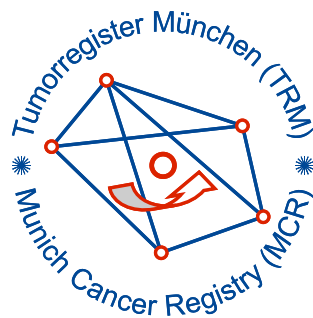


Munich Cancer Registry



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

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

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

Cancer statistics: Survival

C67, D09.0, D41.4: Bladder cancer

Year of diagnosis	1978-1987	1988-1997	1998-2011
Patients	872	4,161	13,213
Diseases	872	4,161	13,363
Creation date	04/01/2013		
Export date	01/03/2013		
Population	4.5 m		



http://www.tumorregister-muenchen.de/en/facts/surv/surv_C67D_E.pdf

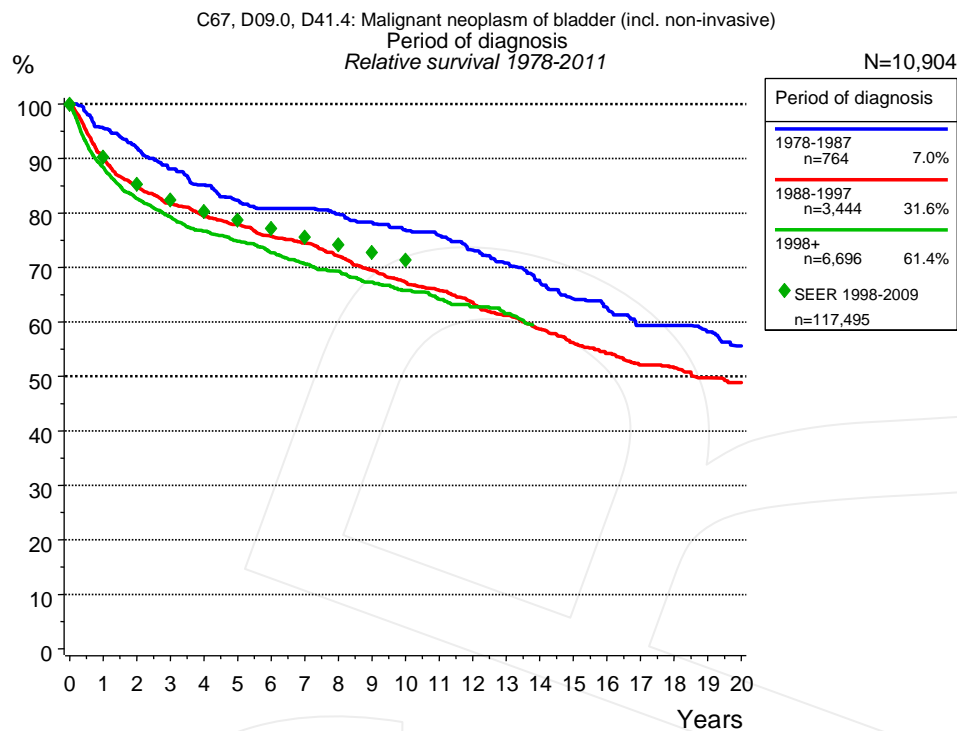


Figure 1a. Relative survival of patients with bladder cancer by period of diagnosis. Included in the evaluation are 10,904 cases diagnosed between 1978 and 2011.

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					
	1978-1987 n=764		1988-1997 n=3,444		1998+ n=6,696	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	92.1	95.6	86.0	90.1	84.7	88.4
2	85.3	91.9	77.3	84.8	76.2	82.6
3	78.9	88.1	71.4	81.6	70.3	79.3
4	73.4	85.1	66.6	79.4	65.5	76.6
5	68.4	82.3	62.8	77.9	61.7	74.8
6	64.8	80.8	58.5	75.7	57.7	72.7
7	62.7	80.8	55.4	74.4	54.0	70.7
8	59.0	79.8	51.5	72.0	51.1	69.3
9	55.5	78.3	47.8	69.5	47.7	67.3
10	52.3	76.9	44.4	67.2	45.0	65.8
11	49.7	75.8	41.9	65.8	42.1	64.2
12	46.0	73.2	39.0	63.6	39.7	62.8
13	42.8	70.8	36.1	61.2	37.3	61.6
14	39.1	67.3	33.2	58.6		
15	35.7	64.2	30.6	56.1		
16	33.5	62.7	28.4	54.2		
17	30.5	59.4	26.2	52.1		
18	29.6	59.4	24.9	51.6		
19	27.5	58.2	23.2	49.7		
20	25.3	55.6	21.7	48.8		

Table 1b. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by period of diagnosis for period 1978-2011 (N=10,904).

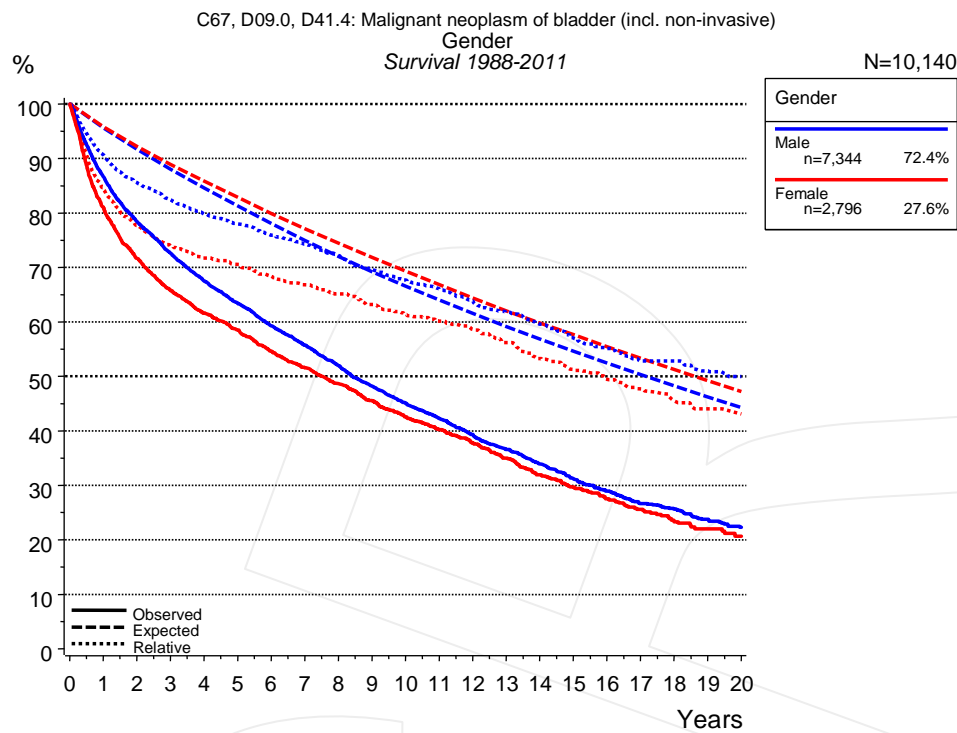


Figure 2a. Survival of patients with bladder cancer by gender. Included in the evaluation are 10,140 cases diagnosed between 1988 and 2011.

Years	Gender			
	Male n=7,344		Female n=2,796	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	86.7	90.7	81.0	84.6
2	78.4	85.5	71.7	77.7
3	72.6	82.4	65.7	73.9
4	67.5	79.8	61.6	71.7
5	63.4	78.0	58.5	70.5
6	59.3	75.9	54.6	68.3
7	55.7	74.3	51.5	66.7
8	52.0	72.2	48.6	65.1
9	48.2	69.6	45.5	63.2
10	45.0	67.6	42.6	61.4
11	42.3	66.0	40.2	60.1
12	39.3	63.8	37.8	58.6
13	36.6	61.8	35.0	56.2
14	33.9	59.6	32.0	53.2
15	31.2	57.0	29.7	51.3
16	29.0	55.1	27.5	49.5
17	26.6	52.8	25.6	47.7
18	25.7	52.8	23.3	45.5
19	23.8	51.0	22.0	44.1
20	22.3	50.0	20.7	43.1

Table 2b. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by gender for period 1988-2011 (N=10,140).

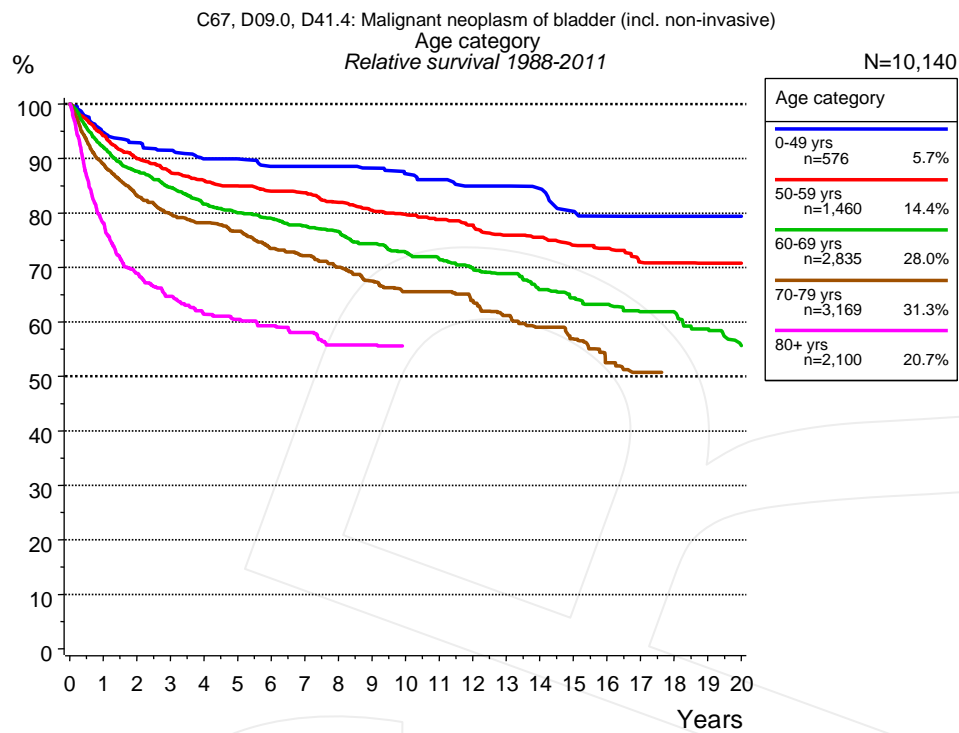


Figure 3a. Relative survival of patients with bladder cancer by age category. Included in the evaluation are 10,140 cases diagnosed between 1988 and 2011.

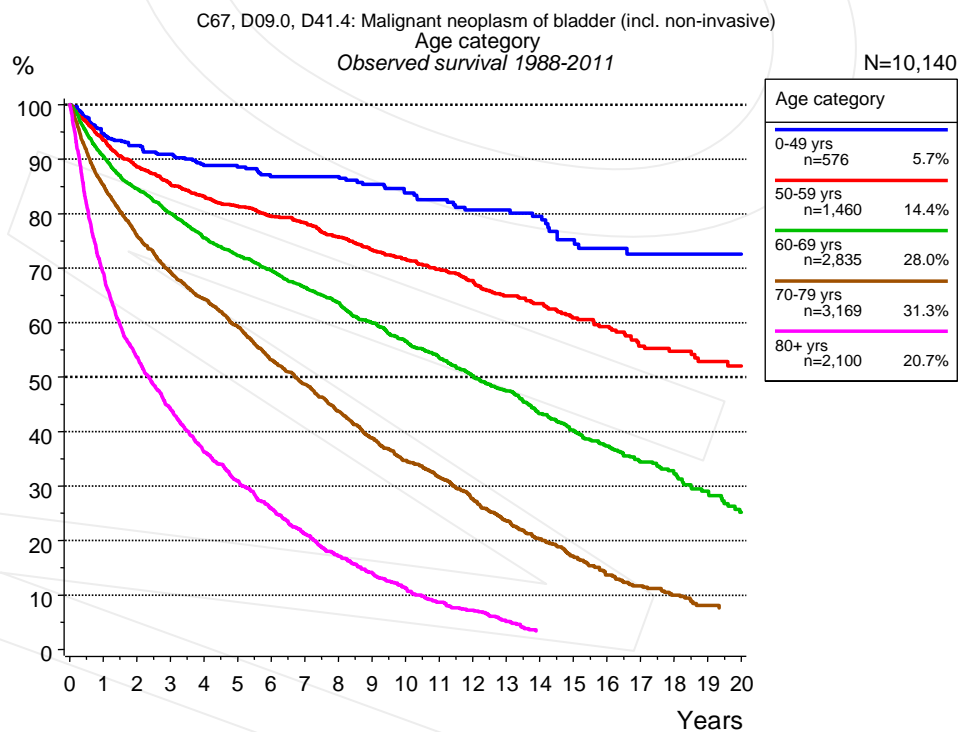


Figure 3b. Observed survival of patients with bladder cancer by age category. Included in the evaluation are 10,140 cases diagnosed between 1988 and 2011.

Years	Age category									
	0-49 yrs n=576		50-59 yrs n=1,460		60-69 yrs n=2,835		70-79 yrs n=3,169		80+ yrs n=2,100	
	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	94.7	94.8	93.5	94.2	90.5	92.1	85.2	89.0	69.1	78.2
2	92.5	92.9	88.5	89.9	84.6	87.7	75.9	83.2	53.6	68.9
3	90.9	91.5	85.3	87.4	80.0	84.6	69.2	79.8	44.1	64.7
4	88.8	89.9	83.2	85.9	75.5	81.7	64.4	78.2	36.2	61.4
5	88.6	89.9	81.4	85.0	72.3	80.0	59.3	76.6	30.9	60.5
6	86.8	88.6	79.5	84.0	69.5	79.0	53.2	73.5	25.9	59.3
7	86.8	88.6	78.3	83.7	66.4	77.6	48.6	72.2	21.2	58.1
8	86.8	88.6	75.8	81.9	63.7	76.6	43.7	70.0	17.1	55.8
9	85.4	88.2	73.4	80.5	60.0	74.4	38.7	67.5	14.1	55.8
10	83.8	87.2	71.6	79.8	56.5	72.8	34.7	65.5		
11	82.5	86.1	69.8	78.8	53.6	71.5	31.6	65.5		
12	80.7	84.9	67.7	77.7	50.3	69.9	27.7	63.9		
13	80.7	84.9	64.9	75.9	47.4	68.9	23.6	61.2		
14	79.5	84.5	63.5	75.5	43.3	66.0	20.3	59.0		
15	75.2	80.3	60.8	74.1	40.3	64.4	17.0	56.9		
16	73.6	79.4	59.3	73.5	37.4	63.3	13.6	52.5		
17	72.6	79.4	55.7	70.9	34.4	61.9	11.7	50.8		
18	72.6	79.4	54.7	70.8	32.2	61.8				
19	72.6	79.4	52.9	70.7	29.1	58.7				
20	72.6	79.4	52.0	70.7	25.2	55.6				

Table 3c. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by age category for period 1988-2011 (N=10,140).

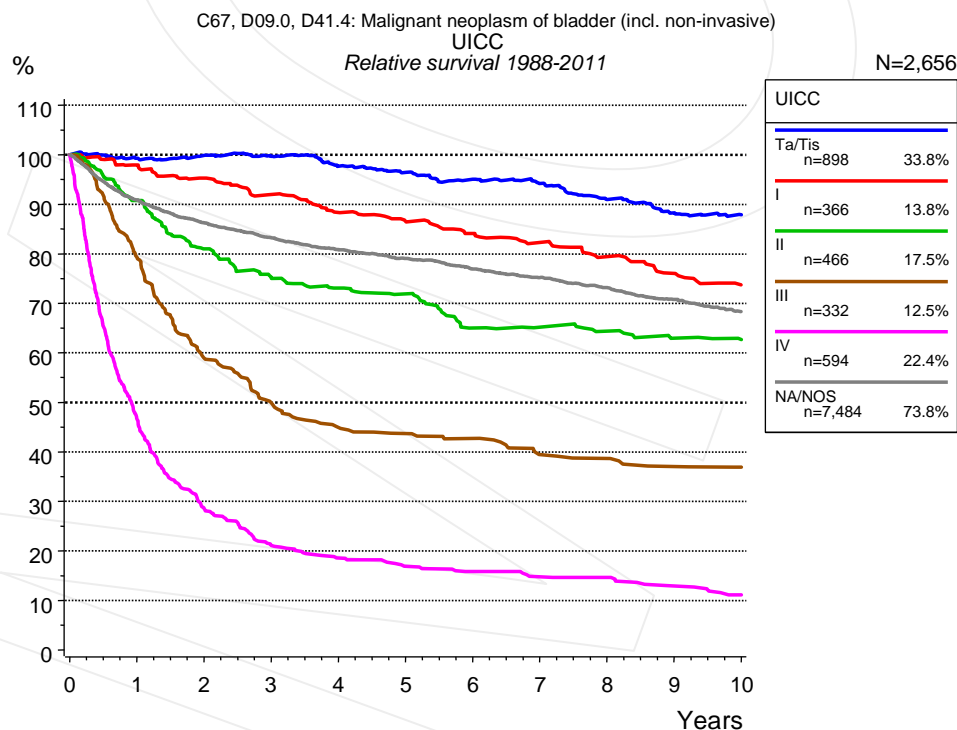


Figure 4a. Relative survival of patients with bladder cancer by UICC. For 9,675 of 10,140 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 2,656 cases an evaluable classification was established. The grey line represents the subgroup of 7,484 patients with missing values regarding UICC (73.8% of 10,140 patients, the percent values of all other categories are related to n=2,656).

Years	UICC											
	Ta/Tis n=898		I n=366		II n=466		III n=332		IV n=594		NA/NOS n=7,484	
	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
1	95.4	99.3	94.7	97.9	88.1	90.8	77.2	79.3	45.2	46.7	86.7	90.9
2	92.2	99.8	89.0	95.3	76.1	81.0	56.1	58.9	26.7	28.5	78.8	86.2
3	88.4	99.7	83.0	92.0	68.5	75.1	46.5	49.9	19.2	21.1	73.0	83.2
4	83.2	97.6	77.2	88.3	64.5	73.0	40.7	45.0	16.4	18.6	68.1	80.8
5	79.1	96.4	73.0	86.6	61.5	71.9	38.6	43.7	14.4	16.9	64.0	79.1
6	74.8	95.0	68.6	84.1	53.7	65.0	36.7	42.7	13.0	15.8	59.9	76.9
7	71.3	94.2	64.7	82.3	52.0	65.2	32.5	39.5	11.9	14.8	56.2	75.2
8	66.2	90.9	60.2	79.4	49.7	64.3	31.4	38.7	11.6	14.6	52.6	73.2
9	62.0	88.2	55.8	76.1	46.8	62.9	29.0	37.1	9.8	12.9	48.9	70.8
10	59.4	87.9	51.6	73.7	45.1	62.6	27.7	37.0	8.1	11.1	45.4	68.3

Table 4b. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by UICC for period 1988-2011 (N=2,656).

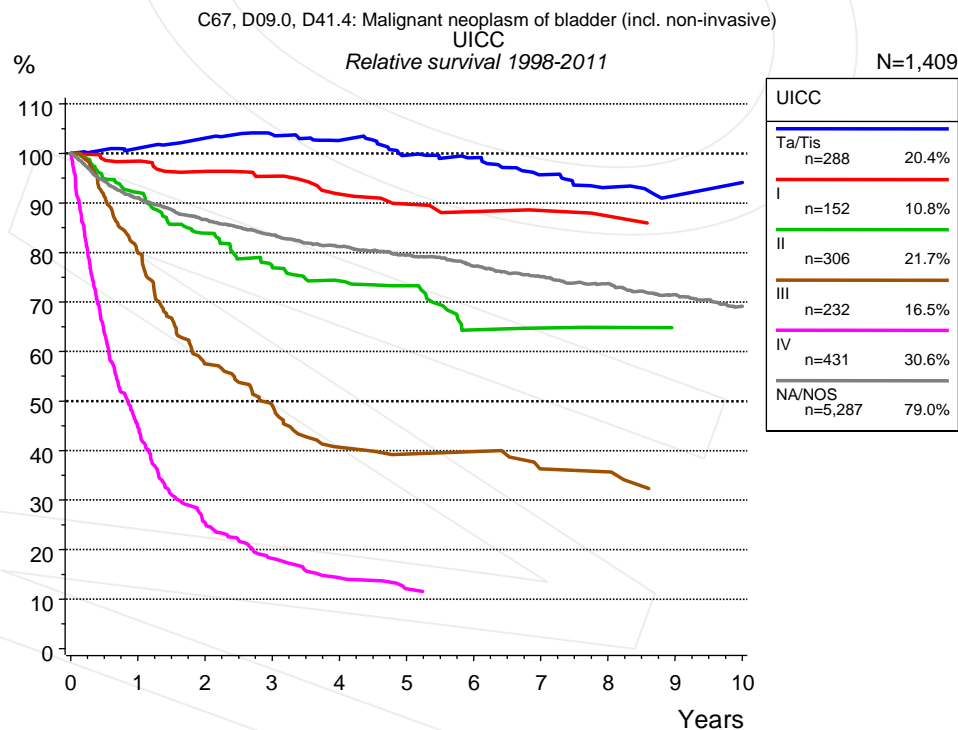


Figure 4c. Relative survival of patients with bladder cancer by UICC. For 6,427 of 6,696 cases diagnosed between 1998 and 2011 valid data could be obtained for this item. For a total of 1,409 cases an evaluable classification was established. The grey line represents the subgroup of 5,287 patients with missing values regarding UICC (79.0% of 6,696 patients, the percent values of all other categories are related to n=1,409).

Years	UICC											
	Ta/Tis n=288		I n=152		II n=306		III n=232		IV n=431		NA/NOS n=5,287	
	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
1	97.9	101.0	96.6	98.4	89.9	92.1	77.8	79.9	43.5	44.7	86.9	91.0
2	96.8	103.1	92.3	96.3	79.5	83.9	54.6	57.4	24.0	25.4	79.3	86.6
3	93.9	103.8	89.0	95.4	71.1	77.1	45.9	49.0	16.8	18.2	73.6	83.5
4	89.4	102.6	83.0	91.8	66.6	74.3	36.8	40.6	12.8	14.3	68.8	81.2
5	83.8	99.7	79.4	89.7	64.0	73.2	34.4	39.2	10.4	12.1	64.9	79.4
6	80.3	99.1	76.4	88.2	54.3	64.4	34.4	39.8	9.9	11.4	60.6	77.2
7	74.4	95.7	74.3	88.4	53.2	64.7	29.7	36.3			56.7	75.1
8	69.8	93.2	71.8	87.3	51.8	64.8	29.7	35.7			53.5	73.7
9	65.9	91.5	68.5	85.2	49.7	64.7					49.9	71.4
10	65.9	94.1	68.5	83.6	49.7	63.9					46.5	69.1

Table 4d. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by UICC for period 1998-2011 (N=1,409).

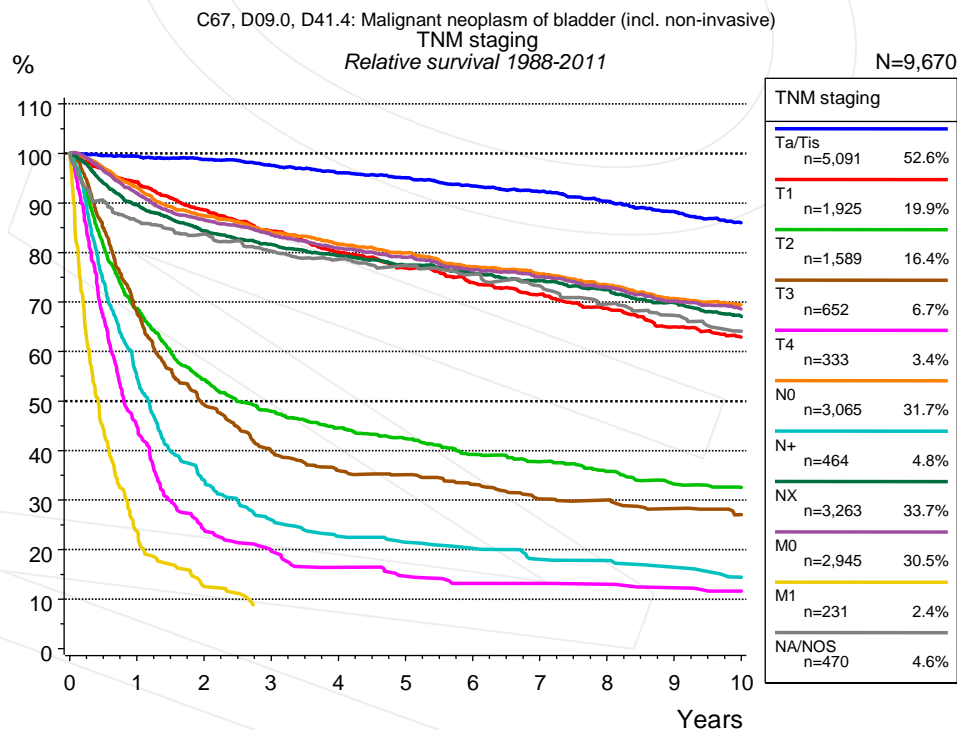


Figure 4e. Relative survival of patients with bladder cancer by TNM staging. For 9,675 of 10,140 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 9,670 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 470 patients with missing values regarding TNM staging (4.6% of 10,140 patients, the percent values of all other categories are related to n=9,670).

Years	TNM staging													
	Ta/Tis n=5,091		T1 n=1,925		T2 n=1,589		T3 n=652		T4 n=333		N0 n=3,065		N+ n=464	
	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	95.5	99.4	89.8	94.2	64.9	68.7	65.6	68.0	43.1	44.9	89.7	93.2	53.3	54.8
2	91.3	98.8	80.8	88.5	48.8	54.3	46.2	49.2	22.3	24.0	81.1	87.4	32.0	34.0
3	86.8	97.6	73.7	84.3	41.2	47.9	36.3	39.9	17.6	19.7	75.3	84.1	23.8	26.0
4	82.3	96.1	67.1	80.1	36.7	44.6	31.8	35.9	14.3	16.4	70.5	81.7	20.1	22.7
5	78.4	95.1	61.8	76.8	33.5	42.4	30.1	35.1	12.4	14.6	66.4	79.9	18.4	21.5
6	74.0	93.4	57.1	73.9	29.7	39.2	27.5	33.2	10.8	13.2	61.7	77.1	17.0	20.2
7	70.4	92.3	53.0	71.5	27.3	37.7	24.2	30.2	10.8	13.2	58.2	75.6	14.7	18.0
8	66.3	90.3	48.9	68.7	24.9	35.8	23.5	30.0	10.3	13.0	54.4	73.4	14.3	17.8
9	62.3	88.2	44.5	65.0	22.2	33.2	21.4	28.3	9.3	12.3	50.5	70.7	12.6	16.4
10	58.4	85.9	41.3	62.9	20.9	32.5	19.7	27.1	8.3	11.6	47.7	69.4	10.7	14.4

cont'd Years	TNM staging							
	NX n=3,263		M0 n=2,945		M1 n=231		NA/NOS n=470	
	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	85.3	89.6	88.3	92.0	23.1	23.7	82.6	86.4
2	76.8	84.3	80.0	86.6	11.5	12.5	77.0	83.7
3	71.2	81.6	74.2	83.5			71.1	80.2
4	66.4	79.3	69.2	80.8			67.0	78.6
5	62.2	77.5	65.1	79.0			63.8	77.4
6	58.5	75.8	60.6	76.5			60.0	75.6
7	55.1	74.3	57.2	75.0			55.8	73.2
8	51.6	72.5	53.5	72.9			51.2	69.6
9	47.7	69.8	49.6	70.2			47.6	67.3
10	44.1	67.0	46.7	68.6			43.8	64.1

Table 4f. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by TNM staging for period 1988-2011 (N=19,558).

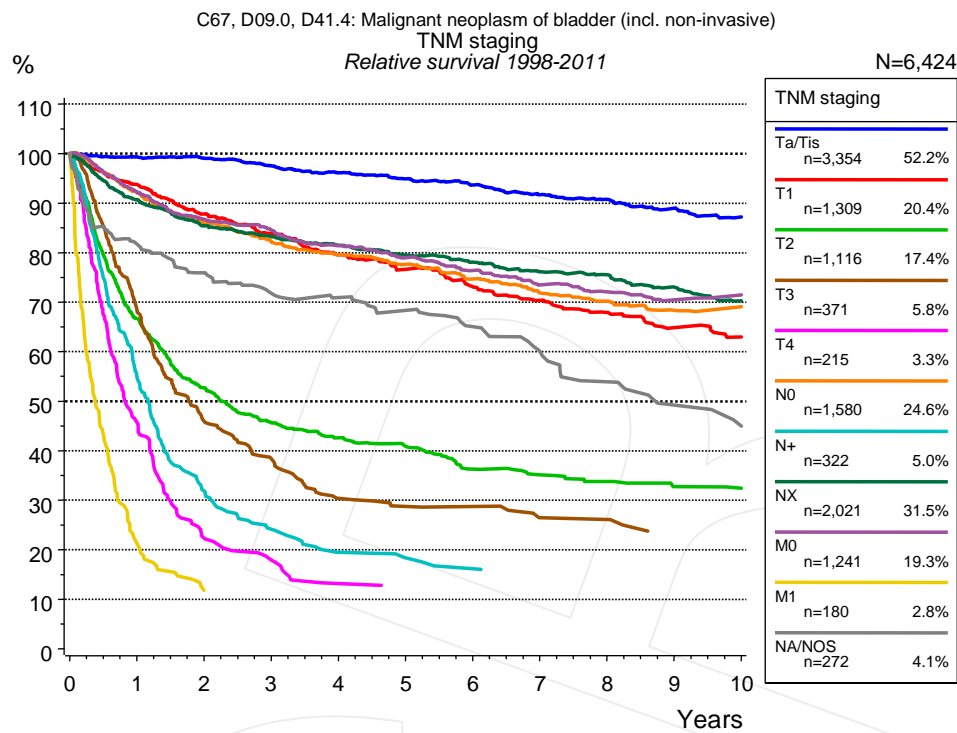


Figure 4g. Relative survival of patients with bladder cancer by TNM staging. For 6,427 of 6,696 cases diagnosed between 1998 and 2011 valid data could be obtained for this item. For a total of 6,424 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 272 patients with missing values regarding TNM staging (4.1% of 6,696 patients, the percent values of all other categories are related to n=6,424).

		TNM staging													
		Ta/Tis n=3,354		T1 n=1,309		T2 n=1,116		T3 n=371		T4 n=215		N0 n=1,580		N+ n=322	
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		95.6	99.3	89.6	93.7	63.2	66.7	66.2	68.3	44.1	45.7	89.2	92.2	53.5	54.8
2		91.9	99.0	80.5	87.8	47.6	52.7	43.4	45.9	21.2	22.4	80.7	86.0	30.4	31.9
3		87.2	97.5	73.9	83.9	39.7	45.7	35.6	38.4	16.2	17.9	74.7	82.2	22.5	24.1
4		82.9	96.1	67.4	79.6	35.6	42.6	27.1	30.4	11.6	13.1	69.9	79.6	17.5	19.5
5		78.9	94.9	62.4	76.6	33.0	40.9	25.1	28.7			65.9	77.6	16.0	18.3
6		75.0	93.7	57.3	73.1	28.2	36.3	24.5	28.7			61.1	74.7	14.4	16.2
7		70.6	91.7	53.1	70.4	26.3	35.1	21.4	26.5			56.7	71.8		
8		67.3	90.8	49.4	67.9	24.6	33.8	21.4	26.1			53.5	70.2		
9		63.5	89.0	45.2	64.9	22.8	32.7					50.2	68.3		
10		60.0	87.2	42.5	63.0	22.1	32.4					49.0	69.0		

cont'd Years	TNM staging							
	NX n=2,021		M0 n=1,241		M1 n=180		NA/NOS n=272	
	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	86.6	90.7	89.1	92.2	21.2	21.2	77.9	81.7
2	78.3	85.4	81.1	86.7	10.9	11.8	69.6	75.9
3	73.3	83.2	76.4	84.5			63.3	71.8
4	69.0	81.5	71.1	81.4			60.0	70.9
5	64.8	79.5	66.6	78.9			56.0	68.3
6	61.3	78.1	62.2	76.4			51.4	65.0
7	57.4	76.1	57.8	73.5			45.5	60.0
8	54.8	75.5	54.8	72.0			40.1	53.9
9	51.0	73.0	51.8	70.5			35.3	49.2
10	47.3	70.3	50.5	71.4			31.8	45.0

Table 4h. Observed (obs.) and relative (rel.) survival of patients with bladder cancer by TNM staging for period 1998-2011 (N=11,709).

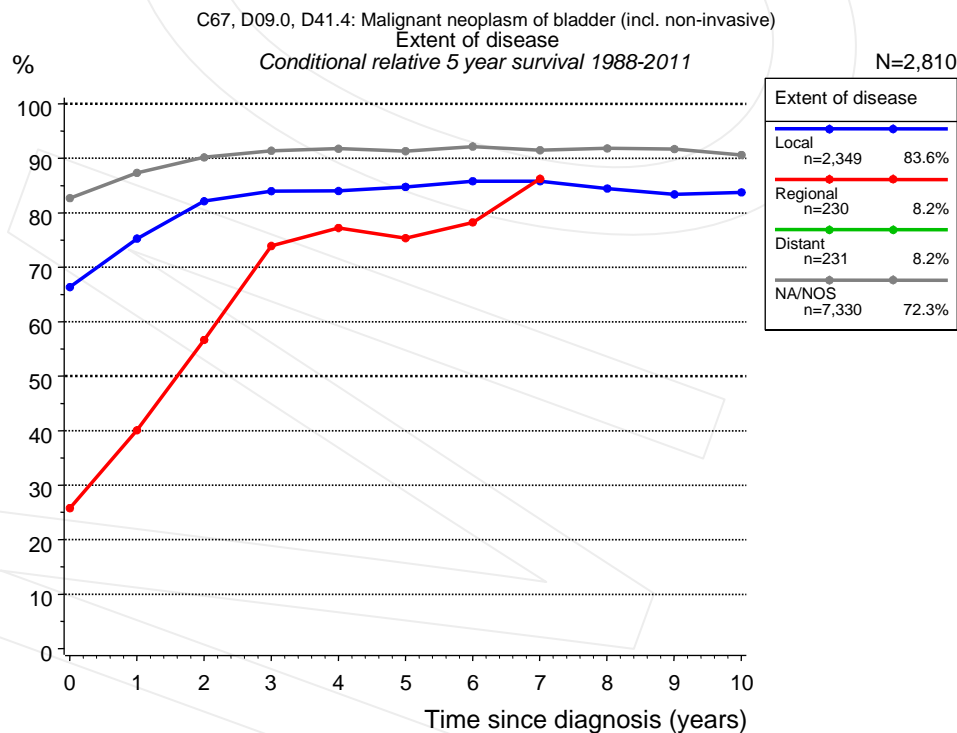


Figure 4i. Conditional relative 5-year survival of patients with bladder cancer by extent of disease. For 9,675 of 10,140 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 2,810 cases an evaluable classification was established. The grey line represents the subgroup of 7,330 patients with missing values regarding extent of disease (72.3% of 10,140 patients, the percent values of all other categories are related to n=2,810).

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	2,349	66.3	230	25.8	231		7,330	82.7
1	1,799	75.3	123	40.1			6,253	87.3
2	1,436	82.1	70	56.7			5,418	90.2
3	1,194	84.0	48	73.9			4,648	91.4
4	981	84.0	41	77.2			3,990	91.8
5	819	84.8	36	75.3			3,422	91.3
6	682	85.8	32	78.2			2,893	92.2
7	594	85.8	27	86.2			2,529	91.5
8	512	84.5					2,192	91.8
9	427	83.4					1,842	91.7
10	372	83.8					1,554	90.6

Table 4j. Conditional relative 5-year survival of patients with bladder cancer by extent of disease for period 1988-2011 (N=2,810).

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 84.0% (n=1,194).

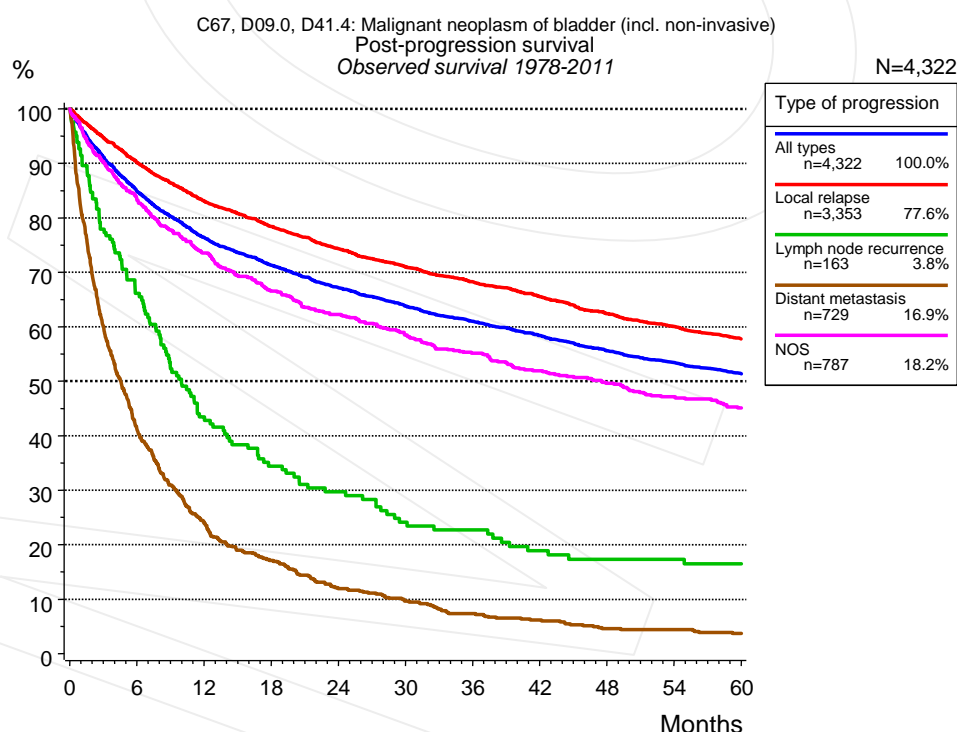


Figure 5a. Observed post-progression survival of 4,322 patients with bladder cancer diagnosed between 1978 and 2011 (incl. M1). These 4,322 patients with documented progression events during their course of disease represent 39.6% of the totally 10,904 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=597, 5.5%). 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				NOS n=787 %
	All types n=4,322 %	Local relapse n=3,353 %	Lymph node recurrence n=163 %	Distant metastasis n=729 %	
0	100.0	100.0	100.0	100.0	100.0
12	76.4	83.1	43.4	23.9	73.5
24	67.2	74.3	29.7	11.9	62.2
36	61.0	68.2	22.7	7.3	55.1
48	55.6	62.4	17.3	4.6	49.6
60	51.4	57.7	16.5	3.7	45.1

Table 5b. Observed post-progression survival of patients with bladder cancer for period 1978-2011 (N=4,322).

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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