Success Factors in Swedish Stroke Care

INSPIRATION FOR THE ADVANCEMENT OF STROKE CARE
Success factors for good stroke care

Stroke is a medical condition with serious consequences for the affected individual that also leads to high costs for society. The disease affects about 30,000 people in Sweden every year. Major advances have been made in stroke care, with improved opportunities to prevent and treat strokes, and an increased survival rate. The implementation of the national quality register Riksstroke has made Sweden one of the leading countries in the world in following up on and evaluating various aspects of stroke care. However, the results from Riksstroke show that there is still potential for improvement in stroke care, and that there are vast geographical differences in the care and treatment provided for strokes.

This variation in results and approaches could be a key source for learning. The National Program Council for Stroke, whose aim is to work to improve conditions for more knowledge-based, equitable and consistent stroke care, has conducted an interview-based benchmark study to chart emergency stroke care and identify success factors that distinguish hospitals and county councils with better results for certain selected indicators in Riksstroke.

The eighteen success factors identified in this study are described in this publication. The hope is that these insights will lead to a better understanding of how other health care providers work, and inspire development and increased knowledge exchange between county councils.

This publication is intended for those working with or in stroke care, as managers or as part of a healthcare team, as well as for officials and politicians involved in decision-making in the area of stroke care.
Our hope is that you and your colleagues can find inspiration and benefit from these materials in your ongoing improvement initiatives. Discussion topics presented in this publication for each success factor can be used to support the dialogue about your own organization.
How have the success factors been identified?

The ability to make comparisons based on high-quality register data, and the large number of interviews with representatives for different areas of emergency stroke care, provide great opportunities to gain relevant insight.

The study is not comprehensive, and several factors are significant to the quality of stroke care. It is also not possible with this type of approach
to draw clear conclusions about causation. The description of different success factors is instead based on observable differences.

The study was conducted in three stages

Nine county councils and thirteen hospitals participated in the study, which was conducted in three stages:

Based on specific indicators from Riksstroke, a selection of hospitals and county councils with good and poor results was made. The composition of stroke care was surveyed through 67 in-depth interviews with decision makers and other active participants in stroke care. Some of the findings from the interviews are reproduced in this publication as quotes.

The study was based on five indicators

The selected indicators focus on emergency stroke care, and where good scientific evidence exists. The following indicators have been studied:

- The number of patients admitted directly to the stroke unit.
- The number of patients treated with thrombolysis.
- Time from arrival to the hospital to the start of thrombolysis (“Door-to-needle time”).
- The number of patients with stroke and atrial fibrillation who received anticoagulants at discharge.
- The number of patients who received early supported discharge.

“Working with stroke care means facing constant challenges. This publication will help us learn from each other. Those who have managed to give patients particularly good care share their experiences so that the rest of us can learn from their good example.”

Nils Wahlgren, Professor of Neurology at Karolinska University Hospital, president of the National Program Council for Stroke.

FIND OUT MORE

You can read more about the study and its findings in the report *Framgångsfaktorer i strokevården – en jämförande studie av strokevård*. (“Success Factors in Stroke Care: A comparative study of stroke care”, in Swedish.) The report is available in the Swedish Association of Local Authorities and Regions webshop at webbutik.skl.se.
18 success factors

“The study focuses on hospital care in the emergency phase, i.e. the care that is provided in connection with the onset of stroke until discharge from the unit performing specialized emergency stroke care (although two of the indicators concern rehabilitation and secondary prevention, though in connection to hospital care).

“Generally speaking, emergency stroke care maintains high quality. But good can always be better. Through dialogue among healthcare providers, decision makers, stroke patients and other stakeholders, I think we can raise quality even further.”

Sven Andréason, Chairman of the Swedish Stroke Association.
### Good stroke care

**A. Direct admission to stroke unit:**  
*Stroke unit for all who have had stroke*

- **A1.** Opinion that everyone who has had a stroke has the right to be treated in a stroke unit
- **A2.** Routines to ensure admission to a stroke unit
- **A3.** Stroke units designed according to needs

**B. Percentage reperfusion:**  
*Competence and consensus (plus recognized contribution of stroke campaign)*

- **B1.** Aggressive treatment culture for thrombolysis
- **B2.** Access to competence and thrombolysis experience

**C. Time to thrombolysis:**  
*Fast track because time is brain*

- **C1.** “Time is brain” culture with a sprint to ambitious goals
- **C2.** Shortened fast track for thrombolysis without extra steps
- **C3.** Fast track for thrombolysis is well known and rehearsed

**D. Percentage anticoagulants:**  
*Consensus at indication and on routines to ensure treatment*

- **D1.** Opinion that the benefits of anticoagulants outweigh the risks
- **D2.** Functioning routines to ensure prescription
- **D3.** If anticoagulants cannot be given at discharge: follow-up in stroke clinic and good information transfer to primary care

**E. Early supported discharge home:**  
*Promising initiatives indicate the importance of cooperation and follow-up*

- **E1.** Clear affiliation to the hospital
- **E2.** Good cooperation with other involved parties
- **E3.** Clear feedback to stakeholders

**F. Good conditions for emergency stroke care:**

- **F1.** Updated knowledge base/documentation that is used
- **F2.** Follow-up and feedback with culture of responsibility
- **F3.** Living and organization-specific structures for improvement initiatives
- **F4.** Strategic initiatives toward ambitious goals
Direct admittance to the stroke unit

Care in the stroke unit (and for some patients in the intensive care unit or neurosurgical clinic) reduces the risk of mortality and results in improved adaptation and activities for generally improved, more autonomous, daily life (ADL capacity). This initiative is given top priority in the Swedish Board of Health and Welfare’s national guidelines, and care in units without stroke expertise has recommendation class “Do Not Do”. It is especially important that people who have had a stroke receive immediate care in a stroke unit during the first critical 24 hours.

Only 79 percent of people who have had a stroke are admitted directly to a stroke unit, which means that every fifth patient today does not receive the right care from the start. There are significant differences between hospitals.
Success factors

Belief that all stroke patients have the right to be treated in a stroke unit
Hospitals who directly admit more patients have the opinion and have made the decision that all stroke patients should be treated directly in the stroke unit.

Routines to ensure admission to a stroke unit
Routines, both for the information chain at admission and for creating space in the stroke unit, play an important role in ensuring that decisions to admit all relevant patients to a stroke unit will have an impact in practice.

Stroke units designed according to needs
The stroke unit should not be too large or too small. A unit that is too small cannot admit all patients who have had strokes, but a unit that is too large must often also treat other patients, and has a harder time reserving beds for stroke patients.

Discussion topics

- What decisions have you made concerning who should, and who should not, be treated in the stroke unit? Are certain patient groups given lower priority? Are patients treated the same regardless of how they have been admitted?
- Do you have routines for admission to the stroke unit? Are they followed?
- How many beds do you have on the stroke unit? How many do you need?
- How can you work to ensure that more people are directly admitted to the stroke unit?
- What are your routines for transferring stroke patients from other wards?

“We treat everyone as a stroke patient until proven otherwise.”

“We might have a bit more overcrowding than others.”

“We have reduced our number of stroke beds to improve our ability to reserve them for stroke patients.”
Reperfusion therapy

Restoring blood flow to the affected part of the brain (reperfusion therapy) through thrombolysis or thrombectomy improves survival and reduces the risk of permanent disability. Thrombolysis administered within three hours after onset is given highest priority in the Swedish Board of Health and Welfare’s national guidelines.

The percentage of patients treated with reperfusion therapy differs greatly between hospitals (from 3 to 31 percent). Significantly more patients would benefit from thrombolysis than those who currently receive this therapy.

Success factors

Aggressive treatment structure for thrombolysis
Hospitals where more patients receive thrombolysis have an aggressive approach and a broader interpretation of the indications for treatment. Even milder symptoms are actively treated if it is determined that there is a risk of permanent disability.

Access to expertise and experience in thrombolysis
Direct access to doctors with a high level of expertise and experience is important to quickly and accurately make decisions about treatment with thrombolysis, particularly in difficultly diagnosed cases.

“We are rather aggressive and treat even mild strokes if it can make a big difference for the patient.”
Discussion topics

- Do you have an aggressive or more restrictive approach to thrombolysis? If your approach is different from others, what is it based on?
- Do you have a consensus on the indications for thrombolysis?
- What “team line-up” do stroke patients encounter when they come to your hospital?
- What skills and expertise do you have to support less experienced colleagues?
- How can you work to ensure that all people who would benefit from thrombolysis actually receive treatment?

“An experienced doctor is better than an inexperienced doctor, and if the doctor can’t be there in person, he or she can help remotely.”
Time to thrombolysis

“Skip the emergency room, wait with tests that can wait, and initiate thrombolysis right away in the radiology lab.”

Fast track that minimizes each minute of delay in the care chain to the start of thrombolysis treatment helps to limit the extent of the damage to the brain. Shortening the time to thrombolysis is given highest priority in the Swedish Board of Health and Welfare’s national guidelines.

There are great differences between hospitals. One in five hospitals can handle the majority of its patients in less than 40 minutes, while just as many hospitals are taking more than 60 minutes each.
Success factors
“Time is brain” culture with a sprint to ambitious goals
Hospitals with a short time to thrombolysis are characterized by a “time is brain” culture and continuously strive to cut minutes in the race toward ambitious goals.

Shortened fast track for thrombolysis without extra steps
Cutting the most extra steps possible shortens the fast track for thrombolysis. The starting point is what should be done, what shouldn’t be done, where it should be done, and who should do it.

The fast track for thrombolysis is well known and rehearsed
To ensure that the fast track to thrombolysis functions in practice, staff must be familiar with the composition of the care and have built up experience of implementation through practice.

Discussion topics
› What are your goals concerning thrombolysis?
› Do you have a fast track, and what does it look like? What steps are taken, and what steps are left out?
› What steps can be eliminated to shorten time even further? Do paramedics know the signs of stroke? Is an assessment of contraindications made in the ambulance? Is the patient taken directly to X-ray without passing through the emergency room? Have the number of steps and tests before the start of thrombolysis been minimized?
› How can differences between normal working hours and on-call hours be minimized?
Anticoagulant therapy in atrial fibrillation

Anticoagulant therapy reduces the risk of stroke recurrence associated with atrial fibrillation. This initiative is given highest priority in the Swedish Board of Health and Welfare’s national guidelines for stroke care. There is consensus on the value of starting anticoagulant therapy during hospitalization or as soon as possible after discharge.

On average, only 69 percent of stroke patients under age 80 with atrial fibrillation received treatment, and there are large differences between hospitals.

“We are of the opinion that anticoagulants should almost always be initiated unless there are strong reasons not to do so.”
Success factors

Opinion that the benefits of anticoagulants outweigh the risks

Hospitals that treat more people with anticoagulants have a broader interpretation of indications, and have a deliberate aggressive approach in the assessment of benefits and risks.

Functioning routines to ensure prescription

Efficient routines ensure that patients who should receive anticoagulants actually get them prescribed, regardless of when and by whom the prescription is written.

Follow-up in stroke clinics and good transfer of information to primary care for initiation of treatment

Patients who are not prescribed anticoagulants directly at discharge are monitored by a stroke clinic and/or primary care, who are informed in such a way so as to ensure initiation of treatment.

Discussion topics

› What is your view on treatment with anticoagulants? Are you among the more restrictive or more aggressive in the country? Is this reflected in the percentage of your patients who receive treatment?
› How is it ensured that anticoagulants are started for the patients who should have this treatment, and that they are not missed?
› What routines do you have for follow-up for patients where initiation of anticoagulants can not be done or should be done at discharge? Are they followed up at the stroke clinic? After how much time?
› What procedures do you have for transferring information to primary care on the patients you do not plan to follow up on yourself? How do you ensure that anticoagulant therapy is actually initiated, if this is planned?

“It is important that anticoagulants are not missed even if the patient is discharged on the weekend by someone unfamiliar with treatment.”

“We are responsible for our patients for up to three months and make sure that treatment is initiated.”
Early supported discharge

People with mild to moderate strokes are offered early discharge home from the hospital with continued rehabilitation at home provided or coordinated by a specially trained multidisciplinary team. There is scientific evidence that early supported discharge home shortens hospital stays and improves survival and functional ability compared to continued hospitalization.

In Sweden there is no uniform model that is practiced widely, but promising initiatives have been implemented in several hospitals.

“Initiatives from the municipality are needed in conjunction with our rehabilitation initiatives, and good cooperation between us has been crucial.”
Success factors

Clear affiliation to the hospital

It is important that the teams belong to and are based in the hospital, and that they are seen as an extension of the inpatient process. This achieves continuity and good coordinated care in the transition from hospital to home.

Good cooperation with other involved parties

Good and flexible cooperation with other stakeholders such as primary care and municipal services is important. Early supported discharge home as a form of treatment requires concurrent initiatives from a number of different stakeholders.

Clear feedback to stakeholders

In order to provide reassurance and confidence about the possibility of earlier discharge, it is important to monitor and evaluate the results provided by the model, and to give feedback to the relevant stakeholders.

Discussion topics

› Have you tried models for early supported discharge home? Why/Why not?
› How do you ensure that initiatives from different stakeholders are optimally coordinated?
› How do you follow up on the results of rehabilitation in the home? How is feedback handled?

“Because the doctors know those of us who work with rehabilitation in the home, they feel comfortable discharging the patients earlier.”

“It is based on trust and the conviction among those we discharge earlier that everything will be fine.”
Good conditions for emergency stroke care

“Well-functioning management and supervision, and active improvement initiatives with a focus on reaching ambitious goals is a prerequisite for progress in stroke care. Joint action through engagement and involvement is required from all levels in the hospital organization.

Success factors

Updated knowledge support that is used
Updated, firmly anchored and user-friendly knowledge support creates important conditions for local practices to evolve towards the best available knowledge.

Follow-up and feedback with culture of responsibility
Results and outcomes that are monitored and reported back create learning and contribute to improvement initiatives and a culture of responsibility and pride.

Living and organization-specific structures for improvement initiatives
Well-functioning and active local work teams support and contribute to improvement initiatives at the hospital.

Strategic initiatives toward ambitious goals
Strategic investments in stroke care with ambitious goals that are consistent with guidelines and indicators, as well as a consensus on these goals within the organization and within the care team, provide measurable results.
Discussion topics

- What knowledge support and diagnostic and treatment recommendations do you have access to? How are they used?
- How do you follow up on your results from Riksstroke? In what way are the results reported back to the different levels in the organization?
- How do you work with improvement initiatives? Are there local structures, such as stroke counseling, to support the hospital?
- Is stroke care a prioritized area for your organization? Is this prioritization reflected in the conditions of the stroke care?
- What are your goals for stroke care? Do you share these with the rest of the organization?

“There is a desire to be on top, a sense of pride.”
The National Program Council for Stroke works for more knowledge-based, equitable and consistent stroke care. As part of this work, the Program Council has initiated a comparative study of the differences and similarities between the emergency stroke care of different county councils and hospitals.

The national quality register Riksstroke offers good access to information on the performance results of different care units and county councils in key quality indicators.

Several success factors have shown to affect the quality of stroke care in the county councils. These are presented in more detail in this publication. This publication is part of the National Program Council for Stroke’s work to improve the quality of stroke care and contribute to more knowledge-based, equitable and consistent care. The National Program Council for Diabetes has previously conducted a similar study.