

# Trends of Incidence, Mortality, and Survival of Chronic Lymphocytic Leukaemia/ Small Lymphocytic Lymphoma in Switzerland between 1995 and 2014

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# Methods

National Institute for Cancer Epidemiology and Registration (NICER)

CLL and SLL cases (ICD-O-codes 9823/3 and 9670/3)

1995–2014

trends in incidence, mortality and survival for consecutive 5-year periods

## Population covered by cancer registration

1995–1999	2000–2004	2005–2009	2010–2014
56.9 %	57.9 %	61.8 %	74.1 %

## New cases

5612 observed

8935 extrapolated

New cases per year (extrapolated) and  
age-adjusted incidence rate (per 100,000 person-years)

1995–1999

2000–2004

2005–2009

2010–2014

392

455

500

440

4.4

4.6

4.8

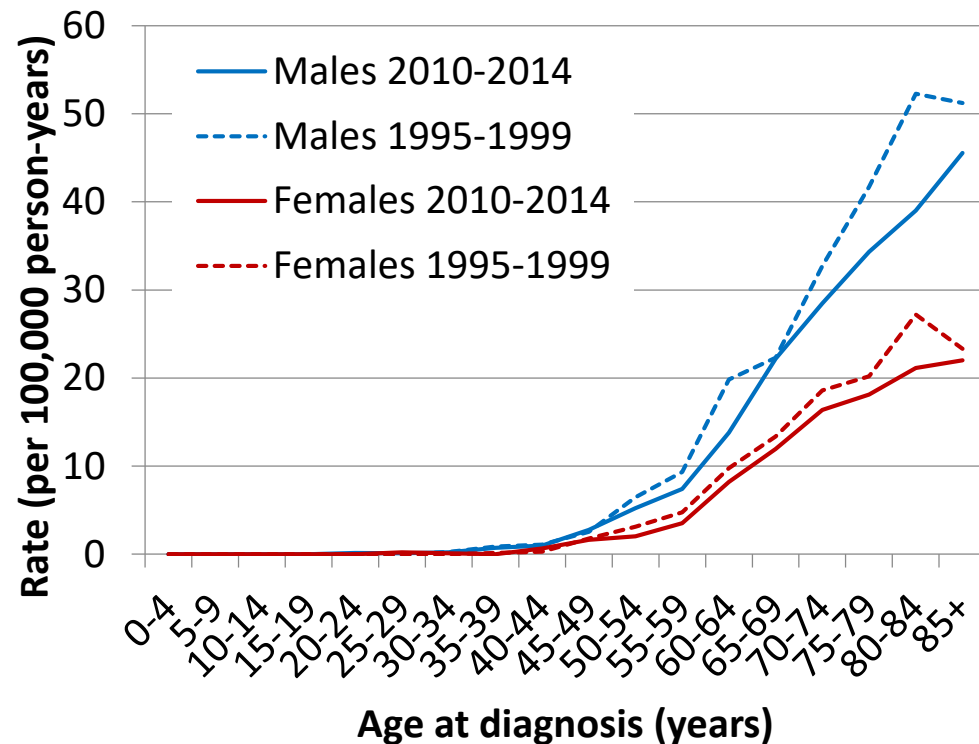
3.8

Our analysis likely underestimates true incidence rates  
due to incompleteness of registries

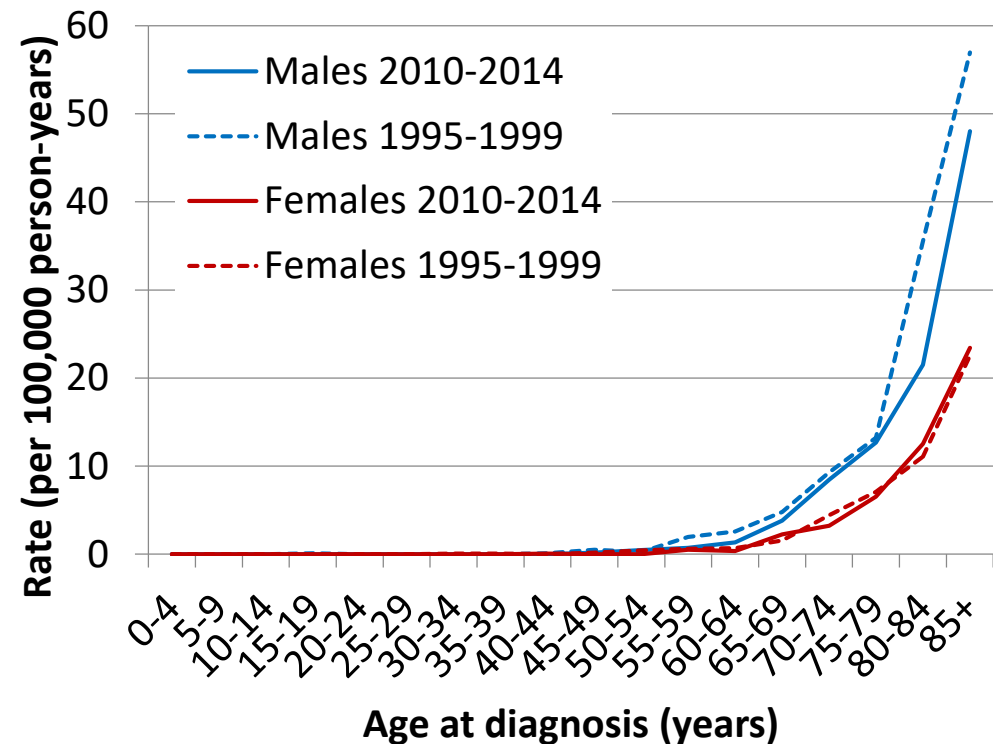
Underreporting  
Reporting delay

# Age-specific incidence and mortality of CLL/ SLL by sex, time period 1995–1999 & 2010–2014

## Incidence



## Mortality



## Median age at diagnosis

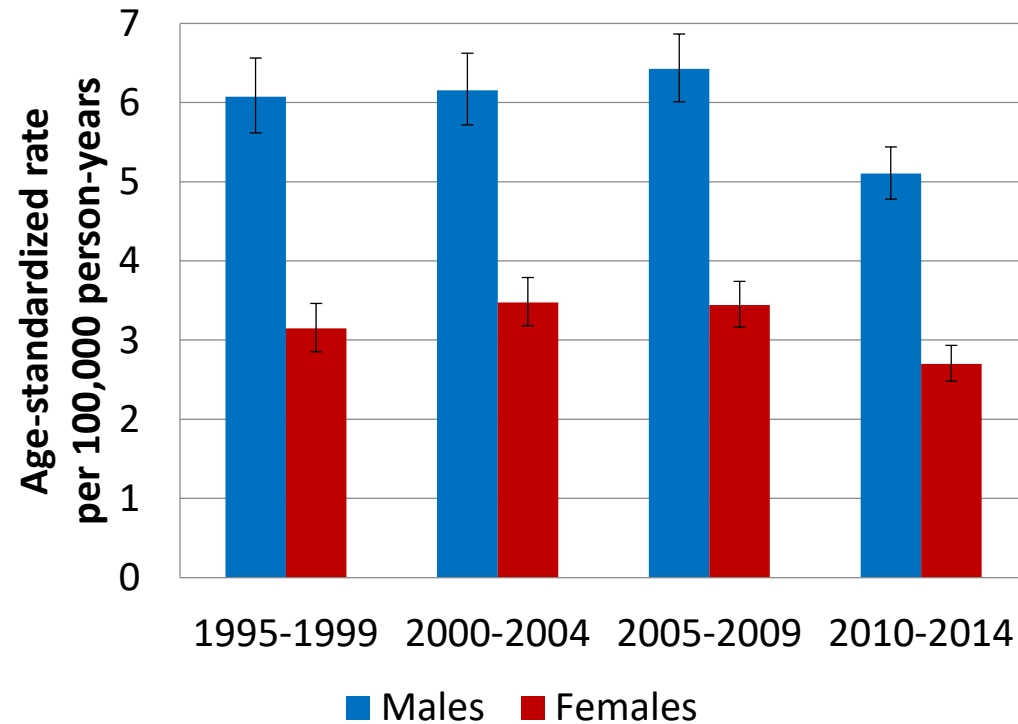
♂ 70

♀ 74

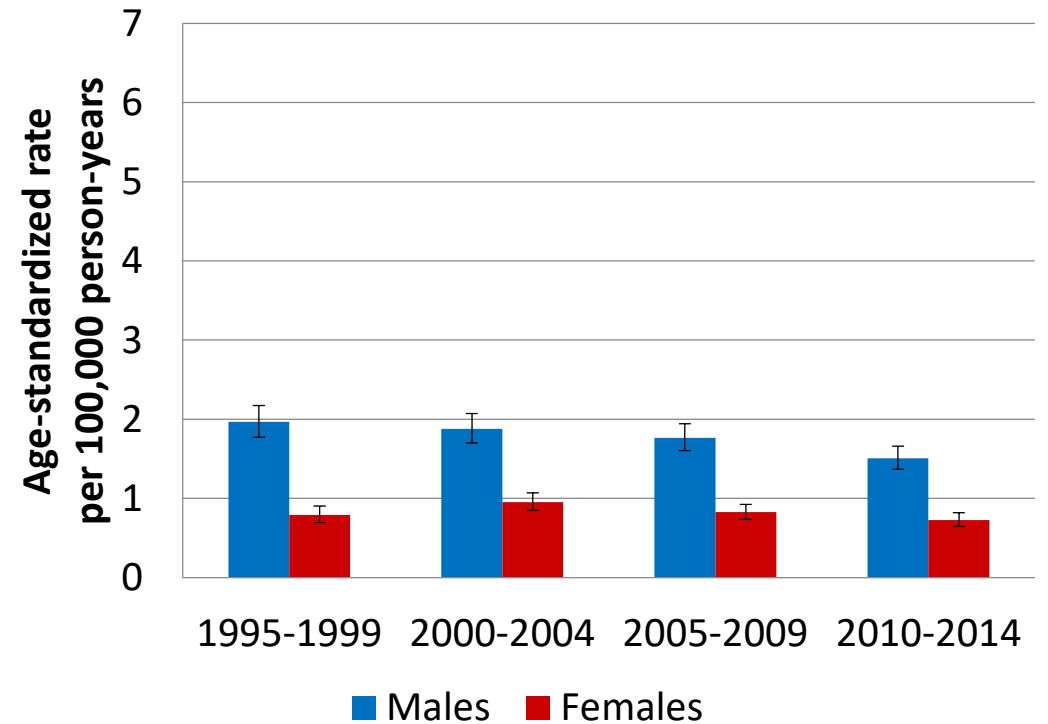


# Age-standardized incidence and mortality of CLL/ SLL by sex and period

## Incidence



## Mortality

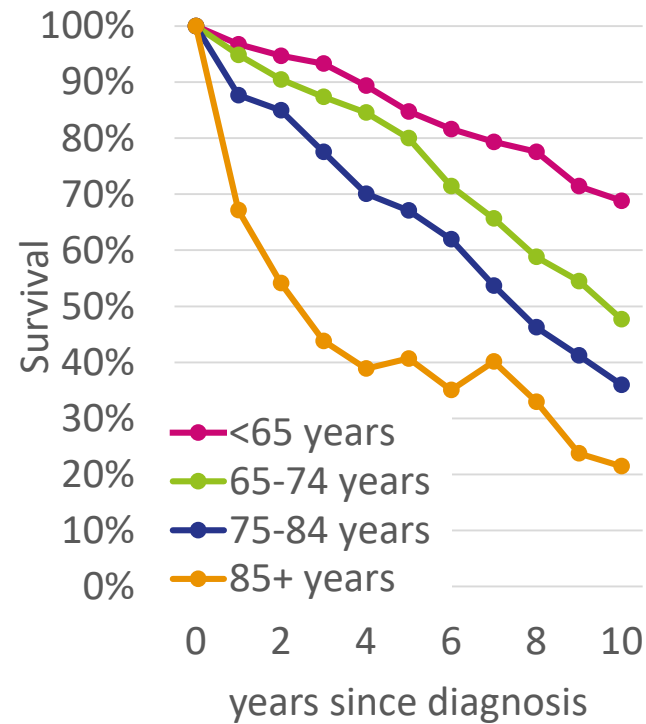


## Relative survival (RS)

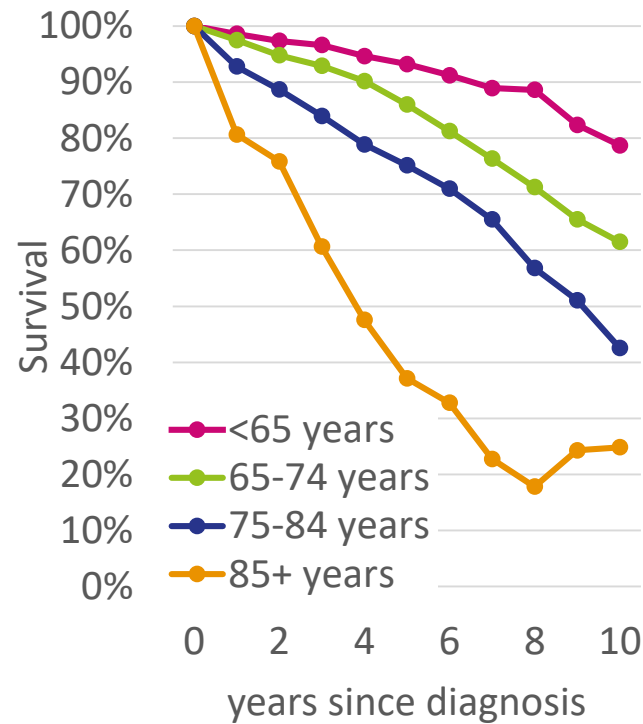
	1995–1999	2010–2014	
5y RS	76.8 %	83.8 %	p < 0.01
10y RS	53.2 %	63.2 %	p < 0.01

# Age-specific relative survival (RS)

1995–1999



2010–2014



5y-RS improvement:

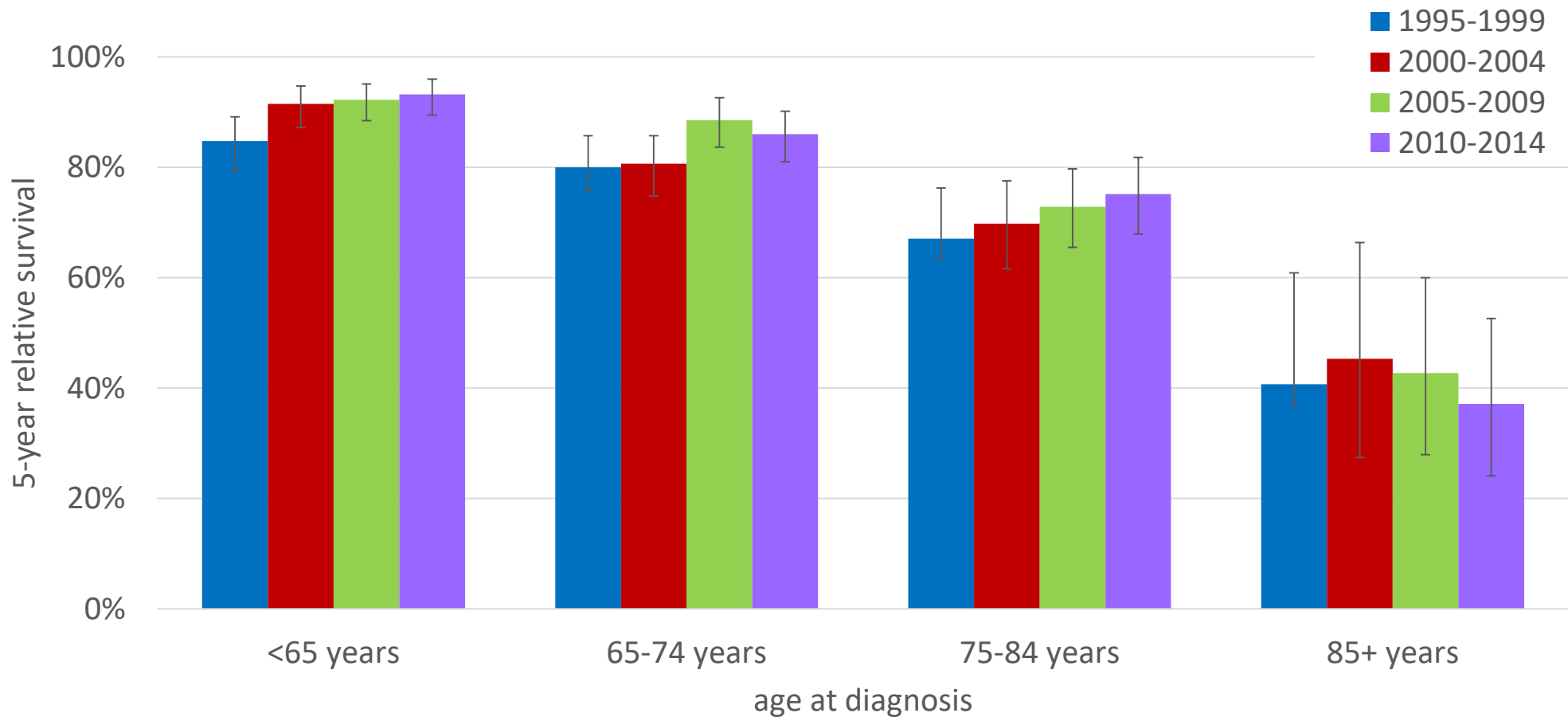
<65 ( $p < 0.01$ )

10y-RS improvement:

<65 ( $p < 0.05$ )

65–74 ( $p < 0.01$ )

# Relative 5-year survival after CLL/ SLL diagnosis by age-group and time period



# Summary

Age distribution and sex differences are in line with reports from other Western countries: higher incidence rates, higher mortality and shorter survival for older individuals and males.

Improvement in relative survival depends on age but not on sex. Improvement was significant for age groups < 65 and 65–74 years.

Timeliness of CLL/ SLL reporting is a major problem to determine current incidence rates.

Thank you for your attention.

# Methods

We retrospectively studied registry data from the National Institute for Cancer Epidemiology and Registration (NICER) database in Switzerland from 1995 to 2014.

## Data sources

Incident CLL and SLL cases (ICD-O-codes 9823/3 and 9670/3) from the National Institute for Cancer Epidemiology and Registration (NICER)

mortality data, mid-year population estimates and cantonal death rates by age, sex and calendar year, referring to all persons with permanent residence status in Switzerland from the Swiss Federal Statistical Office (SFSO)

## Analysis

We investigated trends in incidence, mortality and survival for consecutive 5-year periods.

Cantons	Time-period
Aargau	2013–2014
Basel-City (1)	1995–2011
Basel-Country (1)	1995–2011
Bern	2014
Fribourg	2006–2014
Geneva	1995–2014
Glarus (2)	1995–2014
Graubünden (2)	1995–2014
Jura (3)	2005–2014
Lucerne (4)	2010–2014
Neuchâtel (3)	1995–2014
Nidwalden (4)	2011–2014
Obwalden (4)	2011–2014
St. Gallen (5)	1995–2014
Appenzell-Ausserrhoden (5)	1995–2014
Appenzell-Innerrhoden (5)	1995–2014
Ticino	1996–2014
Thurgau (5)	2012–2014
Uri (4)	2011–2014
Vaud	1995–2014
Valais	1995–2014
Zug (6)	2011–2014
Zurich (6)	1995–2014

# Patient characteristics of CLL/ SLL cases reported to Swiss cancer registries, 1995-2014

	N	%	median age at diagnosis
<b>Overall</b>	5,612	100.0%	72
<b>Sex</b>			
<b>Males</b>	3,262	58.1%	70
<b>Females</b>	2,350	41.9%	74
<b>Age</b>			
<b>&lt;65 years</b>	1,600	28.5%	-
<b>65-74 years</b>	1,738	31.0%	-
<b>75-84 years</b>	1,612	28.7%	-
<b>85+ years</b>	662	11.8%	-
<b>Time period</b>			
<b>1995-1999</b>	1,135	20.2%	71
<b>2000-2004</b>	1,333	23.8%	72
<b>2005-2009</b>	1,543	27.5%	72
<b>2010-2014</b>	1,601	28.5%	71

Population covered by cancer registration:

56.9% in 1995-1999

57.9% in 2000-2004

61.8% in 2005-2009

74.1% in 2010-2014



# Incidence of CLL/ SLL in Switzerland, 1995-2014

	1995-1999			2000-2004			2005-2009			2010-2014		
	N <sup>a</sup>	Rate <sup>b</sup>		N <sup>a</sup>	Rate <sup>b</sup>		N <sup>a</sup>	Rate <sup>b</sup>		N <sup>a</sup>	Rate <sup>b</sup>	
	p. a.	crude	adj.	p. a.	crude	adj.	p. a.	crude	adj.	p. a.	crude	adj.
<b>Overall</b>	392	5.6	4.4	455	6.3	4.6	500	6.6	4.8	440	5.4	3.8
<b>Sex</b>												
<b>Males</b>	228	6.7	6.1	255	7.2	6.2	295	7.9	6.4	264	6.6	5.1
<b>Females</b>	164	4.6	3.1	200	5.5	3.5	205	5.3	3.4	176	4.3	2.7
<b>Age</b>												
<b>&lt;65</b>	118	2.0	1.9	126	2.0	1.9	142	2.2	1.9	123	1.9	1.6
<b>65-74</b>	119	20.7	20.5	130	21.8	21.6	160	25.1	24.8	140	19.1	19.1
<b>75-84</b>	113	31.8	31.2	143	36.2	35.1	139	32.3	32.2	122	26.5	26.2
<b>85+</b>	41	31.0	31.0	55	37.8	37.8	58	35.0	35.0	55	29.4	29.4

<sup>a</sup> mean annual case frequency extrapolated to the whole Swiss population from cases observed in the cancer registries.

<sup>b</sup> per 100,000 person-years.

# Mortality of CLL/ SLL in Switzerland, 1995-2014

	1995-1999			2000-2004			2005-2009			2010-2014		
	N <sup>a</sup>	Rate <sup>b</sup>		N <sup>a</sup>	Rate <sup>b</sup>		N <sup>a</sup>	Rate <sup>b</sup>		N <sup>a</sup>	Rate <sup>b</sup>	
	p. a.	crude	adj.	p. a.	crude	adj.	p. a.	crude	adj.	p. a.	crude	adj.
<b>Overall</b>	133	1.9	1.2	151	2.1	1.3	161	2.1	1.2	154	1.9	1.0
<b>Sex</b>												
<b>Males</b>	78	2.3	2.0	82	2.3	1.9	89	2.4	1.8	87	2.2	1.5
<b>Females</b>	54	1.5	0.8	69	1.9	1.0	72	1.9	0.8	68	1.7	0.7
<b>Age</b>												
<b>&lt;65</b>	14	0.2	0.2	16	0.3	0.2	14	0.2	0.2	9	0.1	0.1
<b>65-74</b>	27	4.6	4.5	34	5.7	5.6	29	4.5	4.4	31	4.2	4.1
<b>75-84</b>	49	13.8	12.9	56	14.2	13.5	61	14.3	13.3	56	12.2	11.5
<b>85+</b>	42	32.2	32.2	45	30.9	30.9	57	34.4	34.4	59	31.2	31.2

<sup>a</sup> mean annual case frequency derived from nationwide cause of death statistics.

<sup>b</sup> per 100,000 person-years.

Age < 65 years at diagnosis

1995–1999

2010–2014

118

123

30.1 %

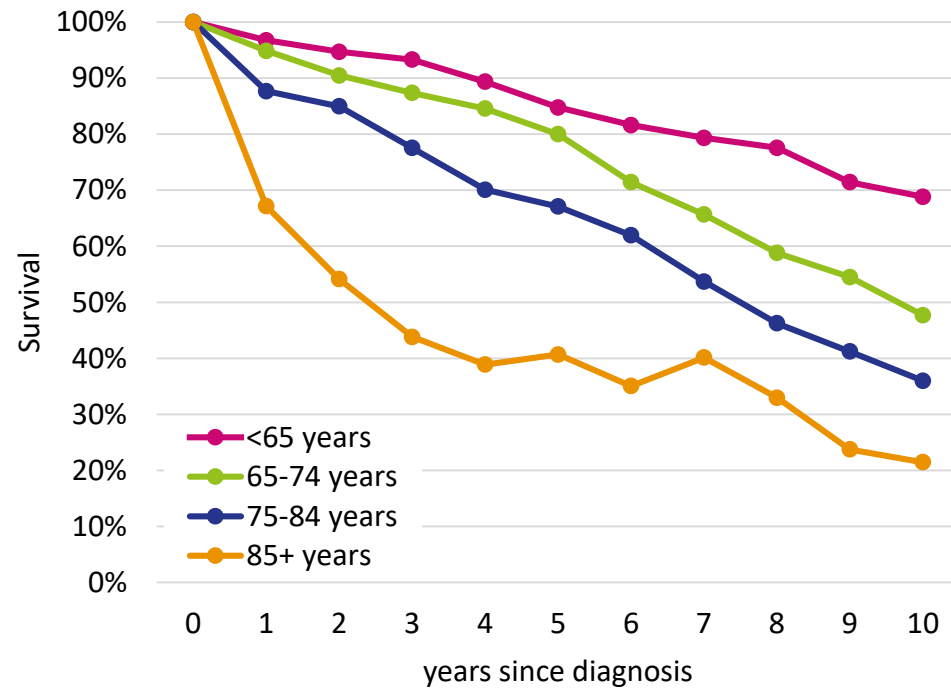
28.0 %

## Age < 65 years at diagnosis

1995–1999	2000–2004	2005–2009	2010–2014
30.1 %	27.7 %	28.4 %	28.0 %

# Age-specific relative survival (RS) of CLL/ SLL patients

## 1995-1999



## 2010-2014

