

# Munich Cancer Registry



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## ICD-10 C33, C34: Lung cancer

### Survival

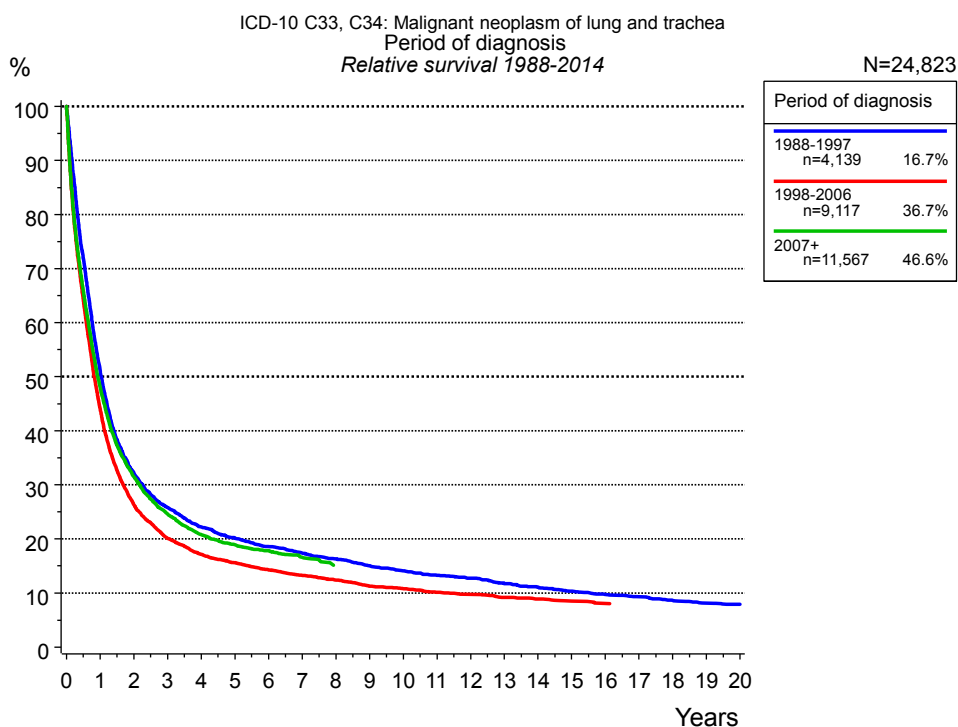
Year of diagnosis	1988-1997	1998-2014
Patients	4,643	30,185
Diseases	4,668	30,462
Cases evaluated	4,145	20,874
Creation date	03/02/2016	
Export date	12/23/2015	
Population	4.64 m	



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Munich, 81377  
Germany

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

<http://www.tumorregister-muenchen.de/en/facts/surv/sC3334E-ICD-10-C33-C34-Lung-cancer-survival.pdf>

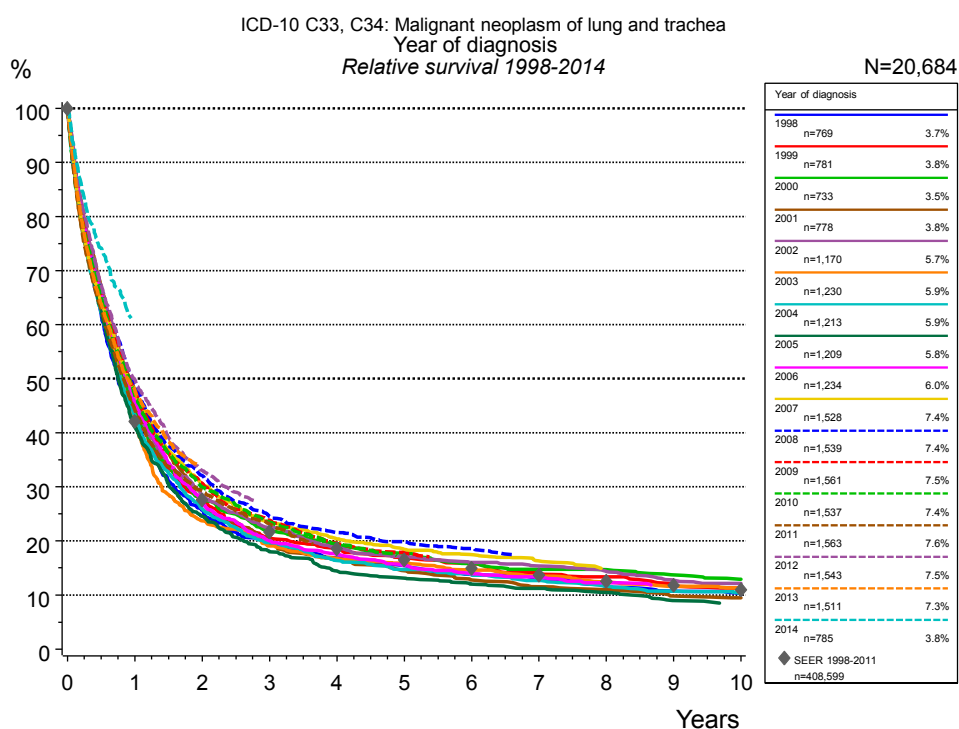


**Figure 1a.** Relative survival of patients with lung cancer by period of diagnosis. Included in the evaluation are 24,823 cases diagnosed between 1988 and 2014.

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=4,139		1998-2006 n=9,117		2007+ n=11,567	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	49.8	51.0	42.8	43.9	46.9	48.0
2	30.7	32.2	25.1	26.3	30.1	31.5
3	24.1	25.8	18.8	20.1	23.0	24.6
4	20.3	22.2	15.7	17.2	19.0	20.8
5	17.9	20.1	13.9	15.6	16.9	18.9
6	16.2	18.6	12.4	14.3	15.6	17.9
7	14.8	17.3	11.3	13.3	14.1	16.6
8	13.5	16.3	10.3	12.4		
9	12.2	15.0	9.1	11.3		
10	11.1	14.1	8.6	10.8		
11	10.2	13.3	7.8	10.2		
12	9.6	12.7	7.4	9.8		
13	8.6	11.8	6.8	9.2		
14	7.9	11.1	6.4	8.9		
15	7.2	10.3	5.9	8.5		
16	6.6	9.7	5.5	8.1		
17	6.1	9.3				
18	5.6	8.6				
19	5.1	8.1				
20	4.8	7.9				

**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with lung cancer by period of diagnosis for period 1988-2014 (N=24,823).



**Figure 1c.** Relative survival of patients with lung cancer by year of diagnosis. Included in the evaluation are 20,684 cases diagnosed between 1998 and 2014.

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 1998 to 2011, and are represented by gray diamonds in order to facilitate comparisons between MCR and SEER.

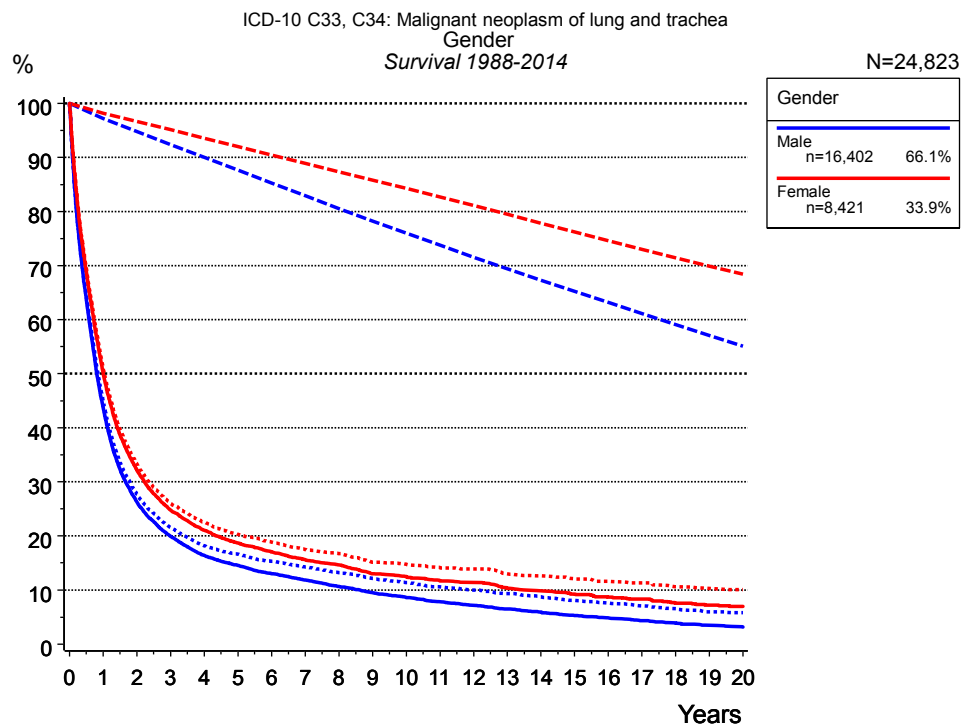
		Year of diagnosis													
		1998 n=769		1999 n=781		2000 n=733		2001 n=778		2002 n=1,170		2003 n=1,230		2004 n=1,213	
Years		obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1		41.4	42.6	43.4	44.6	42.7	43.8	46.7	47.8	44.5	45.7	40.6	41.6	42.2	43.2
2		24.5	25.7	26.2	27.6	26.7	27.9	26.0	27.1	27.1	28.4	22.6	23.7	24.8	25.9
3		18.2	19.5	19.0	20.5	20.7	22.0	18.9	20.2	21.0	22.5	17.9	19.1	18.5	19.7
4		15.4	16.9	16.8	18.6	17.7	19.3	15.4	16.7	17.2	18.8	15.4	16.7	15.1	16.4
5		13.7	15.5	14.9	16.9	16.0	17.7	13.1	14.5	15.4	17.1	14.2	15.9	13.2	14.8
6		12.0	13.8	13.6	15.8	13.9	15.8	11.3	12.8	14.0	16.1	12.8	14.6	12.0	13.7
7		11.0	12.8	11.8	14.0	12.8	14.7	10.0	11.5	13.1	15.4	11.6	13.5	10.9	12.7
8		9.5	11.6	11.0	13.4	12.5	14.7	9.5	11.0	12.0	14.4	10.3	12.4	9.7	11.6
9		8.6	10.7	9.4	11.7	11.3	13.7	8.2	9.8	10.4	12.7	9.4	11.6	8.7	10.7
10		8.0	10.2	8.8	11.3	10.3	12.9	7.8	9.5	9.6	12.1	9.0	11.3	8.1	10.3

		Year of diagnosis													
		2005 n=1,209		2006 n=1,234		2007 n=1,528		2008 n=1,539		2009 n=1,561		2010 n=1,537		2011 n=1,563	
Years		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		40.1	41.0	44.7	45.9	46.4	47.6	47.3	48.5	46.6	47.7	46.0	47.0	43.2	44.2
2		23.5	24.5	25.8	27.0	29.1	30.4	30.7	32.1	29.4	30.6	28.7	29.9	28.0	29.3
3		16.9	18.0	18.8	20.0	21.9	23.5	23.0	24.5	22.3	23.8	22.1	23.5	21.6	23.1
4		13.3	14.4	16.0	17.5	18.6	20.4	19.7	21.6	18.0	19.6	17.9	19.5		
5		11.9	13.1	13.8	15.5	16.4	18.4	17.7	19.9	16.0	17.8				
6		10.7	12.0	12.1	13.9	15.1	17.5	16.3	18.6						
7		9.8	11.2	11.3	13.2	13.7	16.3								
8		9.0	10.5	10.2	12.2										
9		7.5	9.0												

<i>cont'd</i>	Year of diagnosis					
	2012 n=1,543		2013 n=1,511		2014 n=785	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
Years						
0	100.0	100.0	100.0	100.0	100.0	100.0
1	48.7	49.8	46.7	47.8		
2	31.5	33.0				

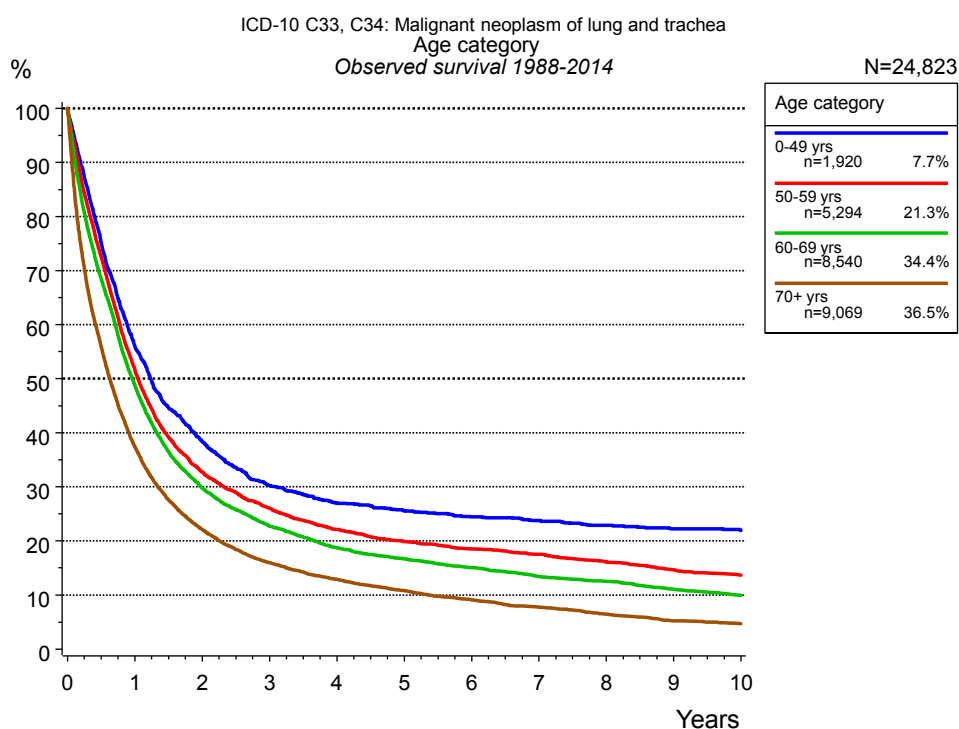
**Table 1d.** Observed (obs.) and relative (rel.) survival of patients with lung cancer by year of diagnosis for period 1998-2014 (N=20,684).



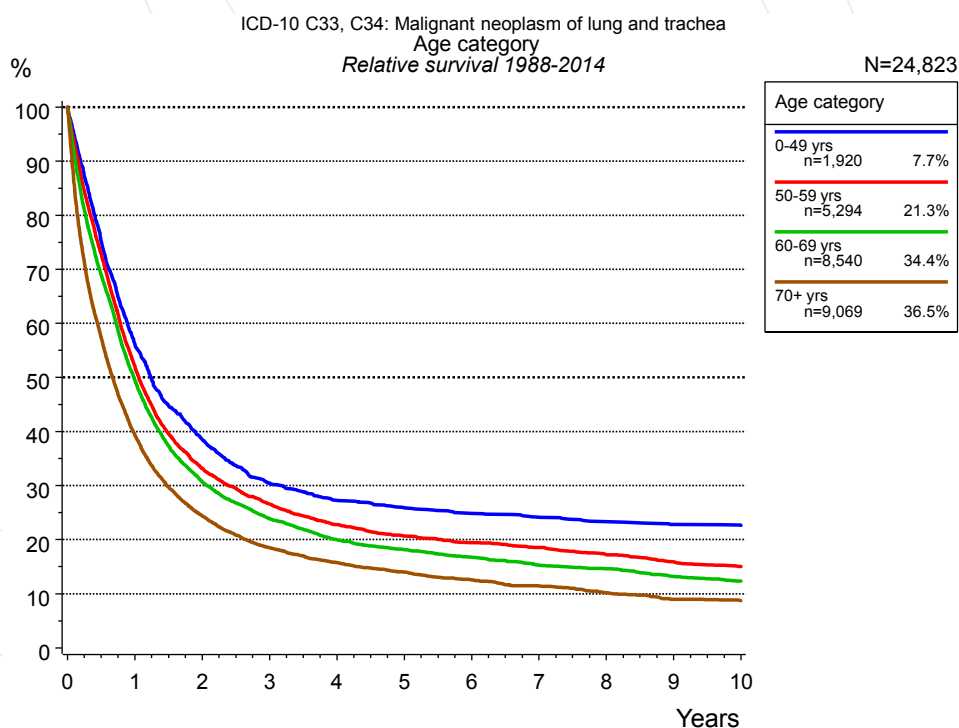
**Figure 2a.** Survival of patients with lung cancer by gender. Included in the evaluation are 24,823 cases diagnosed between 1988 and 2014.

Years	Gender			
	Male n=16,402		Female n=8,421	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	43.7	44.9	50.1	51.0
2	26.3	27.7	32.2	33.3
3	19.9	21.6	24.8	26.0
4	16.4	18.2	21.0	22.5
5	14.6	16.6	18.7	20.3
6	13.1	15.3	17.0	18.8
7	11.8	14.3	15.6	17.5
8	10.7	13.2	14.6	16.7
9	9.5	12.1	13.0	15.2
10	8.6	11.4	12.5	14.8
11	7.8	10.6	11.7	14.2
12	7.2	10.0	11.4	13.9
13	6.5	9.3	10.3	13.0
14	5.9	8.7	9.9	12.6
15	5.3	8.1	9.3	12.1
16	4.8	7.6	8.7	11.6
17	4.3	7.1	8.3	11.3
18	3.9	6.6	7.6	10.6
19	3.4	6.0	7.2	10.3
20	3.2	5.8	7.0	10.1

**Table 2b.** Observed (obs.) and relative (rel.) survival of patients with lung cancer by gender for period 1988-2014 (N=24,823).



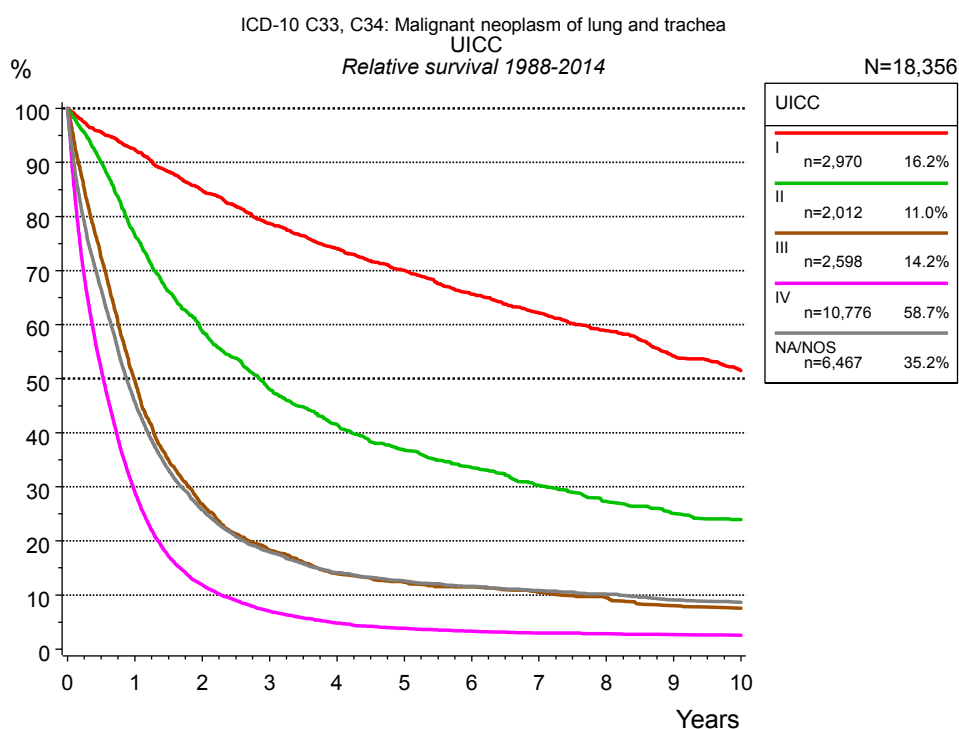
**Figure 3a.** Observed survival of patients with lung cancer by age category. Included in the evaluation are 24,823 cases diagnosed between 1988 and 2014.



**Figure 3b.** Relative survival of patients with lung cancer by age category. Included in the evaluation are 24,823 cases diagnosed between 1988 and 2014.

Years	Age category							
	0-49 yrs n=1,920		50-59 yrs n=5,294		60-69 yrs n=8,540		70+ yrs n=9,069	
	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	56.1	56.2	51.7	52.0	48.8	49.5	37.4	39.4
2	38.4	38.5	32.7	33.2	29.8	30.7	22.1	24.4
3	30.2	30.4	26.0	26.6	22.7	23.8	16.0	18.5
4	27.0	27.3	22.1	22.8	18.7	20.0	12.9	15.8
5	25.6	25.9	19.9	20.7	16.7	18.2	10.8	14.0
6	24.5	24.9	18.5	19.4	15.1	16.8	9.1	12.5
7	23.8	24.2	17.5	18.6	13.4	15.3	7.8	11.4
8	22.9	23.3	16.1	17.2	12.5	14.6	6.4	10.2
9	22.2	22.8	14.7	15.9	11.0	13.2	5.2	9.0
10	22.0	22.7	13.7	15.0	9.9	12.3	4.7	8.7

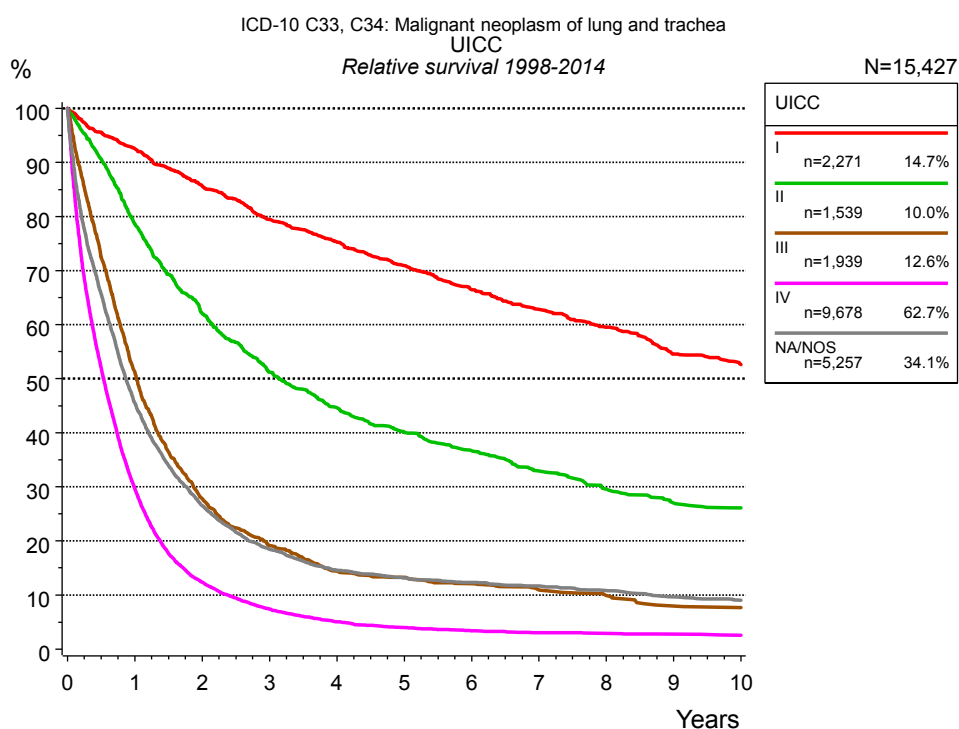
**Table 3c.** Observed (obs.) and relative (rel.) survival of patients with lung cancer by age category for period 1988-2014 (N=24,823).



**Figure 4a.** Relative survival of patients with lung cancer by UICC. For 21,742 of 24,823 cases diagnosed between 1988 and 2014 valid data could be obtained for this item. For a total of 18,356 cases an evaluable classification was established. The grey line represents the subgroup of 6,467 patients with missing values regarding UICC (26.1% of 24,823 patients, the percent values of all other categories are related to n=18,356).

Years	UICC									
	I n=2,970		II n=2,012		III n=2,598		IV n=10,776		NA/NOS n=6,467	
	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	90.5	92.3	75.1	76.5	48.6	49.7	28.4	29.1	44.3	45.7
2	81.5	84.8	56.6	58.8	25.7	26.8	11.4	11.9	24.2	25.7
3	74.0	78.7	45.3	48.0	17.2	18.3	6.6	7.0	16.5	18.0
4	68.2	74.1	38.4	41.5	12.9	14.0	4.4	4.8	12.6	14.1
5	62.9	70.0	33.3	36.8	11.2	12.3	3.5	3.9	10.9	12.6
6	57.6	65.6	29.7	33.6	10.2	11.5	2.9	3.3	9.8	11.6
7	53.2	62.1	26.2	30.3	9.1	10.5	2.6	3.0	9.0	10.9
8	49.2	58.9	23.1	27.3	8.1	9.5	2.4	2.8	8.2	10.2
9	44.2	54.2	20.7	25.1	6.7	8.0	2.3	2.7	7.2	9.1
10	40.8	51.4	19.4	24.0	6.1	7.6	2.2	2.6	6.7	8.7

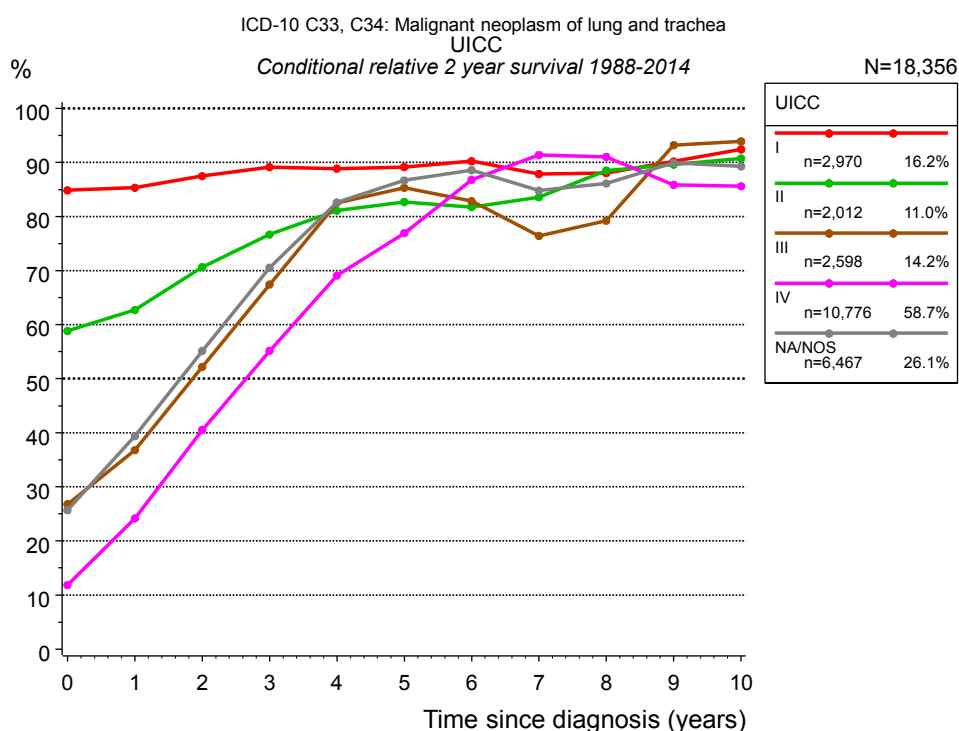
**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with lung cancer by UICC for period 1988-2014 (N=18,356).



**Figure 4c.** Relative survival of patients with lung cancer by UICC. For 18,080 of 20,684 cases diagnosed between 1998 and 2014 valid data could be obtained for this item. For a total of 15,427 cases an evaluable classification was established. The grey line represents the subgroup of 5,257 patients with missing values regarding UICC (25.4% of 20,684 patients, the percent values of all other categories are related to n=15,427).

Years	UICC									
	I n=2,271		II n=1,539		III n=1,939		IV n=9,678		NA/NOS n=5,257	
	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	90.7	92.5	77.2	78.6	50.1	51.2	29.0	29.6	44.0	45.5
2	82.4	85.7	59.6	62.0	26.7	27.8	11.8	12.3	25.0	26.5
3	74.8	79.5	48.3	51.2	18.1	19.2	7.0	7.4	16.9	18.5
4	69.3	75.3	41.3	44.6	13.3	14.4	4.7	5.1	13.0	14.6
5	63.8	70.9	36.3	40.1	12.0	13.3	3.7	4.0	11.4	13.2
6	58.4	66.5	32.4	36.6	10.8	12.1	3.0	3.4	10.4	12.3
7	53.8	62.8	28.5	32.9	9.6	11.0	2.7	3.0	9.6	11.7
8	49.8	59.6	25.1	29.6	8.5	9.9	2.5	2.9	8.7	10.8
9	44.5	54.6	22.3	27.0	6.7	8.0	2.3	2.8	7.6	9.6
10	41.9	52.6	21.1	26.1	6.2	7.7	2.2	2.6	7.0	9.1

**Table 4d.** Observed (obs.) and relative (rel.) survival of patients with lung cancer by UICC for period 1998-2014 (N=15,427).

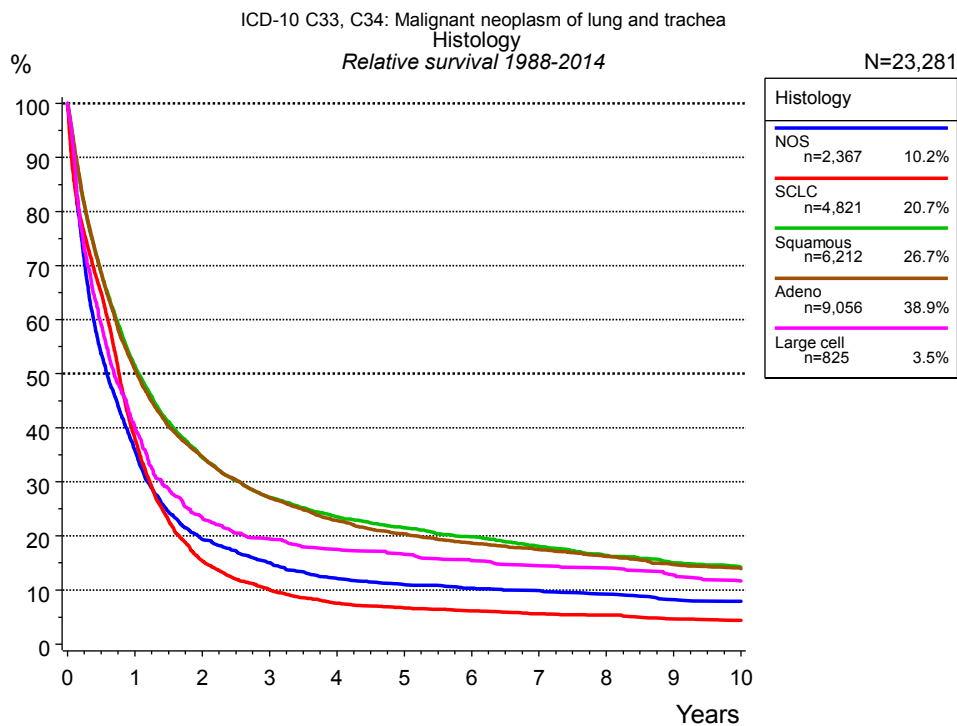


**Figure 4e.** Conditional relative 2-year survival of patients with lung cancer by UICC. For 21,742 of 24,823 cases diagnosed between 1988 and 2014 valid data could be obtained for this item. For a total of 18,356 cases an evaluable classification was established. The grey line represents the subgroup of 6,467 patients with missing values regarding UICC (26.1% of 24,823 patients, the percent values of all other categories are related to n=18,356).

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	2,970	84.8	2,012	58.8	2,598	26.8	10,776	11.9	6,467	25.7
1	2,516	85.3	1,429	62.7	1,194	36.8	2,889	24.2	2,718	39.4
2	2,118	87.5	1,002	70.7	589	52.2	1,029	40.5	1,397	55.1
3	1,797	89.1	737	76.7	353	67.4	511	55.2	873	70.5
4	1,543	88.9	575	81.1	235	82.5	291	69.1	620	82.6
5	1,298	89.1	460	82.7	181	85.3	194	76.9	500	86.7
6	1,098	90.2	364	81.7	151	82.8	136	86.8	402	88.6
7	922	87.9	287	83.6	117	76.4	95	91.4	318	84.8
8	776	88.0	223	88.5	90	79.2	61	91.0	242	86.1
9	635	90.2	183	89.6	62	93.2	50	85.9	184	89.9
10	549	92.4	157	90.7	53	93.9	41	85.6	154	89.3

**Table 4f.** Conditional relative 2-year survival of patients with lung cancer by UICC for period 1988-2014 (N=18,356).

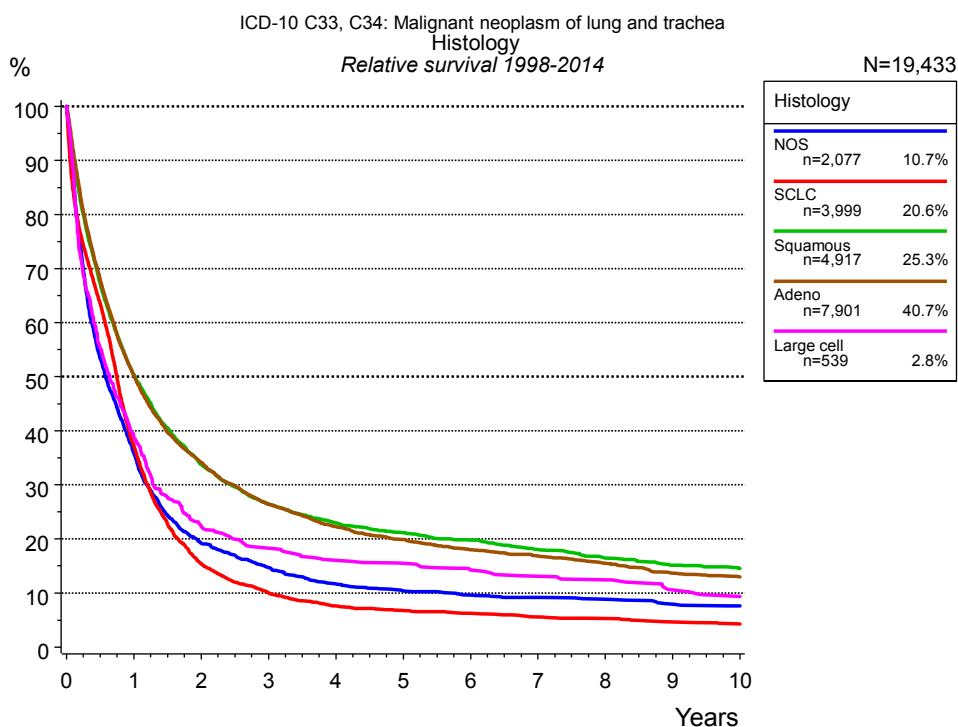
Conditional relative survival rates refer to the relative survival probability, in this case for 2 years after cancer diagnosis, compared to the age- and sex-matched population (=100%) under the condition of being alive for a certain time period (x-axis in Figure 4c). The results illustrate to what extent 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 89.1% (n=1,797).



**Figure 4g.** Relative survival of patients with lung cancer by histology. For 23,281 of 24,823 cases diagnosed between 1988 and 2014 valid data could be obtained for this item.

Years	Histology									
	NOS n=2,367		SCLC n=4,821		Squamous n=6,212		Adeno n=9,056		Large cell n=825	
	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	34.8	35.8	37.3	38.1	50.1	51.5	49.6	50.8	39.2	40.0
2	18.4	19.4	14.8	15.4	32.8	34.5	33.2	34.6	22.4	23.4
3	14.0	15.0	9.5	10.0	25.1	27.2	25.4	27.1	18.4	19.5
4	11.1	12.2	7.1	7.6	21.2	23.5	21.0	22.8	16.3	17.5
5	9.7	11.0	6.2	6.7	18.8	21.5	18.3	20.4	15.1	16.6
6	9.0	10.3	5.5	6.2	16.9	19.8	16.4	18.7	13.7	15.5
7	8.4	9.9	5.0	5.6	15.0	18.0	15.0	17.5	12.6	14.5
8	7.7	9.3	4.7	5.4	13.2	16.4	13.6	16.2	12.1	14.1
9	6.7	8.2	4.0	4.7	11.8	15.0	12.0	14.7	10.8	12.8
10	6.3	7.9	3.7	4.4	10.8	14.2	11.1	14.0	9.6	11.7

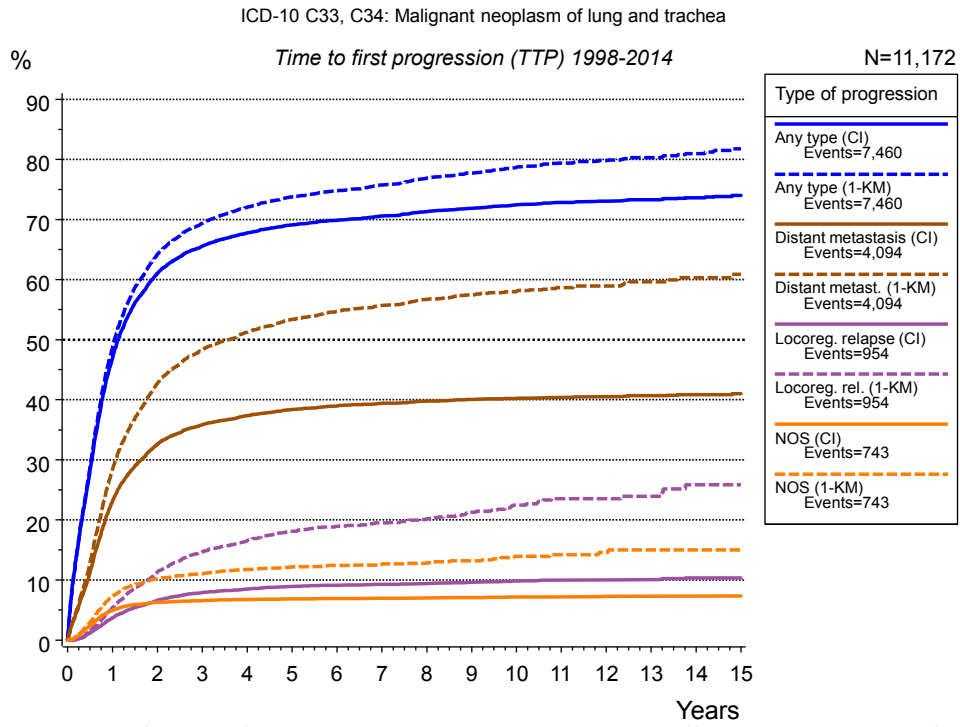
**Table 4h.** Observed (obs.) and relative (rel.) survival of patients with lung cancer by histology for period 1988-2014 (N=23,281).



**Figure 4i.** Relative survival of patients with lung cancer by histology. For 19,433 of 20,684 cases diagnosed between 1998 and 2014 valid data could be obtained for this item.

Years	Histology									
	NOS n=2,077		SCLC n=3,999		Squamous n=4,917		Adeno n=7,901		Large cell n=539	
	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	34.9	35.9	36.4	37.2	49.0	50.4	49.1	50.2	38.3	38.9
2	18.2	19.2	14.8	15.4	32.1	33.8	32.7	34.1	21.4	22.3
3	13.7	14.7	9.5	10.0	24.5	26.5	24.8	26.4	17.4	18.3
4	10.6	11.7	7.1	7.6	20.7	22.9	20.5	22.3	15.1	16.1
5	9.3	10.4	6.2	6.8	18.5	21.2	17.9	19.9	14.1	15.5
6	8.4	9.7	5.6	6.3	16.9	19.8	15.8	18.0	12.6	14.2
7	7.9	9.2	5.0	5.6	15.0	18.1	14.4	16.9	11.5	13.1
8	7.4	8.9	4.6	5.3	13.3	16.5	13.0	15.5	10.8	12.5
9	6.6	7.9	4.0	4.7	11.9	15.1	11.0	13.6	8.8	10.6
10	6.1	7.6	3.6	4.3	11.1	14.6	10.3	13.0	7.9	9.4

**Table 4j.** Observed (obs.) and relative (rel.) survival of patients with lung cancer by histology for period 1998-2014 (N=19,433).

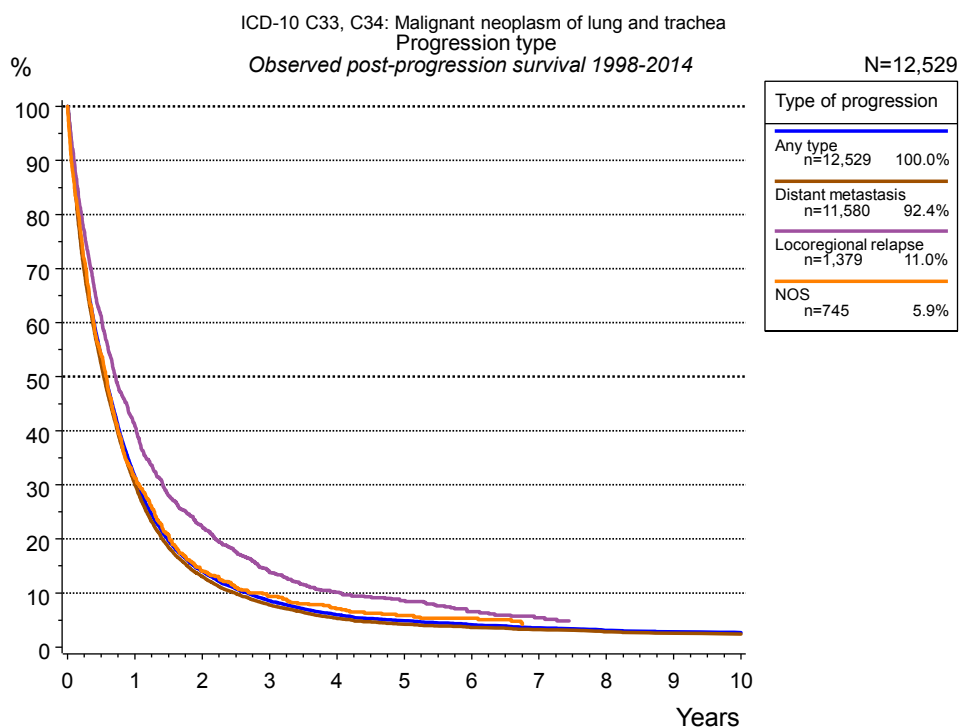


**Figure 5a.** Time to first progression of 11,172 patients with lung cancer diagnosed between 1998 and 2014 (M0 only in solid cancers) estimated by cumulative incidence function (CI, solid line) accounting for death as competing risk and by inverse Kaplan-Meier estimate (1-KM, dashed line). The frequency of events may be underestimated due to underreporting.

Years	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=11,172 %	n=11,172 %	n=11,172 %	n=11,172 %	n=11,172 %	n=11,172 %	n=11,172 %
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	46.9	48.7	23.1	28.4	3.7	5.4	5.0
2	61.0	64.2	32.6	42.7	6.6	11.3	6.3
3	65.6	69.4	35.9	48.3	7.9	14.7	6.6
4	67.8	72.0	37.4	51.2	8.5	16.5	6.8
5	69.1	73.7	38.4	53.4	9.0	18.1	6.9
6	69.9	74.8	39.0	54.7	9.2	18.9	6.9
7	70.6	75.7	39.4	55.7	9.3	19.5	7.0
8	71.3	76.9	39.8	56.7	9.4	20.2	7.0
9	71.9	77.8	40.1	57.5	9.7	21.3	7.1
10	72.5	78.7	40.3	58.1	9.9	22.5	7.2
11	72.8	79.4	40.4	58.7	10.0	23.5	7.2
12	73.1	79.8	40.5	58.9	10.0	23.5	7.3
13	73.3	80.3	40.7	59.6	10.1	23.9	7.3
14	73.6	81.0	40.9	60.3	10.3	25.8	7.3
15	74.0	81.8	41.0	60.9	10.3	25.8	7.3

Type of progression	
<i>cont'd</i>	NOS (1-KM) n=11,172
Years	%
0	0.0
1	7.3
2	10.3
3	11.1
4	11.8
5	12.1
6	12.4
7	12.6
8	12.9
9	13.2
10	13.9
11	14.2
12	14.6
13	15.0
14	15.0
15	15.0

**Table 5b.** Time to first progression of patients with lung cancer for period 1998-2014 (N=11,172).

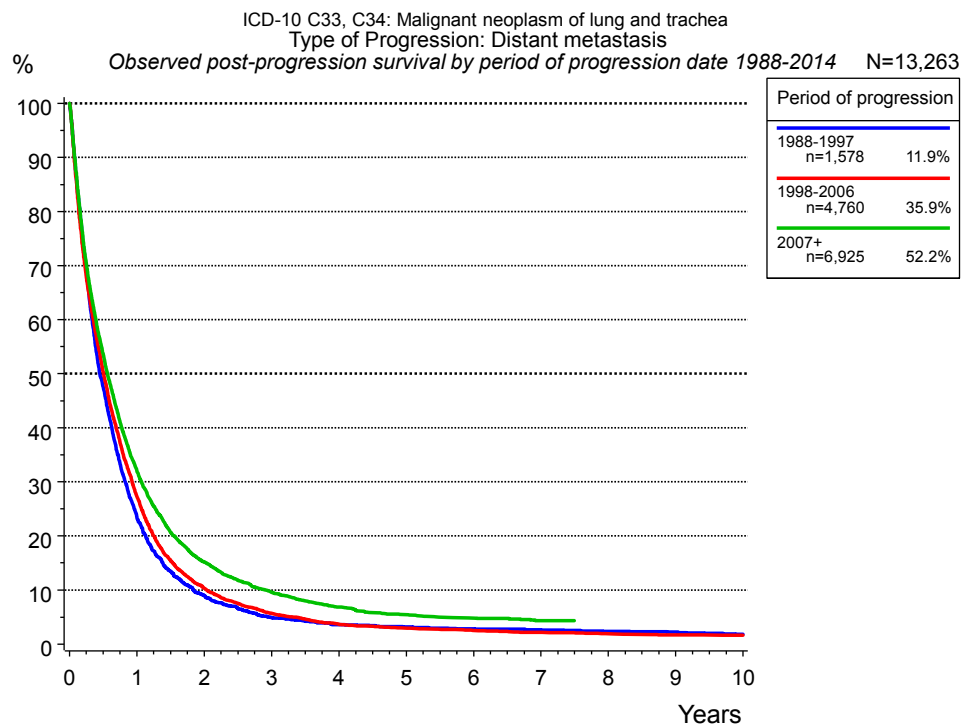


**Figure 5c.** Observed post-progression survival of 12,529 patients with lung cancer diagnosed between 1998 and 2014. These 12,529 patients with documented progression events during their course of disease represent 60.9 % of the totally 20,567 evaluated cases (incl. M1, n=9,395, 45.7 %). Patients with cancer relapse documented via death certificates only were excluded (n=4,326, 21.0 %). 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=12,529 %	Distant metastasis n=11,580 %	Locoregional relapse n=1,379 %	NOS n=745 %
0	100.0	100.0	100.0	100.0
1	31.5	30.1	41.0	31.3
2	14.0	13.0	22.3	14.0
3	8.5	7.8	13.8	9.4
4	6.0	5.3	10.1	7.1
5	4.9	4.2	8.6	5.9
6	4.1	3.6	6.5	5.3
7	3.6	3.2	5.5	
8	3.1	2.8		
9	2.8	2.5		
10	2.7	2.4		

**Table 5d.** Observed post-progression survival of patients with lung cancer for period 1998-2014 (N=12,529).



**Figure 5e.** Observed post-progression (distant metastasis) survival of 13,263 patients with lung cancer diagnosed between 1988 and 2014 by period of progression.

Years	Period of progression		
	1988-1997 n=1,578	1998-2006 n=4,760	2007+ n=6,925
0	100.0	100.0	100.0
1	23.5	27.3	32.1
2	9.0	10.3	15.2
3	4.9	5.7	9.6
4	3.6	3.6	6.8
5	3.2	2.9	5.5
6	2.8	2.5	4.8
7	2.6	2.2	4.3
8	2.4	1.9	4.3
9	2.2	1.7	
10	1.8	1.6	

**Table 5f.** Observed post-progression (distant metastasis) survival of patients with lung cancer for period 1988-2014 by period of progression (N=13,263).

## 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

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