

# Implementation of a Dysphagia Management Program for Acute Stroke Survivors: The Quinte Health Care Experience

FINAL REPORT

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STROKE STRATEGY  
*of* Southeastern Ontario





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# EXECUTIVE SUMMARY

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Dysphagia is a common complication following acute stroke, affecting 50-60% of stroke survivors. Often undetected, dysphagia can lead to pneumonia, dehydration and malnutrition, which in turn impact on length of hospital stay, long-term functional outcomes, quality of life and mortality.

Quinte Health Care (QHC) has embarked on the implementation of a dysphagia management strategy that follows the Heart and Stroke Foundation of Ontario's Best Practice Guidelines for Dysphagia in Acute Stroke<sup>1</sup>. With one full-time Speech-Language Pathologist (SLP) and four hospital sites located across a large rural geographic area, QHC identified itself as a suitable organization for the project with the intent of decreasing risk in the management of dysphagia and improving efficiency in the use of limited SLP resources. In September 2005, with the support of one-time funding from the Stroke Strategy of Southeastern Ontario, QHC engaged the services of an external SLP to act as coordinator for the project. Eleven 8-hour workshops were held to provide 80 RNs and RPNs with the education and support to administer the Toronto Bedside Swallowing Screening Test (TOR-BSST<sup>®</sup>), the only validated tool available to determine risk for dysphagia following stroke. Workshop participants were also provided with comprehensive information on swallowing anatomy and physiology, the signs and symptoms of dysphagia after stroke and the roles of the allied health care team in sustaining a swallowing care plan. Following the workshop, the learner demonstrated competency in use of the TOR-BSST<sup>®</sup> screening tool by performing two bedside swallowing screens referred to as 'return demonstrations'.

Another element of the project involved supporting the research activities of Rosemary Martino, Ph.D, developer of the TOR-BSST<sup>®</sup>, in her continuing investigation of the impact of dysphagia education on nursing practice and the quality of patient care and outcomes.

Based on qualitative and quantitative indicators, the goals of QHC's Dysphagia Management Project have been met. All 80 RNs/RPNs attended the full-day workshops, with 72 nurses completing the required two demonstrated screenings (the remaining eight were unable to complete the process due to long term sick leave

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<sup>1</sup> Improving Recognition and Management of Dysphagia in Acute Stroke; a Vision for Ontario. Heart and Stroke Foundation of Ontario, 2002.

or difficulties in scheduling). All screening team members expressed strong satisfaction with the education received and believed that being equipped to screen for dysphagia using the TOR-BSST® has allowed them to become advocates for their stroke patients. One innovation that will ultimately facilitate the administration of the dysphagia screening at QHC is the newly established electronic documentation (Edoc) system. Ongoing monitoring using Edoc may allow the District Stroke Coordinator to track the uptake of the tool, to identify efficiencies created in the time between admission-to-screen and screen-to-SLP assessment, as well as other key indicators such as length of stay and pneumonia rates. Critical to the continued efficacy of the implementation will be ongoing awareness activities, education for all team members, skill maintenance and education for new staff.

The need for dysphagia management teams in acute care, particularly at sites with limited or no speech-language pathology services, has been identified through this project and the supporting literature. A concurrent project in Toronto will help inform potential plans to expand this dysphagia management program to Long-Term Care settings. As for its application to rehabilitation facilities, key informant interviews with rehabilitation partners suggest that although the interest in creating dysphagia screening capacity is high, the need is tempered by relatively better SLP staffing levels. The need for education in ongoing post-acute dysphagia management has been identified in the rehabilitation setting.

Since the completion of the dysphagia management program implementation at QHC, work has been undertaken by Dr. Martino, the developers of the initial learning module, nurses and dietitians, as well as this writer, to revise the one-day workshop format into one that: a) aims to meet the same educational objectives within a shorter instructional module paired with a self-directed learning module; b) emphasizes the interprofessional collaboration and education of dysphagia team members; and c) allows for a more case-based exploration of the ways in which team members work together to address the unique needs of stroke survivors. This clinically focused, case based, problem solving presentation of the course materials is consistent with Kern's six step approach for curriculum development for medical education<sup>2</sup>.

The Southeast regional implementation of this work has involved using a revised learning module that is being offered to acute care settings across the region that have limited education resources but great needs for developing capacity in dysphagia management. The learning plan developed in response to the need for regional implementation is covered in section V of the report.

Maintaining consistent leadership in supporting best practice guidelines for dysphagia and promoting the awareness of and excellence in dysphagia screening and care will

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<sup>2</sup> Kern DE, Thomas PA, Howard DM, Bass EB. Curriculum development for medical education, a six-step approach (1998). Baltimore: Johns Hopkins University Press.

continue to be crucial in supporting health care professionals in the years to come. At the same time, flexibility with respect to regional implementation to meet the needs of various settings will need to be respected in order to facilitate dissemination of best practice. Consideration will need to be given to rural hospitals that do not have SLP's on staff. An interprofessional approach is desirable. This approach emphasizes empowering various disciplines to work as a team to use dysphagia knowledge and education in a manner that respects their professional judgement and expertise and provides a context for a synergistic improvement to quality stroke care.



## Acknowledgements

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The author would like to acknowledge the contributions and guidance of the following individuals, without whom this project would not have been possible.

The Regional Stroke Steering Committee of Southeastern Ontario is acknowledged for approving the proposal to conduct the implementation of the Dysphagia Management Project, a proposal which was created with the leadership of Cally Martin, (Regional Stroke Program Manager), Suzanne Saulnier (Regional Stroke Education Coordinator) and Tamara Lucas (District Stroke Coordinator, Hastings-Prince Edward Counties). At Quinte Health Care, Nancy Jones (then Manager of Rehabilitation Services), Shawn Allen (Speech-Language Pathologist) and Paulette Jamieson (Director of Medicine and Critical Care) are acknowledged for their foresight and commitment in the early stages of project planning and throughout its implementation.

A project of this scope and magnitude also owes its eventual success to the managers and front-line staff throughout the Corporation. The Coordinator would like to gratefully acknowledge the assistance and support provided by the site administrators and nursing managers, schedulers and team leaders at all four sites. Special thanks for easing the logistics of the project go to: Pat Tresierra, Donna Robinson and Cindy McAlpine (North Hastings); Sally Cowan, Marion Hughes and Cheryl Insley (Prince Edward County Memorial Hospital); Wendy Parker, Fran Foley and Sylvia Hibbard (Trenton Memorial Hospital); and Marilyn Pape, Deb Mora, Grace Zwart and Kelly Pound (Belleville General Hospital). The cooperation of other professionals, including QHC's professional practice leaders, registered dietitians, occupational therapists, physiotherapists, recreational therapists and physicians is also deserving of recognition, as they provided thoughtful comments and support throughout the project's implementation. Though not individually named, each of the nurses educated as part of the project are owed a tremendous debt of gratitude for giving of their time and energy throughout the project and helping to inform the final evaluation.

The staff of the Stroke Prevention Clinic is thanked for its support and encouragement over the eight months of the project: Patti Newall, Sue Kotel and Dr. Curry Grant demonstrated the kind of professional support to the spirit of the project that, although behind-the-scenes, cannot go unnoticed.

The project as a whole would have not been possible without the generous support of the Ontario Stroke Strategy of the Ministry of Health and Long Term Care. Their stewardship of projects such as this is a testament to their commitment to best professional practice in stroke care.

Every successful project is built on sound foundations. The Heart and Stroke Foundation of Ontario (HSFO) was instrumental in spearheading the dysphagia management initiative. Their commitment to Dr. Rosemary Martino's research led to the development of the manuals and learning materials. Special acknowledgement must go to Bev Powell-Vinden (HSFO, Professional Education Consultant and Manager, Stroke Care Delivery) for coordinating the production of educational materials used for this project. The project would not be possible without Dr. Martino's intellectual and practical leadership from day one. Special thanks go to her for allowing the project to utilize the TOR-BSST<sup>®</sup> prior to its general release, and for providing her excellent guidance and support throughout. Patricia Knutson (SLP, Kitchener-Waterloo) and Anna Masciatelli (SLP, Niagara) are recognized, both for their contributions to the educational materials, as well as their practical advice during the planning stages of this project. The lessons learned during the pilot projects in their regions were instrumental to the success of this one.

# I. INTRODUCTION

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Dysphagia is acknowledged as a serious complication from stroke that places survivors at significant risk for malnutrition, dehydration and aspiration, reduces their quality of life, and places considerable burdens on hospitals in terms of length of stay and functional outcomes. Dysphagia is not a disease in itself, but rather is a symptom that is easily identifiable and readily manageable, especially given the recent development of a validated screening tool to detect dysphagia within the first 24 hours – the Toronto Bedside Swallowing Screening Test (TOR-BSST®).<sup>3</sup> Throughout much of North America, an interprofessional approach to dysphagia management is advocated with leadership from speech-language pathologists (SLPs).

From September 2005 to May 2006, a coordinated effort to administer a comprehensive education program took place to implement the best practice guidelines for dysphagia in acute stroke as set out by the Heart and Stroke Foundation of Ontario in its 2002 guideline entitled *Improving Recognition and Management of Dysphagia in Acute Stroke; a Vision for Ontario*.<sup>4</sup> The education program consisted of an 8-hour workshop covering swallowing anatomy and physiology, the signs and symptoms of dysphagia after stroke, complications, oral hygiene, the administration of the TOR-BSST® including video case studies and the roles of the allied health care team in sustaining a swallowing care plan. Following the workshop, the learner demonstrated competency in the use of the TOR-BSST® screening tool by performing two bedside swallowing screens referred to as ‘return demonstrations’. A performance checklist was used to determine competency in the skill.

This project followed on the heels of the pilot research programs in 2003-2004 in the Kitchener/Waterloo and Niagara districts. The QHC project was initiated as a result of a one-time funding opportunity from the Stroke Strategy of Southeastern Ontario (SSSEO) and the needs put forth by Quinte Health Care (QHC).

The physical and human resources at QHC lent themselves to the unique opportunities and challenges posed by this dysphagia management project. QHC is comprised of four hospital sites within Hastings and Prince Edward Counties.

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<sup>3</sup> Martino R et al. Psychometric Properties of the Toronto Bedside Swallowing Screening Test (TOR-BSST®) for Stroke Patients. *Stroke* 2007;38:453-607

<sup>4</sup> *Improving Recognition and Management of Dysphagia in Acute Stroke; a Vision for Ontario*. Heart and Stroke Foundation of Ontario, 2002.

Belleville General has 206 beds comprising acute medical/surgical care, rehabilitation and complex continuing care units. Thirty kilometres to the southeast of Belleville General is Prince Edward County Memorial Hospital, with 38 in-patient beds. Trenton Memorial Hospital, 20 kilometres to the west, has 70 inpatient beds on its acute care and complex continuing care units. Finally, 115 kilometres north of Belleville, the North Hastings site has a total of 10 beds. The total number of admissions for stroke at all sites was 201 for 2005-2006 (118 in Belleville, 45 in Trenton, 27 in Picton and 11 in Bancroft).

QHC was deemed to be an appropriate site for a corporation-wide implementation of the dysphagia project given that it:

- Is a community hospital corporation with four geographically dispersed sites;
- Has one speech-language pathologist serving inpatients, who must travel between the sites in response to demand for dysphagia assessment and management;
- Has an active District Stroke Centre designation and an acute stroke care pathway in place;
- Has the support of its management and staff to implement the program at all sites; and
- Has the support of the Regional Stroke Steering Committee of Southeastern Ontario.

Overall, the goals of implementing best practice dysphagia care can be stated as follows:

1. To provide a streamlined dysphagia management plan of care that is consistent across sites, regardless of geographical location or resources.
2. To make more efficient use of limited SLP resources by making dysphagia screening part of the admission assessment conducted by nursing staff, and by doing so, promoting and enhancing interprofessional collaboration.
3. To educate staff in the utilization of tools and processes to identify the risk for dysphagia in the acute stroke patient population. Those who receive the education are then considered to be members of the dysphagia management team.
4. To minimize the occurrence of medical complications from dysphagia, thereby potentially reducing length of stay and increasing functional outcomes.
5. To maximize the quality of life of patients in the short and long term.

This report represents a synthesis of the activities that took place from project planning to full implementation. It documents all aspects of the project from the time the Project Coordinator was hired until the completion of the project activities. The report also presents an evaluation of each stage of the project, the factors that led to the success of each component, as well as the aspects that will continue to evolve as implementation continues to take place at all four sites of QHC and across the region. It will also serve to inform other regional initiatives to promote best practice in post-stroke dysphagia care.



## II. PLANNING THE IMPLEMENTATION

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The planning phase of the project went on largely prior to the hiring of the Project Coordinator. It was determined fairly early on, during meetings between the Manager of Rehabilitation and the inpatient speech-language pathologist, that caseload demands would not allow the latter to act as Project Coordinator. It should be noted as well that, due largely to the efforts of the Manager of Rehabilitation and the SLP in identifying the caseload and travel requirements experienced in meeting high demand for dysphagia services, the project was proposed as a viable solution to increase efficiency in service delivery. It was thus proposed that part of the funding for the project would be allocated to outsourcing the role of Project Coordinator. A proposal put forth by the Regional Stroke Program Manager and the District Stroke Coordinator was approved by the Regional Stroke Steering Committee of Southeastern Ontario and the Ministry of Health and Long Term Care and unspent Stroke Strategy funds were approved for allocation to the project. The proposal itself can be found at [www.strokestrategyseo.ca](http://www.strokestrategyseo.ca) under projects/news. During the same period, meetings were held between the Director of Medicine and Critical Care and representatives from each site to garner support for the project in principle. It was agreed that the increasing demands on the in-patient SLP, the wide geographic distribution of the hospital sites, and the need for a comprehensive approach to dysphagia in acute stroke made QHC an ideal organization for implementation. The appropriate clinical and administrative departments agreed to a plan to proceed with a clinical practice change in dysphagia screening. Timelines were set such that the project would span from September 2005 to May 2006 in order to allow for education of all staff and full implementation.

Shortly after the Project Coordinator was hired, a videoconference meeting with managers and other key stakeholders took place to determine the scope of the project. It was decided that the 80 staff members budgeted to comprise the dysphagia screening teams would be full-time RNs and RPNs on the in-patient Medicine units at each site. Using this strategy would allow for the 24 hour, seven day per week availability of the screening team. It was decided that the corporation's registered dietitians would also be included as observers at the education workshops, as they were already involved fairly closely with the SLP in developing dysphagia treatment plans. Other internal allied health professionals were also invited to attend as observers. These observers attended the workshops but did not participate in the two demonstration screenings as they would not be

practicing the use of the TOR-BSST®. Once the initial distribution of in-patient Medicine nursing staff was identified, the remaining education slots were allocated to full-time Complex Continuing Care RNs in Belleville and Trenton, the Stroke Resource Nurse on the Rehabilitation Unit (Belleville), and the Emergency Department Team Leaders at each site. Appendix A outlines the numbers of nurses educated at each scheduled workshop.

In the early stages of planning, several meetings were held between the Project Coordinator and the inpatient SLP. As a collegial relationship already existed between the two, cooperation was facilitated. The meetings served to introduce the Project Coordinator to each of the sites and the unique characteristics of the patient care teams and allowed the inpatient SLP to familiarize himself with the scope of the workshop material. This set the stage for an ongoing dialogue regarding the processes involved in coordinating demonstration screenings with new and existing stroke patients during the post-workshop period, and providing on-going support to the dysphagia screening teams during the project and after the Project Coordinator had completed her tenure.

It was important at this juncture that procedures be established regarding how the dysphagia screenings would fit into the acute stroke care pathway. As per the best practice guidelines<sup>5</sup>:

- a dysphagia screening should optimally take place within the first 24 hours of admission, as soon as the survivor is awake and alert;
- the survivor should be maintained NPO until the screening is completed; and
- if the survivor fails the screening, he/she is to be maintained NPO until assessed by the SLP.

Thought was given as to how the time between a positive (failed) screening and referral to the inpatient SLP could be made most expeditious. The possibility of a Medical Directive (allowing immediate notification of the SLP upon failure of the screening) was explored; however, this would have necessitated signature by all admitting physicians - a plan that would have not been practicable in the time available for the project. It was decided that, upon failing the screening, the screening team member would contact the most responsible physician and request an immediate referral to the SLP. The full bedside assessment and subsequent interventions by the SLP would then be implemented upon receipt of the referral. A schematic of the screening, referral and assessment plan is provided as Appendix B.

While the workshops were being scheduled, the Project Coordinator took the opportunity to customize the PowerPoint slide presentation CD-ROMs formatted by the Heart and Stroke Foundation and Dr. Rosemary Martino. The material was

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<sup>5</sup> Improving Recognition and Management of Dysphagia in Acute Stroke; a Vision for Ontario. Heart and Stroke Foundation of Ontario, 2002.

customized to the project and additional activities were planned to enhance the experience of the learners. It was foreseen at that time that the workshop material would evolve in order to best suit the information needs and learning styles of the participants. To this end, an evaluation tool was designed with the assistance of the Regional Stroke Education Coordinator, to collect feedback from participants as to their satisfaction with each of the workshop components (see Appendix C). This evaluation tool was based on a provincial evaluation template commonly used for Stroke Strategy education activities.

Corporation-wide awareness of the dysphagia project was deemed a high priority during the implementation stage. In addition to the early negotiations which set the project into motion, other means of communication were planned. Initial activities included:

- Introduction of the Project Coordinator at Stroke Rounds during site visits and at meetings of key stakeholders (e.g., department managers).
- Introduction and a brief presentation to the District Stroke Advisory Committee.
- Planning for communication vehicles (e.g., information posters).
- Meetings with the registered dietitians to discuss the project and their part in it (with respect to typical procedures for referral after acute stroke, how the Heart and Stroke Nutrition Screen would fit into the implementation, the diet texture recommended for those who passed the screen, etc.).

Later in the project's course was the need to plan for the implementation of electronic documentation (Edoc). This new system would allow for the electronic version of the TOR-BSST<sup>®</sup> to be included when it went "live." According to the data entry protocol established, all those with a diagnosis of stroke or stroke-like symptoms would have the TOR-BSST<sup>®</sup> screen automatically "pop up" to be completed. If the nurse responsible for that patient had not received the education, an information screen provided the instruction to find a member of the dysphagia screening team so that the TOR-BSST<sup>®</sup> could be administered promptly. How this application was put into practice, as well as its strengths and opportunities for improvement, are discussed later in this report.

In preparation for the eventual regional roll-out of the project, representatives of the other acute care hospitals and community rehabilitation providers from across the region of Southeastern Ontario were also invited to attend the workshops as observers. This assisted other organizations to begin to identify how the dysphagia management program could be applied according to the needs of their sites and services.

Another aspect of planning for implementation involved facilitating the research activities of Dr. Rosemary Martino. As noted earlier, Dr. Martino's research

culminated in the development of the TOR-BSST<sup>®</sup>, as well as the supporting educational materials produced by the Heart and Stroke Foundation of Ontario cited earlier. The present project contributed to understanding mechanisms of knowledge translation and large-scale implementation of the screening tool and its component educational elements in a community-based multi-site acute care hospital setting.

The purpose of the research was to:

- Establish the patient outcomes of the dysphagia management program. This involved obtaining patient charts to obtain baseline data on the dysphagia care and course of stay of stroke survivors before implementation, as well as follow-up data once implementation of dysphagia screening had taken place. These “snap shots” would allow for data to be gathered on the incidence of negative outcomes (e.g., pneumonia, malnutrition, dehydration), and to chart the care pathway of stroke survivors.
- Identify the extent to which dysphagia screening team members were:  
a) knowledgeable about various aspects of dysphagia and stroke; and b) satisfied with their own ability to identify and care for their patients who were admitted with stroke. The questionnaires used for this research component were validated during the pilot studies.
- Establish the degree of knowledge transfer enabled by the education they were to receive. The questionnaire used for this research component had been previously validated with other health professionals. Reliability testing was facilitated by a sub-sample of the nurses receiving the questionnaire at least two weeks prior to the workshop attended, followed by a full administration of the questionnaire to all participants on the morning of the workshop.

Reporting the results of the research was not intended to be part of this report and will be available upon publication of Dr. Martino’s findings.

Other miscellaneous activities that were carried out in preparation for the implementation of the education phase of the project were:

- Meeting with staffing schedulers to finalize the dates and participant count for each workshop.
- Booking conference facilities at each site and arranging for refreshments.
- Participating in the review and final edit of the content of the Heart and Stroke dysphagia and nutrition manuals<sup>6</sup>.
- Establishing availability and maintenance of audiovisual equipment.
- Printing workshop evaluations.
- Ordering sufficient copies of the TOR-BSST<sup>®</sup> for the workshops.
- Coordinating the research surveys and maintaining a log to track surveys as they were received.

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<sup>6</sup> Nutrition Screening for Stroke Survivors; Heart and Stroke Foundation of Ontario, 2005; and Management of Dysphagia in Acute Stroke; an Educational Manual for the Dysphagia Screening Professional; Heart and Stroke Foundation of Ontario, 2006.

## III. PROJECT IMPLEMENTATION

### a. Dysphagia Team Education

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Once the education materials were finalized, the workshops were ready to get underway. Although the original proposal projected that six workshops were to be conducted, this number was expanded to 11 in order to accommodate individual sites. For example, the Prince Edward County site was facing staffing shortages and higher than average patient occupancy rates. This resulted in difficulties with arranging for staff to backfill the education hours. As the most remote site and the one with the fewest annual total stroke admissions, it was decided to hold the first workshop at the North Hastings site. Starting at this site was also thought to maximize the project coordinator's opportunity to allow for performing two demonstrations of competence per each nurse educated.

Participant lists for each of the workshops required continuous monitoring and updating in order to fill the target quota of 80 full-time staff. In the case of Belleville's Quinte 5 Medicine unit, four of the originally named participants were on long-term leave; spots were re-allocated to part-time staff in order to achieve full 24/7 coverage. When some participants were unable to attend, a make-up session was added to the workshop roster. Finally, additional staff members from the intensive care unit (ICU) at the Belleville site were identified and a half-day version of the workshop was provided to these participants. The material that the ICU nurses were less likely to be in need of included the longer-term aspects of dysphagia management (e.g., feeding strategies, diet textures, dysphagia care plan review).

The education program was comprised of a series of units dealing with all aspects of best practice dysphagia management. The morning session provided a comprehensive overview of the following:

- The rationale for dysphagia screening
- The nine Heart and Stroke best practice guidelines for managing dysphagia
- Normal swallowing anatomy and physiology
- Impaired swallowing – signs and symptoms
- Videofluoroscopic swallow study videos of normal and abnormal swallowing
- Stroke and dysphagia
- Complications – malnutrition and dehydration
- Ongoing management – feeding and oral care.

The afternoon session was dedicated to the TOR-BSST®. Participants were given a thorough review of the research and rationale behind the development of the screening tool. A section on abnormal voice quality was included to enable participants to describe what constitutes a normal vs. an abnormal voice. This addition to the course materials provided by Dr. Martino was seen as important given the experiences of the pilot project SLPs. It was discovered that many nurses, although highly adept in a vast array of observational and assessment tasks, had difficulty in acknowledging that a voice was somehow abnormal. As judgment of voice quality is a critical step in the decision to pass or fail a patient on the screening, participants were asked to listen to and rate taped vocal samples. Participants were also given the opportunity to practice other elements of the tool, and then were able to practice scoring the form using five video case examples, discussing the rationale for decisions made. Afterwards, the three case studies included in the Heart and Stroke dysphagia manual<sup>4</sup> were also discussed in detail.

Overall, the response to the workshop content and presentation was extremely positive. A detailed list of the responses to the evaluation is included as Appendix D. A great deal of discussion was generated from the case studies and the video patients in particular. This dialogue assisted the Project Coordinator in identifying those areas of the screening protocol that would be crucial to the success of the implementation. Some of these areas included:

- How dysphagia screening team members would deal with situations where a patient was not found to be NPO prior to administration of the screen.
- How team members could advocate for the needs of their patient with physicians, patients, families and others.
- The challenges of weekends/long weekends and the role of the nurse in managing nutrition/hydration issues.
- The importance of oral care, and the challenges that nurses face in managing this critical piece of the puzzle (e.g., no pediatric toothbrushes available as per best practice guidelines).
- The need for education of all staff regarding the distribution and presentation of water to patients with dysphagia. [In response to infection control issues, the current practice at QHC is to distribute bottled spring water rather than the standard water jugs. This practice, however, was identified by participants as posing access issues (hemi-paretic patients who cannot open the bottles) and positioning risks (requiring the patient to tilt his/her head back to drink may introduce added aspiration risk).]
- The importance of various elements of the TOR-BSST® (e.g., tongue deviation, voice change detection) and how they affect decision-making in determining presence/absence of risk.

The overwhelming message from the evaluations was that the TOR-BSST<sup>®</sup> was seen as a valuable, fast and easy tool that nurses could utilize in an effort to optimize their patients' outcomes after stroke. Although some were initially concerned about the safety of the screen to their patients, the vast majority came out of the education session prepared to begin the next phase.

## b. Demonstration of Competence

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In order to complete the requirements of the education as set out by Dr. Martino, each nurse who attended the workshop was required to demonstrate successful use of the TOR-BSST<sup>®</sup> on two patient observations, under the supervision of the Project Coordinator. The advantage of requiring two demonstrations was in increasing the opportunity for any given learner to develop a broader range of problem-solving abilities in meeting an increased variety of patient characteristics in the screenings. This phase of the project was probably the most logistically challenging and the one that called for the greatest creativity and flexibility. The most important factors affecting the ability to conduct two screening demonstrations included nurse and patient availability and patient candidacy for the full test (e.g. state of arousal).

Of these factors, patient availability was often the most demanding. In the case of the Belleville site, there was typically at least one acute patient on the Medicine floor at the time when a dysphagia team member was scheduled for work. If not, a non-acute patient would be recruited from the rehabilitation floor or from Complex Continuing Care. New stroke admissions in Trenton and Picton were much less frequent, and in some cases, necessitated the recruitment of a patient who had been previously screened. This was especially the case towards the end of the project, where fewer nurses were left to demonstrate the use of the screening tool. Thanks to some very willing and pleasant patients (some submitting to the test three or more times over the course of several days or weeks), the demonstration requirements were, for the most part, met.

As for the North Hastings site, the unique challenges of very infrequent stroke admissions and immediate ambulance transport of those with acute stroke to Belleville, meant that patient availability was extremely limited. Due to the level of patient availability for most of the project period, a more creative solution was enacted. An agreement was put in place to allow for North Hastings nurses to screen residents in the adjoining Centennial Manor long-term care facility. (See Appendix E for a copy of the agreement.) This proved to be an excellent strategy, and one that was met with a great deal of support in principle by both facilities. There were, however, some administrative/legal delays, as liability agreements had to be drawn up and agreed upon, as well as consents signed by residents or their designates, before the screenings could take place.

Once the logistical aspects of the demonstration screenings were overcome, this aspect of the project was also a success. Each dysphagia team member required approximately 30-45 minutes to complete the required demonstration screenings. Time was taken with each nurse to review the TOR-BSST<sup>®</sup> in detail, as for most participants there was a long time lag between the workshop and the demonstration screenings. If the patient had been screened by another nurse, consent was requested for repeat administration of the screen. The Project Coordinator then provided support as the nurse rated each part of the tool. A detailed task analysis checklist was created for this exercise (see Appendix F), and this feedback was given immediately following the screening. Participants commented on the relative ease of administration, and how confident they felt in making a judgment of presence/absence of risk. Some nurses initially expressed concern regarding the administration of water to a patient who was NPO. Others were reluctant to perform the posterior pharyngeal wall sensation component of the screen, citing their own tendency to “gag” during the procedure. The most often asked question was “If they have a deviated tongue, but pass the water swallows, do they still fail?” (The answer to this question is “yes”, as deviation suggests oral weakness and the potential for difficulties with bolus formation and transit.) Through this type of questioning, the Project Coordinator and the dysphagia team members had the opportunity to not only clarify the procedure involved in each component of the TOR-BSST<sup>®</sup>, but also to highlight the highly complex nature of swallowing.

All participants successfully demonstrated appropriate use of the TOR-BSST<sup>®</sup>. There were only two instances where those administering the test were doing so with improper technique. On their first attempt, many nurses were unsuccessful in touching the appropriate target during the pharyngeal sensation test. After the Coordinator modeled the correct procedure they were able to complete it successfully the second time. In cases where improper technique was used, additional review and opportunity for further demonstration of the use of the TOR-BSST<sup>®</sup> occurred until the learner was able to administer the tool with accuracy and confidence.

Due to unforeseen circumstances, out of the 80 participants who originally took part in the workshops, nine were unable to complete the demonstration screenings. After discussions with the inpatient SLP, it was agreed that he would attempt to observe the outstanding learner demonstrations as time and opportunity allowed.

## IV PUTTING IT INTO PRACTICE

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It must be noted that the unique circumstances involved in coordinating the scheduling of staff at four sites with their own unique needs often presented a challenge. Additional workshops were booked to accommodate individual site needs and demonstration screenings were conducted on an ad hoc basis depending on the availability of patients and staff. Because of the additional time needed to support these activities, the time remaining for monitoring and evaluating the actual implementation of the dysphagia program within the project timeframe was shorter than anticipated. There were, however, many opportunities during the final two months of the project to witness the identification, screening and referral process. The following sections highlight some of the protocols put into place as a result of these observations, and the lessons learned during the education and implementation phases of the project.

### A. Implementing the supporting protocols

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It was determined early on in the project that nursing protocols would need to be put in place in order to identify patients for screening or referring individuals to the dysphagia team. Below are listed some of the protocols put in place for the implementation of the QHC dysphagia management program.

#### **1. Protocols for ensuring that only staff who had completed the education program would administer the screening**

Only those who would have attended a workshop and demonstrated competence with the TOR-BSST<sup>®</sup> would be eligible to perform the screening. Even though each of the steps required to administer the screening tool is highlighted on the back of the paper version of the tool (and in the electronic version, screens may be accessed which outline the procedures to be followed), it was not to be assumed that an RN or RPN could do the dysphagia screening without having completed the education program.

In order to ensure that only those nurses who had completed the education and successfully demonstrated two screens would administer the TOR-BSST<sup>®</sup>:

- Every effort was made to ensure that all full-time RNs and RPNs on the inpatient medical units, as well as the team leaders of the emergency departments and ICU

received the education. This measure ensured the maximum degree of coverage on all shifts.

- All patients admitted with a query stroke or a confirmed diagnosis of stroke were screened. If the nurse assigned to that patient on that day was not among those who had completed the education program, information was provided on the new procedure for screening all newly admitted stroke survivors. Another nurse who was due to complete her/his demonstration screening(s) was then brought in.
- Posters (see Appendix G) were distributed informing all staff of the need to seek out a dysphagia team member when a new stroke survivor was admitted. Informal discussions in lunchrooms during breaks provided a non-threatening environment in which to spread the word.
- During the design phase the Edoc version of the TOR-BSST<sup>®</sup>, an introductory screen was to “pop up” when a staff member had entered data suggesting that a patient had a stroke or stroke-like symptoms. This screen outlined the requirements for the staff member to seek out a member of the dysphagia screening team.
- Attached to all computer stations was a series of laminated cards to guide the nurses through the specific tools to be used in Edoc data entry. One of the cards was devoted to the TOR-BSST<sup>®</sup>, including instructions on who is to administer it.

**Outcomes and lessons learned:** By educating all full-time RNs and RPNs and making all part-time and casual staff aware that these nurses were to screen their stroke patients, the goal of creating awareness was largely met. Awareness was high and the Team Leaders played a key role in ensuring compliance. Even at the Belleville site, with a very busy medical floor, the Project Coordinator’s presence and the support of QHC’s speech-language pathologist during the observed screenings and the early phases of full implementation ensured that staff appreciated the need to identify dysphagia team members.

[The limitations of Edoc’s ability to ensure that only educated dysphagia team members were to perform the screen are discussed more fully below.]

Ongoing awareness efforts will be crucial to the sustainability of the dysphagia management program. The success of processes involved in identifying those patients who need to be screened, and the efficiency of communication between nursing staff and the SLP will continue to drive the program. Ways in which QHC can continue to sustain this aspect of the program include:

- Orientation of new staff
- Communication via the intranet
- Periodic inservicing by the speech-language pathologist and members of the swallowing team
- Postings in the staff lounges and common areas

- Ongoing staff meetings.

The District Stroke Coordinator and support staff will need to continue to champion the project and to reinforce the protocols already put into place.

## 2. Protocols for identifying patients for screening

During the full-day workshops, the criteria for identifying patients for screening were reviewed. As per the Best Practice Guidelines, all those admitted with stroke (or stroke-like symptoms, if the diagnosis had not yet been established), who were awake and alert, were considered to be appropriate for screening. As the Guidelines also recommend that the stroke survivor be maintained NPO until screening takes place, the need for screening within the first 24 hours of onset (or as soon as possible) was highlighted. On units where Edoc was not yet in place, as in the Emergency and ICU Departments, Team Leaders were to ensure that the screening took place.

**Outcomes and lessons learned:** Thus far, Edoc has not always successfully triggered dysphagia screening. The dysphagia project was implemented just as nurses were being introduced to Edoc. Though the education was conducted with the paper version of the TOR-BSST<sup>®</sup>, participants were aware that the tool would be accessed electronically on all inpatient units. It was apparent during the first month of implementation that the initial programming run of Edoc did not result in the automatic “pop-up” of the screening tool. At least two cases were brought to the attention of the Project Coordinator where the screen was triggered with patients who were not stroke admissions, but who did have difficulties swallowing. There was also anecdotal evidence that the screening could be bypassed during the initial nursing assessment. Although the ability to bypass was built into the system so that the assessment could appropriately continue without the TOR-BSST<sup>®</sup> (e.g., when the patient was not awake or alert, or when the nurse would have to locate an educated dysphagia team member), there was the potential for the screening to be bypassed during the optimal time for identification of dysphagia risk. Communication of these events resulted in informal discussions with the nurses involved and re-education around the application of the tool.

As further refinements have taken place, Edoc has helped to identify patients in need of screening; however, there have been cases where physicians have automatically referred stroke survivors to the SLP prior to the screening taking place. An interim solution in such a case may be that the SLP could then contact the floor, ensure that the TOR-BSST<sup>®</sup> had been administered (and failed), thus engaging the SLP in further involvement. This process could then promote two goals of the program: 1) To make better use of scarce resources; and 2) to enhance interprofessional collaboration.

### 3. Protocols for referral and efficient access to SLP

Proceeding down the flow diagram of dysphagia management (Appendix B), once screening has identified a stroke survivor at risk for dysphagia:

- a referral is requested for the SLP to do his bedside assessment;
- if required, the SLP may perform an instrumental assessment (videofluoroscopic swallow study – VFSS);
- the SLP will collaborate with other members of the team (dietitian, occupational therapist, physical therapist, nurse, physician, etc.) to formulate the optimum dysphagia care plan for the stroke survivor.

As part of a longer-term monitoring and evaluation system, the type of data to be generated with the assistance of QHC's Information Systems (IS) department, in the form of a regular report, was envisioned. As Edoc was only just starting to be implemented towards the end of the Coordinator's tenure, the following were identified as possible data points to be gathered on a regular basis:

- Elapsed time between admission of a stroke survivor and the time they are screened.
- Time between positive TOR-BSST<sup>®</sup> result and referral made to SLP.
- Time between referral to SLP assessment.
- Time between admission of a stroke survivor and intervention by a dietitian.

Other data may also include the relationship between the TOR-BSST<sup>®</sup> and patient outcomes (e.g., pneumonia). Although these data are being collected as part of Dr. Martino's research, the ability to chart the occurrence of such incidents would lend further credibility to the project and its sustainability in meeting projected goals.

**Outcomes and lessons learned:** As part of its accreditation process, QHC's Quality Performance Improvement Coordinator solicited the assistance of the District Stroke Coordinator and the Project Coordinator in completing a Failure Modes Effects and Analysis (see Appendix H). This instrument allowed for a detailed process and risk analysis corresponding to each of the steps involved in the screening process. Using this instrument will not only allow for an accounting of checks and balances along the stroke care pathway for quality assurance and accreditation, but also as a point of reference for an ongoing process monitoring and evaluation system.

### 4. Protocols for around-the-clock coverage by the dysphagia team

By educating 80 full-time RNs and RPNs, QHC assured its capacity to provide for "24/7" dysphagia coverage. As most of the admissions for stroke would be screened on the inpatient Medicine units, the majority of the nurses educated were on these units. During the planning phase, it was anticipated that dysphagia team members from other floors could be called upon to administer the TOR-BSST<sup>®</sup> if there was not a nurse available at a particular time. This need did not emerge during

the initial project period. It was, however, acknowledged as an acceptable practice and similar to other nursing processes followed in the hospital.

**Outcomes and lessons learned:** As the implementation continues, it may be of interest to managers and to the District Stroke Coordinator to track the occurrence of nurses being called to perform the dysphagia screen, and to assess the impact of turnover on this practice.

## B. Fostering Sustainability and Ongoing Education at QHC: Further Lessons Learned

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Based on the successful education and mentorship of 80 full-time RNs and RPNs, QHC has in place the protocols for screening stroke survivors for dysphagia. Keeping up the momentum will be contingent upon many things. As with any skill, upgrading and support is needed if the skill goes unpracticed. Similar to the integration of other standardized tools, such as the concurrently implemented Canadian Neurological Stroke Scale (CNS), ongoing monitoring is crucial to ensuring that the screening becomes included in the overall evaluation and treatment of the stroke survivor.

Screening is but one part of the best practice guidelines for the management of dysphagia in acute stroke. As the first step in the process, it sets into motion the assessments and supports that are required to address the evolving needs of the stroke survivor. Based on the feedback received from participants, discussions with members of the allied health care team and observations made by the Project Coordinator, the following are points to consider when planning for sustaining best practice along the acute care pathway. They would be important both to QHC and to those planning to implement best practice in other acute care centres and across the care continuum.

- **All members of the patient care team must be aware of best practice in dysphagia care.** When referring to the care team it is best to use an interprofessional approach and include physicians, nurses, allied health and non-regulated employees. The overwhelming response of nurses to the workshop evaluation suggested that physicians would be an excellent target group for a modified education program. Issues surrounding limited oral medication administration when NPO, the invalidity of the gag reflex in determining swallowing ability and the role of the nurse in patient advocacy were among the most frequently suggested issues to be part of an education program.
- **Support for optimal oral care is needed.** Though nurses were in full agreement with the need for oral care as recommended by the guidelines, they felt that the lack of necessary equipment hindered the process.

- **Education of other care team members in recognizing the signs and symptoms of dysphagia and how to perform low risk feeding techniques is needed.** QHC dietitians believed that support personnel in Nutrition Services could benefit from receiving additional education in detecting dysphagia in the patients they interview. Staff and volunteers who feed stroke survivors also need information on special feeding considerations and the rationale behind modified diet textures.
- **A plan to address the detection of malnutrition in the stroke survivor could be formalized.** During the workshops, participants were introduced to the Nutrition Screening for Stroke Survivors (included in the Heart and Stroke manuals<sup>7</sup>). They also believed that it would be a quick and easy tool to use. During the implementation of Edoc, the tool was provided to the designers, but unfortunately it did not become part of the TOR-BSST<sup>®</sup> swallowing protocol. Future efforts to update Edoc protocols could include this screen in order to provide the dietitian with information for those who pass the TOR-BSST<sup>®</sup> and who would be monitored.
- **Inservicing in Supported Conversation for Adults with Aphasia (SCA<sup>®</sup>).** During the demonstration screenings, it was apparent that many nurses experienced difficulties when a patient was unable to respond appropriately due to aphasia. Additional skills practice in supportive techniques, as is available through SCA<sup>®</sup> (a technique in which the inpatient SLP has received education) could bridge this gap.
- **Efforts to include greater interprofessional collaboration.** Implementation of the dysphagia management program has further enhanced the dialogue and shared expertise of nursing and SLP. Dietitians, by being present at most of the workshops, were able to increase awareness of their role in the development of swallowing care plans for stroke survivors. The additional roles of the occupational therapist and physiotherapist in the dysphagia care of the stroke survivor are also essential to a patient-centred approach which acknowledges the multiple and complex needs of these patients.

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<sup>7</sup> Nutrition Screening for Stroke Survivors; Heart and Stroke Foundation of Ontario, 2005; and Management of Dysphagia in Acute Stroke; an Educational Manual for the Dysphagia Screening Professional; Heart and Stroke Foundation of Ontario, 2006.

## V RECOMMENDATIONS FOR REGIONAL IMPLEMENTATION

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The lessons learned during the full-scale implementation of best practice in dysphagia management at QHC have set the stage for modifications to how the program has begun to be delivered to the rest of the Region. An interprofessional collaborative team approach to education and support is needed in the current health care environment. Interprofessional education can facilitate a synergistic approach to the team's understanding of quality care and its ability to deliver it.

A revised dysphagia management “package” has now evolved from the need to respond to limited education hours available, adult learning principles and the pragmatics of current methods used for nursing education and consolidation of new skills. Dr. Rosemary Martino, along with Audrey Brown, Pat Knutson (SLP, Kitchener-Waterloo), Anne Mascitelli (SLP, Niagara), and Laura MacIssac, (RN, Kingston General Hospital) worked together to develop a revised education package to support future iterations of the program. It should be noted that these modifications have been made in response to the need for a brief yet comprehensive package to support dysphagia management education.

The revised education program in SEO includes a learning plan that can be used to design an education plan that meets the specific learning needs and characteristics of the learners and their work environment (see Appendix I). The learning plan outlines possible educational interventions that can be used to meet the needs of the learners. This education program is now being implemented across the region and includes:

- Completion of a self-learning guide and test: Participants receive the two Heart and Stroke manuals on dysphagia and nutrition<sup>4</sup> and complete the *Knowledge and Skills* test that was validated as part of the initial research. This is completed prior to workshop attendance and results in decreased classroom time.
- Attendance at a 3- to 4- hour workshop covering theory and practice on the administration of the TOR-BSST<sup>®</sup>
- Two successful return demonstration screenings in the administration of the TOR-BSST<sup>®</sup>

Some features of this program as indicated in the learning plan include:

- In place of a one-SLP facilitator model, the SLP and other team members (ideally a nurse and/or dietitian) work together to implement the education program and to lead the discussion of the case studies included in the dysphagia manual. In this way, the medical, nutritional, and dysphagia-specific expertise of each of the professional leaders is role-modeled in an environment of interprofessional collaboration and more people are given the opportunity to develop their expertise in dysphagia management.
- Interprofessional case discussion now takes the place of the previous lecture format and now represents one to two hours of interactive classroom learning.
- Specific education on the administration and scoring of the TOR-BSST<sup>®</sup> comprises an additional two hours of classroom time. This allows for review of the tool, practice in the steps involved, as well as how to score, interpret and discuss the five video patient case studies. This timeframe does not allow for as much additional instruction and discussion of vocal quality, although this can be compensated for in the discussion of video samples and during return demonstration screenings.
- Consolidation of the skills learned is achieved through two demonstration screenings per participant. These demonstrations are seen as a critical component of the education process and need to be preserved due to the heterogeneity of patients. For example, one screening may be performed on an individual with no co-morbidities that complicate the decision-making process regarding referral to an SLP. A further screen on a more complex patient allows for the opportunity to address the additional concerns that may eventually arise (e.g., a patient with aphasia who is dysphagic and fails the screening, but whose family is insistent on oral feeding on a Friday evening). Since the QHC program implementation, further education at another acute hospital in Southeastern Ontario, the Lennox and Addington County General Hospital, has incorporated immediate demonstration screenings in a nearby Long Term Care home. This enabled all participants, including the interdisciplinary facilitators, to observe and discuss each demonstration screening in an interactive and collaborative context.

With the adoption of this model the staff time required the education are reduced. This model also builds in an interprofessional education approach that increases interprofessional awareness, communication and collaboration that has a synergistic beneficial effect on patient care. The learning plan developed for the Southeastern Ontario regional implementation of the dysphagia education program found in Appendix I is individualized to each acute care organization as regional implementation proceeds.

## Key steps: A How-To Guide for Activating a Dysphagia Management System

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The QHC experience afforded the opportunity to examine the dynamics involved in a multi-site implementation. It also introduced a number of variables that were not present in the pilot sites, most notably the introduction of a Project Coordinator from outside the corporation. Much of the initial implementation followed the model outlined in the document Implementing a Regional Dysphagia Management Strategy: Practical Considerations<sup>8</sup>. Based on the project experiences and lessons learned the following is a series of practical considerations that should be considered:

1. Prior to the identification and education of participants, establish communication and awareness strategies to ensure that all staff members are familiar with the goals of the program. This is especially crucial to all physicians who have admitting privileges at the hospital.
2. Identify as early as possible
  - a. How 24/7 coverage by educated staff can be realistically attained and sustained over the short and longer terms;
  - b. Which members of the interprofessional team will participate in facilitating the education and participate in the ongoing support of staff in identifying and treating stroke patients;
  - c. How much time should the facilitators need to carry out these duties in addition to their caseload (includes preparation time, workshop education, observed screenings, and ongoing support);
  - d. How referrals following a failed TOR-BSST<sup>®</sup> will be handled (including discussions regarding pre-printed orders) and
  - e. How the interprofessional team can cooperate to establish ongoing processes for monitoring of practice and orientation/education of new staff. Stakeholders who need to be at the table for these discussions include relevant managers, professional practice leaders, nursing and rehabilitation professionals including the SLP(s).
3. If an electronic documentation system is in place within the facility, activities geared toward programming the TOR-BSST<sup>®</sup> and nutrition screenings prior to the workshop would be optimal. In this way, staff may become familiar with the way in which patients are identified and screened and clinical decision-making may be facilitated.
4. The onsite SLP or Regional SLP who will lead the clinical aspects of the project must be identified. In the case of QHC, where outsourcing took place for this role, it was vital that communication with the onsite SLP was maintained throughout the course of the project and that reinforcement of the need to initiate referral to the onsite SLP was maintained. This was relatively easy to

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<sup>8</sup> Implementing a Regional Dysphagia Management Strategy: Practical Considerations; Heart and Stroke Foundation of Ontario 2005

achieve as the SLP was well known among all nursing staff at three of the four hospital sites and collegial relationships pre-existed the project. In facilities where an SLP is not employed or employed on a casual or part-time basis in adult acute care, planning dysphagia management teams must accommodate for how failed screenings will be handled and how interprofessional team members can communicate throughout the assessment process.

5. As the administration of a dysphagia screening tool is not considered a “controlled act” by the Regulated Health Professionals of Ontario, the College of Nurses of Ontario would not use the term *certification* but rather *demonstrated competence* in the administration and interpretation of the TOR-BSST<sup>®</sup>. Staff who completed the education program and demonstrated competence in use of the TOR-BSST<sup>®</sup> need to be identified and recognized for their enhanced skills and the role they play in decision making along the acute stroke care pathway and as part of the interprofessional collaborative team.
6. Standardization of modified diet textures is another critical piece of best practice in dysphagia management. For those who fail the screening, the assessment typically results in modifications to solid and liquid textures. Safety must be tempered with equal attention to patient quality of life. All staff members need to be made aware of the reasons for pureed texture solids and liquids. Patient compliance with care plan recommendations often rests with the attitudes and practices of staff when these foods are prepared and presented. Interprofessional collaboration facilitates the ongoing education of all staff in ensuring compliance with dysphagia care plans and adherence to quality control (e.g., powdered thickeners vs. pre-thickened products, standardized pureed meals vs. those pureed on site). A related issue involves the importance of positive staff attitudes to modified textures, especially purees. Increasing the awareness of all staff in patient safety and the role they play with their own approach to texture modification is crucial to ensuring compliance, risk management, and patient quality of life.

## Future Directions

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Maintaining consistent leadership in supporting best practice guidelines for dysphagia and promoting the awareness of and excellence in dysphagia screening and care will continue to be crucial in supporting health care professionals in the years to come. At the same time, flexibility with respect to regional implementation to meet the needs of various settings will need to be respected in order to facilitate dissemination of best practice. Consideration will need to be given to sustainability of the dysphagia education program.

It may be necessary to consider alternate approaches to who is involved in the TOR-BSST<sup>®</sup> education and bedside observations. This might need to include various members of the interprofessional team including for example, nurses, dietitians, SLPs

and occupational therapists. One model could be that the education and support team are trained in a train the trainer model. It is important to consider these alternatives to ensure equal access to learning and performing the screening in areas with no SLP services such as smaller community hospitals in remote or rural settings. The SEO experience has been that the dysphagia education program highlighted the need for SLP services in these areas.

An interprofessional approach is desirable. This approach emphasizes empowering various disciplines to work as a team to use dysphagia knowledge and education in a manner that respects their professional judgement and expertise and provides a context for a synergistic improvement to quality stroke care.

### Applying Dysphagia Management to the Continuum of Care

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Thus far, the model of dysphagia management, as put forth in the manuals and practices created and endorsed by the Heart and Stroke Foundation, has addressed the needs of acute care hospitals. A concurrent study of the application of these same principles is underway in three Long Term Care facilities in Toronto. This study has found that a further modified approach is needed in this type of environment. A model of “screeners” (RNs and RPNs) and “feeders” (PSWs and other supportive personnel) was adopted and found to be more appropriate to a setting where education in low risk feeding strategies was found to be a priority. Access to SLP services is typically through contracted services with CCACs on a case-by-case basis. Any initiative geared toward addressing the unique challenges of dysphagia management service provision in Long Term Care within the spirit of interprofessional collaboration and best practice will require additional study as to the best approach to achieve this end. The final report on the Toronto project will be forthcoming from Dr. Martino in 2007.



## VI SUMMARY

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The Dysphagia Management Program, as implemented at QHC, stands as a benchmark of how interprofessional collaboration can achieve many desirable goals: reducing patient risk due to complications from dysphagia after stroke; efficiently using the limited resources of speech-language pathologists; supporting a group of educated and empowered professionals who feel they can meaningfully contribute to decision-making in the care of their stroke patients and contributing to the quality of patient life.

The program has resulted in the enhancement of an interprofessional team where members better understand how each discipline's scope of practice overlaps with and complements that of others within the team resulting in a synergistic benefit to patient care. The approach has provided nursing staff with the tools and resources to work together with speech-language pathologists, dietitians, physicians and the entire health care team including the patients and their families, in reducing risk and promoting knowledge about dysphagia and stroke. The outcomes of this approach are measurable in terms of reduced complications and length of hospital stay and are a part of Dr. Martino's ongoing research. They may also be seen in staff satisfaction and interprofessional collaboration for improved care of stroke survivors. By supporting the implementation of dysphagia management across the region and across the province and beyond, the establishment of best practice stroke care in an environment of interprofessional collaboration can be achieved.



# APPENDICES

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Appendix A: QHC Workshop Participants

Appendix B: Flow Diagram for Screening and Referral

Appendix C: Workshop Evaluation Questionnaire

Appendix D: Workshop Evaluation Results

Appendix E: Agreement between Centennial Manor and QHC

Appendix F: Task Analysis Checklist

Appendix G: Poster

Appendix H: Failure Modes Effects Analysis (FMEA)

Appendix I: Learning Plan Template for Regional Implementation.



## Appendix A: QHC Workshop Participants

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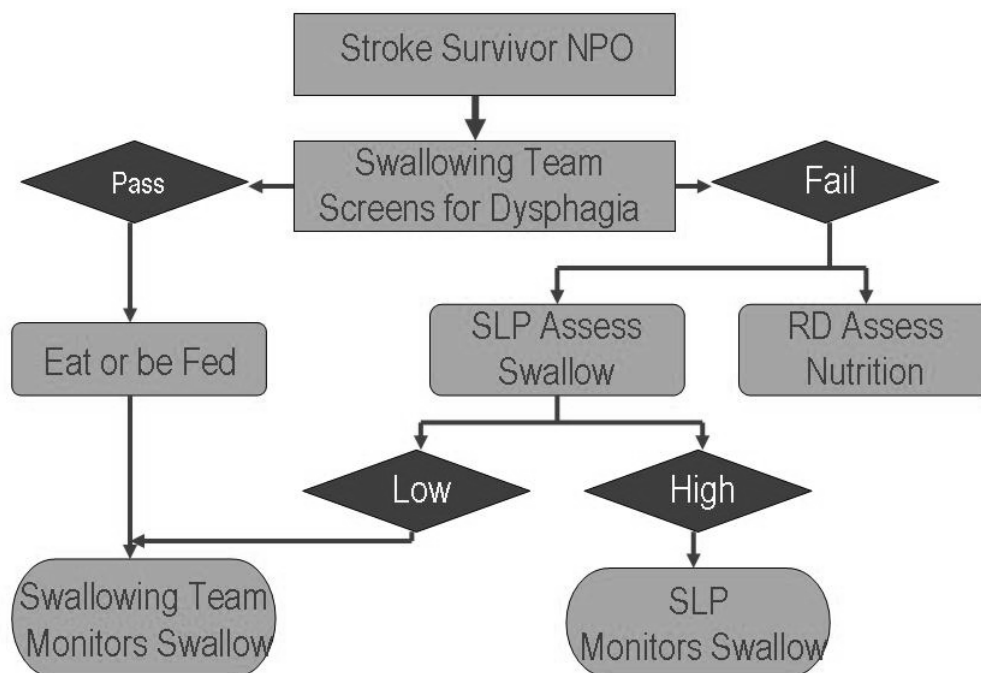
Total # of nurses educated by site:	
North Hastings Site - Bancroft	8 Inpatient
Prince Edward County Memorial Site - Picton	11 Inpatient
Trenton Memorial Site - Trenton	20 1 ER, 3 CCC, 16 Med/Surg
Belleville General Site - Belleville	33 3 CCC, 3 ER, 1 Rehab, 26 Medicine



## Appendix B: Flow Diagram for Screening and Referral

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### Dysphagia Screening in Stroke Patients





# Appendix C:

## Workshop Evaluation Questionnaire



### Dysphagia Management Workshop Participant Evaluation

Workshop Location: \_\_\_\_\_

Date: \_\_\_\_\_

1. In what clinical discipline are you currently working (please check the most relevant)?

Nurse:  NP     CNS     RN     RPN

Dietitian     OT/PT/SLP    Other: \_\_\_\_\_

2. In what part of the continuum of care are you working (please check the most relevant)?

Public Health/Health Promotion     Primary Care     Emergency     Acute Care

Rehabilitation     Long Term Care     Community Care

Other (please specify) \_\_\_\_\_

3. Please indicate the number that best reflects your satisfaction with the following aspects of the workshop sessions (refer to the scale below).

Very satisfied					Very dissatisfied	Not Applicable
5	4	3	2	1		N/A

	Early Morning Session	Late Morning Session	Afternoon Session
	<ul style="list-style-type: none"> <li>Introduction to Dysphagia and Risk Factors</li> <li>Anatomy and Physiology of Swallowing</li> <li>Dysphagia and Stroke</li> </ul>	<ul style="list-style-type: none"> <li>Malnutrition and Dehydration</li> <li>Intervention and Management of Dysphagia</li> <li>Nutrition Screening</li> </ul>	<ul style="list-style-type: none"> <li>Review of TOR-BSST©</li> <li>Hands-on Practice</li> <li>Video Ratings</li> </ul>
Organization of session			
Relevance of session			
Thoroughness of session			
Slide presentation			
Expertise of presenter			
Opportunities for discussion			

4. What was of MOST value to you and WHY?

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5. What was of LEAST value to you and WHY?

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6. List 3 things you learned today that might influence how you provide dysphagia care to stroke patients.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

7. What other topics/job aids would be useful to you in your management of dysphagia in stroke patients?

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8. Who else do you feel would benefit from this workshop?

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Other comments:

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**Thank you for taking the time to complete this evaluation.**

## Appendix D: Workshop Evaluation Results

What was of MOST value to you and why?	Mentions
Learning the TOR-BSST <sup>®</sup> tool	45
Visual aids – videos and tape recordings	22
Anatomy/Physiology of swallowing	25
Demonstrations/hands-on practice	18
All the learning/entire presentation	10
Case studies/discussion	10
The steps in screening (e.g., NPO until screen)	5
Ability to improve knowledge and confidence with screening patients	5
Knowing the right time to consult dietician – with screening tool makes it much simpler	1
Both screening tools (nutrition and dysphagia)	1
Different ideas and techniques for caring for dysphagic patients/management and monitoring (patient and safety-focused)	1
Expertise of SLP	1
Hydration and nutrition	1
Positioning of patient when eating or feeding	1
Risk of aspiration	1
Texture of foods and fluids for people with dysphagia (rationale)	1

What was of LEAST value to you and why?	Mentions
It was all valuable/a good refresher/can be put to good use	24
Malnutrition/dehydration – too basic for practicing RNs	6
Oral hygiene – already know it and practice it	3
The survey was mostly irrelevant to me/research-related comments	2
Recommendations for services because it is difficult to access from North Hastings	1
Too many breaks	1
Not enough breaks	1
Lunch	1
Some of the slide show was a little slow	1
Early morning session (comment from ED staff)	1
Could have been shorter	1
Definitions of dehydration, dysphagia, etc. because it is common knowledge	1
Review of swallowing physiology – already knew material (comment from RD)/a bit lengthy but informative	2
Manuals at this time (but good for future reference)	1

<b>List 3 things you learned today that might influence how you provide dysphagia care to stroke patients.</b>	<b>Mentions</b>
TOR-BSST® swallowing screening tool/using it as part of practice	41
Anatomy and physiology of the swallow	18
More attention to mouth care/use of appropriate tools (if avb.)	20
Process issues (e.g., able to start at bedside, screening within 24 hours, having an organized procedure for screening and referral, rationale for interventions, early referral to SLP)	15
Diet modifications	13
Importance of listening to voice	10
Patient care principles (e.g., Will take more care when offering foods/fluids, paying attention to surroundings of patients while feeding, increased time with patient, reminded me of my standards of care as a nurse, knowing best practice guidelines)	15
Proper nutrition/hydration	8
Safety/identifying patients at risk	8
More frequent re-assessment/follow-up	8
Use SLP as a resource more often/importance of SLP referrals	6
Positioning of patient	5
Breaking top part of Styrofoam cup (nosey cup idea for drinking)	5
Understanding the assessment process	3
More education for patients/family on discharge and in hospital	3
Being aware of safe swallowing strategies (e.g., knowing why the patient may need to swallow twice)	3
(I'm) more confident	2
Hazards of drinking straws for liquids	2
Provide better care for dysphagic patients	1
Importance of saliva in swallowing	1
Improved observation skills	1
ABC (i.e., priority of a safe airway)	1
Role of the dietician	1
Practice cases – very helpful	3
Meds that can't be crushed	2
Seeing the Modified Barium Swallow and knowing how to refer to it	1
Increased knowledge of dysphagic patient	1
Good info to take back to team (observer)	1
How to spell "dysphagia"	1
Let families know how important proper fitting dentures are	1
Reassessing pts daily wrt swallowing	1
Early referral to SLP	1

<b>What other topics/job aids would be useful to you in your management of dysphagia in stroke patients?</b>	<b>Mentions</b>
Having proper/useful oral hygiene tools (ie. Pediatric toothbrushes)	5
Types of strokes – brain function	3
Support of MDs/educate MDs	3
More information on specific dysphagic diets	5
Different types of dysphagic patients (i.e., beyond stroke)	4
More time to follow up with patients after initial screening	1
Poster laminated at head of bed	1
Protocol for diet until seen by SLP	1
All-over stroke care	1
I would like to see a (live) MBS	1
Equipment on floor (not specified)	1
Availability of modified eating utensils, ie.e., large soft thickened handles on spoons, etc.	1
Availability of frequent small meals	1
Aphasia management	1
Review of positioning	1
Posters (not specified)	1
More inservices	1
Cooperation of the whole health care team	1
Importance of hydration	1
Prevention teaching	1

<b>Who else do you feel would benefit from this workshop?</b>	<b>Mentions</b>
Doctors/not necessarily workshop, but awareness of tool and nurses use of tool/ER doctors	35
Family members who feed patients/provide care; patients	25
All staff on floor/all bedside nurses/full and part-time	20
Any health care worker/all members of interdisciplinary team	10
Physiotherapists/Occupational Therapists	5
Nursing home staff to decrease the number of hospital admissions due to aspiration pneumonia	5
PSWs in community care agencies for homecare patients	5
Administration – let them know how much time is spent with patients	5
Dietary staff	3
Dietary – need to improve on flavor and smells with food being served at this time to dysphagic patients.	1
Other nursing staff due to increased numbers of part-time staff	1
More RPNs on the CCC unit	1
Housekeepers	1
Anyone working with the elderly	1

<b>Other Comments</b>	
Excellent	10
Too long/could have been done quicker	2
All of the day regardless of information was either helpful or renewed my skills for looking after dysphagic patients	(1 mention ) ↓
Screening tool (will help) – has been ongoing frustration to wonder whether or not to feed patients	
TOR-BSST® seems simple and easy to do	
More videos – more case studies	
The TOR-BSST® can prevent aspiration pneumonia, prevents complications and perhaps makes patients stay in hospital a shorter time	
TOR-BSST® is a great screening tool for us as we are at an isolated hospital site – better tool to arrange follow-up. We have nothing in place at our site at present so this is great. Improves care for our stroke pts.	
Most of us have been feeding people for way over 20 years. We know how to feed. Late morning session could have been 10 minutes – review.	
Very enjoyable presentation with an easy flow. Thanks.	
Audrey is a lovely presenter, enthusiastic and pleasant. Good lunch!	
Presentation very helpful, interesting, well presented.	
Day well spent! Thanks for the delicious biscotti!	
Very valuable and useful education	
Would be nice to see this in our hospital (observer)	
Much more aware of how to screen patients and act upon the results	
Quicker screening of patient as there is decreased risk of aspiration for pt	
Feel the TOR-BSST® will benefit our stroke clients	
Very well presented by Audrey	
Why aren't part-time nurses involved?	
More frequent breaks	
Excellent presentation. Speaker is very knowledgeable, respectful and experienced with teaching	
I learned so much about the management of dysphagia that I didn't know before – looking forward to trying the tool	
TOR-BSST® is an excellent screening tool and ideally should be used on all stroke patients ASAP. I also feel pts probably won't co-operate (majority of); also this will take longer than 2 mins when you include preparation, cleanup, positioning, etc. We often don't have time to finish the work we have now. More SLPs would be beneficial.	
Very interesting – always good to review and learn more about nursing	
Great sessions – very informative	
Good presentation. Instructor very knowledgeable	
People who are involved with budgets should attend re: how valuable the availability of fluids is so important	
Great course, good refresher and new learning experience. Thank you	
The entire seminar was educational and presented in a manner which is very conducive to learning	
Informative and interesting workshop. Fluoroscopic images helpful in understanding the swallowing process	

# Appendix E: Agreement between Centennial Manor and QHC

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**THIS AGREEMENT IS MADE AS OF [DATE]**

**BETWEEN:**

**QUINTE HEALTH CARE (“QUINTE”)**

**- AND -**

**HASTINGS CENTENNIAL MANOR (“HCM”) [NOTE: ENSURE PROPER NAME]**

**(EACH REFERRED TO AS A “PARTY” OR TOGETHER AS THE “PARTIES”)**

## **BACKGROUND**

1. HCM would like to provide dysphagia screening to their residents with a health history that includes a diagnosis of stroke.
2. Quinte wishes to provide registered nurses and a speech language pathologist to conduct dysphagia screening to appropriate residents of HCM.

**FOR VALUE RECEIVED, THE PARTIES AGREE AS FOLLOWS:**

### **1. GUIDING PRINCIPLES**

The model of collaborative service delivery for providing dysphagia screening services is built upon the following mutually agreed upon values and principles:

- (a) Respect for the informed consent of HCM residents;
- (b) The importance of treating HCM residents with compassion, dignity, respect and fairness; and
- (c) Teamwork, collaboration and flexibility between Quinte and HCM, and the staff members of both facilities.

### **2. PROVISION OF DYSPHAGIA SCREENING SERVICES**

- (a) HCM will allow a speech-language pathologist employed by Quinte to approach those HCM residents with a health history that includes a diagnosis of stroke to request informed consent for dysphagia screening using the TOR-BSST.
- (b) A registered nurse employed by Quinte will perform dysphagia screening on those HCM residents who consent to the dysphagia screening. A speech language pathologist employed by Quinte will oversee the dysphagia screening for each HCM resident.
- (c) The registered nurses performing the dysphagia screening will have completed an eight-hour educational session on dysphagia through Quinte’s Dysphagia Management Program.

**3. DOCUMENTATION OF DYSPHAGIA SCREENING**

The speech language pathologist or registered nurse employed by Quinte will provide to the Director of Nursing at HCM a copy of the completed TOR-BSST for each HCM resident undergoing dysphagia screening.

**4. LIABILITY FOR REFERRALS**

After the speech language pathologist or a registered nurse employed by Quinte performs dysphagia screening on a HCM resident, it is HCM's responsibility to ensure appropriate referral or follow-up with a community speech language pathologist or other appropriate professional for those HCM residents who are at risk for dysphagia according to the TOR-BSST. Quinte will not be liable in any way to HCM for any failure of HCM to ensure appropriate referral or follow-up concerning HCM residents who are risk for dysphagia according to the TOR-BSST.

**5. TERM AND TERMINATION**

This agreement will terminate on [date], unless the parties extend the agreement by written agreement signed by both parties. Either party may terminate this agreement for any reason by giving thirty (30) days written notice to the other party.

**6. ENTIRE AGREEMENT**

This agreement contains all the terms and conditions agreed to by Quinte and HCM concerning its subject matter. This agreement supersedes all previous agreements or other representations, statements, and understandings (verbal or written) made by or on behalf of one party to the other. No modification or amendment of this agreement will be effective unless in writing and signed by both parties.

AGREED TO AND EFFECTIVE AS OF THE DATE FIRST WRITTEN ABOVE.

QUINTE HEALTH CARE

BY: \_\_\_\_\_

NAME:

Title:

HASTINGS CENTENNIAL MANOR

BY: \_\_\_\_\_

NAME:

Title:

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# Appendix F: Task Analysis Checklist

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## TOR-BSST TASK ANALYSIS CHECK-LIST

Name of screener \_\_\_\_\_; Observation # \_\_\_\_\_

Check box if task completed; underline aspects that require attention.

In preparation for TOR-BSST, the screener:

- Was prepared with tongue depressor, swab, cup with water, teaspoon and flashlight
- Recorded date, time and addressographed form

To start screen, the screener:

- Introduced what she/he was going to do: purpose, brief description of what is involved
- Positioned the patient in bed upright at 90°, with trunk in midline, using pillows as necessary
- Ensured that there was adequate light and reduced distractions in room as much as possible (e.g., turned TV off)
- Positioned her/himself so that eye-level to the patient in order to ensure she/he could see the face, larynx (standing with bed raised if patient lying down; sitting if patient seated in chair or on bed)
- Did cursory examination of mouth for cleanliness (no material pocketed, adequate cleanliness, absence of foul-smelling breath)

### PART A

#### VOCAL QUALITY

- Asked patient to say 'ah' for 5 seconds using normal speaking voice
- Modeled a clear 'ah' for patient
- Prompted patient as required (no singing, stretching last syllable of Ottawa)
- Accurately judged voice quality and checked appropriate box

#### TONGUE PROTRUSION/LATERALIZATION

- Asked patient to open their mouth, then to stick out their tongue as far as it will go
- Modeled tongue protrusion to assist patient
- Provided verbal cueing (e.g., stick it straight out and hold it there)
- Accurately judged presence/absence of deviation and checked appropriate box
- If able to protrude tongue at midline, asked patient to move tongue from side to side
- Modeled rhythmic, side-to-side motion of tongue; provided verbal cuing as necessary (e.g., back and forth like a pendulum)
- Accurately judged adequacy of movement and checked appropriate box

#### POSTERIOR PHARYNGEAL WALL SENSATION

- Provided sufficient instruction (“I’m going to touch somewhere in your mouth. It may be a bit uncomfortable. After I touch, I want you to tell me where you felt it”)
- Used a swab and made contact with the posterior pharyngeal wall (not faucial pillars)
- Asked patient to localize sensation; use false touch if judged to be unreliable
- If needed, used supportive techniques if patient unable to verbalize location (e.g., ask to point, provide page with yes/no, ask yes/no questions)
- Checked appropriate box on form

#### WATER SWALLOWS

- Provided a brief description of what patient was required to do (Will give you one teaspoon of water at a time. After you swallow, I want you to say ‘ah’)
- Prompted as needed to ensure swallow was completed before saying ‘ah’
- Palpated/watched larynx move to ensure swallow complete before vocalization
- Accurately judged vocal quality as normal before continuing test
- Accurately judged vocal quality as abnormal before discontinuing test
- Terminated test when coughing/drooling occurred during/after swallow
- If terminated test at or before swallow 10, marked patient as failed and ended test
- If passed 10 water swallows, gave patient cup and instructed to take a sip, then to say ‘ah’
- Accurately judged outcome of cup drinking
- Waited at least one minute after last drink of water to say ‘ah’ once more
- Accurately judged vocal quality one minute after water intake

#### SCORING RESULTS

- Checked pass/fail
- Reviewed form to ensure that one box per item is checked off
- Screener signed bottom of form
- If failed, screener documented in progress notes the failure and initiated referral to MD referral to SLP

#### **Guideline for Use of this Checklist:**

This checklist is to be used as a guide for tracking the performance of screeners during administration of the TOR-BSST<sup>®</sup>. During the first demonstration screening, the speech-language pathologist should check off each task element as it is performed by the learner. The results are then used in the de-briefing to highlight what was done well and what were areas for improvement. If, during the first screening, an error occurs that would jeopardize the proper and safe administration of the tool, feedback should be provided immediately. During the de-briefing, the learner can reflect on what went well while screening the first patient, and what he/she could do differently on the next trial. Based on self-assessment and checklist items, observation of the second screening can take place, allowing for feedback on changes in practice as appropriate. If there are incidents where the learner has not adequately changed his/her practice, and if the speech-language pathologist feels that the learner has not fully consolidated his/her knowledge of the tool and its rationale, then further discussion and instruction should take place, followed by a further patient screening.

## Appendix G: Poster

# NEW STROKE ADMISSION???

### FACT:

**60% OF STROKE SURVIVORS SUFFER FROM DYSPHAGIA  
IN THE ACUTE STAGE OF THEIR ILLNESS**

**COMPLICATIONS (PNEUMONIA, MALNUTRITION,  
DEHYDRATION) MEAN LONGER HOSPITAL STAYS AND  
POOR PATIENT OUTCOMES**

**HERE'S HOW TO IMPLEMENT BEST PRACTICE FOR DYSPHAGIA  
WITH YOUR PATIENTS**

- **Keep the stroke survivor NPO until a swallowing screening can be done.**
  - **Call the Medicine Floor at your site and ask for a staff member who has been trained to do the TOR-BSST® (Toronto Bedside Swallowing Screening Test) to perform the screen as soon as the patient is awake and alert.** Emergency Department Team Leaders have also received this training.
- **NPO means no sips of water, no ice chips, discuss PO medications with the physician.** Continue good oral care with minimal water.
- **If the TOR-BSST® is failed, the stroke survivor is to remain NPO until a full swallowing assessment is completed by the Speech-Language Pathologist.** A Registered Dietitian should also be consulted.
- **If the TOR-BSST® is passed, a Dysphagic Dental Diet should be ordered, and the stroke survivor should be provided with meal assistance as needed and swallowing status should be monitored by staff.** If the patient does not experience symptoms of dysphagia, the diet may be upgraded.



## Appendix H: Failure Modes Effects Analysis (FMEA)

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## Dysphagia Management Program's Failure Modes and Effects Analysis

Steps in the process	Failure Mode	Failure Cause	Failure Effects	Likelihood of Occurrence (1-10)	Likelihood of Detection (1-10)	Severity (1-10)	Risk Profile Number (RPN)	Actions to Reduce Occurrence of Failure
Identification of the patient with stroke like symptoms	The patient may not be identified as a patient with stroke /TIA like symptoms	The front line staff might not know about the screening tool.	The patient will not be screened for dysphagia	3	5	6	14	<ul style="list-style-type: none"> <li>* ER and Medicine Team Leaders have received training.</li> <li>* A stroke nursing fact sheet will be developed containing this information</li> <li>* Stroke Round on the Project in May</li> </ul>
		The front line staff may be mistaken and think a full diagnosis of stroke or TIA is necessary before screening is done.	The patient will not be screened for dysphagia	4	5	6	15	<ul style="list-style-type: none"> <li>* Within the education sessions relating to the screening tool the staff will be informed that any patient who presents with stroke like symptoms should be screened.</li> <li>* Edoc will have a screen at the bottom of the neuroassessment page where there will be a box that asks if the patient has stroke like symptoms. If this box is checked then the nurse will be asked if they want to add the screening tool to the list of interventions.</li> <li>* A stroke nursing fact sheet containing this information will be developed</li> </ul>
		Front line staff may not recognize the signs and symptoms of stroke.	The patient will not be screened for dysphagia	1	5	6	12	<ul style="list-style-type: none"> <li>* A stroke nursing fact sheet including the signs and symptoms of stroke will be developed.</li> </ul>

Keep the patient NPO until the screen takes place.	The patient may be given medication /food/ drink before the screen takes place.	The front line staff might not know about the screening tool and the patient may be given medication /food/ drink as a result	The patient is at risk for aspiration.	3	5	6	15	*Throughout the education sessions the need for NPO status to be maintained will be stressed. * ER and Medicine Team Leaders received training. * We will develop a stroke nursing fact sheet containing this information * Strike Round on the Project in May
		The patient may be received expecting that the screen has already taken place in the ER or from a transferring hospital.	The patient is at risk for aspiration.	4	5	6	15	* Increased awareness about the dysphagia management program will lead to better communication regarding screening.
		Visitors may not know the patient is not to have oral intake.	The patient is at risk for aspiration.	6	7	6	19	* Throughout the workshop the need for patient and visitor education around the screening and the risks associated with oral intake after a failed screen will be stressed. * Bedside notification sign developed for bedside.
		Patient may not be informed/ understand that they should not take anything by mouth	The patient is at risk for aspiration	2	5	6	13	Throughout the workshop the need for patient and visitor education around the screening and the risks associated with oral intake after a failed screen will be stressed.
		Physician may order a diet before screen has taken place and front line staff may see the order and assume that the patient has already passed the screen	The patient is at risk for aspiration	4	4	6	14	* A letter will be prepared and distributed via hospital mail to all physicians explaining the program. * The Dysphagia coordinator will present to as many physician groups as possible explaining the program and the literature supporting this program.
		Despite education patient may choose to take oral intake	The patient is at risk for aspiration	2	7	6	15	* Staff need to be sure the patient is making an educated decision and are aware

Screening the patient within 24 hours	The front line staff recognize the patient with stroke like symptoms and not complete the screen	The front line staff may not feel comfortable doing the screen	The patient will not be screened for dysphagia	2	5	6	13	*The staff will screen two patients with the dysphagia management coordinator present before they will do one by themselves. * The staff may also request additional time with the dysphagia coordinator. * The staff will have the Dysphagia management coordinator as a resource contact until May and then QHC's SLP will become the resource.
		The front line staff may not be able to identify members of the screening team	The patient will not be screened for dysphagia	3	3	6	12	*All of the medicine full time staff have been trained so there will be 24/7 coverage. The staff caring for the patient will have to call the medicine floor and request the screening team member to come and screen the patient. * We will develop a stroke nursing fact sheet containing this information
		The front line staff in situations where they are experiencing competing priorities may not choose to do the screen	The patient will not be screened for dysphagia	2	5	6	13	* Through out the education sessions and in the nursing fact sheets that have been distributed the risks associated with not screening stroke patients are stressed.
Patient passes screen and is placed on a regular diet	Patient passes screen and is maintained NPO	The front line staff may not understand the process and the meaning of a pass	The patient will not receive nutrition and medications they need	1	7	4	12	* Within the education sessions relating to the screening tool staff will be informed that any patient who passes can be placed on a diet ordered by physician.

Patient fails and is left NPO	The patient may be given oral intake.	The front line staff may not understand the process and the meaning of a fail and give the patient oral intake	The patient is at risk for aspiration.	3	5	6	14	* Within the education sessions relating to the screening tool staff will be informed that any patient who fails the screen should maintain their NPO status. * During the education sessions the staff are coached on how to discuss the results of the TOR BSST with the physicians and encouraged to consider other options for patients who need to maintain NPO status until assessed by the SLP. (I.e. NG tubes for patients who appear malnourished and may have to wait until Monday for assessment).
		The patient's visitors may provide the patient with oral intake	The patient is at risk for aspiration.	3	3	6	12	* Throughout the workshop the need for patient and visitor education around the screening and the risks associated with oral intake after a failed screen will be stressed. * Bedside notification sheet is being developed.
		Physician may order a diet even though the patient has failed and front line staff may believe that the patient has passed the screen when they see the order.	The patient is at risk for aspiration.	4	3	6	13	* A letter will be prepared and distributed via hospital mail to all physicians explaining the program. * The Dysphagia coordinator will present to as many physician groups as possible explaining the program and the literature supporting this program.
		Despite education patient may choose to take oral intake	The patient is at risk for aspiration.	2	7	6	15	* Throughout the workshop the need for patient and visitor education around the screening and the risks associated with oral intake after a failed screen will be stressed.
Nurse informs physician of failure and requests an order for an SLP consult	Physician is not made aware of the findings	Staff are not aware that it requires a physician order to be seen by the SLP	The patient is at risk for aspiration	2	2	6	10	Once QHC moves to electronic documentation a notification that there has been a failed screen will be sent to the SLP. If the SLP does not receive a referral then they will follow up to see if the order has been requested.
	Physician does not order assessment	Physician assesses the patient and does not feel a SLP assessment is warranted	The patient may be at risk for aspiration	2	2	6	10	<ul style="list-style-type: none"> <li>The screening team will be able to discuss the finding with the physician and advocate for the patient if they feel an SLP assessment is necessary.</li> </ul>

SLP assessment	SLP assessment does not occur	Above listed reasons	The patient is at risk for aspiration	2	2	6	10	* The above mentioned safe guards are in place.
	SLP assessment does not occur in a timely manner	Delay in Physician's order	Patient is at risk for malnutrition and aspiration	3	2	6	11	* The screening team will be able to discuss the finding with the physician and advocate for the patient if they feel an SLP assessment is necessary
		Delay due to scheduling, weekend or holiday coverage or case load of SLP	Patient is at risk for malnutrition and aspiration	3	2	6	11	* Profession relationship between RN's and SLP already in place. SLP triaging patients at this time and will continue to see most urgent cases first.
A diet that is appropriate for the patient is ordered.	The Patient may not receive the appropriate diet.	The outcome of the screen is not taken into consideration when diet is ordered.	Patient is at risk for malnutrition and aspiration	2	5	6	13	* A letter will be prepared and distributed via hospital mail to all physicians explaining the program. * The Dysphagia coordinator will present to as many physician groups as possible explaining the program and the literature supporting this program.
		The recommendations made by the SLP are not prescribed and followed	Patient is at risk for malnutrition and aspiration	2	5	6	13	* During the education sessions the staff is informed about the role of the SLP and the theory behind the strategies they encourage to be used with stroke patients. Staff will also be encouraged to discuss the needs the patient and advocate for utilization of SLP recommendations.
A diet that is appropriate for the patient is ordered.	The Patient may not receive the appropriate diet.	The patient may be given the wrong tray accidentally	Patient is at risk for malnutrition and aspiration	2	5	6	13	Need to look into how trays are given out *The dieticians will be involved in the patients care and will continue to monitor the patient's progress and recommending changes to the diet as needed.

Patient is monitored for changes in the patients status	Patients who have extended or re-infarcted after stroke are monitored for changes in status and changes in swallowing capabilities	The front line staff may believe that once a screen is done then they will not need to repeat it.	Patient is at risk for aspiration	3	5	6	14	<p>* Through the education sessions the need to continue to monitor the patient for changes in status and monitoring the patient while taking oral intake for signs of dysphagia.</p> <p>*The dieticians will be involved in the patients care and will continue to monitor the patient's progress and recommending changes to the diet as needed.</p>
	The patient may improve in function but remains on the same diet.	The patient may not be placed on the most appropriate diet	Patient is at risk for malnutrition	3	7	4	14	<p>*The dieticians and SLP will be involved in the patients care and will continue to monitor the patient's progress and recommending changes to the diet as needed.</p>



# Appendix I: Learning Plan Template for Regional Implementation.

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## Introduction

The following Learning Plan represents a breakdown of the individual components of the Dysphagia Management Project currently being implemented at Quinte Health Care (QHC) and subsequently across Southeastern Ontario. Each of the Learning Objectives encapsulates a module within the current QHC workshop format that was initially developed by a consensus panel of experts brought together by the Heart and Stroke Foundation of Ontario, and funded by the Ministry of Health and Long-Term Care. Also included here is a sample education program agenda that is being used during the current regional roll-out in Southeastern Ontario at 3 acute care hospitals. The current education plan for these hospitals begins with the independent review of the Dysphagia Management Learning Guide and the Nutrition Learning Guide and the completion of a self-learning quiz. The learner then attends a 3 or 4 hour classroom session followed by two bedside demonstration of use of the TOR-BSST<sup>®</sup> tool for those who will practice use of the bedside swallowing screen.

## How to Use this Plan

The overall objective of this learning plan is to provide a template from which to identify the learning needs of your staff at your facility. Sections 1-4 reflect the learning modules that are present in the Heart and Stroke Dysphagia Manuals, and the current content of the PowerPoint slide presentation that has been included in the training workshops at QHC. Section 5 (TOR-BSST<sup>®</sup>) is intended for those who are learning to use the TOR-BSST<sup>®</sup>.

The column entitled “Possible Learning Activities and Resources” lists the optional learning activities that you may select to be included in an individualized learning plan to meet the selected learning outcomes.

Each facilities’ staff training program will depend on (a) the learning needs and environmental characteristics of the individual facility (b) the learning needs and characteristics of the staff (c) and the learning activities chosen.

### Sample Program Agenda

<b>1. Review manuals and complete self-learning quiz</b>	Independent review and hand in completed quiz
<b>2. Classroom (Theory, practice and case study review)</b>	1-2 hours
<ul style="list-style-type: none"> <li>• Introduction &amp; Program Rationale</li> </ul>	
<ul style="list-style-type: none"> <li>• The Anatomy and Physiology of the Normal Swallow</li> </ul>	
<ul style="list-style-type: none"> <li>• What is Dysphagia?</li> </ul>	
<ul style="list-style-type: none"> <li>• Intervention and Management</li> </ul>	
<ul style="list-style-type: none"> <li>• Bedside Swallowing Screening using the TOR-BSST©</li> </ul>	2 hours
<b>3. Bedside Swallowing Screen Demonstration x2</b> <ul style="list-style-type: none"> <li>• Demonstration of competency. Use the bedside task analysis checklist.</li> </ul>	At bedside

## APPENDIX I - Dysphagia Management Learning Plan

LEARNING OBJECTIVE	POSSIBLE LEARNING ACTIVITIES & RESOURCES	EVALUATION CRITERIA	COMMENTS
<p>1. Introduction &amp; Programme Rationale</p> <p>The participant will understand the:</p> <ul style="list-style-type: none"> <li>• Nine Best Practice Guidelines for Managing Dysphagia in Acute Stroke</li> <li>• Risks for dysphagia in the acute stroke patient</li> <li>• Care of a patient with dysphagia (assessment, intervention, monitoring)</li> <li>• Rationale for the use of a validated screening tool for dysphagia in acute stroke</li> <li>• Roles of the multi-disciplinary team in screening and assessing for dysphagia</li> </ul>	<p><b>Options</b></p> <p>1. Through an interactive workshop format, individual participants discuss and share current practices and how they compare to the Dysphagia Management Guidelines. Includes PowerPoint presentation and discussion by an interdisciplinary teaching team (eg. RN, RD and SLP).</p> <ul style="list-style-type: none"> <li>• Participants are provided with <u>Management of Dysphagia in Acute Stroke: An Educational Manual for the Dysphagia Screening Professional</u> (Heart and Stroke Foundation of Ontario, 2005) as a resource</li> </ul> <p>2. <b>Review of an Independent Learning Module</b> and completion of the self-learning quiz.</p> <p>3. CD ROM (under development) including PowerPoint slides and videos</p>	<ul style="list-style-type: none"> <li>• Participant demonstrates understanding of the program through discussion of Best Practice Guidelines, patient care objectives and facility outcome objectives.</li> <li>• Participant demonstrates understanding of unique roles of team members in screening, assessment and management of dysphagia.</li> </ul> <p><b>Evaluation Tools:</b></p> <ul style="list-style-type: none"> <li>• Group discussion</li> <li>• Independent learning module self-learning quiz</li> </ul>	

LEARNING OBJECTIVE	POSSIBLE LEARNING ACTIVITIES & RESOURCES	EVALUATION CRITERIA	COMMENTS
<p>2. The Anatomy and Physiology of the Normal Swallow</p> <p>The participant will be able to describe the basic anatomy and physiology of the normal swallow including:</p> <ul style="list-style-type: none"> <li>Anatomical structures involved</li> <li>The 4 phases of the swallow and what anatomical landmarks and physiological processes are involved in each</li> </ul>	<p><b>Options</b></p> <ol style="list-style-type: none"> <li>Interactive workshop format with interdisciplinary teaching team and PowerPoint presentation including annotated videofluoroscopy of normal swallow.</li> <li>Review of <u>Management of Dysphagia in Acute Stroke: An Educational Manual for the Dysphagia Screening Professional</u> (Heart and Stroke Foundation of Ontario, 2005) is done independently</li> </ol> <p>2. Review of an Independent Learning Module and Collaborative Case Discussion.</p> <p>3. CD ROM (under development) including PowerPoint slides and videos</p>	<ul style="list-style-type: none"> <li>Participant successfully describes the normal swallow and the landmarks associated with each phase.</li> </ul> <p><u>Evaluation Tools</u></p> <ul style="list-style-type: none"> <li>Independent learning module self-learning quiz</li> </ul>	

LEARNING OBJECTIVE	POSSIBLE LEARNING ACTIVITIES & RESOURCES	EVALUATION CRITERIA	COMMENTS
<p>3. What is Dysphagia?</p> <p>The participant will be able to:</p> <ul style="list-style-type: none"> <li>Describe the signs and symptoms of dysphagia</li> <li>Identify populations at added risk for dysphagia after stroke</li> <li>Understand the risks associated with aspiration, silent aspiration and pneumonia</li> <li>Review the risks for dehydration and malnutrition in dysphagia</li> <li>Understand how different types of strokes impact on swallowing (e.g., cortical vs. brainstem)</li> <li>Educate patient, staff and family members on the importance of maintaining NPO status until SLP assessment is completed</li> </ul>	<p><b>Options</b></p> <ol style="list-style-type: none"> <li>Interactive workshop format with interdisciplinary teaching team and PowerPoint presentation. Examples of videofluoroscopic swallow studies highlighting various dysphagic presentations are discussed. Participants are encouraged to discuss implications of findings on management and patient/family education and counseling.</li> <li>Review of Management of <u>Dysphagia in Acute Stroke: An Educational Manual for the Professional</u> (Heart and Stroke Foundation of Ontario, 2005) is done independently.</li> </ol>	<ul style="list-style-type: none"> <li>Participant successfully identifies the signs and symptoms of dysphagia, and those signs that may signal aspiration/silent aspiration</li> <li>Participant demonstrates knowledge of the rationale for NPO following a failed screening</li> <li>Participant demonstrates, through case study discussion, potential strategies for team, patient and family education</li> </ul> <p><u>Evaluation tools</u></p> <ul style="list-style-type: none"> <li>Case study discussion</li> <li>Knowledge and Skills Test</li> </ul>	
	<ol style="list-style-type: none"> <li>This objective may also be met as part of an <b>Independent Learning Module and Collaborative Case Discussion</b> as discussed in the Introduction to this plan.</li> <li>CD ROM (under development) including PowerPoint slides and videos</li> </ol>		

LEARNING OBJECTIVE	POSSIBLE LEARNING ACTIVITIES & RESOURCES	EVALUATION CRITERIA	COMMENTS
<p><b>4. Intervention and Management</b></p> <p>The participant will be able to :</p> <ul style="list-style-type: none"> <li>Describe the roles of the nurse, SLP, RD, OT/PT in the development of a dysphagia care plan</li> <li>Identify the components of a dysphagia care plan and their role in maximizing patient safety (e.g., positioning, modified diets, strategies)</li> <li>Identify the types of modified fluids/solids included in a dysphagia care plan and the rationale for their use</li> <li>Discuss the nurse's role in monitoring and ongoing evaluation to detect changes in patient swallowing status</li> <li>Conduct a screen of nutritional status</li> <li>Discuss the rationale for increased vigilance in oral care of the dysphagic patient and list the optimal tools to be used with this population</li> </ul>	<p><b>Options</b></p> <ol style="list-style-type: none"> <li>Interactive workshop format with interdisciplinary teaching team and PowerPoint presentation. <ul style="list-style-type: none"> <li>Review of Management of Dysphagia in Acute Stroke: An Educational Manual for the Dysphagia Screening Professional (Heart and Stroke Foundation of Ontario, 2005) is done independently.</li> <li>Review of Management of Dysphagia in Acute Stroke: Nutrition Screening for Stroke Survivors (Heart and Stroke Foundation of Ontario) is done independently.</li> </ul> </li> <li>Review of an Independent Learning Module and Collaborative Case Discussion.</li> <li>CD ROM (under development) including PowerPoint slides and videos</li> </ol>	<ul style="list-style-type: none"> <li>Participant successfully identifies rationale and components of a dysphagia care plan</li> <li>Participant successfully identifies problems and generates solutions presented in case studies illustrating short- and longer-term dysphagia management</li> <li>Participant is aware of need for administration of nutrition screening tool</li> <li>Participant successfully demonstrates administration of nutrition screening tool</li> <li>Participant identifies needs within unit to fulfill best practice for oral care with dysphagic patients</li> </ul> <p>Evaluation Tools:</p> <ul style="list-style-type: none"> <li>Case study discussion</li> </ul>	

LEARNING OBJECTIVE	POSSIBLE LEARNING ACTIVITIES & RESOURCES	EVALUATION CRITERIA	COMMENTS
<p><b>5. Bedside Swallowing Screening using the TOR-BSST®</b></p> <p>The participant will be able to describe:</p> <ul style="list-style-type: none"> <li>• Indications for use of the TOR-BSST®</li> <li>• Interpretation of the outcome and possible corresponding interventions</li> </ul> <p>The participant demonstrates the skill, knowledge and problem solving ability required to perform and implement the findings of a bedside swallowing screening tool (ie. TOR-BSST®).</p>	<ul style="list-style-type: none"> <li>• TOR-BSST® learning module (PowerPoint) presented by Speech-Language Pathologist</li> <li>• TOR-BSST® video case study screenings</li> <li>• Bedside patient screenings (x2) observed by Speech-Language Pathologist</li> </ul>	<ul style="list-style-type: none"> <li>• Participant successfully demonstrates ability to perform oral peripheral screening components of TOR-BSST® with fellow participants in workshop setting</li> <li>• Participant accurately "scores" video screenings in workshop setting. Participants are judged on ability to:               <ul style="list-style-type: none"> <li>• Describe parameters of baseline voice quality</li> <li>• Identify abnormalities in tongue protrusion/lateralization and posterior pharyngeal wall sensation</li> <li>• Identify the point, during water swallow component of screening, at which participant would terminate screen (and be able to provide reasons for termination)</li> </ul> </li> <li>• Participant successfully demonstrates accurate TOR-BSST® interpretation in video screenings and identifies follow-up procedures</li> <li>• Participant successfully demonstrates use of TOR-BSST® in clinical setting, a minimum of two times in the presence of a Speech-Language Pathologist</li> </ul>	

