

Operation Stroke

**How to Reduce the Risk of Stroke
Complications**

Objectives

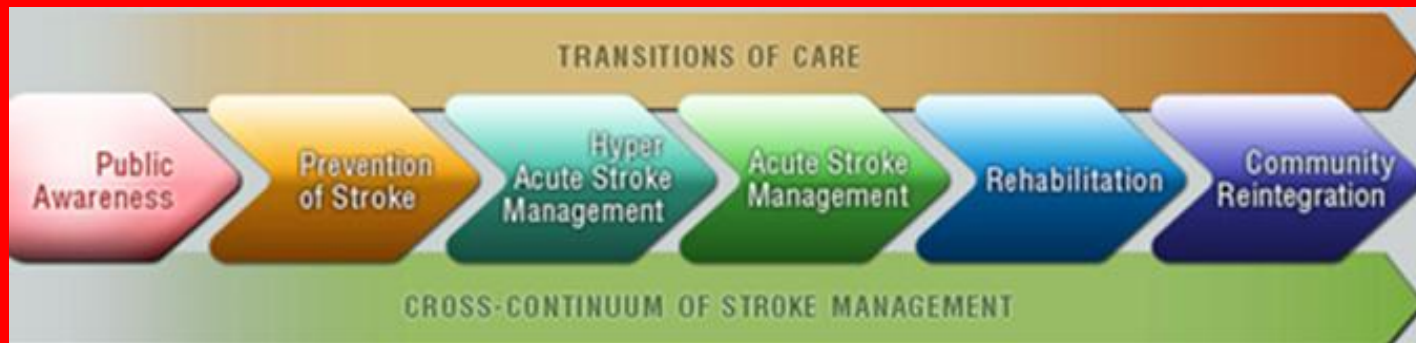
- Focus on Acute Stroke as an active disease
- Discuss the most common stroke complications
- Describe how first 72 hours sets the stage for optimal recovery

Proactive Approach

- Stroke is an active disease
- First 72 hours sets the stage
- Dramatic changes can occur within first 72 hours
 - Mild stroke can get worse and severe stroke deficits can improve greatly

Proactive Approach

- Critical ROLE and RESPONSIBILITY of healthcare providers at every stage of the care continuum to enable optimal stroke care and recovery
- Preventing, Recognizing, Monitoring and Managing complications starts early



Operation Stroke

What you can do to reduce STROKE COMPLICATIONS
(especially in the first 72 hours)

FEVER

Triples the odds of dependency at 3 months

Why: Hyperthermia increases volume of infarcted tissue and depletes energy stores worsening brain injury. Patients with a temp >37.9 have a very high early risk of death.

What can you do about it?

- **Monitor temperature**
- **Target temperature <37.5**
- **Notify MD if temp >37.5**
- **Tylenol PRN**
- **Find/treat sources of infection**

PNEUMONIA

Quadruples the odds of 3 month mortality

WHY: Hypoxia and depletion of energy stores worsen brain injury

What can you do about it?

- **Raise HOB to 45°**
- **Swallowing Screening**
- **Regular mouth care**
- **Supplemental O2 PRN**
- **Early & frequent mobilization**

URINARY TRACT INFECTION

Triples the odds of dependency at 3 months

Why: Indwelling catheters increase the risk of infection substantially.

Urinary Tract Infection is an independent risk factor for a poor stroke outcome.

What can you do about it?

- **Avoid indwelling catheters**
- **If used, remove ASAP**
- **In and out catheterization q4-6h PRN (if bladder scan volume > 300ml)**
- **Post void residuals PRN**

HYPOPERFUSION/DEHYDRATION

Doubles the odds of mortality at 3 months

WHY: Maintaining cerebral perfusion is the best way to prevent infarct expansion.

Hydration = perfusion maintained = improvement of stroke deficit

Dehydration = perfusion not maintained = worsening of stroke deficit

What can you do about it?

- **IV hydration**
- **Avoid excessive BP reduction**
- **Screen swallow, then FEED**
- **Enteral feeds, if necessary**
- **SLP consult PRN**
- **Dietitian consult PRN**

HYPERGLYCEMIA/HYPOGLYCEMIA

Almost double the odds of poor functional outcome

WHY: Hyperglycemia leads to lactic acid in the brain which is damaging, promotes edema and promotes hemorrhagic conversion.

Hypoglycemia does not maintain energy stores for the brain.

What can you do about it?

- **Target glucose 5-10 mmol/L**
- **Maintain normal blood glucose**

DVT

Doubles the odds of mortality at 3 months

WHY: Risk of DVT in stroke patients is 20-50%

What can you do about it?

- **Hydrate/nourish**
- **Early & frequent mobilization**
- **Mechanical and/or Pharmacological prophylaxis as ordered**

PNEUMONIA

4

DVT

2

FEVER

3

UTI

3

HYPERGLYCEMIA

2

HYPOPERFUSION

2

16x the odds
of poor stroke
outcome

Summary

- Being proactive in relation to preventing, recognizing, monitoring and managing complications:
 - Minimizes infarct size
 - Optimize stroke outcomes
- Visit Canadian Stroke Best Practice website to get the latest recommendations, summary of evidence and knowledge transfer tools

<http://www.strokebestpractices.ca/>



RECOMMENDATIONS:

- Overview
- Methods
- Knowledge (KT)
- Awareness
- Prevention **NEW!*
- Hyperacute
- Acute
- Rehabilitation
- Transitions
- Mood and
- Cognition **NEW!*
- Cross-Continuum
- Pediatric Stroke
- Appendices

New Post Stroke Checklist Ensures Patients Needs Being Met

The Post Stroke Checklist (PSC) was developed by an international interdisciplinary group of stroke care experts convened to focus on the need for improved long-term stroke care across the continuum of care.

[Read more](#)

POST-STROKE CHECKLIST (PSC): IMPROVING LIFE AFTER STROKE



This post-stroke checklist (PSC) has been developed to help health care providers identify post-stroke problems amenable to treatment and subsequent referral. This PSC is a brief and easy-to-use tool, intended to be carried out with the patient and with the help of the caregiver, if necessary, to facilitate a standardized approach for health care providers to identify long-term problems in stroke survivors and to facilitate appropriate referrals for treatment.

INSTRUCTIONS FOR USE:

Please ask the patient each numbered question and indicate the answer in the "response" section. In general, if their response is **NO**, observe progress of the patient. If the patient's response is **YES**, follow up with the appropriate action.

1. SECONDARY PREVENTION		
Since your stroke or last assessment, have you received any advice on health-related lifestyle changes or medications for preventing another stroke?	<input type="checkbox"/> NO	If NO , refer to primary care physician for risk factor assessment and treatment if appropriate, or secondary stroke prevention centre.
	<input type="checkbox"/> YES	Observe Progress
2. ACTIVITIES OF DAILY LIVING (ADL)		
Since your stroke or last assessment, are you finding it more difficult to take care of yourself?	<input type="checkbox"/> NO	Observe Progress
	<input type="checkbox"/> YES	Do you have difficulty dressing, washing, and/or bathing? Do you have difficulty preparing hot drinks and/or meals? Do you have difficulty getting outside? If YES to any, refer to the community health team/program, secondary stroke prevention centre, rehabilitation centre, or an appropriate therapist (i.e., occupational therapist or physiotherapist) for further assessment.
3. MOBILITY		
Since your stroke or last assessment, are you finding it more difficult to walk or move safely from bed to chair?	<input type="checkbox"/> NO	Observe Progress
	<input type="checkbox"/> YES	If NO , refer to the community health team/program, rehabilitation or secondary stroke prevention centre, or an appropriate therapist (i.e., occupational therapist or physiotherapist) for further assessment. If YES , ensure patient received and understands...

UPCOMING EVENTS:

May 10 – 11, 2013
Telestroke Summit
Moncton, NB

May 28-31, 2013
European Stroke Conference
London, UK "Ongoing Trials" abstract deadline: 9 May 2013

June 11-14, 2013
Canadian Association for Neurological Nursing
Montreal, QC Abstract Deadline: December 15, 2012

October 17-20, 2013
Vascular 2013
Montreal, QC Abstract Deadline: May 3, 2013

Resources

www.strokenetworkseo.ca

www.strokebestpractices.ca

References

- Heart and Stroke Foundation of Canada and the Canadian Stroke Network. (2013). *The Canadian best practice recommendations for stroke care*. Retrieved from <http://www.strokebestpractices.ca/>