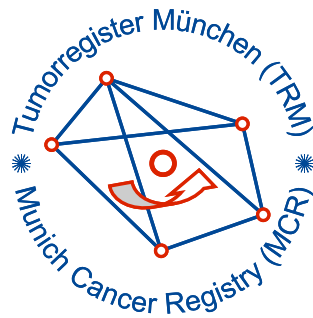


Munich Cancer Registry



- ▶ [Baseline statistics](#)
- ▶ [Selection Matrix](#)
- ▶ [Homepage](#)
- ▶ [Deutsch](#)

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

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

Cancer statistics: Survival

C67: Bladder cancer

Year of diagnosis	1988-2012
Patients	10,072
Diseases	10,079
Cases evaluated	5,246
Creation date	03/25/2014
Export date	02/12/2014
Population	4.5 m



http://www.tumorregister-muenchen.de/en/facts/surv/surv_C67__E.pdf

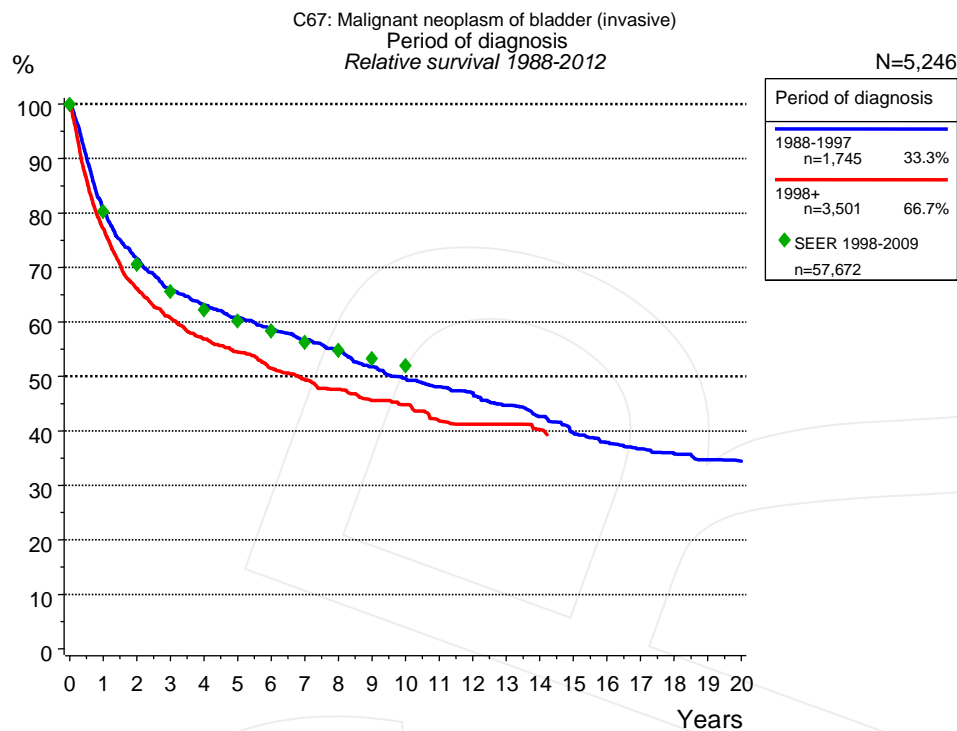


Figure 1a. Relative survival of patients with bladder cancer by period of diagnosis. Included in the evaluation are 5,246 cases diagnosed between 1988 and 2012.

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 2009, and are represented by green 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 1988, 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		1998+	
	n=1,745		n=3,501	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	77.0	81.0	73.5	77.1
2	64.9	71.6	60.4	66.0
3	57.2	65.9	53.5	60.7
4	52.6	63.1	48.2	56.8
5	48.6	60.8	44.5	54.4
6	44.9	58.6	40.5	51.4
7	41.7	56.7	37.4	49.3
8	38.5	54.6	35.0	47.6
9	35.1	51.8	32.1	45.6
10	32.2	49.5	30.5	44.8
11	30.1	48.1	27.3	41.8
12	28.2	47.0	26.4	41.2
13	25.7	44.7	25.3	41.2
14	23.6	42.6	23.6	40.2
15	21.0	39.6	22.5	38.5
16	19.2	37.9		
17	17.9	36.7		
18	16.6	35.8		
19	15.6	34.7		
20	14.8	34.4		

Table 1b. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by period of diagnosis for period 1988-2012 (N=5,246).

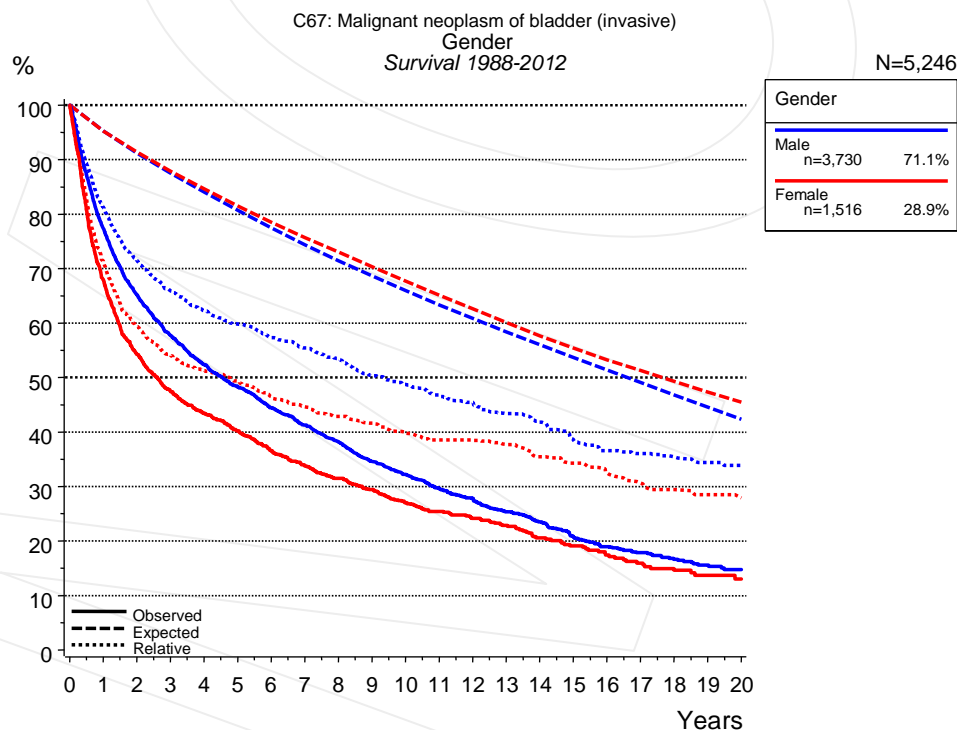


Figure 2a. Survival of patients with bladder cancer by gender. Included in the evaluation are 5,246 cases diagnosed between 1988 and 2012.

Years	Gender			
	Male n=3,730		Female n=1,516	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	77.4	81.3	67.9	71.3
2	65.1	71.4	54.2	59.3
3	57.7	65.9	47.5	54.0
4	52.4	62.3	43.4	51.3
5	48.3	59.8	40.2	49.3
6	44.4	57.3	36.6	46.5
7	41.3	55.4	33.8	44.6
8	38.2	53.4	31.5	42.9
9	34.6	50.4	29.4	41.6
10	32.2	48.7	27.0	39.8
11	29.6	46.7	25.4	38.5
12	27.8	45.5	24.1	38.5
13	25.4	43.4	22.8	37.7
14	23.5	41.8	20.5	35.4
15	20.7	38.5	19.1	34.3
16	19.0	36.6	17.4	32.5
17	17.8	36.1	15.9	30.6
18	16.6	35.4	14.6	29.4
19	15.6	34.4	13.7	28.5
20	14.7	33.9	13.1	27.9

Table 2b. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by gender for period 1988-2012 (N=5,246).

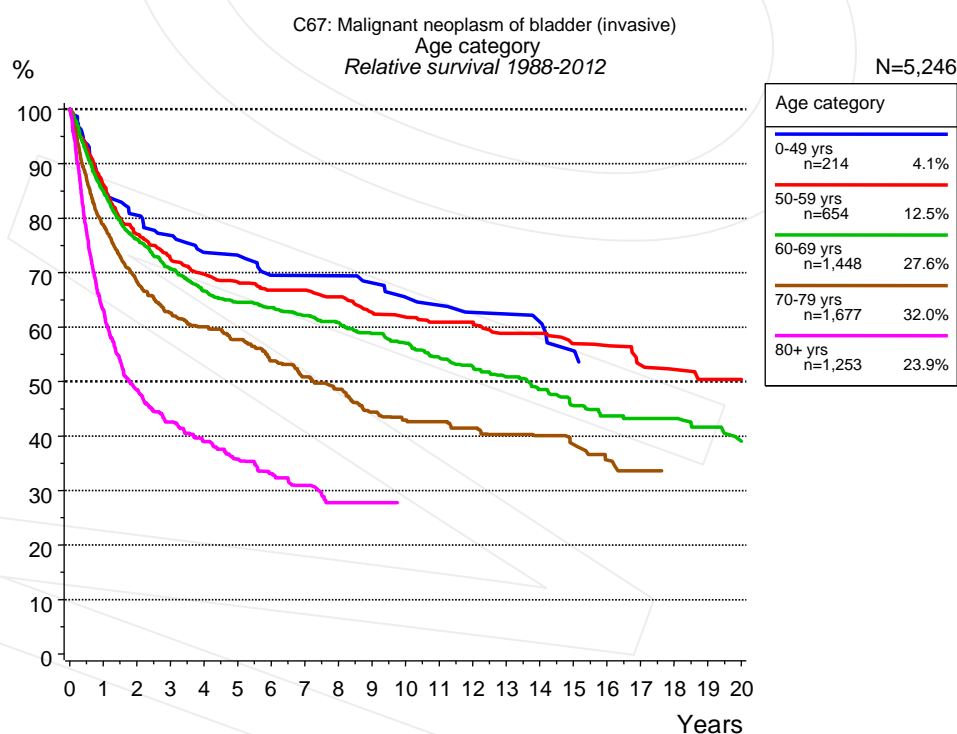


Figure 3a. Relative survival of patients with bladder cancer by age category. Included in the evaluation are 5,246 cases diagnosed between 1988 and 2012.

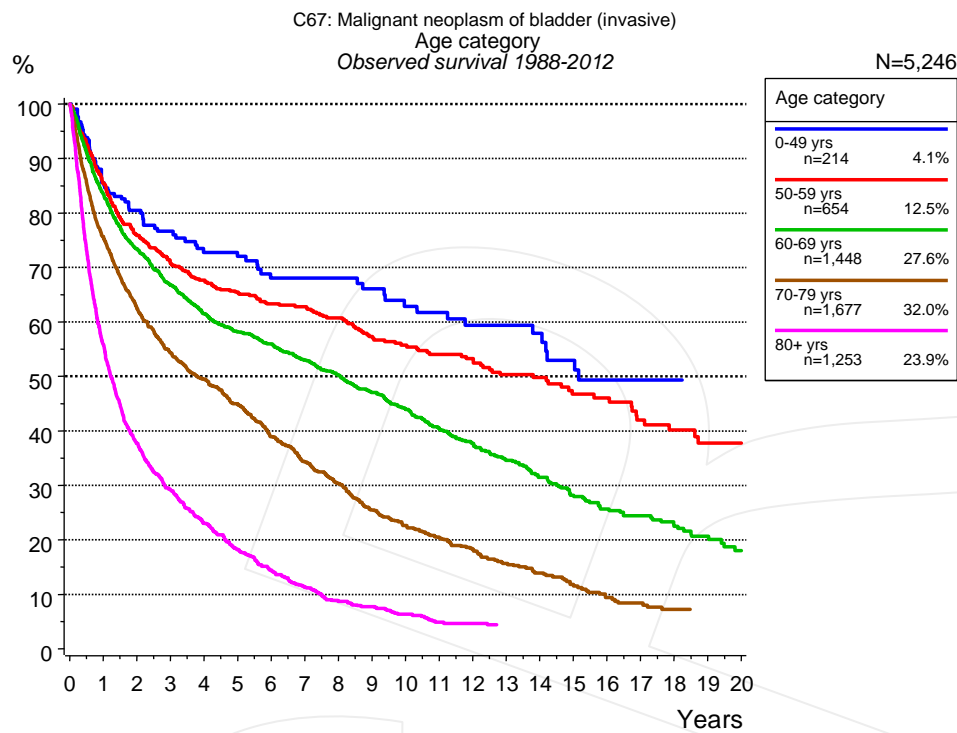


Figure 3b. Observed survival of patients with bladder cancer by age category. Included in the evaluation are 5,246 cases diagnosed between 1988 and 2012.

Years	Age category									
	0-49 yrs n=214		50-59 yrs n=654		60-69 yrs n=1,448		70-79 yrs n=1,677		80+ yrs n=1,253	
	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	85.5	85.4	85.4	86.0	83.5	85.0	75.4	78.7	55.8	63.3
2	80.5	80.6	75.9	77.1	73.4	76.1	62.4	68.3	37.7	48.5
3	76.6	76.8	70.7	72.4	66.7	70.7	54.3	62.5	29.2	42.6
4	72.8	73.7	67.7	69.7	61.5	66.6	49.5	60.1	23.0	39.0
5	72.0	73.2	65.5	68.2	58.1	64.5	44.9	57.7	18.2	35.7
6	68.0	69.5	63.3	66.8	55.9	63.6	38.9	53.8	14.4	33.1
7	68.0	69.5	62.8	66.8	52.9	62.1	34.3	50.8	11.3	30.9
8	68.0	69.5	60.7	65.5	50.2	60.8	30.4	48.6	8.7	27.8
9	66.1	68.1	57.3	62.7	47.0	58.9	25.5	44.4	7.7	27.8
10	62.8	65.5	55.7	61.8	43.9	57.0	22.6	42.9	6.3	27.8
11	61.7	64.0	54.0	60.9	40.4	54.4	20.3	42.6		
12	59.4	62.7	53.2	60.9	37.7	52.7	18.3	41.5		
13	59.4	62.4	50.3	58.8	34.6	50.9	15.6	40.3		
14	57.9	60.9	49.8	58.8	31.5	48.5	13.9	40.1		
15	53.0	55.7	46.7	56.9	28.2	45.5	11.5	38.4		
16			46.0	56.6	25.7	43.7	9.4	35.6		
17			42.0	53.0	24.4	43.2	8.4	33.6		
18			40.1	52.2	22.5	43.2				
19			37.8	50.4	20.7	41.6				
20			37.8	50.4	18.0	39.0				

Table 3c. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by age category for period 1988-2012 (N=5,246).

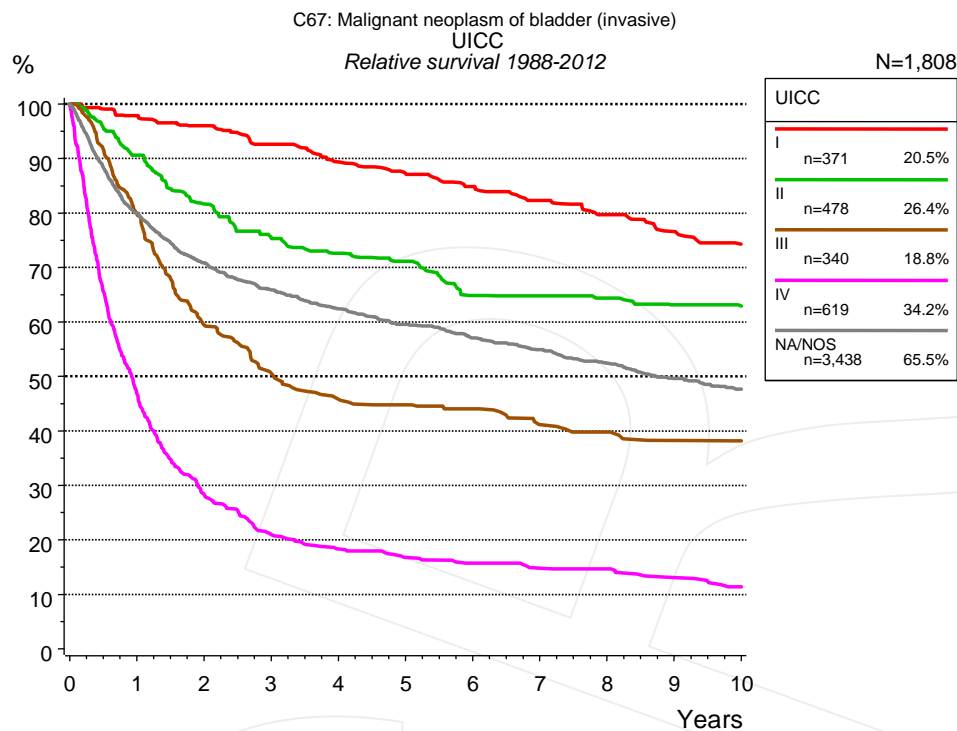


Figure 4a. Relative survival of patients with bladder cancer by UICC. For 4,820 of 5,246 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 1,808 cases an evaluable classification was established. The grey line represents the subgroup of 3,438 patients with missing values regarding UICC (65.5% of 5,246 patients, the percent values of all other categories are related to n=1,808).

		UICC									
		I n=371		II n=478		III n=340		IV n=619		NA/NOS n=3,438	
Years		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		94.8	97.9	88.0	90.6	77.8	79.9	45.4	46.9	75.5	80.0
2		90.0	96.0	76.6	81.6	56.6	59.4	26.5	28.3	63.7	70.8
3		84.0	92.6	68.8	75.4	47.2	50.6	19.0	20.9	56.6	65.9
4		78.2	89.3	64.1	72.6	41.6	45.8	16.2	18.3	51.3	62.4
5		73.7	87.2	60.9	71.1	39.8	44.8	14.3	16.8	47.0	59.6
6		69.3	84.8	53.4	64.8	38.0	44.0	13.0	15.7	43.1	57.1
7		65.0	82.3	51.9	64.8	33.9	41.1	12.0	14.8	39.7	54.9
8		60.6	79.7	49.6	64.3	32.3	39.8	11.7	14.7	36.4	52.4
9		56.2	76.6	46.8	63.1	30.0	38.2	9.9	13.1	33.1	49.6
10		52.2	74.3	45.1	62.9	28.7	38.2	8.4	11.4	30.5	47.7

Table 4b. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by UICC for period 1988-2012 (N=1,808).

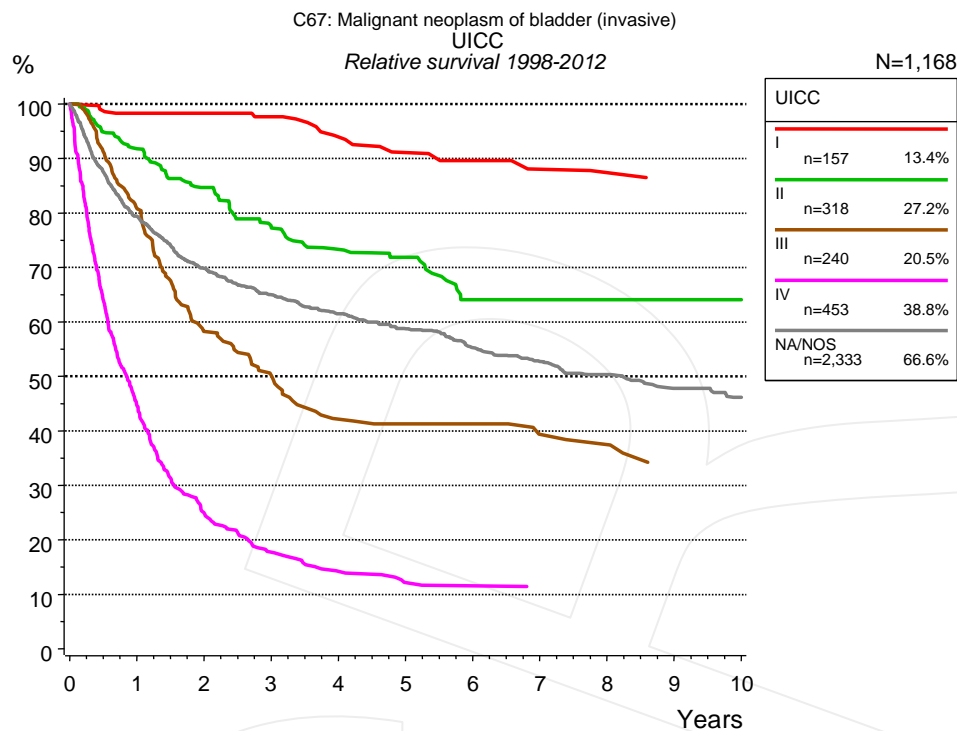


Figure 4c. Relative survival of patients with bladder cancer by UICC. For 3,269 of 3,501 cases diagnosed between 1998 and 2012 valid data could be obtained for this item. For a total of 1,168 cases an evaluable classification was established. The grey line represents the subgroup of 2,333 patients with missing values regarding UICC (66.6% of 3,501 patients, the percent values of all other categories are related to n=1,168).

		UICC									
		I n=157		II n=318		III n=240		IV n=453		NA/NOS n=2,333	
Years		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		96.7	98.3	89.6	91.8	78.6	80.7	43.4	44.7	74.9	79.4
2		94.6	98.3	80.2	84.7	55.4	58.2	23.5	24.9	62.9	69.8
3		91.3	97.7	71.5	77.4	47.0	50.1	16.4	17.7	56.0	65.0
4		85.4	93.9	65.7	73.3	38.2	42.1	12.7	14.2	50.9	61.5
5		80.8	91.1	62.7	71.9	36.7	41.3	10.5	12.1	46.7	58.7
6		77.9	89.6	54.1	64.1	36.7	41.3	10.0	11.6	42.1	55.2
7		74.1	88.1	53.1	64.1	32.4	39.3	9.4	11.1	38.5	52.7
8		71.9	87.4	51.8	64.1	31.2	37.5			35.6	50.3
9		69.0	86.2	49.9	64.1	26.9	34.1			32.3	47.8
10		69.0	85.4	49.9	64.1	26.9	33.7			30.0	46.2

Table 4d. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by UICC for period 1998-2012 (N=1,168).

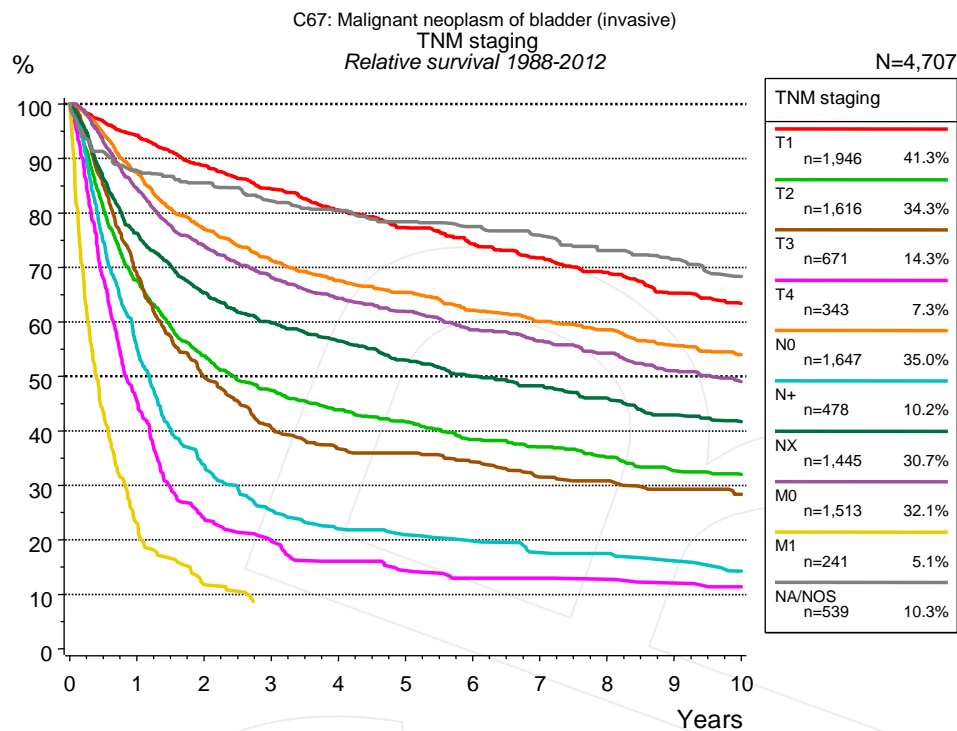


Figure 4e. Relative survival of patients with bladder cancer by TNM staging. For 4,820 of 5,246 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 4,707 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 539 patients with missing values regarding TNM staging (10.3% of 5,246 patients, the percent values of all other categories are related to n=4,707).

TNM staging															
Years	T1 n=1,946		T2 n=1,616		T3 n=671		T4 n=343		N0 n=1,647		N+ n=478		NX n=1,445		
	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	89.9	94.3	63.9	67.6	66.5	68.9	43.7	45.5	84.5	87.5	53.6	55.2	71.7	76.3	
2	81.0	88.7	48.3	53.7	46.8	49.8	22.2	23.9	71.9	77.0	31.7	33.7	58.1	65.3	
3	73.9	84.4	40.8	47.4	37.0	40.5	17.6	19.7	64.4	71.3	23.3	25.4	50.6	59.8	
4	67.7	80.5	36.2	43.9	32.5	36.7	14.0	16.1	59.1	67.6	19.6	22.0	45.5	56.5	
5	62.3	77.3	32.9	41.7	31.1	35.9	12.1	14.4	55.2	65.4	18.0	20.9	40.7	53.0	
6	57.5	74.3	29.1	38.4	28.5	34.3	10.6	12.9	50.6	62.1	16.6	19.8	36.7	50.0	
7	53.4	71.8	26.8	37.0	25.3	31.5	10.6	12.9	47.2	60.1	14.4	17.7	33.8	48.3	
8	49.3	69.1	24.4	35.2	24.3	30.8	10.1	12.8	44.5	58.5	14.1	17.5	30.8	46.0	
9	44.9	65.3	21.8	32.7	22.3	29.3	9.2	12.1	40.8	55.7	12.4	16.1	27.6	42.9	
10	41.7	63.4	20.6	32.0	20.7	28.3	8.2	11.4	38.0	53.9	10.6	14.3	25.6	41.7	

cont'd	TNM staging					
	M0		M1		NA/NOS	
	n=1,513		n=241		n=539	
Years	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	81.1	84.5	22.5	23.0	83.9	87.7
2	68.2	73.9	10.8	11.7	79.1	85.5
3	60.6	68.1			72.8	82.2
4	55.2	64.3			68.6	80.5
5	51.1	61.9			64.8	78.4
6	46.6	58.6			61.5	77.5
7	43.2	56.5			57.7	75.9
8	40.2	54.3			53.8	73.1
9	36.3	51.0			50.4	71.5
10	33.5	49.0			46.5	68.4

Table 4f. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by TNM staging for period 1988-2012 (N=9,900).

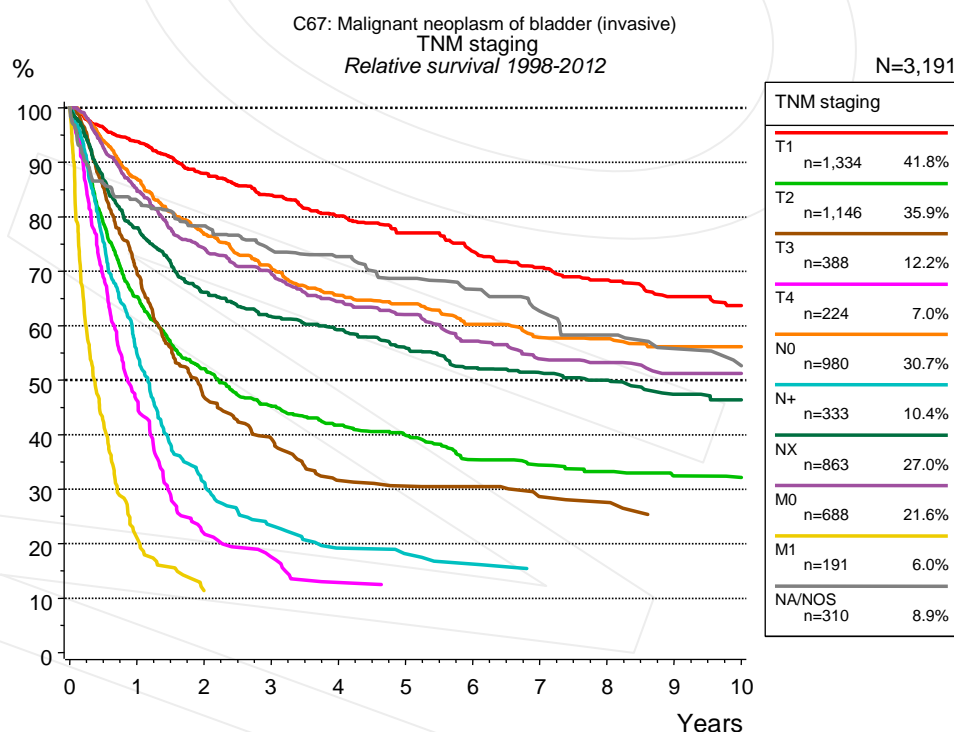


Figure 4g. Relative survival of patients with bladder cancer by TNM staging. For 3,269 of 3,501 cases diagnosed between 1998 and 2012 valid data could be obtained for this item. For a total of 3,191 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 310 patients with missing values regarding TNM staging (8.9% of 3,501 patients, the percent values of all other categories are related to n=3,191).

Years	TNM staging													
	T1 n=1,334		T2 n=1,146		T3 n=388		T4 n=224		N0 n=980		N+ n=333		NX n=863	
	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	89.7	93.8	61.8	65.4	67.6	69.7	44.6	46.3	84.4	87.0	53.6	54.9	73.7	78.0
2	80.7	88.0	47.0	52.1	44.3	46.8	20.7	21.9	72.3	76.8	29.8	31.3	59.4	66.1
3	74.1	84.0	39.3	45.3	36.4	39.2	15.9	17.6	64.6	70.6	21.7	23.3	53.0	61.7
4	68.1	80.2	34.9	41.8	28.3	31.6	11.4	12.9	58.2	65.6	17.2	19.2	48.8	59.3
5	63.1	77.0	32.2	39.9	26.8	30.6			55.1	64.0	15.8	18.2	44.2	55.9
6	58.0	73.6	27.5	35.4	26.2	30.5			50.3	60.2	14.4	16.3	39.6	52.3
7	53.6	70.7	25.7	34.5	23.3	28.6			46.6	57.8	12.8	14.9	37.2	51.4
8	50.0	68.4	24.1	33.2	22.5	27.6			45.3	57.6			35.0	50.0
9	45.9	65.4	22.4	32.4	19.7	25.2			42.4	56.1			31.4	47.4
10	43.2	63.7	21.8	32.2	19.7	24.6			41.8	56.1			30.0	46.4

Years	TNM staging					
	M0 n=688		M1 n=191		NA/NOS n=310	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	82.0	84.9	21.0	21.0	79.1	83.0
2	69.4	74.2	10.6	11.4	71.7	78.4
3	62.9	69.6			64.9	73.9
4	56.3	64.5			61.2	72.7
5	52.4	62.1			56.1	68.7
6	47.0	57.2			52.2	66.7
7	42.7	53.9			46.9	62.7
8	41.2	53.3			43.2	58.3
9	38.2	51.3			39.5	55.8
10	37.6	51.3			36.5	52.6

Table 4h. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by TNM staging for period 1998-2012 (N=6,147).

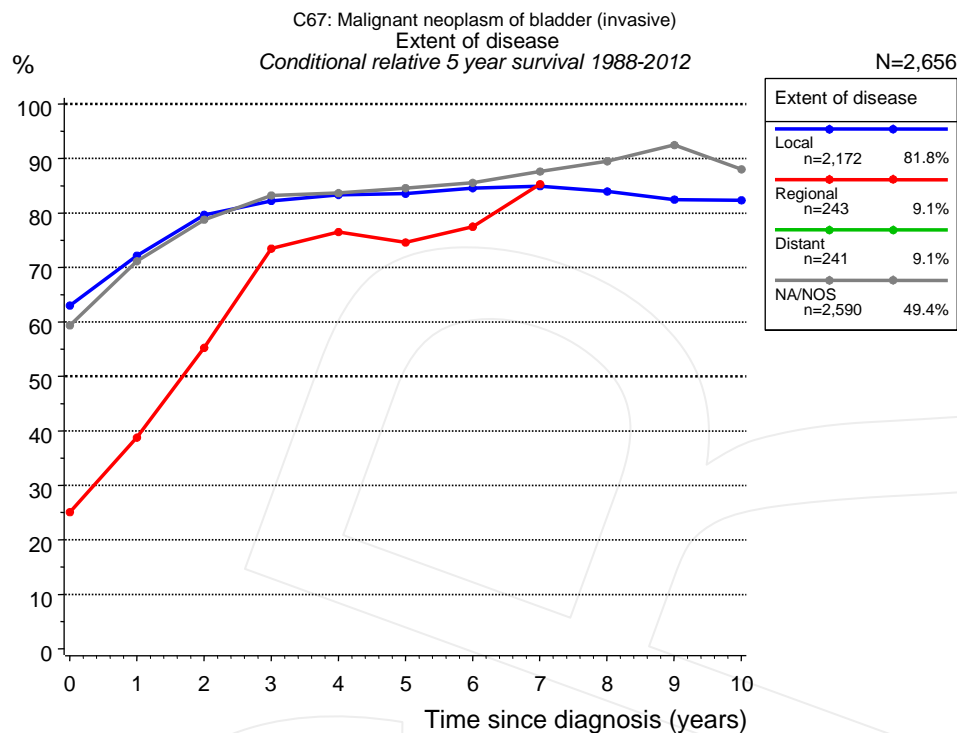


Figure 4i. Conditional relative 5-year survival of patients with bladder cancer by extent of disease. For 4,820 of 5,246 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 2,656 cases an evaluable classification was established. The grey line represents the subgroup of 2,590 patients with missing values regarding extent of disease (49.4% of 5,246 patients, the percent values of all other categories are related to n=2,656).

Years	Extent of disease							
	Local		Regional		Distant		NA/NOS	
	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs	n	Cond. surv. % 5 yrs
0	2,172	63.0	243	25.1	241		2,590	59.4
1	1,628	72.2	132	38.8			1,902	71.2
2	1,279	79.7	73	55.2			1,500	78.8
3	1,046	82.2	51	73.5			1,239	83.2
4	861	83.3	40	76.5			1,061	83.7
5	717	83.5	36	74.6			890	84.6
6	587	84.5	31	77.5			751	85.5
7	504	84.9	26	85.3			650	87.6
8	431	84.0					549	89.5
9	359	82.5					462	92.5
10	312	82.3					383	88.0

Table 4j. Conditional relative 5-year survival of patients with bladder cancer by extent of disease for period 1988-2012 (N=2,656).

Conditional relative survival rates refer to the relative survival probability, in this case for 5 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 4g). 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 extent of disease="Local", who are alive at least 3 years after cancer diagnosis, the conditional relative 5-year survival rate is 82.2% (n=1,046).

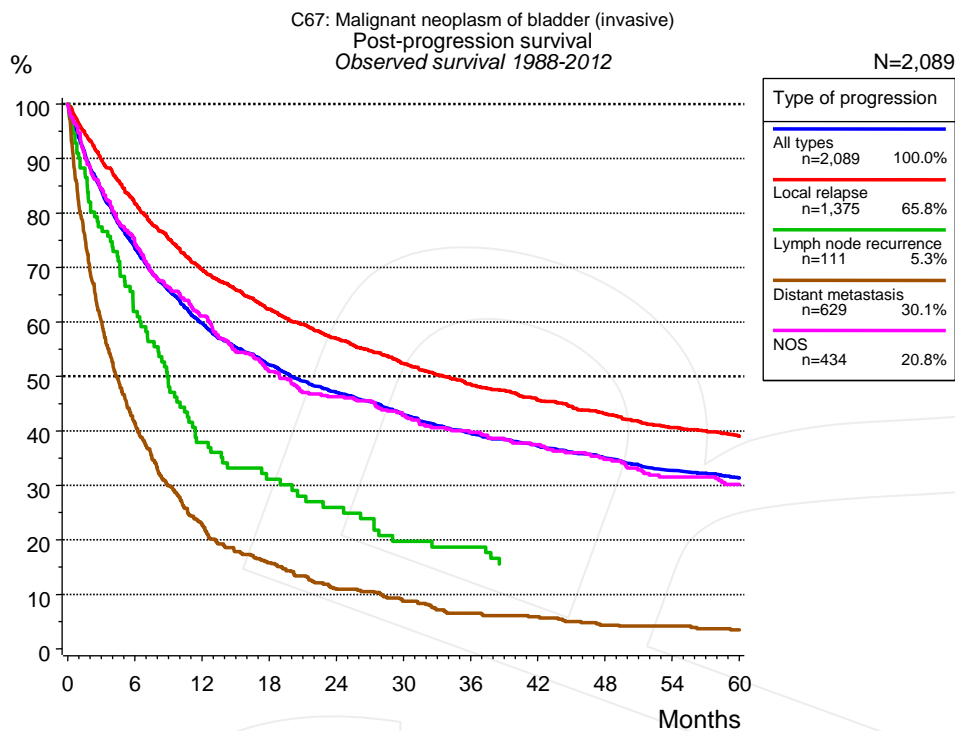


Figure 5a. Observed post-progression survival of 2,089 patients with bladder cancer diagnosed between 1988 and 2012 (incl. M1). These 2,089 patients with documented progression events during their course of disease represent 39.8% of the totally 5,246 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=544, 10.4%). 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 “All types” 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.

Months	Type of progression				
	All types n=2,089	Local relapse n=1,375	Lymph node recurrence n=111	Distant metastasis n=629	NOS n=434
	%	%	%	%	%
0	100.0	100.0	100.0	100.0	100.0
12	59.7	69.6	37.9	22.6	61.1
24	47.0	57.0	26.0	10.9	46.3
36	39.5	48.5	18.7	6.5	39.8
48	35.0	43.1		4.4	34.8
60	31.3	39.0		3.5	30.2

Table 5b. Observed post-progression survival of patients with bladder cancer for period 1988-2012 (N=2,089).

Shortcuts

AS	Assembled survival chart (observed, expected, relative)
CS	Conditional survival
DCO	Death certificate only. The death certificate provides the only notification to the registry.
MCR	Munich Cancer Registry, Germany (Tumorregister München)
NA	Not available
NCI	National Cancer Institute, USA
NOS	Not otherwise specified
OS	Observed/overall survival (Kaplan-Meier estimate)
PPS	Post-progression survival
RS	Relative Survival. Ratio of observed and expected survival (derived from the normal population)
SEER	Surveillance, Epidemiology, and End Results, USA
TTP	Time to progression Date of entry: Date of diagnosis Event (Progression): First local recurrence, lymph node relapse or distant metastasis, unspecified recurrence First all-cause recurrence is illustrated by survival curves (Kaplan-Meier estimate). First local recurrence, lymph node relapse or distant metastasis are depicted cumulatively, where applicable ("reverse" Kaplan-Meier estimate).
UICC	Union for International Cancer Control, Geneva

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Index of figures and tables

Fig./Tbl.		Page
1a	Relative survival by period of diagnosis (chart)	2
1b	Survival by period of diagnosis (table)	3
2a	Survival by gender (chart)	3
2b	Survival by gender (table)	4
3a	Relative survival by age category (chart)	4
3b	Observed survival by age category (chart)	5
3c	Survival by age category (table)	5
4a	Relative survival by UICC 1988+ (chart)	6
4b	Survival by UICC 1988+ (table)	6
4c	Relative survival by UICC 1998+ (chart)	7
4d	Survival by UICC 1998+ (table)	7
4e	Relative survival by TNM staging 1988+ (chart)	8
4f	Survival by TNM staging 1988+ (table)	8
4g	Relative survival by TNM staging 1998+ (chart)	9
4h	Survival by TNM staging 1998+ (table)	10
4i	Conditional survival by extent of disease (chart)	11
4j	Conditional survival by extent of disease (table)	11
5a	Observed post-progression survival (chart)	12
5b	Observed post-progression survival (table)	12