

Munich Cancer Registry



- ▶ Baseline statistics
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Munich, 81377
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<http://www.tumorregister-muenchen.de/en>

Cancer statistics: Survival

C61: Prostate cancer

Year of diagnosis	1978-1987	1988-1997	1998-2011
Patients	941	7,368	35,928
Diseases	941	7,368	35,930
Creation date	04/01/2013		
Export date	01/03/2013		
Population (males)	2.2 m		



http://www.tumorregister-muenchen.de/en/facts/surv/surv_C61__E.pdf

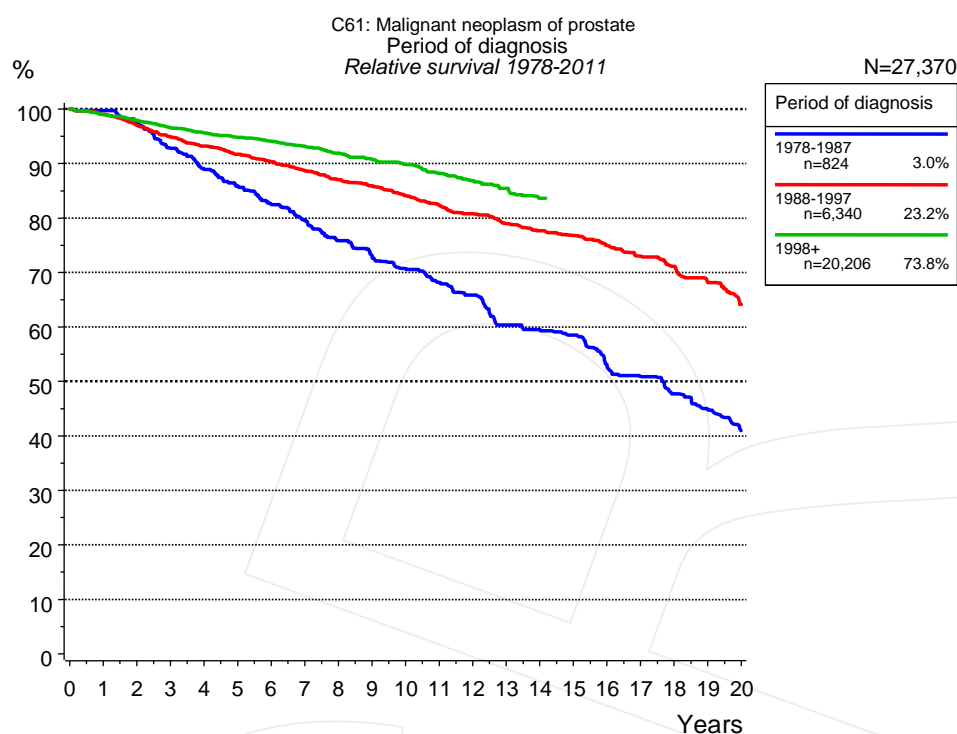


Figure 1a. Relative survival of patients with prostate cancer by period of diagnosis. Included in the evaluation are 27,370 cases diagnosed between 1978 and 2011.

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=824		1988-1997 n=6,340		1998+ n=20,206	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	95.5	99.7	94.3	99.0	95.6	99.0
2	87.7	97.4	88.0	97.0	91.4	97.9
3	79.2	92.8	82.0	94.9	87.1	96.6
4	71.8	88.9	76.7	93.2	83.3	95.6
5	65.5	85.9	71.7	91.6	79.6	94.8
6	59.4	82.5	67.3	90.3	76.1	94.1
7	54.1	79.7	62.9	88.7	72.4	93.1
8	48.4	75.8	58.7	87.0	68.7	91.9
9	43.7	73.0	55.0	85.9	65.0	90.8
10	39.7	70.7	51.2	84.1	61.5	89.8
11	35.8	68.1	47.6	82.4	57.7	88.2
12	32.4	65.8	44.2	80.7	54.2	86.9
13	27.8	60.4	40.8	78.9	50.9	85.4
14	25.6	59.5	37.9	77.7	47.0	83.6
15	23.4	58.5	35.2	76.8		
16	19.9	53.2	32.2	74.9		
17	17.6	50.9	29.2	72.9		
18	15.4	47.7	26.6	71.1		
19	13.4	44.8	23.6	68.1		
20	11.3	41.0	20.6	64.1		

Table 1b. Observed (obs.) and relative (rel.) survival of patients with prostate cancer by period of diagnosis for period 1978-2011 (N=27,370).

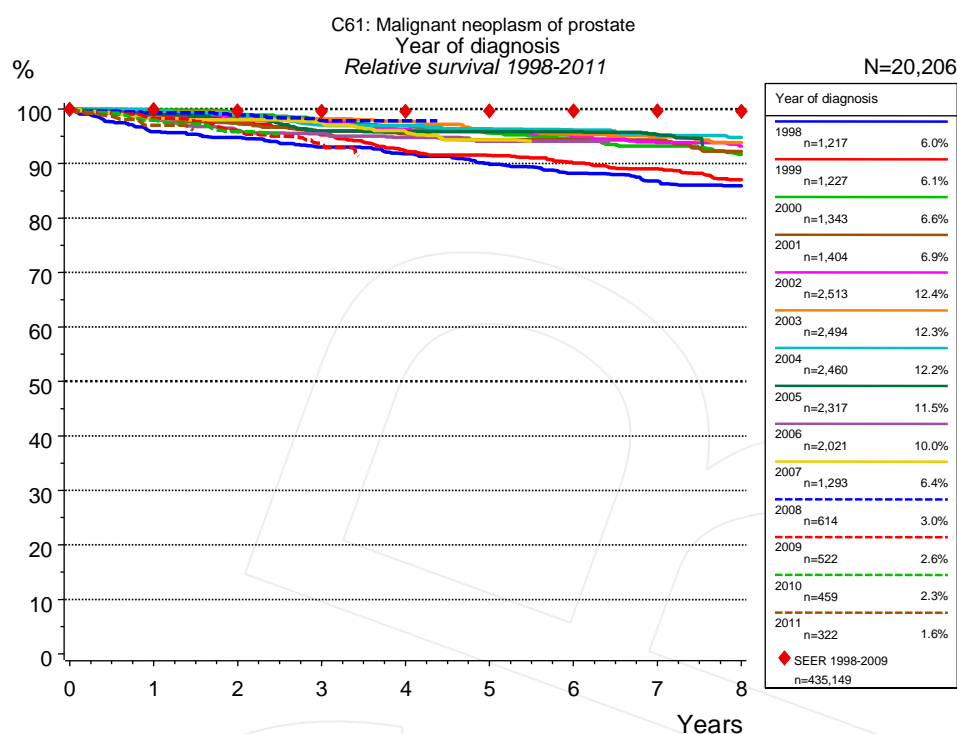


Figure 1c. Relative survival of patients with prostate cancer by year of diagnosis. Included in the evaluation are 20,206 cases diagnosed between 1998 and 2011.

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 red diamonds in order to facilitate comparisons between MCR and SEER.

		Year of diagnosis													
		1998 n=1,217		1999 n=1,227		2000 n=1,343		2001 n=1,404		2002 n=2,513		2003 n=2,494		2004 n=2,460	
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		91.9	95.8	95.1	98.9	96.5	99.8	94.6	98.1	95.9	99.4	96.5	99.4	96.8	99.9
2		87.3	94.8	90.2	97.5	92.1	99.2	90.5	97.3	91.7	98.6	92.8	99.1	92.8	98.9
3		82.4	93.0	84.7	95.3	87.7	98.1	86.1	96.0	87.4	97.4	89.1	98.2	88.3	97.1
4		77.9	91.8	78.9	92.3	83.4	97.0	82.5	95.5	83.3	96.2	85.6	97.8	85.6	97.0
5		73.1	89.8	75.3	91.5	79.0	95.6	78.8	94.3	80.2	96.0	81.3	96.1	82.0	96.4
6		69.0	88.2	71.2	90.1	75.0	94.5	75.9	94.3	76.5	95.1	78.0	95.4	78.9	96.2
7		65.0	86.8	67.8	89.0	71.5	93.2	72.8	94.3	72.7	93.9	74.8	94.9	75.2	95.2
8		61.8	85.9	63.8	87.0	67.2	91.7	68.1	92.2	69.3	93.2	71.3	93.9	72.1	94.8

		Year of diagnosis													
cont'd		2005 n=2,317		2006 n=2,021		2007 n=1,293		2008 n=614		2009 n=522		2010 n=459		2011 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		96.1	99.2	94.9	98.0	95.1	98.3	96.7	99.3	95.6	98.3	95.4	98.0	94.8	97.0
2		91.9	98.0	90.2	96.0	92.5	98.0	93.5	98.9	90.4	95.9	90.7	95.8		
3		87.2	96.0	87.0	95.4	88.8	97.5	89.7	97.9	85.8	93.6				
4		84.6	95.9	83.7	94.8	84.7	95.9	87.9	97.9						
5		82.2	95.9	80.4	94.1	81.1	94.3								
6		79.2	95.9	78.1	94.1										
7		75.4	95.3												

Table 1d. Observed (obs.) and relative (rel.) survival of patients with prostate cancer by year of diagnosis for period 1998-2011 (N=20,206).

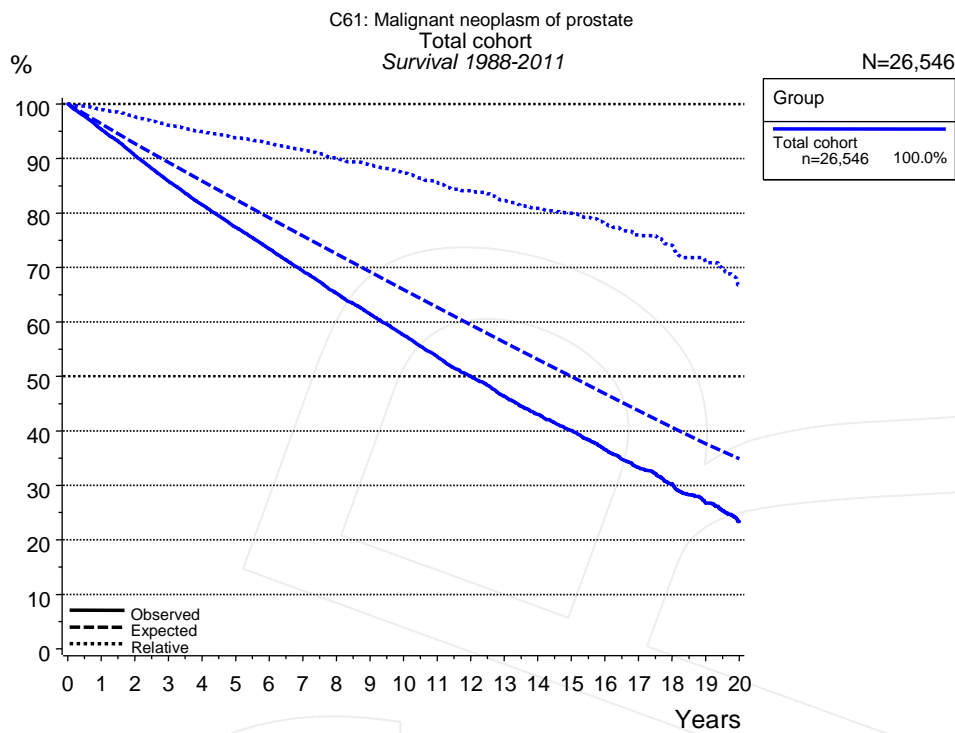


Figure 2a. Observed, expected and relative survival of the total cohort with prostate cancer. Included in the evaluation are 26,546 cases diagnosed between 1988 and 2011.

Group		
Total cohort n=26,546		
Years	obs. %	rel. %
0	100.0	100.0
1	95.3	99.0
2	90.6	97.6
3	85.8	96.1
4	81.5	94.9
5	77.3	93.8
6	73.4	92.8
7	69.3	91.5
8	65.3	90.0
9	61.5	88.9
10	57.5	87.3
11	53.7	85.6
12	50.0	84.1
13	46.3	82.3
14	43.0	80.8
15	40.0	79.9
16	36.6	78.0
17	33.2	75.9
18	30.2	74.0
19	26.8	70.9
20	23.4	66.7

Table 2b. Observed (obs.) and relative (rel.) survival of the total cohort with prostate cancer for period 1988-2011 (N=26,546).

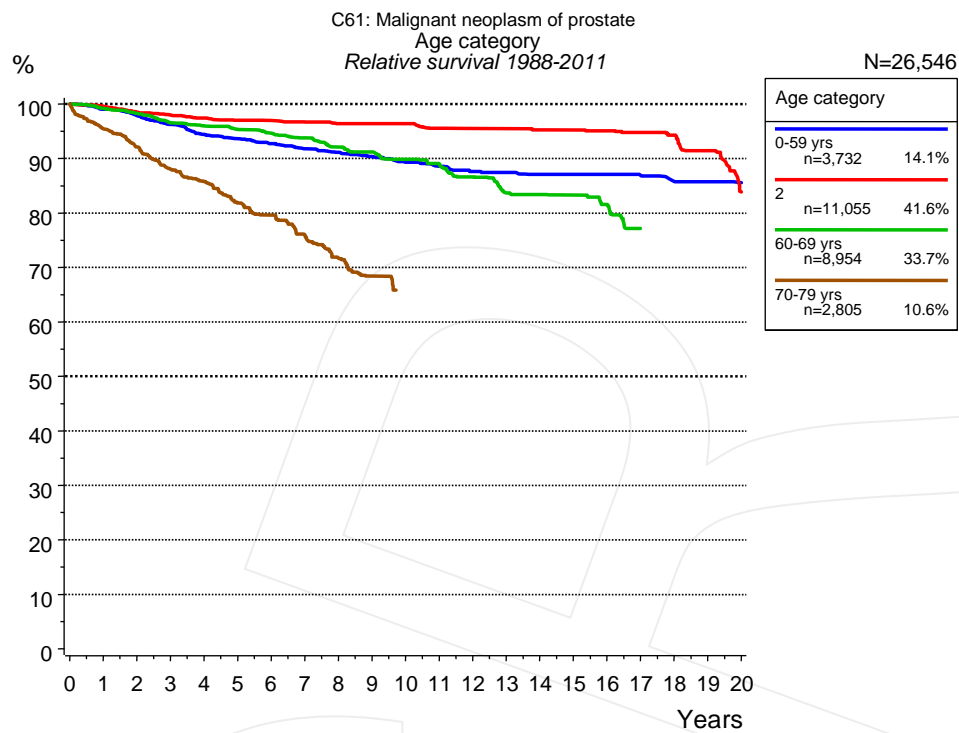


Figure 3a. Relative survival of patients with prostate cancer by age category. Included in the evaluation are 26,546 cases diagnosed between 1988 and 2011.

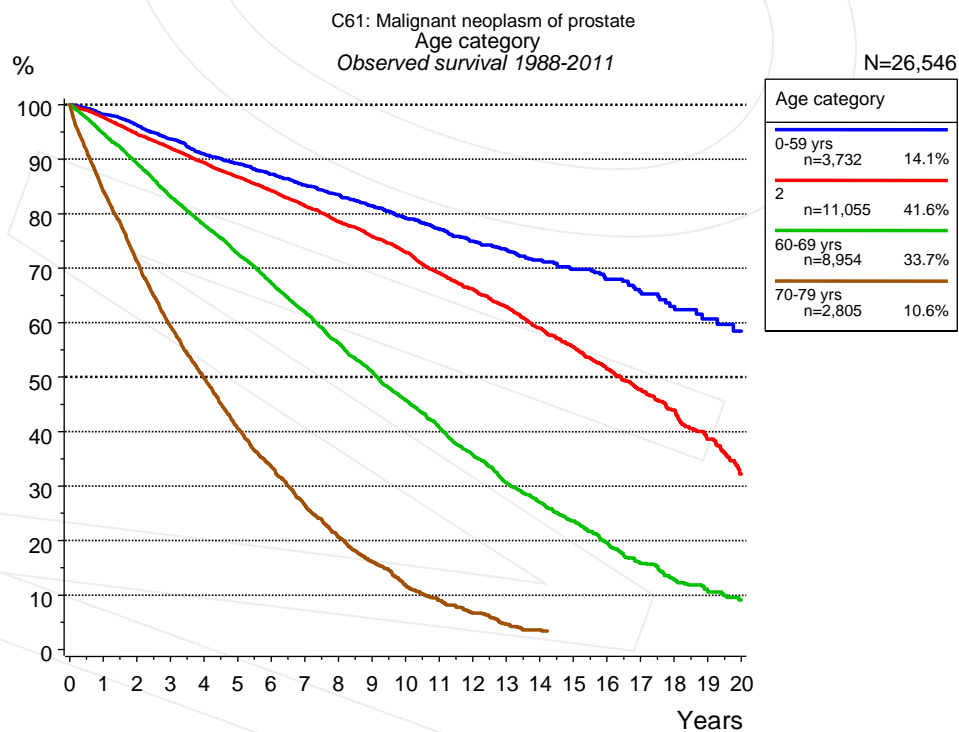


Figure 3b. Observed survival of patients with prostate cancer by age category. Included in the evaluation are 26,546 cases diagnosed between 1988 and 2011.

Years	Age category							
	0-59 yrs		2		60-69 yrs		70-79 yrs	
	n=3,732		n=11,055		n=8,954		n=2,805	
	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	98.2	99.0	97.7	99.6	94.7	99.2	84.1	95.4
2	96.2	97.9	94.6	98.5	89.2	98.3	71.1	92.1
3	93.7	96.2	92.1	98.0	83.1	96.5	59.2	88.0
4	90.9	94.4	89.4	97.4	77.9	96.0	49.8	85.8
5	89.2	93.6	86.7	97.0	72.6	95.3	40.6	81.8
6	87.2	92.7	84.2	96.9	67.3	94.6	33.5	79.6
7	85.2	91.8	81.4	96.7	61.9	93.8	26.5	75.9
8	83.4	91.1	78.5	96.3	56.3	92.1	20.7	71.7
9	81.5	90.4	75.8	96.3	51.0	91.2	16.2	68.4
10	79.1	89.3	72.9	96.3	45.7	89.9		
11	77.2	88.6	69.1	95.5	40.8	89.0		
12	74.9	87.6	66.2	95.4	35.7	86.6		
13	73.4	87.4	62.9	95.4	30.6	83.7		
14	71.5	87.1	58.9	95.2	26.9	83.4		
15	69.8	87.1	55.5	95.2	23.6	83.2		
16	68.0	87.1	51.6	95.0	19.6	81.6		
17	65.6	86.9	47.7	94.8	15.8	77.2		
18	63.0	85.8	44.0	94.3				
19	60.7	85.7	38.6	91.5				
20	58.4	85.5	32.2	83.8				

Table 3c. Observed (obs.) and relative (rel.) survival of patients with prostate cancer by age category for period 1988-2011 (N=26,546).

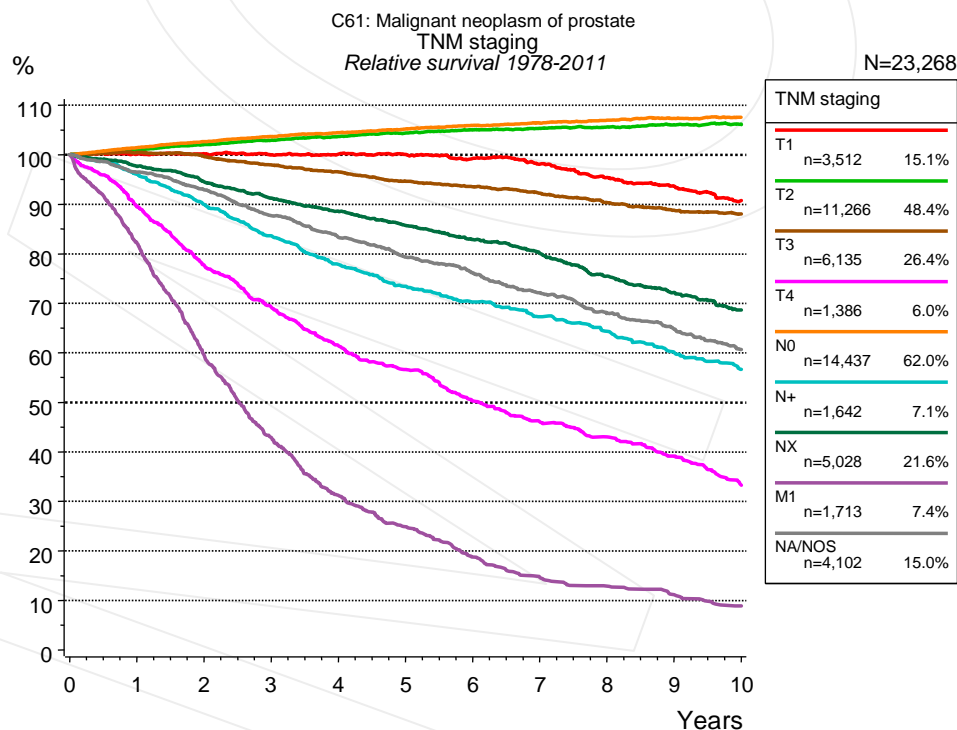


Figure 4a. Relative survival of patients with prostate cancer by TNM staging. For 23,342 of 27,370 cases diagnosed between 1978 and 2011 valid data could be obtained for this item. For a total of 23,268 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 4,102 patients with missing values regarding TNM staging (15.0% of 27,370 patients, the percent values of all other categories are related to n=23,268).

TNM staging														
	T1 n=3,512		T2 n=11,266		T3 n=6,135		T4 n=1,386		N0 n=14,437		N+ n=1,642		NX n=5,028	
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	95.3	100.1	98.3	101.0	97.2	100.4	85.4	89.6	98.9	101.4	93.6	96.1	92.5	97.7
2	90.8	100.1	96.5	102.0	93.3	99.6	70.7	77.7	97.4	102.6	85.0	90.0	84.8	94.5
3	86.3	100.0	94.4	102.9	88.6	97.9	60.2	69.2	95.6	103.7	76.8	83.6	77.4	91.2
4	82.0	100.1	92.2	103.7	84.3	96.5	50.9	61.4	93.5	104.4	69.3	77.9	71.0	88.6
5	77.7	100.0	89.8	104.4	79.6	94.6	44.9	56.7	91.2	105.2	63.4	73.5	64.7	85.7
6	72.9	99.2	87.2	105.0	75.7	93.6	38.0	50.3	88.7	105.9	58.6	70.3	58.8	82.9
7	68.0	98.1	84.3	105.3	71.7	92.2	33.2	46.1	86.0	106.4	54.1	67.3	53.4	80.0
8	62.3	95.4	81.4	105.6	67.3	90.3	29.5	43.0	83.3	107.0	49.7	64.3	47.3	75.5
9	57.5	93.6	78.5	106.0	63.3	88.8	25.7	39.1	80.2	107.4	44.6	60.0	42.3	72.2
10	52.3	90.7	75.2	106.1	60.0	88.1	20.7	33.2	77.0	107.5	40.3	56.6	37.7	68.7

TNM staging				
Years	M1 n=1,713		NA/NOS n=4,102	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	78.4	82.3	90.9	96.4
2	54.1	59.4	82.5	92.9
3	37.3	42.9	73.3	87.7
4	25.9	31.2	65.5	83.3
5	19.7	24.9	58.6	79.3
6	14.2	18.8	52.8	76.2
7	10.5	14.6	47.0	72.2
8	8.8	12.9	41.4	68.0
9	7.2	11.2	36.9	64.8
10	5.5	8.9	32.3	60.6

Table 4b. Observed (obs.) and relative (rel.) survival of patients with prostate cancer by TNM staging for period 1978-2011 (N=45,119).

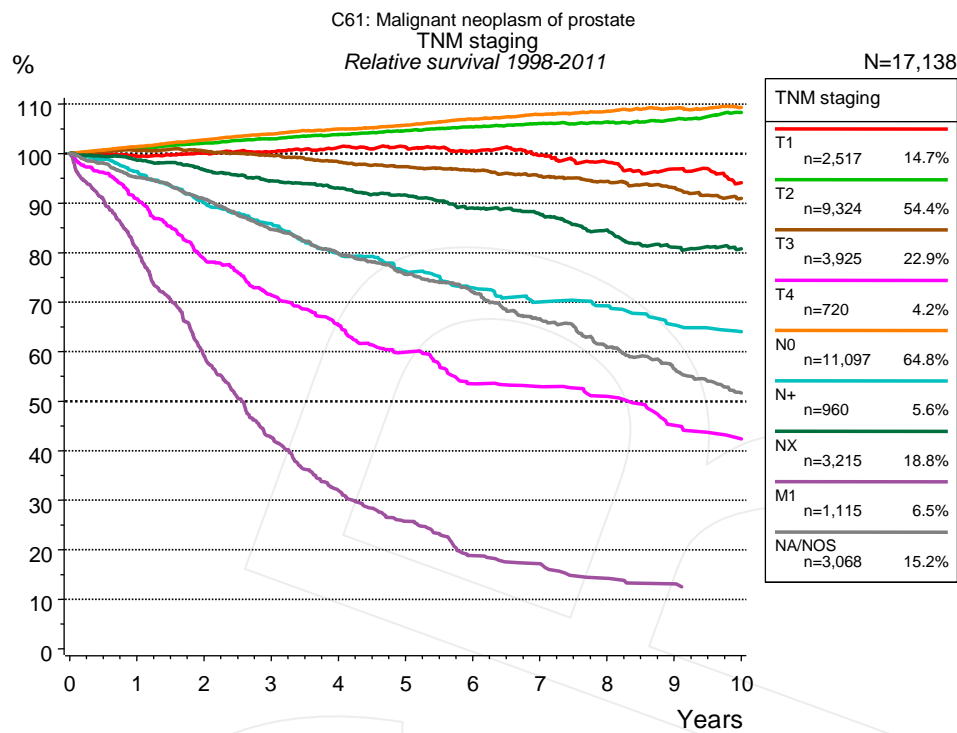


Figure 4c. Relative survival of patients with prostate cancer by TNM staging. For 17,201 of 20,206 cases diagnosed between 1998 and 2011 valid data could be obtained for this item. For a total of 17,138 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 3,068 patients with missing values regarding TNM staging (15.2% of 20,206 patients, the percent values of all other categories are related to n=17,138).

TNM staging															
Years	T1 n=2,517		T2 n=9,324		T3 n=3,925		T4 n=720		N0 n=11,097		N+ n=960		NX n=3,215		
	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	95.2	99.5	98.5	101.0	98.0	100.6	87.7	90.9	99.1	101.4	94.2	96.4	94.3	98.6	
2	91.6	100.1	97.0	102.1	95.2	100.5	73.3	78.7	98.0	102.7	85.8	90.1	88.5	96.7	
3	87.8	100.3	95.1	103.0	91.7	99.6	64.2	71.4	96.7	103.9	79.8	85.8	82.5	94.5	
4	84.6	101.2	93.2	103.8	87.9	98.3	56.5	65.3	95.0	104.9	72.4	79.8	77.5	93.0	
5	80.6	101.3	91.0	104.6	84.3	97.4	50.0	59.9	93.1	105.7	67.3	76.2	72.6	91.6	
6	76.0	100.5	88.8	105.4	81.0	96.6	43.2	53.5	91.3	106.9	62.5	72.9	67.1	89.0	
7	71.3	99.6	86.4	106.0	77.3	95.4	41.2	52.9	89.2	107.8	58.1	70.0	62.8	87.7	
8	66.7	98.3	83.7	106.4	73.7	94.3	38.0	50.9	86.8	108.5	55.8	69.2	57.5	84.5	
9	61.9	96.9	81.0	106.9	70.0	93.1	32.6	45.1	84.2	109.2	50.9	65.4	52.3	81.1	
10	56.7	94.1	78.8	108.3	65.5	90.9	29.1	42.3	81.1	109.4	47.9	64.0	49.2	80.8	

cont'd Years	TNM staging			
	M1 n=1,115		NA/NOS n=3,068	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	77.5	80.8	89.7	95.1
2	54.5	59.1	80.7	90.8
3	37.8	42.7	70.9	84.7
4	27.3	31.9	63.0	79.7
5	21.1	25.8	56.2	75.6
6	14.8	18.8	50.4	72.1
7	13.2	17.2	43.7	66.6
8	10.5	14.2	37.4	60.8
9	9.4	13.1	32.6	56.5
10			27.9	51.7

Table 4d. Observed (obs.) and relative (rel.) survival of patients with prostate cancer by TNM staging for period 1998-2011 (N=32,873).

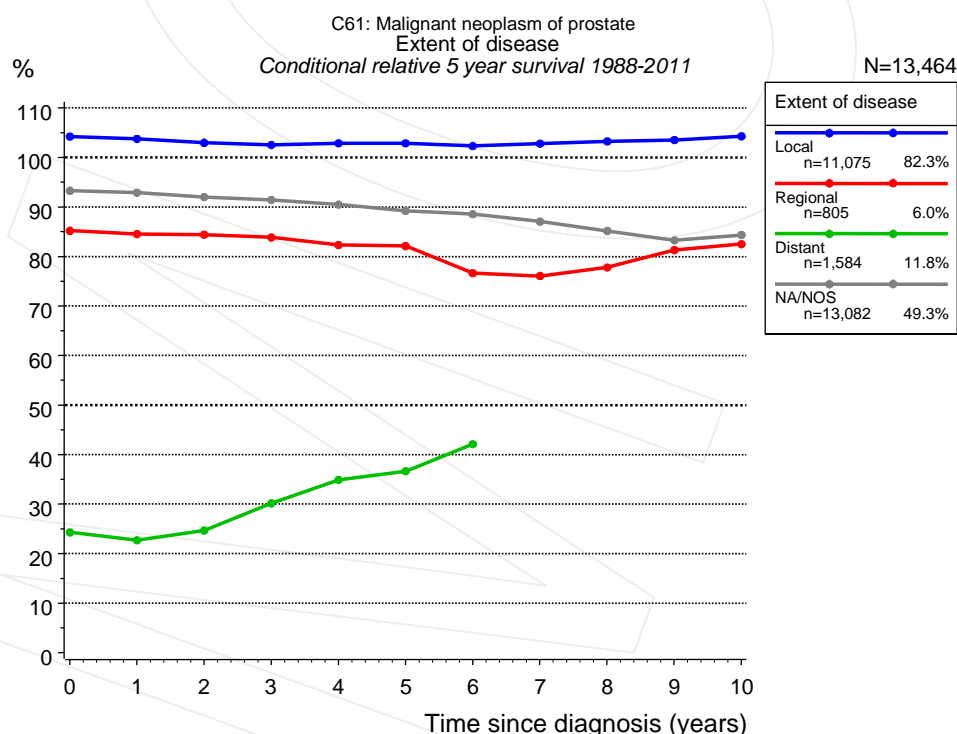


Figure 4e. Conditional relative 5-year survival of patients with prostate cancer by extent of disease. For 22,762 of 26,546 cases diagnosed between 1988 and 2011 valid data could be obtained for this item. For a total of 13,464 cases an evaluable classification was established. The grey line represents the subgroup of 13,082 patients with missing values regarding extent of disease (49.3% of 26,546 patients, the percent values of all other categories are related to n=13,464).

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	11,075	104.2	805	85.2	1,584	24.3	13,082	93.3
1	10,441	103.7	755	84.5	1,160	22.7	11,865	92.9
2	9,536	102.9	678	84.4	727	24.7	10,394	92.0
3	8,565	102.5	574	83.8	460	30.1	8,769	91.4
4	7,559	102.8	508	82.3	291	34.9	7,184	90.5
5	6,500	102.8	441	82.1	192	36.6	5,710	89.2
6	5,525	102.3	386	76.6	120	42.1	4,570	88.5
7	4,834	102.8	345	76.1			3,679	87.0
8	4,155	103.2	289	77.8			2,956	85.1
9	3,529	103.5	247	81.3			2,283	83.2
10	2,934	104.3	213	82.5			1,667	84.3

Table 4f. Conditional relative 5-year survival of patients with prostate cancer by extent of disease for period 1988-2011 (N=13,464).

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 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 extent of disease="Local", who are alive at least 3 years after cancer diagnosis, the conditional relative 5-year survival rate is 102.5% (n=8,565).

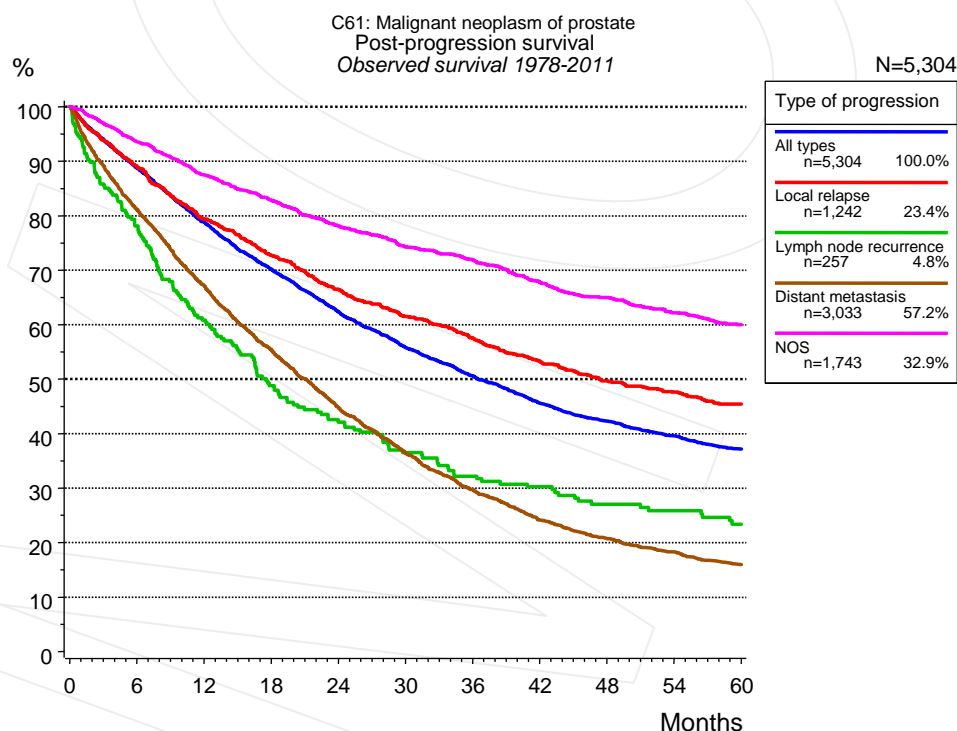


Figure 5a. Observed post-progression survival of 5,304 patients with prostate cancer diagnosed between 1978 and 2011 (incl. M1). These 5,304 patients with documented progression events during their course of disease represent 19.4% of the totally 27,370 evaluated cases. Patients with cancer relapse documented via death certificates only were excluded (n=888, 3.2%). 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=5,304	Local relapse n=1,242	Lymph node recurrence n=257	Distant metastasis n=3,033	NOS n=1,743
	%	%	%	%	%
0	100.0	100.0	100.0	100.0	100.0
12	78.8	79.4	60.8	67.2	87.5
24	62.3	66.5	42.1	44.8	78.1
36	50.6	57.5	32.2	29.7	71.9
48	42.3	49.7	27.0	20.7	65.0
60	37.1	45.5	23.4	15.9	60.0

Table 5b. Observed post-progression survival of patients with prostate cancer for period 1978-2011 (N=5,304).

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

Munich Cancer Registry. Survival C61: Prostate cancer [Internet]. 2013 [updated 2013 Apr 1; cited 2013 May 1]. Available from: http://www.tumorregister-muenchen.de/en/facts/surv/surv_C61__E.pdf

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