

# Country report Sweden – April 2014



Report by Ass. **Prof. Anna Kiessling**, National CVD Prevention Coordinator for Sweden, *et al.*  
Prepared for the EACPR "Country of the Month" initiative  
Contact: [email](#)

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Health care | Risk factors | Prevention methods | Prevention activities | Cardiac rehabilitation | Future

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## I. Structure of Health care in Sweden

### Structure

Everyone in Sweden has equal access to healthcare services under a decentralised, taxpayer-funded system. The central government establishes principles and guidelines. The county councils promote and provide good-quality health care for the entire population. The municipalities provide care for the elderly, for people with physical disabilities or psychological disorders as well as for school health care.

County councils are political bodies. It has been increasingly common to buy services from private health care providers – 12 % of health care is financed by county councils but carried out by private care providers.

Quality care registers are increasingly used to follow the adherence to guidelines and for national comparisons, in some cases even with financial incentives aiming to support increased adherence to guidelines. A common directive is that relevant basal investigations should be performed and evaluated in primary care before patients are referred to secondary care. However, emergency care is provided freely and accessible without a referral requirement. Prevention of diseases, especially cardiovascular diseases, diabetes and cancer have over the years been an increasing priority on a governmental level.

In 2008, Sweden had 3.7 practising physicians per 1000 inhabitants, compared to EU average of 3.3. Also, the number of 10.8 practising nurses per 1000 inhabitants was above the EU average of 7.9. In 2008, there were about 35 000 registered physicians (non-retired) and 115 000 registered nurses (non-retired) in Sweden working in the county council, municipal and private sectors. About 70% of all physicians have a licensed speciality degree. Almost a quarter of these are specialists in family medicine, a low proportion compared to most other countries. Of the non-retired specialists, 783 were cardiologists in 2011 resulting in 7.5 practicing specialists in cardiology per 100 000 inhabitants.

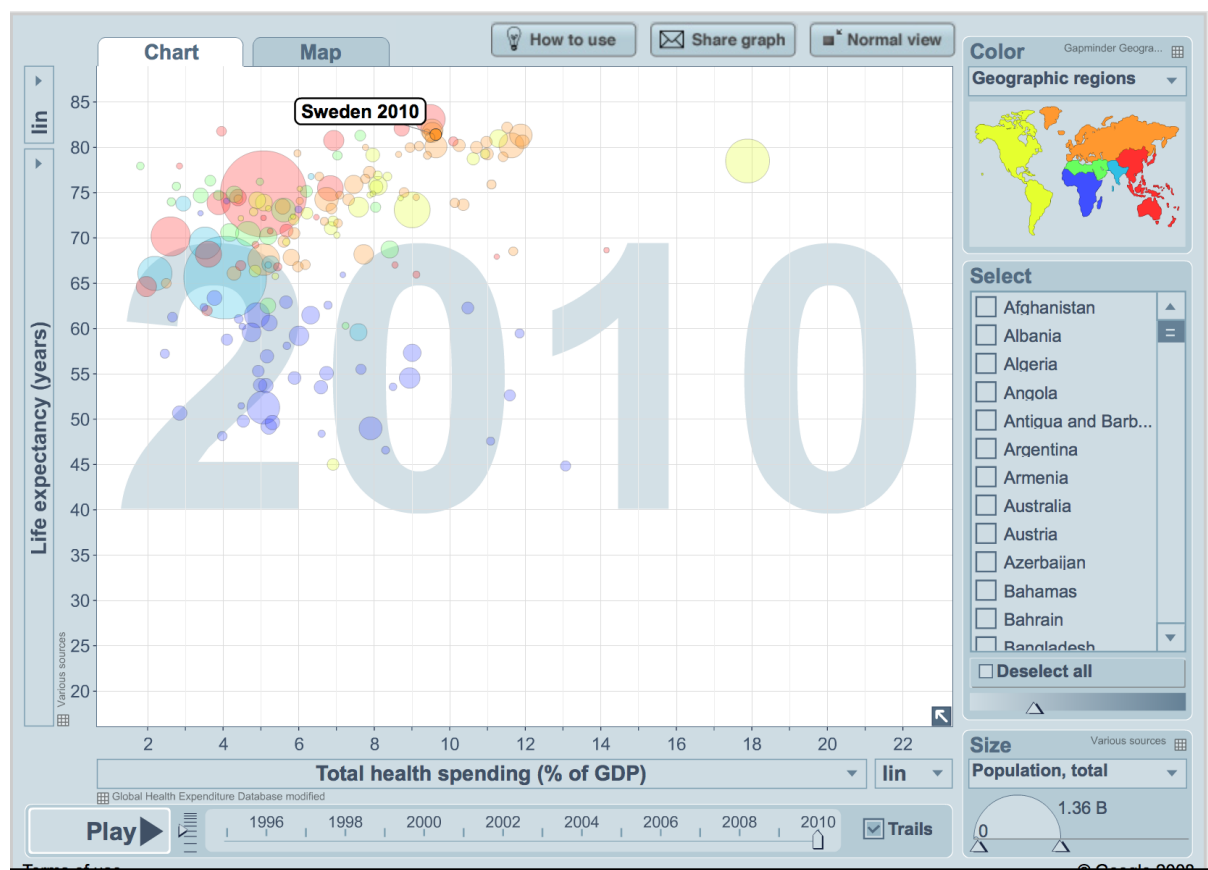
The formal requirements to be a licensed specialist in family medicine in Sweden are equal in length and competence level to the requirements for any specialties in

secondary care. However, the Swedish system still lacks formal requirements to support continuous medical education (CME) for physicians.

## Finances

Costs for health and medical care represent about 10 % of Sweden's gross domestic product (GDP), which is on par with most other European countries. County and municipal taxes cover most health care costs including cardiovascular secondary prevention and cardiac rehabilitation.

The patient fee for a doctor's appointment or other care represents only a small fraction of the actual costs. It is largely up to the counties and municipalities to set the patient fees. However, these are quite similar in various counties. If a patient needs a lot of health care, there is a ceiling that is referred to as high-cost protection. This ensures that you will not pay more than around SEK 1,100 over a period of twelve months. Patients reaching the ceiling receive a free pass valid for the remainder of the 12-month period. Patient cost for medication follows a similar system as for health care costs with a separate high-cost protection.

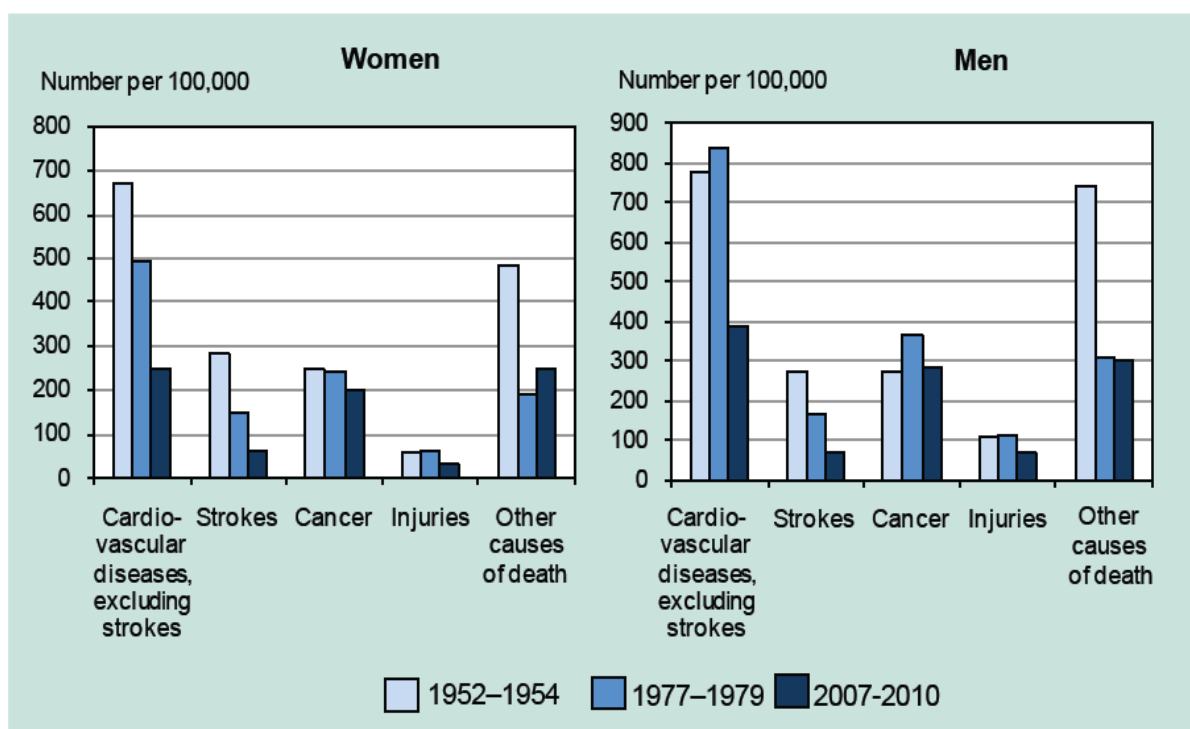


**Figure1.** A world comparison of life expectancy by total health spending (% of GDP) with the Swedish figures marked. A playable version is available at: [www.bit.ly/1f09Jiq](http://www.bit.ly/1f09Jiq)  
The figure is produced by free material from [www.gapminder.org](http://www.gapminder.org)

## II. Risk factor statistics

### CVD Mortality

People in Sweden are living increasingly longer, in part due to decreasing mortality rates from cardiovascular diseases. The average life span is among the highest in the world, 83.5 years for women and 79.5 years for men. Sweden has proportionally one of Europe's largest elderly populations. However, the number of children born in Sweden has been increasing since the late 1990s.



**Figure 4. Mortality by cause of death in the 1950s, 1970s, and 2000s.**

Number of deaths per 100,000 by cause of death, averages for 1952-1954, 1977-1979, and 2007-2010. Women and men in all age groups. Standardised by age.

Source: Cause of Death Register, Swedish National Board of Health and Welfare.

Read more in: *Health in Sweden: The National Public Health Report 2012* can be downloaded here: [http://sjp.sagepub.com/content/40/9\\_suppl.toc](http://sjp.sagepub.com/content/40/9_suppl.toc)

Cardiovascular disease is the most common cause of death and among the most frequent sources of disability in Sweden. Acute myocardial infarction, of which there were more than 32 000 cases in 2010, is the cardiovascular disease that leads to most deaths. Mortality rates have declined substantially (around 50%) over the last 15 years. More than half of the decrease between 1986 and 2002 was attributable to reductions of major risk factors, mainly a large decrease in total serum cholesterol (1). Early revascularisation and more modern and effective secondary prevention are also important factors.

Reference:

(1) Björk L. et al, European Heart J 2009

<http://eurheartj.oxfordjournals.org/content/30/9/1046.full.pdf+html>

### **Percutaneous coronary intervention (PCI) resources**

23 PCI centres in Sweden performed between 1000 and 1500 coronary angiographies in 2011. Three centres are from an international perspective high volume centres with over 2000 angiographies in 2011.

### **Main CVD risk factors**

The most recent national risk factor survey in English is the National Public Health Report chapter 7 for overweight, cardiovascular disease and diabetes:

[http://sjp.sagepub.com/content/40/9\\_suppl/135.full.pdf+html](http://sjp.sagepub.com/content/40/9_suppl/135.full.pdf+html)

And for eating habits and physical activity:

[http://sjp.sagepub.com/content/40/9\\_suppl/164.full.pdf+html](http://sjp.sagepub.com/content/40/9_suppl/164.full.pdf+html)

For comparisons with other countries see the WHO statistics from 2008 available at:

<http://apps.who.int/gho/data>

All data below (crude estimates among adults) come from the WHO data from 2008. Smoking, obesity and blood lipid levels have decreased between 2008 and 2012 in the Swedish population.

| <b>Risk factor</b>                      | <b>Prevalence among adults</b> | <b>Trend over time</b> |
|---|--------------------------------|------------------------|
| <b>Smoking</b>                          | 22 %                           | Decreasing             |
| <b>Physical inactivity</b>              | 47 %                           | Decreasing             |
| <b>Adiposity</b>                        | 18 %                           | Increasing             |
| <b>Blood lipids (total cholesterol)</b> | 5 mmol/l (mean)                | Decreasing             |
| <b>Hypertension</b>                     | 46 %                           | Decreasing             |
| <b>Diabetes mellitus</b>                | 9 %                            | Increasing             |
| <b>Alcohol</b>                          | 7-10 litres/adult >15 years    | Increasing             |

Physical inactivity: less than 30 minutes 5 times a week, moderate intensity, or 20 minutes 3 times a week, vigorous intensity

Hypertension: systolic BP  $\geq$  140 or diastolic BP  $\geq$  90 or on medication

Diabetes mellitus: fasting blood glucose > 7.0 mmol/L or on medication

Source: WHO statistics (2008): <http://apps.who.int/gho/data>

### **Smoking**

More than 6000 people in Sweden die each year as a result of their own or passive smoking. The societal costs for sick-leave and premature death due to smoking is huge. The number of daily smokers has decreased during the past 30 years, more prominently among men than among women. The proportion of daily smokers among men in Sweden is lower than in any other European country. The reduction in the number of daily smokers has been achieved partly by the adoption of non-smoking campaigns and tax increases on tobacco. Another reason is that many ex-smokers have turned to smokeless tobacco (oral snuff).

### **Physical activity**

The proportion of Swedes engaged in intense physical activity increases independently of educational level over time from 1990 to 2012. However the proportion of people with a sedentary life style is stable over time (12 % among men with higher education and 25 % among men with low educational level; 10-15 % among women with small difference between different education levels). Forty-six % of the male population and 48 % of the female population was attaining less than 5 times 30 minutes of moderate activity per week, or less than 3 times 20 minutes of vigorous activity per week, or equivalent.

### **Adiposity**

The prevalence of adiposity is increasing in Sweden. The mean BMI in the adult population was 26 kg/m<sup>2</sup>. 19.9 % of the men and 17.3 % of the women were obese (BMI>30). Overweight (BMI>25) figures were 60 % of the men and 47 % of the women.

### **Blood lipids**

The mean cholesterol is decreasing in the Swedish population. In 2009 mean total cholesterol in the age groups 25+, were 5.1 mmol/l [4.6-5.6] among males and 4.9 mmol/l [4.4-5.4] among females.

### **Blood pressure**

Blood pressure decreases on a population level. The percent with hypertension were among men were 49 % and among women 43 % (systolic blood pressure  $\geq$  140 OR diastolic blood pressure  $\geq$  90 OR on medication) in 2008.

### **Diabetes mellitus**

Ten % of Swedish men and 8 % of the women have raised fasting blood glucose > 7.0 mmol/L or were on diabetes medication.

### **Alcohol**

The consumption of alcohol has increased since the 1990s. In spite of the increase, alcohol consumption in Sweden is among the lowest in Europe. In younger age groups consumption is, however, in line with other countries in the EU.

Reference:

WHO statistics (2008): <http://apps.who.int/gho/data>

### III. Main actors and Prevention methods

#### Who delivers?

##### Public health level

- **The National Board of Health and Welfare** plays a fundamental role as the central government's expert and supervisory authority. [socialstyrelsen.se](http://socialstyrelsen.se)
- **The Swedish Association of Local Authorities and Regions** represents the government, professional and employer-related interests of Sweden's 290 municipalities, 20 county councils and four regions. [skl.se](http://skl.se)
- **The Swedish Council on Health Technology Assessment** identifies the best treatment methods and the effective use of resources. [sbu.se](http://sbu.se)
- **The Public Health Agency of Sweden** work to secure preconditions for health on equal terms by monitoring the development of public health, effects of public health interventions and to promote health and prevent diseases. <http://folkhalsomyndigheten.se>

##### Cardiology care and prevention

- Main official actors:
  - **The Swedish Society of Cardiology.** The association unites Swedish cardiologists, cardiology interested physicians and scientists, medical students and representatives of cardiology related activities. It unites cardiologists in the Swedish Society of Medicine respectively in the Swedish Medical Association.
  - **The Heart and Lung Foundation** is a charitable fundraising organisation that raises funds and distributes money to heart, lung and vascular research, and provides information about heart-lung disease.
  - **The Swedish Heart and Lung Association** is a non-governmental organisation that unites people with heart and lung diseases and works to improve living conditions for people with heart and lung diseases.
- Main care givers:

The main actors in long-term cardiovascular prevention are general practitioners and district nurses. Citizens have easy access to primary health care centres. However, there is a shortage of general practitioners resulting in regional quality variations. Patients can consult internists and cardiologists only by referral from primary care. However, emergency care is accessible without referral. The number of nurses, physiotherapists and dieticians specialised in cardiovascular prevention is limited. The practising cardiologists mostly play a role in the acute cardiac care and the short-term follow-up and in the evaluation of patients with secondary prevention problems referred from primary care. Awareness, knowledge and compliance to guidelines among practicing cardiologists is good and especially in secondary prevention on an individual patient level.

#### Where?

Preventive management can be accomplished in primary care settings, hospitals and private clinics. Nurse-based programmes are common emanating from the hospital based cardiac clinics. There are some special rehab centres but most of the structured secondary prevention and rehabilitation are performed at centres run by the cardiac or internist clinics at the hospitals.

## Guidance

The Swedish Society of Cardiology generally endorses the ESC guidelines. The Swedish National Board of Health and Welfare elaborates, launch and update National Guidelines on a regular basis in several disease areas. These guidelines also contains a priority list for specific disease conditions e.g. in cardiology, and are a support for decision makers concerning the allocation of resources. The goal of these guidelines is to contribute to achieving a high standard of care based on clinical evidence and health economy analyses. The latest National Guidelines for Cardiac Care was launched in 2008 and are presently under total revision. The Swedish Society of Cardiology recurrently arranges and supports meetings aiming to promote, educate and discuss "Cardiac State of the Art" based on these guidelines. They are also fundamental in the residency training of future cardiologists.

## Quality control

The **SEPHIA registry** (SEcondary Prevention after Hear Intensive care Admission), forming a part of the SWEDEHEART-registry, provides information on secondary prevention results of unselected consecutive patients below the age of 75, discharged alive after an acute myocardial infarction

<http://www.ucr.uu.se/swedeheart/index.php/annual-reports>.

Further the National Board of Health and Welfare provides quality results from all hospitals and regions in Sweden on a yearly basis. "*Quality and Efficiency in Swedish Health Care - Regional Comparisons*":

<http://www.socialstyrelsen.se/publikationer2013/2013-5-7>

## IV. Main Prevention activities

### Campaigns

The Swedish National Board of Health and Welfare's **National Guidelines for Methods of Preventing Disease** presented in 2011, provide recommendations for methods of preventing disease by supporting patients in their efforts to change an unhealthy lifestyle habit.

The lifestyle habits included are: tobacco use; hazardous use of alcohol; insufficient physical activity; unhealthy eating habits. The aim of the guidelines is to present methods for the prevention of disease that could be used in the entire Swedish healthcare system, not only in cardiac care. Further, to facilitate uniform clinical practice, and reduce regional variations, as well as differences between hospitals and clinics in Sweden.

The Swedish National Board of Health and Welfare run, 2012 to 2014, a national project called the Lifestyle project aimed to implement the guidelines. The Swedish Cardiac Society is deeply engaged in this project, though use of these counselling methods of preventing disease on a regular basis is in need of improvement in the Swedish cardiac care. English summary of the guidelines is provided here:

<http://www.socialstyrelsen.se/nationalguidelines/nationalguidelinesformethodsofpreventingdisease>

### Recommendations in the guidelines:

**Table 1.** Three levels of methods for preventing disease.

| Level                       | Description  | Amount of time  | Lifestyle habit   |
|-----------------------------|--|---|---|
| <b>Brief advice</b>         | <ul style="list-style-type: none"><li>• Information, short advice and recommendations about lifestyle habits (not the same thing as asking questions about lifestyle habits).</li><li>• Possible addition of written information.</li></ul>                                  | Usually less than 5 minutes.                          |   |
| <b>Counselling</b>          | <ul style="list-style-type: none"><li>• Dialogue between healthcare professional and patient.</li><li>• Adaptation to the specific person's age, health, risk levels, etc.</li><li>• Possible addition of various tools and devices, as well as special follow-up.</li></ul> | Usually 10–15 minutes, occasionally up to 30 minutes. | <ul style="list-style-type: none"><li>• Hazardous use of alcohol</li><li>• Insufficient physical activity</li></ul> |
| <b>Advanced Counselling</b> | <ul style="list-style-type: none"><li>• Dialogue between healthcare professional and patient.</li><li>• Adaptation to the specific person's age, health, risk levels, etc.</li><li>• Possible addition of various tools and devices, as well as</li></ul>                    | Often longer than counselling                         | <ul style="list-style-type: none"><li>• Smoking</li><li>• Unhealthy eating habits</li></ul>                         |

|  |  |  |  |
|--|--|--|--|
|  | special follow-up.<br>• Ordinarily theory-based or structured, such as<br>• Social learning theory/Social cognitive theory<br>• Health belief model<br>• Theory of planned behaviour<br>• Stages of change/Trans-theoretical model<br>• Motivational interviewing (MI)<br>• Cognitive behavioural therapy (CBT)<br>• Method with components from more than one theory.<br>• Healthcare professionals with training in the method used. |  |  |
|--|--|--|--|

Source: <http://www.socialstyrelsen.se/nationalguidelines/nationalguidelinesformethodsofpreventingdisease>

### **Smoking**

Smoking refers to daily smoking, regardless of the number of cigarettes. Occasional smoking is also included for people who are pregnant, breastfeeding or facing surgery.

### **Hazardous use of alcohol**

Hazardous use of alcohol refers either to high average consumption or binge drinking at least once a month. High average consumption exceeds 14 standard glasses per week for men and 9 standard glasses for women. Binge drinking is defined as five or more standard glasses on the same occasion for men and four or more standard glasses for women. A standard glass corresponds to 33 cl of beer, 12–15 cl of wine or less than 4 cl of liquor.

### **Insufficient physical activity**

Insufficient physical activity refers to less than 150 minutes on moderate intensity per week, or less than 75 minutes on high intensity per week.

### **Unhealthy eating habits**

Unhealthy eating habits refer to patients who score low on a dietary index that the Swedish National Board of Health and Welfare developed during its work on the guidelines. The index is based on consumption of fruit, vegetables, fish and low nutrition food (such as sweets, chips, buns and cakes, and soft drinks).

Other campaigns to be mentioned are:

- The Heart and Lung Foundation have launched two projects aiming to decrease sudden cardiac deaths in Sweden:
  - "To heart secure Sweden" aiming to place defibrillators in public places, workplaces, shopping malls etc.
  - "Life saving by short messages". Individuals trained in cardiac resuscitation apply to get a short message to their mobile if they are nearby a person afflicted by a cardiac arrest.

- The “1.6 million Club” was founded in 1998. At that time there were 1.6 million women over 45 years old in Sweden. It is a non-profit organisation aiming to increase awareness concerning women’s health and lifestyle issues and to lobby for equal, gender-based medical research. The organization is spread to other countries and has an International network. [www.1.6miljonerklubben.se](http://www.1.6miljonerklubben.se) (in Swedish only)

## Projects

**Healthy eating habits** are discussed widely in Sweden and both evidence based and more populist guidance on different diets are available.

- The National Food Agency (Livsmedelsverket) provides guidance both on a public health level and for healthcare professionals. [www.slv.se](http://www.slv.se)
- The Nordic Nutrition Recommendations provide regular updates on the latest recommendations on healthy food habits: [www.norden.org](http://www.norden.org)
- The National Board of Health and Welfare is this year going to launch a web-based education programme for healthcare professionals on facts on healthy eating habits and on how to support patients to change their habits.
- The Health Course (Sundkurs) is a web course focused on prevention. There are one part for public and one for healthcare professionals [www.sundkurs.se](http://www.sundkurs.se) (Swedish only)
- Physical activity on prescription (PAP) is another successful project (read more in section V)

## Education

All undergraduate programmes leading to a healthcare profession at the university level have intended learning outcomes at graduation level including competence in prevention. Here exemplified by the Medical programme: “For a medical degree, the student should demonstrate the ability to initiate and implement health promotion and prevention within healthcare for both individuals and groups of patients”.

At a residency level there are also compulsory goals on preventive and health promoting competences at both individual patient and group level for all specialities including in cardiology.

Continuous professional education is not formalised in Sweden. However the Swedish Society of Cardiology, The Swedish Medical Society and other authorities at regional and local levels arrange shorter and longer courses on a regular basis with focus on cardiovascular prevention and on support of healthier lifestyle among patients.

## V. Cardiac rehabilitation

### For whom

Sweden has no fixed age limits for participation in cardiac rehabilitation, but most participating patients are below 75 years old.

### By whom and how

Sweden has a well-established nation-wide system of cardiac rehabilitation mainly emanating from the 69 hospital based cardiac centres in Sweden with specially educated nurse practitioners and allied healthcare professionals working with cardiovascular prevention and rehabilitation. The content, duration and attendance rate of presumptive patients of the programmes differs between centres but most programmes have a duration of 2-3 months and include physical activity training, a "Heart School" with education about healthy food, cardiac risk factors, smoking and the importance of physical activity and stress reduction. Some of the centres also provide special stress behaviour treatment programmes and all support smoking cessation individually or in groups, see below in the audit and cost section for statistics.

The link from organised cardiac rehabilitation to long-term structures to support maintenance of a health life style is increasingly strengthened. This could be exemplified by:

- Physical activity on prescription (PAP) is an individually adjusted written prescription of physical activity including the intensity, duration, and type of activity that the patient should perform in order to minimize a sedentary lifestyle. All healthcare providers in Sweden recommend physicians to use it in order to prevent and treat illness. The Swedish National Institute of Public Health estimates that 28 000 PAPs were prescribed in 2009 and the use continues to rise.
- The Swedish Heart and Lung Patients Association offers a regular follow-up of cardiac rehabilitation at Swedish hospitals. A dedicated homepage at the Internet provides updated information for patients and their relatives on the structure of the rehabilitation program at the local hospital. The association also offers phase IV facilities for physical training and lifestyle support once the hospital-based schemes are completed.
- In the Swedish primary care, an increasing proportion of the staff are educated in Motivation Inquiring (MI) or cognitive behavioral therapy and are well prepared to support patients in need of lifestyle changes.
- A growing number of web-based interactive educational programmes aiming to quit smoking (<http://slutarokalinjen.org/>, Swedish only), eating healthier food ([www.sundkurs.se](http://www.sundkurs.se), Swedish only) or stimulating physical activity are available for free in Swedish.

### Audit and costs

Patients participating in cardiac rehabilitation pay regular fees up to a fixed amount for all health care received over a period of twelve months, called high cost protection. Costs exceeding the capped amount are covered by the national healthcare system.

Audit and quality assurance are monitored and presented yearly on a national basis. **SWEDEHEART** is a national registry of all patients hospitalized for acute coronary syndrome (ACS). It includes several parts. To be mentioned here is:

- The **RIKS-HIA registry**, were all patients with suspected acute coronary artery disease, for which ECG or measurement of heart damage marker is ordered to rule out/confirm infarction have to be registered. In 2012 all 69 hospitals took part and 51 939 care episodes were registered. The annual reports provide an open comparison of myocardial infarction care between hospital regions, county councils and hospitals.
- The **SEPHIA registry** (SEcondary Prevention after Heart Intensive care Admission), provides information on unselected consecutive patients below the age of 75, and discharged alive after an acute myocardial infarction (AMI). They are invited to an interview 6-10 weeks and 12-14 months after the infarction.

#### Measurements:

- Health related quality of life using EQ-5D Questionnaire and Visual Analogue Scale
- Symptoms of ischemic heart disease (IHD): angina, classified according to the Canadian Cardiovascular Society and dyspnoea, classified according to the New York Heart Association (NYHA).
- Events after discharge: hospitalisation for new MI, heart failure, other heart disease, stroke, bleeding complication, coronary intervention or non-cardiac disease.
- Self-reported tobacco use previous or current
- Physical activity measured as a 7-day recall question, asking for number of times during the past 7 days the patient has engaged in moderately intense physical activity lasting at least 30 minutes.
- Participation in cardiac rehabilitation programmes including exercise training
- Medication: Aspirin, other platelet inhibitors, anticoagulants, ACE-inhibitors, angiotensin receptor blockers (ARB), beta blockers, statins, other lipid lowering drugs, insulin, oral glucose lowering drugs
- Biological risk factors: cholesterol and blood glucose levels, waist circumference, blood pressure.

#### Some results from the annual SEPHIA-report 2012

At the time of the second follow-up after the myocardial infarction around 55 % of smokers had quit, the same level as in previous years. Fourteen per cent of smokers had taken part in smoking cessation programmes.

The proportion of patients with systolic blood pressure < 140 mmHg was 65 % both at the first and second follow-up, but with differences between hospitals ranging from around 40 % to over 80 %.

Target level for LDL (< 1.8 mmol/l or 50 % lowering of baseline value for apoB below 0.8) was achieved by 38 % two months after the myocardial infarction. There was divergence in results between hospitals, from around 10 % to just over 50 % target achievement at the time of the second follow-up. The full report in English can be downloaded here: <http://www.ucr.uu.se/swedeheart/index.php/annual-reports>

**The SWEDEHEART quality index** focuses on quality indicators with a great scope for improvement, e.g. coverage and secondary preventive measures as shown in figure 1-5.

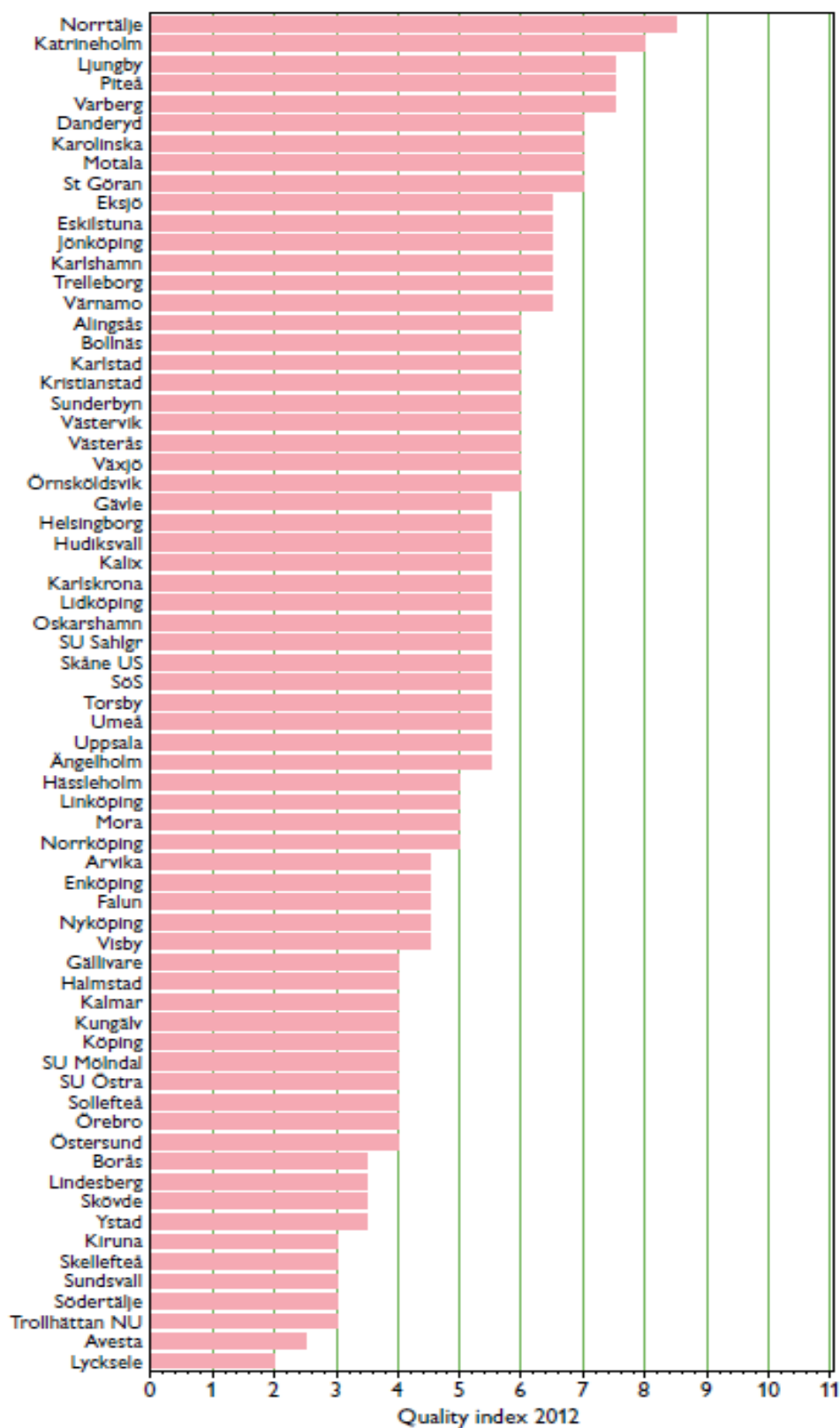
Around 75% of the hospitals could be evaluated with regard to all four secondary prevention quality indicators.

**Figure 1.** Quality Indicators building the SWEDEHEART quality index

| Quality indicator   | 0.5 points | 1 point |
|---|------------|---------|
| Reperfusion in STEMI/LBBB   | 80 %       | 85 %    |
| Reperfusion in STEMI/LBBB within recommended time   | 75 %       | 90 %    |
| Coronary angiography in target group in NSTEMI  | 75 %       | 80 %    |
| P2Y12 blockers in NSTEMI  | 85 %       | 90 %    |
| ACE inhibitors/ARBs in target group for myocardial infarction                                 | 85 %       | 90 %    |
| Proportion with myocardial infarction as principal diagnosis (<80 years) included in RISK-HIA | 90 %       | 95 %    |
| Proportion of myocardial infarctions < 75 years in RIKS-HIA undergoing follow-up (SEPHIA)     | 75 %       | 90 %    |
| Proportion of smokers who have stopped after 12–14 months                                     | 60 %       | 70 %    |
| Proportion who have taken part in physical training programme after 12–14 months              | 50 %       | 60 %    |
| Proportion with LDL cholesterol < 2.5 mmol/L after 12–14 months                               | 60 %       | 70 %    |
| Proportion with systolic blood pressure < 140 mmHg after 12–14 months                         | 70 %       | 75 %    |

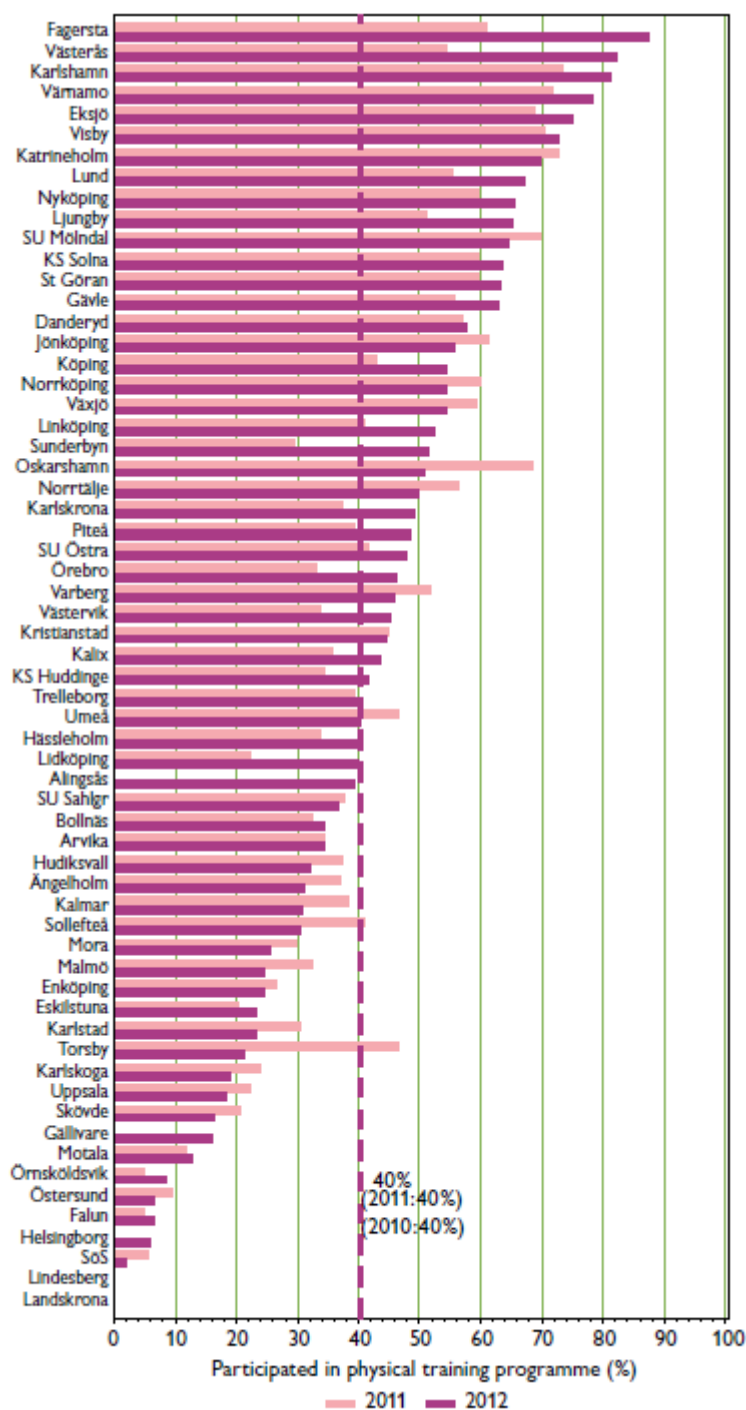
Source: <http://www.ucr.uu.se/swedeheart/index.php/annual-reports>

**Figure 2.** The SWEDEHEART Quality Index at different hospitals in Sweden 2012. From extremely low global quality (0) to extremely high global quality (11) of acute and secondary preventive measures after a myocardial infarction.



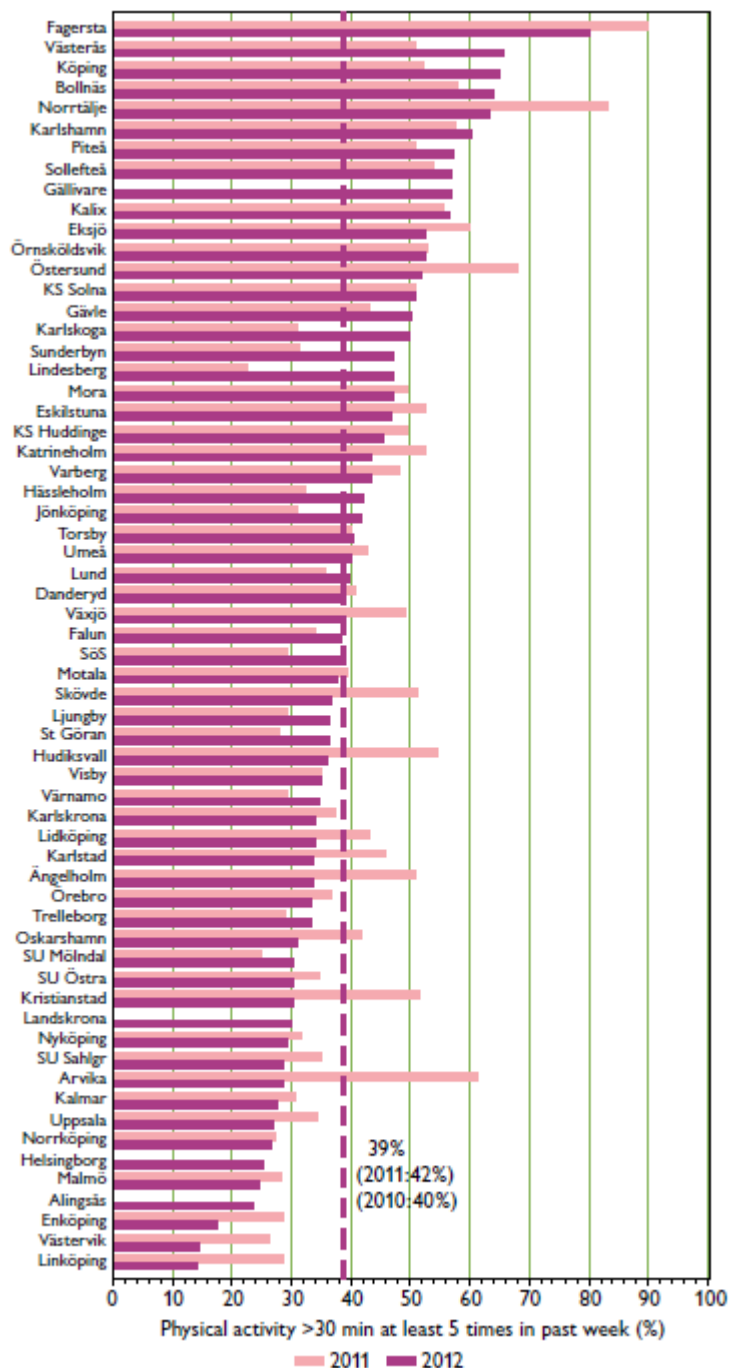
Source: <http://www.ucr.uu.se/swedeheart/index.php/annual-reports>

**Figure 3.** Proportion of patients at different hospitals in Sweden having participated in an exercise-training program after myocardial infarction



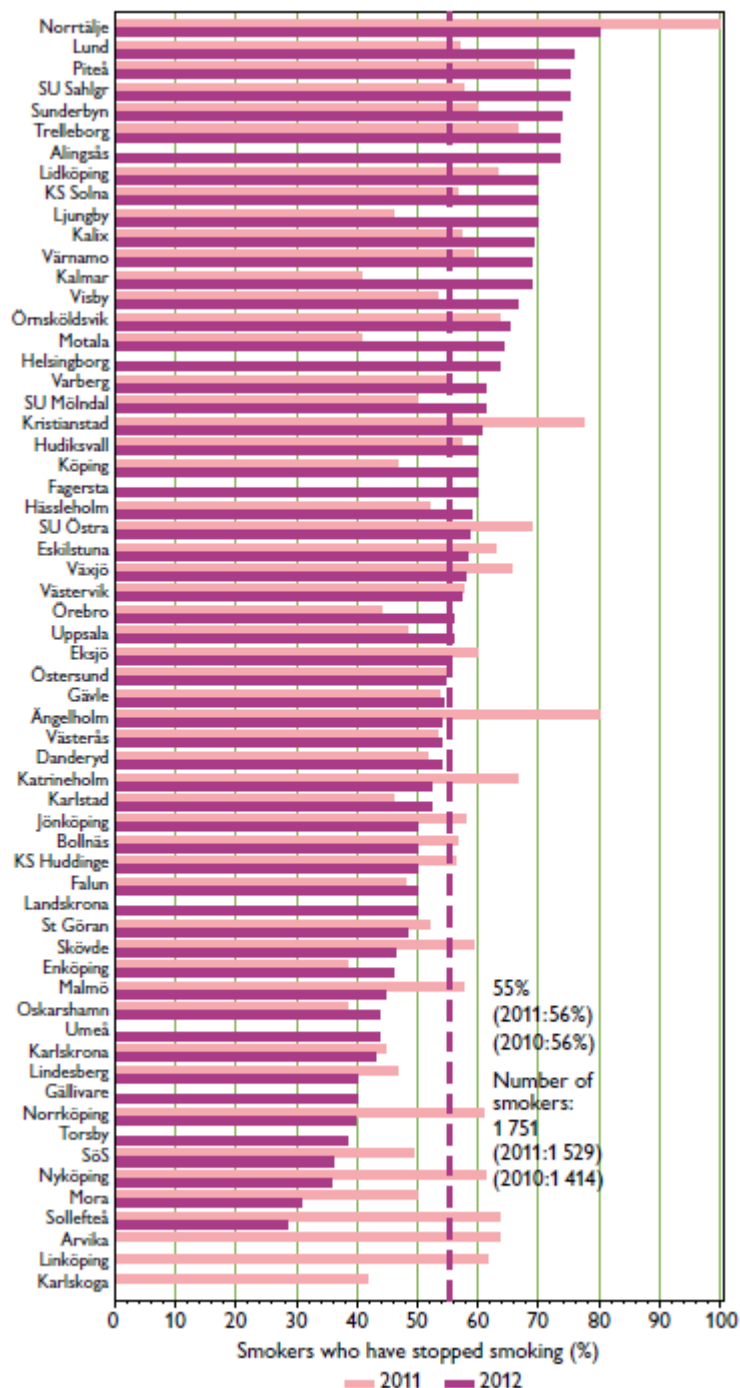
Source: <http://www.ucr.uu.se/swedeheart/index.php/annual-reports>

**Figure 4.** Proportion of patients < 75 years of age at different hospitals in Sweden engaging in moderate physical activity at least 30 min\*5 days in the past week one year post AMI.



Source: <http://www.ucr.uu.se/swedeheart/index.php/annual-reports>

**Figure 5.** Proportion of patients < 75 years of age at different hospitals in Sweden who have quit smoking one year post AMI



Source: <http://www.ucr.uu.se/swedeheart/index.php/annual-reports>

## VI. The Future

### Needs

In general, Swedish cardiac prevention and rehabilitation holds a high standard. However there is still room for improvement of equality between different regions and hospitals as well as between different patient groups. In addition, we need to focus more on the socioeconomically deprived, mentally ill and persons with disabilities who are especially susceptible to marketing of the tobacco and fast food industry.

### Possibilities

The national initiatives for a healthier lifestyle with several projects going on are promising. To be mentioned is also the Tobacco endgame – a smoke free Sweden in 2025 aimed to form a public opinion and political decisions that will result in the end of tobacco use in 2025.

### Obstacles

Sweden has a well-established system of national quality registers and guidelines, which increasingly also include preventive measures. However, the guidelines are sometimes more of priority than treatment guidelines, including priority lists founded on both scientific evidence and health economic considerations. Further they are not comprehensive implying that they mainly cover only common diseases, and almost always guidance on diseases one by one. This leads to an ambiguous support for treatment in routine healthcare, especially in primary care where comorbidities are a rule rather than an exception.

Counselling on healthy eating habits are perceived as difficult among healthcare personnel, as compared to concealing on smoking cessation, lifestyle changes of physical activity and alcohol consumption. The ultimate goals of the first three habits are one-dimensional. You are supposed to quit, start, increase or reduce the habit. When it comes to eating habit professionals have to consider concealing even about frequencies, meal order, and changes between different carbohydrates etc.

### Plans

We plan to continue and further develop the structured use of our national quality registers to include structured registration of all relevant lifestyle and risk factor parameters. Further to encourage joint cardiovascular prevention activities within the healthcare system; both at cardiac units and in primary and geriatric care settings. From a public health perspective we see the young population as our main target.

By tradition, cardiac rehabilitation has been conformed to a common programme with more or less the same content with little room for individual adaptation. We plan now to develop new more individualized models. The main aim is to increase equality and to target a greater proportion of patients at very high total risk i.e. patients with comorbidities such as psychiatric diseases or functional disabilities, weak socioeconomic and ethnical groups etc.

A national strategy has been launched aiming to prevent and treat patients with non-communicable chronic diseases. The Swedish Society of Cardiology will participate in this initiative.