Munich Cancer Registry

- Survival
- Selection Matrix
- Homepage
- *Deutsch*

ICD-10 C84: Mature T/NK-cell l.

Incidence and Mortality

Year of diagnosis	1998-2020
Patients	651
Diseases	652
Creation date	12/21/2021
Database export	12/20/2021
Population	4.95 m

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

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

https://www.tumorregister-muenchen.de/en/facts/base/bC84__E-ICD-10-C84-Mature-T-NK-cell-l.-incidence-and-mortality.pdf

Index of figures and tables

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, December 2021

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

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

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

ICD-10 codes (ICD-10 2016) used for specifying cancer site

Code	Description
C84.-	Mature T/NK-cell lymphomas
C84.0	Mycosis fungoides
C84.1	Sézary disease
C84.4	Peripheral T-cell lymphoma, not elsewhere classified
C84.5	Other mature T/NK-cell lymphomas
C84.6	Anaplastic large cell lymphoma, ALK-positive
C84.7	Anaplastic large cell lymphoma, ALK-negative
C84.8	Cutaneous T-cell lymphoma, unspecified
C84.9	Mature T/NK-cell lymphoma, unspecified

INCIDENCE

Table 1

Cases 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	12			0.0	9.5	66.7	100.0
1999	14			3.8	9.2	78.6	100.0
2000	16			7.1	9.0	75.0	87.5
2001	15	1	6.7	15.8	9.0	73.3	100.0
2002	22			15.2	8.9	68.2	95.5 #
2003	24			15.5	8.4	62.5	100.0
2004	24	1	4.2	15.0	8.3	66.7	91.7
2005	33			13.8	8.7	66.7	93.9
2006	28			13.8	8.5	71.4	92.9
2007	31	4	12.9	13.7	8.3	77.4	100.0 #
2008	46	7	15.2	15.5	7.8	67.4	97.8
2009	34	1	2.9	15.4	7.9	58.8	100.0
2010	39	3	7.7	16.9	8.4	69.2	97.4
2011	44	7	15.9	18.8	7.5	72.7	100.0
2012	35	3	8.6	18.7	7.6	74.3	100.0
2013	46	5	10.9	18.4	8.8	71.7	95.7
2014	49	5	10.2	18.8	7.0	69.4	98.0
2015	34	3	8.8	19.8	5.1	50.0	97.1
2016	30	4	13.3	19.6	3.9	70.0	100.0
2017	27	3	11.1	20.1	4.1	40.7	100.0
2018	19	3	15.8	20.1	0.0	36.8	100.0
2019	16			20.2	0.0	50.0	100.0
2020	14	1	7.1	20.4	0.0	21.4	100.0 ##
1998-2020	652	51	7.8	20.4	9.5	65.0	97.7

652 cases diagnosed 1998-2020 are related to a total of 651 patients. Currently, in 186 (28.6 %) of these 651 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 133 / 42 / 11 (20.4 % / 6.5 % / 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 retreived from the respective headings.

How to interpret:
In 2018, a subgroup of 19 cases has been diagnosed, of which 20.1 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 0.0 % 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 1a

Cases 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	9	75.0			0.0	9.8	55.6	100.0	
1999	9	64.3			0.0	9.2	77.8	100.0	
2000	8	50.0			7.7	9.5	62.5	87.5	
2001	6	40.0	1	16.7	9.4	9.6	83.3	100.0	
2002	15	68.2			10.6	9.8	66.7	93.3	#
2003	12	50.0			13.6	9.6	58.3	100.0	
2004	12	50.0			14.1	9.6	58.3	91.7	
2005	23	69.7			13.8	10.0	65.2	91.3	
2006	17	60.7			13.5	9.7	76.5	100.0	
2007	17	54.8	2	11.8	14.1	9.6	88.2	100.0	#
2008	34	73.9	5	14.7	17.9	8.8	67.6	97.1	
2009	25	73.5			17.6	8.7	60.0	100.0	
2010	26	66.7	3	11.5	19.2	9.7	76.9	100.0	
2011	29	65.9	4	13.8	21.5	8.5	72.4	100.0	
2012	24	68.6	2	8.3	20.7	8.2	70.8	100.0	
2013	32	69.6	2	6.3	19.8	9.4	75.0	96.9	
2014	35	71.4	2	5.7	20.1	7.0	68.6	97.1	
2015	24	70.6	2	8.3	21.0	5.3	45.8	95.8	
2016	24	80.0	4	16.7	20.7	2.8	70.8	100.0	
2017	18	66.7	3	16.7	21.3	4.3	55.6	100.0	
2018	12	63.2	1	8.3	21.2	0.0	33.3	100.0	
2019	13	81.3			21.2	0.0	61.5	100.0	
2020	6	42.9			21.2	0.0		100.0	##
1998-2020	430	66.0	31	7.2	21.2	9.8	65.8	97.9	

430 cases diagnosed 1998-2020 are related to a total of 429 patients. Currently, in 129 (30.1 %) of these 429 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 94 / 29 / 6 (21.9 % / 6.8 % / 1.4 %) 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 retreived from the respective headings.

How to interpret:
In 2018, a subgroup of 12 cases has been diagnosed, of which 21.2 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 0.0 % 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 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	3	25.0			0.0	9.1	100.0	100.0	
1999	5	35.7			12.5	9.2	80.0	100.0	
2000	8	50.0			6.3	8.0	87.5	87.5	
2001	9	60.0			24.0	7.8	66.7	100.0	
2002	7	31.8			21.9	7.2	71.4	100.0	#
2003	12	50.0			18.2	5.9	66.7	100.0	
2004	12	50.0	1	8.3	16.1	5.7	75.0	91.7	
2005	10	30.3			13.6	6.1	70.0	100.0	
2006	11	39.3			14.3	5.8	63.6	81.8	
2007	14	45.2	2	14.3	13.2	5.6	64.3	100.0	#
2008	12	26.1	2	16.7	11.7	5.4	66.7	100.0	
2009	9	26.5	1	11.1	11.6	6.0	55.6	100.0	
2010	13	33.3			12.8	5.6	53.8	92.3	
2011	15	34.1	3	20.0	14.3	5.3	73.3	100.0	
2012	11	31.4	1	9.1	15.2	6.3	81.8	100.0	
2013	14	30.4	3	21.4	15.8	7.2	64.3	92.9	
2014	14	28.6	3	21.4	16.2	7.1	71.4	100.0	
2015	10	29.4	1	10.0	17.5	4.8	60.0	100.0	
2016	6	20.0			17.4	6.3	66.7	100.0	
2017	9	33.3			17.6	3.8	11.1	100.0	
2018	7	36.8	2	28.6	18.0	0.0	42.9	100.0	
2019	3	18.8			18.2	0.0		100.0	
2020	8	57.1	1	12.5	18.9	0.0	37.5	100.0	##
1998-2020	222	34.0	20	9.0	18.9	9.1	63.5	97.3	

222 cases diagnosed 1998-2020 are related to a total of 222 patients. Currently, in 57 (25.7 %) of these 222 patients more than one malignancy of any cancer type has been registered. Hereby, groups of 39 / 13 / 5 (17.6 % / 5.9 % / 2.3 %) patients exist having 2 / 3 / 4+ malignancies.

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

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

How to interpret:
In 2018, a subgroup of 7 cases has been diagnosed, of which 18.0 % previously and/or concurrently (synchronously) had at least one other malignancy of any cancer type. In 0.0 % 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 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 4.94 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	9	3	0.8	0.3	0.6	0.2	0.7	0.2	0.9	0.2
1999	9	5	0.8	0.4	0.5	0.3	0.7	0.3	0.7	0.5
2000	8	8	0.7	0.7	0.6	0.3	0.7	0.5	0.7	0.7
2001	6	9	0.5	0.7	0.4	0.4	0.5	0.5	0.6	0.6
2002	15	7	0.8	0.4	0.5	0.2	0.7	0.3	0.8	0.3
2003	12	12	0.6	0.6	0.4	0.4	0.6	0.5	0.6	0.6
2004	12	12	0.6	0.6	0.5	0.4	0.6	0.5	0.6	0.5
2005	23	10	1.2	0.5	0.9	0.3	1.1	0.3	1.3	0.4
2006	17	11	0.9	0.5	0.5	0.2	0.7	0.3	0.9	0.5
2007	17	14	0.8	0.6	0.5	0.4	0.7	0.5	0.8	0.5
2008	34	12	1.5	0.5	0.9	0.3	1.2	0.3	1.5	0.4
2009	25	9	1.1	0.4	0.7	0.3	0.9	0.3	1.0	0.3
2010	26	13	1.2	0.6	0.6	0.3	0.9	0.4	1.1	0.4
2011	29	15	1.3	0.6	0.8	0.3	1.0	0.4	1.2	0.5
2012	24	11	1.1	0.5	0.6	0.3	0.8	0.3	1.0	0.4
2013	32	14	1.4	0.6	0.9	0.4	1.1	0.4	1.4	0.5
2014	35	14	1.5	0.6	0.9	0.3	1.2	0.4	1.4	0.5
2015	24	10	1.0	0.4	0.5	0.2	0.7	0.3	1.0	0.3
2016	24	6	1.0	0.2	0.5	0.1	0.7	0.2	0.9	0.2
2017	18	9	0.7	0.4	0.4	0.2	0.5	0.3	0.6	0.3
2018	12	7	0.5	0.3	0.3	0.1	0.4	0.1	0.5	0.2
2019	13	3	0.5	0.1	0.3	0.1	0.4	0.1	0.5	0.1
2020	6	8	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3
1998–2020	430	222	0.9	0.5	0.6	0.3	0.8	0.3	0.9	0.4

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	Mean	Std. dev.	Min.	Max.	10%	25%	Median 50%	75%	90%
1998	12	53.6	15.5	24.8	78.0	29.6	47.5	55.6	61.0	73.1
1999	14	60.2	16.6	20.8	79.7	38.4	50.0	62.1	70.0	78.1
2000	16	58.9	24.0	11.0	85.1	22.0	41.6	66.2	76.3	84.1
2001	15	63.0	18.9	26.0	89.0	34.6	49.4	60.3	80.4	86.4
2002	22	62.9	15.3	24.5	87.0	41.4	59.7	67.1	73.7	77.0
2003	24	57.9	19.3	10.9	82.9	27.6	46.9	62.8	74.0	76.8
2004	24	57.2	20.5	8.0	93.7	31.8	44.6	61.8	71.3	76.7
2005	33	59.7	21.3	3.4	81.0	23.3	54.8	68.0	72.9	78.9
2006	28	69.3	13.9	38.7	91.2	50.2	59.9	69.2	79.3	85.7
2007	31	60.0	16.9	10.6	84.0	41.2	47.6	61.5	72.5	78.0
2008	46	64.5	20.6	5.9	91.7	32.8	52.5	72.1	78.8	84.7
2009	34	60.3	18.6	13.8	89.3	36.7	50.1	63.7	69.8	82.4
2010	39	65.1	16.4	25.9	96.7	41.2	54.1	66.0	79.9	85.3
2011	44	64.0	20.1	10.5	99.2	35.2	53.5	70.5	78.8	85.6
2012	35	62.4	17.2	25.2	91.3	37.0	47.0	66.5	74.7	81.9
2013	46	61.4	20.6	16.0	91.8	23.6	49.8	64.9	77.2	82.6
2014	49	62.3	20.2	13.4	91.0	30.4	54.1	63.2	78.2	84.6
2015	34	66.6	16.9	20.7	90.6	49.6	58.3	69.8	79.0	87.1
2016	30	66.3	14.3	19.7	84.9	53.4	57.7	68.8	77.8	82.0
2017	27	63.5	20.4	2.4	88.8	35.0	53.9	69.2	76.7	85.7
2018	19	68.1	17.0	33.9	94.5	35.1	55.7	71.8	76.9	90.6
2019	16	57.7	18.5	26.1	83.0	34.8	45.9	51.4	75.8	83.0
2020	14	61.3	17.9	27.4	86.5	40.0	45.1	65.4	72.9	85.5
1998–2020	652	62.5	18.6	2.4	99.2	35.1	52.3	66.4	76.4	82.9

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	9	52.8	17.9	24.8	78.0	24.8	43.1	55.2	62.2	78.0
1999	9	60.1	10.2	38.4	70.0	38.4	59.6	60.9	68.2	70.0
2000	8	51.1	25.8	11.0	85.1	11.0	27.9	59.7	68.7	85.1
2001	6	60.2	22.3	26.0	89.0	26.0	47.3	60.9	77.3	89.0
2002	15	62.4	14.6	35.7	87.0	41.4	47.0	63.6	72.0	77.9
2003	12	58.0	15.1	25.7	74.5	33.4	53.3	61.3	68.2	73.5
2004	12	54.1	16.7	17.8	74.2	31.8	44.6	59.7	65.6	69.3
2005	23	57.1	21.8	3.4	79.2	23.3	45.6	66.1	75.0	76.7
2006	17	68.4	13.9	42.3	91.2	50.2	59.8	68.1	79.3	88.2
2007	17	60.0	19.3	10.6	80.8	23.1	55.9	68.9	72.5	78.0
2008	34	63.9	21.5	5.9	91.7	32.8	55.2	72.1	78.8	82.1
2009	25	59.8	14.8	18.1	89.3	45.5	50.1	63.6	68.7	72.9
2010	26	67.6	12.7	38.2	85.3	53.3	58.5	68.1	79.9	82.8
2011	29	60.6	18.9	10.5	86.0	31.5	51.7	61.7	72.9	81.6
2012	24	62.8	17.4	25.2	91.3	33.1	53.5	67.1	74.8	80.5
2013	32	61.9	20.0	16.0	88.4	23.6	54.6	64.9	77.0	82.6
2014	35	62.1	21.3	13.4	91.0	25.5	54.1	67.5	79.1	83.3
2015	24	65.7	17.7	20.7	90.6	49.6	58.0	70.6	78.4	82.9
2016	24	66.3	15.5	19.7	84.9	52.0	57.8	69.3	77.9	82.6
2017	18	65.4	20.2	2.4	88.8	45.5	55.2	74.0	76.7	85.9
2018	12	60.3	15.8	33.9	81.2	35.1	49.4	62.5	72.6	76.4
2019	13	56.9	19.3	26.1	83.0	34.8	44.8	50.5	70.2	83.0
2020	6	52.7	17.7	27.4	71.1	27.4	40.0	55.4	66.6	71.1
1998–2020	430	61.7	18.3	2.4	91.7	34.4	52.8	65.6	74.7	81.5

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	3	56.2	3.5	52.7	59.7	52.7	52.7	56.1	59.7	59.7
1999	5	60.5	26.2	20.8	79.7	20.8	46.3	77.7	78.1	79.7
2000	8	66.8	20.7	22.0	84.1	22.0	59.3	76.0	78.7	84.1
2001	9	64.8	17.5	34.6	86.4	34.6	54.0	60.3	80.4	86.4
2002	7	63.8	18.1	24.5	76.3	24.5	60.6	69.3	73.8	76.3
2003	12	57.8	23.4	10.9	82.9	27.6	40.5	66.5	76.8	78.4
2004	12	60.4	24.0	8.0	93.7	34.4	44.8	63.4	76.0	84.8
2005	10	65.5	19.9	10.7	81.0	38.2	68.0	68.7	72.9	80.0
2006	11	70.6	14.4	38.7	84.8	52.0	63.4	73.9	83.4	84.8
2007	14	60.0	14.1	39.9	84.0	41.2	47.6	61.4	71.2	79.7
2008	12	66.2	18.6	29.3	89.2	41.2	52.3	71.3	80.3	84.7
2009	9	61.6	27.6	13.8	88.4	13.8	60.6	69.2	82.4	88.4
2010	13	60.1	21.9	25.9	96.7	36.4	42.0	63.0	71.2	88.6
2011	15	70.6	21.5	20.2	99.2	35.2	57.3	75.4	85.6	91.6
2012	11	61.5	17.5	37.0	88.1	39.7	46.0	63.4	74.6	83.5
2013	14	60.0	22.5	16.3	91.8	26.9	44.9	68.1	77.2	78.1
2014	14	62.8	18.0	32.5	86.7	34.6	48.4	61.9	77.2	84.6
2015	10	68.9	15.5	44.1	87.2	48.2	58.3	67.3	85.6	87.2
2016	6	66.5	9.0	54.7	78.8	54.7	57.7	67.7	72.4	78.8
2017	9	59.8	21.4	19.6	85.7	19.6	53.9	63.5	76.7	85.7
2018	7	81.5	9.0	71.7	94.5	71.7	73.5	76.9	90.6	94.5
2019	3	61.1	17.7	49.4	81.4	49.4	49.4	52.4	81.4	81.4
2020	8	67.8	16.0	42.9	86.5	42.9	56.1	69.0	81.6	86.5
1998-2020	222	64.1	19.2	8.0	99.2	36.4	52.2	68.5	77.7	85.5

Table 4

Age distribution by 5-year age group and sex for period 2007-2020
(incl. DCO)

Age at diagnosis Years	Cases n	%	Cum.%	Males n	%	Cum.%	Females n	%	Cum.%
0-4	1	0.2	0.2	1	0.3	0.3			0.0
5-9	2	0.4	0.6	2	0.6	0.9			0.0
10-14	6	1.3	1.9	5	1.6	2.5	1	0.7	0.7
15-19	8	1.7	3.7	5	1.6	4.1	3	2.1	2.8
20-24	6	1.3	5.0	5	1.6	5.6	1	0.7	3.4
25-29	7	1.5	6.5	4	1.3	6.9	3	2.1	5.5
30-34	11	2.4	8.8	8	2.5	9.4	3	2.1	7.6
35-39	14	3.0	11.9	8	2.5	11.9	6	4.1	11.7
40-44	17	3.7	15.5	9	2.8	14.7	8	5.5	17.2
45-49	29	6.3	21.8	19	6.0	20.7	10	6.9	24.1
50-54	30	6.5	28.2	21	6.6	27.3	9	6.2	30.3
55-59	42	9.1	37.3	34	10.7	37.9	8	5.5	35.9
60-64	43	9.3	46.6	28	8.8	46.7	15	10.3	46.2
65-69	44	9.5	56.0	34	10.7	57.4	10	6.9	53.1
70-74	68	14.7	70.7	50	15.7	73.0	18	12.4	65.5
75-79	55	11.9	82.5	37	11.6	84.6	18	12.4	77.9
80-84	43	9.3	91.8	32	10.0	94.7	11	7.6	85.5
85+	38	8.2	100.0	17	5.3	100.0	21	14.5	100.0
All ages	464	100.0		319	100.0		145	100.0	

Table 5

Age-specific incidence, DCO rate and proportion of all cancers
for period 2007–2020

Age at diagnosis Years	Males n	Females n	Males Age-spec. incid.	Females Age-spec. incid.	Males DCO rate n=30 %	Females DCO rate n=19 %	Males Prop.all cancers n=153686 %	Females Prop.all cancers n=155051 %
0- 4	1		0.1				0.5	
5- 9	2		0.1				1.7	
10-14	5	1	0.3	0.1			3.6	0.8
15-19	5	3	0.3	0.2			1.6	1.1
20-24	5	1	0.2	0.1			0.8	0.2
25-29	4	3	0.2	0.1			0.4	0.3
30-34	8	3	0.3	0.1	12.5		0.6	0.1
35-39	8	6	0.3	0.3			0.4	0.2
40-44	9	8	0.4	0.3			0.3	0.1
45-49	19	10	0.7	0.4			0.4	0.1
50-54	21	9	0.8	0.4	4.8		0.2	0.1
55-59	34	8	1.6	0.4	2.9	25.0	0.3	0.1
60-64	28	15	1.6	0.8	10.7	6.7	0.2	0.1
65-69	34	10	2.1	0.6	2.9	20.0	0.1	0.1
70-74	50	18	3.3	1.0	6.0	16.7	0.2	0.1
75-79	36	18	3.0	1.2	19.4	16.7	0.1	0.1
80-84	32	11	4.4	1.0	18.8	9.1	0.2	0.1
85+	17	21	3.6	2.0	41.2	33.3	0.2	0.1
All ages	318	145			9.4	13.1	0.2	0.1
Incidence								
Raw			1.0	0.4				
WS			0.6	0.2				
ES			0.8	0.3				
BRD-S			0.9	0.4				

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).

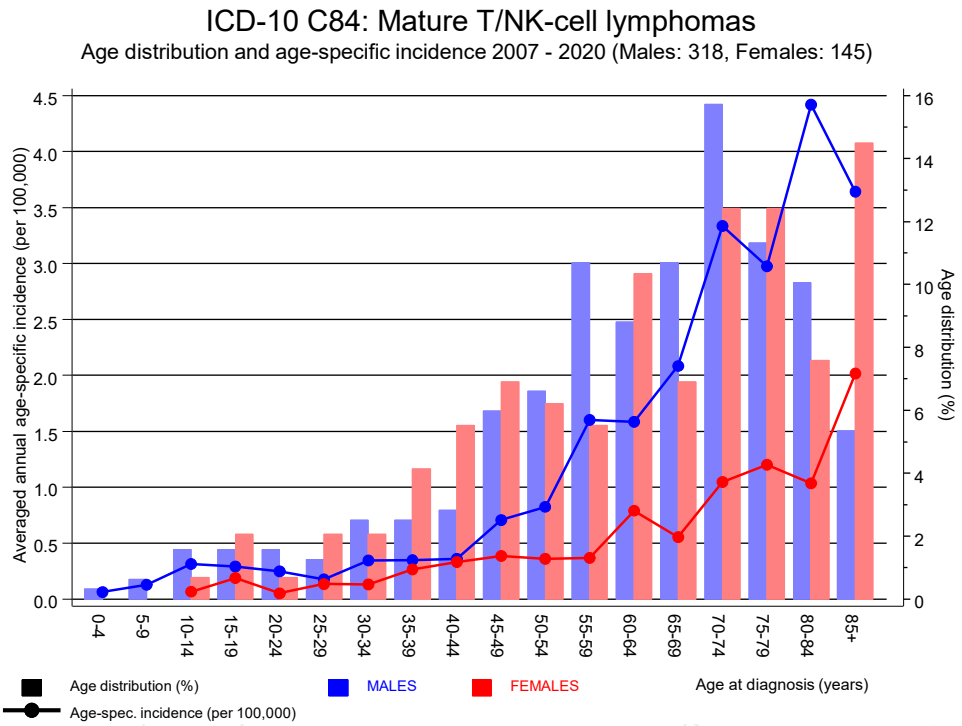


Figure 6. Age distribution (males: mean=62.6 yrs, median=67.0 yrs; females: mean=64.5 yrs, median=66.7 yrs) and age-specific incidence.

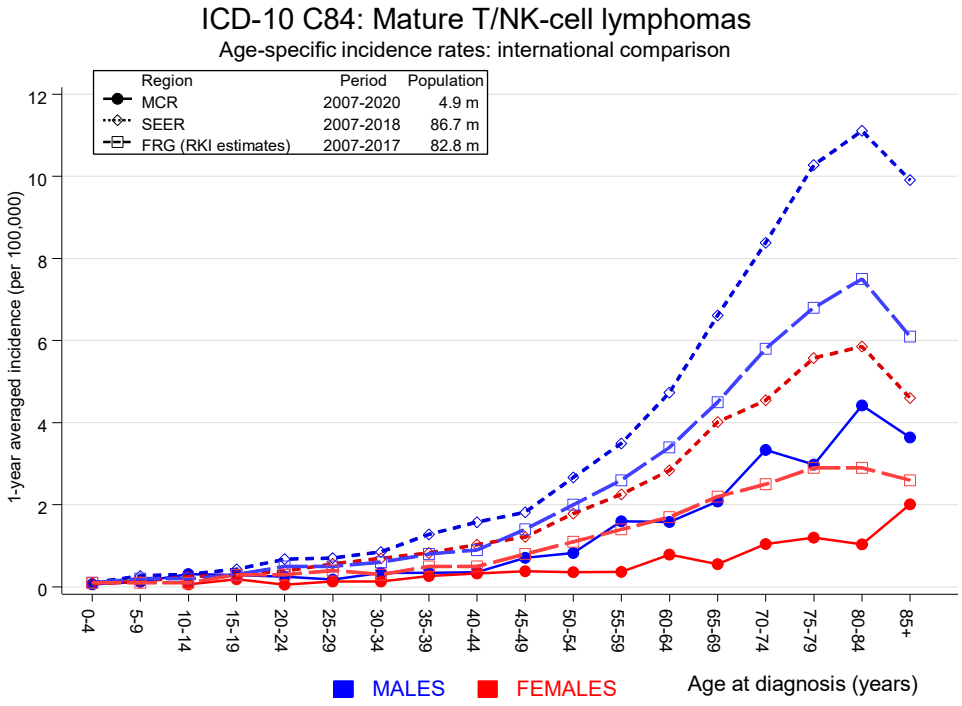


Figure 6a. Age-specific incidence in MCR registry areas compared to Germany (FRG, RKI estimates) and SEER (Surveillance, Epidemiology, and End Results, USA).

Reference:

Estimated age-specific patient population of Germany, latest update: 16 March 2021. German Centre for Cancer Registry Data, Robert Koch Institute (RKI), based on data of the population based cancer registries. http://www.krebsdaten.de. Last access: 08/17/2021
Surveillance, Epidemiology, and End Results (SEER) Program SEER*Stat Database: Incidence - SEER 21 Regs Research Data, released April 2021, based on the November 2020 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 1998–2020
MALES

Diagnosis		Observed n	Expected n	SIR	CI 95%	CI 95%		EAR	DCO %
C03–C06	Oral cavity	2	0.1	16.2	2.0	58.6	#	16.0	
C12–C13	Hypopharynx	1	0.1	12.3	0.3	68.6		7.8	
C14	ENT cancer	1	0.0	297.9	7.5	1660	#	8.5	
C18	Colon	3	1.4	2.2	0.5	6.5		14.0	
C19–C20	Rectum	1	0.8	1.3	0.0	7.3		2.0	
C22	Liver	1	0.4	2.4	0.1	13.3		5.0	
C32	Larynx	1	0.1	6.9	0.2	38.3		7.3	
C33–C34	Lung	9	1.7	5.4	2.5	10.2	#	62.3	
C37	Thymus	1	0.0	107.4	2.7	598.5	#	8.4	
C43	Malign. melanoma	2	0.7	2.9	0.4	10.5		11.2	
C61	Prostate	4	4.0	1.0	0.3	2.6		0.3	25.0
C67	Bladder	2	0.7	3.1	0.4	11.0		11.4	
C81	Hodgkin lymphoma	4	0.0	93.6	25.5	239.5	#	33.7	
C82–C85	NHL	7	0.6	11.3	4.5	23.2	#	54.3	
C90	Mult. myeloma	2	0.2	10.6	1.3	38.1	#	15.4	
C91–C96	Leukaemia	3	0.2	13.6	2.8	39.7	#	23.6	
Not observed		0	3.5	0.0	0.0	1.0		-30.0	
All further malignancies		44	14.5	3.0	2.2	4.1	#	251.1	2.3

Patients	402
Median age at next malignancy (years)	72.7
Person-years	1175
Mean observation time (years)	2.9
Median observation time (years)	1.2

The occurrence of further specified malignancy is statistically significant.

Table 7b

Standardized incidence ratio (SIR, with 95% confidence limits), excess absolute risk (EAR) and DCO rate of further malignancies for period 1998–2020
FEMALES

Diagnosis		Observed n	Expected n	SIR	CI 95%	CI 95%		EAR	DCO %
C18	Colon	1	0.6	1.7	0.0	9.3		6.3	
C21	Anus/canal	1	0.0	31.6	0.8	176.1		15.2	
C22	Liver	2	0.1	27.5	3.3	99.3	#	30.3	
C33-C34	Lung	3	0.4	7.1	1.5	20.6	#	40.5	
C43	Malign. melanoma	2	0.2	8.6	1.0	31.1	#	27.8	
C46,C49	Soft tissue	1	0.0	28.7	0.7	160.0		15.2	
C48	Peritoneal	1	0.0	43.6	1.1	243.0	#	15.4	
C50	Breast	5	1.8	2.8	0.9	6.6		50.8	
C54	Corpus uteri	1	0.3	3.2	0.1	17.6		10.7	
C67	Bladder	1	0.1	8.5	0.2	47.4		13.9	
C73	Thyroid	1	0.1	9.6	0.2	53.4		14.1	
C82-C85	NHL	4	0.2	16.9	4.6	43.3	#	59.1	
Not observed		0	2.0	0.0	0.0	1.8		-31.4	
All further malignancies		23	6.0	3.9	2.4	5.8	#	267.8	

Patients	199
Median age at next malignancy (years)	72.5
Person-years	636
Mean observation time (years)	3.2
Median observation time (years)	1.0

The occurrence of further specified malignancy is statistically significant.

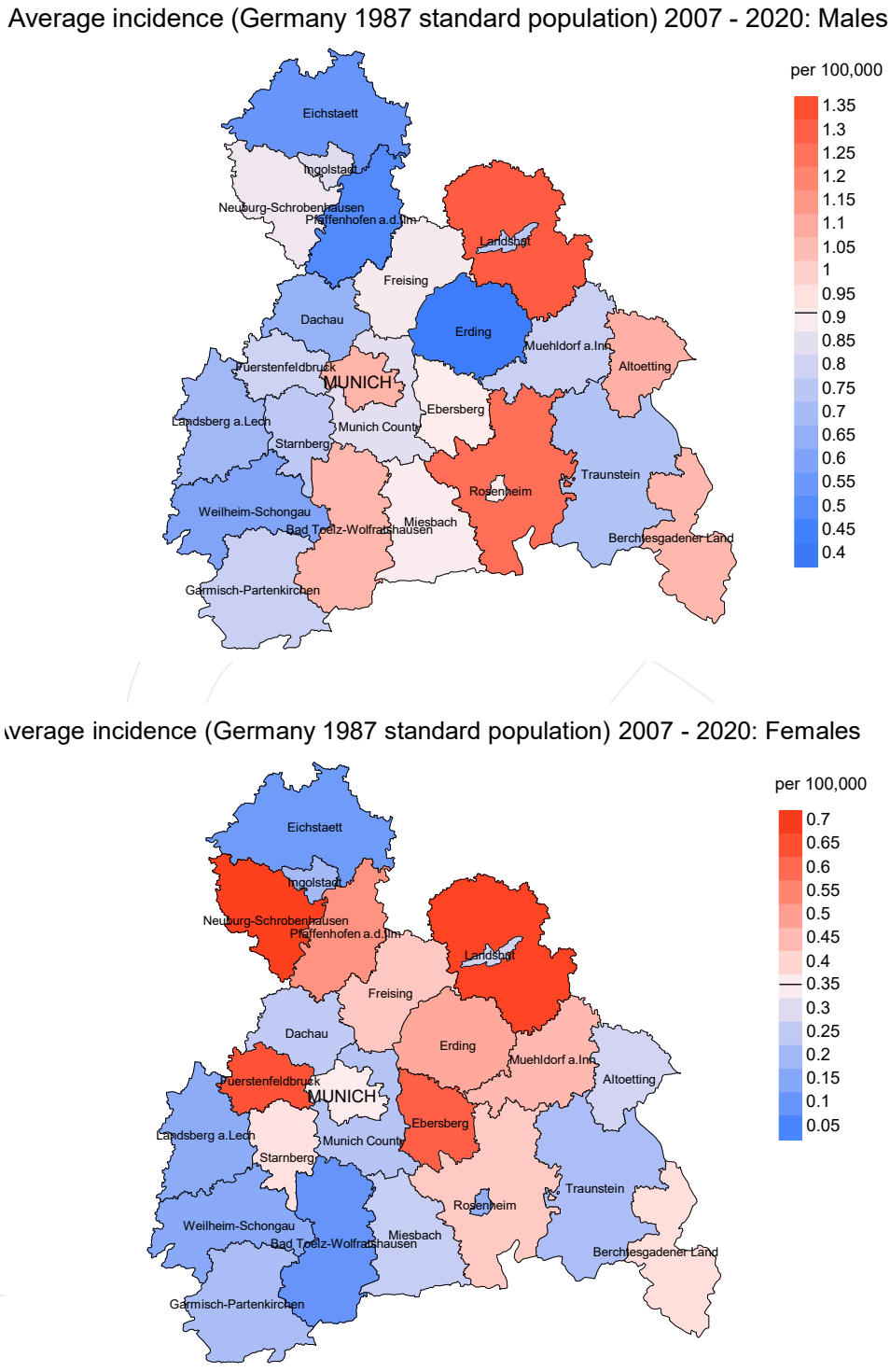
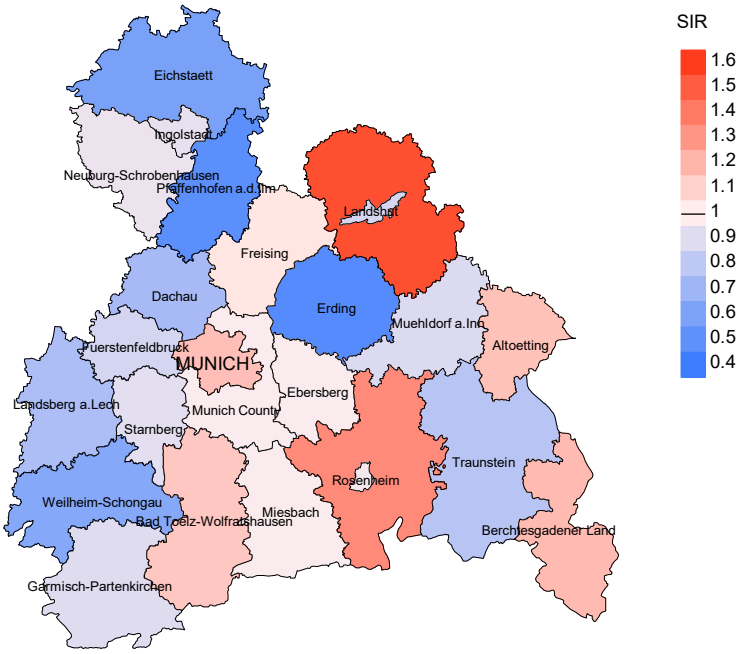


Figure 8a. Map of cancer incidence (german standard population, incl. DCO cases) by county averaged for period 2007 to 2020. According to their individual incidence rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 0.9/100,000 WS N=318, females 0.4/100,000 WS N=145).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 67,727 female residents (averaged) in the period from 2007 to 2020 a total of 7 women were identified with newly diagnosed mature T/NK-cell l.. Therefore, the mean incidence rate for this cancer type in this area can be calculated at 0.6/100,000 (german standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.2 and 1.6/100,000.

Standardized incidence ratio (SIR) 2007 - 2020: Males



Standardized incidence ratio (SIR) 2007 - 2020: Females

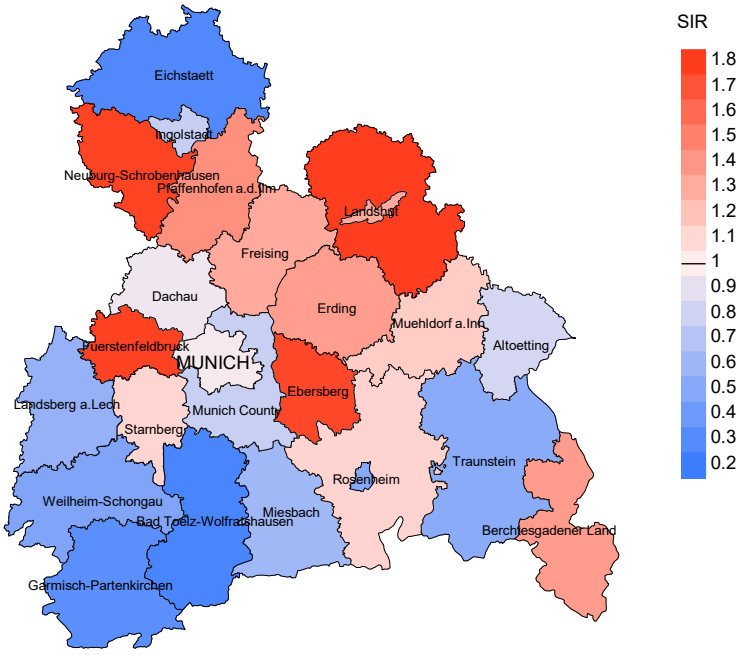


Figure 8b. Map of standardized incidence ratio (SIR, incl. DCO cases) by county averaged for period 2007 to 2020. According to their individual SIR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=318, females N=145).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 67,153 female residents (averaged) in the period from 2007 to 2020 a total of 7 women were identified with newly diagnosed mature T/NK-cell l.. Therefore, the mean standardized incidence ratio (SIR) for this cancer type in this area can be calculated at 1.76. Though, the value of this parameter may vary with an underlying probability of 99% between 0.51 and 4.30, and is therefore not statistically striking.

MORTALITY

Table 9a

Annual cohorts: Incident cancers, follow-up status, proportion of DCO, deaths among the annual cohorts and proportion of available death certificates (with respect to registry area expansion from 2.65 to 4.10 m as of 2002, and from 4.10 to 4.94 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	12	100.0		8	66.7	100.0
1999	14	100.0		11	78.6	90.9
2000	16	87.5		12	75.0	91.7
2001	15	100.0	6.7	11	73.3	90.9
2002	22	95.5		15	68.2	100.0
2003	24	100.0		15	62.5	100.0
2004	24	91.7	4.2	16	66.7	100.0
2005	33	93.9		22	66.7	100.0
2006	28	92.9		20	71.4	95.0
2007	31	100.0	12.9	24	77.4	95.8
2008	46	97.8	15.2	31	67.4	96.8
2009	34	100.0	2.9	20	58.8	90.0
2010	39	97.4	7.7	27	69.2	96.3
2011	44	100.0	15.9	32	72.7	100.0
2012	35	100.0	8.6	26	74.3	100.0
2013	46	95.7	10.9	33	71.7	93.9
2014	49	98.0	10.2	34	69.4	97.1
2015	34	97.1	8.8	17	50.0	94.1
2016	30	100.0	13.3	21	70.0	95.2
2017	27	100.0	11.1	11	40.7	90.9
2018	19	100.0	15.8	7	36.8	57.1
2019	16	100.0		8	50.0	100.0
2020	14	100.0	7.1	3	21.4	100.0
1998-2020	652	97.7	7.8	424	65.0	95.8

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 4.94 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	12	2	50.0	1	8.3
1999	14	5	100.0	1	7.1
2000	16	10	90.0	3	18.8
2001	15	13	100.0	6	40.0
2002	22	9	100.0	3	13.6
2003	24	8	100.0	2	8.3
2004	24	19	100.0	6	25.0
2005	33	12	91.7	4	12.1
2006	28	21	100.0	10	35.7
2007	31	22	100.0	9	29.0
2008	46	29	100.0	16	34.8
2009	34	26	96.2	9	26.5
2010	39	19	100.0	8	20.5
2011	44	33	100.0	16	36.4
2012	35	31	96.8	13	37.1
2013	46	31	100.0	13	28.3
2014	49	33	93.9	14	28.6
2015	34	36	100.0	8	23.5
2016	30	31	100.0	13	43.3
2017	27	23	95.7	7	25.9
2018	19	16	62.5	4	21.1
2019	16	7	42.9	2	12.5
2020	14	14	100.0	2	14.3
1998–2020	652	450	96.0	170	26.1

Table 9c

Annual cohorts of deaths, proportion of cancer-related and non-cancer-related deaths, and cancer recorded on death certificates
(incl. DCO)
(with respect to registry area expansion from 2.65 to 4.10 m as of 2002, and from 4.10 to 4.94 m as of 2007, respectively)

Year of death	Deaths n	Prop. cancer-related %	Prop. non-cancer-related %	Prop. cancer recorded on death certificate %
1998	2	50.0	50.0	100.0
1999	5	80.0	20.0	100.0
2000	10	80.0	20.0	88.9
2001	13	84.6	15.4	92.3
2002	9	100.0		100.0
2003	8	87.5	12.5	87.5
2004	19	89.5	10.5	100.0
2005	12	83.3	16.7	90.9
2006	21	90.5	9.5	100.0
2007	22	90.9	9.1	90.9
2008	29	82.8	17.2	89.7
2009	26	76.9	23.1	88.0
2010	19	73.7	26.3	84.2
2011	33	84.8	15.2	93.9
2012	31	83.9	16.1	90.0
2013	31	83.9	16.1	93.5
2014	33	72.7	27.3	90.3
2015	36	86.1	13.9	91.7
2016	31	96.8	3.2	93.5
2017	23	73.9	26.1	90.9
2018	16	68.8	31.3	80.0
2019	7	42.9	57.1	33.3
2020	14	57.1	42.9	78.6
1998-2020	450	81.8	18.2	91.0

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	1	78.1		78.1	78.1
1999	4	61.0	61.0		61.0
2000	5	70.3	70.3	65.6	70.3
2001	8	63.1	61.6	69.4	61.4
2002	6	76.0	76.0		76.0
2003	4	61.3	61.3		61.3
2004	6	73.7	74.9	70.7	73.7
2005	10	68.7	67.3	70.1	67.3
2006	8	68.5	68.5	74.5	68.5
2007	14	69.5	68.9	75.7	68.9
2008	20	76.7	74.3	87.6	75.4
2009	21	73.5	73.5	74.9	73.5
2010	9	61.9	61.9	54.9	61.9
2011	20	73.8	73.6	82.8	73.7
2012	23	72.8	69.9	85.5	71.8
2013	19	73.4	73.4	79.4	73.4
2014	25	73.7	73.0	75.4	73.0
2015	25	73.8	72.6	84.3	72.9
2016	25	74.0	74.0		72.1
2017	16	76.1	75.4	83.2	76.8
2018	10	74.0	70.5	79.9	73.5
2019	6	58.6	46.1	70.3	47.8
2020	12	80.0	81.8	79.4	79.9
1998-2020	297	73.2	72.0	78.6	72.6

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	1	70.6	70.6		
1999	1	100.0		100.0	100.0
2000	5	76.1	70.3	78.4	70.3
2001	5	77.8	77.8		77.8
2002	3	68.7	68.7		68.7
2003	4	64.7	78.6	50.9	78.6
2004	13	76.9	75.3	76.9	76.9
2005	2	70.4	51.4	89.4	51.4
2006	13	77.9	77.9		77.9
2007	8	69.0	68.7	82.3	68.7
2008	9	84.6	84.7	76.5	84.6
2009	5	83.7	83.7		83.7
2010	10	76.7	73.6	87.6	73.6
2011	13	83.6	81.4	83.6	81.4
2012	8	76.6	74.1	87.4	76.6
2013	12	74.0	72.9	88.4	72.2
2014	8	76.4	63.0	87.0	77.5
2015	11	71.9	72.6	65.1	66.9
2016	6	82.5	78.7	90.3	78.7
2017	7	73.1	73.1		73.1
2018	6	85.4	91.8	70.7	91.8
2019	1	81.9	81.9		
2020	2	67.6	67.6		67.6
1998-2020	153	76.9	74.9	83.6	76.0

By 2018, Bavarians' life expectancy at birth is estimated at 79.3 years for boys and 83.8 years for girls.

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

Table 11a

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

Year of death	Deaths n	Mort. raw	MI-Index raw	Mort. WS	MI-Index WS	Mort. ES	MI-Index ES	Mort. BRD-S	MI-Index BRD-S
1998									
1999	4	0.4	0.44	0.2	0.41	0.3	0.41	0.3	0.43
2000	4	0.4	0.50	0.2	0.37	0.3	0.47	0.4	0.54
2001	6	0.5	1.00	0.3	0.87	0.5	0.98	0.6	0.89
2002	6	0.3	0.40	0.2	0.37	0.3	0.42	0.4	0.48
2003	4	0.2	0.33	0.1	0.26	0.2	0.28	0.2	0.34
2004	5	0.3	0.42	0.1	0.26	0.2	0.34	0.3	0.51
2005	9	0.5	0.39	0.2	0.27	0.4	0.34	0.5	0.37
2006	6	0.3	0.35	0.2	0.35	0.2	0.32	0.3	0.32
2007	13	0.6	0.76	0.4	0.75	0.5	0.75	0.6	0.73
2008	16	0.7	0.47	0.3	0.38	0.6	0.46	0.8	0.52
2009	15	0.7	0.60	0.3	0.44	0.5	0.52	0.7	0.62
2010	7	0.3	0.27	0.2	0.29	0.3	0.28	0.3	0.28
2011	18	0.8	0.62	0.4	0.46	0.6	0.54	0.7	0.61
2012	20	0.9	0.83	0.4	0.75	0.6	0.79	0.8	0.86
2013	17	0.7	0.53	0.3	0.37	0.5	0.44	0.7	0.48
2014	20	0.9	0.57	0.4	0.39	0.6	0.49	0.8	0.54
2015	22	0.9	0.92	0.5	0.93	0.7	0.91	0.9	0.92
2016	25	1.0	1.04	0.5	0.91	0.7	0.98	1.0	1.02
2017	10	0.4	0.59	0.2	0.39	0.2	0.48	0.4	0.59
2018	7	0.3	0.58	0.1	0.43	0.2	0.49	0.2	0.54
2019	2	0.1	0.15	0.1	0.21	0.1	0.20	0.1	0.17
2020	6	0.2	1.00	0.1	0.43	0.1	0.62	0.2	0.82
1998-2020	242	0.5	0.56	0.3	0.46	0.4	0.52	0.5	0.57

Table 11b

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

Year of death	Deaths n	Mort. raw	MI-Index raw	Mort. WS	MI-Index WS	Mort. ES	MI-Index ES	Mort. BRD-S	MI-Index BRD-S
1998	1	0.1	0.33	0.0	0.26	0.1	0.27	0.1	0.35
1999									
2000	4	0.3	0.50	0.1	0.42	0.2	0.48	0.3	0.43
2001	5	0.4	0.56	0.2	0.63	0.3	0.56	0.4	0.61
2002	3	0.2	0.43	0.1	0.46	0.1	0.47	0.2	0.44
2003	3	0.2	0.25	0.1	0.15	0.1	0.19	0.1	0.22
2004	12	0.6	1.00	0.3	0.72	0.4	0.83	0.5	0.96
2005	1	0.1	0.10	0.0	0.14	0.1	0.16	0.1	0.14
2006	13	0.6	1.18	0.2	1.04	0.4	1.09	0.5	1.11
2007	7	0.3	0.50	0.1	0.39	0.2	0.42	0.2	0.45
2008	8	0.3	0.67	0.1	0.36	0.2	0.43	0.2	0.49
2009	5	0.2	0.56	0.1	0.19	0.1	0.32	0.1	0.44
2010	7	0.3	0.54	0.1	0.36	0.2	0.43	0.2	0.52
2011	10	0.4	0.67	0.1	0.46	0.2	0.54	0.3	0.70
2012	6	0.3	0.55	0.1	0.38	0.1	0.42	0.2	0.47
2013	9	0.4	0.64	0.2	0.46	0.2	0.53	0.3	0.58
2014	4	0.2	0.29	0.1	0.29	0.1	0.30	0.1	0.26
2015	9	0.4	0.90	0.2	0.91	0.2	0.90	0.3	0.95
2016	5	0.2	0.83	0.1	0.59	0.1	0.64	0.1	0.65
2017	7	0.3	0.78	0.1	0.48	0.2	0.59	0.2	0.70
2018	4	0.2	0.57	0.0	0.52	0.1	0.53	0.1	0.47
2019	1	0.0	0.33	0.0	0.08	0.0	0.13	0.0	0.24
2020	2	0.1	0.25	0.0	0.25	0.1	0.24	0.1	0.25
1998-2020	126	0.3	0.57	0.1	0.42	0.2	0.47	0.2	0.52

Table 12

Age distribution of age at death (cancer-related) for period 2007-2020
(**incl. multiple malignancies**)

Age at death	Cases			Males			Females		
Years	n	%	Cum.%	n	%	Cum.%	n	%	Cum.%
0-4									
5-9									
10-14	1	0.4	0.4	1	0.5	0.5			0.0
15-19	1	0.4	0.7	1	0.5	1.0			0.0
20-24	1	0.4	1.1	1	0.5	1.5			0.0
25-29	2	0.7	1.8	1	0.5	2.0	1	1.2	1.2
30-34	3	1.1	2.8	3	1.5	3.5			1.2
35-39	4	1.4	4.3	2	1.0	4.5	2	2.4	3.6
40-44	3	1.1	5.3	2	1.0	5.6	1	1.2	4.8
45-49	9	3.2	8.5	6	3.0	8.6	3	3.6	8.3
50-54	12	4.3	12.8	9	4.5	13.1	3	3.6	11.9
55-59	22	7.8	20.6	19	9.6	22.7	3	3.6	15.5
60-64	22	7.8	28.4	17	8.6	31.3	5	6.0	21.4
65-69	30	10.6	39.0	20	10.1	41.4	10	11.9	33.3
70-74	52	18.4	57.4	39	19.7	61.1	13	15.5	48.8
75-79	49	17.4	74.8	35	17.7	78.8	14	16.7	65.5
80-84	37	13.1	87.9	26	13.1	91.9	11	13.1	78.6
85+	34	12.1	100.0	16	8.1	100.0	18	21.4	100.0
All ages	282	100.0		198	100.0		84	100.0	

Table 13

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007-2020
(**incl. multiple malignancies**)

Age at death Years	Males n	Females n	Males Age-spec. mortal.	Males MI-index	Females Age-spec. mortal.	Females MI-index	Males Prop.all cancers %	Females Prop.all cancers %
0- 4								
5- 9								
10-14	1		0.1	0.20			3.6	
15-19	1		0.1	0.20			2.1	
20-24	1		0.0	0.20			1.4	
25-29	1	1	0.0	0.25	0.0	0.33	1.1	1.0
30-34	3		0.1	0.38			2.1	
35-39	2	2	0.1	0.25	0.1	0.33	0.7	0.5
40-44	2	1	0.1	0.22	0.0	0.13	0.3	0.1
45-49	6	3	0.2	0.32	0.1	0.30	0.4	0.2
50-54	9	3	0.4	0.43	0.1	0.33	0.3	0.1
55-59	19	3	0.9	0.56	0.1	0.38	0.4	0.1
60-64	17	5	1.0	0.61	0.3	0.33	0.3	0.1
65-69	20	10	1.2	0.59	0.6	1.00	0.2	0.1
70-74	39	13	2.6	0.78	0.8	0.72	0.3	0.1
75-79	35	14	2.9	0.97	0.9	0.78	0.3	0.1
80-84	26	11	3.6	0.81	1.0	1.00	0.2	0.1
85+	16	18	3.4	0.94	1.7	0.86	0.2	0.2
All ages	198	84					0.3	0.1
Mortality								
Raw			0.6	0.62	0.3	0.58		
WS			0.3	0.51	0.1	0.41		
ES			0.4	0.57	0.1	0.47		
BRD-S			0.6	0.62	0.2	0.52		
PYLL-70								
per 100,000			4.0		1.3			
ES			3.6		1.1			
AYLL-70			13.9		12.7			

Table 14a

Further malignancies in deaths in period 1998–2020
MALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn-chron ±30d n	Syn-chron ±30d ←%	Post n	Post ←%
C03–C06 Oral cavity	2	1.9					2	100.0
C09–C10 Oropharynx	1	1.0	1	100.0				
C12–C13 Hypopharynx	1	1.0					1	100.0
C14 ENT cancer	1	1.0			1	100.0		
C16 Stomach	3	2.9	2	66.7			1	33.3
C17 Small intestine	1	1.0	1	100.0				
C18 Colon	9	8.7	4	44.4	2	22.2	3	33.3
C19–C20 Rectum	3	2.9	1	33.3			2	66.7
C22 Liver	1	1.0			1	100.0		
C32 Larynx	1	1.0			1	100.0		
C33–C34 Lung	11	10.7	3	27.3			8	72.7
C37 Thymus	1	1.0			1	100.0		
C40–C41 Bone	1	1.0	1	100.0				
C43 Malign. melanoma	2	1.9	2	100.0				
C44 Skin others	13	12.6	4	30.8			9	69.2
C46,C49 Soft tissue	1	1.0					1	100.0
C48 Peritoneal	1	1.0	1	100.0				
C61 Prostate	18	17.5	13	72.2	3	16.7	2	11.1
C67 Bladder	3	2.9	2	66.7			1	33.3
C68 Urethra	1	1.0	1	100.0				
C73 Thyroid	2	1.9	2	100.0				
C81 Hodgkin lymphoma	4	3.9	2	50.0			2	50.0
C82–C85 NHL	12	11.7			1	8.3	11	91.7
C90 Mult. myeloma	7	6.8	4	57.1	2	28.6	1	14.3
C91–C96 Leukaemia	3	2.9			1	33.3	2	66.7
All further malignancies	103	100.0	44	42.7	13	12.6	46	44.7

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

Table 14b

Further malignancies in deaths in period 1998–2020
FEMALES

Diagnosis	Total n	Total %↓	Pre n	Pre ←%	Syn-chron ±30d n	Syn-chron ±30d ←%	Post n	Post ←%
C03–C06 Oral cavity	1	1.9	1	100.0				
C16 Stomach	1	1.9			1	100.0		
C17 Small intestine	1	1.9					1	100.0
C18 Colon	4	7.4	2	50.0			2	50.0
C21 Anus/canal	1	1.9					1	100.0
C22 Liver	2	3.7					2	100.0
C33–C34 Lung	3	5.6					3	100.0
C43 Malign. melanoma	2	3.7	1	50.0			1	50.0
C44 Skin others	7	13.0	1	14.3			6	85.7
C48 Peritoneal	1	1.9			1	100.0		
C50 Breast	16	29.6	14	87.5			2	12.5
C54 Corpus uteri	2	3.7	2	100.0				
C56 Ovary	2	3.7	2	100.0				
C67 Bladder	2	3.7					2	100.0
C82–C85 NHL	7	13.0					7	100.0
C91–C96 Leukaemia	2	3.7	1	50.0			1	50.0
All further malignancies	54	100.0	24	44.4	2	3.7	28	51.9

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 2007-2020
(**First primaries only** *)

Age at death Years	Males n	Females n	Males Age-spec. mortal.	Males MI-index	Females Age-spec. mortal.	Females MI-index	Males Prop.all cancers %	Females Prop.all cancers %
0- 4								
5- 9								
10-14	1		0.1	0.20			3.6	
15-19	1		0.1	0.20			2.2	
20-24	1		0.0	0.20			1.5	
25-29	1	1	0.0	0.25	0.0	0.33	1.2	1.1
30-34	3		0.1	0.38			2.2	
35-39	2	2	0.1	0.25	0.1	0.33	0.8	0.5
40-44	2	1	0.1	0.25	0.0	0.17	0.4	0.1
45-49	5	3	0.2	0.29	0.1	0.33	0.4	0.2
50-54	7	3	0.3	0.39	0.1	0.43	0.3	0.1
55-59	15	3	0.7	0.56	0.1	0.50	0.4	0.1
60-64	14	4	0.8	0.67	0.2	0.33	0.3	0.1
65-69	15	7	0.9	0.54	0.4	0.88	0.2	0.1
70-74	29	7	1.9	0.83	0.4	0.70	0.3	0.1
75-79	27	10	2.2	1.23	0.7	0.71	0.3	0.1
80-84	16	9	2.2	0.89	0.8	1.13	0.2	0.1
85+	7	12	1.5	1.00	1.2	0.80	0.1	0.1
All ages	146	62					0.3	0.1
Mortality								
Raw			0.4	0.61	0.2	0.55		
WS			0.2	0.48	0.1	0.39		
ES			0.3	0.54	0.1	0.45		
BRD-S			0.4	0.60	0.1	0.49		
PYLL-70								
per 100,000			3.5		1.2			
ES			3.2		1.0			
AYLL-70			14.9		14.2			

* See corresponding tables with multiple malignancies.

Table 16

Age-specific mortality (cancer-related) and proportion of all cancers
for period 2007-2020
(**Single primaries only** *)

Age at death Years	Males n	Females n	Males Age-spec. mortal.	Males MI-index	Females Age-spec. mortal.	Females MI-index	Males Prop.all cancers %	Females Prop.all cancers %
0- 4								
5- 9								
10-14	1		0.1	0.20			3.6	
15-19	1		0.1	0.20			2.2	
20-24	1		0.0	0.20			1.5	
25-29	1	1	0.0	0.25	0.0	0.33	1.2	1.1
30-34	2		0.1	0.25			1.5	
35-39	2	1	0.1	0.25	0.0	0.17	0.8	0.3
40-44	2	1	0.1	0.25	0.0	0.17	0.4	0.1
45-49	5	3	0.2	0.31	0.1	0.33	0.4	0.2
50-54	6	3	0.2	0.33	0.1	0.50	0.3	0.1
55-59	15	2	0.7	0.65	0.1	0.33	0.4	0.1
60-64	10	3	0.6	0.59	0.2	0.33	0.2	0.1
65-69	14	6	0.9	0.56	0.3	0.75	0.2	0.1
70-74	23	6	1.5	0.74	0.3	0.60	0.3	0.1
75-79	23	8	1.9	1.10	0.5	0.62	0.3	0.1
80-84	16	9	2.2	1.14	0.8	1.13	0.2	0.1
85+	3	11	0.6	0.50	1.1	0.73	0.1	0.1
All ages	125	54					0.2	0.1
Mortality								
Raw			0.4	0.58	0.2	0.50		
WS			0.2	0.44	0.1	0.35		
ES			0.3	0.51	0.1	0.40		
BRD-S			0.4	0.57	0.1	0.45		
PYLL-70								
per 100,000			3.2		1.0			
ES			3.0		0.9			
AYLL-70			15.2		14.3			

* See corresponding tables with multiple malignancies.

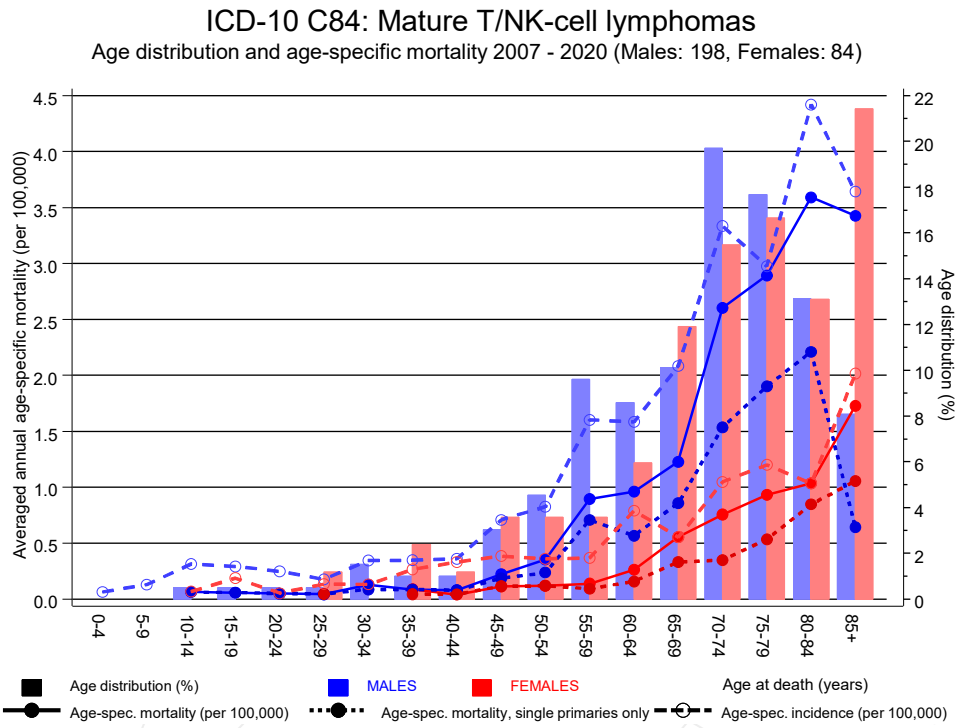


Figure 17. Distribution of age at death (bars; males: mean=66.7 yrs, median=69.9 yrs; females: mean=70.3 yrs, median=72.4 yrs) and age-specific mortality (all patients: solid line, patients with single primaries: dotted line). The age-specific incidence is additionally plotted for comparison (dashed line).

The difference between age at diagnosis (Table 3) and age at mature T/NK-cell l.-related death (see Table 10) should be considered.

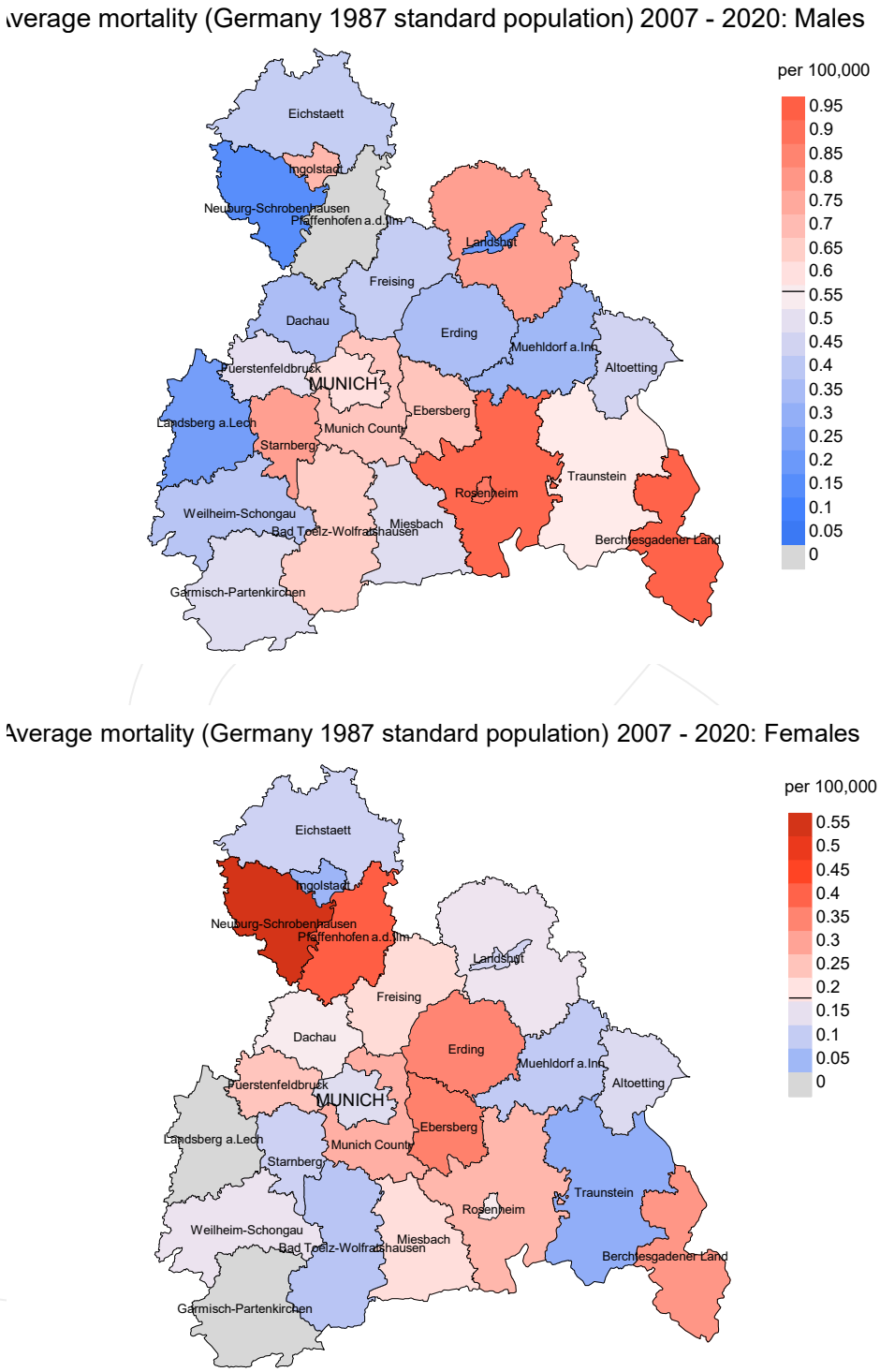
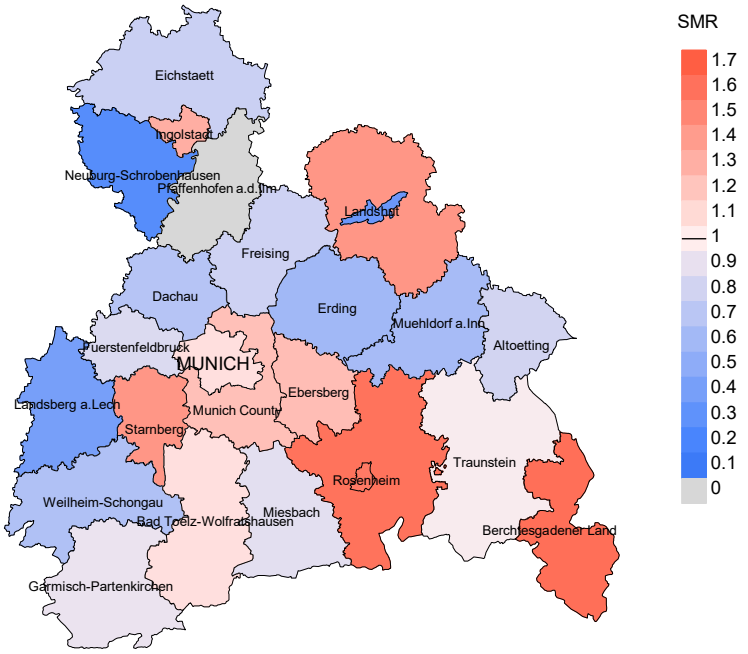


Figure 18a. Map of cancer mortality (german standard population) by county averaged for period 2007 to 2020. According to their individual mortality rates, the counties are displayed in different red and blue hues, being the fine white color attributed to the population mean (males 0.6/100,000 WS N=198, females 0.2/100,000 WS N=84).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 67,727 female residents (averaged) in the period from 2007 to 2020 a total of 4 women died from mature T/NK-cell l.. Therefore, the mean mortality rate for this cancer type in this area can be calculated at 0.4/100,000 (german standard population). Though, the value of this parameter may vary with an underlying probability of 99% between 0.1 and 1.2/100,000.

Standardized mortality ratio (SMR) 2007 - 2020: Males



Standardized mortality ratio (SMR) 2007 - 2020: Females

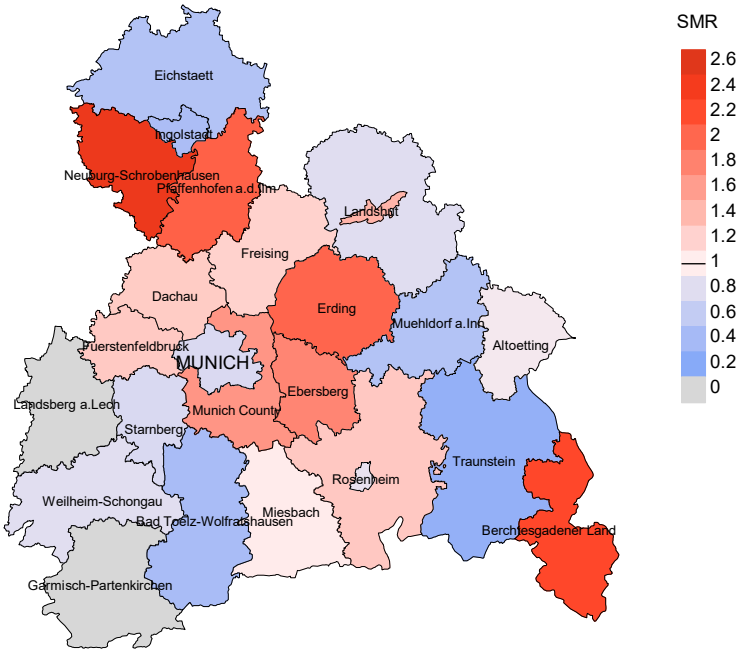


Figure 18b. Map of standardized mortality ratio (SMR, incl. DCO cases) by county averaged for period 2007 to 2020. According to their individual SMR values, the counties are displayed in different red and blue hues, being the fine white color attributed to the population overall of 1.0 (males N=198, females N=84).

The results should be interpreted with caution! E.g., in county Ebersberg with a population of 67,153 female residents (averaged) in the period from 2007 to 2020 a total of 4 women died from mature T/NK-cell l.. Therefore, the mean standardized mortality ratio (SMR) for this cancer type in this area can be calculated at 1.77. Though, the value of this parameter may vary with an underlying probability of 99% between 0.30 and 5.57, and is therefore not statistically striking.

Statistical Notes

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

1. **All multiple primaries included**

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

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

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

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

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

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

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

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

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

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

Shortcuts

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

Recommended Citation

Munich Cancer Registry. ICD-10 C84: Mature T/NK-cell l. - Incidence and Mortality [Internet]. 2021 [updated 2021 Dec 21; cited 2022 Feb 1]. Available from: https://www.tumorregister-muenchen.de/en/facts/base/bC84__E-ICD-10-C84-Mature-T-NK-cell-l.-incidence-and-mortality.pdf

Copyright

Disclaimer