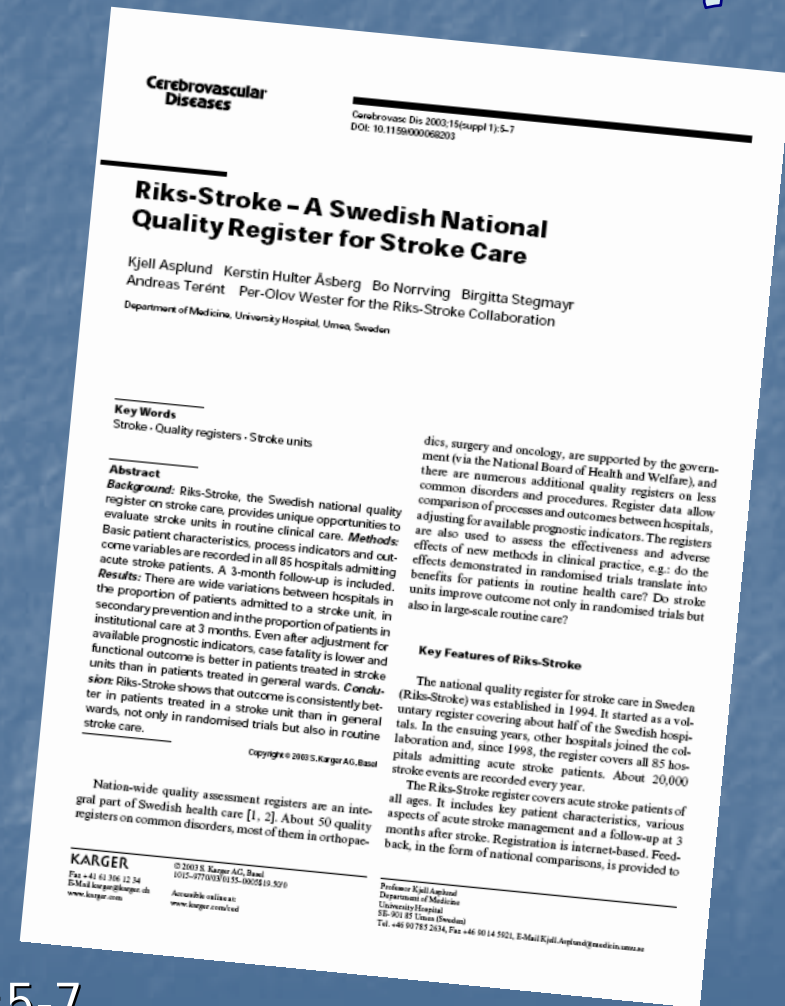


The evolution and utility of a national stroke registry: the Swedish experience

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- Cerebrovasc Dis 2003;15(suppl 1):5-7

RIKS-STROKE

The Swedish registry for quality assessment of stroke care



- from 1994 onwards
- funded publicly
- all 79 hospitals admitting acute stroke patients
- all ages
- questionnaire follow-up at 3 months after stroke (a 12-month follow-up is underway)

AIMS OF RIKS-STROKE

The Swedish registry for quality assessment of stroke care

- **Primary:** to improve quality of stroke care in all hospitals (and after discharge from hospital)
 - ✓ processes (adherence to evidence-based national guidelines on stroke care)
 - ✓ outcome, including patient-oriented variables
- **Secondary:** Research

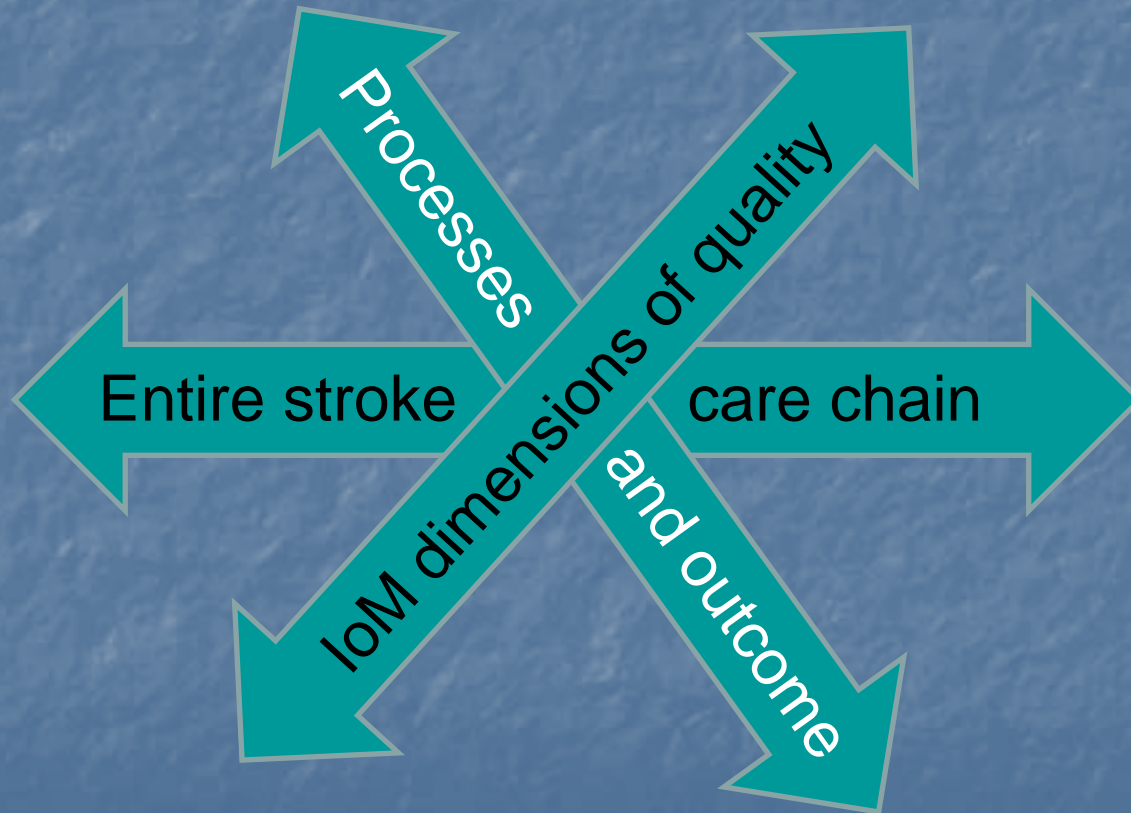
WHAT STRATEGY?

**COMPRE-
HENSIVE?**
*= in-depth
information*



SIMPLE?
*= good
coverage*

RIKS-STROKE: MULTIDIMENSIONAL MONITORING OF STROKE CARE QUALITY



RIKS-STROKE TECHNICALITIES



- Paper protocols → diskettes → Internet-based registrations → pilot studies for direct transfer of data from computerized medical records
- Hospitals have immediate access to own data, using a simple statistical and presentation package
- Annual feedback to individual hospitals (time trends, relative to other hospitals, etc.)
- Open-access website with comparisons between counties and hospitals

COVERAGE

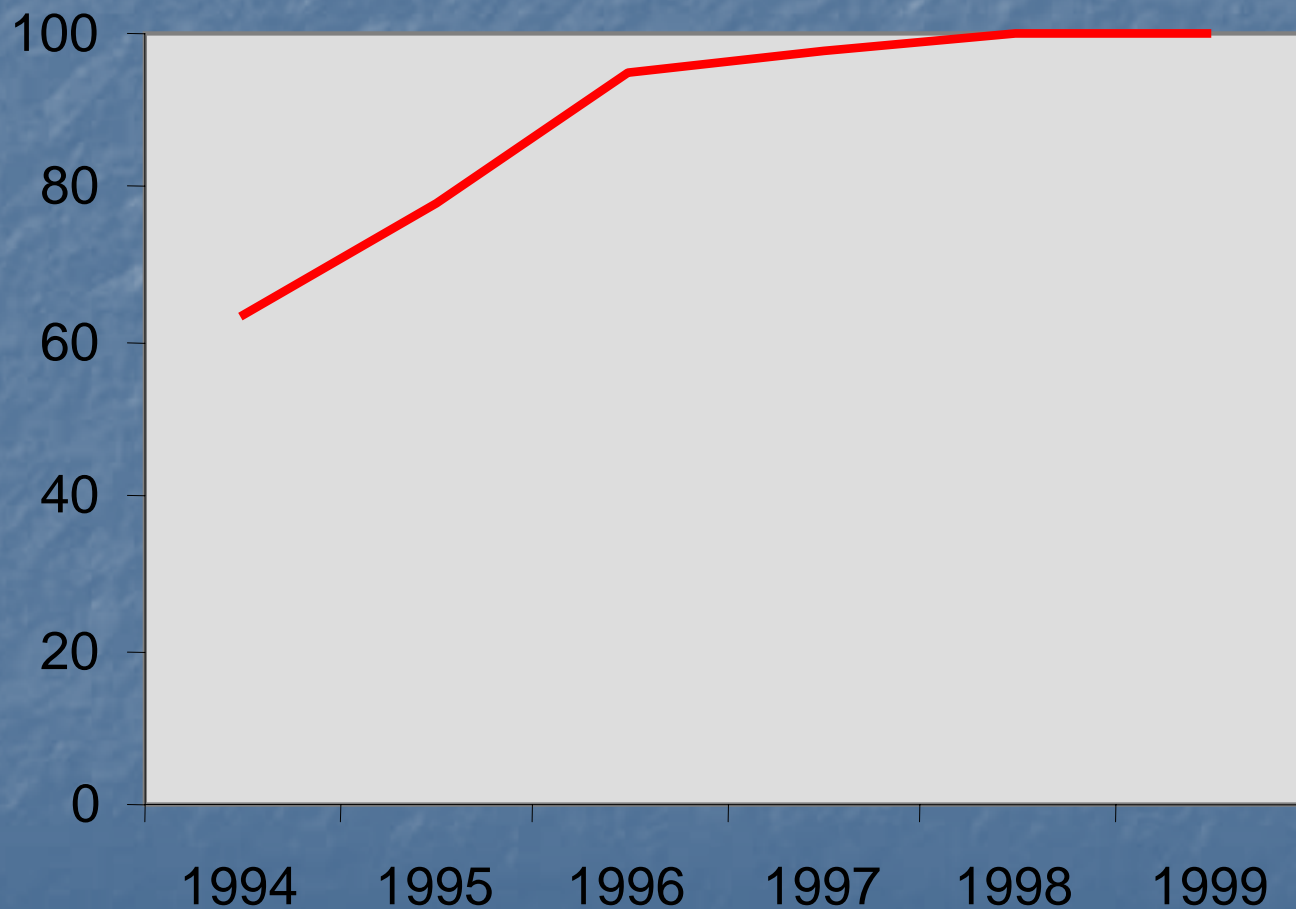


- 87-93% in various validation studies
- Less likely to be covered: early deaths, not admitted to a stroke unit, elderly in nursing homes
- Follow-up data at 3 months: 89% of all included in the acute phase

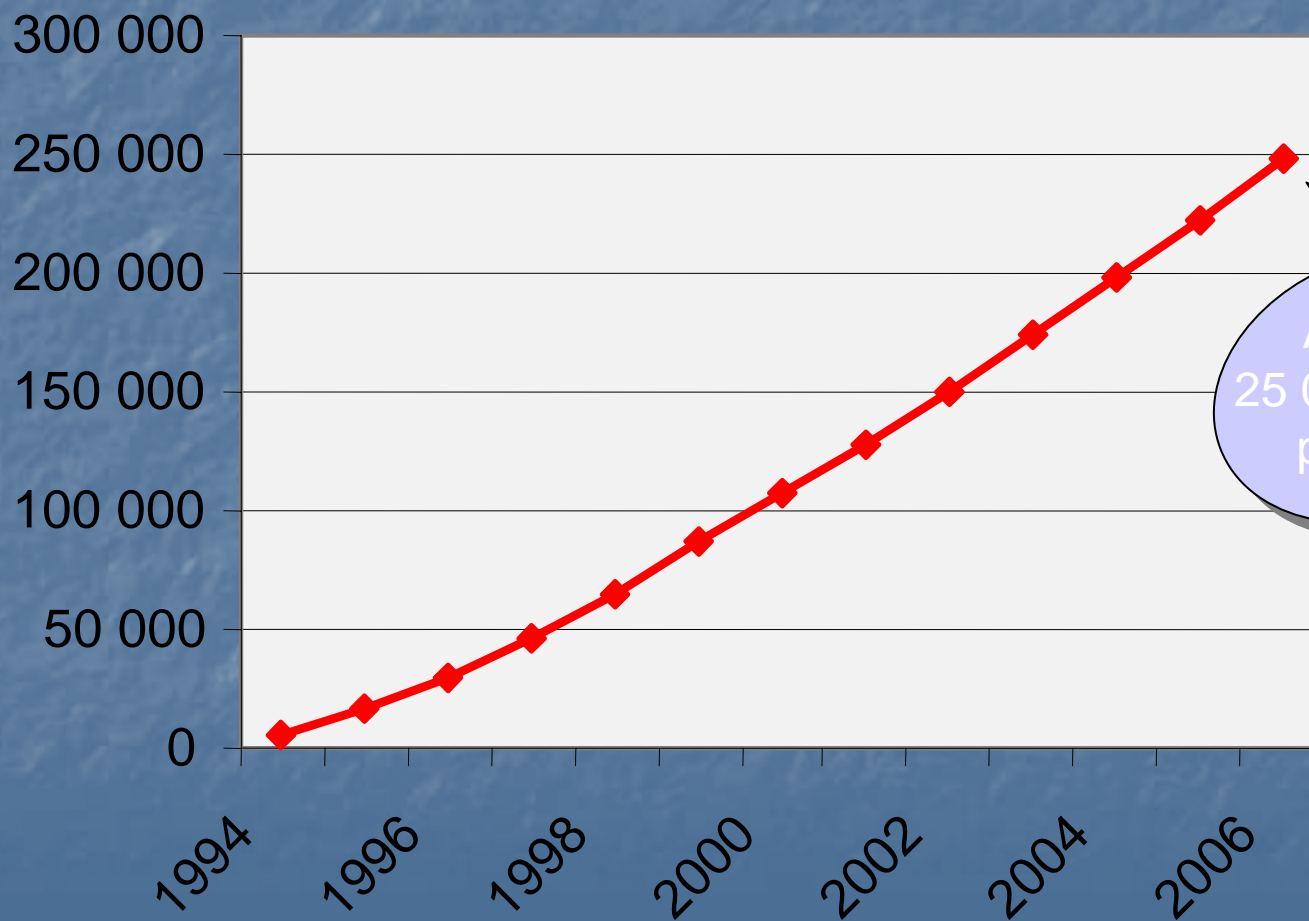
4 YEARS TO INCLUDE ALL HOSPITALS



Per cent of hospitals



5 YEARS TO ACHIEVE NEXT-TO-FULL COVERAGE: CUMULATED NO. OF EVENTS IN RIKS-STROKE



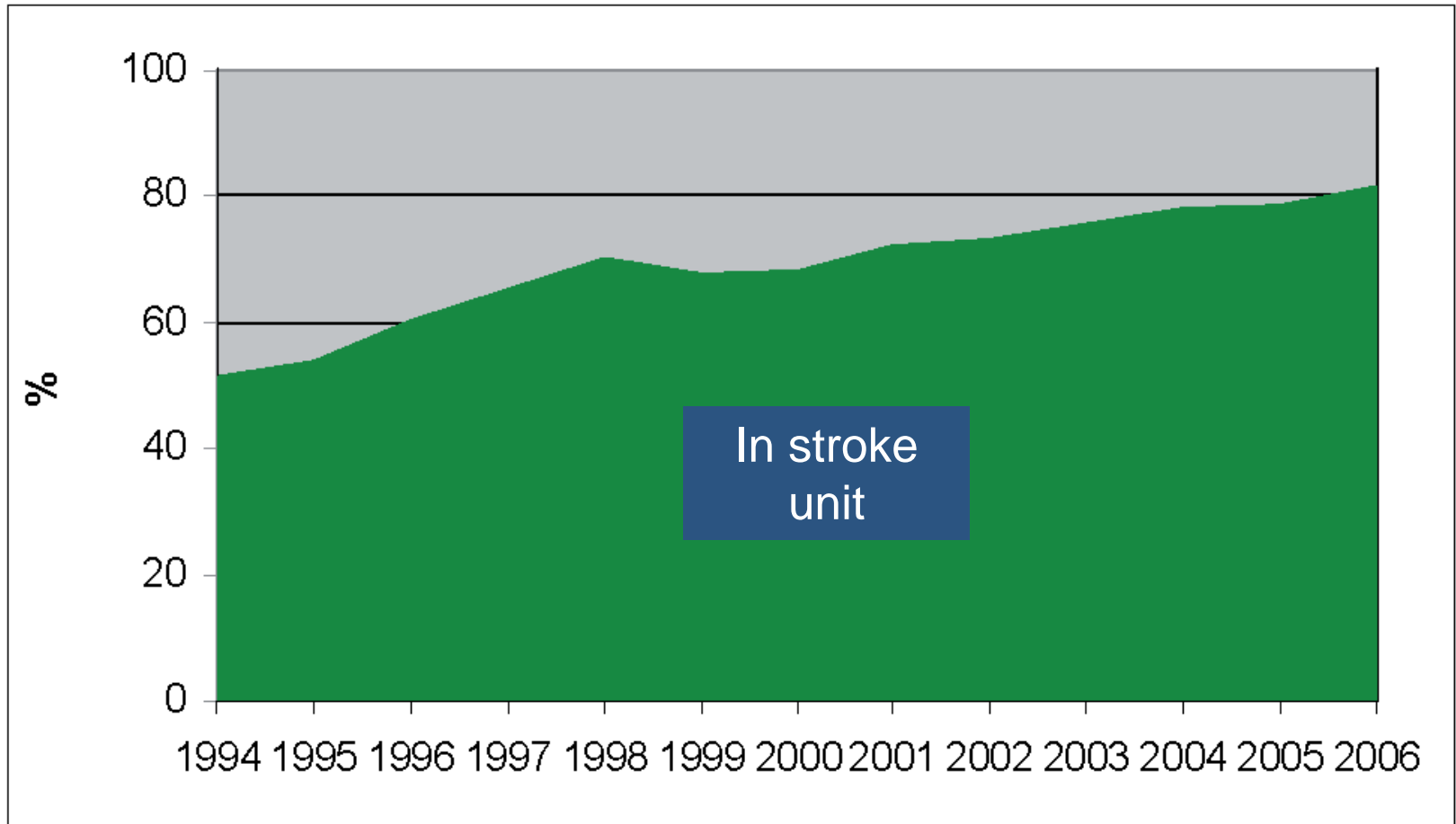
Approx
25 000 events
per year

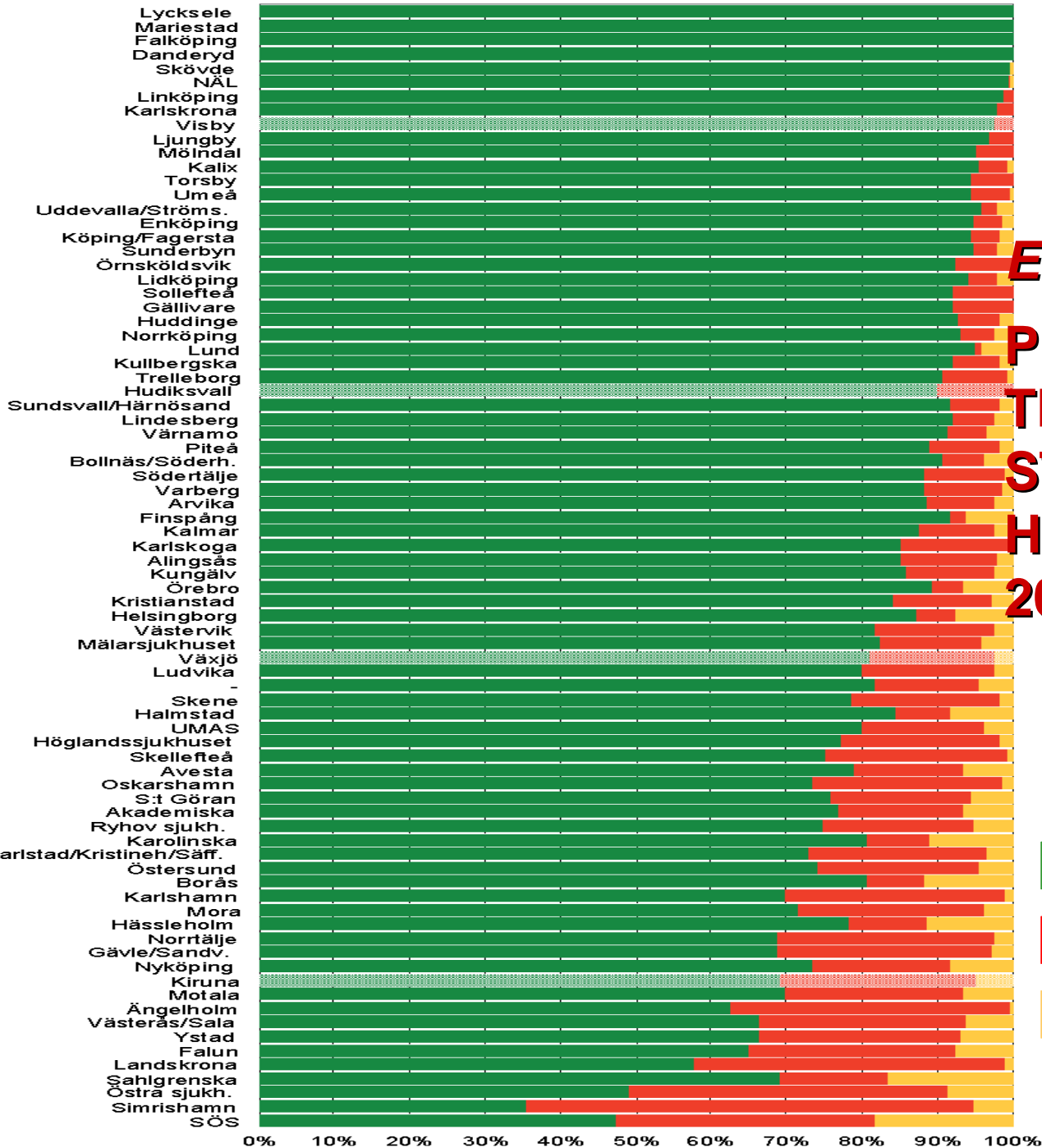
SIX DIMENSIONS IN QUALITY OF HEALTH CARE

What is done in health care should be ...

- based on evidence/knowledge
- safe
- provided in time
- distributed fairly
- patient-orientated
- cost-effective (optimal use of resources)

EVIDENCE-BASED? **PROPORTION OF ACUTE STROKE PATIENTS TREATED IN A STROKE UNIT 1994-2006**

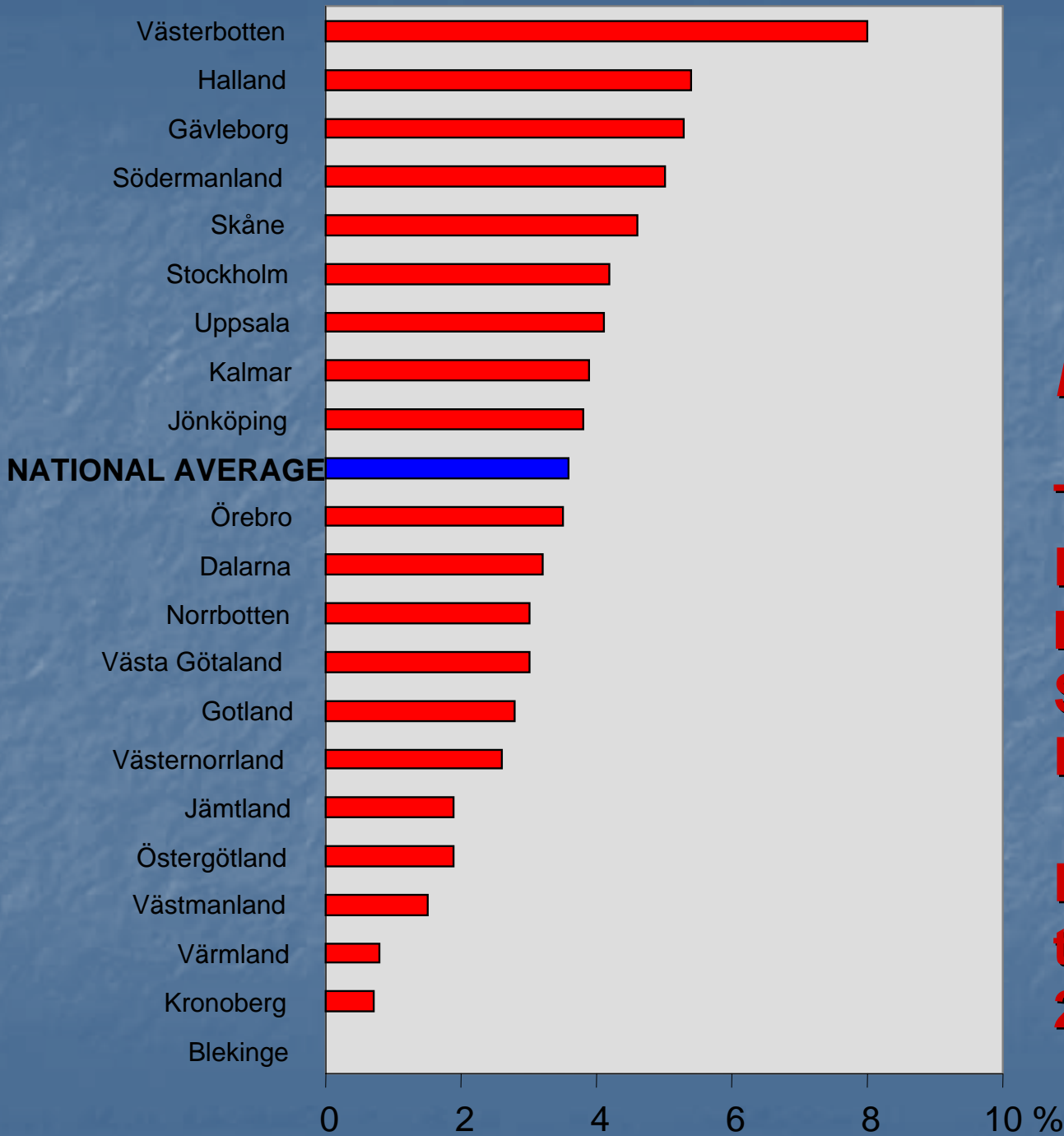




Evidence-based?

**PROPORTION
TREATED IN A
STROKE UNIT BY
HOSPITAL
2006**





Evidence-based?

**THROMBOLYSIS
FOR ACUTE
ISCHEMIC
STROKE
BY REGION:**

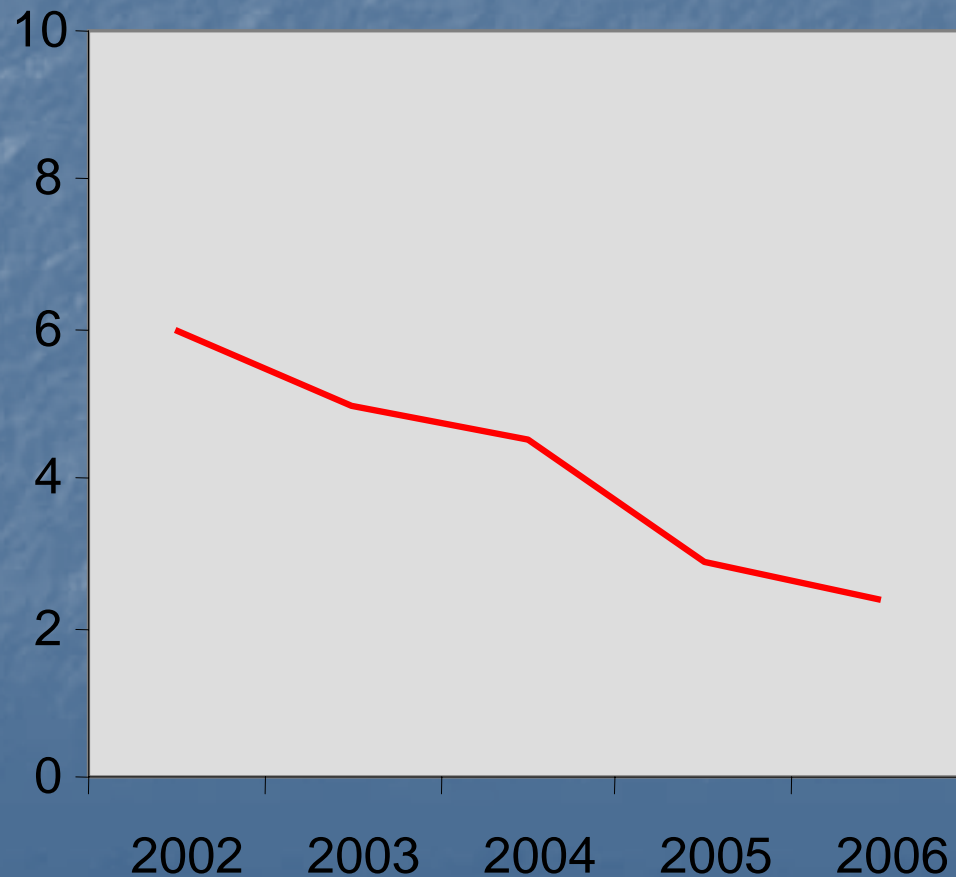
**Proportion
treated
2006**

Safe?

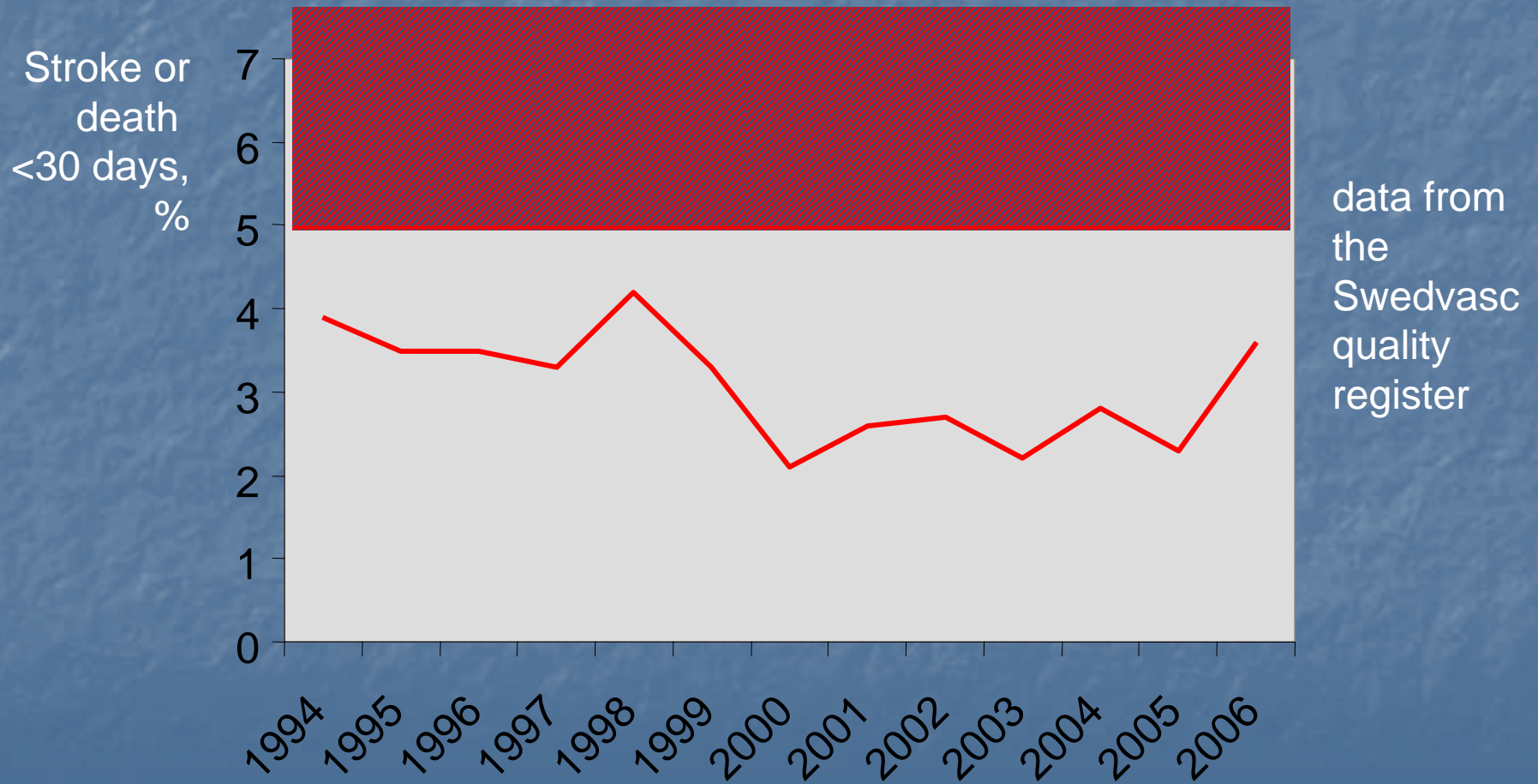
**ADHERENCE TO NATIONAL GUIDELINES:
PROPORTION OF PATIENTS WITH ISCHEMIC
STROKE TREATED WITH HEPARIN**



per cent



SAFE? SEVERE COMPLICATIONS IN CAROTID SURGERY

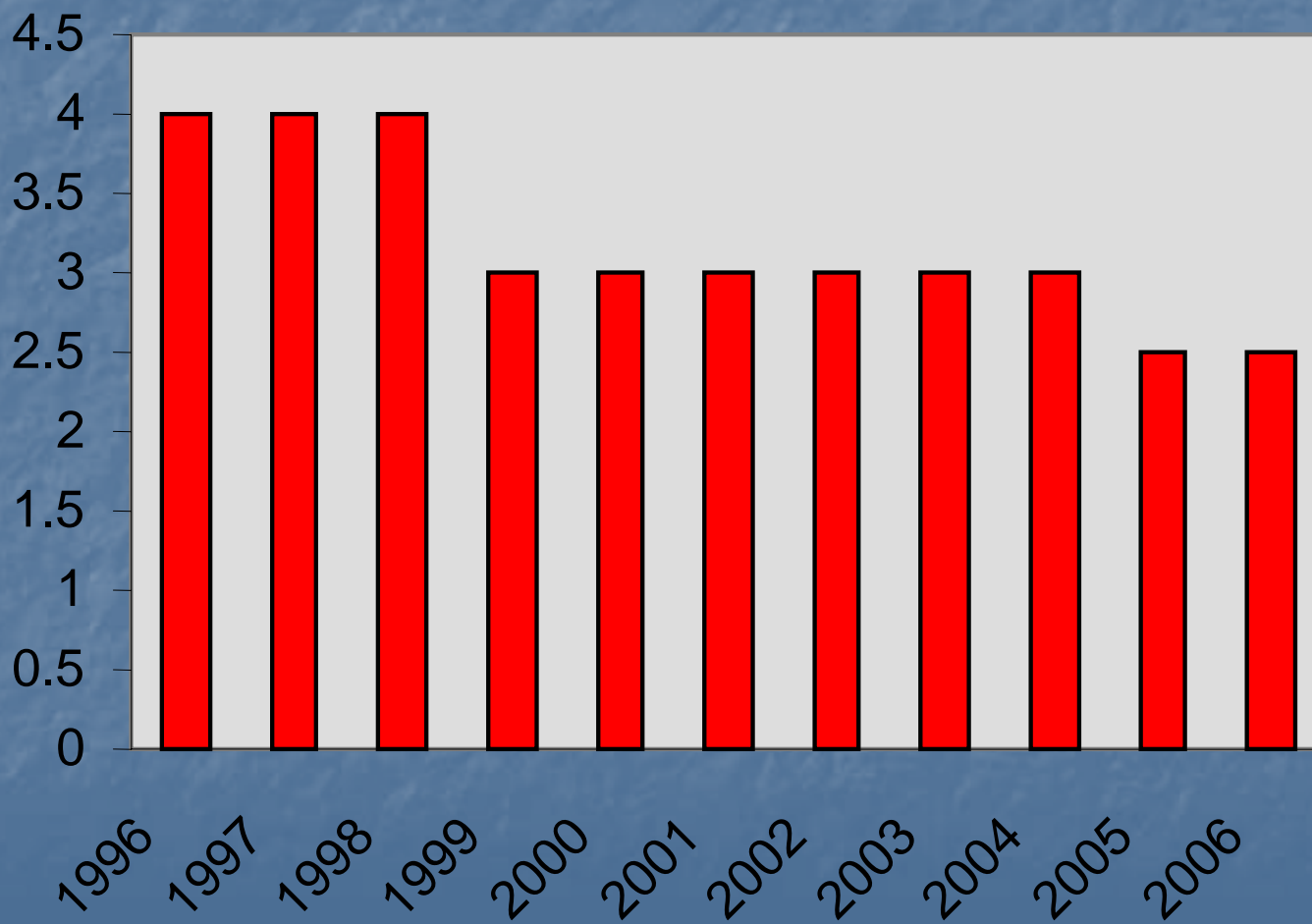


In time?

DELAY FROM ONSET TO ARRIVAL IN HOSPITAL



Hours,
median



Distributed fairly? **SEX DIFFERENCES**

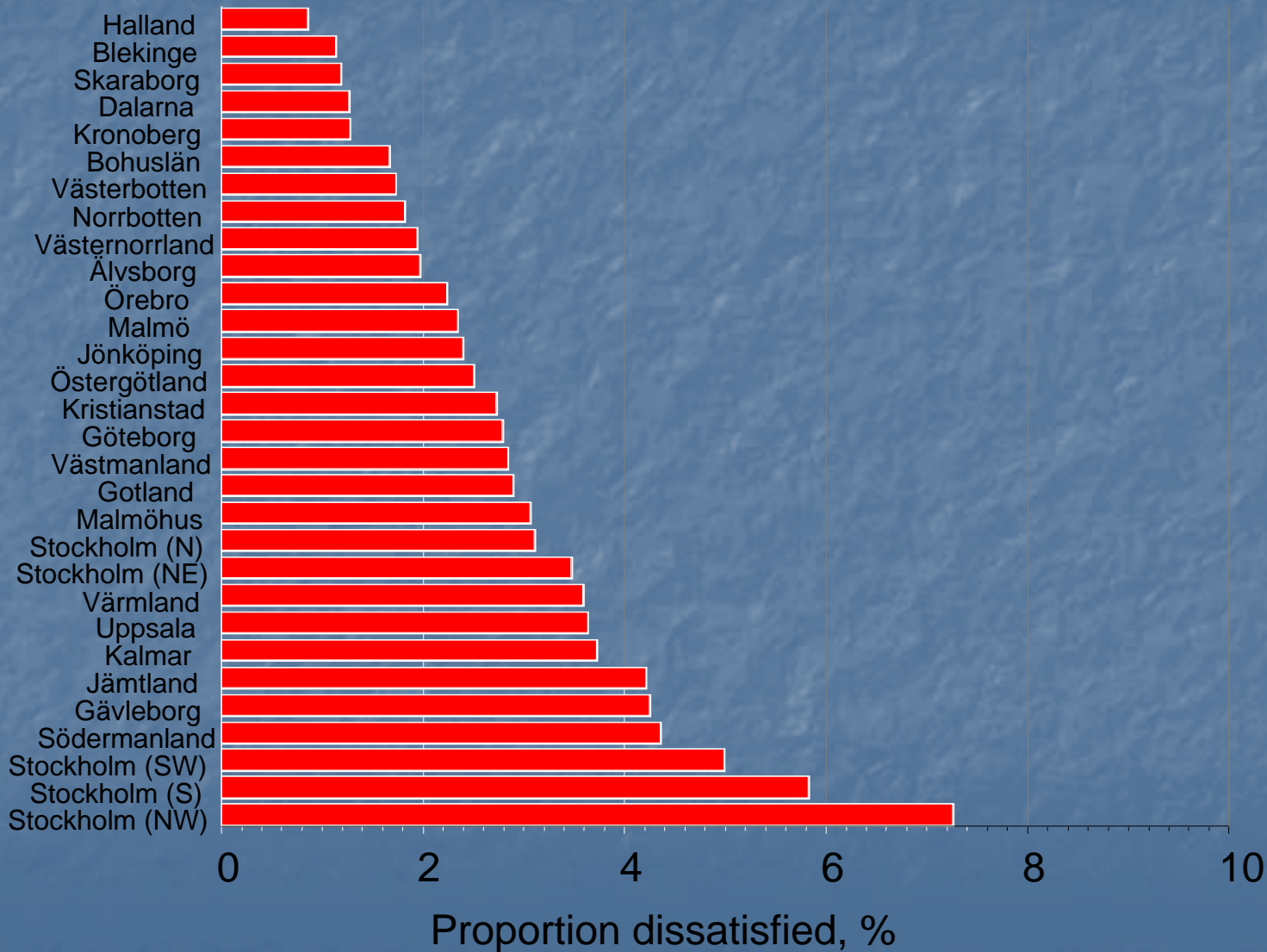
After age adjustment, no differences in ...

- admission to a stroke unit
- thrombolysis
- anticoagulation after embolic stroke
- other antithrombotic secondary prevention
- antihypertensives

More men than women treated with statins after stroke

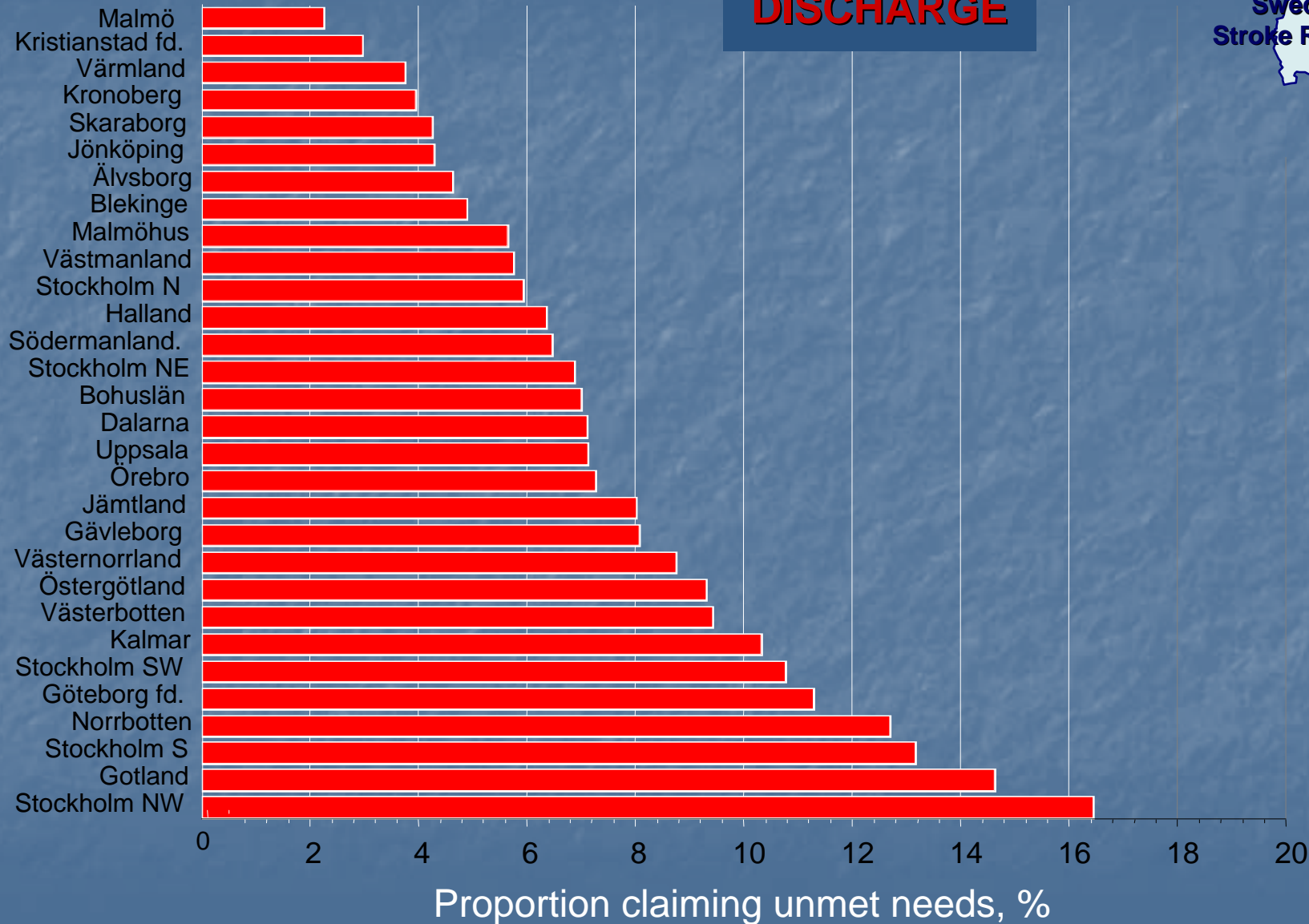
Patient-oriented?

DISSATISFIED WITH ACUTE CARE BY COUNTY



Patient-oriented?

UNMET NEEDS OF COMMUNITY SUPPORT AFTER DISCHARGE



Cost-effective?

OPTIMAL USE OF RESOURCES



Preliminary analyses only.

Pilot cost estimates based on 6,824 patients in Riks-Stroke.

| | |
|--|---------------------------------|
| Initial hospitalisation | € 6,920 (range € 222-84,478) |
| Later direct costs | € 54,950 |
| Indirect costs (premature death, early retirement) | € 14,810 |
| Total costs | € 76,680 |

KEY QUALITY INDICATORS ON OUTCOME



- Survival
- Primary ADL functions at 3 months
- Institutionalisation at 3 months
- Support from family members and social services
- Low mood
- Smoking cessation
- Self-assessed general health
- Quality of life (EQ-5)

OPPORTUNITIES TO EXPAND THE USE OF RIKS-STROKE DATA



Linkage to other registers by personal identification numbers:

- cause-of-death
- hospital admissions (partly also out-patient care)
- prescribed drugs
- socioeconomic
- demography/geneology

**EXAMPLE OF LINKAGE TO NATIONAL REGISTER ON
PRESCRIBED DRUGS:
PROPORTION RETAINED ON SECONDARY PREVENTION
n=11,077**

