DRAFT

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Quality Standard

+ STROKE

The *Stroke Quality Standard* articulates what it means to provide and receive high-quality stroke care in BC.

BC PATIENT SAFETY & QUALITY COUNCIL
Working Together. Accelerating Improvement.

ABOUT THE BC PATIENT SAFETY & QUALITY COUNCIL

Our work leads to better health care for British Columbians

We deliver the latest knowledge from home and abroad to champion and support high-quality care for every person in our province. This system-wide impact requires creativity and innovative thinking, which we combine with evidence-informed strategies to shift culture, improve clinical practice and accelerate our partners' improvement efforts.

We also understand that meaningful change comes from working together. We are uniquely positioned to build strong partnerships with patients, care providers, health leaders, policymakers, senior executives, academics and others. These connections enable us to nurture networks, recognize the needs of our health care system and build capacity where it is needed the most.

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Table of Contents

Stroke Quality Standard

WHAT IS A QUALITY STANDARD?

A quality standard is a set of concise statements and associated indicators that contribute to delivering high-quality care. It supports:

- **People** to understand the care offered by their health care system, and to make informed decisions in partnership with their health care teams;
- **Health care professionals** to make decisions about appropriate care; and
- **Health care organizations** to examine their systems and policies and improve the care they provide.

See bold text like ***"unwarranted variation"*** *at the right?*

That means we've included a definition for that term in our glossary on page 22

Quality standards focus on areas of the patient journey where the need for improving quality is the greatest. In this way, they differ from best practice guidelines which aim to address all areas of the patient journey. Quality standards are based on the best available evidence and focus on areas of British Columbia's (BC) health care system with known **unwarranted variation**. The Council will review each quality standard every three years to determine its effectiveness and relevance.

Quality standards also aim to promote cultural safety and equity within the health care system. Some statements will directly address cultural safety or equity concerns, while others will highlight cultural safety and equity considerations when implementing a statement into practice. It is important to continue the process of cultural humility when applying the information in this document.

Quality Statements

Quality statements describe priority areas for improvement within the BC health system. Unwarranted variation occurs when the care someone receives is not what is expected and is not the result of their individual circumstances or choices. Quality statements aim to reduce areas of unwarranted variation by focusing improvement efforts where they are needed the most and outline the care that should be offered to people.

Quality Indicators

Quality statements require monitoring using associated **quality indicators** in order to track if care is meeting the standard or being improved. Quality indicators are intended to measure the progress towards meeting each quality statement.

About This Quality Standard

WHAT IS STROKE?

A **stroke** happens when blood stops flowing to any part of the brain, damaging brain cells. The effects of a stroke depend on the part of the brain that was damaged, and the amount of damage done.[1] Types of stroke include:

- **Ischemic stroke** – when a blockage or blood clot stops blood flow to the brain.
- **Hemorrhagic stroke** – when a blood vessel in the brain is damaged or weakened, stopping blood flow to the brain. This can also be referred to as a spontaneous nontraumatic intracerebral hemorrhage.
- **Transient Ischemic Attack (TIA)** – when a small clot briefly blocks blood flow to the brain. This is sometimes called a mini-stroke and is a medical emergency because it is a warning sign that a larger stroke may occur.[1]

In this quality standard, the word stroke is used to collectively refer to all different types of stroke, unless it is stated otherwise.

Why Do We Need a Stroke Quality Standard?

The goal of the *Stroke Quality Standard* is to improve the quality of care offered to people experiencing or living with stroke, increase their chance of survival, maximize their **recovery** and reduce their risk of another stroke.

Although stroke is a leading cause of death and disability, in recent years, efforts to prevent and treat stroke are leading to improvements in stroke care and decreases in death rates in BC.[3] This quality standard will provide a provincially guided approach to this continued improvement.

Stroke is the third-leading cause of death in Canada after cancer and heart disease and a leading cause of adult disability.[2] The incidence of stroke is increasing as the population grows and ages[2] and more than 10,000 British Columbians are admitted to hospitals following a stroke or TIA each year.[3]

Up to 80% of all strokes are preventable by maintaining a healthy lifestyle, including being physically active, eating healthy and not smoking.[2]

Scope

This *Stroke Quality Standard* relates to the care that people should be offered when they are at risk of having a stroke, experiencing a stroke or recovering from a stroke. It covers early recognition, acute stroke management, **secondary stroke prevention**, **rehabilitation**, recovery, community reintegration and transitions between care areas. It does not cover primary stroke prevention and end-of-life care for people with stroke.

This quality standard applies to all health care settings where people may seek care because they are at risk of having a stroke, experiencing a stroke or recovering from a stroke.

General Principles & Guiding Frameworks

Partnership

People with stroke, their chosen caregivers and/or their family will partner with health care professionals when using the information in this quality standard. Clinical judgement should be considered alongside the preferences, priorities and goals of the person with stroke.

Alignment

Health care organizations should ensure their policies and processes align with the quality standard and advocate for the resources required to implement and monitor adherence to the quality standard. This includes supporting health care professionals to partner with people with stroke to deliver high-quality care.

Equity

Providing stroke care to all residents of BC requires a coordinated and integrated approach. Due to the unique geography of BC, stroke services must use innovative approaches in the delivery of equitable care. Technology, such as telehealth, allows for virtual assessment, monitoring and treatment of people with stroke across the province. Technology can be used to supplement in-person care in some circumstances.

Cultural Safety & Humility

Cultural safety is an outcome based on respectful engagement that recognizes and strives to address power imbalances inherent in the health care system. It results in an environment free of racism and discrimination, where people feel safe when receiving health care.[5] Cultural safety is defined by the person receiving care, and their unique experiences shape the way we provide appropriate care.[6]

Cultural humility is a process of self-reflection to understand personal and systemic biases and to develop and maintain respectful processes and relationships based on mutual trust. It involves humbly acknowledging oneself as a learner when it comes to understanding another's experience.[5] In health care, it means going through an active process of examining our assumptions, beliefs and privileges, as well as how they influence the way that care is delivered.[6]

Canadian Stroke Best Practice Recommendations

The ***Canadian Stroke Best Practice Recommendations*** are up-to-date, evidence-based guidelines for preventing and managing stroke and promoting optimal recovery and reintegration for those who have experienced a stroke. They provide guiding principles for stroke care and the necessary infrastructure needed to achieve best practices in stroke care.[8] These recommendations are foundational to the references of best practice in the quality standards.

The BC Health Quality Matrix

The **BC Health Quality Matrix (the Matrix)** provides a common language and understanding about quality for all those who engage with, deliver, support, manage and govern health and wellness services.[7] A shared definition ensures that we can all approach thinking and learning about quality in the same way. This quality standard uses the **dimensions of quality** from the Matrix to describe what it is aiming to improve.

Interdisciplinary Care

Many different professions contribute to caring for people with stroke. These may include doctors, nurses, physiotherapists, occupational therapists, speech language pathologists and many more, and they are referred to in this standard collectively as **health care professionals**.

Culturally appropriate health care is an important element of achieving cultural safety. Traditional healing and complementary medicine may play an important role in the health and wellness of people with stroke and should be incorporated wherever possible into the care team. Health care professionals must work together in a coordinated approach to deliver care that is safe and effective.

Person- and Family-Centred Care

Person- and family-centred care puts the person with stroke and their chosen caregivers and/or family members at the forefront of their health and care. It ensures that the person with stroke can partner with health care professionals, retain control over their own choices and make informed decisions about their care.

Chosen caregivers and/or family members are relatives, partners, friends or members of the community that play an important role in ensuring people receive the care they need to have a good quality of life.

This quality standard integrates person- and family-centred care principles. This includes how people experiencing or recovering from stroke and their chosen caregivers and/or family members should be:

- treated with dignity and respect;
- provided with timely, accurate and complete information;
- encouraged and supported to participate in care and informed decision making; and
- provided opportunities to engage and collaborate in the planning of their care.[4]

This quality standard advocates for the involvement of the person, chosen caregivers and/or family members in planning care and education, whenever possible. This is to help meet the specific needs of the person with stroke and create a culturally safe environment for them.

Stroke Quality Statements

CROSS-CONTINUUM

1

Quality Statement 1

People with stroke experience a care journey in the health care system that is respectful and culturally safe.

Purpose

To improve accessibility to stroke services by delivering care that is culturally safe and respectful.

BC Health Quality Matrix Dimensions: Respect & Safety

WHAT THIS STATEMENT MEANS:

a. **For patients, caregivers and/or family** – If you are a person with stroke, the care you receive should be culturally safe and respectful. You should expect that your stroke care is professional and respectful regardless of your personal identity. Health care teams should strive to work with you and consider your individual circumstances, histories, needs and preferences. Encounters with health care professionals throughout your care journey should demonstrate cultural humility: a process where providers examine how their assumptions, beliefs and privileges might influence the way they practice.

b. **For health care professionals** – Cultural humility is a process undertaken by care providers to help identify personal and systemic biases that influence the ability to develop and maintain respectful relationships based on mutual trust.[4] Developing cultural humility starts with education and training but involves ongoing self-reflection, learning, curiosity and seeking feedback. A patient-provider relationship developed with cultural humility promotes effective and meaningful shared decision-making and improves health outcomes.[4] Cultural safety is defined by the person receiving care and is actively achieved through ongoing cultural humility.

c. **For health care organizations** – A culturally safe environment is fostered by an ongoing process of cultural humility. Everyone involved with patient encounters within the system should be supported in developing key skills for cultural humility. Cultural safety is defined by the person receiving care; therefore, it is their experience that must be measured to ensure that efforts to build culturally safe practices and environments are successful. Mechanisms should be in place to measure people's cultural safety experiences throughout their stroke care journey. Policies and guidelines should reflect this commitment.

Indicators

1. Proportion of people with stroke who report experiencing culturally safe care.

2 Quality Statement 2

People with stroke and their chosen caregivers and/or family collaborate with the care team to develop a **care plan** and work together to evaluate and update it throughout the patient journey.

Purpose

To ensure the person with stroke is in the centre of decision making and that their preferences, priorities and goals are addressed throughout their care and recovery.

BC Health Quality Matrix Dimensions: Respect, Safety & Appropriateness

WHAT THIS STATEMENT MEANS:

a. **For patients, caregivers and/or family** – If you are a person with stroke, your care plan should be developed and written with you, your chosen caregivers and/or family and your care team. This plan should be available for you to read and discuss changes throughout your journey. The care plan should support your recovery and include your goals, upcoming tests and ways to minimize risk of another stroke. This plan should also include the named contact of your primary health care provider.

b. **For health care professionals** - Develop an interprofessional care plan in partnership with the person with stroke and their chosen caregivers and/or family at the earliest possible opportunity. Co-developed care plans should be revised and updated regularly and be based on recommendations from the *Canadian Stroke Best Practice Recommendations.* Clearly communicate the care plan to the person with stroke and their chosen caregivers and/or family and ensure they understand the plan. The most current care plan should be accessible to the person with stroke, their chosen caregivers and/or family and all relevant health care professionals.

c. **For health care organizations** – Ensure protocols and policies are in place to enable the care teams to co-develop and communicate care plans with the person with stroke and their chosen caregivers and/or family, including ensuring they have access to the most current care plan. Systems should be in place to facilitate the care plan to move with the person with stroke throughout their journey as this ensures better communication and safer care.

d. **Cultural safety and equity considerations** – The person with stroke and their chosen caregivers and/or family are the experts in their needs, lived experience and cultural context. Their expertise should be acknowledged and reflected in the care plan. Elements of traditional or complementary healing that the person with stroke identifies should be incorporated wherever possible.

Indicators

2. Proportion of people with a final diagnosis of stroke who report being involved in care planning throughout their hospital admission.

3 Quality Statement 3

A person with stroke and their chosen caregivers and/or family are engaged in education and training to support them from the onset of their stroke and throughout their recovery.

Purpose

To increase the involvement of people with stroke and their chosen caregivers and/or family in reaching their health goals, through skills and knowledge in stroke care.

BC Health Quality Matrix Dimensions: Respect, Safety, Accessibility & Effectiveness

WHAT THIS STATEMENT MEANS:

a. **For patients, caregivers and/or family** – If you are a person with stroke, their chosen caregivers and/or family, education and training on stroke will be available to you. This should include education on risk factors, treatment, recovery and skills to manage at home. Relevant education and training should be offered throughout your care journey.

b. **For health care professionals** – Ensure people with stroke and their chosen caregivers and/or family are offered opportunities to be engaged in education on stroke and training of necessary skills to optimize the person's independence and safety. This should include information on stroke awareness, secondary stroke prevention and care required. It also includes practical training of skills such as personal care, safe physical management and management of issues like swallowing or diet. They should also know how and where to access more information in their community. This education and training should be aligned with the best evidence as described in *Canadian Stroke Best Practice Recommendations.*

c. **For health care organizations** – Ensure systems are in place for people with stroke and their chosen caregivers and/or family to receive education on stroke and training on skills required to support their ongoing recovery, and maintain health and well-being. When people with stroke and their chosen caregivers and/or family receive appropriate education and training, they will have a better opportunity to live independently while reducing hospital re-admissions.

d. **Cultural safety and equity considerations** – When planning education and training, consider the literacy level, cultural background, location of the recipient and their impairment after a stroke. Educational materials should be available in a variety of languages and tailored to the person receiving them wherever possible.

Indicators

3a. Proportion of people with a final diagnosis of stroke who report being involved in education and training related to the ongoing management of their condition.

3b. Evidence of local arrangements and protocols for providing education and training to people with stroke.

4 Quality Statement 4

People with symptoms of a stroke are recognized early and offered timely transport to the most appropriate care.

Purpose

To increase timely access to evidence-based hyperacute therapies known to improve outcomes after stroke.

BC Health Quality Matrix Dimensions: Respect, Accessibility, Appropriateness, Effectiveness & Equity

WHAT THIS STATEMENT MEANS:

a. **For patients, caregivers and/or family** – Stroke is a medical emergency. If you or another person experiences any of the following **FAST** signs call 9-1-1 immediately:[9]

Face is it drooping?
Arms can you raise both?
Speech is it slurred or jumbled?
Time to call 9-1-1 right away.

Act FAST because the quicker you act, the more of the person you save.

Other symptoms of stroke include sudden onset of:

- Weakness, numbness or incoordination (not coordinated) on one side of the body
- Loss of vision (cannot see) in one or both eyes
- Severe headache
- Loss of memory or confusion
- Episode of dizziness and unsteadiness

If you think someone is having a stroke, they need to be seen by a health care professional right away so they can receive the care they need.

b. **For health care professionals** – A person suspected of stroke should be rapidly assessed at first contact in the community, pre-hospital or emergency triage using a validated stroke screening tool (e.g., FAST-VAN or NIH Stroke Scale) by a trained health care professional. If a person has any symptoms of stroke, it should be treated as such until it has been definitively ruled out. People suspected of stroke should be offered timely transport to appropriate care. People suspected of stroke and their chosen caregivers and/or family should be communicated with during this time and involved in decision-making.

c. **For health care organizations** – Ensure protocols and policies are in place to identify stroke symptoms and rapidly transport the person to receive definitive stroke care. Regional and provincial ambulance transport and triage pathways should be in place to support timely emergency transport within and across regions to optimize access to the most appropriate stroke care. This includes clear pathways for transporting people suspected of stroke to a health care facility with appropriate hyperacute services to identify and treat people experiencing acute stroke.

d. **Cultural safety and equity considerations** – It is important to consider biases, stereotypes and assumptions when screening and assessing people for stroke. Health care professionals must rule out the possibility of stroke before assuming other causes. Transportation to appropriate services may mean leaving a person's community and their support structures. This should be considered when planning transport with the person. People who choose not to leave their community should be supported with services that are available where they are.

Indicators

4a. Proportion of people suspected of stroke who are assessed using a validated screening tool by BC Emergency Health Services (BCEHS).

4b. Proportion of acute stroke patients transported by BCEHS to a stroke-enabled hospital (i.e., designated hyperacute stroke treatment centre) as first hospital destination.

5

Quality Statement 5

A person with acute stroke is offered rapid assessment and treatment depending on their type of stroke when presenting to the emergency department, as outlined by the ***Canadian Stroke Best Practice Recommendations.***

Purpose

To improve the appropriateness of assessment and treatment offered to people with stroke to decrease the severity of long-term effects.

BC Health Quality Matrix Dimensions: Respect, Safety, Appropriateness, Effectiveness & Equity

WHAT THIS STATEMENT MEANS:

a. **For patients, caregivers and/or family** – If you are suspected of having a stroke you will be reviewed to confirm and determine the type of stroke. To find out what type of stroke you have, you will need a brain scan.

The two main types of strokes are:

- Ischemic stroke – caused by a blood clot blocking a blood vessel. If your stroke is caused by a blood clot, treatment to restore blood flow in the brain will be considered. This treatment may include medicine to dissolve the clot (**thrombolysis**) or surgery to remove the clot (**endovascular thrombectomy or EVT**).[1]
- Hemorrhagic stroke – caused by bleeding in the brain. If your stroke is caused by a bleed in the brain, treatment to stop bleeding and relieve pressure in the brain will be considered. This treatment may include surgery and/or managing your blood pressure and the way your blood clots.[1]

These treatments may not be appropriate for everyone. The care team will work with you and your chosen caregivers and/or family on what treatment is best for you and they will ask for consent to provide treatment where possible. Treatment of stroke is a medical emergency and time critical.

b. **For health care professionals** – Various options exist for treatment of stroke, depending on the type and severity. Rapid assessment and appropriate imaging will determine the type and severity of stroke. **Reperfusion** treatment such as thrombolysis or endovascular thrombectomy (EVT) should be offered for eligible and confirmed ischemic stroke as soon as possible. Emergency medical and surgical management options should be considered for spontaneous intracerebral hemorrhage, such as blood pressure control, management of **anticoagulation** (if applicable) and neurosurgical consultation. Collaborate with the person with stroke, their chosen caregivers and/or family, involving them in decision making whenever possible and seeking consent for treatment.

c. **For health care organizations** – Systems are in place to ensure people with stroke are rapidly assessed and offered treatment as per best evidence outlined by the *Canadian Stroke Best Practice Recommendations.* Acute treatment of stroke is time-critical and requires coordinated services that bridge multiple specialties and health systems. **Virtual health** technologies, such as Tele-stroke, should be considered to increase access to evidence-based care if providers with stroke expertise are not available on site.

d. **Cultural safety and equity considerations** – For areas where stroke specialists are not readily available, consider the use of Tele-stroke services to assess the patient. When explaining the person's condition and treatment options, care should be taken to ensure the person and their chosen caregivers and/or family understand the information and can make informed decisions about their care options. Consideration should be made to involve traditional/community supports if the person with stroke, their chosen caregivers and/or family request their support.

Indicators

5a. Proportion of people suspected of acute stroke that receive initial brain imaging (CT or CTA) within 30 minutes or less of hospital arrival.

5b. Proportion of people with ischemic stroke who received thrombolysis within 60 minutes or less of arrival to hospital.

5c. Proportion of people with ischemic stroke who receive endovascular thrombectomy within 90 minutes or less of arrival to hospital.

6 Quality Statement 6

A person with stroke is offered **stroke unit care** as defined by the best available evidence.

Purpose

To improve acute stroke outcomes by increasing access to best practice, **interdisciplinary** stroke unit care.

BC Health Quality Matrix Dimensions: Respect, Accessibility, Appropriateness, Effectiveness & Equity

WHAT THIS STATEMENT MEANS:

a. **For patients, caregivers and/or family** – Stroke unit care involves a team of various health care professionals with stroke expertise. The team should include physicians, nurses, occupational therapists, physiotherapists, speech-language pathologists, pharmacists, social workers and dietitians. Some members of this team may see you in person and others may see you virtually. If you are a person with stroke, you should be offered stroke unit care. Depending on where you are in the province, you may need to be transferred to a hospital with this capacity. You and your chosen caregivers and/or family will be involved in the decision to transfer to a hospital that can offer stroke unit care.

b. **For health care professionals** – People with stroke should be offered stroke care by an interdisciplinary team with stroke expertise. The team should include physicians, nurses, occupational therapists, physiotherapists, speech-language pathologists, pharmacists, social workers and dieticians. The team may also include access to other health care team members depending on the person's needs, preferences and goals. The interdisciplinary team should assess the person with stroke within 48 hours of admission to hospital and form a care plan in collaboration with the person with stroke and their chosen caregivers and/or family. This assessment should be based on the *Canadian Stroke Best Practice Recommendations*, using **validated tools**.

c. **For health care organizations** – Systems should be in place to ensure people with stroke are offered evidence-based stroke unit care as defined by *Stroke Services BC.* Virtual-health options should be considered to increase access to evidence-based care if providers with stroke expertise are not available on site.

d. **Cultural safety and equity considerations** – Elements of traditional or complementary healing should be incorporated, as per the person with stroke's wishes, alongside care described by best evidence wherever possible. People who choose not to transfer to facilities with stroke unit care should be supported in their community with services available. Virtual health should be in place to provide expert stroke care to communities that do not have onsite health care professionals with stroke expertise.

Indicators

6. Proportion of people with stroke who were admitted to a stroke unit.

SECONDARY PREVENTION

7

Quality Statement 7

A person with stroke (including TIA) is assessed by a health care professional when they present to a health care facility to determine appropriate care or the need for urgent referral to mitigate the risk of recurrent stroke.

Purpose

To decrease the risk of recurrent or more disabling stroke in people who have a stroke (including TIA).

BC Health Quality Matrix Dimension: Respect, Safety, Appropriateness, Effectiveness & Efficiency

WHAT THIS STATEMENT MEANS:

a. **For patients, caregivers and/or family** – If you have a stroke (including TIA), you are at risk of having another stroke, which could lead to more disability or loss of life.

   If you are a person with stroke (including TIA), you should be reviewed by a health care professional when presenting to a health care facility to determine the risk of another stroke. Tests may be ordered to help inform possible treatments. A health care professional will talk to you about possible treatments to help minimize the risk of another stroke.

   If you are admitted to hospital, you will be offered treatment to minimize your risk of another stroke. You and your chosen caregivers and/or family should be involved in education on what stroke is and what you can do to minimize your risk of another stroke. This education may include changes to your diet, exercise or taking medicine. You should be provided with clear and accessible information about stroke and its risk factors so you can review it later.

   If you are not admitted to hospital you may be given an urgent referral to another health care facility so you can be seen by a health care professional with expertise in stroke. They will work with you to decide on treatment and talk about ways to minimize your risk of another stroke.

b. **For health care professionals** – People with stroke are at high risk of a reoccurring stroke, especially within 48 hours of their initial symptom onset.[4] People with stroke should be assessed for risk of reoccurring stroke by a health care professional with expertise in stroke. A care plan, including education, should be developed with the person with stroke, their chosen caregivers and/or family. The care plan should be based on best evidence as outlined in the *Canadian Stroke Best Practice Recommendations*. This includes assessment and management of blood pressure, irregular heartbeat, lipid levels, blood sugars and diabetes, and consideration of **anti-platelet therapy**, anticoagulation and risk factors. Care plans should be accessible to the person with stroke and their chosen caregivers and/or family so they can be actively involved in the planning and care implementation.

   If the health care facility does not have a health care professional with expertise in stroke, the person with stroke should be referred to a health care facility or provider that specializes in secondary stroke prevention.

c. **For health care organizations** – Ensure systems are in place so that people with stroke (including TIA) receive rapid access to services either virtually or in person that specialize in minimizing the risk of recurrent stroke. Processes and protocols should ensure a care plan that outlines preventative strategies is made in conjunction with the person with stroke and given to them in a language and format they understand before they leave the health care facility.

d. **Cultural safety and equity considerations** – When making a care plan to decrease the risk of recurrent stroke, collaborate with the person with stroke and their chosen caregivers/family to overcome physical, social and economic barriers. Ensure that the plan is culturally safe and relevant to the person with stroke. Consider their local community supports and how they may help meet the person's health goals.

Indicators

7a. Proportion of patients with TIA or non-disabling stroke who are investigated and discharged from the emergency department who are referred to organized secondary stroke prevention services at discharge.

7b. Proportion of patients with TIA or non-disabling stroke with a very high or high risk of recurrent stroke who receive brain and vascular imaging within 24 hours of the first contact with the health care system.

7c. Proportion of people with a final diagnosis of ischemic stroke or TIA prescribed antithrombotic therapy on discharge from acute care.

8

Quality Statement 8

People with stroke have access to interdisciplinary rehabilitation in alignment with the ***Canadian Stroke Best Practice Recommendations*** throughout their care journey.

Purpose

To increase access to evidence-informed stroke rehabilitation delivered by health care professionals with expertise in stroke recovery that meets the person's needs.

BC Health Quality Matrix Dimensions: Respect, Accessibility, Appropriateness & Effectiveness

WHAT THIS STATEMENT MEANS:

a. **For patients, caregivers and/or family** – Rehabilitation is a process in the stroke recovery journey to help regain skills that were lost due to stroke. Rehabilitation may occur at any point of the patient journey, including in health care facilities, ambulatory clinics, community programs and more.

   If you are a person with stroke admitted to hospital, you should have an initial rehabilitation review by health care professionals with expertise in rehabilitation as soon as possible after admission. This usually happens within 48 hours of hospital admission, however this will depend on your condition. The rehabilitation team may include **psysiatrists** or other physicians with expertise in stroke rehabilitation, occupational therapists, physiotherapists, speech-language pathologists, nurses, social workers and dietitians. Depending on where you are, some of the rehabilitation team may see you in person or virtually.

   If you are a person with stroke and not admitted to hospital, you should be screened to see if you need to be referred to an outpatient or community-based rehabilitation service.

b. **For health care professionals** – Rehabilitation is a process that may occur throughout the patient journey and should be considered after the person with stroke is stabilized. An interdisciplinary stroke rehabilitation team should assess the person with stroke within 48 hours of hospital admission, when clinically appropriate. An interprofessional care plan should be informed by and developed with the person with stroke and their chosen caregivers and/or family to best suit their needs and goals. Evidence-informed rehabilitation interventions should commence as soon as appropriate during acute care.

   A person with stroke who is not admitted to hospital should be screened for the need for referral to a health care professional with expertise in stroke rehabilitation, where feasible, before they leave the health care facility. When screening, assess any persistent disabilities that impact their activities of daily living.

c. **For health care organizations** – Ensure systems are in place so people with stroke have timely access to an interdisciplinary rehabilitation team with stroke expertise. This may be either fully in-person or a combination of in-person and virtual. This team should include physiatrists or other physicians with expertise in stroke rehabilitation, occupational therapists, physiotherapists, speech-language pathologists, nurses, social workers and dieticians, and other professionals based on persons' needs. Rehabilitation may occur at any point of the patient journey, including in acute health care facilities, ambulatory clinics, community programs and more. The person with stroke should have access to rehabilitation services that meet their individual needs throughout their recovery.

d. **Cultural Safety and Equity Considerations** – Elements of traditional or complementary healing that the person with stroke identifies should be incorporated alongside care described by best evidence wherever possible. When collaborating with people with stroke, consider their personal and cultural needs. Some people with stroke will choose to stay in their community rather than travelling to specialized centres. These people should be supported and offered services such as virtual health, where possible.

Indicators

8a. Proportion of stroke patients with a rehabilitation assessment within 48 hours of hospital admission for acute stroke by at least one rehabilitation professional with expertise in stroke as appropriate to patient needs.

8b. Proportion of acute stroke patients discharged/transfered from acute care to an inpatient rehabilitation unit.

8c. Proportion of stroke patients discharged to the community who receive a referral for outpatient rehabilitation before discharge from acute and/or inpatient rehabilitation (either facility-based or community-based programs).

COMMUNITY REINTEGRATION

9

Quality Statement 9

People with stroke have a health and social care needs review performed at least twice within the first year after hospital discharge, and then annually by the provider identified in the care plan.

Purpose

To ensure support for reintegration of people with stroke back into their community, and to identify gaps in knowledge, skills or support to address changes in status or function over time.

BC Health Quality Matrix Dimensions: Respect, Safety, Accessibility & Appropriateness

WHAT THIS STATEMENT MEANS:

a. **For patients, caregivers and/or family** – If you are a person with stroke, you should be assessed on your readiness to return to the community before being discharged from hospital care. This means assessing you and your chosen caregivers and/or family's comfort with the skills and knowledge that will support you to live safely in the community, as well as assessing your health. A plan should be made for you to follow up with a health care professional in the community to see if you need any other support. Follow-up should occur twice in the first year after your stroke, and then once annually. You should be provided with information on who to contact if you need to talk to someone about your health before your next review. This may be your primary care provider or another health care professional, depending on your circumstance and where you are.

b. **For health care professionals** – Use validated tools to assess the knowledge and ability of a person with stroke and their chosen caregivers and/or family to determine what supports they may need in the community before discharge from hospital. Collaborate with them and their primary care team to determine when, where and how follow-up reviews will take place. Provide them with information on who to contact if they have any issues before the next review. When reviewing the information with the person with stroke and their chosen caregivers and/or family, look for gaps in their knowledge, skills or services and seek to address those areas. Referral to specialized community teams may be needed.

c. **For health care organizations** – Ensure systems are in place to support appropriately trained health care professionals to conduct health and social care needs reviews with people with stroke and their chosen caregivers and/or family in the community. These reviews will help support people with stroke to remain in their community and ensure their health and well-being. Ensure that community-based resources exist to support people in their community.

d. **Cultural safety and equity considerations** – Different communities will have different support structures available. It is important to collaborate with the person with stroke and their chosen caregivers and/or family, as well as with community organizations, to determine what the person needs to successfully return to the community. Also consider the role the person has within their family and community, and how their stroke will impact that role. Integrated approaches and partnerships may be needed within and across regions to ensure equitable access to services.

Indicators

9a. Proportion of people with stroke readmitted to an emergency department or acute inpatient care for reasons related to failure to thrive, following an initial stroke hospital stay.

9b. Proportion of people with stroke who report having their stroke care needs reviewed with their primary care provider within the first year following discharge from hospital.

Definitions

Term	Definition
anticoagulation	Therapy used to prevent blood clots from forming. Blood clots can cause a stroke when they make their way into blood vessels. Anticoagulants can also prevent blood clots from getting bigger.[10]
anti-platelet therapy	Anti-platelets help to prevent blood clots by preventing blood from clumping together.[10] Aspirin and Clopidogrel are common anti-platelet therapies.
care plan	A plan to outline a person's stroke care journey. It is developed with the person with stroke, their chosen caregivers and/or family and the health care team. It includes specific therapy goals, upcoming investigations and daily therapy activities.[17]
complementary medicine	A variety of health care practices that may be used along with medical treatment. Examples include alternative health approaches (e.g., naturopathy), mind and body techniques (e.g., acupuncture) and natural health products (e.g., herbs and dietary supplements).[11]
computerized tomography scan (CT scan)	A CT scan sends X-rays through the body to make detailed pictures of body structures, such as organs, bones or blood vessels.[12]
cultural humility	A process of self-reflection to understand personal and systemic biases and to develop and maintain respectful processes and relationships based on mutual trust. Cultural humility involves humbly acknowledging oneself as a learner when it comes to understanding another's experience.[5]
cultural safety	An outcome based on respectful engagement that recognizes and strives to address power imbalances inherent in the health care system. It results in an environment free of racism and discrimination, where people feel safe when receiving health care.[5]

Term	Definition
dimensions of quality	Quality is defined by seven dimensions that span the full continuum of care: ◢ **Respect**: honouring a person's choices, needs and values ◢ **Safety**: avoiding harm and fostering security ◢ **Accessibility**: ease with which health and wellness services are reached ◢ **Appropriateness**: care is specific to a person's or community's context ◢ **Effectiveness**: care is known to achieve intended outcomes ◢ **Equity**: fair distribution of services and benefits according to population need ◢ **Efficiency**: optimal and sustainable use of resources to yield maximum value [7]
end-of-life care	Supportive and compassionate care that focuses on comfort, quality of life, respect for personal health care treatment decisions, support for the family, and psychological, cultural and spiritual concerns for dying people and their families.[13]
endovascular thrombectomy (EVT)	A surgical procedure used to remove a blood clot in a blood vessel.[14]
FAST signs	**FAST** is an acronym used to highlight the most common signs of a stroke: **Face** is it dropping? **Arms** can you raise both? **Speech** is it slurred or jumbled? **Time** to call 911 right away.[9]
health care professionals	Health care professionals provide essential services to promote health, prevent diseases and deliver health care services based on the needs of the person.[15]
interdisciplinary team	A team of health care professionals dedicated to the care of a person with stroke. The team will include physicians, nurses, allied health professionals such as physiotherapists, speech-language pathologists, pharmacists, social workers and dietitians, to name a few.[16]
ischemic stroke	A stroke which occurs when the blood supply to the brain is disrupted, normally due to a blood clot.[1]
physiatrist	A physician who specializes in the field of physical medicine and rehabilitation.[18]

Term	Definition
primary stroke prevention	Approach to prevent the initial occurrence of a stroke in otherwise healthy individuals. Prevention strategies include lifestyle and risk factor management, diabetes management and screening for high blood pressure.[23]
quality indicators	A quality indicator is used to measure health system performance, provide comparable and actionable information and track progress over time.[19]
recovery	Stroke recovery is a process which includes seven steps: exercise and mobility, communication and language, social interaction, thinking, memory and perception, support, healthy lifestyle, and navigating the health care system.[20]
rehabilitation	A process in the stroke recovery journey to help regain skills and functions that were lost due to stroke.[21]
reperfusion treatment	Used to restore blood flow to the brain by using either medication (thrombolysis) or surgery (endovascular thrombectomy).[22]
secondary stroke prevention	Efforts such as lifestyle modifications to prevent stroke in patients who are at risk of experiencing a stroke or have already experienced one.[23]
spontaneous intracerebral hemorrhage (hemorrhagic stroke)	Bleeding in the brain which causes an interruption in blood flow. Leads to damage of brain tissue.[1]
stroke	A disruption of blood supply to the brain — either through a blockage due to clot (ischemic), or bleeding (hemorrhagic). The amount of brain affected by the stroke and the type of symptoms a person experience depends on where the blockage or bleed occurs. In both cases, if the blood supply is not restored quickly, the affected part of the brain dies, causing disability or death.[1]
stroke unit care	A stroke unit is a specialized, geographically defined hospital unit dedicated to the management of stroke patients and staffed by an experienced interdisciplinary stroke team.[16]
thrombolysis	Medication used to break up a blood clot to allow blood to begin flowing properly again.[10]
transient ischemic attack (TIA)	A “mini-stroke” when blood flow to the brain stops for a short period of time. A TIA is an important sign of a problem with blood flow to the brain and should be treated as an emergency.[1]
unwarranted variation	Care that is not consistent with the person with stroke’s preferences or underlying stroke condition.[25]

Term	Definition
validated tools	Recommended assessment and screening tools used during stroke care to assess levels of functional and disability due to stroke.[26] Examples of validated stroke tools: ◢ Alpha-FIM (Functional Independence Measure): used in the acute care setting to assess functional ability. ◢ FAST-VAN: used to identify large vessel occlusion. ◢ NIH-Stroke Scale: Used to assess neurologic function (visual, auditory, sensory).
virtual health	Connects patients and their chosen caregivers and/or families with health care professionals using technology. It improves access in remote locations by enabling health care professionals to assess, monitor and treat a person with stroke virtually.[24]

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