



# COST OF ABSENTEEISM DUE TO CANCER IN POLAND

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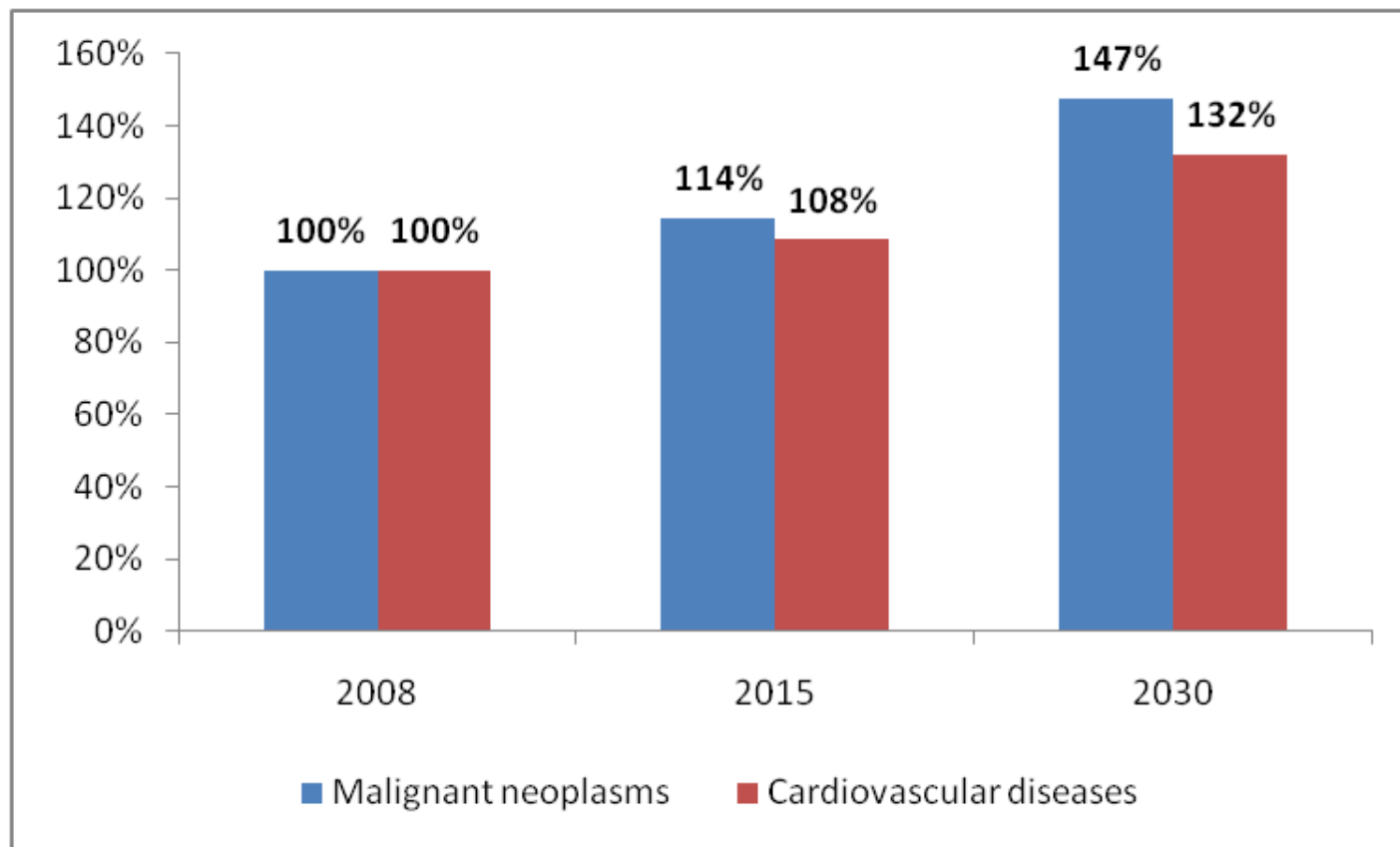
<sup>3</sup> ZUS (Social Insurance Institution), Department of Statistics



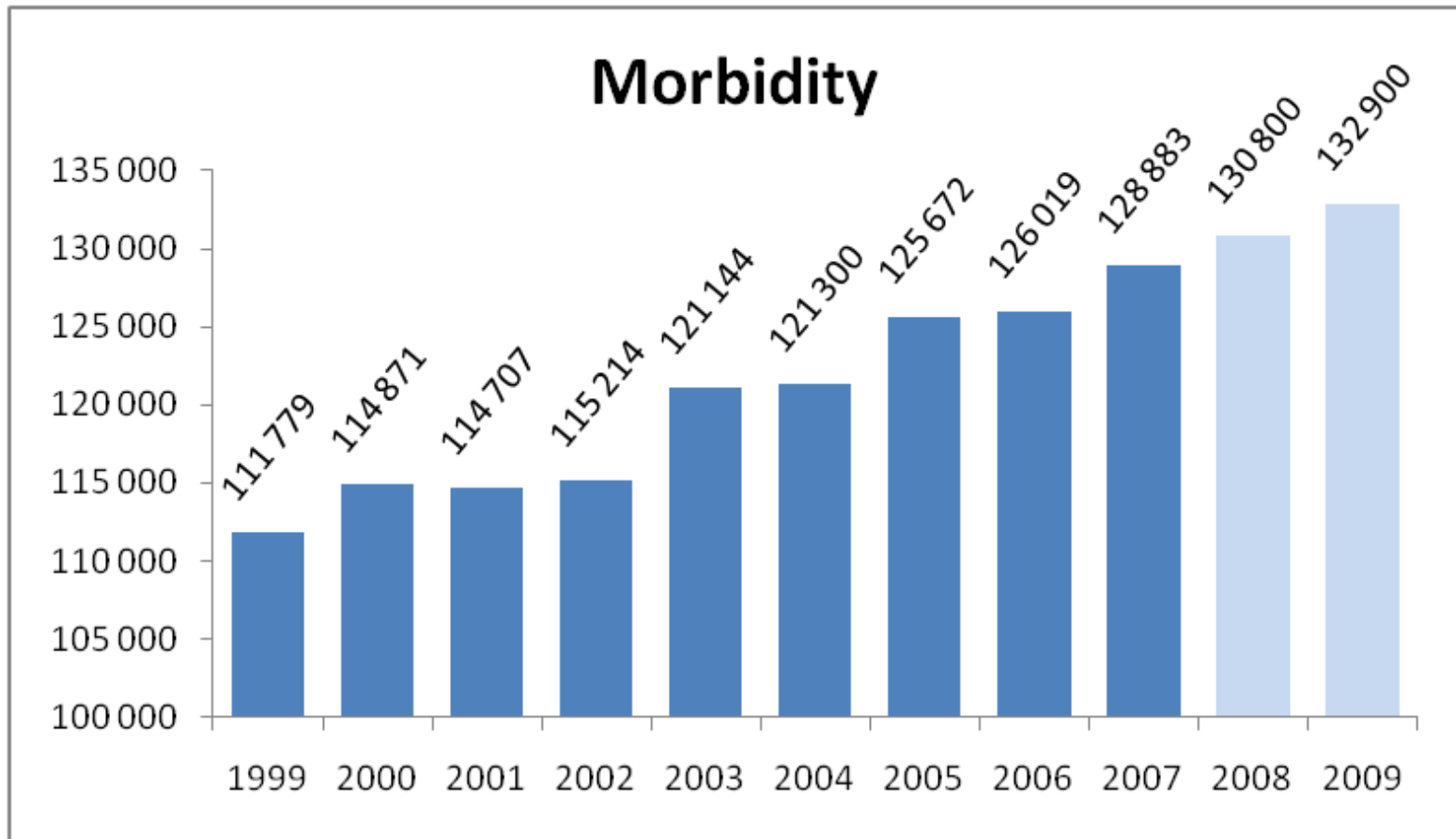
# Cancer mortality

- Second most common cause of death in the world
- WHO projected deaths:
  - 2008: 8 097 thous. (13,8% of all deaths)
  - 2015: 9 259 thous. (15,2% of all deaths)
  - 2030: 11 928 thous. (17,6% of all deaths)

# Cardiovascular mortality and cancer mortality

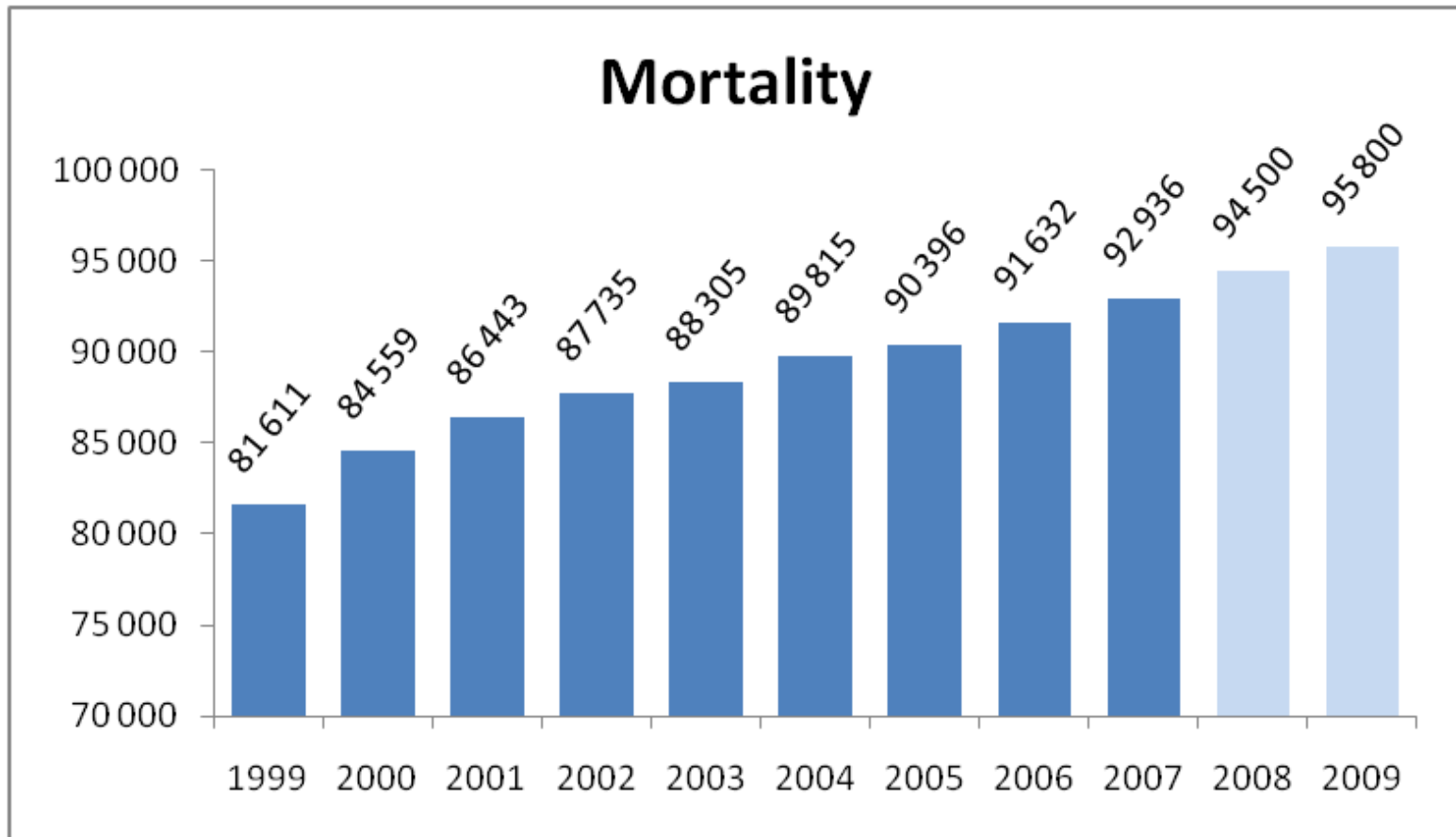


# Epidemiology - morbidity

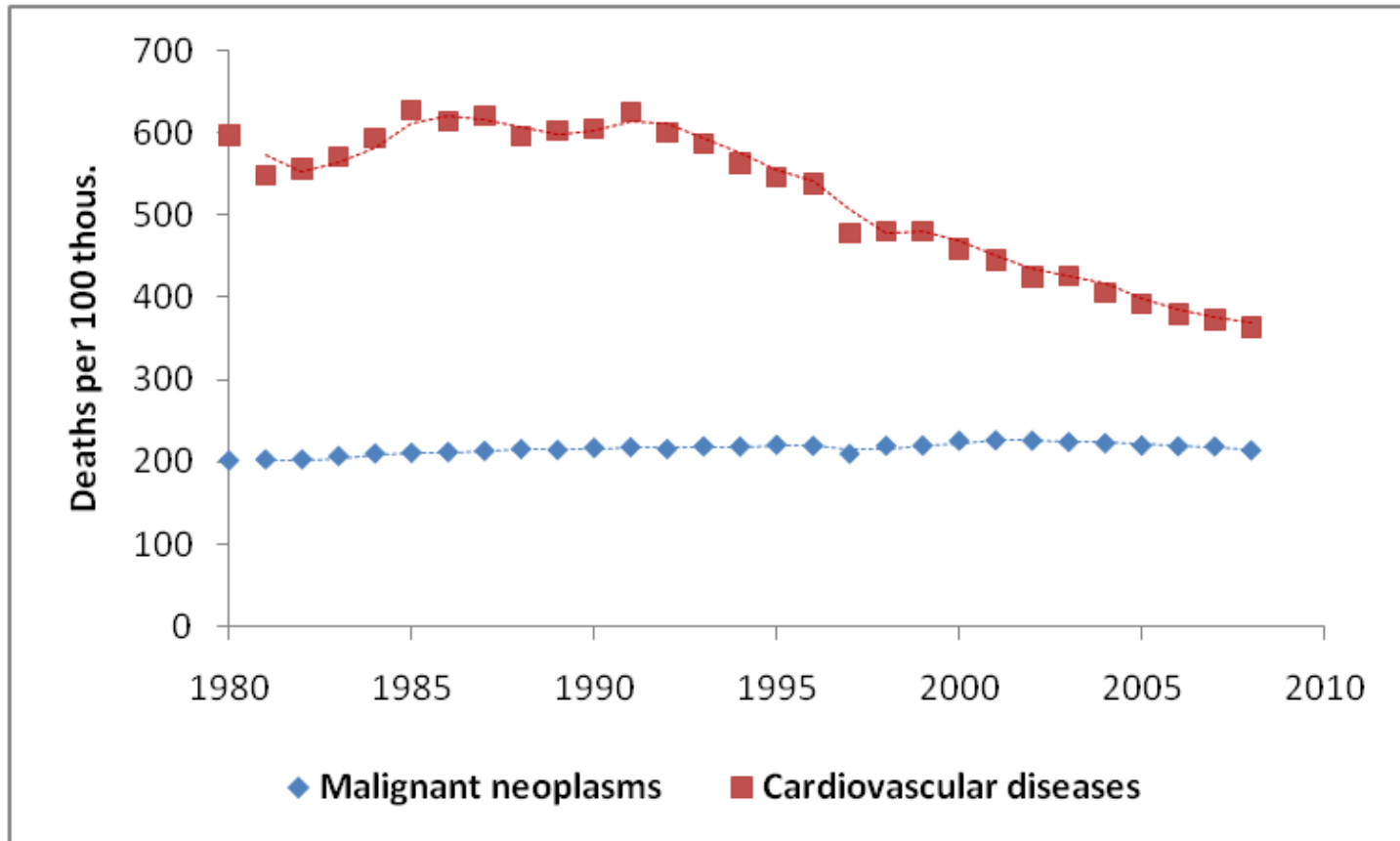


*KRN data 1999-2007*

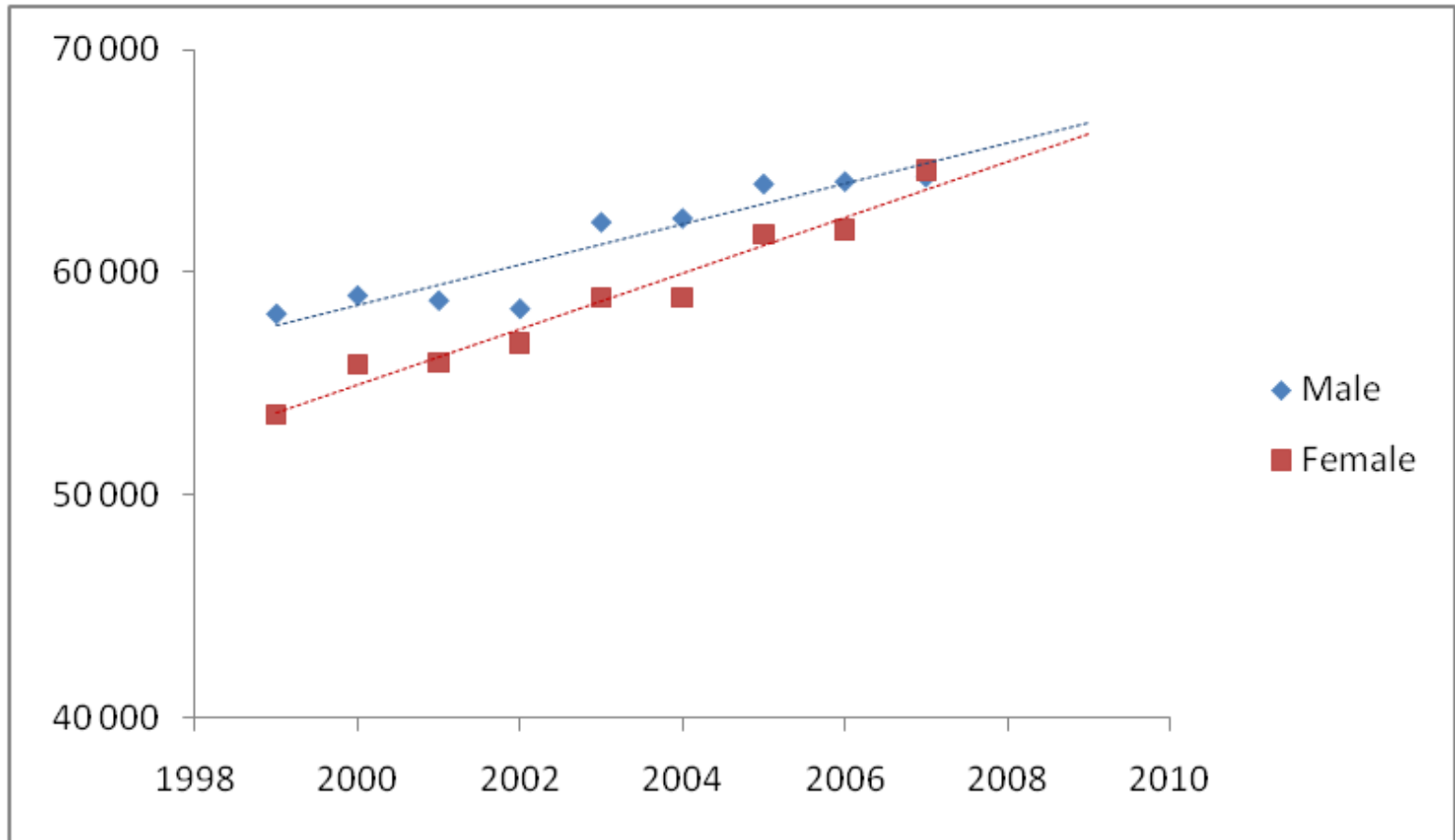
# Epidemiology - mortality



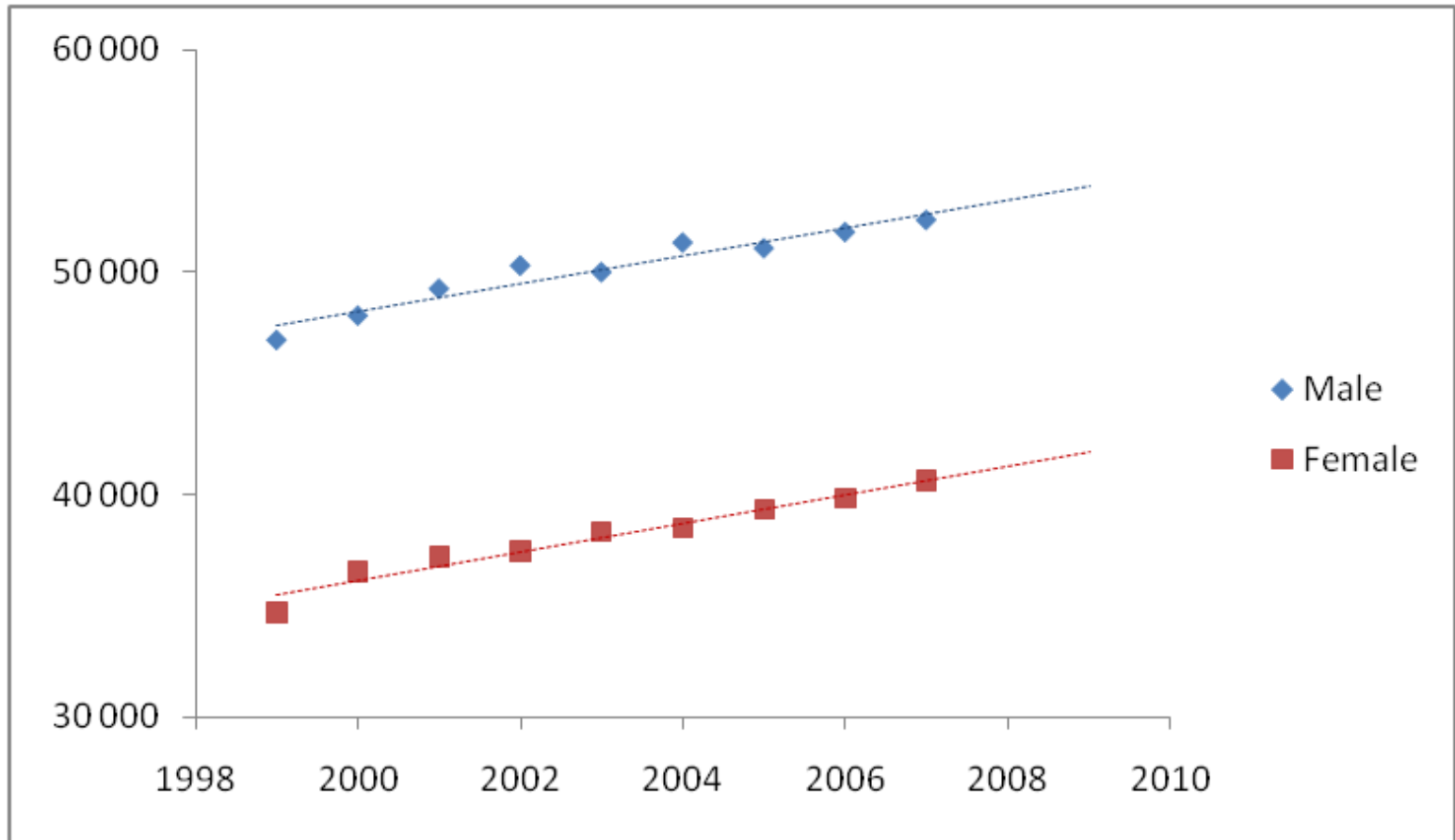
# Cardiovascular mortality and cancer mortality - Poland



# Epidemiology - morbidity

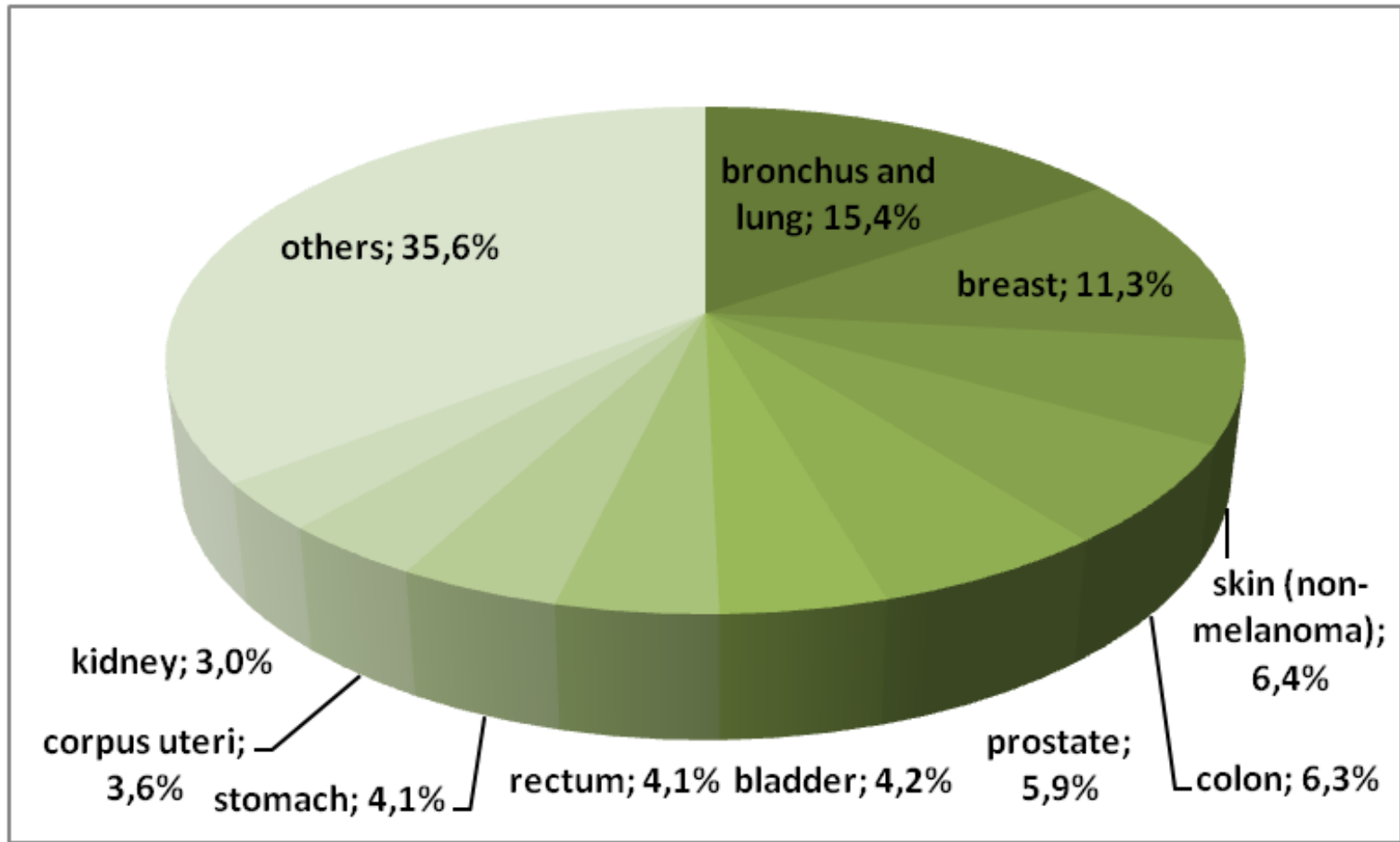


# Epidemiology - mortality





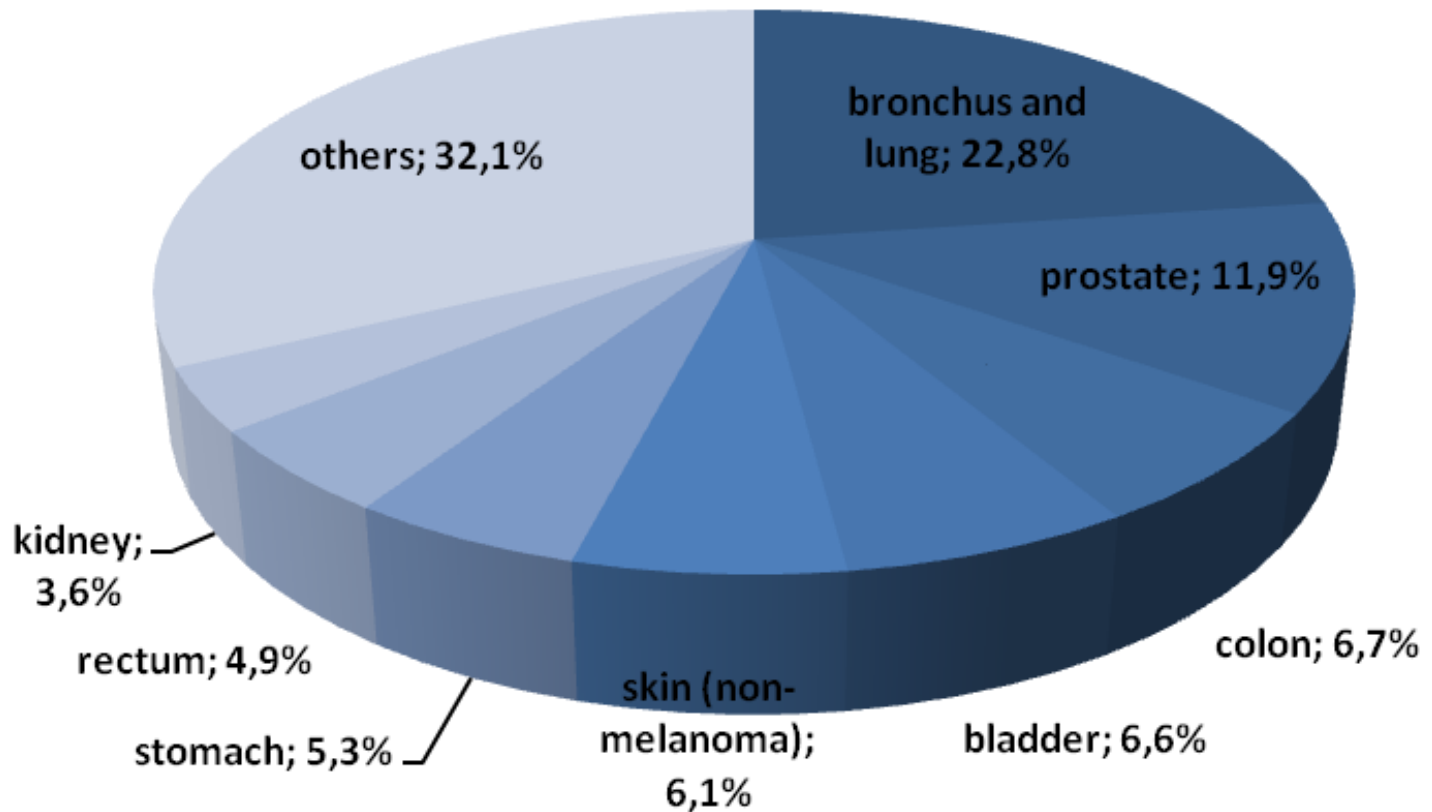
# Epidemiology - morbidity



# Epidemiology - morbidity



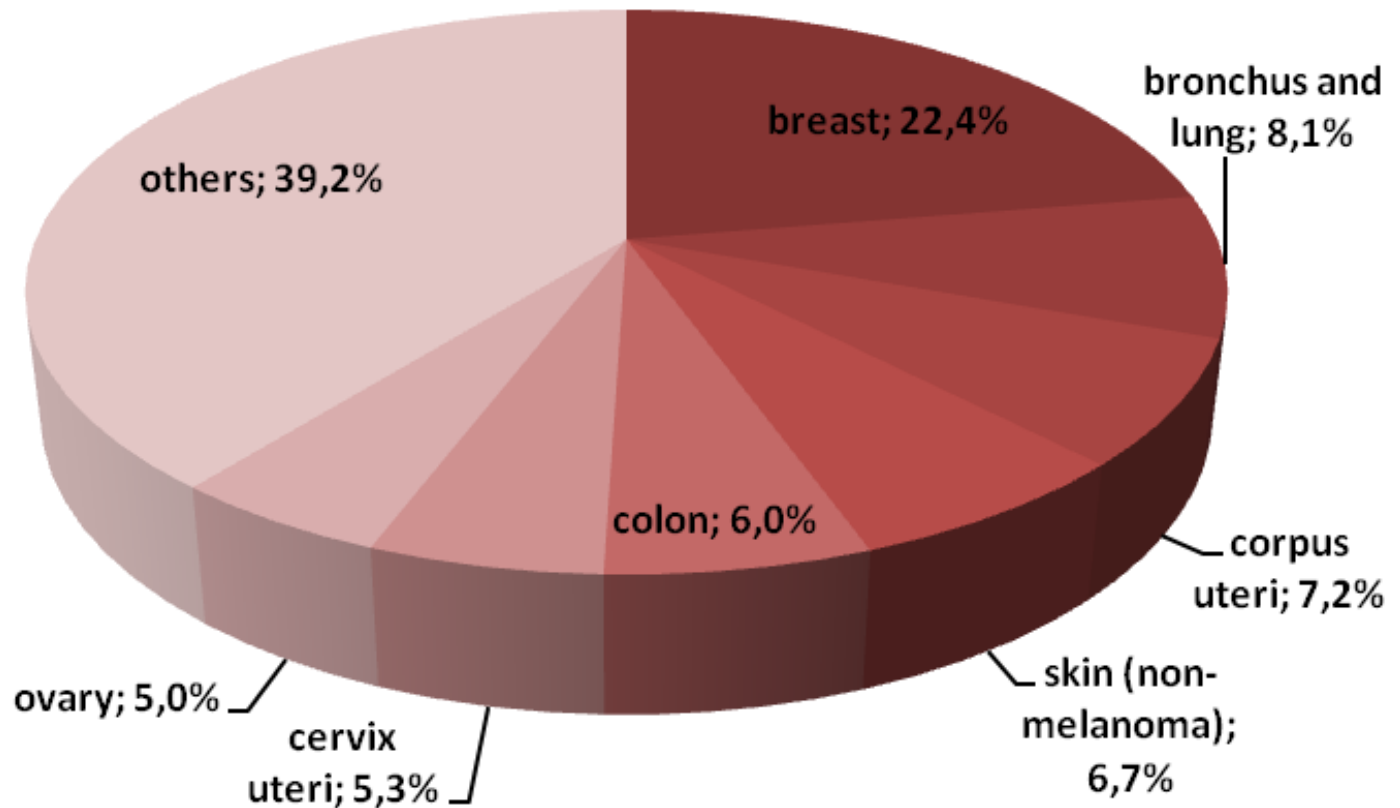
## Male



# Epidemiology - morbidity



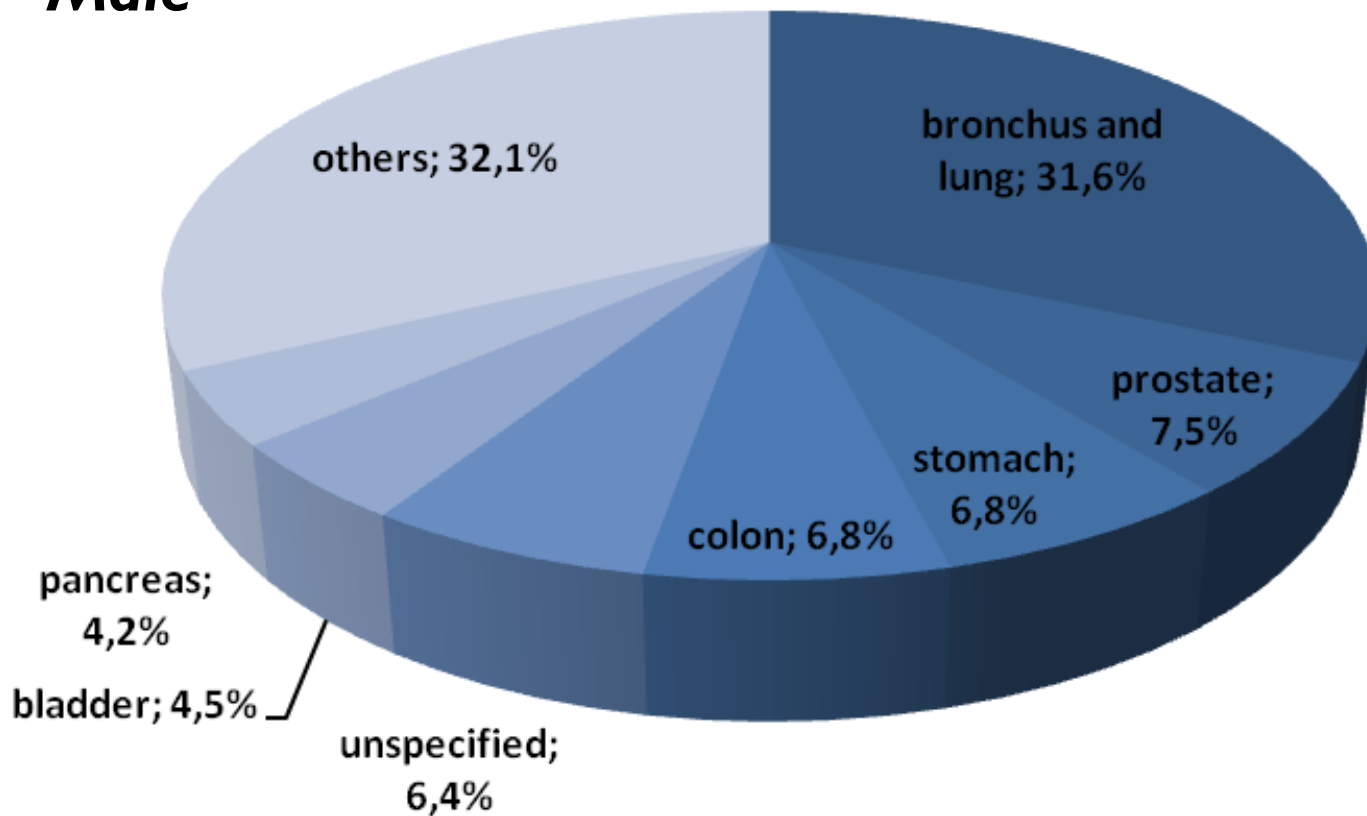
## Female



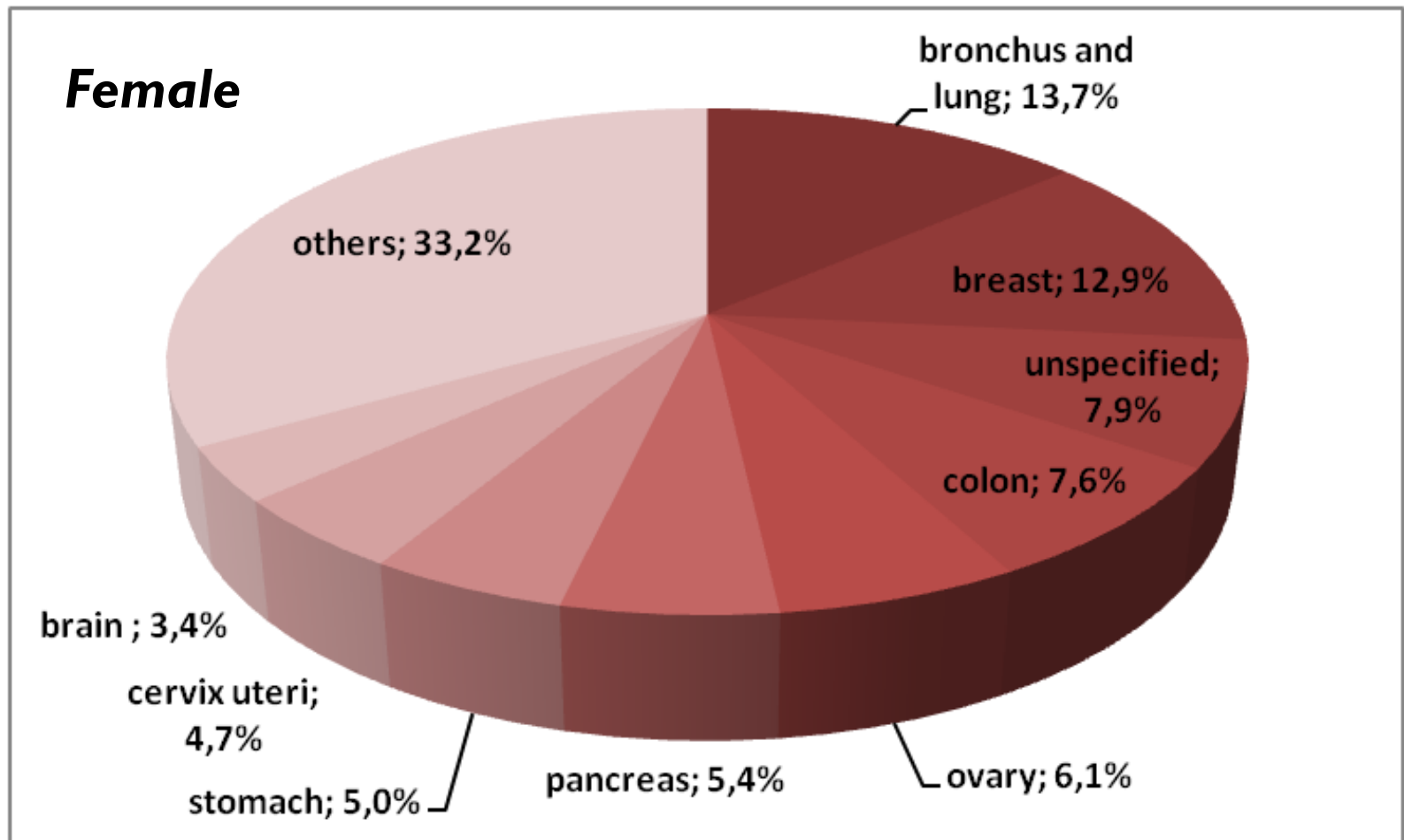
# Epidemiology - mortality



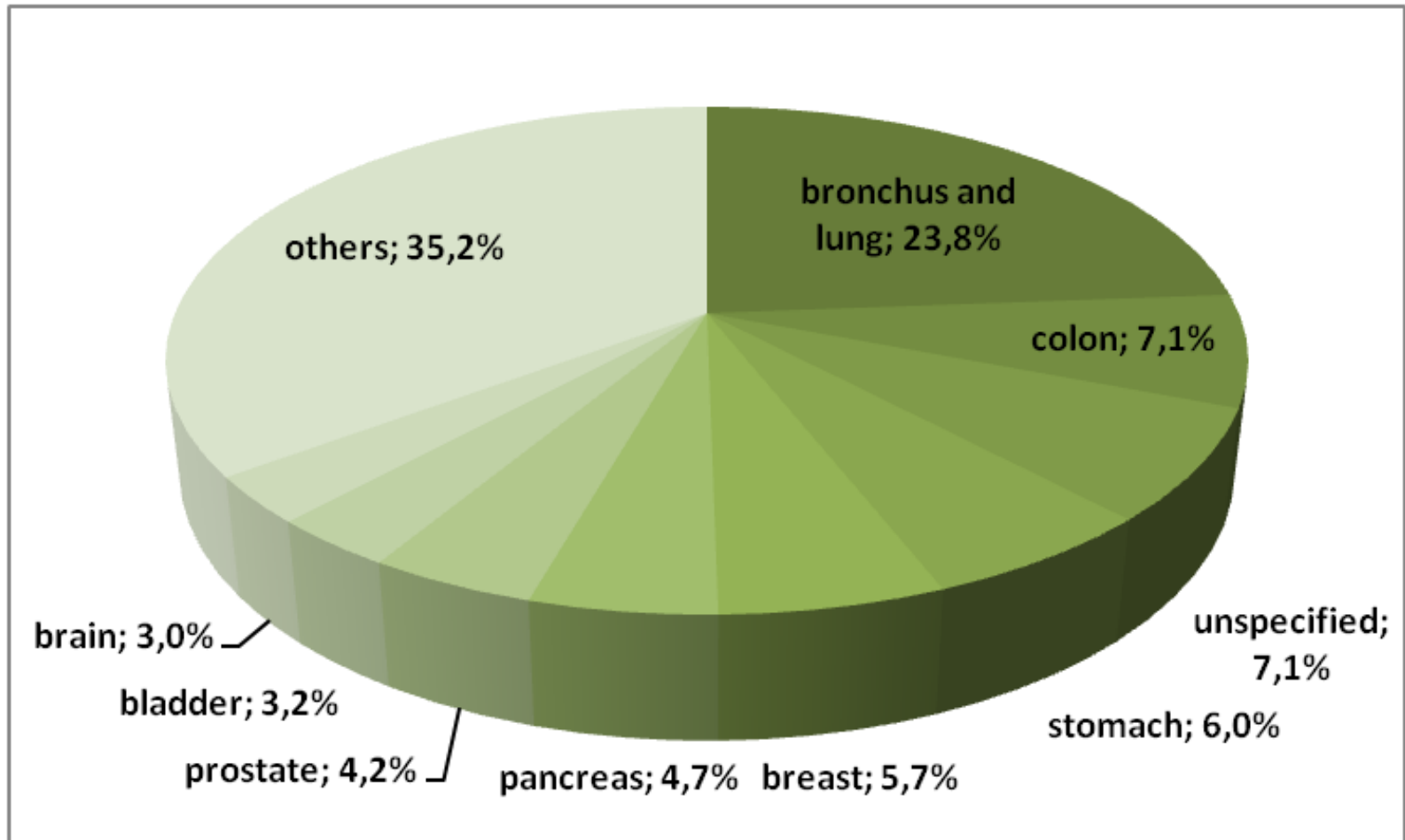
## Male



# Epidemiology - mortality

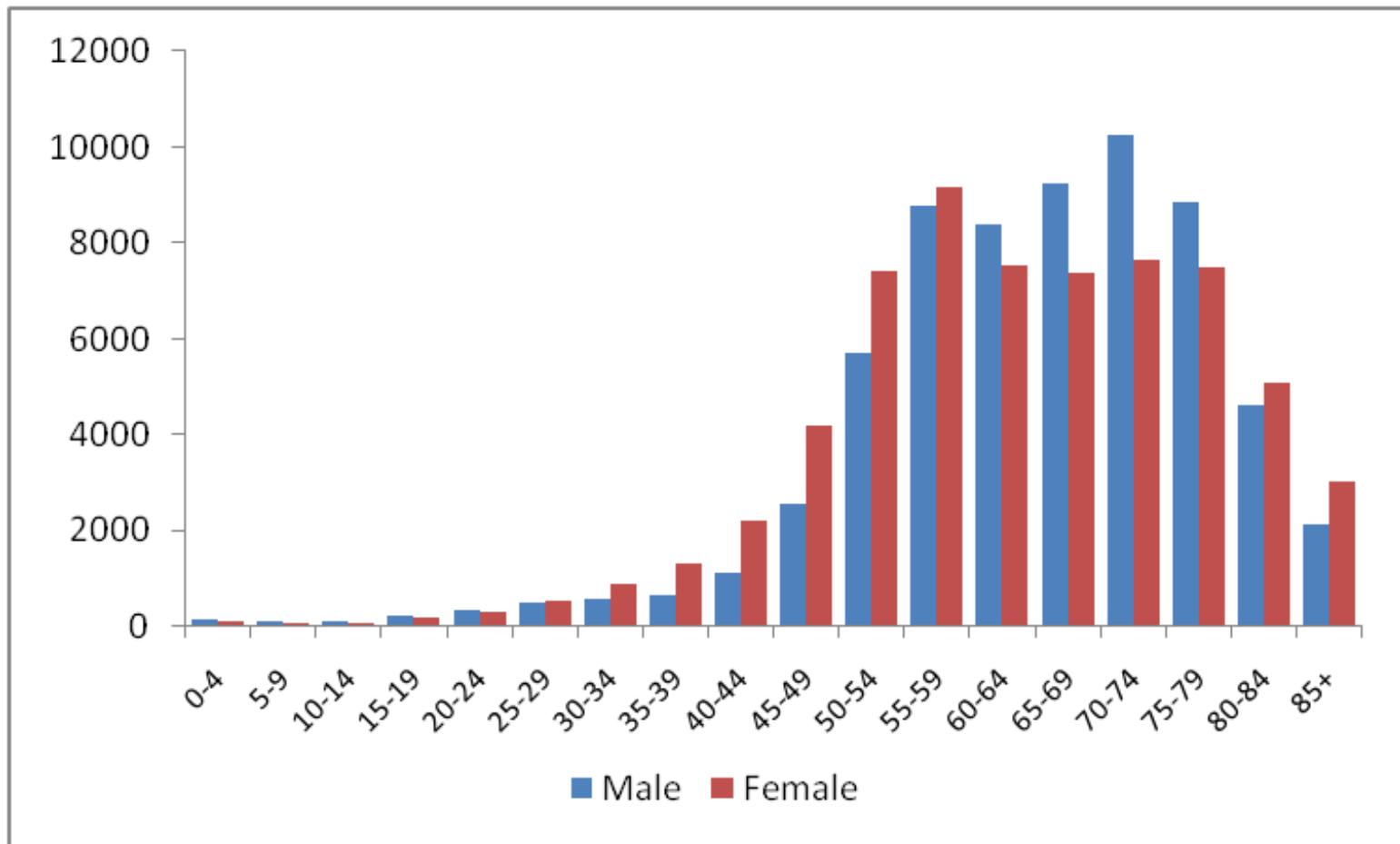


# Epidemiology - mortality



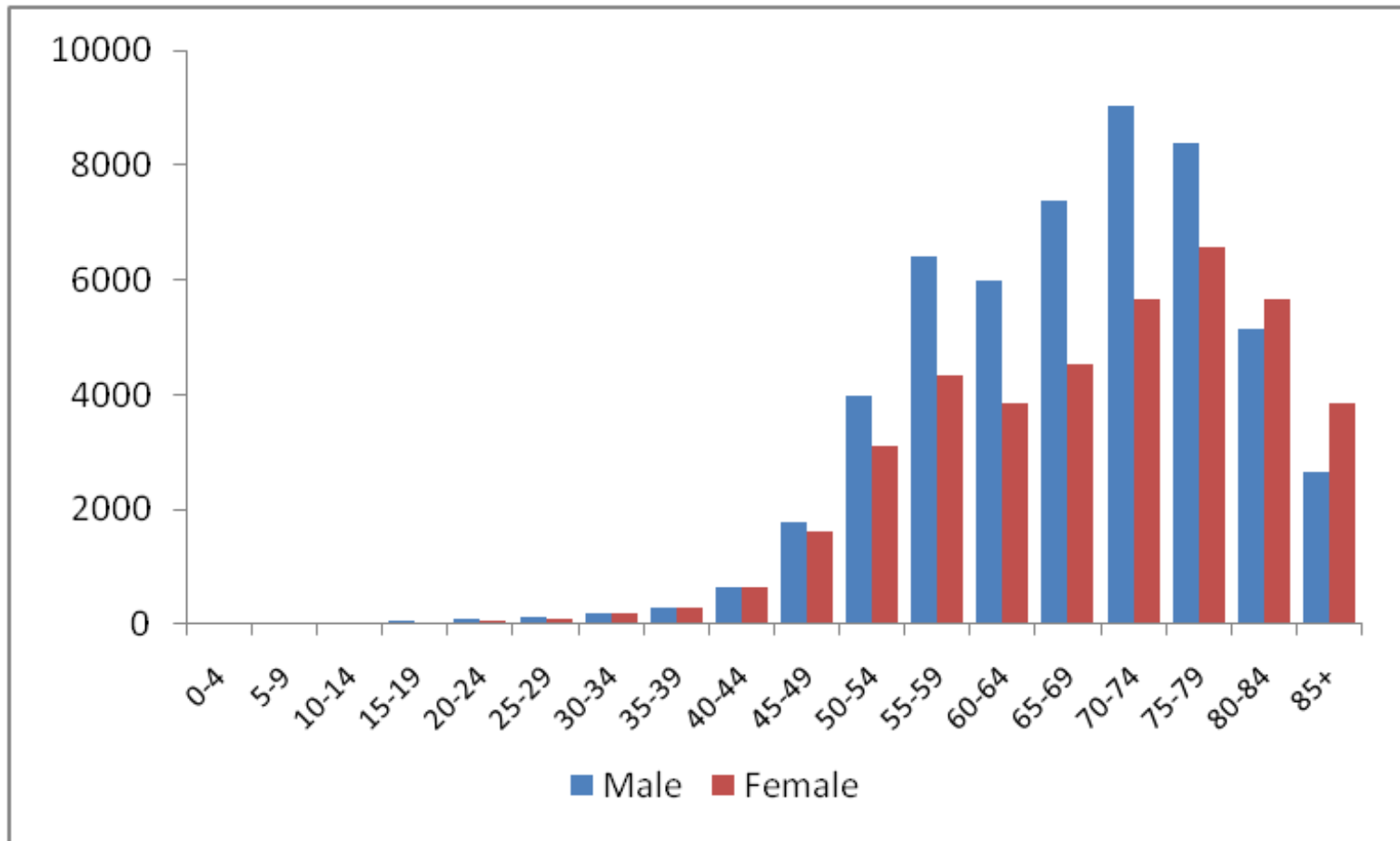
# Epidemiology – morbidity

## Age profile



# Epidemiology – mortality

## Age profile



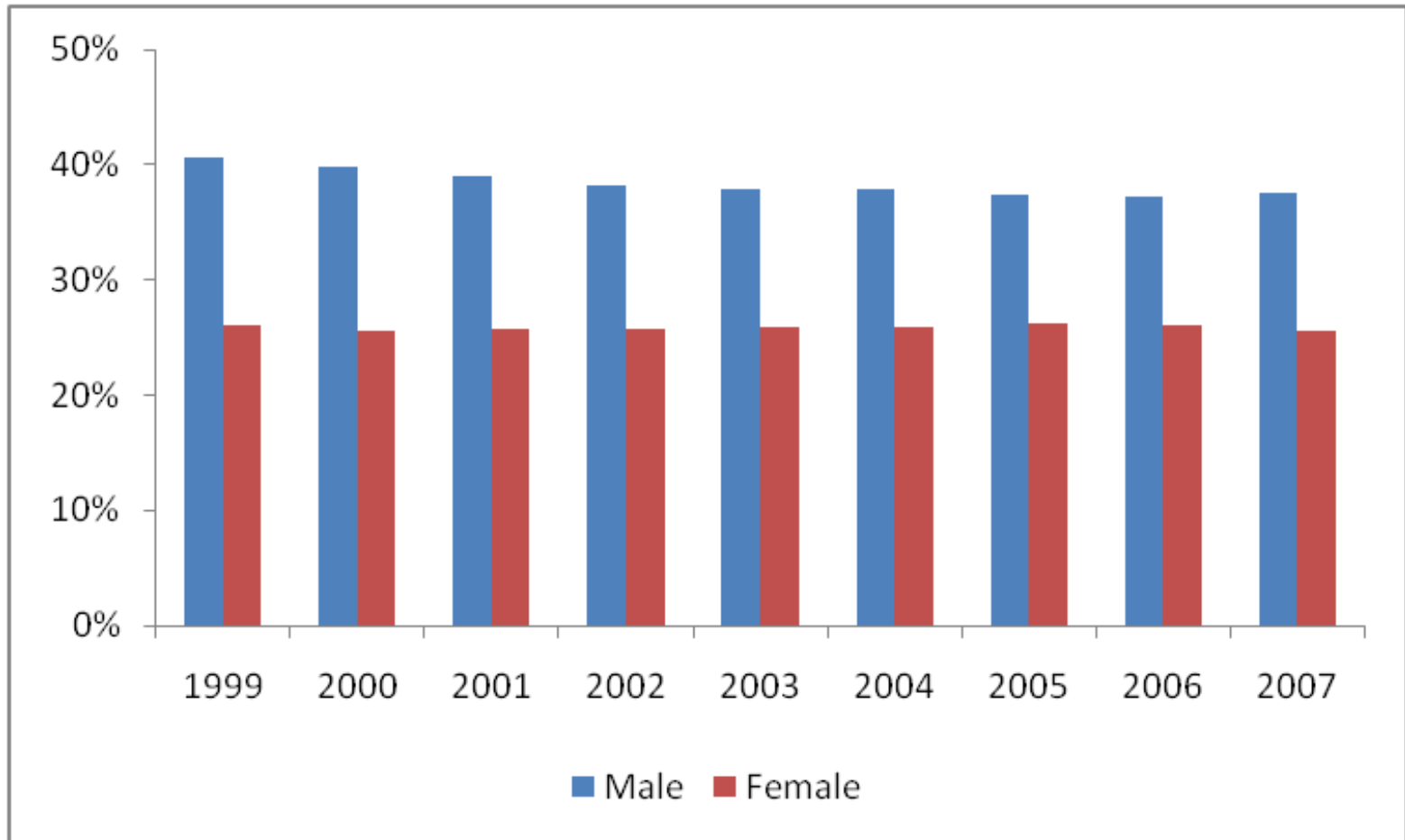


# Epidemiology – morbidity Population in working age



# Epidemiology – mortality

## Population in working age





# Methods

- indirect cost related to:
  - premature death
  - work absence
  - disability
- data for 2009 year
- human-capital approach
- value added per employed
- results presented in EURO (1 EURO= 4,00 PLN)

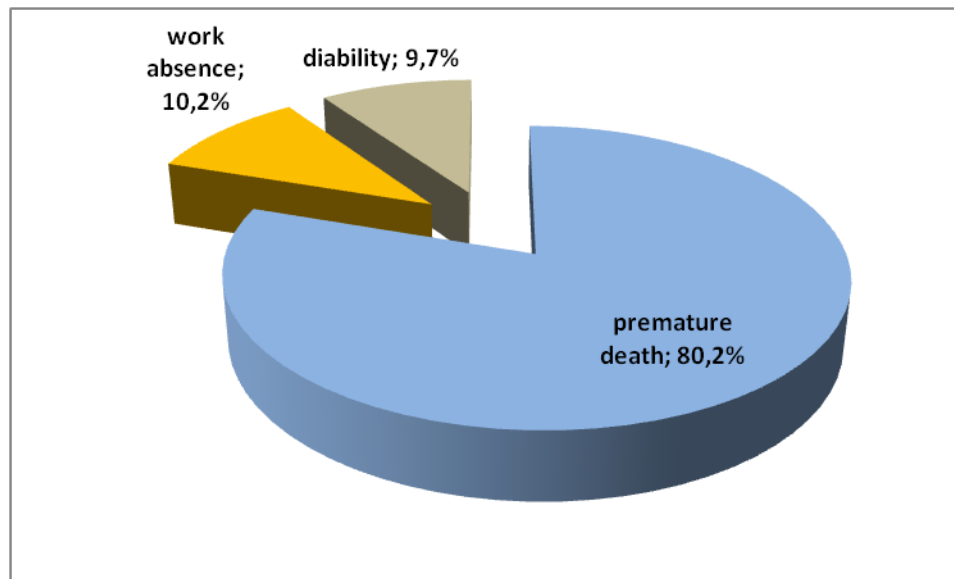


# Methods

- Source data:
  - KRN (National Cancer Registry) 1999-2007 data
    - cancer epidemiology (mortality)
  - ZUS (Social Insurance Institution) 2009 data (unpublished)
    - work absence
    - disability
  - GUS (Central Statistical Office) 2009 data
    - value added per employed
    - economic activity of the population
    - life tables in general population
  - EUROCARE-4 1995-1999 data
    - overall survival

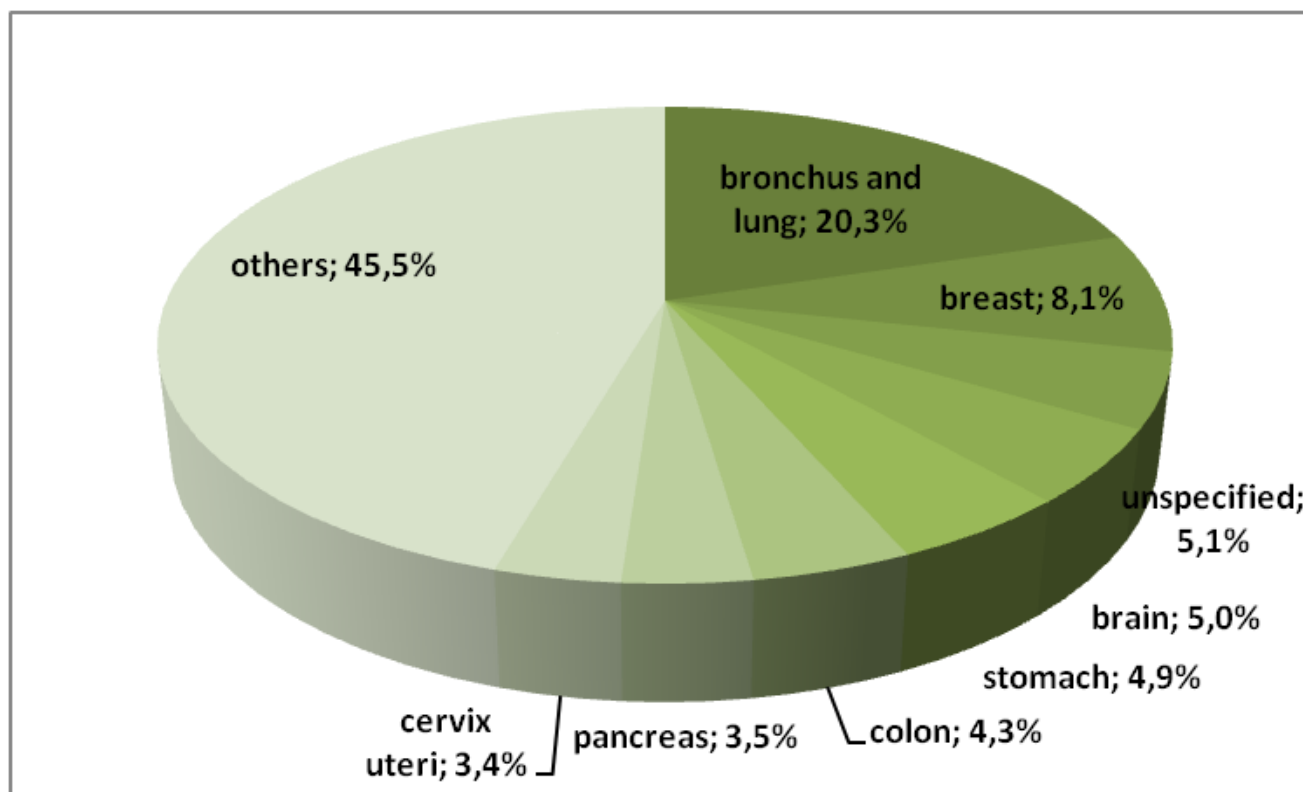
# Results

- Total cost: 5,529 billion EUR
  - premature death: 4,433 billion EUR
  - work absence: 563 million EUR
  - disability: 534 million EUR



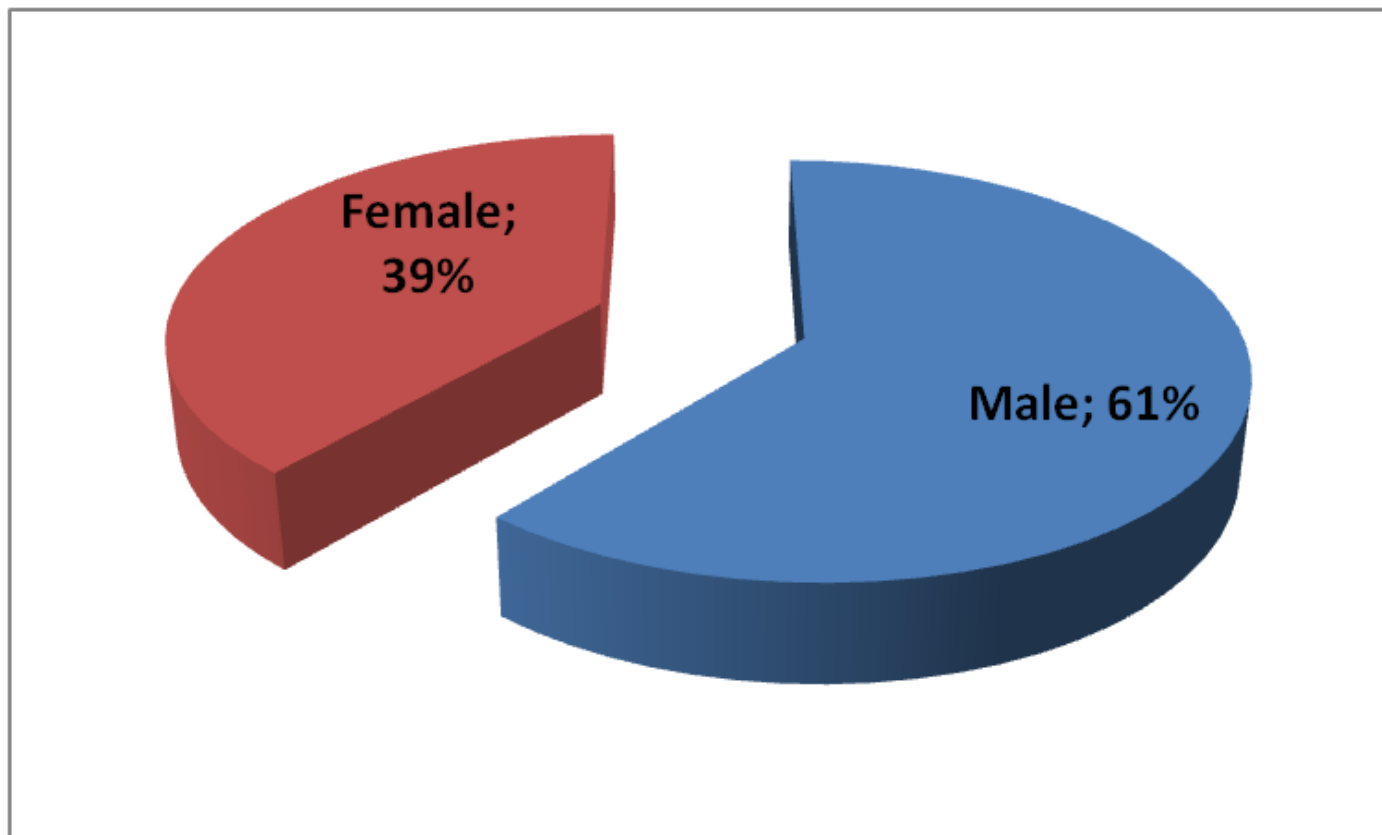
# Results – total cost

- Total cost: 5,529 billion EUR
  - Lung cancer: 1,123 billion EUR (20,3%)
  - Breast cancer: 448 million EUR (8,1%)



# Results

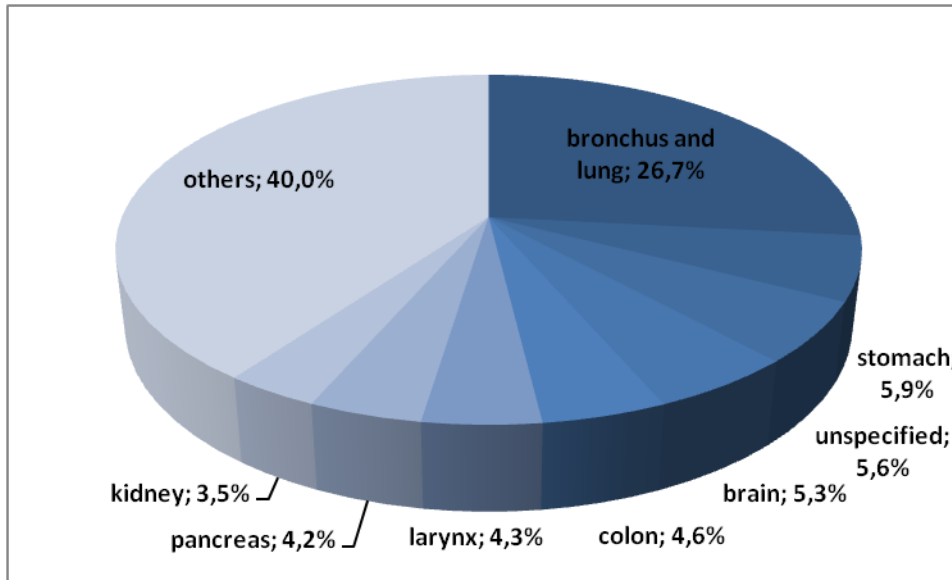
- Male: 3,382 billion EUR
- Female: 2,147 billion EUR



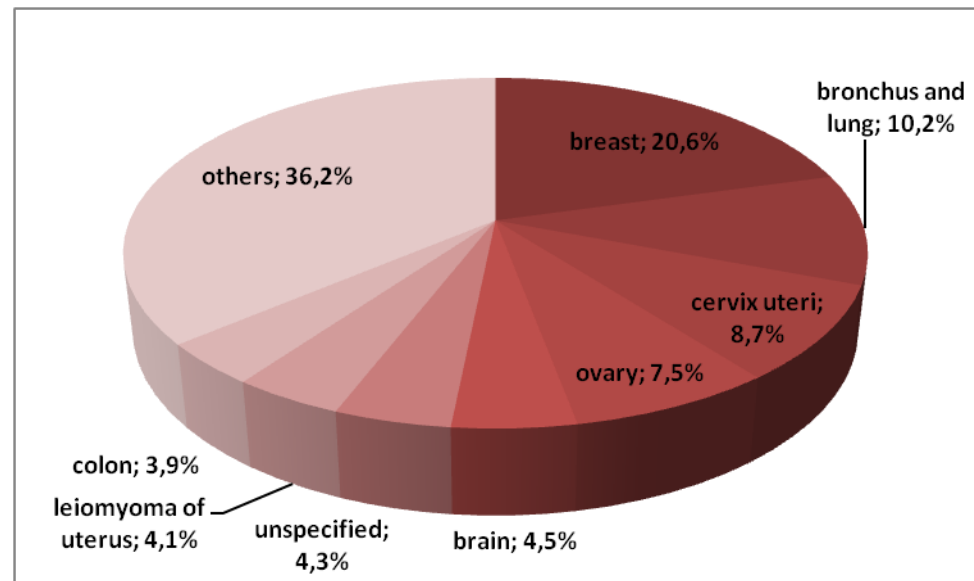
# Male vs female



## Male

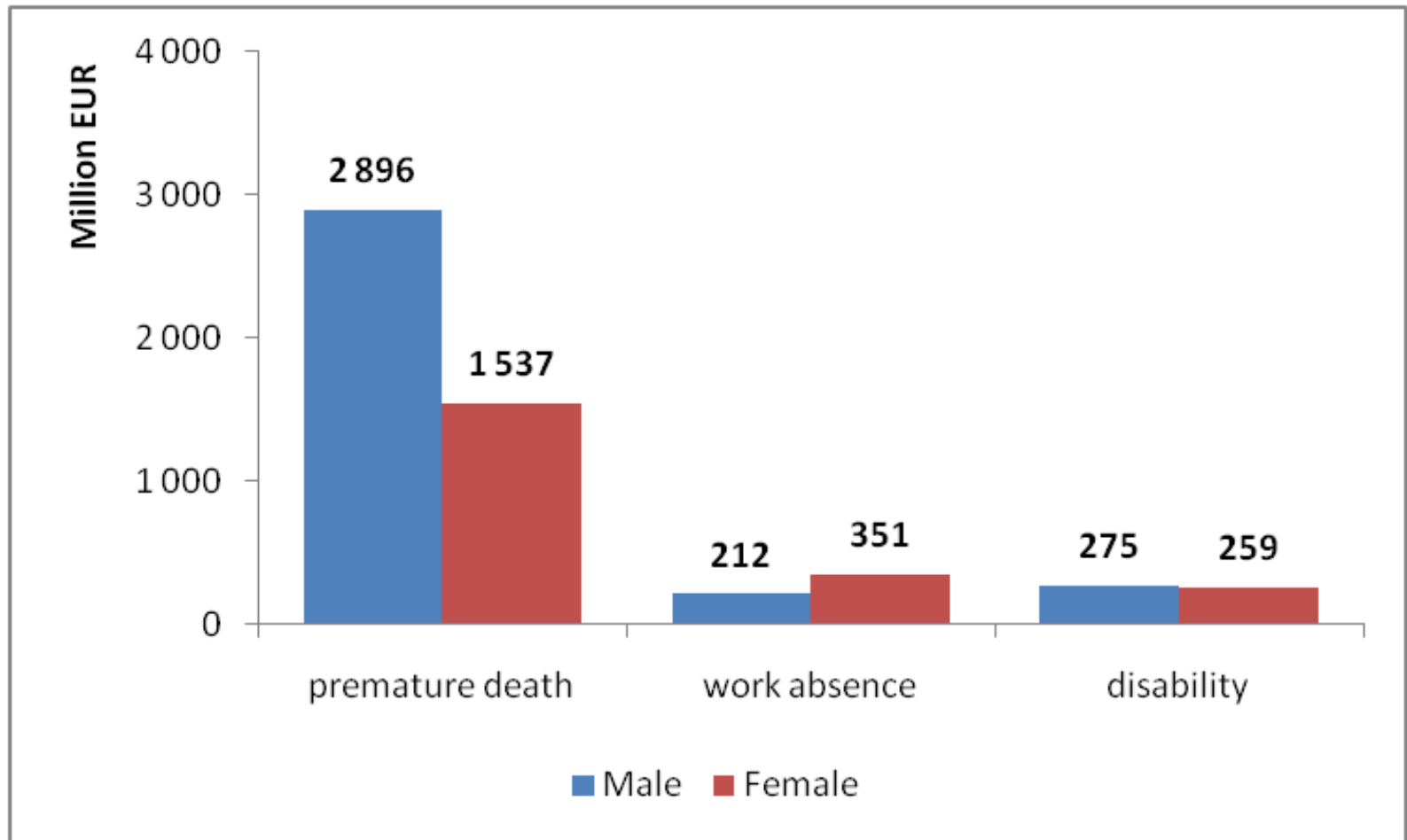


## Female





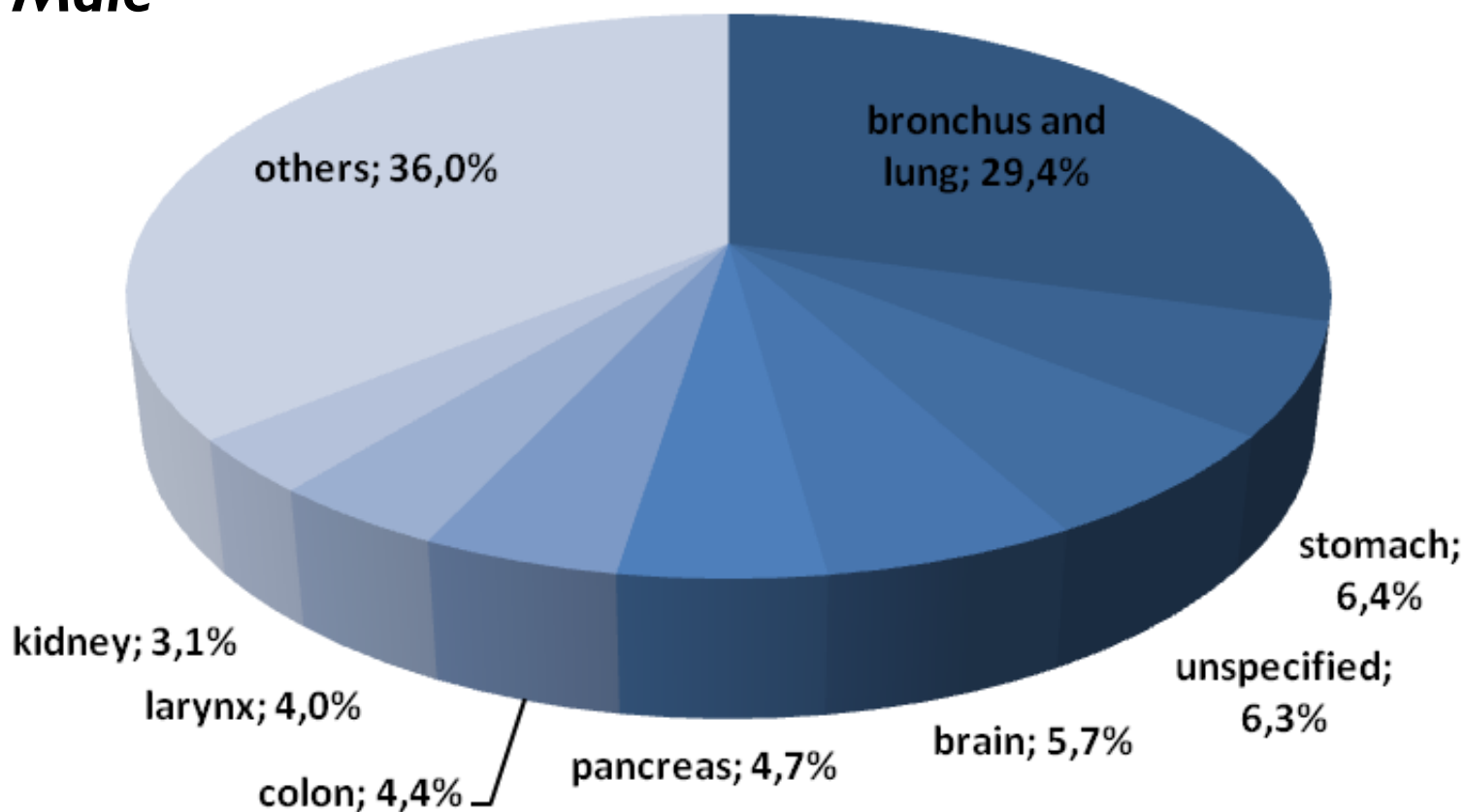
# Male vs female



# Premature death



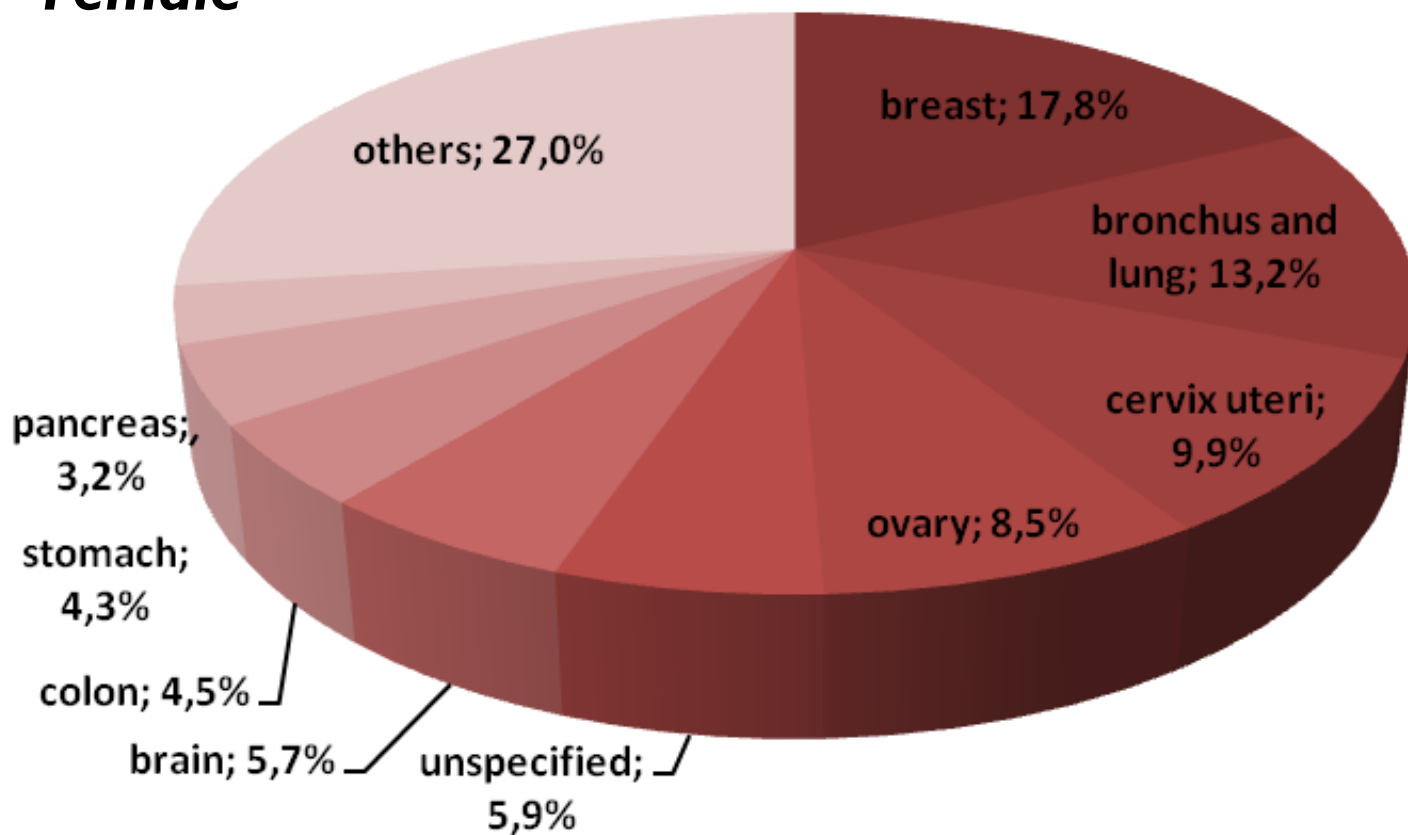
## Male



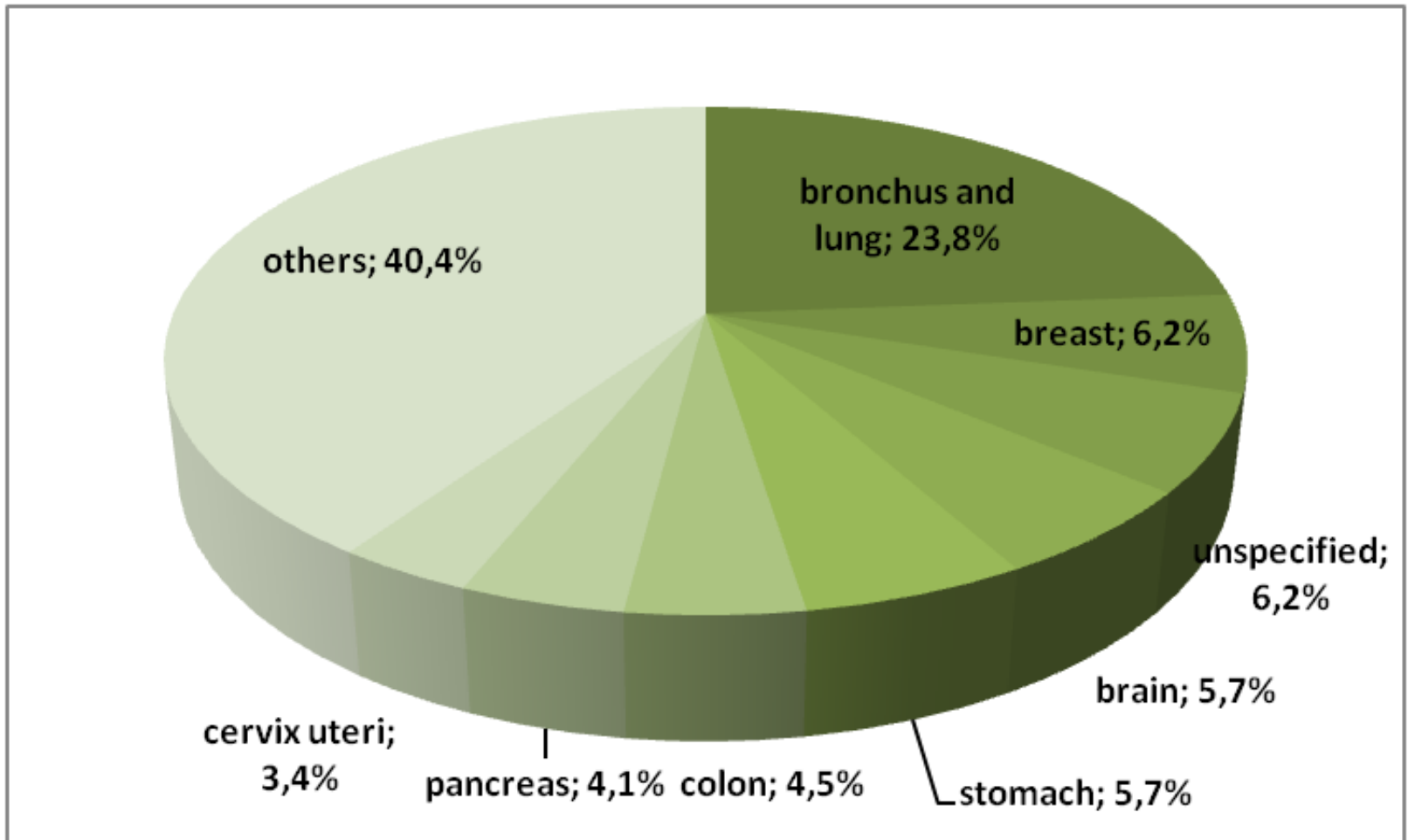
# Premature death



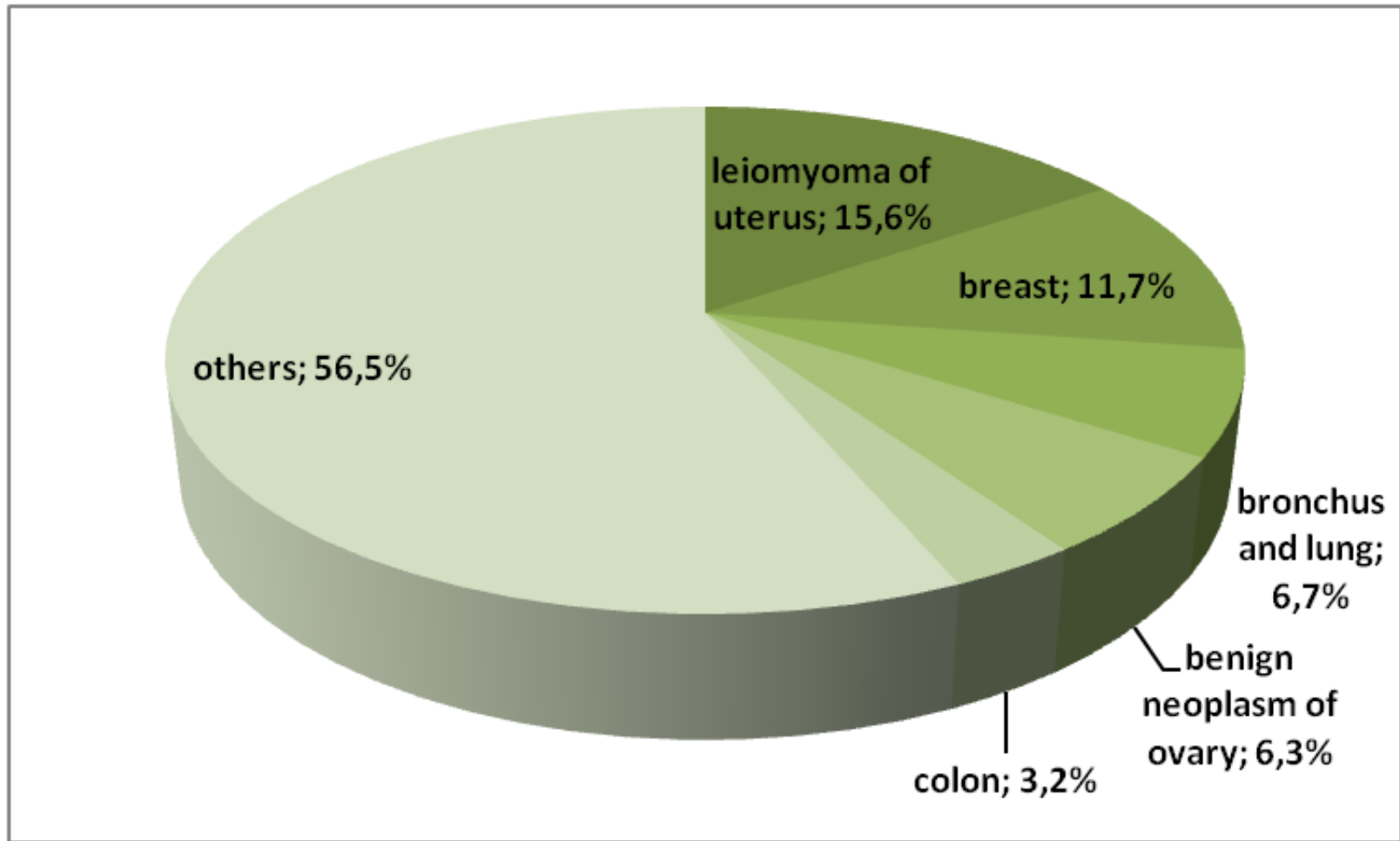
## Female



# Premature death



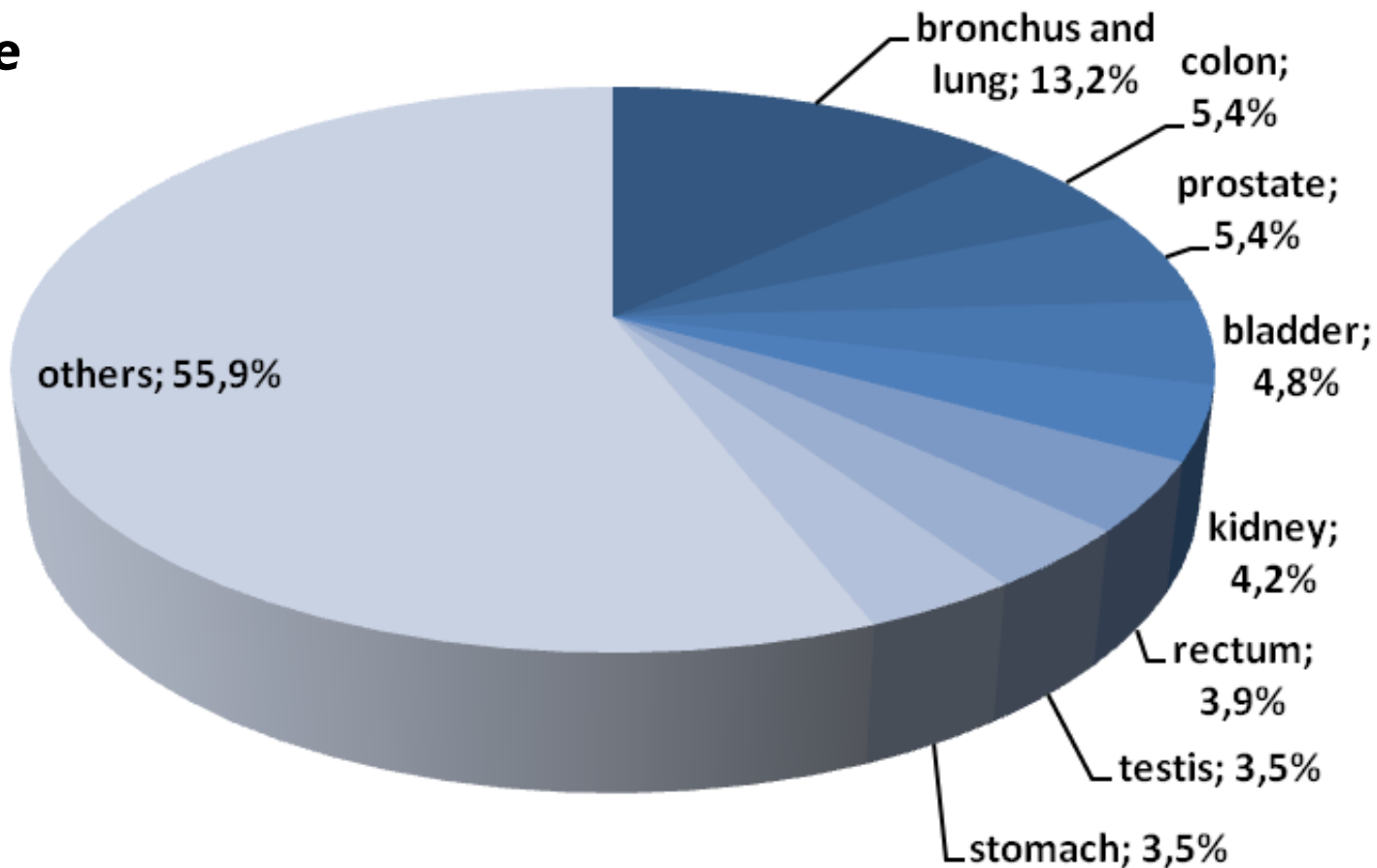
# Work absence



# Work absence



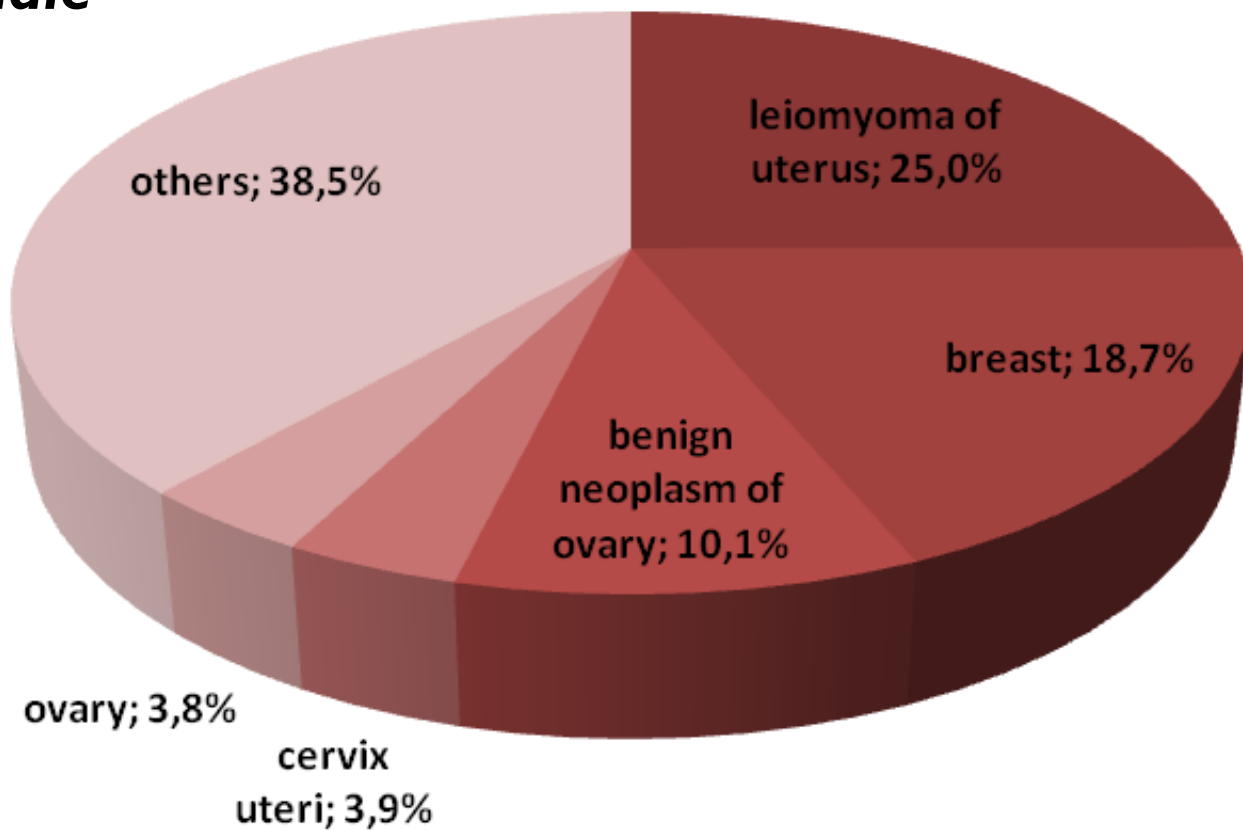
## Male



# Work absence



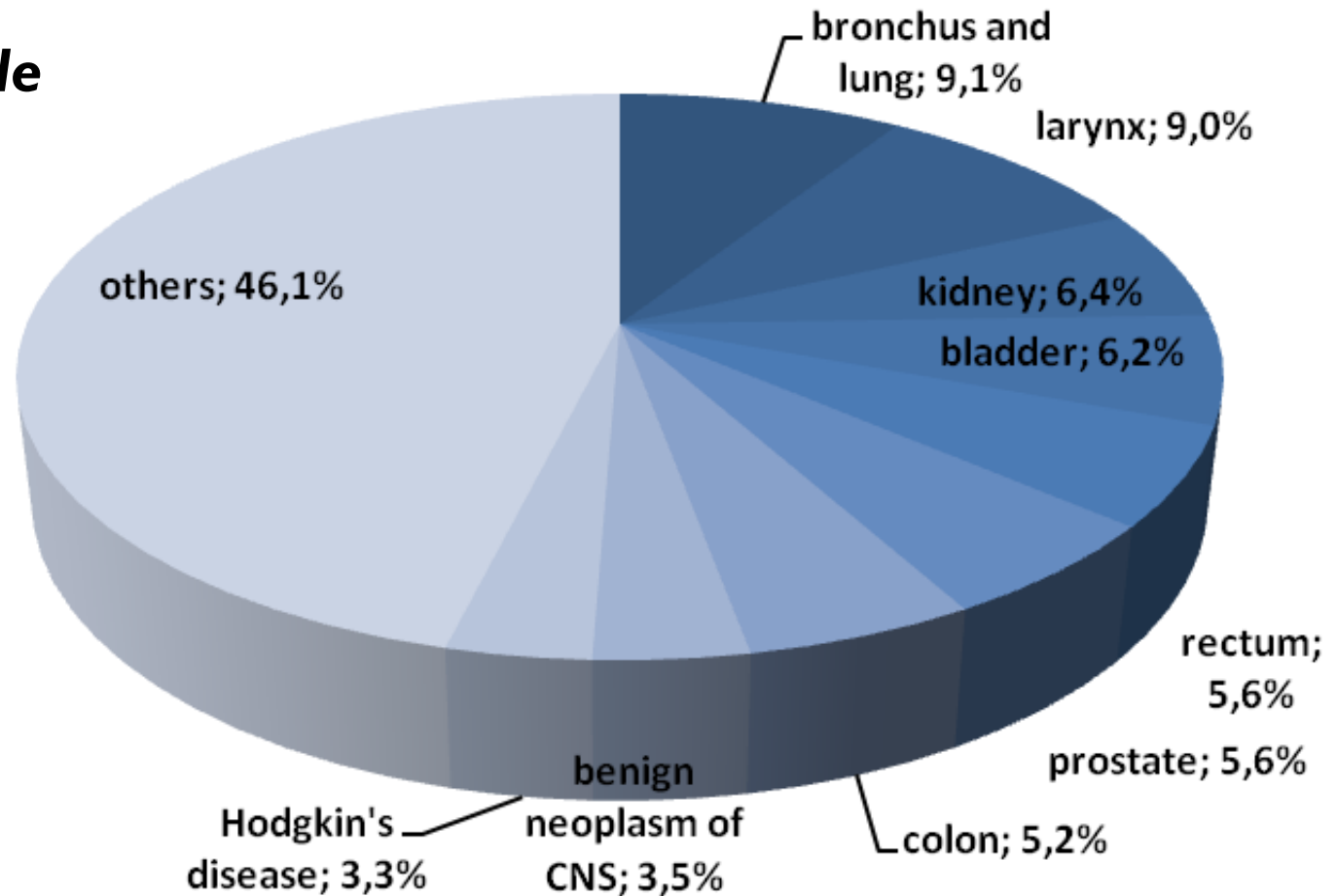
## Female



# Disability



## Male

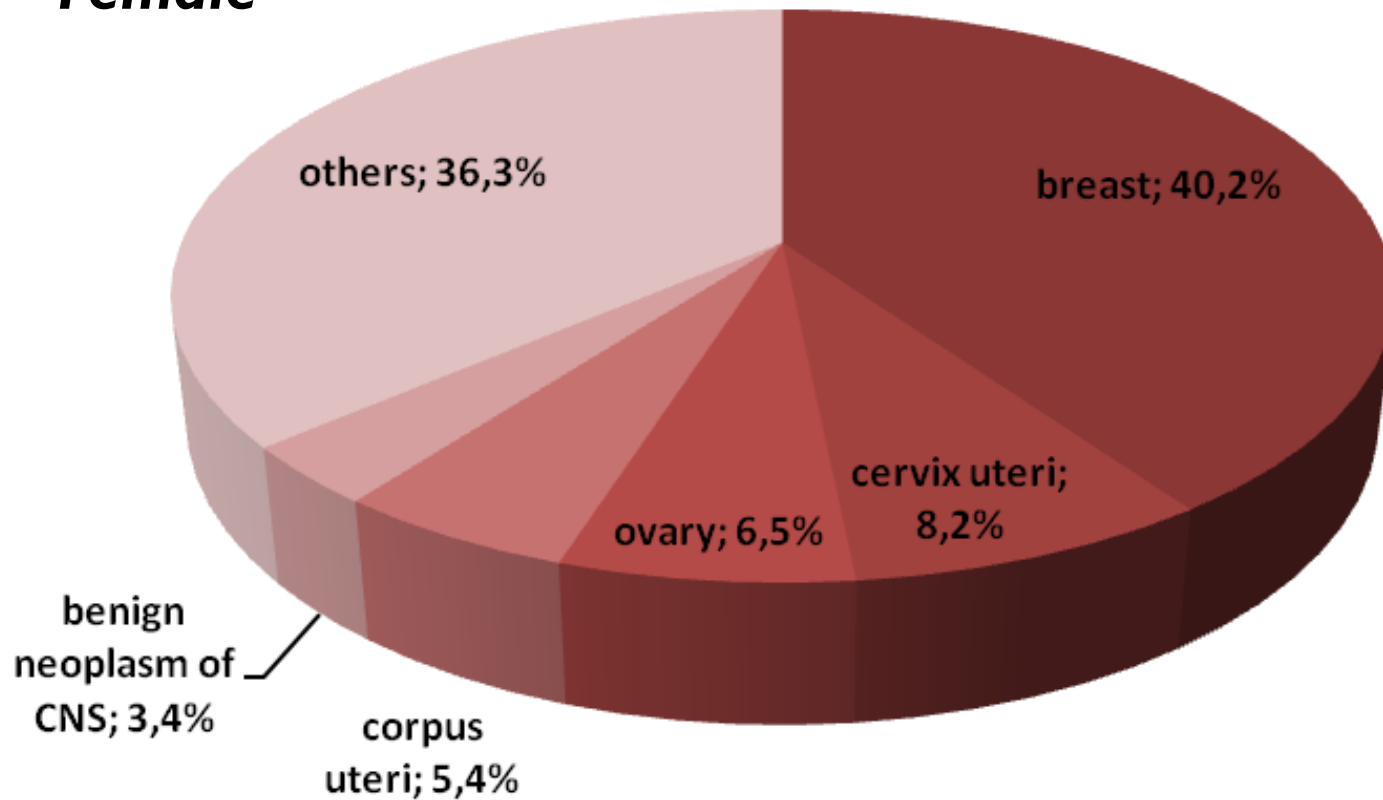




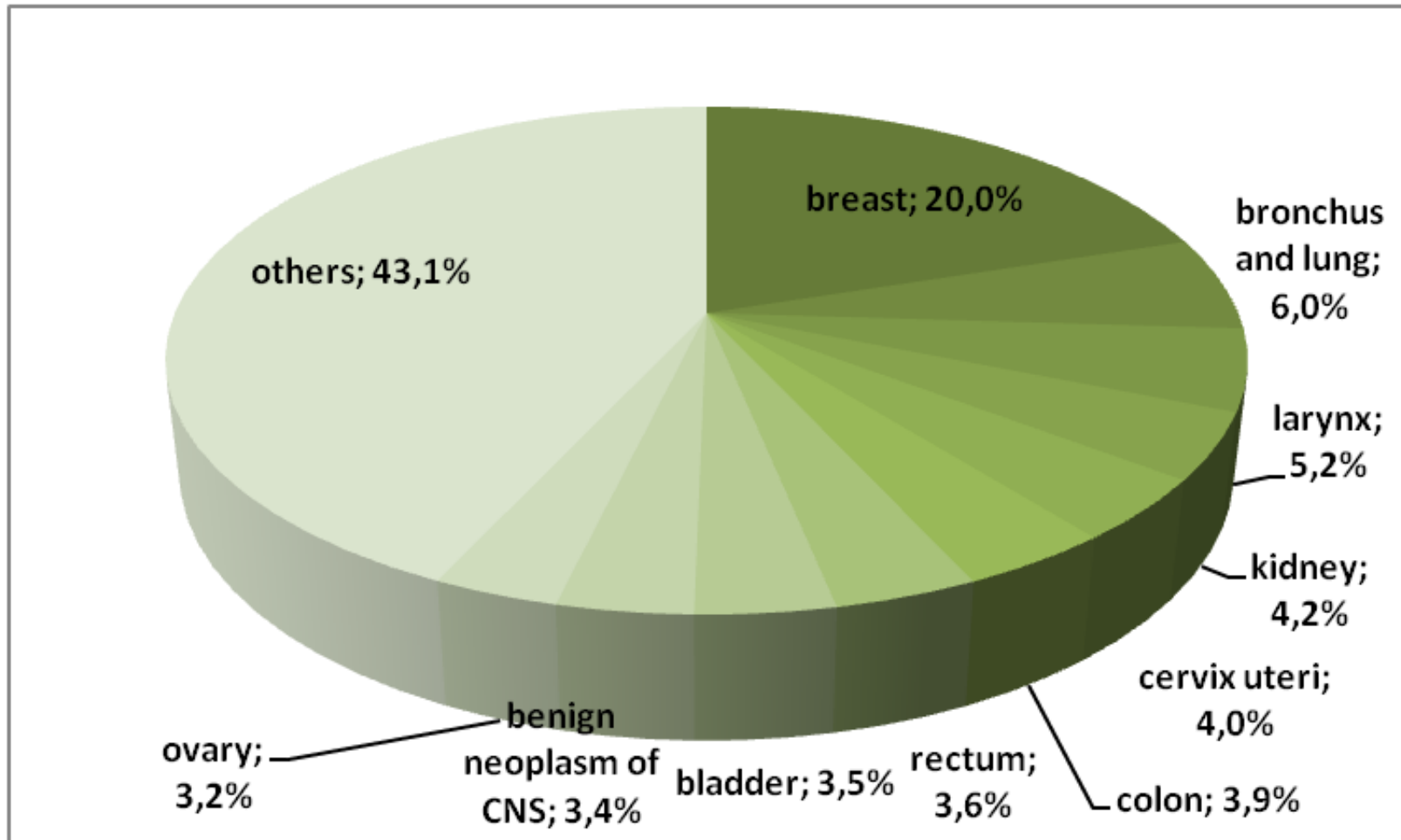
# Disability



## Female



# Disability





# Discussion

- epidemiology:
  - KRN 2007 data projected for 2009
  - KRN data are incomplete (approx. 90%)
- ZUS data covers approx. 85% of total population
- overall survival are based on 1995-1999 data
- GUS data on economic activity of the population are incomplete
- only absenteeism cost were measured

# Discussion



- US data (The National Institutes of Health)
  - cost of lost productivity due to illness: 18,8 billion USD
  - cost of lost productivity due to premature death: 116,1 billion USD
  - **Total indirect cost: 134,9 billion USD (0,9% GDP 2008)**

***Only absenteeism cost***



# Conclusion

- Cancer related absenteeism cost are substantial for polish economy – 1,6% GDP in 2009 year;
- Cost of premature death dominate over the costs of work absence and disability;
- Substantial differences between sex are present, especially for:
  - type of absenteeism cost generated,
  - type of cancer responsible for generation of cost
- Cancer is a stigmatic disease - cost of presenteeism might be also substantial
- Cancer concern not only patients but also neighbors (family, friends, colleagues, etc.) – indirect cost in this population should be also measured



# Facts about cancer

- A third of cancers could be cured if detected early and treated adequately
- More than 30% of cancer could be prevented, mainly by not using tobacco, having a healthy diet, being physically active and preventing infections that may cause cancer (e.g.: HPV, HBV, HCV, HIV)

# Acknowledgment

- Social Insurance Institution (ZUS),  
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  - Hanna Markowska
  - Ewa Karczewicz

