

# Munich Cancer Registry



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Munich Cancer Registry at Munich Cancer Center  
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<http://www.tumorregister-muenchen.de/en>

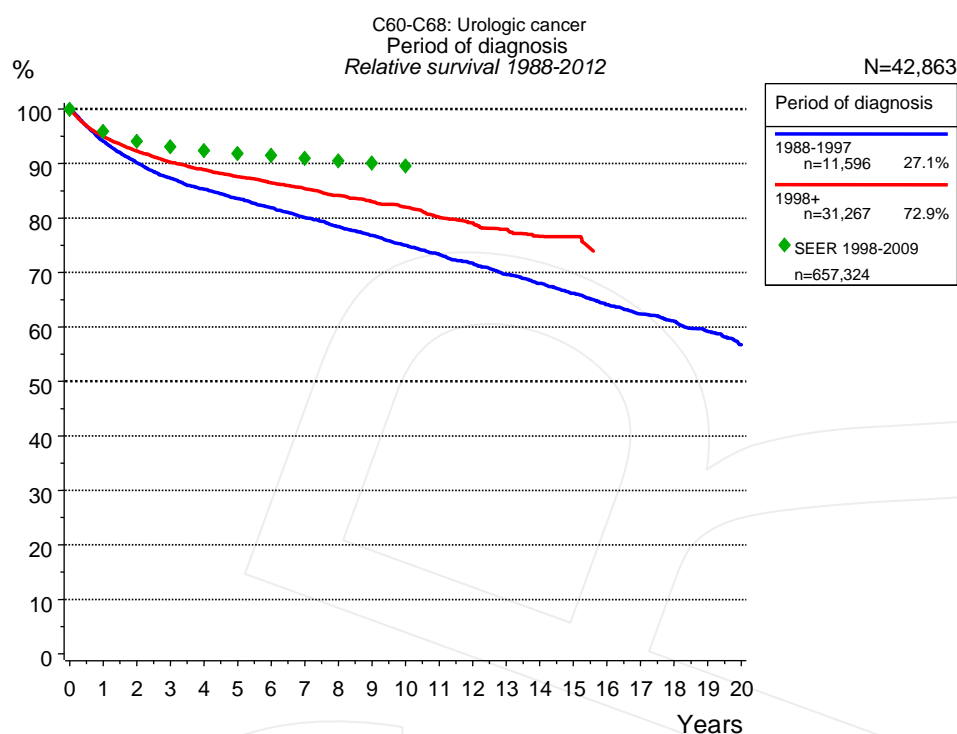
## Cancer statistics: Survival

### C60-C68: Urologic cancer

Year of diagnosis	1988-2012
Patients	72,431
Diseases	75,645
Cases evaluated	42,863
Creation date	03/25/2014
Export date	02/12/2014
Population	4.5 m



[http://www.tumorregister-muenchen.de/en/facts/surv/surv\\_C6068E.pdf](http://www.tumorregister-muenchen.de/en/facts/surv/surv_C6068E.pdf)

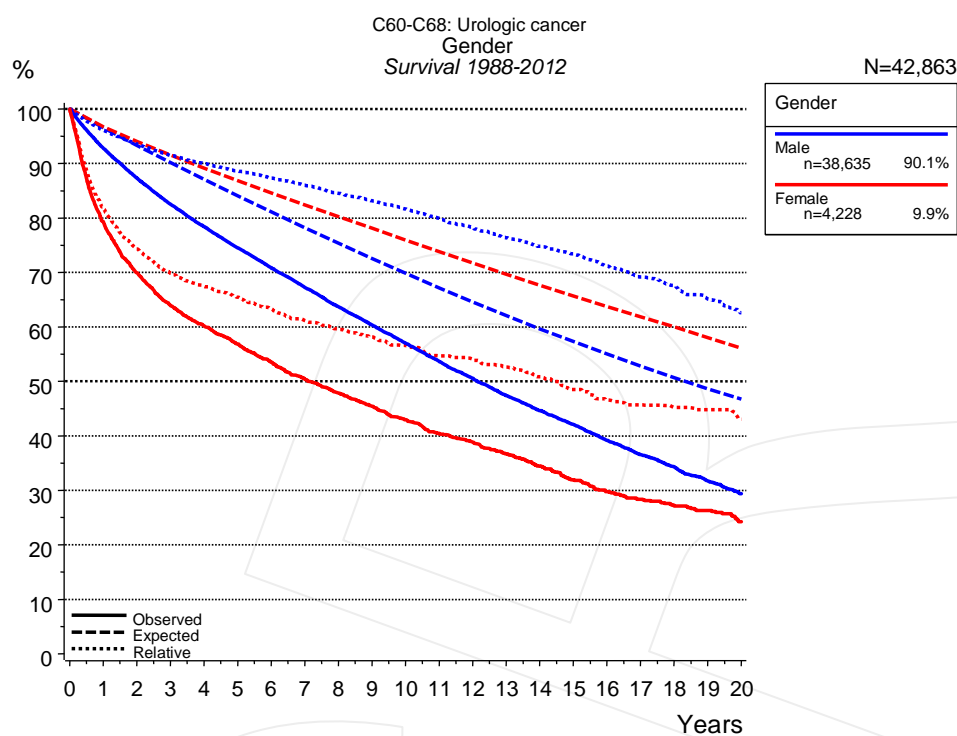


**Figure 1a.** Relative survival of patients with urologic cancer by period of diagnosis. Included in the evaluation are 42,863 cases diagnosed between 1988 and 2012.

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 n=11,596		1998+ n=31,267	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	90.4	94.1	91.9	94.9
2	83.2	90.1	86.5	92.3
3	77.5	87.3	82.0	90.2
4	72.9	85.3	78.2	88.9
5	68.7	83.6	74.6	87.6
6	64.8	81.9	71.2	86.4
7	61.1	80.1	68.0	85.4
8	57.6	78.4	64.7	84.1
9	54.4	76.8	61.5	83.0
10	51.1	75.0	58.6	82.0
11	48.2	73.3	55.1	80.2
12	45.4	71.7	52.3	79.1
13	42.4	69.6	49.5	77.9
14	39.9	68.0	46.7	76.6
15	37.4	66.2	45.0	76.6
16	34.9	64.1		
17	32.6	62.4		
18	30.7	61.0		
19	28.6	59.2		
20	26.4	56.7		

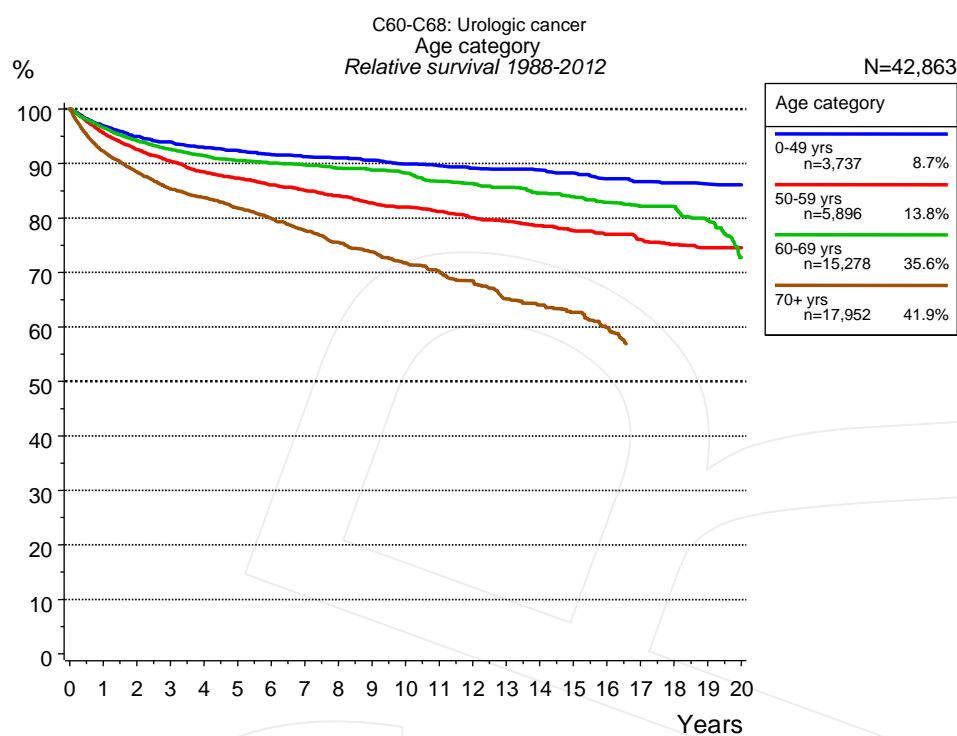
**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with urologic cancer by period of diagnosis for period 1988-2012 (N=42,863).



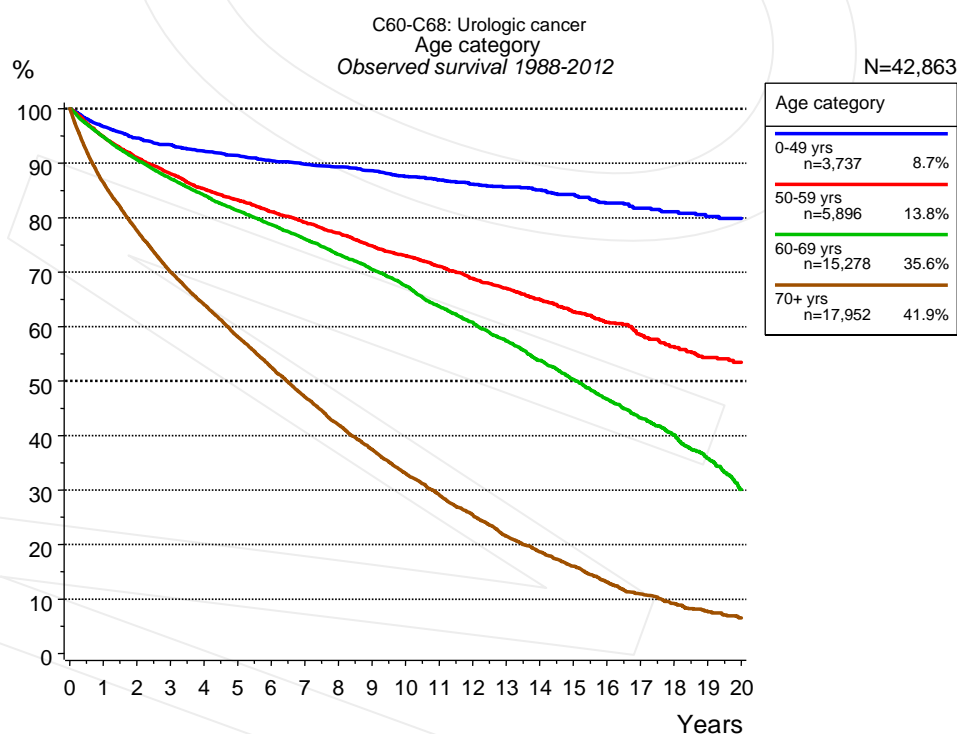
**Figure 2a.** Survival of patients with urologic cancer by gender. Included in the evaluation are 42,863 cases diagnosed between 1988 and 2012.

Years	Gender			
	Male n=38,635		Female n=4,228	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	92.8	96.1	79.2	81.9
2	87.3	93.5	69.9	74.3
3	82.5	91.5	63.9	69.8
4	78.4	90.0	60.2	67.4
5	74.5	88.6	56.8	65.4
6	70.8	87.3	53.5	63.3
7	67.2	86.0	50.4	61.1
8	63.7	84.5	47.9	59.6
9	60.3	83.2	45.4	58.1
10	57.0	81.6	43.0	56.6
11	53.7	79.9	40.4	54.7
12	50.6	78.3	38.8	54.1
13	47.4	76.3	36.7	52.6
14	44.6	74.8	34.5	50.9
15	42.0	73.4	31.9	48.5
16	39.2	71.2	29.7	46.6
17	36.5	69.2	28.4	45.7
18	34.3	67.6	27.1	45.2
19	31.7	65.2	26.3	44.8
20	29.3	62.6	24.2	43.0

**Table 2b.** Observed (obs.) and relative (rel.) survival of patients with urologic cancer by gender for period 1988-2012 (N=42,863).



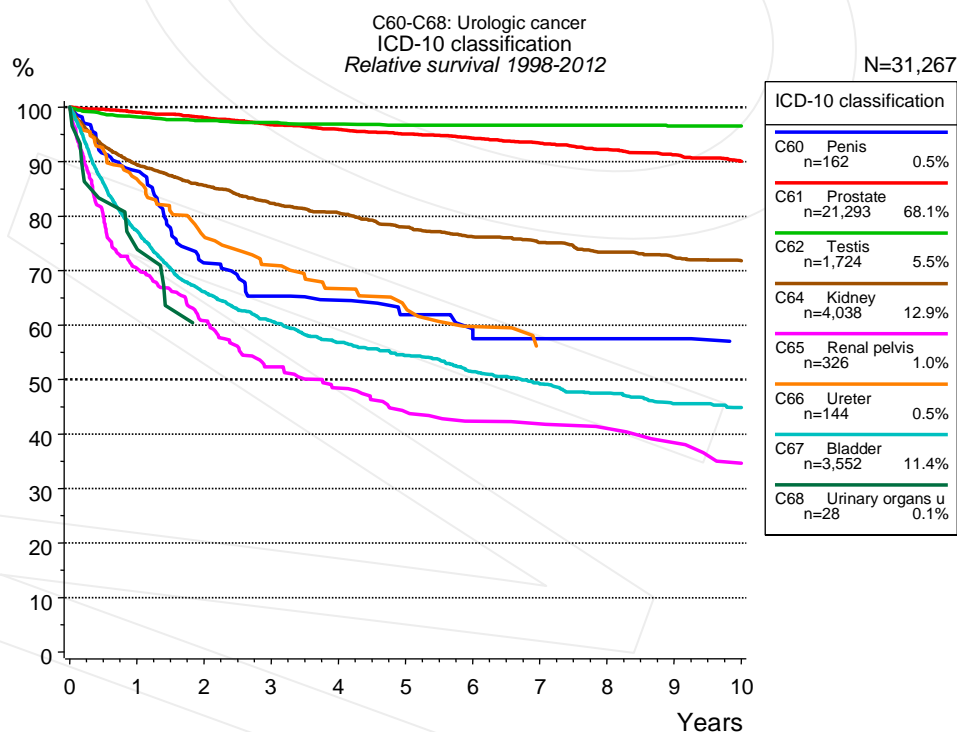
**Figure 3a.** Relative survival of patients with urologic cancer by age category. Included in the evaluation are 42,863 cases diagnosed between 1988 and 2012.



**Figure 3b.** Observed survival of patients with urologic cancer by age category. Included in the evaluation are 42,863 cases diagnosed between 1988 and 2012.

Years	Age category							
	0-49 yrs n=3,737		50-59 yrs n=5,896		60-69 yrs n=15,278		70+ yrs n=17,952	
	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	96.7	96.9	94.8	95.6	94.8	96.6	86.4	92.2
2	94.6	94.9	91.0	92.5	90.6	94.2	77.6	88.4
3	93.4	93.9	88.0	90.4	87.2	92.6	70.0	85.3
4	92.2	92.9	85.3	88.4	84.1	91.4	64.0	83.7
5	91.4	92.4	83.2	87.3	81.3	90.5	58.1	81.8
6	90.4	91.6	81.0	86.0	78.7	90.1	52.5	79.9
7	89.8	91.2	79.1	85.0	76.1	89.7	47.1	77.7
8	89.3	91.0	77.1	84.0	73.3	89.1	42.0	75.5
9	88.6	90.6	74.8	82.7	70.5	88.8	37.5	73.7
10	87.6	89.9	73.0	82.0	67.5	88.2	33.0	71.7
11	86.9	89.6	71.1	81.1	63.7	86.7	29.1	70.2
12	86.2	89.1	68.8	80.0	60.8	86.3	25.4	68.4
13	85.6	89.0	67.0	79.4	57.4	85.6	21.5	65.1
14	85.1	88.8	65.0	78.6	53.8	84.5	18.6	64.0
15	84.3	88.2	62.7	77.6	50.3	83.9	16.0	62.6
16	82.7	87.2	60.8	77.0	46.7	82.8	13.1	59.9
17	81.7	86.7	58.5	76.0	43.2	82.2		
18	81.1	86.4	56.3	75.1	40.1	82.1		
19	80.2	86.2	54.3	74.5	35.8	79.6		
20	79.9	86.1	53.5	74.5	30.1	72.8		

**Table 3c.** Observed (obs.) and relative (rel.) survival of patients with urologic cancer by age category for period 1988-2012 (N=42,863).

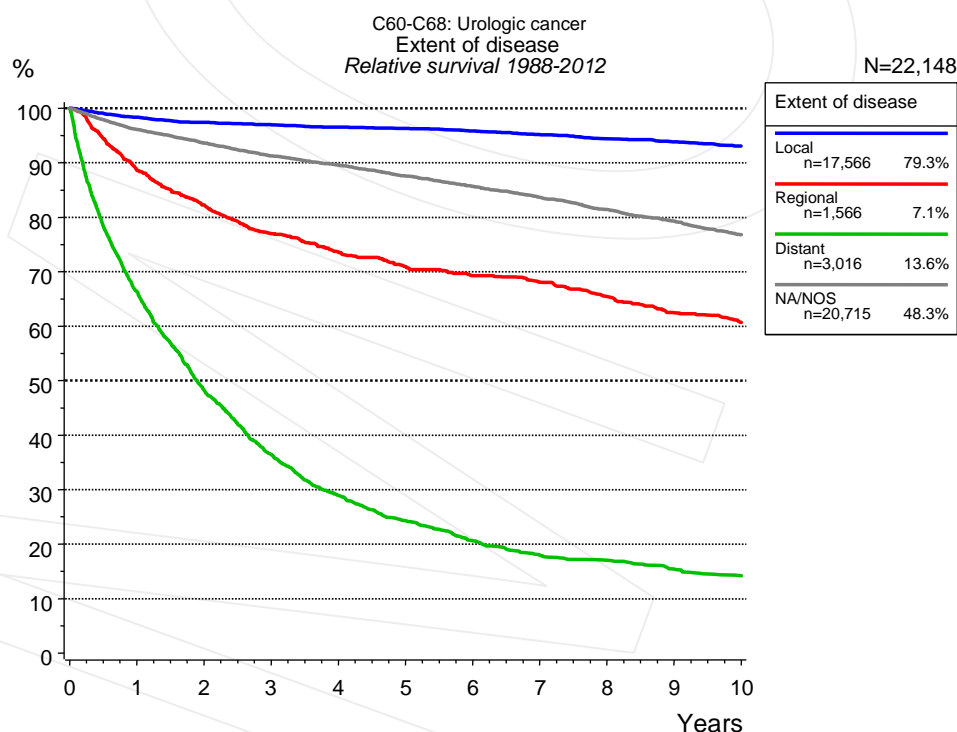


**Figure 4a.** Relative survival of patients with urologic cancer by ICD-10 classification. Included in the evaluation are 31,267 cases diagnosed between 1998 and 2012.

ICD-10 classification														
Years	C60 Penis n=162		C61 Prostate n=21,293		C62 Testis n=1,724		C64 Kidney n=4,038		C65 Renal pelvis n=326		C66 Ureter n=144		C67 Bladder n=3,552	
	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	85.4	88.3	95.7	99.1	98.0	98.2	87.3	89.4	67.8	70.4	83.3	86.8	73.7	77.3
2	66.1	71.4	91.6	98.1	97.0	97.5	81.7	85.6	56.2	60.8	70.8	76.2	60.5	66.1
3	59.1	65.3	87.4	96.8	96.5	97.2	76.8	82.3	46.4	52.3	63.2	71.0	53.5	60.8
4	56.5	64.5	83.5	95.9	95.9	96.9	73.4	80.6	41.5	48.4	57.2	66.7	48.2	56.8
5	51.9	61.9	79.9	95.1	95.5	96.7	69.3	78.0	36.4	44.1	52.5	63.1	44.5	54.4
6	46.2	57.5	76.3	94.3	95.3	96.7	66.0	76.2	33.7	42.4	47.4	59.7	40.5	51.4
7	46.2	57.5	72.7	93.4	95.3	96.7	63.5	75.2	32.9	41.9	42.7	56.1	37.3	49.2
8	44.5	57.5	69.0	92.3	94.7	96.7	60.4	73.4	31.1	41.0	42.7	56.1	34.9	47.5
9	44.5	57.5	65.4	91.2	93.9	96.5	58.0	72.5	28.7	38.4	42.7	56.1	32.1	45.6
10	39.6	56.8	61.9	90.1	93.9	96.5	55.9	71.8	25.0	34.6	42.7	56.1	30.5	44.9

ICD-10 classification		
<i>cont'd</i>		
	C68 Urinary organs unspec. n=28	
Years	obs. %	rel. %
0	100.0	100.0
1	75.0	74.0

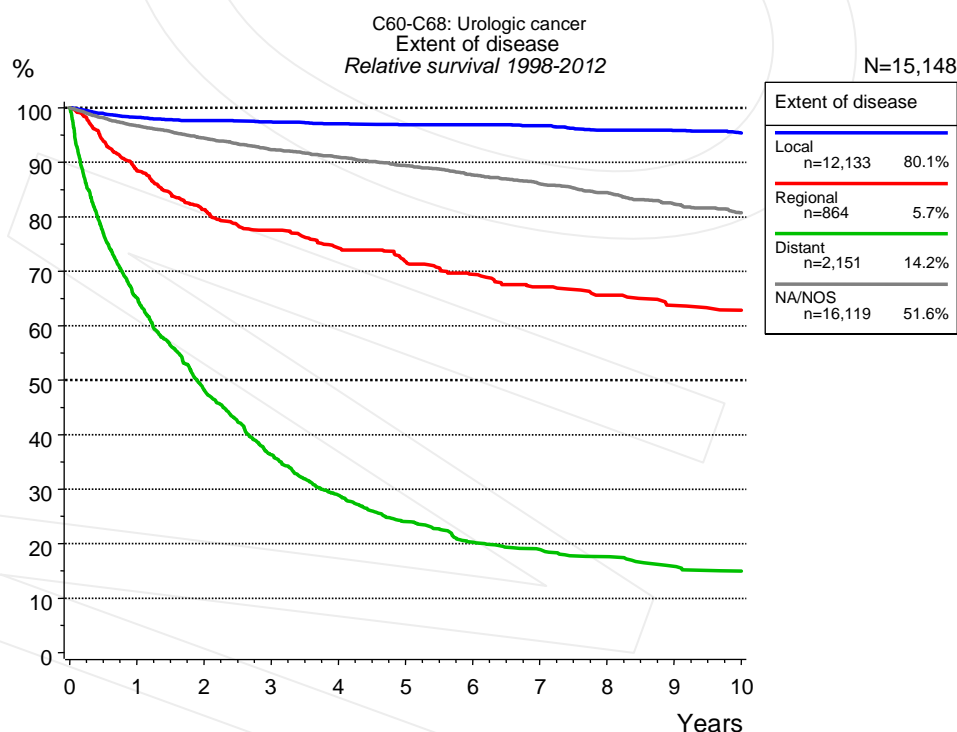
**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with urologic cancer by ICD-10 classification for period 1998-2012 (N=31,267).



**Figure 4c.** Relative survival of patients with urologic cancer by extent of disease. For 37,898 of 42,863 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 22,148 cases an evaluable classification was established. The grey line represents the subgroup of 20,715 patients with missing values regarding extent of disease (48.3% of 42,863 patients, the percent values of all other categories are related to n=22,148).

Years	Extent of disease							
	Local n=17,566		Regional n=1,566		Distant n=3,016		NA/NOS n=20,715	
	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	95.5	98.4	86.7	88.7	63.9	66.3	92.4	96.1
2	91.8	97.4	78.7	82.3	44.8	48.2	86.6	93.6
3	88.8	97.0	72.0	77.0	32.8	36.5	81.2	91.3
4	85.8	96.5	67.4	73.6	25.2	28.9	76.7	89.6
5	82.9	96.3	63.4	70.9	20.5	24.3	72.1	87.6
6	79.9	95.8	60.4	69.3	17.0	20.7	67.8	85.7
7	76.8	95.2	57.9	68.1	14.4	17.9	63.5	83.6
8	73.7	94.4	54.3	65.5	13.4	17.1	59.4	81.4
9	70.8	93.8	50.4	62.5	11.9	15.4	55.5	79.3
10	67.7	93.0	47.8	60.7	10.8	14.2	51.5	76.8

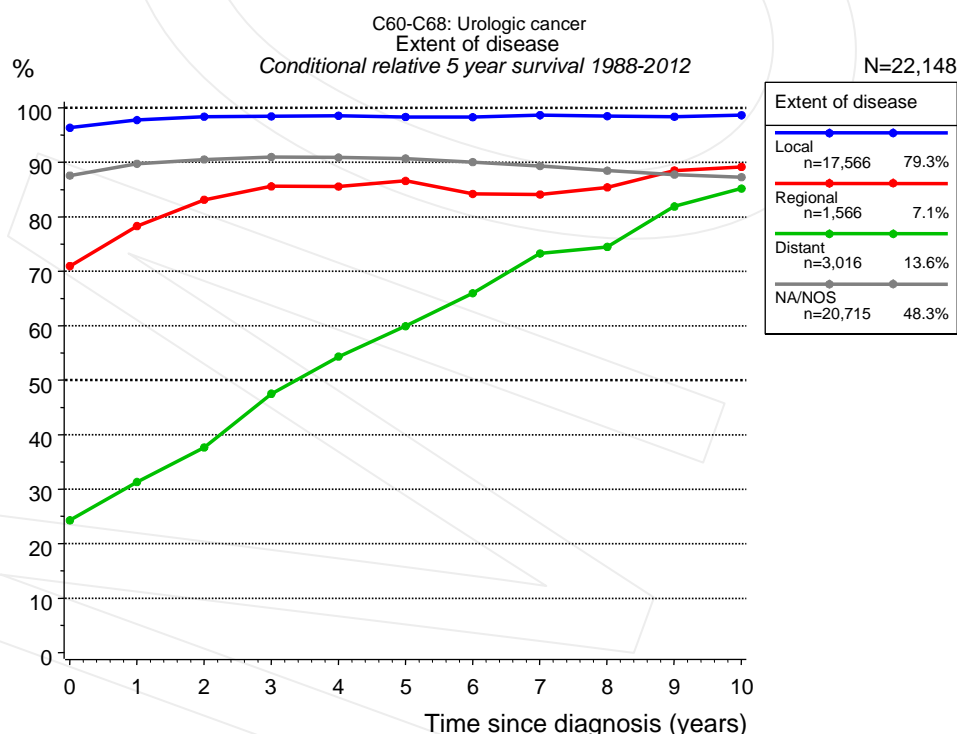
**Table 4d.** Observed (obs.) and relative (rel.) survival of patients with urologic cancer by extent of disease for period 1988-2012 (N=22,148).



**Figure 4e.** Relative survival of patients with urologic cancer by extent of disease. For 27,475 of 31,267 cases diagnosed between 1998 and 2012 valid data could be obtained for this item. For a total of 15,148 cases an evaluable classification was established. The grey line represents the subgroup of 16,119 patients with missing values regarding extent of disease (51.6% of 31,267 patients, the percent values of all other categories are related to n=15,148).

Years	Extent of disease							
	Local n=12,133		Regional n=864		Distant n=2,151		NA/NOS n=16,119	
	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	95.5	98.3	86.7	88.4	62.8	65.1	93.3	96.7
2	92.3	97.7	78.1	81.3	45.1	48.2	88.0	94.4
3	89.5	97.4	73.1	77.5	32.9	36.3	83.1	92.3
4	86.7	97.1	68.7	74.3	25.5	28.9	79.0	90.9
5	83.9	96.9	65.1	71.8	20.6	24.0	74.9	89.4
6	81.4	96.9	61.6	69.4	17.0	20.3	70.9	87.7
7	78.7	96.7	58.3	67.1	15.5	18.9	67.0	86.0
8	75.6	95.9	55.8	65.6	14.2	17.6	63.3	84.4
9	72.9	95.8	53.0	63.7	12.5	15.8	59.4	82.3
10	69.9	95.4	51.3	62.8	11.5	15.0	56.0	80.8

**Table 4f.** Observed (obs.) and relative (rel.) survival of patients with urologic cancer by extent of disease for period 1998-2012 (N=15,148).

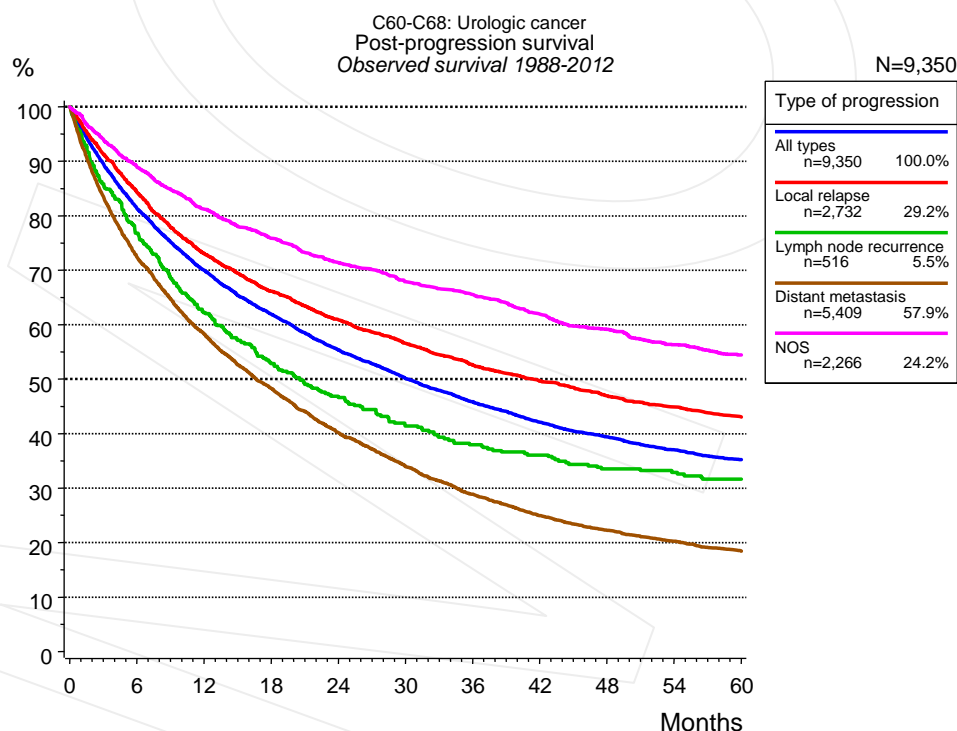


**Figure 4g.** Conditional relative 5-year survival of patients with urologic cancer by extent of disease. For 37,898 of 42,863 cases diagnosed between 1988 and 2012 valid data could be obtained for this item. For a total of 22,148 cases an evaluable classification was established. The grey line represents the subgroup of 20,715 patients with missing values regarding extent of disease (48.3% of 42,863 patients, the percent values of all other categories are related to n=22,148).

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	17,566	96.3	1,566	70.9	3,016	24.3	20,715	87.6
1	16,038	97.8	1,308	78.3	1,804	31.3	18,190	89.7
2	14,382	98.4	1,117	83.1	1,151	37.7	15,612	90.5
3	12,766	98.4	942	85.6	761	47.5	13,275	91.0
4	11,257	98.6	811	85.6	534	54.3	11,161	90.9
5	9,791	98.3	710	86.6	389	59.9	9,147	90.7
6	8,472	98.3	625	84.2	282	66.0	7,478	90.0
7	7,515	98.7	568	84.1	217	73.3	6,248	89.3
8	6,650	98.5	502	85.4	182	74.5	5,112	88.5
9	5,800	98.4	430	88.5	146	81.9	4,156	87.7
10	4,966	98.7	392	89.2	117	85.2	3,259	87.3

**Table 4h.** Conditional relative 5-year survival of patients with urologic cancer by extent of disease for period 1988-2012 (N=22,148).

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 4e). 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 98.4% (n=12,766).



**Figure 5a.** Observed post-progression survival of 9,350 patients with urologic cancer diagnosed between 1988 and 2012 (incl. M1). These 9,350 patients with documented progression events during their course of disease represent 21.8% of the totally 42,863 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=1,785, 4.2%). 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=9,350	Local relapse n=2,732	Lymph node recurrence n=516	Distant metastasis n=5,409	NOS n=2,266
	%	%	%	%	%
0	100.0	100.0	100.0	100.0	100.0
12	70.0	73.0	62.2	58.3	81.2
24	55.4	60.9	46.6	40.2	71.3
36	45.8	52.6	38.0	28.9	65.5
48	39.4	46.9	33.5	22.3	59.1
60	35.2	43.0	31.6	18.4	54.5

**Table 5b.** Observed post-progression survival of patients with urologic cancer for period 1988-2012 (N=9,350).

**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

**Recommended Citation**

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