Perth and Smiths Falls District Hospital

Brockville General Hospital

STROKE NETWORK of Southeastern Ontario

LLG Integrated Stroke Project

Final Evaluation

November 2017

Contents

1. Executive Summary

In order to support standardized, quality stroke care and reduce variation in care outcomes in the Lanark, Leeds & Grenville (LLG) area, a project team was struck to develop a plan for integrated stroke care. The Project Aim, supported by the Perth & Smiths Falls District Hospital (PSFDH) and the Brockville General Hospital (BGH) Boards was: "*75% of all admitted stroke patients in the LLG area will receive care by an interprofessional team in a geographically clustered acute stroke unit as recommended and defined by the QBP Clinical Handbook for Stroke Care.*" A decision-making framework was used to determine that BGH was the recommended site for the Acute Stroke Unit (ASU). Stakeholders were engaged in the development and implementation of a comprehensive project plan to enable access to an ASU for all patients in LLG counties effective May 2, 2016. These stakeholders included patient experience advisors. Project Advisory meetings occurred monthly to monitor progress and jointly address any arising issues.

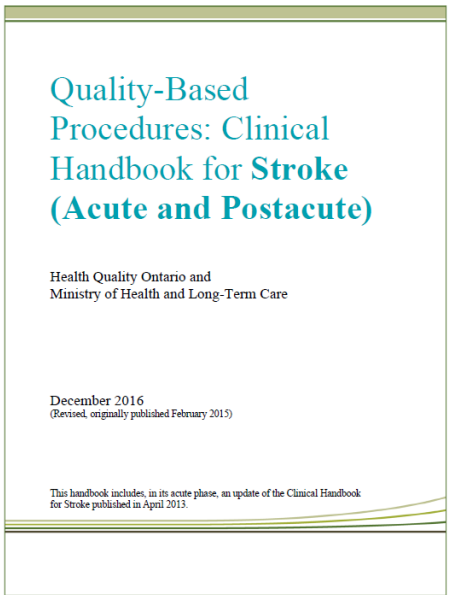
The Project Advisory Team has been successful in implementing geographically consolidated acute stroke care across LLG. 53 patients have transferred from the PSFDH to the BGH ASU (May 2, 2016-March 31, 2017). 27of the 53 patients were discharged directly home from BGH. These volumes are consistent with the predicted referral volumes of approximately one patient per week. Based on discharge data from April 1, 2016 to March 31, 2017, 76.5% of admitted stroke patients in LLG received care in the ASU at BGH. This excludes those patients admitted to PSFDH prior to May 2nd when ASU care was not yet available to Lanark County. Indicators detailed in this report demonstrate improved patient outcomes over previous years including a significant reduction in stroke mortality rates. Feedback from patients, families, and providers indicate the new processes are working well and are improving timely access to quality care. Project monitoring will transition to quarterly data reporting and a minimum of an annual joint review of processes and outcomes.

Recommendations:

1. Continue to transfer acute PSFDH stroke/TIA patients requiring admission to BGH ASU.
2. Continue to monitor stroke indicators quarterly using the Regional Stroke Dashboard process to inform continuous quality improvements.
3. Conduct a joint annual review with BGH, PSFDH, and Stroke Network of SEO partners, with first review in Fall 2018.
4. Continue to seek out and incorporate patient and family feedback. The existing survey will remain available for an additional nine months while BGH establishes patient/family feedback process within its new organizational structure.
5. Develop an education plan at BGH that incorporates best practices in stroke care and supports staff working with patients who have had a stroke.
6. Monitor ASU occupancy rates and performance to inform decisions regarding resources required to provide safe, high quality care.
7. Share project findings with key stakeholders who can influence and positively impact timely access to brain and vascular imaging in LLG.
8. Develop and implement a communication plan regarding stroke care program enhancements and developments. Embed integrated stroke care processes into ongoing orientations for all physicians and staff (e.g., LLG Stroke Care Algorithm and associated processes).
9. Ensure that all stakeholders are kept informed regarding processes related to accessing secondary stroke prevention programs.
10. Ensure ongoing communication with public/community stakeholders on the delivery of stroke care in the LLG area starting by reporting back on this project.

2. Background and Rationale for the Project

Stroke units add value for patients. Best practice acute stroke unit care delivery lessens complications and has a significant positive impact on long term outcomes. Those who receive organized stroke unit care are more likely to survive their stroke, return home, and become independent in self-care. Stroke unit care has been shown to reduce length of hospital stay and in-hospital mortality. The QBP Clinical Handbook for Stroke (p. 68), states that "*patients should be admitted to a specialized, geographically defined hospital unit dedicated to the management of stroke patients.*"



http://health.gov.on.ca/en/pro/programs/ecfa/docs/qbp_stroke.pdf

QBP Clinical Handbook (p. 68)

A stroke unit is a geographical unit with identifiable co-located beds that are occupied by stroke patients 75% of the time and have a dedicated interprofessional team with expertise in stroke care including, at a minimum, nursing, physiotherapy, occupational therapy and speech-language pathology.

**3.1.2 The core stroke unit team should consist of health care professionals with stroke expertise in medicine, nursing, occupational therapy, physiotherapy, speech-language pathology, social work, and clinical nutrition (a dietitian).*

**3.1.3 To have the necessary stroke expertise, the health care professionals on the core stroke unit team should be individuals who spend the vast majority of their time treating stroke patients and regularly complete education about stroke care.*

A recent Ontario analysis of seven years of CIHI DAD annual stroke volumes and 30-day stroke mortality rates reported that Centres admitting volumes of less than 130 ischemic stroke patients per year had 38% higher odds of mortality compared to hospitals admitting over 205 stroke patients per year. Authors recommended annual volumes of at least 165 to optimize outcomes.

Stroke care performance in the South East LHIN identified in the Stroke QBP Baseline Indicator Report and 2013-14 Ontario Stroke Network Stroke Report Card highlighted an opportunity to standardize access to quality stroke care delivery in Lanark, Leeds and Grenville (LLG) counties. Performance risks were identified as follows (see Table 1 & Figure 1):

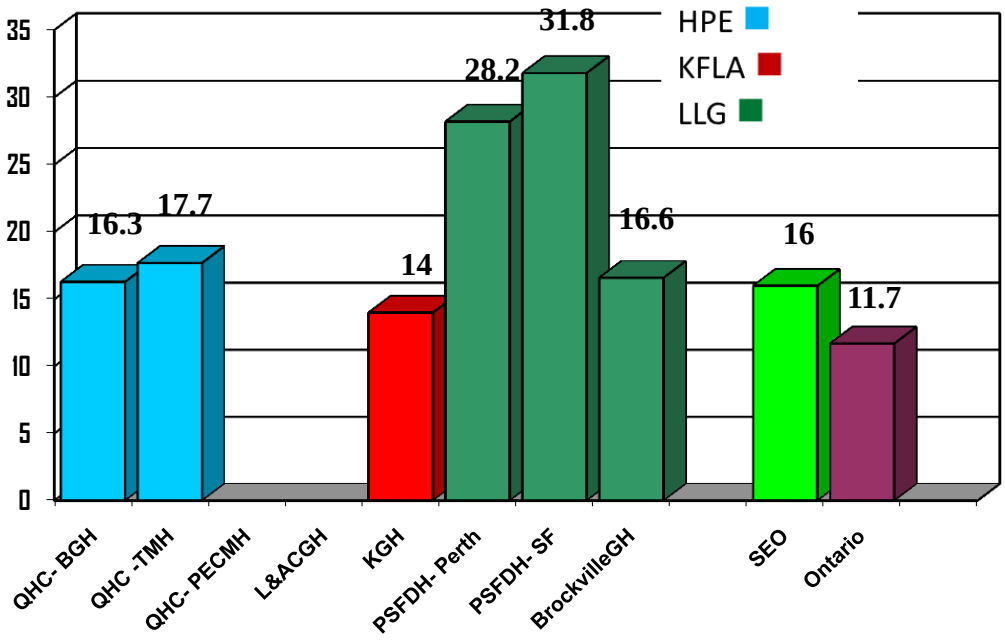
- High risk-adjusted 30-day stroke mortality rates: PSFDH- Perth (28.2%) and Smiths Falls (31.8%);
- Low brain imaging rates particularly in the east;
- Low % discharged to inpatient rehabilitation; with no standardized rehabilitation data for Lanark County;
- Long stroke onset time to post-acute rehabilitation admission; and
- Low achievement of QBP acute and rehabilitation LOS targets with patient flow challenges.

Table 1: 2013-14 Stroke Performance Indicators - Ontario Stroke Report Card SE LHIN
(yellow highlights identify key areas of opportunity in LLG) 2014-15† data only available for volumes

Indicator	Ontario rate	Kingston General	PSFDH Perth	PSFDH S. Falls	Brockville General
Stroke Admission rate/1000	1.3	1.5	1.6	1.6	2.0
Number admitted in 13-14 /14-15†	-	401/427	37/30	21/27	119/135
30-day Stroke Mortality rates	12%	14%	28.2%	31.8%	16.6%
% referred from ED to SPC	78.5%	80%	87.5%	60%	75%
% CT/MRI within 24hrs	93%	97%	63%	64%	93%
% treated on acute stroke unit	28%	78%	0%	0%	25%***
% ALC days as proportion of LOS	28.4%	17.5%	42.0%	0%	12.2%
% discharged to inpt rehab**	34.2%	27%	N/A	N/A	23.0%
Median days stroke onset to inpatient rehab**	9	15	†11 mean 14/15 audit; no NRS data	N/A	8 †6 in 14/15
% discharged to LTC/CCC	7.8%	4.3%	N<5	N<5	16.0%

*all-cause readmission rate
**Source is CIHI NRS data –available only where rehab beds are designated- PSFDH beds not designated
*** Brockville opened an acute stroke unit in Dec 2013-current rates over 80%

Figure 1: SE LHIN 30-day Risk Adjusted Mortality Rates 2013-14



Given that the annual volumes at each of the LLG hospital sites was well below the recommended volume of 165 and that the local Lanark mortality rates were significantly above provincial rates, geographic consolidation of acute stroke care was needed. Consolidation of acute stroke care to one site would improve quality of care and patient outcomes while reducing QBP funding loss to the local area.

3. Project Summary

Geographic consolidation of acute stroke care across the LLG area was successfully launched on May 2nd, 2016 with the opening of an expanded 6-bed Acute Stroke Unit at Brockville General Hospital. Processes were established to ensure access to this Acute Stroke Unit for Perth & Smiths Falls District Hospital patients. LLG stroke mortality rates subsequently declined.

The Project Charter Aim supported by the PSFDH and BGH hospital boards was as follows: *75% of all admitted stroke patients in the LLG area will receive care by an interprofessional team in a geographically clustered acute stroke unit as recommended and defined by the QBP Clinical Handbook for Stroke Care.* A comprehensive project plan was developed and implemented to enable access to an Acute Stroke Unit for all patients in Lanark Leeds and Grenville (LLG) counties effective May 2, 2016. A Joint LLG Integrated Stroke Planning Team endorsed the project charter to pursue an integrated approach to inpatient acute stroke unit care. A decision-making framework developed by the North Simcoe Muskoka LHIN was used to identify the recommended stroke unit site in the south east. The Framework included an assessment of several variables including stroke volumes, geographic location, and evidence of demonstrated best practices. BGH was the recommended site for the Acute Stroke Unit (ASU). This site leveraged the existing BGH ASU and stroke expertise. The decision to proceed with the integration was supported by each hospital Board of Directors and the South East LHIN. A SE LHIN Service Delivery Change Form was jointly submitted and approved.

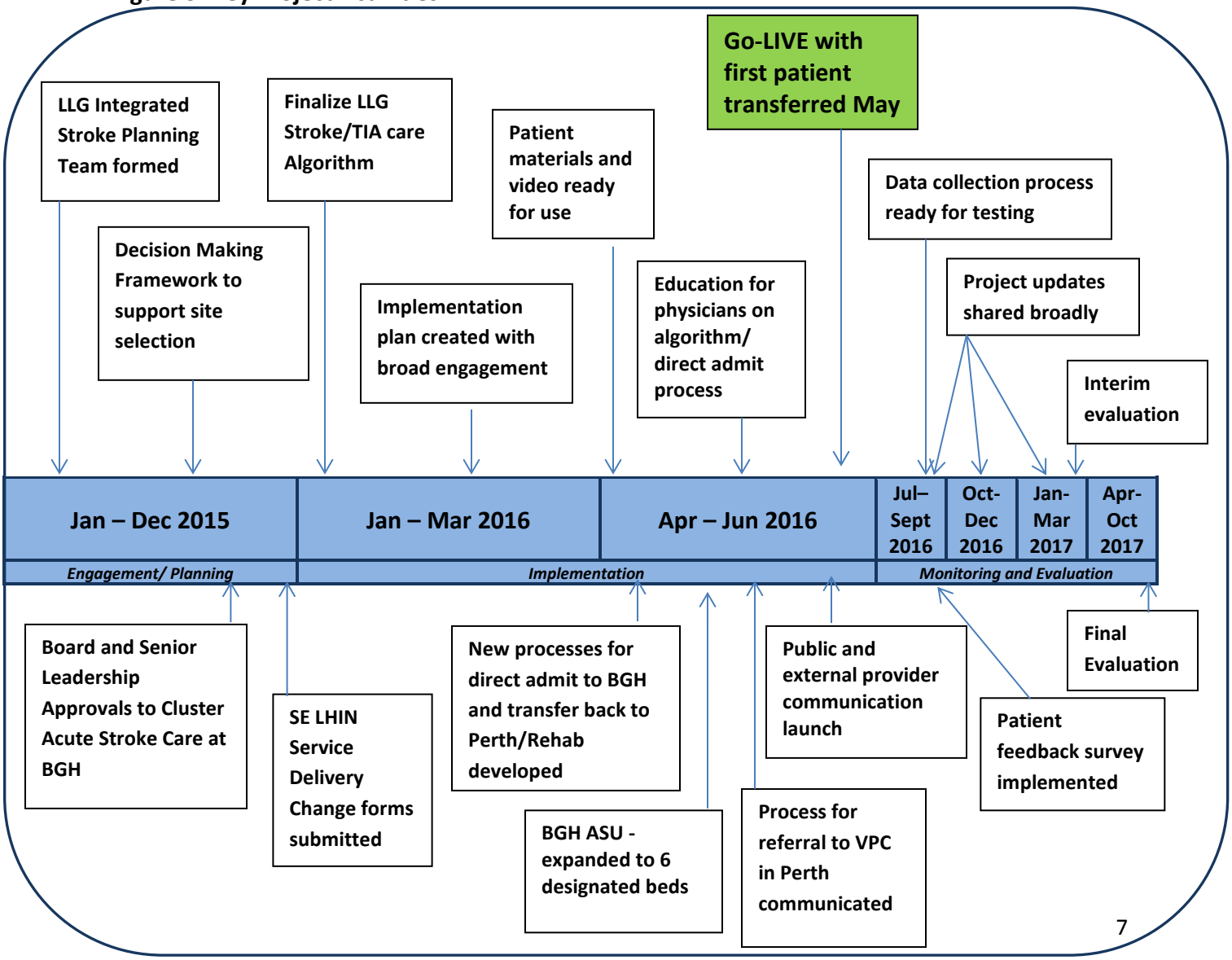
Over 100 individuals across several organizations participated in a comprehensive stakeholder engagement process to develop a detailed project plan (see Figures 2 & 3). This plan was endorsed by the LLG Integrated Planning Team. A Project Advisory Group provided oversight to the implementation. Patient Advisors were engaged throughout and provided input into key messages that profiled the benefits of ASU care. They assisted in developing a brochure (see Appendix A) and videotape to help bring the key messages to life. Transfer processes were developed (see Appendices B, C, & D). Education was delivered at all sites. An evaluation plan was prepared. The official project launch included a media release with participation of patient advisors (see Appendix G).

The Project Advisory Group (PAG) initially met monthly to monitor progress and jointly address any arising issues. The PAG meetings progressed to quarterly meetings on September 2016 once the group was satisfied that patient activities were occurring as anticipated and processes/relationships were in place to problem-solve isolated issues/cases. The PAG concluded its meetings in October 2017 with completion of the final evaluation. The PAG and its Evaluation Planning Group made recommendations to continue monitoring indicators quarterly, continue patient/family surveys, and conduct an annual review of processes and outcomes.

Figure 2: LLG Integrated Stroke Care Project Plan Overview

Project Plan Overview	Jan-Mar 2015	Apr – June 2015	July – Sept 2015	Oct – Dec 2015	Jan – Mar 2016	Apr – June 2016	July – Sept 2016	Oct – Dec 2016	Jan – Mar 2017	Apr –Oct 2017
Engagement Planning and Approval	■	■	■	■	■					
Communication Plan	■	■	■	■	■	■	■	■	■	■
Evaluation Plan				■	■	■	■	■	■	■
Resource Capacity at BGH	■	■	■	■	■	■				
Development of Patient/Family Resources and Processes					■	■				
Clinical Processes Implementation					■	■				
Process Review and Improvement						■	■	■	■	■

Figure 3: Key Project Activities



Patient feedback is ongoing with recommendations to modify and sustain the patient/family survey. Patient flow metrics were captured monthly to monitor basic elements of the project. Key indicators were reported quarterly.

Three *Project News Updates* were developed to broadly share project progress and to communicate ways in which process issues were being addressed. The project results have been shared locally (Regional Stroke Steering Committee and other local stroke events), provincially (poster presentation at OHA Health Achieve), and nationally (poster presentation at the Canadian Stroke Congress). A final project communication will be delivered providing a summary of the project status and evaluation findings.

4. Volumes Summary

As of March 31, 2017, there have been 53 patients transferred from PSFDH to the BGH Acute Stroke Unit and 50 patients discharged. This is consistent with the predicted volumes of approximately one patient per week. A summary of the discharge dispositions is described in Table 2 below. Referrals are being sent to the Perth Vascular Protection Clinic (VPC) and Rehab Day Hospital for patients discharged home or being transferred back as an inpatient. The outpatient services complete the follow-up and coordinate with the team at PSFDH. This has been the preferred practice of the teams to ensure community follow up. In addition, staff report that most patients are being referred to the SE LHIN Home and Community Care (formerly South East CCAC) Enhanced Stroke Rehabilitation program.

Table 2: Volumes/Referrals

Patient Flow/Referral Summary (May 2, 2016 – March 31, 2017)	
# patients admitted to BGH from PSFDH	**53**
# patients discharged	**50**
# to PSFDH	17 *5 patients confirmed in manual data admitted to rehab – Avg days post onset for admit to rehab was 8.8 days*
# discharged home	27
# died	2
# to Other	4
# Day Rehab referrals	**34 referred, 6 attended**
# Vascular Protection Clinic referrals	**47**
Enhanced Community Rehab	**7 patients from BGH living in Lanark county received Enhanced therapy visits**

**The data above were collected manually by health care providers*

5. Key Indicators

The following data (see Tables 3, 4, 5 & Figure 4) are based on standardized coded CIHI Discharge Data. The Hyperacute portion represents the stay for this patient cohort in the PSFDH ED while the Acute portion represents the stay for this patient cohort in the Acute Stroke Unit (ASU) at BGH. The following are highlights from the indicator review:

- 90.9% of all patients transferred from the Lanark area received care in the ASU
- 30 day in-hospital mortality rate of 6.6% for 2016-17 in the combined ASU at BGH
- Clinical best practices were more likely to occur for patients who spent time in the ASU (e.g., timely CT scan, Vascular Imaging, and Alpha FIM rehab triage score administered)
- Length of Stay (LOS) for Lanark patients was the same as the overall median LOS for the ASU at 4 days

Table 3: Hyperacute (PSFDH ED Data)

			Fiscal 2016/17
Hyperacute (PSFDH)	Volumes	Volume of stroke/TIA patients in PSF ED	227
		# Admitted to PSF directly from the ED (without going to any acute stroke unit) since May 2 when ASU at BGH was available	6
	ED LOS - Total	Median Length of Stay in ED (total time from arrival time or triage time, whichever is earliest, to physically leaving the ED)	3 hr 8 min
	ED LOS – Total (**BGH transfers only)**	Median Length of Stay in ED to acute care hospital setting (total time from arrival time or triage time, whichever is earliest, to physically leaving the ED)	2 hr 36 min
	Brain Imaging	Proportion of patients who received brain CT within 24 hours of arrival at an ED (%)	67.8%

Table 4: Acute Stroke Unit - Brockville General Hospital

			Fiscal 2016-17		
	Indicator	**Indicator Definition**	**Total**	**Leeds/ Grenville**	**Lanark**
Acute (ASU) – Brockville General Hospital	Volumes	Volume of stroke/TIA patients admitted to acute care hospital (number)	196	150	33
	ASU utilization	Proportion of patients treated in a designated Stroke Unit at any time during their inpatient stay (%)	87.8%	87.3%	90.9%
	Mortality	In-hospital Mortality Rate (30 days, all cause) (%)	6.6% 13/196 pts		
	LOS - Total	Median Length of Stay in an acute care hospital setting (days)	4	5	4
	Brain Imaging	Proportion of inpatients who received brain CT within 24hrs (%)	97.9%	97.2%	100%
	Vascular imaging	Proportion of stroke/TIA patients who received Brain/Neck CTA or MRA or Carotid Doppler (neck) after admission to acute care hospital (%)	84.5%	81.6%	93.9%
	Alpha FIM	Proportion of patients who have Alpha FIM completed (%)	81.9%	77.3%	95.2%
	Discharge	Proportion of stroke patients (discharged alive) to each discharge disposition:			
		Designated Inpatient Rehab (%)	6.1%	7.3%	0.0%
		Acute Care*(%)	10.7%	1.3%	45.5%
		Home without support (%)	18.4%	19.3%	9.1%
		Home with Support** (%)	38.8%	40.0%	42.4%
		CCC (%)	12.8%	16.7%	0.0%
		LTC (%)	4.6%	5.3%	3.0%
	Complications	Proportion of stroke/TIA inpatients that experience at least one complication (%) ***	7.6%		

** Inpatient rehab service at Perth is included in the Acute Care service*

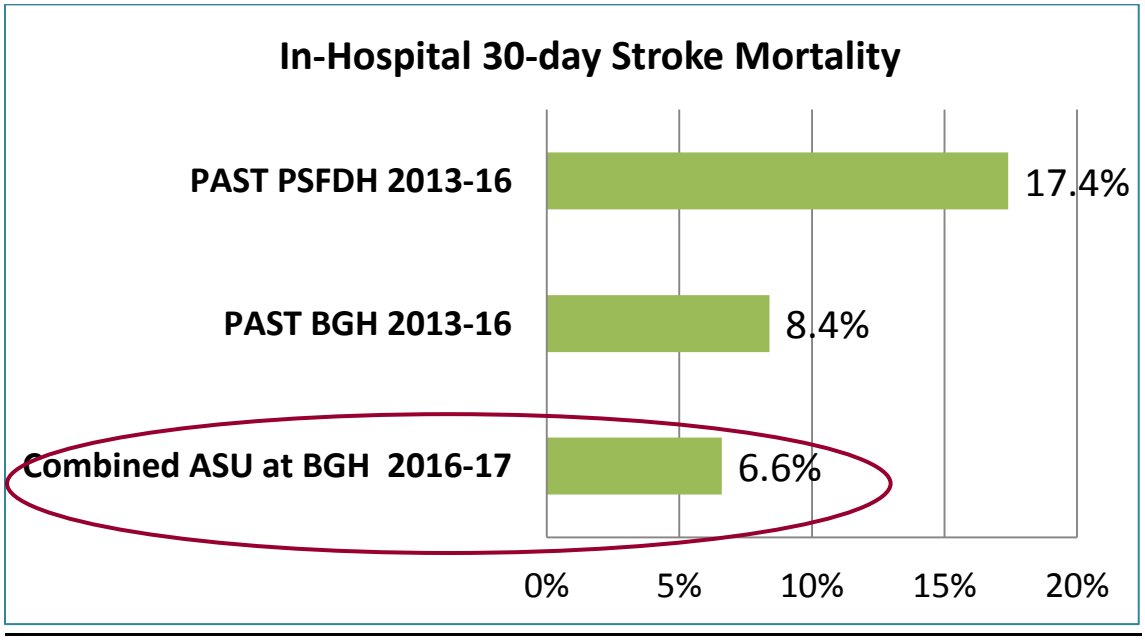
*** Home with support represents patients referred to SE LHIN Home & Community care*

**** Complications being tracked include pneumonia, UTI, VTE, skin pressure ulcers, GI bleed, & secondary intracerebral bleed*

Table 5: Volumes and ASU utilization Pre and Post LLG Integration

Indicator	Pre LLG Integration			Post LLG Integration
	13/14	14/15	15/16	16/17
Inpatient Stroke Volumes at BGH	95	110	97	196
Volume of Stroke Admissions at PSFDH Direct from PSFDH ED	54	47	60	6
% Admitted to ASU - BGH	25.3%	79.1%	72.2%	87.3%
% Admitted to ASU - PSFDH	0	0	0	0
% Admitted to ASU – LLG area (May include admission to BGH or KGH)	30.9%	56.9%	47.0%	76.4% of all stroke admission in LLG admitted to ASU in BGH *(slightly higher when include any admissions to KGH that were repatriated to PSFDH)*

Figure 4: In-hospital 30-day Stroke Mortality



6. Patient and Family Feedback – based on patient and family surveys to date

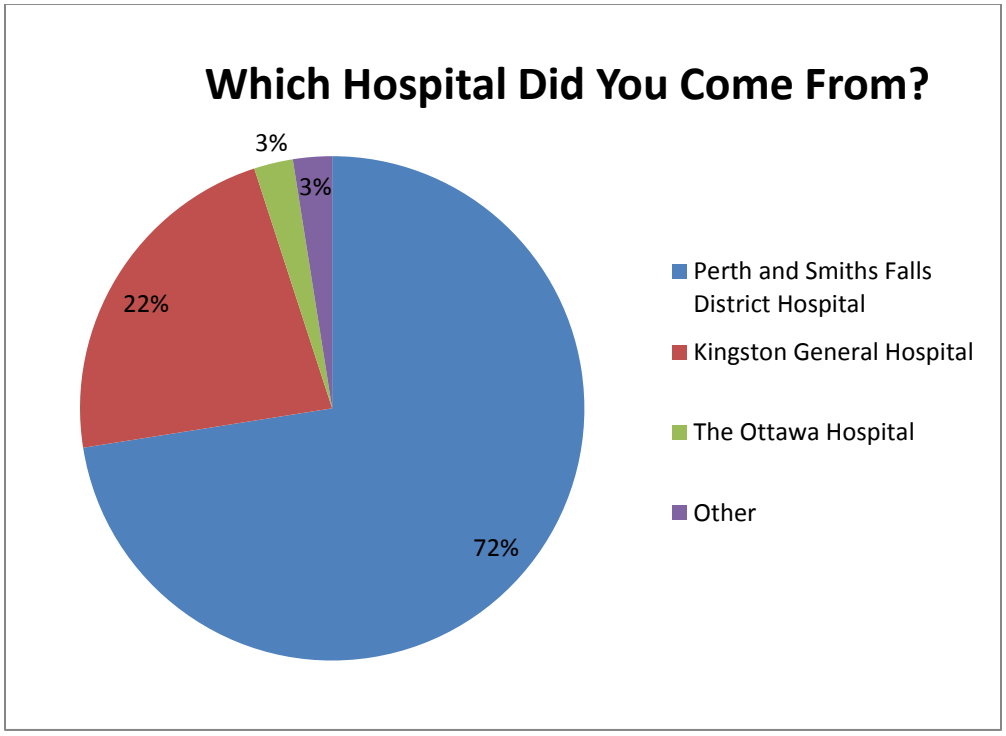
Patient and family surveys were conducted beginning July 8th for the Acute Stroke Unit; Perth Rehab Unit followed in January 2017. The patient and family feedback process launch was delayed because the same human resources were needed to work on all the project components. The patient surveys were launched in stages to allow for creating and testing of surveys in paper and then electronic format. The surveys were designed with patient advisors who also assisted in testing the electronic format. This evaluation focused on patient/family feedback collected at the time of discharge from the BGH ASU.

Patient Survey – BGH ASU:

The patient survey results included responses from a 21-question survey created in Survey Monkey. The survey was administered on the unit to patients just prior to discharge. This was done electronically using iPads or via print copy. Surveys analyzed for this report were collected from July 8, 2016 to July 31, 2017. 73 patient surveys were completed in total and included 29 patients who identified they were transferred to the BGH ASU from PSFDH. Of those 29 patients, 25 patients indicated they were being discharged to their own home and 2 noted they were returning to PSFDH. Not all surveys had responses to all questions.

Of the 73 patients surveyed, 59% (43 patients) reported being transferred to the BGH ASU from another hospital. The following figure shows the breakdown of the sending hospitals for those 43 patients; 29 of the 43 patients were transferred from PSFDH.

Figure 5



Since the interim review, there has been no obvious change in the pattern of results in any particular area. Overall, the surveys indicated positive feedback from patients. Most patients felt their wait time for transfer, coordination of the transfer, information received about the ASU, and reason given for transfer were executed to their expectations. 85% (23/27) described their transfer from the ED to ASU as completely well organized (see Figure 6). One significant response was that few (4/28) patients reported any challenge in being away from their home community (see Figure 7). Patient communication and education was identified as an area to monitor for improvement. 48% (13/27) reported they received "completely" the required information about what was going to happen in the ASU and 67% (18/27) reported they received "completely" the information they wanted about their condition or treatment. On final evaluation the trend of discrepancy between actual referrals to the PSFDH Vascular Protection Clinic (VPC) and patients' awareness of those referrals continues. 54% (13/24) of patients who responded indicated they did not receive a referral to the VPC; however, the data collected on referrals indicated almost all patients (49 out of 50 discharged) were referred to the clinic (See Appendix E for full patient survey details).

Figure 6

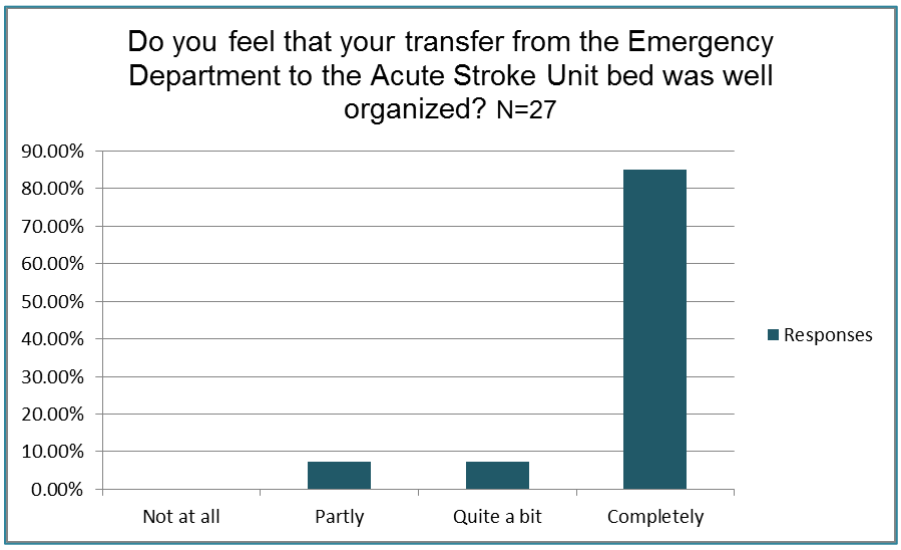
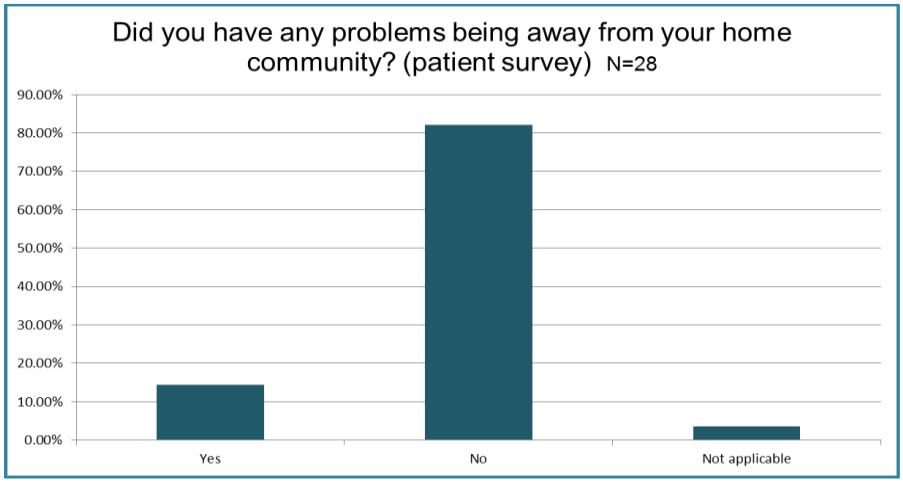


Figure 7



Family Survey – BGH ASU:

The family survey responses were received from July 8, 2016 to July 31, 2017. 32 family member surveys were completed with 11 identifying that their family members were transferred to the BGH ASU from PSFDH; only eight completed additional survey questions. Seven indicated their family member was discharged to their own home and one was returning to PSFDH. Not all the surveys had responses to all the questions. Of interest were the family member responses to the same question, "*Did you or your family member have any problems being away from your family member's local home community?"* Three out of eight individuals responded that it was problematic being away from their community (see Figure 8) yet, as noted above, patients did not acknowledge this to the same extent. Comments indicated this was largely due to the travel for families (see Appendix F). Otherwise, the experience reported by family members was fairly consistent for the family member that was admitted to the ASU. It was noted that all family members indicated being well informed and the transfer was well organized. Most (7/8) did not feel the wait time was long for their family member to be transferred (See Figure 9) Similar responses about VPC referrals as described in the patient survey were noted in the family survey.

Figure 8

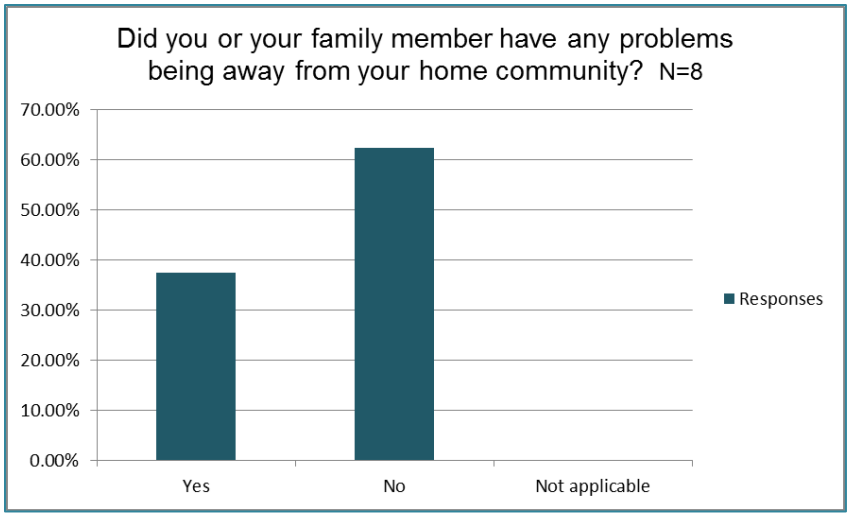
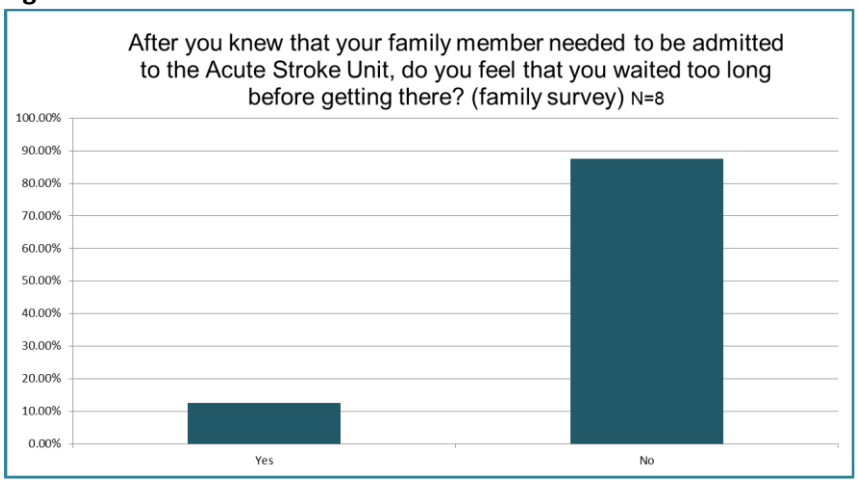


Figure 9



Patient and Family Surveys – Perth Rehabilitation Services:

At the time of writing this evaluation, there were three family surveys and one patient survey from the Perth Rehab Unit, and two patient surveys and one family survey from the Perth Day Hospital. Patients and families were positive about their experience and the care provided by the teams. Of the two patient surveys, each patient felt differently about information provided in advance about rehabilitation. The volume of surveys was not sufficient to conduct a more detailed analysis or make further recommendations.

7. Process Implementation Evaluation

The project team used a very inclusive approach when developing the implementation plan. This has enabled input and dialogue amongst patient experience advisors and health care providers from PSFDH and BGH, Paramedic Services, Kingston General Hospital (KGH), The Ottawa Hospital (TOH), SE LHIN Home and Community Care (formerly Community Care and Access Centre), Communicare Therapy (SE LHIN Rehabilitation Provider Agency), local Family Health Teams, Community Support Service agencies, and others. As a result, the hospital teams and their partner agencies have been available for quick consultation and resolution as issues arose. Table 6 below provides a summary of key process issues and actions taken that led to resolution. In addition, staff members connected by phone regarding individual patient needs to ensure safe transitions whether transferred to another inpatient setting or discharged to the home community.

Table 6: Summary of Issues and Actions

Issue Raised	Action Taken	Outcome	Comments
Difficulty getting through to phone on BGH unit	Charge nurse's cell phone added to process	Limited further issues raised	Some challenges with unit phone number were ongoing so using charge nurse number as primary contact in updated process
Lack of clarity between Acute Stroke Protocol with KGH and transfers to BGH	Poster language updated and PSFDH posted all KGH ASP and BGH Stroke Unit posters together	Resolved confusion for staff to see protocols linked	
Confusion around repatriation to acute vs rehab bed	Urgent meeting called and process clarified; communicated in project updates and by emails etc.	Discharge planners primary link with rehab referrals to Dr. Stolee	
Confusion around whether to admit or discharge TIA patients	Pg. 2 Stroke Care Algorithm reinforced; Developed FAQ for Physicians	Less confusion reported about TIA admission decision-making. Perth VPC receiving BGH referrals	May need further education given questions are common in relation to this topic

Non-urgent transport between hospitals	Group immediately discussed ways to improve communication for patients not requiring BGH admission	Non-urgent transport to be arranged (e.g., cover taxi costs)	No further similar situations have arisen
Lack of awareness about where imaging should take place	Communication reinforced about imaging process. Included in FAQ for physicians		The ongoing DI work has been deemed out of scope for the project team other than as it relates to the Direct Admit process. Other workgroups will continue to address timely imaging access
Referrals sent to Perth Day Rehab Hospital however patients declined appointments reporting therapy already complete	Teleconference of teams involved (BGH ASU, CCAC, Communicare, and Perth Day Hospital). New process for phone contact between ASU and Day Hospital prior to discharge to enable patient to receive appt prior to leaving; team can refer appropriately to LHIN Home and Community Care (formerly CCAC) as needed vs all referrals	Anecdotal improvement noted after first couple contacts. Phone contact not maintained consistently. Referrals continue to flow to Day Hospital. BGH to refer only those who need the service vs all referrals	Communicare reviewed home care rehab clients referred from BGH living in Lanark area for any trends. Able to confirm receipt of referrals and clients received services at various levels based on needs. No specific trends identified. Ongoing opportunity to 1) collaborate between Day Rehab and In-Home Rehab providers 2) increase awareness of potential community resources post in home rehab discharge
Patients not admitted from PSFDH during Enteric outbreak	Short term action was for patient to be admitted to KGH stroke unit	BGH has changed internal processes to admit to other units and to ensure ASU is a “clean” unit as soon as possible. BGH changed communication plan during such events to include KGH and PSFDH leadership for early awareness	

BGH and PSFDH Provider Survey Results:

An electronic and paper survey was distributed through unit managers to staff, administrators, and physicians on two occasions (Dec 10, 2016 to Jan 20, 2017 and June 20, 2017 to August 15, 2017). The results were collated by project team members of the Stroke Network of SEO. During the first survey interval there were 42 respondents (12 from BGH and 30 from PSFDH, 24 from inpatient units, 15 from the ED, and 3 from other areas). The second survey interval had 18 respondents (13 from BGH and 5 from PSFDH, 13 from inpatient units, 3 from the ED and 2 from other areas). Positive feedback on the process was received from both sites along with specific examples for opportunities for improvement. At times, the experiences may be contradictory even from the same location. The following are the themes observed in the text responses. Themes remained fairly consistent over the two surveys, however the opportunities for improvement in the second survey related more to enhancing expertise and operations of the ASU itself and less about process issues between sites. Feedback from staff has been considered in ongoing work and was shared with all respective managers.

Themes - What is Going Well:

- *Overall transfer processes working well*
- *Daytime transfers and communication*
- *One straight forward pathway for everyone to follow*
- *Timely access to service (CT, transfers to ASU, testing, medications)*
- *Collaborative approach between teams*
- *Stroke RN resource role at Brockville*

Themes - What Needs to be Changed/Improved:

- *Access to CT in Smiths Falls (delays, processes)*
- *Need for ongoing hands-on training for the ASU*
- *Appropriate coverage in the ASU*
- *Transfer to BGH process not always consistent afterhours – some instances where process not fully understood*
- *Repatriation processes - continued need for patient information*

The following summarizes the experience of the project team, previous discussions with stakeholders over the course of the project, and the provider survey results. In general, the experience has been positive although challenging at times with a need for ongoing support and facilitation.

What has worked well?

- Implementation led to improved access to best practices for stroke care. Clinical best practices were more likely to occur for patients who spent time in the ASU.
- Involvement of patient and family advisors at all levels of project work; advisors were able to provide feedback and insight to keep groups focused on the patient/family needs.
- Initial stakeholder engagement sessions to develop the workplan. This provided a comprehensive list of tasks for successful implementation and enabled early staff awareness and support for the upcoming changes in practice.
- Timely communication resolved issues early; teams were responsiveness to assist.
- Project News Updates were useful in sharing messages and updates with local teams, raising awareness at team meetings, generating further discussion, and providing a summary of key points for future education of new staff.
- Site visits to connect teams: stroke prevention nurses connected in person supporting an ongoing collaborative approach for follow up; the BGH acute stroke team visited the Perth site at PSFDH which enabled learning to support better transitions and appropriate referrals. These in-person visits helped build relationships to support individual patient discussions and discharge planning.
- Ongoing follow up and education was available as needed.
- Project Advisory Workgroup oversight with a commitment by all parties to full participation; meeting coordination through the Office of the Stroke Network of Southeastern Ontario.
- Small subgroups such as the Evaluation Workgroup ensured ongoing focused work on specific areas of the project plan; completion of project tasks was facilitated by assigning the work to smaller subgroups.
- Collaboration and support was received from Decision Support Teams in the evaluation.
- Communications Teams supported the development of brochures, key messages, and news updates.

What were the main gaps or issues?

- Transfer processes for the PSFDH ED to BGH ASU were more challenging to implement afterhours.
- Some tasks, such as tracking of current volumes or stroke specific patient education/linkages, were dependent on individuals versus an embedded process so easily dropped during vacation/illness. (Note: The expectation for manual tracking will not continue post project).
- There is an ongoing need for stroke specific education due to staff changes/turnover. Stroke specific education is becoming embedded in new staff orientation at BGH; however, a sustainability plan for education for acute stroke team members needs to be addressed.

- Physician communication requires unique strategies for each site or group of physicians. The approach must remain responsive to physician turnover making it a challenge to get consistent messages to all.
- Rehabilitation datasets are limited and are not standardized for patients returning to PSFDH, outpatients, or the community. The focus of the evaluation has been limited primarily to the BGH ASU and the PSFDH ED.
- Timely imaging and flow of patient information were challenges that were raised regularly. Access to timely imaging remains problematic across the entire east of the SE LHIN but is particularly limited after hours.
- Sustainability planning is needed in these areas:
    - communication of clinical processes and related process improvements;
    - stroke care education embedded into daily practices;
    - efficient and effective transfer of patient information;
    - access to timely imaging; and
    - processes for ongoing patient and family feedback; transition from Stroke Network to BGH.

8. Financial Report

A Financial Workgroup (representatives from BGH, PSFDH and the SE LHIN) was created to oversee the financial transfer, impact and any reconciliation that would be required. The SE LHIN was able to find additional funding to support Perth Smith Falls District Hospital for the Stroke activity that transpired at that site, prior to the transfer of the service. Both hospitals very much appreciated their support.

9. Summary and Recommendations

Overall, the LLG Project Advisory Group was successful in implementing integrated Acute Stroke Unit Care for the geographical area of Lanark, Leeds and Grenville. Feedback from patients and providers indicated new processes were working well, achieved the desired results, and should continue. Patient volumes were observed as expected. Implementation led to improved access to best practice stroke care. Clinical best practices were more likely to occur for patients who spent time in the ASU. Indicators demonstrated improved patient outcomes over previous years including a significant reduction in stroke mortality rates. Continued monitoring will be required to ensure that these new processes and associated patient outcomes are sustained despite competing priorities.

Final Recommendations:

1. Continue to transfer acute PSFDH stroke/TIA patients requiring admission to BGH ASU.
2. Continue to monitor stroke indicators quarterly using the Regional Stroke Dashboard process to inform continuous quality improvements.
3. Conduct a joint annual review with BGH, PSFDH and Stroke Network of SEO partners, with first review in Fall 2018.

4. Continue to seek out and incorporate patient and family feedback. The existing survey will remain available for an additional nine months while BGH establishes patient/family feedback process within its new organizational structure.
5. Develop an education plan at BGH that incorporates best practices in stroke care and supports staff working with patients who have had a stroke.
6. Monitor ASU occupancy rates and performance to inform decisions regarding resources required to provide safe, high quality care.
7. Share project findings with key stakeholders who can influence and positively impact timely access to brain and vascular imaging in LLG.
8. Develop and implement a communication plan regarding stroke care program enhancements and developments including embedding integrated stroke care processes into ongoing orientations for all physicians and staff (e.g., LLG Stroke Care Algorithm and associated processes).
9. Ensure that all stakeholders are kept informed regarding processes related to accessing secondary stroke prevention programs.
10. Ensure ongoing communication with public/community stakeholders on the delivery of stroke care in the LLG area starting by reporting back on this project.

Appendices

A. Patient and Family Acute Stroke Unit Brochure

B. LLG Stroke Care Algorithm (BGH, PSFDH, KGH)

C. Direct Admission Process

D. Repatriation/Referral to Rehab Process

E. Detailed Patient Surveys

F. Detailed Family Surveys

G. Media Releases

H. BGH Acute Stroke Unit Indicators by Quarter

Appendix A: Patient and Family Acute Stroke Unit Brochure

Stroke survivors in Lanark, Leeds and Grenville counties now have access to **specialized care** at the Acute Stroke Unit in Brockville through the partnership of Perth and Smiths Falls District Hospital and Brockville General Hospital.

Where to find us

Brockville General Hospital is located at 75 Charles Street in Brockville.

Take Highway 43 to Smiths Falls. Turn right on Highway 15. Continue onto Highway 29 (Brockville Street). In Brockville, cross over Highway 401 and make a left turn on Front Avenue, followed by a right turn on Ormond.

Turn left on Charles Street immediately after you cross the train tracks.

Parking

You can access our main parking lot on Charles Street by taking Ormond Street, just north of Pearl Street.

Daily rates are posted at the entrance to the lot. Day passes are available, as well as 5-, 10- and 30-day parking passes at 50% of their daily rate.

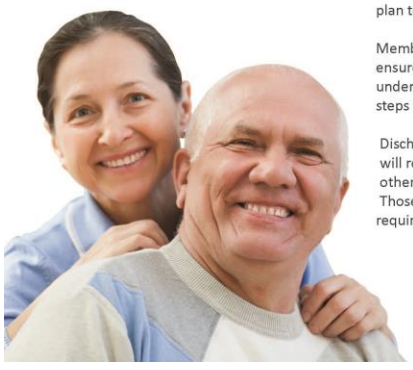
Acute Stroke Unit
75 Charles Street
Brockville, Ontario, K6V 1S8
(613) 345-5649 ext. 1150
www.bgh-on.ca

Through the partnership of
Brockville General Hospital
Perth and Smiths Falls District Hospital

Acute Stroke Unit
part of Brockville General Hospital

Recovery can be expected after a **stroke.** People who experience a stroke can **survive and recover.**

A person who experiences a stroke is more likely to **survive, recover and return home** when early stroke care is provided by a **specialized team in an Acute Stroke Unit.**



What happens in the Acute Stroke Unit

Many health care professionals are involved in caring for patients in the Acute Stroke Unit. The specialized team of doctors, nurses, therapists, and others, will work with the patient and their family to determine the next steps for recovery.

A number of tests and assessments will be conducted to determine the:

- Type of stroke experienced
- Location of the stroke in the brain
- Effects of the stroke
- Risk factors for another stroke
- Appropriate treatment

Each patient's stroke is different.

The specialized Acute Stroke Unit team will develop an individualized best-practice plan to meet a patient's specific needs.

Members of the health care team will ensure that both the patient and their family understands the treatment process, the next steps for care and the eventual discharge plan.

Discharge planning starts early. Some patients will return home after a few days, while others will require ongoing rehabilitation. Those who suffer a severe stroke may require more lengthy hospitalization.

Acute Stroke Unit
part of Brockville General Hospital

Visting a family member in the Acute Stroke Unit

The Acute Stroke Unit is located on the 1st floor. Visitors may take the Blue Elevator located just past the cafeteria. Turn left as you exit the elevator and proceed through the double doors to the end of the hallway.

If you arrive after 10:30pm, please enter the building through the Emergency Department.

Talk to a member of the health care team if you have questions or concerns about visiting.

How do I contact the Acute Stroke Unit?

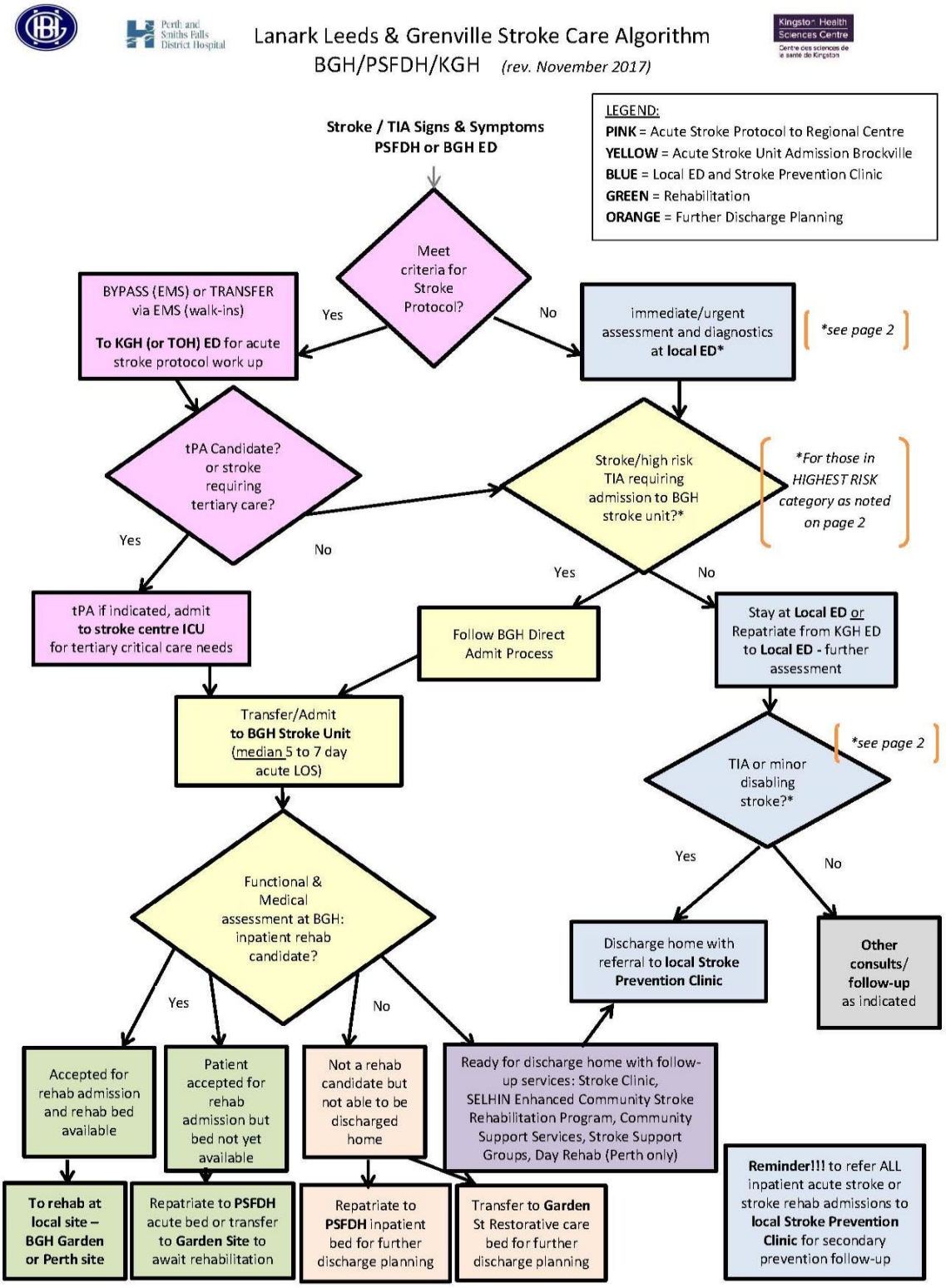
The Charge Nurse for the Acute Stroke Unit can be reached at (613) 345-5649 ext 1150.

In accordance with the Privacy Act, patient information can only be discussed with the patient's designated primary emergency contact(s).

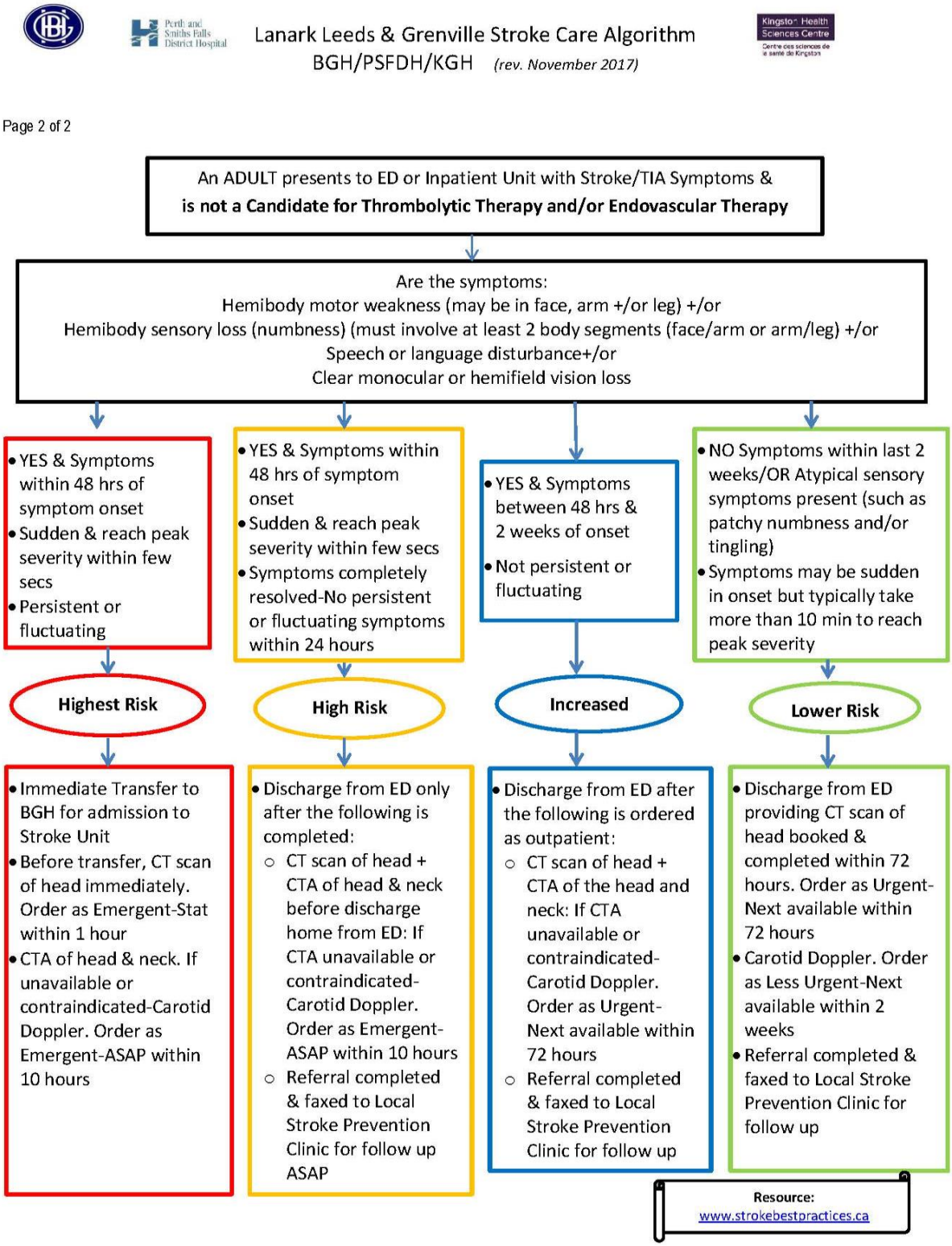
For more information or to view a video about Acute Stroke Units, please visit the Patient Services section on our website **www.bgh-on.ca**

Retrieve Copy from: https://www.strokenetworkseo.ca/projects/acute-stroke-care-in-lanark-leeds-and-grenville-counties

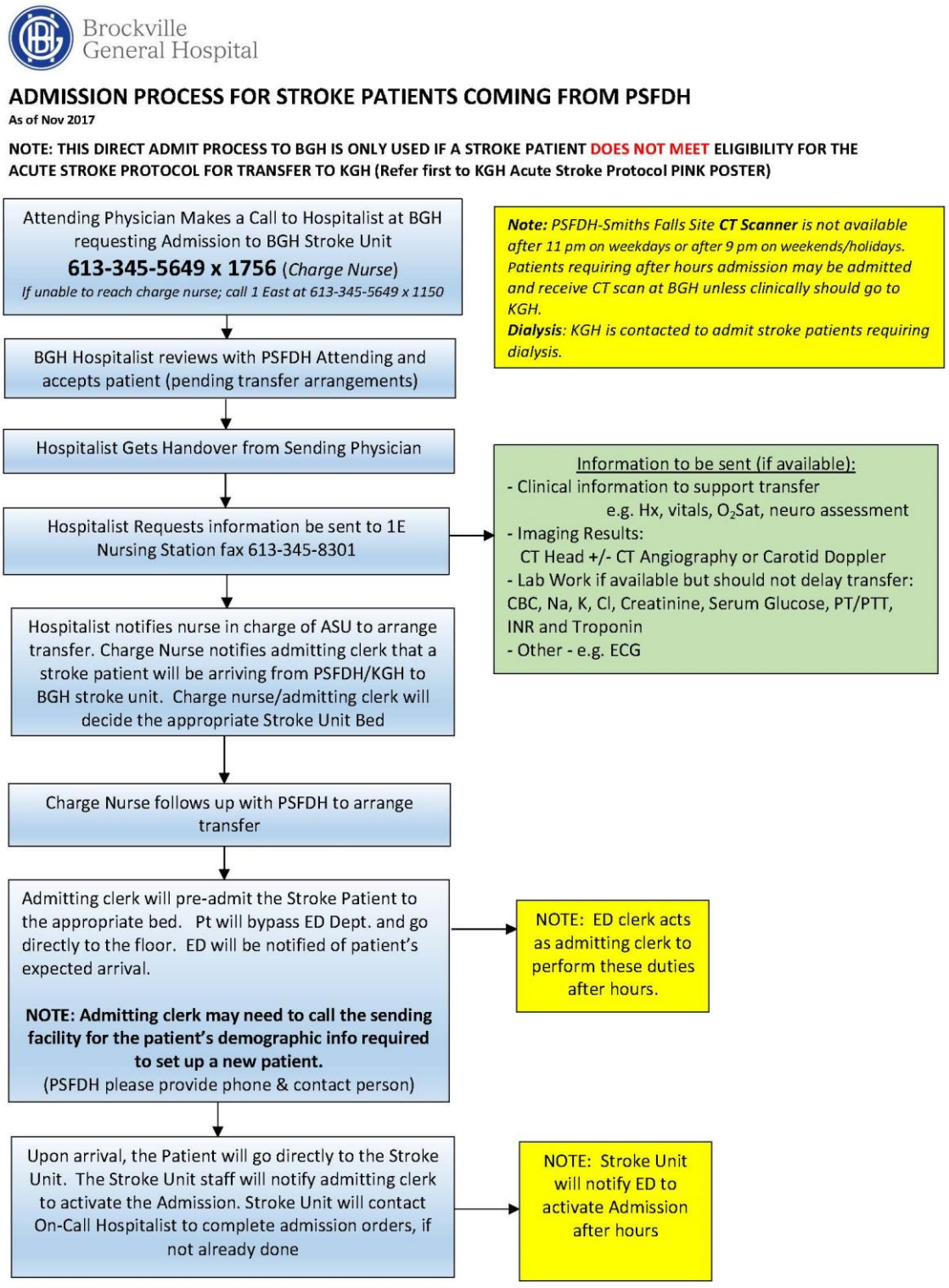
Appendix B: LLG Stroke Care Algorithm (BGH, PSFDH, KGH)



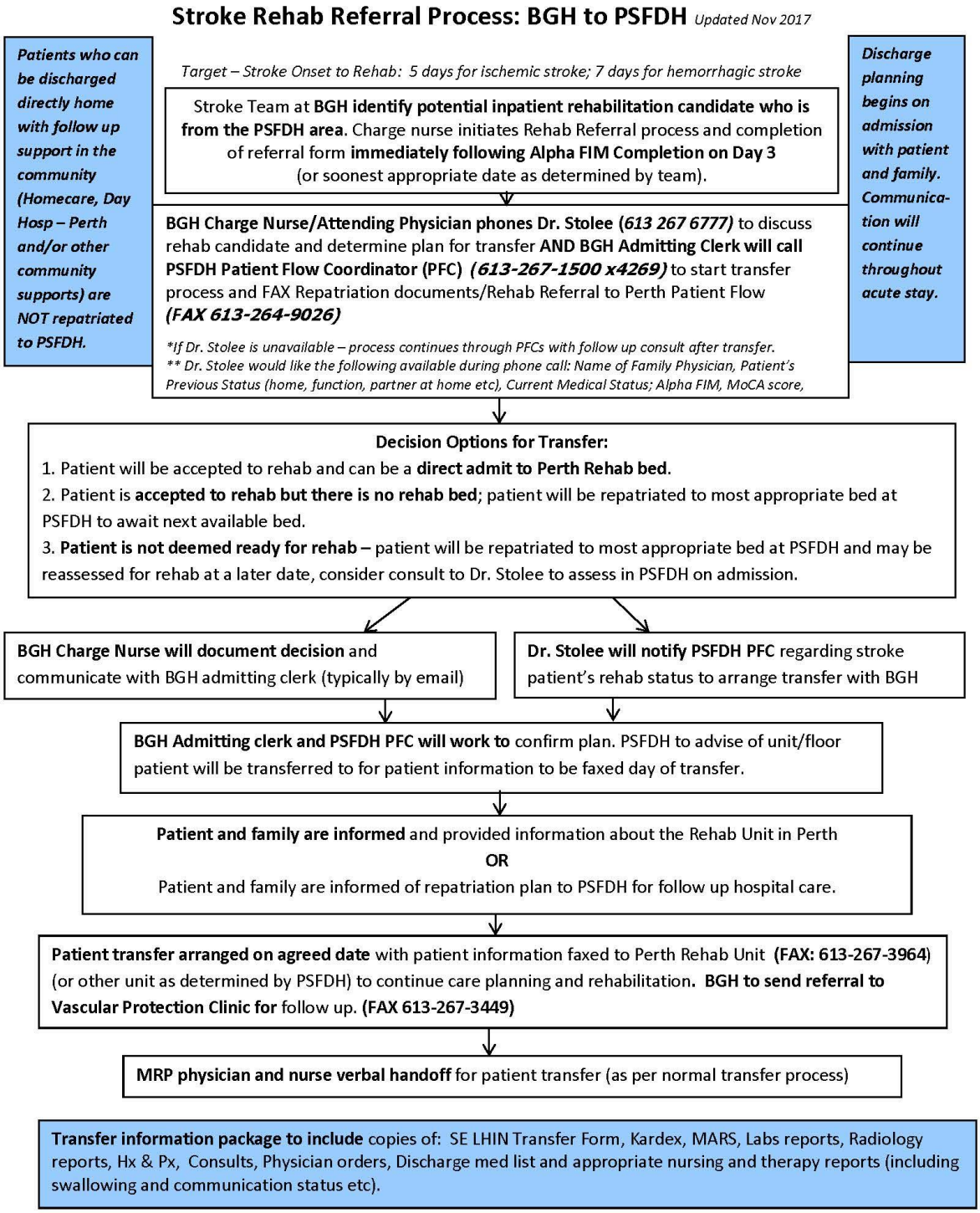
Appendix B: LLG Stroke Care Algorithm (BGH, PSFDH, KGH)



Appendix C: Direct Admission Process



Appendix D: Repatriation/Referral to Rehab Process



Appendix E: Patient Survey Results – BGH ASU

Topic Area	Question	Interim *(December 31 2016)*	Final *(July 31 2017)*	Summary
Wait time for transfer to BGH	After you knew that you needed to be admitted to the Acute Stroke Unit, do you feel that you waited too long before getting there?	14/17 replied No 3/17 replied Yes	23/28 replied No 5/28 replied Yes	82% felt wait time was appropriate for transfer – no remarkable change since interim evaluation
Transfer to BGH	Do you feel that your transfer from the emergency Department to the acute Stroke Unit was well organized?	14/17 Completely 2/17 Quite a bit 0/17 Partly 0/17 Not at all	23/27 completely 2/27 quite a bit 2/27 partly 0/27 partly	85% felt the transfer was completely well organized
Family involvement	Do you feel your family received adequate information about the reasons for transfer of admission to the Acute Stroke Unit?	17/17 Yes	27/28 Yes	96% patients report their family received adequate information about reasons for transfer the ASU
Patient education	Do you feel you were given all the information you need about what was going to happen in the Acute Stroke Unit?	7/16 Completely 4/16 Quite a bit 4/16 Partly 1/16 Not at all	13/27 Completely 8/27 Quite a bit 5/27 Party 1/27 Not at all	78% of patients report that they had quite a bit or complete information about what was going to happen in ASU – improved 9% over first 6 months
Team	How often did your health care team treat you with kindness and respect?	16/17 Always 0/17 Usually 1/17 Sometimes 0/17 Never	26/27 Always 0/27 Usually 1/27 Sometimes 0/27 Never	Patients felt they were treated with kindness and respect
Team	Do you feel that your health care team worked well together?	15/17 Always 1/17 Usually 1/17 Sometimes 0/17 Never	22/27 Always 4/27 Usually 1/27 Sometimes 0/17 Never	Patients felt the health care team worked well together
Information	Were you given all the information you wanted about your condition and treatment?	11/17 Completely 4/17 Quite a bit 2/17 Partly 0/17 Not at all	18/27 Completely 7/27 Quite a bit 2/27 Partly 0/27 Not al all	Usually patients felt they were given all the information they wanted about their condition or treatment
Patient involvement	Do you feel you were involved as much as you wanted in decisions about your care and treatment with your health care team (e.g., able to ask questions, share ideas and participate in your plan of care)?	16/16- Yes	26/26 Yes	Patients were involved in their care
Family involvement	Was your family or friends involved as much as you wanted in your care and treatment?	14/17 Always 2/17 Usually 1/17 Sometimes 0/17 Never	19/27 Always 5/27 Usually 3/27 Sometimes 0//27 Never	89% patients report family or friends being involved as much as they wanted (usually or always)

Community	Did you have any problems being away from your home community?	16/17 - No 1/17 Not applicable 0/17 Yes	4/28 Yes 23/28 No 1 NA	Most patients (82%) did not have any problems being away from home. One patient did comment that it was "Difficult for husband to visit"
DC	Did you receive useful information about managing at home before leaving hospital?	14/14 Yes	24/24 Yes	All patients report receiving useful information about managing at home
DC	Did you get information about what symptoms or health problems to look out for after you leave the hospital?	14/14 Yes	24/24 Yes	All patients report receiving information about symptoms to look for
SPC follow up	Were you given a follow up appointment to your local Stroke Prevention Clinic or Vascular Protection Clinic?	7/14 - Yes 7/14 – No	13/24 Yes 11/24 Yes 4% better	Actual patients who had referrals received by the VPC in Perth was 49 and 50 patients discharged. Challenge is in communicating this in a way that patients recognize this has occurred. Interesting that only 54% patient acknowledge the referral but improved 4% since 6 month review
Community resources	Were you provided with information about services or resources in your community to help you continue your recovery?	13/13 Yes	23/23	All patients were provided information about community services or resources
Support Group info	Did you get information about your local Community Stroke Survivors Support group?	10/14 - Yes 4/14 - No	17/24 yes 7/24 No	Most patients at 71% report receiving information about the community support group
Overall experience	Rate your overall experience in the Acute Stroke Unit	10/16 - Excellent 3/16- Very good 3/16 - Good 0/16 - Fair 0/16 - Poor	18/26 excellent 4/26 very good 4/26 good	7% improvement in excellent ratings for overall experience in the ASU

Appendix F: Detailed Family Survey

Topic Area	Question	Interim *(December 31 2016)*	Final *(July 31 2017)*	Summary
Wait time for transfer to BGH	After you knew that your family member needed to be admitted to the Acute Stroke Unit, do you feel that they waited too long before getting there?	5/6 replied No 1/6 replied Yes	7/8 No 1/8 Yes	87.5% felt wait time was appropriate for transfer-no remarkable change since interim evaluation
Wait time for transfer	Do you recall how long they waited from the time of arrival in the first Emergency Department until the time your family member arrived at the Acute Stroke Unit?	4/6 Less than 6 hours 2/6 Greater than 6 hours	5/8 Less than 6 3/8 greater than 6 hours	37.5% felt wait time was greater than 6 hours to arrive at the ASU. Slight increase since interim evaluation
Transfer to BGH	Do you feel that your family member's transfer from the emergency Department to the acute Stroke Unit was well organized?	6/6 completely	7/8 completely 1/8 quite a bit	Most felt the transfer was well organized
Family involvement	Did you receive adequate information about the reasons for transfer or admission to the Acute Stroke Unit?	6/6 - Yes	8/8 Yes	100% indicated they received adequate info about reasons for transfer to ASU
Patient/Family education	Do you feel you were given all the information you need about what was going to happen in the Acute Stroke Unit?	2/6 Completely 2/6 Quite a bit 1/6 Partly 1/6 Not at all	4/8 Completely 2/8 quite a bit 1/8 partly 1/8 not at all	75% indicated that they had completely or quite a bit received all info about what was going to happen in the ASU. No improvement since interim evaluation
Team	How often did your health care team treat you with kindness and respect?	6/6 Always	8/8	All family members responded that the team treated them with kindness and respect
Team	Do you feel that the health care team worked well together?	5/5 Always	8/8	All family members responded that the team worked well together
Information	Were you given all the information you wanted about your family member's condition and treatment?	4/6 Completely 1/6 Quite a bit 1/6 Partly 0/6 Not at all	5/8 completely 2/8 quite a bit 1/8 partly 0/8 not at all	Mostly all received completely or quite a bit of info about family member's condition and treatment
Patient involvement	Do you feel you were involved as much as you wanted in decisions about your family member's care and treatment with the health care team (e.g., able to ask questions, share ideas and participate in your plan of care)?	6/6 - Yes	8/8 yes	All family members responded that they felt involved in decisions about care and treatment

Community	Did you or your family member have any problems being away from your family member's local home community?	3/6 - No 3/6 - Yes	1. "longer distance to travel" 2. "harder to be out of town" Final 5/8 no 3/8 yes	2 comments (see outcomes to the left) received Aug 3, 2016 & Oct 11, 2016 during interim evaluation. 37.5% of families indicated problems being away from local community. Slight improvement compared to the interim evaluation
DC	Did you receive useful information about managing at home before your family member leaves the hospital?	5/5 Yes	7/7	All families responded that they received useful info about managing at home
DC	Did you get information about what symptoms or health problems to look out for after your family members leaves the hospital?	5/5 Yes	7/7	All families responded that they received info about symptoms or problems to look out for after leaving hospital
SPC follow up	Was your family member given a follow up appointment to your local Stroke Prevention Clinic or Vascular Protection Clinic?	3/5 - Yes 2/5 - No	4/7 Yes 3/7 No	42.9% responded they were not given a VPC appointment. Unchanged since interim evaluation
Community resources	Were you provided with information about services or resources in your community to help your family member continue your recovery?	4/5 - Yes 1/5 No	6/7 Yes 1/7 No	Most family members received info about resources in their community to help with recovery
Support Group info	Did you get information about your local Community Stroke Survivors Support group?	4/5 - Yes 1/5 - No	5/7 Yes 2/7 No	28.6% did not receive info about Stroke Survivor's Support Group. Slightly more families did not receive this info compared to interim evaluation
Overall experience	Rate your overall experience in the Acute Stroke Unit	4/6 - Excellent 2/6 - Very good 0/6 -Good 0/6 - Fair 0/6 - Poor	5/8 excellent 3/8 very good	"Very good care from staff" "It has been a relief knowing he was sent to specialty unit, where we knew his medical needs would be addressed"

Appendix G: Media Releases

Smiths Falls Record News

http://www.insideottawavalley.com/news-story/6524532-positive-changes-for-stroke-care-and-patients/

Brockville Recorder and Times

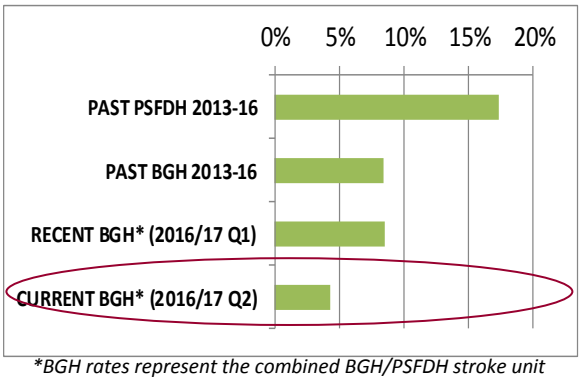
http://www.recorder.ca/2016/05/03/brockville-hospital-new-home-to-regional-stroke-unit

Sample Media Releases:

Acute Stroke Care Interim Report Shows Drop in Mortality Rates – March 2017

Perth and Smiths Falls District Hospital and Brockville General Hospital have worked together to improve outcomes for stroke survivors.

In-Hospital 30-day Stroke Mortality



**BGH rates represent the combined BGH/PSFDH stroke unit*

A person who experiences a stroke is more likely to survive, recover and return home when early stroke care is provided by a specialized team in an ***Acute Stroke Unit*.**

Collaboration between Perth and Smiths Falls District Hospital (PSFDH) and Brockville General Hospital (BGH) created a combined Acute Stroke Unit in Brockville.

Beginning in May 2016, people presenting with stroke to the Perth and Smiths Falls Emergency Rooms who required admission to hospital were transferred to the Acute Stroke Unit at BGH.

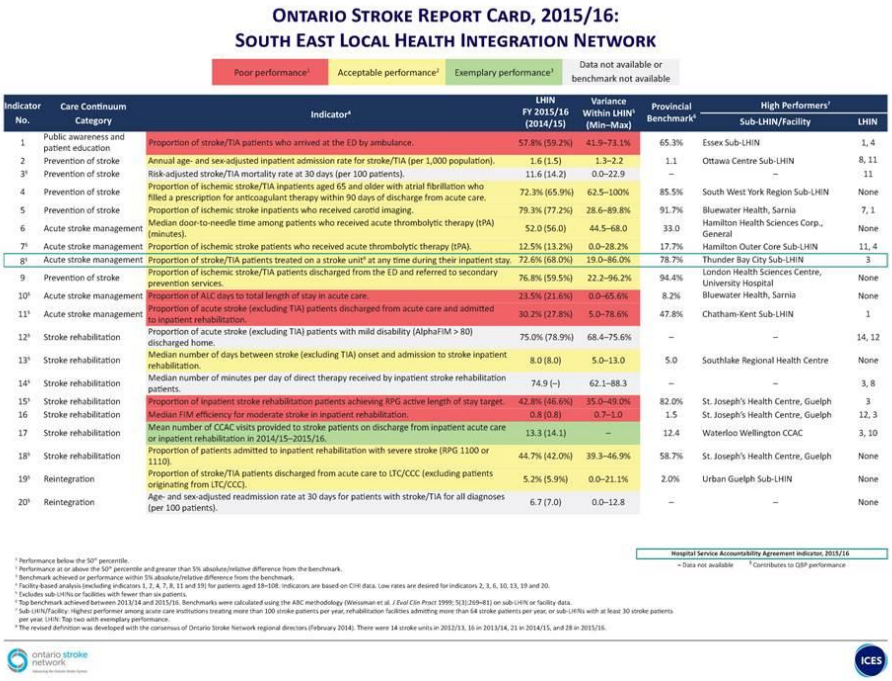
The Acute Stroke Unit, located on BGH's 1 East inpatient unit includes a specialized team of doctors, nurses, therapists and others, who work with the patient and their family to determine the next steps for recovery. Upon discharge, patients receive care within their community.

A collective effort

The project has been a joint collaboration between the PSFDH and BGH teams, the Stroke Network of Southeastern Ontario and the South East Local Health Integration Network.

The group includes patient advisors from both hospitals. Linda Weese from Mallorytown, and Joan Moloughney from Westport, have each survived strokes and become passionate advocates for improving the stroke survivor experience. Watch this video for their story!

More People in the South East Region Now Survive & Recover after a Stroke June 23, 2017



ONTARIO STROKE REPORT CARD, 2015/16:
SOUTH EAST LOCAL HEALTH INTEGRATION NETWORK

Poor performance[1] | Acceptable performance[2] | Exemplary performance[3] | Data not available or benchmark not available

Indicator No.	Care Continuum Category	Indicator[4]	LHIN FY 2015/16 (2014/15)	Variance Within LHIN[5] (Min–Max)	Provincial Benchmark[6]	High Performers[7] Sub-LHIN/Facility	High Performers[7] LHIN
1	Public awareness and patient education	Proportion of stroke/TIA patients who arrived at the ED by ambulance.	57.8% (59.2%)	41.9–73.1%	65.3%	Essex Sub-LHIN	1, 4
2	Prevention of stroke	Annual age- and sex-adjusted inpatient admission rate for stroke/TIA (per 1,000 population).	1.6 (1.5)	1.3–2.2	1.1	Ottawa Centre Sub-LHIN	8, 11
3[8]	Prevention of stroke	Risk-adjusted stroke/TIA mortality rate at 30 days (per 100 patients).	11.6 (14.2)	0.0–22.9	–	–	11
4	Prevention of stroke	Proportion of ischemic stroke/TIA inpatients aged 65 and older with atrial fibrillation who filled a prescription for anticoagulant therapy within 90 days of discharge from acute care.	72.3% (65.9%)	62.5–100%	85.5%	South West York Region Sub-LHIN	None
5	Prevention of stroke	Proportion of ischemic stroke inpatients who received carotid imaging.	79.3% (77.2%)	28.6–89.8%	91.7%	Bluewater Health, Sarnia	7, 1
6	Acute stroke management	Median door-to-needle time among patients who received acute thrombolytic therapy (tPA) (minutes).	52.0 (56.0)	44.5–68.0	33.0	Hamilton Health Sciences Corp., General	None
7[9]	Acute stroke management	Proportion of ischemic stroke patients who received acute thrombolytic therapy (tPA).	12.5% (13.2%)	0.0–28.2%	17.7%	Hamilton Outer Core Sub-LHIN	11, 4
8[9]	Acute stroke management	Proportion of stroke/TIA patients treated on a stroke unit[9] at any time during their inpatient stay.	72.6% (68.0%)	19.0–86.0%	78.7%	Thunder Bay City Sub-LHIN	3
9	Prevention of stroke	Proportion of ischemic stroke/TIA patients discharged from the ED and referred to secondary prevention services.	76.8% (59.5%)	22.2–96.2%	94.4%	London Health Sciences Centre, University Hospital	None
10[8]	Acute stroke management	Proportion of ALC days to total length of stay in acute care.	23.5% (21.6%)	0.0–65.6%	8.2%	Bluewater Health, Sarnia	None
11[8]	Acute stroke management	Proportion of acute stroke (excluding TIA) patients discharged from acute care and admitted to inpatient rehabilitation.	30.2% (27.8%)	5.0–78.6%	47.8%	Chatham-Kent Sub-LHIN	1
12[8]	Stroke rehabilitation	Proportion of acute stroke (excluding TIA) patients with mild disability (AlphaFIM > 80) discharged home.	75.0% (78.9%)	68.4–75.6%	–	–	14, 12
13[8]	Stroke rehabilitation	Median number of days between stroke (excluding TIA) onset and admission to stroke inpatient rehabilitation.	8.0 (8.0)	5.0–13.0	5.0	Southlake Regional Health Centre	None
14[8]	Stroke rehabilitation	Median number of minutes per day of direct therapy received by inpatient stroke rehabilitation patients.	74.9 (–)	62.1–88.3	–	–	3, 8
15[8]	Stroke rehabilitation	Proportion of inpatient stroke rehabilitation patients achieving RPG active length of stay target.	42.8% (46.6%)	35.0–49.0%	82.0%	St. Joseph's Health Centre, Guelph	3
16	Stroke rehabilitation	Median FIM efficiency for moderate stroke in inpatient rehabilitation.	0.8 (0.8)	0.7–1.0	1.5	St. Joseph's Health Centre, Guelph	12, 3
17	Stroke rehabilitation	Mean number of CCAC visits provided to stroke patients on discharge from inpatient acute care or inpatient rehabilitation in 2014/15–2015/16.	13.3 (14.1)	–	12.4	Waterloo Wellington CCAC	3, 10
18[8]	Stroke rehabilitation	Proportion of patients admitted to inpatient rehabilitation with severe stroke (RPG 1100 or 1110).	44.7% (42.0%)	39.3–46.9%	58.7%	St. Joseph's Health Centre, Guelph	None
19[8]	Reintegration	Proportion of stroke/TIA patients discharged from acute care to LTC/CCC (excluding patients originating from LTC/CCC).	5.2% (5.9%)	0.0–21.1%	2.0%	Urban Guelph Sub-LHIN	None
20[8]	Reintegration	Age- and sex-adjusted readmission rate at 30 days for patients with stroke/TIA for all diagnoses (per 100 patients).	6.7 (7.0)	0.0–12.8	–	–	None

Hospital Service Accountability Agreement indicator, 2015/16

– = Data not available [8] Contributes to QBP performance

[1] Performance below the 50th percentile.
[2] Performance at or above the 50th percentile and greater than 5% absolute/relative difference from the benchmark.
[3] Benchmark achieved or performance within 5% absolute/relative difference from the benchmark.
[4] Facility-based analysis (excluding indicators 1, 2, 4, 7, 8, 11 and 19) for patients aged 18–108. Indicators are based on CIHI data. Low rates are desired for indicators 2, 3, 6, 10, 13, 19 and 20.
[5] Excludes sub-LHINs or facilities with fewer than six patients.
[6] Top benchmark achieved between 2013/14 and 2015/16. Benchmarks were calculated using the ABC methodology (Weissman et al. *J Eval Clin Pract* 1999; 5(3):269–81) on sub-LHIN or facility data.
[7] Sub-LHIN/Facility: Highest performer among acute care institutions treating more than 100 stroke patients per year, rehabilitation facilities admitting more than 64 stroke patients per year, or sub-LHINs with at least 30 stroke patients per year. LHIN: Top two with exemplary performance.
[9] The revised definition was developed with the consensus of Ontario Stroke Network regional directors (February 2014). There were 14 stroke units in 2012/13, 16 in 2013/14, 21 in 2014/15, and 28 in 2015/16.

ontario stroke network | ICES

A recently released **provincial report** indicates that patients and families from across the South East Local Health Integration Network (LHIN) are benefiting from improved access to stroke care. According to new data released by the Institute for Clinical Evaluative Sciences (ICES) and the Ontario Stroke Network (OSN), the South East LHIN showed the biggest improvement in 30-day mortality rate following an acute stroke.

The **SE Report Card** serves as a positive indication that the quality of stroke care continues to improve in this region and highlights the significant impact of access to stroke unit care now available for all residents of the South East LHIN in Belleville, Brockville and Kingston.

.

*"I was so pleased to be involved in advising on the stroke unit in Brockville. Our family was involved in the development of a **video** on the importance of acute stroke unit care. We were able to reinforce the importance of the knowledge and experience of a dedicated team and how this helps others to become "survivors". The recent decrease in mortality rate in our local area from 17 to 4 per cent is amazing and I am proud to have been a part of this endeavor." – Linda Weese, Stroke Survivor, Mallorytown*

Learn More: http://www.southeastlhin.on.ca/Page.aspx?id=7C5F84220E7940C7BACE02BC36B83A7C