

British Columbia Stroke Strategy
Stroke Measurement and Evaluation
Action Plan



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1.0 Project Purpose

The purpose of the project is to establish and implement a formal evaluation framework and measurement strategy for overall stroke system performance in British Columbia. The evaluation framework will be designed to be complimentary to other evaluation models at the Canadian Stroke Network, the Ministry of Health and the health authorities where frameworks currently exist.

While the stroke evaluation framework will take a system's perspective, particular focus will be placed on evaluating the priority interventions identified by the Stroke Steering Group. These include TIA rapid access and telehealth; the deliverable for rehabilitation and community reintegration focuses on an approach and strategy and will therefore require confirmation of performance measures and data availability only.

2.0 Project Priority

The priority for establishing an evaluation framework was highlighted in recommendations by the Steering Group. Specifically:

That \$75,000 be invested in a Stroke Measurement Working Group in order to develop a formal stroke evaluation framework and measurement strategy.

This priority is fully supported by the "British Columbia Stroke Strategy, 2005", and the report "Innovations in Stroke Care, 2007." The evaluation framework and measurement must be designed to capture improvements in patient outcomes, and to support continued investments in preventing and managing stroke.

3.0 Background

Measuring progress toward improving the prevention of stroke and the management of patient outcomes was a priority outlined in the 2007 Business Case. This requires a concise set of performance measures and dedicated resources to consolidate, analyze and report on the data. The business case recommended establishing a working group, which would include the Canadian Stroke Strategy, to develop a concise set of measurement indicators and to develop the data collection and evaluation program.

The British Columbia Stroke Steering Group (BCSSG) established an evaluation subcommittee in the spring of 2007 to recommend a preliminary set of stroke measures and indicators, and to collect baseline data. The BCSSG recommended twenty-two indicators that span the continuum of stroke prevention and care, and for which data generally exists. The indicators will be used to demonstrate progress toward improving the overall stroke system, and to ensure a common and consistent focus for the work that needs to be done.

With the preliminary set of indicators now identified, this project will focus on firmly establishing the data set, the collection and storage system, and the reporting on the results of priority interventions.

3.1 Key Customers/Users

The target groups that will benefit from this work include:

Customers/Users	Benefit to be Achieved
Stroke Strategy Steering Group, and by direct association, the Health Authorities	Improved understanding of the feasibility and benefits associated with stroke related interventions, patient outcomes and cost avoidance.
Provincial Government, Ministry of Health	Improved understanding of the cost/benefit of investing in interventions to prevent and better manage stroke disease.
Heart and Stroke Foundation of BC and Yukon	Improved understanding of public awareness, and the basis for advocating for additional funding.
Health care professionals	Feasibility and success of particular interventions (e.g., different approaches to rehab, application of telehealth, approaches to improving TIA rapid access).
Stroke Recovery Association	Improved understanding of the impact and effectiveness of community reintegration.

3.2 Application of the Results

The results of the evaluation and measurement initiative will be used by the Stroke Steering Group to determine the success of the three main stroke initiatives, and by the Heart and Stroke Foundation to develop further business cases for additional funding from government. Furthermore, each Health Authority and NGO will have improved information on which to plan, budget and deliver health care services to improve patient care and to reduce health care costs.

The results will also be used by the provincial government to determine whether additional support for the provincial stroke strategy is warranted. Finally, the evaluation framework and results will be of interest to the Canadian Stroke Network as it continues to build a national strategy to combat stroke disease.

3.3 Measurement and Evaluation Measurement Timeframe

The overall timeframe for implementation will be two years, beginning in April 2008. Implementation will occur in two parallel streams. One stream will focus on establishing a comprehensive stroke evaluation framework for BC. This will include confirming performance measures and indicators, establishing a data collection and storage system, and collecting baseline data. At the same time, the Measurement and Evaluation Working Group will work directly with each of the implementation teams for TIA rapid access, rehabilitation and re-integration and telehealth to identify performance measures and to gather baseline and progress data to evaluate the success of each intervention. The Working Group will publish the recommended evaluation framework, and the results of the data collection and evaluation.

4.0 Objectives and Measurable Outcomes

The objectives of the project are to:

- Establish and implement a comprehensive measurement and evaluation framework for stroke disease in British Columbia.
- Establish and implement measure and evaluation for each of the three main tasks – TIA rapid assessment, telehealth and rehab/reintegration.
- Report on the outcome of the evaluation framework, and the results of implementation of TIA rapid assessment, telehealth and rehab/reintegration.

Performance measures that have been identified for consideration in the evaluation framework are highlighted in the following table:

1. Stroke severity	11. Proportion of TIAs prescribed antithrombotic therapy	16. Discharge from acute care to inpatient rehab.
2. Incidence/prevalence of stroke	12. Proportion of CEA patients experiencing peri-operative, in hospital stroke, acute MI or death.	17. Time to outpatient rehab.
3. Symptoms of Stroke	13. Proportion of eligible TIAs with atrial fibrillation	18. Median days spent as ALC in an acute care setting.
4. Time to presentation at ED	14. Discharge disposition for stroke survivors following inpatient rehab.	19. Change in functional status score using a standard assessment tool
5. Patients managed in an acute stroke unit	15. Percentage of patients with a hospital admission for stroke who receive an admission assessment within 48 hours.	20. Availability of multi disciplinary coordinate rehab programs.
6. Discharge disposition from acute care		21. Percentage of patients re-admitted to acute care following discharge
7. Proportion receiving tPA		
8. Proportion of patients receiving a CT/MRI within 24 hours		
9. Proportion receiving carotid imaging		
10. Proportion of TIA patients seen within 72 hours in secondary prevention clinic		

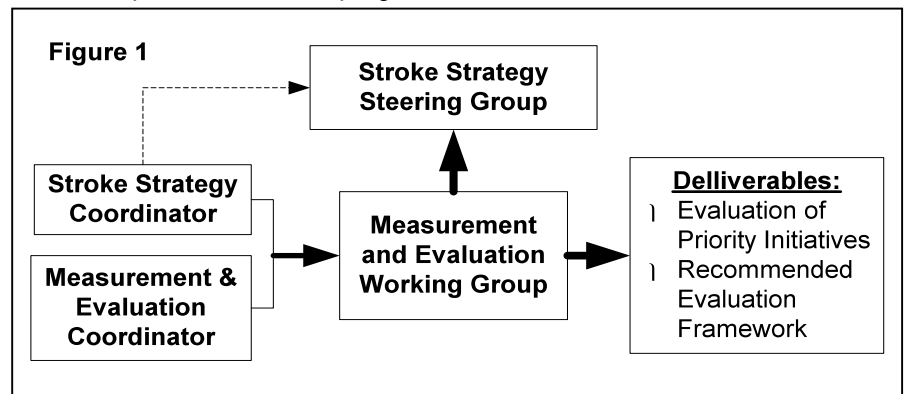
The Stroke Measurement and Evaluation Working Group will meet with the leads for the three priority stroke initiatives to confirm priority performance measures, and to establish the data collection, evaluation and reporting.

5.0 Project Management

The Stroke Strategy Coordinator will oversee the implementation of the work program (Figure 1). A Measurement and Evaluation Coordinator (MEC) will be hired, part time, to implement the work plan. THE MEC will report to the Stroke Coordinator. Implementation of the work program will be guided by the MEWG, who will report progress to the Stroke Strategy Steering Group.

The MEC will:

- Work with the MEWG to finalize and implement the work program;
- Retain consultants as required to conduct research on data sources and management;
- Keep the Stroke Coordinator informed of progress;
- Manage communications to promote the results of the evaluations.
- Provide links to other



priority stroke strategy initiatives including finalizing performance measures and gathering data for each of the three priority initiatives.

The MEWG will be responsible for developing a comprehensive report on the process and the recommendations for a stroke evaluation framework.

6.0 Scope

6.1 Approach

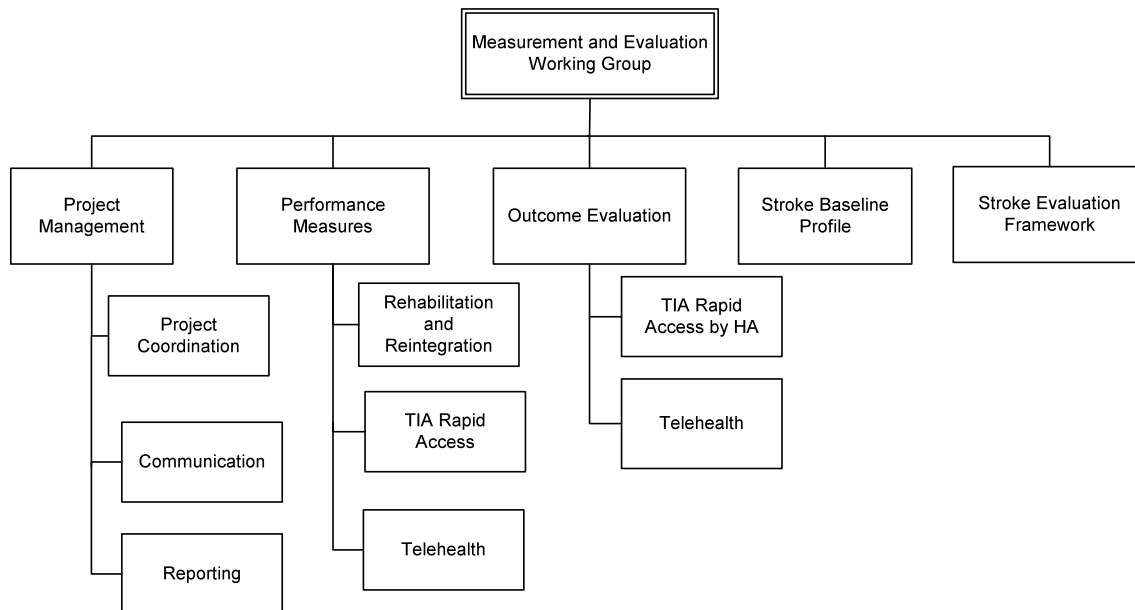
The Measurement and Evaluation Working Group (MEWG) will work closely with the Measurement and Evaluation Coordinator (MEC) to implement the work program that includes:

- Developing the stroke system evaluation framework that addresses performance across the stroke continuum.
- Confirming performance measures and a data collection capability for each of the three priority stroke projects.
- Collecting and reporting on results of implementing the telehealth project, and the TIA rapid access projects in each health authority.

The \$75,000 budget for measurement and evaluation will cover the costs for the MEC. Each of the three priority initiatives – TIA rapid access, rehab and re-integration, and telehealth – will contribute funding to support data collection, analysis and reporting.

The work breakdown structure is shown in Figure 2, and task descriptions are summarized in Section 6.2.

Figure 2 – Work Breakdown Structure



6.2 Implementation Tasks

To achieve the objectives outlined in Section 4.0, the following activities will be implemented.

TASK #1: Confirm Current Performance Measures and Data Availability

This task focuses on confirming the current list of performance measures developed by the Measurement and Evaluation Working Group. The MEWG will meet with the leads of each of the other projects to confirm the priority indicators for measuring and evaluating outcomes. Specific steps include:

- Meetings with each of the leads and coordinators for the three priority initiatives to confirm the list of indicators.
- Align the indicators according to the three domains - 1) quality of care 2) patient outcomes and 3) financial sustainability.
- Confirm the definition of the indicators including consistency with the Ministry, Health Authorities and the Canadian Stroke Network.
- Identify the source and availability of the confirmed indicators using the resources within the MEWG.
- For each potential source, confirm data availability and management protocols to see if they fit with the information and reporting requirements for stroke.
- Provide recommendations on a short term data collection for priority stroke projects (TIA rapid access, telehealth and rehabilitation/reintegration).

Deliverables:

- Confirmed list of indicators following review and input from other working groups.
- Availability of baseline data for priority projects.

TASK #2: Evaluation of Priority Initiatives

This task includes both the baseline and outcome evaluation for each of the three priority stroke projects. The MEC, working with the MEWG, will meet with each of the project leads to develop an evaluation program based on the recommended performance measures. Once the performance measures and data collection system are confirmed, the MEWG will initiate the collection of baseline data. The budget for data collection and consolidation will come from each of the three initiatives. Specific steps include:

- Confirm the priority performance measures.
- Develop a data collection and evaluation program for each of the three priority stroke interventions.
- Develop a standardized audit tool to ensure consistency in data collection.
- Consolidate available current data against the approved list of measures.
- Identify current data gaps and options for bridging gaps (proxy measures, new collection).
- Provide a report on the baseline data collection system for each project lead, and for the Stroke Strategy Working Group.
- Follow the baseline evaluation with an outcome evaluation for each of the three priority initiatives.
- Report on the outcome evaluations, and link reporting to the communications task.

Deliverable: Completed baseline and outcome evaluations.

TASK: Stroke Baseline Profile

British Columbia does not have a baseline profile of the stroke population and the services provided across the health authorities. While this data exists in different areas, it has not been consolidated to provide a picture of the current situation in BC. The MEWG will consolidate a baseline profile of stroke disease and services provided across the care continuum. Implementation will include:

- Establish a standardized, baseline data collection template.
- Conduct an inventory of existing databases
- Initiate an inventory at the health authority level to establish up to date information on the prevalence of stroke and patient characteristics, along with the services provided to care for stroke patients.
- Publish the profile.
- Establish a process for keeping the profile current.

TASK: Stroke Evaluation Framework

The evaluation framework will include a comprehensive set of performance measures for Stroke in B.C., and a registry for consolidating and reporting on outcomes across the continuum of care. The evaluation of the three immediate stroke priority interventions will fit within the broader evaluation framework. Specific actions include:

- Confirm the components of the evaluation framework, including the final set of agreed to performance measures.
- Confirm standardized data collection protocols.
- Identify and recommend system and functional requirements for consolidating, storing and managing stroke data. These requirements become the criteria for evaluating registry options.
- Identify and evaluate current registries for application to stroke. These include the cardiac registry, SPIRIT, renal registry and the Ministry of Health's data collection system.

- Develop a common data collection system and templates for all health authorities.
- Develop a recommendation for establishing a comprehensive evaluation framework.
- Once approved by the Stroke Working Group, develop a business plan for establishing the registry.

Deliverable: Recommendations and business plan for establishing and managing a comprehensive stroke evaluation framework.

TASK: Communications

The results of the evaluation will be reported and promoted to those interested in stroke, as well as for those who need to be aware of the value of a comprehensive stroke initiative. The communications task will include:

- Developing a brief communication plan to identify target audiences and opportunities.
- Reporting on progress related to the three priority initiatives – TIA rapid access, telehealth, rehab/reintegration.
- Communicating early successes.
- Providing technical information to health authorities on data collection.
- Sharing learnings on key findings.

7.0 Major Deliverables and Project Milestones

The major deliverable products for this project are 1) the evaluation of the three main priority initiatives – TIA rapid access; telehealth and rehabilitation and re-integration; and 2) recommendations on an evaluation framework for stroke prevention and care in British Columbia. The evaluation of the three priority initiatives will require finalizing the performance measures, baseline and progress-based data collection, and reporting on the evaluation. The evaluation framework will include research on requirements for the framework, potential models that could be adapted or used for stroke, and a business case with recommendations, costs and a timeframe.

Major deliverables for each task include:

Major Deliverable	Description	Target Date
Work Plan Sign Off	Complete the project plan and sign-off by the Stroke Strategy Steering Group.	April 30, 2008
Confirm Current Performance Measures	Meet with each project lead and confirm the short list of performance measures for the three main priorities. Consult with the CSN and other experts in the evaluation and reporting for stroke on the completeness of the 21 initial indicators.	May 15, 2008 September 2008
Data Collection System	Research and recommendations on existing data collection systems for consolidating information on priority stroke interventions.	June 2008

Major Deliverable	Description	Target Date
Baseline Assessment	Consolidation, storage and management of baseline data for the three priority interventions. Evaluation of the potential for existing data management systems to provide information on the 21 performance measures.	October 2008
Outcome Assessment	Evaluation of the three main stroke initiatives.	May 2009
Stroke Profile	Characterization of stroke in BC, including awareness and prevalence of stroke, patient profiles, and services available within each health authority and at the community level.	December 2008
Evaluation Framework	Research and develop a recommended approach to the evaluation framework.	February 2009
Communications Plan	Communications approach and activities Promotion of evaluation process and outcomes	June 2008 Ongoing to April 2009

8.0 Assumptions, Links and Dependencies

Implementing the measurement and evaluation project is dependent on the following:

- Establishment of a project management structure and budget, including assigning the MEC to manage the work program with the guidance of the MEWG.
- Assignment of financial resources from each of the three priority projects for data collection, consolidation and reporting.
- Cooperation by members of the Stroke Strategy Working Group, in particular the Ministry of Health and the Health Authorities, to access data and to evaluate potential models for the evaluation framework.
- Coordination with the Canadian Stroke Network to confirm/validate the performance measures.

9.0 Risks, Issues and Constraints

Risks of not proceeding include:

- Inadequate funding to enable effective project management.
- Inadequate funding to enable data collection.
- Lack of cooperation by other government agencies to provide data or to consider compatible evaluation frameworks.
- Health Authority cooperation in data collection.

10.0 Budget

The budget for the measurement and evaluation project is \$82,500. In-kind financial support for travel expenses and salaries is expected from the provincial government and health authorities. However, a budget has been assigned to cover additional costs where in-kind support is not provided. Program management costs will be included in the MEC budget, while the costs for collecting data for the three priority stroke projects will come from each project budget.

Budget Item	Fiscal Year	Project Costs
Measurement and Evaluation Coordinator.	2008 through 2009.	\$50,000 Part time for one year
Confirm Current Performance Measures	2008/09	In the MEC Budget
Data Collection System for Priority Interventions	2008/09	In the MEC Budget
Evaluation of Priority Initiatives	2008/09, 2009/10	Budget allocation from each project
Stroke Baseline Profile	2008/09	In MEC budget
Stroke Evaluation Framework – Sustainability Model	2008/09 through 2009/10	Partial in MEC Budget \$15,000
Communications	2008/09 through 2009/10	Stroke Coordinator
MEWG Support – travel and honorariums for 5 participants. ¹	2008/09 through 2009/10	\$15,000
Reporting	2008/09 through 2009/10	\$2,500
Total		\$82,500

¹ Estimated that 5 members of the MEWG may require remuneration for travel and salary. Remuneration is based on 5 – 1 day meetings over 24 months. Costs based on sessional rates for the GPAC . Travel is estimated at costs for air fare and meals outside of the meeting.