

# Munich Cancer Registry



- Incidence and Mortality
- Selection Matrix
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- *Deutsch*

## ICD-10 C16: Stomach cancer

### Survival

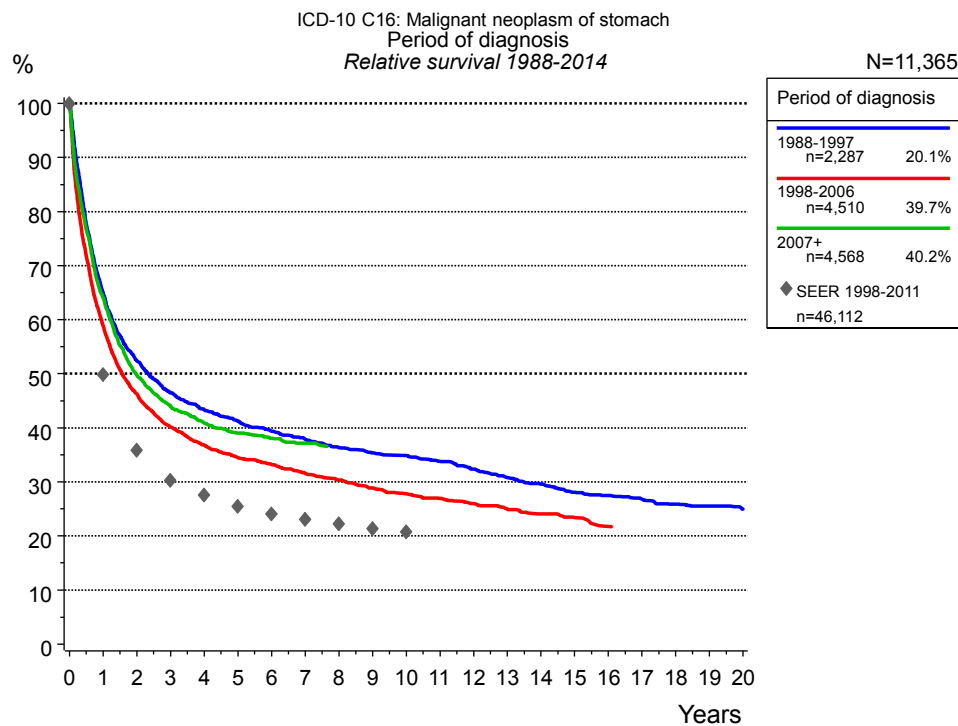
Year of diagnosis	1988-1997	1998-2014
Patients	2,561	12,317
Diseases	2,563	12,340
Cases evaluated	2,290	9,151
Creation date	03/02/2016	
Export date	12/23/2015	
Population	4.64 m	



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Munich, 81377  
Germany

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

[http://www.tumorregister-muenchen.de/en/facts/surv/sC16\\_\\_E-ICD-10-C16-Stomach-cancer-survival.pdf](http://www.tumorregister-muenchen.de/en/facts/surv/sC16__E-ICD-10-C16-Stomach-cancer-survival.pdf)



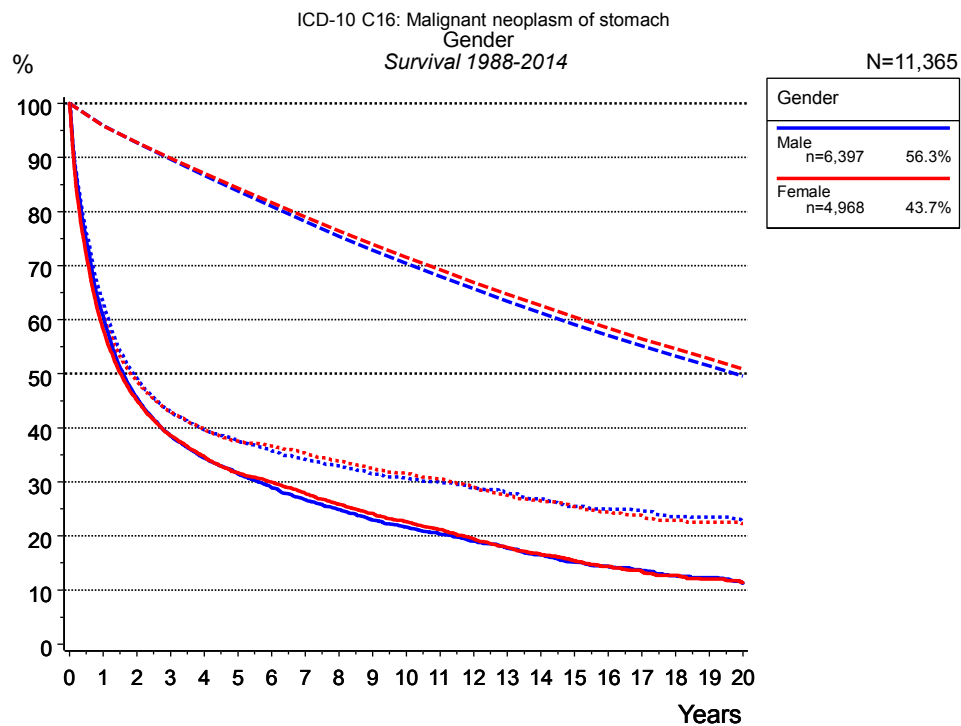
**Figure 1a.** Relative survival of patients with stomach cancer by period of diagnosis. Included in the evaluation are 11,365 cases diagnosed between 1988 and 2014.

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=2,287		1998-2006 n=4,510		2007+ n=4,568	
	obs. %	rel. %	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0	100.0	100.0
1	62.3	64.8	56.2	58.8	61.5	64.0
2	48.7	52.4	42.7	46.3	46.4	49.8
3	41.8	46.4	35.7	40.1	39.8	44.0
4	37.8	43.4	31.7	36.8	35.8	40.9
5	34.8	41.2	28.7	34.4	33.1	39.0
6	32.2	39.4	26.7	33.2	31.3	38.1
7	30.0	37.9	24.5	31.6	29.6	37.2
8	27.8	36.4	22.7	30.3		
9	26.2	35.3	20.9	28.9		
10	25.1	34.9	19.4	27.8		
11	23.5	33.8	18.2	26.9		
12	21.8	32.4	16.9	25.9		
13	20.1	30.8	15.6	25.0		
14	18.7	29.6	14.6	24.1		
15	17.2	28.1	13.6	23.4		
16	16.4	27.5	12.3	21.8		
17	15.4	26.8				
18	14.4	25.9				
19	13.8	25.5				
20	12.9	24.9				

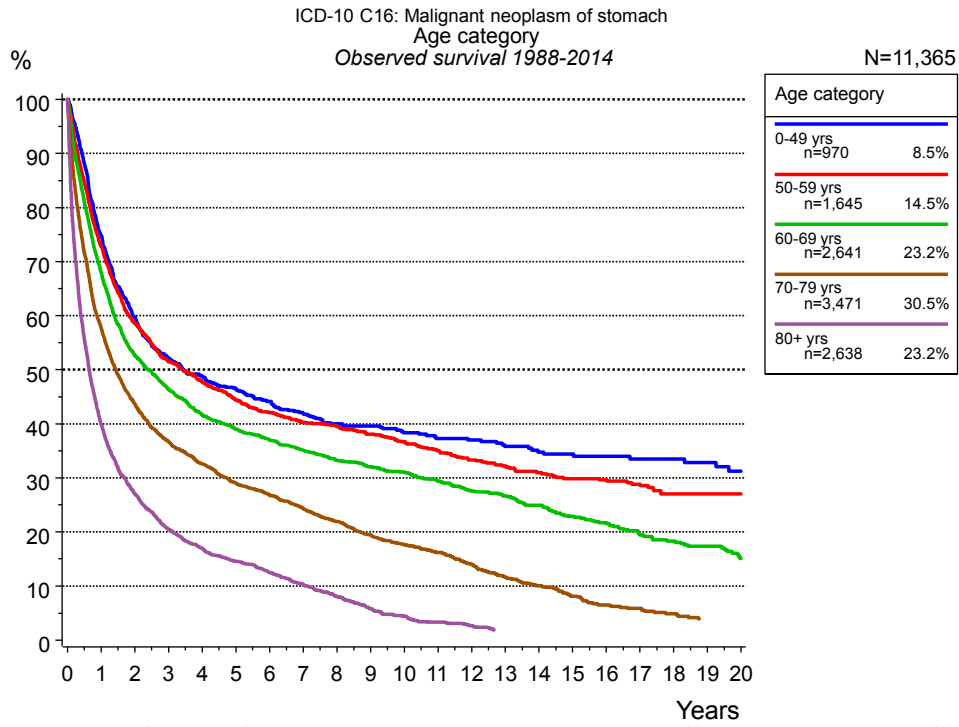
**Table 1b.** Observed (obs.) and relative (rel.) survival of patients with stomach cancer by period of diagnosis for period 1988-2014 (N=11,365).



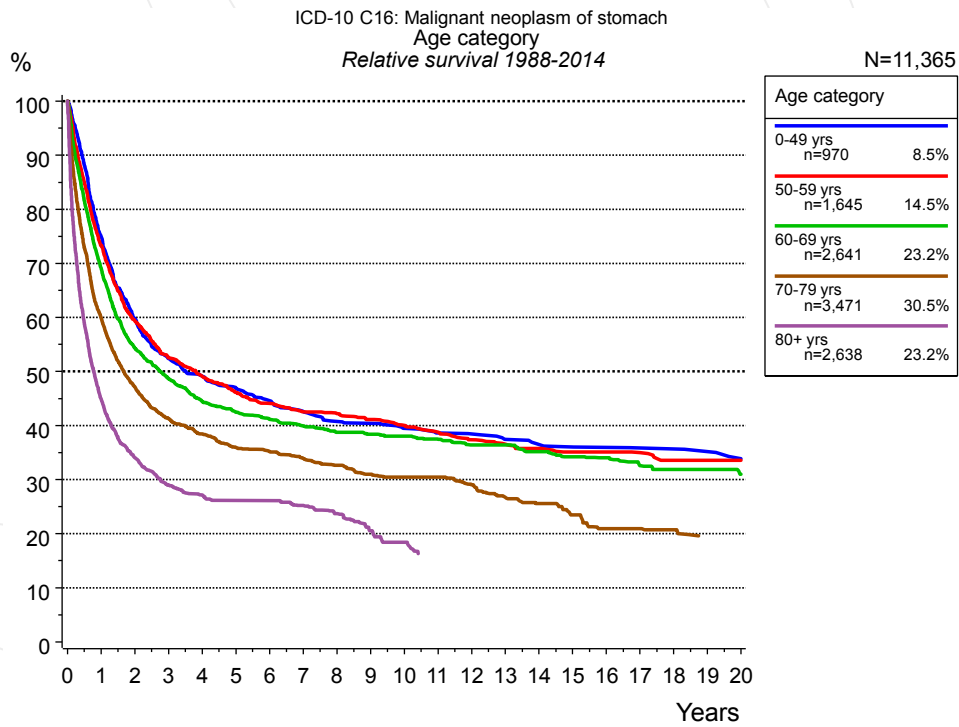
**Figure 2a.** Survival of patients with stomach cancer by gender. Included in the evaluation are 11,365 cases diagnosed between 1988 and 2014.

Years	Gender			
	Male n=6,397		Female n=4,968	
	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	60.6	63.2	58.2	60.7
2	45.6	49.2	45.1	48.6
3	38.6	43.0	38.6	42.9
4	34.4	39.6	34.8	39.9
5	31.4	37.5	31.7	37.5
6	29.0	35.8	30.0	36.7
7	26.7	34.1	27.9	35.3
8	24.9	33.0	25.8	33.8
9	22.9	31.4	24.2	32.6
10	21.7	30.7	22.7	31.6
11	20.3	29.9	21.2	30.6
12	19.0	28.9	19.4	29.0
13	17.7	27.9	17.8	27.5
14	16.5	26.8	16.6	26.5
15	15.1	25.5	15.4	25.4
16	14.4	25.0	14.4	24.4
17	13.6	24.6	13.5	23.8
18	12.7	23.6	12.8	22.9
19	12.3	23.5	12.0	22.5
20	11.3	22.8	11.4	22.3

**Table 2b.** Observed (obs.) and relative (rel.) survival of patients with stomach cancer by gender for period 1988-2014 (N=11,365).



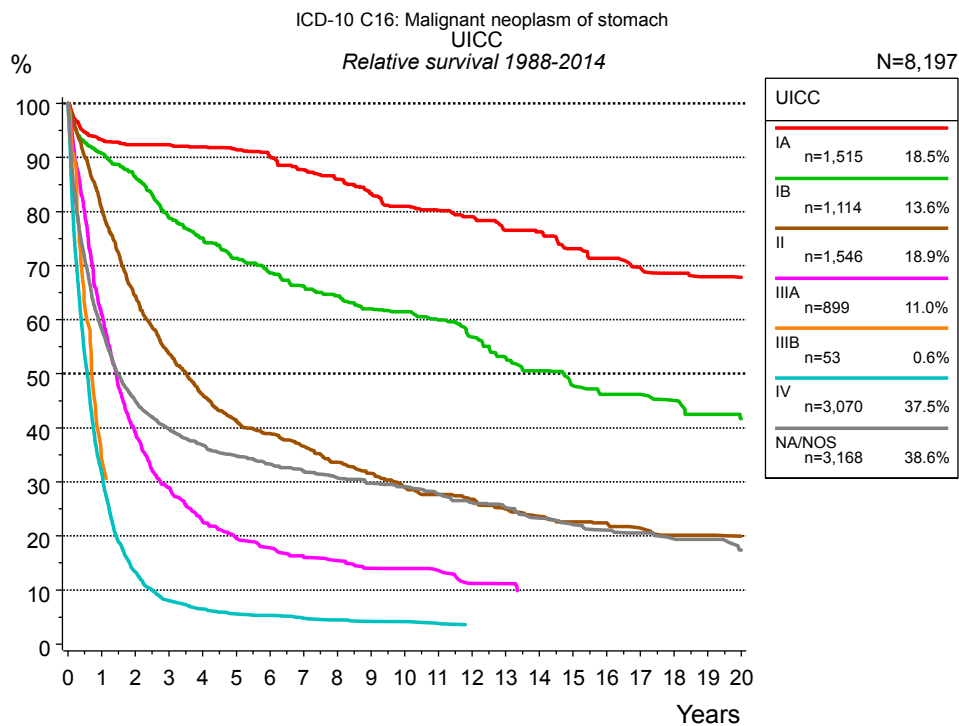
**Figure 3a.** Observed survival of patients with stomach cancer by age category. Included in the evaluation are 11,365 cases diagnosed between 1988 and 2014.



**Figure 3b.** Relative survival of patients with stomach cancer by age category. Included in the evaluation are 11,365 cases diagnosed between 1988 and 2014.

Years	Age category									
	0-49 yrs n=970		50-59 yrs n=1,645		60-69 yrs n=2,641		70-79 yrs n=3,471		80+ yrs n=2,638	
	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	74.7	74.9	72.9	73.3	67.9	69.0	57.7	59.8	39.9	44.9
2	59.8	59.8	58.5	59.3	52.7	54.3	43.7	47.1	27.1	34.0
3	52.1	52.4	51.5	52.5	46.4	48.7	36.7	41.3	20.5	29.0
4	48.8	49.2	47.8	49.1	41.6	44.4	32.7	38.4	17.0	27.2
5	46.3	46.9	44.5	46.1	39.0	42.5	29.0	36.0	14.5	26.1
6	44.1	44.6	42.1	44.1	37.0	41.1	26.9	35.2	12.5	26.1
7	41.9	42.6	40.3	42.5	35.1	39.9	24.3	33.9	10.2	25.2
8	40.0	40.8	39.5	42.2	33.2	38.8	22.0	32.6	8.1	23.7
9	39.6	40.4	38.1	41.1	32.0	38.4	19.4	31.0	5.8	20.5
10	38.3	39.5	36.7	40.0	31.1	38.0	17.6	30.5	4.4	18.4
11	37.3	38.6	35.1	38.8	29.5	37.5	16.2	30.5		
12	37.0	38.4	33.3	37.4	27.6	36.4	14.0	29.1		
13	35.8	37.5	32.2	36.6	26.7	36.4	11.6	26.8		
14	34.8	36.5	31.0	35.8	24.9	35.2	10.1	25.6		
15	34.4	36.0	29.9	35.1	22.9	34.2	8.1	23.5		
16	34.0	36.0	29.7	35.1	21.7	34.1	6.5	21.0		
17	33.5	35.9	28.9	35.0	19.4	32.6	5.9	21.0		
18	33.5	35.7	27.0	33.6	18.3	31.9	4.9	20.7		
19	32.8	35.2	27.0	33.6	17.3	31.9				
20	31.2	33.9	27.0	33.6	15.1	31.0				

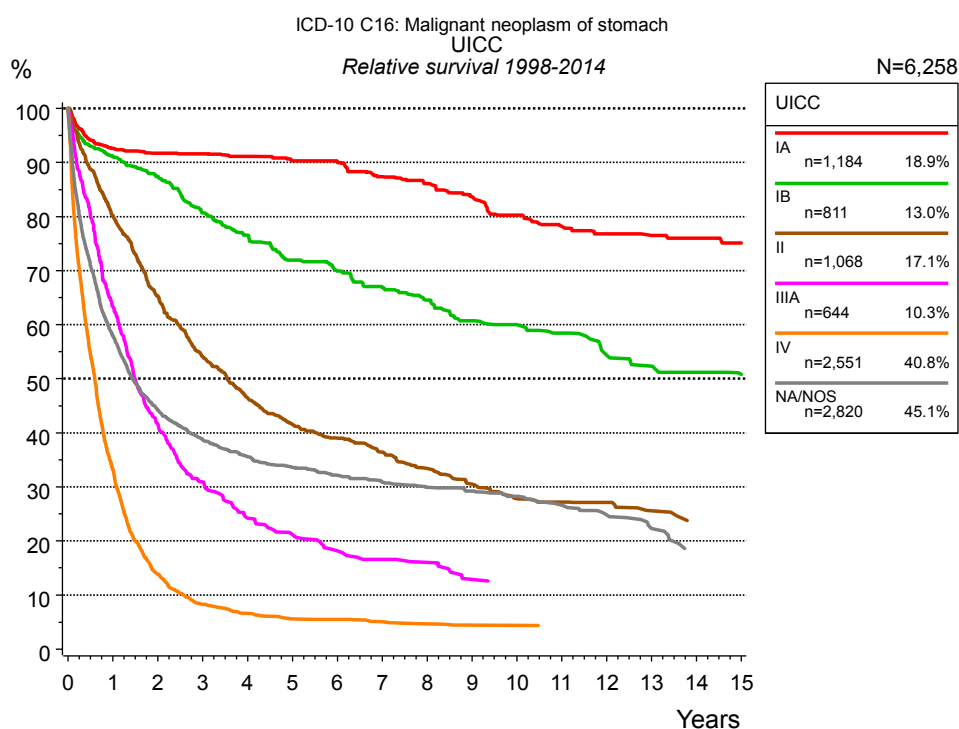
**Table 3c.** Observed (obs.) and relative (rel.) survival of patients with stomach cancer by age category for period 1988-2014 (N=11,365).



**Figure 4a.** Relative survival of patients with stomach cancer by UICC. For 9,177 of 11,365 cases diagnosed between 1988 and 2014 valid data could be obtained for this item. For a total of 8,197 cases an evaluable classification was established. The grey line represents the subgroup of 3,168 patients with missing values regarding UICC (27.9% of 11,365 patients, the percent values of all other categories are related to n=8,197).

Years	UICC													
	IA n=1,515		IB n=1,114		II n=1,546		IIIA n=899		IIIB n=53		IV n=3,070		NA/NOS n=3,168	
	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	90.3	93.3	87.4	90.8	77.8	80.6	58.4	61.0	33.1	34.3	30.7	31.8	55.0	58.2
2	86.8	92.4	80.4	86.5	60.2	64.4	36.0	39.1			12.6	13.3	41.0	45.0
3	83.8	92.4	70.6	78.8	48.7	53.7	25.6	29.0			7.4	8.0	35.1	39.7
4	80.8	91.9	64.8	75.1	40.4	46.1	19.3	22.6			5.9	6.5	31.6	36.8
5	77.6	91.5	59.1	71.3	34.9	41.2	16.0	19.5			4.9	5.6	29.0	34.8
6	74.0	90.1	54.6	68.6	32.0	38.9	14.1	17.8			4.7	5.3	27.0	33.3
7	69.5	87.8	50.6	66.2	29.0	36.6	12.3	16.1			4.1	4.8	25.1	31.9
8	65.7	86.0	47.3	64.4	25.8	33.6	11.2	15.5			3.8	4.5	23.6	30.7
9	61.5	83.3	43.8	62.0	23.3	31.6	9.8	14.0			3.5	4.2	22.3	29.8
10	58.2	81.0	41.8	61.5	20.8	29.0	9.6	14.0			3.4	4.2	21.3	29.1
11	55.4	80.2	39.1	59.9	19.3	27.6	9.1	13.6			3.0	3.9	19.6	27.8
12	52.8	79.0	35.7	56.8	18.0	26.8	7.0	11.2			2.8	3.6	17.9	26.1
13	49.3	76.5	32.2	53.0	16.1	25.0	7.0	11.2			2.8	3.5	16.8	25.3
14	47.7	76.2	29.6	50.5	14.8	23.6							15.0	23.3
15	44.3	73.1	26.8	47.8	13.9	22.6							14.0	22.1
16	42.0	71.4	24.9	46.2	13.3	22.4							12.9	21.1
17	39.3	69.7	24.2	46.2	12.1	21.4							12.2	20.5
18	37.9	68.6	22.6	45.1	11.1	20.1							11.3	19.4
19	36.2	67.9	20.7	42.5	11.1	20.1							10.9	19.3
20	35.2	67.8	18.7	41.7	10.4	20.0							9.3	17.4

**Table 4b.** Observed (obs.) and relative (rel.) survival of patients with stomach cancer by UICC for period 1988-2014 (N=8,197).

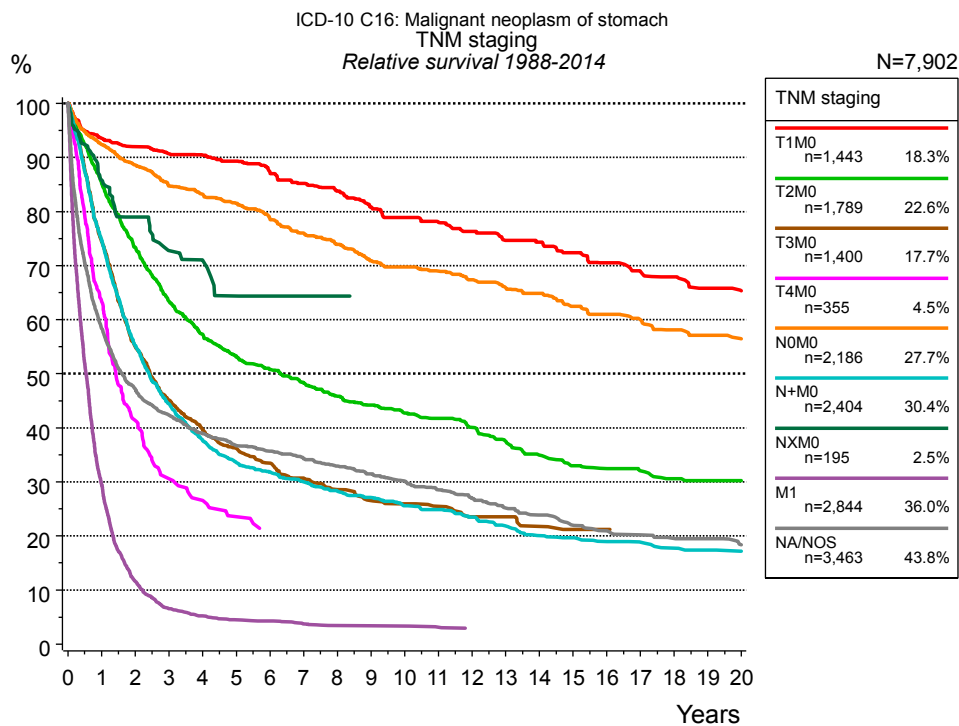


**Figure 4c.** Relative survival of patients with stomach cancer by UICC. For 7,162 of 9,078 cases diagnosed between 1998 and 2014 valid data could be obtained for this item. For a total of 6,258 cases an evaluable classification was established. The grey line represents the subgroup of 2,820 patients with missing values regarding UICC (31.1% of 9,078 patients, the percent values of all other categories are related to n=6,258).

Years	IA n=1,184		IB n=811		II n=1,068		IIIA n=644		IV n=2,551		NA/NOS n=2,820	
	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	89.6	92.6	87.6	91.0	77.6	80.2	60.6	63.3	32.1	33.2	54.6	57.8
2	86.0	91.7	81.3	87.5	61.1	65.3	38.4	41.6	13.1	13.9	40.3	44.2
3	83.1	91.6	72.1	80.7	49.1	54.1	27.3	30.9	7.7	8.3	34.3	38.7
4	79.9	91.1	65.9	76.6	40.8	46.4	20.6	24.2	6.0	6.6	30.6	35.6
5	76.1	90.3	59.6	71.9	35.3	41.5	17.2	21.2	5.0	5.6	28.1	33.6
6	73.2	90.1	55.3	69.9	32.1	39.0	14.4	18.2	4.9	5.5	26.2	32.1
7	68.5	87.4	50.6	66.9	29.0	36.4	12.6	16.6	4.4	5.1	24.5	30.9
8	64.8	86.1	46.8	64.5	25.8	33.4	11.8	16.1	4.0	4.7	23.1	29.9
9	60.6	83.7	42.4	60.7	22.6	30.5	9.1	12.9	3.7	4.5	22.0	29.2
10	56.1	80.3	40.1	60.0	20.1	27.8	8.6	12.5	3.7	4.4	20.8	28.2
11	52.6	78.2	37.8	58.4	19.2	27.2	8.6	12.2	3.5	4.2	19.0	26.6
12	50.0	76.8	33.6	54.3	18.4	27.1					17.1	24.8
13	47.3	76.5	31.6	52.3	16.6	25.6					14.8	22.3
14	45.7	76.0	29.9	51.2	14.9	23.8					12.1	18.4
15	43.4	75.1	27.4	50.8	14.9	23.5						

**Table 4d.** Observed (obs.) and relative (rel.) survival of patients with stomach cancer by UICC for period 1998-2014 (N=6,258).



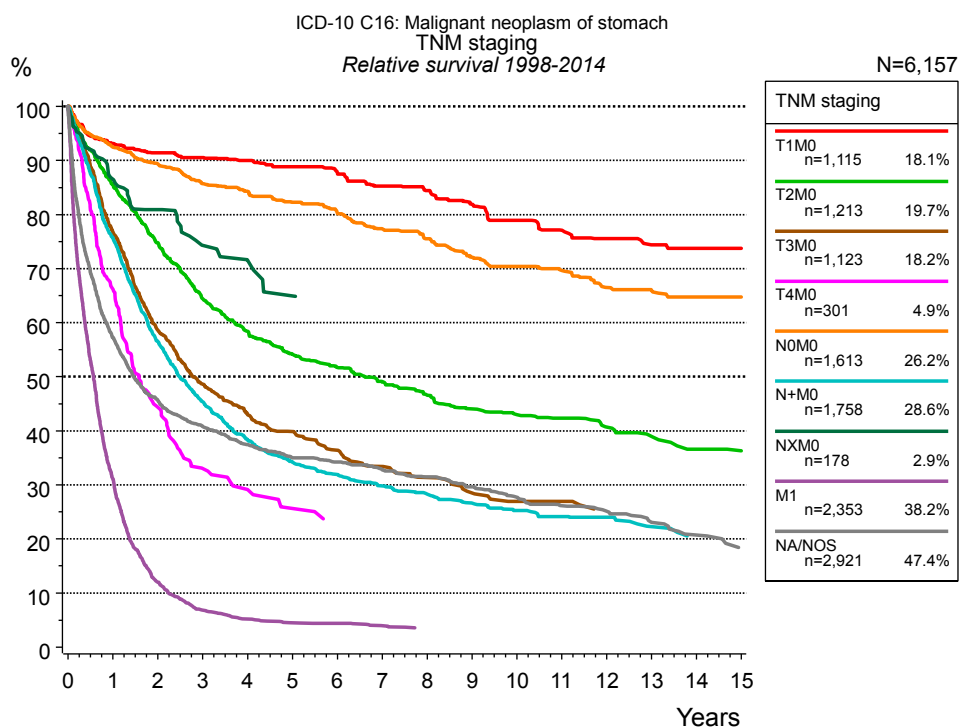


**Figure 4e.** Relative survival of patients with stomach cancer by TNM staging. For 9,177 of 11,365 cases diagnosed between 1988 and 2014 valid data could be obtained for this item. For a total of 7,902 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 3,463 patients with missing values regarding TNM staging (30.5 % of 11,365 patients, the percent values of all other categories are related to n=7,902).

TNM staging															
Years	T1M0 n=1,443		T2M0 n=1,789		T3M0 n=1,400		T4M0 n=355		N0M0 n=2,186		N+M0 n=2,404		NXM0 n=195		
	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	90.8	93.5	82.4	85.3	72.0	74.4	61.1	63.3	89.4	92.4	72.2	74.7	83.3	85.8	
2	86.6	92.0	68.6	73.4	51.6	55.0	38.9	41.3	83.1	88.6	51.8	55.2	74.5	79.0	
3	82.7	90.7	57.3	63.4	41.2	45.1	27.7	30.6	76.9	84.8	40.5	44.4	65.7	72.8	
4	80.0	90.4	50.1	57.3	35.1	39.5	23.9	26.6	73.0	83.2	33.4	37.8	61.7	70.9	
5	76.5	89.3	44.7	53.1	31.3	36.2	20.4	23.6	69.1	81.5	28.8	33.5	55.1	64.4	
6	72.3	87.2	41.2	50.8	28.3	33.5	17.8	21.4	64.5	78.6	26.5	31.8	53.2	64.3	
7	68.3	85.2	37.7	48.3	25.3	30.7	17.8	21.4	60.2	76.0	24.3	30.0	53.2	64.3	
8	64.9	83.8	34.6	45.9	22.8	28.6	17.8	21.4	56.5	73.9	22.1	28.3	50.4	64.3	
9	60.5	80.8	32.1	44.2	20.7	26.5			52.4	70.9	20.5	27.1	47.6	64.3	
10	57.9	78.9	29.8	42.7	19.6	25.9			50.2	69.8	18.7	25.6	47.6	64.3	
11	54.8	78.1	28.2	41.8	18.7	25.5			47.6	69.0	17.6	24.9	47.6	64.3	
12	52.2	76.4	26.0	40.1	16.7	23.6			44.9	67.4	16.1	23.5			
13	48.9	74.7	23.5	37.5	16.7	23.6			42.4	65.9	14.4	21.8			
14	47.2	74.4	21.1	35.0	14.7	21.8			40.4	64.9	12.8	20.1			
15	44.7	72.4	19.2	33.0	13.6	21.2			37.5	62.5	12.2	19.6			
16	41.9	70.5	18.4	32.5	13.6	21.2			35.6	61.0	11.4	18.9			
17	39.3	69.0	17.4	32.1	12.9	20.7			33.5	60.0	10.9	18.8			
18	37.9	68.0	16.1	30.6					31.5	58.1	10.0	17.8			
19	35.4	65.8	15.6	30.3					30.0	57.1	9.5	17.4			
20	33.8	65.3	14.5	30.3					28.3	56.5	8.9	17.2			

<i>cont'd</i>	TNM staging			
	M1		NA/NOS	
	n=2,844		n=3,463	
Years	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	28.6	29.5	55.0	58.4
2	10.9	11.6	42.5	47.1
3	6.0	6.5	36.8	42.4
4	4.7	5.2	32.7	38.9
5	4.0	4.5	29.7	36.7
6	3.8	4.3	27.9	35.7
7	3.2	3.8	25.8	34.2
8	2.9	3.4	24.0	32.9
9	2.9	3.4	22.1	31.4
10	2.8	3.4	20.5	30.2
11	2.6	3.1	18.8	28.6
12	2.3	2.9	17.1	26.9
13	2.3	2.7	15.4	25.2
14			14.2	23.9
15			12.7	22.0
16			11.8	20.9
17			11.0	20.2
18			10.3	19.5
19			10.1	19.5
20			9.1	18.4

**Table 4f.** Observed (obs.) and relative (rel.) survival of patients with stomach cancer by TNM staging for period 1988-2014 (N=12,616).

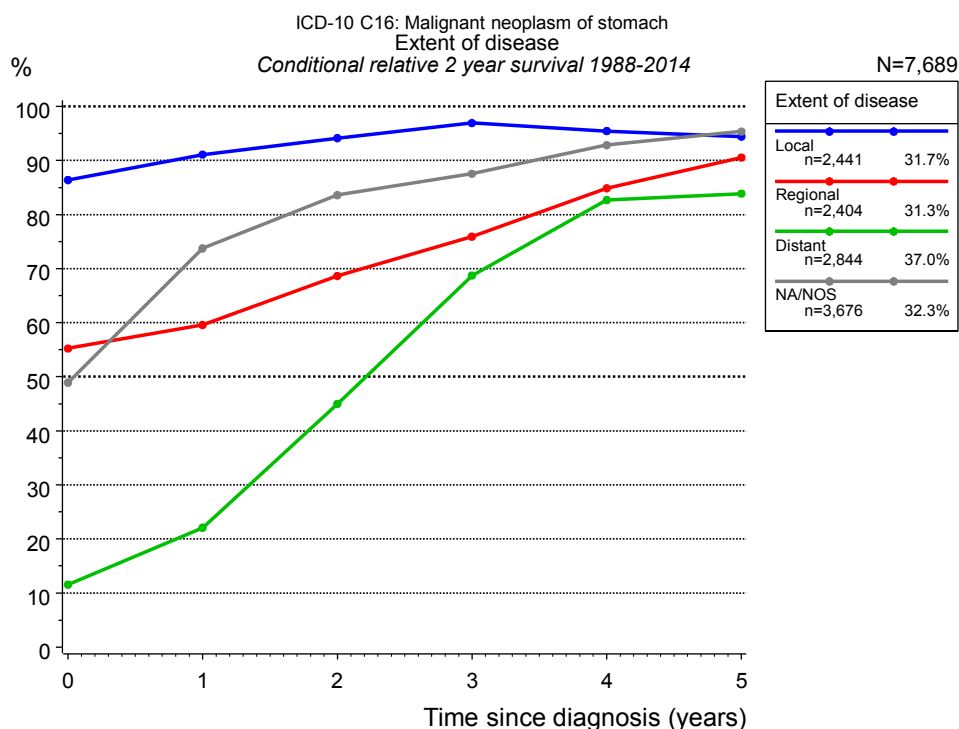


**Figure 4g.** Relative survival of patients with stomach cancer by TNM staging. For 7,162 of 9,078 cases diagnosed between 1998 and 2014 valid data could be obtained for this item. For a total of 6,157 cases an evaluable classification was established. The accumulated percentage exceeds the 100% value because patients are potentially considered in more than one subgroup. The grey line represents the subgroup of 2,921 patients with missing values regarding TNM staging (32.2 % of 9,078 patients, the percent values of all other categories are related to n=6,157).

TNM staging														
Years	T1M0 n=1,115		T2M0 n=1,213		T3M0 n=1,123		T4M0 n=301		N0M0 n=1,613		N+M0 n=1,758		NXM0 n=178	
	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	90.3	93.2	82.6	85.5	74.3	76.7	63.8	66.2	89.4	92.4	73.2	75.6	84.3	86.5
2	85.9	91.4	70.0	74.8	55.3	58.7	41.8	44.4	83.8	89.4	53.2	56.5	76.6	80.9
3	82.5	90.6	58.3	64.4	44.7	48.6	30.0	33.0	77.6	85.7	41.5	45.4	67.6	74.3
4	79.5	90.0	51.0	58.4	38.4	42.9	26.4	29.1	73.8	84.3	34.1	38.4	62.9	71.5
5	75.6	88.9	45.5	54.1	34.8	39.9	22.3	25.7	69.6	82.3	29.5	34.2	56.9	65.0
6	72.0	87.7	41.8	51.7	31.1	36.4	19.8	23.6	65.5	80.3	26.7	31.9	54.6	64.9
7	67.6	85.3	38.1	49.0	28.0	33.4	19.8	23.3	60.8	77.4	24.3	29.8	54.6	64.9
8	64.3	84.4	35.0	46.6	25.5	31.4	19.8	23.0	57.2	75.5	22.3	28.3		
9	60.2	81.9	31.7	44.0	22.8	28.5			52.7	72.1	20.2	26.6		
10	56.5	78.9	29.9	43.0	20.8	27.0			49.8	70.4	18.6	25.3		
11	52.6	77.1	28.6	42.3	20.8	27.0			47.3	69.7	17.4	24.1		
12	49.7	75.6	26.3	40.7					43.2	66.5	16.9	24.0		
13	46.4	74.4	24.6	39.0					41.3	66.0	14.8	22.3		
14	44.6	73.8	22.1	36.6					39.4	64.8	13.2	20.4		
15	43.1	73.8	21.3	36.3					37.7	64.8	13.2	19.9		

<i>cont'd</i>	TNM staging			
	M1		NA/NOS	
	n=2,353		n=2,921	
Years	obs. %	rel. %	obs. %	rel. %
0	100.0	100.0	100.0	100.0
1	30.1	31.1	53.8	57.2
2	11.4	12.0	41.1	45.6
3	6.3	6.8	35.5	40.8
4	4.8	5.2	31.3	37.4
5	4.1	4.5	28.3	35.0
6	3.9	4.4	26.7	34.2
7	3.4	4.0	24.7	32.8
8	3.0	3.6	22.8	31.5
9	3.0	3.6	20.9	29.7
10	3.0	3.5	18.8	27.7
11	3.0	3.5	17.2	26.1
12			15.9	25.2
13			14.1	23.0
14			12.4	20.7
15			10.5	18.3

**Table 4h.** Observed (obs.) and relative (rel.) survival of patients with stomach cancer by TNM staging for period 1998-2014 (N=9,654).

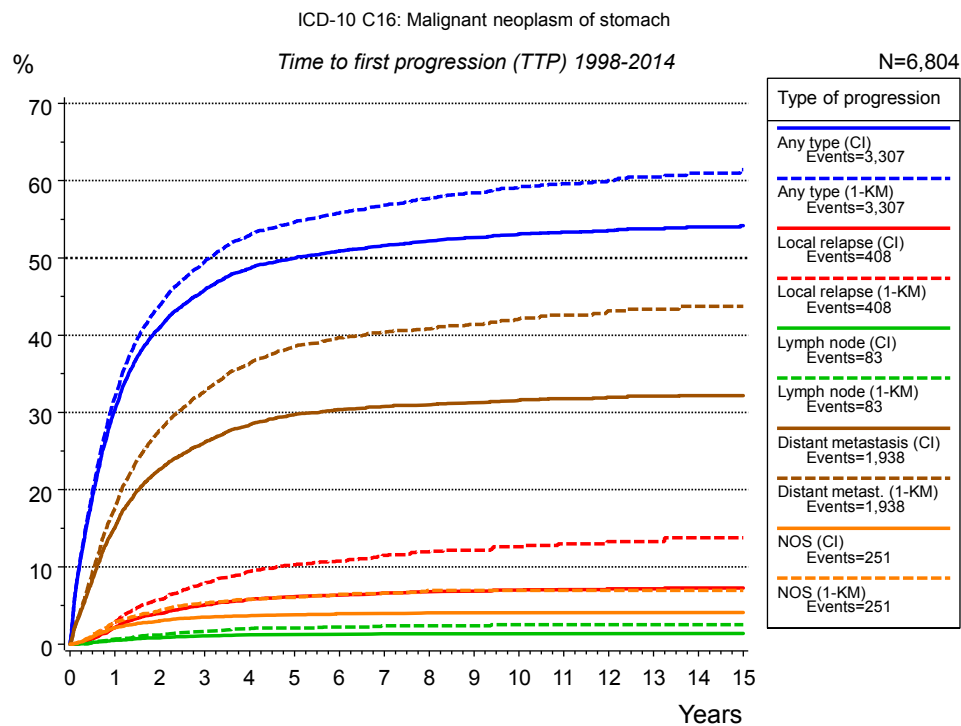


**Figure 4i.** Conditional relative 2-year survival of patients with stomach cancer by extent of disease. For 9,177 of 11,365 cases diagnosed between 1988 and 2014 valid data could be obtained for this item. For a total of 7,689 cases an evaluable classification was established. The grey line represents the subgroup of 3,676 patients with missing values regarding extent of disease (32.3% of 11,365 patients, the percent values of all other categories are related to n=7,689).

Years	Extent of disease							
	Local		Regional		Distant		NA/NOS	
	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs	n	Cond. surv. % 2 yrs
0	2,441	86.4	2,404	55.2	2,844	11.6	3,676	48.9
1	2,019	91.1	1,664	59.6	768	22.1	1,990	73.8
2	1,747	94.1	1,126	68.7	273	45.0	1,479	83.6
3	1,514	96.9	823	75.9	134	68.7	1,213	87.6
4	1,322	95.4	626	84.8	97	82.7	987	92.8
5	1,150	94.4	504	90.6	75	83.9	837	95.3

**Table 4j.** Conditional relative 2-year survival of patients with stomach cancer by extent of disease for period 1988-2014 (N=7,689).

Conditional relative survival rates refer to the relative survival probability, in this case for 2 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 2-year survival rate is 96.9% (n=1,514).

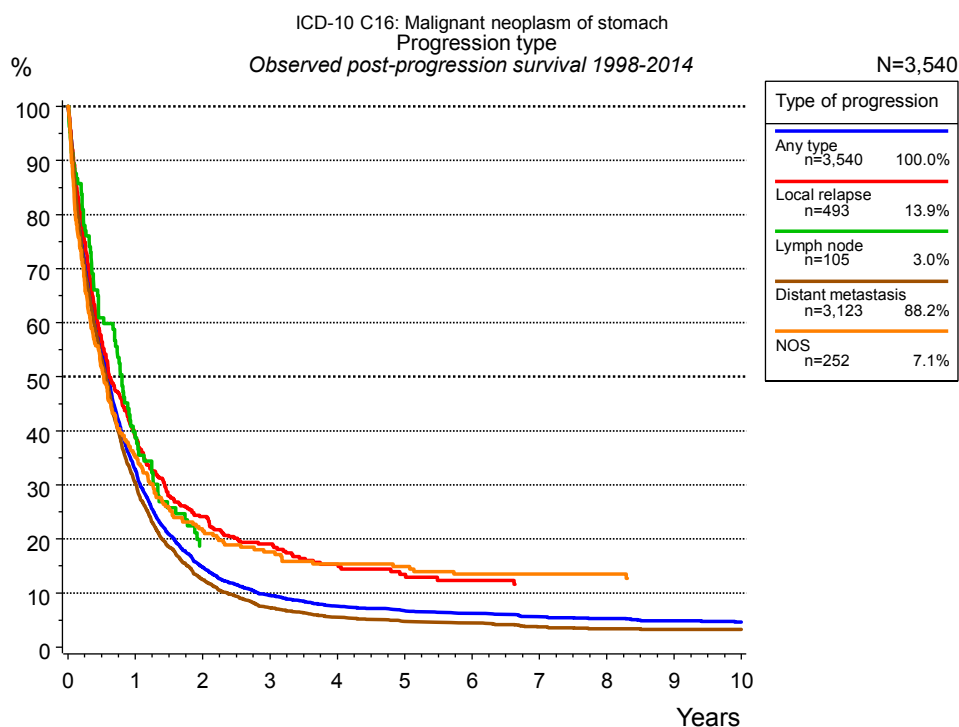


**Figure 5a.** Time to first progression of 6,804 patients with stomach cancer diagnosed between 1998 and 2014 (M0 only in solid cancers) estimated by cumulative incidence function (CI, solid line) accounting for death as competing risk and by inverse Kaplan-Meier estimate (1-KM, dashed line). The frequency 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=6,804 %	n=6,804 %	n=6,804 %	n=6,804 %	n=6,804 %	n=6,804 %	n=6,804 %
0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	30.4	32.0	2.1	2.8	0.5	0.7	15.1
2	41.0	43.8	4.0	5.8	0.8	1.2	22.6
3	45.8	49.5	5.1	7.9	1.1	1.7	26.1
4	48.6	52.9	5.8	9.4	1.2	2.0	28.4
5	50.0	54.6	6.2	10.3	1.3	2.1	29.8
6	50.9	55.8	6.4	10.8	1.3	2.2	30.4
7	51.6	56.9	6.6	11.5	1.4	2.4	30.8
8	52.2	57.7	6.8	12.0	1.4	2.4	31.0
9	52.7	58.4	6.8	12.2	1.4	2.4	31.3
10	53.1	59.2	7.0	12.6	1.4	2.6	31.6
11	53.3	59.6	7.1	13.0	1.4	2.6	31.8
12	53.5	60.0	7.1	13.3	1.4	2.6	32.0
13	53.8	60.5	7.1	13.3	1.4	2.6	32.1
14	54.0	61.0	7.3	13.8	1.4	2.6	32.2
15	54.2	61.4	7.3	13.8	1.4	2.6	32.2

<i>cont'd</i>	Type of progression		
	Distant metast. (1- KM)	NOS (CI)	NOS (1-KM)
	n=6,804	n=6,804	n=6,804
Years	%	%	%
0	0.0	0.0	0.0
1	17.6	2.2	2.9
2	27.7	3.0	4.4
3	32.8	3.5	5.4
4	36.3	3.7	5.8
5	38.6	3.8	6.1
6	39.6	3.9	6.4
7	40.4	4.0	6.6
8	40.8	4.1	6.9
9	41.4	4.1	6.9
10	42.1	4.1	6.9
11	42.6	4.1	6.9
12	43.2	4.1	6.9
13	43.4	4.1	6.9
14	43.7	4.1	6.9
15	43.7	4.1	6.9

**Table 5b.** Time to first progression of patients with stomach cancer for period 1998-2014 (N=6,804).



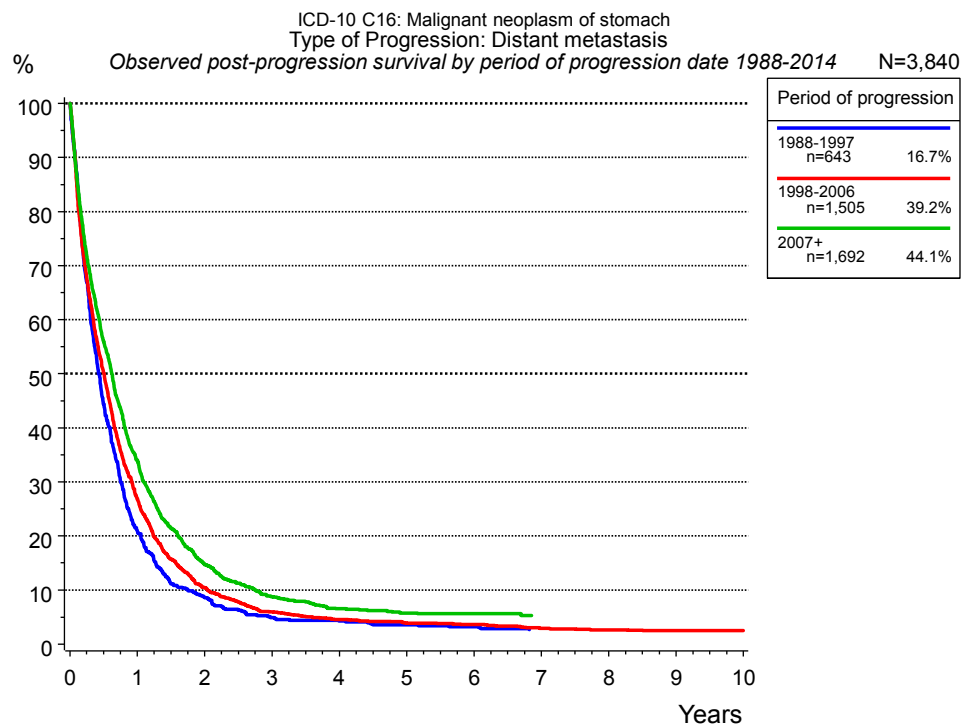
**Figure 5c.** Observed post-progression survival of 3,540 patients with stomach cancer diagnosed between 1998 and 2014. These 3,540 patients with documented progression events during their course of disease represent 39.2% of the totally 9,035 evaluated cases (incl. M1, n=2,231, 24.7%). Patients with cancer relapse documented via death certificates only were excluded (n=1,998, 22.1%). 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=3,540 %	Local relapse n=493 %	Lymph node n=105 %	Distant metastasis n=3,123 %	NOS n=252 %
0	100.0	100.0	100.0	100.0	100.0
1	32.8	38.9	38.7	30.4	35.1
2	14.7	24.1	18.7	12.5	21.5
3	9.6	19.1		7.3	17.6
4	7.6	15.3		5.5	15.4
5	6.7	13.4		4.7	14.9
6	6.2	12.4		4.5	13.5
7	5.6			3.8	13.5
8	5.3			3.4	13.5
9	4.9			3.3	
10	4.6			3.3	

**Table 5d.** Observed post-progression survival of patients with stomach cancer for period 1998-2014 (N=3,540).





**Figure 5e.** Observed post-progression (distant metastasis) survival of 3,840 patients with stomach cancer diagnosed between 1988 and 2014 by period of progression.

Years	Period of progression		
	1988-1997 n=643	1998-2006 n=1,505	2007+ n=1,692
0	100.0	100.0	100.0
1	20.9	26.8	33.9
2	8.6	10.4	14.7
3	4.9	6.0	8.8
4	4.3	4.6	6.5
5	3.6	3.9	5.8
6	3.2	3.6	5.6
7		3.0	5.3
8		2.7	5.3
9		2.5	
10		2.5	

**Table 5f.** Observed post-progression (distant metastasis) survival of patients with stomach cancer for period 1988-2014 by period of progression (N=3,840).

## 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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