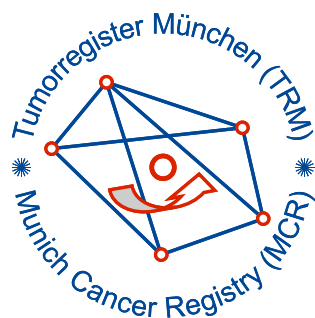


Munich Cancer Registry



- ▶ Incidence and Mortality
- ▶ Selection Matrix
- ▶ Homepage
- ▶ *Deutsch*

ICD-10 C34: Non-small cell LC

Survival

Year of diagnosis	1988-1997	1998-2019
Patients	3,431	27,687
Diseases	3,448	27,994
Cases evaluated	3,069	21,767
Creation date	01/27/2021	
Database export	01/07/2021	
Population	4.92 m	



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

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

https://www.tumorregister-muenchen.de/en/facts/surv/sC34N_E-ICD-10-C34-Non-small-cell-LC-survival.pdf

Index of figures and tables

Fig./Tbl.		Page
1a	Relative survival by period of diagnosis (chart)	3
1b	Survival by period of diagnosis (table)	3
2a	Survival by sex (chart)	4
2b	Survival by sex (table)	4
3a	Observed survival by age category (chart)	5
3b	Relative survival by age category (chart)	5
3c	Survival by age category (table)	6
4a	Relative survival by UICC (chart)	7
4b	Survival by UICC (table)	7
4c	Conditional survival by UICC (chart)	8
4d	Conditional survival by UICC (table)	8
4g	Relative survival by TNM staging (chart)	9
4h	Survival by TNM staging (table)	9
5a	Time to first progression (chart)	11
5b	Time to first progression (table)	11
5c	Observed post-progression survival (chart)	13
5d	Observed post-progression survival (table)	13
5e	Observed post-progression survival by period of progression (chart)	14
5f	Observed post-progression survival by period of progression (table)	14

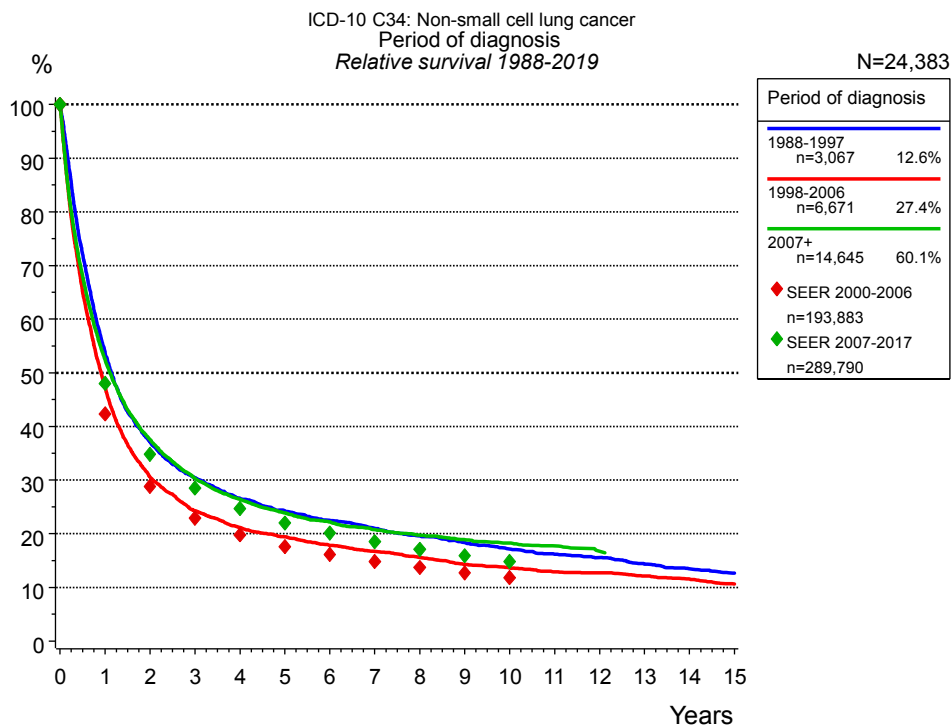


Figure 1a. Relative survival of patients with non-small cell LC by period of diagnosis. Included in the evaluation are 24,383 cases diagnosed between 1988 and 2019.

The survival results of the SEER program (Surveillance, Epidemiology, and End Results) of the American National Cancer Institute (NCI) are summarized as the period of diagnosis from 2000 to 2017, and are represented by colored diamonds in order to facilitate comparisons between MCR and SEER.

The presented survival curves are derived from clinical records with valid follow-up informations, which means that death certificate cases (DCO) cases are omitted from the analysis. With this one restriction, the MCR has provided population-based statistics since 1998, collecting data on all cancer cases in the region of southern Bavaria. Historical data of previous time periods can be heavily selected, therefore, univariate survival comparisons of the presented time periods must be carefully considered. Nonetheless, all calculable survival curves are depicted to facilitate the comparison of long time follow-up analyses of relative survival between particular cancers.

Years	Period of diagnosis					
	1988-1997 n=3,067		1998-2006 n=6,671		2007+ n=14,645	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	52.6	53.9	46.1	47.3	51.2	52.5
2	35.4	37.1	29.2	30.6	35.9	37.6
3	28.3	30.4	22.7	24.3	28.4	30.3
4	24.2	26.6	19.3	21.2	24.2	26.4
5	21.5	24.2	17.4	19.4	21.3	23.8
6	19.6	22.5	15.6	17.8	19.4	22.2
7	17.9	21.0	14.2	16.7	17.7	20.7
8	16.3	19.6	13.0	15.6	16.4	19.7
9	14.9	18.4	11.5	14.2	15.4	18.9
10	13.5	17.1	10.8	13.6	14.5	18.3
11	12.5	16.2	9.9	12.9	13.6	17.7
12	11.7	15.5	9.6	12.7	12.7	16.7
13	10.5	14.3	8.9	12.1		
14	9.6	13.5	8.2	11.5		
15	8.8	12.7	7.4	10.7		
Median	1.1		0.9		1.1	

Table 1b. Observed (obs.) and relative (rel.) survival of patients with non-small cell LC by period of diagnosis for period 1988-2019 (N=24,383).

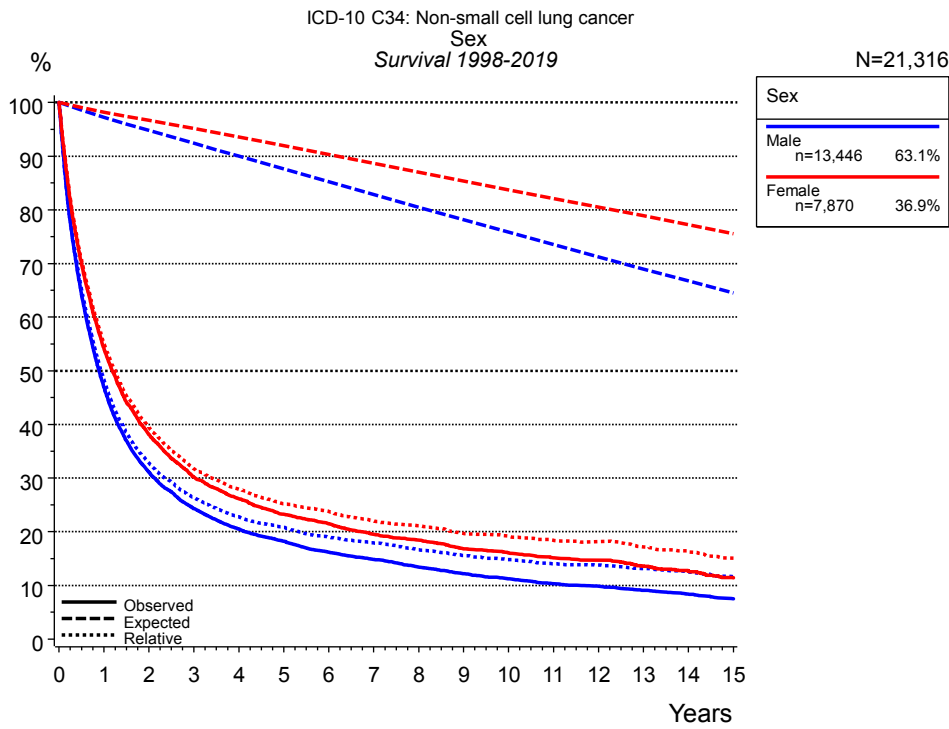


Figure 2a. Survival of patients with non-small cell LC by sex. Included in the evaluation are 21,316 cases diagnosed between 1998 and 2019.

Years	Sex			
	Male n=13,446		Female n=7,870	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	47.0	48.3	54.1	55.1
2	31.1	32.8	38.1	39.4
3	24.3	26.3	30.2	31.7
4	20.5	22.8	26.1	27.9
5	18.2	20.8	23.2	25.2
6	16.2	19.0	21.5	23.8
7	14.8	17.9	19.5	22.0
8	13.4	16.6	18.4	21.1
9	12.2	15.6	16.8	19.7
10	11.2	14.8	16.1	19.2
11	10.3	14.0	15.1	18.4
12	9.8	13.8	14.6	18.1
13	9.1	13.1	13.6	17.2
14	8.4	12.5	12.7	16.4
15	7.5	11.6	11.4	15.1
Median	0.9		1.2	

Table 2b. Observed (obs.) and relative (rel.) survival of patients with non-small cell LC by sex for period 1998-2019 (N=21,316).

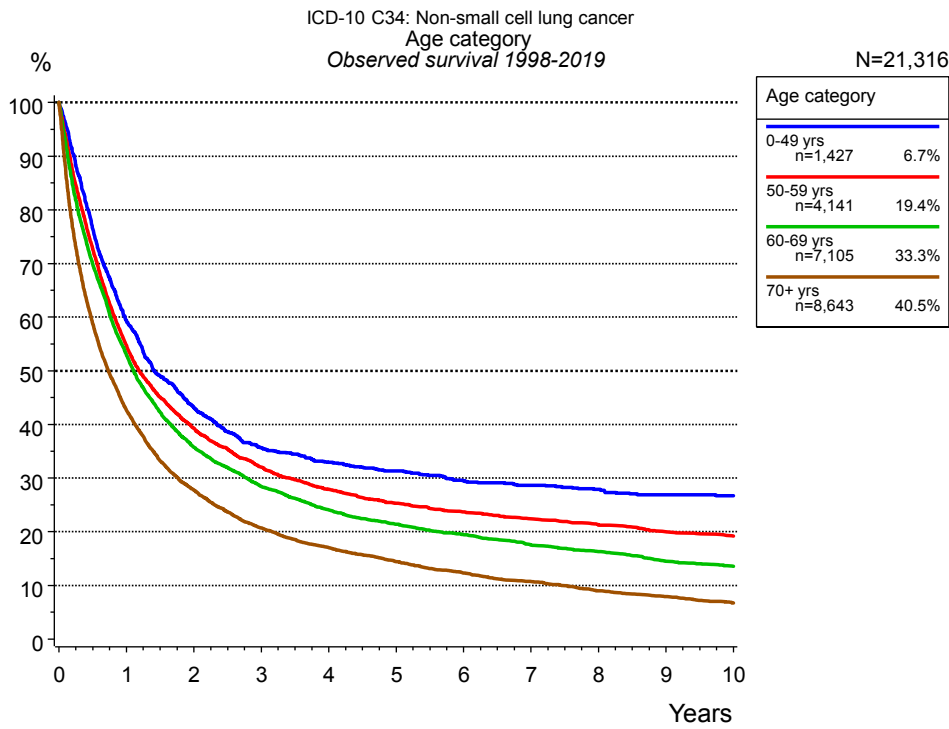


Figure 3a. Observed survival of patients with non-small cell LC by age category. Included in the evaluation are 21,316 cases diagnosed between 1998 and 2019.

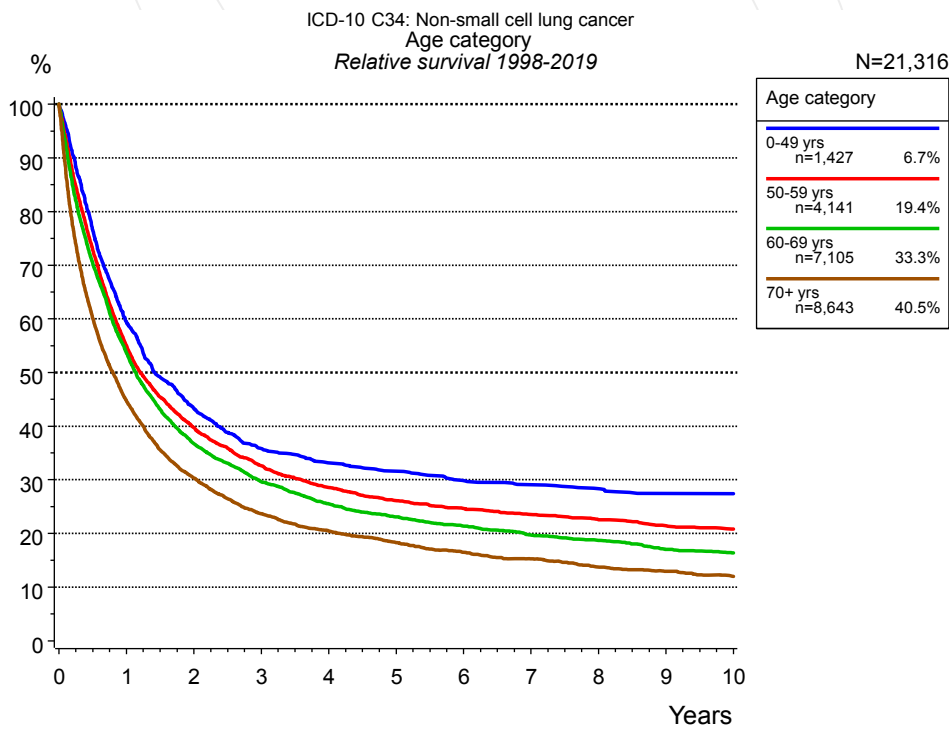


Figure 3b. Relative survival of patients with non-small cell LC by age category. Included in the evaluation are 21,316 cases diagnosed between 1998 and 2019.

Years	Age category							
	0-49 yrs n=1,427		50-59 yrs n=4,141		60-69 yrs n=7,105		70+ yrs n=8,643	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1	59.4	59.5	54.7	55.0	53.0	53.7	42.7	44.7
2	43.2	43.3	39.3	39.7	35.7	36.7	27.8	30.4
3	35.7	35.8	32.0	32.6	28.4	29.6	20.7	23.7
4	32.9	33.2	27.9	28.6	24.1	25.5	17.1	20.5
5	31.3	31.6	25.3	26.1	21.4	23.1	14.4	18.3
6	29.5	29.8	23.7	24.7	19.4	21.4	12.3	16.5
7	28.7	29.1	22.4	23.5	17.5	19.7	10.7	15.3
8	27.9	28.3	21.3	22.6	16.3	18.7	9.0	13.7
9	26.9	27.5	20.0	21.4	14.5	17.1	7.9	13.0
10	26.7	27.4	19.2	20.9	13.5	16.4	6.7	12.0
Median	1.4		1.2		1.1		0.7	

Table 3c. Observed (obs.) and relative (rel.) survival of patients with non-small cell LC by age category for period 1998-2019 (N=21,316).

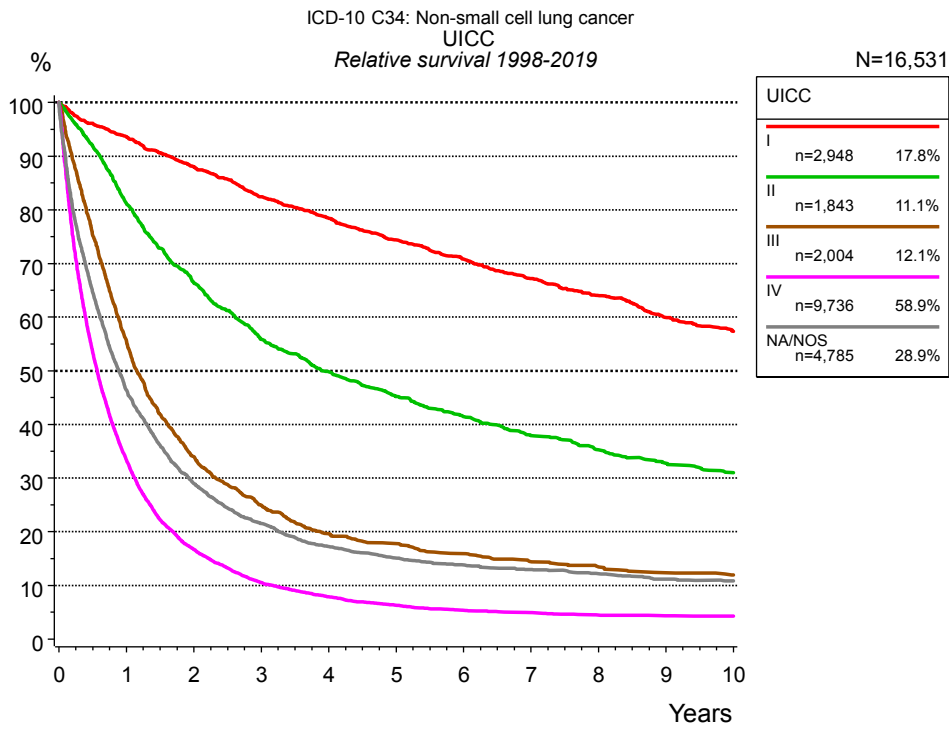


Figure 4a. Relative survival of patients with non-small cell LC by UICC. For 19,154 of 21,316 cases diagnosed between 1998 and 2019 valid data could be obtained for this item. For a total of 16,531 cases an evaluable classification was established. The grey line represents the subgroup of 4,785 patients with missing values regarding UICC (22.4 % of 21,316 patients, the percent values of all other categories are related to n=16,531).

Years	UICC									
	I n=2,948		II n=1,843		III n=2,004		IV n=9,736		NA/NOS n=4,785	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1	91.8	93.6	79.7	81.3	54.4	55.6	32.6	33.3	44.9	46.4
2	84.7	88.0	63.9	66.4	32.6	34.0	16.0	16.6	27.3	29.0
3	77.6	82.4	52.7	55.8	23.5	25.0	9.9	10.5	19.6	21.5
4	72.3	78.5	46.1	49.8	18.1	19.6	7.3	7.9	15.3	17.2
5	66.9	74.4	40.9	45.2	16.1	17.8	5.7	6.3	13.1	15.1
6	62.3	70.8	36.7	41.5	14.1	15.9	4.8	5.3	11.6	13.8
7	57.7	67.2	32.7	37.9	12.4	14.4	4.3	4.9	10.6	12.9
8	53.6	64.0	29.8	35.2	11.4	13.5	3.8	4.5	9.7	12.2
9	48.9	59.9	27.0	32.7	10.2	12.4	3.6	4.3	8.7	11.2
10	45.6	57.3	24.8	31.0	9.5	11.9	3.5	4.2	8.2	10.8
Median	8.8		3.4		1.1		0.6		0.8	

Table 4b. Observed (obs.) and relative (rel.) survival of patients with non-small cell LC by UICC for period 1998-2019 (N=16,531).

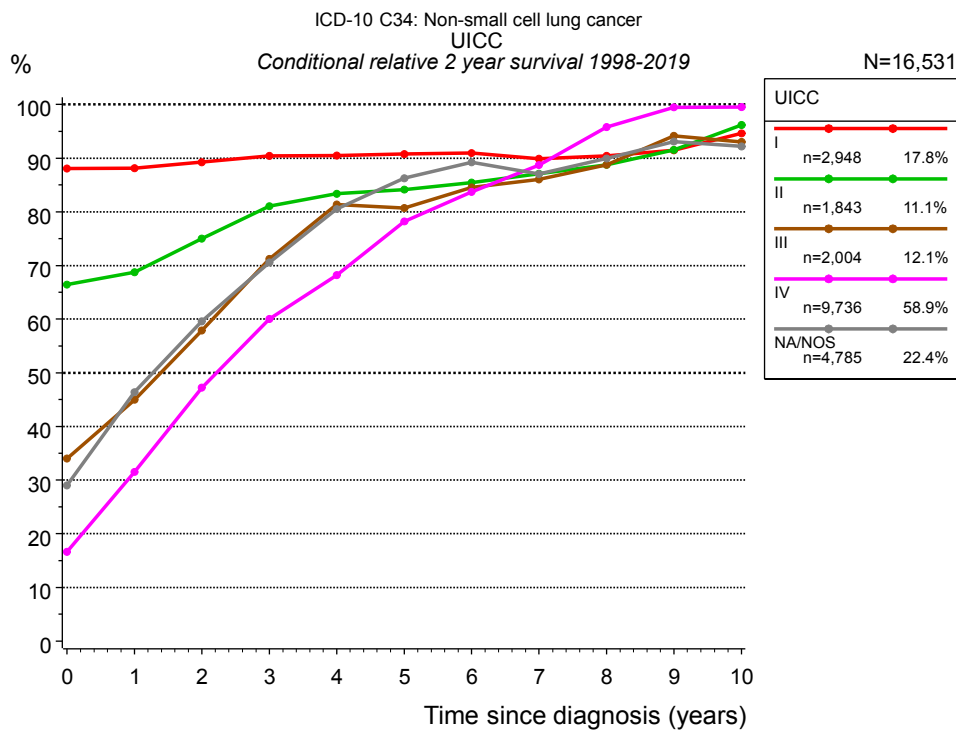


Figure 4c. Conditional relative 2-year survival of patients with non-small cell LC by UICC. For 19,154 of 21,316 cases diagnosed between 1998 and 2019 valid data could be obtained for this item. For a total of 16,531 cases an evaluable classification was established. The grey line represents the subgroup of 4,785 patients with missing values regarding UICC (22.4 % of 21,316 patients, the percent values of all other categories are related to n=16,531).

Years	UICC									
	I		II		III		IV		NA/NOS	
	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs
0	2,948	88.0	1,843	66.4	2,004	34.0	9,736	16.6	4,785	29.0
1	2,502	88.1	1,401	68.7	1,010	45.0	2,954	31.5	2,041	46.4
2	2,155	89.2	1,063	75.0	543	57.9	1,301	47.2	1,154	59.6
3	1,823	90.4	821	81.1	348	71.2	702	60.0	768	70.6
4	1,573	90.5	670	83.4	240	81.4	434	68.2	540	80.5
5	1,349	90.8	532	84.2	182	80.7	293	78.2	421	86.3
6	1,153	91.0	421	85.4	145	84.5	207	83.7	335	89.2
7	959	89.9	336	87.1	116	86.1	148	88.7	280	87.0
8	808	90.4	268	88.8	90	88.8	111	95.8	235	89.9
9	651	91.5	215	91.5	66	94.2	82	99.5	193	93.1
10	526	94.6	172	96.2	58	93.0	65	99.6	157	92.2

Table 4d. Conditional relative 2-year survival of patients with non-small cell LC by UICC for period 1998-2019 (N=16,531).

Conditional relative survival rates refer to the relative survival probability, in this case for 2 years after cancer diagnosis, compared to the age- and sex-matched population (=100 %) under the condition of being alive for a certain time period (x-axis in Figure 4a). The results illustrate to what extent the cancer induced mortality of particular subgroups declines in the subsequent years after detection of the malignancy. For instance, according to the presented survival statistics, patients in the subgroup UICC="I", who are alive at least 3 years after cancer diagnosis, the conditional relative 2-year survival rate is 90.4% (n=1,823).

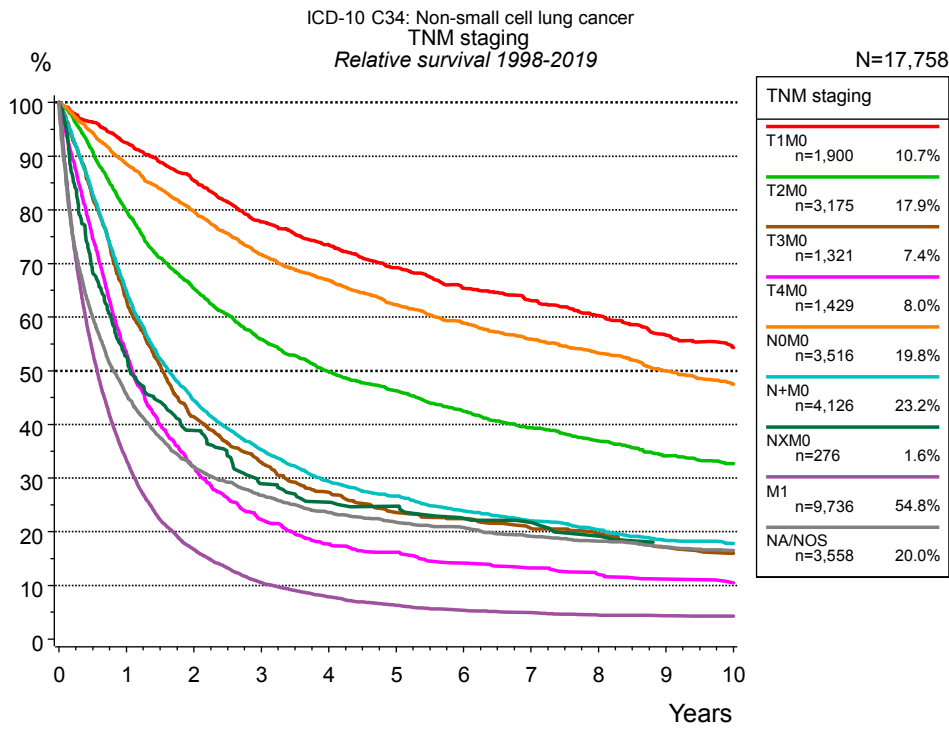


Figure 4g. Relative survival of patients with non-small cell LC by TNM staging. For 19,154 of 21,316 cases diagnosed between 1998 and 2019 valid data could be obtained for this item. For a total of 17,758 cases an evaluable classification was established. The accumulated percentage exceeds the 100 % value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 3,558 patients with missing values regarding TNM staging (16.7 % of 21,316 patients, the percent values of all other categories are related to n=17,758).

Years	TNM staging													
	T1M0 n=1,900		T2M0 n=3,175		T3M0 n=1,321		T4M0 n=1,429		N0M0 n=3,516		N+M0 n=4,126		NXM0 n=276	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1	90.7	92.5	78.0	79.9	61.9	63.3	52.1	53.3	86.6	88.6	63.5	64.9	51.1	52.6
2	82.1	85.5	62.4	65.4	39.6	41.4	30.8	32.1	76.3	79.8	42.7	44.5	36.6	38.8
3	73.0	77.7	52.1	55.9	30.8	32.9	21.0	22.3	67.0	71.6	33.1	35.3	26.2	28.9
4	67.6	73.5	45.4	49.8	25.0	27.3	16.4	17.7	61.2	66.9	27.1	29.4	22.7	25.5
5	62.2	69.2	41.1	46.2	21.2	23.6	14.7	16.2	55.5	62.3	24.0	26.6	21.3	24.7
6	57.5	65.4	36.9	42.5	19.8	22.4	12.5	14.1	51.3	58.9	21.1	23.9	18.3	22.5
7	54.2	63.1	33.4	39.4	17.7	20.6	11.4	13.2	47.5	55.8	19.0	22.0	17.3	21.7
8	50.5	60.3	30.5	36.9	16.5	19.6	10.2	12.0	44.2	53.3	17.2	20.4	14.7	19.2
9	46.3	56.6	27.5	34.1	14.2	17.1	9.2	11.2	40.4	50.0	15.2	18.4	13.0	17.7
10	43.4	54.3	25.6	32.7	12.8	16.0	8.3	10.5	37.4	47.5	14.3	17.8		
Median	8.1		3.3		1.5		1.1		6.3		1.5		1.0	

<i>cont'd</i>	TNM staging			
	M1 n=9,736		NA/NOS n=3,558	
	obs. %	rel. %	obs. %	rel. %
Years				
0	100.0	100.0	100.0	100.0
1	32.6	33.3	44.1	45.6
2	16.0	16.6	30.3	32.1
3	9.9	10.5	24.7	26.8
4	7.3	7.9	21.2	23.6
5	5.7	6.3	19.1	21.8
6	4.8	5.3	17.8	20.8
7	4.3	4.9	16.0	19.2
8	3.8	4.5	14.8	18.2
9	3.6	4.3	13.6	17.1
10	3.5	4.2	12.7	16.5
Median	0.6		0.8	

Table 4h. Observed (obs.) and relative (rel.) survival of patients with non-small cell LC by TNM staging for period 1998-2019 (N=17,758).

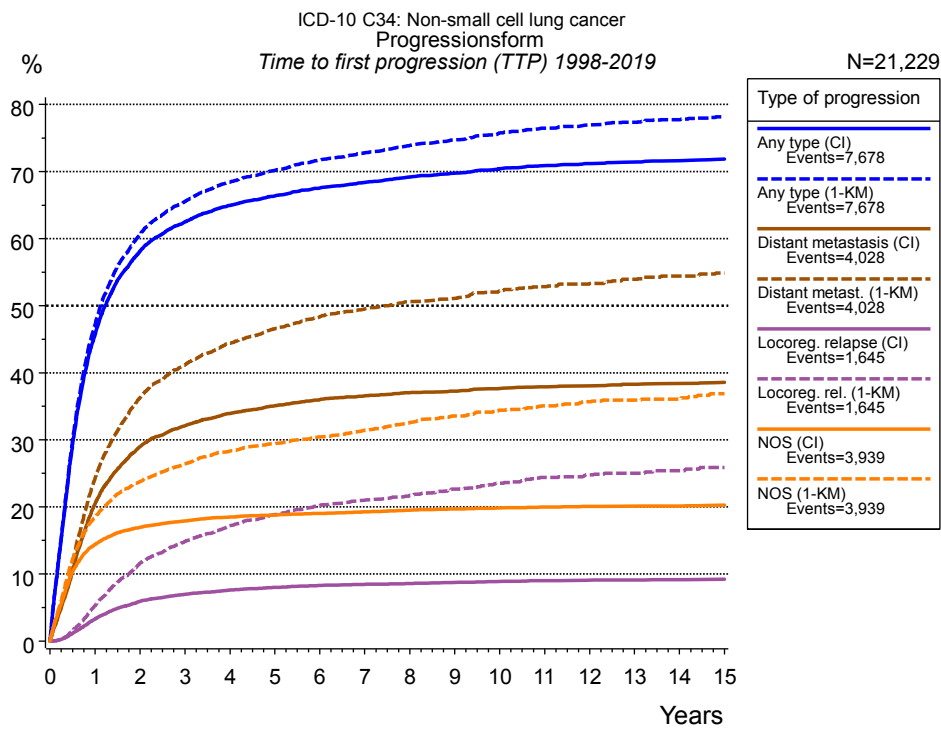


Figure 5a. Time to first progression of 21,229 patients with non-small cell LC diagnosed between 1998 and 2019 (in solid cancers M0 only) estimated by cumulative incidence function (CI, solid line) accounting for death as competing risk and by inverse Kaplan-Meier estimate (1-KM, dashed line). The frequency of events may be underestimated due to underreporting.

	Type of progression						
	Any type (CI)	Any type (1-KM)	Distant metastasis (CI)	Distant metast. (1-KM)	Locoreg. relapse (CI)	Locoreg. rel. (1-KM)	NOS (CI)
N	11,719	11,719	11,724	11,724	21,228	21,228	21,225
Events	7,669	7,669	4,022	4,022	1,641	1,641	3,935
compet.	1,429		4,645		15,421		13,241
Years	%	%	%	%	%	%	%
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	45.7	47.2	20.4	24.2	3.3	5.3	14.4
2	58.1	60.6	29.0	36.3	5.9	11.6	17.0
3	62.5	65.5	32.1	41.2	7.0	14.8	17.9
4	65.0	68.5	33.9	44.4	7.6	17.2	18.5
5	66.4	70.2	35.1	46.6	8.0	18.9	18.8
6	67.5	71.7	36.0	48.3	8.3	20.2	19.1
7	68.4	72.8	36.6	49.5	8.4	21.0	19.3
8	69.2	73.9	37.1	50.6	8.6	21.7	19.5
9	69.8	74.7	37.2	51.1	8.7	22.6	19.7
10	70.4	75.8	37.7	52.2	8.9	23.6	19.9
11	70.9	76.5	37.9	52.9	9.0	24.4	20.0
12	71.2	77.0	38.1	53.3	9.1	24.8	20.1
13	71.4	77.4	38.3	53.9	9.1	25.0	20.1
14	71.6	77.8	38.4	54.4	9.2	25.4	20.1
15	71.8	78.2	38.6	54.9	9.2	25.9	20.3

Type of progression	
<i>cont'd</i>	NOS (1-KM)
N	21,225
Events	3,935
compet.	
Years	%
0	0.0
1	18.5
2	23.8
3	26.4
4	28.3
5	29.4
6	30.5
7	31.5
8	32.6
9	33.6
10	34.4
11	35.0
12	35.7
13	35.9
14	36.1
15	36.9

Table 5b. Time to first progression of patients with non-small cell LC for period 1998-2019 (N=21,229), also showing the total of progression events (Events) and of deaths as competing risk (compet.).

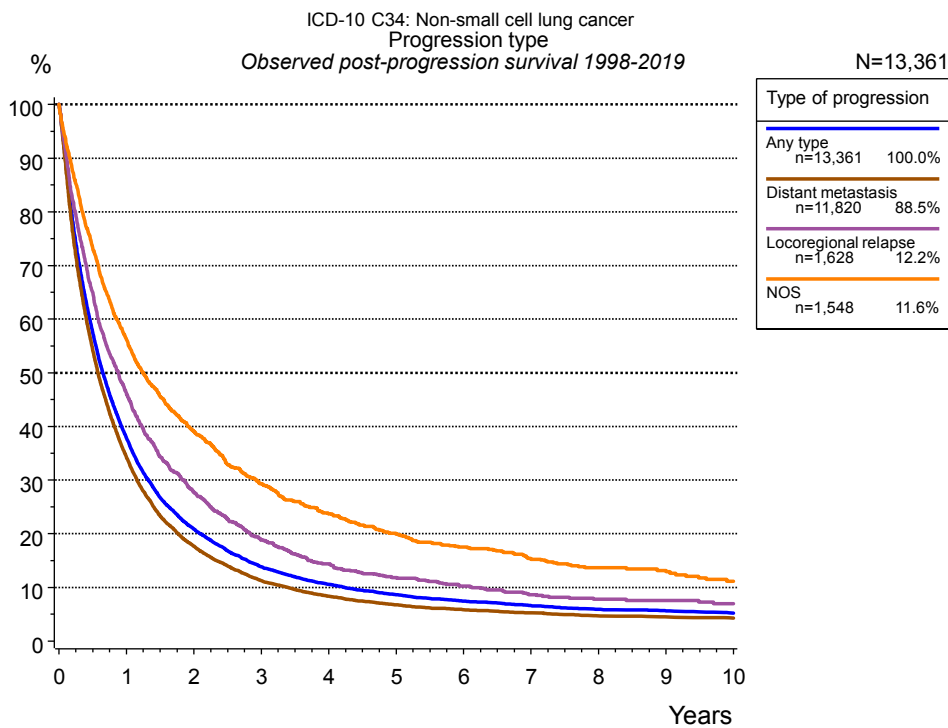


Figure 5c. Observed post-progression survival of 13,361 patients with non-small cell LC diagnosed between 1998 and 2019. These 13,361 patients with documented progression events during their course of disease represent 62.9 % of the totally 21,229 evaluated cases (incl. M1, n=9,510, 44.8 %). Patients with cancer relapse documented via death certificates only were excluded (n=3,827, 18.0 %). Multiple progression types on different sites are included in the evaluation even when not occurring synchronously. The NOS (not otherwise specified) class is included under the condition, that it is the one and only progression type during the course of disease.

Medical record documentation often lacks the linguistic severity to distinguish between local relapse, regional lymph node metastasis and distant spread in solid cancers. Frequently, the statement “not specified” is the only information in registries regarding relapse of the disease. The category “Any type” denotes all cases who suffered from at least one relapse during the course of disease (incl. primary M1-status). Although, the real number of relapsed patients is likely to be much higher. The accumulated percentage of patients with local relapse or distant metastasis exceeds the 100 % value because patients are potentially considered in more than one subgroup.

Years	Type of progression			
	Any type n=13,361 %	Distant metastasis n=11,820 %	Locoregional relapse n=1,628 %	NOS n=1,548 %
0	100.0	100.0	100.0	100.0
1	37.8	34.2	46.2	56.2
2	20.9	17.6	27.8	39.1
3	13.8	11.2	18.8	29.3
4	10.6	8.3	14.4	23.8
5	8.6	6.7	11.8	19.9
6	7.4	5.8	10.2	17.5
7	6.6	5.2	8.6	15.2
8	5.9	4.7	7.8	13.7
9	5.6	4.4	7.6	13.2
10	5.2	4.3	7.0	11.1

Table 5d. Observed post-progression survival of patients with non-small cell LC for period 1998-2019 (N=13,361).

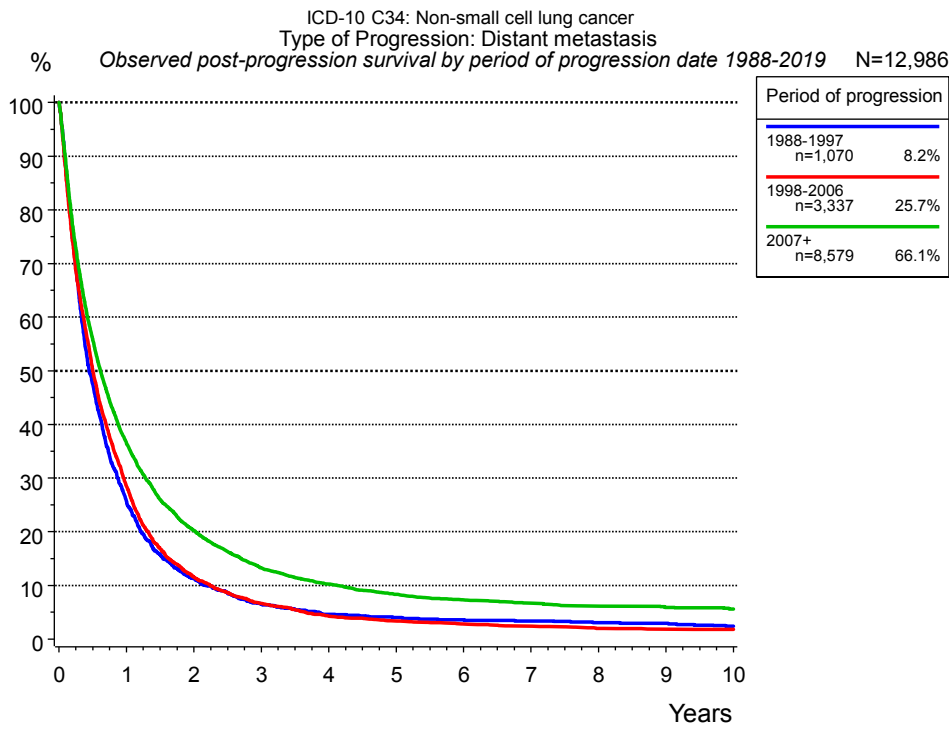


Figure 5e. Observed post-progression (distant metastasis) survival of 12,986 patients with non-small cell LC diagnosed between 1988 and 2019 by period of progression.

Years	Period of progression		
	1988-1997 n=1,070 %	1998-2006 n=3,337 %	2007+ n=8,579 %
0	100.0	100.0	100.0
1	25.7	28.5	36.5
2	11.3	11.5	20.2
3	6.6	6.6	13.2
4	4.6	4.2	10.3
5	4.0	3.4	8.3
6	3.6	2.8	7.3
7	3.4	2.4	6.6
8	3.1	2.0	6.1
9	2.9	1.8	5.9
10	2.4	1.8	5.6

Table 5f. Observed post-progression (distant metastasis) survival of patients with non-small cell LC for period 1988-2019 by period of progression (N=12,986).

Shortcuts

MCR Munich Cancer Registry, Germany

NCI National Cancer Institute, USA

SEER Surveillance, Epidemiology, and End Results, USA

UICC Union for International Cancer Control, Geneva

DCO Death certificate only Death certificate provides the only notification to the registry.

NA Not available

NOS Not otherwise specified

OS Overall/Observed survival Overall/Observed survival (Kaplan-Meier estimate)
Date of entry: diagnosis
Event: death from any cause

RS Relative survival Survival compared to “general population”,
ratio of observed to expected survival (Ederer II method),
reflecting cancer specific survival

AS Assembled survival Assembled chart of
observed, expected, relative survival

CS Conditional survival Survival probability under the condition of surviving
a given period of time

TTP Time to progression Time to first progression / relapse
Date of entry: diagnosis
Event: (progression / relapse): first local-, lymph node recurrence,
distant metastasis or unspecified progression

1-KM 1 minus Kaplan-Meier estimator
 (“inverse” Kaplan-Meier estimator)

CI Cumulative incidence
Death as competing risk (according to Kalbfleisch und Prentice)

PPS Post-progression survival Survival since first progression / relapse (Kaplan-Meier estimate)
Date of entry (progression / relapse): first local-, lymph node
recurrence, distant metastasis or unspecified progression
Event: death from any cause

Recommended Citation

Munich Cancer Registry. Survival ICD-10 C34: Non-small cell LC [Internet]. 2021 [updated 2021 Jan 27; cited 2021 Mar 1]. Available from: https://www.tumorregister-muenchen.de/en/facts/surv/sC34N_E-ICD-10-C34-Non-small-cell-LC-survival.pdf

Copyright

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

Disclaimer

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