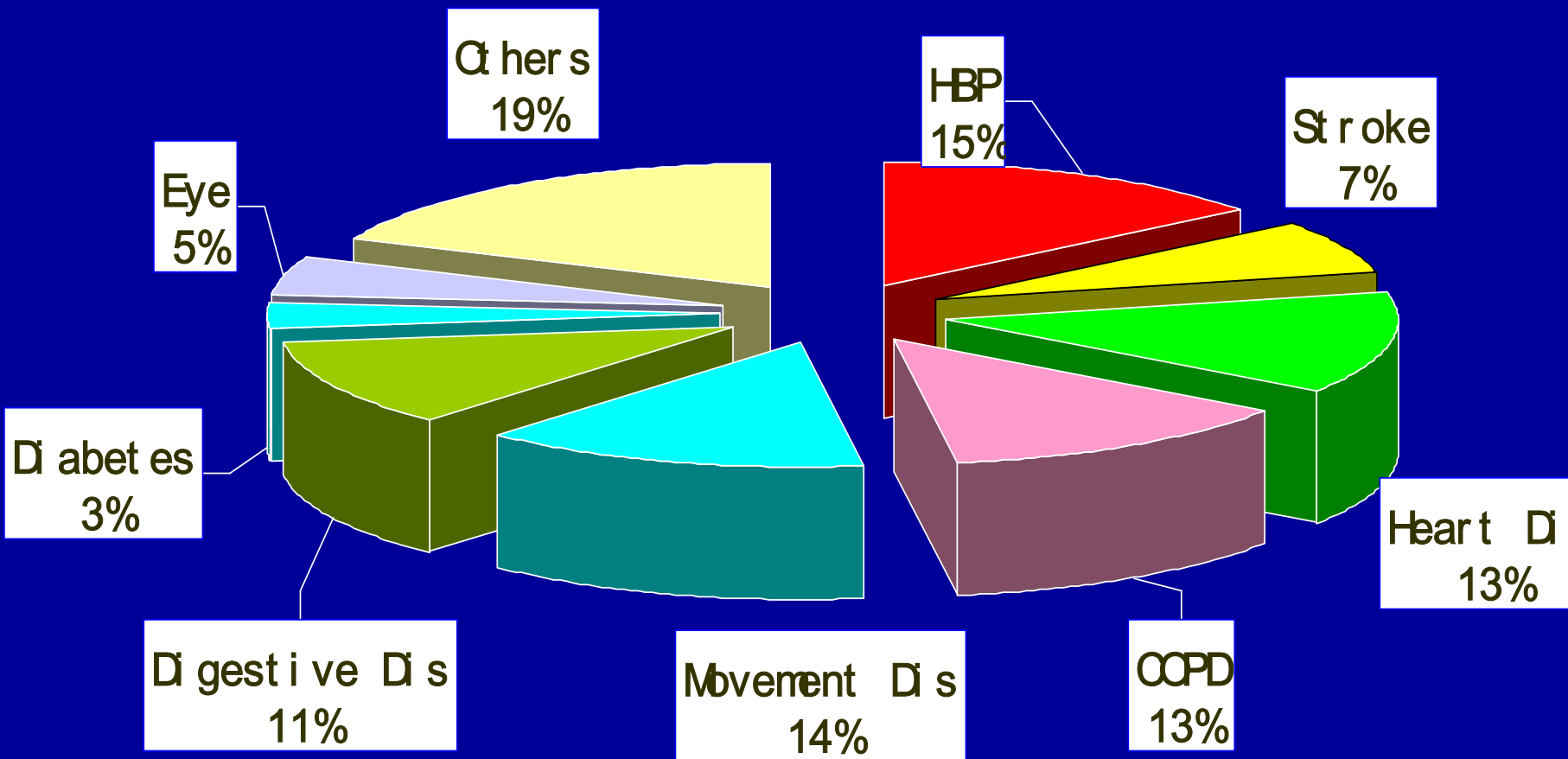# Stroke and Active Life Expectancy in Beijing: Effects and Trends
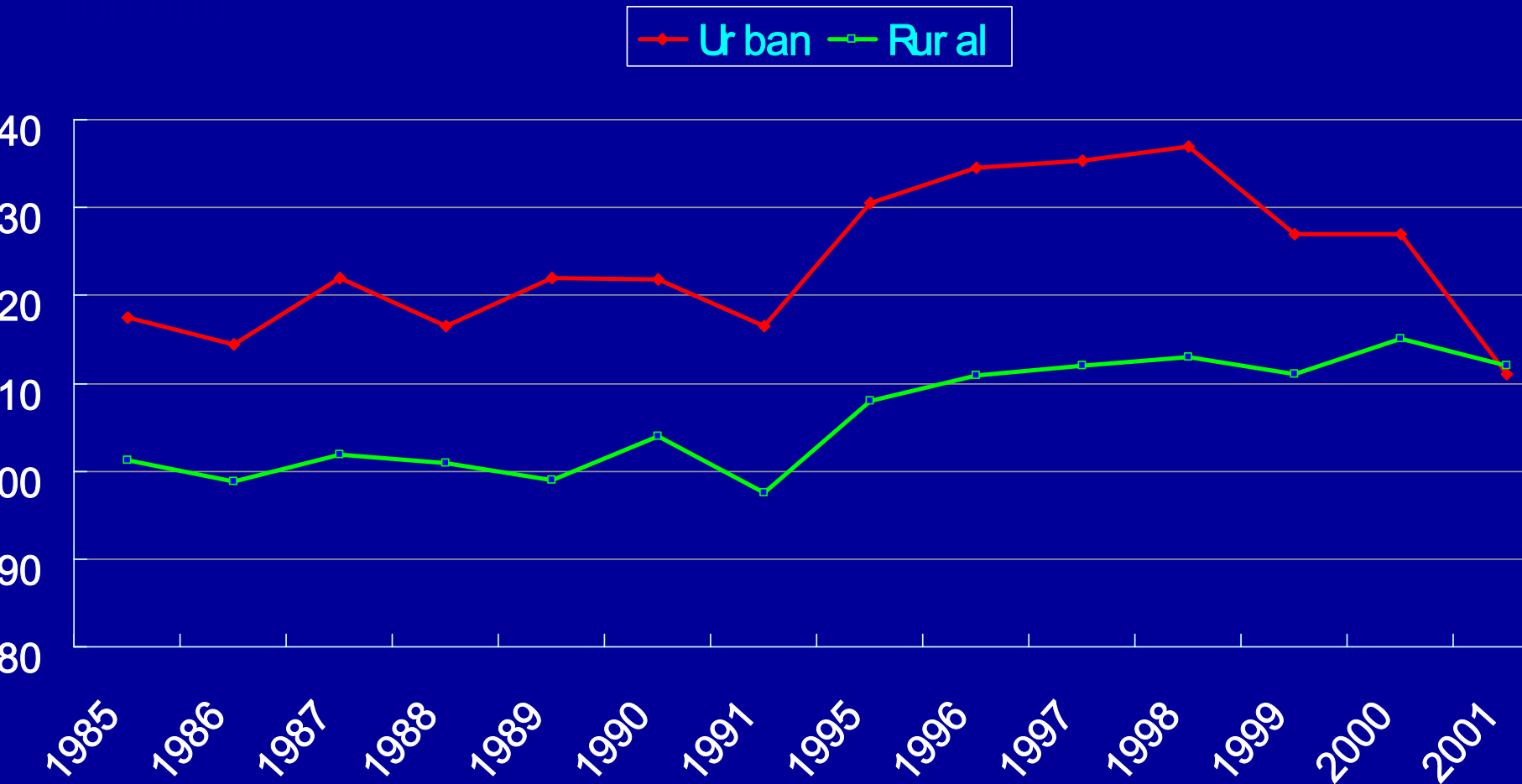
Xinghua Fang, Capital Univ. of Medical Sciences
Toshiko Kaneda, Population Reference Bureau
Zachary Zimmer, Population Council
Zhe Tang, Capital Univ. of Medical Sciences

The proportion of Chronic diseases among the elderly (60+) in China 1998

The trend of mortality of stroke in China (1983----2000)

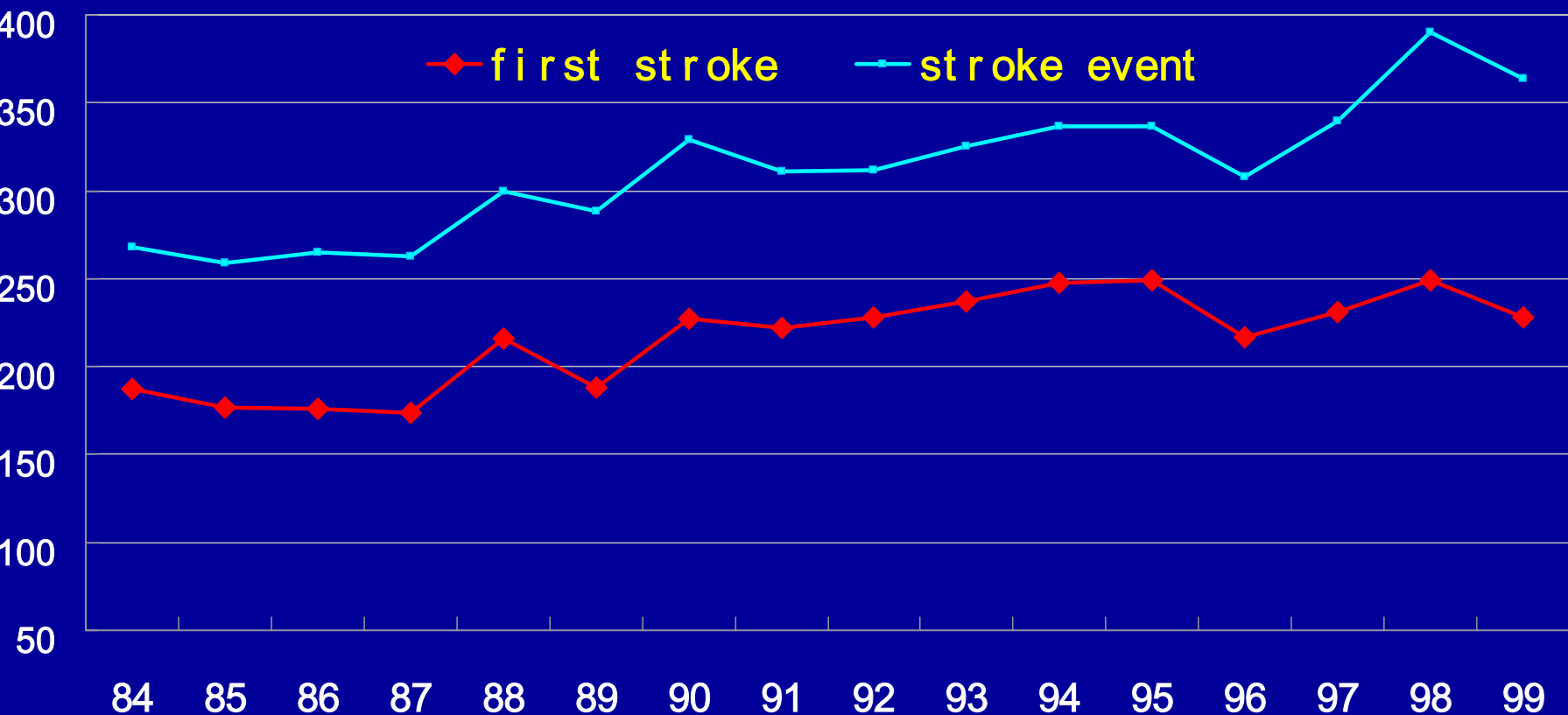Data source: Annals of Chinese Hygiene

Mortality of stroke in Beijing

/100 000
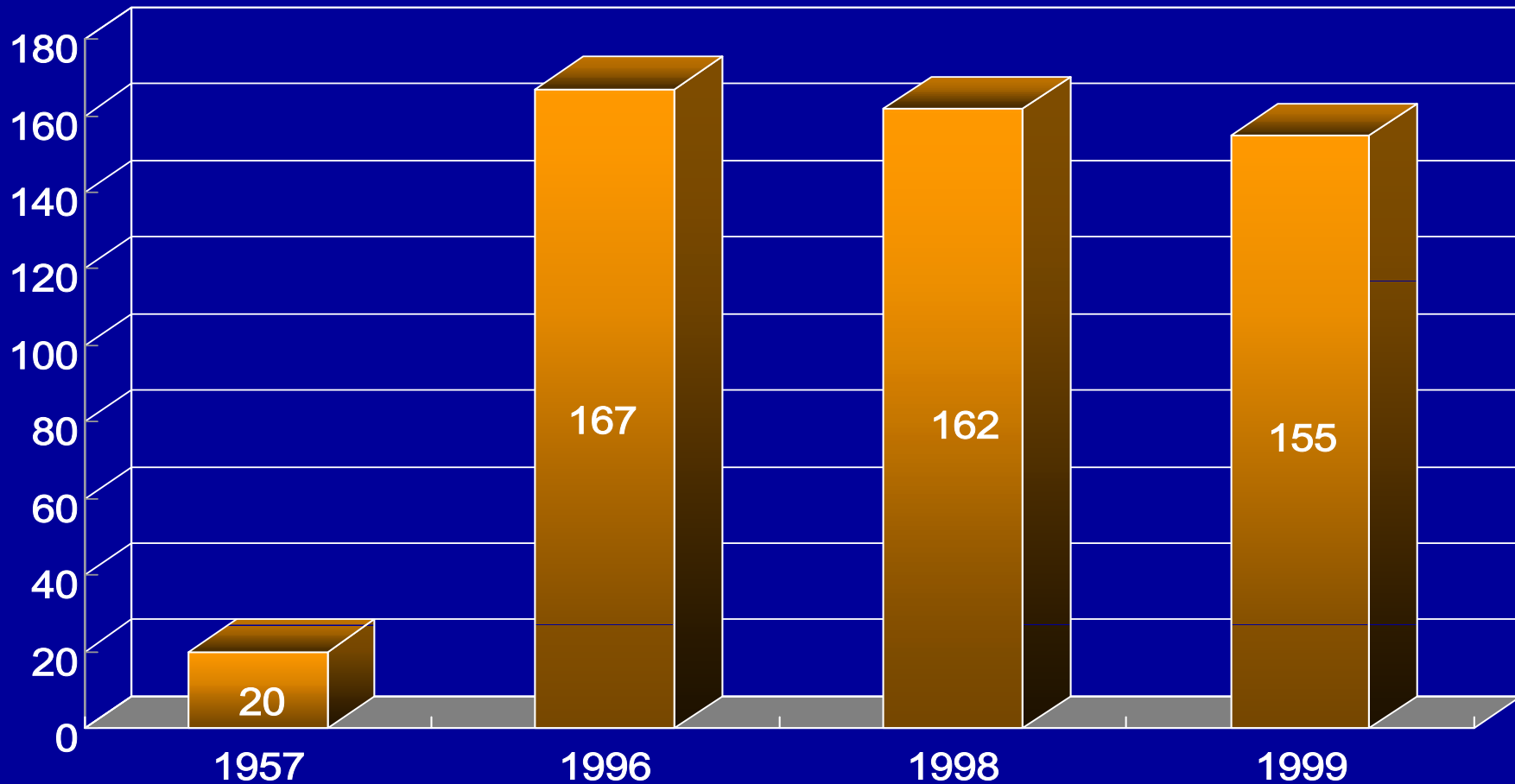
The incidence of stroke event in Beijing
(Sino-MONICA, 1984-1999)

/100,000

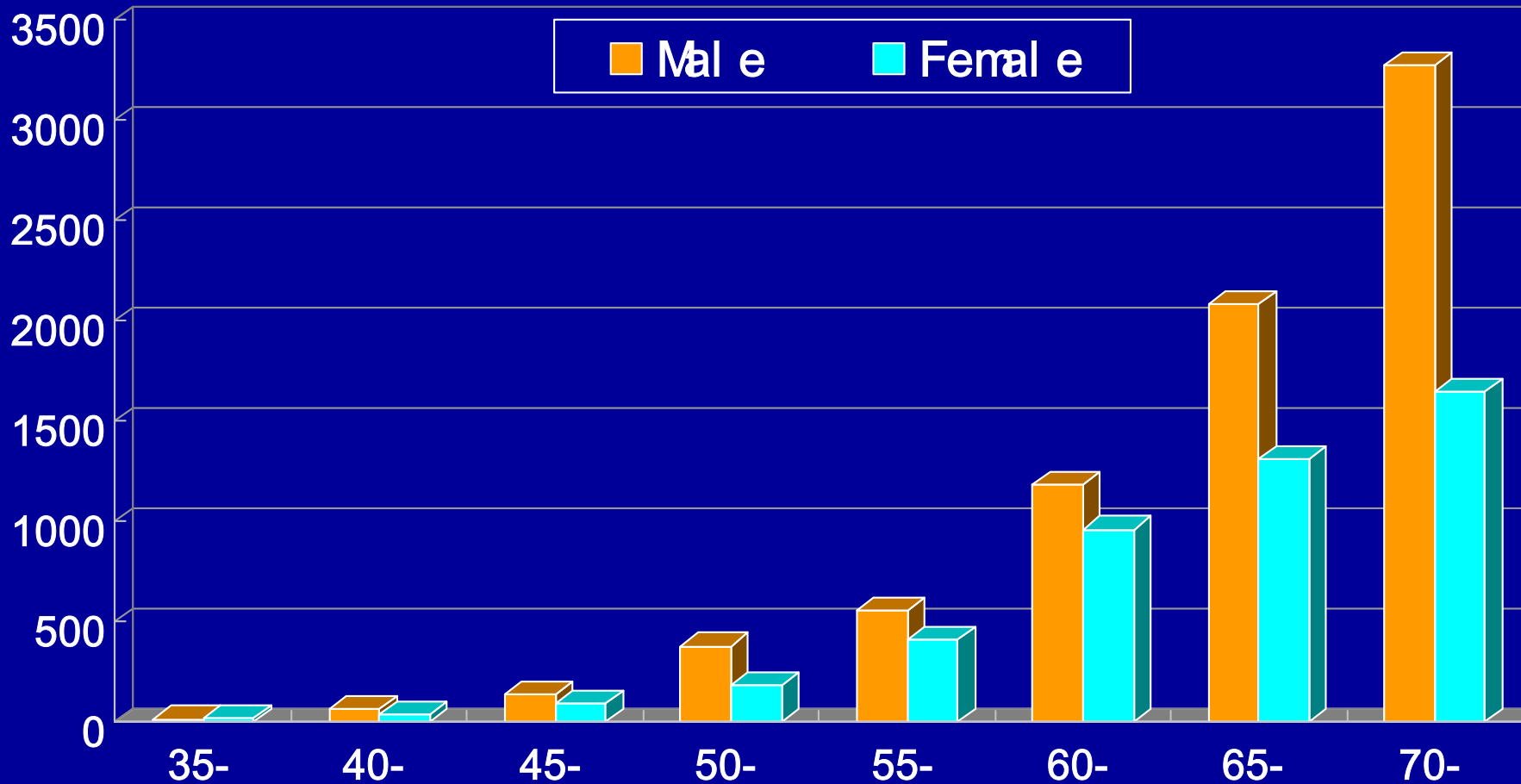Legend: first stroke, stroke event

Data source: Wang WH et al; Chin J Epidemiol 2001, 22:269-2
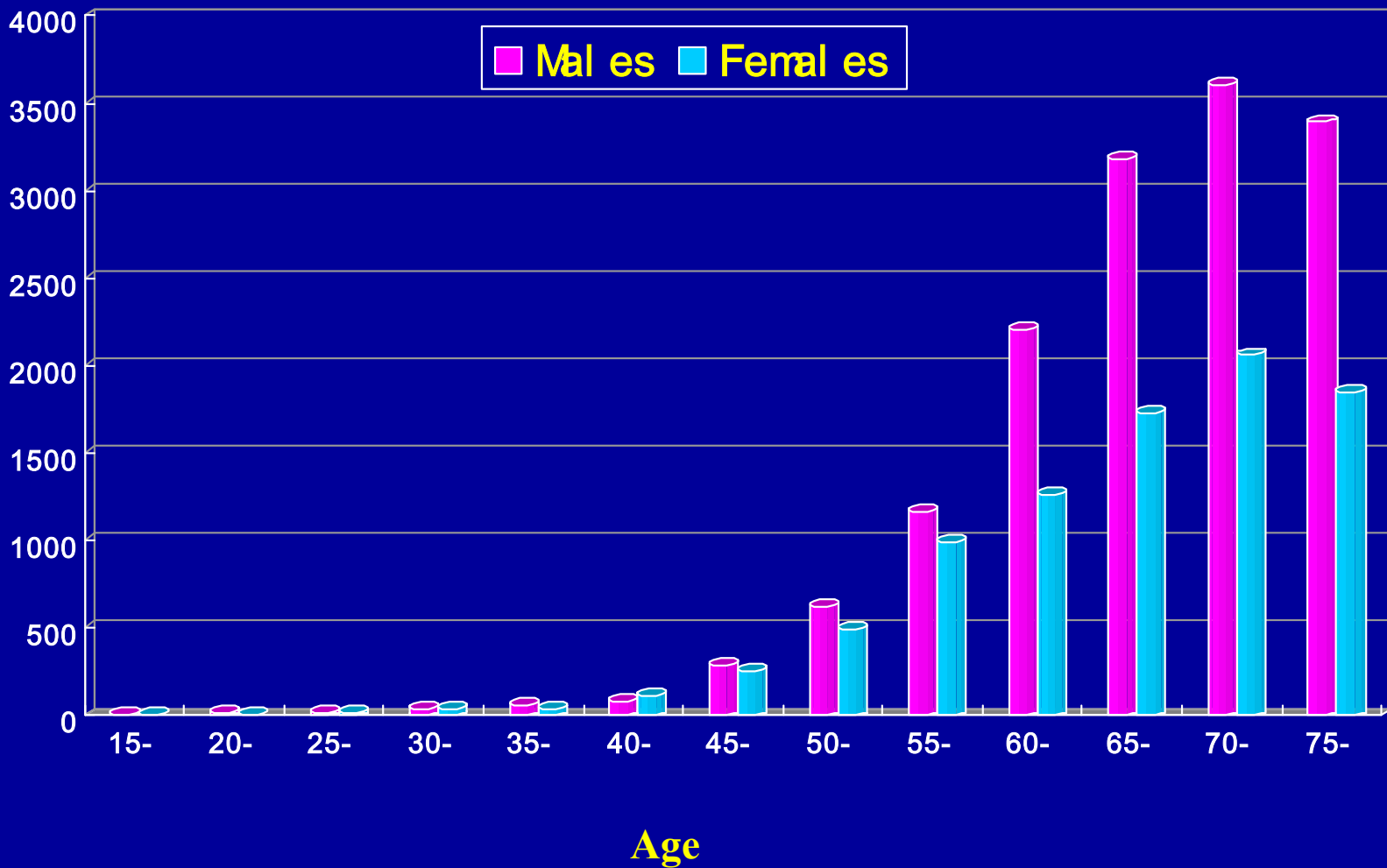
Incidence of stroke by age and sex in Beijing, 1984-99

(/100,000)

Prevalence of stroke by age and sex in China, 1991

/100,000

Purpose of Current Study

1. Look at stroke prevalence over time among a sample of older adults in Beijing

2. Compare LE and ALE among those with and without stroke

3. Examine whether effect of stroke on ALE has been changing over time as Beijing experiences rapid socio-economic development

Beijing Multidimensional Longitudinal Study on Aging

HuaiRou

Xuan Wu

DaXing

- Eighteen administrative areas, divided into 3 categories according to the degree of urbanization and economic status:
  8 urban districts,
  5 suburban counties,
  5 mountain counties.
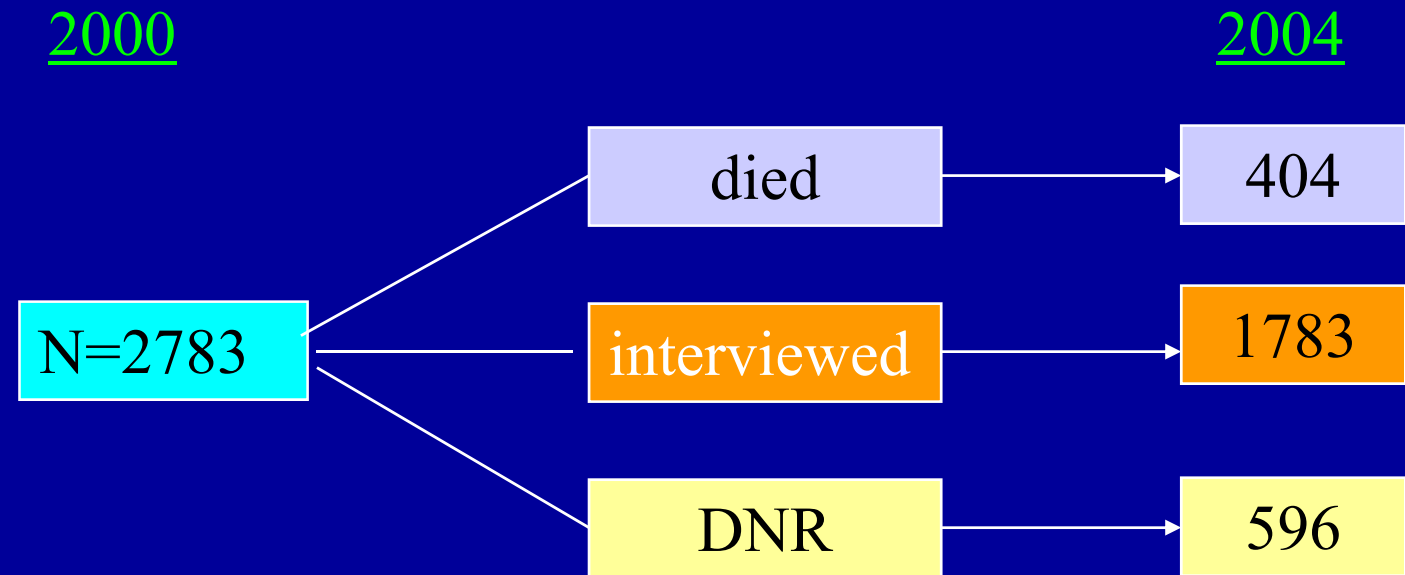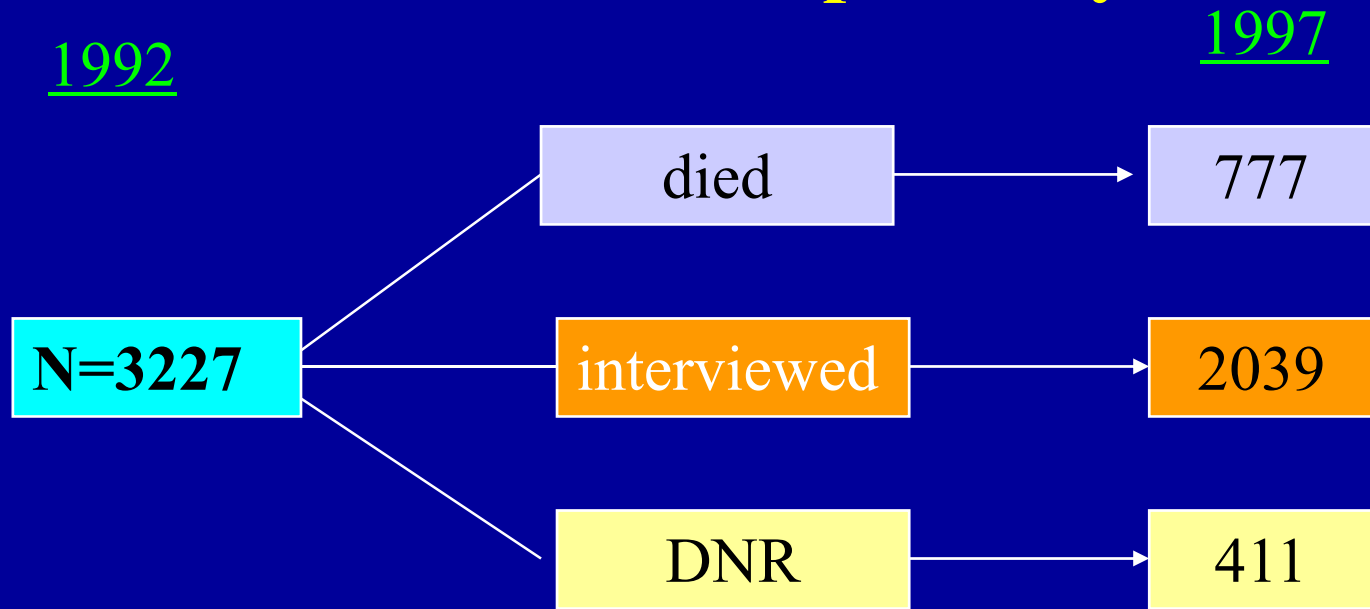
- One district/county chosen at each category:
  HuaiRuo (mountain).
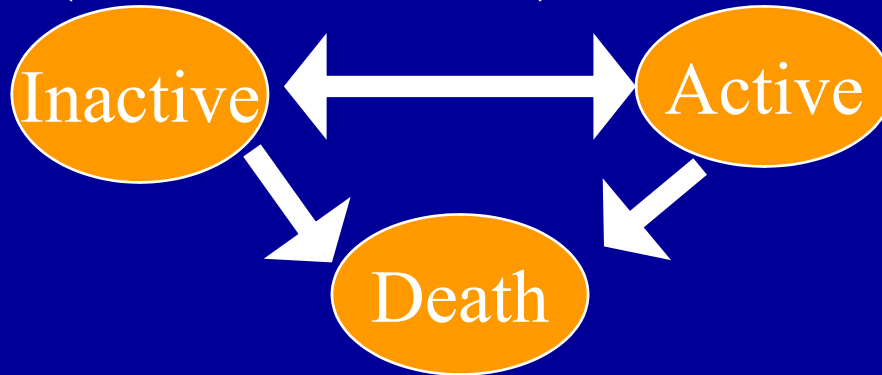 **XuanWu** (urban),
  DaXing (suburban)
  Data weighted to be representative of the three areas

Results of follow-up surveys

Methods

- Estimate rates for transitions shown below using hazard rate models (SAS LIFEREG)

- Use the hazard rates to construct <u>status based</u> multistate life tables using SAS macro developed by Mark Hayward

- Conduct these procedures using 2 sets of transitions
  - a. 1992 to 1997 data
  - b. 2000 to 2004 data

Calculating separate transition rates for each period

Definition of active and inactive

- **Active**   Can do all of the following
  - Walking 300 meters
  - Getting on/off bed
  - Eating
  - Dressing
  - Bathing
  - Walking up stairs

- **Inactive**   Needs assistance with any one of the above

Findng and Definition of Stroke

- Self-report

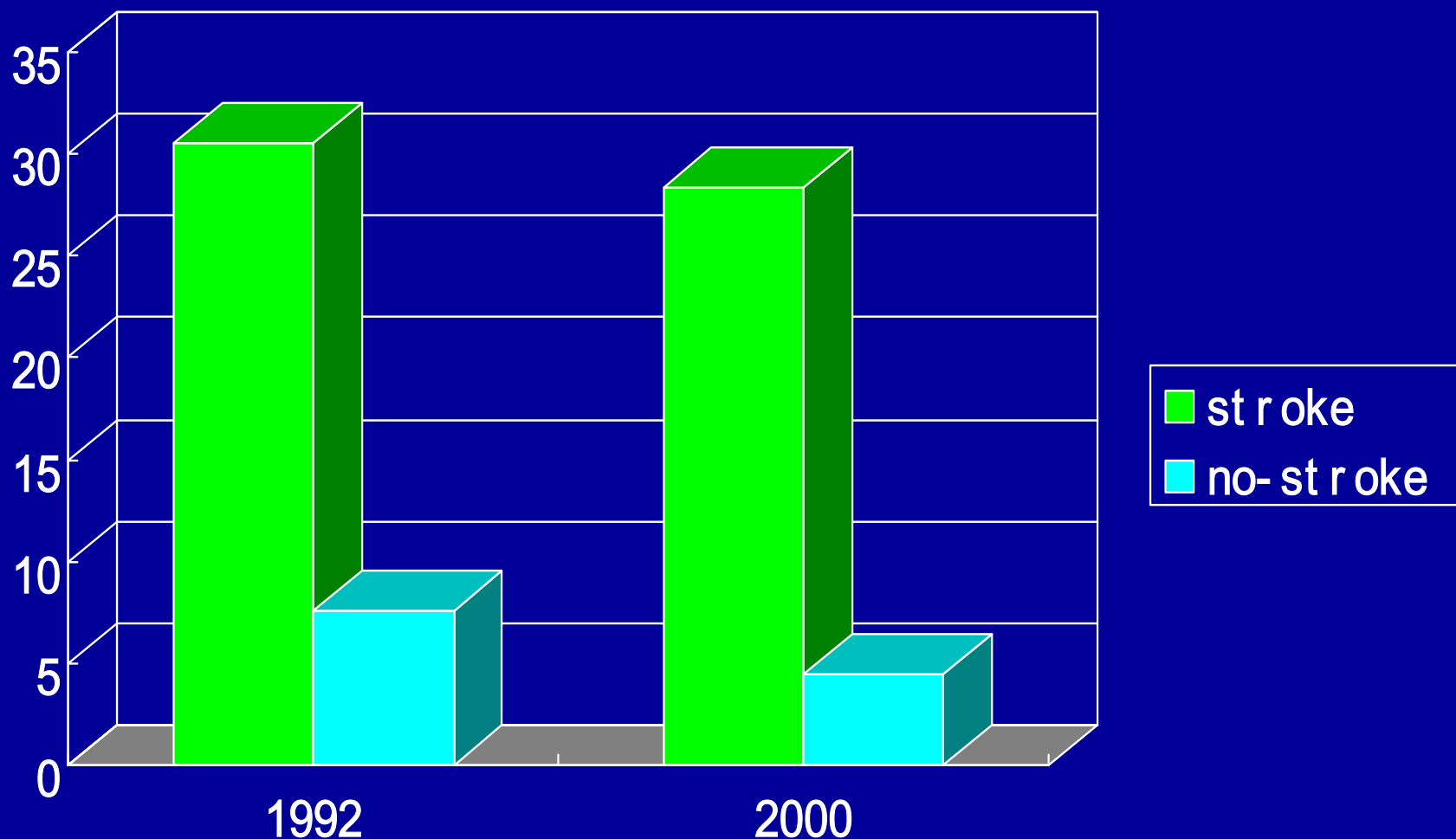- Question: Did a doctor ever tell you that you had a stroke?

**Prevalence of stroke by age, 1992 versus 2000**
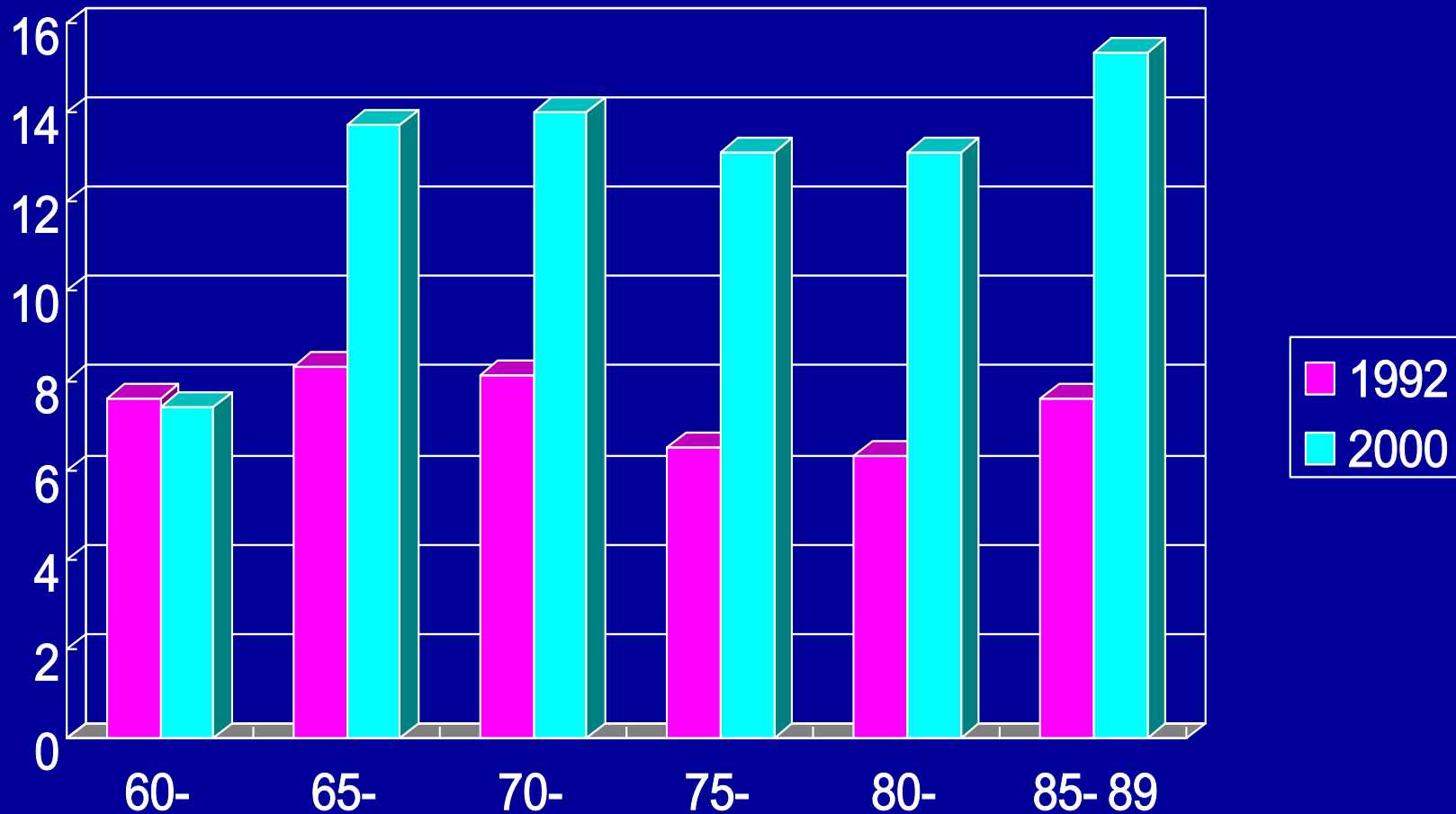
Proportion who died by whether they had a stroke at start of period

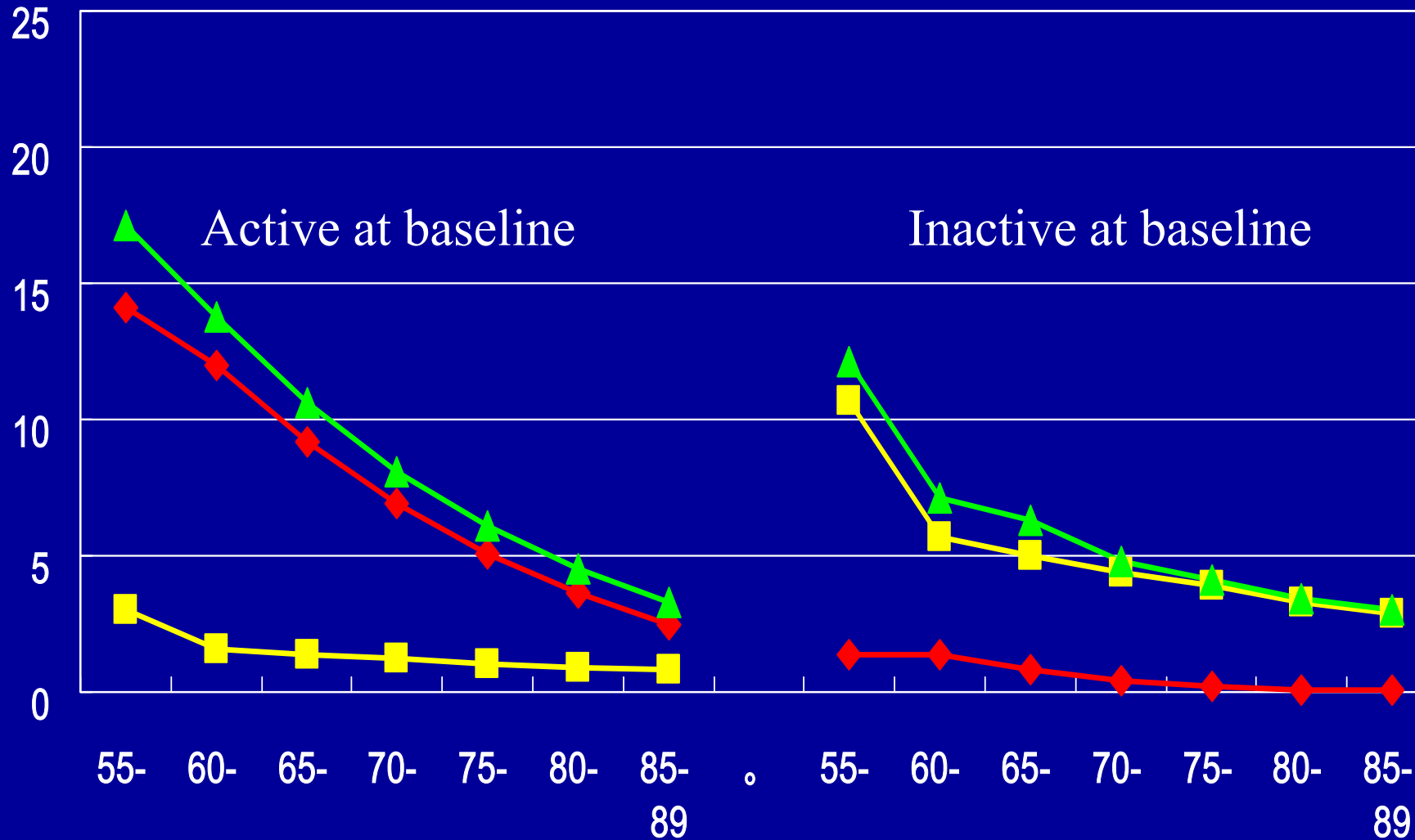|	1992-1997		2000-2004	
	With stroke in 1992	Without stroke in 1992	With stroke in 2000	Without stroke in 2000
Death	39.45	26.23*	24.33	13.79*

Percent inactive for those with and without stroke, 1992 and 2000

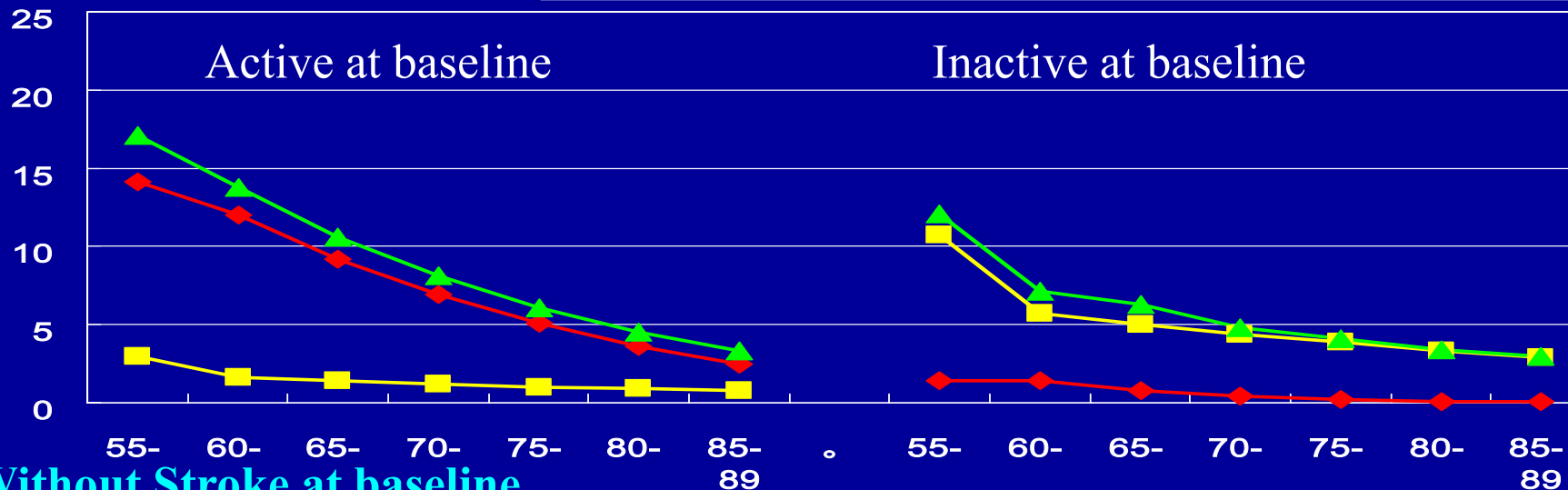# Percent inactive for those with and without stroke, by age and sex, 1992 and 2000
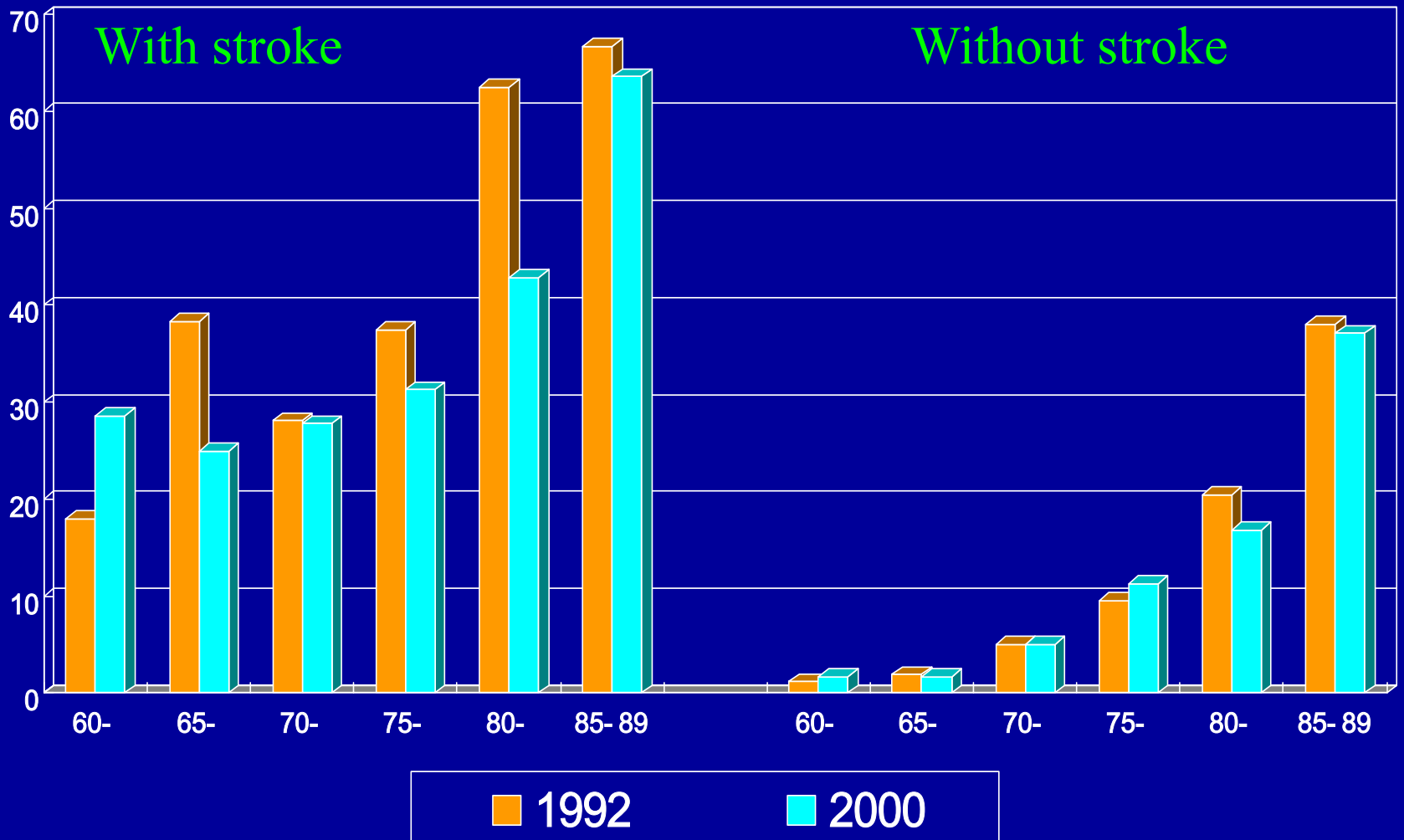
Status based ALE and IALE for those <u>with stroke at baseline</u>, 1992-1997
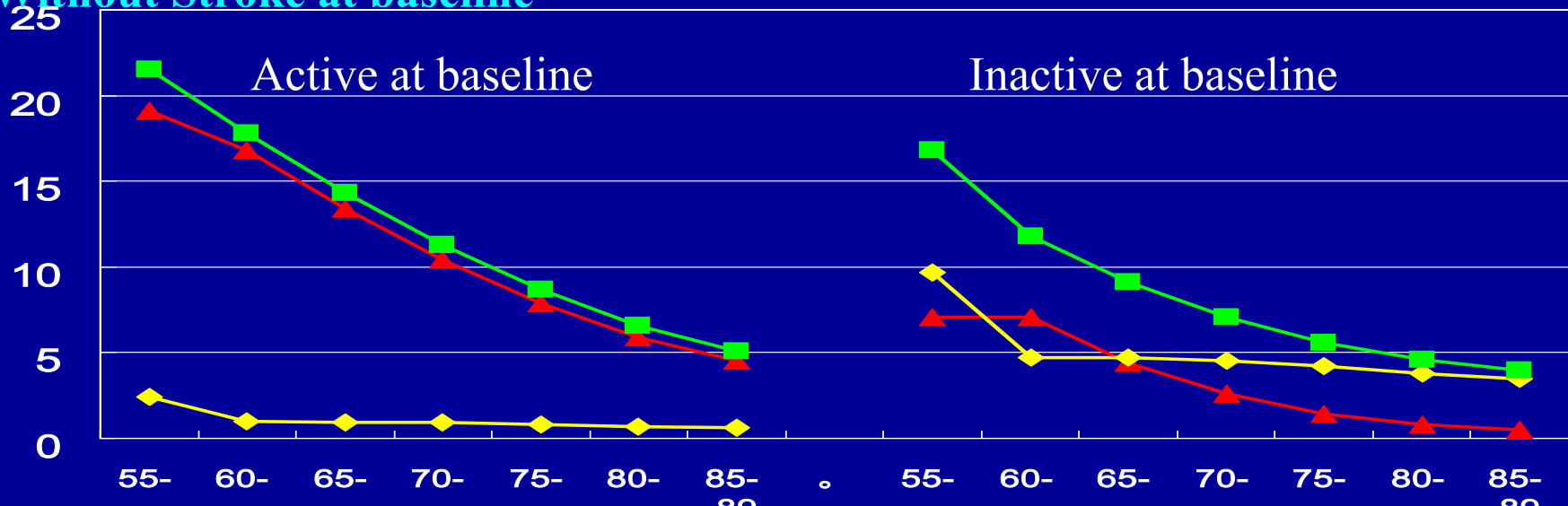
Status based ALE and IALE with and without stroke at baseline

Ratio in LE and ALE of stroke versus non-stroke by originating status

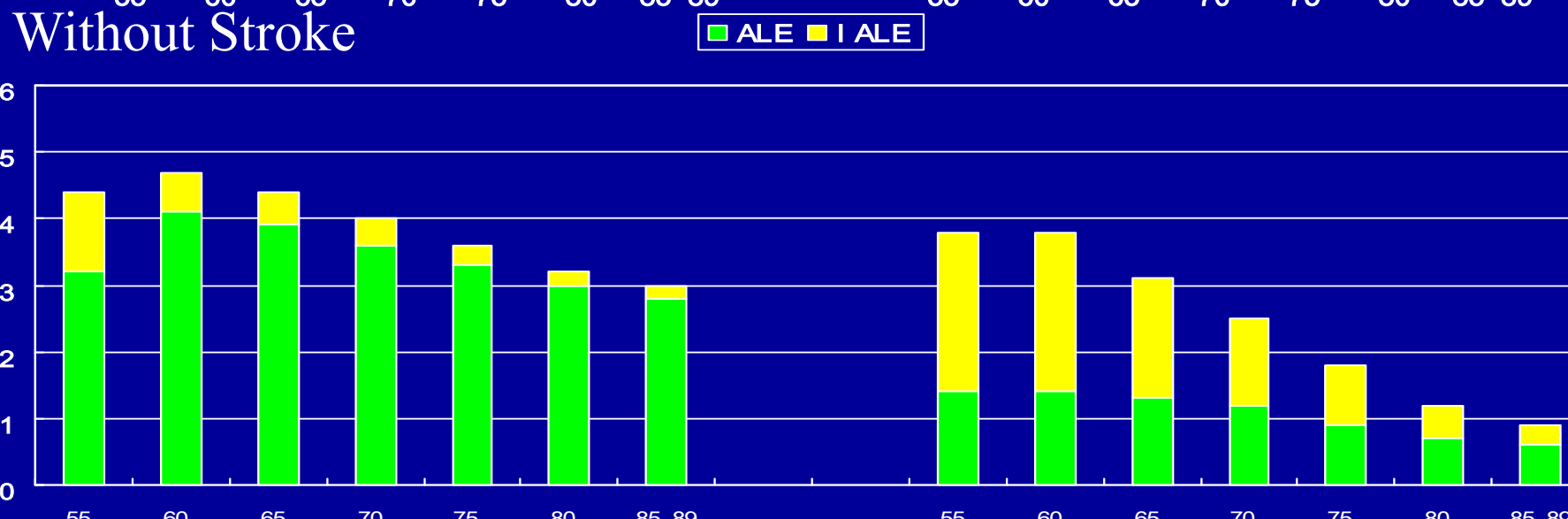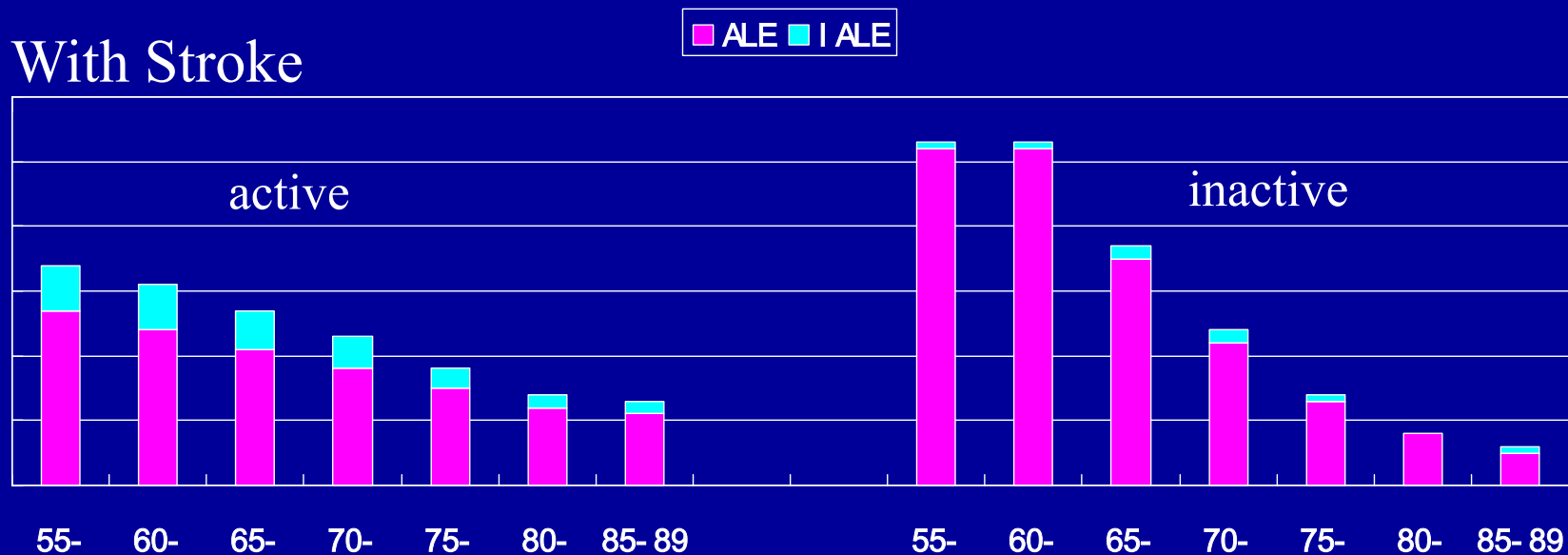| Age	Active		Inactive	
	LE	ALE	LE	ALE
55-	0.80	0.74	0.72	0.20
60-	0.76	0.71	0.60	0.20
65-	0.74	0.69	0.64	0.17
70-	0.72	0.67	0.69	0.16
75-	0.71	0.64	0.73	0.14
80-	0.68	0.61	0.75	0.13
85-89	0.63	0.55	0.75	0.11

Summary of 1992-1997data

- Strokes reduce both LE and ALE

- LE and ALE in inactive elderly are shorter than in active elderly people

- The proportion of reduction is more greater in ALE than in total LE in those inactive and with stroke

- What about comparing trends over time in the effects of stroke?

Net change in years of ALE and IALE, 1992-1997 to 2000-2004, by originating state, <u>for those with stroke at baseline</u>

Active

Inactive

55- 60- 65- 70- 75- 80- 85- 89

55- 60- 65- 70- 75- 80- 85- 8

■ ALE ■ I ALE

6
5
4
3
2
1
0
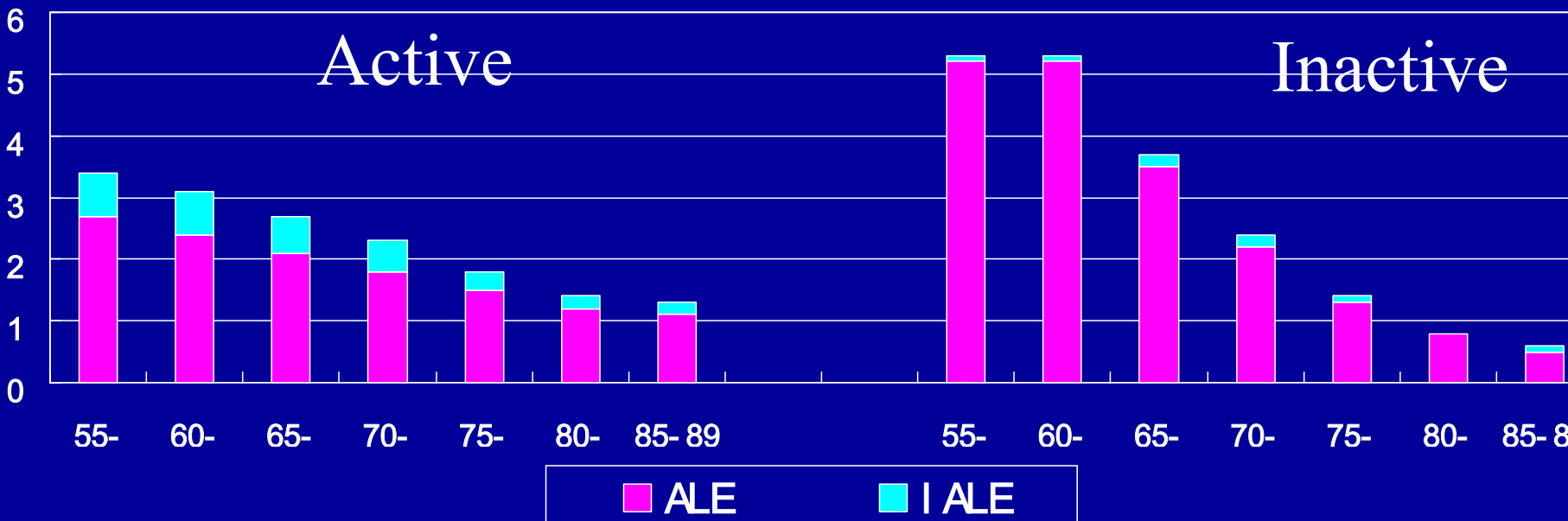
Net change in years of ALE and IALE, 1992-1997 to 2000-2004, by originating state and stroke

Summarizing changes over time

- Life expectancy increased for each group over time

- Most of the increase is active life

- The increase in active life is greatest for those with stroke beginning the period inactive

- The reason for the increase in life and active could be improvement in medical conditions, but this is speculative