

Munich Cancer Registry



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

ICD-10 C54: Corpus cancer

Incidence and Mortality

Year of diagnosis	1998-2016
Patients	9,811
Diseases	9,811
Creation date	08/21/2018
Export date	08/09/2018
Population (females)	2.43 m



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

https://www.tumorregister-muenchen.de/en/facts/base/bC54__E-ICD-10-C54-Corpus-cancer-incidence-and-mortality.pdf

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

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

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

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

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

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

Munich Cancer Registry, August 2018

[#] Base data has been collected since 1998. An increase in new diseases is apparent, which is an effect of two extensions in the MCR catchment area (from a base population of 2.65 million to 4.10 in 2002, and to 4.69 million in 2007).

^{##} Due to the high frequency and good prognosis of non-malignant skin cancer (C44), no systematic ascertainment is performed for this diagnosis. C44 is not designated as a primary, but rather as a secondary tumor.

^{###} DCO (death certificate only) identifies a cancer case that first becomes available to the MCR through the death certificate.

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

Code	Description
C54.-	Malignant neoplasm of corpus uteri
C54.0	Isthmus uteri
C54.1	Endometrium
C54.2	Myometrium
C54.3	Fundus uteri
C54.8	Overlapping lesion of corpus uteri
C54.9	Corpus uteri, unspecified

INCIDENCE

Table 1

Cases with invasive cancer by year of diagnosis, proportions of DCO, further malignancies, deaths, and active follow-up (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	329	5	1.5	10.9	11.1	56.5	92.7
1999	325	4	1.2	10.6	10.8	55.1	94.2
2000	314	9	2.9	11.0	10.4	52.5	94.6
2001	347	17	4.9	11.2	10.3	56.2	92.8
2002	523	22	4.2	11.2	10.0	51.2	94.8 #
2003	512	12	2.3	11.0	9.7	46.9	93.0
2004	522	14	2.7	11.1	9.2	46.9	92.9
2005	544	10	1.8	11.5	8.8	43.8	92.3
2006	507	16	3.2	11.4	8.4	38.3	91.1
2007	621	31	5.0	11.4	8.3	43.5	73.8 #
2008	627	23	3.7	11.6	7.5	38.4	59.6
2009	614	16	2.6	11.9	7.0	36.0	59.3
2010	589	28	4.8	12.0	6.5	35.0	55.9
2011	625	15	2.4	12.2	6.2	32.3	57.8
2012	622	25	4.0	12.8	5.5	32.5	58.7
2013	646	22	3.4	13.0	4.5	27.2	58.0
2014	600	18	3.0	13.2	4.1	25.2	67.7
2015	509	18	3.5	13.3	3.4	15.9	97.6
2016	435	14	3.2	13.6	3.6	11.3	74.9 ##
1998-2016	9811	319	3.3	13.6	11.1	37.8	76.5

9,811 cases diagnosed 1998-2016 are related to a total of 9,811 patients. Currently, in 2,509 (25.6 %) of these 9,811 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 2,050 / 365 / 94 (20.9 % / 3.7 % / 1.0 %) patients exist having 2 / 3 / 4+ malignancies.

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

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

How to interpret:

In 2014, a subgroup of 600 cases has been diagnosed, of which 13.2 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 4.1 % of cases, at least one new malignancy has occurred during the follow-up period (all numbers refer to the date of the database export, see cover sheet).

Table 2

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

Year of diagnosis	Cases n	Incidence raw	Incidence WS	Incidence ES	Incidence BRD-S
1998	329	28.0	14.5	20.6	24.9
1999	325	27.4	13.6	19.6	23.9
2000	314	26.1	13.2	18.9	23.0
2001	347	28.5	14.2	20.5	24.9
2002	523	26.7	13.3	18.9	22.8
2003	512	26.0	12.9	18.6	22.2
2004	522	26.4	12.8	18.6	22.5
2005	544	27.3	13.5	19.1	22.8
2006	507	25.2	12.0	17.2	21.0
2007	621	26.9	13.1	18.8	22.6
2008	627	27.0	12.9	18.5	22.2
2009	614	26.4	12.9	18.4	21.8
2010	589	25.2	11.5	16.7	20.5
2011	625	26.7	12.5	17.9	21.8
2012	622	26.4	12.0	17.3	21.1
2013	646	27.1	12.3	17.8	21.8
2014	600	24.9	11.1	16.1	19.7
2015	509	20.9	9.9	14.2	16.9
2016	435	17.7	8.6	12.1	14.3
1998-2016	9811	25.6	12.2	17.6	21.2

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

Table 3

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

Year of diagnosis	Cases n	Std.		Min.	Max.	Median				
		Mean	dev.			10%	25%	50%	75%	90%
1998	329	67.4	11.4	28.8	92.1	52.5	59.7	67.6	75.2	82.9
1999	325	68.4	11.3	32.1	96.9	54.5	60.4	68.4	76.5	83.5
2000	314	67.1	11.3	27.2	93.1	52.9	60.0	66.7	75.9	80.8
2001	347	68.2	11.9	26.3	95.5	53.4	60.6	68.5	76.2	83.2
2002	523	68.1	11.5	31.8	96.0	54.2	61.3	67.5	76.6	82.7
2003	512	68.0	11.3	31.2	93.4	53.4	60.3	67.4	76.2	83.0
2004	522	68.2	11.2	32.3	95.3	53.8	60.5	68.1	76.7	82.6
2005	544	67.8	11.4	30.2	98.0	53.1	61.4	67.7	74.9	83.4
2006	507	69.0	11.8	31.9	98.3	53.7	61.7	69.0	77.7	84.3
2007	621	68.1	11.5	36.5	99.2	53.1	60.4	68.2	76.6	82.7
2008	627	68.4	11.5	34.3	97.1	52.5	60.5	69.1	75.9	84.0
2009	614	68.0	11.8	38.1	102	52.5	60.7	68.6	75.1	83.3
2010	589	69.2	11.9	28.5	98.7	52.7	61.4	70.2	77.3	84.4
2011	625	68.4	12.1	29.5	95.5	52.4	60.4	69.6	76.9	84.1
2012	622	69.1	12.0	0.3	97.8	53.3	61.0	70.1	76.9	84.3
2013	646	68.9	12.4	30.6	99.7	53.4	60.4	70.3	77.7	84.7
2014	600	69.1	12.4	27.8	99.0	52.3	60.3	70.8	78.0	84.5
2015	509	67.8	12.0	37.9	102	51.7	59.1	68.7	76.4	82.4
2016	435	67.4	12.6	26.1	96.7	52.2	59.0	67.4	77.1	83.5
1998–2016	9811	68.3	11.8	0.3	102	53.0	60.4	68.8	76.7	83.6

Table 4

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

Age at diagnosis Years	Cases n	%	Cum.%
0–4	1	0.0	0.0
5–9	0	0.0	0.0
10–14	0	0.0	0.0
15–19	0	0.0	0.0
20–24	0	0.0	0.0
25–29	7	0.1	0.1
30–34	18	0.3	0.4
35–39	48	0.8	1.3
40–44	110	1.9	3.1
45–49	216	3.7	6.8
50–54	436	7.4	14.2
55–59	603	10.2	24.4
60–64	750	12.7	37.2
65–69	871	14.8	52.0
70–74	1032	17.5	69.5
75–79	802	13.6	83.1
80–84	507	8.6	91.7
85+	487	8.3	100.0
All ages	5888	100.0	

Table 5

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

Age at diagnosis Years	Cases n	Age-spec. incidence	DCO rate n=210 %	Prop. all cancers n=112253 %
0- 4	1	0.1	100.0	0.7
5- 9		0.0		
10-14		0.0		
15-19		0.0		
20-24		0.0		
25-29	7	0.4		0.8
30-34	18	1.1		1.2
35-39	48	3.0		1.9
40-44	110	6.1	0.9	2.4
45-49	216	11.3	0.9	3.1
50-54	436	25.5	0.5	5.0
55-59	603	41.0	0.7	6.5
60-64	750	56.4	0.8	6.6
65-69	871	67.1	1.1	6.2
70-74	1032	81.5	1.5	7.0
75-79	802	80.1	2.6	6.0
80-84	507	71.7	7.1	4.6
85+	487	66.4	23.0	3.8
All ages	5888		3.6	5.2
Incidence				
Raw		24.9		
WS		11.6		
ES		16.7		
BRD-S		20.2		

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 C54: Malignant neoplasm of corpus uteri Age distribution and age-specific incidence 2007 - 2016 (n=5888)

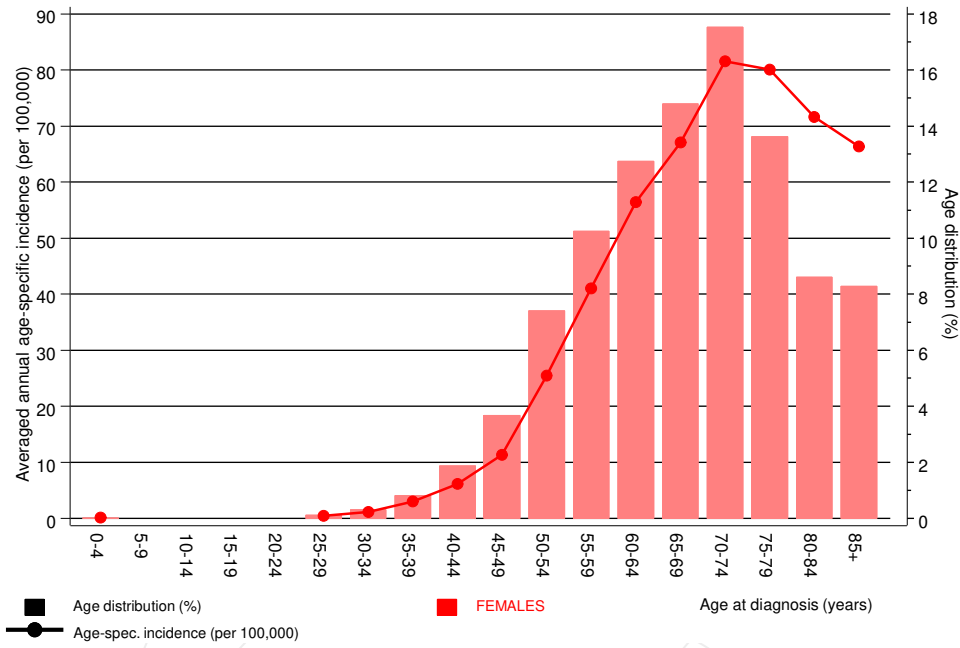


Figure 6. Age distribution (mean=68.5 yrs, median=69.3 yrs) and age-specific incidence.

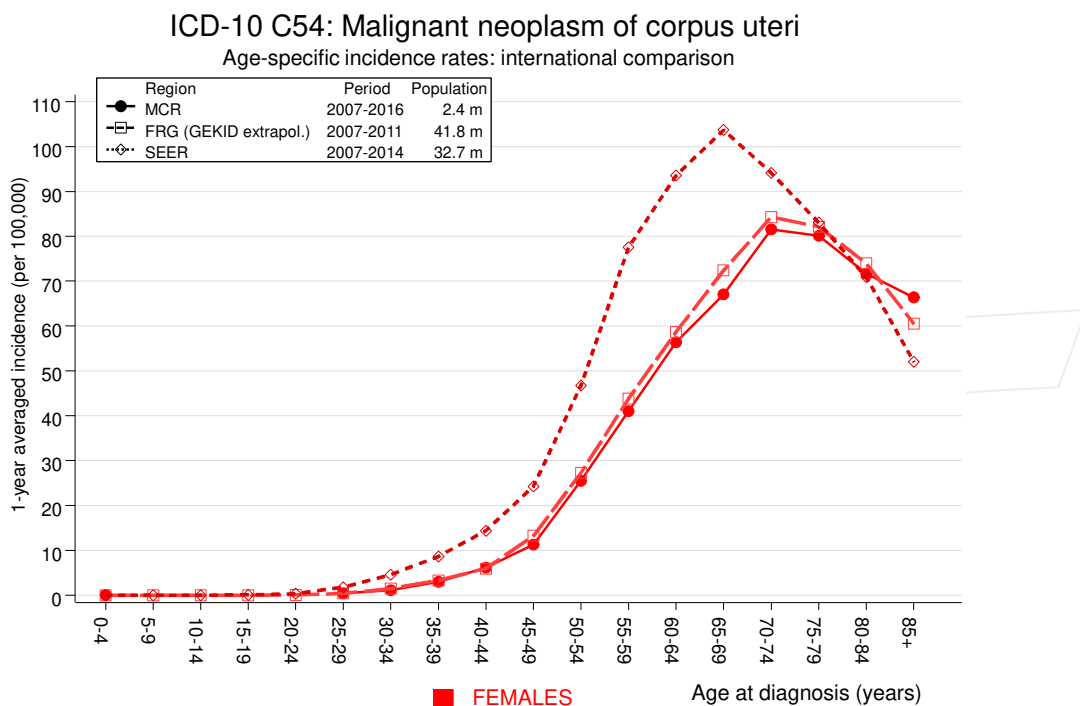


Figure 6a. Age-specific incidence in MCR registry areas compared to Germany (FRG, GEKID extrapolation) and SEER (Surveillance, Epidemiology, and End Results, USA).

Reference:

Extrapolated age-specific patient population of Germany, data status middle of 2010. Association of Population-based Cancer Registries in Germany (GEKID e.V.). Berlin, 2014. <http://www.gekid.de>. Last access: 02/11/2015
 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 7

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

Diagnosis	Observed n	Expected n	SIR	CI 95%	CI 95%	EAR	DCO %
C03-C06 Oral cavity	3	2.5	1.2	0.2	3.5	0.1	
C09-C10 Oropharynx	2	1.7	1.2	0.1	4.3	0.1	
C15 Oesophagus	6	2.7	2.2	0.8	4.8	0.9	
C16 Stomach	28	15.5	1.8	1.2	2.6 #	3.5	17.9
C17 Small intestine	10	2.1	4.7	2.2	8.6 #	2.2	
C18 Colon	122	43.2	2.8	2.3	3.4 #	22.2	11.5
C19-C20 Rectum	26	18.1	1.4	0.9	2.1	2.2	11.5
C22 Liver	7	5.3	1.3	0.5	2.7	0.5	14.3
C23-C24 Bile	17	6.4	2.7	1.6	4.3 #	3.0	5.9
C25 Pancreas	46	20.0	2.3	1.7	3.1 #	7.3	21.7
C26 GI cancer	4	0.8	5.1	1.4	13.0 #	0.9	50.0
C33-C34 Lung	88	31.9	2.8	2.2	3.4 #	15.8	13.6
C38,C45 Mesothelioma	3	0.8	3.7	0.8	10.7	0.6	
C43 Malign. melanoma	28	15.4	1.8	1.2	2.6 #	3.5	
C46,C49 Soft tissue	11	2.5	4.5	2.2	8.0 #	2.4	
C48 Peritoneal	16	1.6	9.7	5.5	15.8 #	4.0	
C50 Breast	342	126.9	2.7	2.4	3.0 #	60.7	3.2
C51 Vulva	13	4.4	3.0	1.6	5.0 #	2.4	7.7
C52 Vagina	8	0.8	9.8	4.2	19.2 #	2.0	
C53 Cervix uteri	32	5.1	6.3	4.3	8.9 #	7.6	31.3
C55,C57 Fem. genitals un	5	1.0	5.0	1.6	11.7 #	1.1	80.0
C56 Ovary	228	17.6	12.9	11.3	14.7 #	59.4	11.0
C64 Kidney	27	10.8	2.5	1.6	3.6 #	4.6	11.1
C65 Renal pelvis	5	1.4	3.6	1.2	8.4 #	1.0	
C66 Ureter	2	0.7	2.9	0.3	10.4	0.4	
C67 Bladder	18	8.4	2.2	1.3	3.4 #	2.7	11.1
C70-C72 CNS cancer	12	5.9	2.0	1.1	3.6 #	1.7	16.7
C73 Thyroid	14	6.6	2.1	1.2	3.5 #	2.1	
C74-C80 Cancer others	2	1.7	1.2	0.1	4.3	0.1	
C76-C79 CUP	18	7.9	2.3	1.3	3.6 #	2.8	5.6
C81 Hodgkin lymphoma	3	0.8	4.0	0.8	11.6	0.6	
C82-C85 NHL	29	17.1	1.7	1.1	2.4 #	3.4	3.4
C90 Mult. myeloma	6	5.5	1.1	0.4	2.4	0.1	16.7
C91-C96 Leukaemia	19	7.0	2.7	1.6	4.2 #	3.4	21.1
Others, specified	7	4.6	1.5	0.6	3.1	0.7	
Not observed	0	26.7	0.0	0.0	0.1 #	-7.5	
All further malignancies	1207	431.4	2.8	2.6	3.0 #	218.8	9.4

Patients	9163
Median age at next malignancy (years)	72.2
Person-years	35443
Mean observation time (years)	3.9
Median observation time (years)	2.3

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

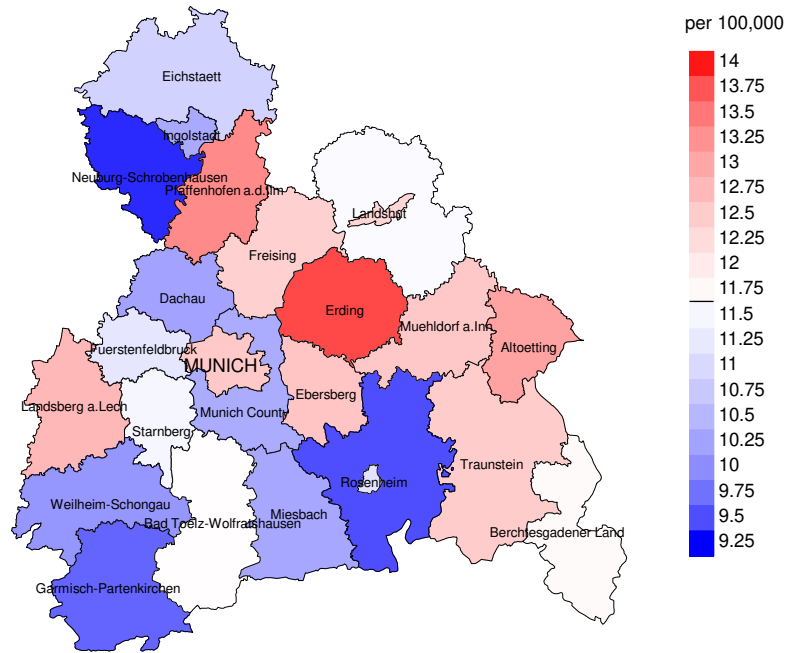


Figure 8a. Map of cancer incidence (world standard population, incl. DCO cases) by county averaged for period 2007 to 2016. According to their individual incidence rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (11.6/100,000 WS N=5,888).

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 171 women were identified with newly diagnosed corpus cancer. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 12.6/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 10.1 and 15.6/100,000.

Standardized incidence ratio (SIR) 2007 - 2016

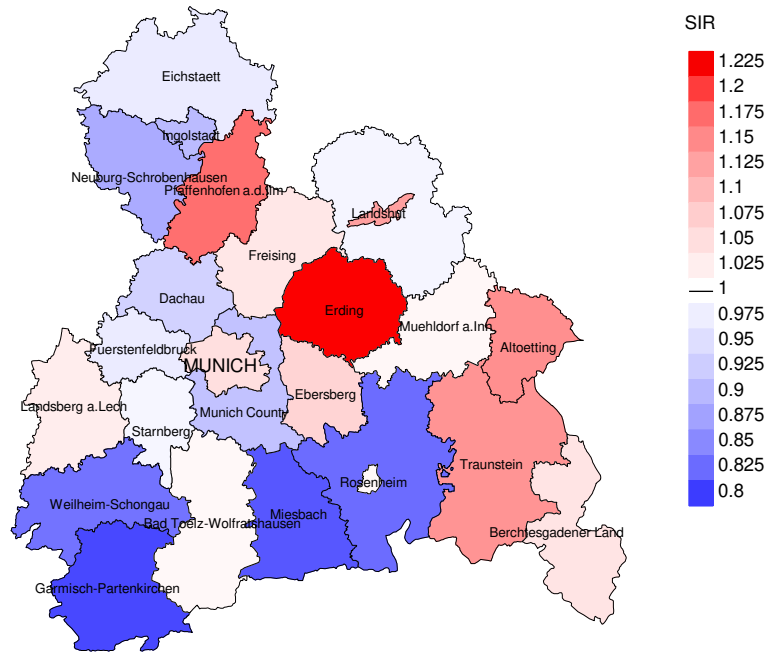


Figure 8b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2007 to 2016. According to their individual SIR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (N=5,888).

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 171 women were identified with newly diagnosed corpus cancer. Therefore, the mean standardized incidence ratio (SIR) for this cancer type in this area can be calculated at 1.06. Though, the value of this parameter may vary with an underlying probability of 99% between 0.87 and 1.29, 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	329	92.7	1.5	186	56.5	93.0
1999	325	94.2	1.2	179	55.1	94.4
2000	314	94.6	2.9	165	52.5	95.2
2001	347	92.8	4.9	195	56.2	97.4
2002	523	94.8	4.2	268	51.2	98.1
2003	512	93.0	2.3	240	46.9	97.5
2004	522	92.9	2.7	245	46.9	97.1
2005	544	92.3	1.8	238	43.8	97.1
2006	507	91.1	3.2	194	38.3	99.0
2007	621	73.8	5.0	270	43.5	98.1
2008	627	59.6	3.7	241	38.4	98.8
2009	614	59.3	2.6	221	36.0	98.2
2010	589	55.9	4.8	206	35.0	98.5
2011	625	57.8	2.4	202	32.3	98.5
2012	622	58.7	4.0	202	32.5	96.5
2013	646	58.0	3.4	176	27.2	94.9
2014	600	67.7	3.0	151	25.2	97.4
2015	509	97.6	3.5	81	15.9	90.1
2016	435	74.9	3.2	49	11.3	79.6
1998-2016	9811	76.5	3.3	3709	37.8	96.8

Table 9b

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

(with respect to registry area expansion from 2.65 to 4.10 m as of 2002, and from 4.10 to 4.81 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	329	131	90.8	23	7.0
1999	325	140	92.9	17	5.2
2000	314	167	92.8	28	8.9
2001	347	155	92.3	26	7.5
2002	523	253	96.4	43	8.2
2003	512	292	96.9	37	7.2
2004	522	252	96.8	36	6.9
2005	544	275	94.5	33	6.1
2006	507	272	96.7	35	6.9
2007	621	340	97.9	59	9.5
2008	627	319	99.1	43	6.9
2009	614	340	99.1	42	6.8
2010	589	355	98.6	50	8.5
2011	625	399	96.5	49	7.8
2012	622	380	99.2	59	9.5
2013	646	426	98.1	59	9.1
2014	600	403	99.0	53	8.8
2015	509	404	97.0	38	7.5
2016	435	356	98.0	40	9.2
1998-2016	9811	5659	97.1	770	7.8

Table 9c

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

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

Year of death	Deaths n	Prop. cancer- related %	Prop. non-cancer- related %	Prop. cancer recorded on death certificate %
1998	131	55.7	44.3	69.7
1999	140	57.1	42.9	66.2
2000	167	53.3	46.7	64.5
2001	155	43.9	56.1	65.7
2002	253	58.5	41.5	73.0
2003	292	60.3	39.7	71.4
2004	252	61.9	38.1	70.9
2005	275	59.3	40.7	68.5
2006	272	56.6	43.4	67.3
2007	340	58.5	41.5	67.9
2008	319	57.4	42.6	65.8
2009	340	56.2	43.8	63.5
2010	355	59.2	40.8	67.7
2011	399	57.6	42.4	68.8
2012	380	57.1	42.9	65.3
2013	426	56.8	43.2	64.4
2014	403	56.8	43.2	66.2
2015	404	52.2	47.8	59.2
2016	356	54.5	45.5	64.8
1998-2016	5659	56.8	43.2	66.5

Table 10

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

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	131	79.9	74.6	83.2	76.7
1999	140	81.2	77.4	84.8	78.9
2000	167	80.0	77.3	82.9	78.1
2001	155	81.3	77.4	82.3	79.7
2002	253	80.3	76.1	84.1	78.8
2003	292	78.7	75.1	83.7	76.1
2004	252	79.4	74.8	84.4	77.2
2005	275	81.7	76.3	84.2	77.8
2006	272	81.0	76.3	85.6	76.8
2007	340	82.9	78.5	86.2	80.3
2008	319	81.3	75.6	85.9	77.3
2009	340	82.0	75.8	86.1	77.0
2010	355	82.9	77.7	86.1	79.8
2011	399	81.8	76.5	85.9	78.0
2012	380	82.0	77.7	87.5	78.6
2013	426	82.6	77.9	87.1	78.5
2014	403	80.7	77.0	86.3	77.9
2015	404	82.0	78.2	87.4	78.6
2016	356	81.0	77.2	86.2	78.1
1998-2016	5659	81.3	76.8	85.7	78.1

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 11

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

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	73	6.2	0.22	2.7	0.19	4.0	0.20	5.2	0.21
1999	80	6.7	0.25	2.5	0.19	4.0	0.20	5.5	0.23
2000	89	7.4	0.28	2.7	0.20	4.3	0.23	6.2	0.27
2001	68	5.6	0.20	2.1	0.15	3.3	0.16	4.6	0.18
2002	148	7.6	0.28	2.8	0.21	4.3	0.23	6.0	0.26
2003	176	8.9	0.34	3.4	0.26	5.3	0.29	7.2	0.33
2004	156	7.9	0.30	3.0	0.23	4.6	0.25	6.2	0.27
2005	163	8.2	0.30	2.9	0.22	4.5	0.24	6.1	0.27
2006	154	7.7	0.30	2.7	0.23	4.3	0.25	5.9	0.28
2007	199	8.6	0.32	2.9	0.22	4.6	0.24	6.3	0.28
2008	183	7.9	0.29	2.9	0.22	4.4	0.24	6.1	0.27
2009	191	8.2	0.31	2.9	0.22	4.5	0.24	6.0	0.28
2010	210	9.0	0.36	2.9	0.25	4.6	0.28	6.3	0.31
2011	230	9.8	0.37	3.3	0.26	5.2	0.29	7.1	0.32
2012	217	9.2	0.35	2.9	0.25	4.7	0.27	6.5	0.31
2013	242	10.2	0.37	3.2	0.26	5.1	0.28	7.1	0.33
2014	229	9.5	0.38	3.0	0.27	4.8	0.30	6.8	0.35
2015	211	8.7	0.41	2.7	0.28	4.4	0.31	6.1	0.36
2016	194	7.9	0.45	2.5	0.30	4.0	0.33	5.5	0.39
1998-2016	3213	8.4	0.33	2.9	0.24	4.5	0.26	6.2	0.30

Table 12

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

Age at death Years	Cases n	%	Cum.%
0-4			
5-9			
10-14			
15-19			
20-24			
25-29			
30-34	3	0.1	0.1
35-39	2	0.1	0.2
40-44	13	0.6	0.9
45-49	28	1.3	2.2
50-54	49	2.3	4.5
55-59	73	3.5	8.0
60-64	128	6.1	14.1
65-69	241	11.4	25.5
70-74	336	16.0	41.5
75-79	402	19.1	60.5
80-84	356	16.9	77.4
85+	475	22.6	100.0
All ages	2106	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	Cases n	Age-spec. mortality	MI-index	Prop. all cancers %
0- 4		0.0		
5- 9		0.0		
10-14		0.0		
15-19		0.0		
20-24		0.0		
25-29		0.0		
30-34	3	0.2	0.17	2.5
35-39	2	0.1	0.04	0.7
40-44	13	0.7	0.12	1.9
45-49	28	1.5	0.13	2.1
50-54	49	2.9	0.11	2.5
55-59	73	5.0	0.12	2.6
60-64	128	9.6	0.17	3.4
65-69	241	18.6	0.28	4.5
70-74	336	26.5	0.33	5.0
75-79	402	40.1	0.50	5.7
80-84	356	50.3	0.70	5.2
85+	475	64.7	0.98	5.1
All ages	2106			4.5
Mortality				
Raw		8.9	0.36	
WS		2.9	0.25	
ES		4.6	0.28	
BRD-S		6.4	0.32	
PYLL-70				
per 100,000		22.5		
ES		18.5		
AYLL-70		8.4		

Table 14

Further malignancies in deaths in period 1998-2016

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn- chron ±30d n	Syn- chron ±30d ←%	Post n	Post ←%
C16 Stomach	47	2.8	4	8.5	2	4.3	41	87.2
C18 Colon	160	9.4	40	25.0	14	8.8	106	66.3
C19-C20 Rectum	86	5.0	31	36.0			55	64.0
C22 Liver	16	0.9	2	12.5	1	6.3	13	81.3
C23-C24 Bile	24	1.4	2	8.3			22	91.7
C25 Pancreas	80	4.7	2	2.5	3	3.8	75	93.8
C33-C34 Lung	135	7.9	7	5.2	3	2.2	125	92.6
C43 Malign. melanoma	39	2.3	24	61.5			15	38.5
C44 Skin others	67	3.9	35	52.2	4	6.0	28	41.8
C48 Peritoneal	13	0.8			7	53.8	6	46.2
C50 Breast	460	27.0	250	54.3	43	9.3	167	36.3
C51 Vulva	24	1.4	2	8.3	4	16.7	18	75.0
C52 Vagina	15	0.9	1	6.7	5	33.3	9	60.0
C53 Cervix uteri	43	2.5	22	51.2	6	14.0	15	34.9
C55,C57 Fem. genitals un	15	0.9	3	20.0	2	13.3	10	66.7
C56 Ovary	174	10.2	17	9.8	110	63.2	47	27.0
C64 Kidney	30	1.8	9	30.0	3	10.0	18	60.0
C67 Bladder	46	2.7	4	8.7	8	17.4	34	73.9
C70-C72 CNS cancer	21	1.2	5	23.8			16	76.2
C73 Thyroid	13	0.8	6	46.2			7	53.8
C76-C79 CUP	27	1.6	4	14.8			23	85.2
C82-C85 NHL	29	1.7	7	24.1	2	6.9	20	69.0
C91-C96 Leukaemia	38	2.2	7	18.4	2	5.3	29	76.3
Others, specified	101	5.9	28	27.7	4	4.0	69	68.3
All further malignancies	1703	100.0	512	30.1	223	13.1	968	56.8

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	Cases n	Age-spec. mortality	MI-index	Prop. all cancers %
0- 4		0.0		
5- 9		0.0		
10-14		0.0		
15-19		0.0		
20-24		0.0		
25-29		0.0		
30-34	1	0.1	0.06	0.9
35-39	2	0.1	0.05	0.8
40-44	10	0.6	0.11	1.7
45-49	20	1.0	0.11	1.8
50-54	39	2.3	0.10	2.3
55-59	60	4.1	0.11	2.5
60-64	103	7.7	0.16	3.4
65-69	182	14.0	0.25	4.3
70-74	261	20.6	0.31	4.9
75-79	307	30.7	0.49	5.7
80-84	273	38.6	0.69	5.1
85+	385	52.5	1.06	5.2
All ages	1643			4.4
Mortality				
Raw		6.9	0.34	
WS		2.3	0.23	
ES		3.6	0.26	
BRD-S		5.0	0.30	
PYLL-70				
per 100,000		17.5		
ES		14.3		
AYLL-70		8.4		

* 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	Cases n	Age-spec. mortality	MI-index	Prop. all cancers %
0- 4		0.0		
5- 9		0.0		
10-14		0.0		
15-19		0.0		
20-24		0.0		
25-29		0.0		
30-34	1	0.1	0.06	1.0
35-39	2	0.1	0.05	0.8
40-44	9	0.5	0.10	1.5
45-49	17	0.9	0.10	1.5
50-54	37	2.2	0.11	2.2
55-59	49	3.3	0.10	2.1
60-64	86	6.5	0.14	2.9
65-69	132	10.2	0.20	3.2
70-74	180	14.2	0.24	3.5
75-79	216	21.6	0.39	4.1
80-84	161	22.8	0.44	3.1
85+	254	34.6	0.76	3.6
All ages	1144			3.2
Mortality				
Raw		4.8	0.26	
WS		1.7	0.19	
ES		2.6	0.20	
BRD-S		3.5	0.23	
PYLL-70				
per 100,000		14.9		
ES		12.3		
AYLL-70		8.9		

* See corresponding tables with multiple malignancies.

ICD-10 C54: Malignant neoplasm of corpus uteri
 Age distribution and age-specific mortality 2007 - 2016 (n=2106)

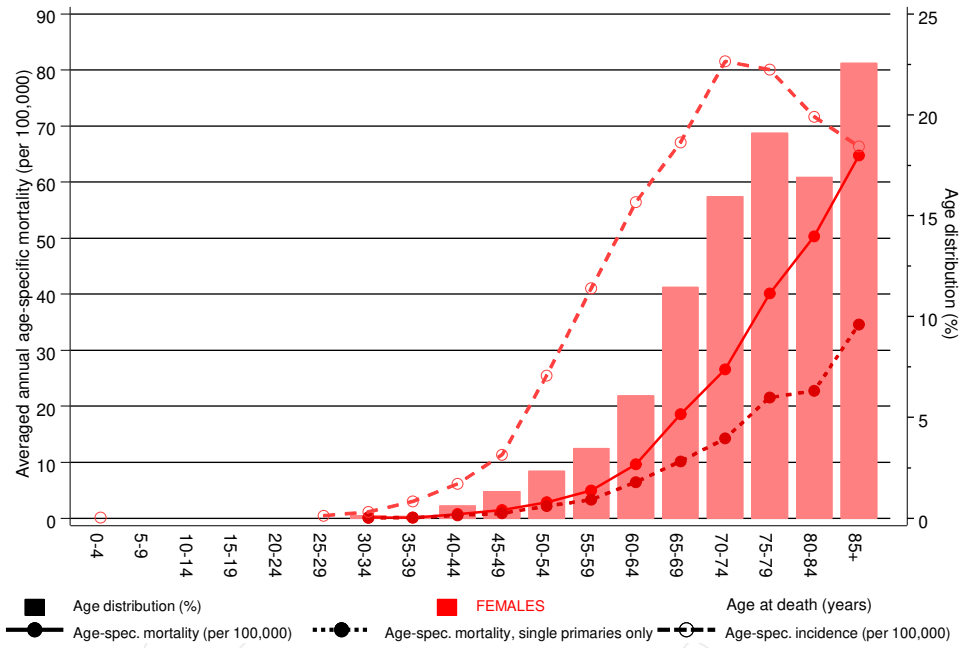


Figure 17. Distribution of age at death (bars; n=mean=70.4 yrs, median=71.5 yrs) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

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

Average mortality (world standard population) 2007 - 2016

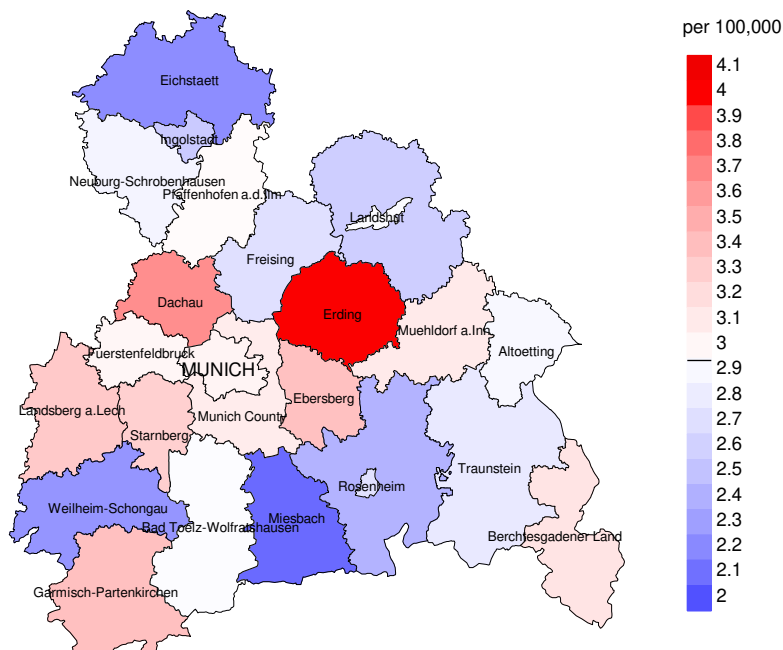


Figure 18a. Map of cancer mortality (world standard population) by county averaged for period 2007 to 2016. According to their individual mortality rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (2.9/100,000 WS N=2,106).

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 66 women died from corpus cancer. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 3.4/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 2.3 and 5.0/100,000.

Standardized mortality ratio (SMR) 2007 - 2016

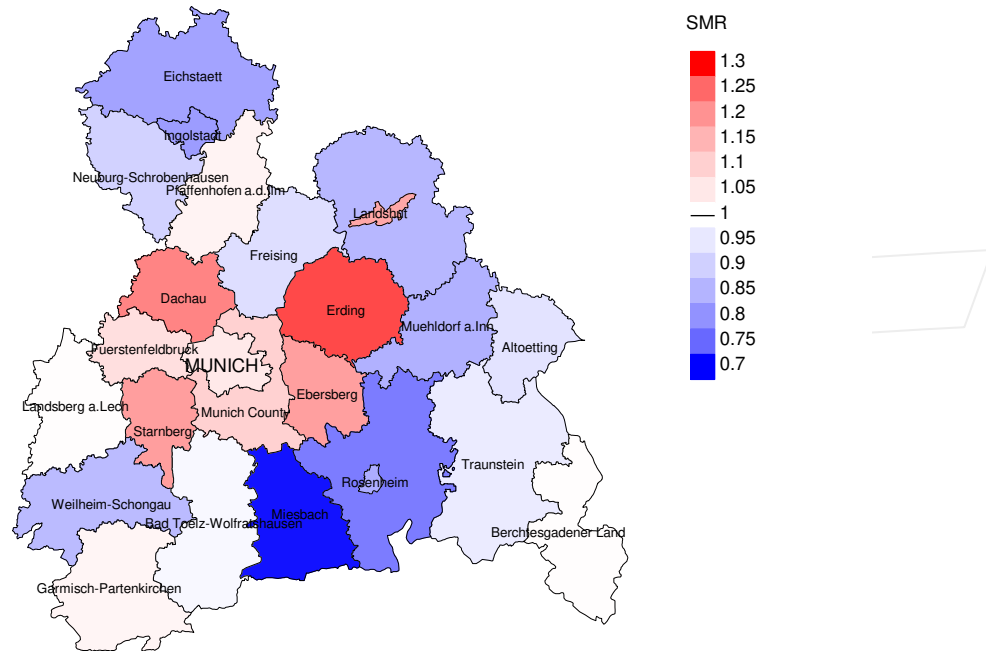


Figure 18b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2007 to 2016. According to their individual SMR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (N=2,106).

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 66 women died from corpus cancer. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 1.18. Though, the value of this parameter may vary with an underlying probability of 99% between 0.84 and 1.61, 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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