

# Late Morbidity among 5-year Survivors of Young Adult Cancer in British Columbia

the Childhood, Adolescent, Young Adult  
Cancer Survivors (CAYACS) Program

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# *Outline*

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- Rationale
- Objective
- Method
- Result
- Conclusion

# *Rationale*

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- Different biologic properties and immunophenotypic features
- Cancer and its treatment
- Serious life-threatening complications in multiple organ systems, more significant with aging
- Gaps in Current Studies

# *Objectives*

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- To estimate the long-term risk, comparing to the general population, of developing late morbidity leading to hospitalization
- To assess the potential effect of socio-demographic, disease-related, temporal factors on risk

# *Methods*

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## Study Population

- **Young Adult Survivor Cohort (N=596):**
  - diagnosed between 20-24 yrs old
  - Primary cancer included in AYA classification
  - diagnosed 1981-1995, in MSP registry between Jan 1, 1986 and Mar 31, 2000
  - Resident in BC at the time of diagnosis
  - Having survived at least 5-yrs after diagnosis
  - Excluding non-melanoma skin cancer

# Methods

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## Study Population

- Young Adult Survivor Cohort (N=596)
- Population Comparison Group (N=5960):
  - 10 times the size of survivor group
  - resident in BC 1986-2000
  - Randomly selected from provincial health insurance plan registry records
  - Frequency-matched by gender and birth year

# Methods

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## Data Collection

- **Survivor Cohort**

- BC Cancer Registry- baseline demographic, disease, and death information
- BC Cancer Agency- treatment from health record
- Health insurance plan registry- yearly individual-specific demographic information

- **Comparison Group**

- Health insurance plan registry- yearly individual-specific demographic information

# Methods

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## Data Collection

- Survivor Cohort
- Comparison Group
- **Death Identification**
  - Death records are maintained at the BC Vital Statistics Agency (VSA)
  - Participants without death records were considered as alive

# *Methods*

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## Outcome Measure

- **Late morbidity**
  - any chronic or late-occurring health condition
  - Severe health conditions leading to hospitalization
  - Most responsible diagnosis for hospitalization, grouped by ICD-9 chapter
  - Only the first hospitalization diagnosis in a particular ICD9 chapter was counted

# *Methods*

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## Study Variables

- Primary Cancer diagnosis
- Disease-related factors
  - Time since Diagnosis (5-7, 8-9, 10+ yrs)
  - Calendar period of diagnosis by 5-yr group
  - Primary treatment
- Socio-demographic factors
  - Regional Health Authority (HA)
  - Urban/rural status of residence
  - Socio-economic status (SES) Quintiles

# *Methods*

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## Study Analysis

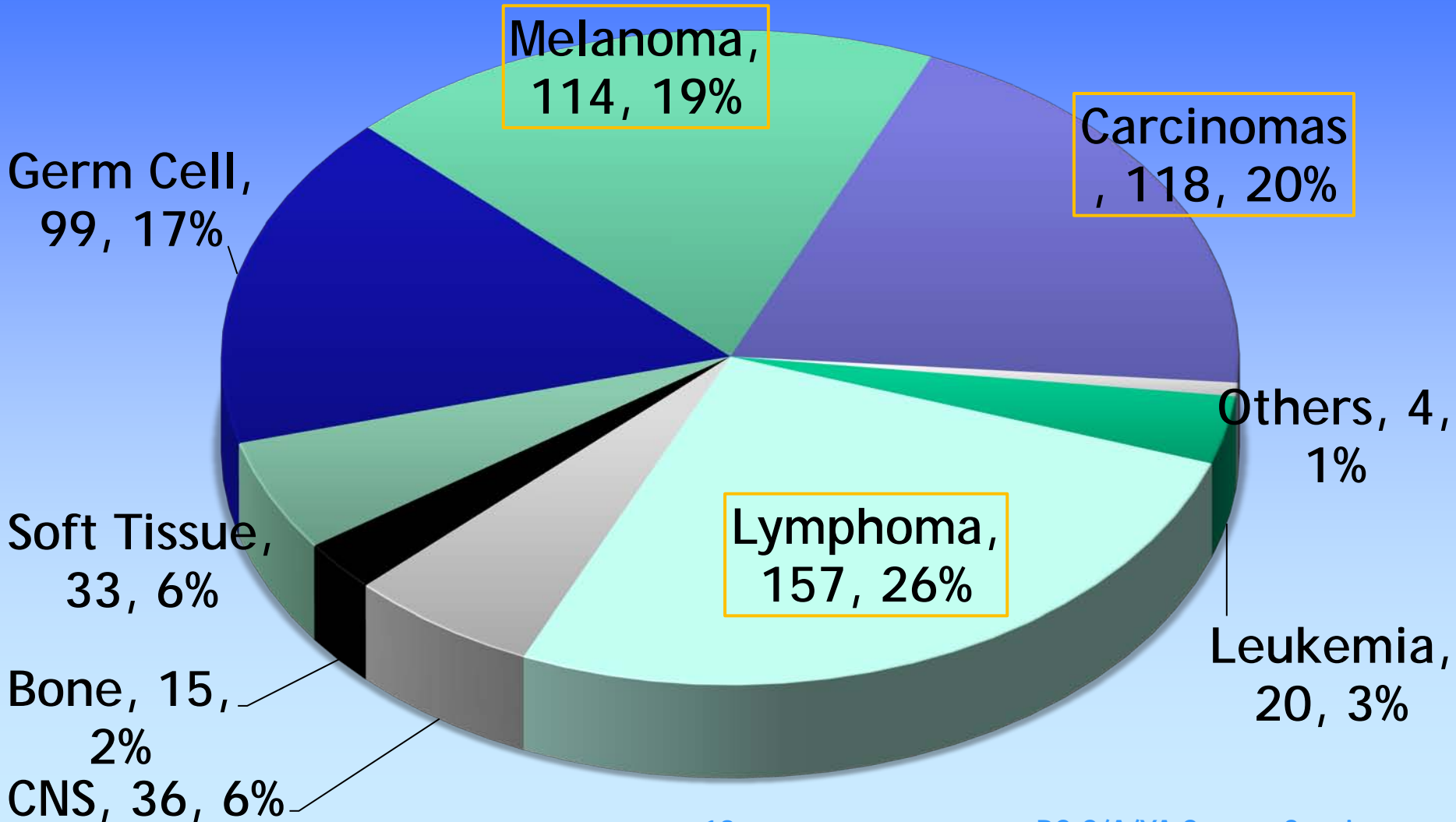
- The frequency and proportion of late morbidity measured by hospitalization
- Cox proportional hazard regression, adjusting for socio-demographic factors

# Results

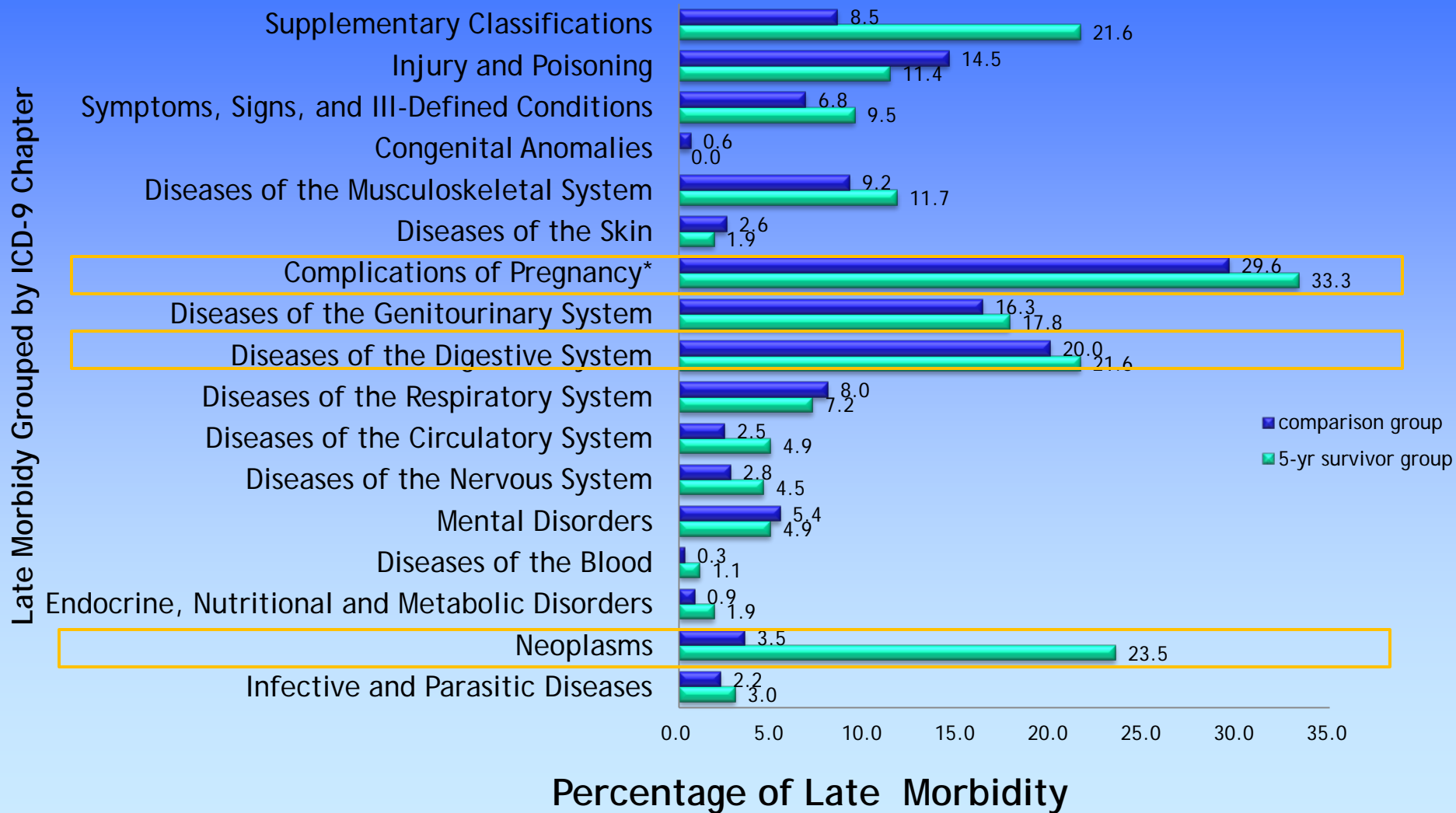
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Characteristic	Survivor (N=596)	Comparison (N=5960)
	No. (%)	No. (%)
<b>Gender</b>		
Male	296(49.7)	2960(49.7)
Female	300(50.3)	3000(50.3)
<b>Birth year</b>		
1956-1964	228(38.2)	2280(38.2)
1965-1974	368(61.8)	3680(61.8)

# Primary Diagnosis of Survivors (N=596)

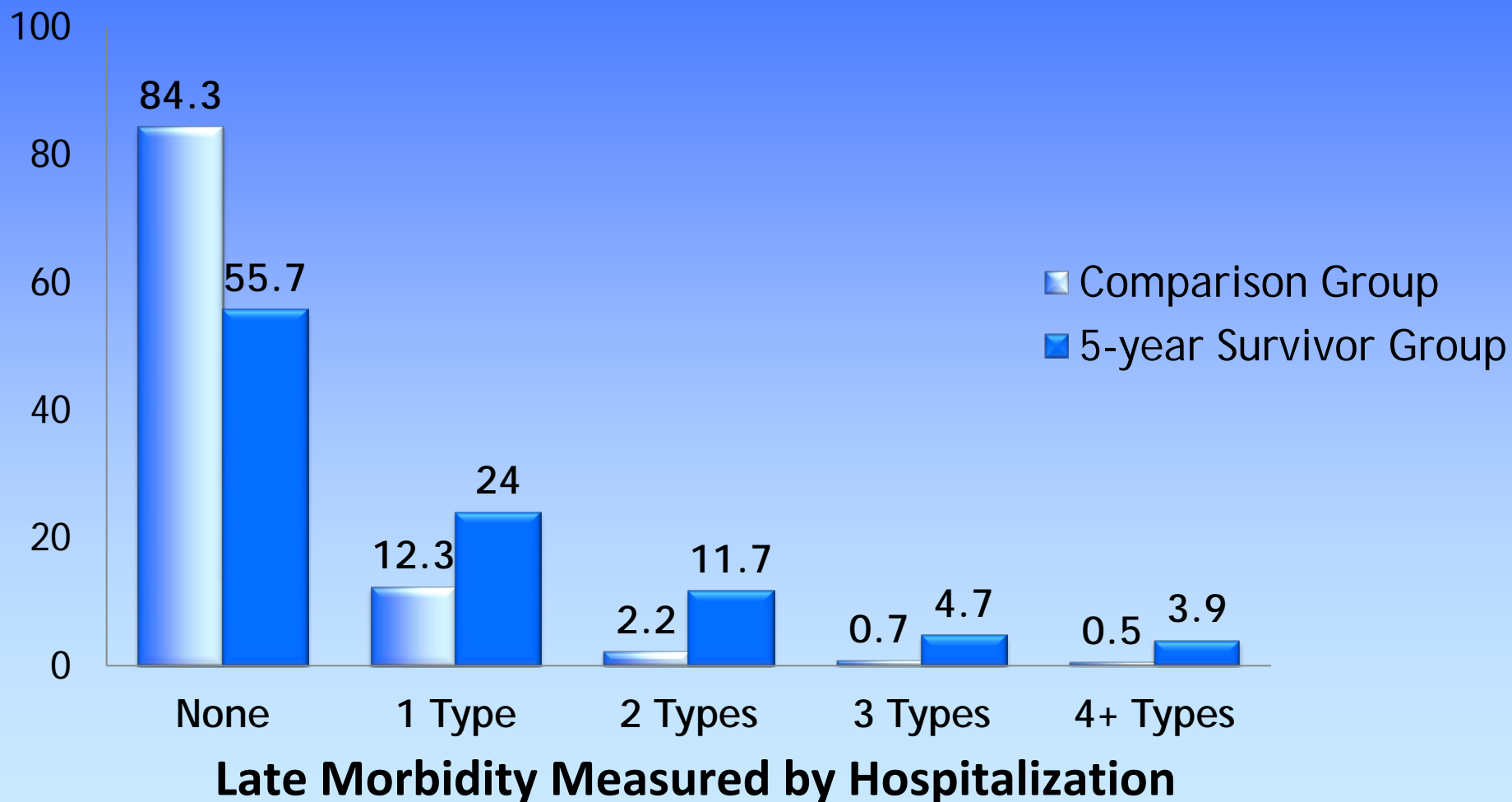


# Percentage of Late Morbidity Leading to Hospitalization by ICD-9 Chapter

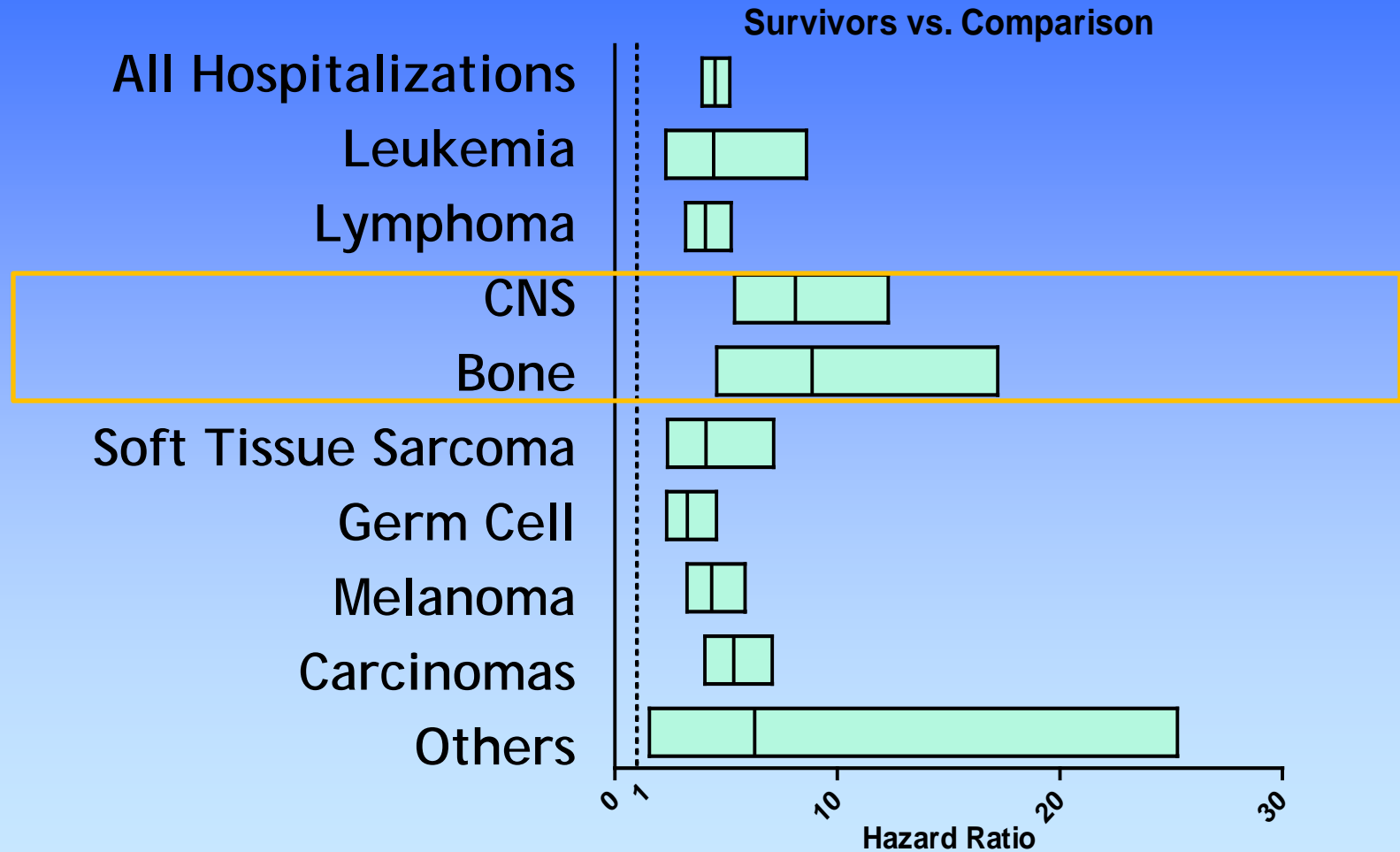


\*female survivors only

# Percentage of Types of Late Morbidity

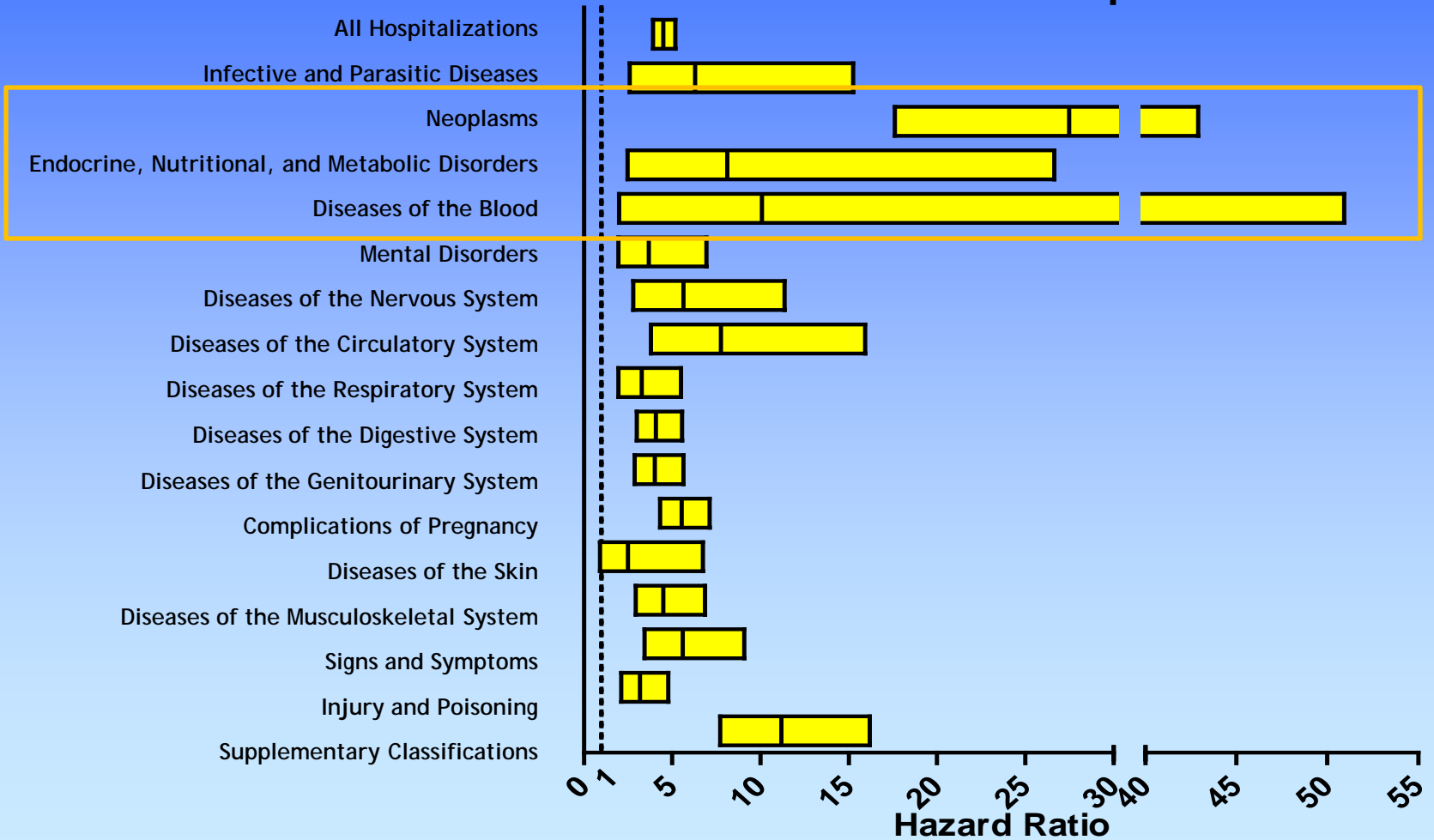


# Hazard Ratio of Late Morbidity Leading to Hospitalization among 5-Yr Survivors of YA Cancer



# Hazard Ratio of Late Morbidity Leading to Hospitalization among 5-Yr Survivors of YA Cancer

**Survivors vs. Comparison**



# *Conclusions*

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- Young adult cancer survivors have elevated risk of late morbidity leading to hospitalization.
- All survivor groups are at increased risk; however CNS and bone tumors cancers have the highest risk over time.
- Emphasize the need for life-time systematic monitoring and follow-up for young adult survivors

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# Thank you, and questions?

