

Canada

# Canadian Stroke Strategy

## Best Practices & Standards Working Group

### Environmental Scan Report

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***Best Teams:** We believe that by offering clients the best our firm has to offer in terms of expertise, experience and innovation – regardless of geography, practice, or service – we provide them with measurable gains. The result: a successful and lasting relationship with the client.*

***High Standards:** We are committed to doing whatever it takes to execute our services in a profitable and ethical manner with the highest standards of our profession – standards we have set for the industry – standards we strive to meet daily.*

***Constant Improvement:** We provide the tools and opportunities for our professionals to continue learning, exploring and reaching to achieve excellence.*

***The Result:** The combination of small-agency focus and personalized service with large-agency resources and reach means professionals who have the experience, drive and ability to get the job done. For our clients, it means unparalleled strategic counsel and targeted, effective tactics.*

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## EXECUTIVE SUMMARY

The Best Practices and Guidelines Environmental Scan is intended to provide an inventory and catalogue of relevant best practices in stroke, as well as an overall understanding of the best practices and guidelines landscape in Canada and internationally. The goal is to provide information to assist the Best Practices and Standards Working Group and other stakeholders in identifying major gaps along the continuum of care and to form recommendations on the implementation of best practices, standards and guidelines for stroke care and management in Canada.

Readily-available, on-line information provided the bulk of the information found in the scan. However, members of the working group -- and their personal and professional knowledge base -- were also a tremendous resource in guiding and assisting the research efforts. The scan was wide-reaching and attempted to capture all relevant and available information specific to stroke.

For the purposes of the scan, best practices were generally defined as: emerging guidelines, gleaned from key expert perspectives and supported by literature and data on the approaches and elements of treatment that appear to result in successful treatment outcomes for stroke prevention, treatment and rehabilitation.

Stroke management language is complex and includes a wide variety of terminology. To ensure clarity and consistency, the terms used in this report are consistent with other environmental scans conducted. To aid consistency, the findings are presented along the continuum of care to allow for maximum comprehension. The continuum of care includes:

- Primary Prevention
- Pre-Hospital/Hyper-Acute
- Acute/In-Hospital.
- Stroke Rehabilitation Secondary Prevention
- Community Care/Re-engagement

It is important to note that the intent of the environmental scan was not to assess or evaluate the findings, but to compile and catalogue an inventory of findings.

### **Three Key Findings:**

The environmental scan uncovered 23 sources that were deemed the most relevant and useful by the Working Group. Based on this research, three clear findings emerged:

### **Seven Most Relevant Guidelines**

There are seven examples of best practices and guidelines that emerged as the most relevant on the basis that they were well-established, widely accepted as the best-known and most respected guidelines by stroke experts and professionals, including members of the working group. The seven most relevant guidelines are:

1. The Heart and Stroke Foundation of Ontario, Best Practice Guidelines for Stroke Care
2. SIGN (Scottish Intercollegiate Guidelines Network, Management of Patients with Stroke: Assessment, Investigation, Immediate Management and Secondary Prevention
3. Stroke Services in Australia/National Stroke Foundation: Management of Acute Stroke, Stroke Rehabilitation and Recovery and the National Stroke Unit Program: Policy Document



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4. The Stroke Association/Royal College of Physicians: National Clinical Guidelines for Stroke, 2<sup>nd</sup> edition
5. Stroke PREvention and Educational Awareness Diffusion (SPREAD) Italian Guidelines on Stroke
6. Registered Nurses Association of Ontario/Heart and Stroke Foundation of Ontario: Nursing Best Practices Guideline: Stroke Assessment Across the Continuum of Care
7. The New Zealand Guideline Group: Life After Stroke: New Zealand Guidelines for Management of Stroke

### Guidelines Vary Across the Continuum of Care

While many of the findings were applicable to more than one area along the continuum of care, the depth and amount of information available differed considerably among the sources identified. Three examples of guidelines covered the entire continuum of care. The acute care area contained the most numerous examples of guidelines. In fact, four of the seven most relevant examples were found in acute care. Overall, there were eleven examples of acute care guidelines, followed by two examples of primary prevention, one example of pre-hospital, three examples of stroke rehabilitation and one example of secondary prevention.

### Implementation

The available implementation information was scarce, but the topic appears to be emerging and gaining a broader audience. There were four applicable sources of information on guideline implementation:

1. Best Practice Guidelines for Stroke Care (HSFO)
2. Stroke Assessment Across the Continuum of Care
3. Clinical Practice Guideline for the Management of Stroke Rehabilitation in the Primary Care Setting (U.S. Govt. Dept. of Veteran's Affairs)
4. Life After Stroke: New Zealand Guideline for Management of Stroke

The AGREE (Appraisal of Guidelines Research and Evaluation) instrument is noted as appearing in several of the guidelines found in the scan. It is used to assess new and existing guidelines as well as guideline updates.

### Observations

**There are several important resources for guideline information - *Stroke Guidelines—The Internet Stroke Centre*** is a comprehensive resource and a major guide for the Best Practices and Guidelines Environmental Scan and provided an excellent source of links and references to national and international guidelines in stroke. Although not a direct example of actual guidelines, this internet source contained a compendium of most of the guidelines in this scan. It is a key resource for stakeholders who may wish to delve more deeply into the area of stroke guidelines. The Cochrane Collaboration is also another excellent source of information and knowledge.

**Work and guidelines emerging from Australia and New Zealand may have particular relevance and applicability for a Canadian Stroke Strategy.** Australia and Canada have many comparisons; size, rural/urban split with respect to population and a significant aboriginal population. Although there are not any specific guidelines dealing with stroke and the aboriginal population, the National Stroke Foundation (Australia) has a document entitled "Aboriginal Stroke Program" which details their experiences with the aboriginal population with respect to stroke. In the same manner, the New Zealand Guidelines also have a component dealing with its aboriginal (Maori, Pacific Peoples) population.



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**There is an increase in the voice of the patient and patient perspective in the development and implementation of guidelines.** The Stroke Association/Royal College of Physicians guidelines are unique in that they recognize the opinions and experiences of patients and their caregivers through focus group sessions. The intent was to complement other forms of evidence and to address problems from patient perspective.

**One must acknowledge the complexity and ever-changing nature of stroke management.** Several of the guidelines stressed the ever-changing nature of stroke and stroke management. For example:

- The Stroke Association/Royal College of Physicians stressed that the guidelines are meant to inform the clinicians. They are not intended to be rigid “rules” but rather fluid guidelines that can be expected to be updated or changed on a regular basis as new research and information comes available.
- The RNAO Guidelines also point out in their “How to Use This Document” section that the guidelines should not be applied in a “cookbook” fashion but used as a tool to assist in decision making and that they adapt the guidelines to formats that would best suit daily use.

### **Best Practices and Guidelines Matrix and Annotated Bibliography**

The most effective method of presenting the information was to do so along the continuum of care in a matrix format. This format allows a clear and immediate view of where the most important information exists and reveals the most obvious gaps. The Best Practices and Guidelines Matrix (Appendix A) serves as an “at-a-glance” view of the overall findings.

The Annotated Bibliography (Appendix B) presents the complete list (23) of all best practices and guidelines included in the environmental scan and includes the title, source, author and date (if known) and a brief summary of the guideline/best practice details.



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### INTRODUCTION

The purpose of the Best Practices and Guidelines Environmental Scan is to provide the Canadian Stroke Strategy (CSS) Best Practices and Standards Working Group with an inventory of publicly available and relevant best practices in stroke as well as an overall understanding of the best practices and guidelines landscape in stroke in Canada and internationally. This report is intended to assist the Working Group to identify major gaps along the continuum of care and form recommendations on the implementation of the best practices, standards and guidelines for stroke care and management in Canada.

The intended audience for this environmental scan includes the members of the Working Group, non-stroke experts and other stakeholders who will be engaged in the process and who may not be as familiar with the current landscape as the members of the Working Group. This report is written to speak to readers that may not necessarily be a clinical experts in stroke, and will provide a broad understanding of the current stroke environment in Canada to date. This report presents the findings of the environmental scanning and research effort guided by input and direction from the Working Group.

#### Definition of Best Practices and Guidelines

For the purposes of this report, best practices are generally defined as: emerging guidelines, gleaned from key expert perspectives and supported by literature and data on the approaches and elements of treatment that appear to result in successful treatment outcomes for stroke prevention, treatment and rehabilitation. Given this definition, best practices are recommendations that may evolve, based on ongoing key expert experience, judgment and perspective, and continued research.

During the course of conducting the environmental scan, it should be noted that the Best Practices and Guidelines Working Group changed its name to: the Best Practices and Standards Working Group. At the Working Group meeting on December 2 2005, the following definition was reviewed and accepted:

“Best Practices are recommendations for practice or policy decisions that are informed by sufficient good quality evidence. They describe the most effective health care practices, interventions and processes determined by research evidence. Best Practices can take the form of clinical practice/best practice guidelines or policy guidelines.”

Although the definition of best practices was revised, the original definition was used as the foundation of the research for the environmental scan. The core meaning of best practices remains largely the same in both definitions and the spirit of the research reflects this similarity.

#### Continuum of Care

Stroke management terminology is frequently complex, with a variety of terms often with the same meaning. For example, the Royal College of Physicians uses the term “whole pathway” where we have used “continuum of care.” In order to ensure consistency in language there has been an ongoing dialogue with the Best Practices and Standards Working Group in an effort to ensure the terminology used in this report is clear and in line with what is being used by the group. For this report, the continuum of care is defined as consisting of the following areas:



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**Primary Prevention:** an individually-based clinical approach to disease prevention in otherwise healthy individuals with modifiable risk factors. Primary prevention is usually implemented in the primary care setting and the physician, advanced practice nurse or the patient may initiate a discussion of stroke risk reduction.<sup>1</sup>

**Pre-Hospital/Hyper-Acute:** effective and rapid pre-hospital care is a critical part of the continuum of care for stroke patients and may include; paramedics, EMT's, ambulance communications officers.<sup>2</sup>

**Acute/In-Hospital:** Generally described to be the first seven days following a stroke, acute care generally takes place in a hospital setting.

**Stroke Rehabilitation:** Rehabilitation focuses on improving the abilities of the stroke survivor to facilitate independence and social integration.<sup>3</sup>

**Secondary Prevention:** Secondary Prevention of stroke is an individually based, clinical approach to reducing the risk of events in persons who are experiencing symptoms that place them at high risk of a stroke or have already experienced a transient ischemic attack (TIA) or mild non-disabling stroke. Prevention strategies may include medication, surgery and support in making changes to lifestyle.<sup>4</sup>

**Community Care/Re-engagement:** Community re-engagement focuses on processes and supports that maximize the likelihood of stroke survivors feeling empowered and achieving their personal goals.<sup>5</sup>

### **Purpose and Objectives**

The purpose of the environmental scan is to provide the CSS Best Practices and Standards Working Group with an inventory or catalogue of the publicly available and relevant best practices with respect to stroke. The guidelines included in the scan were deemed the most relevant sources of best practices identified by the Working Group. These guidelines are documented and presented in a manner to inform stakeholders in the process, who may not be as familiar with stroke best practices and guidelines. The scan is intended to inform the process by which major gaps along the continuum are identified and to form recommendations on the implementation of the best practices, standards and guidelines.

The search resulted in the identification, documentation and general analysis of the best practices policies and procedures existing in a wide variety of health organizations in Canada, the United States and around the world. It is important to note that the intent of the environmental scan was not to assess or evaluate the findings, but to compile, catalogue and develop an inventory of findings from which to develop the report. The scan explains and summarizes the existing landscape of stroke best practices and guidelines

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<sup>1</sup> HSFO Best Practice Guidelines for Stroke Prevention

<sup>2</sup> HSFO, *Best Practice Guideline for Pre Hospital Care*

<sup>3</sup> HSFO, *Best Practice Guideline for Rehabilitation Management*

<sup>4</sup> *Coordinated Stroke Strategy Website*

<sup>5</sup> HSFO, *Best Practice Guideline for Community Re-engagement*



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and should serve as a reference point for discussion and deliberation by the Working Group members and other stakeholders.

### **Research Methodology**

For the purposes of this environmental scan, readily accessible information was the primary source used. Online resources provided the bulk of the information and were supplemented by academic journals and other organizational information which assisted in providing the necessary information for the stroke inventory. The members of the Working Group were also a tremendous resource as they regularly guided and assisted the research efforts through their personal and professional knowledge base.

Throughout the research effort, every attempt was made to identify any insights into the uptake, application and operationalization, lessons learned or efficacy of the best practices. To the extent possible, any existing knowledge transition elements were also identified.

The scan cast the net broadly in an attempt to capture all relevant and available elements specific to stroke, focusing on activities for organizational uptake and where available, full implementation. Every attempt was made to obtain and present as much information as possible.

Every effort was made to systematically and objectively locate and synthesize evidence in order to establish facts concerning best practices along the continuum of care. For the purposes of this report, any data that has been produced through rigorous research was included in the annotated bibliography. The timeline for the development of the environmental scan was September 2005 to January 2006.

The scanning exercise included a detailed information review which was guided by both the Statement of Work and the Search Methodology as agreed to by the Working Group (Appendix C & D).



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### OVERALL FINDINGS

The environmental scan yielded a plethora of examples and information on best practices and guidelines related to stroke. Many of the examples were clinically-based and technical in nature and were therefore beyond the scope of what would be useful to the Working Group based on the working definition provided. Overall, there are 23 sources included in the report that were deemed most relevant and useful. It should be noted that many sources identified were not included in the inventory as they did not fit the criteria established.

The starting point for all of the environmental scan research was the Heart and Stroke Foundation of Ontario's Best Practice Guidelines for Stroke Care. These guidelines are comprehensive, Canadian, recent and were an excellent example of guidelines across the continuum. As such, they provided the comparative basis for determining what other similar guidelines might be for located as examples of best practice guidelines.

After analyzing all of the material obtained during the scan, three clear findings emerged.

1. There are seven excellent examples of best practices and guidelines that emerged that will likely be of the most significance to the Working Group. Two of these examples are Canadian and the remaining five examples are from international sources.
2. There is a significant difference in the volume, quality and detail of the material available in each of the six categories listed in the continuum of care. It became apparent very quickly that the distribution or existence of information is uneven, with the bulk found in the acute care area and much less information available in the other categories.
3. There was not a great deal of information on implementation and evaluation of best practices and guidelines available and was found only in a few instances. In general, most guidelines did not specifically address implementation or evaluation (of the quality and application of the guidelines), however, it does appear to be a topic which is emerging and gaining a broader audience and demand.

The observation section of this report contains interesting and potentially useful information that may be helpful to the Working Group. This information has been pulled from the examples in the report and presented together to inform and provide context.

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**KEY FINDING 1: SEVEN MOST RELEVANT GUIDELINES**

Overall, there were seven examples of guidelines that emerged as the most relevant. These were selected on the basis that they were already well-established and widely accepted as the best-known and most respected guidelines by stroke experts and professionals. Members of the Working Group agreed that these examples are the most applicable and relevant.

**The Heart and Stroke Foundation of Ontario (HSFO):  
Best Practice Guidelines for Stroke Care**

The HSFO developed evidence-based Best Practice Guidelines for Stroke Care in 2003. They were developed and designed as part of the Ontario Stroke Strategy (OSS) by the Ministry of Health and Long-Term Care of Ontario and the Heart and Stroke Foundation of Ontario. This comprehensive Stroke Strategy spans the continuum of stroke care, from prevention to rehabilitation.

The guidelines were developed to assist health care professionals and administrators identify and implement optimal stroke management strategies and to deliver optimal stroke care. They were developed on the basis of clinical trial evidence and the HSFO expects them to be updated as the underlying clinical science evolves. In the future, it is expected that these guidelines will become benchmarks to ensure that all Ontario residents receive optimal stroke care. The document (available in hard copy and on the HSFO website) is divided into modules that explain the basis for each guideline, which include:

- Stroke Recognition
- Stroke Prevention (primary and secondary)
- Pre-hospital care (including EMS)
- Emergency Management
- Acute Treatment
- Transition Management
- Rehabilitation Management
- Community-Re-engagement

Three reasons that suggest that the HSFO Guidelines are perhaps the most relevant and comprehensive set of guidelines for use by the Working Group are:

- They were designed and developed in Ontario and are therefore specifically Canadian.
- The guidelines cover the entire continuum of care and also cover aspects of implementation. As such, they are unique compared with other guidelines in covering all aspects of the continuum of care in a truly comprehensive manner.
- The HSFO Guidelines were the only source of actual guidelines specific to community care and re-engagement and were a comprehensive source of information on this aspect of the continuum, which was notably absent in other guidelines.

It is important to note that while the Ontario guidelines are very strong; we must also recognize that each province in Canada is unique, with various resource and geographic challenges that may affect the development and implementation of guidelines in stroke.

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**SIGN (Scottish Intercollegiate Guidelines Network):  
Management of Patients with Stroke:  
Assessment, Investigation, Immediate Management and Secondary Prevention**

SIGN is a Scottish-based organization, formed in 1993, with the objective of improving the quality of health care for patients in Scotland by reducing variation in practice and outcome, through the development and dissemination of national clinical guidelines containing recommendations for effective practice based on current evidence. Membership of SIGN includes all the medical specialties, nursing, pharmacy, dentistry, professors of medicine, patients, health care managers, social services and researchers.

SIGN has produced 113 evidence-based clinical guidelines covering a wide range of topics, including four specifically relating to patient care after an acute stroke:

*Management of Patients with Stroke: Identification and Management of Dysphasia*

This guideline includes: evaluating swallowing and nutrition after stroke, aspiration pneumonia, swallow screening, nutritional screening, assessment and nutritional interventions, diet modification, the role of regular review, oral hygiene and caring for patients with dysphasia. This guideline is current.

*Management of patients with Stroke Part I: Assessment, Investigation, Immediate Management and Secondary Prevention*

This guideline includes: multidisciplinary team membership and roles, multidisciplinary team communication, patients involvement, information provision, early supported discharge and post-discharge, discharge planning and transfer of care, management and prevention strategies, driving after a stroke and Chest, Heart and Stroke Scotland advice line.

*Management of Patients with Stroke Part II: Management of Carotid Stenosis and Carotid Endarterectomy*

This guideline includes information to assist clinicians and hospitals develop protocols on carotid endarterectomy. This guideline is being updated/under review.

*Management of Patients with Stroke: Rehabilitation, Prevention and Management of Complications and Discharge Planning*

This guideline includes service delivery, assessment and investigation and secondary prevention information.



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### **Stroke Services in Australia/National Stroke Foundation:**

The National Stroke Foundation is a not for profit organization that works with the public, government, health professionals, patients, caregivers and stroke survivors to reduce the impact of stroke on the Australian community by:

- Promoting and conducting research into the incidence, causes and treatment of stroke through the National Stroke Research Institute.
- Working with all stakeholders to develop and implement policy on the prevention and management of stroke.
- Educating the public about the risk factors and signs of stroke and promoting healthy lifestyles.
- Encouraging the development of comprehensive and coordinated services for all stroke survivors and their families.

### **Relevant documents:**

In Australia, there are currently two established clinical guidelines documents: *Stroke Rehabilitation and Recovery*, and *Management of Acute Stroke*. There is also an over-arching policy document from the Stroke Services in Australia's National Stroke Unit Program that details an overview of the national stroke policy in Australia: *The National Stroke Unit Program Policy Document*. The National Stroke Unit Program was funded by the Australian Government Department of Health and Aged Care.

### **Management of Acute Stroke:**

The *Clinical Guidelines for Acute Stroke Management* summarize the evidence base for the acute phase of stroke (determined to be the first 7 days of stroke). The *National Clinical Guidelines for Acute Stroke Management* were developed as part of the National Stroke Unit Program and funded by the Australian Government Department of Health and Ageing.

Evidence-based recommendations about stroke care are presented. Where no evidence exists, care recommendations are based on expert clinical opinion. Recommendations are designed to provide guidance about the way care should be delivered for stroke. Where resources may not support the delivery of the recommendations in the guidelines, the development of local protocols that address these issues is recommended. A consumer version of the acute guidelines is currently under development as part of ongoing guidelines work.

### **Stroke Rehabilitation and Recovery:**

This guideline document builds on the *Clinical Guidelines for Acute Stroke Management* and ensures there are evidence based guidelines to cover all aspects of stroke management and recovery. The Guidelines were developed with the assistance of a multidisciplinary Expert Working Group who worked with the project team to review the evidence base for stroke rehabilitation and long term care. Recommendations were drafted based on the evidence. Where no evidence exists, expert opinion is provided.

### **National Stroke Unit Program: Policy Document:**

The overall objective of the National Stroke Unit Program of Australia is to establish a cohesive stroke policy that identifies the key elements of clinical best practice so that they may be implemented across a diverse range of clinical settings, resulting in coordinated stroke services throughout Australia. Additionally in order to foster best practice and the continual improvement of quality service provision,



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performance measures need to be developed in relation to the process of care and incorporated into an accreditation process for the management of stroke.

The online policy paper provides an overview of the Australian Stroke program including a review of current Australian stroke care service and policy, a feasibility study of a pilot of innovative models of stroke care and a set of performance measurement indicators which will be established as part of the pilot site feasibility study.

This document also presents a Stroke Services Model describing how organized stroke services (including stroke units) may be developed across Australia. The Stroke Services Model is based on gradation of services over four levels of specialization and resources and on networks between larger and smaller centres. It was developed with input from stroke experts around Australia and after reviewing stroke unit structure and processes.

The work done by the Australians can potentially be used as a comparison between stroke models in Canada and Australia. The Australian National Stroke Unit is one of the most comprehensive in the world and is recognized as such throughout the information reviewed as part of this scan.

The key features of stroke units outlined in the policy paper are:

- Coordinated multidisciplinary care;
- Family and career involvement in acute rehabilitation;
- Staff specialization and education (leading to reduced complications); and
- Early onset of rehabilitation.

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**The Stroke Association/Royal College of Physicians:  
National Clinical Guidelines for Stroke: Second Edition**

Developed in July 2004 by the Intercollegiate Stroke Working Party, and coordinated by the Clinical Effectiveness and Evaluation Unit (CEEU) of the Royal College of Physicians U.K.; these guidelines are part of a thorough publication which covers the management of stroke, transient ischemic attack (TIA) and subarachnoid haemorrhage.

The Stroke Association is the only national charity solely concerned with combating stroke in people of all ages. It funds research into prevention, treatment and better methods of rehabilitation, and helps stroke patients and their families directly through its community services. These include dysphasia support, family support, information services and welfare grants. The association also campaigns, educates and informs to increase knowledge of stroke at all levels of society and we act as a voice for everyone affected by stroke.

The aims of the guidelines are:

- To provide explicit recommendations for practicing clinicians, managers, patients and caregivers about the management of stroke and TIA, covering the whole care pathway from the acute event to the longer-term management in the community.
- To provide recommendations based on best available evidence
- To give consensus statements from the working party for important areas of clinical practice where evidence is lacking.

The authors stress the guidelines are statements to inform the clinician, and are somewhat fluid, in that they will be updated on a regular basis based on feedback and ongoing new evidence.

One interesting component of these guidelines is that the first edition of the guidelines relied on the opinions and experiences of stroke patients and their caregivers through focus groups. This was done to complement other forms of evidence in developing guidelines and address problems from the perspective of a patient and acknowledge that the priorities of patients and caregivers may differ from those of professionals.

In addition, there are principles which underline the guidelines. In particular, they should:

- Address issues in stroke management that are important.
- Wherever possible, draw upon published evidence.
- Indicate areas of uncertainty or controversy.

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**Stroke Prevention and Educational Awareness Diffusion (SPREAD)  
Italian Guidelines on Stroke**

The Italian Guidelines on Stroke are the result of a coordinated process involving a multidisciplinary Working Group, called the Stroke PREvention and Educational Awareness Diffusion (SPREAD). There have been three versions of these guidelines since 1999. The guidelines development was supported by an unconditional grant for Bayer Healthcare Italy.

The SPREAD document is a detailed series of guidelines, developed in collaboration with 33 different professional organizations and two patients associations which combined to form a multidisciplinary Working Group, aimed to provide knowledge and recommendations about the best management of the primary and secondary prevention of stroke, as well as acute stroke.

The 38 page document itself is a series of recommendations, in the following areas:

- Methodology
- Epidemiology
- Diagnostic work-up
- Risk factors
- Primary prevention
- Acute stroke
  - Pre-hospital management and emergency phase
  - Hospital admission (diagnostic procedures and treatment)
  - Monitoring and complications in the steady-state
- Secondary prevention: long term pharmacological therapy
- Surgical treatment
- Rehabilitation and continued care
- Post-stroke cognitive impairment and mood disorders

There are a series of criteria listed at the outset of the document which are used in grading the recommendations offered within the report. Throughout the document, as a recommendation is listed, a grade is listed beside it, ranging from A through D.

Finally, a series of synthesis are reported encompassing numerous statistics and related facts, followed by a number of associated recommendations, where applicable. This can be very useful to the reader, who can utilize the specific statistics and general information, along with correlating some of the associated recommendations made by the collaborative group.



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### **Registered Nurses Association of Ontario/Heart and Stroke Foundation of Ontario: Nursing Best Practice Guideline: Stroke Assessment Across the Continuum of Care**

The Registered Nurses Association of Ontario and the Heart and Stroke Foundation of Ontario joined together with financial support of the Government of Ontario to develop and evaluate a best practice guideline focusing on nursing assessment of persons who have experienced stroke, across the continuum of care.

Released in June 2005, this is a comprehensive document providing resources necessary for the support of evidence-based nursing practice. It is recommended for use as a resource tool and is aimed at nurses, health care professionals and administrators who are leading and facilitating practice changes and who will find the information valuable for the development of policies, procedures, protocols, educational programs, assessments and documentation tools.

The goal of the document is to provide nurses with evidence-based recommendations regarding the assessment and /or screening of adult stroke survivors across the continuum of care. It is intended for nurses who are not experts in stroke care.

#### **Implementation strategy**

A somewhat unique component of these guidelines is the inclusion of compilation of implementation strategies as part of the Guidelines package to assist healthcare organizations who are interested in implementing this guideline. In addition to this list of strategies, the RNAO developed resources that are available on the website. A toolkit for implementing guidelines is also available.

#### **Process for Update/Review of Guideline**

The RNAO proposed to update the best practice guideline as follows:

- Review the topic area every three years, following the last set of revisions.
- During the interim three-year period, regularly monitor for new relevant literature in the field.
- Consult with team of members and specialists to inform the decision to possibly recommend an earlier review and revision period.
- Three months prior to the three-year review milestone, program staff with commence the planning of the review process.



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### **Life After Stroke: New Zealand Guidelines for Management of Stroke: The New Zealand Guideline Group**

The New Zealand Guidelines were developed with the aim of better facilitating equitable outcomes for people with a stroke by presenting best evidence currently available for the most effective management of specific problems after stroke. The guidelines deal with a range of topics from diagnosis to management to treatment. The aim is to add to the existing knowledge base for evidence-based cost-effective and equitable management of stroke and to provide a commentary on the most effective way to manage stroke in the New Zealand setting.

The guidelines documentation also details as its objectives: assisting people with stroke and their families to make informed decisions, highlighting the need for significant changes in current practice in New Zealand and ensuring access to resources for stroke management. The guidelines are intended for physicians, nurses, health care providers and plans, hospitals, managed care organizations, public health departments and physician assistants.

The New Zealand Guidelines were adapted from the American Heart Association/American Stroke Association, Royal College of Physicians and the Scottish Intercollegiate Guidelines Network (SIGN) guidelines, with the evidence updated and expanded where thought appropriate. It is interesting to note that the process by which the guidelines were researched and developed is very similar to the process undertaken by the Canadian Stroke Strategy. The New Zealand Guideline Group conducted a search of existing guidelines and systemic reviews gathered from a variety of sources, including an extensive search of web-site resources.

Another interesting component is the description of the guideline validation process, which was a two-part process:

1. People who have experienced stroke services and who were willing to participate were given the option of reviewing a draft of the guideline. Their comments were then included in the guideline.
2. As well, the draft guideline document was sent to 207 organizations and individuals for appraisal using the AGREE instrument. Comments were then considered by the guideline development team and the New Zealand Guidelines Group.

They also contain excellent information pertaining to implementation, including a full description of the components contained in the implementation strategy used.

## KEY FINDING 2: GUIDELINES ACROSS THE CONTINUUM OF CARE

Once the research effort was complete it was clear that the most effective method of presenting the information is to do so along the continuum of care as doing so permits a clear view of where most of the information exists and immediately and visually reveals the obvious gaps along the continuum.

The Best Practices and Standards Matrix (Appendix A) serves as an “at-a-glance” view of the overall findings. However, it is necessary to explain more fully the research highlights and the resulting presentation of the data, the following section details this information.

The seven most relevant guidelines are identified under the previous section and will not be repeated. This section will profile the remaining examples identified.

While many of the findings were applicable to more than one area along the continuum of care, the depth and amount of information available differed considerably among the sources identified. There were three examples of guidelines which covered the entire continuum of care, the Heart and Stroke Foundation of Ontario Guidelines and the Registered Nurses Association of Ontario/HSFO Nursing Best Practice Guidelines and the Italian (SPREAD) Guidelines. The New Zealand Guidelines covered diagnosis, management and treatment, but did not cover the areas of prevention (primary or secondary) or reintegration.

It is apparent that the most heavily populated section of the matrix is the Acute Care/In Hospital section. Here, there is no shortage of examples of best practices. In fact, four of the seven best examples are contained in this area. At the same time, the environmental scan yielded much more limited results in the community care/ reintegration category, with only several brief references found throughout the other guidelines, and two significant community care/re-integration references found in the HFSO and RNAO guidelines.

Overall, there were eleven examples of acute care guidelines, followed by two examples of primary prevention, one example of pre-hospital, three examples of stroke rehabilitation and one example of secondary prevention.



## APPENDIX A – GUIDELINES MATRIX

Continuum of Care					
Primary Prevention	Pre Hospital	Acute Care/In Hospital	Rehabilitation	Secondary Prevention	Community Care
Heart and Stroke Foundation of Ontario Best Practices Guidelines for Stroke Care					
Nursing Best Practice Guidelines: Stroke Assessment Across the Continuum of Care					
Italian Guidelines for Stroke Prevention and Management: SPREAD					
<ul style="list-style-type: none"> <li>• Steps to a Healthier U.S.</li> <li>• Southern Medical Journal/Medscape</li> </ul>	<ul style="list-style-type: none"> <li>• Point of Entry Guidelines for Stroke</li> </ul>	<ul style="list-style-type: none"> <li>• SIGN</li> <li>• Stroke Services of Australia: Clinical Guidelines for the Management of Acute Stroke</li> <li>• Life After Stroke: New Zealand Guideline for Management of Stroke</li> <li>• Stroke: Evaluation Management</li> <li>• Hospital for Sick Kids</li> <li>• Brain Attack Coalition (Children)</li> <li>• National Clinical Guidelines</li> <li>• European Stroke Initiative</li> <li>• Karolinska Conference</li> <li>• Cochrane Collaboration</li> <li>• NINDS</li> </ul>	<ul style="list-style-type: none"> <li>• SCORE Evidence Based Recommendations</li> <li>• Evidence Based Review of Stroke Rehab.</li> <li>• Stroke Services of Australia: Clinical Guidelines for Stroke Rehabilitation and Recovery</li> <li>• Office of Quality and Practice, Veteran's Affairs</li> </ul>	<ul style="list-style-type: none"> <li>• Preventing Ischemic Stroke in Patients with Prior Stroke and TIA</li> </ul>	



Canada

## PRIMARY PREVENTION

### **U.S. Department of Health and Human Services Steps to a Healthier U.S.: A Program and Policy Perspective--Prevention Strategies That Work**

This document provides a chapter on stroke prevention which details an overview of the guidelines for stroke prevention and outlines how socio-ecological approaches are integral to prevention strategies. The key components of the heart disease and stroke prevention program identified in this document include:

- Promoting cardiovascular health (CVH) to prevent risk factors (e.g., high blood pressure, high cholesterol, tobacco use, physical inactivity, and poor nutrition) and conditions (e.g., diabetes and obesity)
- Primary heart disease and stroke prevention
- Secondary heart disease and stroke prevention
- Eliminating health disparities for heart disease and stroke
- Heart-healthy policies and supportive environmental changes
- Programs in multiple settings: health care sites, work sites, schools, and communities
- The “use of population-based policy and environmental strategies shifts public health from a direct service role to one that focuses on guidance, agenda setting, and coordination of CVH improvement efforts.”

### **Medscape/Southern Medical Journal: Medical Prevention of Stroke**

Medical Prevention of Stroke is a published academic journal article that details primary and secondary stroke prevention. For example, it includes such areas as:

- The primary stroke prevention measures applicable to the general public (a healthy low fat diet containing fruit, vegetables, fish; exercise; smoking cessation; limiting alcohol to moderate use; and perhaps avoidance of stress.)
- Why screening for hypertension, cholesterol, heart disease, and carotid artery stenosis can lead to even more effective stroke prevention in high-risk patients.
- How secondary stroke prevention in patients who have already had a stroke or transient ischemic attack is even more effective in preventing more serious strokes.
- Why stroke prevention depends on the application of these well-known and widely available treatments to a large number of patients.

## PRE-HOSPITAL/HYPER ACUTE

### Commonwealth of Massachusetts, Department of Public Health Point of Entry Guidelines for Stroke

A concise resource for emergency medical staff in hospitals it is widely-used by EMS in the United States. The Stroke Point of Entry Plan (S-PEP) includes a short analysis of procedures used by emergency medical staff in the presence of stroke systems. It also lists how EMS should determine the most appropriate transport for stroke victims.

The patient entry plan is based on neurological signs, pre-hospital treatment protocols, time of onset, stroke symptoms present and appropriate receiving facility. The goal is to define the process of determining the most appropriate transport and is based on choosing the appropriate method of transportation, transferring patient to hospital in case of need for acute stabilization, CT scan capabilities of hospital and transportation to hospitals which must occur within 2 hours of symptoms.

### National Institute of Neurological Disorders and Stroke (NINDS): Proceedings of a National Symposium on Rapid Identification and Treatment of Acute Stroke

This symposium, held in December 1996, was an unprecedented gathering of more than 50 organizations involved in the diagnosis, care, and treatment of acute stroke. More than 400 medical professionals from neurology, emergency medicine, radiology, internal medicine, neurosurgery, nursing, and other fields within the health care system laid the foundation for a national plan for rapid stroke treatment.

This document is a comprehensive source that is used by EMS for rapid identification and treatment of acute stroke. It underscores importance of early identification of the patient by pre-hospital personnel and should help mobilize emergency department (ED), in-hospital services and pre-hospital care providers to pursue enhanced education to quickly identify and possibly treat acute stroke victims.

The conference notes cover guidelines and best practices for:

- Pre-hospital emergency response systems
- Emergency departments
- Hospitals
- Health care system
- Public education


 Canada

## ACUTE/IN HOSPITAL

**John E. Duldner, Jr., MD**

**Charles L. Emerman, MD**

### **Stroke: Evaluation and Management**

A detailed clinical consensus report for stroke evaluation and management, this source could prove beneficial to Working Group as it lists specific best practices and includes approaches to systems, teams, and evaluations. Also, in the document is an algorithm for evaluation of acute stroke and charts detailing inclusion and exclusion criteria for administration of Thrombolytic therapy.

The source has a detailed section outlining acute ischemic syndromes management and provides best practices and guidelines for this and other stroke-related conditions. The report also seeks to clarify other management considerations including:

- Acute Stroke: Management Considerations
- Computed Tomography in Acute Stroke
- Anticoagulation
- Hyperglycemia
- Antipyretics
- Seizures
- Corticosteroids
- Cerebral Edema
- Thrombolytic Therapy

### **Report of the National Institute of Neurological Disorders and Stroke Workshop on Perinatal and Childhood Stroke**

The National Institute of Neurological Disorders and Stroke and the Office of Rare Disorders, National Institutes of Health, sponsored a workshop on perinatal and childhood stroke in Bethesda, Maryland, on September 18 and 19, 2000. It brought together experts in the field of perinatal and childhood stroke. The topics covered included epidemiology, animal models, risk factors, outcome and prognosis, and areas of future research for perinatal and childhood stroke. Perinatal stroke was discussed separately from childhood stroke because of underlying differences in incidence, cause, and outcome.

### **Child Neurology Society: Ad Hoc Committee on Stroke in Children: Recognition and Treatment of Stroke in Children**

Found through the Brian Attack Coalition website, this document is a very specific resource for recognizing and treating stroke in children. The target audience is medical professionals. The document is quite clinical, but does cover a range across the continuum of care, with a focus on the acute phase. It is obviously specific to stroke in children and may be useful to the Working Group.

The document lists three fundamental issues with stroke care and children:

- Stroke and cerebrovascular disorders are infrequent in children and it is difficult to organize clinical trial, as has been done with adults. Because stroke is so rare in children, clinicians are often reluctant to diagnose it as such.


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- The causes of cerebrovascular disorders in children are many and no one risk factor predominates.
- Many physicians still know very little about cerebrovascular disorders in children. This lack of awareness often leads to delayed diagnosis and may make it more difficult to use treatments which require early detection and diagnosis.

### **European Stroke Initiative: Recommendations for Stroke Management 2003**

This source addresses stroke management and is published by the European Stroke Initiative, which is a joint initiative of the European Stroke Council, the European Federation of Neurological Societies, and the European Neurological Society. Its' aim is to improve and optimize stroke management in Europe through educational programmes for medical professionals and the public. It also aims to offer best practice guidelines and thereby harmonize stroke management in Europe.

*Recommendations for Stroke Management 2003* provides an overview of established or widely used therapeutic strategies as well as an evaluation of evolving, but not yet proven strategies. Specific recommendations are evidence-based and each recommendation is classified according to their scientific levels of evidence.

### **Karolinska Stroke Conference: Karolinska Stroke Update, Consensus Statements**

The Karolinska Institute is a Swedish University, with an exclusive focus on medicine. It held a conference on stroke, the Karolinska Stroke Update, in November 2004. The Karolinska Stroke Update Consensus Statements are brief and fairly technical, with the exception of the Stroke Management statement, which is more general. They appear on the conference website and are include the following eight specific areas:

1. Carotid Endarterectomy and Angioplasty
2. Antiplatelet Therapy
3. Blood Pressure Control
4. Statins and thrombin inhibitors
5. Management of cerebral haemorrhage
6. Reperfusion in acute occlusive stroke
7. Imaging
8. Stroke Management

Each consensus statement is independent of one another, and lists the various individuals who were involved in the proposal, along with those who spoke on the particular subject. One of these statements deals specifically with stroke management.

At the outset of the document, levels of evidence are introduced which highlight a three tiered grading system of A, B and C, which represented strong support, support or no reasonable support from randomized controlled trials. In each of the six areas, a series of facts and statements are provided. Each piece of information is then given a grading in parenthesis along with the reasoning for why the

particular grade was allocated. There is a balance between the three levels of grading throughout the document and variety between each particular statement.

This document tends to be very technical, and focuses extensively on associated trials and statistical reviews as opposed to some of the best practices and guidelines. The next Karolinska Stroke Update will be held in November 2006, so the above statements may be updated or altered in the coming year.

### **Office of Quality and Practice, Veteran's Affairs Government of the United States: Clinical Practice Guideline for the Management of Stroke Rehabilitation in the Primary Care Setting**

While specific and targeted to medical professionals, this resource was created by the U.S. Government Department of Veterans Affairs. They are intended for physicians, nurses, physical therapists, speech language pathologists, occupational therapists, social workers and psychiatrists and are targeted at veterans who have suffered a stroke. They have also been adopted by the American Heart and the American Stroke Associations as their chosen guideline for stroke management in the United States.

While the guidelines mainly cover rehabilitation after acute stroke, they also contain some information on prevention. The guidelines objectives are:

- To provide a scientific evidence-base for practice interventions and evaluations related to stroke rehabilitation designed to achieve maximum functionality and independence and improve patient/family quality of life.
- To serve as a guide that clinicians can use to determine best interventions and timing of care for their patients, better stratify stroke patients, reduce re-admission, and optimize healthcare utilization.

The recommendations for the management of stroke rehabilitation in the primary care setting are organized into 3 main areas:

- Assessment
- Inpatient Rehabilitation
- Community Based Rehabilitation

The quality of evidence (I, II-1, II-2, II-3, III), overall quality (good, fair, poor), net effect of intervention (substantial, moderate, small, zero or negative), and strength of recommendation grading (A-D, I) are defined.


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### **The Cochrane Collaboration: Cochrane Stroke Group Various Reviews:**

The Cochrane Collaboration is an international network of individuals and institutions committed to preparing, maintaining, and disseminating systematic reviews of the effects of health care. In pursuing its aims, the Collaboration is guided by ten principles:

- collaboration
- building on the enthusiasm of individuals
- avoiding duplication
- minimizing bias
- keeping up to date
- striving for relevance
- promoting access
- ensuring quality
- continuity
- enabling wide participation

Under the Cochrane Stroke Group, the following reviews can be found, with respect to stroke care and what can be assumed relate to standards or care or guidelines. It is important to note that these are not described as "guidelines" as such, but may contain similar relevant information.

1. Organized inpatient (stroke unit) care for stroke
2. In-hospital care pathways for stroke
3. Services for reducing duration of hospital care for acute stroke patients
4. Services for helping acute stroke patients avoid hospital admission

## **STROKE REHABILITATION**

### **The Canadian Stroke Network (CSN): The Stroke Canada Optimization of Rehabilitation through Evidence (SCORE) Evidence-based Recommendations**

The SCORE Project and the recommendations fall within the Post Stroke Repair and Recovery category.

The SCORE Evidence-based Recommendations (EBR) are a result of a thorough search, review and critical evaluation of currently published Clinical Practice Guidelines (CPG) by a panel of stroke rehabilitation researchers and clinicians. The goal was not to create recommendations, but to select recommendations from currently published, high quality CPG that are most clinically relevant for health care in Canada. The Recommendations focus on upper and lower extremity treatments and risk assessment for patients post-stroke, who have experienced stroke with residual disability and who are medically stable within the first six months after acute stroke.

The primary users of the SCORE recommendations will be nurses, physiotherapists and occupational therapists. The recommendations can also be used by general practitioners, physiatrists, neurologists, speech language therapists, social workers and psychologists who provide rehabilitation care to stroke



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patients. Ultimately, this should assist clinicians to provide the more effective treatment based on the current best practice evidence.

There are various systems used by each CPG for the level of evidence, so the SCORE team standardized this across guidelines.

The SCORE EBR's are currently being piloted at six hospitals across Canada for six months. The SCORE EBR will be updated in 2006 using the feedback gathered from the pilot, updated versions of the CPG originally used to create the recommendations and a review of the literature using the Evidence Based Review of Stroke Rehabilitation.

### **The Evidence-based Review of Stroke Rehabilitation (EBRSR), 7<sup>th</sup> Edition**

The Evidence-Based Review of Stroke Rehabilitation (EBRSR) reviews current practices in stroke rehabilitation. EBRSR's mandate is to serve as an up-to-date review of the current evidence in stroke rehabilitation, provide a comprehensive and accessible review to facilitate best practices and provide specific conclusions to help direct stroke care at the bedside and at home.

The review arose from a vision for integrated stroke care in Ontario and is a direct result of the Ontario Stroke Rehabilitation Consensus Panel.

It was funded by the Ontario Ministry of Health and Long-Term Care and the Heart and Stroke Foundation of Ontario, with additional assistance from the Canadian Stroke Network. The goal of the project was to produce an up-to-date easily accessible evidence-based review of the stroke rehabilitation literature and is aimed at stroke rehabilitation professionals.

The Levels of Evidence used to summarize the findings are based, in part on the Eastern Ontario/Queen's Evidence Based Report, which in turn were based on the United States Agency for Health Care Policy (AHCPR) Guidelines for Stroke Rehabilitation. Three levels of evidence were used: Level 1(a) Strong, Level 1(b) Moderate, Level 2 (Limited), Level 3 (Consensus) and Level 4 (Conflicting).

Particularly relevant is the Interdisciplinary Inpatient Stroke Rehabilitation report outlining stroke rehabilitation, combined acute and rehabilitation and sub-acute rehabilitation. Methods of outpatient stroke rehabilitation are also explored in great detail.


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## SECONDARY PREVENTION

### **American Heart Association: Preventing Ischemic Stroke in Patients with Prior Stroke and Transient Ischemic Attacks (TIA)**

This is a Statement for Healthcare Professionals from the Stroke Council of the American Heart Association and may be helpful for programs dealing specifically with TIA. The Statement includes substantial evidence from observational epidemiological studies and clinical trials that recurrent ischemic stroke can be prevented, specifically:

- An overview of 3 treatments of TIA (dose-adjusted warfarin sodium, carotid endarterectomy, daily doses of aspirin)
- The likelihood and consequences of stroke recurrence (statistical data provided)
- Methods for Prevention of Other Cardiovascular Outcomes in Cerebrovascular Patients
- A Guide to Risk Reduction for Patients With Ischemic Cerebrovascular Disease (Patients Who Have Already Had Their First TIA or Stroke): General Risk-Factor–Specific Recommendations

### **Community Care and Reintegration**

The best examples of guidelines relating to community care and reintegration in our scan came from the Heart and Stroke Foundation of Ontario and from the Registered Nurses Association of Ontario.

### **Best Practice Guidelines for Stroke Care (The Heart and Stroke Foundation of Ontario):**

The Guidelines for community care and reintegration specifically include:

- Assist the stroke survivor and family to develop and implement an evolving care plan.
- Create strategies to enable health care professionals and caregivers in community and long-term care settings to develop stroke care expertise to support stroke survivors in achieving their goals.
- Support care givers in balancing personal needs and care giving responsibilities through community programs, respite care, and educational opportunities.

### **The Nursing Best Practice Guideline: Stroke Assessment Across the Continuum of Care:**

The Guidelines applicable to community care and reintegration include those that deal with:

- Activities of daily living
- Caregiver strain
- Depression
- Client and Caregiver – Readiness to Learn

As well, the following sources do also contain some reference to community care or reintegration, however small:



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### **Steps to a Healthier U.S. A Program and Policy Perspective ~ Prevention Strategies That Work**

Refers to: heart healthy policies and supportive environmental changes and programs in multiple settings: health care sites, work sites, schools and communities

### **SIGN: Management of Patients with Stroke**

Discharge Planning, Transfer of Care and Patient Issues guidelines refer to post-hospital care.

### **Development of the National Clinical Guidelines for Acute Stroke Management**

Although dealing primarily with the acute phase, these guidelines include reference to later stages of stroke care within the contents of the following Working Groups: Post-acute, Stroke Recovery, Participation in the Community.

### **Evidence-based Review of Stroke Rehabilitation (EBRSR)**

The review refers to best practices and specific conclusions to help direct stroke care at the bedside and at home.

### KEY FINDING 3: IMPLEMENTATION

As part of the environmental scan, information regarding successful implementation strategies were sought and documented where available. Four sources which contained implementation information were identified.

- **Best Practice Guidelines for Stroke Care (HSFO)** In Ontario, the regional stroke centres will collaborate with organizations within their respective regions to review the guidelines, develop care pathways and protocols that meet local needs and ensure the coordination of stroke management across the entire continuum. Each organization will review the guideline in the manual and determine how they would be applied. The Guidelines package also contains a number of care guides, along the different phases of stroke care. These guides are useful to facilitate the development of organization specific protocols and care pathways based on best practices.
- **Stroke Assessment Across the Continuum of Care (RNAO)** The RNAO Implementation Toolkit can accompany the Best Practices guidelines to assist health care organizations with systematic and well-planned implementation.
- **Clinical Practice Guideline for the Management of Stroke Rehabilitation in the Primary Care Setting (U.S. Govt. Dept of Veteran's Affairs)**. The Guidelines also list clinical algorithm and pocket guide/reference cards as implementation tools. The Department of Veteran's Affairs Guidelines also contain information about implementation and include outcome measures, which are described as: "Effective rehabilitation improves functional outcome. An indicator for improvement is the positive change in the Functional Independence Measures (FIM™) score over a period of time in the post-acute care period. Within the Veterans Health Administration (VHA) this measure is captured in the Functional Status and Outcomes Database for rehabilitation."<sup>6</sup>
- **Life After Stroke: New Zealand Guideline for Management of Stroke**. Description of the implementation strategy includes publication on the Stroke Foundation of New Zealand and the New Zealand Guidelines Group websites, "launch" seminars, dissemination of electronic versions to district health boards for their intranet sites, electronic and hard copy versions to academic centres, to services and clinicians who are in contact with people with a stroke and to medical specialist groups. There was also an attempt to gain publicity through venues like medical and nursing journals, media, radio and at a public launch with media coverage. Audit and feedback to health providers was also part of the implementation strategy.
- **The Heart and Stroke Foundation of Ontario** also developed a Speakers Bureau package to accompany the Guidelines package. Comprised of eight PowerPoint Presentations, it is intended as a resource for regions to assist in introducing the Best Practice Guidelines and in educating staff about the particulars of the guidelines.

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<sup>6</sup> Veterans Health Administration, Department of Defense. VA/DoD clinical practice guideline for the management of stroke rehabilitation in the primary care setting. Washington (DC): Department of Veteran Affairs; 2003 Feb.

## AGREE Project

It is not the intention of this environmental scan report to specifically address the AGREE tool or other evaluation instruments and its use in the best practices included in the inventory in any great detail. However, the report does acknowledge that the AGREE tool appears in several of the guidelines and that we are aware of its use.

AGREE stands for "Appraisal of Guidelines Research and Evaluation". It originates from an international collaboration of researchers and policy makers who work together to improve the quality and effectiveness of clinical practice guidelines by establishing a shared framework for their development, reporting and assessment. The AGREE instrument or tool, as it sometimes known, is used to assess new and existing guidelines as well as guideline updates.

"The purpose of the AGREE tool is to provide a framework for assessing the quality of clinical practice guidelines. The AGREE instrument assesses both the quality of the reporting, and the quality of some aspects of recommendations. It provides an assessment of the predicted validity of a guideline that is the likelihood that it will achieve its intended outcome. It does not assess the impact of a guideline on patients' outcomes."<sup>7</sup>

The AGREE instrument is intended to be used by:

- Policy makers, to help them to decide which guidelines to use in practice, as part of the formal assessment process.
- Guideline developers can follow a structured and rigorous development methodology and can use AGREE as a self-assessment tool to ensure that their guidelines are sound.
- Educators or teachers to help enhance critical appraisal skills among health professionals

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<sup>7</sup> Appraisal of Guidelines for Research and Evaluation, AGREE Instrument, September 2001, the AGREE Collaboration


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## OBSERVATIONS

### 1. There are several important resources for guideline information

*Stroke Guidelines—The Internet Stroke Centre* is a comprehensive resource and a major guide for the Best Practices and Guidelines Environmental Scan and provided an excellent source of links and references to national and international guidelines in stroke. Although not a direct example of actual guidelines, this internet source contained a compendium of most of the guidelines in this scan. It is a key resource for stakeholders who may wish to delve more deeply into the area of stroke guidelines. The Cochrane Collaboration is also another excellent source of information.

### 2. Work and guidelines emerging from Australia and New Zealand may have particular relevance and applicability for a Canadian Stroke Strategy

Australia and Canada have many comparisons; size, rural/urban split with respect to population and a significant aboriginal population. Although there are not any specific guidelines dealing with stroke and the aboriginal population, the National Stroke Foundation (Australia) has a document entitled "Aboriginal Stroke Program" which details their experiences with the aboriginal population with respect to stroke. In the same manner, the New Zealand Guidelines also have a component dealing with its aboriginal (Maori, Pacific Peoples) population.

### 3. Increasing the voice of the patient and patient perspective in the development and implementation of guidelines

The Stroke Association/Royal College of Physicians guidelines are unique in that they recognize the opinions and experiences of patients and their caregivers through focus group sessions. The intent was to complement other forms of evidence and to address problems from patient perspective.

### 4. Acknowledging the complexity and ever-changing nature of stroke management

Several of the guidelines stressed the ever-changing nature of stroke and stroke management. For example:

- The Stroke Association/Royal College of Physicians stressed that the guidelines are meant to inform the clinicians. They are not intended to be rigid "rules" but rather fluid guidelines that can be expected to be updated or changed on a regular basis as new research and information comes available.
- The RAO Guidelines also point out in their "How to Use This Document" section that the guidelines should not be applied in a "cookbook" fashion but used as a tool to assist in decision making and that they adapt the guidelines to formats that would best suit daily use.

## APPENDIX B – BEST PRACTICES & GUIDELINES ANNOTATED BIBLIOGRAPHY

Title	Source	Author & Date	Summary Details
1. Best Practice Guidelines for Stroke Care	Heart and Stroke Foundation of Ontario  <a href="http://209.5.25.171">http://209.5.25.171</a>	Heart and Stroke Foundation of Ontario (HSFO)  June 2003	Comprehensive, evidence-based best practice guidelines developed to assist healthcare professionals and administrators identify and implement optimal stroke management strategies and deliver optimal stroke care. Divided into seven modules, based on continuum of care.
2. Stroke Assessment Across the Continuum of Care	The Registered Nurses Association of Ontario Heart and Stroke Foundation of Ontario  <a href="http://www.rnao.org/bestpractices/completed_guidelines/BPG_Guide_C5_Stroke_Assessment.asp">http://www.rnao.org/bestpractices/completed_guidelines/BPG_Guide_C5_Stroke_Assessment.asp</a>	Registered Nurses Association of Ontario (RNAO)  June 2005	This best practice guideline focuses on assisting nurses working in diverse practice settings in the assessment and/or screening of stroke survivors.  The goal of this document is to provide nurses with evidence-based recommendations regarding the assessment and/or screening of stroke survivors across the continuum of care.
3. The Stroke Canada Optimization of Rehabilitation through Evidence (SCORE) Project Evidence Based Recommendations (EBR)	The Canadian Stroke Network  <a href="http://www.canadianstrokenetwork.ca/research/projects/resproject54.php">http://www.canadianstrokenetwork.ca/research/projects/resproject54.php</a>	The Canadian Stroke Network	Focus on upper and lower extremity treatments/risk assessments for stroke.  For use by nurses, physiotherapists, occupational therapists, as well as general practitioners, neurologists, speech language pathologists, social workers and psychologists.  Should assist clinicians in providing the most effective rehabilitation treatments based on current best evidence.
4. Stroke Services in Australia: National Stroke Unit Program Policy Document	National Stroke Foundation, Australia  <a href="http://www.strokefoundation.com.au/pages/Default.aspx?PageID=104&amp;id=1">http://www.strokefoundation.com.au/pages/Default.aspx?PageID=104&amp;id=1</a>	National Stroke Foundation  November 2002	Comprehensive outline of Australia's National Stroke Unit Program. Includes "Developing the Stroke Service Model"

Title	Source	Author & Date	Summary Details
6. Development of the National Clinical Guidelines for Stroke Rehabilitation and Recovery	National Stroke Foundation, Australia <a href="http://www.strokefoundation.com.au/pages/Default.aspx?PageID=104&amp;id=1">http://www.strokefoundation.com.au/pages/Default.aspx?PageID=104&amp;id=1</a>	National Stroke Foundation  September 2005	Builds upon earlier (Management of Acute Stroke) guidelines. Multidisciplinary Working Group developed to review and make recommendations to develop these evidence-based guidelines for stroke rehabilitation and long term care.
7. National Clinical Guidelines for Stroke, Second Edition	Clinical Effectiveness and Evaluation Unit, Royal College of Physicians London  <a href="http://www.rcplondon.ac.uk/pubs/books/stroke/">http://www.rcplondon.ac.uk/pubs/books/stroke/</a>	Intercollegiate Stroke Working Party,  June 2004	Guidelines cover stroke, TIA and subarachnoid haemorrhage, mainly in acute care with some coverage of other aspects of the continuum of care. Notable for inclusion of patient and caregiver perspective.
8. Steps to a Healthier US:  A Program and Policy Perspective:  Prevention Strategies that Work	"Achieving a Heart Healthy and Stroke Free Nation"  US Departments of Health and Human Services  <a href="http://www.healthierus.gov/steps/summary/prevportfolio/Prevention_Strategies.pdf">http://www.healthierus.gov/steps/summary/prevportfolio/Prevention_Strategies.pdf</a>	US Department of Health and Human Services  2003	Identifies prevention strategies that work. Includes diagram "Logic Model on Heart Disease and Stroke Prevention".
9. Stroke : Evaluation and Management	<a href="http://www.hypertension-consult.com/Secure/textbookarticles/Textbook/40_stroke2.htm">http://www.hypertension-consult.com/Secure/textbookarticles/Textbook/40_stroke2.htm</a>	John E. Duldner, Jr., MD Charles L. Emerman, MD	Acute assessment of stroke, include logic model for evaluation.
<a href="#">Point of Entry Guidelines for Stroke</a>	Commonwealth of Massachusetts, Dept. of Public Health <a href="http://www.mass.gov/dph/oems/ambulance/strokepointofentryplan.doc">www.mass.gov/dph/oems/ambulance/strokepointofentryplan.doc</a>	Department of Public Health	A one-page compilation of pre-hospital guidelines for stroke.
10. Management of Patients with Stroke: Rehabilitation, Prevention and Management of Complications and Discharge (No.64)	Scottish Intercollegiate Guidelines Network  <a href="http://www.sign.ac.uk">www.sign.ac.uk</a>	SIGN Management of Patients with Stroke Guideline Development Group  November 2002	Guidelines support treatment for stroke in a multidisciplinary stroke unit in a hospital setting.  Also deals with patients' involvement, information provision, early supported discharge and discharge planning.



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Title	Source	Author & Date	Summary Details
11. Recommendations for Stroke Management 2003	European Stroke Initiative <a href="http://www.eusi-stroke.com/index.shtml">http://www.eusi-stroke.com/index.shtml</a>	European Stroke Initiative Executive Committee and EUSI Writing Committee  July 2003	Provide an overview of established or widely used therapeutic strategies as well as an evaluation of evolving, but not yet proven strategies. Classified according to their scientific levels of evidence. Specific recommendations are evidence-based.
12. Evidence-based Review of Stroke Rehabilitation (EBRSR), 7 <sup>th</sup> Edition	St. Joseph's Health Care, Parkwood Hospital, University of Western Ontario, Departments of Epidemiology and Biostatics, McGill University, University of Western Ontario  (Funding by Ministry of Health and Long Term Care, Canadian Stroke Network, Heart and Stroke Foundation of Ontario)	Robert Teasall, Norine Foley, Katherine Salter, Sanjit Bhogal, Nestor Bayona, Jeffrey Jutai, Mark Speechley	A comprehensive evidence-based review of stroke rehabilitation created to be an up-to-date review of the current evidence in stroke rehabilitation and to provide specific conclusions based on evidence that could be used to help direct stroke care at the bedside and at home.
13. Proceedings of a National Symposium on Rapid Identification and Treatment of Acute Stroke	National Institute of Neurological Disorders and Stroke (NINDS)  <a href="http://www.ninds.nih.gov/">http://www.ninds.nih.gov/</a>	NINDS December 1996	Proceedings from this gathering of 50 organizations involved in the diagnosis, care, and treatment of acute stroke with more than 400 medical professionals from neurology, emergency medicine, radiology, internal medicine, neurosurgery, nursing, and others who laid the foundation for a U.S. plan for rapid stroke treatment.  Participants developed a blueprint for: pre-hospital emergency medical care systems, emergency department response to stroke, acute hospital care, health care systems and public education.
14. "Medical Prevention of Stroke"	Medscape/Southern Medical Journal  <a href="http://search.medscape.com">http://search.medscape.com</a>	Howard S. Kirshner May 2003	Article on stroke prevention which depends on two critical premises: Stroke is one of the most preventable serious medical illnesses, and stroke prevention depends not on new medical breakthroughs, such as a cure for cancer, but rather on the application of readily available knowledge.


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Title	Source	Author & Date	Summary Details
15. <i>Preventing Ischemic Stroke in Patients With Prior Stroke and Transient Ischemic Attack</i>	A Statement for Healthcare Professionals From the Stroke Council of the American Heart Association <a href="http://stroke.ahajournals.org/cgi/content/full/30/9/1991">http://stroke.ahajournals.org/cgi/content/full/30/9/1991</a>	Philip A. Wolf, MD, Chair; G. Pat Clagett, MD; J. Donald Easton, MD; Larry B. Goldstein, MD; Philip B. Gorelick, MD; Margaret Kelly-Hayes, EdD, RN; Ralph L. Sacco, MD; Jack P. Whisnant, MD 1999 American Heart Association, Inc.	Deals with secondary prevention and includes an overview and outline of secondary prevention treatment and strategies.
16. Report of the National Institute of Neurological Disorders and Stroke Workshop on Perinatal and Childhood Stroke"	Neuroepidemiology Branch, National Institute of Neurological Disorders and Stroke, Bethesda, Maryland Extramural Program, National Institute of Neurological Disorders and Stroke, Bethesda, Maryland Hospital for Sick Children, Toronto, Canada	John Kylan Lynch, DO <sup>*</sup> , Deborah G. Hirtz, MD <sup>†,‡,§</sup> , Gabrielle DeVeber, MD <sup>‡,§,¶</sup> and Karin B. Nelson, MD <sup>*</sup>	Guidelines for treatment and prevention of paediatric stroke.
17. Recognition and Treatment of Stroke in Children"	The Brain Attack Coalition <a href="http://www.stroke-site.org">http://www.stroke-site.org</a>	Child Neurology Society Ad Hoc Committee on Stroke in Children  Date not available	Guidelines for treatment and rehabilitation of stroke in children.
18. Karolinska Stroke Update	Karolinska Stroke conference; <i>Stockholm, Sweden</i>  <a href="http://www.strokecenter.org/prof/guidelines.htm">http://www.strokecenter.org/prof/guidelines.htm</a>	Karolinska Stroke Conference  November 2004	Consensus Statements on various aspects of acute stroke management and prevention of strokes. Deep venous thrombosis, dementia, blood pressure, hyperglycaemia, hyperthermia, hypoxia, fluid and electrolyte management
19. Italian Guidelines for Stroke Prevention	Stroke Prevention and Educational Awareness Diffusion (SPREAD) Collaboration <a href="http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&amp;db=PubMed&amp;listuids=10938196&amp;dopt=Citation">http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&amp;db=PubMed&amp;listuids=10938196&amp;dopt=Citation</a>	Department of Neurological and Psychiatric Sciences, University of Firenze, Italy.	The Italian Guidelines on Stroke are the result of a coordinated process involving a multidisciplinary Working Group. Aims to provide knowledge and recommendations about the best management of the primary and secondary prevention of stroke, as well as acute stroke.

Title	Source	Author & Date	Summary Details
20. Abstracts of Cochrane Reviews	The Cochrane Library, Issue 4, 2005  <a href="http://www.update-software.com/abstracts">www.update-software.com/abstracts</a>	The Cochrane Stroke Group  2005	Reviews consist of the following topics: Services for helping acute stroke patients avoid hospital admission Services for reducing duration of hospital care for acute stroke patients Organized inpatient (stroke unit) care for stroke In-hospital pathways for stroke
21. Appraisal of Guidelines for Research & Evaluation (AGREE) Instrument	The AGREE Collaboration  <a href="http://www.agreecollaboration.org/instrument/">http://www.agreecollaboration.org/instrument/</a>	The AGREE Collaboration  September 2001	A framework for assessing the quality of clinical practice guidelines.  Assesses both the quality of the reporting and the quality of some aspects of recommendations. It does not assess the impact of a guideline on patients' outcomes.
22. Clinical Practice Guideline for the Management of Stroke Rehabilitation in the Primary Care Setting	Office of Quality and Practice, Veteran's Affairs  <a href="http://www.guideline.gov/summary/summary.aspx?ss=15&amp;doc_id=3846&amp;nbr=3061">http://www.guideline.gov/summary/summary.aspx?ss=15&amp;doc_id=3846&amp;nbr=3061</a>	Veterans Health Administration, Department of Defense  2003	Created by the U.S. Government Department of Veterans Affairs. They are intended for physicians, nurses, physical therapists, speech language pathologists, occupational therapists, social workers and psychiatrists and are targeted at veterans who have suffered a stroke.
23. Life After Stroke: New Zealand Guideline for Management of Stroke	New Zealand Guidelines Group  <a href="http://www.guideline.gov/summary">www.guideline.gov/summary</a>	New Zealand Guidelines Group  November 2003	Based on several other existing guidelines, covers diagnosis, management and treatment of adult patients in New Zealand who have had stroke. Also significantly covers implementation.

## APPENDIX C – BEST PRACTICES & GUIDELINES STATEMENT OF WORK

### Context

A message consistently heard is that evidence-based research findings are not always reaching physicians, nurses, rehabilitation specialists, hospital administrators, health ministries and, most importantly, patients. For the purposes of this project, best practices are defined as emerging guidelines, gleaned from key expert perspectives and supported by the literature and data, on the approaches and elements of treatment that appear to result in successful treatment outcomes for stroke prevention, treatment and rehabilitation. Given this definition, best practices are recommendations that may evolve, based on ongoing key expert experience, judgment and perspective, and continued research. Best practices are not consistently applied, leaving a significant gap between what *should be done* and what *is being done* in Canada's healthcare system. The goal of the CSS is to close this gap.

The CSS provides a framework to help ensure that the latest science and research evidence results in measurable and tangible policy and practice change. Likewise, as the Strategy is implemented, we will be able to identify gaps in knowledge, creating future research priorities and ensuring continuous improvements in policy and practice development.

The *Best Practices, Standards and Guidelines Working Group* will contribute to the goals and efforts of the CSS by engaging a broad range of stakeholders, through consensus-building initiatives, to lead and promote the development, dissemination and uptake of evidence-based best practices, standards and guidelines in stroke prevention, care, rehabilitation and community reintegration and long term care.

In support of the *Best Practices, Standards and Guidelines Working Group* a detailed environmental scan will be conducted to determine what best practices, standards and guidelines currently exist, focusing specifically on Canada and identifying any other relevant leading practices or examples that exist internationally. The environmental scan will provide the Working Group with an inventory or catalogue of the publicly available and relevant best practices (as defined – see scope) and a comprehensive understanding of the current best practices landscape in stroke and will enable them to identify major gaps along the continuum to form recommendations on the implementation of the best practices, standards and guidelines.

### Objectives

- 1) Guided by and in collaboration with the Working Group, conduct a detailed environmental scan of the best practices, standards and guidelines in support of the Canadian Stroke Strategy.
- 2) Develop for approval one (1) report documenting the search strategy (for methodological transparency) and the overall findings of scanning efforts in the area of best practices and standards.
- 3) Develop environmental scanning and data / information source materials for the Working Group (e.g. annotated bibliography, inventory of materials, gap analysis, and recommendations).



## Canada

### Scope

The environmental scan will be framed in collaboration with the Working Group to determine where scanning efforts should be focused (Note: health promotion will be considered out of scope for this effort). For example, in consultation with the Working Group we may identify current areas of strength or recent reports and practices that are well documented as well as areas where less is known. Hill & Knowlton and the Working Group have agreed to the scope of the scan as well as the timelines for completion. The initial timeline proposed to conduct the environmental scan for this Working Group is September 2005 to November 2005.

The scope of the environmental scan will include the following:

- All publicly available documents in English (from Canada and internationally)
- All publicly available documents in French, with authorship from Canada (e.g. Quebec, New Brunswick etc.)
- Any tools or learning that provides insight into the uptake, application and operationalization, lessons learned or efficacy of the best practices identified and to the extent possible and available, knowledge translation elements
- The scan will also look at “practices” and not just “guidelines – this is an important distinction as practices typically refer to systems and guidelines are typically considered clinical
- The scan will cast the net broadly to capture all relevant and available elements specific to stroke, focused on activities for organizational uptake and where available full implementation. This will include physician statements and recommendations to the extent they are sufficient to guide practice and are not considered motherhood statements
- Every attempt will be made to “drill down” and mine as much information as possible – especially focused on anything available for rehabilitation, although it is expected that SCORE covers the major areas.
- Contacting organizations responsible for guidelines in specific areas to obtain any relevant information pertaining to best practices and guidelines (e.g. Canadian Medical Association etc.) – the Working Group will assist in shaping the list of these organizations
- A grey literature review will be considered out of scope for this effort.

### Approach

Hill & Knowlton will work with the *Best Practices, Standards and Guidelines Working Group* to finalize the scope of the scan. Once we have finalized the scope Hill & Knowlton will proceed to document the search strategy for approval and then conduct a preliminary scan and report back to the group on findings. This will provide an opportunity to make course corrections if required based on the information and data collected. Once the group is in agreement on next steps, Hill & Knowlton will conduct the detailed scan documenting all of the relevant aspects identified in this document.



## Canada

Hill & Knowlton will ensure regular communications and consultation with the Working Group over the course of the scanning effort. H&K will also liaise with the Working Group, specifically, one point of contact to coordinate this communication. Regular status updates will be provided to the group and H&K will be available to participate on Working Group conference calls as required.

Hill & Knowlton will develop the environmental scan report which will include the findings, identification of information gaps (available along the continuum), analysis of the information (available, not an assessment of the guidelines) and recommendations such as additional scanning steps or data sources (e.g. reports pending release) if necessary. Other deliverables such as an annotated bibliography, inventory of documentation and information collected and other data will also be provided as it will be a valuable information source for the applicability and relevance to this and other Working Groups.

We propose the following high level action plan and (target) timeframes:

- Finalize statement of work and contracting (October 3, 2005)
- Develop and approve search strategy (October 7)
- Conduct stakeholder assessment/mapping to identify the list of organizations that should be contacted and engaged in identifying guidelines and leading practices (October 12)
- Obtain, or if necessary develop a mini-communications plan and messaging to reach out to the organization and implement (October 17)
- Conduct the preliminary scan and report to the Working Group the findings including major information gap areas identified etc (October 21)
- Identify and catalogue all relevant examples of best practices, standards and guidelines. This will yield two products, the first an inventory of all guidelines identified and the second a summary analysis of the most relevant examples which would include the name of the project/program, the context in which it is applied and the dissemination or management program and degree of success it achieved (if available, e.g. impact on health outcomes), best practice implementation and monitoring programs, costs associated – a matrix of information profiling the guidelines (November 4)
- Consult with the Working Group and take follow up actions as required (e.g. obtain other information, consult other sources etc.) (November 11)
- Develop the first draft of the environmental scanning report based on the most relevant information, documenting the findings and analysis and highlighting information gaps, opportunities and recommendations (specific to the report and information available) where appropriate (November 18)
- Consult the Working Group for their input and feedback on the report (November 25)
- Finalize all deliverables and documentation for the Working Group (November 30)



Canada

### Deliverables

- Search strategy
- Stakeholder assessment and communications/engagement approach
- Preliminary assessment of broad findings
- Inventory of best practices, standards and guidelines and matrix of information
- Preliminary analysis of the findings of the environmental scan
- First draft of environmental scan report
- Final environmental scan report and associated tools and products for the Working Group



Canada

## APPENDIX D – BEST PRACTICES AND STANDARDS WORKING GROUP ENVIRONMENTAL SCAN

### Search Methodology Objective & Overview

The purpose of the environmental scan is to provide the CSS Best Practices Working Group with an inventory or catalogue of the publicly available and relevant best practices, as defined, and a comprehensive understanding of the current best practices landscape in stroke that will enable the CSS to identify major gaps along the continuum to form recommendations on the implementation of the best practices, standards and guidelines.

The search will result in the finding, documentation and general analysis of the best practices policies and procedures existing in a wide variety of health organizations in Canada, the United States and around the world.

### Scope

As outlined in the initial Statement of Work, the scope of the environmental scan will include the following:

- All publicly available documents in English (from Canada and internationally)
- All publicly available documents in French, with authorship from Canada (e.g. Quebec, New Brunswick etc.)
- Any tools or learning that provides insight into the uptake, application and operationalization, lessons learned or efficacy of the best practices identified and to the extent possible and available, knowledge translation elements
- The scan will also look at “practices” and not just “guidelines – this is an important distinction as practices typically refer to systems and guidelines are typically considered clinical
- The scan will cast the net broadly to capture all relevant and available elements specific to stroke, focused on activities for organizational uptake and where available full implementation. This will include physician statements and recommendations to the extent they are sufficient to guide practice and are not considered motherhood statements
- Every attempt will be made to “drill down” and mine as much information as possible – especially focused on anything available for rehabilitation, although it is expected that SCORE covers the major areas
- Contacting organizations responsible for guidelines in specific areas to obtain any relevant information pertaining to best practices and guidelines (e.g. Canadian Medical Association etc.) – the Working Group will assist in shaping the list of these organizations
- All material that would be categorized as under the auspices of a grey literature review will be considered and sorted according to relevance. The term “grey literature review” is used to describe information that covers a wide range of material not readily available through conventional channels but which is frequently original and usually recent. Estimates of the volume of such informal publishing vary, but one puts it at about 20% of all publishing.



Canada

### **Definition of Key-Terms**

Prior to initial execution of the scan, the two key terms best practices and clinical guidelines must be clear.

For the purpose of our work and as indicated in the Statement of Work, we have defined best practices as:

"...emerging guidelines, gleaned from key expert perspectives and supported by the literature and data, on approaches and elements of treatment that appear to result in successful treatment outcomes for stroke prevention, treatment and rehabilitation. Best practices are recommendations that may evolve, based on ongoing key expert experience, judgment and perspective, and continued research."

By comparison, clinical guidelines are:

"...developed through a rigorous methodological approach that mandates the review and consideration of the available medical literature. Practice guidelines define the role of specific diagnostic and therapeutic modalities, including non-invasive and invasive procedures, in the diagnosis and management of patients with various cardiovascular diseases. These evidence-based guidelines are intended to assist physicians in clinical decision making by describing a range of generally acceptable approaches for the diagnosis, management, or prevention of specific diseases or conditions. They attempt to define practices that meet the needs of most patients in most circumstances by categorizing the recommendations into a classification system."

### **Research Tools**

For the purposes of this environmental scan, documentary (that information which is readily accessible in soft or hard copy form) research will be the primary method used. Online resources, academic journals and organizational information will provide the necessary information for the stroke inventory.

#### ***Research***

We will be systematically and objectively locating, evaluating, and synthesizing evidence in order to establish facts and draw conclusions concerning best practices along the continuum of care. As such, secondary data, that is, existing published will be our main source of information. For the purposes of this project, any data that has been produced through rigorous research will be of included in the annotated bibliography.

#### ***Data***

The environmental scan will require us to gather as much qualitative information as possible—both structured and unstructured (information or data elements – not necessarily packaged in report-specific format) data.

## **Existing Information**

Information contained in the annotated bibliography compiled for the first phase of the CSN Stroke Project is general and was not compiled for the purposes of determining best practices but was a good starting point. It is important to note that the search started nationally then moved internationally.

Under the continuum of care there are five major areas of focus:

1. Prevention
2. Treatment
3. Rehabilitation
4. Acute
5. Reintegration

Most of the existing information exists in the "Treatment" and "Rehabilitation" categories. It was particularly difficult to find relevant information, however, that fit under all the specific areas of focus. Rather, information found on best practices was applicable across the board for the areas of Prevention, Treatment, and Rehabilitation. Sources for best practices in the "Acute" and "Reintegration" categories were also difficult to find.

## **Required Information**

Following a review of existing material as outlined in the annotated bibliography, the following course of action was pursued:

1. A search through the websites listed for specific references to best practices (50% success rate).
2. An additional search using a number of search engines identifying other relevant organizations (75% success rate).
3. A search of the identified stakeholder websites for specific best practices references (50% success rate)

While the existing references were helpful, new information was found in the various associations to which Neurologists, Physicians, and Health-care workers belong. Best practices guidelines were often included on association websites.

The research must sort through the information found in the "Treatment" and "Rehabilitation" categories, but best practices information for the "Prevention," "Acute" and "Reintegration" categories along the continuum of care is sparse and these areas must be focused on.

## Documentation of Findings & Reporting

All best-practices information found will be categorized and placed in a table under the following subtitles, if applicable:

These subtitles, specifically, will be defined as:

***Date:*** Date the publication was produced.

***Title:*** Title of the document referenced.

***Source:*** The source(s) of the referenced document.

***Author:*** The author(s) of the referenced document.

***Summary:*** A general top-down overview of the document. This section will provide a sense of where best practices and guidelines speak along the continuum of care.

***Relevance:*** How the document is relevant to our purposes, i.e. best practices.

In addition to creating the above table, detailed addendums including findings will be attached to the final document.

Once collected, data will be analyzed and synthesized for relevance. As outlined in the Statement of Work the environmental scan and subsequent analysis of the sources included, will provide a starting point for the implementation of a best practices approach within the CSS.