

# Cancer and Aging

Robert L. Kane, MD  
University of Minnesota  
School of Public Health

# Case #1

An 85 year-old man is mentally alert and in good general physical shape. He uses a walker. He is diagnosed with acute myelocytic leukemia. What treatment would you recommend?

# Case # 2

Same case but the man has moderate dementia.

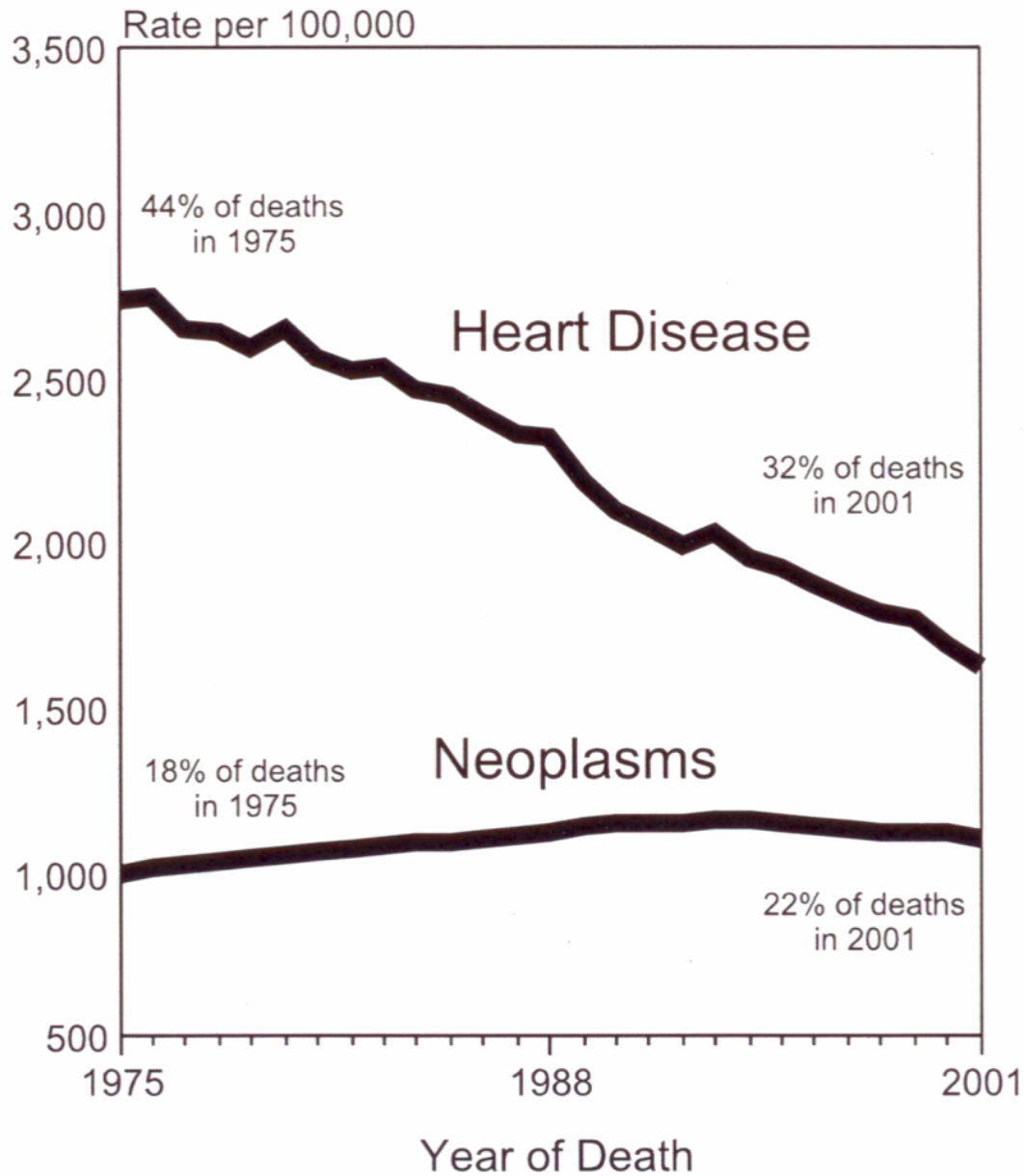
## Case #3

75 year old woman who has a history of a fractured hip successfully repaired, plays tennis once a week, works part-time has colon cancer by CAT scan. What treatment would you recommend?

# Case #4

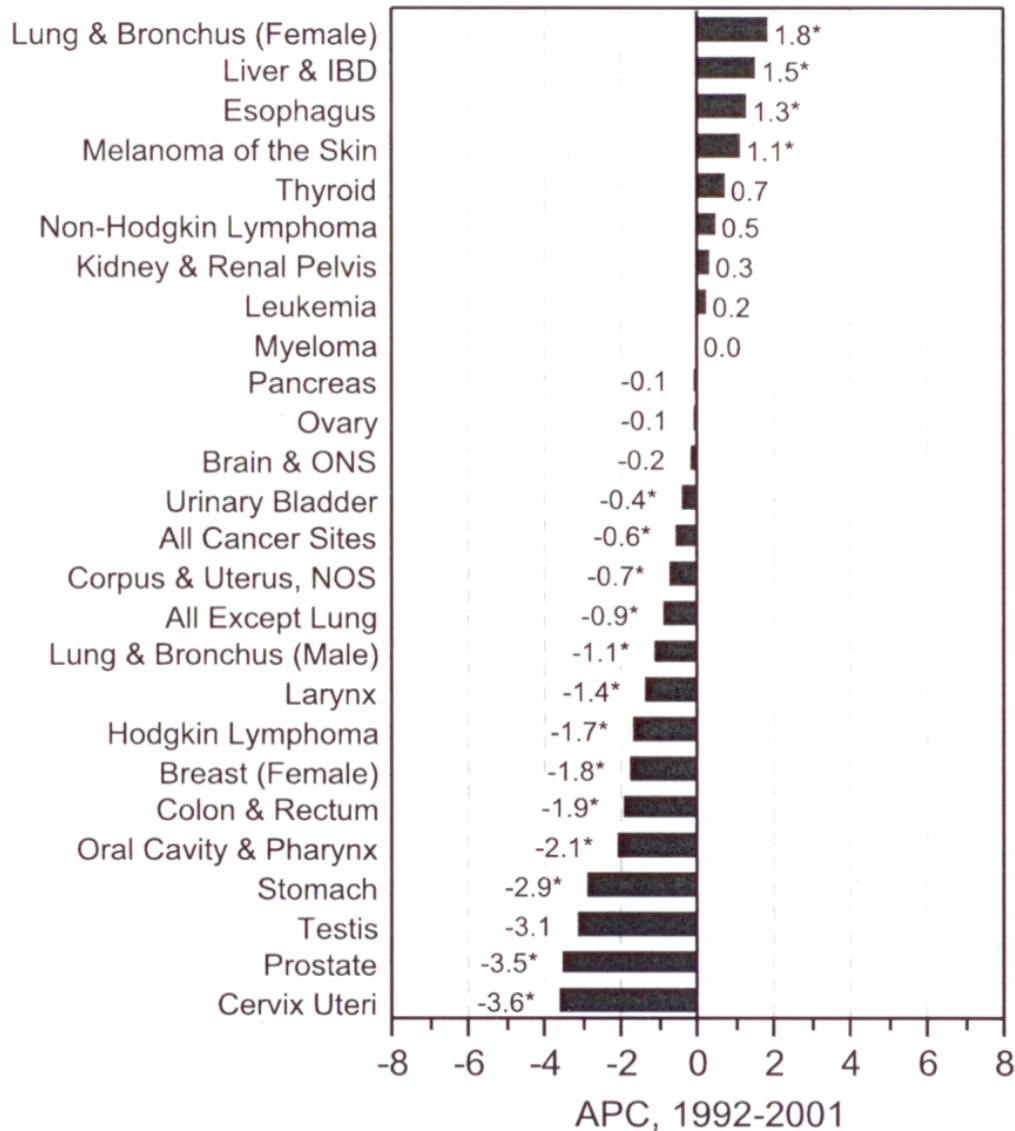
83 year-old woman is a resident of a nursing home with dementia and some congestive heart failure., Her children request that you order a mammogram. What would you do?

# Ages 65 and Over



# Annual Percentage Change in Mortality, 1992-2001

## Ages 65 and Over

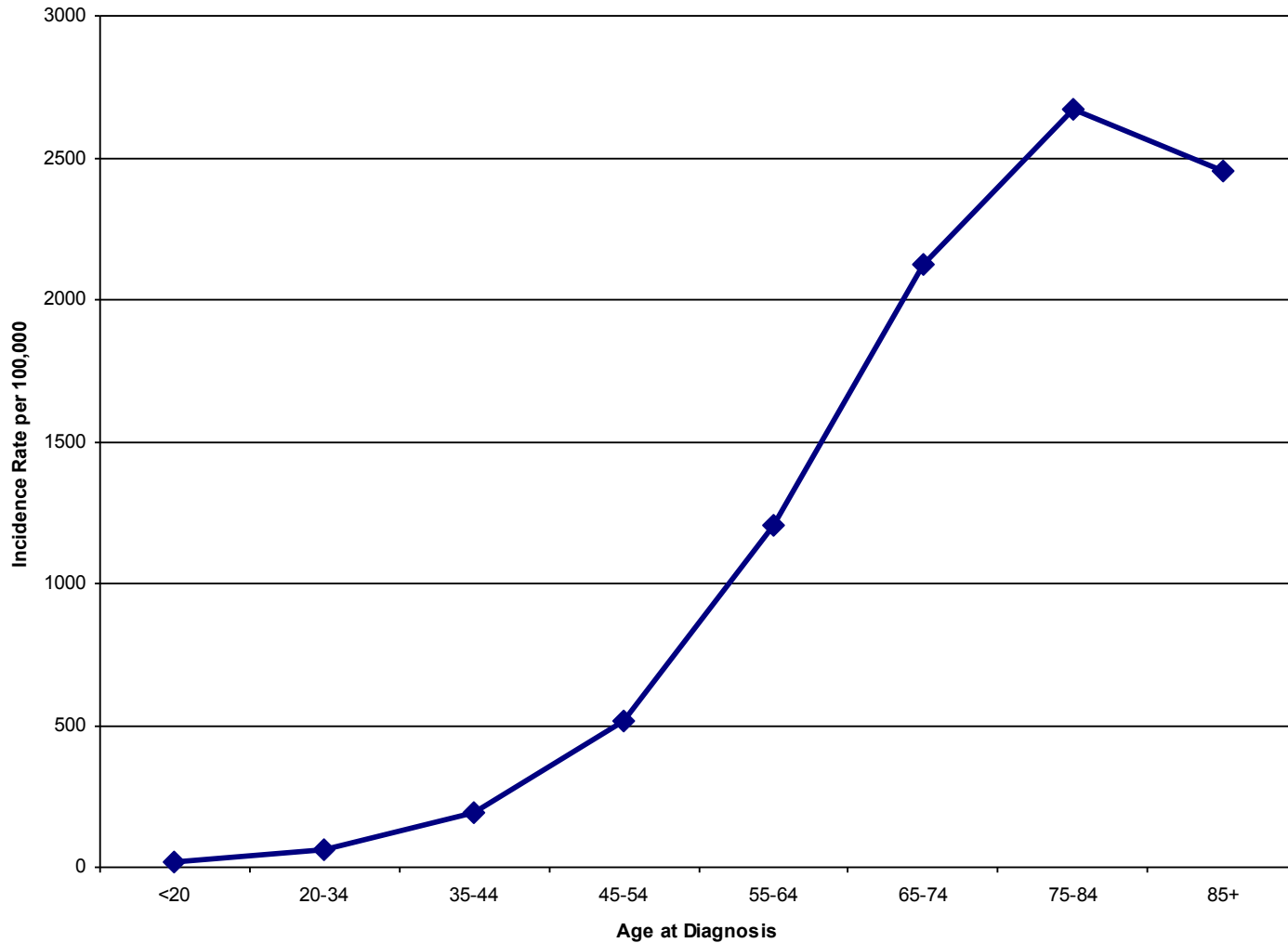


# Age-Related v. Age-Specific

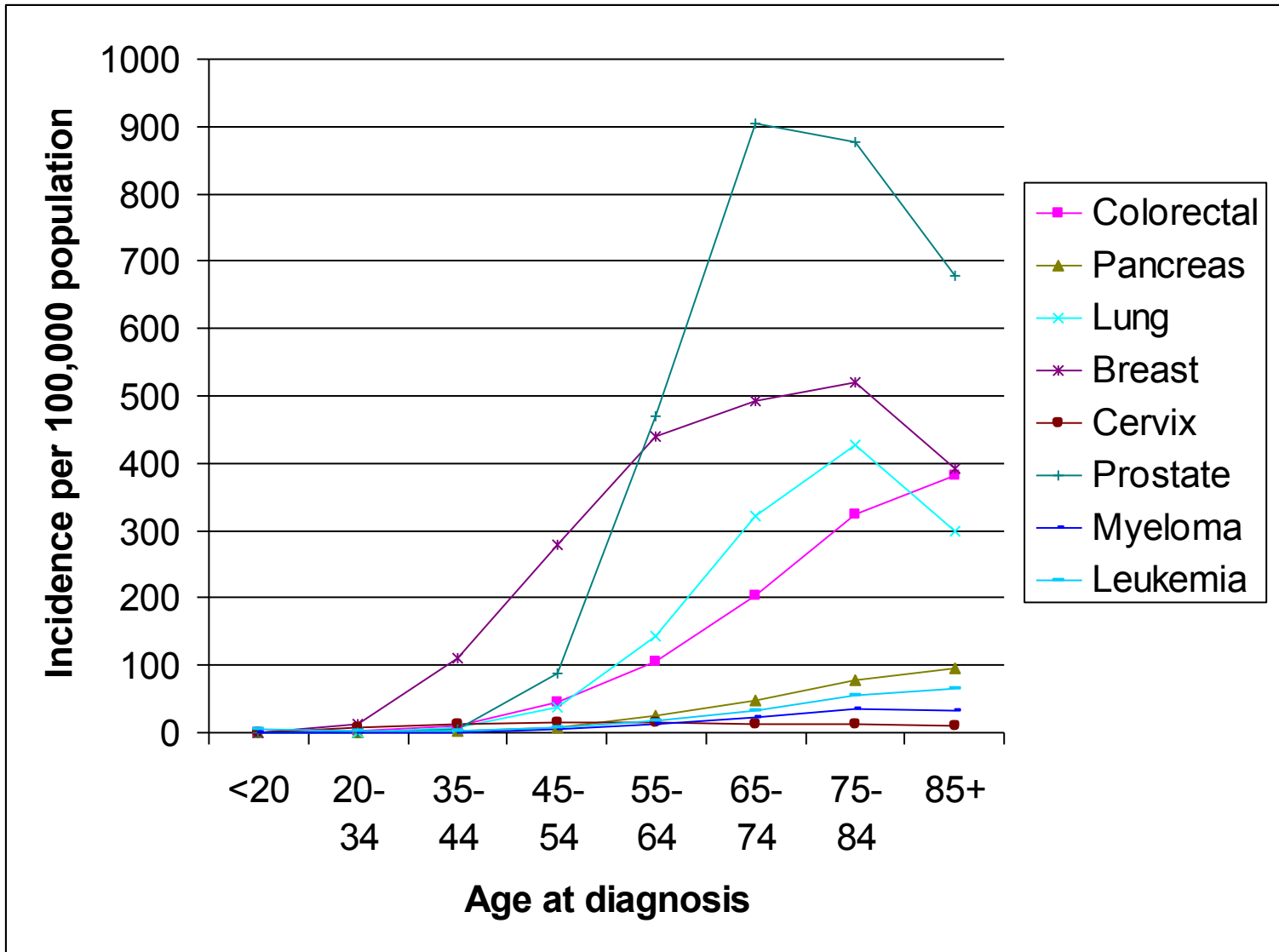
- Age related:
  - Prevalence increases with age
    - Typical of chronic diseases
  - Incidence increases with age
    - Dementia, osteoporosis
- Age specific:
  - the incidence peaks at specific ages
    - Multiple sclerosis, rheumatoid arthritis
- Is cancer age-related or age-specific?



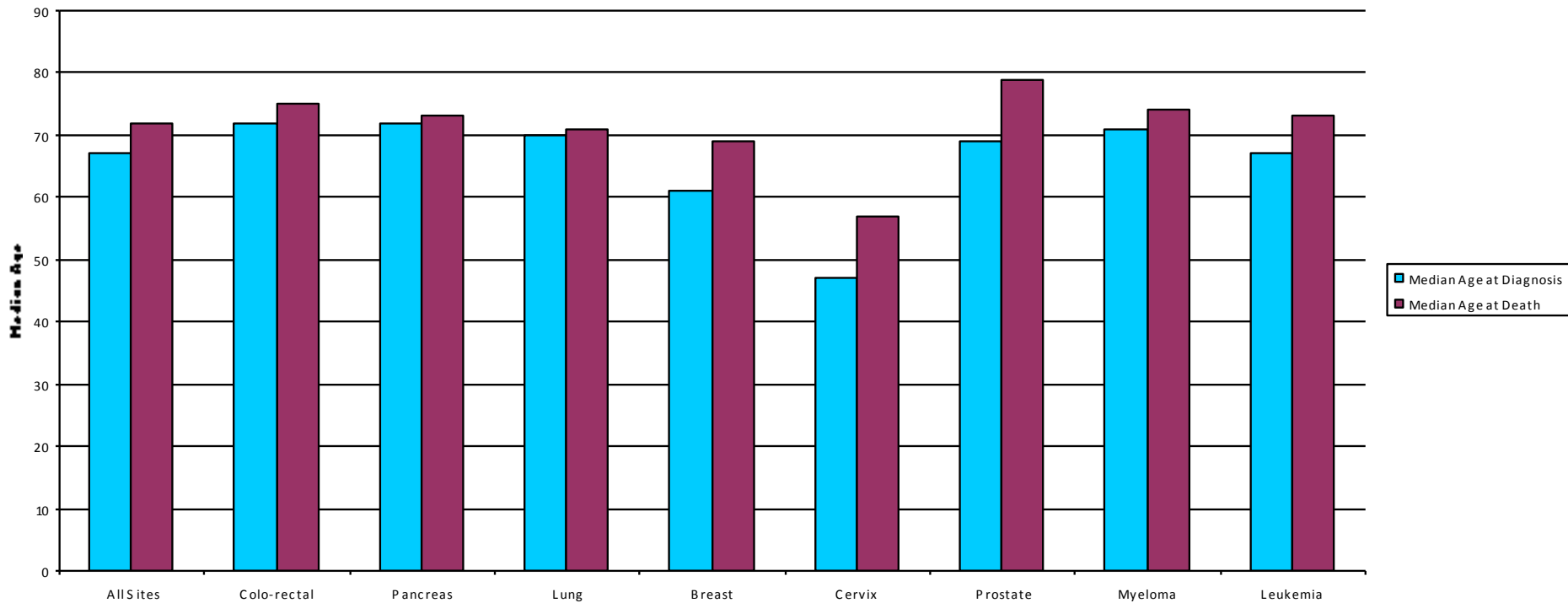
# Age-Specific Incidence of Cancer, All Sites



# Age-Specific Incidence of Selected Cancers



# Median Age of Cancer Diagnosis & Death



# Differences in the Clinical Course

- Onset
- Survival
  
- Leukemia
- Prostate

# Management of Cancer

Older people with cancer are treated differently with regard to:

- Screening
- Treatment
- Intensity of follow up

Should they be?

# Screening

- Age vs. other factors (e.g., function)
- Life expectancy
- Do not uncover what you are not prepared to treat

# Age and Treatment

- Success of treatment
- Availability of treatment
- Options
  - Surgery
    - Aggressive v. local
  - Chemotherapy
  - Radiation
- Whom should you treat
- Lack of good data on the extent and strength of side effects from treatment
  - Short-term (nausea, weakness)
- Long-term (fractures, cognition)

# Intensity of Follow Up

- How aggressive should you be
- What is the basis for your follow-up plan?



# The Calculus of Cancer Treatment

- The therapeutic window
  - Likelihood of benefit (life expectancy with treatment – without treatment)
    - Life expectancy without cancer
- Comorbidities
  - Functional and cognitive status/quality of life
- Likelihood of side effects\*utility
- Patient preferences
  - Personal timeline

# SEER Data

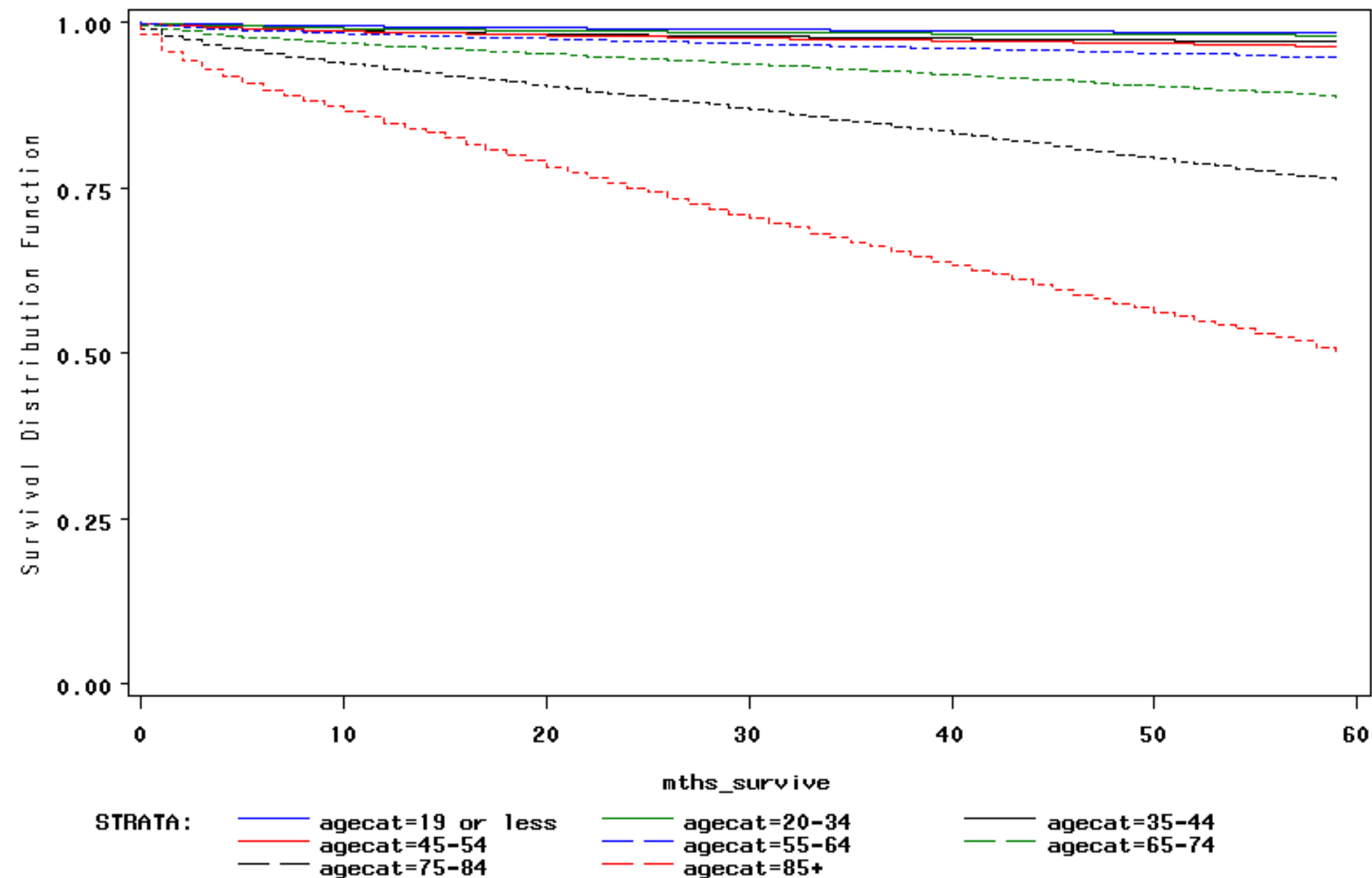
- Report source limited to exclude:
  - Nursing/Convalescent Home/Hospice, Autopsy only and Death Certificate Only
- All registries included
- Censors persons for whom cause of death was unknown (death certificate not available or cause of death not listed on death certificate):
  - 2.2% of deaths

# Observations

- Cancer is an important cause of death
- 50% of 85+ (75% of 75-84; 90% of 65-74) survive 5 years if don't die from cancer
- Cancer effects seen in first 30 months
- Age matters; cancer effects greater for oldest
- Cervical cancer is deadly in older people
- Breast cancer affects 85+ harder
- Leukemia hits the elderly hardest

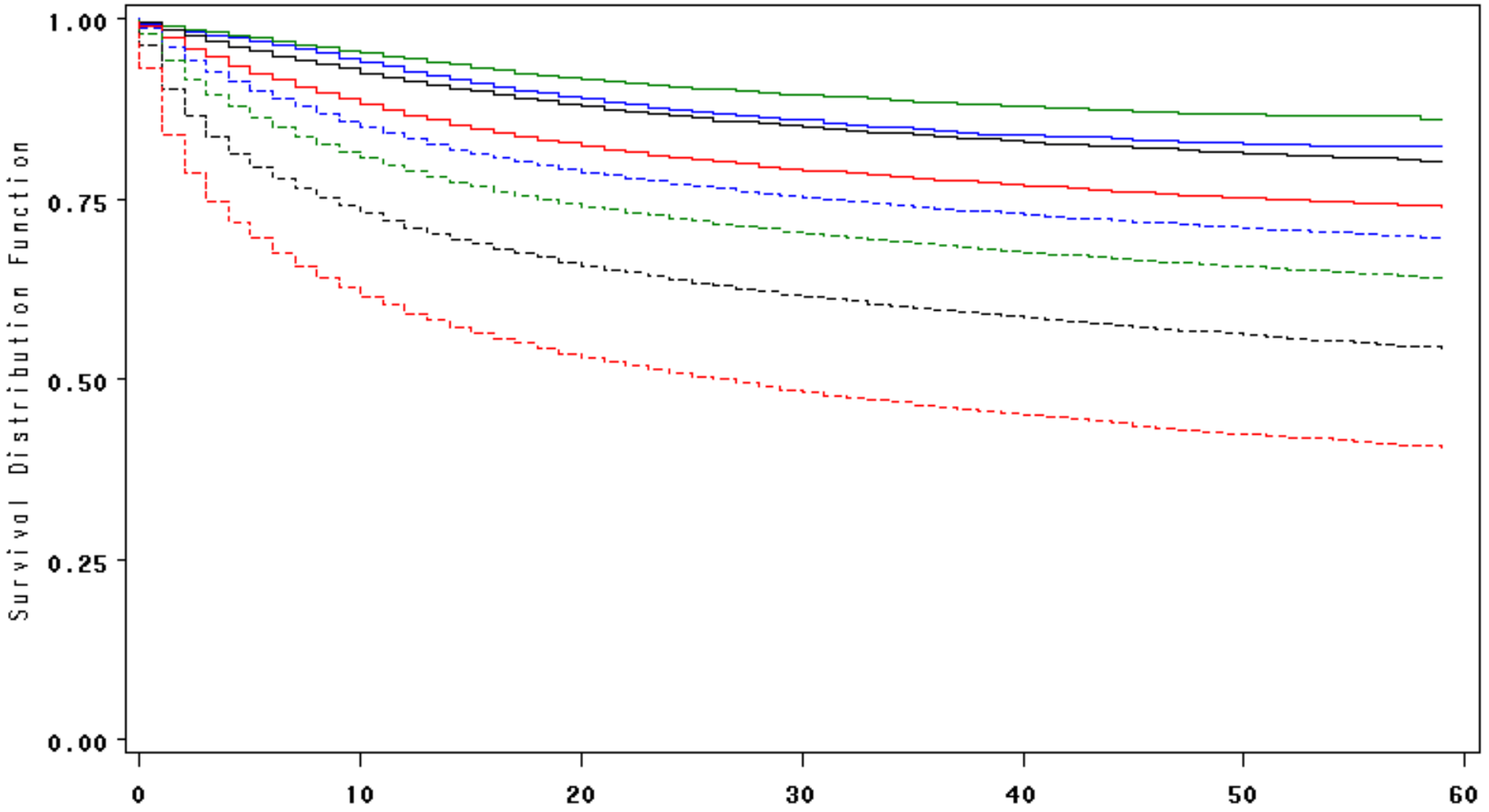
# All sites

Non-cancer mortality



# All sites

## Cancer Mortality

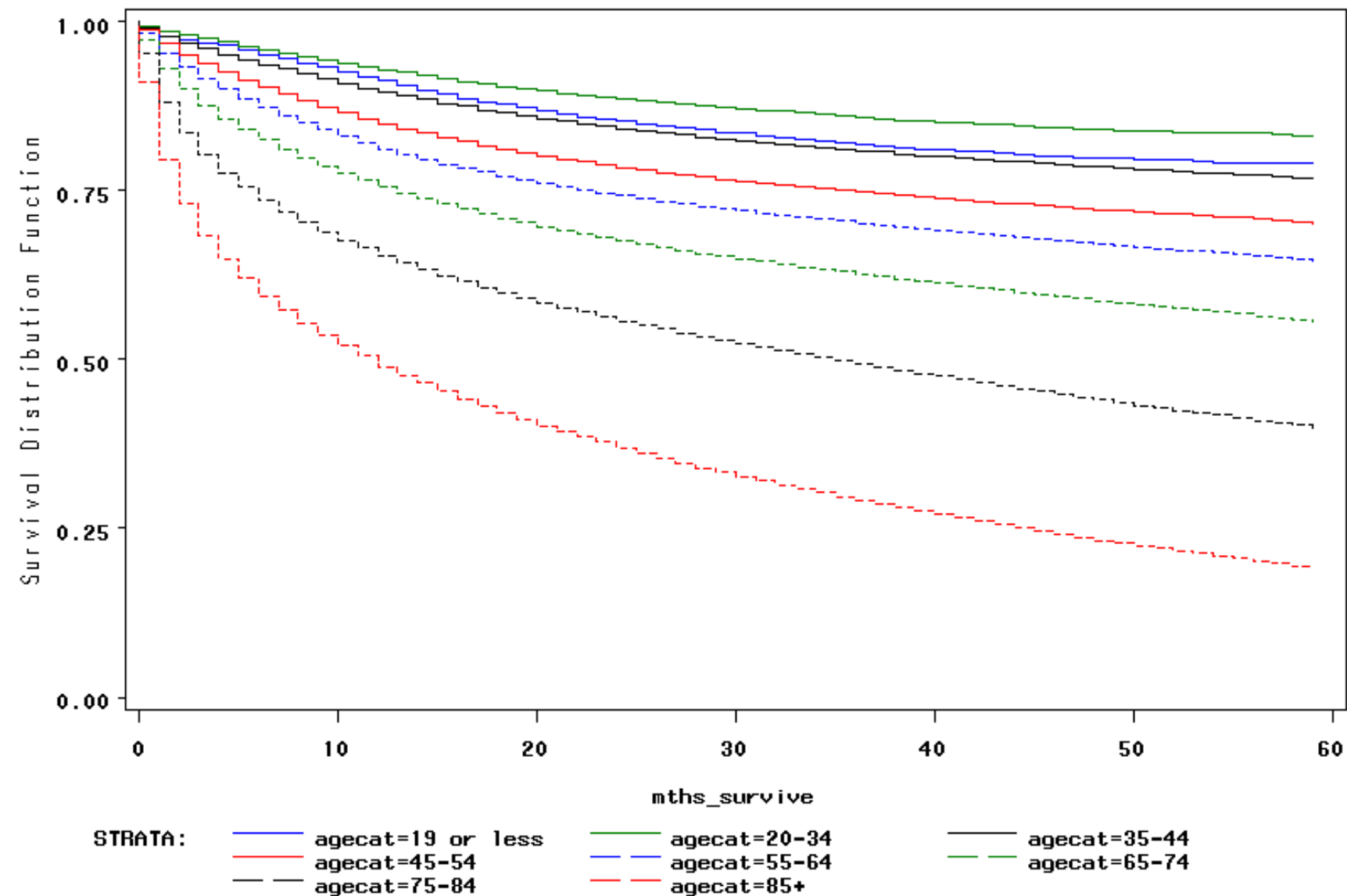


STRATA:

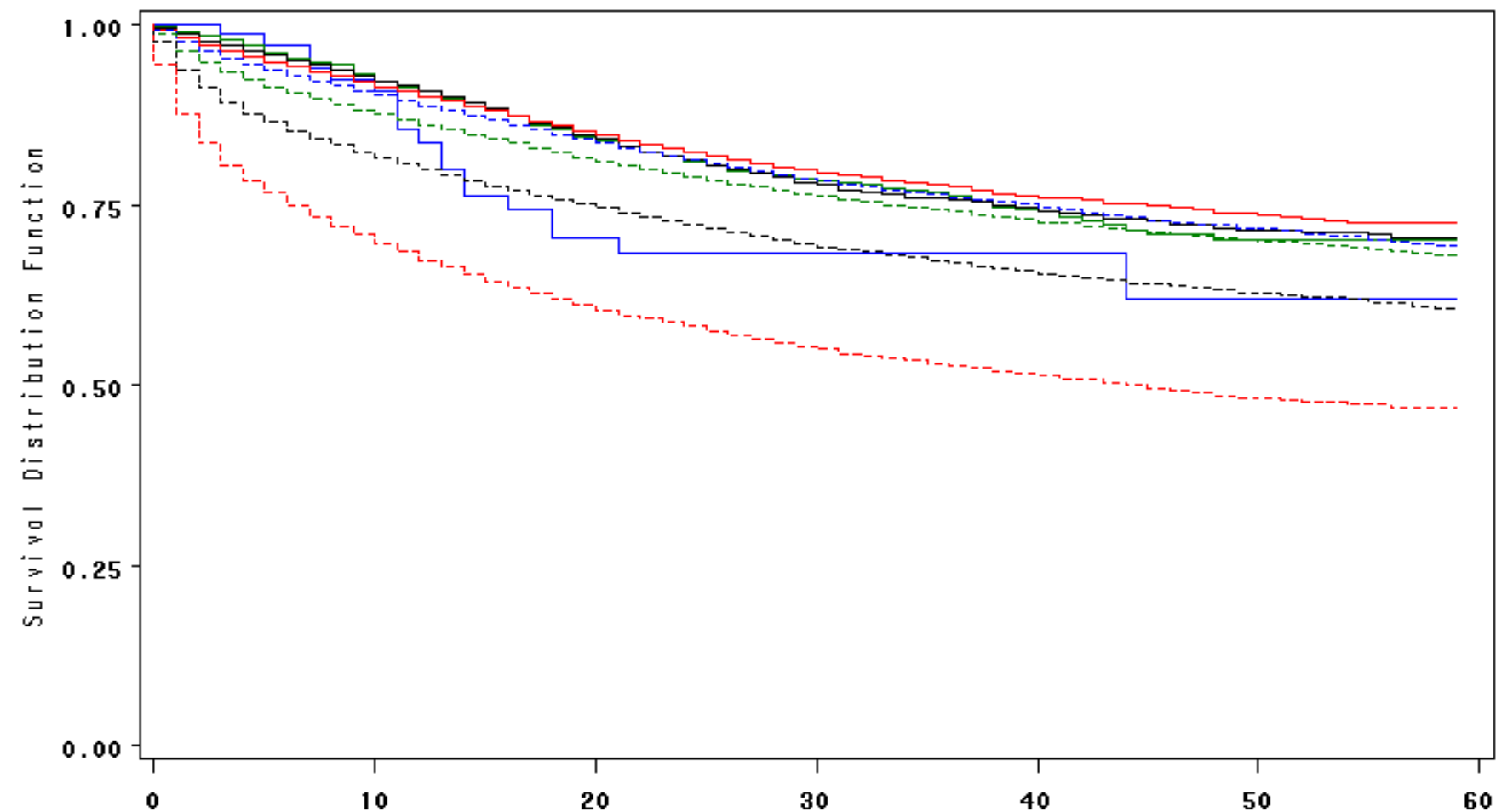
- agecat=19 or less
- agecat=20-34
- agecat=35-44
- agecat=45-54
- agecat=55-64
- agecat=65-74
- agecat=85+

# All sites

All cause mortality



# Colorectal Cancer Mortality



STRATA:

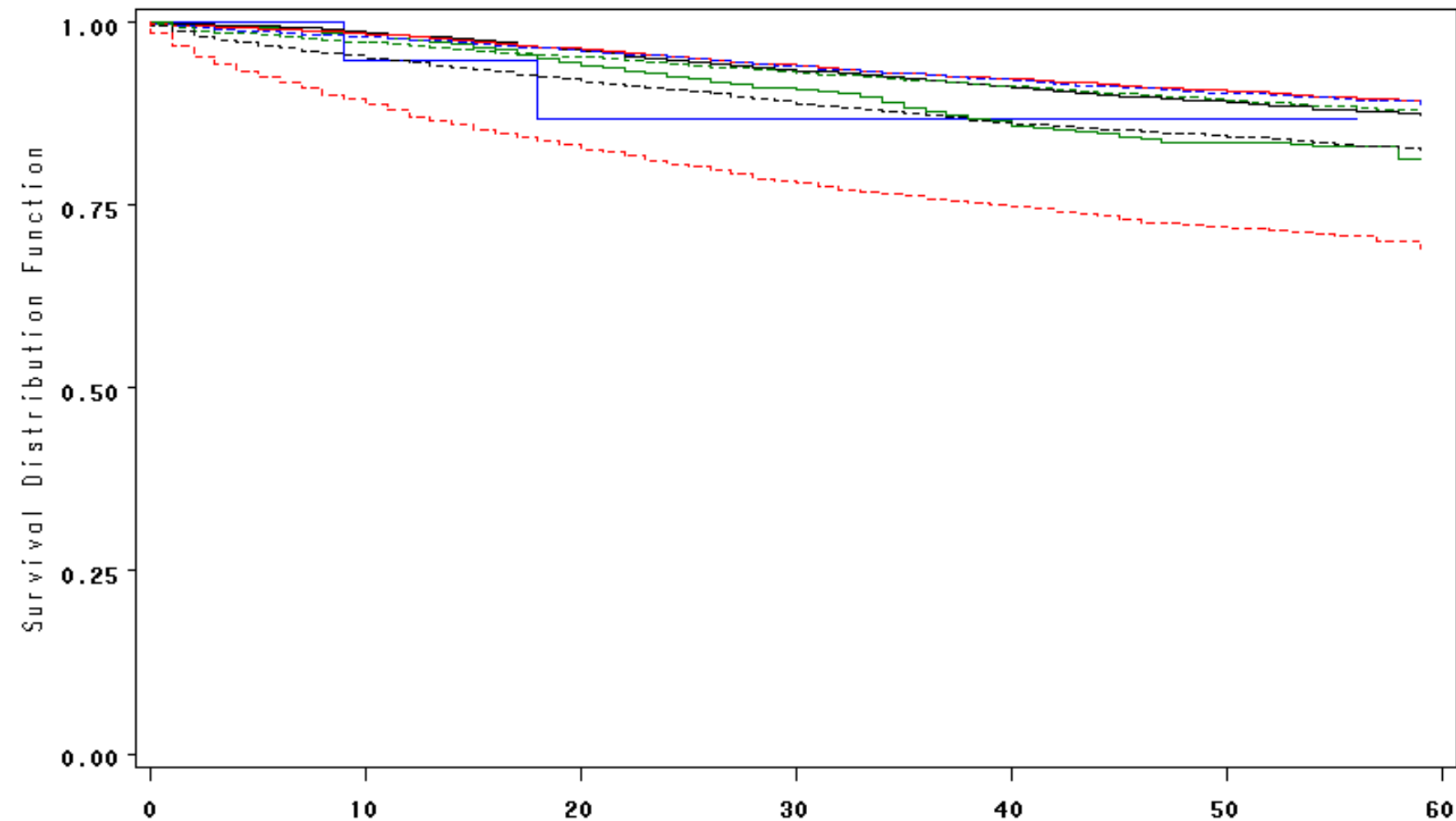
— agecat=19 or less  
— agecat=45-54  
— agecat=75-84

— agecat=20-34  
— agecat=55-64  
— agecat=85+

— agecat=35-44  
— agecat=65-74

# Female Breast — — Invasive

## Cancer Mortality



STRATA:

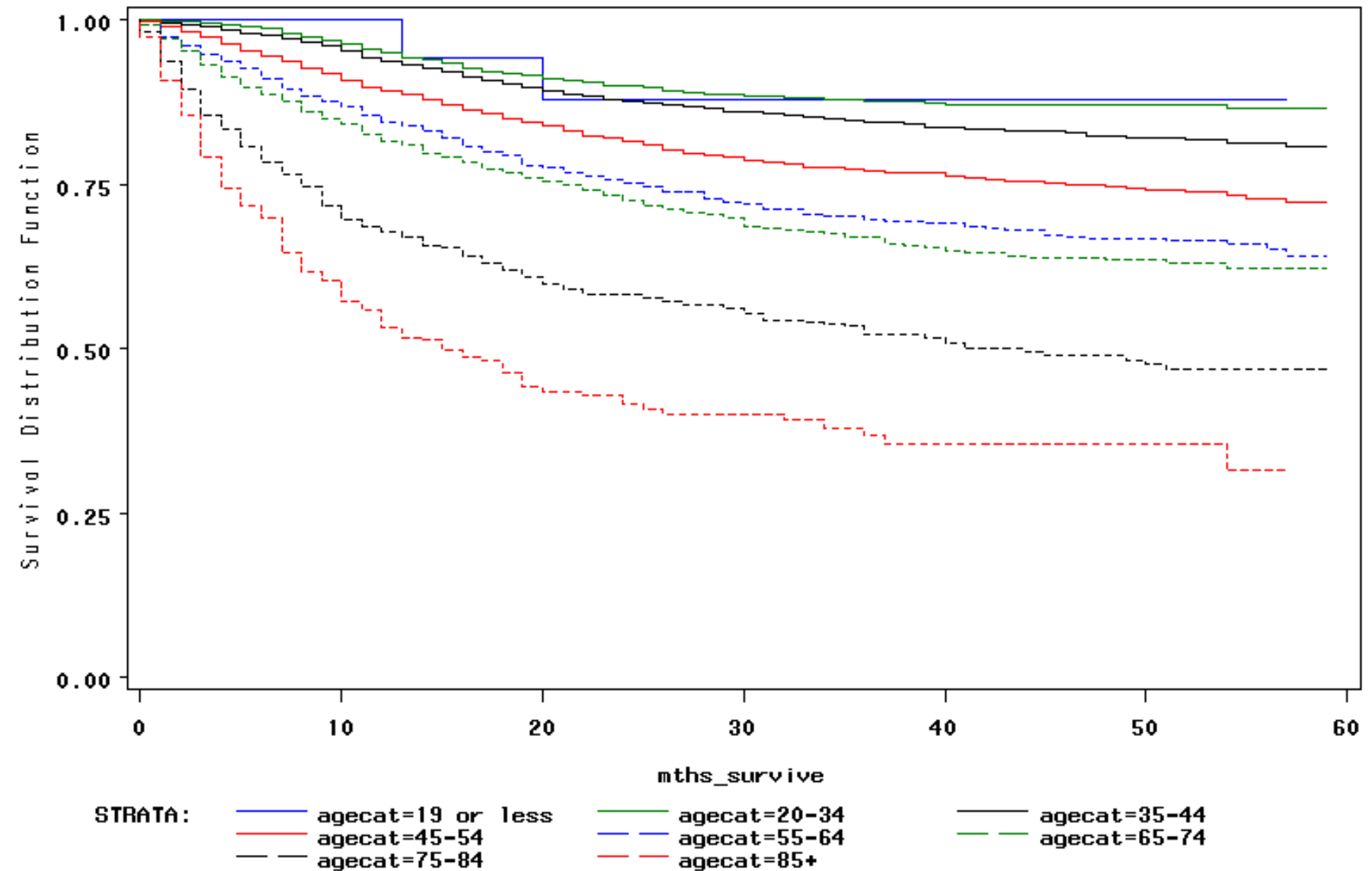
— agecat=19 or less  
— agecat=45-54  
— agecat=75-84

— agecat=20-34  
— agecat=55-64  
— agecat=85+

— agecat=35-44  
— agecat=65-74

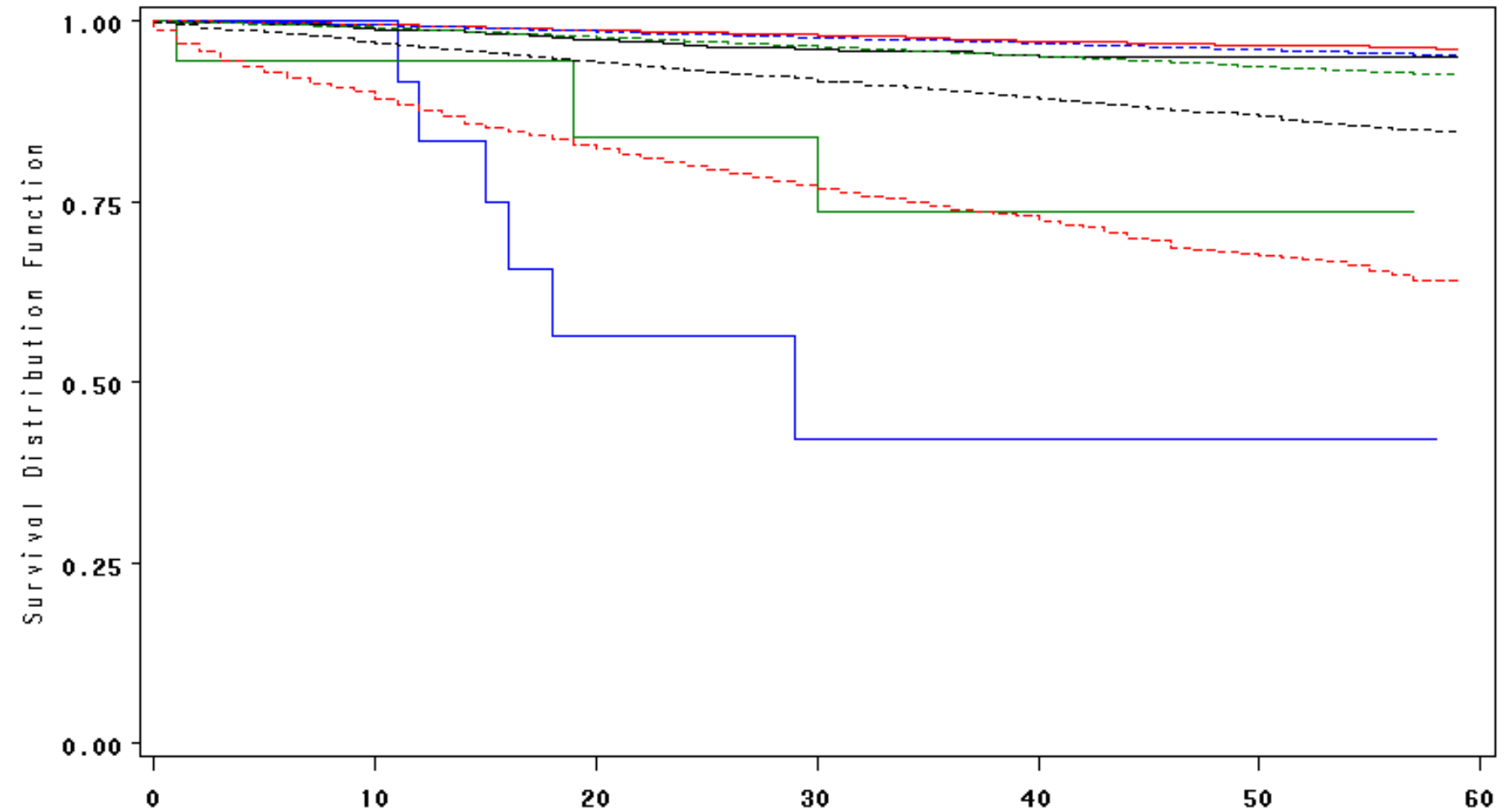


# Cervical Cancer Mortality



# Prostate

## Cancer Mortality

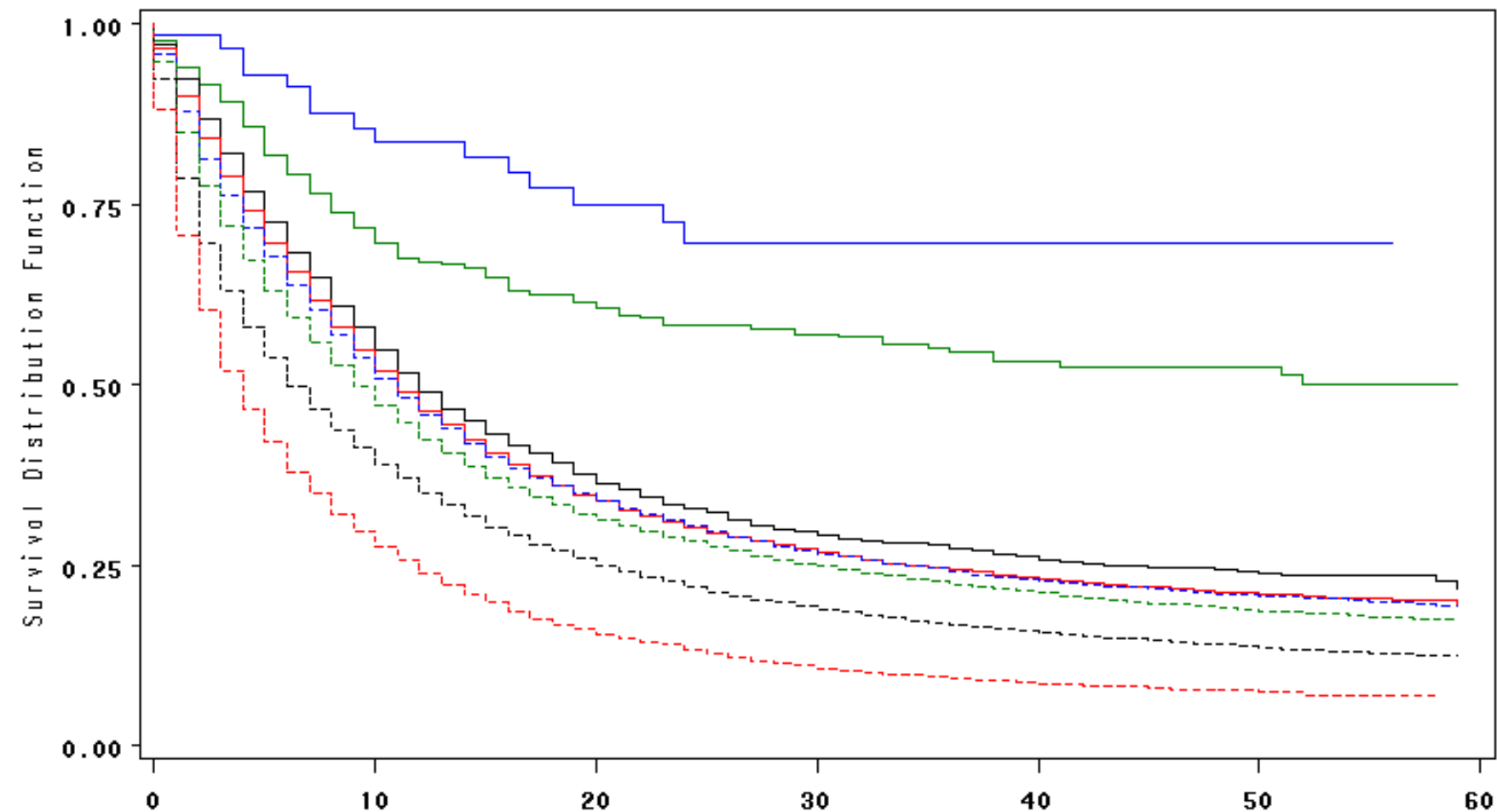


STRATA:

— agecat=19 or less	— agecat=20-34	— agecat=35-44
— agecat=45-54	— agecat=55-64	— agecat=65-74
— agecat=75-84	— agecat=85+	

# Lung

## Cancer Mortality

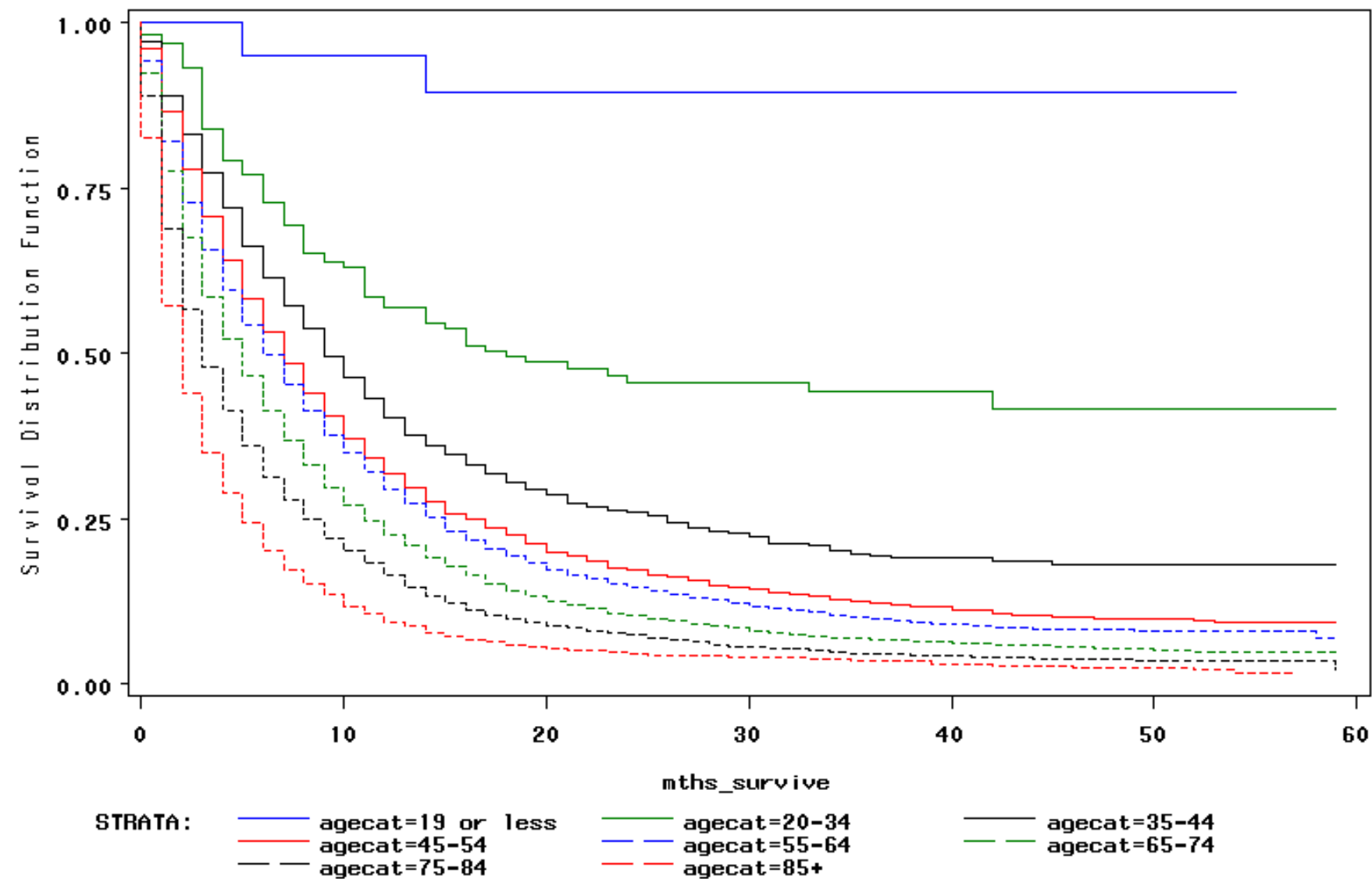


STRATA:

— agecat=19 or less	— agecat=20-34	— agecat=35-44
— agecat=45-54	— agecat=55-64	— agecat=65-74
— agecat=75-84	— agecat=85+	

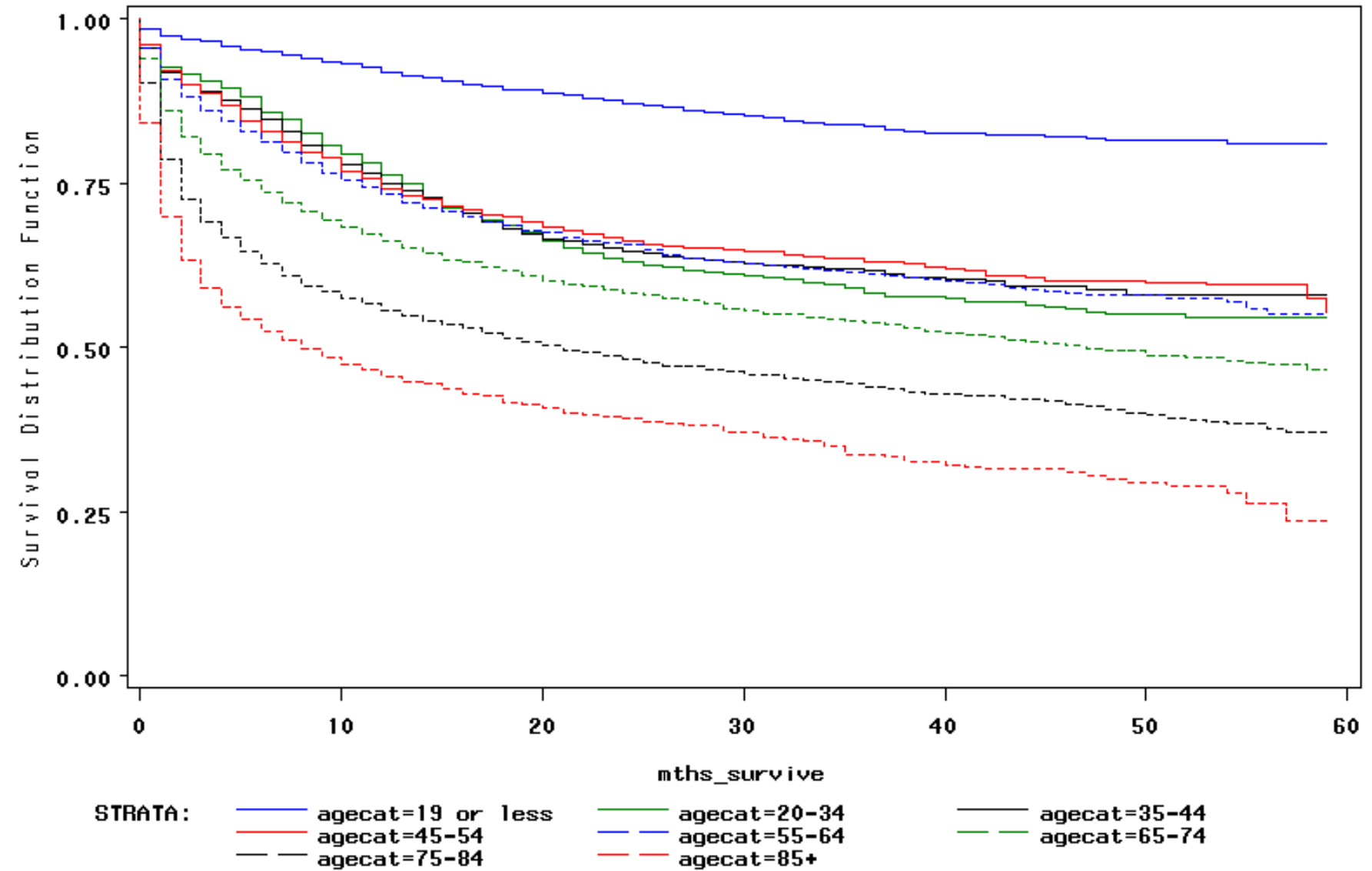
# Pancreas

## Cancer Mortality



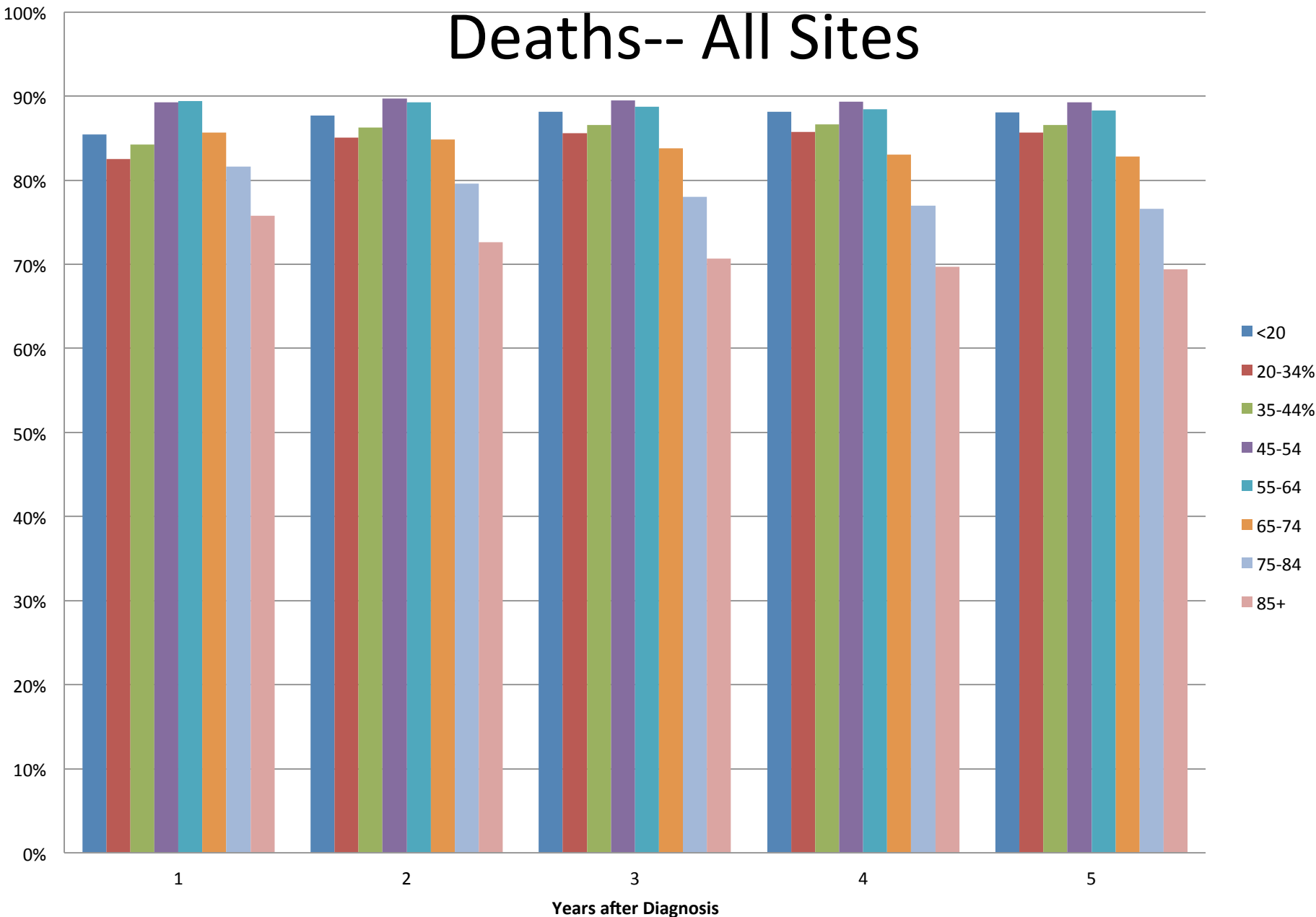
# Leukemia

## Cancer Mortality

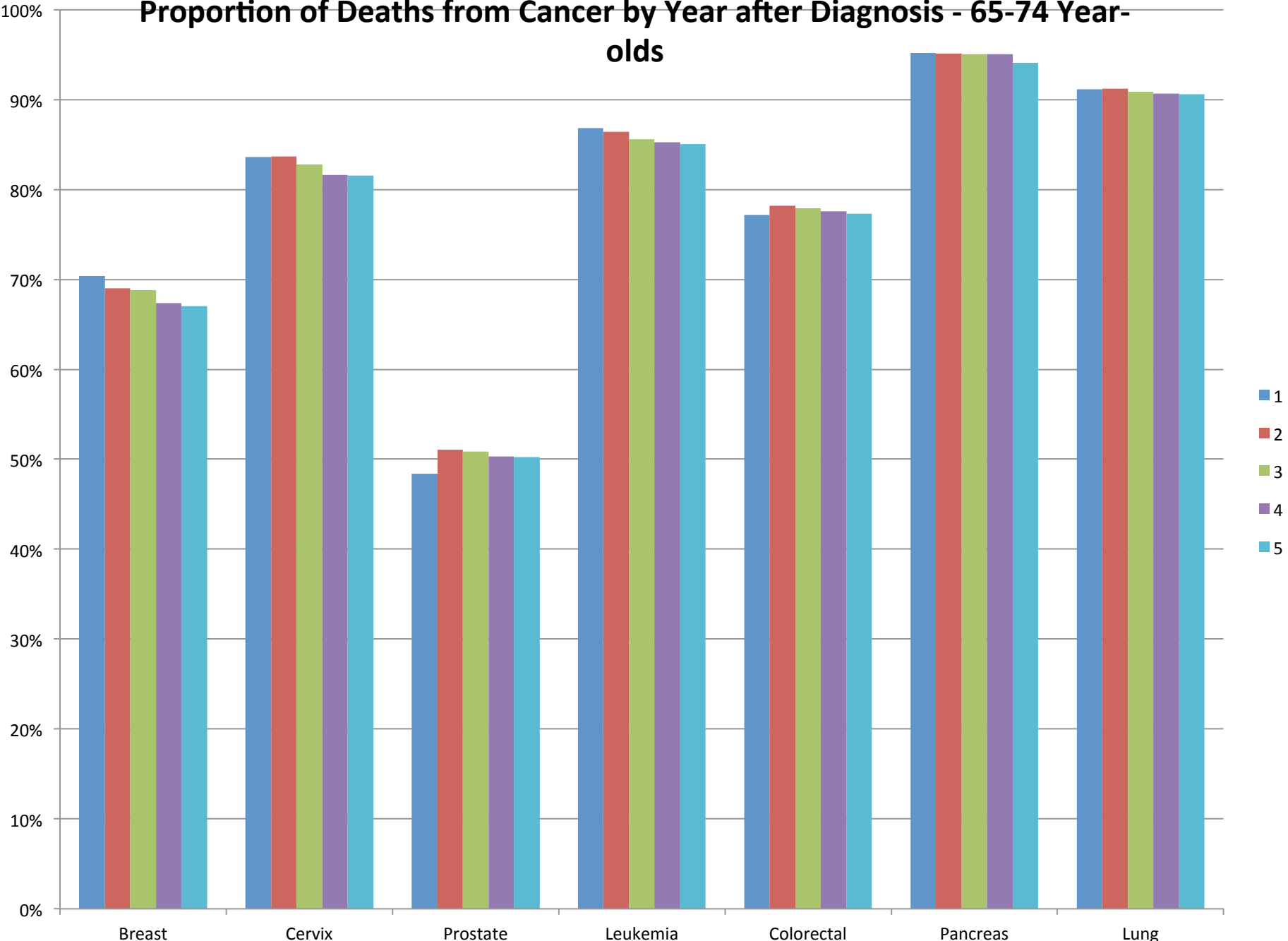


# Deaths from Cancer as a Proportion of All

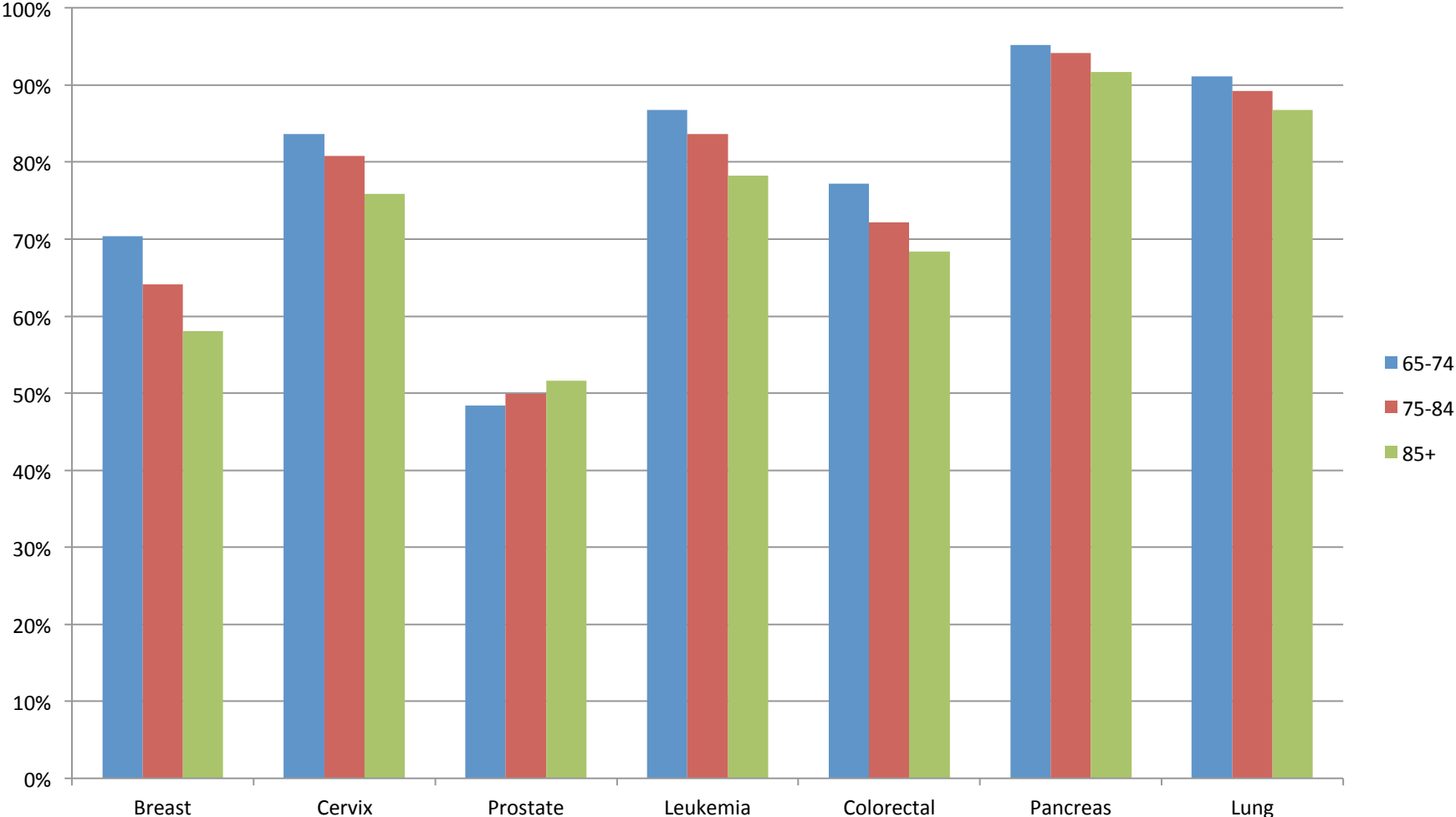
## Deaths-- All Sites



# Proportion of Deaths from Cancer by Year after Diagnosis - 65-74 Year-olds



# Proportion of Deaths from Cancer at One Year after Diagnosis





- Cancer is an important cause of death
- 50% of 85+ (75% of 75-84; 90% of 65-74) survive 5 years if don't die from cancer
- Cancer effects seen in first 30 months
- Age matters; cancer effects greater for oldest
- Cervical cancer is deadly in older people
- Breast cancer affects 85+ harder
- Leukemia hits the elderly hardest

# Hospice/Palliative Care

- Symptom management
- Pain management
- Social support
  - Avoid abandonment
- Care setting
- End of life planning

# Lessons

- Cancer is important in aging
- Reconsider some practices around screening?
- Titrate treatment to the person
- Respect personal values, but only after the patient knows the facts.