7	71.1
2004	47	58.9	9.9	39.4	81.9	45.5	52.6	58.9	63.9	73.0
2005	37	60.4	11.8	40.8	85.0	44.6	52.1	58.2	66.9	77.2
2006	51	58.8	10.2	34.7	84.4	48.0	52.5	57.6	64.9	71.3
2007	51	59.4	10.6	42.6	87.0	46.5	50.5	57.1	67.1	73.3
2008	47	62.3	11.8	41.2	100	49.2	51.6	62.2	68.3	80.0
2009	61	60.2	9.1	41.5	87.9	48.0	53.8	59.6	67.0	71.3
2010	66	56.7	10.1	29.9	78.6	43.4	50.6	56.6	63.3	69.8
2011	29	60.1	11.1	42.5	79.7	47.6	52.1	56.8	71.3	77.3
2012	44	60.0	9.1	43.7	79.5	48.0	51.5	61.4	67.1	70.5
2013	57	61.1	8.7	45.2	78.6	49.4	54.7	60.3	66.0	74.3
2014	35	62.4	10.6	43.5	90.0	48.4	53.2	63.1	69.9	74.9
2015	28	64.2	9.8	41.5	85.0	50.8	58.2	64.0	73.0	76.1
2016	11	62.1	9.8	51.3	84.4	53.4	53.7	60.2	69.6	70.5
1998-2016	777	59.4	10.5	0.9	100	46.7	51.9	58.9	66.3	73.2

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	4	54.7	4.4	49.6	58.6	49.6	51.0	55.2	58.3	58.6
1999	15	66.2	13.1	53.6	95.7	53.6	56.2	61.6	72.2	91.9
2000	5	64.3	14.2	48.5	85.8	48.5	57.1	60.6	69.7	85.8
2001	12	65.3	8.9	56.4	89.8	56.7	60.4	62.9	69.1	69.3
2002	14	63.9	14.8	39.1	99.0	50.7	54.6	61.2	74.8	77.2
2003	16	57.9	9.5	43.5	80.2	46.2	49.3	58.3	63.0	67.4
2004	9	65.6	12.9	47.4	84.8	47.4	54.2	68.1	75.5	84.8
2005	10	66.9	11.6	54.1	85.9	54.5	58.9	63.2	80.8	83.7
2006	10	66.5	10.6	56.0	91.4	56.2	58.8	63.8	71.2	83.1
2007	14	65.0	17.0	34.0	98.2	50.0	55.1	63.4	71.9	91.0
2008	17	64.3	11.6	46.2	89.0	48.8	55.3	62.7	70.0	79.4
2009	18	64.8	11.1	48.4	95.3	50.6	58.2	63.9	68.9	77.2
2010	20	66.3	10.5	49.9	90.9	52.2	61.7	66.3	68.9	83.5
2011	17	64.5	9.7	49.5	77.1	51.6	55.1	69.7	71.8	75.4
2012	21	64.2	12.0	45.5	100	49.9	58.1	64.2	72.2	72.7
2013	15	65.6	13.9	44.8	90.5	51.3	54.5	66.2	74.0	88.3
2014	13	68.7	10.0	53.4	88.4	57.2	63.1	67.3	74.7	82.2
2015	8	70.4	9.0	54.5	85.3	54.5	65.7	72.2	73.6	85.3
2016	3	62.0	13.7	46.4	72.2	46.4	46.4	67.3	72.2	72.2
1998-2016	241	64.9	11.7	34.0	100	51.3	56.4	63.6	71.8	80.2

Table 4

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

Age at diagnosis Years	Cases n	Males			Females				
		%	Cum.%	n	%	Cum.%	n	%	Cum.%
0-4									
5-9									
10-14									
15-19									
20-24									
25-29	1	0.2	0.2	1	0.2	0.2			0.0
30-34	1	0.2	0.3			0.2	1	0.7	0.7
35-39	2	0.3	0.7	2	0.5	0.7			0.7
40-44	18	3.1	3.8	17	4.0	4.7	1	0.7	1.4
45-49	57	9.9	13.7	47	11.0	15.6	10	6.8	8.2
50-54	96	16.7	30.4	80	18.6	34.3	16	11.0	19.2
55-59	85	14.8	45.2	63	14.7	49.0	22	15.1	34.2
60-64	99	17.2	62.4	79	18.4	67.4	20	13.7	47.9
65-69	94	16.3	78.8	66	15.4	82.8	28	19.2	67.1
70-74	69	12.0	90.8	44	10.3	93.0	25	17.1	84.2
75-79	30	5.2	96.0	21	4.9	97.9	9	6.2	90.4
80-84	8	1.4	97.4	5	1.2	99.1	3	2.1	92.5
85+	15	2.6	100.0	4	0.9	100.0	11	7.5	100.0
All ages	575	100.0		429	100.0		146	100.0	

Table 5

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

Age at diagnosis Years	Males n	Females n	Males Age- spec. incid.	Females Age- spec. incid.	Males DCO rate n=31 %	Females DCO rate n=12 %	Males Prop.all cancers n=113978 %	Females Prop.all cancers n=112253 %
0- 4								
5- 9								
10-14								
15-19								
20-24								
25-29	1		0.1				0.1	
30-34		1		0.1				0.1
35-39	2		0.1				0.1	
40-44	17	1	0.9	0.1			0.8	0.0
45-49	47	10	2.4	0.5			1.2	0.1
50-54	80	16	4.6	0.9	2.5		1.3	0.2
55-59	63	22	4.5	1.5	6.3	13.6	0.7	0.2
60-64	79	20	6.4	1.5	7.6	5.0	0.6	0.2
65-69	66	28	5.6	2.2	10.6	7.1	0.4	0.2
70-74	44	25	4.0	2.0	13.6		0.2	0.2
75-79	21	9	2.6	0.9	19.0		0.1	0.1
80-84	5	3	1.1	0.4		33.3	0.0	0.0
85+	4	11	1.3	1.5	50.0	45.5	0.1	0.1
All ages	429	146			7.2	8.2	0.4	0.1
Incidence								
Raw			1.9	0.6				
WS			1.2	0.3				
ES			1.6	0.5				
BRD-S			1.7	0.5				

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 C04: Malignant neoplasm of floor of mouth
 Age distribution and age-specific incidence 2007 - 2016 (Males: 429, Females: 146)

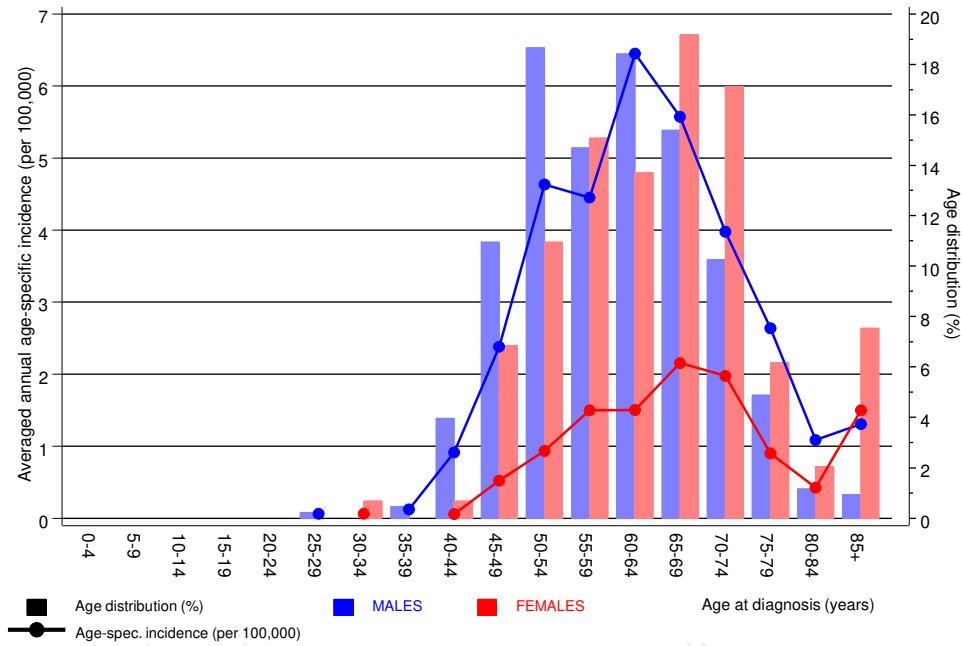


Figure 6. Age distribution (males: mean=60.4 yrs, median=60.5 yrs; females: mean=65.5 yrs, median=65.8 yrs) and age-specific incidence.

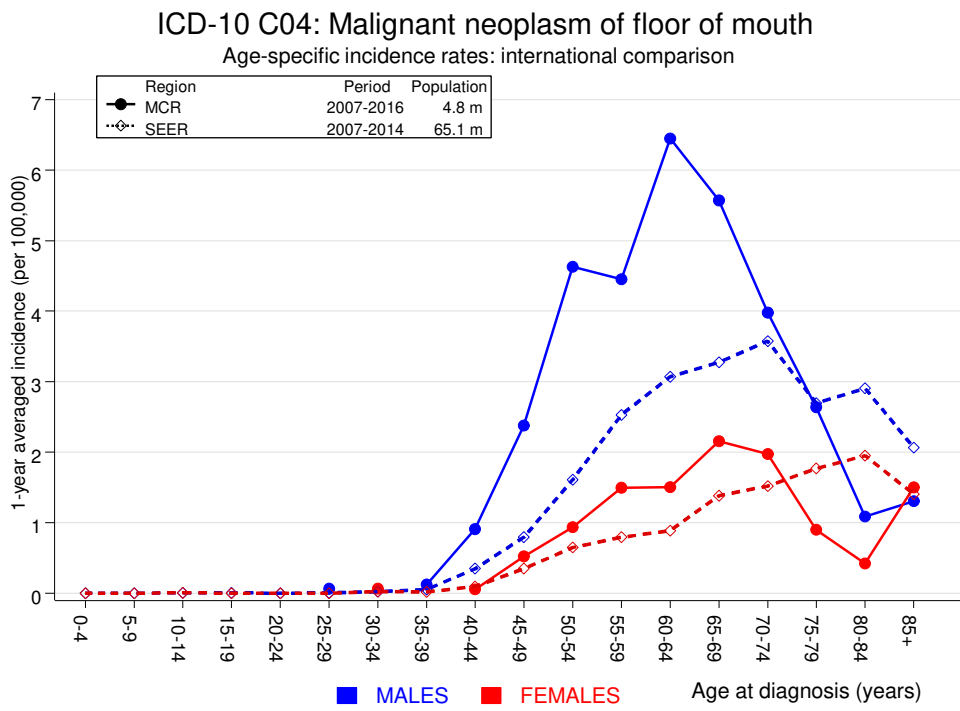


Figure 6a. Age-specific incidence in MCR registry areas compared to SEER (Surveillance, Epidemiology, and End Results, USA).

Reference:
 Surveillance, Epidemiology, and End Results (SEER) Program SEER*Stat Database: Incidence - SEER 18 Regs Research Data, released April 2014, based on the November 2013 submission. <http://www.seer.cancer.gov>.

Table 7a

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

MALES

Diagnosis	Observed n	Expected n	SIR	CI 95%	CI 95%	EAR	DCO %
C03–C06 Oral cavity	4	0.4	10.8	2.9	27.6 #	14.5	
C09–C10 Oropharynx	23	0.5	48.1	30.5	72.2 #	89.9	4.3
C12–C13 Hypopharynx	17	0.3	66.2	38.6	106.0 #	66.9	5.9
C15 Oesophagus	23	0.6	37.3	23.6	55.9 #	89.4	4.3
C18 Colon	8	2.2	3.6	1.6	7.1 #	23.1	
C19–C20 Rectum	4	1.6	2.6	0.7	6.6	9.8	
C22 Liver	6	0.8	7.7	2.8	16.9 #	20.9	
C25 Pancreas	2	0.9	2.2	0.3	8.0	4.4	
C32 Larynx	13	0.4	35.6	19.0	60.9 #	50.4	7.7
C33–C34 Lung	49	3.3	14.9	11.0	19.7 #	182.5	10.2
C43 Malign. melanoma	4	1.3	3.1	0.8	7.9	10.8	
C61 Prostate	9	7.5	1.2	0.5	2.3	6.0	
C64 Kidney	4	1.0	3.9	1.1	9.9 #	11.9	
C67 Bladder	3	0.9	3.2	0.7	9.4	8.3	
C73 Thyroid	2	0.3	7.1	0.9	25.7	6.9	
C76–C79 CUP	4	0.4	9.5	2.6	24.2 #	14.3	
Others, specified	8	1.6	5.1	2.2	10.1 #	25.7	
Not observed	0	3.1	0.0	0.0	1.2	-12.4	
All further malignancies	183	27.0	6.8	5.8	7.8 #	623.1	4.9
Patients		735					
Median age at next malignancy (years)		62.6					
Person-years		2504					
Mean observation time (years)		3.4					
Median observation time (years)		2.1					

The occurrence of further malignancy listed is statistically significant.

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

Table 7b

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

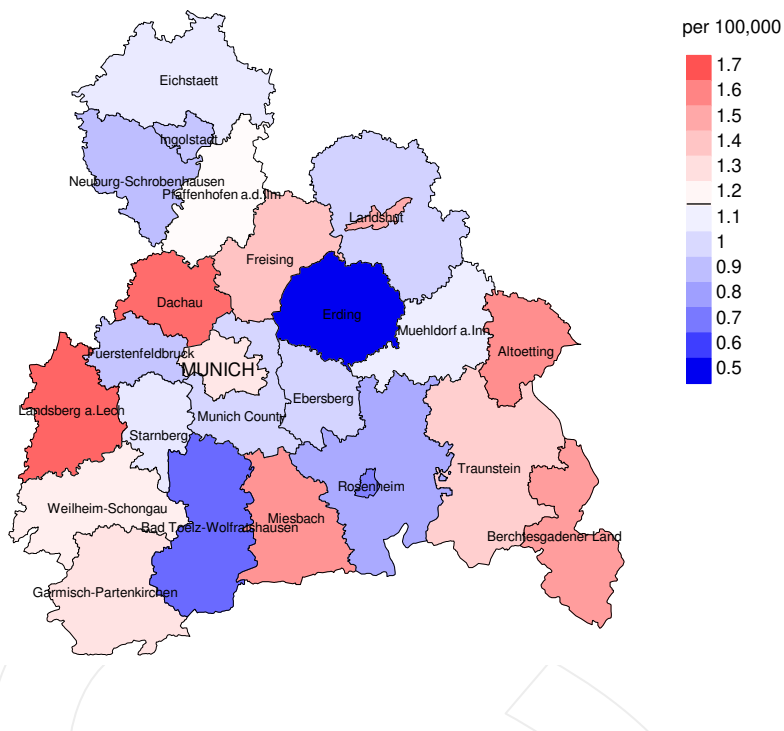
FEMALES

Diagnosis	Observed n	Expected n	SIR	CI 95%	CI 95%	EAR	DCO %
C09–C10 Oropharynx	8	0.0	165.4	71.4	325.9 #	90.0	
C12–C13 Hypopharynx	3	0.0	221.7	45.7	647.9 #	33.8	66.7
C15 Oesophagus	6	0.1	92.7	34.0	201.7 #	67.2	16.7
C18 Colon	3	0.8	3.9	0.8	11.3	25.2	
C22 Liver	2	0.1	19.1	2.3	69.2 #	21.5	
C25 Pancreas	2	0.4	5.4	0.7	19.6	18.5	
C30–C31 Sinuses	2	0.0	163.1	19.7	589.0 #	22.5	100.0
C33–C34 Lung	16	0.7	21.4	12.3	34.8 #	172.6	12.5
C50 Breast	2	3.0	0.7	0.1	2.4	-11.6	
Others, specified	4	0.9	4.7	1.3	12.0 #	35.6	
Not observed	0	3.2	0.0	0.0	1.2	-36.3	
All further malignancies	48	9.2	5.2	3.8	6.9 #	438.8	14.6
Patients		226					
Median age at next malignancy (years)		66.8					
Person-years		884					
Mean observation time (years)		3.9					
Median observation time (years)		2.8					

The occurrence of further malignancy listed is statistically significant.

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

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



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

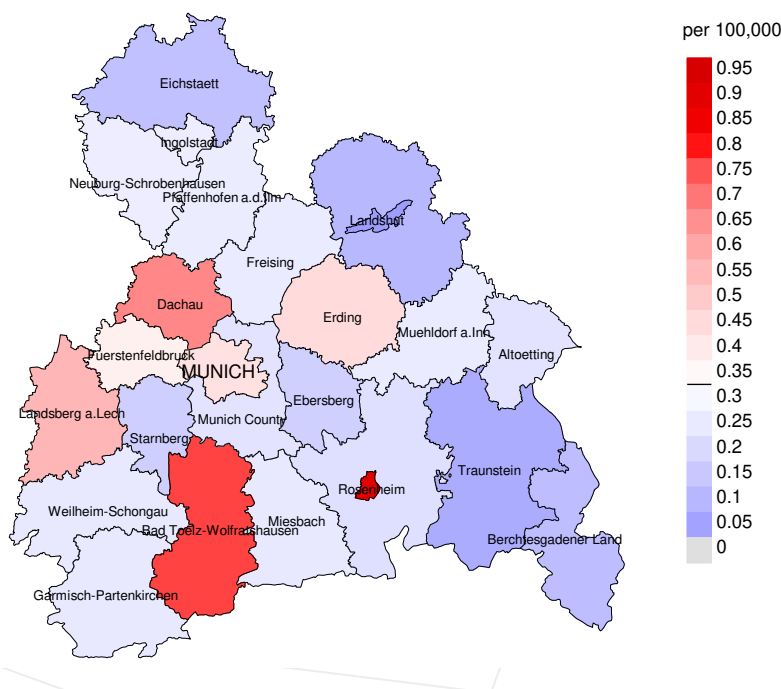
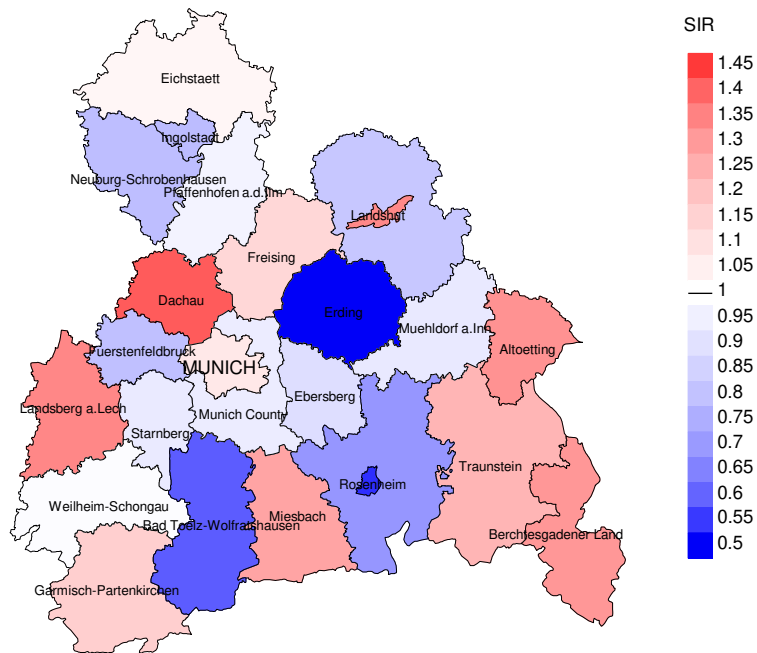


Figure 8a. Map of cancer incidence (world standard population, incl. DCO cases) by county averaged for period 2007 to 2016. According to their individual incidence rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 1.2/100,000 WS N=429, females 0.3/100,000 WS N=146).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 66,416 female residents (averaged) in the period from 2007 to 2016 a total of 2 women were identified with newly diagnosed floor of mouth cancer. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 0.2/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.0 and 1.2/100,000.

Standardized incidence ratio (SIR) 2007 - 2016: Males



Standardized incidence ratio (SIR) 2007 - 2016: Females

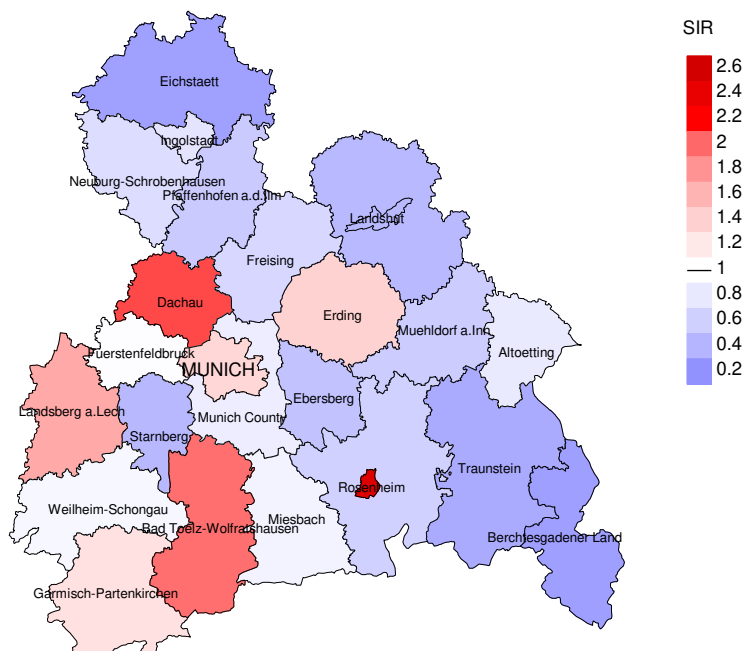


Figure 8b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2007 to 2016. According to their individual SIR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=429, females N=146).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 66,416 female residents (averaged) in the period from 2007 to 2016 a total of 2 women were identified with newly diagnosed floor of mouth cancer. Therefore, the mean standardized incidence ratio (SIR) for this cancer type in this area can be calculated at 0.50. Though, the value of this parameter may vary with an underlying probability of 99% between 0.03 and 2.30, and is therefore not statistically striking.

MORTALITY

Table 9a

Annual cohorts: Incident cancers, follow-up status, proportion of DCO, deaths among the annual cohorts and proportion of available death certificates (with respect to registry area expansion from 2.65 to 4.10 m as of 2002, and from 4.10 to 4.81 m as of 2007, respectively)

Year of diagnosis	Incident cases n	Prop. actively followed %	Prop. DCO %	Deaths n	Prop. deaths %	Prop. deaths with death certific. %
1998	33	100.0	9.1	30	90.9	93.3
1999	44	93.2	9.1	37	84.1	86.5
2000	40	97.5	2.5	30	75.0	93.3
2001	47	95.7	6.4	36	76.6	97.2
2002	51	100.0	3.9	38	74.5	97.4
2003	64	96.9	7.8	47	73.4	97.9
2004	56	98.2	5.4	42	75.0	97.6
2005	47	97.9	6.4	34	72.3	100.0
2006	61	95.1	1.6	44	72.1	100.0
2007	65	89.2	7.7	48	73.8	100.0
2008	64	79.7	4.7	42	65.6	95.2
2009	79	75.9	3.8	46	58.2	100.0
2010	86	81.4	7.0	48	55.8	100.0
2011	46	67.4	6.5	23	50.0	100.0
2012	65	73.8	7.7	34	52.3	94.1
2013	72	76.4	6.9	31	43.1	93.5
2014	48	93.8	12.5	22	45.8	90.9
2015	36	97.2	13.9	18	50.0	88.9
2016	14	57.1	14.3	4	28.6	100.0
1998-2016	1018	87.5	6.7	654	64.2	96.5

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 4.81 m as of 2007, respectively)

Year of diagnosis/ death	Incident cases n	Deaths n	Prop. deaths with death certific. %	Deaths in same year n	Prop. deaths in same year %
1998	33	27	96.3	9	27.3
1999	44	24	87.5	7	15.9
2000	40	25	92.0	5	12.5
2001	47	35	88.6	8	17.0
2002	51	49	98.0	6	11.8
2003	64	57	96.5	11	17.2
2004	56	44	93.2	12	21.4
2005	47	38	100.0	4	8.5
2006	61	39	100.0	2	3.3
2007	65	46	97.8	10	15.4
2008	64	52	98.1	9	14.1
2009	79	67	98.5	12	15.2
2010	86	63	100.0	11	12.8
2011	46	56	98.2	6	13.0
2012	65	67	98.5	9	13.8
2013	72	55	98.2	11	15.3
2014	48	43	97.7	10	20.8
2015	36	56	100.0	13	36.1
2016	14	30	100.0	4	28.6
1998-2016	1018	873	97.4	159	15.6

Table 9c

Annual cohorts of deaths, proportion of cancer-related and non-cancer-related deaths, and cancer recorded on death certificates
(incl. DCO)

(with respect to registry area expansion from 2.65 to 4.10 m as of 2002,
and from 4.10 to 4.81 m as of 2007, respectively)

Year of death	Deaths n	Prop. cancer- related %	Prop. non-cancer- related %	Prop. cancer recorded on death certificate %
1998	27	81.5	18.5	92.3
1999	24	66.7	33.3	95.2
2000	25	64.0	36.0	78.3
2001	35	80.0	20.0	96.8
2002	49	87.8	12.2	95.8
2003	57	82.5	17.5	92.7
2004	44	75.0	25.0	92.7
2005	38	86.8	13.2	92.1
2006	39	79.5	20.5	87.2
2007	46	73.9	26.1	88.9
2008	52	78.8	21.2	92.2
2009	67	83.6	16.4	90.9
2010	63	74.6	25.4	92.1
2011	56	73.2	26.8	85.5
2012	67	80.6	19.4	92.4
2013	55	80.0	20.0	94.4
2014	43	72.1	27.9	83.3
2015	56	69.6	30.4	87.5
2016	30	73.3	26.7	80.0
1998-2016	873	77.7	22.3	90.4

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	24	59.6	58.1	75.5	58.1
1999	18	54.7	57.5	50.3	53.1
2000	19	61.2	60.5	62.4	61.2
2001	29	60.5	60.5	53.5	61.0
2002	37	61.4	61.3	66.1	61.3
2003	48	63.2	63.0	68.4	64.9
2004	35	63.5	62.9	64.9	63.7
2005	30	69.1	67.7	79.6	69.1
2006	31	63.9	63.1	67.2	63.2
2007	38	62.8	60.0	66.0	62.3
2008	42	64.6	64.6	66.5	64.4
2009	55	66.6	63.9	74.1	63.9
2010	51	64.4	63.5	68.7	64.4
2011	44	63.0	61.3	67.1	62.0
2012	52	65.1	63.9	65.6	64.9
2013	40	66.3	65.3	72.4	65.3
2014	29	67.6	66.1	71.5	66.8
2015	39	62.5	61.7	65.2	62.5
2016	24	67.3	68.3	65.0	68.3
1998–2016	685	63.9	63.0	67.1	63.5

Deaths of patients are considered to be cancer-related, in case that fact was recorded on the death certificate, or patients had suffered from metastasis or recurrence.

Table 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	3	56.0	57.6	55.0	55.8
1999	6	81.3	70.6	91.9	70.6
2000	6	63.3	63.3	70.3	63.3
2001	6	68.3	73.9	62.8	73.9
2002	12	62.5	62.5		62.5
2003	9	69.8	70.4	59.5	70.4
2004	9	72.3	72.3	76.9	70.7
2005	8	62.8	62.1	85.1	62.1
2006	8	65.3	66.6	64.9	65.7
2007	8	64.4	64.1	64.8	64.4
2008	10	64.6	66.1	63.0	67.9
2009	12	69.0	67.9	70.5	67.9
2010	12	71.9	63.9	86.1	68.8
2011	12	73.1	73.1	69.4	71.9
2012	15	72.0	70.8	87.4	72.0
2013	15	71.6	71.3	71.6	71.6
2014	14	75.5	69.7	77.1	76.5
2015	17	71.7	71.7	78.9	71.7
2016	6	73.7	72.4	87.5	72.4
1998-2016	188	69.3	69.2	71.0	69.2

By 2010, life expectancy at birth was 77.5 years for boys and 82.6 years for girls.

Deaths of patients are considered to be cancer-related, in case that fact was recorded on the death certificate, or patients had suffered from metastasis or recurrence.

Table 11a

Mortality measures (cancer-related death) and mortality-incidence-index
by year of death

MALES

Year of death	Deaths n	Mort. raw	MI-Index raw	Mort. WS	MI-Index WS	Mort. ES	MI-Index ES	Mort. BRD-S	MI-Index BRD-S
1998	21	1.9	0.72	1.3	0.71	1.7	0.72	1.9	0.73
1999	13	1.2	0.45	0.7	0.43	1.0	0.43	1.1	0.45
2000	12	1.1	0.34	0.7	0.32	0.9	0.34	1.1	0.37
2001	23	2.0	0.66	1.3	0.66	1.8	0.65	2.0	0.66
2002	31	1.7	0.84	1.1	0.81	1.5	0.85	1.6	0.85
2003	39	2.1	0.81	1.2	0.73	1.7	0.75	2.1	0.85
2004	26	1.4	0.55	0.9	0.55	1.2	0.53	1.3	0.53
2005	26	1.4	0.70	0.7	0.62	1.1	0.66	1.4	0.73
2006	26	1.4	0.51	0.8	0.47	1.1	0.48	1.3	0.50
2007	29	1.3	0.57	0.8	0.54	1.1	0.57	1.3	0.58
2008	34	1.5	0.72	0.9	0.70	1.2	0.71	1.4	0.73
2009	45	2.0	0.74	1.2	0.69	1.7	0.70	1.9	0.75
2010	38	1.7	0.58	1.1	0.54	1.4	0.56	1.5	0.57
2011	31	1.4	1.07	0.8	1.10	1.2	1.09	1.3	1.08
2012	40	1.8	0.91	1.0	0.79	1.4	0.86	1.6	0.93
2013	32	1.4	0.56	0.8	0.54	1.1	0.54	1.3	0.56
2014	25	1.1	0.71	0.6	0.64	0.8	0.66	0.9	0.68
2015	26	1.1	0.93	0.7	0.95	0.9	0.95	1.0	0.91
2016	19	0.8	1.73	0.4	1.62	0.6	1.63	0.7	1.75
1998-2016	536	1.5	0.69	0.9	0.65	1.2	0.66	1.4	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	1	0.1	0.25	0.0	0.19	0.1	0.21	0.1	0.21
1999	3	0.3	0.20	0.1	0.18	0.2	0.18	0.2	0.19
2000	4	0.3	0.80	0.2	0.74	0.3	0.80	0.3	0.76
2001	5	0.4	0.42	0.2	0.30	0.2	0.32	0.3	0.39
2002	12	0.6	0.86	0.4	0.88	0.5	0.87	0.5	0.86
2003	8	0.4	0.50	0.2	0.39	0.3	0.42	0.4	0.48
2004	7	0.4	0.78	0.2	0.67	0.2	0.72	0.3	0.79
2005	7	0.4	0.70	0.2	0.79	0.3	0.75	0.3	0.70
2006	5	0.2	0.50	0.1	0.44	0.2	0.44	0.2	0.43
2007	5	0.2	0.36	0.1	0.32	0.2	0.32	0.2	0.34
2008	7	0.3	0.41	0.1	0.36	0.2	0.36	0.2	0.33
2009	11	0.5	0.61	0.2	0.49	0.3	0.51	0.3	0.51
2010	9	0.4	0.45	0.2	0.39	0.3	0.43	0.3	0.49
2011	10	0.4	0.59	0.2	0.45	0.2	0.46	0.3	0.49
2012	14	0.6	0.67	0.3	0.55	0.4	0.59	0.5	0.64
2013	12	0.5	0.80	0.2	0.73	0.3	0.70	0.4	0.77
2014	6	0.2	0.46	0.1	0.42	0.2	0.43	0.2	0.44
2015	13	0.5	1.63	0.2	1.53	0.3	1.53	0.4	1.66
2016	3	0.1	1.00	0.1	0.80	0.1	0.89	0.1	0.91
1998-2016	142	0.4	0.59	0.2	0.51	0.3	0.53	0.3	0.55

Table 12

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

Age at death Years	Cases			Males			Females		
	n	%	Cum.%	n	%	Cum.%	n	%	Cum.%
0-4									
5-9									
10-14									
15-19									
20-24									
25-29									
30-34									
35-39									
40-44	8	2.0	2.0	7	2.2	2.2	1	1.1	1.1
45-49	17	4.2	6.1	16	5.0	7.2	1	1.1	2.2
50-54	42	10.3	16.4	38	11.9	19.1	4	4.4	6.7
55-59	61	14.9	31.3	53	16.6	35.7	8	8.9	15.6
60-64	68	16.6	47.9	55	17.2	53.0	13	14.4	30.0
65-69	88	21.5	69.4	70	21.9	74.9	18	20.0	50.0
70-74	63	15.4	84.8	43	13.5	88.4	20	22.2	72.2
75-79	33	8.1	92.9	27	8.5	96.9	6	6.7	78.9
80-84	13	3.2	96.1	7	2.2	99.1	6	6.7	85.6
85+	16	3.9	100.0	3	0.9	100.0	13	14.4	100.0
All ages	409	100.0		319	100.0		90	100.0	

Table 13

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

Age at death Years	Males 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								
25-29								
30-34								
35-39								
40-44	7	1	0.4	0.41	0.1	1.00	1.4	0.1
45-49	16	1	0.8	0.34	0.1	0.10	1.4	0.1
50-54	38	4	2.2	0.48	0.2	0.25	1.8	0.2
55-59	53	8	3.7	0.84	0.5	0.36	1.6	0.3
60-64	55	13	4.5	0.70	1.0	0.65	1.1	0.3
65-69	70	18	5.9	1.06	1.4	0.64	1.0	0.3
70-74	43	20	3.9	0.98	1.6	0.80	0.5	0.3
75-79	27	6	3.4	1.29	0.6	0.67	0.3	0.1
80-84	7	6	1.5	1.40	0.8	2.00	0.1	0.1
85+	3	13	1.0	0.75	1.8	1.18	0.0	0.1
All ages	319	90					0.6	0.2
Mortality								
Raw			1.4	0.74	0.4	0.62		
WS			0.8	0.70	0.2	0.52		
ES			1.1	0.72	0.2	0.54		
BRD-S			1.3	0.74	0.3	0.57		
PYLL-70								
per 100,000			12.2		1.8			
ES			10.5		1.5			
AYLL-70			10.3		8.1			

Table 14a

Further malignancies in deaths in period 1998–2016
MALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn- chron ±30d n	Syn- chron ±30d ←%	Post n	Post ←%
C03–C06 Oral cavity	10	2.9					10	100.0
C09–C10 Oropharynx	44	12.7	17	38.6	9	20.5	18	40.9
C12–C13 Hypopharynx	29	8.4	10	34.5	4	13.8	15	51.7
C15 Oesophagus	35	10.1	4	11.4	8	22.9	23	65.7
C16 Stomach	4	1.2	1	25.0			3	75.0
C18 Colon	12	3.5	3	25.0	1	8.3	8	66.7
C19–C20 Rectum	9	2.6					9	100.0
C22 Liver	12	3.5	4	33.3	1	8.3	7	58.3
C32 Larynx	18	5.2	6	33.3	3	16.7	9	50.0
C33–C34 Lung	87	25.1	7	8.0	11	12.6	69	79.3
C43 Malign. melanoma	4	1.2	1	25.0	1	25.0	2	50.0
C44 Skin others	20	5.8	7	35.0	1	5.0	12	60.0
C61 Prostate	16	4.6	10	62.5	2	12.5	4	25.0
C64 Kidney	7	2.0	1	14.3			6	85.7
C67 Bladder	9	2.6	5	55.6			4	44.4
C76–C79 CUP	9	2.6	4	44.4			5	55.6
C82–C85 NHL	4	1.2	1	25.0	1	25.0	2	50.0
Others, specified	18	5.2	7	38.9			11	61.1
All further malignancies	347	100.0	88	25.4	42	12.1	217	62.5

Further malignancies with number of cases 1 to 3 are pooled in category "Others, specified".

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

Table 14b

Further malignancies in deaths in period 1998-2016
FEMALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn- chron ±30d n	Syn- chron ±30d ←%	Post n	Post ←%
C03-C06 Oral cavity	3	3.7					3	100.0
C09-C10 Oropharynx	12	14.8	3	25.0	3	25.0	6	50.0
C12-C13 Hypopharynx	3	3.7			1	33.3	2	66.7
C15 Oesophagus	6	7.4					6	100.0
C16 Stomach	2	2.5					2	100.0
C18 Colon	5	6.2	4	80.0			1	20.0
C21 Anus/canal	2	2.5					2	100.0
C22 Liver	2	2.5					2	100.0
C23-C24 Bile	1	1.2					1	100.0
C25 Pancreas	1	1.2					1	100.0
C30-C31 Sinuses	2	2.5					2	100.0
C32 Larynx	2	2.5	2	100.0				
C33-C34 Lung	19	23.5					19	100.0
C43 Malign. melanoma	2	2.5			1	50.0	1	50.0
C44 Skin others	3	3.7					3	100.0
C50 Breast	4	4.9	3	75.0			1	25.0
C51 Vulva	2	2.5	1	50.0			1	50.0
C53 Cervix uteri	5	6.2	5	100.0				
C56 Ovary	2	2.5	1	50.0			1	50.0
C73 Thyroid	1	1.2	1	100.0				
C82-C85 NHL	2	2.5	1	50.0	1	50.0		
All further malignancies	81	100.0	21	25.9	6	7.4	54	66.7

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

Table 15

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

Age at death Years	Males 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								
25-29								
30-34								
35-39								
40-44	6	1	0.3	0.40	0.1	1.00	1.3	0.2
45-49	13	1	0.7	0.30	0.1	0.11	1.2	0.1
50-54	30	3	1.7	0.48	0.2	0.20	1.7	0.2
55-59	42	8	3.0	0.89	0.5	0.42	1.4	0.3
60-64	40	9	3.3	0.73	0.7	0.53	1.0	0.3
65-69	55	15	4.6	1.08	1.2	0.75	0.9	0.4
70-74	31	16	2.8	1.07	1.3	0.84	0.4	0.3
75-79	20	6	2.5	1.82	0.6	0.86	0.3	0.1
80-84	5	5	1.1	1.67	0.7	1.67	0.1	0.1
85+	3	11	1.0	1.00	1.5	1.22	0.1	0.1
All ages	245	75					0.6	0.2
Mortality								
Raw			1.1	0.76	0.3	0.63		
WS			0.6	0.70	0.1	0.52		
ES			0.9	0.73	0.2	0.54		
BRD-S			1.0	0.76	0.2	0.57		
PYLL-70								
per 100,000			9.6		1.5			
ES			8.3		1.3			
AYLL-70			10.5		8.3			

* See corresponding tables with multiple malignancies.

Table 16

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

Age at death Years	Males 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								
25-29								
30-34								
35-39								
40-44	6	1	0.3	0.55	0.1	1.00	1.3	0.2
45-49	10	1	0.5	0.26	0.1	0.14	1.0	0.1
50-54	23	2	1.3	0.40	0.1	0.17	1.3	0.1
55-59	25	6	1.8	0.61	0.4	0.35	0.9	0.3
60-64	21	5	1.7	0.43	0.4	0.31	0.5	0.2
65-69	25	7	2.1	0.58	0.5	0.39	0.4	0.2
70-74	21	11	1.9	0.84	0.9	0.69	0.3	0.2
75-79	13	4	1.6	1.18	0.4	0.80	0.2	0.1
80-84	3	4	0.7	1.00	0.6	1.33	0.1	0.1
85+	3	11	1.0	1.50	1.5	1.22	0.1	0.2
All ages	150	52					0.4	0.1
Mortality								
Raw			0.7	0.53	0.2	0.50		
WS			0.4	0.49	0.1	0.38		
ES			0.5	0.51	0.1	0.41		
BRD-S			0.6	0.53	0.2	0.44		
PYLL-70								
per 100,000			6.6		1.1			
ES			5.6		0.9			
AYLL-70			12.0		9.8			

* See corresponding tables with multiple malignancies.

ICD-10 C04: Malignant neoplasm of floor of mouth
 Age distribution and age-specific mortality 2007 - 2016 (Males: 319, Females: 90)

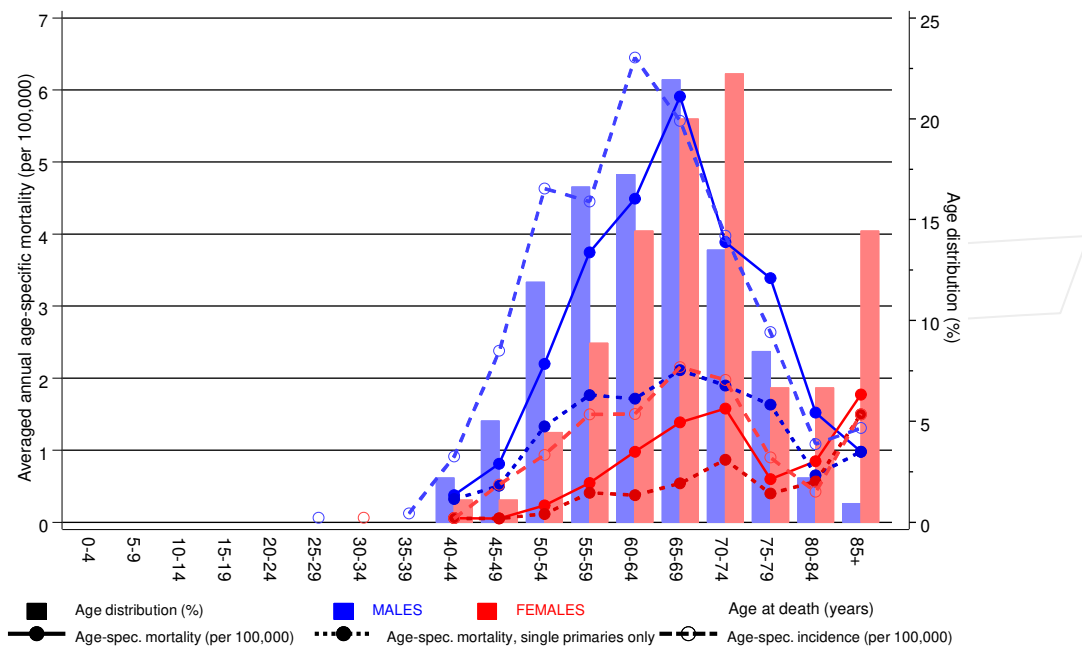
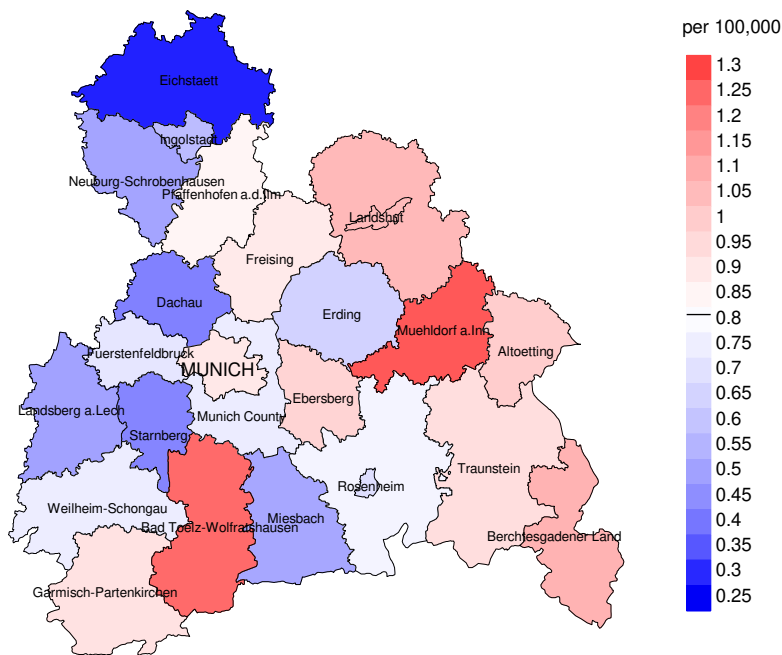


Figure 17. Distribution of age at death (bars; males: mean=58.8 yrs, median=58.3 yrs; females: mean=66.4 yrs, median=66.7 yrs) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

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

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



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

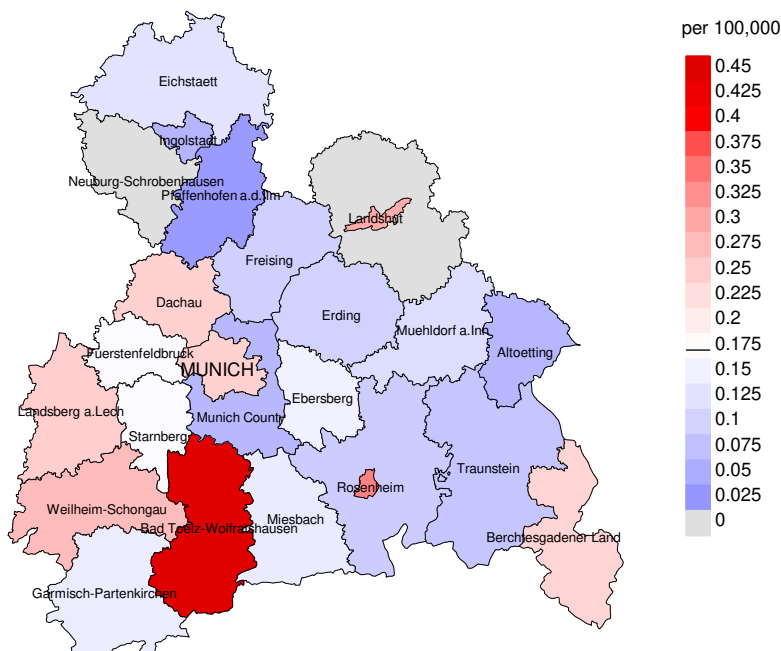
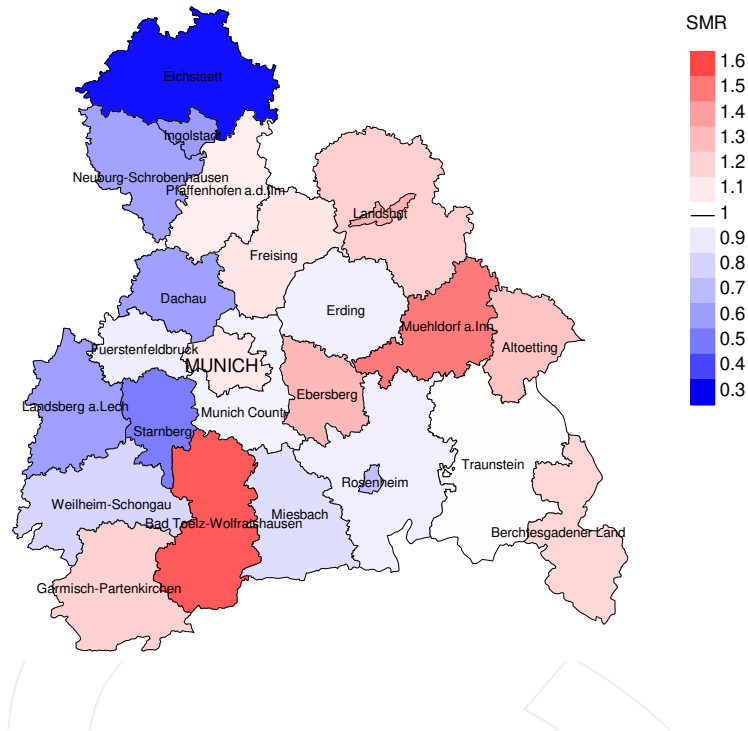


Figure 18a. Map of cancer mortality (world standard population) by county averaged for period 2007 to 2016. According to their individual mortality rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 0.8/100,000 WS N=319, females 0.2/100,000 WS N=90).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 66,416 female residents (averaged) in the period from 2007 to 2016 a total of 2 women died from floor of mouth cancer. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 0.1/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.0 and 1.1/100,000.

Standardized mortality ratio (SMR) 2007 - 2016: Males



Standardized mortality ratio (SMR) 2007 - 2016: Females

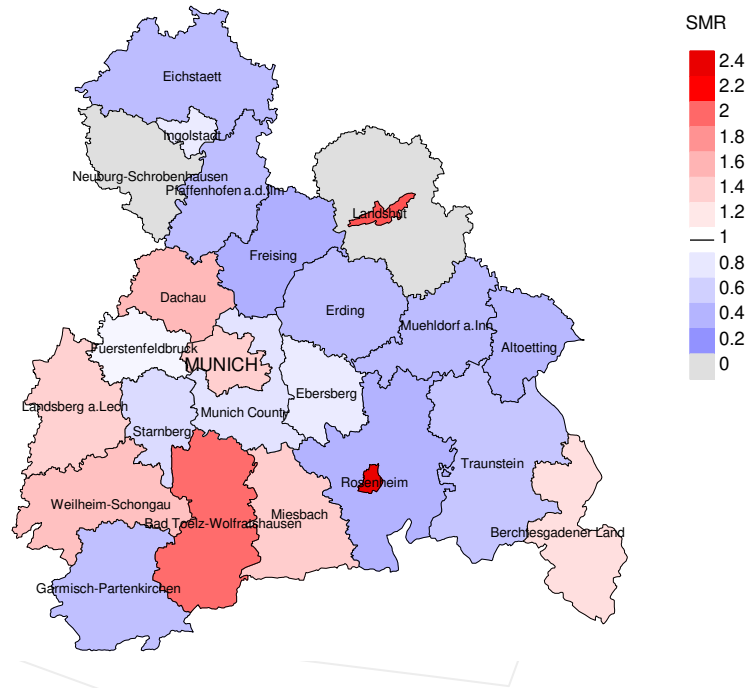


Figure 18b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2007 to 2016. According to their individual SMR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=319, females N=90).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 66,416 female residents (averaged) in the period from 2007 to 2016 a total of 2 women died from floor of mouth cancer. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 0.82. Though, the value of this parameter may vary with an underlying probability of 99% between 0.04 and 3.82, and is therefore not statistically striking.

Statistical Notes

In all tables and figures the respective reference values should be carefully considered. The incidence rates include diagnoses (with multiple primary), and death certificate only (DCO) cases, where applicable. For mortality statistics patients, diagnoses and progressive course of disease are presented. In the calculations, all courses of disease are considered whereby progressions occurred and/or death certificate identified progressive cancers were ascertained. Additionally there are three groups of disease course to consider:

1. All multiple primaries included

The mortality statistic describes the tumor-specific death, independent of any malignancy. The patient perspective, induced secondary malignancies, and the problem of multiple malignancies from the same primary tumor all have reasons for their inclusion.

2. First singular primary (no information about other prior or synchronous malignancy)

The mortality statistic describes the cancer-related death for patients who have no therapeutic restrictions due to a previous or synchronous cancer. These statistics are comparable to studies that have exclusion criteria based on a second malignancy.

3. Single primary (no information about other prior, syn- or metachronous malignancy)

The mortality statistic describes the tumor-specific death that occurs without any impact through secondary primaries, earlier, synchronous, later or induced. Precisely the difference between disease group 1 and 2 highlight the magnitude of the problem of secondary malignancies.

For this reason differences appear concerning official mono-causal mortality statistics. To judge the maximum deviation, 2 further tables are presented. In the first table the distribution of secondary malignancies before, at or after the described cancer are shown, that could be an alternative cause of death. In the second table, the age-specific mortality rates for all courses of disease, without designation of secondary malignancies are shown.

A previously minimally acknowledged statistic is the **age at death**, which allows for a good assessment of the quality of classification of the apparent tumor-specific death. For assumed tumor-independent deaths, the age of death should be estimated from the age of diagnosis and the normal life expectancy, whereas tumor-dependent deaths can be estimated from the age of diagnosis plus the average tumor-specific life expectancy. The comparison of different tumors demonstrates this association, if the causes of cancer and the competing cause of death are independent of each other (e.g. breast and colon versus head/neck and lung).

The index from mortality and incidence (Mortality-Incidence ratio, **MI-index**) is a statistic that allows for the evaluation of the quality of data. For diseases with poor prognoses, comparable values are obtained from all age groups, because to a large extent, the numerator and denominator contain the same cases. For tumors with a good prognosis, increasing and decreasing incidence and age-specific differences in prognosis can more strongly alter the MI- index. Additionally, attention should be paid to the confidence intervals where fewer cases are reported.

The complexity of problems identified here emphasizes the importance of relative survival data for the appropriate analysis of long term results.

As a measurement of the burden of disease, the number of potential life years loss due to premature deaths in a cohort can be calculated (**PYLL**, potential years of life lost, standardized per 100,000 persons or per European standard) as well as the average loss of life years per individual (**AYLL**, average years of life lost). Depending upon the analytic aim (health economy, prevention, health care research) different methods exist for the generation of these measurements. In the results presented here, the age for a premature death is considered to be before 70 years, according to the guidelines of the OECD and the WHO (as seen in the abbreviation PYLL-70 or AYLL-70).

Shortcuts

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

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