ACUTE STROKE CARE IN MINNESOTA

Minnesota Acute Stroke Treatment System Survey 2006

Summary Report

December 2006

MINNESOTA MDH DEPARTMENT OF HEALTH

HDSP Minnesota Heart Disease & Stroke Prevention Unit

MINNESOTA STROKE PARTNERSHIP Partnering to Prevent Stroke

Key Findings

Emergency Department Stroke Care Capacity

1. Approximately 40% of hospitals do not have written standing orders or protocols for their emergency department regarding acute stroke diagnosis and treatment. Almost half of rural and small hospitals do not have standing orders.

2. Only 10 hospitals in the state have an emergency department protocol that includes the use of telemedicine.

3. Only 1 in 9 hospitals have a designated stroke team available around the clock.

4. Most hospitals have expedited laboratory services around the clock or during business hours.

5. Nearly 9 out of 10 hospitals have CT scan and a CT technician available around the clock, but almost 1 in 6 small hospitals and/or rural hospitals do not.

6. Most hospitals reported that they have access to a neurologist for stroke consults.

7. While over half of hospitals do not provide coordinated care beyond the emergency physician's evaluation, nearly all report being prepared to transfer the patient to a hospital with greater stroke care capacity.

Inpatient Care Stroke Care Capacity

1. 56% of hospitals do not have a written protocol for inpatient management and care for stroke patients.

2. Only 28% of all hospitals have a "stroke code" or a process for rapid treatment of inpatient strokes.

3. Approximately 20% of hospitals have a designated ward for stroke patients; very few rural or small hospitals do.

Quality Improvement for Stroke Care

1. As of April 2006, seven hospitals were certified by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) as a Primary Stroke Center. All six are based in the Twin Cities.

2. Twelve hospitals indicated that they had plans for becoming JCAHO-certified; most of these were larger bed hospitals, evenly split between rural and metro areas.

3. Of the remaining hospitals who did not intend on becoming certified, only a handful (n=5) reporting meeting Brain Attack Coalition recommendations for a primary stroke center.

4. More than half of all hospitals reported that their staff did not have sufficient opportunity to receive at least eight contact hours per year of stroke education and training. This proportion was higher among rural hospitals (60%) versus metro hospitals (11%) and in the smallest facilities (71%) versus the largest facilities (14%).

5. Only 1 in 5 hospitals provide public education programs on stroke for their communities.

6. About one-third of hospitals have a system for collecting quality improvement data – but only 26% of rural hospitals do, compared to 74% of metro hospitals.

7. Most hospitals do not have a stroke champion within their hospital (71%).

8. When asked about priorities for improving stroke care, the answers reported with greatest frequency included:
   a. Development of care protocols or standing orders (31%)
   b. Improvements in early identification and assessment of stroke (20%)
   c. Staff education on stroke (19%)
   d. Rapid intervention and tPA use (14%) and
   e. Rapid transfer of stroke patients (13%).

9. Only 61% (n = 72) hospitals currently report administering tPA at their facility. The proportion of hospitals administering tPA differs by geography (only 56% of rural hospitals compared to 89% of metro hospitals) and size (only 49% of very small hospitals compared to 89% of the largest hospitals).

Contents

Introduction

In 2004, 2,540 people in Minnesota died due to stroke, making it the third highest cause of death in the state.[1] Moreover, there were over 11,500 hospitalizations for stroke in 2003.[2] Estimated costs for stroke hospitalizations reach $53 million. In sum, the burden of stroke in Minnesota due to its incidence, mortality rate, and costs is unacceptably high.

In order to plan and implement both efficient and strategic interventions for reducing the burden of stroke in Minnesota, it is necessary to understand the current capacity and system for stroke care. We lack this baseline level of information on many fronts, not least of which is the acute stroke care delivery system. Because systems level improvements in the acute care setting (namely, hospitals) have a potentially high impact on the burden of stroke, we chose to assess the capacity for stroke care in Minnesota hospitals.

This was the first time a formal statewide assessment of the state of acute hospital stroke care in Minnesota has ever been conducted. The purpose of this assessment was:

- To obtain an understanding of acute stroke care capacity in Minnesota hospitals.
- To provide valid empirical data as a basis for initiating improvements and coordination in care within hospitals and across competing (or isolated) health systems.

Methods

The survey was developed in collaboration with selected members of the Minnesota Stroke Partnership with clinical expertise in stroke care. Questions were included based on the Brain Attack Coalition recommended checklist for stroke centers and recommendations from the American Stroke Association Stroke Systems of Care planning committee for Minnesota. The final survey was approved by the Minnesota Department of Health Institutional Review Board in October 2005.

The list of recipient hospitals was obtained from the Minnesota Department of Health Facility and Provider Compliance Division web site. This list was cross-checked with the list of hospitals on the Minnesota Hospital Association web site. Hospitals that serve children primarily or are otherwise specialty care facilities were excluded from this assessment frame. Every hospital was contacted by telephone to determine the optimal recipient of the survey. Recipients were mostly directors of nursing or quality improvement. Additionally, a survey was sent to the hospital medical director.

The survey was sent to 133 acute care hospitals in January 2006 with a joint cover letter from the Minnesota Stroke Partnership and the Minnesota Department of Health. In addition, respondents were given the option to complete the survey online. Two follow-up letters were sent to hospitals not responding within six weeks. Hospitals which did not return the second follow-up survey were contacted to conduct the survey over the telephone. The survey was closed in April 2006.

Results

A total of 120 (90%) of 133 hospitals responded to the survey. A total of 19 "Metro" (located within the seven-county metropolitan area around Minneapolis and St. Paul) area hospitals responded versus 101 rural (non-metro) hospitals. Data are presented by size of hospital (according to number of licensed beds) and location (metro vs. rural). Hospitals were grouped into the following categories: <50 beds (n = 75), 50-99 beds (n = 17), 100-249 (n = 9) and 250 or more beds (n = 19).

1 Source: Minnesota Department of Health, Center for Health Statistics.

2 Source: Minnesota Department of Health, Minnesota Hospital Discharge Dataset. Note: This figure does not include stroke admissions at Rochester Methodist and St. Mary's Medical Center in Rochester, MN, nor either of the two Veterans Administration hospitals in Minnesota, thus the actual number of annual stroke hospitalizations is likely much higher than stated.

Of the 13 hospitals not responding to the survey, 11 have fewer than 100 beds, and 11 are located outside the seven-county metropolitan area around Minneapolis and St. Paul.

Summary Results

Emergency Care Questions	
Does your hospital have written Emergency Department care protocols (standing orders) for acute stroke diagnosis/ treatment?	57% (68)
Does your Emergency Department staff receive training in care protocols for acute stroke diagnosis/treatment?	68% (81)
Does your hospital have a designated Stroke Team available 24/7?	13% (16)
Can your hospital provide laboratory services 24/7 with expedited results within 45 minutes?	93% (112)
Does your hospital have CT scan and CT technician available 24/7?	86% (101)
Does your hospital have access to consultation with a neurologist for stroke cases?	87% (103)
Is there a preference on the method of transport (ambulance, helicopter, other vehicle) of stroke patients?	58% (68)
Inpatient Care Questions	
Does your hospital have written inpatient protocol for management/care ("critical pathways" or "standing orders") for stroke patients?	42% (50)
Is there a "stroke code" in your hospital, or is there a process in place for the rapid treatment of inpatient strokes?	28% (33)
Does your hospital provide coordinated stroke care beyond the emergency department physician's evaluation?	47% (55)
Does your hospital have a designated ward for stroke patients?	18% (21)
Quality Improvement, Education, and Primary Stroke Center Certification	
Is your hospital certified by JCAHO as a Primary Stroke Center?	5% (6)
Does your hospital have a strategic plan for becoming a JCAHO-certified Primary Stroke Center?	11% (12)
If you are not intending on becoming a JCAHO certified Primary Stroke Center, does your hospital meet Brain Attack Coalition recommendations for a primary stroke center?	5% (5)
Does your stroke center (or other) staff have sufficient opportunity to receive at least eight contact hours per year for stroke education and training?	37% (44)
Does your hospital present a minimum of two (2) programs per year educating the public on stroke risk factor reduction and signs/symptoms of acute stroke?	20% (24)
Does your hospital have a database or system to collect data and to track quality improvement activity related to their stroke patients?	34% (40)
Do you have a "stroke champion" in your hospital?	26% (31)
Does your hospital currently administer IV rtPA for acute stroke treatment?	61% (71)
The Minnesota Stroke Committee feels that a stroke care network among the hospitals in Minnesota would be effective in improving stroke outcomes. Would your hospital be willing to consider voluntary participation in this network?**	93% (112)

* Number responding to any given question is varied; the value for percent responding yes is among all non-missing responses to each individual question.

** Cumulative percent and number responding Maybe (42%), Probably (31%) or Definitely (21%).

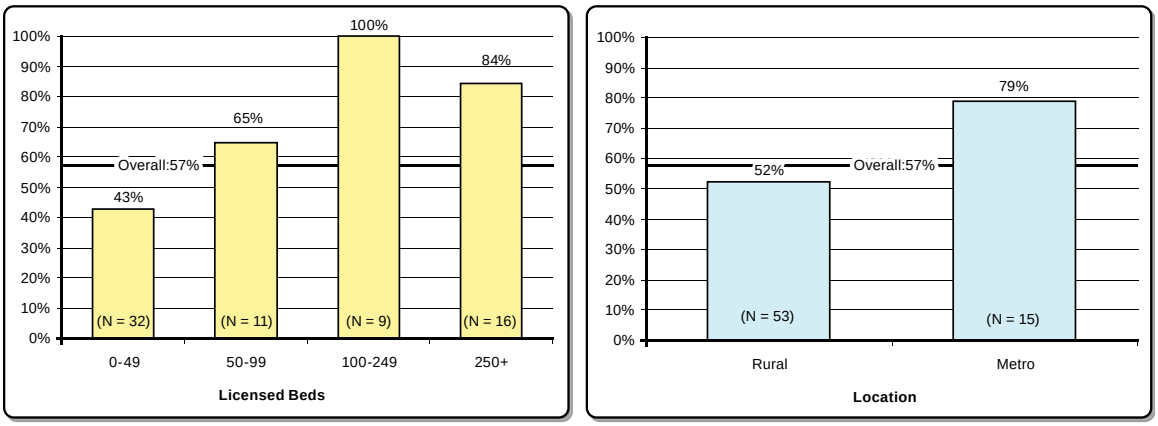
Emergency Care

Question 1:
Does your hospital have written Emergency Department care protocols (standing orders) for acute stroke diagnosis/treatment?

Overall, 68 out of 120 hospitals (57%) indicated that they have written emergency department (ED) care protocols for acute stroke diagnosis or and treatment. All but three (16 out of 19, 80%) of the largest hospitals responded that they had written ED protocols for acute stroke care. In contrast, only 43% of the smallest hospitals (<50 beds) reported having such protocols. While 79% of metro hospitals have acute care stroke protocols, just over half (52%) of rural hospitals do.

Of the hospitals with written stroke care protocols and answered the follow-up question, "Does the Emergency Department protocol include telemedicine?", 10 (17%) responded "yes."

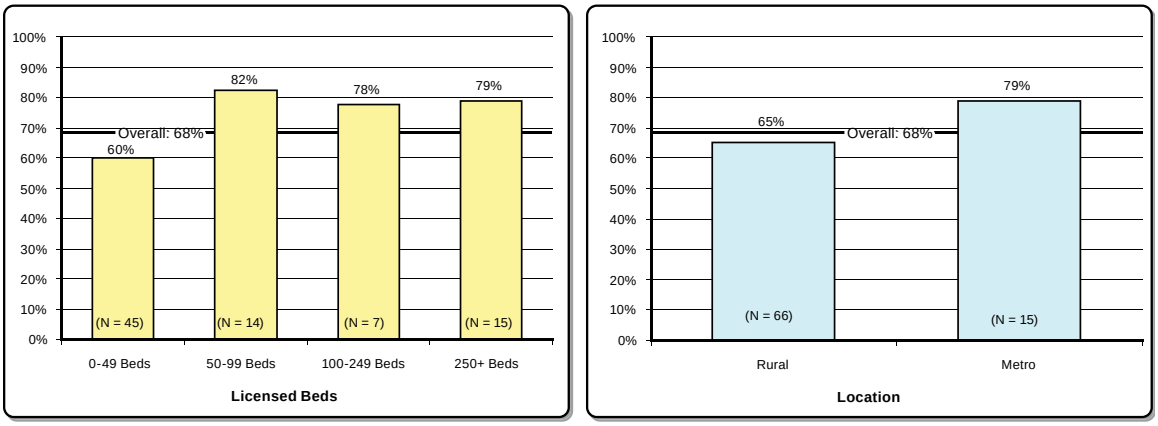
Figure 1. Percent of Minnesota hospitals with written emergency department care protocols for acute stroke diagnosis or treatment.



Question 2:
Does your Emergency Department staff receive training in care protocols for acute stroke diagnosis/ treatment?

Overall, 81 out of 120 hospitals (68%) indicated that emergency department staff receive training in care protocols for acute stroke diagnosis or and treatment. Approximately 80% of hospitals with 50 beds or more have emergency department staff who receive training for acute stroke diagnosis and treatment. In contrast, 60% of the smallest hospitals (<50 licensed beds) reported that their ED staff received such training. While ED staff in all but four metro hospitals (15 out of 19) receive stroke treatment training, staff in just 65% of rural hospitals do.

Figure 2. Percent of Minnesota hospitals whose emergency department staff receive training in care protocols for acute stroke diagnosis or treatment.

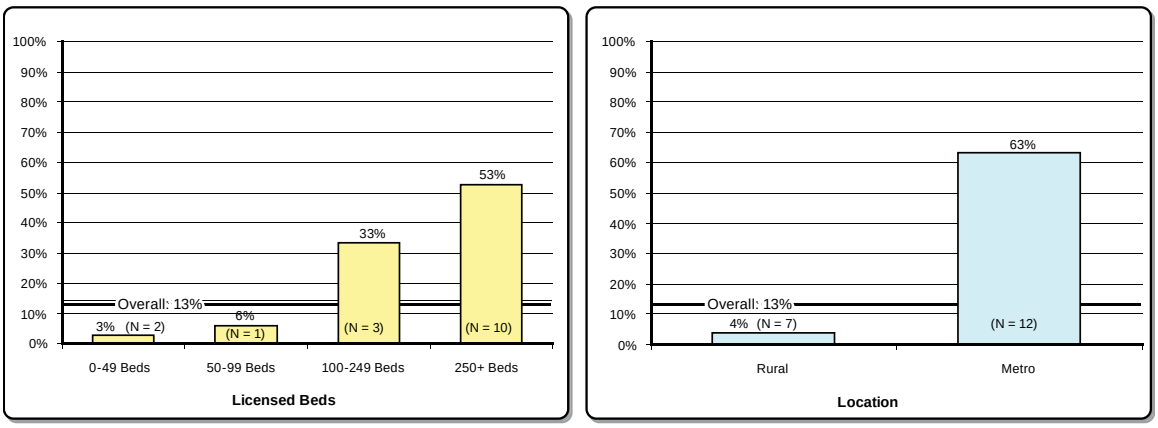


Question 3:

Does your hospital have a designated Stroke Team available 24/7?

Overall, 16 out of 120 hospitals (13%) have a designated stroke team available around the clock. Not surprisingly, 10 out of these 16 were large hospitals (250+ beds), half of all the large hospitals. Most of the hospitals with a stroke team are based in the Twin Cities metropolitan area.

Figure 3. Percent of Minnesota hospitals with a designated stroke team available 24/7.

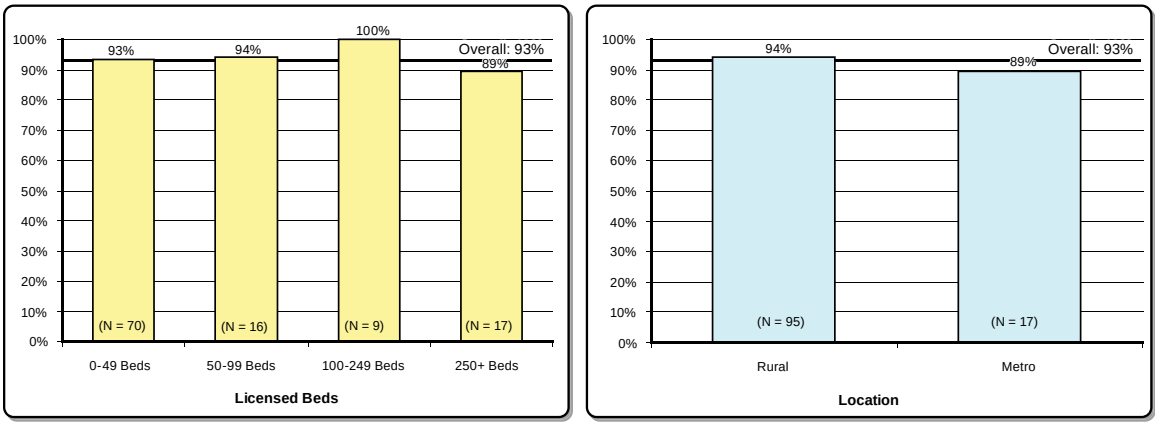


Question 4:

Can your hospital provide laboratory services 24/7 with expedited results within 45 minutes?

Overall, 112 out of 120 hospitals (93%) reported the ability to provide around-the-clock laboratory services with expedited results within 45 minutes. Essentially no differences between hospitals based on size or location on this capacity were found.

Figure 4. Percent of Minnesota hospitals with 24/7 laboratory services able to provide expedited results within 45 minutes.

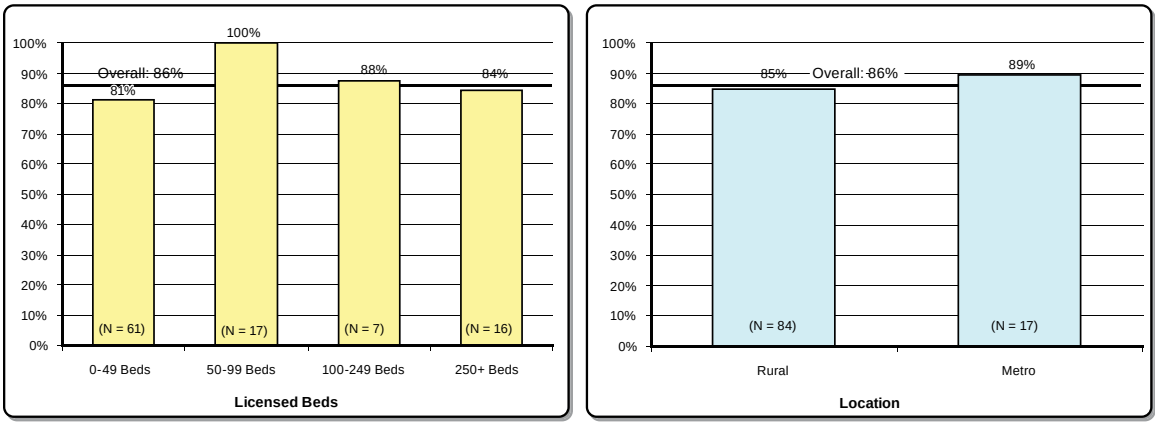


Question 5:

Does your hospital have CT scan and CT technician available 24/7?

Overall, 101 out of 118 hospitals (86%) report the presence of CT scan and a technician available around-the-clock. Among rural hospitals, 15 out of 99 (15%) do not have CT scan and a CT technician available around-the-clock, compared to 2 out of 19 (11%) of metro hospitals. A few hospitals (n = 4) have a CT technician available only certain hours of the day.

Figure 5. Percent of Minnesota hospitals with CT scan and CT technician available 24/7.

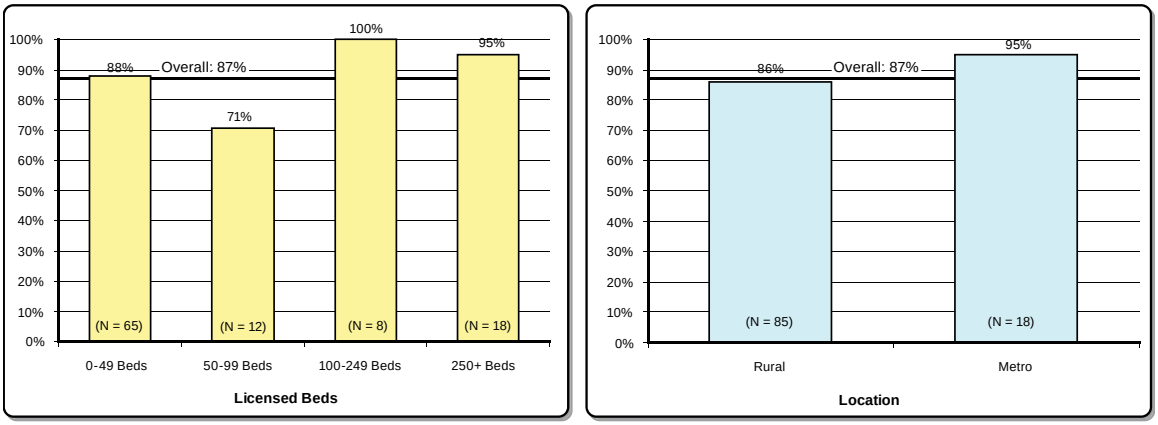


Question 6:

Does your hospital have access to consultation with a neurologist for stroke cases?

Overall, 103 out 118 hospitals (87%) indicated that they have access to a neurologist for consultation on stroke cases. Of the 15 hospitals who do not have access (or did not know that whether they had access) to a neurologist for consultation on stroke cases, all but one were rural hospitals, and four hospitals said they have access to a neurologist consultation during specific hours of the day.

Figure 6. Percent of Minnesota hospitals with access to a neurologist for stroke cases.



Question 7:

If you typically transfer your stroke patients to another hospital, please provide the name of that hospital (or hospitals, in order of preference):

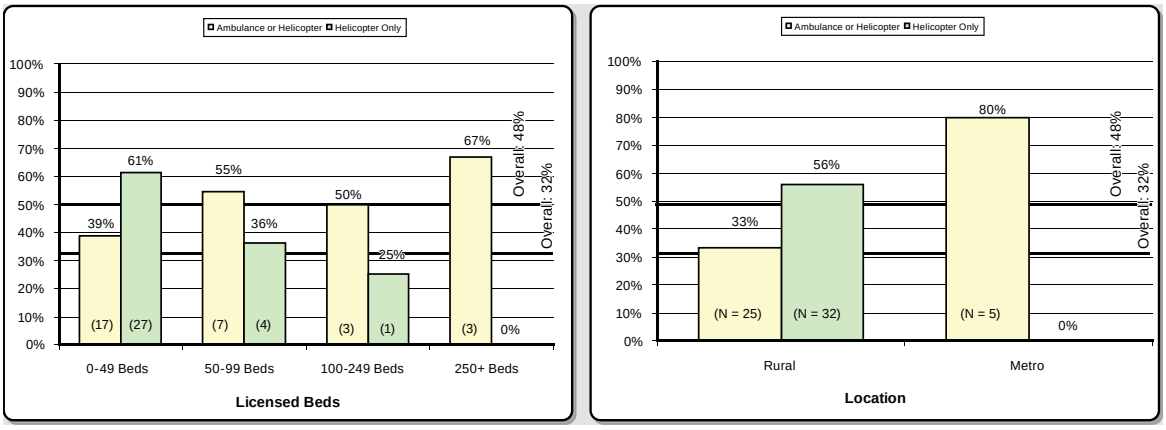
Results from this question are specific to individual hospitals. These results are kept out of this report and will be retained for future analysis and technical assistance.

Question 8:

Is there a preference on the method of transport (ambulance, helicopter, other vehicle) of stroke patients?

Overall, 68 out of 120 hospitals (58%) indicated a preference on the method of transport of their stroke patients. Of these, 32 (52% of hospitals responding to follow-up question) prefer use of helicopter, while 30 (48%) use either ambulance or helicopter for transport.

Figure 7. Preferred methods of transport of stroke cases by Minnesota hospitals.



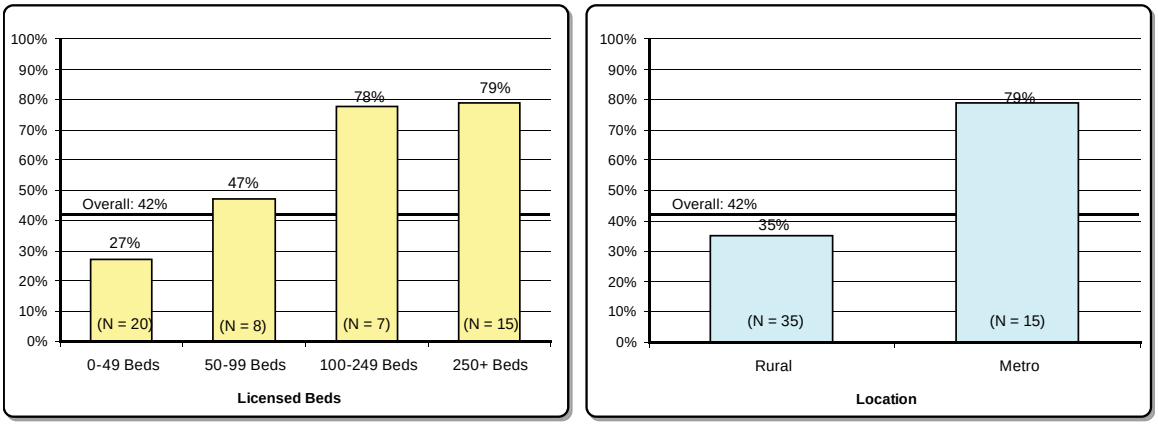
Inpatient Care

Question 9:

Does your hospital have written inpatient protocol for management/care ("critical pathways" or "standing orders") for stroke patients?

Overall, 50 out of 119 hospitals (42%) indicated that they have a written inpatient protocol for management of stroke patients. Approximately 27% of small hospitals (<50 beds) and medium-size hospitals (50-99 beds) have such protocols. Just over one-third (35%) of rural hospitals have such protocols compared to 15 of 19 (79%) metro hospitals.

Figure 8. Percent of Minnesota hospitals with access written inpatient protocols for management and care for stroke patients.

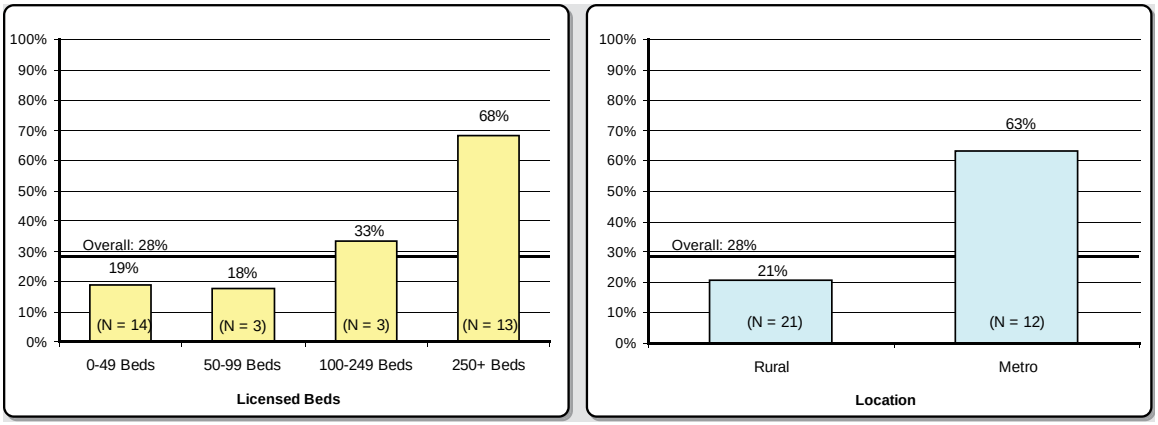


Question 10:

Is there a "stroke code" in your hospital, or is there a process in place for the rapid treatment of inpatient strokes?

Overall, 33 out of 120 hospitals (28%) have a "stroke code" in place. While 68% (13 out of 19) of the largest hospitals (250+ beds) have a stroke code, 14 of 74 (19%) of small hospitals (<50 beds) do, 3 out of 17 (18%) of medium-sized hospitals (50-99 beds), and 3 out of 9 (33%) larger hospitals (100-249 beds) have a stroke code. Approximately 21% of rural hospitals have a stroke code compared to 12 of 19 (63%) metro hospitals.

Figure 9. Percent of Minnesota hospitals with a "stroke code" or process in place for rapid treatment of inpatient strokes.

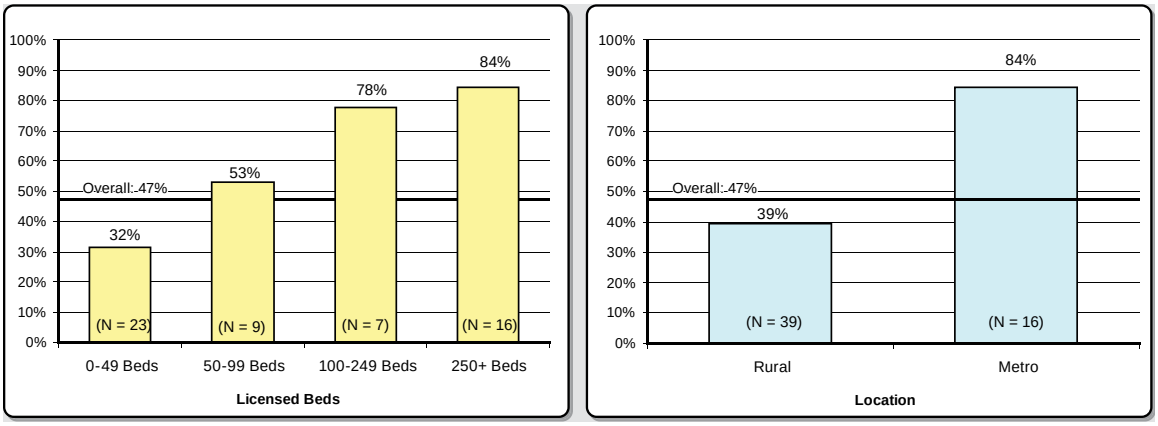


Question 11:

Does your hospital provide coordinated stroke care beyond the emergency department physician's evaluation?

Overall, 55 out of 118 hospitals (47%) provide coordinated stroke care beyond the emergency department physician's evaluation. The majority of the hospitals which do not provide coordinated stroke care (56 out of 60) have fewer than 100 beds; 58 out of 60 of these hospitals are rural. Among rural hospitals, 39 (39%) do provide coordinated care for stroke patients beyond the emergency physician's evaluation. Nearly every hospital which indicated that they did not provide such coordinated stroke care did report that they were prepared to transfer the patient to an appropriate hospital for such care.

Figure 10. Percent of Minnesota hospitals providing coordinated stroke care beyond the emergency department physician's evaluation.

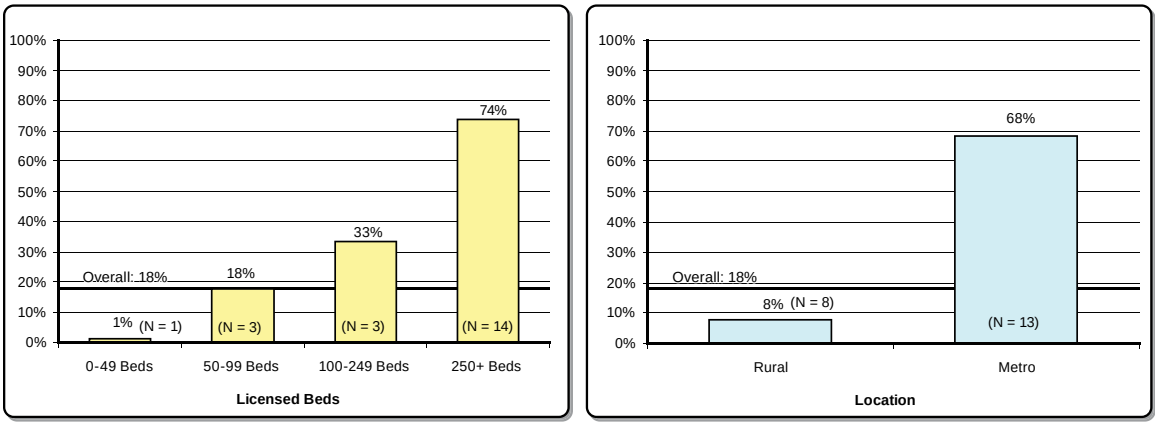


Question 12:

Does your hospital have a designated ward for stroke patients?

Overall, 21 out of 120 hospitals (18%) have a designated ward for stroke patients. While 14 out of 19 (74%) of the largest hospitals (250+ beds) have a designated stroke ward, very few smaller hospitals do. Only 8 out of 100 rural hospitals (8%) compared to 13 out of 19 (68%) metro hospitals have a designated ward for stroke patients.

Figure 11. Percent of Minnesota hospitals with a designated ward for stroke patients.



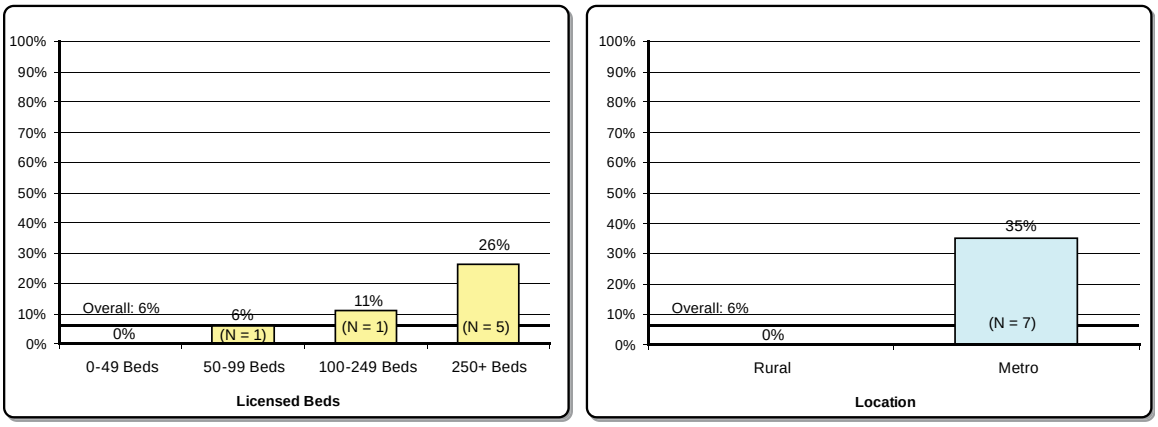
Quality Improvement, Education, and Primary Stroke Center Certification

Question 13:

Is your hospital certified by JCAHO as a Primary Stroke Center?

At the time of the survey, there were six hospitals which had been certified by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) as Primary Stroke Centers. An additional 12 hospitals indicated that they had a plan for becoming certified as a Primary Stroke Center. All but one were in hospitals with 100 or more beds, and 5 out of 12 were rural hospitals. Five (5%) hospitals among those not certified nor planning on becoming certified indicated that their hospital met Brain Attack Coalition recommendations for a primary stroke center. Since the completion of the survey, one additional hospital has becoming certified as a Primary Stroke Center at the time of this report.

Figure 12. Percent of Minnesota hospitals certified by JCAHO as a Primary Stroke Center.

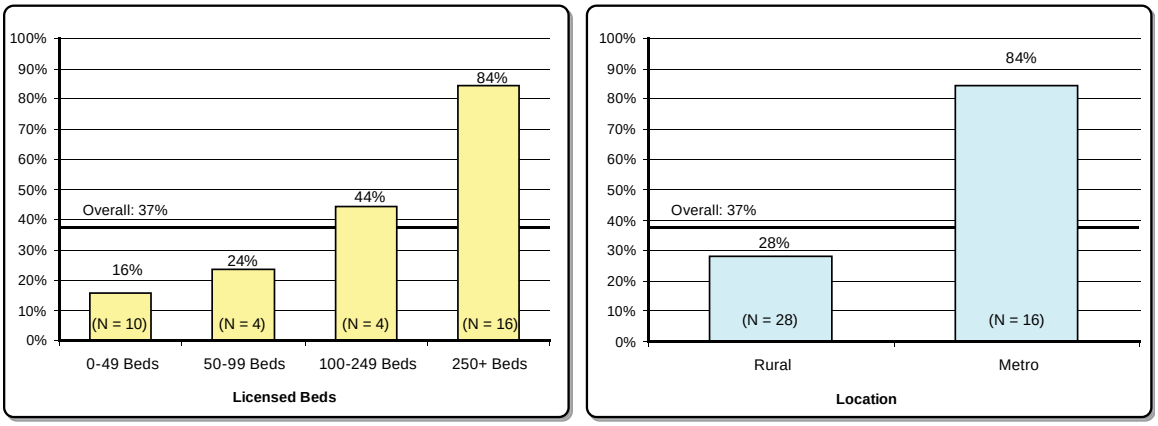


Question 14:

Does your stroke center (or other) staff have sufficient opportunity to receive at least eight contact hours per year for stroke education and training?

Overall, 44 out of 120 hospitals (37%) reported that their staff had sufficient opportunity to receive at least eight contact hours per year for stroke education and training. While staff in 16 out of 19 (84%) of the largest hospitals have sufficient opportunity, staff in 10 out of 63 (16%) of the smallest hospitals have such an opportunity. Additionally, while 12 out of 19 (63%) metro hospitals have stroke education opportunities, 12 out of 99 (12%) of rural hospital staff do.

Figure 13. Percent of Minnesota hospitals whose staff have sufficient opportunity to receive at least eight contact hours per year for stroke education and training.

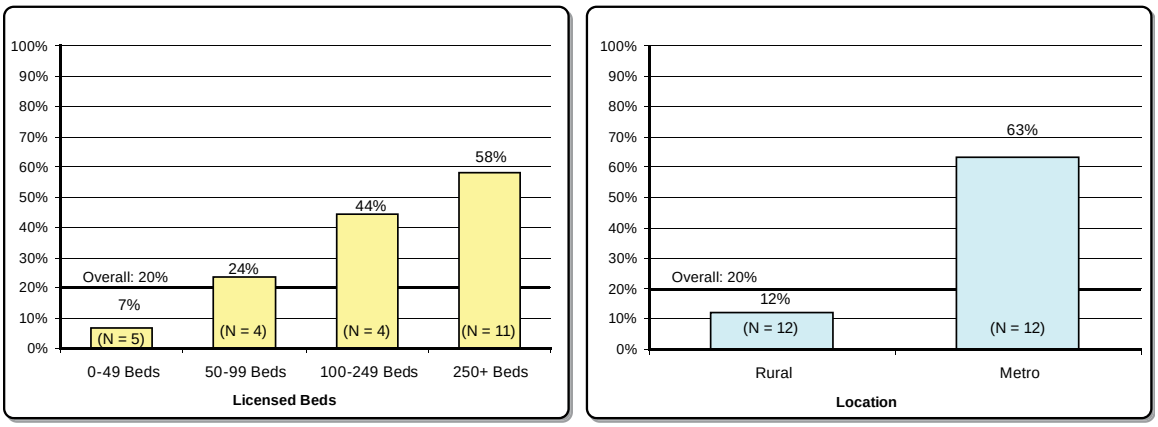


Question 15:

Does your hospital present a minimum of two (2) programs per year educating the <u>public</u> on stroke risk factor reduction and signs/symptoms of acute stroke?

Overall, 24 out of 119 hospitals (20%) provide at least two public education programs on the topic of stroke. About half of hospitals with 100 or more beds provide this type of public education, while 21% of the smallest hospitals (<50 beds) and 12% of medium-sized hospitals (50-99 beds) provide education on this topic with this frequency.

Figure 14. Percent of Minnesota hospitals which present a minimum of two programs per year educating the public on stroke risk factor reduction and signs/symptoms of acute stroke.

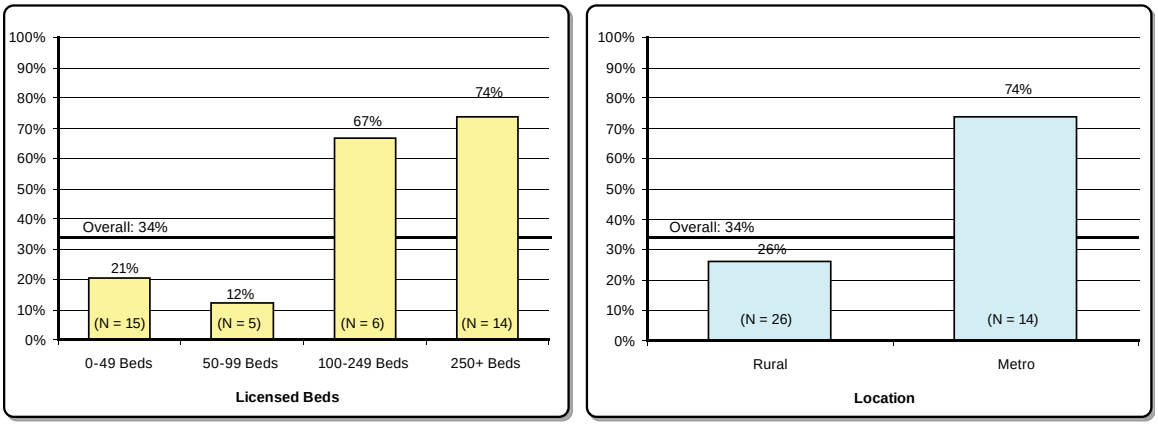


Question 16:

Does your hospital have a database or system to collect data and to track quality improvement activity related to their stroke patients?

Overall, 40 out of 118 (34%) hospitals have a system for quality improvement data tracking for their stroke patients. While 14 out of 19 (74%) of the largest (250+ beds) hospitals have a tracking system, 21% of the smallest hospitals (<50 beds) and 12% of the medium-sized hospitals (50-99 beds) have such a system. Seven hospitals indicated that they were participating in the Get With The Guidelines – Stroke quality improvement program, a product of the American Heart Association.

Figure 15. Percent of Minnesota hospitals with a database or system to collect data and to track quality improvement activity related to their stroke patients.

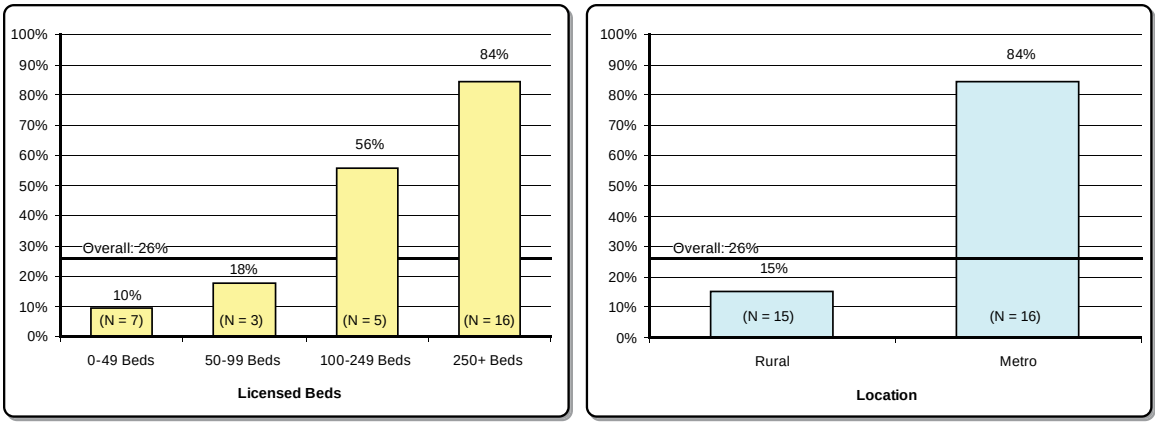


Question 17:

Do you have a "stroke champion" in your hospital?

Overall, 31 out of 118 of hospitals (26%) report having a stroke champion. Very few (11%) hospitals with fewer than 100 beds have a stroke champion. All but three metro hospitals have one, while 15 out of 99 (15%) rural hospitals reported having a stroke champion.

Figure 16. Percent of Minnesota hospitals with a stroke champion.



Question 18:

Please name your top two priorities for improving stroke care at your hospital:

These results were compiled into the most common responses. The most common response was development of protocols, standing orders, or pathways (31% overall). Second most frequently reported was early identification or assessment of stroke patients (20%). The third most common response was staff education on stroke (19%). Other responses included rapid intervention or tPA use (14%) and rapid transfer of stroke patients (13%).

Table. Top priorities for improving stroke care.

Priority	N	Percent
Development of protocols, standing orders, or pathways	37	31%
Early identification or assessment of stroke patients	24	20%
Staff education on stroke	23	19%
Rapid intervention or tPA use	17	14%
Rapid transfer of stroke patients	15	13%
Community education on stroke	11	9%
Improving CT or MRI capabilities	10	8%
JCAHO certification	9	8%
Coordination of Care	8	7%
Quality Improvement (general)	7	6%
Patient education on stroke	6	5%
Quality of care through the continuum, including rehab	6	5%
Development and/or marketing of the stroke team	4	4%
Other	5	3%

Stroke Hospitalizations and tPA Questions

Question 19:

Please estimate the number of stroke discharges in the past six months from your hospital:

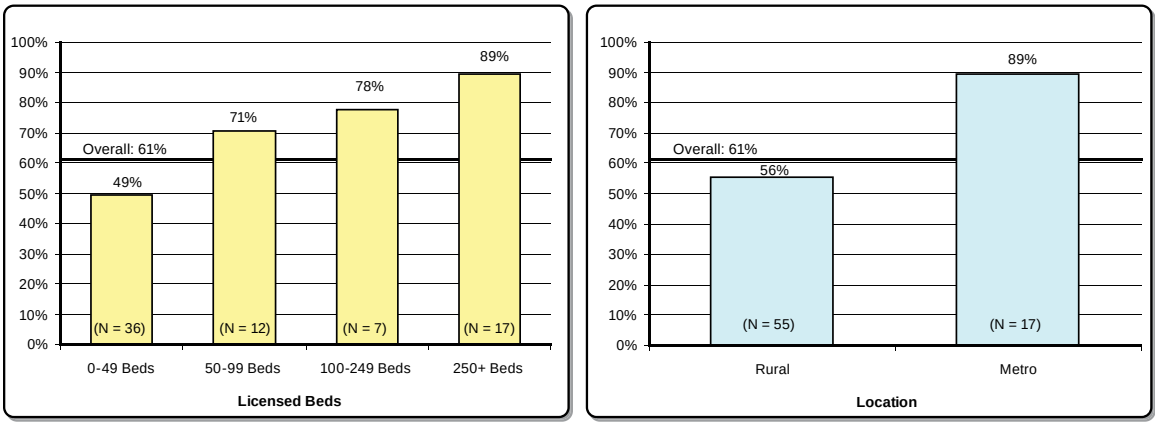
Results from this question were deemed too unreliable to report. Most respondents were unable to provide an estimate.

Question 20:

Does your hospital currently administer IV rtPA for acute stroke treatment?

Overall, 72 out of 118 of hospitals (61%) reported that they administer intravenous tissue plasminogen activator (tPA) for acute stroke treatment. Among small hospitals (<50 beds), 49% administer tPA compared to 17 out of 19 (89%) of large (250+ beds) hospitals. Among rural hospitals, 56 out of 99 (56%) administer tPA compared to 17 out of 19 (89%) metro area hospitals.

Figure 17. Percent of Minnesota hospitals currently administering IV tPA for acute stroke treatment.



Question 21:

Please estimate the number and percent of eligible acute strokes treated by IV rtPA during the past six months:

Results from this question were deemed too unreliable to report. Most respondents were unable to provide an estimate.

Question 22:

The Minnesota Stroke Committee feels that a stroke care network among the hospitals in Minnesota would be effective in improving stroke outcomes. Would your hospital be willing to consider voluntary participation in this network?

Overall, 42% of hospitals indicated that they would definitely or probably be interested in considering voluntary participation in a stroke care network of hospitals. Of the remaining, most (50 out of 58, 86%) indicated "maybe," perhaps because the definition and requirements for such a network were not explicitly explained in this question. Eight hospitals (7%) indicated that they would probably not consider participation in such a network. Nearly all of these were rural and small hospitals.

Discussion

The acute stroke care survey of Minnesota hospitals identified many areas where much work needs to be done in order to build an effective and efficient system of care for stroke patients. Most questions varied across hospital size and in rural versus metropolitan hospitals. Several strengths in the acute (hospital-based) care of stroke patients in Minnesota should be acknowledged.

- Over half of Minnesota hospitals have standing orders or protocols for their emergency care of stroke patients.
- Most hospitals have around-the-clock laboratory services which can provide expedited results.
- Most hospitals have around-the-clock CT scan services.
- Among hospitals which do not provide coordinated post-emergency department care for stroke patients, nearly all have a plan for transferring these patients in place.
- Nearly two-thirds of hospitals administer IV tPA for acute stroke treatment.

This survey identified several areas where improvements in acute stroke care capacity may be considered. The following are suggestions for areas which hospitals individually – or a statewide collaboration of stakeholders – may consider making systems-level changes to improve stroke care in Minnesota.

Emergency Department

1. Develop and share protocols with emergency departments which do not currently have standing orders. Provide technical assistance to all emergency department staff to implement protocols and engage their staff to follow the standing orders; focus on small and/or rural hospitals.

2. Help more rural hospitals include and develop telemedicine ("telestroke") in their emergency department protocols. Foster relationships between appropriate facilities (e.g. hospitals within the same health systems) to help development of telemedicine as a means for improving acute stroke care.

Inpatient Care

1. Develop care protocols and pathways for inpatient care of stroke patients. Share and train hospitals who lack these, particularly for rural hospitals.

2. Provide training and build capacity of hospitals who do not currently have a "stroke code" in place for inpatient events.

Quality Improvement and Education

1. Provide technical assistance and share lessons learned to the hospitals – particularly the rural hospitals – which are planning on becoming JCAHO-certified as Primary Stroke Centers.

2. Develop ongoing stroke training and continuing education opportunities for hospital staff. Focus on rural hospitals. Training topics should include:
    a. Protocol development and implementation
    b. Evidence-based use of tPA
    c. Early and rapid assessment of stroke (NIH Stroke Scale training)
    d. Updates and Current Practices for stroke care

3. Work with more hospital education and outreach departments to develop community-based stroke education efforts, particularly for the month of May (stroke awareness month).

4. Increase the number of hospital emergency departments which administer IV tPA in appropriate and eligible stroke patients.

5. Develop a voluntary hospital network. Define its purpose and infrastructure. Collaborate with multiple partners, including Stratis Health, Minnesota Hospital Association, Office of Rural Health and Primary Care (Minnesota Department of Health), and the Minnesota Stroke Partnership in its development, implementation, and maintenance.

Project Limitations

There are some limitations this survey which should be considered. Accuracy of responses was limited to respondents' knowledge of stroke practices and capacity. It is unknown to what extent respondents queried more informed colleagues to answer questions for which they were unsure. In addition, self-reported information has the potential for bias towards positive answers when the opposite may be true. Moreover, none of the responses were confirmed by external review or formal inquiry with the exception of identification of Primary Stroke Center certification, which was confirmed through identification on the JCAHO website.

On question #6, most hospitals responded positively that they had 24-hour access to a neurologist for consultation acute stroke cases. However, this question should have specified "stroke specialist" or "neurologist with specialty training in stroke." Moreover, although this question was based in the Emergency Department section, the question language should have specified "acute stroke" or "emergency stroke" cases, as respondents may not have answered this question with this context in mind. Based on anecdotal evidence, it is doubtful that 9 out of 10 Minnesota hospitals truly have around-the-clock access to a stroke specialist. These results will be examined in future collaborations and surveys.

Although there are limitations to this survey, these data are valuable towards planning changes and developing a coordinated system of stroke care in Minnesota.

Conclusions

The results of this assessment will guide the Minnesota Department of Health and the Minnesota Stroke Partnership in planning for systems-level intervention and programs to improve acute stroke care in Minnesota. In addition, we hope that hospitals take these results and be motivated to make appropriate changes in their health systems to improve the quality of care for their stroke patients.

For more information about this survey or the Minnesota Stroke Partnership, please contact the Minnesota Heart Disease and Stroke Prevention Unit at (651) 201-5412.

Acknowledgements

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Appendix A. Minnesota Acute Stroke Treatment System Survey 2006

MINNESOTA MDH DEPARTMENT OF HEALTH

HDSP Minnesota Heart Disease & Stroke Prevention Unit

MINNESOTA STROKE PARTNERSHIP Partnering to Prevent Stroke

Minnesota Acute Stroke Treatment System Survey 2006

Please Return by: January 31, 2006

Hospital Name: _____

Hospital Location (City & County): _____

Contact Person, Telephone:_____

Email: _____

Please complete and submit this survey **on-line at:** www.health.state.mn.us/strokesurvey

Or, mail completed surveys to:
Minnesota Department of Health, Attn: Albert Tsai
P.O. Box 64882
St. Paul, MN 55164

Or, fax completed survey to:
(651) 215-8959
(Attention: Albert Tsai, tel: (651) 281-9896)

Emergency Department Questions	YES	NO	Don't Know	
1) Does your hospital have written Emergency Department care protocols (standing orders) for acute stroke diagnosis/treatment?				If Yes, does Emergency Department protocol include telemedicine? • Yes, currently in protocol • No, but is in future plans • No
2) Does your Emergency Department staff receive training in care protocols for acute stroke diagnosis/treatment?				
3) Does your hospital have a designated Stroke Team available 24/7?				• Stroke Team available specific hours
4) Can your hospital provide laboratory services 24/7 with expedited results within 45 minutes?				• Laboratory services available during business hours
5) Does your hospital have CT scan and CT technician available 24/7?				• CT scan is available specific hours
6) Does your hospital have access to consultation with a neurologist for stroke cases?				• Neurologist consult is available specific hours
7) If you typically transfer your stroke patients to another hospital, please provide the name of that hospital (or hospitals, in order of preference):				
8) Is there a preference on the method of transport (ambulance, helicopter, other vehicle) of stroke patients?				If yes, list method:
Inpatient Hospital Questions	**YES**	**NO**	**Don't Know**	**Other Information** (Please complete when applicable)
9) Does your hospital have written inpatient protocol for management/ care ("critical pathways" or "standing orders") for stroke patients?				
10) Is there a "stroke code" in your hospital, or is there a process in place for the rapid treatment of inpatient strokes?				

11) Does your hospital provide coordinated stroke care beyond the emergency department physician's evaluation? a. If yes, please briefly describe:				If not, is your hospital prepared to transfer the patient to a hospital that does? • Yes • No
12) Does your hospital have a designated ward for stroke patients?				
Quality Improvement, Education, and Stroke Center Questions	**YES**	**NO**	**Don't Know**	**Other Information** (Please complete when applicable)
13) Is your hospital certified by JCAHO as a Primary Stroke Center?				
a. If not, does your hospital have a strategic plan for becoming a JCAHO certified Primary Stroke Center?				
b. If you are *not* intending on becoming a JCAHO certified Primary Stroke Center, does your hospital meet Brain Attack Coalition recommendations for a primary stroke center?				
14) Does your stroke center (or other) staff have sufficient opportunity to receive at least eight contact hours per year for stroke education and training?				
15) Does your hospital present a minimum of two (2) programs per year educating the <u>public</u> on stroke risk factor reduction and signs/symptoms of acute stroke?				
16) Does your hospital have a database or system to collect data and to track quality improvement activity related to their stroke patients?				Is that system GWTG-Stroke? • Yes • No
17) Do you have a "stroke champion" in your hospital?				Please provide his/her name:
18) Please name your top two priorities for improving stroke care at your hospital: a. b.				
Stroke Hospitalizations and rtPA Questions	**YES**	**NO**	**Don't Know**	**Other Information**
19) Please estimate the number of stroke discharges in the past six months from your hospital:				
20) Does your hospital currently administer IV rtPA for acute stroke treatment?				
21) Please estimate the number and percent of eligible acute strokes treated by IV rtPA during the past six months: Number_____ Percent _____				

The **Minnesota Stroke Committee** feels that a stroke care network among the hospitals in Minnesota would be effective in improving stroke outcomes. Would your hospital be willing to consider voluntary participation in this network?

☐ Definitely
☐ Probably
☐ Maybe
☐ Probably not
☐ Definitely not

Thank you for completing this survey! You will receive a summary report after results are compiled.

Acute Stroke Care in Minnesota. Minnesota Acute Stroke Treatment Survey 2006-Summary Report.

Contact Information:
Minnesota Heart Disease and Stroke Prevention Unit
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St. Paul, MN 55101
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