A GUIDE FOR STROKE NURSES ON MONITORING AND COUNSELLING STROKE PATIENTS

Based on the stroke care pathway standard

In accordance with the care pathway standard for stroke patients, **a patient with suspected ischaemic stroke is transported to the nearest hospital with a stroke unit[1].**

The patient **is admitted to the intensive care or neurology unit and the patient's care pathway begins**.

AT THE STROKE UNIT

In the neurology or intensive care unit, the nursing activities prescribed for the stroke patient are carried out by the nurses of the ward (a more detailed description of the activities is given in the care pathway standard for stroke patients).

A post-stroke health plan is drawn up for the patient in collaboration with the patient's care team (attending physician, stroke nurse, stroke coordinator) and secondary prevention goals are set.
In terms of secondary prevention, the patient is counselled by members of their care team (attending physician and/or stroke nurse and/or stroke coordinator), depending on the work procedure agreed in the institution.
The health plan provides the contact details of the stroke nurse, enabling the patient or family members to reach out with any questions. The patient is given information materials on strokes.

As part of secondary prevention:

- The patient is advised to quit smoking and is recommended to contact the tobacco and nicotine cessation counselling office[2].
- The patient is advised to abstain from alcohol; if this is not possible or effective, advised to limit consumption to a maximum of 14 units per week for men and 7 units per week for women. If necessary, suggest contacts where the patient could get further help[3].
- Based on the results of the patient's blood tests (fasting plasma glucose or HbA1C, lipid profile, ALAT/ASAT levels), instructions are given to improve the patient's diet according to the food pyramid[4].
- Advice is given on the importance of following the treatment regimen and checking their blood pressure.
- Taking into account the patient's individual abilities, advice is given on exercise and physical

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1 A hospital with a stroke unit means a healthcare facility, as defined by the European Stroke Organisation standard, where a stroke patient is treated by a multidisciplinary team and where revascularisation treatment is available. In Estonia, stroke units are located at the North Estonia Medical Centre, Tartu University Hospital, West Tallinn Central Hospital, East Tallinn Central Hospital, Pärnu Hospital, and Ida-Viru Central Hospital.

2 'Where to go for help to quit tobacco', Tubakainfo, National Institute for Health Development

3 'Where to turn', Alkoinfo, National Institute for Health Development

4 Food pyramid. Toitumine.ee, National Institute for Health Development

activity[5].

- The patient is asked to formulate personally important recovery goals that would increase the patient's motivation to follow secondary prevention recommendations.

LEAVING THE STROKE UNIT

- Prior to leaving the stroke unit, a consultation with the stroke nurse takes place, where the nurse, in cooperation with the attending physician, shares detailed information with the patient and their family members about the further course of treatment (taking into account the patient's capacity to receive information) and the stroke nurse assesses the need for referral to the stroke coordinator service if the attending physician has not already assessed the need. If necessary, the nurse informs the stroke coordinator of the referral, forwarding the details of the patient to the coordinator in accordance with the working arrangement. In the absence of a stroke nurse, the consultation will be carried out by the nurse of the unit or the attending physician according to the agreed substitution procedure.
- The inpatient nurse makes an entry in the nursing notes and completes the nursing epicrisis.
- The stroke nurse makes sure that the patient and/or their family members have received an overview of the patient's medical condition, the treatment given, and the further treatment arrangements based on the stroke patient care pathway standard.
    - Depending on the severity of the functional impairment and the patient's readiness for rehabilitation, further treatment is determined in accordance with the standard set out in the table in ANNEX 1.
- If the patient's physical and cognitive condition allows for a follow-up visit to be scheduled as soon as the patient leaves the stroke unit, a follow-up appointment for secondary prevention is scheduled with the stroke nurse. Patients should see a stroke nurse around 90 days after the onset of stroke.

THIRD-MONTH FOLLOW-UP BY STROKE NURSE

The aim of the third-month follow-up by the stroke nurse is to:

- assess the patient's physical and cognitive state;
- advise on secondary prevention activities;
- check that personal targets for secondary prevention are met;
- check the patient's adherence to treatment and advise accordingly;
- verify the existence and validity of drug prescriptions.

The stroke nurse uses a variety of scales, scores, and questionnaires to assess the patient's physical and cognitive status during the independent appointment (ANNEX 2).

3. During the third-month follow-up, the stroke nurse:

[5] WHO Guidelines on Physical Activity, World Health Organization. Information material, National Institute for Health Development, University of Tartu, Ministry of Social Affairs, 2022

- monitors patients for functional decline and new symptoms using the post-stroke checklist (ANNEX 3);
- counsels patients and/or relatives on the same basis as used in secondary prevention during inpatient treatment;
- assesses the patient's progress towards personal goals and advises on the way forward;
- monitors the patient's adherence to treatment, advises on medication if necessary;
- evaluates the patient's post-stroke coping using the modified Rankin scale and advises on coping if necessary;
- assesses the risk of malnutrition in a patient with swallowing problems using one of the recognised screenings (e.g. NRS-2002 or MUST);
- **verifies whether the patient attended their first family physician visit within 30 days after discharge;**
    - if the patient has not visited the family physician, a referral will be arranged.

During follow-up visits, the nurse will adjust the patient's treatment plan as needed, within their scope of practice, in consultation with the appropriate specialist (e.g., neurologist, rehabilitation doctor). If needed, they refer the patient to a specialist or schedule another follow-up visit, providing the necessary referral documents.

Further assessment and follow-up of the stroke patient during the treatment course is carried out by the **family physician and/or nurse.** The family physician or nurse assesses the patient's adherence to treatment and secondary prevention targets and checks prescriptions and whether medications have been dispensed after 60 and 365 days.

ANNEXES

ANNEX 1.

Further handling of the stroke patient's care pathway in accordance with the standard

Follow-up treatment	Patients in a stable general condition who require daily medical supervision at least once a day and/or nursing care are referred to follow-up treatment. Patients referred to follow-up treatment have a medication and intervention plan drawn up by the attending physician in the acute care unit. The plan is adapted as necessary to the patient's changing condition. Depending on the clinical condition, the interventions may include physiotherapy, speech and/or swallowing therapy, and/or occupational therapy. The goal of follow-up treatment is to support the patient's recovery from both the underlying condition and concomitant disease(s), enabling them to return to their pre-hospital life, progress to the next stage of care (e.g. rehabilitation, nursing), or alleviate symptoms.	As per the treatment plan, the patient receives physiotherapy, speech and/or swallowing therapy, or occupational therapy.
Inpatient nursing care	Inpatient nursing care is provided for patients in a stable general condition with various complications, profound cognitive impairment, low physical capacity (unable to participate in rehabilitation activities for 3 hours a day), and with a need for round-the-clock nursing care.	As per the treatment plan, the patient receives physiotherapy and occupational therapy and engages in daily activities within the limits of their functional capacity. The treatment process is managed by a nurse.
Inpatient rehabilitation	A patient is referred for inpatient rehabilitation if they have a moderate/severe functional impairment and are capable of intensive or	The rehabilitation specialist assesses the patient's general health and functional impairments, and selects the rehabilitation treatment and therapies appropriate for the specific disorders of

	functional rehabilitation.	the patient. A treatment team is involved in preparing the treatment plan, which includes a physiotherapist, occupational therapist, speech therapist, clinical psychologist, social worker, and nursing staff, as needed.
Outpatient rehabilitation	Patients are referred for outpatient rehabilitation if they have a mild, single functional impairment and are fit for treatment. The patient needs at-home rehabilitation (physiotherapy and/or occupational therapy) if: • the patient has a severe movement and postural dysfunction but does not require intensive rehabilitation in a rehabilitation unit because of their general condition; • rehabilitation or, if the patient prefers, home treatment is needed after the end of inpatient treatment; • the patient has been indicated for physiotherapy and/or occupational therapy but is prevented from reaching the hospital because of mobility problems.	For example, if the patient has a mild impairment of one function (speech, hand function, paralysis of one side of the body, etc.), the specific impairment will be addressed. The patient must receive at least one rehabilitation session per day, which includes occupational, speech, psychological, and/or physiotherapy. If the patient needs complex rehabilitation but does not require round-the-clock nursing and care, the patient can be referred to the outpatient rehabilitation unit. The patient is guaranteed at least two rehabilitation activities a day, which include occupational therapy, physiotherapy, speech therapy, and/or psychotherapy.
Home (under the supervision of the family physician and nurse)	If the patient does not need rehabilitation or if rehabilitation is not indicated, the patient will go home and remain under the care of their family physician and nurse. A visit to the family physician should take place 30 days after returning home.	The family doctor advises on changes in lifestyle and, if necessary, refers the patient to physiotherapy, a speech therapist, or a psychologist. An e-consultation with a rehabilitation doctor or a neurologist as needed.

ANNEX 2.

Scales, scores, and questionnaires used by stroke nurses to assess the physical and cognitive status of patients

Name of the questionnaire	Purpose	Follow-up activities
PSC – Post Stroke Checklist	Assess the most common post-stroke problems in eleven different domains (secondary prevention, activities of daily living, mobility, spasticity, pain, incontinence, communication (speech), mood, cognition, life after stroke, and relationship with family). Provide guidance to nurses on when to refer the patient to another specialist	If necessary, refer the patient to a family physician or nurse, rehabilitation physician, neurologist, or the Estonian Stroke Patients' Society.
EEK-2 (emotional well-being questionnaire)	Assess whether the patient has a predisposition to mental health disorders (depression, anxiety disorders, sleep disturbances, and mental exhaustion) and help to address them	Encourage the patient to consult a mental health professional (e.g. a mental health nurse) if necessary
mRS – modified Rankin Scale	Evaluate the patient's functional performance post-stroke in comparison to their pre-hospital status and condition at hospital discharge	Refer the patient to the rehabilitation team if necessary; help relatives to organise a 24-hour care service
MUST – Malnutrition Universal Screening Tool	Assess adults who are malnourished, at risk of malnutrition, or obese. Consists of five steps	Offer guidance on dietary modifications, such as adjusting food textures, thickening liquids, or enhancing nutritional content. If necessary, refer the patient to a nutrition counsellor or speech therapist
NRS-2002 – Nutrition Risk Screening	Identify malnutrition and assess the risk of malnutrition. Unlike the MUST scale, it takes into account the patient's age and health problems	Offer guidance on dietary modifications, such as adjusting food textures, thickening liquids, or enhancing nutritional content. If necessary, refer the patient to a nutrition counsellor or speech therapist
GUSS – The Gugging Swallowing Screen	Assessment of oropharyngeal dysphagia in adults. Consists of a pre-assessment and a swallowing assessment	Helps to decide whether the patient needs a nasogastric tube or food consistency modification (thickening of liquids, puréed food) for safe swallowing. Patients with swallowing disorders should only consume food by mouth if explicitly

		approved by their speech therapist
ASSIST – Acute Screening of Swallow in Stroke / TIA	Helps non-speech therapists identify dysphagia (difficulty swallowing) and aspiration risk in patients with acute stroke	Helps to decide whether the patient needs a nasogastric tube or food consistency modification (thickening of liquids, puréed food) for safe swallowing. Patients with swallowing disorders should only consume food by mouth if explicitly approved by their speech therapist

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ANNEX 3.

Post-stroke checklist

POST-STROKE COPING ASSESSMENT QUESTIONNAIRE:
IMPROVING THE QUALITY OF LIFE OF STROKE PATIENTS

The post-stroke coping assessment questionnaire helps health professionals to identify post-stroke problems that can be modified by intervention and/or require patient referral. The post-stroke coping assessment questionnaire is short and easy to use. It is completed together with the patient or, if necessary, with the patient's carer. The use of the questionnaire allows a standard approach to identifying the long-term effects of stroke and determining the appropriate treatment course.

INSTRUCTION MANUAL
Please ask the patient all the numbered questions and write the answer in the appropriate box. If the answer is NO, document it and reassess the situation at your next appointment. If the answer is YES, proceed with the appropriate action.

SECONDARY PREVENTION		
Since your stroke or last assessment, have you received any advice on health-related lifestyle changes or medications for preventing another stroke?	**NO**	If NO, refer the patient to a family physician or nurse to assess the risk factors and determine the need for treatment.
	YES	Continue monitoring.

ACTIVITIES OF DAILY LIVING			
Since your stroke or last assessment, are you finding it **more difficult** to take care of yourself?	**NO**	Continue monitoring.	
	YES	Do you have difficulty getting dressed, washing, and/or taking a bath? Do you have difficulty preparing hot drinks and/or meals? Do you have difficulty leaving your home?	If the answer to any of these questions is YES, refer the patient to the appropriate specialist in the stroke care team (e.g. social worker, stroke coordinator, neurologist, occupational therapist, or physiotherapist) for further assessment.

MOBILITY			
Since your stroke or last assessment, do you find it **more difficult** to walk or safely move from bed to chair?	**NO**	Continue monitoring.	
	YES	Are you still receiving rehabilitation therapy?	If NO, refer the patient to the rehabilitation team for further assessment.
			If YES, document it and reassess the situation at your next appointment.

SPASTICITY			
Since your stroke or last assessment, do you experience increasing stiffness in your arms and/or legs?	**NO**	Continue monitoring.	
	YES	Does it affect activities of daily living?	If YES, refer the patient to a neurologist or rehabilitation specialist for further assessment and to clarify the diagnosis.

PAIN		
Since your stroke or last assessment, do you have any new pain?	**NO**	Continue monitoring.
	YES	If YES, refer the patient to a neurologist or pain specialist for further assessment and to clarify the diagnosis.

INCONTINENCE		
Since your stroke or last assessment, are you having **more difficulty** controlling your bladder or bowels?	**NO**	Continue monitoring.
	YES	If YES, refer the patient to an incontinence specialist for further assessment.

COMMUNICATION (SPEECH)		
Since your stroke or last assessment, are you finding it **more difficult** to communicate with others?	**NO**	Continue monitoring.
	YES	If YES, refer the patient to a speech therapist for further assessment.

MOOD		
	NO	Continue monitoring.
Since your stroke or last assessment, do you feel more anxious or depressed?	YES	If YES, refer the patient to a family physician or nurse or mental health nurse for further assessment.

COGNITION			
Since your stroke or last assessment, are you finding it **more difficult** to think, concentrate, or remember things?	**NO**	Continue monitoring.	
	YES	Does this interfere with activity or participation?	If NO, document it and evaluate the situation again at your next appointment.
			If YES, refer the patient for assessment to a neurologist, rehabilitation doctor, or neuropsychologist.

LIFE AFTER STROKE		
Since your stroke or your last assessment are you finding things important to you **more difficult** to carry out (e.g. leisure activities, hobbies, work, as well as relationships with loved ones)?	**NO**	Continue monitoring.
	YES	If YES, refer the patient to the Estonian Stroke Patients' Society (to peer counselling).

RELATIONSHIP WITH FAMILY		
Since your stroke or last assessment, has your relationship with your family become more difficult or stressed?	**NO**	Continue monitoring.
	YES	If YES, ask the patient to come to the next visit with a family member. If a family member is already involved, refer the patient to the Estonian Stroke Patients' Society (for peer counselling).

Adapted from source: Philp, I., et al. 'Development of a poststroke checklist to standardize follow-up care for stroke survivors'. *Journal of Stroke and Cerebrovascular Diseases.* December 2012. The questionnaire has been endorsed by the World Stroke Organisation to support improved stroke survivor follow-up and care.