

# CHRONIC CANCERS: SURVIVAL TIME FROM DIAGNOSIS TO DEATH

## An epidemiological perspective

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### INTRODUCTION

The notion of incurable cancers as ‘chronic diseases’ patients may live with for a long time is increasingly being put forward in society and in the scientific literature.

But – how long do cancer patients actually live with their cancer, if they die from it?

### STUDY AIM

To investigate cancer patients’ survival from the time of diagnosis until death, if death was caused by cancer

- for the cohort as a whole
- according to cancer type

### METHOD

A population based cohort study using record linkage between The Danish Register of Causes of Death and the Cancer Registry.

Included were all deceased in Denmark during 2012-2014 with cancer registered as their cause of death – who also had a prior diagnosis of cancer.

Survival time from diagnosis to death overall, and in relation to cancer type, and age at the time of death is presented using descriptive statistics.

For people with more than one cancer diagnosis, the survival time was calculated using the date of the latest cancer.

### RESULTS

- 46,269 people died from cancer during 2012-2014 in Denmark
- 43,281 people (47% women) were included in the cohort, because they were previously registered in the Cancer Registry with a cancer diagnosis
  - 84% with one cancer-diagnosis
  - 14% with two cancer-diagnoses.

- The median survival time from diagnosis to death in the cohort was 345 days (p25/p75; 95/991 days)

- 32% survived 2 years
- 23% survived 3 years
- 17% survived 4 years
- 14% survived 5 years

**Table 1-3** show the survival time (ST) in 16 different cancer types, divided into three categories according to the length of their median ST;

Category 1 – median ST less than 1 year

Category 2 – median ST from 1 to 2 years

Category 3 – median ST longer than 2 years

In each table, the cancers are ranked according to the median ST.

### CONCLUSION

This population-based cohort study showed that more than half of all cancer patients, who die from cancer, had lived less than one year after they were diagnosed – and almost 7 out of 10 lived less than two years after the diagnosis.

The association between cancer type – incurability – and survival time is important knowledge in the planning of rehabilitation and palliative care initiatives – and also in the public mention of cancer as a disease ‘you can live with for a long time’.

If ‘a long time’ or ‘a chronic disease’ is perceived to surpass ‘two years’ – the results from this study cannot support this perception for most patients with incurable cancer.

**DECLARATION OF INTERESTS** - The author has nothing to declare

**TABLE 1 Category I: Median survival - less than 1 yr after the cancer diagnosis**  
N=24,264 ~ 56 % of the cohort

Cancer type as cause of death	ST median	p25*	p75*	ST mean	Number of deaths
GI**_liver/biliary/pancreatic	122	39	337	379	3882
Lung	209	64	487	481	10821
Unspecified	215	41	715	859	3685
GI**_oesophageal/ventricular	228	79	487	413	2370
Urinary	353	123	922	844	2296
CNS	361	141	749	733	1210

\* p25 and p75: 25%-percentile and 75%-percentile  
\*\* GI: gastro-intestinal

**TABLE 2 Category II: Median survival - between 1 to 2 yrs after the cancer diagnosis**  
N=11,466 ~ 27 % of the cohort

Cancer type as cause of death	ST median	p25*	p75*	ST mean	Number of deaths
GI**_colon	372	86	933	769	3796
Head and neck	409	156	1003	932	1376
GI**_rectal/anal	529	170	1143	907	1499
Hemopoietic	534	122	1637	1212	2959
Uterine	592	251	1270	1162	479
Cervical	598	245	1147	1208	298
Ovarian	660	253	1282	987	1059

\* p25 and p75: 25%-percentile and 75%-percentile  
\*\* GI: gastro-intestinal

**TABLE 3 Category III: Median survival - longer than 2 yrs after the cancer diagnosis**  
N=7,551 ~ 17 % of the cohort

Cancer type as cause of death	ST median	p25*	p75*	ST mean	Number of deaths
Malignant melanoma	857	352	1815	1459	891
Prostate	1271	545	2412	1630	3360
Breast	1359	547	2944	2122	3300

\* p25 and p75: 25%-percentile and 75%-percentile

**Figure 1** shows the cohort’s distribution of age at death, in comparison with the distribution among people dying from other causes than cancer, during 2012-2014.

- The median age at the time of death was 73 years (p25/p75: 65//81 years) in the cohort
- The median age at the time of the diagnosis was 70.9 years in the cohort

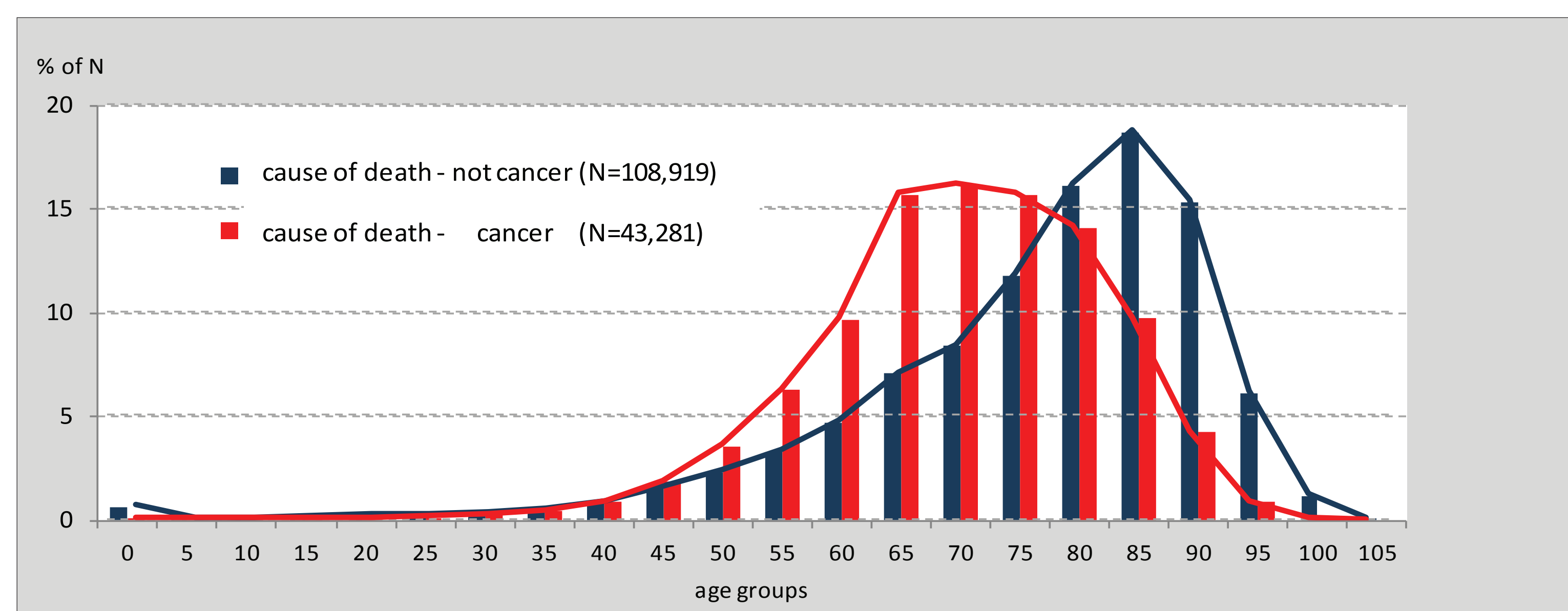


Figure 1 Distribution of age at death among people dying from ‘cancer’ or ‘not cancer’ in Denmark, 2012-2014

