

Munich Cancer Registry



- ▶ Incidence and Mortality
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ICD-10 C54: Corpus cancer

Survival

Year of diagnosis	1988-1997	1998-2014
Patients	2,140	8,659
Diseases	2,140	8,660
Cases evaluated	1,926	7,073
Creation date	04/11/2016	
Export date	12/23/2015	
Population (females)	2.36 m	



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

http://www.tumorregister-muenchen.de/en/facts/surv/sC54__E-ICD-10-C54-Corpus-cancer-survival.pdf

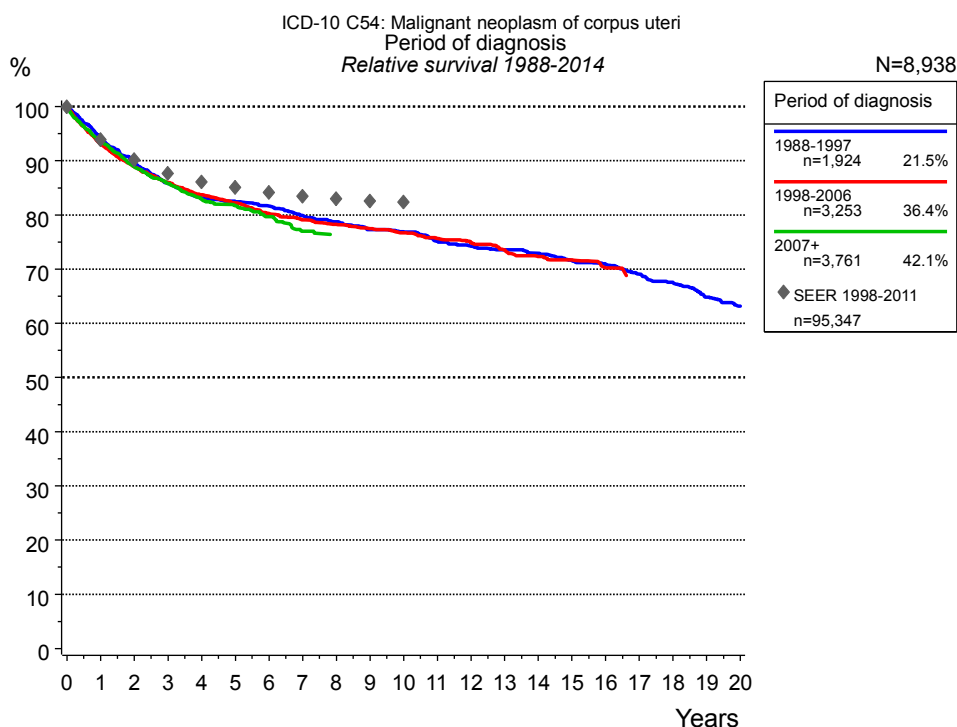


Figure 1a. Relative survival of patients with corpus cancer by period of diagnosis. Included in the evaluation are 8,938 cases diagnosed between 1988 and 2014.

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 2011, and are represented by gray 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 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					
	1988-1997 n=1,924		1998-2006 n=3,253		2007+ n=3,761	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	91.9	94.4	90.9	93.1	91.7	93.7
2	85.1	89.7	84.9	88.9	85.3	89.0
3	79.3	85.8	80.3	86.0	80.6	85.8
4	74.8	83.1	76.5	83.7	76.4	82.9
5	72.3	82.5	73.5	82.2	73.8	81.7
6	69.7	81.6	70.1	80.3	70.5	79.7
7	66.4	79.9	67.5	79.1	66.6	77.0
8	63.6	78.7	65.2	78.2		
9	60.7	77.3	63.0	77.5		
10	58.8	76.9	60.9	76.7		
11	55.7	75.2	58.5	75.7		
12	53.5	74.3	56.3	74.9		
13	51.5	73.6	53.8	73.6		
14	49.3	72.9	51.3	72.3		
15	46.8	71.6	49.6	71.7		
16	44.7	70.9	46.7	70.2		
17	42.0	69.1				
18	39.6	67.6				
19	36.6	64.8				
20	34.3	63.2				

Table 1b. Observed (obs.) and relative (rel.) survival of patients with corpus cancer by period of diagnosis for period 1988-2014 (N=8,938).

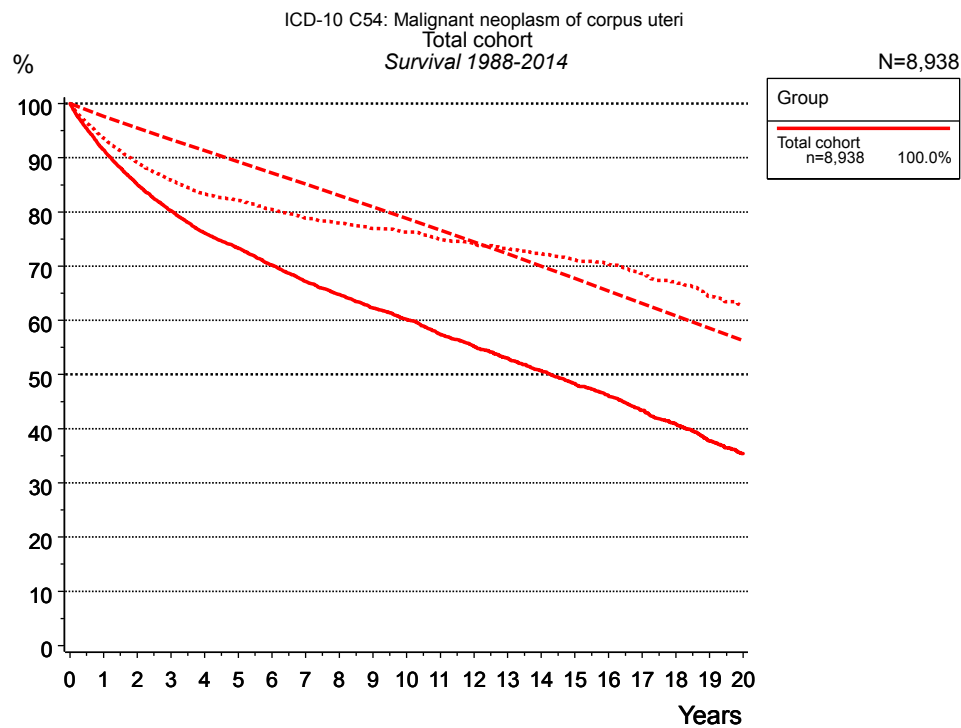


Figure 2a. Observed, expected and relative survival of the total cohort with corpus cancer. Included in the evaluation are 8,938 cases diagnosed between 1988 and 2014.

Years	Group	
	Total cohort n=8,938	
	obs. %	rel. %
0	100.0	100.0
1	91.5	93.6
2	85.1	89.1
3	80.2	85.9
4	76.1	83.3
5	73.3	82.1
6	70.2	80.5
7	67.2	78.9
8	64.8	78.0
9	62.2	76.9
10	60.2	76.3
11	57.4	74.9
12	55.2	74.1
13	53.0	73.3
14	50.7	72.3
15	48.3	71.2
16	46.1	70.3
17	43.4	68.6
18	40.9	67.1
19	37.8	64.4
20	35.4	62.8

Table 2b. Observed (obs.) and relative (rel.) survival of the total cohort with corpus cancer for period 1988-2014 (N=8,938).

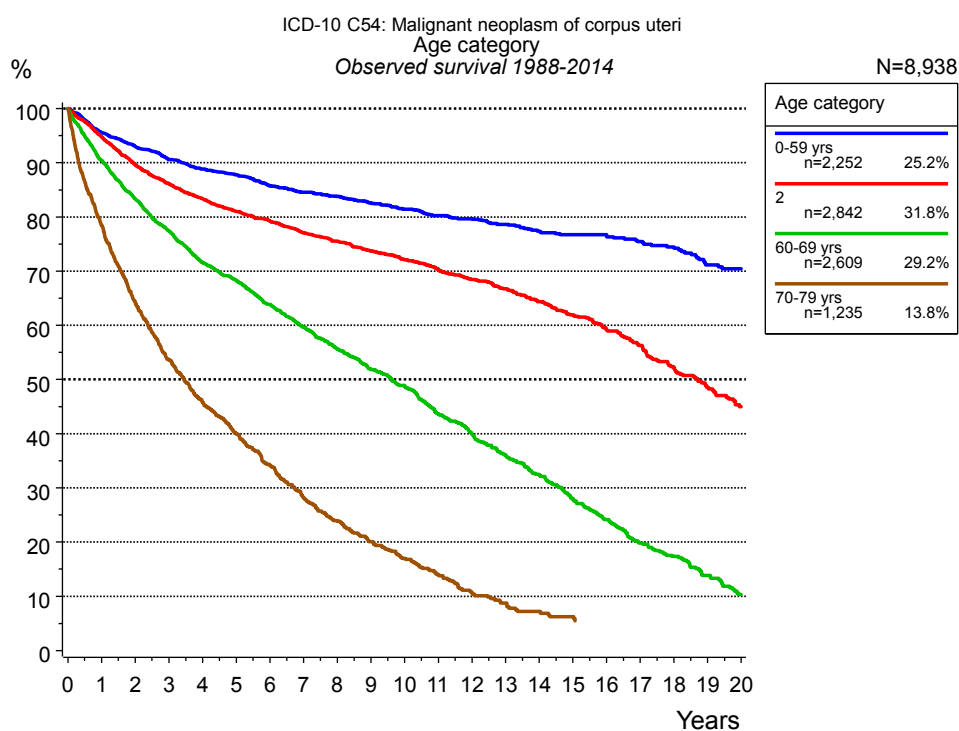


Figure 3a. Observed survival of patients with corpus cancer by age category. Included in the evaluation are 8,938 cases diagnosed between 1988 and 2014.

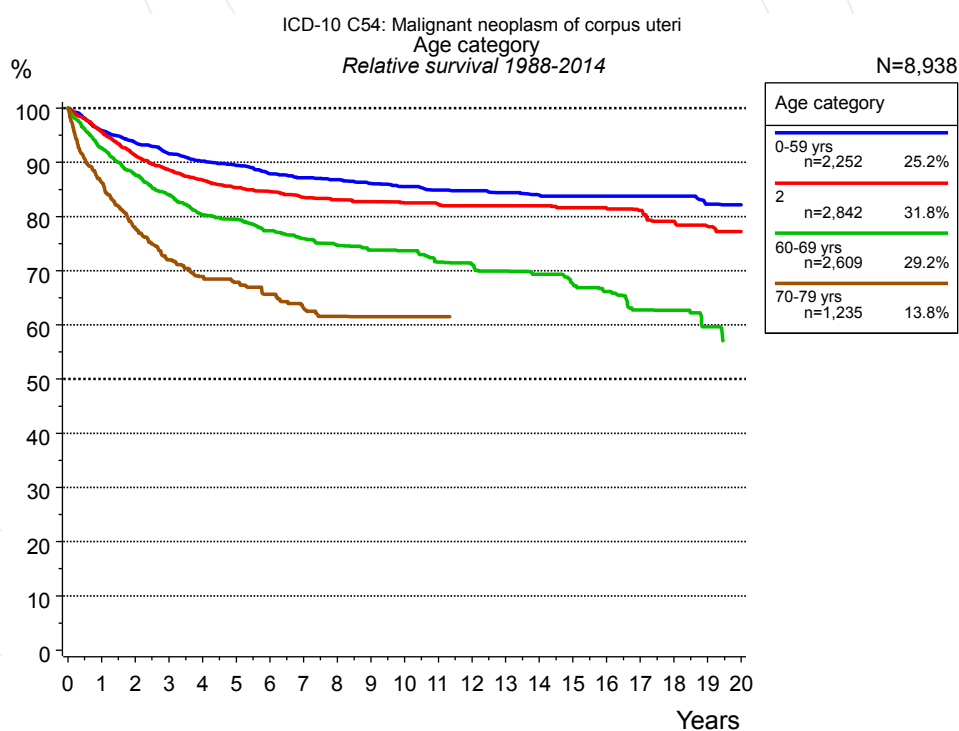


Figure 3b. Relative survival of patients with corpus cancer by age category. Included in the evaluation are 8,938 cases diagnosed between 1988 and 2014.

Years	Age category							
	0-59 yrs		2		60-69 yrs		70-79 yrs	
	n=2,252		n=2,842		n=2,609		n=1,235	
	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	95.9	94.8	95.6	90.5	92.7	78.5	86.3
2	93.0	93.6	89.6	91.2	83.3	87.7	64.3	78.0
3	90.6	91.6	86.1	88.6	77.4	84.0	53.7	72.0
4	88.9	90.2	83.4	86.7	71.6	80.3	45.8	68.9
5	87.8	89.5	81.0	85.3	68.2	79.5	39.9	67.9
6	85.8	87.9	79.3	84.6	63.9	77.4	34.2	65.7
7	84.6	87.1	77.1	83.5	59.7	75.9	28.2	63.1
8	83.8	86.8	75.5	83.1	55.7	74.7	24.0	61.6
9	82.5	86.1	73.7	82.7	51.9	73.8	20.1	61.5
10	81.5	85.5	72.1	82.5	48.9	73.7	17.0	61.5
11	80.3	84.8	70.3	82.3	43.6	71.6	14.0	61.5
12	79.7	84.7	68.5	82.0	40.0	71.2		
13	78.6	84.4	66.8	82.0	36.1	70.0		
14	77.4	83.9	64.4	82.0	32.4	69.3		
15	76.8	83.8	62.0	81.6	28.0	67.6		
16	76.8	83.8	59.1	81.5	24.2	66.2		
17	75.5	83.8	56.3	81.1	19.8	62.8		
18	74.5	83.8	52.2	79.1	17.3	62.7		
19	71.2	82.3	48.6	78.2	13.8	59.6		
20	70.5	82.2	45.0	77.2				

Table 3c. Observed (obs.) and relative (rel.) survival of patients with corpus cancer by age category for period 1988-2014 (N=8,938).

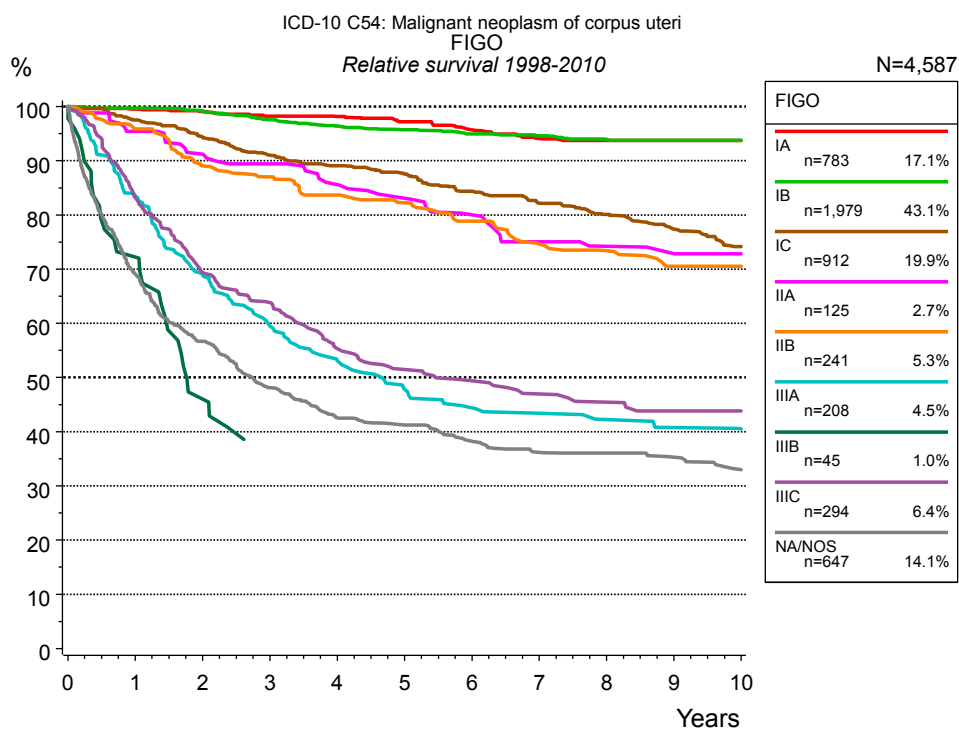


Figure 4a. Relative survival of patients with corpus cancer by FIGO. For 5,019 of 5,234 cases diagnosed between 1998 and 2010 valid data could be obtained for this item. For a total of 4,587 cases an evaluable classification was established. The grey line represents the subgroup of 647 patients with missing values regarding FIGO (12.4% of 5,234 patients, the percent values of all other categories are related to n=4,587).

Due to substantial changes in stage classification schemes long-term survival statistics over decades could not be created.

FIGO														
	IA n=783		IB n=1,979		IC n=912		IIA n=125		IIB n=241		IIIA n=208		IIIB n=45	
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	98.2	99.5	98.1	99.7	94.8	97.5	93.5	95.5	93.7	95.9	80.6	83.5	70.8	72.2
2	96.2	99.1	95.8	99.2	88.8	94.3	87.8	91.2	85.2	89.0	64.9	69.0	43.4	46.0
3	93.8	98.2	92.5	97.5	83.3	91.0	84.5	89.4	81.7	87.0	54.4	59.5	34.2	37.0
4	92.0	98.2	89.7	96.4	79.2	89.1	78.6	85.6	76.9	83.7	47.8	53.2		
5	89.5	97.2	87.3	95.7	75.3	87.6	74.3	83.1	73.8	82.3	42.1	47.9		
6	86.5	95.7	84.9	95.0	70.4	84.4	69.9	80.0	69.2	78.9	38.6	44.4		
7	83.6	94.1	82.8	94.6	66.4	82.2	64.3	75.0	63.9	74.6	36.7	43.4		
8	82.3	93.7	80.4	94.0	62.6	80.1	61.6	74.2	61.6	73.4	35.1	42.3		
9	80.9	93.7	78.7	93.8	58.4	77.4	60.1	72.8	57.6	70.5	33.3	40.8		
10	80.3	93.7	76.4	93.8	54.2	74.2	58.5	72.8	56.8	70.5	32.2	40.5		

<i>cont'd</i>	FIGO			
	IIIC n=294		NA/NOS n=647	
	obs. %	rel. %	obs. %	rel. %
Years				
0	100.0	100.0	100.0	100.0
1	82.2	83.2	66.8	69.1
2	67.4	69.4	53.3	56.7
3	61.2	63.8	44.1	48.1
4	52.2	55.4	38.1	42.6
5	47.9	51.5	36.3	41.2
6	45.4	49.4	32.9	38.2
7	42.3	47.0	30.6	36.2
8	40.5	45.5	30.1	36.0
9	38.2	43.9	28.7	35.3
10	38.2	43.9	26.4	33.0

Table 4b. Observed (obs.) and relative (rel.) survival of patients with corpus cancer by FIGO for period 1998-2010 (N=4,587).

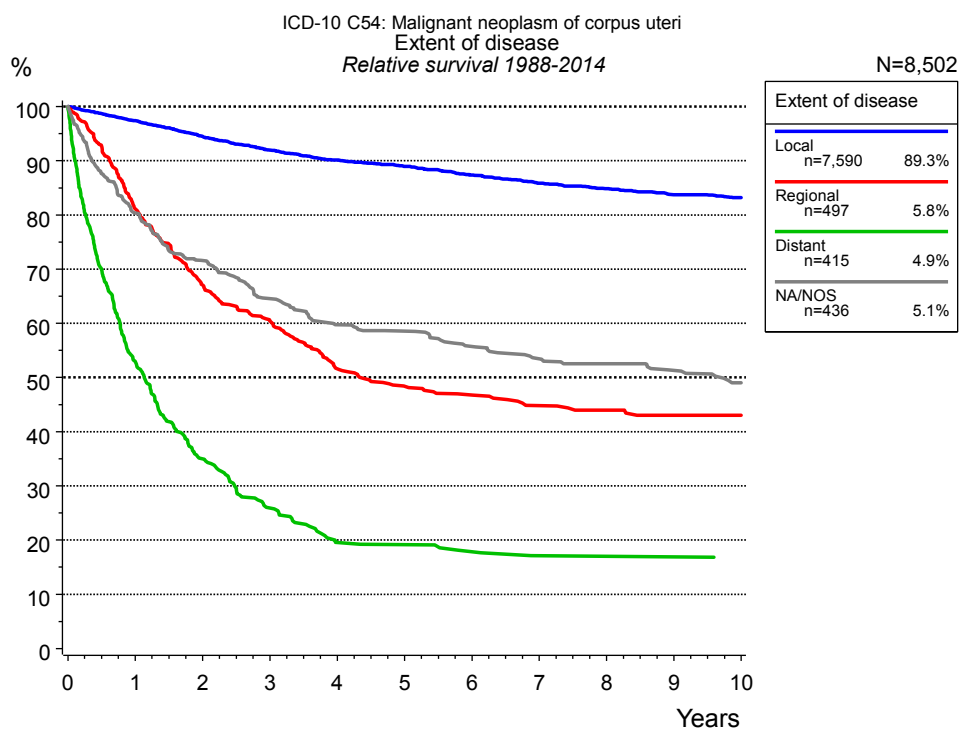


Figure 4c. Relative survival of patients with corpus cancer by extent of disease. For 8,542 of 8,938 cases diagnosed between 1988 and 2014 valid data could be obtained for this item. For a total of 8,502 cases an evaluable classification was established. The grey line represents the subgroup of 436 patients with missing values regarding extent of disease (4.9% of 8,938 patients, the percent values of all other categories are related to n=8,502).

Years	Extent of disease							
	Local n=7,590		Regional n=497		Distant n=415		NA/NOS n=436	
	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	95.2	97.4	79.9	81.1	51.7	52.9	77.4	80.4
2	90.3	94.5	65.0	67.1	33.6	35.0	67.0	71.6
3	85.9	92.0	57.6	60.4	24.3	25.9	59.0	64.5
4	82.3	90.1	48.4	51.6	17.9	19.6	53.5	59.8
5	79.4	89.0	44.5	48.4	17.4	19.2	51.5	58.6
6	76.2	87.4	42.6	46.8	16.0	17.9	48.2	55.8
7	73.0	85.8	40.1	44.8	14.9	17.2	45.5	53.5
8	70.3	84.9	38.8	44.0	14.9	17.0	43.9	52.5
9	67.6	83.8	37.3	43.0	14.9	16.9	42.1	51.3
10	65.4	83.2	37.3	43.0	14.0	16.0	39.5	49.0

Table 4d. Observed (obs.) and relative (rel.) survival of patients with corpus cancer by extent of disease for period 1988-2014 (N=8,502).

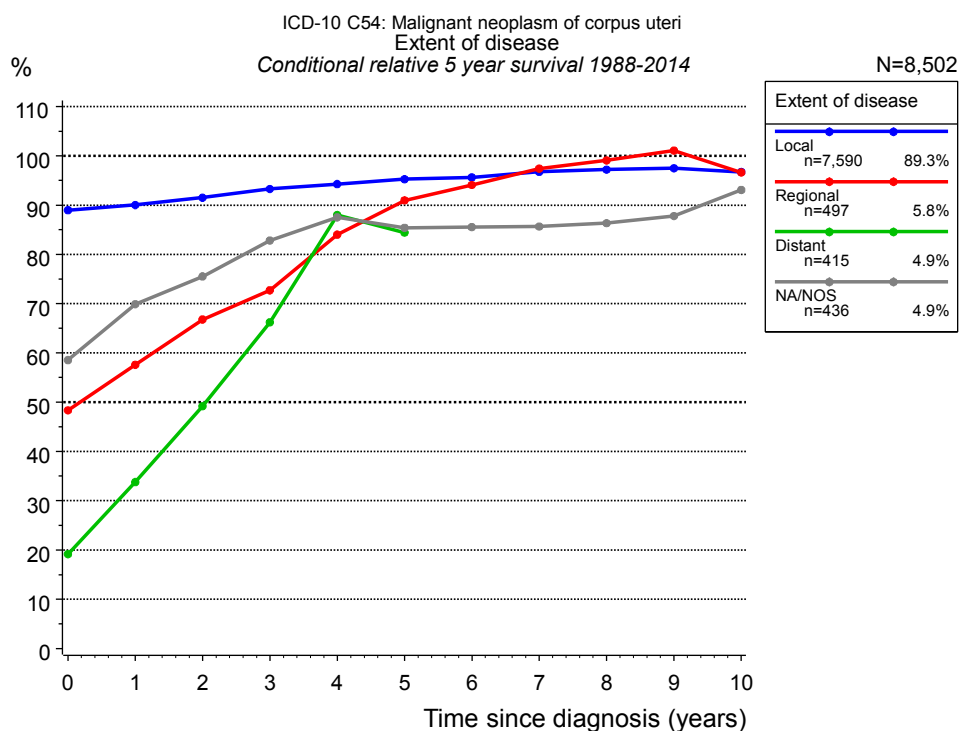


Figure 4e. Conditional relative 5-year survival of patients with corpus cancer by extent of disease. For 8,542 of 8,938 cases diagnosed between 1988 and 2014 valid data could be obtained for this item. For a total of 8,502 cases an evaluable classification was established. The grey line represents the subgroup of 436 patients with missing values regarding extent of disease (4.9% of 8,938 patients, the percent values of all other categories are related to n=8,502).

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	7,590	89.0	497	48.4	415	19.2	436	58.6
1	6,833	90.0	378	57.6	198	33.8	321	69.9
2	6,071	91.5	290	66.8	118	49.2	272	75.5
3	5,414	93.3	241	72.7	70	66.2	232	82.8
4	4,842	94.3	184	84.0	44	88.0	196	87.5
5	4,326	95.3	152	91.0	39	84.4	179	85.4
6	3,804	95.6	127	94.1			161	85.5
7	3,329	96.8	104	97.4			143	85.7
8	2,901	97.2	84	99.1			128	86.3
9	2,538	97.5	70	101.1			116	87.8
10	2,220	96.7	63	96.6			100	93.1

Table 4f. Conditional relative 5-year survival of patients with corpus cancer by extent of disease for period 1988-2014 (N=8,502).

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 93.3% (n=5,414).

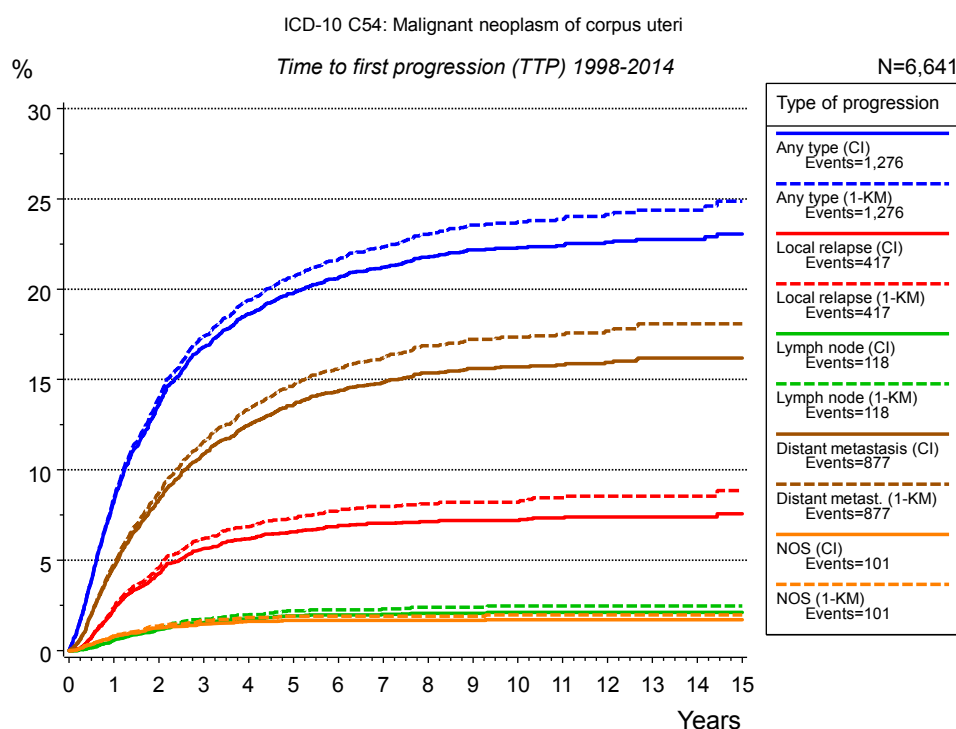


Figure 5a. Time to first progression of 6,641 patients with corpus cancer diagnosed between 1998 and 2014 (M0 only in solid cancers) estimated by cumulative incidence function (CI, solid line) accounting for death as competing risk and by inverse Kaplan-Meier estimate (1-KM, dashed line). The frequency of events may be underestimated due to underreporting.

Years	Type of progression						
	Any type (CI)	Any type (1-KM)	Local relapse (CI)	Local relapse (1-KM)	Lymph node (CI)	Lymph node (1-KM)	Distant metastasis (CI)
	n=6,641 %	n=6,641 %	n=6,641 %	n=6,641 %	n=6,641 %	n=6,641 %	n=6,641 %
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	8.2	8.3	2.2	2.3	0.6	0.6	4.6
2	13.6	14.0	4.3	4.6	1.2	1.3	8.4
3	16.8	17.4	5.6	6.2	1.6	1.7	10.9
4	18.6	19.4	6.2	6.8	1.7	2.0	12.5
5	19.8	20.7	6.6	7.3	1.9	2.2	13.6
6	20.6	21.7	6.9	7.8	2.0	2.3	14.4
7	21.2	22.3	7.0	8.0	2.0	2.3	14.8
8	21.8	23.0	7.1	8.1	2.1	2.4	15.4
9	22.2	23.6	7.2	8.2	2.1	2.4	15.6
10	22.3	23.7	7.2	8.2	2.1	2.5	15.7
11	22.4	23.9	7.3	8.4	2.1	2.5	15.8
12	22.6	24.1	7.4	8.5	2.1	2.5	15.9
13	22.8	24.4	7.4	8.5	2.1	2.5	16.2
14	22.8	24.4	7.4	8.5	2.1	2.5	16.2
15	23.1	24.9	7.6	8.9	2.1	2.5	16.2

<i>cont'd</i>	Type of progression		
	Distant metast. (1- KM)	NOS (CI)	NOS (1-KM)
	n=6,641	n=6,641	n=6,641
Years	%	%	%
0	0.0	0.0	0.0
1	4.8	0.8	0.8
2	8.8	1.2	1.4
3	11.6	1.5	1.7
4	13.4	1.6	1.8
5	14.6	1.7	1.9
6	15.6	1.7	1.9
7	16.2	1.7	1.9
8	16.9	1.7	1.9
9	17.2	1.7	1.9
10	17.3	1.7	2.0
11	17.5	1.7	2.0
12	17.7	1.7	2.0
13	18.1	1.7	2.0
14	18.1	1.7	2.0
15	18.1	1.7	2.0

Table 5b. Time to first progression of patients with corpus cancer for period 1998-2014 (N=6,641).

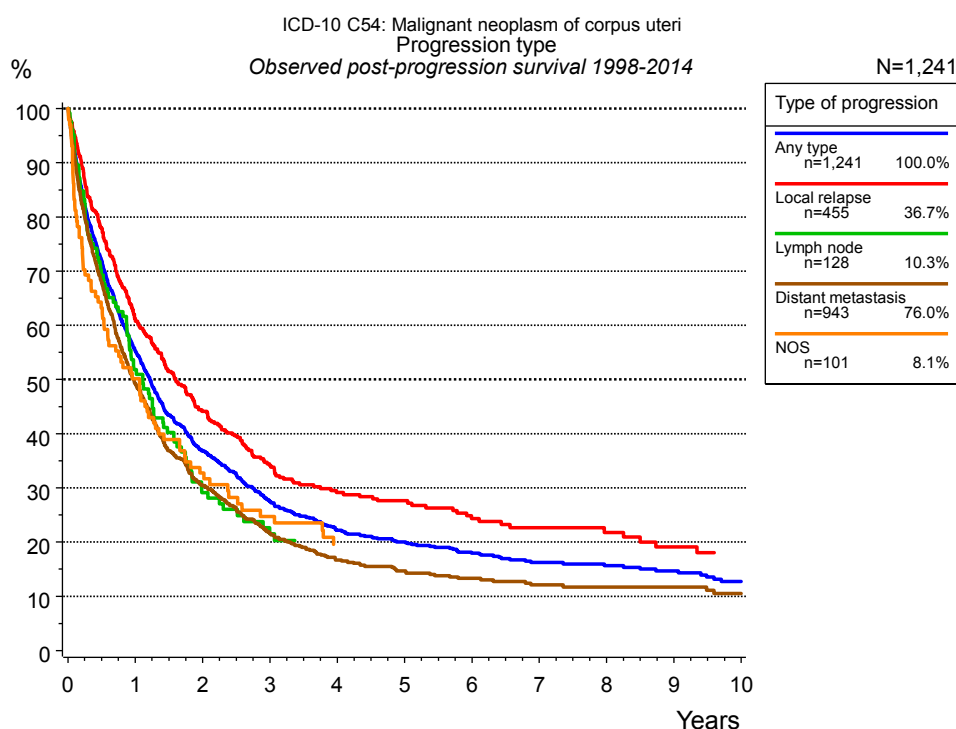


Figure 5c. Observed post-progression survival of 1,241 patients with corpus cancer diagnosed between 1998 and 2014. These 1,241 patients with documented progression events during their course of disease represent 17.8 % of the totally 6,991 evaluated cases (incl. M1, n=350, 5.0 %). Patients with cancer relapse documented via death certificates only were excluded (n=385, 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 “Any type” 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.

Years	Type of progression				
	Any type n=1,241 %	Local relapse n=455 %	Lymph node n=128 %	Distant metastasis n=943 %	NOS n=101 %
0	100.0	100.0	100.0	100.0	100.0
1	55.2	61.0	51.9	49.1	50.2
2	36.8	44.2	29.1	30.4	32.8
3	27.5	34.1	21.5	21.6	24.7
4	22.2	29.2	20.3	16.7	19.6
5	20.0	27.6		14.7	
6	18.0	24.4		13.3	
7	16.2	22.7		12.1	
8	15.7	21.8		11.7	
9	14.7	19.1		11.7	
10	12.8			10.5	

Table 5d. Observed post-progression survival of patients with corpus cancer for period 1998-2014 (N=1,241).

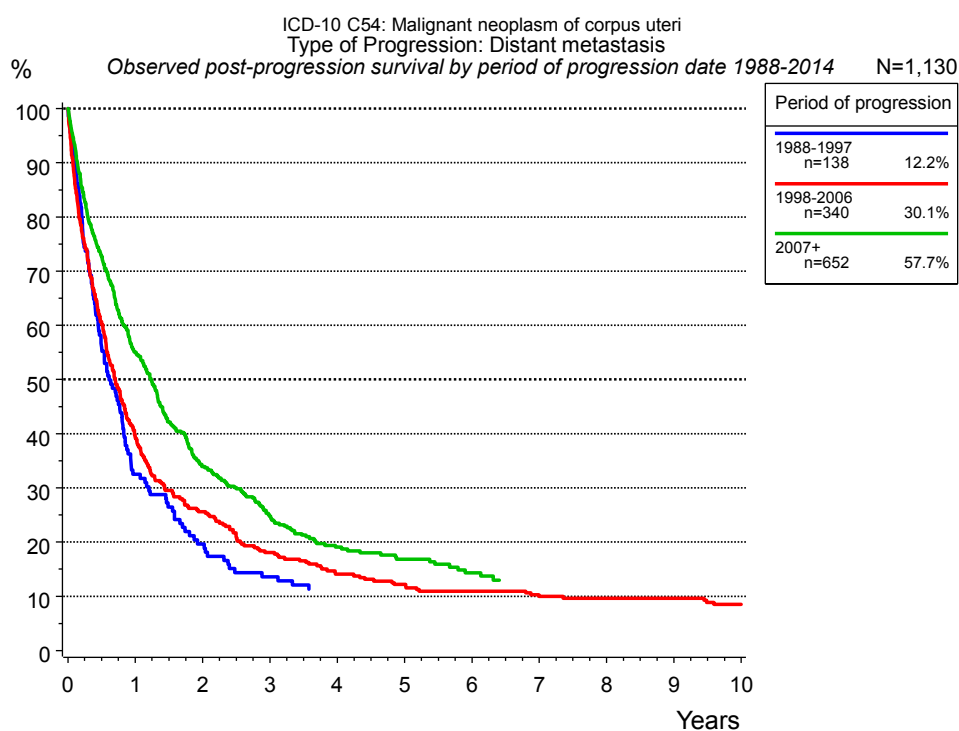


Figure 5e. Observed post-progression (distant metastasis) survival of 1,130 patients with corpus cancer diagnosed between 1988 and 2014 by period of progression.

Years	Period of progression		
	1988-1997 n=138	1998-2006 n=340	2007+ n=652
0	100.0	100.0	100.0
1	32.5	39.2	55.1
2	19.7	25.6	33.9
3	13.6	18.1	24.8
4		14.1	19.0
5		12.2	16.9
6		10.9	14.3
7		10.0	
8		9.7	
9		9.7	
10		8.5	

Table 5f. Observed post-progression (distant metastasis) survival of patients with corpus cancer for period 1988-2014 by period of progression (N=1,130).

Shortcuts

MCR Munich Cancer Registry, Germany

NCI National Cancer Institute, USA

SEER Surveillance, Epidemiology, and End Results, USA

UICC Union for International Cancer Control, Geneva

DCO Death certificate only Death certificate provides the only notification to the registry.

NA Not available

NOS Not otherwise specified

OS Overall/Observed survival Overall/Observed survival (Kaplan-Meier estimate)

Date of entry: diagnosis
Event: death from any cause

RS Relative survival Survival compared to “general population”, ratio of observed to expected survival (Ederer II method), reflecting cancer specific survival

AS Assembled survival Assembled chart of observed, expected, relative survival

CS Conditional survival Survival probability under the condition of surviving a given period of time

TTP Time to progression Time to first progression / relapse
Date of entry: diagnosis
Event: (progression / relapse): first local-, lymph node recurrence, distant metastasis or unspecified progression

1-KM 1 minus Kaplan-Meier estimator (“inverse” Kaplan-Meier estimator)

CI Cumulative incidence
Death as competing risk (according to Kalbfleisch und Prentice)

PPS Post-progression survival Survival since first progression / relapse (Kaplan-Meier estimate)
Date of entry (progression / relapse): first local-, lymph node recurrence, distant metastasis or unspecified progression
Event: death from any cause

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