

# **HEALTH AND HEALTH CARE CHALLENGES AMONG YOUNG ADULT CANCER SURVIVORS**

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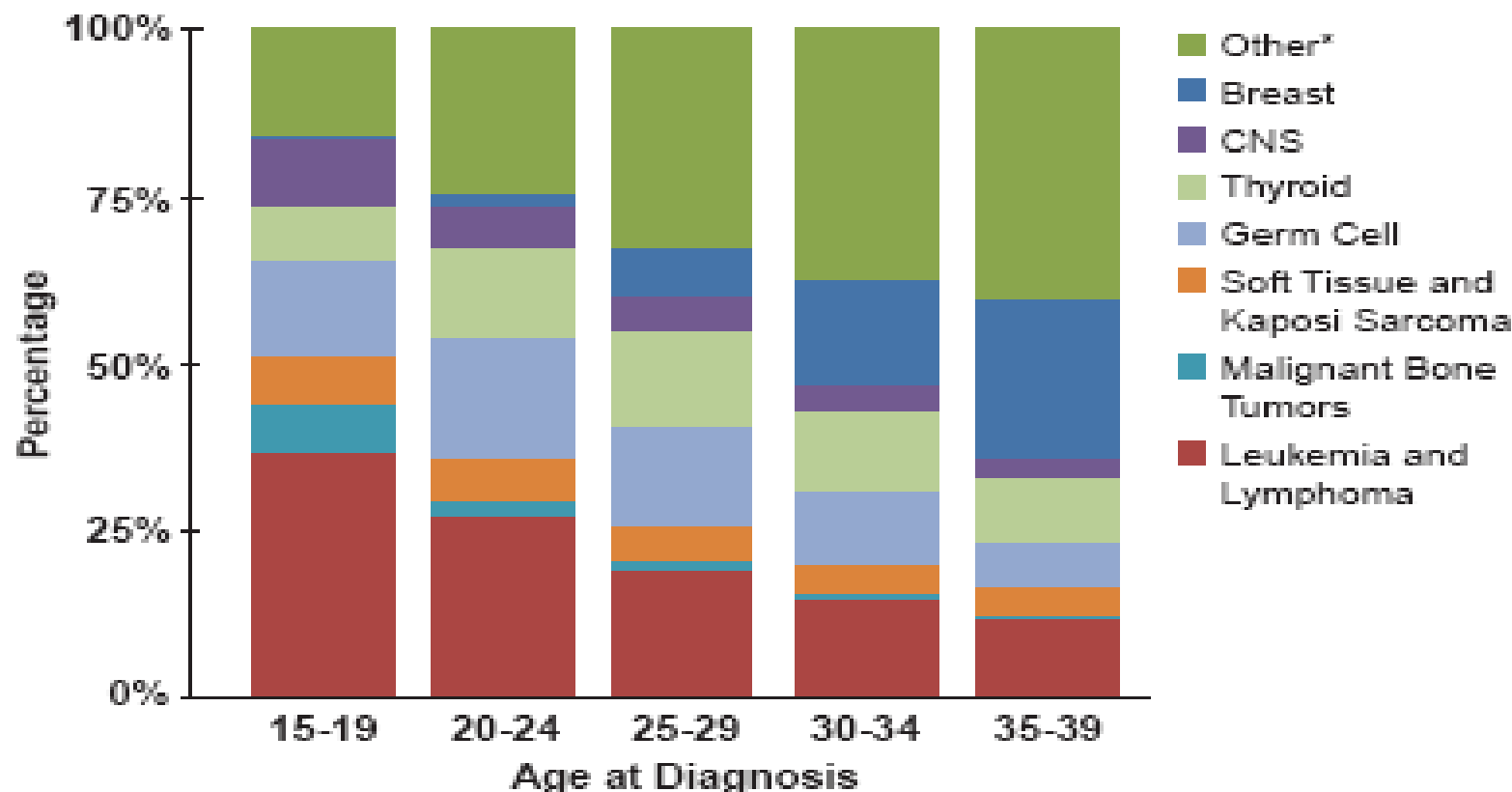
**BCCA Survivorship Day  
November 1, 2013**

# Why study young adult cancer survivors?

- ❖ Issues for young adult cancer survivors
  - Young adult cancers are transitional between childhood and adult cancer patterns
  - Young adults are a distinct developmental phase, both biologically and psychologically.
  - Survival gains have not been as dramatic as for childhood cancer patients.
  - Young adults would be expected to experience late effects of their cancer and its treatment
- ❖ There is little evidence available on risks of late physical and cognitive effects of cancer among young adults

# Characteristics of Young Adult Cancers

## Common Types of Cancer Afflicting AYAs (% cases/disease)



*\*Includes melanoma, colorectal, cervical, and other less prevalent cancers.*

*Data source: SEER 17, 2000–2004, ages 15–39.*

# CAYACS Study objectives for YACS

For those diagnosed between age 20 and 24 years in British Columbia from 1970, and surviving at least 5 years post-diagnosis, using de-identified linked registries, clinical and administrative data, we examined:

- the risk of late mortality among YACS and the impact of factors affecting these risks
- the risk of SMN among YACS and the effect of factors on risk
- the risk of late morbidity leading to hospitalization among YACS and the effects of risk factors
- health care utilization and factors affecting utilization

# Late Mortality: Overview

## ❖ Study population (N=1248)

- diagnosed with cancer between 20-24 yrs old (excluding non-melanoma skin)
- diagnosed 1981-1995, follow-up to end of 2007
- Resident in BC at the time of diagnosis
- Survived at least 5-yrs after diagnosis

## ❖ Death Identification

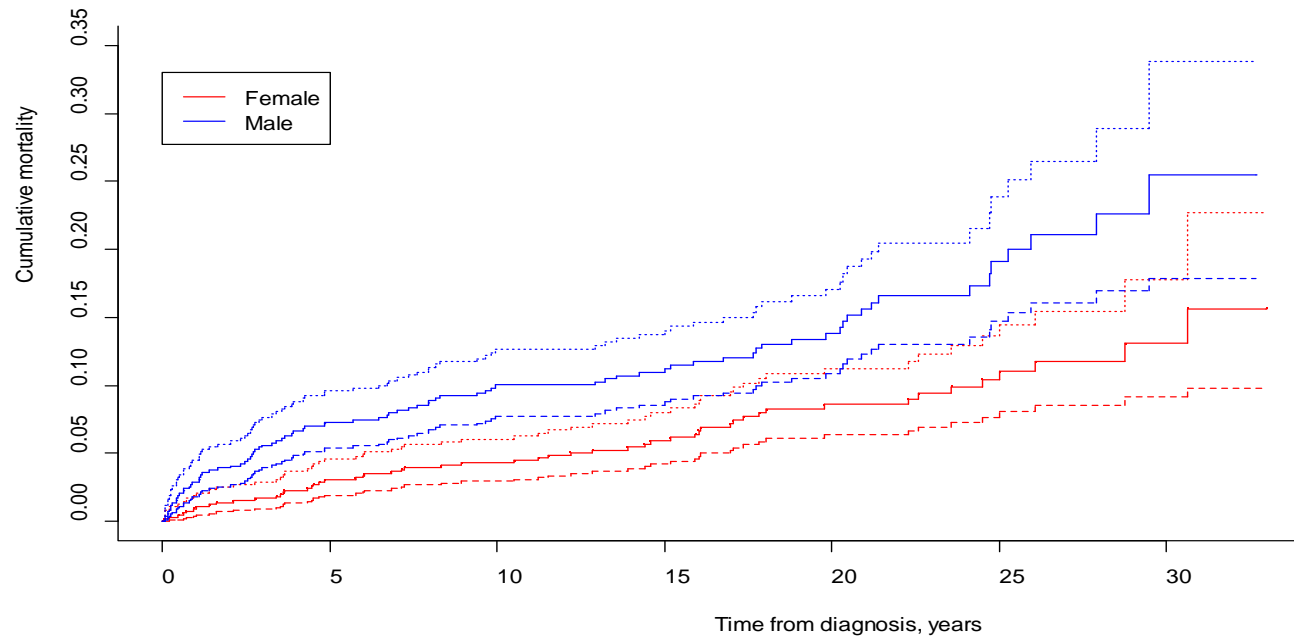
- From death records at the Vital Statistics Agency (VSA)
- Participants without death records are considered as alive

## ❖ Modifying variables

- Type of original cancer diagnosis
- Clinical factors (disease-related, treatment)
- Socio-demographic factors

# Late Mortality: Results

Cumulative mortality by sex



- Male survivors had higher cumulative mortality over time than females.

# Late Mortality: Results

## ❖ 117 deceased cases

- 62 due to recurrence or progression of original cancer
- 23 due to another cancer
- Rest attributed to non-cancer causes
  - Circulatory
  - Infections

## ❖ Groups at increased risk:

- Survivors of CNS and leukemia
- Males
- Those who received radiation

# Second malignant neoplasms: Overview

## ❖ Study population

- Young Adult Survivor Cohort (N=1248)

## ❖ Second malignant neoplasm (SMN)

- a neoplasm that occurred between 5 years after the index diagnosis and December 31, 2007

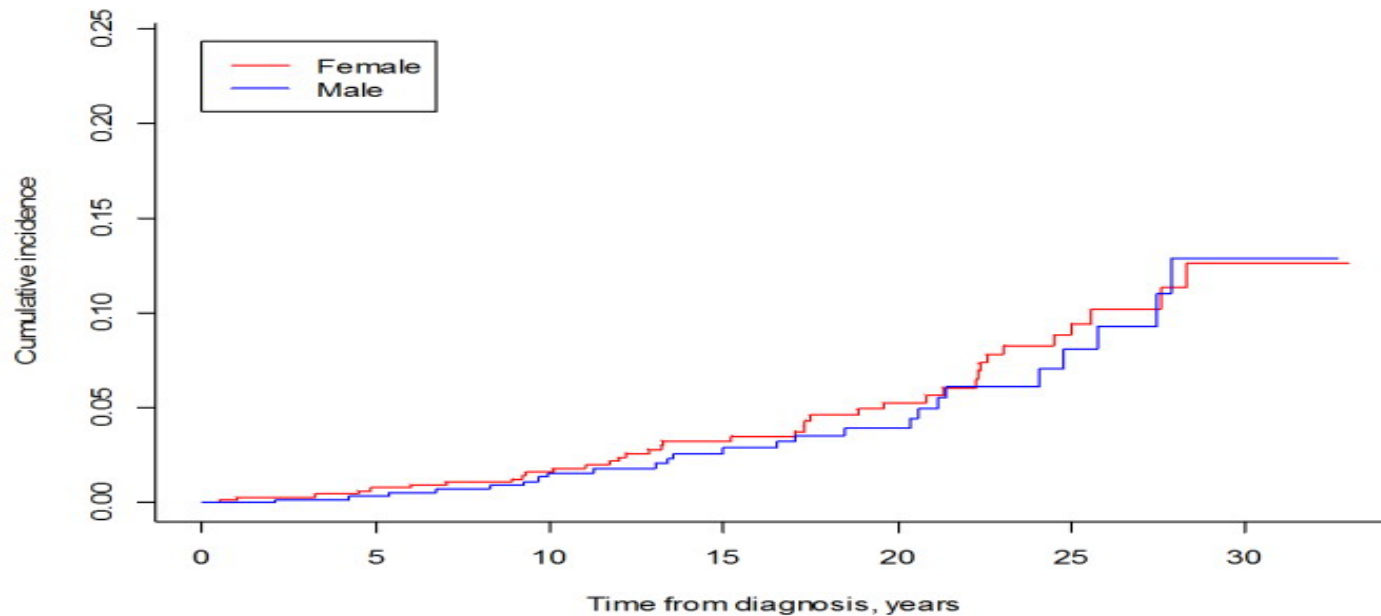
## ❖ Modifying variables

- Type of original cancer diagnosis
- Clinical factors (disease-related, treatment)
- Socio-demographic factors



# Second malignant neoplasms: Results

Cumulative incidence of SMN by sex



- There was no significant difference in cumulative incidence of SMNs by sex over time.

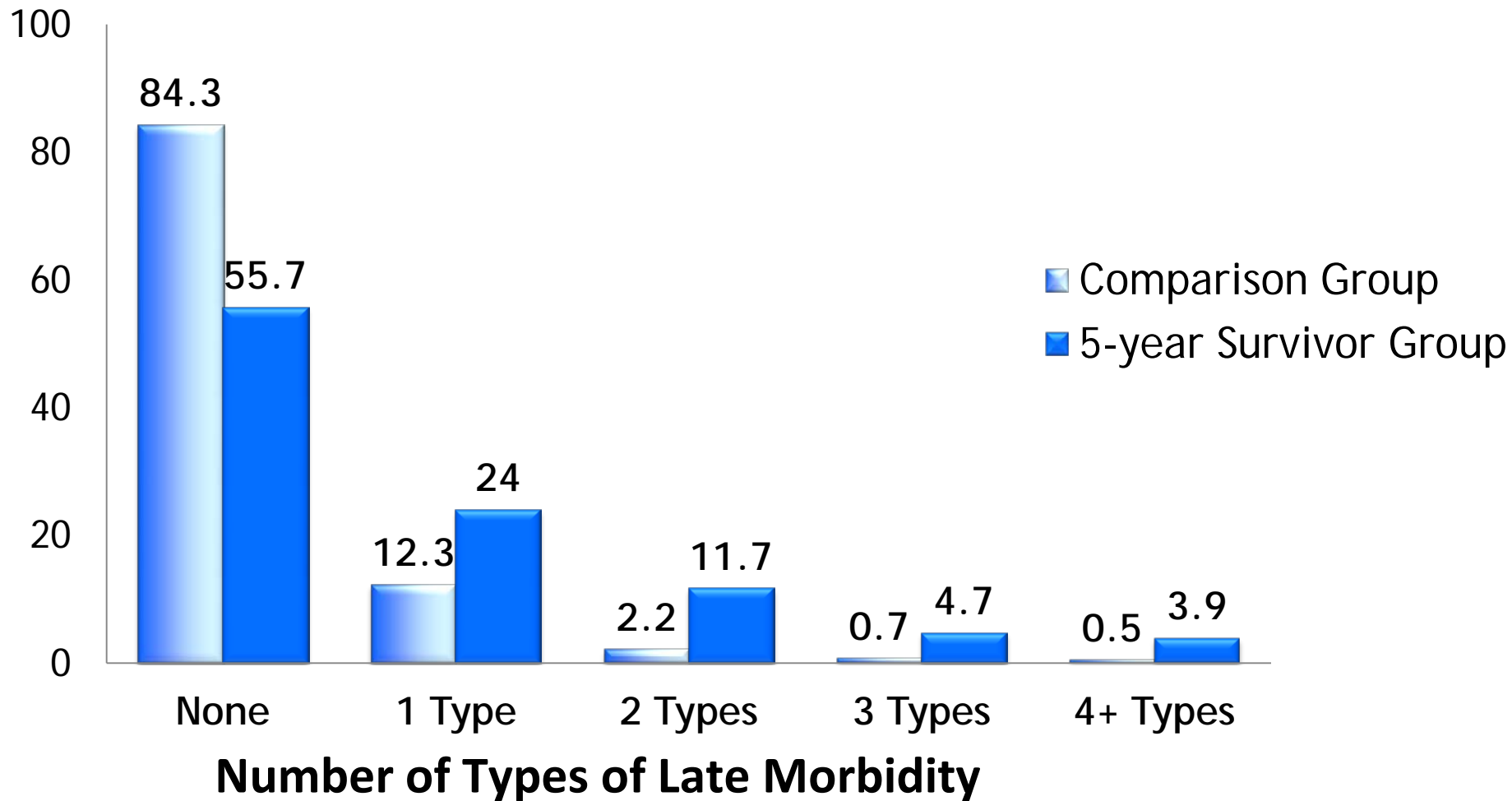
# Second malignant neoplasms: Results

- ❖ 62 (5.0%) developed an SMN
- ❖ Average latency period: 20 years
- ❖ Risk decreased over time
- ❖ Groups with increased risk
  - Those with radiation
    - Half of the survivors with RT and a SMN had SMN in the radiation field (mostly Hodgkins)
  - Survivors of lymphoma and germ cell tumour
  - Males

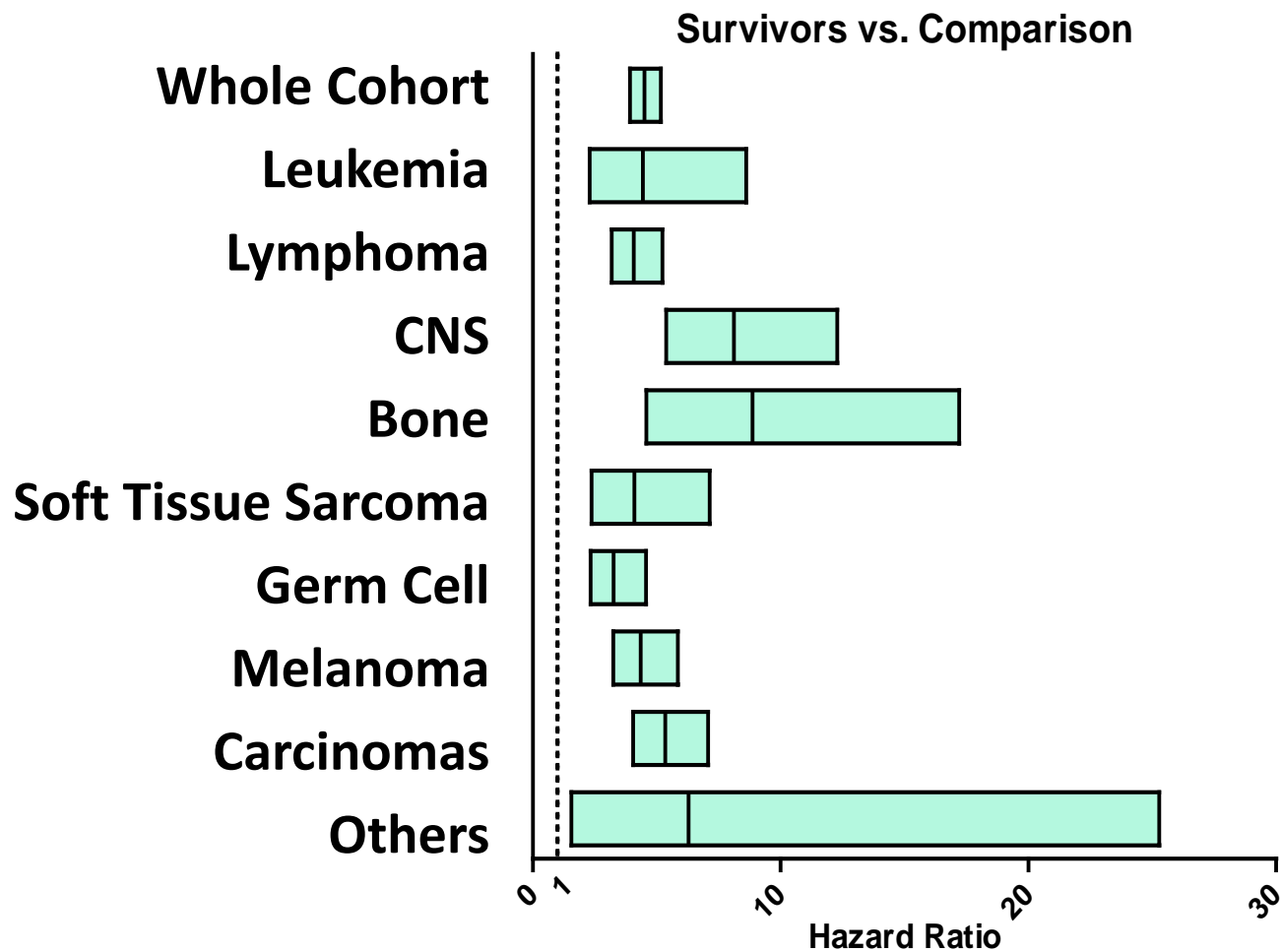
# Late hospital-related morbidity: Overview

- ❖ Study population (N=902)
  - Young Adult Survivor Cohort diagnosed from 1986-2007
  - Compared to age-gender-matched sample of BC population (N=9020)
  
- ❖ Outcome measure-- Late morbidity leading to hospitalization
  - Conditions that were most responsible for the hospitalization
  
- ❖ Modifying variables
  - Type of original cancer diagnosis
  - Disease- and treatment-related factors
  - Socio-demographic factors
  - Health system factors

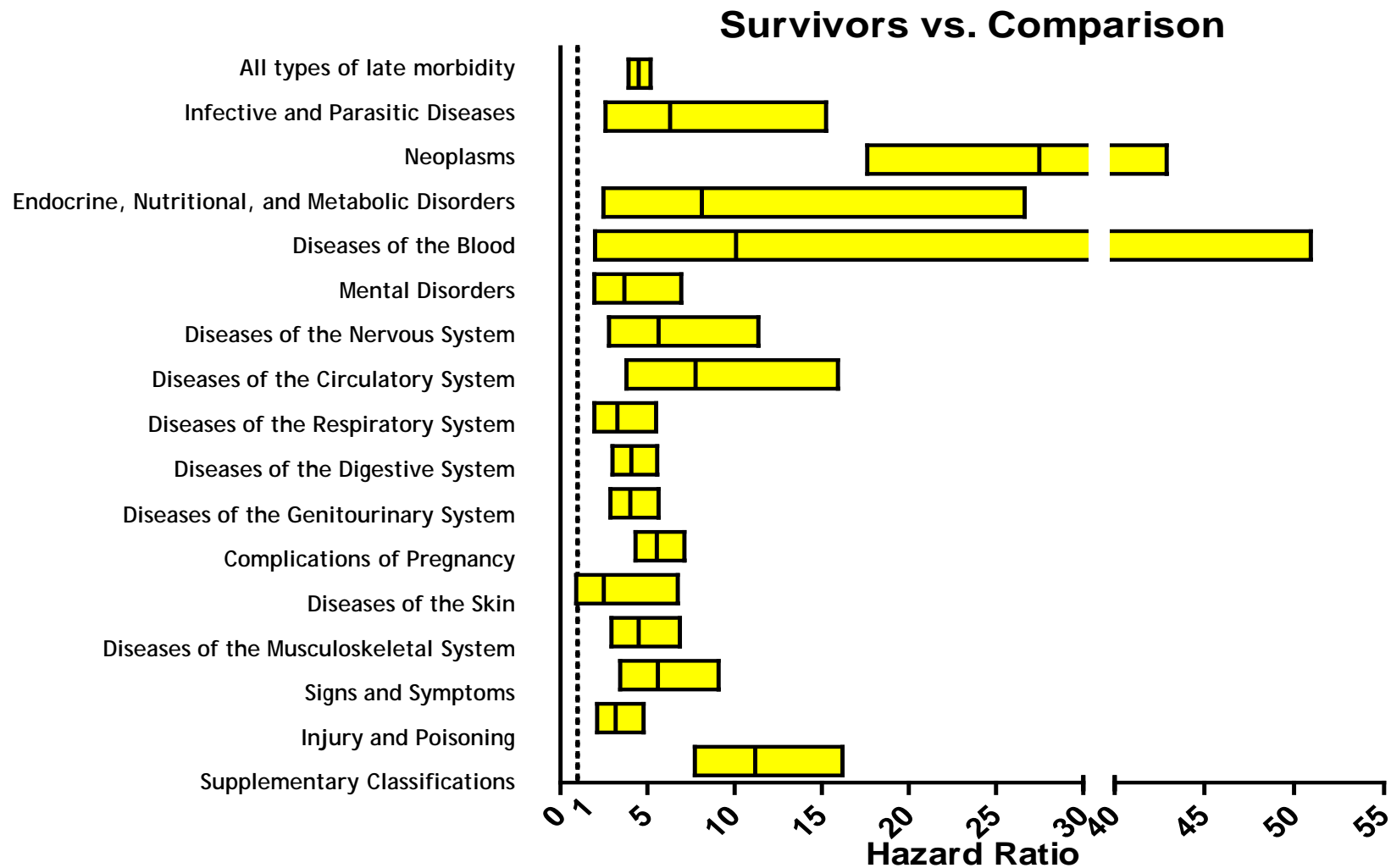
# Number of Types of Late Morbidity



# Risks of Late Morbidity Leading to Hospitalization



# Risk of Late Morbidity Leading to Hospitalization



# Late hospital-related morbidity: Results

- ❖ 50% of survivors had at least one type of late morbidity leading to hospitalization (vs 38% of general population sample)
  - 68% among CNS survivors
  - 41% among germ cell survivors
- ❖ Highest incidence
  - Neoplasms
  - Digestive system problems
- ❖ Highest relative risk
  - Neoplasms
  - Blood diseases
- ❖ Groups at highest risk
  - Combination of radiation, chemotherapy and surgery
  - Survivors of CNS tumours and bone cancer

# Health Care Utilization: Overview

## ❖ Study population

- Young Adult Survivor Cohort (N=888) diagnosed from 1986
- Followed 2002-2003

## ❖ Outcomes:

- Physician visits
  - GP visits
  - Specialist visits
- Hospitalization
  - Yes/No, days in hospital
  - Overall, and by type of hospitalization
- High use of primary care services (physician services, prescription drugs)
  - In top 10% of total cost, based on the general population



# Health Care Utilization: Results

## Physician visits

- ❖ No difference in likelihood to see a GP in 2-year period than peers
  - More likely to have 10+ visits
  - Higher likelihood of a specialist visit
    - Dermatologist
    - Urologist
    - Neurologist
- ❖ Females more likely to have more visits (true also for peers)

## Hospitalization

- ❖ 1.6 times more likely to have a hospitalization (excl pregnancy) than peers
- ❖ Groups at highest risk
  - Those with a relapse
  - Those living in rural areas and/or in Interior or Northern HA
  - Female (similar to peers)

# Health Care Utilization: Results

## High users of Primary Care Services

- ❖ Those with high levels of health problems (comorbidity)
- ❖ No overall difference between YA survivors and peers with similar levels of comorbidity
- ❖ Sociodemographic factors did not affect level of use
  
- ❖ Groups most likely to be high users
  - Those with a SMN
  - Those in metropolitan areas
  - Those with high levels of comorbidity
    - Particularly combinations of chronic conditions and psychosocial conditions
  - No differences by treatment after taking comorbidity into account

# Summary

Among survivors of young adult cancers,

- ❖ Late mortality among young adult cancer survivors
    - ongoing increased risks of late mortality in the survivors
    - Factors with increased risk of mortality: exposure to RT, recurrence and SMN
  - ❖ SMN among young adult cancer survivors
    - Increased risks of SMN in the survivors; lower risk over time
    - Factors with increased risk of SMN: lymphoma, exposure to RT
  - ❖ Late morbidity leading to hospitalization among young adult cancer survivors
    - ongoing increased risks of having hospital-related morbidity
    - Factors with increased risk of late morbidity: CNS or bone cancer, radiation
- > those with high ongoing comorbidity need and use health care more**

# Acknowledgements

## FUNDERS

Canadian Cancer Society (CCS) Research  
Institute  
CCS BC & Yukon  
Canadian Centre for Applied Research in  
Cancer Control

## DATA SOURCES

BC Cancer Registry  
BC Cancer Agency  
BC Children's Hospital  
BC College of Pharmacists  
Ministry of Health  
Statistics Canada

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**Thank you!**

# **QUALITY CARE FOR YOUNG ADULT CANCER SURVIVORS**

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# Quality Survivor Care – Why?

Our work demonstrates that survivors of young adult cancer in British Columbia may face increased health risks for many years after diagnosis related to:

- ❖ Initial diagnosis (particularly CNS, bone, and lymphoma)
- ❖ Treatment (radiation, alone or in combination)
- ❖ Other comorbid conditions (particularly chronic medical or psychosocial) that may arise independently of either the cancer or its treatment
  - ❖ Adds to overall health burden and can complicate care

# Quality Survivor Care – What?

## Quality follow-up care consists of:

- ❖ Ongoing monitoring for cancer recurrence and new primary cancers
- ❖ Surveillance and treatment of late effects of cancer
- ❖ Management of other health problems
- ❖ Support for healthy lifestyle, psychosocial and functional issues (eg. independent living, relationships)



# Quality Survivor Care – How?

Quality follow-up care involves:

- ❖ Individualized, risk-based care
- ❖ Multidisciplinary, coordinated care
- ❖ Continuity of care
- ❖ Equitable access to appropriate, acceptable care
- ❖ Sustainable care

**Thank you!**

# Study I: Method – CAYACS research program

