

Stroke Prevention Best Practice Workshop

Source: HSFO, 2005, Secondary Prevention Workshop, Overview, Introduction, Continuum

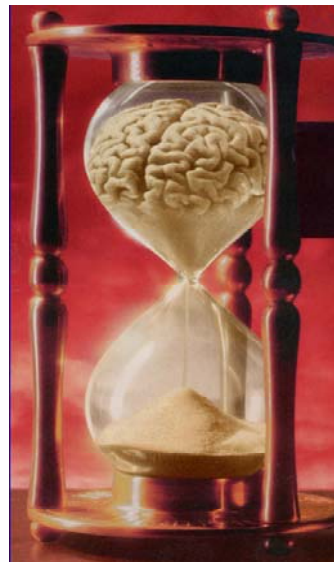


HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Current Issue

- New and effective treatments exist for the prevention of stroke.
- An aggressive approach is needed for the **identification** of risk factors and their **management** at all points of the stroke prevention and care continuum.



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Unmet Need

- Despite Level I evidence to support the effectiveness of stroke prevention treatments, many individuals at risk remain **untreated** or **under-treated**.
- There is a need for marked improvement in the management of known risk factors such as hypertension, hyperlipidemia, diabetes, atrial fibrillation, and smoking.



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Unmodifiable Stroke Risk Factors

Age

Gender

Family history

Ethnicity

Prior transient ischemic attack or stroke



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Modifiable Risk Factors

High blood pressure

High cholesterol

Increased BMI (>25)

Waist Measurement (>40 inches male, 35 inches female)

Physical inactivity

Smoking

Excessive alcohol consumption

Atrial fibrillation

Coronary heart disease

Diabetes

Asymptomatic carotid artery disease



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Independent Risk Factors for Stroke Within 90 days of TIA

Age >60 years

Diabetes mellitus

Duration of episode >10 minutes

Weakness in the episode

Speech impairment in the episode

History of Crescendo TIAs



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Current State of Modifiable Risk Factors

Only 16% of Canadians prescribed treatment for HTN are well controlled

59% of Saskatchewan adults are inactive

55% of Saskatchewan adults (20-64 yrs) are overweight

20% of Saskatchewan residents >45 yrs, smoke

Eight out of every ten Saskatchewan people have **at least one of the major risk factors** for stroke.



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Definitions

Primary Prevention

- Aimed at preventing disease **before** it occurs.
- Usually risk factor modification aimed at preventing a first stroke.
- May be accomplished at the population level (health promotion programming) or individual clinical level (primary clinical prevention).

Ministry of Health and Long-Term Care. Towards an Integrated Stroke Strategy for Ontario, Report of the Joint Working Group, June 2000.



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Definitions

Secondary Prevention

- Strategies work to prevent the disease from progressing to a completed stroke or to prevent another stroke (recurrence).
- Targeted at those with a very high risk of stroke (e.g., those with symptomatic carotid stenosis $\geq 70\%$) and those who have had TIAs or stroke.

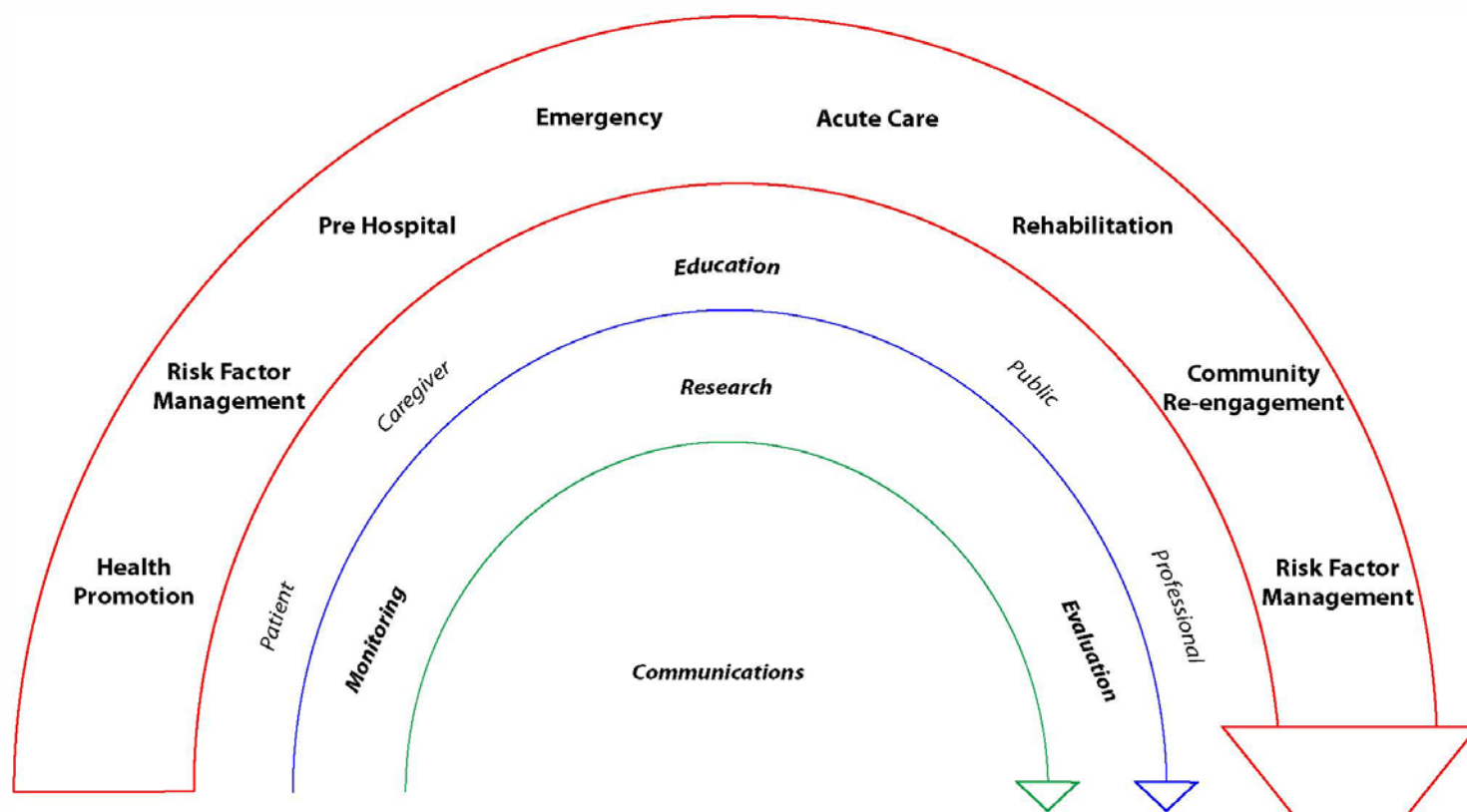
Ministry of Health and Long-Term Care. Towards an Integrated Stroke Strategy for Ontario, Report of the Joint Working Group, June 2000.



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Stroke Continuum



Decreased Incidence
and Impact of Stroke
in Saskatchewan



Source: www.hsf.sk.ca/siss 2008, A Saskatchewan Integrated Stroke Strategy:

The "ABCDE"s of Stroke Prevention

A	B	C	D	E
Anticoagulants Antiplatelets	BP lowering agents (ACEI, ARBs, Diuretics)	Cessation of smoking Cholesterol lowering agents (Statins)	Diabetes control Diet	Endarterectomy Exercise



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Priority Issues for Secondary Prevention

- **Rapid access** - to diagnostic testing and surgical follow-up
- **Leadership** - to sponsor and guide development and implementation of secondary stroke prevention services
- **Regional planning** - to link and interface clinics and patient care services
- **Development of links** - with primary care, hospitals, rehabilitation, community organizations and long-term care.
- **Measurement and evaluation** - to support patient care and regional planning
- **Professional education**



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Best Practice Guidelines for Stroke Prevention

- Timely optimal stroke prevention strategy for all TIA and stroke survivors, includes:

Stroke prevention services

Lifestyle modification

Pharmacotherapy

Effective communication

Education strategies for patients and providers

- Canadian Best Practice Recommendations for Stroke Care 2006



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Secondary Stroke Prevention After TIA or Stroke

- Determine etiology of the ischemic event through history, physical exam and diagnostic testing
- Initiate and optimize secondary stroke prevention for every patient with stroke or TIA
- Communicate stroke prevention plan to other health professionals in the continuum (e.g., rehabilitation providers, family physicians, and community care providers)
- Educate patients and families



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Health Professionals Need to Know...

- A TIA increases the risk of stroke by 10.5% in the first 90 days (50% of strokes occur in first 2 days)
- Long-term risk of recurrence is estimated between 4% and 14% (American Heart Association)
- Level 1 evidence for antiplatelets, anticoagulants, antihypertensive agents, cholesterol lowering agents, and surgery in appropriate patients
- It is important to initiate or continue stroke prevention as part of best practice stroke care regardless of setting



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Urgent Secondary Stroke Prevention

- TIA and stroke are medical emergencies
- All ED patients (not admitted) with a TIA or mild non disabling stroke should be discharged with an urgent stroke prevention plan in place
- All patients admitted to hospital with TIA or stroke should be discharged with a prevention plan
- Communicate the prevention plan as part of the discharge plan



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Urgent Patient & Family Education

- Stress the importance of time and the 3 hr window
- Initiate teaching regarding medications
- Distribute/discuss resources
- Review warning signs of TIA and stroke
- Review when to call 911
- Avoid driving until advised by physician
- Review plan (e.g., see FP within 48 hours, go to TIA clinic in one week, etc.)



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Stroke Prevention Risk Factor Management

- Medical Management
 - Antiplatelet or anticoagulant
 - Antihypertensive (ACEI, ARB, diuretic, other)
 - Cholesterol lowering agent (Statin)
 - Anti-hyperglycemic agent
 - Surgical assessment for Symptomatic Carotid Stenosis $\geq 50\%$
- Determine ongoing management needs
 - Monitoring: BP, blood sugar, anticoagulation targets (INR), cholesterol
 - Smoking cessation, diet (target BMI < 25), physical activity (target 30 minutes/day)



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Education for Risk Factor Management

- Develop patient/ family education plan to manage risk factors
- Re-inforce any previous teaching
- Identify specific educational issues and how to address them e.g.
 - Diabetes education
 - Smoking cessation
 - BP monitoring and medication compliance
- Consult regional stroke prevention clinic, where they exist, for best practice advice and risk modification strategies



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Primary Care Physician/Primary Care Team

- Reviews the discharge stroke prevention plan (if there is one)
- Continues or initiates preventative treatment ASAP
- Resumes the ongoing management of individual risk factors

Medications

Laboratory monitoring of blood work (e.g., INR)



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Primary Care Physician/Primary Care Team

- Resumes the ongoing management of individual risk factors (continued)

Risk factor management (BP control, physical activity, diet, etc.)

Ongoing patient and family education and referrals as appropriate (e.g., nutrition counselling, diabetes education, etc.)

Consults/communications with other providers



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Challenges of Stroke Prevention in Long Term Care

- Many stroke survivors are discharged to long-term care settings
- Despite ↑ risk of a recurrent stroke, many residents are not prescribed preventative therapies such as antiplatelets or anticoagulants.
- A recent study found that 67% (n= 53,829) of nursing home patients were NOT receiving therapy (defined as antiplatelet or anticoagulant) for stroke prevention
- There is room for improvement in the application of best practice for stroke prevention in long-term care settings



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Staff Education Needs in LTC

Staff in LTC settings need to understand:

- There is a high risk of stroke in long-term care population because of aging and complex co morbidities (e.g., diabetes, heart disease)
- Stroke prevention should be considered for every resident with a history of TIA/stroke
- The benefits of preventive therapy (e.g., anti-platelets and anticoagulants)
- The need for ongoing monitoring (e.g., BP, glucose, INRs, etc.)
- The warning signs of stroke and what to do



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Stroke Prevention – two risk factors to highlight

- Hypertension
- Hyperlipidemia

A	B	C	D	E
Anticoagulants Antiplatelets	BP lowering agents (ACEI, ARBs, Diuretics)	Cessation of smoking Cholesterol lowering agents (Statins)	Diabetes control Diet	Endarterectomy Exercise



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Hypertension

Canadian Hypertension Education Program 2007

Recommendations:

- BP assessment at all appropriate clinical visits for all Canadians.
- Adults with high-normal readings 130-139/85-89 mmHg are at risk and need regular follow-up.
- Importance of reducing sodium in the diet of Canadians
- Lifestyle assessment and modification
 - Alone or in combination with pharmacological treatment
- Use pharmacotherapy where indicated
- Promote reassessment and reinforcement using a multifaceted approach

Source: www.hypertension.ca



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Hypertension

- “Blood Pressure Control, the Crown Jewel of Stroke Prevention”*
- Individualize management
- Treat to target
- Lifestyle assessment and modification
 - Alone or in combination with pharmacological treatment
- Use pharmacotherapy where indicated
- Promote reassessment and reinforcement using a multifaceted approach

*CHEP 2004 Recommendations



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Treatment of Hypertension for Secondary Prevention

Bottom Line

- There is a strong relationship between blood pressure level and the subsequent occurrence of stroke in patients with known cerebrovascular disease

Rogers et al, *BMJ* 1996; 313:147.

- Blood pressure reduction is important regardless of medication choice
- Drug choice may depend on genetic factors and tolerance of the medication and economic factors such as costs



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Hyperlipidemia

- Higher total & LDL cholesterol are associated with greater risk of ischemic stroke.
- Recent meta-analyses of RCTs have shown that ↓cholesterol can reduce the risk of nonfatal and fatal stroke by 30% in patients with no history of stroke
- In high risk patients with vascular disease it is appropriate to use both diet and cholesterol lowering drugs to reduce the risk



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Stroke Prevention: The Major Opportunity

Anticoagulation

Antiplatelet agents

Appropriate endarterectomy

↓Blood pressure

↑Physical activity

Diet

Stop Smoking

Cholesterol

Diabetes

Getting It All Right Can Reduce Risk of Stroke



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.

Resources

- Canadian Best Practice Recommendations for Stroke Care – www.canadianstrokestrategy.ca
- Canadian Hypertension Education Program Recommendations – www.hypertension.ca
- Saskatchewan Integrated Stroke Strategy – stroke professional resources – www.hsf.sk.ca/siss
- Others?



HEART &
STROKE
FOUNDATION OF
SASKATCHEWAN

Finding answers. For life.