

# Munich Cancer Registry



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

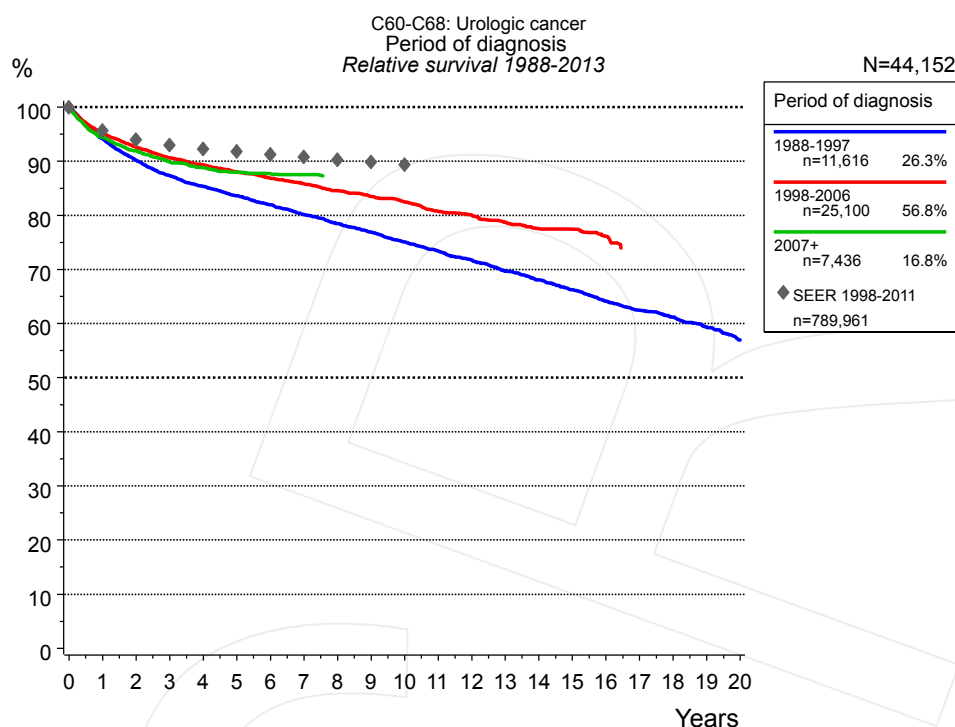
## Cancer statistics: Survival

### C60-C68: Urologic cancer

Year of diagnosis	1988-2013
Patients	77,269
Diseases	80,798
Cases evaluated	44,152
Creation date	05/13/2015
Export date	12/30/2014
Population	4.64 m



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

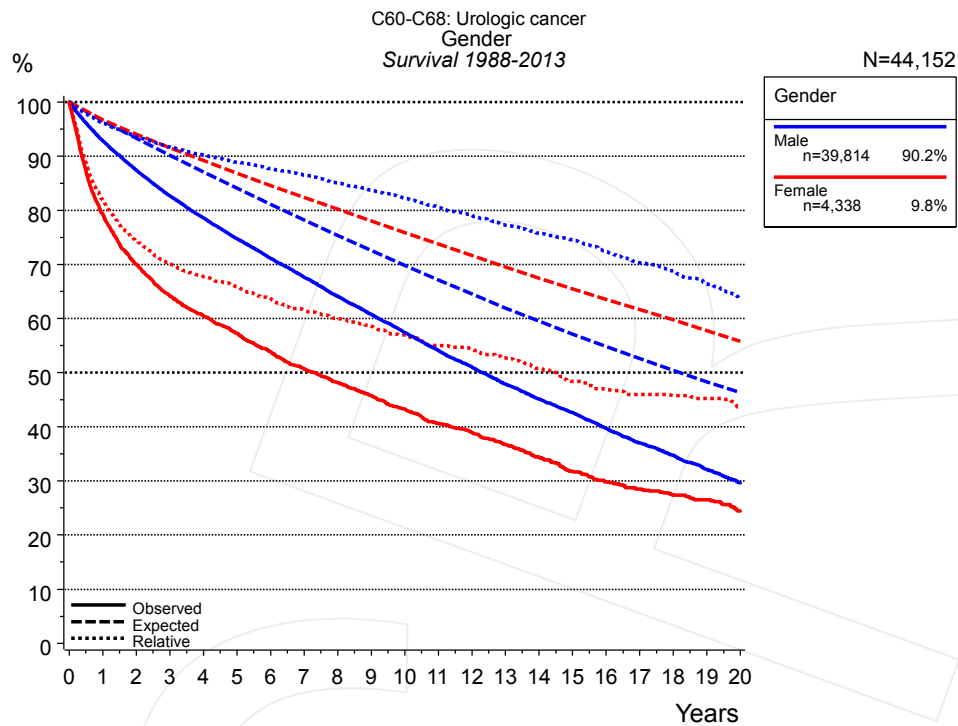


**Figure 1a.** Relative survival of patients with urologic cancer by period of diagnosis. Included in the evaluation are 44,152 cases diagnosed between 1988 and 2013.

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.

Period of diagnosis						
Years	1988-1997 n=11,616		1998-2006 n=25,100		2007+ n=7,436	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	90.4	94.1	92.1	95.2	91.6	94.4
2	83.2	90.1	86.7	92.6	86.7	91.9
3	77.6	87.3	82.1	90.6	82.4	89.9
4	72.9	85.3	78.3	89.3	79.1	88.8
5	68.8	83.6	74.7	88.0	76.0	87.9
6	64.9	81.9	71.3	86.8	73.4	87.7
7	61.1	80.1	68.0	85.8	71.5	87.5
8	57.7	78.5	64.8	84.6		
9	54.4	76.9	61.6	83.5		
10	51.2	75.1	58.6	82.5		
11	48.3	73.4	55.2	80.8		
12	45.4	71.8	52.6	80.1		
13	42.5	69.7	49.6	78.7		
14	40.0	68.1	46.9	77.5		
15	37.4	66.2	45.0	77.4		
16	34.9	64.1	42.2	76.1		
17	32.6	62.4				
18	30.7	61.2				
19	28.6	59.3				
20	26.4	57.0				

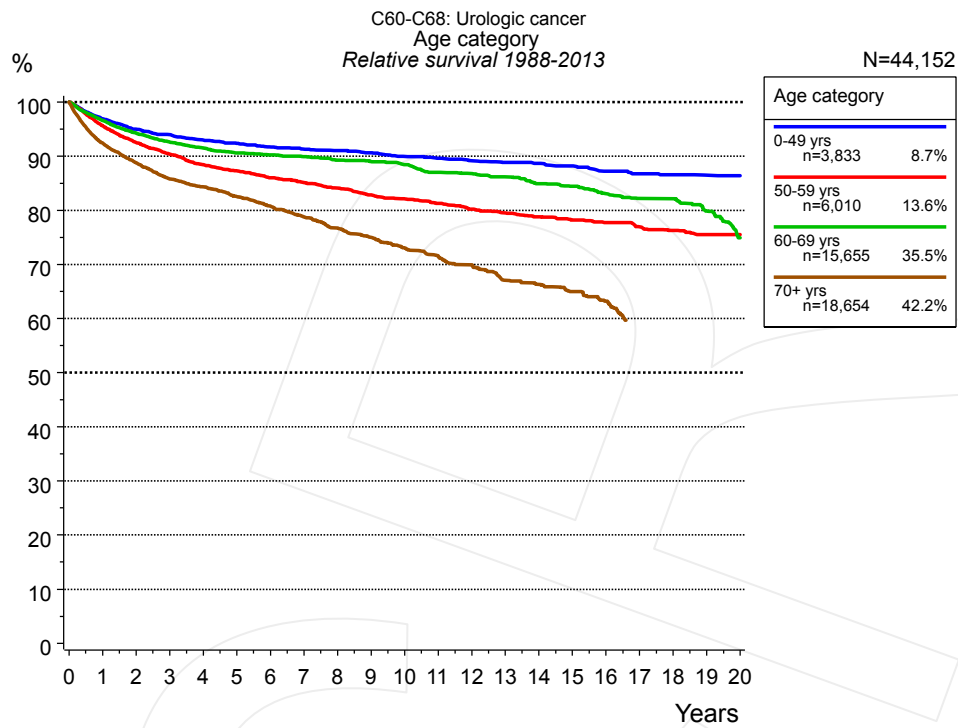
**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with urologic cancer by period of diagnosis for period 1988-2013 (N=44,152).



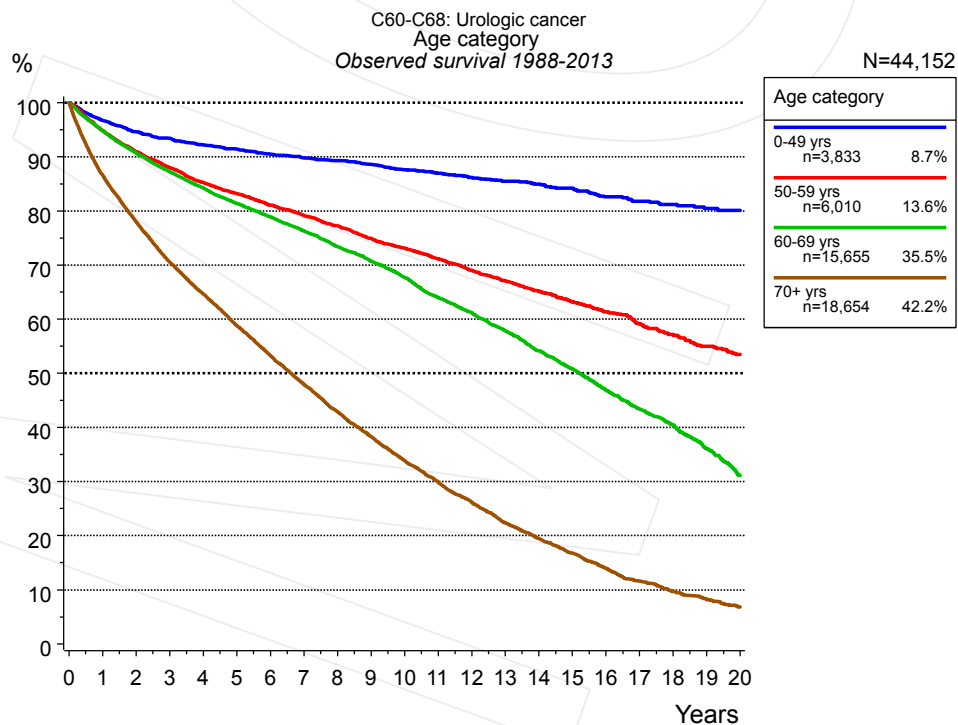
**Figure 2a.** Survival of patients with urologic cancer by gender. Included in the evaluation are 44,152 cases diagnosed between 1988 and 2013.

Years	Gender			
	Male n=39,814		Female n=4,338	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	92.9	96.2	79.3	82.0
2	87.4	93.7	70.0	74.4
3	82.7	91.7	64.1	70.0
4	78.6	90.2	60.5	67.8
5	74.7	88.9	57.2	65.9
6	71.1	87.7	53.9	63.7
7	67.7	86.5	50.7	61.5
8	64.1	85.1	48.1	60.0
9	60.8	83.7	45.7	58.5
10	57.4	82.2	43.2	56.9
11	54.1	80.6	40.6	55.0
12	51.1	79.2	38.9	54.3
13	47.9	77.2	36.7	52.7
14	45.1	75.8	34.4	50.8
15	42.6	74.6	31.8	48.4
16	39.7	72.4	29.8	46.9
17	37.0	70.3	28.5	46.0
18	34.8	68.8	27.4	45.8
19	32.1	66.4	26.5	45.2
20	29.6	63.8	24.4	43.6

**Table 2b.** Observed (obs.) and relative (rel.) survival of patients with urologic cancer by gender for period 1988-2013 (N=44,152).



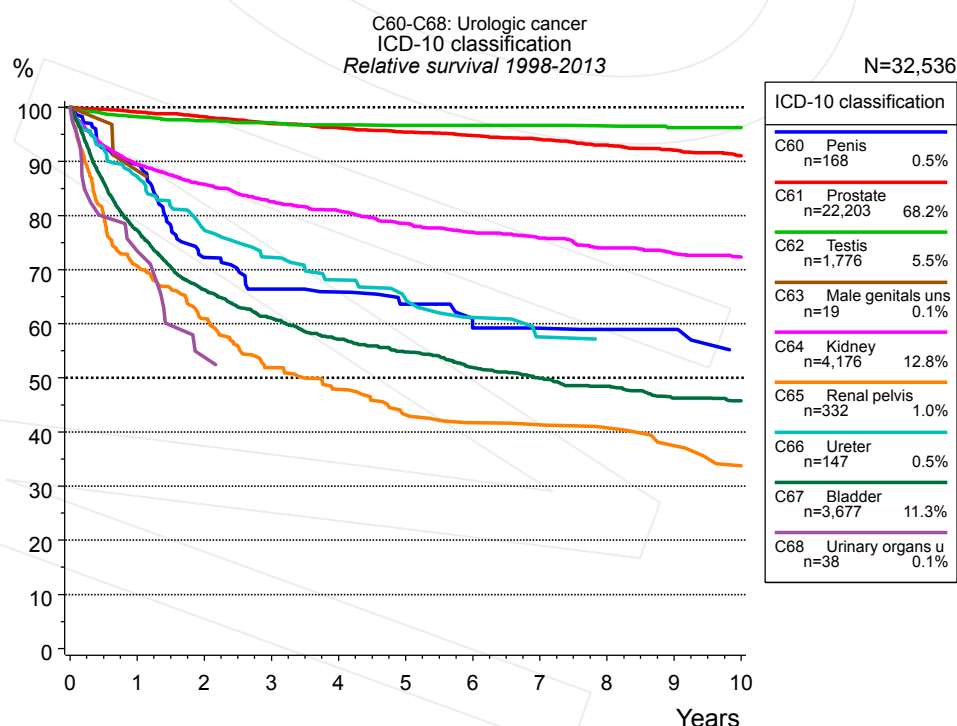
**Figure 3a.** Relative survival of patients with urologic cancer by age category. Included in the evaluation are 44,152 cases diagnosed between 1988 and 2013.



**Figure 3b.** Observed survival of patients with urologic cancer by age category. Included in the evaluation are 44,152 cases diagnosed between 1988 and 2013.

Years	Age category							
	0-49 yrs n=3,833		50-59 yrs n=6,010		60-69 yrs n=15,655		70+ yrs n=18,654	
	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	86.6	92.4
2	94.6	95.0	91.0	92.5	90.7	94.2	78.0	88.8
3	93.4	94.0	88.0	90.4	87.3	92.6	70.5	85.8
4	92.2	93.0	85.3	88.4	84.2	91.5	64.6	84.3
5	91.4	92.4	83.2	87.3	81.4	90.6	58.8	82.5
6	90.5	91.7	81.1	86.0	78.9	90.3	53.3	80.7
7	89.8	91.3	79.2	85.1	76.3	89.9	48.0	78.8
8	89.3	91.0	77.2	84.1	73.4	89.2	42.9	76.8
9	88.6	90.6	74.9	82.8	70.7	89.0	38.3	75.0
10	87.6	89.9	73.1	82.1	67.7	88.5	33.8	73.0
11	87.0	89.6	71.2	81.3	64.0	87.0	29.9	71.6
12	86.2	89.1	69.0	80.2	61.3	86.8	26.2	70.0
13	85.5	88.8	67.1	79.5	57.8	86.1	22.4	67.1
14	85.0	88.7	65.2	78.8	54.2	84.9	19.5	66.3
15	84.2	88.2	63.2	78.2	50.8	84.4	16.8	65.0
16	82.6	87.2	61.4	77.7	46.9	83.0	14.0	63.2
17	81.8	86.7	59.2	76.9	43.4	82.2		
18	81.2	86.5	57.2	76.3	40.5	82.2		
19	80.4	86.5	55.0	75.5	36.1	79.9		
20	80.1	86.4	53.5	75.5	31.1	74.9		

**Table 3c.** Observed (obs.) and relative (rel.) survival of patients with urologic cancer by age category for period 1988-2013 (N=44,152).

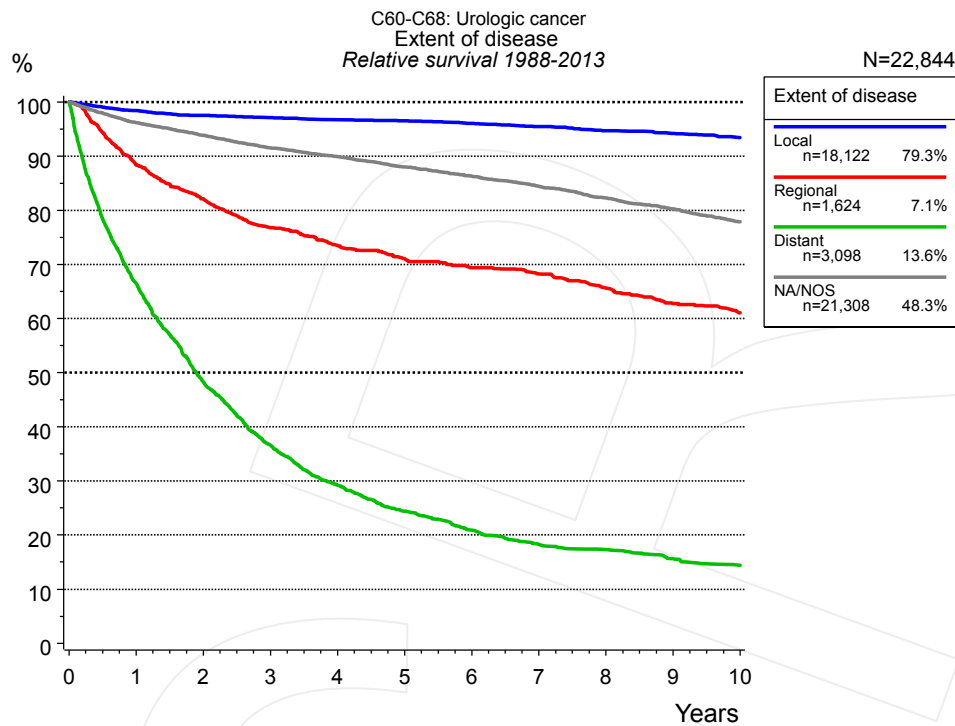


**Figure 4a.** Relative survival of patients with urologic cancer by ICD-10 classification. Included in the evaluation are 32,536 cases diagnosed between 1998 and 2013.

ICD-10 classification														
	C60 Penis		C61 Prostate		C62 Testis		C63 Male genitals unspec.		C64 Kidney		C65 Renal pelvis		C66 Ureter	
	n=168		n=22,203		n=1,776		n=19		n=4,176		n=332		n=147	
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	86.5	89.5	95.8	99.1	98.0	98.3	88.9	88.3	87.3	89.5	68.1	70.7	83.6	87.2
2	67.0	72.3	91.8	98.3	97.1	97.6	83.3	87.2	81.8	85.7	56.4	61.0	71.8	77.4
3	60.2	66.4	87.5	97.0	96.4	97.1	83.3	87.2	76.9	82.5	46.2	51.9	64.2	72.3
4	57.6	65.9	83.8	96.2	95.8	96.8	83.3	87.2	73.6	80.9	41.1	47.9	58.2	68.1
5	53.4	63.6	80.2	95.4	95.4	96.7			69.7	78.5	35.8	43.2	53.5	64.6
6	47.7	59.2	76.6	94.8	95.3	96.7			66.6	76.9	33.3	41.7	48.3	61.2
7	46.2	59.2	73.2	94.1	95.1	96.7			64.0	75.8	32.5	41.3	43.6	57.6
8	44.5	59.0	69.5	93.0	94.4	96.6			60.9	74.0	30.8	40.8	41.9	57.2
9	44.5	59.0	66.0	92.1	93.7	96.3			58.3	73.0	27.8	37.5	41.9	57.1
10	38.3	55.1	62.5	91.0	93.7	96.3			56.2	72.3	24.2	33.7		

ICD-10 classification				
<i>cont'd</i>	C67 Bladder		C68 Urinary organs unspec.	
	n=3,677		n=38	
Years	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	73.7	77.3	73.6	73.5
2	60.7	66.3	51.5	53.8
3	53.8	61.0		
4	48.5	57.1		
5	44.8	54.8		
6	40.9	51.9		
7	37.8	49.9		
8	35.4	48.4		
9	32.5	46.3		
10	31.1	45.7		

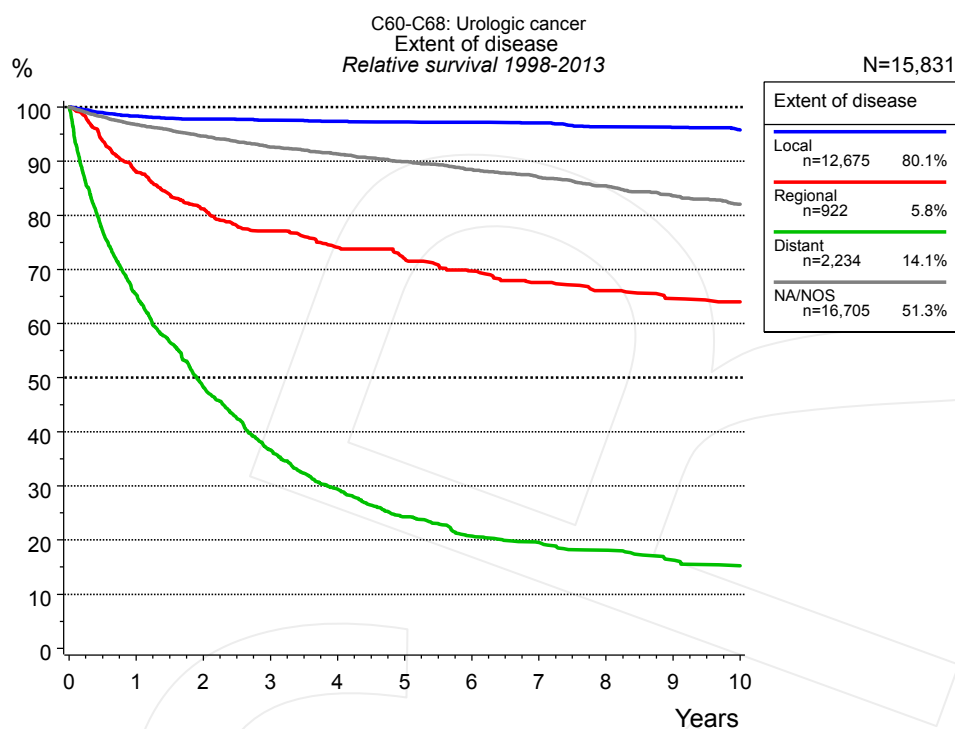
**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with urologic cancer by ICD-10 classification for period 1998-2013 (N=32,536).



**Figure 4c.** Relative survival of patients with urologic cancer by extent of disease. For 38,819 of 44,152 cases diagnosed between 1988 and 2013 valid data could be obtained for this item. For a total of 22,844 cases an evaluable classification was established. The grey line represents the subgroup of 21,308 patients with missing values regarding extent of disease (48.3% of 44,152 patients, the percent values of all other categories are related to n=22,844).

Years	Extent of disease							
	Local n=18,122		Regional n=1,624		Distant n=3,098		NA/NOS n=21,308	
	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	95.6	98.4	86.4	88.4	64.1	66.5	92.4	96.2
2	92.0	97.5	78.5	82.2	44.9	48.3	86.8	93.8
3	88.9	97.1	71.8	76.8	33.0	36.7	81.5	91.5
4	86.0	96.7	67.2	73.5	25.4	29.2	77.0	89.9
5	83.2	96.5	63.4	71.0	20.6	24.4	72.5	88.0
6	80.1	96.1	60.5	69.4	17.2	20.9	68.3	86.3
7	77.1	95.5	58.0	68.3	14.6	18.3	64.2	84.4
8	74.0	94.7	54.4	65.7	13.6	17.4	60.1	82.3
9	71.0	94.2	50.7	62.8	12.0	15.7	56.2	80.3
10	67.9	93.4	48.1	61.1	10.9	14.4	52.3	77.9

**Table 4d.** Observed (obs.) and relative (rel.) survival of patients with urologic cancer by extent of disease for period 1988-2013 (N=22,844).

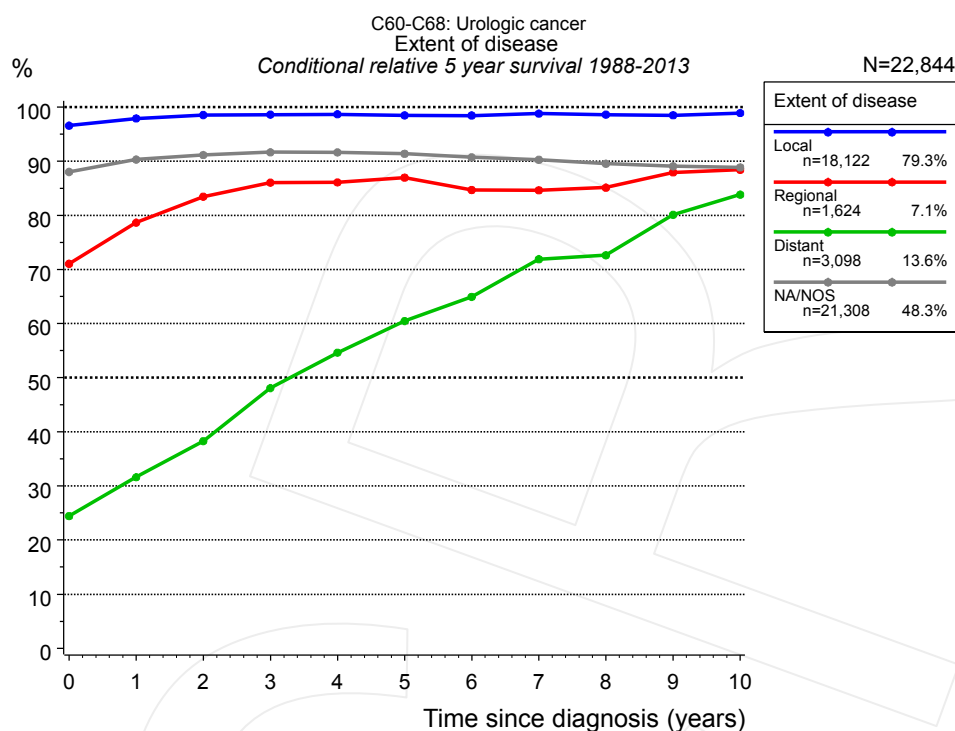


**Figure 4e.** Relative survival of patients with urologic cancer by extent of disease. For 28,381 of 32,536 cases diagnosed between 1998 and 2013 valid data could be obtained for this item. For a total of 15,831 cases an evaluable classification was established. The grey line represents the subgroup of 16,705 patients with missing values regarding extent of disease (51.3% of 32,536 patients, the percent values of all other categories are related to n=15,831).

Years	Extent of disease							
	Local n=12,675		Regional n=922		Distant n=2,234		NA/NOS n=16,705	
	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	95.6	98.3	86.2	88.0	63.1	65.4	93.3	96.8
2	92.5	97.8	77.9	81.2	45.2	48.3	88.2	94.6
3	89.6	97.6	72.6	77.1	33.2	36.6	83.4	92.6
4	87.0	97.3	68.4	74.1	25.9	29.4	79.3	91.3
5	84.2	97.2	65.1	72.0	20.8	24.3	75.3	89.9
6	81.6	97.2	61.7	69.7	17.3	20.8	71.4	88.4
7	78.9	97.1	58.6	67.6	16.0	19.5	67.7	87.0
8	75.8	96.3	56.2	66.1	14.5	18.1	64.0	85.4
9	73.2	96.2	53.7	64.6	12.8	16.3	60.2	83.6
10	70.2	95.8	52.1	64.0	11.7	15.3	56.8	82.0

**Table 4f.** Observed (obs.) and relative (rel.) survival of patients with urologic cancer by extent of disease for period 1998-2013 (N=15,831).



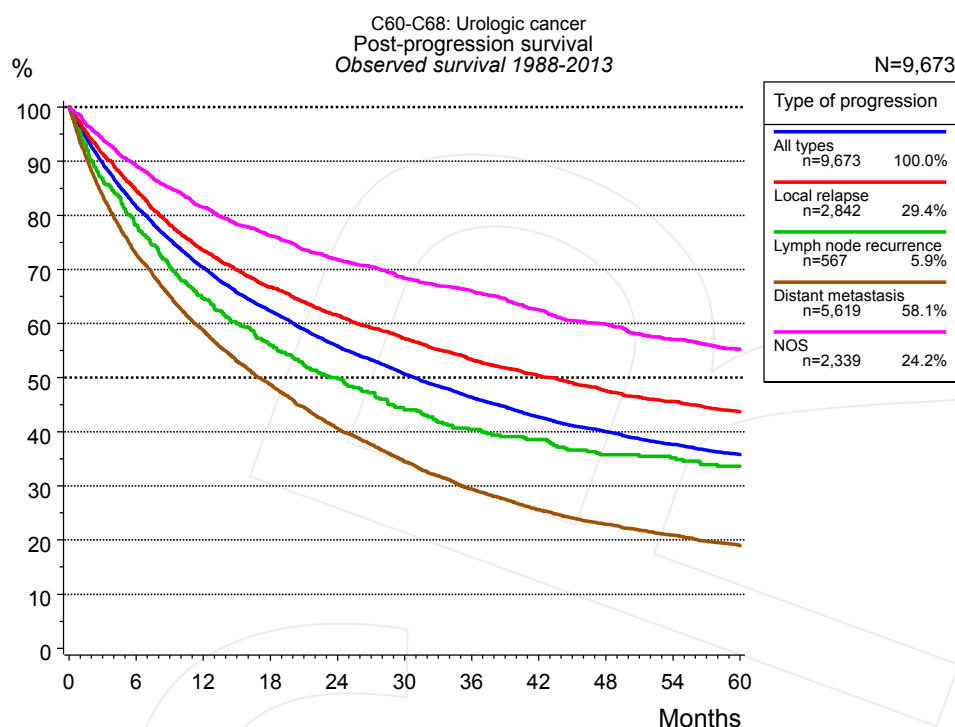


**Figure 4g.** Conditional relative 5-year survival of patients with urologic cancer by extent of disease. For 38,819 of 44,152 cases diagnosed between 1988 and 2013 valid data could be obtained for this item. For a total of 22,844 cases an evaluable classification was established. The grey line represents the subgroup of 21,308 patients with missing values regarding extent of disease (48.3% of 44,152 patients, the percent values of all other categories are related to n=22,844).

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	18,122	96.6	1,624	71.0	3,098	24.4	21,308	88.0
1	16,578	97.9	1,358	78.7	1,862	31.6	18,722	90.3
2	14,955	98.5	1,163	83.4	1,201	38.3	16,162	91.2
3	13,257	98.6	982	86.0	795	48.1	13,724	91.6
4	11,624	98.7	845	86.1	554	54.6	11,607	91.6
5	10,031	98.5	718	87.0	399	60.5	9,706	91.4
6	8,713	98.4	636	84.7	292	64.9	8,035	90.7
7	7,777	98.8	578	84.6	224	71.9	6,762	90.3
8	6,895	98.6	508	85.1	196	72.6	5,633	89.5
9	6,105	98.5	445	87.9	156	80.1	4,578	89.1
10	5,288	98.9	397	88.4	124	83.8	3,665	88.9

**Table 4h.** Conditional relative 5-year survival of patients with urologic cancer by extent of disease for period 1988-2013 (N=22,844).

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 98.6% (n=13,257).



**Figure 5a.** Observed post-progression survival of 9,673 patients with urologic cancer diagnosed between 1988 and 2013 (incl. M1). These 9,673 patients with documented progression events during their course of disease represent 21.9% of the totally 44,152 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=1,833, 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=9,673	Local relapse n=2,842	Lymph node recurrence n=567	Distant metastasis n=5,619	NOS n=2,339
	%	%	%	%	%
0	100.0	100.0	100.0	100.0	100.0
12	70.4	73.5	64.6	58.7	81.5
24	55.8	61.5	49.8	40.6	71.8
36	46.4	53.3	40.4	29.5	66.0
48	40.1	47.6	35.8	23.0	59.8
60	35.8	43.7	33.6	19.0	55.3

**Table 5b.** Observed post-progression survival of patients with urologic cancer for period 1988-2013 (N=9,673).

## Shortcuts

MCR	Munich Cancer Registry, Germany (Tumorregister München)
NCI	National Cancer Institute, USA
SEER	Surveillance, Epidemiology, and End Results, USA
UICC	Union for International Cancer Control, Geneva
DCO	Death certificate only. The death certificate provides the only notification to the registry.
NA	Not available
NOS	Not otherwise specified
OS	Observed/overall survival (Kaplan-Meier estimate)
RS	Relative survival, compared to the general population, ratio of observed to expected survival (Ederer II method), reflecting excess mortality among cancer patients
AS	Assembled survival chart (observed, expected, relative)
PPS	Post-progression survival, survival since first relapse (Kaplan-Meier estimate)
progression	Date of entry: Date of first locoregional recurrence, distant metastasis, unspecified
	Event: Death of all causes
CS	Conditional survival, survival probability under the condition of surviving a given period of time

## Recommended Citation

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