

Munich Cancer Registry



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

ICD-10 C64-C66, C68: Urinary tract cancer

Incidence and Mortality

Year of diagnosis	1998-2016
Patients	13,299
Diseases	13,726
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/bC6466E-ICD-10-C64-C66-C68-Urinary-tract-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.

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

Code	Description
C64	Malignant neoplasm of kidney, except renal pelvis
C65	Malignant neoplasm of renal pelvis
C66	Malignant neoplasm of ureter
C68.-	Malignant neoplasm of other and unspecified urinary organs

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	469	50	10.7	16.6	15.3	67.0	96.2
1999	458	43	9.4	16.4	15.0	65.9	94.8
2000	421	46	10.9	17.4	14.9	63.9	96.2
2001	420	48	11.4	17.6	14.8	68.1	96.4
2002	719	103	14.3	18.9	14.7	69.8	97.4 #
2003	711	77	10.8	18.7	14.5	63.3	94.5
2004	712	82	11.5	19.1	14.3	58.4	95.6
2005	779	44	5.6	19.8	13.8	56.2	94.6
2006	753	50	6.6	19.8	13.5	55.2	90.6
2007	865	78	9.0	20.0	12.8	54.7	79.5 #
2008	912	74	8.1	20.6	12.0	49.8	68.9
2009	913	74	8.1	21.1	11.5	48.7	66.5
2010	914	66	7.2	21.7	10.7	44.6	65.8
2011	858	57	6.6	22.1	10.1	43.8	64.5
2012	867	63	7.3	22.6	9.2	41.9	64.7
2013	807	59	7.3	23.1	8.3	37.7	64.3
2014	882	73	8.3	23.5	7.2	33.3	61.7
2015	697	78	11.2	23.8	6.0	29.1	98.6
2016	569	64	11.2	24.1	4.8	21.3	86.1 ##
1998-2016	13726	1229	9.0	24.1	15.3	49.8	80.5

13,726 cases diagnosed 1998-2016 are related to a total of 13,299 patients. Currently, in 4,802 (36.1 %) of these 13,299 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 3,461 / 1,000 / 341 (26.0 % / 7.5 % / 2.6 %) patients exist having 2 / 3 / 4+ malignancies.

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

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

How to interpret:

In 2014, a subgroup of 882 cases has been diagnosed, of which 23.5 % 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 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	288	61.4	24	8.3	16.0	16.6	68.4	97.2
1999	282	61.6	26	9.2	16.7	16.3	65.2	95.0
2000	274	65.1	32	11.7	17.4	16.1	65.0	94.9
2001	245	58.3	23	9.4	17.8	16.0	65.3	96.7
2002	434	60.4	56	12.9	19.4	15.9	68.4	97.7 #
2003	444	62.4	42	9.5	19.6	15.6	61.0	93.2
2004	440	61.8	41	9.3	19.9	15.4	59.5	95.0
2005	496	63.7	20	4.0	20.6	14.8	54.6	95.4
2006	466	61.9	19	4.1	20.7	14.3	53.0	91.0
2007	561	64.9	38	6.8	21.1	13.6	54.5	79.1 #
2008	578	63.4	33	5.7	21.7	12.6	47.2	66.6
2009	573	62.8	42	7.3	22.5	12.0	48.0	67.5
2010	586	64.1	24	4.1	23.0	11.2	42.7	65.4
2011	548	63.9	38	6.9	23.5	10.0	43.8	64.4
2012	562	64.8	33	5.9	24.0	9.0	40.0	64.8
2013	527	65.3	27	5.1	24.6	7.8	36.1	63.0
2014	576	65.3	40	6.9	25.1	7.0	32.1	62.3
2015	469	67.3	43	9.2	25.3	6.3	26.0	98.7
2016	387	68.0	33	8.5	25.7	5.4	19.6	85.3 ##
1998-2016	8736	63.6	634	7.3	25.7	16.6	48.2	80.1

8,736 cases diagnosed 1998-2016 are related to a total of 8,438 patients. Currently, in 3,242 (38.4 %) of these 8,438 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 2,281 / 702 / 259 (27.0 % / 8.3 % / 3.1 %) 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 576 cases has been diagnosed, of which 25.1 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 7.0 % of cases, at least one new malignancy has occurred during the follow-up period (all numbers refer to the date of the database export, see cover sheet).

Table 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	181	38.6	26	14.4	17.7	13.1	64.6	94.5
1999	176	38.4	17	9.7	16.0	12.9	67.0	94.3
2000	147	34.9	14	9.5	17.5	12.8	61.9	98.6
2001	175	41.7	25	14.3	17.4	12.6	72.0	96.0
2002	285	39.6	47	16.5	18.0	12.6	71.9	96.8 #
2003	267	37.6	35	13.1	17.2	12.5	67.0	96.6
2004	272	38.2	41	15.1	17.9	12.4	56.6	96.7
2005	283	36.3	24	8.5	18.4	12.1	59.0	93.3
2006	287	38.1	31	10.8	18.5	11.9	58.9	89.9
2007	304	35.1	40	13.2	18.3	11.2	54.9	80.3 #
2008	334	36.6	41	12.3	18.7	10.9	54.2	72.8
2009	340	37.2	32	9.4	18.8	10.5	50.0	64.7
2010	328	35.9	42	12.8	19.6	9.9	48.2	66.5
2011	310	36.1	19	6.1	19.8	10.3	43.9	64.5
2012	305	35.2	30	9.8	20.2	9.7	45.2	64.6
2013	280	34.7	32	11.4	20.5	9.4	40.7	66.8
2014	306	34.7	33	10.8	20.9	7.6	35.6	60.5
2015	228	32.7	35	15.4	21.3	5.4	35.5	98.2
2016	182	32.0	31	17.0	21.4	3.4	24.7	87.9 ##
1998-2016	4990	36.4	595	11.9	21.4	13.1	52.6	81.1

4,990 cases diagnosed 1998-2016 are related to a total of 4,861 patients. Currently, in 1,560 (32.1 %) of these 4,861 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 1,180 / 298 / 82 (24.3 % / 6.1 % / 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 306 cases has been diagnosed, of which 20.9 % 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 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	288	181	26.0	15.4	16.4	7.3	23.6	10.5	29.3	13.2
1999	282	176	25.2	14.8	15.6	7.5	22.6	10.5	28.1	12.8
2000	274	147	24.1	12.2	15.1	5.7	21.5	8.3	26.5	10.5
2001	245	175	21.1	14.4	12.6	6.7	18.3	9.8	23.2	12.4
2002	434	285	23.3	14.6	13.5	6.7	19.8	9.6	25.1	12.2
2003	444	267	23.7	13.6	13.9	5.9	19.7	8.6	24.4	11.1
2004	440	272	23.4	13.8	13.7	6.2	19.3	9.0	24.0	11.4
2005	496	283	26.2	14.2	14.8	6.4	21.3	9.2	26.0	11.8
2006	466	287	24.3	14.3	13.7	6.8	19.4	9.5	24.1	11.7
2007	561	304	25.3	13.2	14.0	5.8	20.0	8.2	24.9	10.5
2008	578	334	26.0	14.4	14.2	6.6	20.3	9.3	25.0	11.9
2009	573	340	25.7	14.6	13.8	6.5	19.8	9.3	24.8	11.9
2010	586	328	26.0	14.0	13.5	5.6	19.4	8.4	24.4	10.9
2011	548	310	24.5	13.3	12.8	6.3	18.3	8.5	22.7	10.6
2012	562	305	24.8	12.9	12.7	5.1	18.4	7.7	23.0	10.3
2013	527	280	22.9	11.7	11.7	5.0	16.8	7.2	21.1	9.2
2014	576	306	24.7	12.7	12.6	5.4	18.1	7.8	22.4	9.9
2015	469	228	19.7	9.4	9.4	3.7	13.9	5.5	17.8	7.0
2016	387	182	16.1	7.4	7.6	3.0	11.2	4.4	14.6	5.6
1998-2016	8736	4990	23.7	13.0	12.9	5.8	18.5	8.3	23.1	10.5

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

Table 3

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

Year of diagnosis	Cases n	Std.				Median				
		Mean	dev.	Min.	Max.	10%	25%	50%	75%	90%
1998	469	66.4	13.6	2.8	99.7	50.0	59.0	67.7	76.0	82.2
1999	458	66.0	13.3	1.1	94.3	50.1	58.1	66.1	76.0	82.0
2000	421	66.3	13.1	0.3	93.5	49.5	58.8	67.0	75.4	81.3
2001	420	67.4	12.1	1.9	96.4	52.5	60.7	67.6	76.8	81.2
2002	719	68.3	13.1	0.1	99.5	50.8	61.2	69.6	77.2	82.7
2003	711	67.8	13.5	0.4	99.6	51.6	60.8	68.7	76.8	83.2
2004	712	67.2	13.6	0.0	94.6	49.4	60.8	68.5	76.6	82.0
2005	779	67.4	13.0	0.7	95.1	51.5	60.3	68.2	76.6	82.1
2006	753	67.3	14.0	0.2	95.5	49.9	60.3	68.9	76.4	83.1
2007	865	68.0	14.2	1.2	99.1	50.1	61.6	69.8	76.9	83.6
2008	912	67.8	13.6	0.2	98.1	51.2	60.6	69.1	77.1	83.3
2009	913	68.0	14.2	0.5	96.9	50.3	60.7	70.2	77.8	83.1
2010	914	68.8	13.2	5.4	100	50.8	60.5	70.7	77.8	83.9
2011	858	68.4	14.5	0.5	96.9	51.0	61.4	70.4	77.6	84.4
2012	867	69.2	13.2	1.4	93.1	52.4	61.3	71.3	78.9	83.4
2013	807	68.7	13.8	0.3	101	51.0	61.2	70.9	78.3	83.4
2014	882	68.9	13.1	1.2	98.9	53.2	60.9	70.7	77.7	84.6
2015	697	70.5	12.3	0.7	98.9	52.7	62.2	72.3	78.6	85.3
2016	569	70.2	12.6	12.6	96.0	53.3	62.2	72.4	79.1	84.4
1998-2016	13726	68.2	13.5	0.0	101	51.4	60.8	69.8	77.4	83.4

Table 3a

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

Year of diagnosis	Cases n	Std.				Median				
		Mean	dev.	Min.	Max.	10%	25%	50%	75%	90%
1998	288	64.9	13.5	5.0	91.9	49.0	58.0	65.9	74.7	79.7
1999	282	64.9	12.8	2.3	89.5	49.7	57.6	65.7	74.1	80.3
2000	274	64.7	13.2	0.3	93.5	48.0	57.0	65.9	73.2	79.3
2001	245	66.0	11.0	1.9	89.9	52.3	59.4	65.3	74.7	80.0
2002	434	66.7	12.8	0.1	96.2	48.9	59.1	68.3	75.6	81.3
2003	444	65.6	13.4	0.4	99.6	48.6	59.9	65.9	74.4	80.7
2004	440	65.5	13.6	0.0	93.6	49.0	58.8	67.3	74.7	80.1
2005	496	66.0	11.7	0.7	93.3	51.4	59.3	66.7	73.7	79.7
2006	466	66.0	12.9	0.8	95.4	49.5	59.9	67.3	74.5	80.3
2007	561	66.4	13.0	2.6	93.1	49.7	59.3	68.1	74.9	80.5
2008	578	66.5	13.0	0.2	98.1	49.7	58.9	68.2	74.6	81.9
2009	573	66.7	13.7	0.5	96.1	49.7	59.2	69.2	75.9	82.1
2010	586	66.9	12.8	5.4	93.5	48.2	59.0	69.4	76.0	81.6
2011	548	67.7	12.8	1.5	96.9	51.0	60.7	69.4	75.9	82.8
2012	562	67.4	13.6	1.4	93.1	50.1	59.3	69.8	77.1	83.1
2013	527	67.5	13.1	0.9	94.1	50.0	59.7	69.6	76.8	82.3
2014	576	68.0	13.2	1.2	97.0	52.7	60.2	70.2	77.0	83.3
2015	469	69.7	11.5	28.1	98.9	52.9	61.4	71.5	77.9	83.6
2016	387	69.6	12.0	20.8	94.8	53.9	61.3	72.0	78.4	83.4
1998-2016	8736	66.8	13.0	0.0	99.6	50.3	59.5	68.3	75.8	81.7

Table 3b

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

Year of diagnosis	Cases n	Mean	Std. dev.	Min. Max.		10% 25%		Median		
				Min.	Max.	10%	25%	50%	75%	90%
1998	181	68.9	13.4	2.8	99.7	56.3	61.7	70.3	78.0	84.3
1999	176	67.7	14.0	1.1	94.3	51.8	58.8	68.8	77.7	85.5
2000	147	69.4	12.3	37.2	91.4	54.5	60.8	71.4	78.2	86.4
2001	175	69.4	13.3	30.6	96.4	53.1	61.7	71.2	78.9	85.1
2002	285	70.6	13.2	2.4	99.5	54.7	63.7	72.4	79.9	85.0
2003	267	71.5	12.9	2.5	96.5	56.3	64.5	72.5	80.9	85.8
2004	272	70.0	13.2	18.5	94.6	54.2	63.6	71.8	79.4	84.7
2005	283	69.9	14.5	4.2	95.1	52.9	63.1	72.9	80.2	84.4
2006	287	69.4	15.4	0.2	95.5	52.1	62.1	71.9	79.1	85.9
2007	304	70.8	15.8	1.2	99.1	53.0	66.3	73.1	80.4	85.8
2008	334	70.1	14.2	0.6	96.1	54.1	63.6	71.5	80.0	84.9
2009	340	70.1	14.7	1.7	96.9	51.3	65.2	72.7	79.8	84.5
2010	328	72.1	13.1	5.4	100	54.7	65.2	73.2	81.0	87.9
2011	310	69.5	17.1	0.5	96.5	51.1	64.6	72.8	79.7	85.7
2012	305	72.4	11.6	9.7	92.8	57.0	67.2	74.0	80.6	84.4
2013	280	70.9	14.8	0.3	101	53.2	65.3	73.6	79.8	84.9
2014	306	70.7	12.8	2.5	98.9	54.0	63.0	73.2	79.5	85.8
2015	228	72.1	13.6	0.7	98.0	51.9	65.4	74.3	80.7	88.5
2016	182	71.4	13.7	12.6	96.0	52.7	64.4	73.9	80.6	86.8
1998-2016	4990	70.5	14.0	0.2	101	53.5	63.7	72.6	79.9	85.7

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	45	0.5	0.5	21	0.4	0.4	24	0.8	0.8
5-9	15	0.2	0.7	8	0.1	0.5	7	0.2	1.1
10-14	4	0.0	0.8	2	0.0	0.6	2	0.1	1.1
15-19	2	0.0	0.8	1	0.0	0.6	1	0.0	1.2
20-24	8	0.1	0.9	4	0.1	0.7	4	0.1	1.3
25-29	16	0.2	1.1	11	0.2	0.9	5	0.2	1.5
30-34	33	0.4	1.5	20	0.4	1.2	13	0.4	1.9
35-39	98	1.2	2.7	70	1.3	2.6	28	1.0	2.9
40-44	169	2.0	4.7	115	2.1	4.7	54	1.9	4.7
45-49	299	3.6	8.3	237	4.4	9.1	62	2.1	6.9
50-54	506	6.1	14.4	379	7.1	16.2	127	4.4	11.2
55-59	661	8.0	22.4	490	9.1	25.3	171	5.9	17.1
60-64	843	10.2	32.6	603	11.2	36.5	240	8.2	25.3
65-69	1253	15.1	47.7	819	15.3	51.8	434	14.9	40.2
70-74	1428	17.2	64.9	980	18.3	70.1	448	15.4	55.5
75-79	1330	16.1	81.0	780	14.5	84.6	550	18.9	74.4
80-84	933	11.3	92.3	534	9.9	94.5	399	13.7	88.1
85+	641	7.7	100.0	293	5.5	100.0	348	11.9	100.0
All ages	8284	100.0		5367	100.0		2917	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=349 %	Females DCO rate n=331 %	Males	Females
							Prop.all cancers n=113978 %	Prop.all cancers n=112253 %
0- 4	19	24	1.7	2.3			9.7	16.1
5- 9	8	7	0.7	0.7			7.7	8.3
10-14	2	2	0.2	0.2		50.0	1.7	2.0
15-19	1	1	0.1	0.1			0.4	0.5
20-24	4	4	0.3	0.3			0.9	1.1
25-29	11	5	0.7	0.3			1.6	0.6
30-34	20	13	1.3	0.8			2.1	0.9
35-39	70	28	4.3	1.8			5.1	1.1
40-44	112	54	6.0	3.0	0.9		5.2	1.2
45-49	232	62	11.7	3.2	0.4	1.6	5.9	0.9
50-54	370	126	21.4	7.4	1.9		6.0	1.5
55-59	476	169	33.6	11.5	2.1	2.4	5.2	1.8
60-64	588	238	48.0	17.9	1.5	1.3	4.5	2.1
65-69	799	427	67.4	32.9	3.4	2.8	4.3	3.0
70-74	959	440	86.7	34.8	4.4	4.8	4.6	3.0
75-79	770	540	96.6	53.9	8.1	8.1	4.7	4.0
80-84	523	392	113.7	55.4	15.3	19.1	4.8	3.6
85+	292	343	95.4	46.7	37.7	49.6	3.7	2.7
All ages	5256	2875			6.6	11.5	4.6	2.6
Incidence								
Raw			23.0	12.1				
WS			11.9	5.2				
ES			17.1	7.5				
BRD-S			21.5	9.5				

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 C64-C66, C68: Malignant neoplasms of urinary tract
 Age distribution and age-specific incidence 2007 - 2016 (Males: 5256, Females: 2875)

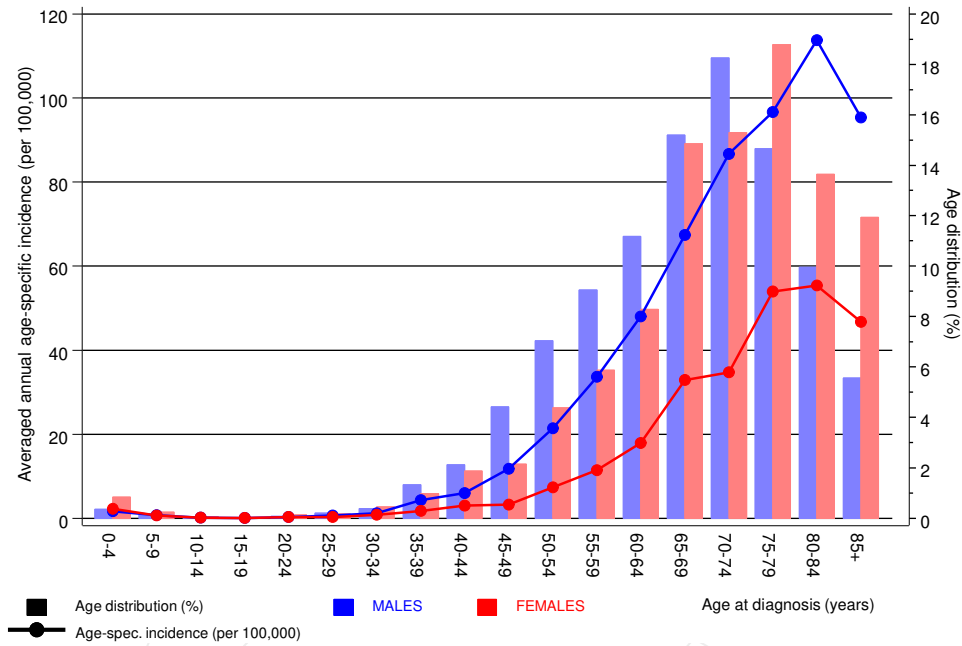


Figure 6. Age distribution (males: mean=67.6 yrs, median=69.5 yrs; females: mean=70.9 yrs, median=73.2 yrs) and age-specific incidence.

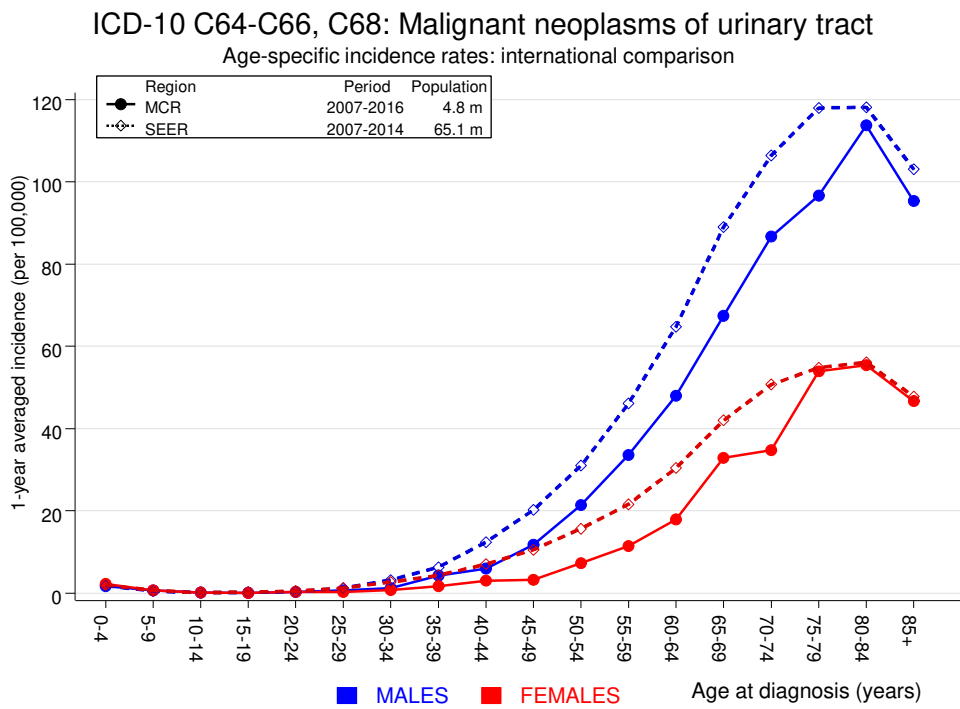


Figure 6a. Age-specific incidence in MCR registry areas compared to SEER (Surveillance, Epidemiology, and End Results, USA).

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	9	3.7	2.4	1.1	4.6 #	2.0	
C09-C10 Oropharynx	15	4.6	3.3	1.8	5.4 #	3.9	
C12-C13 Hypopharynx	7	2.5	2.8	1.1	5.7 #	1.7	
C15 Oesophagus	19	8.5	2.2	1.4	3.5 #	4.0	15.8
C16 Stomach	29	18.7	1.6	1.0	2.2 #	3.9	13.8
C17 Small intestine	10	2.5	4.0	1.9	7.4 #	2.8	
C18 Colon	106	45.0	2.4	1.9	2.9 #	23.0	7.5
C19-C20 Rectum	44	24.6	1.8	1.3	2.4 #	7.3	
C21 Anus/canal	2	1.0	2.0	0.2	7.3	0.4	50.0
C22 Liver	38	13.1	2.9	2.1	4.0 #	9.4	13.2
C23-C24 Bile	9	4.6	2.0	0.9	3.7	1.7	11.1
C25 Pancreas	43	17.3	2.5	1.8	3.4 #	9.7	18.6
C32 Larynx	12	4.7	2.6	1.3	4.5 #	2.8	8.3
C33-C34 Lung	159	54.5	2.9	2.5	3.4 #	39.3	13.8
C38,C45 Mesothelioma	6	3.2	1.9	0.7	4.1	1.1	16.7
C40-C41 Bone	3	0.4	8.1	1.7	23.7 #	1.0	
C43 Malign. melanoma	55	19.6	2.8	2.1	3.7 #	13.3	3.6
C46,C49 Soft tissue	13	2.5	5.1	2.7	8.7 #	3.9	
C48 Peritoneal	4	0.3	11.6	3.2	29.7 #	1.4	25.0
C50 Breast	2	1.2	1.7	0.2	6.1	0.3	
C60 Penis	4	1.1	3.7	1.0	9.5 #	1.1	
C61 Prostate	431	133.3	3.2	2.9	3.6 #	111.9	4.9
C62 Testis	6	1.1	5.7	2.1	12.3 #	1.9	
C64 Kidney	188	16.0	11.7	10.1	13.5 #	64.7	4.8
C65 Renal pelvis	42	2.0	20.8	15.0	28.1 #	15.0	
C66 Ureter	42	1.1	37.2	26.8	50.3 #	15.4	
C67 Bladder	194	21.0	9.2	8.0	10.6 #	65.1	9.8
C68 Urethra	10	0.4	27.2	13.1	50.1 #	3.6	
C68 Urinary org.	11	0.3	36.6	18.3	65.4 #	4.0	63.6
C70-C72 CNS cancer	14	5.9	2.4	1.3	4.0 #	3.0	7.1
C73 Thyroid	15	2.9	5.2	2.9	8.6 #	4.6	13.3
C76-C79 CUP	8	7.8	1.0	0.4	2.0	0.1	12.5
C81 Hodgkin lymphoma	2	1.0	2.0	0.2	7.1	0.4	
C82-C85 NHL	62	18.9	3.3	2.5	4.2 #	16.2	6.5
C90 Mult. myeloma	13	6.1	2.1	1.1	3.7 #	2.6	15.4
C91-C96 Leukaemia	14	7.7	1.8	1.0	3.1	2.4	14.3
Others, specified	8	4.8	1.7	0.7	3.3	1.2	25.0
Not observed	0	0.9	0.0	0.0	4.0	-0.3	
All further malignancies	1649	464.6	3.5	3.4	3.7 #	445.4	7.7

Patients 7663
 Median age at next malignancy (years) 71.7
 Person-years 26592
 Mean observation time (years) 3.5
 Median observation time (years) 1.8

The occurrence of further malignancy listed is statistically significant.

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

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

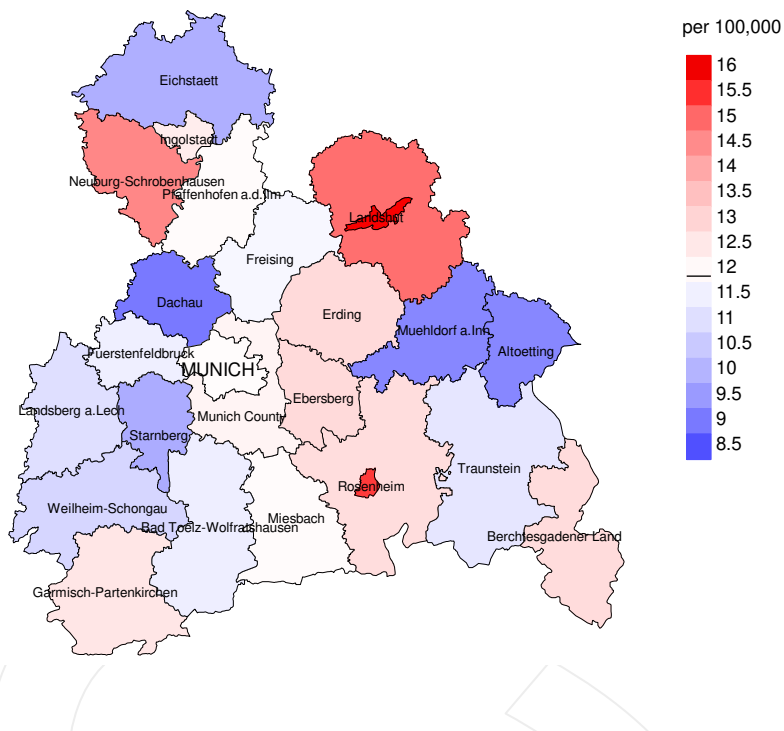
Diagnosis	Observed n	Expected n	SIR	CI 95%	CI 95%	EAR	DCO %
C15 Oesophagus	3	1.2	2.6	0.5	7.5	1.2	
C16 Stomach	18	7.2	2.5	1.5	4.0 #	7.1	
C17 Small intestine	2	0.9	2.2	0.3	7.9	0.7	
C18 Colon	40	19.9	2.0	1.4	2.7 #	13.3	5.0
C19–C20 Rectum	14	8.2	1.7	0.9	2.9	3.8	7.1
C22 Liver	6	2.4	2.5	0.9	5.4	2.4	16.7
C23–C24 Bile	14	2.9	4.8	2.6	8.0 #	7.3	14.3
C25 Pancreas	24	9.2	2.6	1.7	3.9 #	9.7	33.3
C33–C34 Lung	51	13.8	3.7	2.8	4.9 #	24.6	13.7
C43 Malign. melanoma	15	6.7	2.2	1.3	3.7 #	5.5	6.7
C46,C49 Soft tissue	4	1.1	3.6	1.0	9.3	1.9	
C50 Breast	119	53.9	2.2	1.8	2.6 #	42.9	6.7
C51 Vulva	4	2.0	2.0	0.5	5.0	1.3	25.0
C53 Cervix uteri	5	2.2	2.3	0.7	5.4	1.9	
C54 Corpus uteri	18	10.4	1.7	1.0	2.7 #	5.0	5.6
C56 Ovary	12	7.8	1.5	0.8	2.7	2.8	16.7
C64 Kidney	83	4.9	17.0	13.5	21.0 #	51.5	13.3
C65 Renal pelvis	15	0.6	23.4	13.1	38.6 #	9.5	
C66 Ureter	22	0.3	67.3	42.2	101.9 #	14.3	
C67 Bladder	92	3.9	23.7	19.1	29.1 #	58.2	12.0
C68 Urethra	2	0.1	36.0	4.4	129.9 #	1.3	
C68 Urinary org.	5	0.1	64.3	20.9	150.2 #	3.2	40.0
C70–C72 CNS cancer	6	2.6	2.3	0.8	5.0	2.2	33.3
C73 Thyroid	24	2.7	8.8	5.7	13.1 #	14.0	4.2
C76–C79 CUP	10	3.7	2.7	1.3	5.0 #	4.2	10.0
C82–C85 NHL	24	7.7	3.1	2.0	4.6 #	10.7	8.3
C90 Mult. myeloma	5	2.5	2.0	0.6	4.6	1.6	
C91–C96 Leukaemia	10	3.2	3.1	1.5	5.7 #	4.5	10.0
Others, specified	7	4.1	1.7	0.7	3.5	1.9	28.6
Not observed	0	4.0	0.0	0.0	0.9 #	-2.6	
All further malignancies	654	190.4	3.4	3.2	3.7 #	306.0	10.2

Patients	4251
Median age at next malignancy (years)	74.4
Person-years	15153
Mean observation time (years)	3.6
Median observation time (years)	1.8

The occurrence of further malignancy listed is statistically significant.

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

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



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

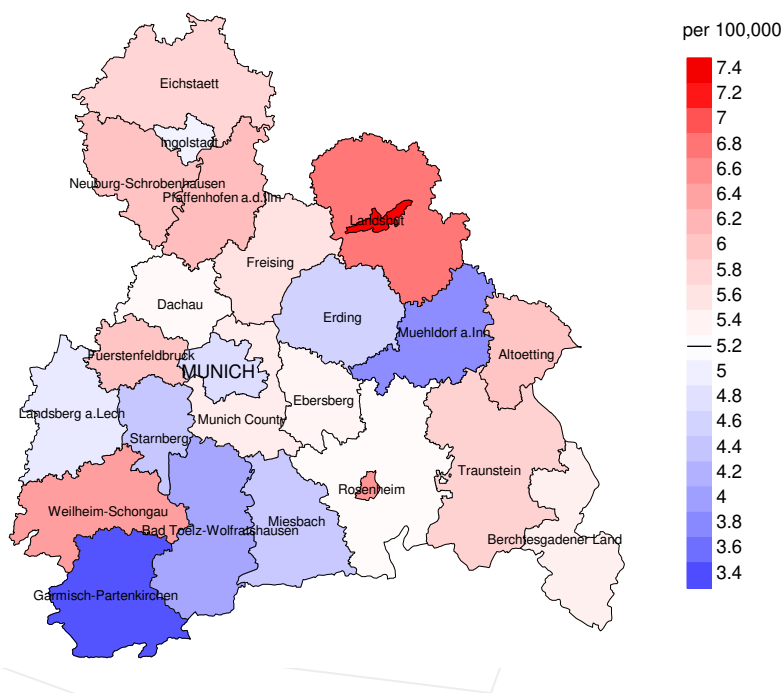
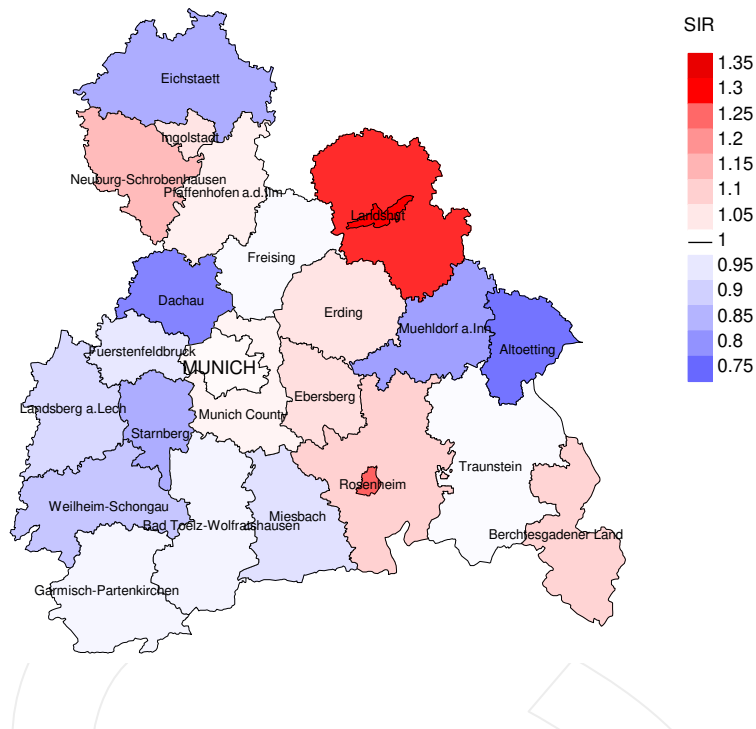


Figure 8a. Map of cancer incidence (world standard population, incl. DCO cases) by county averaged for period 2007 to 2016. According to their individual incidence rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 11.9/100,000 WS N=5,256, females 5.2/100,000 WS N=2,875).

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 90 women were identified with newly diagnosed urinary tract cancer. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 5.4/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 3.9 and 7.4/100,000.

Standardized incidence ratio (SIR) 2007 - 2016: Males



Standardized incidence ratio (SIR) 2007 - 2016: Females

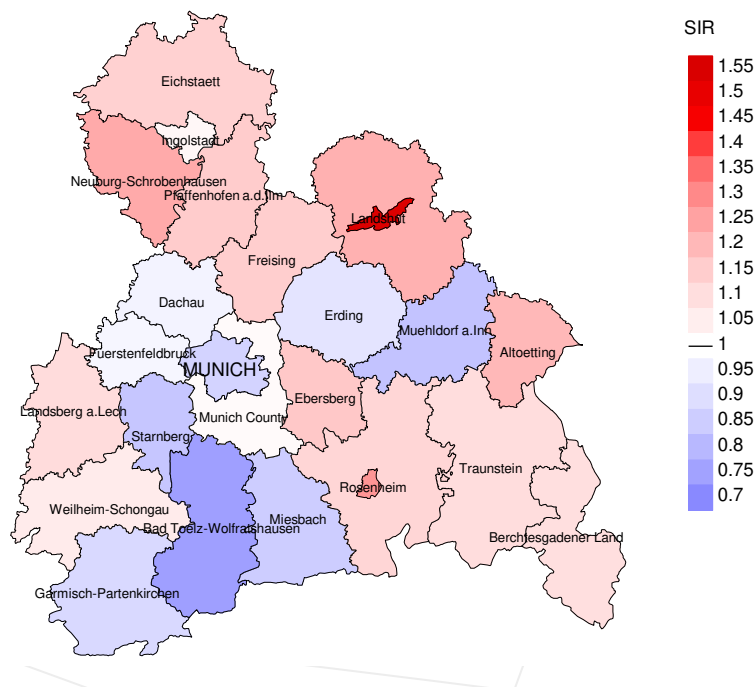


Figure 8b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2007 to 2016. According to their individual SIR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=5,256, females N=2,875).

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 90 women were identified with newly diagnosed urinary tract cancer. Therefore, the mean standardized incidence ratio (SIR) for this cancer type in this area can be calculated at 1.16. Though, the value of this parameter may vary with an underlying probability of 99% between 0.87 and 1.51, 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	469	96.2	10.7	314	67.0	95.2
1999	458	94.8	9.4	302	65.9	95.4
2000	421	96.2	10.9	269	63.9	96.7
2001	420	96.4	11.4	286	68.1	98.3
2002	719	97.4	14.3	502	69.8	96.6
2003	711	94.5	10.8	450	63.3	98.2
2004	712	95.6	11.5	416	58.4	97.8
2005	779	94.6	5.6	438	56.2	97.9
2006	753	90.6	6.6	416	55.2	98.3
2007	865	79.5	9.0	473	54.7	98.5
2008	912	68.9	8.1	454	49.8	98.9
2009	913	66.5	8.1	445	48.7	98.7
2010	914	65.8	7.2	408	44.6	98.3
2011	858	64.5	6.6	376	43.8	97.9
2012	867	64.7	7.3	363	41.9	97.5
2013	807	64.3	7.3	304	37.7	98.7
2014	882	61.7	8.3	294	33.3	95.6
2015	697	98.6	11.2	203	29.1	97.5
2016	569	86.1	11.2	121	21.3	93.4
1998-2016	13726	80.5	9.0	6834	49.8	97.6

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	469	251	93.6	78	16.6
1999	458	251	96.0	88	19.2
2000	421	258	95.3	74	17.6
2001	420	258	95.7	75	17.9
2002	719	377	97.3	149	20.7
2003	711	411	96.4	141	19.8
2004	712	400	96.8	129	18.1
2005	779	378	95.8	102	13.1
2006	753	419	97.6	105	13.9
2007	865	465	97.6	140	16.2
2008	912	495	99.2	136	14.9
2009	913	511	99.2	154	16.9
2010	914	543	98.5	141	15.4
2011	858	548	98.2	143	16.7
2012	867	569	98.2	153	17.6
2013	807	566	99.1	130	16.1
2014	882	565	98.8	141	16.0
2015	697	645	98.6	136	19.5
2016	569	553	99.1	113	19.9
1998-2016	13726	8463	97.8	2328	17.0

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	251	65.3	34.7	79.6
1999	251	74.5	25.5	85.1
2000	258	72.1	27.9	83.7
2001	258	72.5	27.5	85.8
2002	377	71.4	28.6	85.8
2003	411	74.5	25.5	86.4
2004	400	70.3	29.8	82.2
2005	378	74.1	25.9	83.1
2006	419	71.1	28.9	78.5
2007	465	72.7	27.3	81.3
2008	495	71.5	28.5	81.7
2009	511	73.4	26.6	80.9
2010	543	68.9	31.1	77.9
2011	548	69.0	31.0	81.4
2012	569	62.2	37.8	72.1
2013	566	64.7	35.3	75.9
2014	565	66.0	34.0	75.1
2015	645	62.8	37.2	73.0
2016	553	59.3	40.7	73.0
1998-2016	8463	68.6	31.4	79.2

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	162	71.4	69.5	76.6	70.5
1999	157	73.7	72.4	83.2	73.0
2000	161	73.0	69.3	78.9	72.4
2001	169	70.5	69.5	76.2	70.2
2002	218	74.3	73.6	74.6	74.7
2003	250	74.6	72.9	79.1	73.9
2004	231	74.3	73.2	77.3	73.6
2005	223	73.6	71.8	79.7	72.4
2006	260	73.9	72.4	77.4	73.0
2007	290	74.5	72.6	79.8	73.4
2008	313	74.9	73.4	78.7	74.5
2009	324	74.3	72.9	79.2	72.9
2010	327	75.5	74.1	78.6	74.6
2011	355	76.1	73.8	82.5	74.9
2012	333	77.3	75.3	80.9	75.7
2013	350	77.4	74.9	81.7	76.2
2014	358	77.1	75.0	81.9	75.9
2015	413	77.4	75.6	83.1	76.3
2016	351	78.3	76.3	81.2	77.7
1998–2016	5245	75.5	73.6	79.9	74.5

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	89	80.8	77.7	82.4	80.9
1999	94	77.3	76.7	80.5	78.7
2000	97	76.5	76.1	77.8	77.0
2001	89	78.9	75.9	84.2	77.8
2002	159	78.5	75.6	82.5	76.9
2003	161	78.8	77.7	80.6	78.4
2004	169	81.1	80.0	83.1	80.7
2005	155	78.2	75.1	83.1	76.0
2006	159	78.9	78.2	81.6	77.8
2007	175	80.0	78.7	82.3	79.9
2008	182	80.2	78.1	85.1	78.4
2009	187	80.8	77.4	85.7	78.2
2010	216	81.0	78.5	85.6	79.5
2011	193	81.9	79.3	87.3	80.4
2012	236	80.1	77.3	84.1	77.6
2013	216	80.5	77.3	84.8	78.8
2014	207	81.6	79.6	86.0	80.2
2015	232	81.3	78.6	86.5	79.6
2016	202	82.6	78.5	86.3	79.9
1998-2016	3218	80.3	78.0	84.4	79.0

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	114	10.3	0.40	6.0	0.37	9.3	0.40	12.4	0.43
1999	118	10.5	0.42	6.0	0.39	9.5	0.43	13.3	0.48
2000	116	10.2	0.43	5.8	0.39	9.1	0.43	12.5	0.49
2001	125	10.8	0.52	6.1	0.50	9.4	0.52	12.3	0.54
2002	160	8.6	0.37	4.5	0.34	7.3	0.37	10.2	0.41
2003	191	10.2	0.44	5.4	0.39	8.4	0.43	11.7	0.49
2004	167	8.9	0.38	4.5	0.33	7.1	0.37	9.9	0.41
2005	162	8.6	0.34	4.3	0.30	6.7	0.32	9.1	0.36
2006	191	10.0	0.42	5.0	0.37	7.6	0.40	10.3	0.44
2007	221	10.0	0.40	4.9	0.36	7.7	0.39	10.4	0.43
2008	221	9.9	0.39	4.6	0.33	7.3	0.36	10.2	0.41
2009	242	10.8	0.43	5.0	0.37	7.8	0.40	10.7	0.44
2010	226	10.0	0.40	4.5	0.34	7.0	0.37	9.9	0.42
2011	255	11.4	0.47	5.1	0.40	7.9	0.44	10.7	0.48
2012	211	9.3	0.39	3.8	0.31	6.1	0.35	8.6	0.39
2013	237	10.3	0.46	4.4	0.38	6.9	0.42	9.6	0.46
2014	231	9.9	0.41	4.2	0.34	6.6	0.37	9.0	0.41
2015	272	11.4	0.58	4.7	0.51	7.4	0.54	10.4	0.59
2016	226	9.4	0.59	3.8	0.51	6.0	0.55	8.4	0.59
1998-2016	3686	10.0	0.43	4.7	0.37	7.4	0.41	10.2	0.45

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	50	4.3	0.28	1.5	0.21	2.4	0.23	3.3	0.26
1999	69	5.8	0.40	2.2	0.30	3.5	0.34	4.8	0.39
2000	70	5.8	0.48	2.2	0.38	3.4	0.42	4.8	0.46
2001	62	5.1	0.36	1.9	0.29	3.0	0.31	4.2	0.35
2002	109	5.6	0.38	2.1	0.31	3.3	0.34	4.5	0.37
2003	115	5.8	0.44	2.1	0.35	3.3	0.38	4.6	0.42
2004	114	5.8	0.43	1.9	0.31	3.0	0.34	4.3	0.39
2005	119	6.0	0.43	2.3	0.37	3.4	0.38	4.6	0.40
2006	107	5.3	0.38	1.8	0.27	2.9	0.31	4.0	0.34
2007	118	5.1	0.39	1.5	0.27	2.6	0.32	3.9	0.37
2008	133	5.7	0.41	1.9	0.29	3.0	0.32	4.2	0.36
2009	135	5.8	0.40	2.0	0.31	3.1	0.34	4.3	0.36
2010	148	6.3	0.46	2.0	0.36	3.2	0.39	4.8	0.44
2011	123	5.3	0.41	1.7	0.27	2.7	0.32	3.8	0.37
2012	143	6.1	0.48	1.9	0.39	3.1	0.42	4.5	0.46
2013	129	5.4	0.47	1.7	0.34	2.7	0.38	3.9	0.42
2014	143	5.9	0.47	1.8	0.34	2.9	0.38	4.3	0.44
2015	133	5.5	0.59	1.6	0.43	2.6	0.48	3.8	0.55
2016	102	4.2	0.56	1.3	0.44	2.1	0.47	2.9	0.52
1998-2016	2122	5.5	0.43	1.8	0.32	2.9	0.36	4.1	0.40

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	2	0.1	0.1	2	0.1	0.1			0.0
10-14	1	0.0	0.1			0.1	1	0.1	0.1
15-19	1	0.0	0.1	1	0.0	0.1			0.1
20-24	2	0.1	0.2	1	0.0	0.2	1	0.1	0.2
25-29	3	0.1	0.2	2	0.1	0.3	1	0.1	0.2
30-34	2	0.1	0.3	2	0.1	0.3			0.2
35-39	7	0.2	0.5	4	0.2	0.5	3	0.2	0.5
40-44	18	0.5	1.0	9	0.4	0.9	9	0.7	1.1
45-49	42	1.2	2.1	32	1.4	2.3	10	0.8	1.9
50-54	106	2.9	5.0	78	3.3	5.6	28	2.1	4.1
55-59	163	4.5	9.5	126	5.4	11.0	37	2.8	6.9
60-64	271	7.4	16.9	207	8.8	19.8	64	4.9	11.8
65-69	429	11.8	28.7	284	12.1	31.9	145	11.1	22.9
70-74	654	17.9	46.6	473	20.2	52.1	181	13.8	36.7
75-79	721	19.8	66.4	452	19.3	71.4	269	20.6	57.3
80-84	676	18.5	84.9	385	16.4	87.9	291	22.3	79.6
85+	551	15.1	100.0	284	12.1	100.0	267	20.4	100.0
All ages	3649	100.0		2342	100.0		1307	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	2		0.2	0.25			8.3	
10-14		1			0.1	0.50		4.2
15-19	1		0.1	1.00			2.3	
20-24	1	1	0.1	0.25	0.1	0.25	1.8	3.0
25-29	2	1	0.1	0.18	0.1	0.20	2.7	1.4
30-34	2		0.1	0.10			1.9	
35-39	4	3	0.2	0.06	0.2	0.11	2.0	1.1
40-44	9	9	0.5	0.08	0.5	0.17	1.8	1.3
45-49	32	10	1.6	0.14	0.5	0.16	2.8	0.8
50-54	78	28	4.5	0.21	1.6	0.22	3.8	1.4
55-59	126	37	8.9	0.26	2.5	0.22	3.7	1.3
60-64	207	64	16.9	0.35	4.8	0.27	4.2	1.7
65-69	284	145	24.0	0.36	11.2	0.34	3.9	2.7
70-74	473	181	42.8	0.49	14.3	0.41	5.1	2.7
75-79	452	269	56.7	0.59	26.9	0.50	5.0	3.8
80-84	385	291	83.7	0.74	41.1	0.74	5.1	4.3
85+	284	267	92.8	0.97	36.4	0.78	4.3	2.9
All ages	2342	1307					4.5	2.8
Mortality								
Raw			10.2	0.45	5.5	0.45		
WS			4.5	0.38	1.7	0.33		
ES			7.0	0.41	2.8	0.37		
BRD-S			9.8	0.45	4.0	0.42		
PYLL-70								
per 100,000			33.1		12.6			
ES			29.1		10.6			
AYLL-70			8.9		8.4			

Table 14a

Further malignancies in deaths in period 1998–2016
MALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn- chron ±30d n	Syn- chron ±30d ←%	Post n	Post ←%
C09–C10 Oropharynx	33	1.5	16	48.5	2	6.1	15	45.5
C15 Oesophagus	32	1.4	10	31.3	1	3.1	21	65.6
C16 Stomach	66	2.9	23	34.8	7	10.6	36	54.5
C18 Colon	183	8.1	75	41.0	33	18.0	75	41.0
C19–C20 Rectum	85	3.8	28	32.9	20	23.5	37	43.5
C22 Liver	48	2.1	6	12.5	9	18.8	33	68.8
C25 Pancreas	62	2.7	2	3.2	9	14.5	51	82.3
C32 Larynx	24	1.1	15	62.5	1	4.2	8	33.3
C33–C34 Lung	245	10.9	47	19.2	27	11.0	171	69.8
C43 Malign. melanoma	57	2.5	34	59.6	4	7.0	19	33.3
C44 Skin others	86	3.8	39	45.3	4	4.7	43	50.0
C61 Prostate	471	20.9	202	42.9	71	15.1	198	42.0
C64 Kidney	126	5.6			39	31.0	87	69.0
C65 Renal pelvis	35	1.6			14	40.0	21	60.0
C66 Ureter	36	1.6			19	52.8	17	47.2
C67 Bladder	338	15.0	165	48.8	49	14.5	124	36.7
C70–C72 CNS cancer	22	1.0	6	27.3	2	9.1	14	63.6
C76–C79 CUP	32	1.4	15	46.9	4	12.5	13	40.6
C82–C85 NHL	71	3.1	21	29.6	11	15.5	39	54.9
C90 Mult. myeloma	24	1.1	10	41.7	3	12.5	11	45.8
C91–C96 Leukaemia	22	1.0	1	4.5	1	4.5	20	90.9
Others, specified	160	7.1	61	38.1	16	10.0	83	51.9
All further malignancies	2258	100.0	776	34.4	346	15.3	1136	50.3

Further malignancies with number of cases 1 to 18 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 ←%
C16 Stomach	30	2.9	8	26.7	8	26.7	14	46.7
C18 Colon	67	6.5	23	34.3	13	19.4	31	46.3
C19-C20 Rectum	32	3.1	12	37.5	5	15.6	15	46.9
C23-C24 Bile	16	1.6	1	6.3	4	25.0	11	68.8
C25 Pancreas	48	4.7	4	8.3	5	10.4	39	81.3
C33-C34 Lung	88	8.6	12	13.6	12	13.6	64	72.7
C43 Malign. melanoma	21	2.0	11	52.4	2	9.5	8	38.1
C44 Skin others	34	3.3	19	55.9	2	5.9	13	38.2
C50 Breast	206	20.0	113	54.9	17	8.3	76	36.9
C53 Cervix uteri	31	3.0	23	74.2	1	3.2	7	22.6
C54 Corpus uteri	36	3.5	22	61.1	4	11.1	10	27.8
C56 Ovary	31	3.0	12	38.7	5	16.1	14	45.2
C64 Kidney	57	5.5			15	26.3	42	73.7
C66 Ureter	18	1.8			11	61.1	7	38.9
C67 Bladder	130	12.6	42	32.3	22	16.9	66	50.8
C73 Thyroid	29	2.8	14	48.3	2	6.9	13	44.8
C76-C79 CUP	21	2.0	3	14.3	2	9.5	16	76.2
C82-C85 NHL	37	3.6	16	43.2	7	18.9	14	37.8
Others, specified	96	9.3	25	26.0	19	19.8	52	54.2
All further malignancies	1028	100.0	360	35.0	156	15.2	512	49.8

Further malignancies with number of cases 1 to 10 are pooled in category "Others, specified".

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

Table 15

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

Age at death Years	Males 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	2		0.2	0.25			8.7	
10-14								
15-19	1		0.1	1.00			2.4	
20-24	1	1	0.1	0.25	0.1	0.25	2.0	3.2
25-29	2	1	0.1	0.20	0.1	0.20	3.0	1.5
30-34	2		0.1	0.11			2.0	
35-39	4	3	0.2	0.06	0.2	0.11	2.1	1.2
40-44	8	7	0.4	0.08	0.4	0.16	1.8	1.2
45-49	30	8	1.5	0.14	0.4	0.15	2.9	0.7
50-54	56	20	3.2	0.18	1.2	0.20	3.1	1.2
55-59	95	26	6.7	0.25	1.8	0.20	3.2	1.1
60-64	162	41	13.2	0.35	3.1	0.23	3.9	1.3
65-69	203	115	17.1	0.38	8.9	0.35	3.5	2.7
70-74	322	122	29.1	0.52	9.6	0.38	4.5	2.3
75-79	290	195	36.4	0.61	19.5	0.49	4.4	3.6
80-84	239	213	52.0	0.82	30.1	0.81	4.4	4.0
85+	175	214	57.2	1.09	29.2	0.84	3.7	2.9
All ages	1592	966					3.9	2.6
Mortality								
Raw			7.0	0.43	4.1	0.45		
WS			3.1	0.36	1.3	0.31		
ES			4.9	0.39	2.0	0.36		
BRD-S			6.6	0.44	2.9	0.41		
PYLL-70								
per 100,000			26.3		9.2			
ES			23.1		7.6			
AYLL-70			9.4		8.2			

* 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.	MI-index	Females Age- spec. mortal.	MI-index	Males Prop.all cancers %	Females Prop.all cancers %
0- 4								
5- 9	2		0.2	0.25			8.7	
10-14								
15-19	1		0.1	1.00			2.4	
20-24	1	1	0.1	0.25	0.1	0.25	2.0	3.2
25-29	2	1	0.1	0.20	0.1	0.20	3.0	1.5
30-34	2		0.1	0.12			2.0	
35-39	4	1	0.2	0.06	0.1	0.04	2.1	0.4
40-44	8	5	0.4	0.08	0.3	0.12	1.8	0.8
45-49	26	7	1.3	0.13	0.4	0.14	2.5	0.6
50-54	49	17	2.8	0.18	1.0	0.18	2.7	1.0
55-59	76	22	5.4	0.23	1.5	0.18	2.6	0.9
60-64	139	31	11.3	0.35	2.3	0.20	3.4	1.0
65-69	152	100	12.8	0.33	7.7	0.34	2.7	2.4
70-74	232	88	21.0	0.46	7.0	0.32	3.3	1.7
75-79	192	140	24.1	0.47	14.0	0.40	3.0	2.7
80-84	150	164	32.6	0.60	23.2	0.71	2.9	3.2
85+	99	154	32.3	0.66	21.0	0.65	2.2	2.2
All ages	1135	731					2.9	2.0
Mortality								
Raw			5.0	0.35	3.1	0.38		
WS			2.3	0.30	1.0	0.27		
ES			3.5	0.33	1.6	0.30		
BRD-S			4.7	0.36	2.2	0.35		
PYLL-70								
per 100,000			22.5		7.4			
ES			19.9		6.1			
AYLL-70			9.8		8.0			

* See corresponding tables with multiple malignancies.

ICD-10 C64-C66, C68: Malignant neoplasms of urinary tract
 Age distribution and age-specific mortality 2007 - 2016 (Males: 2342, Females: 1307)

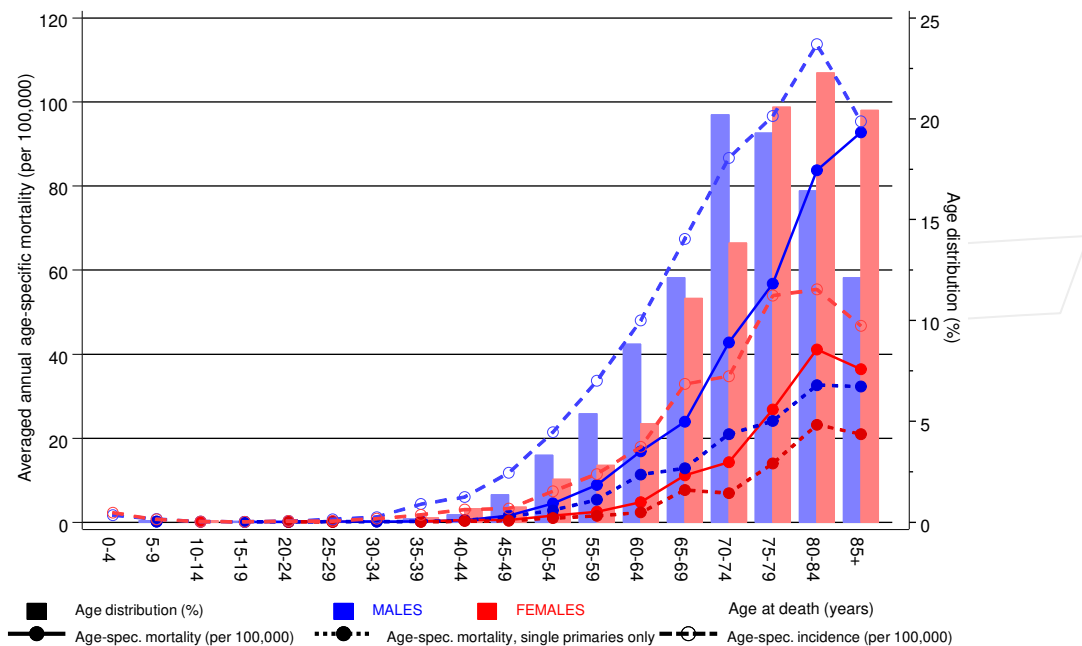
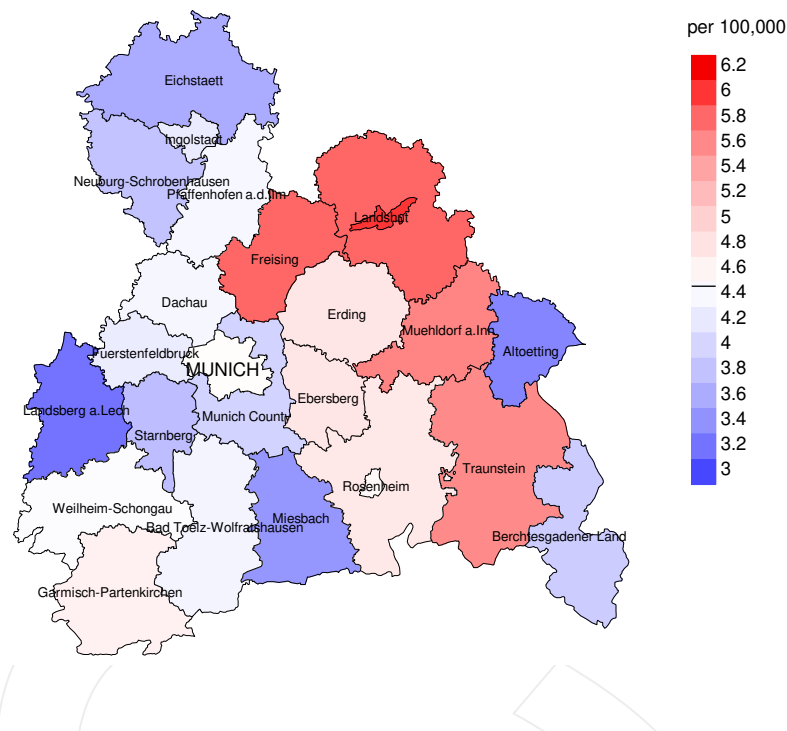


Figure 17. Distribution of age at death (bars; males: mean=68.5 yrs, median=69.7 yrs; females: mean=71.5 yrs, median=73.3 yrs) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

The difference between age at diagnosis (Table 3) and age at urinary tract 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

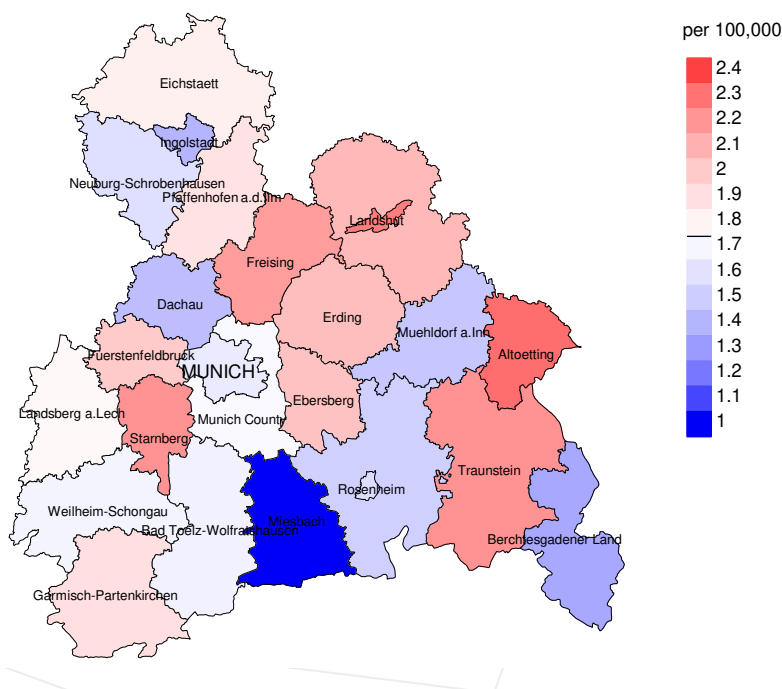
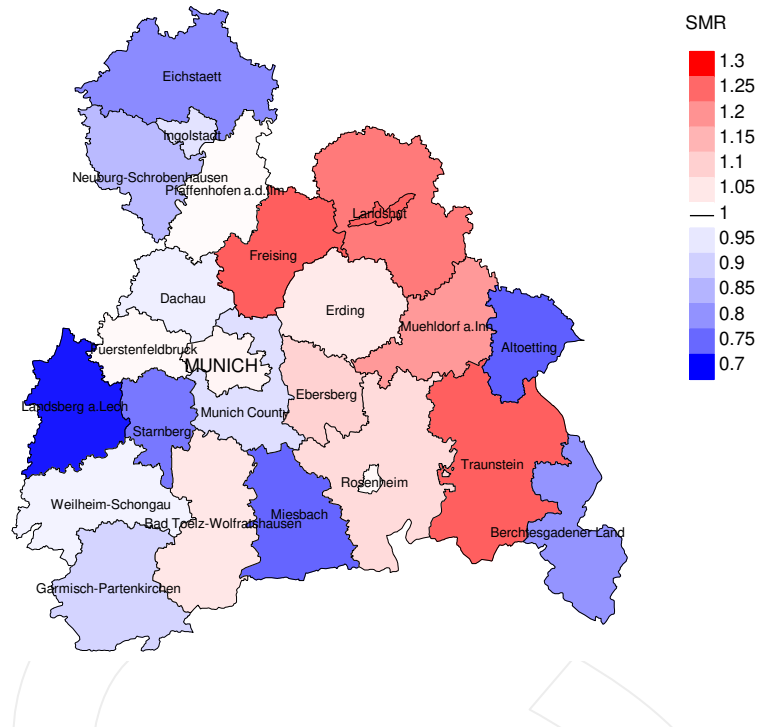


Figure 18a. Map of cancer mortality (world standard population) by county averaged for period 2007 to 2016. According to their individual mortality rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 4.5/100,000 WS N=2,342, females 1.7/100,000 WS N=1,307).

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 50 women died from urinary tract cancer. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 2.0/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 1.3 and 3.3/100,000.

Standardized mortality ratio (SMR) 2007 - 2016: Males



Standardized mortality ratio (SMR) 2007 - 2016: Females

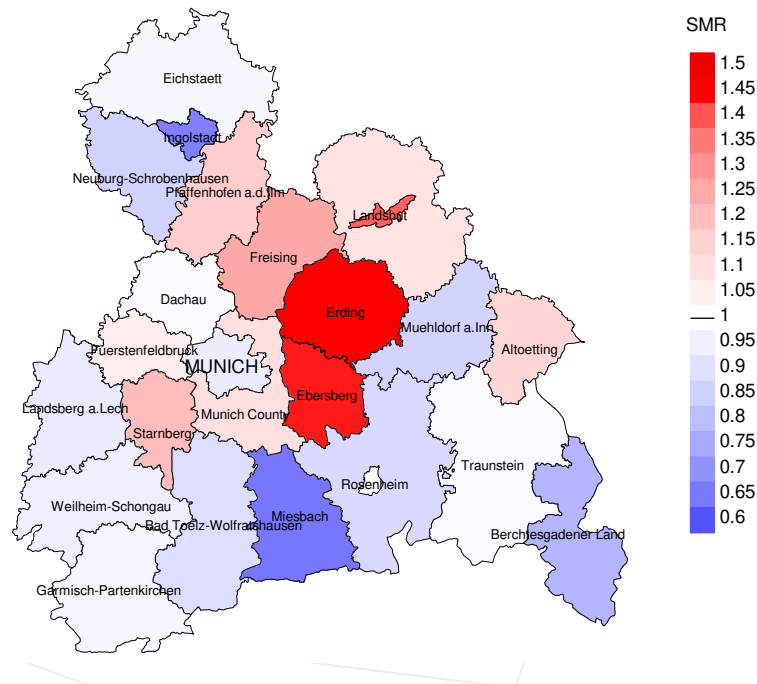


Figure 18b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2007 to 2016. According to their individual SMR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=2,342, females N=1,307).

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 50 women died from urinary tract cancer. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 1.45. Though, the value of this parameter may vary with an underlying probability of 99% between 0.97 and 2.06, 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

Recommended Citation

Munich Cancer Registry. ICD-10 C64-C66, C68: Urinary tract cancer - Incidence and Mortality [Internet]. 2018 [updated 2018 Aug 21; cited 2018 Oct 1]. Available from: <https://www.tumorregister-muenchen.de/en/facts/base/bC6466E-ICD-10-C64-C66-C68-Urinary-tract-cancer-incidence-and-mortality.pdf>

Copyright

The content of the public web site provided by the Munich Cancer Registry is available worldwide and free of charge. All documents are free to download, utilize, copy, print-out and distribute, providing that the MCR is referenced.

Disclaimer

The Munich Cancer Registry reserves the right to not be responsible for the topicality, correctness, completeness or quality of the information provided. Liability claims regarding damage caused by the use of any information provided, including any kind of information which is incomplete or incorrect, will therefore be rejected.