Munich Cancer Registry

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ICD-10 C91.1: Chronic lymph. leukaemia

Incidence and Mortality

Year of diagnosis	1998-2014
Patients	3,136
Diseases	3,140
Creation date	04/13/2016
Export date	12/23/2015
Population	4.64 m

Munich Cancer Registry at Munich Cancer Center
Marchioninistr. 15
Munich, 81377
Germany

http://www.tumorregister-muenchen.de/en

http://www.tumorregister-muenchen.de/en/facts/base/bC911_E-ICD-10-C91.1-Chronic-lymph.-leukaemia-incidence-and-mortality.pdf

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 4.64 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, April 2016

[#] 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 2.51 million to 3.96 in 2002, and to 4.52 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

The results for leukemias should be interpreted with caution. As with other primarily non-surgically or non-radiologically treated cancer diseases, the MCR hardly manages to obtain even the simplest information on this cancer. The proportion of DCO cases indicates a situation that is far away from a satisfying cooperation. In the group of institutions that potentially participate in reporting are a few hospitals that refuse any contribution to MCR.

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

Code	Description
C91.1	Chronic lymphocytic leukaemia of B-cell type

INCIDENCE

Table 1

All patients by year of diagnosis,
proportions of DCO, multiple primaries, deaths, and active follow-up
(incl. DCO)

Year of diagnosis	Cases n	DCO cases n	Prop. DCO %	Prop. mult. primaries %	Prop. deaths %	Prop. actively followed %	
1998	99	8	8.1	24.2	72.7	93.9	
1999	93	7	7.5	37.6	68.8	95.7	
2000	96	16	16.7	36.5	78.1	96.9	
2001	139	36	25.9	27.3	74.1	97.1	
2002	251	74	29.5	30.7	78.1	96.8	#
2003	212	64	30.2	29.7	69.3	93.9	
2004	231	52	22.5	33.3	62.3	90.5	
2005	208	54	26.0	39.9	70.2	92.3	
2006	217	36	16.6	44.7	64.1	91.2	
2007	258	56	21.7	31.8	58.5	81.8	#
2008	228	46	20.2	43.9	52.2	77.2	
2009	237	48	20.3	32.9	46.4	71.7	
2010	214	54	25.2	36.4	50.9	79.4	
2011	208	49	23.6	38.9	41.8	76.9	
2012	190	47	24.7	34.7	44.2	73.7	
2013	160	47	29.4	41.9	43.8	96.9	
2014	99	44	44.4	30.3	53.5	92.9	##
1998-2014	3140	738	23.5	35.4	59.5	86.8	

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 found in the respective headings.

Table 1a

All patients
by year of diagnosis and gender
(incl. DCO)

Year of diagnosis	All n	Males n	Females n	Prop. males %
1998	99	52	47	52.5
1999	93	48	45	51.6
2000	96	60	36	62.5
2001	139	74	65	53.2
2002	251	138	113	55.0
2003	212	133	79	62.7
2004	231	130	101	56.3
2005	208	130	78	62.5
2006	217	135	82	62.2
2007	258	151	107	58.5
2008	228	130	98	57.0
2009	237	136	101	57.4
2010	214	123	91	57.5
2011	208	120	88	57.7
2012	190	113	77	59.5
2013	160	95	65	59.4
2014	99	57	42	57.6
1998-2014	3140	1825	1315	58.1

Table 2

Incidence measures by year of diagnosis including DCO cases
(with respect to registry area expansion from 2.51 to 3.96 m as of 2002,
and from 3.96 to 4.64 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	52	47	4.7	4.0	2.8	1.8	4.2	2.7	5.5	3.4
1999	48	45	4.3	3.8	2.5	1.9	3.8	2.7	5.0	3.3
2000	60	36	5.3	3.0	3.2	1.3	4.7	2.0	5.6	2.5
2001	74	65	6.4	5.3	3.8	2.2	5.6	3.4	7.2	4.3
2002	138	113	7.4	5.8	4.2	2.2	6.2	3.4	8.0	4.5
2003	133	79	7.1	4.0	3.8	1.6	5.8	2.4	7.7	3.2
2004	130	101	6.9	5.1	3.7	2.2	5.6	3.2	7.3	4.1
2005	130	78	6.9	3.9	3.4	1.4	5.4	2.2	7.3	3.1
2006	135	82	7.0	4.1	3.6	1.5	5.6	2.3	7.3	3.1
2007	151	107	6.8	4.6	3.4	1.8	5.3	2.8	7.1	3.6
2008	130	98	5.8	4.2	2.7	1.6	4.2	2.4	5.7	3.1
2009	136	101	6.1	4.3	3.0	1.6	4.6	2.4	5.9	3.1
2010	123	91	5.5	3.9	2.5	1.3	3.9	2.0	5.4	2.8
2011	120	88	5.3	3.7	2.5	1.3	3.8	2.0	4.9	2.5
2012	113	77	4.9	3.3	2.1	1.1	3.3	1.7	4.7	2.2
2013	95	65	4.2	2.8	1.8	1.0	2.9	1.6	3.9	2.1
2014	57	42	2.5	1.8	1.1	0.5	1.7	0.8	2.4	1.1
1998-2014	1825	1315	5.7	3.9	2.9	1.5	4.4	2.3	5.8	3.0

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

Table 3

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

Year of diagnosis	Cases n	Mean	Std. dev.	Min.	Max.	10%	25%	Median 50%	75%	90%
1998	99	68.0	12.8	33.9	95.8	54.0	59.2	67.4	77.8	84.2
1999	93	66.4	12.1	31.9	89.4	52.0	58.5	66.1	76.8	80.4
2000	96	69.1	10.9	46.5	91.2	55.1	60.8	67.8	77.1	86.5
2001	139	70.7	11.9	40.5	94.0	56.6	63.1	69.3	78.7	87.7
2002	251	71.4	12.3	28.6	95.0	55.9	63.0	71.1	80.1	88.3
2003	212	71.5	12.2	35.6	98.9	55.7	63.4	72.3	80.6	87.7
2004	231	70.5	12.4	29.8	98.6	55.4	63.3	70.7	79.8	85.7
2005	208	73.0	11.2	34.4	97.1	57.6	65.8	74.7	80.0	86.1
2006	217	72.1	11.5	30.0	95.4	56.9	65.1	72.9	80.6	86.2
2007	258	71.7	12.7	37.6	99.8	53.3	63.2	72.7	81.2	87.0
2008	228	73.7	10.5	42.6	97.4	60.8	67.2	72.9	81.6	87.3
2009	237	72.0	12.8	28.2	98.6	54.6	64.0	72.6	82.1	88.0
2010	214	74.8	12.5	37.1	101	55.1	67.9	76.5	83.7	89.4
2011	208	72.9	12.6	41.8	101	54.1	65.7	73.1	81.8	89.1
2012	190	75.0	11.3	28.2	96.9	60.9	68.7	75.8	83.6	88.6
2013	160	74.7	12.1	40.0	100	59.0	67.7	75.5	83.9	90.1
2014	99	78.0	12.2	39.4	98.3	63.3	70.5	80.0	88.3	92.4
1998-2014	3140	72.3	12.2	28.2	101	56.1	64.3	72.9	81.3	87.9

Table 3a

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

Year of diagnosis	Cases n	Mean	Std. dev.	Min.	Max.	10%	25%	Median 50%	75%	90%
1998	52	66.2	13.2	33.9	95.8	51.8	57.7	64.6	75.8	82.5
1999	48	66.0	12.9	31.9	89.4	51.8	56.2	64.3	78.3	82.6
2000	60	67.8	10.1	46.5	91.1	55.3	61.0	67.3	72.6	82.6
2001	74	67.6	11.2	40.5	90.7	53.2	60.6	67.4	76.0	83.2
2002	138	68.5	11.7	28.6	90.9	54.1	61.9	68.1	76.8	84.1
2003	133	69.6	11.2	35.6	90.7	55.7	62.8	69.9	77.2	83.8
2004	130	69.7	11.7	29.8	95.2	56.6	62.9	70.2	77.3	82.5
2005	130	71.0	11.1	34.4	91.3	55.5	65.5	71.8	78.1	84.8
2006	135	70.9	11.3	30.0	95.4	55.9	64.3	71.5	78.1	85.2
2007	151	69.8	12.4	37.6	97.8	51.2	60.6	71.4	79.3	84.9
2008	130	72.7	9.0	49.5	93.7	61.1	67.4	71.8	78.4	84.6
2009	136	70.1	11.9	42.0	97.0	52.8	62.1	70.9	78.7	85.4
2010	123	73.2	12.6	37.1	101	53.7	66.0	75.1	81.9	88.4
2011	120	70.8	12.1	41.8	101	52.8	63.6	71.4	79.8	85.4
2012	113	73.9	10.2	39.0	95.2	62.9	68.7	74.1	80.8	84.9
2013	95	74.4	12.0	46.3	100	57.7	68.4	74.8	83.6	88.2
2014	57	76.0	12.1	39.4	95.9	59.4	68.3	75.9	83.9	92.4
1998-2014	1825	70.7	11.7	28.6	101	54.9	63.4	71.4	79.1	85.3

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 50%	75%	90%
1998	47	70.1	12.2	39.8	90.3	55.6	61.4	71.4	78.7	86.7
1999	45	66.9	11.3	39.1	88.4	52.3	60.4	68.0	75.1	78.2
2000	36	71.2	12.0	49.3	91.2	54.7	60.5	71.7	81.3	88.6
2001	65	74.3	11.8	51.2	94.0	59.4	65.0	73.7	84.7	92.5
2002	113	74.9	12.0	40.4	95.0	58.5	66.0	75.6	84.4	90.1
2003	79	74.8	13.2	47.3	98.9	53.7	65.0	77.5	83.5	92.1
2004	101	71.6	13.1	40.4	98.6	52.1	64.0	72.6	81.7	87.3
2005	78	76.2	10.6	43.7	97.1	62.4	69.2	77.2	83.7	90.3
2006	82	74.1	11.6	32.7	93.9	58.5	67.5	75.0	82.8	87.1
2007	107	74.4	12.7	39.5	99.8	56.7	64.1	76.8	85.0	89.0
2008	98	75.2	12.2	42.6	97.4	60.6	66.7	75.7	84.5	90.8
2009	101	74.7	13.4	28.2	98.6	58.4	69.1	75.9	84.9	88.7
2010	91	77.0	12.1	42.8	97.5	60.9	70.4	79.1	85.2	89.7
2011	88	75.8	12.9	44.4	96.7	56.6	69.0	75.6	86.9	90.9
2012	77	76.7	12.5	28.2	96.9	60.3	68.7	77.9	86.9	90.0
2013	65	75.0	12.5	40.0	97.3	59.5	66.4	75.8	84.7	90.6
2014	42	80.9	11.7	48.9	98.3	64.9	74.3	83.9	90.7	92.3
1998-2014	1315	74.6	12.5	28.2	99.8	58.1	66.0	75.8	84.4	89.8

Table 4

Age distribution by 5-year age group and gender for period 2007-2014
(incl. DCO)

Age at diagnosis Years	Cases n	%	Cum.%	Males n	%	Cum.%	Females n	%	Cum.%
25-29	2	0.1	0.1			0.0	2	0.3	0.3
30-34	0	0.0	0.1			0.0			0.3
35-39	7	0.4	0.6	5	0.5	0.5	2	0.3	0.6
40-44	17	1.1	1.6	7	0.8	1.3	10	1.5	2.1
45-49	40	2.5	4.1	30	3.2	4.5	10	1.5	3.6
50-54	67	4.2	8.3	49	5.3	9.8	18	2.7	6.3
55-59	90	5.6	14.0	55	5.9	15.8	35	5.2	11.5
60-64	123	7.7	21.7	70	7.6	23.4	53	7.9	19.4
65-69	219	13.7	35.4	140	15.1	38.5	79	11.8	31.2
70-74	263	16.5	51.9	175	18.9	57.4	88	13.2	44.4
75-79	222	13.9	65.9	137	14.8	72.2	85	12.7	57.1
80-84	241	15.1	81.0	138	14.9	87.1	103	15.4	72.5
85+	303	19.0	100.0	119	12.9	100.0	184	27.5	100.0
All ages	1594	100.0		925	100.0		669	100.0	

Included in the statistics are 54.9% multiple primaries in males and 40.1% in females.

Table 5

Age-specific incidence, DCO rate and proportion of all cancers
for period 2007-2014

Age at diagnosis Years	Males n	Females n	Males Age-spec. incid.	Females Age-spec. incid.	Males DCO rate n=185 %	Females DCO rate n=206 %	Males Prop.all cancers n=91183 %	Females Prop.all cancers n=89596 %
0- 4			0.0	0.0				
5- 9			0.0	0.0				
10-14			0.0	0.0				
15-19			0.0	0.0				
20-24			0.0	0.0				
25-29		2	0.0	0.2		50.0		0.3
30-34			0.0	0.0				
35-39	5	2	0.4	0.2			0.4	0.1
40-44	7	10	0.4	0.7			0.4	0.3
45-49	30	10	1.9	0.7			0.9	0.2
50-54	49	18	3.8	1.4	6.1		1.0	0.3
55-59	55	35	5.2	3.1	10.9	2.9	0.8	0.5
60-64	70	53	7.1	5.0	5.7	7.5	0.7	0.6
65-69	140	79	14.6	7.6	7.1	5.1	0.9	0.7
70-74	175	88	19.2	8.4	8.0	10.2	1.0	0.7
75-79	137	85	24.9	11.9	21.9	17.6	1.1	0.8
80-84	138	103	39.5	18.4	29.0	45.6	1.6	1.2
85+	119	184	51.4	31.8	65.5	67.9	2.0	1.8
All ages	925	669			20.0	30.8	1.0	0.7
Incidence								
Raw			5.1	3.6				
WS			2.4	1.3				
ES			3.7	1.9				
BRD-S			5.0	2.6				

The age-specific incidence characterizes the disease risk in a particular age group. The age distribution depends on the patient population frequency in each age group and reflects the tangible clinical picture of everyday patients care (see following chart).

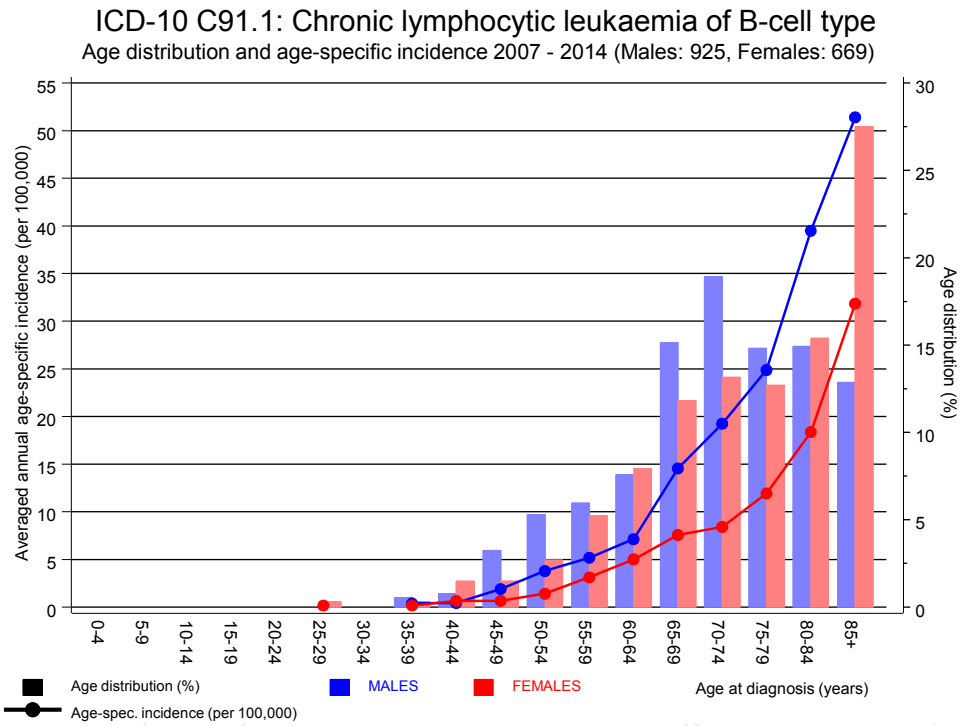


Figure 6. Age distribution and age-specific incidence

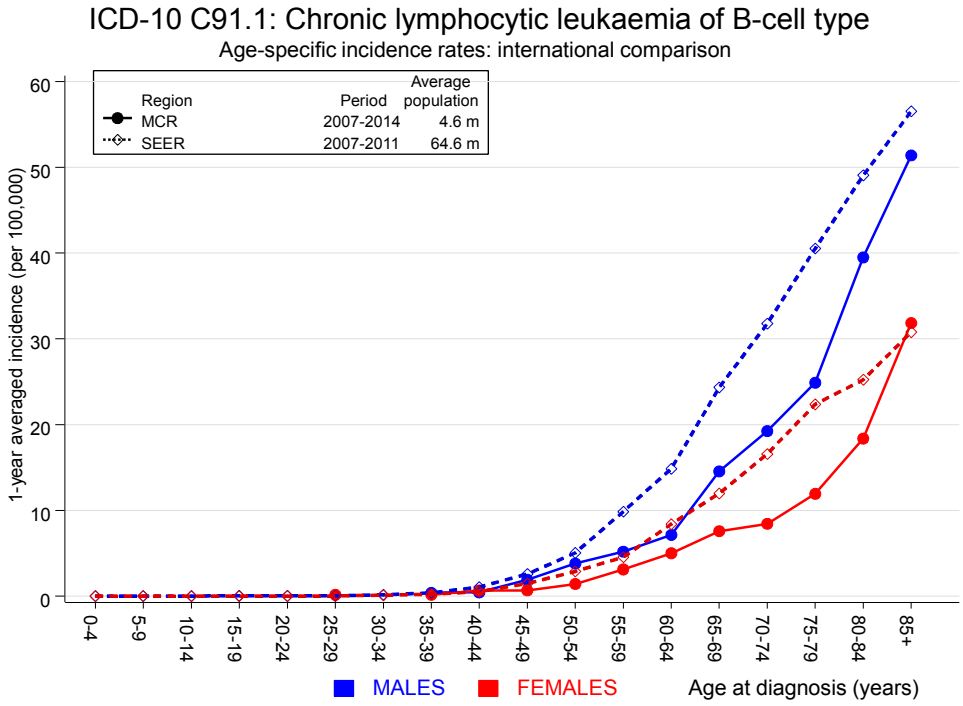


Figure 6a. Age-specific incidence in MCR registry areas compared to SEER (Surveillance, Epidemiology, and End Results, USA).

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.

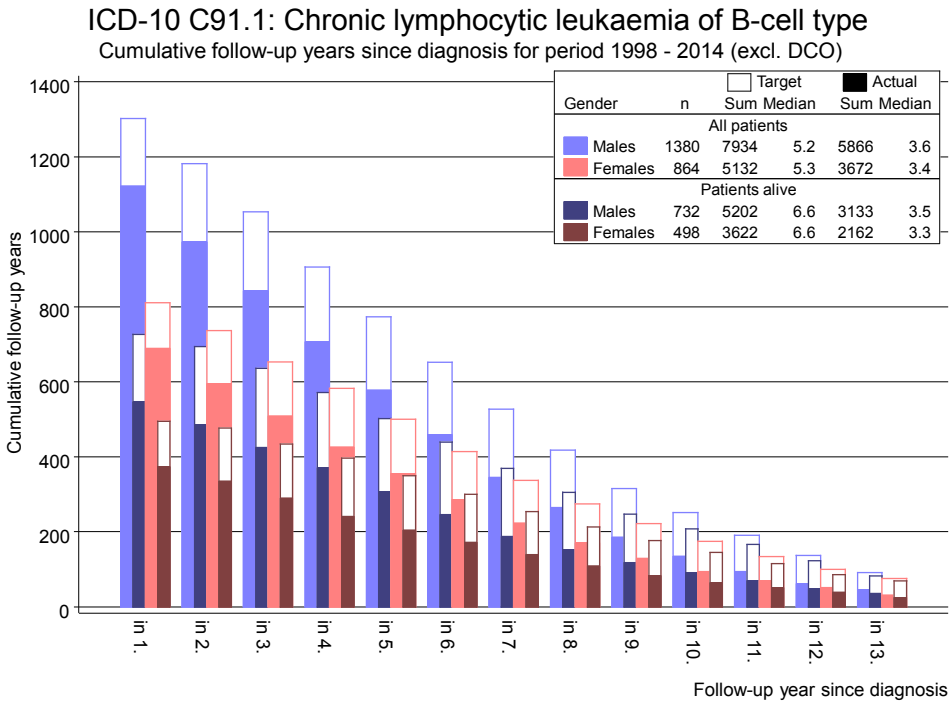


Figure 7. Cumulative follow-up years depending on time since diagnosis

The increase of the lost to follow-up rate can be interpreted as a consequence of a declining number of survivors over time.

Table 8a

Standardized incidence ratio (SIR, with 95% confidence limits), excess absolute risk (EAR) and DCO rate of second primaries for period 1998-2014
MALES

Diagnosis		Observed n	Expected n	SIR	LCL 95%	UCL 95%		EAR	DCO %
C07-C08	Salivary gland	5	0.2	20.2	6.6	47.2	#	7.9	
C15	Oesophagus	5	1.9	2.6	0.8	6.1		5.1	
C16	Stomach	11	4.4	2.5	1.2	4.4	#	10.9	
C18	Colon	19	10.8	1.8	1.1	2.8	#	13.7	5.3
C19-C20	Rectum	16	5.9	2.7	1.5	4.4	#	16.7	
C22	Liver	7	3.0	2.3	0.9	4.8		6.6	14.3
C25	Pancreas	6	4.0	1.5	0.6	3.3		3.3	
C33-C34	Lung	39	12.8	3.0	2.2	4.2	#	43.5	
C43	Malign. melanoma	21	4.5	4.6	2.9	7.1	#	27.4	
C46,C49	Soft tissue	5	0.6	8.6	2.8	20.1	#	7.3	
C50	Breast	2	0.3	7.1	0.9	25.5		2.9	
C61	Prostate	70	32.2	2.2	1.7	2.8	#	62.9	4.3
C62	Testis	2	0.2	9.1	1.1	33.0	#	3.0	
C64	Kidney	11	3.8	2.9	1.4	5.2	#	12.0	
C65	Renal pelvis	2	0.5	4.3	0.5	15.4		2.5	
C67	Bladder	12	4.9	2.4	1.3	4.2	#	11.7	
C70-C72	CNS cancer	4	1.4	2.8	0.8	7.3		4.3	
C76-C79	CUP	5	1.8	2.7	0.9	6.4		5.3	
C81	Hodgkin lymphoma	6	0.2	26.4	9.7	57.6	#	9.6	
C82-C85	NHL	14	4.4	3.2	1.7	5.3	#	15.9	21.4
C90	Mult. myeloma	4	1.4	2.8	0.8	7.2		4.3	
C91-C96	Leukaemia	9	1.8	5.0	2.3	9.4	#	11.9	33.3
Other primaries		8	4.0	2.0	0.9	4.0		6.7	12.5
Not observed		0	4.8	0.0	0.0	0.8	#	-8.0	
All mult. primaries		283	110.0	2.6	2.3	2.9	#	287.4	4.2

Patients	1480
Median age at second malignancy (years)	73.0
Person-years	6020
Mean observation time (years)	4.1
Median observation time (years)	3.3

The occurrence of second malignancy is statistically significant.

Observed second primaries with count 1 are pooled in category “Other primaries”

Table 8b

Standardized incidence ratio (SIR, with 95% confidence limits), excess absolute risk (EAR) and DCO rate of second primaries for period 1998–2014
FEMALES

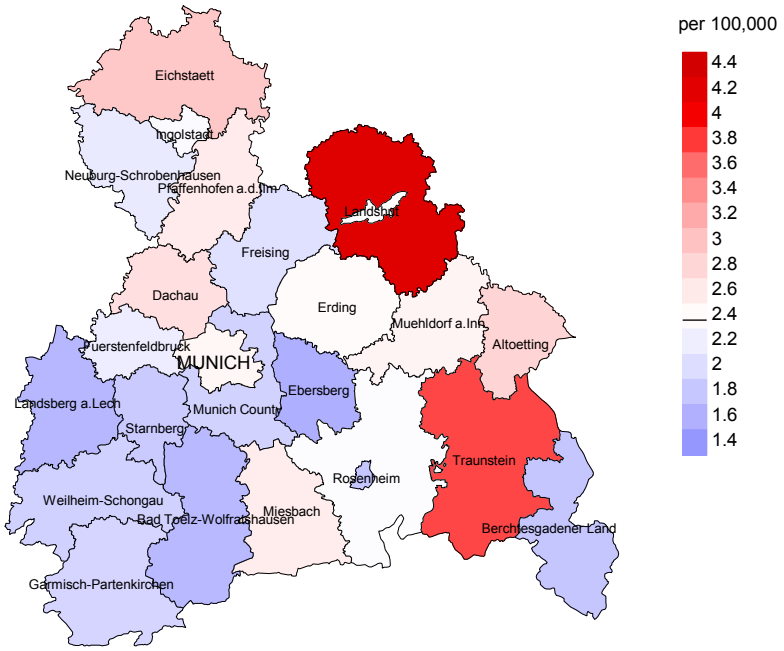
Diagnosis		Observed n	Expected n	SIR	LCL 95%	UCL 95%		EAR	DCO %
C09–C10	Oropharynx	2	0.2	11.6	1.4	41.8	#	4.8	
C16	Stomach	5	1.8	2.8	0.9	6.6		8.5	
C18	Colon	8	4.9	1.6	0.7	3.2		8.1	12.5
C19–C20	Rectum	3	2.1	1.4	0.3	4.2		2.4	
C21	Anus/canal	2	0.2	8.2	1.0	29.7		4.6	
C22	Liver	2	0.6	3.5	0.4	12.7		3.8	
C25	Pancreas	6	2.2	2.7	1.0	5.9		10.0	
C33–C34	Lung	11	3.4	3.2	1.6	5.8	#	20.1	9.1
C43	Malign. melanoma	7	1.7	4.2	1.7	8.7	#	14.1	
C50	Breast	33	13.8	2.4	1.6	3.4	#	50.8	
C54	Corpus uteri	6	2.7	2.2	0.8	4.9		8.8	
C56	Ovary	4	2.0	2.0	0.6	5.2		5.4	
C64	Kidney	5	1.2	4.1	1.3	9.5	#	10.0	
C73	Thyroid	3	0.7	4.2	0.9	12.3		6.0	
C76–C79	CUP	2	0.9	2.3	0.3	8.2		3.0	
C82–C85	NHL	17	1.9	9.0	5.2	14.3	#	39.9	11.8
C90	Mult. myeloma	3	0.6	4.9	1.0	14.3	#	6.3	
C91–C96	Leukaemia	7	0.8	8.9	3.6	18.4	#	16.4	
Other primaries		7	1.8	3.9	1.6	8.1	#	13.8	
Not observed		0	4.2	0.0	0.0	0.9	#	-11.1	
All mult. primaries		133	47.6	2.8	2.3	3.3	#	225.8	3.0

Patients	940
Median age at second malignancy (years)	73.5
Person-years	3785
Mean observation time (years)	4.0
Median observation time (years)	3.1

The occurrence of second malignancy is statistically significant.

Observed second primaries with count 1 are pooled in category “Other primaries”

Average incidence (world standard population) 2007 - 2014: Males



Average incidence (world standard population) 2007 - 2014: Females

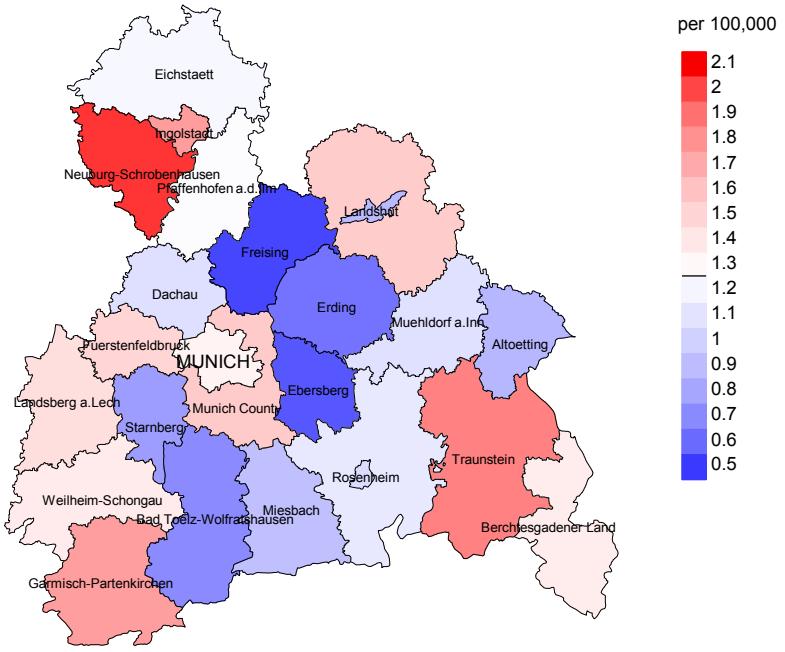
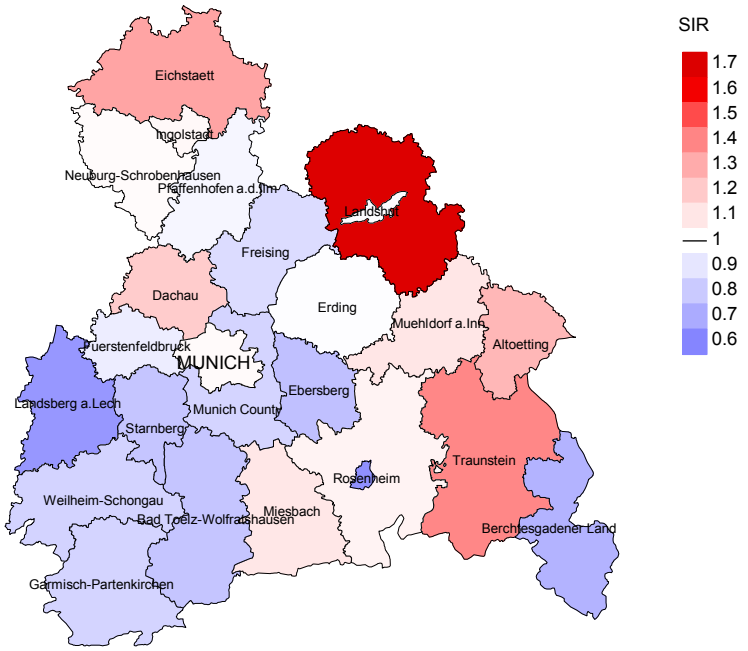


Figure 9a. Map of cancer incidence (world standard population, incl. DCO cases) by county averaged for period 2007 to 2014. According to their individual incidence rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 2.4/100,000 WS N=925, females 1.3/100,000 WS N=669).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 65,347 female residents (averaged) in the period from 2007 to 2014 a total of 11 women were identified with newly diagnosed chronic lymph. leukaemia. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 0.6/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.2 and 1.3/100,000.

Standardized incidence ratio (SIR) 2007 - 2014: Males



Standardized incidence ratio (SIR) 2007 - 2014: Females

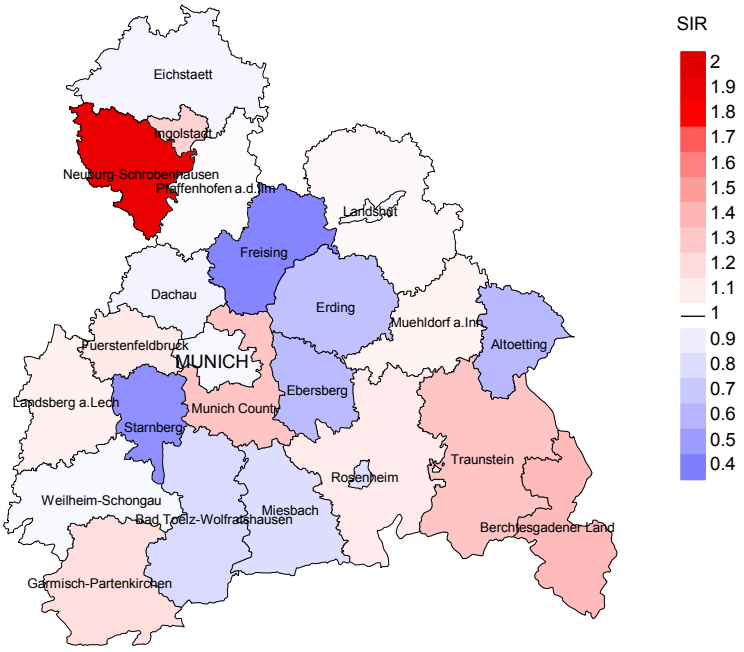


Figure 9b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2007 to 2014. According to their individual SIR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=925, females N=669).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 64,924 female residents (averaged) in the period from 2007 to 2014 a total of 11 women were identified with newly diagnosed chronic lymph. leukaemia. Therefore, the mean standardized incidence ratio (SIR) for this cancer type in this area can be calculated at 0.64. Though, the value of this parameter may vary with an underlying probability of 99% between 0.25 and 1.32, and is therefore not statistically striking.

MORTALITY

Table 10a

Patient cohorts of incident cancers by year of diagnosis, follow-up status, proportion of DCO, deaths among the annual cohorts and proportion of available death certificates (with respect to registry area expansion from 2.51 to 3.96 m as of 2002, and from 3.96 to 4.64 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	99	93.9	8.1	72	72.7	98.6
1999	93	95.7	7.5	64	68.8	95.3
2000	96	96.9	16.7	75	78.1	98.7
2001	139	97.1	25.9	103	74.1	98.1
2002	251	96.8	29.5	196	78.1	99.0
2003	212	93.9	30.2	147	69.3	99.3
2004	231	90.5	22.5	144	62.3	99.3
2005	208	92.3	26.0	146	70.2	98.6
2006	217	91.2	16.6	139	64.1	98.6
2007	258	81.8	21.7	151	58.5	99.3
2008	228	77.2	20.2	119	52.2	97.5
2009	237	71.7	20.3	110	46.4	100.0
2010	214	79.4	25.2	109	50.9	96.3
2011	208	76.9	23.6	87	41.8	100.0
2012	190	73.7	24.7	84	44.2	98.8
2013	160	96.9	29.4	70	43.8	98.6
2014	99	92.9	44.4	53	53.5	100.0
1998-2014	3140	86.8	23.5	1869	59.5	98.7

Table 10b

Annual cohorts of incident cancers and deaths, proportion of death certificates and cases deceased the same year of cancer diagnosis
(incl. DCO)
(with respect to registry area expansion from 2.51 to 3.96 m as of 2002, and from 3.96 to 4.64 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	99	40	97.5	7	7.1
1999	93	50	92.0	5	5.4
2000	96	50	92.0	14	14.6
2001	139	89	96.6	40	28.8
2002	251	132	98.5	83	33.1
2003	212	121	98.3	75	35.4
2004	231	119	100.0	54	23.4
2005	208	150	100.0	64	30.8
2006	217	140	97.9	49	22.6
2007	258	154	100.0	66	25.6
2008	228	154	98.7	53	23.2
2009	237	133	100.0	52	21.9
2010	214	157	99.4	62	29.0
2011	208	154	99.4	55	26.4
2012	190	170	98.2	56	29.5
2013	160	165	99.4	57	35.6
2014	99	150	99.3	51	51.5
1998-2014	3140	2128	98.7	843	26.8

Table 10c

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 2.51 to 3.96 m as of 2002, and from 3.96 to 4.64 m as of 2007, respectively)

Year of death	Deaths n	Prop. cancer-related %	Prop. non-cancer-related %	Prop. cancer recorded on death certificate %
1998	40	62.5	37.5	89.7
1999	50	62.0	38.0	87.0
2000	50	62.0	38.0	97.8
2001	89	59.6	40.4	93.0
2002	132	76.5	23.5	96.2
2003	121	80.2	19.8	94.1
2004	119	87.4	12.6	95.8
2005	150	80.0	20.0	96.7
2006	140	77.9	22.1	92.0
2007	154	74.7	25.3	89.6
2008	154	81.8	18.2	89.5
2009	133	82.7	17.3	94.0
2010	157	80.9	19.1	93.6
2011	154	75.3	24.7	90.2
2012	170	78.2	21.8	89.2
2013	165	73.3	26.7	85.4
2014	150	64.7	35.3	83.9
1998-2014	2128	75.9	24.1	91.4

Table 11a

Medians of age at death according to the grouping in Table 10
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	23	73.9	68.2	84.2	74.3
1999	28	76.0	68.3	82.9	73.5
2000	34	73.5	71.3	80.2	73.5
2001	42	74.2	73.7	80.8	74.0
2002	76	76.5	75.9	77.1	77.1
2003	67	74.2	73.5	75.5	74.2
2004	76	74.5	73.7	82.4	74.5
2005	91	77.2	75.6	79.4	77.1
2006	83	76.0	73.7	81.9	75.0
2007	82	78.1	77.1	82.1	78.0
2008	96	75.7	75.1	80.8	75.6
2009	78	78.9	76.7	84.0	78.9
2010	93	77.7	77.2	80.9	77.9
2011	98	77.4	76.3	79.3	77.4
2012	108	78.0	77.6	82.6	78.6
2013	107	77.9	75.0	83.2	78.6
2014	100	79.1	76.7	83.3	78.8
1998-2014	1282	76.9	75.6	81.3	76.7

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 11b

Medians of age at death according to the grouping in Table 10
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	17	79.9	76.7	82.2	78.6
1999	22	79.8	76.5	83.2	76.8
2000	16	85.5	81.3	88.7	85.5
2001	47	78.8	77.3	81.3	78.8
2002	56	83.1	76.1	88.7	82.9
2003	54	79.4	77.9	84.5	79.1
2004	43	79.7	77.3	84.5	78.9
2005	59	81.6	78.2	89.3	81.4
2006	57	79.9	78.4	81.8	78.8
2007	72	81.8	79.3	87.5	81.8
2008	58	82.8	81.7	91.3	81.9
2009	55	81.8	79.4	84.5	80.9
2010	64	82.3	82.2	89.6	82.3
2011	56	82.4	80.7	85.4	81.6
2012	62	81.7	80.7	84.2	80.3
2013	58	83.2	82.9	85.5	83.4
2014	50	85.8	84.2	86.4	85.6
1998-2014	846	81.9	79.8	86.3	81.3

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 12a

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	17	1.5	0.33	0.9	0.34	1.4	0.34	1.7	0.32
1999	16	1.4	0.33	0.8	0.34	1.3	0.34	1.7	0.34
2000	23	2.0	0.38	1.2	0.38	1.8	0.39	2.3	0.41
2001	29	2.5	0.39	1.4	0.36	2.2	0.39	3.1	0.42
2002	63	3.4	0.46	1.7	0.41	2.8	0.45	4.1	0.51
2003	54	2.9	0.41	1.4	0.38	2.4	0.40	3.3	0.43
2004	68	3.6	0.52	1.8	0.48	2.9	0.52	4.0	0.55
2005	71	3.7	0.55	1.7	0.50	2.9	0.53	4.2	0.57
2006	65	3.4	0.48	1.6	0.43	2.5	0.45	3.6	0.49
2007	63	2.8	0.42	1.2	0.36	2.1	0.40	3.1	0.44
2008	77	3.5	0.59	1.5	0.56	2.5	0.60	3.6	0.62
2009	66	3.0	0.49	1.3	0.43	2.1	0.46	3.0	0.52
2010	76	3.4	0.62	1.3	0.54	2.2	0.57	3.4	0.63
2011	78	3.4	0.65	1.4	0.55	2.3	0.60	3.3	0.67
2012	81	3.5	0.72	1.4	0.67	2.3	0.71	3.5	0.74
2013	81	3.5	0.85	1.4	0.80	2.3	0.81	3.3	0.85
2014	66	2.9	1.16	1.2	1.09	1.9	1.12	2.9	1.19
1998-2014	994	3.1	0.54	1.4	0.49	2.3	0.52	3.3	0.57

Table 12b

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	8	0.7	0.17	0.3	0.14	0.4	0.15	0.5	0.16
1999	15	1.3	0.33	0.5	0.24	0.7	0.27	1.0	0.31
2000	8	0.7	0.22	0.2	0.18	0.4	0.20	0.5	0.20
2001	24	2.0	0.38	0.7	0.32	1.1	0.33	1.6	0.38
2002	38	1.9	0.34	0.7	0.30	1.1	0.32	1.5	0.34
2003	43	2.2	0.54	0.8	0.49	1.2	0.51	1.7	0.55
2004	36	1.8	0.36	0.6	0.28	1.0	0.31	1.4	0.35
2005	49	2.5	0.63	0.8	0.57	1.3	0.58	1.8	0.59
2006	44	2.2	0.54	0.7	0.44	1.1	0.48	1.7	0.53
2007	52	2.3	0.49	0.7	0.41	1.2	0.43	1.7	0.47
2008	49	2.1	0.50	0.6	0.39	1.0	0.43	1.5	0.48
2009	44	1.9	0.44	0.6	0.39	1.0	0.42	1.4	0.45
2010	51	2.2	0.56	0.6	0.46	1.0	0.50	1.5	0.54
2011	38	1.6	0.43	0.4	0.35	0.7	0.37	1.1	0.42
2012	52	2.2	0.68	0.5	0.48	0.9	0.55	1.5	0.66
2013	40	1.7	0.62	0.4	0.42	0.7	0.47	1.1	0.55
2014	31	1.3	0.74	0.3	0.64	0.5	0.68	0.8	0.70
1998-2014	622	1.9	0.47	0.6	0.38	0.9	0.41	1.4	0.45

Table 13

Age distribution of age at death (cancer-related) for period 2007-2014
(**incl. multiple primaries**)

Age at death Years	Cases n	%	Cum.%	Males n	%	Cum.%	Females n	%	Cum.%
30-34	1	0.1	0.1	1	0.2	0.2			0.0
35-39	0	0.0	0.1			0.2			0.0
40-44	3	0.3	0.4	2	0.3	0.5	1	0.3	0.3
45-49	7	0.7	1.2	5	0.8	1.4	2	0.6	0.8
50-54	15	1.6	2.7	10	1.7	3.1	5	1.4	2.2
55-59	23	2.4	5.2	16	2.7	5.8	7	2.0	4.2
60-64	56	5.9	11.1	40	6.8	12.5	16	4.5	8.7
65-69	92	9.7	20.8	68	11.5	24.1	24	6.7	15.4
70-74	158	16.7	37.5	109	18.5	42.5	49	13.7	29.1
75-79	190	20.1	57.6	132	22.4	64.9	58	16.2	45.4
80-84	197	20.8	78.4	113	19.2	84.1	84	23.5	68.9
85+	205	21.6	100.0	94	15.9	100.0	111	31.1	100.0
All ages	947	100.0		590	100.0		357	100.0	

Included in the statistics are 54.9% multiple primaries in males and 40.1% in females.

Table 14

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007-2014
(**incl. multiple primaries**)

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			0.0		0.0			
5- 9			0.0		0.0			
10-14			0.0		0.0			
15-19			0.0		0.0			
20-24			0.0		0.0			
25-29			0.0		0.0			
30-34	1		0.1	1.00	0.0		1.1	
35-39			0.0		0.0			
40-44	2	1	0.1	0.29	0.1	0.10	0.4	0.2
45-49	5	2	0.3	0.17	0.1	0.20	0.5	0.2
50-54	10	5	0.8	0.20	0.4	0.28	0.5	0.3
55-59	16	7	1.5	0.29	0.6	0.20	0.5	0.3
60-64	40	16	4.1	0.57	1.5	0.30	0.8	0.4
65-69	68	24	7.1	0.49	2.3	0.30	1.0	0.5
70-74	109	49	12.0	0.62	4.7	0.56	1.2	0.7
75-79	132	58	24.0	0.96	8.1	0.68	1.6	0.9
80-84	113	84	32.4	0.82	15.0	0.82	1.5	1.3
85+	94	111	40.6	0.79	19.2	0.60	1.6	1.3
All ages	590	357					1.2	0.8
Mortality								
Raw			3.3	0.64	1.9	0.53		
WS			1.3	0.57	0.5	0.42		
ES			2.2	0.61	0.9	0.46		
BRD-S			3.3	0.66	1.3	0.51		
PYLL-70								
per 100,000			6.6		2.7			
ES			5.7		2.2			
AYLL-70			7.4		7.8			

The rates underestimate the prognosis if other synchronous cancers are prognostic unfavorable.

Table 15a

Multiple primaries in deaths in period 1998–2014
MALES

Diagnosis		Total n	Total %↓	Pre n	Pre ←%	Syn-chron ±30d n	Syn-chron ±30d ←%	Post n	Post ←%
C16	Stomach	10	1.5	2	20.0			8	80.0
C18	Colon	45	6.8	17	37.8	6	13.3	22	48.9
C19–C20	Rectum	27	4.1	7	25.9	6	22.2	14	51.9
C25	Pancreas	9	1.4			2	22.2	7	77.8
C33–C34	Lung	67	10.1	7	10.4	16	23.9	44	65.7
C43	Malign. melanoma	36	5.4	14	38.9	3	8.3	19	52.8
C44	Skin others	182	27.3	21	11.5	10	5.5	151	83.0
C46,C49	Soft tissue	10	1.5	3	30.0	1	10.0	6	60.0
C61	Prostate	98	14.7	43	43.9	14	14.3	41	41.8
C64	Kidney	15	2.3	8	53.3	2	13.3	5	33.3
C67	Bladder	31	4.7	14	45.2	4	12.9	13	41.9
C70–C72	CNS cancer	9	1.4	1	11.1	1	11.1	7	77.8
C76–C79	CUP	9	1.4			1	11.1	8	88.9
C81	Hodgkin lymphoma	12	1.8	3	25.0	2	16.7	7	58.3
C82–C85	NHL	35	5.3			8	22.9	27	77.1
C90	Mult. myeloma	11	1.7	2	18.2	4	36.4	5	45.5
C91–C96	Leukaemia	15	2.3					15	100.0
Other primaries		45	6.8	14	31.1	9	20.0	22	48.9
All mult. primaries		666	100.0	156	23.4	89	13.4	421	63.2

Multiple primaries with number of cases 1 to 6 are pooled in category “Other primaries”

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 multiple malignancy.

Table 15b

Multiple primaries in deaths in period 1998-2014
FEMALES

Diagnosis		Total n	Total %↓	Pre n	Pre ←%	Syn-chron ±30d n	Syn-chron ±30d ←%	Post n	Post ←%
C16	Stomach	8	2.9	1	12.5	4	50.0	3	37.5
C18	Colon	20	7.4	8	40.0	2	10.0	10	50.0
C19-C20	Rectum	8	2.9	4	50.0	1	12.5	3	37.5
C23-C24	Bile	3	1.1	1	33.3	1	33.3	1	33.3
C25	Pancreas	6	2.2					6	100.0
C33-C34	Lung	12	4.4			1	8.3	11	91.7
C43	Malign. melanoma	11	4.0	7	63.6			4	36.4
C44	Skin others	70	25.7	16	22.9	4	5.7	50	71.4
C50	Breast	44	16.2	24	54.5	5	11.4	15	34.1
C51	Vulva	4	1.5	3	75.0			1	25.0
C53	Cervix uteri	3	1.1	3	100.0				
C54	Corpus uteri	9	3.3	4	44.4	2	22.2	3	33.3
C56	Ovary	9	3.3	2	22.2	2	22.2	5	55.6
C64	Kidney	8	2.9	2	25.0	3	37.5	3	37.5
C67	Bladder	4	1.5	1	25.0	2	50.0	1	25.0
C70-C72	CNS cancer	7	2.6	3	42.9	2	28.6	2	28.6
C76-C79	CUP	3	1.1	1	33.3			2	66.7
C82-C85	NHL	16	5.9			1	6.3	15	93.8
C90	Mult. myeloma	5	1.8			2	40.0	3	60.0
C91-C96	Leukaemia	6	2.2	1	16.7	1	16.7	4	66.7
Other primaries		16	5.9	4	25.0	2	12.5	10	62.5
All mult. primaries		272	100.0	85	31.3	35	12.9	152	55.9

Multiple primaries with number of cases 1 to 2 are pooled in category “Other primaries”

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 multiple malignancy.

Table 16

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007-2014
(**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			0.0		0.0			
5- 9			0.0		0.0			
10-14			0.0		0.0			
15-19			0.0		0.0			
20-24			0.0		0.0			
25-29			0.0		0.0			
30-34	1		0.1	1.00	0.0		1.2	
35-39			0.0		0.0			
40-44	1	1	0.1	0.14	0.1	0.11	0.2	0.2
45-49	5	2	0.3	0.17	0.1	0.25	0.5	0.2
50-54	7	4	0.5	0.15	0.3	0.24	0.4	0.3
55-59	14	6	1.3	0.28	0.5	0.22	0.5	0.3
60-64	28	15	2.9	0.56	1.4	0.34	0.7	0.5
65-69	51	19	5.3	0.50	1.8	0.33	0.9	0.5
70-74	88	43	9.7	0.77	4.1	0.69	1.3	0.8
75-79	104	42	18.9	1.14	5.9	0.75	1.7	0.9
80-84	85	67	24.3	0.94	11.9	0.87	1.6	1.3
85+	61	91	26.3	0.80	15.7	0.60	1.4	1.3
All ages	445	290					1.2	0.8
Mortality								
Raw			2.5	0.67	1.5	0.57		
WS			1.0	0.58	0.4	0.45		
ES			1.7	0.62	0.7	0.49		
BRD-S			2.5	0.70	1.1	0.55		
PYLL-70								
per 100,000			5.1		2.4			
ES			4.4		2.0			
AYLL-70			7.6		8.0			

* See corresponding tables with multiple primaries.

Table 17

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007-2014
(**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			0.0		0.0			
5- 9			0.0		0.0			
10-14			0.0		0.0			
15-19			0.0		0.0			
20-24			0.0		0.0			
25-29			0.0		0.0			
30-34	1		0.1	1.00	0.0		1.2	
35-39			0.0		0.0			
40-44	1	1	0.1	0.14	0.1	0.11	0.3	0.2
45-49	3	2	0.2	0.11	0.1	0.33	0.3	0.2
50-54	6	2	0.5	0.14	0.2	0.15	0.4	0.2
55-59	9	6	0.8	0.20	0.5	0.27	0.4	0.3
60-64	12	9	1.2	0.30	0.8	0.23	0.4	0.4
65-69	29	14	3.0	0.36	1.3	0.31	0.6	0.4
70-74	55	31	6.0	0.68	3.0	0.53	1.0	0.7
75-79	58	28	10.5	0.81	3.9	0.62	1.2	0.7
80-84	53	53	15.2	0.67	9.5	0.72	1.3	1.3
85+	47	71	20.3	0.64	12.3	0.49	1.4	1.3
All ages	274	217					0.9	0.8
Mortality								
Raw			1.5	0.50	1.2	0.47		
WS			0.6	0.42	0.3	0.38		
ES			1.0	0.46	0.5	0.41		
BRD-S			1.5	0.51	0.8	0.46		
PYLL-70								
per 100,000			3.2		1.8			
ES			2.8		1.5			
AYLL-70			8.4		8.4			

* See corresponding tables with multiple primaries.

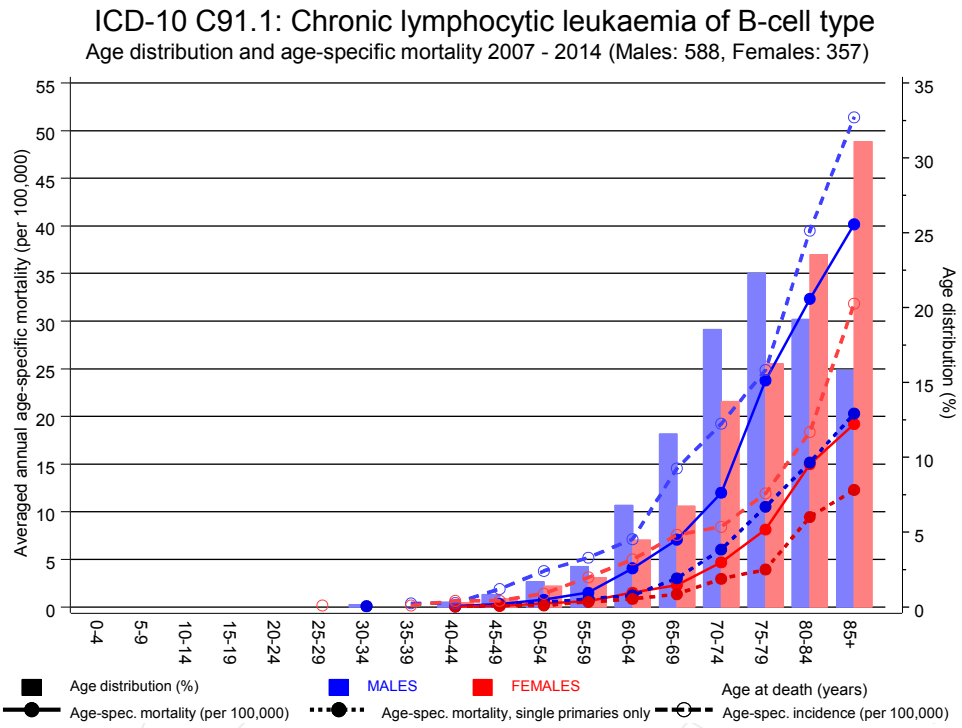
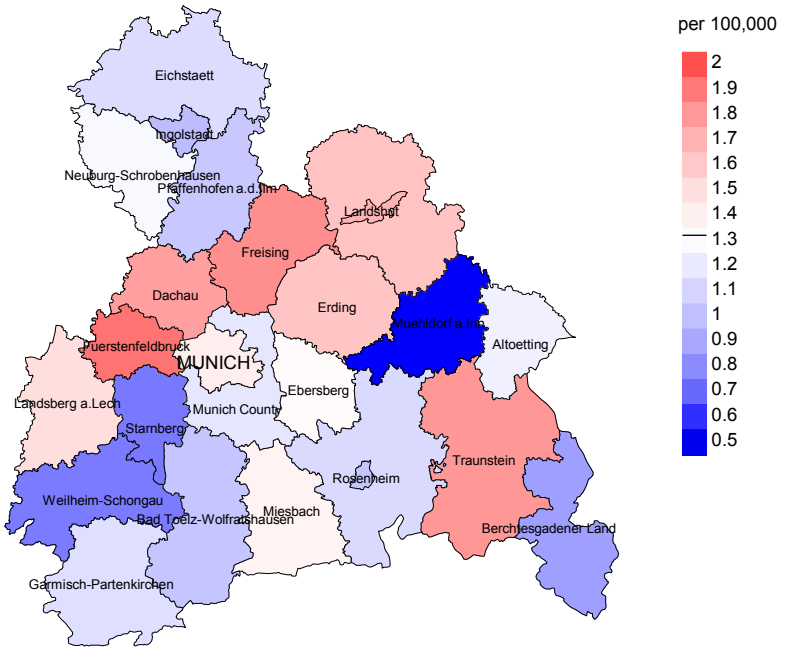


Figure 18. Distribution of age at death (bars) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

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

Average mortality (world standard population) 2007 - 2014: Males



Average mortality (world standard population) 2007 - 2014: Females

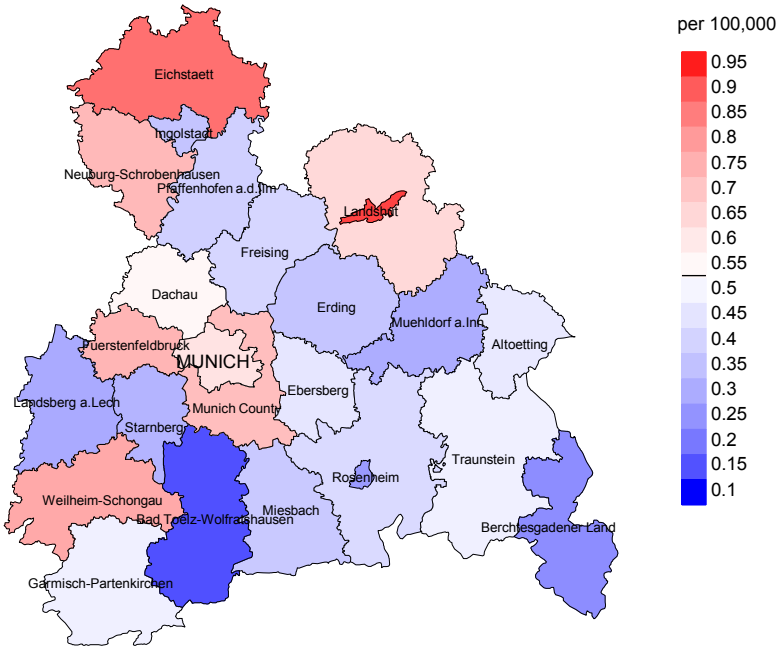
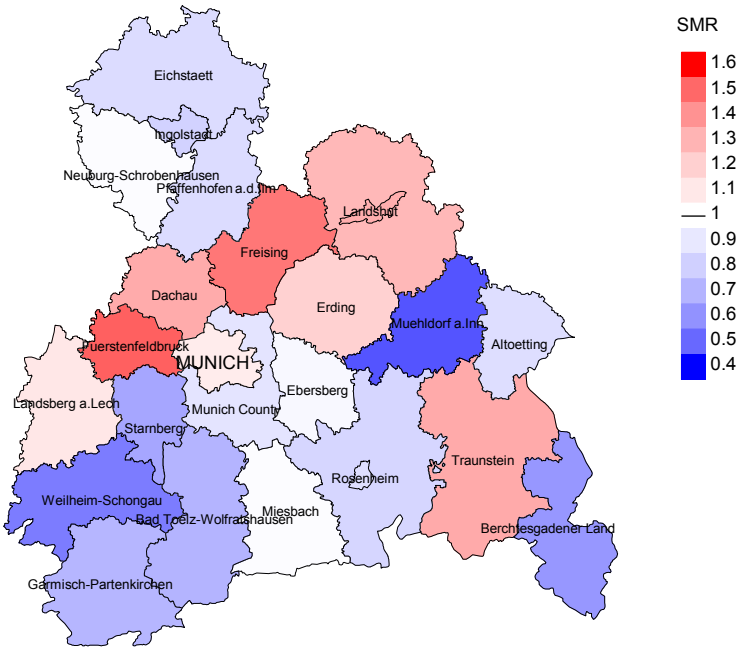


Figure 19a. Map of cancer mortality (world standard population) by county averaged for period 2007 to 2014. According to their individual mortality rates, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population mean (males 1.3/100,000 WS N=584, females 0.5/100,000 WS N=356).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 65,347 female residents (averaged) in the period from 2007 to 2014 a total of 12 women died from chronic lymph. leukaemia. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 0.5/100,000 (world standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.2 and 1.0/100,000.

Standardized mortality ratio (SMR) 2007 - 2014: Males



Standardized mortality ratio (SMR) 2007 - 2014: Females

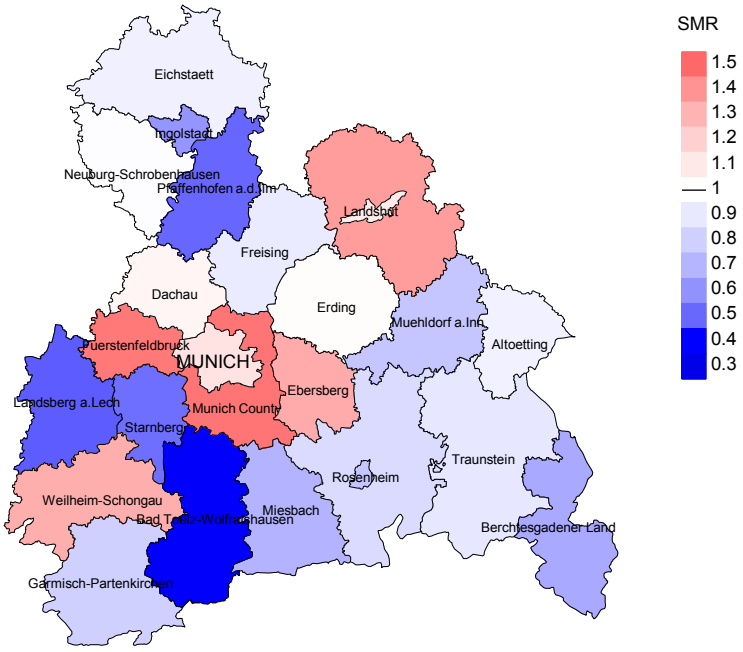


Figure 19b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2007 to 2014. According to their individual SMR values, the counties are displayed in different red and blue color temperatures where the fine white color indicates the population overall of 1.0 (males N=584, females N=356).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 64,924 female residents (averaged) in the period from 2007 to 2014 a total of 12 women died from chronic lymph. leukaemia. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 1.33. Though, the value of this parameter may vary with an underlying probability of 99% between 0.55 and 2.67, 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

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

Recommended Citation

Munich Cancer Registry. ICD-10 C91.1: Chronic lymph. leukaemia - Incidence and Mortality [Internet]. 2016 [updated 2016 Apr 13; cited 2016 Jun 1]. Available from: http://www.tumorregister-muenchen.de/en/facts/base/bC911_E-ICD-10-C91.1-Chronic-lymph.-leukaemia-incidence-and-mortality.pdf

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