



Brief summary of data collected 2011

*Tables and figures are presented after the initial summary.
A full description is available in Swedish at the Riks-Stroke website
www.riks-stroke.org*

Number of recordings, coverage and proportion followed up at 3 months after stroke

- During 2011, 25 108 **stroke events** were recorded in Riks-Stroke. Since the start in 1994, Riks-Stroke has included more than 350 000 stroke patients (figure 1)
- **Coverage** (proportion recorded in Riks-Stroke out of all in-hospital patients with a diagnosis of acute stroke) is calculated at 90.5 %, based on comparisons with the routine hospital discharge register. Validations show considerable over diagnosis of acute stroke in routine clinical practice. Allowing for this, the Riks-Stroke coverage is 96.5 %.
- 88 % of patients recorded in Riks-Stroke during the acute phase, 88 % were **followed up 3 months after onset of stroke**, the same level as in preceding years.

Type of stroke care and length of hospital stay

- The proportion of acute stroke patients **treated in stroke units** is still increasing (89 % during 2011, figure 2). The between-hospital variations are being markedly reduced. However, in many hospitals stroke patients are treated in observation units or general admission units during the critical first day (figure 3).
- **Median length of stay** in the acute care hospital was 12 days and median total length of hospital stay (including rehabilitation) was 15 days, to be compared with 18 days 10 years ago). Large between-hospital variations remain.

Acute thrombolysis

- In the primary target group (ischemic stroke, ≤ 80 years) the proportion **treated with thrombolysis** continues to increase, although modestly so. In comparison with other countries, the proportion treated is reasonably high in Sweden (10.3 % in 2011) (figure 4).
- The number of patients treated in the **age group >80 years** increases rapidly (figure 5).
- **Large variations** between counties and between hospitals indicate that thrombolysis is underused in many hospitals. In 8 hospitals, the proportion treated is now above 15 %.
- The increased proportion receiving thrombolysis has been achieved without an increased occurrence of **intracranial bleeding** with clinical worsening.
- The proportion of stroke patients **arriving in hospital early** after onset of symptoms increases (figure 6), as does the proportion of **prenotifications**, i.e. early assessment by ambulance staff if the patient is a potential candidate for thrombolysis or not (figure 7). These two factors may have contributed to higher rates of thrombolysis.
- Many hospitals have markedly reduced the time from arrival in hospital to onset of treatment (**door-to-needle time**). In many other hospitals, long delay times remain; it is evident they have a good deal to learn when it comes to the logistics of thrombolysis treatment.

Other acute treatments

- **Thrombectomy** (mechanical removal of a clot in arteries in the brain using a catheter) has been introduced in a larger scale in three hospitals: Karolinska University Hospital Solna, Skåne University Hospital Lund and Sahlgrenska University Hospital Gothenburg.
- **Hemicraniectomy** (neurosurgical treatment of very large, directly life-threatening brain infarcts) is established in all regions of the country (with modest regional variations in how often this treatment is applied). Fewer of hemicraniectomies were performed in 2011 than in 2010.

Secondary prevention

- Nearly half (45 %) of stroke patients who were **smoking** before onset of stroke had quit at 3 months after stroke. The proportion of **quitters** varied largely between hospitals (figure 8).
- The proportion of patients discharged from hospital with any form of **antithrombotic medication** (antiplatelet agents or anticoagulants) was high (92 %). There were no large variations between hospitals in total use of antithrombotic drugs.

- In patients with embolic stroke (combination of atrial fibrillation and brain infarct), secondary prevention with oral **anticoagulants** continues to increase (figure 9). The rate of increase has been particularly high during 2011, probably because new anticoagulants have been introduced. In ages below 80 years, the proportion was 64 % in 2011. Clinical practice still varies largely between hospitals.
- The proportion discharged from hospital with **antihypertensive drugs** has remained at a high level and there were only small variations between hospitals.
- The use of **statins** in patients with ischemic stroke has continued to rise, although at a slower pace than previously. There are still large between-hospital variations. In addition, there is a sex difference, with statins being prescribed more often in men than in women.
- Taken together, the use of **evidence-based secondary prevention methods** has continued to increase. For some of the methods, the use is now close to optimal at the national level (figure 10).

Patient-reported information on care and support

- The proportion of patients who were **discontent with the care they had received in the acute hospital** was low (4.5 % for the country) (figure 11). There were significant differences between counties and between hospitals.
- The proportion of patients who were **discontent with the rehabilitation they had received** after discharge from hospital was 8.9 % (nationwide), unchanged compared with previous years. Also here, there were relatively large between-county and between-hospital variations.
- Of all patients reporting that they have received rehabilitation after discharge from hospital, 15 % had had it in their homes (a form of **early supported discharge**) (figure 12). This proportion varied grossly across the country.
- There were large variations between counties in the proportion of patients with speech problems who reported that they had got any form of assessment or treatment by a **speech therapist**.
- As a crude measure of the level of ambition regarding follow-up after stroke, Riks-Stroke uses the proportion of patient who at 3 months follow-up report that they had got a **follow-up visit at a physician or registered nurse**. On average, 67 % had visited a physician and 48 % a nurse (most often both). There were several hospitals where >25 % had not had any follow-up visit (at a hospital out-patient unit or in primary health care).
- 63 % of the patients reported that they had got sufficient **support from health care and/or from the community's social services**, a higher proportion than previously.
- Half of the patients living at home reported that they partly or entirely were dependent on support from **help/support from next-of-kins** 3 months after stroke (unchanged from previous years). Also patients in institutional care reported a high level of dependency on next-of-kins (figure 13).

Patient-reported outcomes 3 months after stroke

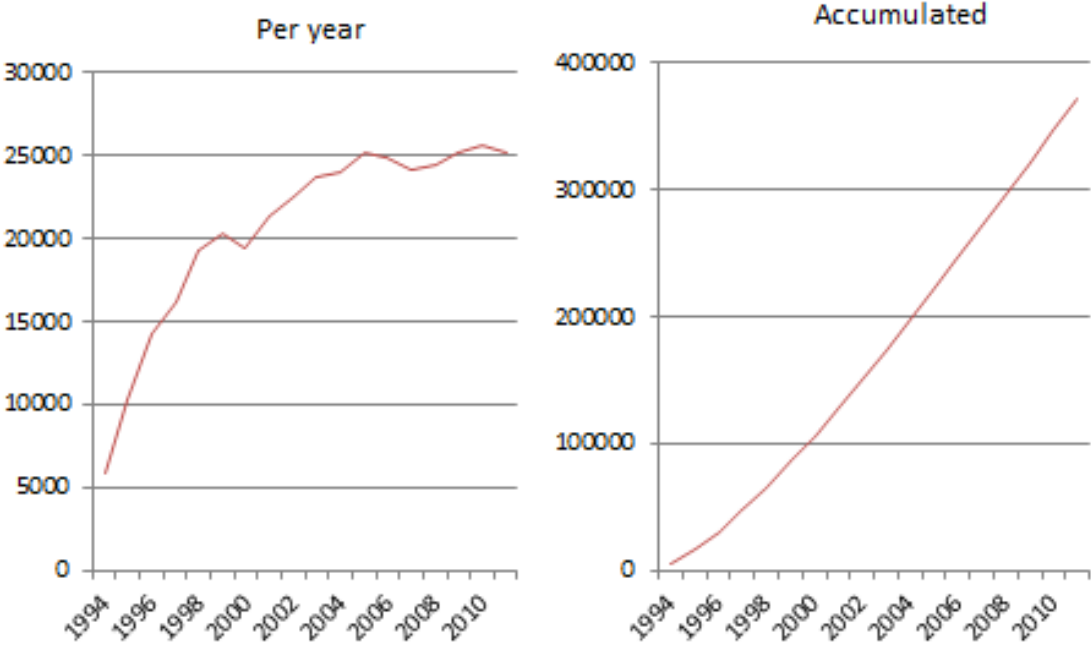
- The proportion of patients who were dependent on others for their **personal (primary) ADL** 3 months after onset of stroke has been declining slowly during the last 10-year period (figure 14), corresponding to approximately 500 fewer ADL-dependent persons in 2011 compared with 2002. Even after case-mix adjustments, a 19 percentage point difference between hospitals with low and high proportion of ADL-dependent patients.
- The proportion of stroke patients **living at home** 3 months after stroke continues to increase at a slow pace.
- 78 % reported that their **general health** to be good or very good, unchanged compared with 2009 and 2010. The between-hospital variations were very small.
- At 3 months after stroke, 14 % reported that they often or always felt **depressed**, unchanged compared to previous years. The proportions were particularly high in the biggest cities.

Survival

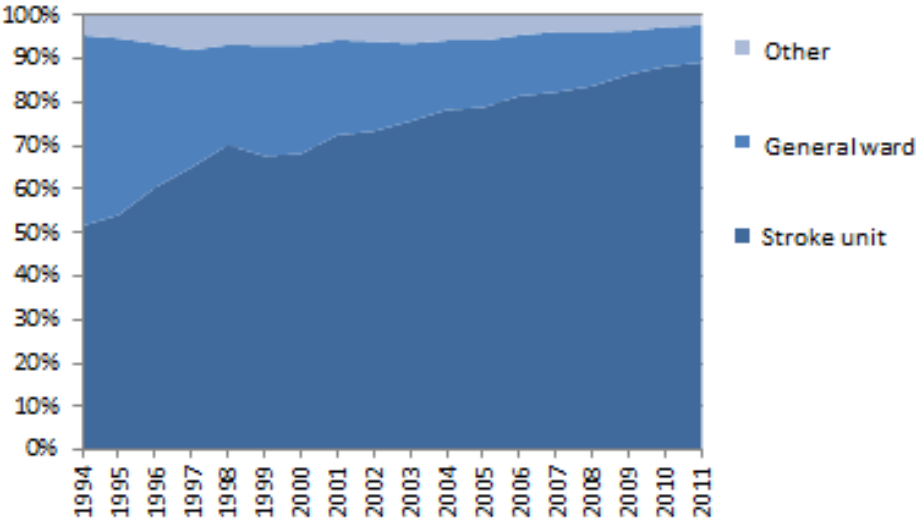
- The proportion dead 3 months after stroke was 19.9 %. Even after case-mix adjustments (sex, age, stroke severity at onset) there were a number of statistically significant differences in survival between hospitals.

Figures

Figur 1. Number of stroke events in Riks-Stroke

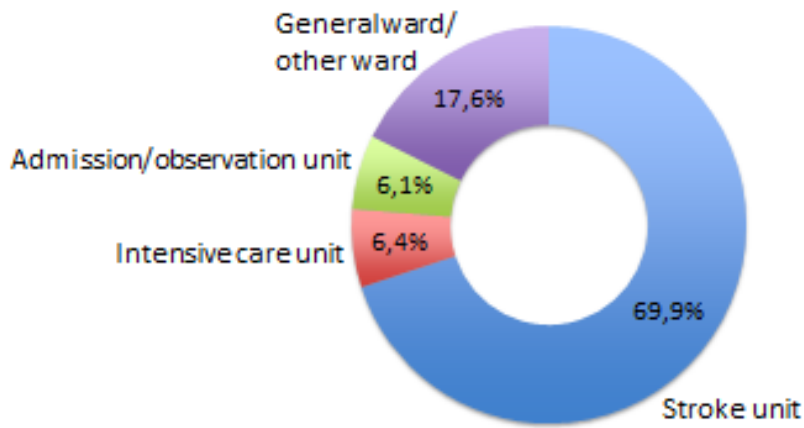


Figur 2. Type of care during the acute phase of stroke

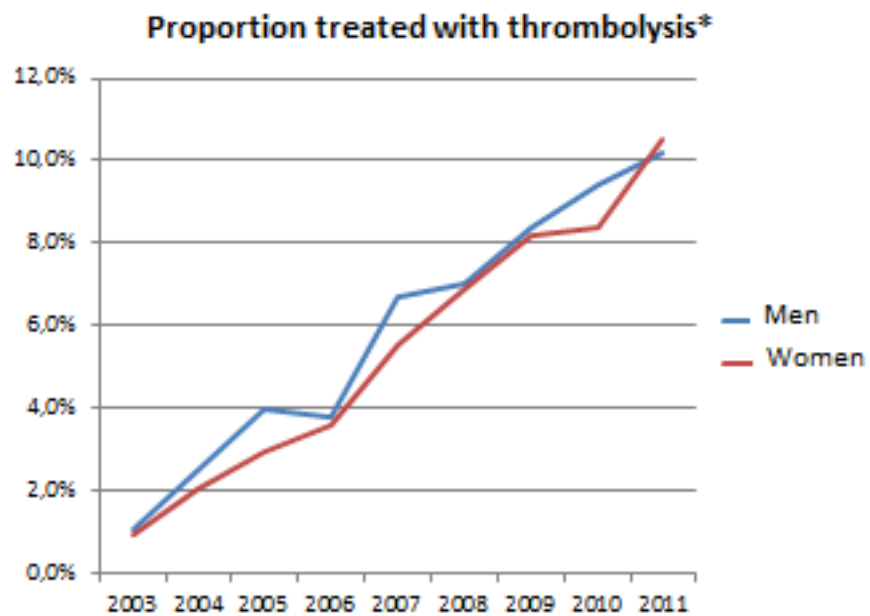


Figur 3.

Type of care immediately after admission to hospital

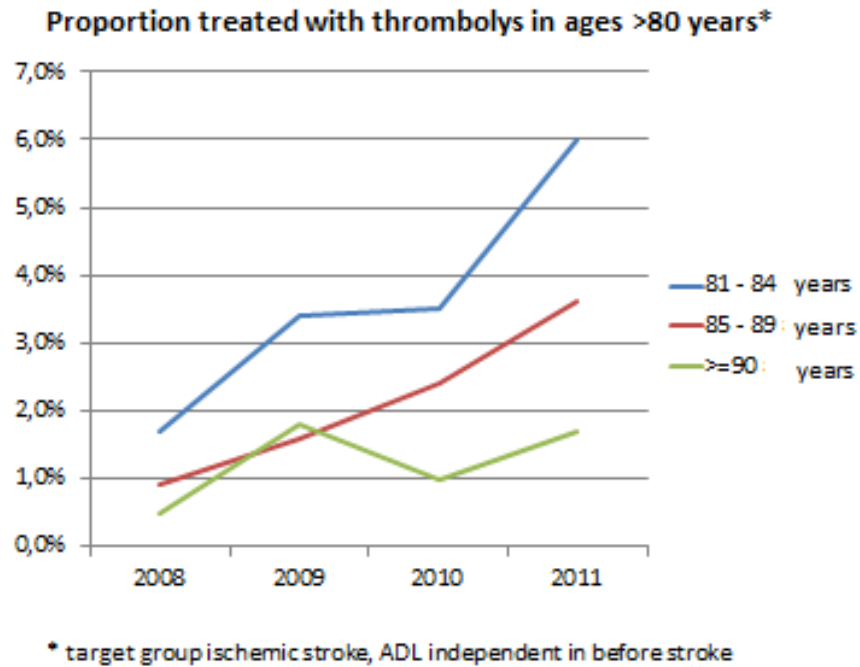


Figur 4.

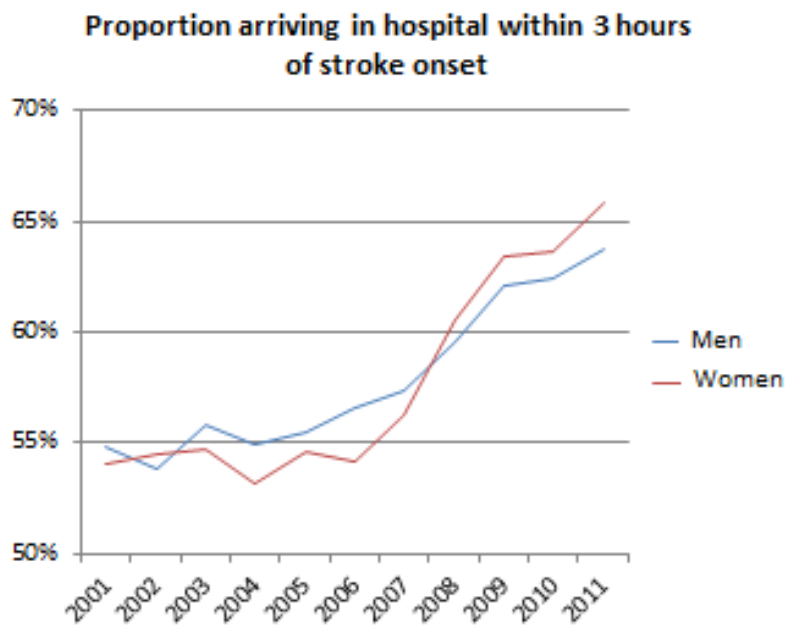


* target group ischemic stroke ≤ 80 years, ADL independent before stroke

Figur 5.

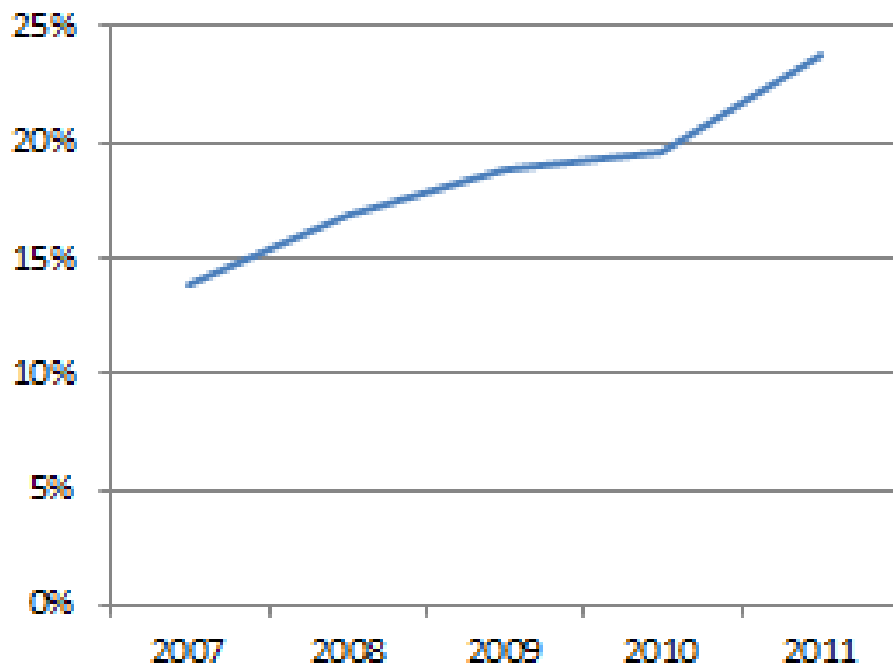


Figur 6.



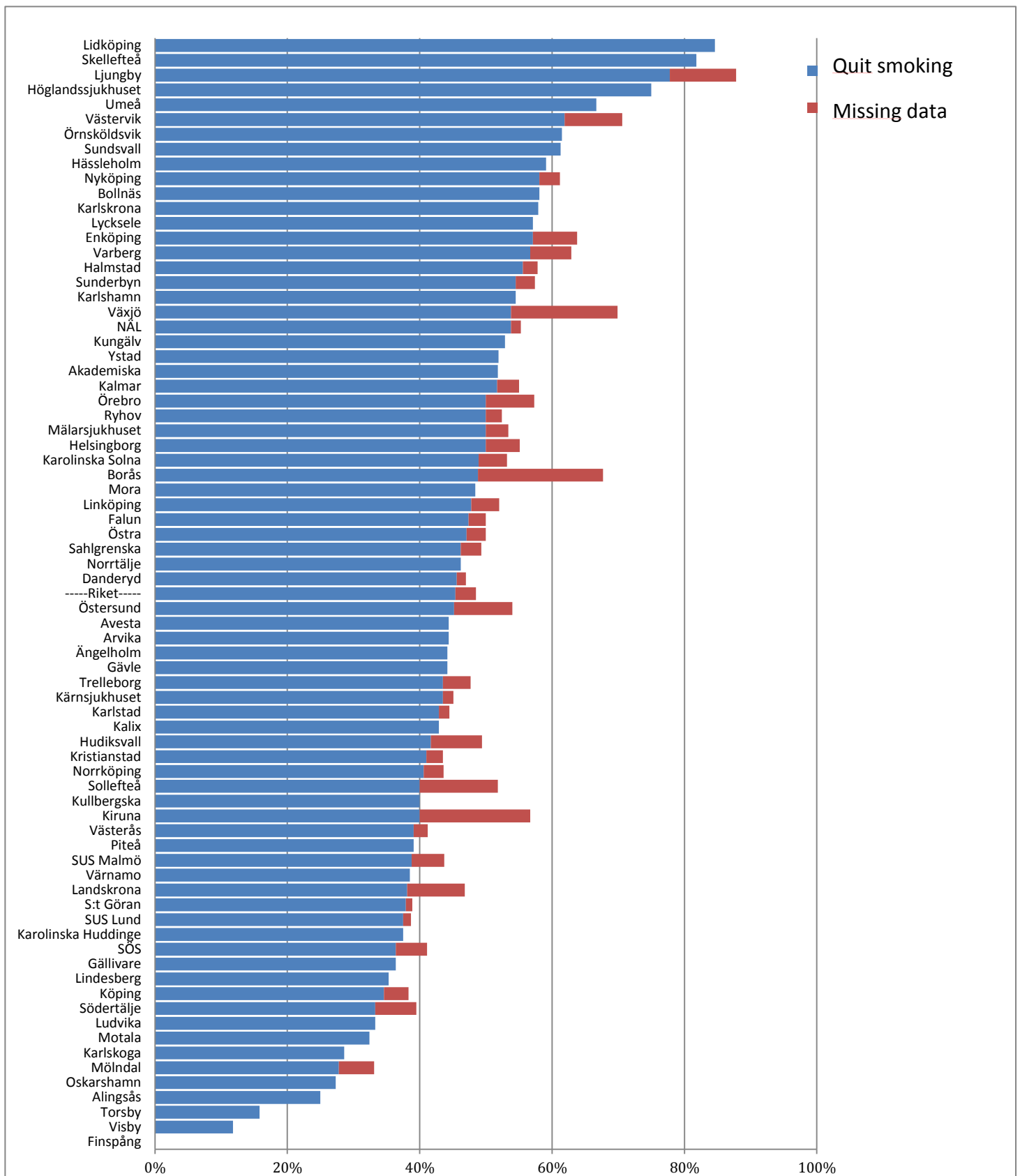
Figur 7

**Proportion of prenotifications,
% of all patients admitted to hospital**

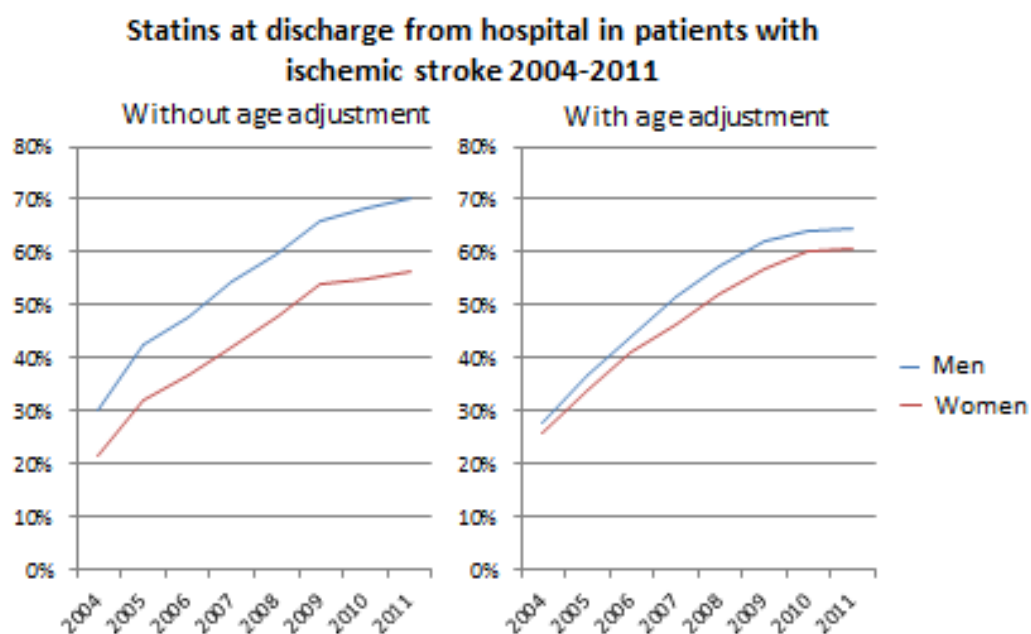


Figur 8.

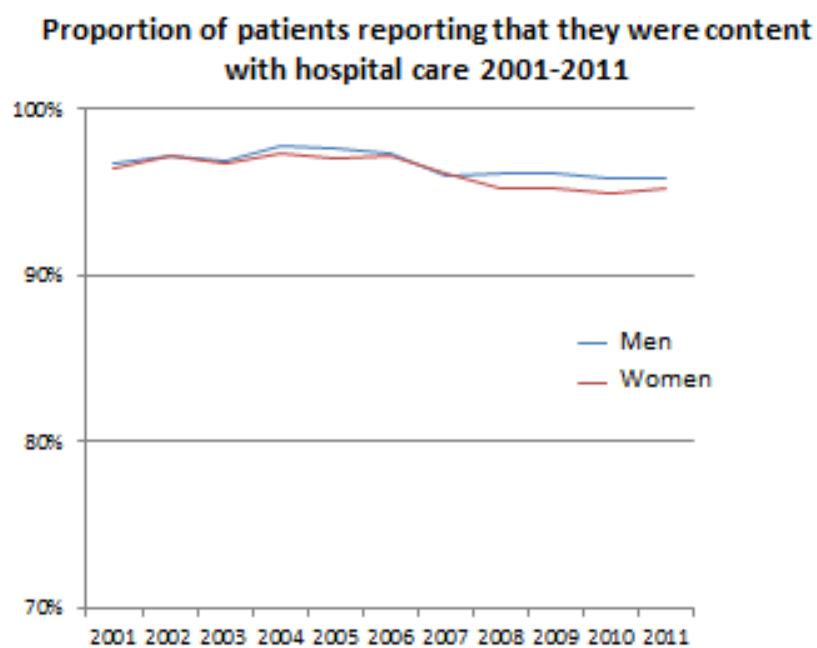
Smoking cessation 3 months after stroke*



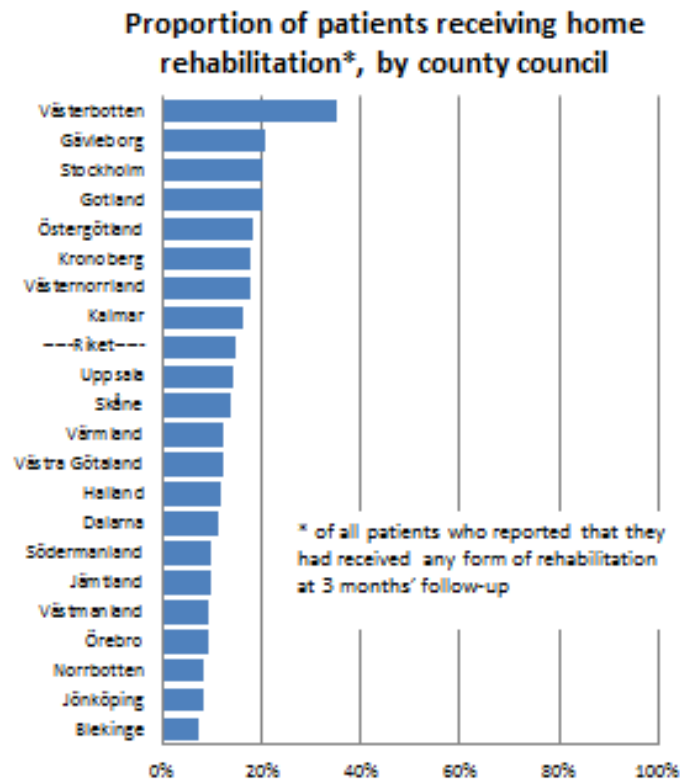
Figur 10.



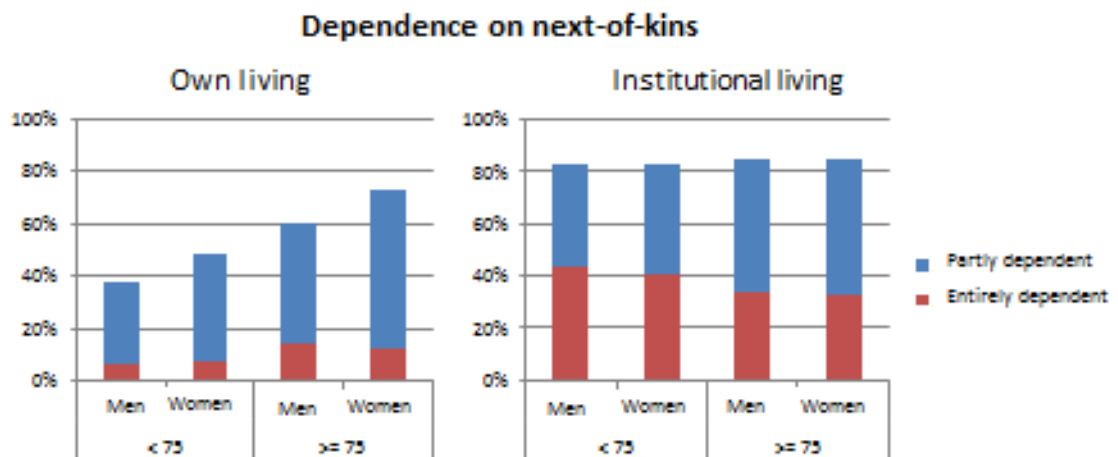
Figur 11.



Figur 12.



Figur 13.



Figur 14.

**Proportion dependent on others in dressing and toileting 1999-2011,
by age and sex**

