Sekundär primär cancer

Resultat från EU-projektet PanCareSurFup

Utbildningsdag PHO-sektionen
Stockholm, 2019-01-30

Lars Hjorth, överläkare, docent
Skånes universitetssjukhus Lund, Lunds universitet

PanCare

- A multidisciplinary pan-European network of professionals, survivors and their families
- Founded in 2008
- A legal entity in 2013
- Charitable status in 2014
- Newsletter
- www.pancare.eu
- 13 elected Board members
- More than 200 full members from various backgrounds and disciplines

Short history

ESLCCC2007
Lund
Apr. 2007

I-BFM ELTEC
Budapest Oct. 2007

2007 2008 2011

PanCare foundation
Lund 2008

PanCare meeting # 2-22
in Graz, Modena, Newcastle, Paris, Mainz, Brno, Amsterdam, Bucharest, London, Genova, Amsterdam (again), Wroclaw, Lucerne, Dublin, Vienna, Lisbon, Erice, Lund, Lübeck, Prague and Paris

PanCare meeting # 23
Rijeka, April 24-26, 2019

PanCareSurFup 2011 - 2017

PanCareLIFE 2013 - 2018

PanCareFollowUp 2019 - 2023

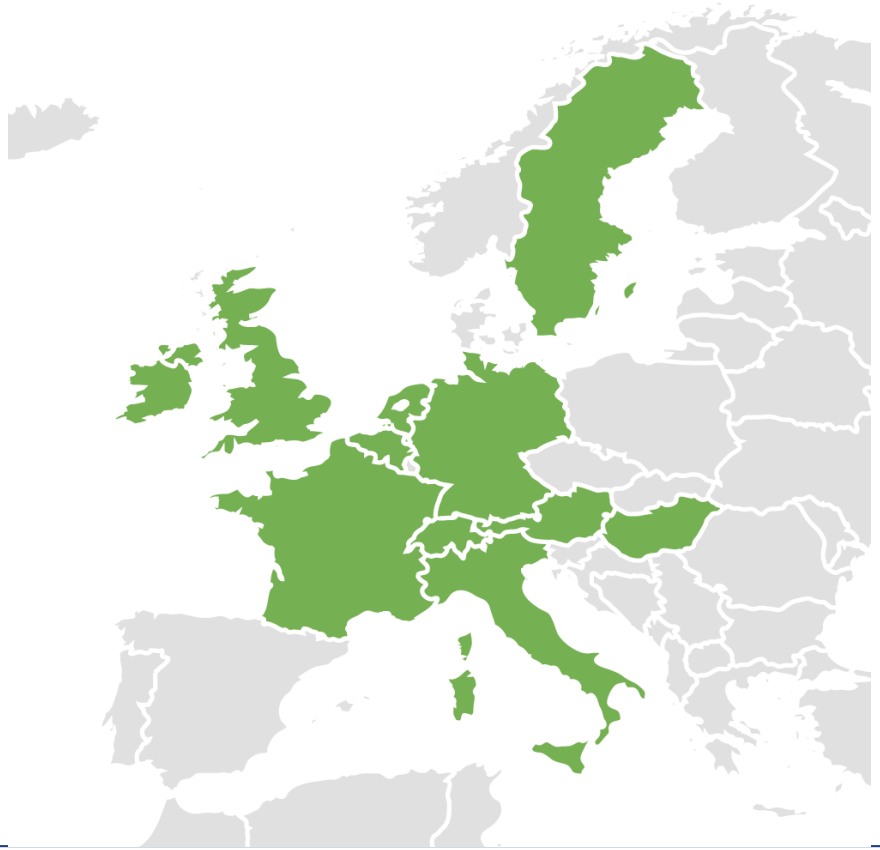
Pancare Childhood and Adolescent Cancer Survivor Care and Follow-up Studies

PanCareSurFup

PanCareSurFup

(PanCare Childhood and Adolescent Cancer Survivor Care and Follow-up Studies)

HEALTH.2010.2.4.1-7 Predicting long-term side effects to cancer therapy, €6,000,000 6 years (2011-2017)



Pancare Childhood and Adolescent Cancer Survivor Care and Follow-up Studies

PanCareSurFup

PanCareSurFup

(PanCare Childhood and Adolescent Cancer Survivor Care and Follow-up Studies)

WP1 – Data collection and harmonisation (UMC)
WP2 – Radiation dosimetry (IGR)
WP3 – Cardiac disease (AMC)
WP4 – Second primary neoplasms (UBHAM)
WP5 – Late mortality (ULUND)
WP6 – Guidelines, transition and follow-up (UNEW)
WP7 – Dissemination and training (MBBM)
WP8 – Coordination and management (ULUND)

www.pancaresurfup.eu

Pancare Childhood and Adolescent Cancer Survivor Care and Follow-up Studies

PanCareSurFup

WP4

Standardized incidence ratios (SIRs) are calculated as the observed divided by the expected number of STS

Absolute excess risks (AERs) are calculated as the observed minus the expected number of new tumours, divided by person years at risk and multiplied by 10 000. **The absolute excess risk** can be interpreted as the number of excess new tumours observed beyond that expected per 10 000 persons per year

Relative risks can be interpreted as the ratio of standardized incidence ratios adjusted for other explanatory factors

Relative excess risks can be interpreted as the ratio of absolute excess risks adjusted for other explanatory factors

Pancare Childhood and Adolescent Cancer Survivor Care and Follow-up Studies

PanCareSurFup

WP4

Risk of Soft-Tissue Sarcoma among 69,460 5-year Survivors of Childhood Cancer in Europe

Overall, survivors had a 15.7-fold (95% CI of 14.0 to 17.6) risk of developing a STS compared with that expected from the general population, corresponding to an absolute excess risk of 2.5 (95% CI of 2.2 to 2.8)

Bright CJ et al. J Natl Cancer Inst. 2018 Jun 1;110(6):649-660. doi: 10.1093/jnci/djx235

Pancare Childhood and Adolescent Cancer Survivor Care and Follow-up Studies

PanCareSurFup

WP4, cont.

Survivors of each specific type of childhood cancer were at a statistically significantly increased multiplicative (SIR) and absolute (AER) excess risk of developing a STS, particularly retinoblastoma survivors (SIR = 72.8, 95% CI 56.1 to 93.0; AER = 10.5, 95% CI 7.9 to 13.1)

There was no statistically significant relationship between age at diagnosis or decade of diagnosis and the excess risk of STS in either multiplicative or absolute terms.

Bright CJ et al. J Natl Cancer Inst. 2018 Jun 1;110(6):649-660. doi: 10.1093/jnci/djx235

Pancare Childhood and Adolescent Cancer Survivor Care and Follow-up Studies

PanCareSurFup

WP4, cont.

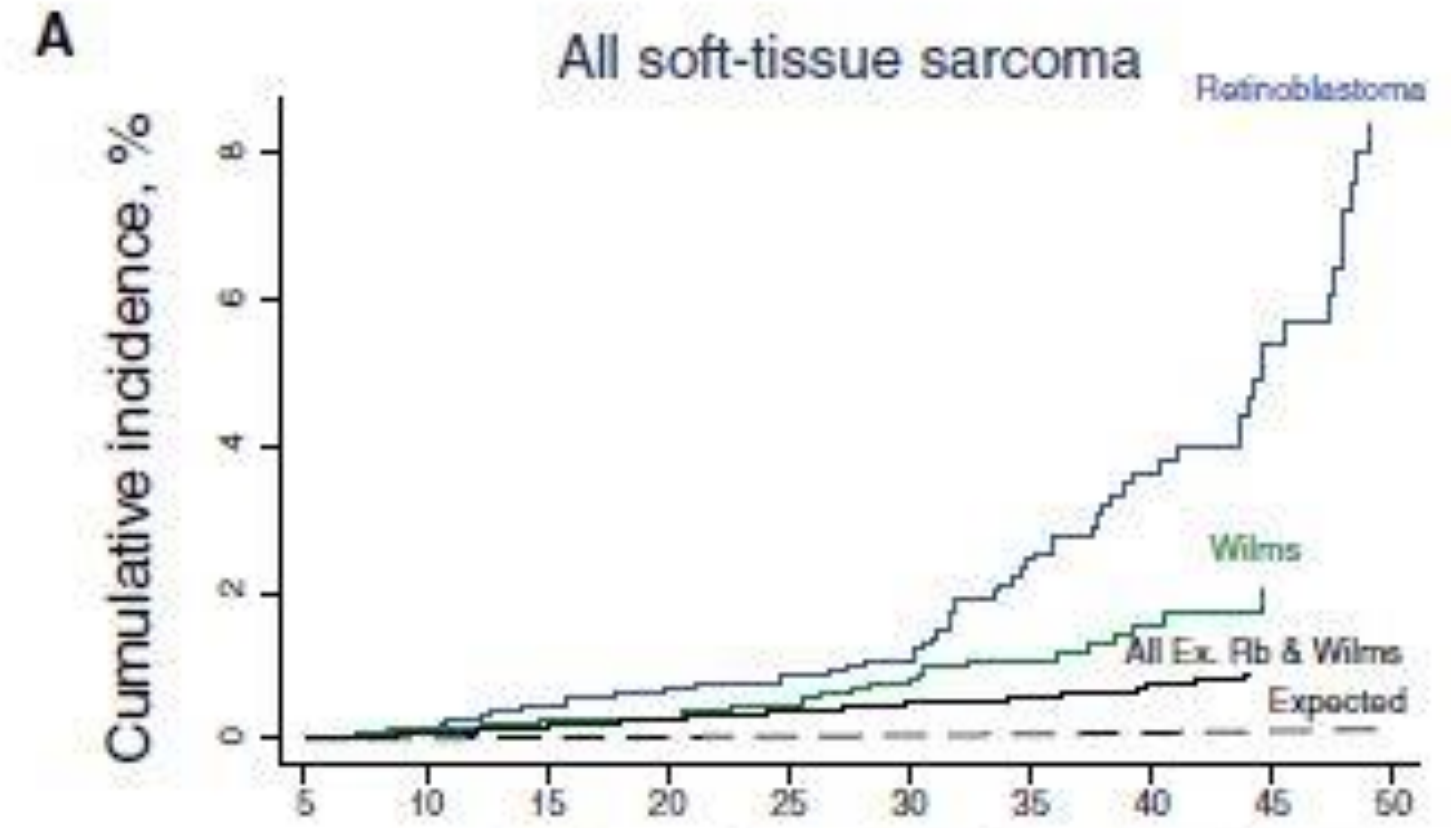
The relative risk declined by 50% among survivors older than age 40 years compared with survivors age 0 to 19 years (RR = 0.5, 95% CI 0.3 to 0.8); in contrast, the relative excess risk increased 2.9-fold (95% CI 1.8 to 4.5)

Beyond 45 years from diagnosis, the absolute excess risk was 9.1 (95% CI = 3.6 to 14.6). The cumulative incidence of developing a STS was 1.4% (95% CI = 1.1 to 1.6) at 45 years from diagnosis, whereas 0.1% was expected

Bright CJ et al. J Natl Cancer Inst. 2018 Jun 1;110(6):649-660. doi: 10.1093/jnci/djx235

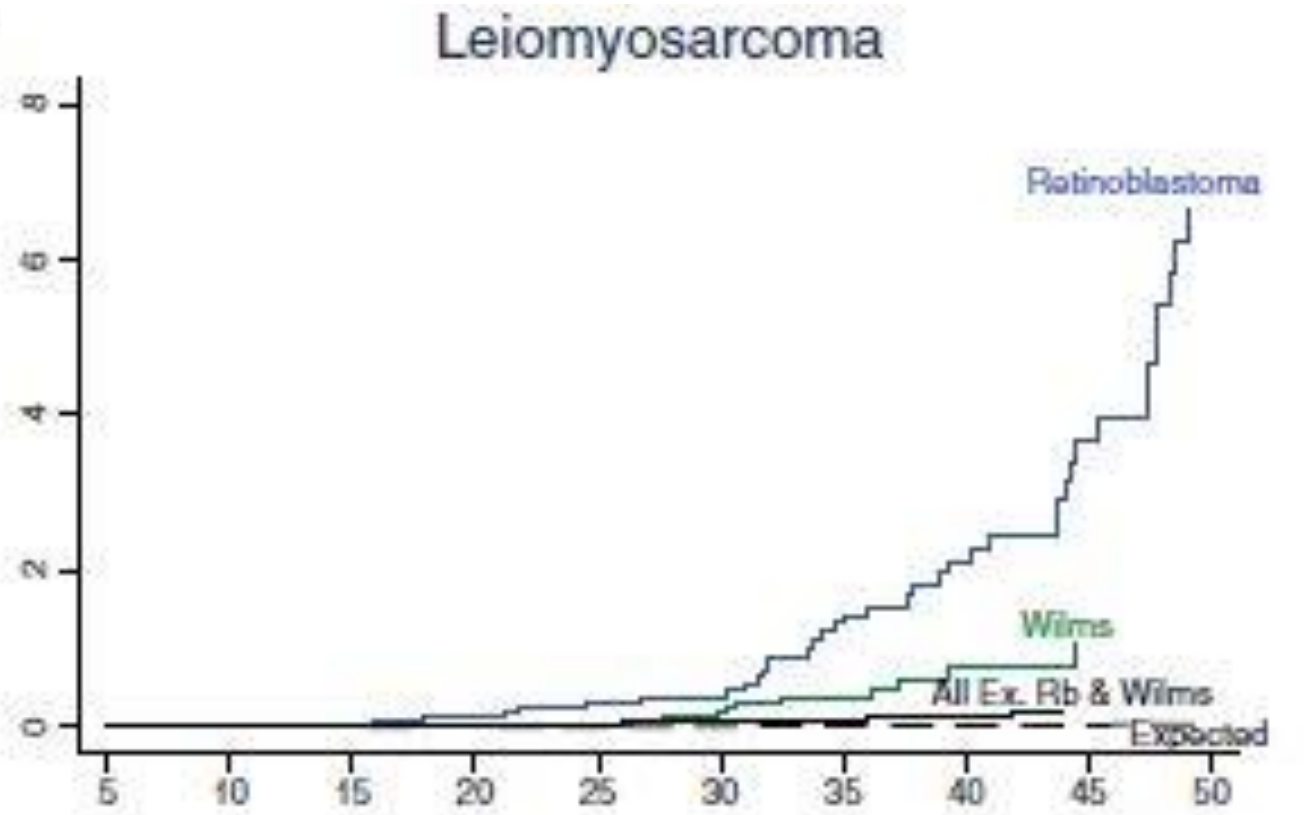
Pancare Childhood and Adolescent Cancer Survivor Care and Follow-up Studies

PanCareSurFup



All cancer	69460	56150	33137	15507	5255	1014
Retinoblastoma	2578	2355	1756	1161	549	158
Wilms tumor	4756	4291	2953	1584	539	106
Other	62126	49504	28428	12762	4167	750

B



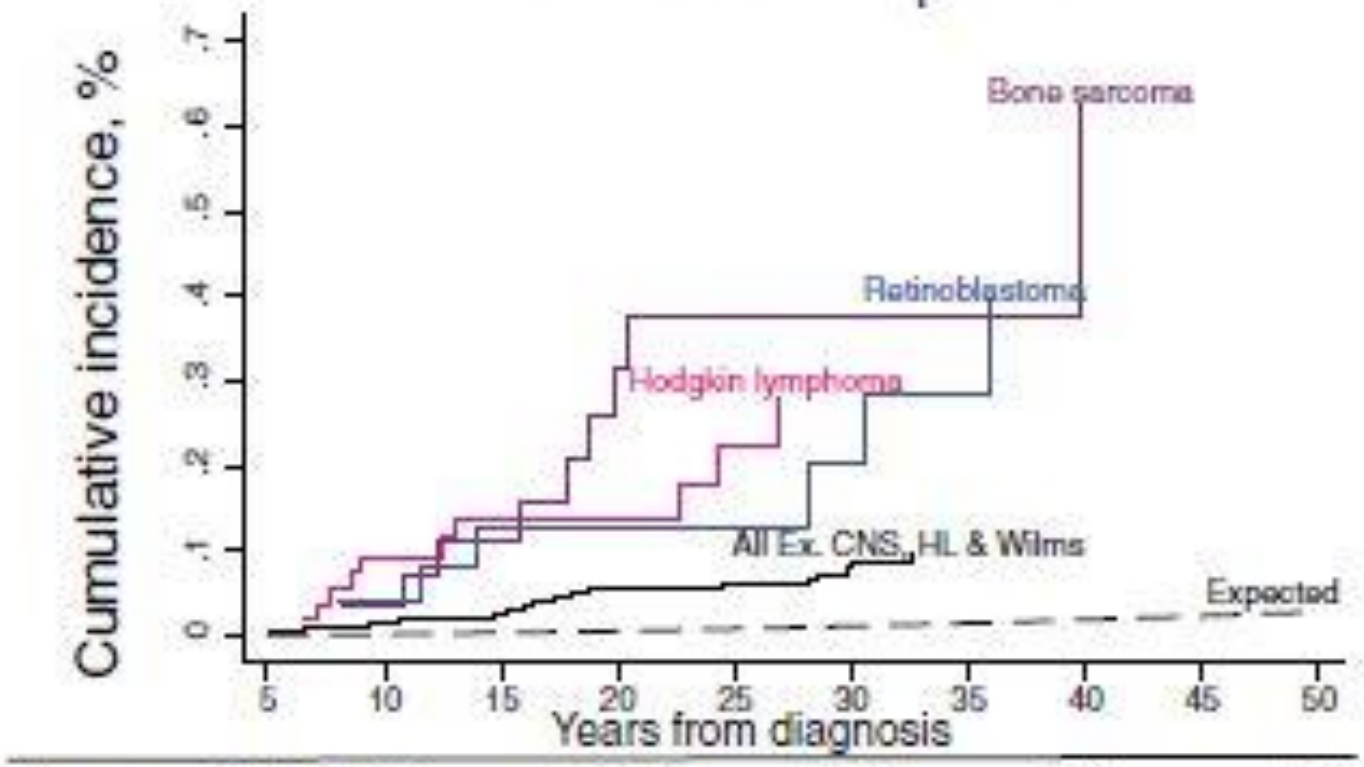
All cancer	69460	56191	33172	15535	5267	1025
Retinoblastoma	2578	2358	1759	1163	553	159
Wilms tumor	4756	4295	2956	1586	540	106
Other	62126	49528	28457	12786	4174	750

Pancare Childhood and Adolescent Cancer Survivor Care and Follow-up Studies

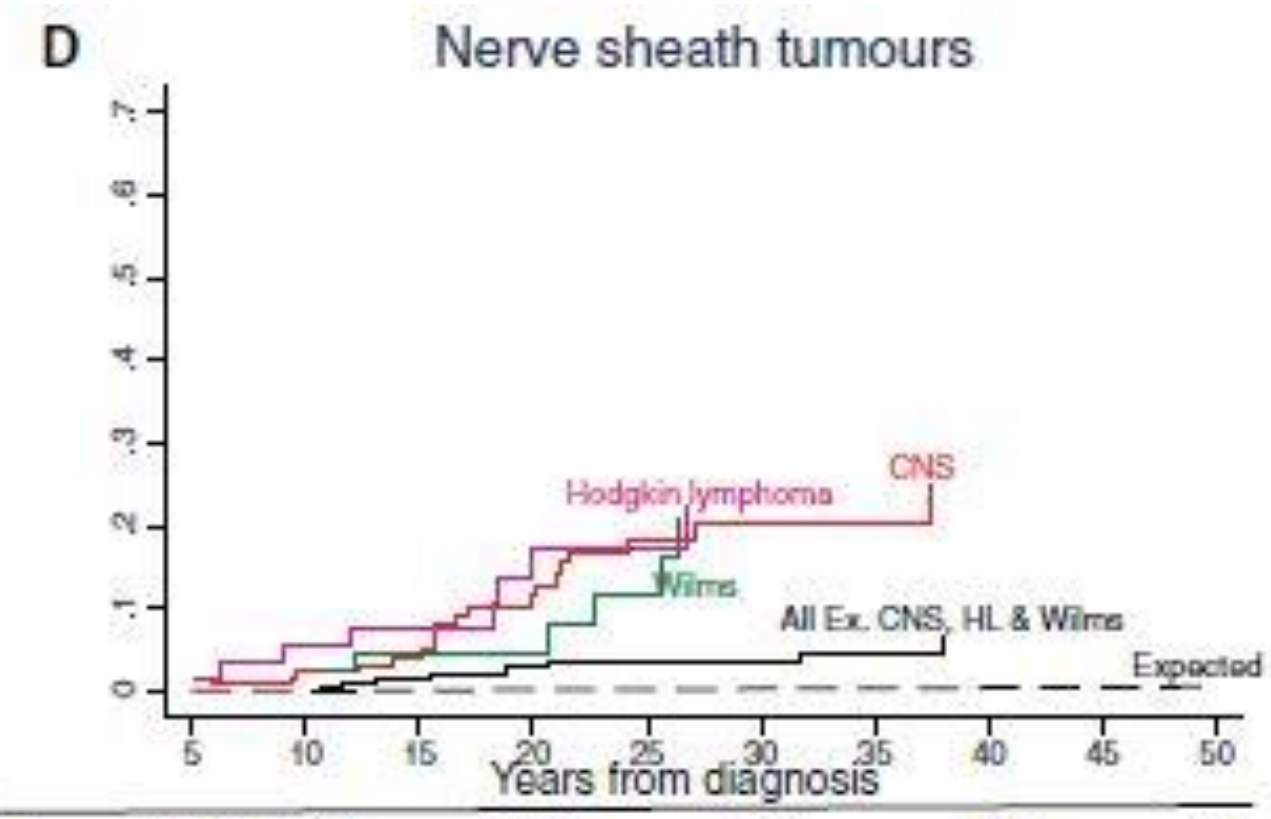
PanCareSurFup

C

Fibromatous neoplasms



All cancer	69460	56174	33166	15535	5274	1023
Hodgkin	6000	4570	2627	1102	267	35
Bone sarcoma	3147	2494	1506	752	311	57
Retinoblastoma	2578	2368	1761	1163	557	166
Other	57735	46750	27272	12518	4139	765



All cancer	69460	56179	33171	15542	5278	1023
CNS	14096	11231	6666	3213	1204	215
Wilms tumor	4756	4295	2956	1589	542	106
Hodgkin	6000	4573	2627	1104	267	35
Other	44608	36080	20922	9637	3265	667

Pancare Childhood and Adolescent Cancer Survivor Care and Follow-up Studies

PanCareSurFup

WP4

Risk of Subsequent Bone Cancers among 69,460 5-year Survivors of Childhood and Adolescent Cancer in Europe

Overall, survivors were 21.65 times (95% CI = 18.97 to 24.60 times) more likely to experience a bone SPN than expected, which equated to 1.99 (95% CI = 1.72 to 2.26) excess bone cancers per 10 000 person-years

When the risk of a bone SPN was assessed by FPN diagnosis, all diagnostic groups were found to have at least a five-fold increased risk compared with that expected

Fidler MM et al.J Natl Cancer Inst. 2018 Feb 1;110(2). doi: 10.1093/jnci/djx165

Pancare Childhood and Adolescent Cancer Survivor Care and Follow-up Studies

PanCareSurFup

WP4, cont.

Retinoblastoma survivors were found to have the greatest excess risks both in multiplicative and absolute terms, with a standardized incidence ratio of 134.9 (95% CI = 105.7 to 169.6) and 12.0 (95% CI = 9.3 to 14.8) excess bone cancers per 10 000 person-years

Bone sarcoma and STS survivors had the next greatest excess risks at 78.2-fold (95% CI = 55.0 to 107.8) and 46.8-fold (95% CI = 32.9 to 64.5) that expected, respectively

Fidler MM et al.J Natl Cancer Inst. 2018 Feb 1;110(2). doi: 10.1093/jnci/djx165

Pancare Childhood and Adolescent Cancer Survivor Care and Follow-up Studies

PanCareSurFup

WP4, cont.

After all FPNs combined, there was not a statistically significant linear trend in excess risks (RRs or RERs) of bone SPN with either age at diagnosis of FPN or treatment era of FPN when adjusted

As years since diagnosis and attained age increased, both the relative risks and relative excess risks statistically significantly declined. Specifically, from the age range of 5 to 19 years to 40+ years of age, the standardized incidence ratio declined from 29.0 (95% CI = 24.6 to 33.9) to 7.0 (95% CI = 2.6 to 15.1)

Fidler MM et al.J Natl Cancer Inst. 2018 Feb 1;110(2). doi: 10.1093/jnci/djx165

Pancare Childhood and Adolescent Cancer Survivor Care and Follow-up Studies

PanCareSurFup

WP4, cont.

Beyond 40 years from diagnosis and age 40 years, there were at most 0.45 excess bone SPNs per 10 000 person-years. At 45 years since diagnosis, the cumulative incidence of a bone SPN was 0.6% compared with 0.03% of the expected

Fidler MM et al.J Natl Cancer Inst. 2018 Feb 1;110(2). doi: 10.1093/jnci/djx165

Pancare Childhood and Adolescent Cancer Survivor Care and Follow-up Studies

PanCareSurFup

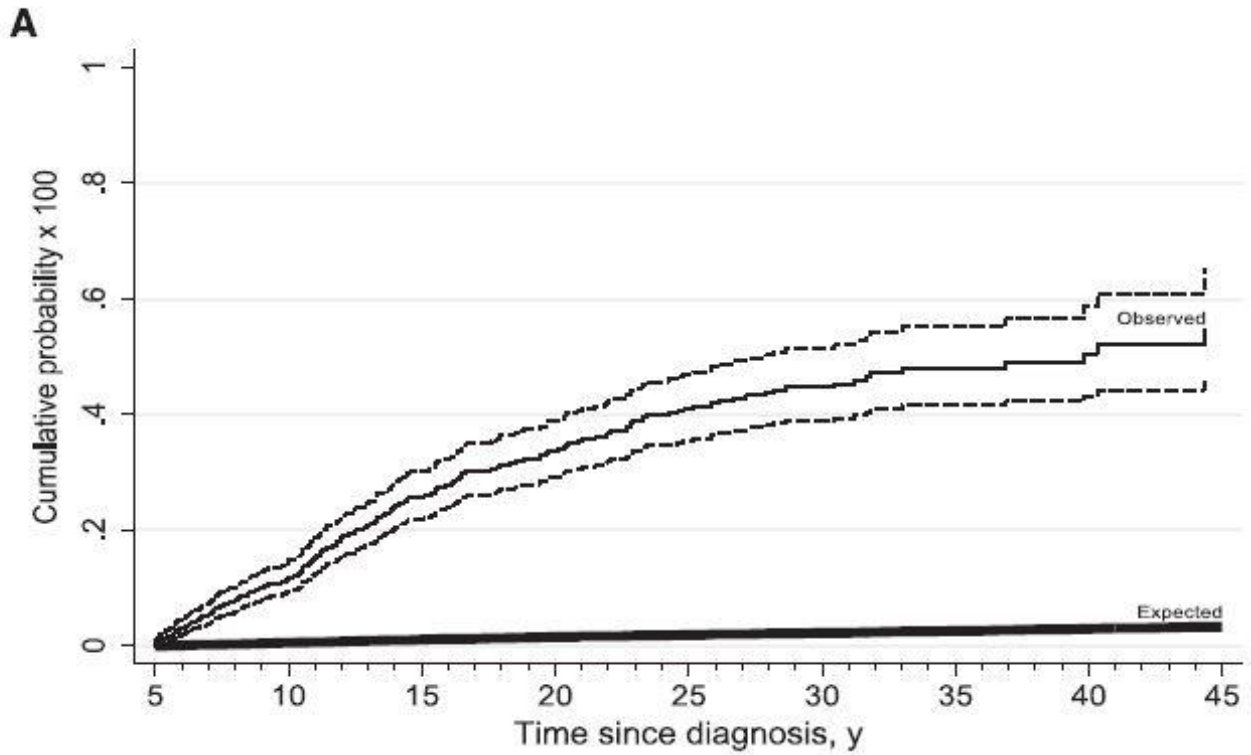


Figure 1. Cumulative probability curves for bone subsequent primary neoplasms (SPNs), by time since diagnosis. A) The observed cumulative probability for a bone SPN, with the corresponding 95% confidence intervals (dashed lines), compared with the expected cumulative probability from the general population.

Pancare Childhood and Adolescent Cancer Survivor Care and Follow-up Studies

PanCareSurFup

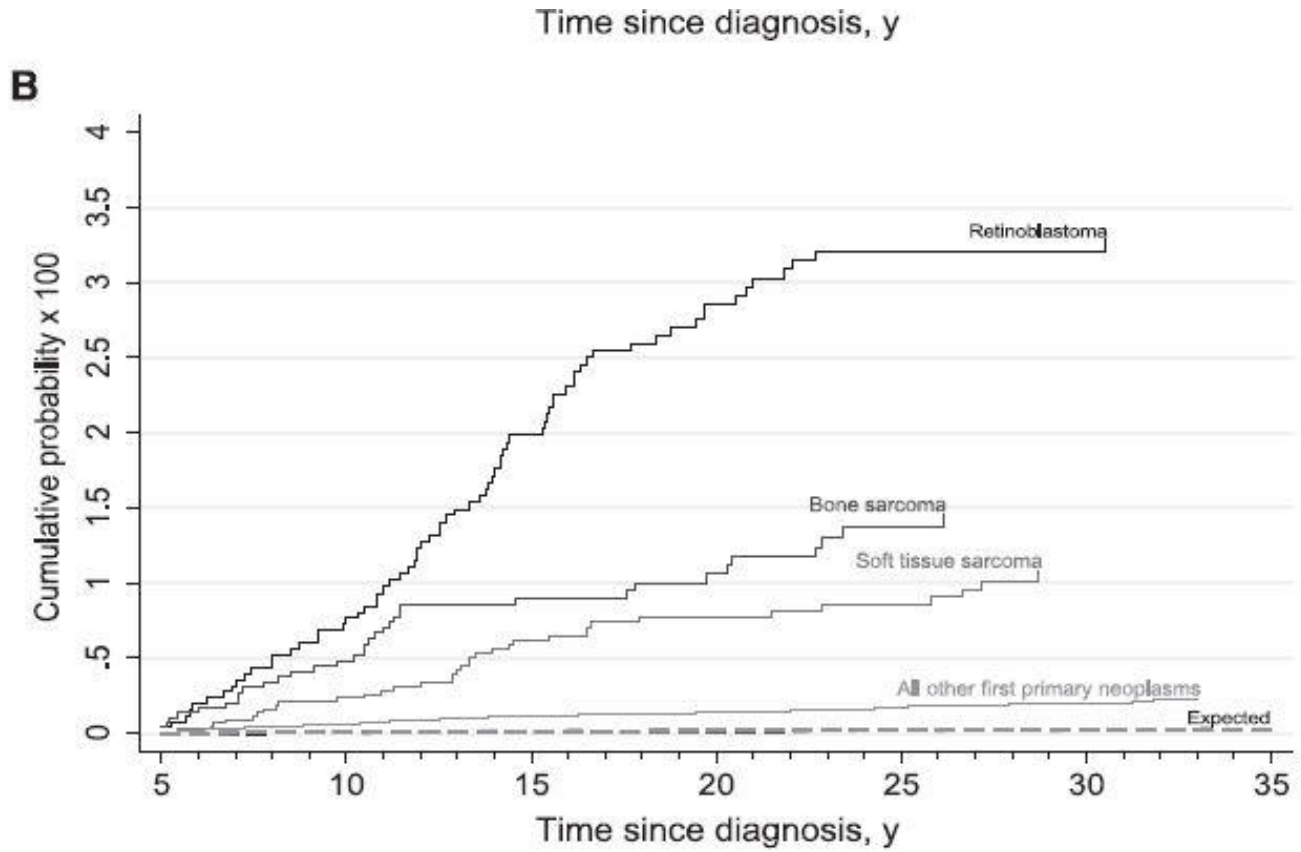


Figure 1. Cumulative probability curves for bone subsequent primary neoplasms (SPNs), by time since diagnosis. B) The cumulative probability for a bone SPN for survivors of retinoblastoma, bone sarcoma, soft tissue sarcoma, and all other first primary neoplasm types compared with that expected from the general population.

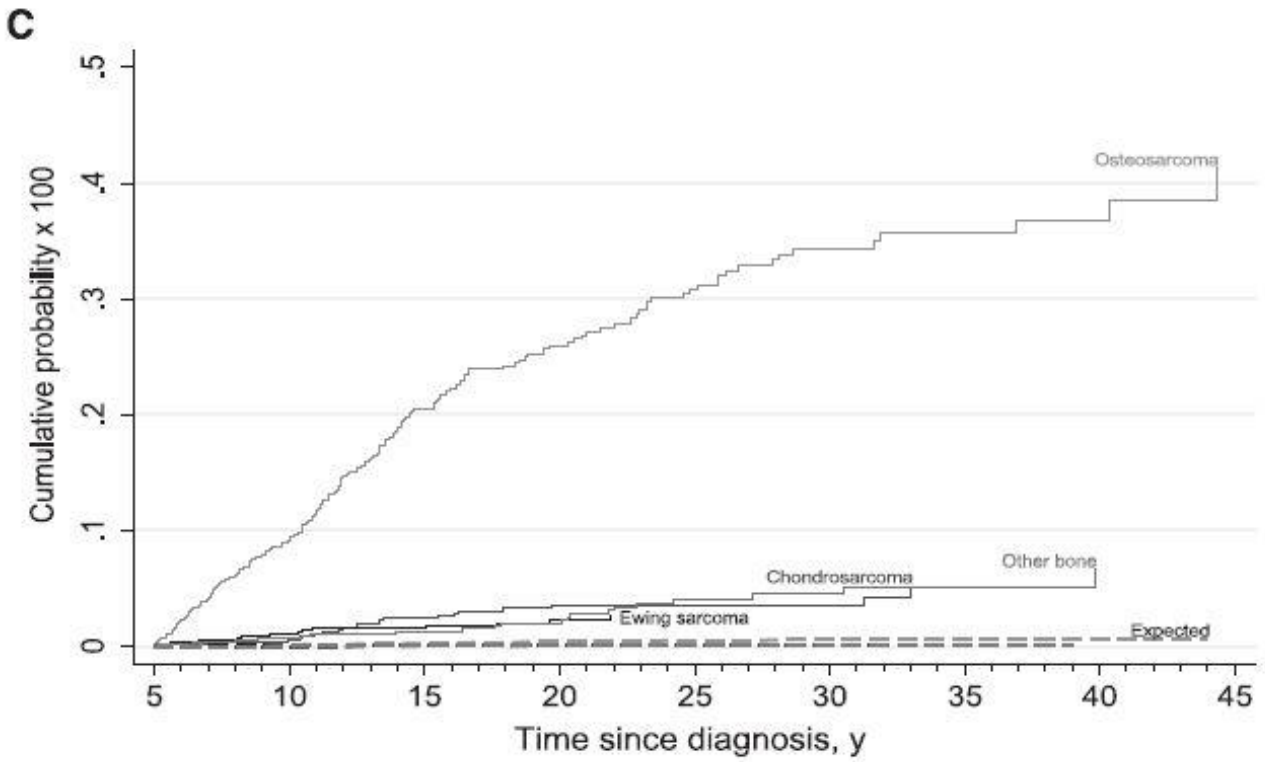


Figure 1. Cumulative probability curves for bone subsequent primary neoplasms (SPNs), by time since diagnosis. C) The cumulative probability for an osteosarcoma SPN, chondrosarcoma SPN, Ewing sarcoma SPN, and all other bone SPNs compared with that expected from the general population.

Pancare Childhood and Adolescent Cancer Survivor Care and Follow-up Studies

PanCareSurFup

WP4, cont.

Analyses are on-going for:

second digestive tumours,

second leukemias and

second thyroid cancer

2017-2021 the Consortium has a moratorium on using the data

From 2022, the data will be available for further analyses by researchers from outside of the Consortium