



Royal College of Surgeons
in Ireland



Trinity College Dublin

**National Audit of Stroke Care (NASC)
Irish Heart Foundation in Association with the
Department of Health and Children**

**Results for Phase 1
Organisational Audit: Hospital Services 2006**

**Prepared on behalf of the Irish Heart Foundation National
Stroke Review Group**

by

**The National Audit of Stroke Care Research Team
(Royal College of Surgeons in Ireland and Trinity College Dublin)**

April 2007

**National Audit of Stroke Care
Organisational Audit: Hospital Services 2006**

Report prepared by the National Audit of Stroke Care Research Team

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Acknowledgements

This first National Audit of Stroke Care in the Republic of Ireland was funded by the Irish Heart Foundation in association with the Department of Health and Children. It was conducted by the National Audit of Stroke Care Research Team. The Research Team acknowledge the support and assistance of all 37 participating public acute hospitals in the Republic of Ireland, and in particular the senior administrative and professional staff who participated in the organisational interviews.

We acknowledge the assistance of the Clinical Effectiveness and Evaluation Unit (CEEU) of the Royal College of Physicians London, United Kingdom (RCPUK), on behalf of the Intercollegiate Working Party on Stroke for allowing us the use of the National Sentinel Audit Proforma (2004) and help notes for this study. In particular, we acknowledge the assistance of Dr Anthony Rudd, Programme Director for Stroke, Mrs Alex Hoffman, Stroke Programme Manager, and Ms Calvin Down, Stroke Programme Administrator at the Clinical Effectiveness and Evaluation Unit.

We particularly thank the staff and sites who participated in the pilot study and so allowed us to ensure that the proforma would be applicable in the Irish setting. Ms. Imelda Noone, Clinical Nurse Specialist at St Vincent's University Hospital Dublin provided valuable expertise to the Research Team by participating in data collection and hospital interviews. Thank you to her and her hospital managers for facilitating this aspect of the overall project. Finally, we acknowledge the assistance of the National Hospitals Office, Health Service Executive, through Mr John O'Brien and Dr Mary Hynes, who provided endorsement and support for the organisational and clinical (chart review) aspects of the overall project.

This report forms one component of a larger project to systematically and comprehensively determine the current state and need for stroke care in Ireland. As such, it should be read in conjunction with findings from other projects to be completed in late 2006 and 2007.

Executive Summary

Background and Methods

Stroke is the third leading cause of death and disability worldwide and constitutes a formidable burden of disability for patients, their families, health professionals and the wider community. A local evidence base is essential in planning and evaluating service delivery. In the absence of such information in Ireland, the overall aim of the project was to conduct a national stroke audit of hospital and community stroke services in the Republic of Ireland.

The objective of the audit of hospital based stroke services was to establish the current level and functioning of services available for the care of stroke patients in acute Irish hospitals. This comprised an audit of organisational aspects of stroke care in acute hospitals and a clinical audit of care involving review of clinical case notes for a national sample of patients with stroke. The first of these two audits is described in this report.

All 37 public hospitals who provide acute services to stroke patients were contacted and agreed to participate. A group of senior officials in each hospital (typically the chief executive and a member of the senior physician, nursing and physiotherapy staff) were interviewed as a team. The interview was based on the Organisational Audit Proforma of the Royal College of Physicians London (United Kingdom) (RCPUK) National Sentinel Stroke Audit 2004.

Results and Discussion

These findings present for the first time a national overview of the organisation of hospital based stroke services, and the current level and functioning of services available for the care of stroke patients in acute hospitals in the Republic of Ireland.

Stroke Unit Provision and Organisation of Care

- Stroke services in Ireland were notable by the complete absence, with one exception, of the recommended standard of stroke units for optimal care of patients following stroke. Only one hospital, representing 3% of Irish relevant hospitals, had a stroke unit. This compares with 91% of hospitals in the United Kingdom (Intercollegiate Working Party for Stroke Sentinel Audit UK 2006).
- When surveyed, there were 411 acute stroke inpatients among the 10,399 hospital bed capacity of the 37 hospitals. There were only 12 stroke unit beds nationally. These figures indicate an overall ratio of 0.03 beds per stroke patient in comparison to 0.82 beds per stroke patient in the UK (Intercollegiate Working Party for Stroke Sentinel Audit UK 2006).

Managing Stroke as a Medical Emergency

- Thrombolysis services for stroke patients were not available in Ireland. There is an urgent need to develop arrangements with paramedical services for rapid transfer of patients with suspected stroke to hospital.
- Not all hospitals have access to facilities for brain scanning, MRI or carotid endarterectomy. It is of significant concern that 30% of hospitals did not have routine access to routine CT scanning within 48 hours of stroke, and the level of access to emergency MR scanning was only 41%. The low access to Carotid Doppler scanning within 2 weeks after a TIA, and its non-availability in 14% of sites admitting patients with stroke, is also a cause of serious concern. This issue needs to be addressed so that better acute stroke services can be delivered in Irish hospitals.

Management of Transient Ischaemic Attack (TIA)

- Only 16% of Irish hospitals had TIA services. The UK National Clinical Guidelines for Stroke (Intercollegiate Working Party for Stroke National Clinical Guidelines for Stroke 2004) recommend that patients be seen and a management plan instituted within a week of the onset of symptoms. Improved communication and service infrastructure is needed to establish agreed protocols for managing TIA and stroke between acute and primary care services.

Staffing and Specialist Roles

- In terms of leadership, only one third of hospitals could identify a lead consultant physician for stroke care. Furthermore, this role was recognised with a formal sessional commitment to stroke care in only five centres. Similarly, there were very few specialised nursing positions, with only five clinical nurse specialists in stroke care nationally.
- In terms of provision of the multidisciplinary team necessary to address the many challenges of stroke, there was a lot of variability across hospitals. The overall profile was however, of a very limited and usually non-specialist service with services from some disciplines relatively more frequently available (e.g. occupational therapy, physiotherapy) and others almost non-existent (e.g. clinical psychology).
- Overall, staffing levels and profiles indicate a lot of stroke service provision by interested staff with little opportunity to specialise or consolidate either stroke services or related professional skills.

Processes of Stroke Care

- Only 5 (14%) Irish hospitals had a mobile stroke team in contrast to 23% of hospitals in the UK (Intercollegiate Working Party for Stroke Sentinel Audit UK 2004).
- Team meetings were not generally held for patients who were based outside a stroke unit or generic rehabilitation unit within the acute hospital. This is a concern as early coordination and communication of the care of professionals is important in the delivery of effective multidisciplinary treatment.

- Team meetings did always take place on stroke units and generic rehabilitation units. However, the concern for these is that they were often not truly multidisciplinary and not stroke-specific on the generic rehabilitation unit. While a detailed evaluation of multidisciplinary team needs was not conducted, the absence of clinical psychology and under representation of social work and dietetic professionals are a cause of concern.

Access to Rehabilitation, Community Services and Discharge

- The majority of hospitals (81%) had access to a generic rehabilitation unit, however the majority (two thirds) were off site which, given the complexity of much stroke care, is a cause of concern. Furthermore staffing levels were low. Particularly notable was the very limited access to rehabilitation for younger patients (only five hospitals routinely accept stroke patients under 65 to their rehabilitation unit).
- Discharge from hospital following stroke can be a very difficult time for patients and families. Only eight hospitals provided patients with a named patient contact on discharge to the community.
- There was universal concern among the senior hospital staff interviewed about the lack of availability of community services. There was seen to be no specialised stroke care in the community, with the majority of sites accessing generic services, which would be very limited regarding the delivery of longer-term management for stroke patients.
- Stroke patients under age 65 years were seen to experience particular difficulties in accessing community services.
- Evidence on staff training and information provision made clear that much work needs to be done to provide training opportunities for staff and to improve communication and meet the information needs of stroke patients and their families.

Plans for Stroke Services

- Commitment to improvement in stroke service provision in Ireland was evident not least in the active participation of senior administrative and health professional staff in all relevant centres in this first national organisational audit.
- It was clear that front line staff throughout Ireland, without specific national investment in stroke care, had improvised and set up services in an *ad hoc* way in order to best address the daily challenges of stroke care. While not either a satisfactory or comprehensive solution, these activities can form the basis of a more strategic and clearly resourced service in the future. Most encouraging was the finding that 23 hospitals had already submitted service plans for stroke care to local health service executive (HSE) health managers.
- What is clear from experience elsewhere, particularly the evolving profile of service improvement across the three rounds to date of the Sentinel UK audit, is that improvement can be achieved in a reasonable timeframe through a continuous cycle of investment, evaluation and planning. In view of the evidence of organised stroke unit care, many lives can be saved: extrapolating UK data, it is likely

that 350-500 deaths a year could be saved by the introduction of stroke unit care.

Conclusion

This organisational audit provides comprehensive information for the first time on the current situation regarding hospital-based stroke care in Ireland. Availability of services of proven efficacy for those admitted to hospital with stroke in Ireland is very poor and in marked contrast to the current situation in the UK. There is also considerable variation in access to services. In particular, lack of access to early CT scanning, acute stroke units and identifiable local lead persons with responsibility for developing stroke care need to be addressed as a matter of urgency.

On a positive note, it was encouraging that the majority of hospitals had submitted a formal service plan for stroke services in 2006, suggesting that most had already identified local deficits in the organisation of stroke care and resources to redress these deficits. Staff were clearly enthusiastic and keen to improve services. This enthusiasm needs to be matched by Government action and resources. Commitment and resources now need to be galvanised through an over-arching policy with designated funding and an urgent timeframe for development of stroke services, i.e., a national stroke strategy.

Recommendations

[For further discussion with Review Group]

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Chapter 1 Introduction

Stroke is the third leading cause of death and disability worldwide and constitutes a formidable burden of disability for patients, their carers and the wider community. There were approximately 10,000 acute strokes admitted to hospital in the Republic of Ireland in 2005 (ESRI) and it is estimated that over 30,000 people in Ireland are survivors of stroke, many of whom have significant residual disability including hemiparesis (48%), inability to walk (22%), need for help with activities of daily living (24-53%), clinical depression (32%), and cognitive impairment (33%) (Council on Stroke, IHF, 2001). Many strokes are preventable and recent developments have shown that fast and effective treatment can save brain tissue from further damage and significantly reduce further damage and residual disability. The recent national Audit Office Commission's report in the UK highlighted the disproportionate differences in resourcing and status of coronary heart disease (CHD) against stroke. The annual direct healthcare costs for stroke were £2.8 billion in contrast to £1.9 billion for CHD. The number of inpatient hospital bed days annually were 2.6 million for stroke and 3 million for coronary heart disease. The average length of stay for stroke was 28 days and 7 days for CHD (National Audit Office 2005). However the status awarded to stroke in terms of services has not been commensurate with other leading diseases, such as heart disease. Services for coronary heart disease are well established in Ireland (Coughlan, 2004) however organised stroke care is in its infancy.

The organisation of stroke services has received considerable attention and it is now recognised that the way services are organised can have an important effect on patient outcome (Langhorne & Dennis, 1998). The profile of stroke care in the United Kingdom is increasing and several factors have contributed to this change, including the National Clinical Guidelines for Stroke (2000), which was updated in 2004. The stimulus for these guidelines stemmed from the findings of the first round of the National Sentinel Audit of Stroke (Intercollegiate Working Party for Stroke, 2001-2002), which confirmed suboptimal stroke care. There is now a considerable amount of research evidence supporting the components of an integrated stroke service. Secondary prevention measures considerably reduce the risk of stroke (Elkind, 2005). Most evidence exists for comprehensive stroke units with associated reductions in mortality and length of stay and improved patient outcomes though there is some evidence for the effectiveness of rehabilitation units (Kalra et al, 2000). The early supported discharge team model has been tested in a small number of randomised controlled trials, and while early results support reduced length of stay and better long term patient functional outcomes, the economic analysis of such a model of care is not available (Early Supported Discharge Trialists 2002, Fjaertoft et al, 2005.). Many reports have articulated the unmet service and information needs of stroke patients and their families and carers after discharge from hospital (Martin et al, 2002).

Despite the fact that there is international evidence for over a decade that Stroke Units reduce death and disability by 25% (Langhorne et al, 1993), a fact confirmed by the recent UK National Sentinel Stroke Audit (Rudd et al,

2005), preliminary Irish evidence suggests that hospital services are poorly prepared for this major advance in stroke care (Coughlan, 2004). Community services appear to be under-resourced and ill-focussed to the needs of Irish people with stroke (Noone et al, 2002, Swanton et al, 2004). This is against a background of no overall national or regional policy on stroke within the Irish health services. The Council on Stroke of the Irish Heart Foundation made four principal recommendations to the Irish Government in 2000. These have yet to be adopted.

The report recommended the following:

1. Prevention and health promotion: to develop active programmes for primary, secondary and tertiary prevention for stroke. Primary prevention could most usefully be undertaken in conjunction with the National Cardiovascular Health Strategy. Secondary and tertiary prevention should be based in Stroke Services.
2. Acute treatment and rehabilitation: that in every general hospital admitting patients with acute stroke, people with stroke should be admitted to a Stroke Service under the care of a dedicated specialist(s) in stroke care, associated interdisciplinary team, appropriate diagnostic technology (e.g. CT/MRI) and a clearly defined continuum of care. Access to tertiary services (e.g. carotid endarterectomy) should also be available. Rehabilitation strategies should start from admission and should be continued during the hospital stay.
3. Community rehabilitation: Out-patient rehabilitation should be made available for all patients of all ages in each Health Board area, on the basis of 250-300 patients discharged to the community/year per 250,000 population. These should encompass the full interdisciplinary team with either a domiciliary focus or adequate transportation if provided as out-patient care. Services should be available at any age and the model of the stroke services at Baggot St Hospital (Dublin) should be considered. The activities of the Volunteer Stroke Scheme should be developed and supported.
4. Stroke Register: As stroke is such a devastating and costly illness, and since little data is available on stroke in Ireland, a register of people with acute stroke should be established as a priority, similar to that of the cardiac surgery, coronary care and cancer registries.

It has been a cause of considerable concern to those affected by stroke and professionals involved with stroke that there is a dearth of reliable data on the provision of services for stroke. The proposed project will provide an important advance in quantifying the preparedness of Irish hospitals for modern stroke treatment, as well as providing a nationwide profile. The aim of the project is to conduct a national stroke audit of hospital and community stroke care for the Republic of Ireland.

The objective of the Audit of hospital based stroke services is to establish the current level and functioning of services available for the care of stroke patients in acute hospitals in the Republic of Ireland. The audit of hospital-based services has two components:

- i) an Audit of the Organisational Aspects of Stroke Care in acute hospitals with regard to their resources for organised stroke care; and
- ii) a Clinical Audit of Stroke Care involving review of clinical case notes for a selected national sample of patients with stroke.

This report presents the findings of the first of these components – the National Audit of the Organisational Aspects of Stroke Care.

Chapter 2 Methods

2.1 Aims

The objective of the organisational audit of hospital-based stroke services was to establish the current level and functioning of services available for the care of stroke patients in acute hospitals in the Republic of Ireland with regard to their resources for organised stroke care.

2.2 Sample / Participation

The audit was planned for all 37 relevant public acute hospitals in the Republic of Ireland. The data was to be collected between May and July 2006 and represents the organisation of services during May – July 2006. Ethical approval for the research protocol was provided by the Royal College of Surgeons in Ireland Research Ethics Committee. In advance of the audit, permission was also granted from the National Hospitals Office, Health Service Executive and the Chief Executive Officers of the relevant hospitals.

2.3 Procedure

The audit of organisational aspects of stroke care involved structured face-to-face group interviews by two research team members with relevant senior personnel in each hospital. This included a senior member of the management team (usually the Chief Executive Officer / Hospital Manager), a lead medical clinician in the area of stroke care, the director of nursing and a senior therapist manager involved in stroke care. The interview proforma was piloted on two hospitals. Data collectors used the National Sentinel Audit of Stroke 2004 Help Notes for the Organisational Audit of the RCPUK to standardise interviewing and responses. Two experienced researchers, who were very familiar with stroke services, conducted the interview. They concurred post-interview and where unclear, re-contacted a small number of centres to clarify answers.

2.4 Data Collection Tool

The audit proforma used was the Royal College of Physicians London (United Kingdom) (RCPUK) National Sentinel Stroke Audit 2004 Organisational Audit Proforma (Appendix 1). The RCPUK National Sentinel Stroke Audit 2004 Organisational Audit Proforma has 14 sections as follows:

- Section 1 Auditor discipline, hospital caseload and presentation at hospital
- Section 2 Stroke Unit Models
- Section 3 Type of Stroke Unit
- Section 4 Other models of stroke care
- Section 6 Mixed Rehabilitation Units
- Section 7 Imaging
- Section 8 TIA / Neurovascular Service
- Section 9 Endarterectomy
- Section 10 Specialist Roles
- Section 11 Interdisciplinary Services
- Section 12 Team Meetings
- Section 13 Agreed Assessment Measures
- Section 14 Communication

Some minor modifications were necessary for the Irish context as recommended by the National Stroke Review Group and are detailed in Appendix 2. In addition some minor modifications were necessary following initial pilot studies and are detailed in Appendix 2, these included adding two short new sections as follows:

3.15 Discharge Planning / Rehabilitation

3.16 Stroke Service Plans.

The final Proforma used in the Irish National Organisational Audit of Stroke Care is presented in Appendix 1. In the Results Section, reference will be made to the question asked in the proforma (e.g. Q12). Comparisons with previous UK Sentinel audits will be made where appropriate.

Chapter 3 Summary of Results for all Hospitals

3.1 Hospital Participation, Hospital Stroke Caseload and Presentation of Stroke to Hospital

Organisational data was received from all 37 participating hospitals, representing 100% of eligible public acute general hospitals in the Republic of Ireland. Participants in the face-to-face group interviews were primarily chief executives (n= 31) or other members of the senior management teams (n= 1), a lead clinician in the area of stroke care (n= 36 geriatricians or n=1 general physician), the director of nursing services (n= 31) and a senior therapist manager involved in stroke care (n = 34 physiotherapists, n = 1 occupational therapist).

Acute Hospital Size and Caseload

The total number of hospital beds (Q1) across all 37 hospitals was 10,399 (median: 220 beds; range 75 to 750, interquartile range (IQR) 148-350). The mean number of beds was 281 (standard deviation: 29.5). The number of acute stroke inpatients on the hospital site (Q2), on the day of the organisational audit, was recorded (Table 3.1). Over 400 stroke patients were on site in hospitals on the day of the hospital visit. A median of 8 patients per hospital was much lower than in UK hospitals (median =26) in the 2004 audit.

Table 3.1 Acute stroke inpatients on interview day (37 sites) (Q2)

	N	UK 2004	UK 2006
Mean	11 patients (s.d.9.42)		
Median	8 patients	26	Not available
IQR	(5-13)	(18-36)	
National total	411		

s.d. = standard deviation

IQR = Interquartile range

Presentation at Hospital

Only one of 37 hospitals had arrangements with the local ambulance service for emergency / rapid transfer to hospital for patients with acute stroke (Q3i). In 33 hospitals (89%), staff reported that the majority of stroke patients presented to the hospital's accident and emergency (A/E) department (Q3ii), while 4 (11%) reported that the majority of stroke patients were admitted directly to a hospital ward.

In the majority of hospitals (35, 95%) the stroke patient was first seen by (Q3iii) the accident and emergency department nurse (Q3iii). In other situations, a physician (non-consultant A&E (8%), A&E consultant (3%) or physician on call (8%) first saw the patient.

Only three hospitals (8%) had a stroke team on call (Q3iv). Two of these had this on a 24/7 basis while the other one had a system operating from 9am-5pm on a five-day basis.

In relation to access to scanning in the accident and emergency (A/E) department (Q3v and 3vi), three quarters of hospitals (78%) had on-site access to Computerised Tomography (CT) while just under half had on-site access to MRI scanning (49%).

None of the 37 hospitals had a routine thrombolysis service (Q3vii) in the accident and emergency department.

With the exception of a medical social worker service, very few hospitals provided therapy assessment in the A/E department (Table 3.2). Five sites reported that swallow assessment was available and in these cases, the assessment was performed by the speech and language therapist in two hospitals, and in the other three by the nurse or medical team. There was no psychology presence in the A/E department in relation to stroke care. This was in contrast to the availability of swallow assessment within 24 hours of referral where almost three quarters of hospitals (73%) provided this assessment.

Table 3.2 Therapy assessment in the A/E Department (37 sites) (Q3viii - 3 ix)

	N	%	N	%	UK 2004/2006
	<i>In A/E</i>	<i>Yes</i>	<i>24hr of referral</i>	<i>Yes</i>	
Medical social worker	9	24	13	35	Not available *
Physiotherapy	5	14	37	100	
Swallow assessment	5	14	27	73	
Dietician	5	14	21	58	
Speech & language therapy	2	8	21	57	
Occupational therapy	2	5	21	57	
Psychology	0	0	0	0	

* Comparative results from the National Sentinel Stroke Audit UK 2004 are not available as this question was added for the Irish stroke audit (IHF modification see Appendix 4)

In the majority of hospitals (84%), patients with acute stroke were admitted to a general medical ward. Only one hospital had access to a stroke unit (Table 3.3).

Table 3.3 Acute stroke patient is most likely to be admitted to (37 sites) (Q4)

	N	%	UK 2004	UK 2006
General medical ward	31	84	13%	Not available*
Care of the elderly	3	8	13%	
Medical assessment unit	2	5	71%	
Stroke unit	1	3	15%	
Surgical ward / other	0	0	Not available^	

^ Comparative result from the National Sentinel Stroke Audit UK 2004 not available

* Comparative result from the National Sentinel Stroke Audit UK 2006 not available

3.2 – 3.4 STROKE UNIT MODELS

Organisation of Care

A stroke unit was defined as a multidisciplinary team including specialist nursing staff based in a discrete ward, which has been designated for stroke patients. Only one Irish hospital (3%) had a stroke unit as defined above. Even if the other five hospitals with organised stroke care are included, the total count of 16% is in marked contrast to the UK 2004 audit which identified 79% of centres as having a stroke unit and 91% in the most recent 2006 UK audit.

This stroke unit had a total of 12 specialist stroke unit beds (Q6), six of which were designated for acute stroke care (Q7i) and six were designated for stroke rehabilitation (Q8i). The acute and rehabilitation beds were situated on the same ward (Q9).

Table 3.4 Stroke Unit details (1 site 3%)

<i>Acute stroke beds (Q7ii)</i>				
<i>Features of acute stroke unit (6 beds) (Q7ii)</i>	1 site (3%)	UK 2004	UK 2006	
a. continuous physiological monitoring (all beds)	no	56%	57%	
b. access to scanning within 3 hours of admission	yes	40%	48%	
c. a policy for direct admission from A/E	yes	55%	95%	
d. specialist ward rounds at least 5 times a week	yes	59%	48%	
e. acute stroke protocols/guidelines	yes	97%	74%	
f. access to 24 hour brain imaging	yes	82%	97%	
<i>WTE Staffing acute stroke unit (6 beds) and rehabilitation stroke unit (6 beds) (Q7iii – 7iv and Q8ii)</i>				
Qualified nurses on duty 10am normal weekday acute and rehabilitation stroke unit	2.5	3.3 (2.7–3.8)*	2004	3.3 (2.9-3.7) *
Care assistants on duty 10am normal weekday acute and rehabilitation stroke unit	1.0		Not available	
Qualified nurses on duty in 24 hr period acute unit	3.5		Not available	
Care assistants on duty in 24 hr period acute unit	1.5		Not available	
<i>Combined stroke beds (Q10 I and ii)</i>	<i>None</i>			

Acute stroke beds were defined as follows: patients are accepted acutely but discharged or transferred early (usually within 7 days).

Rehabilitation stroke beds were defined as follows: accepts patients after a delay of 7 days or more and has a focus on rehabilitation.

Combined stroke beds were defined as follows: no separation between acute and rehabilitation beds. Accepts patients acutely but also provides rehabilitation for at least several weeks if necessary.

*Median (IQR) combined nurses / care assistants on duty per 10 beds UK Sentinel 2004

IQR – Interquartile range

In the case of the one existing stroke unit, a needs assessment was conducted by the hospital to identify the appropriate number of beds for the population served before it opened (Q11). There were 12 stroke patients in the unit on the day of the interview (Q12).

The unit had a named medical social worker attached to the multidisciplinary team (Q13) with access to all other therapy professionals (i.e. dieticians, physiotherapists, occupational therapists, and speech and language therapists) except clinical psychologists (Q15) (see Table 3.5). The staffing levels would be within the range described by Langhorne and Ellis (1998) for speech and language therapy, occupational therapy and NCHDs but below them for physiotherapy and social work. The stroke unit operated admission criteria (Q14) in relation to pre-existing dementia and other factors, but not with regard to age or stroke severity.

Table 3.5 Professionals for stroke unit (Q 15 i-vi)

	WTE (acute + rehab SU)	UK 2004	UK 2006
Occupational therapy	1.0	1.0 (0.7-1.3)	Not available
Physiotherapy	1.0	1.3 (0.9-1.7)	
Speech and language therapy	0.4	0.3 (0.2-0.5)	
Social work	0.25	Not available	
Dietetics	0.2	0.1 (0.1-0.2)	
Clinical psychology	0	0 (0-0.1)*	
Junior doctor sessions (Q16)	10	4.4 (2.7-7.1)	

SU = Stroke Unit * Sentinel UK 2004 data comparisons, median (IQR) of staff per 10 bedded unit
IQR = Interquartile range

Other Model of Organised Stroke Care (Q20 iv) but not a Stroke Unit

Five hospitals described models for stroke care at their hospital that did not fulfil the full definition of a Stroke Unit, but seem to represent an intermediate stage in organised stroke care. These five sites had 37 stroke designated beds ranging from 4 to 10 beds and in two cases it was specified that there was access to stroke patients of all ages. Two of these were in the Eastern region (HSE Dublin Midlands and HSE Dublin South), one in the Mid Western region (HSE Midwest) and two in the Western region (HSE West Northwest). We will be more able to address the types of services used by different patients when the clinical audit of a national sample of patient charts is complete.

3.5 OTHER MODELS OF STROKE CARE

Ten additional sites (27%) reported that there was an agreed policy that all / or the majority of acute stroke patients were admitted under a lead consultant physician with an interest in stroke (Q17a). Five of the 37 hospitals had a mobile stroke team. These mobile stroke teams always included a specialist doctor, speech and language therapist, physiotherapist and occupational therapist. A specialist nurse, medical social worker and dietician were also available in 4 of the 5 teams. None of these had a clinical psychologist as a member of the team. The average number of ward rounds conducted was two each week. None of the hospitals had access to a specialist community stroke team for continuing longer-term management of stroke patients after hospital discharge.

Table 3.6 Hospitals with other models of stroke care

	n	%	UK 2004	UK 2006
A mobile stroke team (Q17i)	5	14	23%	29%
Members of mobile stroke team (Q17ii)	n sites have		WTE (median IQR)	
Specialist doctor	5		2.5 (2-3)	
Speech and language therapist	5		1.0 (0-1)	
Physiotherapist	5		1.5 (1-1.5)	
Occupational therapist	5		1.0 (0.5-1)	
Specialist nurse	4		1.0 (0.875-1)	
Social worker	4		0.5 (0.375-0.5)	
Dietician	4		0.5 (0.375-0.5)	
Psychologist	0		0 (0-0)	
Other	Not applicable			
MDT ward rounds per week (5 sites) (Q17iii)			2 (1-2) median / (IQR)	
Stroke patients seen in the last week (5 sites) (Q17iv)			20 (8-21) median / (IQR)	
	n	%		
An early support discharge team (Q18i)	0	0	14%	22%
Specialist community stroke team (Q19i) for continuing longer-term management	0	0	25%	32%
Generic community team (Q19ii) for continuing longer-term management	19	51	Not available*	

Definition mobile stroke team – a multidisciplinary team (excluding specialist ward-based nursing staff) providing care / consultation to acute stroke patients admitted to a variety of teams in the hospital in a variety of settings

Comparative results from the national Sentinel Stroke Audit UK 2004 are not available as this question was added for the Irish stroke audit (IHF modification see Appendix 4)

IQR = Interquartile range

3.6 MIXED REHABILITATION UNITS

Only 35% of hospitals had access to an on-site rehabilitation unit, although the majority of hospitals (30, 81%) had access to a generic rehabilitation unit, usually under the direction of a geriatrician (see Table 3.7). The median number of rehabilitation beds (Q20ii) was 19 (range 6-80, IQR 13-34). The total available was 685 (inclusive of on-site and off site rehab units).

Table 3.7 Access to a generic inpatient rehabilitation unit (37 sites) (Q20)

	N	%	UK 2004	UK 2006
Yes	30	81	63%	Not available
Yes onsite	10	35*		
Yes offsite	21	72		
No	7	19		

A mixed rehabilitation unit (generic rehabilitation unit) was defined as follows: a multidisciplinary team (including specialist nursing staff) in a ward providing a generic rehabilitation service but not exclusively caring for stroke patients.

* yes onsite and yes off site > 100% and totals as one site had access to both an on-site and an off-site generic rehabilitation unit.

In the case of all hospitals with a rehabilitation unit, patients over 65 years had access to this service. In general, there was limited access to rehabilitation for younger stroke patients with only 5 hospitals reporting that they routinely accepted patients with stroke who were aged less than 65 years.

Table 3.8 Age related access to generic rehabilitation unit for stroke patients (29 sites 1 site missing data) (Q20)

	N	%
> 65 years access	29	100%
> 60 years access	6	21
< 65 full access	5	17
< 65 good access	1	3
< 65 very limited	5	17

3.7 IMAGING

The majority of hospitals had access to Computerised Tomography Scanning (CT) for emergencies in A&E (84%) and as inpatients within 24 hours (92%) (Table 3.9). There was moderate access to CT for outpatient emergencies (43%) and cases with Transient Ischaemic Attack (TIA) (62%). Access to CT in the A/E was high for emergencies within 24 hours (84%). Four hospitals reported that they did not have access to Magnetic Resonance Image Scanning (MRI) and Carotid Doppler Scanning was not available in five hospitals. About one in five hospitals had only five day week access (19-22% from inpatient through outpatient and A&E services). The clinical case note audit will give a more clear insight into the number of patients who received timely neuroimaging.

<i>Table 3.9 Imaging</i>			
<i>CT Imaging (37 sites) (Q21)</i>	INPATIENT	OUTPATIENT	A/E
	% Yes	% Yes	% Yes
<i>Computerised Tomography Scanning</i>			
None	0	0	0
Access weekdays only	19	22	19
Routine <48hr	70	27	62
Emergency <24hr	92	43	84
OPD < 2 weeks TIA/minor stroke	14	62	41
Access to consultant neuroradiologist <3hr	0	8	11
<i>MRI Imaging (37 sites) (Q22)</i>	INPATIENT	OUTPATIENT	A/E
	% Yes	% Yes	% Yes
<i>Magnetic Resonance Image Scanning</i>			
None available	11	11	16
Weekdays	57	41	32
Routine <48hr	24	11	14
Emergency <24hr	41	19	32
OPD < 2 weeks TIA/minor stroke	NA	38	11
<i>Carotid Doppler (37 sites) (Q23)</i>	INPATIENT	OUTPATIENTS	A/E
	% Yes	% Yes	% Yes
<i>Carotid Doppler</i>			
None available	14	14	8
Weekdays	68	49	43
Routine <48hr	41	32	32
Emergency <24hr	41	32	35
OPD < 2 weeks TIA/minor stroke	NA	51	16

NA = Not applicable

It is of significant concern that 30% of hospitals did not have routine access to routine CT scanning within 48 hours of stroke, and the level of access to emergency MR scanning was only 41%. The low access to Carotid Doppler scanning within 2 weeks after a TIA, and its non-availability in 14% of sites admitting patients with stroke, is also a cause of serious concern.

3.8 TIA / NEUROVASCULAR SERVICE

Six of the 37 (16%) hospitals had a neurovascular clinic with an average of four clinics in a 4-week period. Three of these six shared the same service, while the other three had individual services.

Table 3.10 TIA / Neurovascular service		37 sites	
Neurovascular clinic (Q24)	N / % YES 6 16%	UK 2004 65%	UK 2006 78%
Clinics within a 4-week period (Q24i)	Median/IQR 4 (3.25-4)	4 (4-4)	5 (4-8)
Current average waiting time for appointment for clinic (days) (Q24ii)	4 (4-7)	14 (7-28)	12(7-17)
Service which enables patients to be seen and investigated within 7 days of minor stroke/TIA (Q25)	N / % YES 6 16%	55%	35%

NA = not available

IQR = Interquartile range

3.9 CAROTID ENDARTERECTOMY

Carotid Endarterectomy was performed on-site in about a third of hospitals (30%). The remaining hospitals described how patients were referred to other hospitals for this procedure. In many cases, detailed information regarding number of procedures and patients referred was not available. When expressed, medians are based on replying hospitals only (as noted in Table 3.11).

Table 3.11 Carotid Endarterectomy (CEA) 37 sites

	N / % YES	
Carotid Endarterectomy performed within hospital (Q26i)	11	30%
Number of surgeons performing CEA (Q26 iia) (n=10 sites)	Total 25	Median (IQR) 3 (2-3)
Sum/Median/ IQR CEA procedures in last 12m (Q26iib) (n= 5 sites)	239	40 (25-74)
No of patients referred from stroke service for CEA (Q26iic) (n=8 sites)	127	8 (7-21)
Which hospital do you send patients to (Q26ii)	9 hospitals mentioned	

Protocols Between Acute and Primary Care Service

Over 90% of the hospitals did not have agreed stroke or TIA protocols between acute and primary care services (Q27 i and ii). This compared poorly with UK figures (see Table 3.12).

Table 3.12 Percentage with acute and primary care protocols (Q27 i and ii)

	N	%	UK 2004	UK 2006
Agreed stroke protocols	2	5	55%	Not available
Agreed TIA protocols	3	8	49%	Not available

3.10 SPECIALIST ROLES

Medical Staff

About one third of hospitals (12 sites, 32%) stated that there was a consultant physician with specialist knowledge of stroke who was formally recognised as having principal responsibility for stroke services at the hospital. However only 5 of these were recognised with a formal sessional commitment in their contract.

Table 3.13 Percentage sites with specialist medical staff

	N	% Yes	UK 2004	2006
A consultant physician with specialist knowledge of stroke who is formally recognised as having principal responsibility for stroke services (Q28i)	12	32%	90%	98%
Reflected in formal sessional commitment (Q28iid)	5	14%	Not available	
Number of formal sessions per week of consultant physician time for management of stroke (including OPD clinics) (Q28iia)		median IQR 3 (2-4.5)	3 (2-5)	5 (3-7)
Number of formal sessions per week of registrar time for management of stroke (including OPD clinics) (Q28iib)		3 (0.25-8.75)	0 (0-2)	NA
Number of formal sessions per week of Senior house officer time for management of stroke (including OPD clinics) (Q28iic)		3 (.25-8.75)	0 (0-2)	NA

Other Stroke Specialist Roles

None of the hospitals had a stroke coordinator. Five of the 37 hospitals had a clinical nurse specialist in stroke (Table 3.14). One hospital had two clinical specialist therapists (one was a physiotherapist and one an occupational therapist). Clinical nurse specialists were most involved in clinics and service development rather than therapy planning. There was no input in relation to links with the community. The Irish situation was very different with regard to stroke coordinator and clinical nurse specialists, which were available in over a third of UK centres.

Table 3.14 Other Stroke specialist roles (37 sites)

	N	% Yes	UK 2004	UK 2006
Stroke coordinator (Q29i)	0	0	34%	Not available
Clinical nurse specialist (Q29ii)	5	14	42%	Not available
<i>Services offered</i>				
Clinics	5	100		
Service development	5	100		
Therapy planning	1	20		
Long term community support	0	0		
Specialist therapist (Q29iii)	1*	3	4%	Not available
<i>Services offered</i>				
Clinics	0	0		
Service development	1	100		
Therapy planning	1	100%		
Long term community support	0	0%		

*2 specialist therapist posts at this site = 1 Clinical Specialist Physiotherapist and 1 Clinical Specialist Occupational Therapist

3.11 INTERDISCIPLINARY SERVICES

Routine Access to Specialist Nursing Support (Q30 i-iii)

There was very little access to specialist nursing support for stroke care outside of stroke and rehabilitation units. This can be contrasted with pressure sore prevention support (available in 73% of wards).

Table 3.15 Routine access to specialist nursing support (Q30 i-iii)

	Onsite		<i>Other wards in the hospital</i>		
	Stroke Unit	Rehab Unit	All wards	Some	None
N	1	10	37	37	37
%					
Continence advice	100%	70%	40%	6%	54%
Pressure sore prevention	100%	70%	73%	5%	22%
Stroke care	100%	50%	17%	5%	78%

Continuing Education in Stroke (Q31 i-ii) and Team working (Q32 i-ii)

In house training for staff was present in the stroke unit, and in over half of the onsite rehabilitation units however three quarters of other wards had no such programmes in place. There was limited use of a single central set of patient records. This was present in four units (stroke and rehabilitation). Only three hospitals (8%) indicated that they had an interdisciplinary care pathway for stroke (Q32ii), the remaining 34 hospitals (92%) did not have a stroke pathway.

Table 3.16 Continuing education in stroke (Q31 i-ii) and Team working (Q32 i-ii)

	Onsite		<i>Other wards in the hospital</i>		
	Stroke Unit	Rehab Unit	All wards	Some	None
N	1	10	37	37	37
%					
In-house training qualified staff	100%	60%	15%	9%	77%
In-house training unqualified staff	100%	40%	19%	3%	78%
Single set of patient records (Q32i)	100%	30%	38%	3%	59%

3.12 TEAM MEETINGS

Team Meetings (Q33 i-iii)

Team meetings were always held in the stroke unit and onsite rehabilitation units (generic rehabilitation units) (Q33i), however these meetings were stroke specific in only a minority of cases (Q33ii). In the case of five hospitals (14%) staff reported that they only had team meetings in the rehabilitation unit and not on any other wards in the hospital. In relation to the frequency of meetings (Q33iii) most were once weekly (94%), with 6% more than once weekly.

Table 3.17 Team meetings (Q33 i-iii)

	<i>Onsite</i>		<i>Other wards in the hospital</i>		
	<i>Stroke Unit</i>	<i>Rehab Unit</i>	<i>All wards</i>	<i>Some</i>	<i>None</i>
N	1	10	37	37	37
%					
Team meetings held (Q33i)	100%	100%	22%	59%	19%
Exclusively for stroke patients (Q33ii)			Yes 3 (8%) No 34 (92%)		

Disciplines who regularly attend (Q33iv)

	<i>Onsite</i>		<i>Other wards in the hospital</i>		
	<i>Stroke Unit</i>	<i>Rehab Unit</i>	<i>All wards</i>	<i>Some</i>	<i>None</i>
N	1	10	37	37	37
%					
Medicine	100%	100%	14%	54%	5%
Nursing	100%	100%	16%	51%	5%
Occupation therapy	100%	100%	14%	54%	8%
Physiotherapy	100%	100%	16%	54%	3%
Speech and language therapy	100%	100%	5%	49%	19%
Medical social work	100%	70%	14%	27%	32%
Dietetics	100%	70%	8%	41%	27%
Clinical psychology	0%	0%	0%	5%	70%
Other*	0%	50%	8%	27%	0%

Other disciplines attending:

District Care Unit (DCU) team leader
 Home Care Coordinator
 Public Health Nurse
 Assistant Director Community Nursing
 Community Liaison Nurse
 Discharge Planner / Coordinator
 Consultant in Rehabilitation Medicine
 Consultant in Old Age Psychiatry
 Pharmacist
 Bed Management Representative
 Community Rehabilitation Unit Coordinator

3.13 AGREED ASSESSMENT MEASURES

Locally Agreed Assessment Protocols for Stroke (Q34 i-v)

The majority of hospitals had locally agreed protocols for the assessment of consciousness level (76%), cognitive function (68%) and, somewhat less, activities of daily living (57%). Motor impairment and stroke severity protocols were used by less than a quarter of services. This was in marked contrast to high levels of protocol use in the UK.

Table 3.18 Locally agreed assessment protocols for stroke (Q34i-v)

	N	% Yes	UK 2004	UK 2006
Conscious level	28	76%	89%	96%
Cognitive function	25	68%	90%	93%
Activities of daily living	21	57%	85%	95%
Motor impairment	9	24%	77%	90%
Stroke severity scale	4	11%	Not available	

Availability of Information to Inform Practice (Q35 i-iv)

Staff were reported to have ready access to reference information in a variety of clinical areas for stroke, up-to-date information on patient and carer support organisations and records of stroke management in the acute phase of stroke in the stroke unit. Access to information for pressure care management was available on a large number of wards. However, information on continence and swallow management was less widely available.

Table 3.19 Availability of information to inform practice (Q35 i-iv)

	N	Stroke Unit	Onsite	<i>Other wards in the hospital</i>		
			Rehab Unit	All wards	Some	None
	1	10		37	37	37
<i>Staff have ready access to reference information on functional tools used locally</i>		100%	80%	31%	28%	41%
<i>Staff have ready access to practice guidelines on</i>						
Clinical management of stroke	100%	60%		12%	15%	73%
Continence management	100%	70%		34%	16%	50%
Swallowing difficulties	100%	70%		28%	22%	50%
Pressure area care	100%	60%		70%	18%	12%
Patient / carer organisations	100%	80%		18%	24%	58%
Records patient management acute phase of stroke	100%	50%		32%	21%	47%

3.14 COMMUNICATION

Communication with Patients and Carers (Q36 and 37i-vi)

The majority of hospitals were not organised to allow patients and/or family to have ready access to their stroke management plan (see Table 3.20). Patient literature was routinely displayed in the stroke unit. There was very little availability of patient versions of local / national guidelines and on standards on stroke care. Little was also available in general wards on community services, carer allowances or voluntary agencies.

Table 3.20 Communication with patients and carers (Q36 and 37i-vi)

	Onsite		<i>Other wards in the hospital</i>		
	Stroke Unit	Rehab Unit	All wards	Some	None
N	1	10	37	37	37
%					
Organisation of ward allows patient access to management plan (Q36)	100%	40%	3%	3%	94%
Patient literature displayed on ward on the following (Q37i-vi)					
Condition literature stroke	100%	70%	9%	49%	42%
Patient versions of guidelines	100%	20%	0%	3%	97%
Community services	100%	60%	12%	33%	55%
Carer's allowance/benefits	100%	60%	12%	27%	61%
Voluntary agencies	100%	60%	12%	18%	71%
How to complain	100%	40%	78%	14%	38%

Three hospitals (8%) had formal links with patients' and carers' organisations for communication on service provision, audit and future plans (Q38). Five hospitals (14%) stated that there was a community user group for stroke (Q39) this was in contrast to 68% of hospitals in the recent 2006 UK audit. Eight (22%) of the 37 hospitals had a policy to give stroke patients a named contact on transfer from hospital to the community (Q40).

3.15 DISCHARGE PLANNING / REHABILITATION

All of the 37 hospitals (100%) reported sending a patient discharge summary as standard practice to the general practitioner (Q41i). Four hospitals (11%) had a hospital / community liaison person (Q41ii).

Access to Community Services (Q41iii)

In general, access to public health nursing and liaison psychiatric nursing and general services was rated as good to excellent. There was very little access to medical social work and psychology community services (Table 3.21). These were rated as no access in many cases. There was some access to therapies (physiotherapy, speech and language therapy, occupational therapy and dietician) but this was frequently described as very or quite limited.

The majority of hospitals, 30 of the 33 for whom replies were available (91%), described community stroke services as very limited for those stroke patients under age 65 years. The remaining three hospitals described services as reasonable for those under age 65 years.

	N sites				
	No access	very limited	quite limited	good	excellent
Medical social worker	28	8	0	0	1
Psychology	27	9	0	0	1
Dietician	16	17	1	2	1
Speech & language therapy	13	19	3	0	2
Liaison psychiatric service	4	6	4	19	3
Liaison psychiatric nurse	2	5	3	22	4
Occupational therapy	1	21	9	4	2
Public health nurse	0	1	4	19	13
Physiotherapy	0	14	12	8	3

Access to a Day Hospital (Q41iv)

Fourteen (38%) of the 37 hospitals had a day hospital. There was open access to stroke patients under 65 years in four of these centres. Details were available on therapy cover for 13 of the 14 day hospitals (Q41vi) (Table 3.22). Staffing levels were very low, in particular regarding psychology, dietetic and speech and language therapy cover. Nursing, physiotherapy and occupational therapy were the therapies most available in day hospitals.

	N sites yes	median WTE range
Physiotherapy	12	1 (0.5-1)
Nursing	11	2 (1.75-2.5)
Occupational therapy	11	1 (0.5-1)
Speech and language therapy	6	0.175 (0.1-0.45)
Medical social work	5	2 (0-0.75)
Dietician	1	0.1 (0.25-0.36)
Psychology	1	0 (0-0)

Staff reported that stroke patients could be seen weekly in the day hospital (Q41vii). The number of patients seen in the day hospital per year was on average 3,450 attendances (range 398-6,000, IQR1300-5000). Attendance data were only available for nine of the 14 day hospitals. Similarly, nine day hospitals had figures on the number of stroke patients seen. These ranged from 9-1,150 with a median of 100 (IQR22-250) patients seen in the previous year.

3.16 STROKE SERVICE PLANS

Nearly two thirds of hospitals (23 sites, 62%) had submitted a plan for stroke services in their annual service plans for 2007 (Q43). Hospitals were asked to describe the hospital's plans for stroke services (Q42) (Table 3.23 Appendix 5). The service plans included many of the issues addressed in the organisational audit including facilities and dedicated stroke units and rehabilitation beds, increases in staffing levels (consultant posts, allied health professionals and clinical nurse / advanced nurse practitioner posts), the setting up of thrombolysis, Doppler services and neurovascular clinics with links to ambulance services and general practitioners. Many included provisions for better access for those with stroke under 65 years, with provision of outpatient therapy services, early support discharge teams and better availability of day hospitals to improve access to rehabilitation.

Chapter 4 Discussion

Introduction

These findings present for the first time a national overview of the organisation of hospital based stroke services, and the current level and functioning of services available for the care of stroke patients in acute hospitals in the Republic of Ireland. The organisational audit involved structured face-to-face group interviews with four key senior staff from each of the 37 public acute hospitals in the Republic of Ireland. This process sought to gather a consensus regarding the organisation of stroke services at each hospital. In many instances, it was clear that the process of setting up, preparing documentation and conducting the interview facilitated potentially valuable discussions between senior management and senior clinical staff within centres with regard to the provision of stroke services.

Acute Hospital Setting: Acute Stroke Care Presentation at Hospital

The total number of beds for the 37 acute hospitals was 10,399 and the average number of acute stroke patients in the hospital on the day of interview appeared to be quite low (a median of 8 in comparison to 26 in the UK (Intercollegiate Working Party for Stroke 2004)). This may reflect a greater proportion of smaller hospitals in Ireland.

Stroke Unit Provision and Organisation of Care

With one exception, stroke units were notable by their absence in the Republic of Ireland. The one hospital with a stroke unit in accordance with the definition set out in the UK organisational audit represents 3% of Irish hospitals in contrast to 79% of hospitals in the United Kingdom (Sentinel 2004) and more recently 91% (Intercollegiate Working Party for Stroke 2006) who have a stroke unit. Some elements of the staffing levels for the 12 bed unit were below those recommended for a 10 bed stroke unit (Council on Stroke IHF, 2001, Langhorne & Dennis, 1998). Despite the overwhelming evidence supporting the benefits of stroke unit care and the recommendations of the Irish Heart Foundation Stroke Report (2000) the Republic of Ireland is at present very underdeveloped with regard to the provision of specialised stroke units in the acute hospital setting. Five hospitals described how they had designated stroke beds. While they were not in a discrete ward and did not adhere to the definition of a stroke unit, they do represent an important component of current stroke service availability in Ireland. These beds were often based in a medical, care of the elderly or rehabilitation ward.

Three hospitals had a stroke team on call (only two of which were available on a 24 hour basis). Effective stroke rehabilitation requires the coordinated skills of a wide range of professionals (Intercollegiate Working Party for Stroke National Clinical Guidelines for Stroke 2004). Therapy assessment was quite limited in A/E with between 5-9 hospitals having access to physiotherapy, social work and dietician services. Only five hospitals were able to provide swallow assessment in A/E. However the assessment was not always performed by the speech and language therapist. Access to therapy assessment improved at 24 hours of referral. However some hospitals

reported that the patient could still be in A/E at this time and may not have been transferred to an acute inpatient bed. A clinical psychology service in the A/E department or within 24 hours of referral was not available in any of the 37 hospitals.

Models of Stroke Care

Only ten hospitals reported that there was an agreed policy that all or the majority of stroke patients were admitted under a lead consultant physician with an interest in stroke. Only 5 hospitals had a mobile stroke team (14%) in contrast to 23% of hospitals in the UK (Intercollegiate Working Party for Stroke 2004). The mobile stroke teams in all sites did have a specialist doctor, physiotherapist, occupational therapist and speech and language therapist. Four of the five teams also had a social worker, dietician and specialist nurse. None of the mobile stroke teams included a psychologist. None of the hospitals had an early support discharge team in comparison to 14% of UK hospitals. Of note a recent meta-analysis by Langhorne et al (2005) reported that appropriately resourced early supported discharge services for a selected group of stroke patients can reduce long term dependency and admission to institutional care as well as shortening hospital stays.

Specialist Roles

Twelve of the 37 (32%) hospitals had a recognised consultant physician for stroke care, but this was recognised with a formal sessional commitment in only five cases. It would appear that while there are plenty of competent physicians; they are not designated to stroke management, as such. Only five hospitals had a clinical nurse specialist in stroke care in contrast to 42% of UK hospitals (Intercollegiate Working Party for Stroke 2004). Specialist nursing in stroke care comprises assessment, planning, delivery and evaluation of stroke care given to patients and their carers in hospital, community and outpatient settings. The specialist nurse works closely with medical and paramedical staff and acts as a consultant in education and clinical practice to nursing colleagues and the wider multidisciplinary team. In this audit there was little evidence of the development of links to the community and in relation to therapy planning but in all cases the clinical nurse specialist was involved in clinics and service development. There were only two clinical specialist therapy posts, both based in one hospital. These posts are also not widely available in the UK hospitals with only 4% of sites in the 2004 UK audit reporting that they had specialist therapy posts. None of the Irish hospitals had a stroke coordinator in contrast to a third of UK hospitals. Only eight hospitals gave patients a named contact on transfer from hospital to community. Fragmentation of service delivery particularly at the transition from hospital discharge to the home environment is often a cause of frustration and anxiety for patients and their families after stroke (Doolittle 1991, Burton, 1999). This has been highlighted by many stroke advocacy and voluntary groups in Ireland and the UK (Intercollegiate Working Party for Stroke 1998). The role of a stroke coordinator is a relatively new development in coordinating services and fulfilling information needs for the stroke patients and their families.

Urgent Neuroradiological Investigation and Thrombolysis

In the majority of hospitals (89%) stroke patients presented to the hospital accident and emergency department and were seen by the A/E nurse (95%). Only one hospital (3%) had an arrangement with the local ambulance service for rapid transfer. This compares to 4% of hospitals in the 2004 UK audit and was below 12% of sites in the more recent 2006 UK audit of stroke care. It is of significant concern that 30% of hospitals did not have routine access to routine CT scanning within 48 hours of stroke, and the level of access to emergency MR scanning was only 41%. The low access to Carotid Doppler scanning within 2 weeks after a TIA, and its non-availability in 14% of sites admitting patients with stroke, is also a cause of serious concern. Access to scanning in A/E was poor with 20% of hospitals not having access to CT and 50% not having access to MRI. This obviously has implications for the introduction of thrombolysis at these hospitals. Thrombolysis is not available routinely in any Irish hospital in comparison to 18% of UK hospitals that now offer thrombolysis (Intercollegiate Working Party for Stroke 2006). While thrombolysis has the potential to improve outcome of patients with cerebral ischaemia, it is a high risk treatment and should only be administered by personnel trained in its use, in a centre equipped to investigate and monitor patients appropriately (Intercollegiate Working Party for Stroke National Clinical Guidelines for stroke 2004). Thrombolysis therapy needs to be administered within three hours of onset of stroke symptoms assuming all criteria for therapy have been met. In addition to thrombolysis, other therapeutic options may be coming on stream shortly which will further justify rapid transfer of stroke patients to acute hospitals with acute stroke units (e.g. thrombolysis therapies with longer time windows of opportunity for treatment e.g. up to 9 hours, enhanced thrombolysis with transcranial ultrasound and micro-bubbles, thrombus retrieval with mechanical devices and recombinant factor VII) for acute treatment of primary intracerebral haemorrhage. Stroke patients were admitted directly to hospital in only four sites with the majority of hospitals requiring initial A/E assessment. After initial assessment patients were most likely to be admitted to a general medical ward in the majority of hospitals (84%) with medical assessment units and medicine for the elderly wards as less common alternatives.

TIA / Neurovascular Service and Protocols for TIA / Stroke

Only six hospitals (16%) had a TIA / Neurovascular Service. This is extremely low in comparison to 65% of hospitals in the UK (Intercollegiate Working Party for Stroke 2004). The risk of developing a stroke after a TIA can be as high as 20% within the first month, with the greatest risk within the first 72 hours. The National Clinical Guidelines for Stroke (2004) recommend that patients with TIA should be seen and a management plan implemented within 7 days of symptoms. In addition much work needs to be done to improve liaison between acute and primary care in relation to protocols for the management of TIA and stroke. Only 5% and 8% of hospitals had agreed protocols in comparison to 49-55% of hospitals in the UK (Intercollegiate Working Party for Stroke 2004).

Carotid Endarterectomy

This is performed in a third of hospitals but detailed figures were only available for five sites thus making definitive conclusions difficult. This is one example of the lack of information on procedures or patient throughput, which exemplifies an underdeveloped IT infrastructure in many hospitals.

Rehabilitation

Access to Rehabilitation

Only 35% of hospitals had access to an on-site rehabilitation unit, although the majority of hospitals (30, 81%) had access to a generic rehabilitation unit, usually under the direction of a geriatrician. The lack of access to rehabilitation beds, particularly those on-site, given the complexity of much stroke care, is a cause of very grave concern. While all provided access to these services to stroke patients over 65 years, there was very limited access to rehabilitation for younger patients. Only five hospitals reported that they accepted patients with stroke who were less than 65 years old. While there is a small national rehabilitation facility for younger patients (not included in this audit as it does not provide acute stroke services), there needs to be considerably increased resourcing of rehabilitation for this patient group. The complementary clinical audit of patients across Ireland will provide a profile of these patients – numbers, demographic and clinical profile, geographic distribution and service uptake. This will inform resourcing issues.

Community Services and Discharge Planning / Rehabilitation

None of the Irish hospitals had access to a specialised community stroke team for continuing longer-term management. This was in contrast to 25% of UK hospitals in the 2004 audit and 32% in 2006. Fifty per cent of hospitals were able to access a generic community stroke team for continuing longer-term management. The UK National Clinical Stroke Guidelines (2004) recommend that hospital services should ensure that continuing treatment is provided without delay by a specialist service in the community, a day hospital or outpatients and that early hospital discharge to generic (non-specialist) community services should not be undertaken. There was very limited access to community services for those stroke patients under 65. All of the hospitals sent a discharge summary to the GP as standard practice. However, the companion General Practitioner report in this project identifies problems with the receipt and/or timeliness of these reports. Four hospitals had a stroke liaison person. In general hospitals reported good access to community services for public health nursing and psychiatric liaison services. Access to other professional services was limited or in some cases not available. The majority of hospitals reported that there was very limited access to services for those with stroke under age 65 years. Only 38% of hospitals had a day hospital. Of these, only four day hospitals had a policy to accept patients under age 65 years.

Interdisciplinary Services

Nursing support for stroke care was very limited and there was very little evidence of specialised training in stroke for clinical staff. In many cases there was limited access to practice guidelines on stroke management. The use of common integrated records for stroke was only evident in four units (including

the single stroke unit). Three hospitals had an interdisciplinary care pathway for stroke – although evidence for their efficacy is uncertain (Sulch et al, 2002). Assessments of stroke severity were not in common use though assessments of cognition and level of consciousness were more common. Team meetings took place in all the stroke and rehabilitation units but only on 22% of other wards. These were only stroke specific in three hospitals. Meetings were attended regularly by medical, nursing, physiotherapy, speech and language therapy and occupational therapy with attendance by other specialties variable and attendance by psychology extremely limited. It was encouraging that in some instances there were links at this point to community services where a member of the community team attended the team meeting such as the public health nurse and district care unit team leader.

Communication with Patient and Carers

Patients and carers did not generally have access to their hospital management plan. Stroke specific information was frequently displayed in hospital, most often the Irish Heart Foundation stroke booklet was reported by staff. However, little information was displayed regarding community services. In many hospitals, staff noted that the information was usually provided by the relevant discipline. Generic information on how to complain was widely available. There was very little evidence of links with community user groups for patients and carers.

Some Comparisons with UK Sentinel Data

The most recent round of the UK Sentinel audit (Intercollegiate Working Party for Stroke 2006) is now available. The comparative results in a number of key areas for the last three rounds of the UK audits clearly demonstrate that with investment from Government, progress has followed in key areas of service provision and specialisation.

Table 4.1 Comparison of key areas between Ireland and Sentinel Audit

	Ireland 2006	UK 2002	UK 2004	UK 2006
Stroke unit	3%	73%	79%	91%
Rapid transfer to hospital	3%	NA	4%	12%
Routine thrombolysis	0%	NA	NA	18%
Neurovascular clinic	6%		65%	78%
Mobile stroke team	14%	NA	23%	29%
Early support discharge team	0%	NA	14%	22%
Specialised community team	0%	NA	25%	32%
Consultant with responsibility for stroke care	32%	80%	90%	98%

NA = Not available

Conclusion

Availability of services of proven efficacy for those admitted to hospital with stroke is deeply inadequate and is in marked contrast to the situation in the UK. There was also considerable variation in access to evidence-based services. In particular the lack of access to acute stroke units, CT scanning within 48 hours and identifiable local lead persons with responsibility for developing stroke care need to be addressed as a matter of some urgency.

The Stroke Unit Trialist's Collaboration demonstrated that within clinical trials, there were fewer deaths and less morbidity for those patients admitted to stroke units (Stroke Unit Trialist's Collaboration 2002). Jarman et al (2004) showed that hospitals with an acute stroke unit were associated with an 11% lower odds of death. Based on the clinical audit data from Sentinel 2002, nearly two thirds of patients in the UK were not managed in a stroke unit (Intercollegiate Working Party for Stroke 2002). Based on incidence data the authors estimated that patients managed on non specialist wards had a 14% - 25% higher mortality rate than those managed in stroke units. The reorganisation of stroke care provision would translate into the potential to save lives.

On a positive note, it is encouraging that the majority of hospitals had submitted a formal service plan for stroke services this year, suggesting that most have already identified local deficits in the organisation of stroke care. Resources to advance these plans, in the context of findings from this national organisational audit, now need to be put in place as a matter of some urgency.

Chapter 5 Recommendations

[For further discussion with Review Group]

[General comment to Review Group: it is difficult to make definitive recommendations until all information is triangulated, (e.g. hospitals report routine communication with GPs while GPs say they get information too late), to make most useful recommendations]

References

Burton CR. An exploration of the stroke coordinator role. *Journal of Clinical Nursing*. 1999; 8: 535-541.

Coughlan T, O'Neill D. Hemiplegia of the will and trends in stroke incidence. *Irish Medical Journal*. 2004; 97: (10): 294-295.

Doolittle N. Clinical ethnography of lacunar stroke: implications for acute care. *Journal of Neuroscience Nursing*. 1991; 23: 235-240.

Early supported discharge Trialist's. Services for reducing duration of hospital care for acute stroke patients (Cochrane Review). In: The Cochrane Library, Issue 1, 2002. Oxford: Update Software.

Elkind MS. Implications of stroke prevention trials: treatment of global risk. *Neurology*. 2005; 65 (1): 17-21

Fjaertoft H, Indredavik B, Magnussen J, Johnsen R. Early supported discharge for stroke patients improves clinical outcome. Does it also reduce use of health services and costs? One-year follow-up of a randomised controlled trial. *Cerebrovascular Disease*. 2005; 19 (6): 376-383

Intercollegiate Working Party for Stroke. Stroke Rehabilitation: patient and carer views. A report from the Intercollegiate Working Party for Stroke and published jointly by the College of Health and the Research Unit of the Royal College of Physicians, London. 1998.

Intercollegiate Working Party for Stroke. Concise report on the National Sentinel Audit of Stroke 2001-2. Clinical Effectiveness and Evaluation Unit. Royal College of Physicians, London. Sentinel Audit 2002.

http://www.rcplondon.ac.uk/college/ceeu/ceeu_stroke_home.htm

Intercollegiate Working Party for Stroke. Concise report on the National Sentinel Audit of Stroke 2004. Clinical Effectiveness and Evaluation Unit. Royal College of Physicians, London. Sentinel Audit 2004.

http://www.rcplondon.ac.uk/college/ceeu/ceeu_stroke_home.htm

Intercollegiate Working Party for Stroke. National Clinical Guidelines for Stroke, 2nd edition. June 2004. Clinical Effectiveness and Evaluation Unit. Royal College of Physicians, London.

http://www.rcplondon.ac.uk/college/ceeu/ceeu_stroke_home.htm

Intercollegiate Working Party for Stroke. Concise report on the National Sentinel Audit of Stroke 2006. Clinical Effectiveness and Evaluation Unit. Royal College of Physicians, London. Sentinel Audit 2006.

www.healthcarecommission.org.uk/db/documents/National_Sentinel_Organisational_Audit_for_Stroke_2006.pdf

Irish Heart Foundation Council on Stroke. Towards Excellence in Stroke Care. Dublin, 2001.

Jarman B, Aylin P, Bottle A. Acute stroke units and early CT scans are linked to lower in-hospital mortality rates. *British Medical Journal*. 2004; 328-369.

Kalra L, Evans E, Perez I, Knapp M, Donaldson N, Swift C. Alternative strategies for stroke care: a prospective randomised controlled trial. *Lancet* 2000; 356: 894-899

Langhorne P, Williams BO, Gilchrist W, Howie K. Do stroke units save lives? *Lancet*. 1993; 14: 395-398.

Langhorne P, Dennis M (eds). Stroke Units: an evidence-based approach. BMJ Books, London, 1998.

Langhorne P, Taylor G, Murray G, Dennis M, Anderson ,C Bautz-Holter E, Dey P, Indredavik B, Mayo N, Power M, Rodgers H, Ranning O, Rudd A, Suwanwela N, Widen-Holmquist L, Wolfe C. Early supported discharge services for stroke patients: a meta-analysis of individual patients' data. *Lancet* 2005; 365: 501-506.

Martin BJ, Yip B, Hearty M, Marletta S, Hill R. Outcome, functional recovery and unmet needs following acute stroke. Experience of patient follow-up at 6 to 9 months in a newly established stroke service. *Scottish Medical Journal*. 2002; 6:136-137.

National Audit Office, Department of Health. Reducing brain damage: faster access to better stroke care. Report by the Comptroller and Auditor General HC 452 Session 2005-2006.

http://www.dh.gov.uk/PolicyAndGuidance/HealthAndSocialCareTopics/OlderPeoplesServices/OlderPeopleArticle/fs/en?CONTENT_ID=4123353&chk=xiHV4X

Noone I, Fan CW, Tarrant H, O'Keeffe S, McDonnell R, Crowe M. What happens to stroke patients after hospital discharge? *Irish Medical Journal*. 2001; 94 (5): 151-152.

Rudd AG, Hoffman A, Irwin P, Lowe D, Pearson MG. Stroke unit care and outcome: results from the 2001 National Sentinel Audit of Stroke (England, Wales, and Northern Ireland). *Stroke*. 2005; 36 (1): 103-106.

Stroke Unit Trialist's Collaboration. Organised inpatient (stroke unit) care for stroke (Cochrane Review). In: The Cochrane Library, Issue 4, 2002, Oxford: Update Software.

Sulch D, Melbourn A, Perez I, Kalra L. Integrated care pathways and quality of life on a stroke rehabilitation unit. *Stroke*. 2002; 33: 1600-1604.

Swanton T et al (2004) Description of current community stroke services – a pilot study conducted on behalf of the Council on Stroke. Presented at the Irish Heart Foundation Annual Stroke Conference 2004 (Abstract).

Appendix 1 - Irish Stroke Audit Proforma 2006

Irish Heart Foundation National Audit of Stroke Services In association with the Department of Health and Children 2006

ROYAL COLLEGE OF PHYSICIANS
NATIONAL SENTINEL STROKE AUDIT 2004
ORGANISATIONAL AUDIT PROFORMA

The Audit Proforma that has been chosen for use in the audit of hospital-based stroke services in Ireland is the Royal College of Physicians (UK) National Sentinel Stroke Audit 2004 Organisational Audit Proforma. Not only does this provide our project with a thoroughly developed and validated audit tool, but it also allows for comparison of data with relatively contemporaneous data from the UK. It is for this reason that significant variations from the RCP Audit Proforma are not encouraged. It is necessary, however, to make some adjustments for application in the Irish context.

This proforma should describe your stroke services as at *[date]* *].* Please complete all questions. In some cases you will either be directed to a later question or a response will apply based on answers to key questions. Proforma is reproduced by kind permission of the Royal College of Physicians London.

SECTION ONE SITE CODE: [] **INTERVIEW DATE:** []

Auditor Discipline: (tick all that apply)

Doctor Manager Nurse Therapist Other (please specify) [.....]

***Acute hospital**

1. What is the size of the hospital / number of beds []

HOSPITAL CASELOAD

2. How many patients with acute stroke are there in the hospital site? []
(Please estimate the number of patients with stroke (i.e. stroke as a primary diagnosis, and those who have had a stroke during this hospital admission) in the hospital on the day this form is completed.

PRESENTATION AT HOSPITAL

*3.

(i) Are there specific arrangements with the local ambulance service for emergency/rapid transfer to hospital for acute stroke patients?

Yes No

(ii) How do the majority of Stroke Patients present to the hospital?

Via A/E Yes No

Admit direct to hospital Yes No

Unknown Yes No

(iii) Emergency Services at the hospital for Stroke Patients

Who is the patient first seen by

A/E Nurse Yes No

A/E Junior Doctor Yes No

A/E Consultant Yes No

Physician on call Yes No

Other, specify Yes No

(iv) Is there a Stroke Team on call

No

Yes, 24 hours, 7 days

Yes, other specify

(v) Is there access to CT imaging in A/E on site off site

Yes

No

Unknown

(vi) Is there access to MRI imaging in A/E on site off site

Yes

No

Unknown

(vii) Routine thrombolysis service in A/E

Yes, 24 hrs, 7 days

Yes, other

No

Unknown

(viii) Is there therapy assessment in A/E	Yes	No	Unknown
- Physiotherapy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Speech & language therapy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Occupational therapy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Medical social work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Swallow assessment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Psychology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Dietician	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(ix) Is there therapy assessment within 24 hours of referral?	Yes	No	Unknown
- Physiotherapy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Speech & language therapy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Occupational therapy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Medical social work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Swallow assessment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Psychology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Dietician	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Which ward is a patient with acute stroke most likely to be admitted to?
(select one option)

- Medical Assessment Unit
- General medical ward
- Care of the Elderly
- Stroke unit
- Surgical ward
- Other

If other please specify

ORGANISATION OF CARE

Stroke Unit

5. Does the hospital have a specialist stroke unit or units? Yes No

Definition: a multidisciplinary team including specialist nursing staff based in a discrete ward which has been designated for stroke patients.

IF YES,

6. What is the total number of specialist stroke unit beds? [] specialist stroke beds

If NO go straight to Question 17

REHABILITATION STROKE BEDS

Definition: accepts patients after a delay of usually 7 days or more and has a focus on rehabilitation

- 8 i) Number of beds designated for stroke rehabilitation []
(If you do not have a unit of this type answer 0)
- 8 ii) How many of the following *nursing* staff are there usually on duty at 10.00 in the morning (on a normal week-day) on the rehabilitation stroke unit?
- a. Qualified nurses []
- b. Care assistants []
Enter 0 if no staff of that grade
- 9) If you have both acute and rehabilitation stroke units are they on the same ward? Yes No
-

COMBINED STROKE BEDS

Definition: No separation between acute and rehabilitation beds. Accepts patients acutely but also provides rehabilitation for at least several weeks if necessary.

- 10 i) Number of beds if combined stroke unit []
(If you do not have a unit of this type answer 0)
- 10 ii) How many of the following *nursing* staff are there usually on duty at 10.00 in the morning (on a normal week-day) on the combined stroke unit?
- a. Qualified nurses []
- b. Care assistants []
Enter 0 if no staff of that grade

ALL STROKE UNITS

11. Has a needs assessment been undertaken by your hospital to identify the appropriate number of beds for the population served before it opened? Yes No
12. How many stroke patients are there in total on your stroke unit(s) today? []
13. If you have a stroke unit/stroke units, is there a named Social Worker attached to the multi-disciplinary team? Yes No
14. Do(es) your stroke unit(s) operate admission criteria? Yes No

If YES,

- 14 i) Which of the following criteria apply? (tick all that apply)

	SU	Acute SU	Rehab SU	Combined
Either a) None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Or (tick all that apply)				
b) Age related	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Stroke severity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Pre existing dementia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If other please specify	[]	[]	[]	[]

15. What is the establishment of whole time equivalents (WTEs) of the following professionals for each of the 3 types of stroke unit (where applicable)? If it is not possible to differentiate the staffing for each type of unit complete total number for each profession.

		Acute SU	Rehab SU	Combined SU	Total	
i.	Clinical Psychology	[]	[]	[]	[]	WTE
ii.	Dietetics	[]	[]	[]	[]	WTE
iii.	Occupational Therapy	[]	[]	[]	[]	WTE
iv.	Physiotherapy	[]	[]	[]	[]	WTE
v.	Speech & Language Therapy	[]	[]	[]	[]	WTE
vi.	Social worker	[]	[]	[]	[]	WTE
	(Enter 0 if no establishment)					

16. How many sessions of junior doctor time are there per week in total for each of the 3 types of stroke unit (where applicable)?

Sessions	Acute SU	Rehab SU	Combined SU	Total
	[]	[]	[]	[]

SECTION FIVE OTHER MODELS OF STROKE CARE SITE CODE: []

OTHER MODELS OF STROKE CARE

17a Is there an agreed policy that all or / the majority of acute stroke patients are admitted under a lead Consultant Physician with an interest in stroke?
Yes No Other please specify.....

Mobile Stroke Team

Definition – a multidisciplinary team (excluding specialist ward-based nursing staff) providing care / consultation to acute stroke patients admitted to a variety of teams in the hospital in a variety of settings

17 i) Do you have a mobile stroke team? Yes No

IF NO, go to question 18 **IF YES,**

17 ii) Which of the following are regular members of the team? (Tick all that apply)

- a. Specialist doctor [] WTE*
- b. Specialist nurse [] WTE
- c. Social worker [] WTE
- d. Speech and language therapist [] WTE
- e. Physiotherapist [] WTE
- f. Occupational therapist [] WTE
- g. Dietician [] WTE
- h. Psychologist [] WTE
- i. Other (please specify)

17 iii) How many “multidisciplinary ward rounds” are conducted per week? []

17 iv) How many patients has the team seen in the last week? []

18 i) Do you have a specialist early supported discharge team especially for stroke?
Yes No

IF NO, go to question 19 **IF YES,**

18 ii) Which of the following are regular members of the team? (Tick all that apply)

- a. Specialist doctor [] WTE *
- b. Specialist nurse [] WTE
- c. Social worker [] WTE
- d. Speech and language therapist [] WTE
- e. Physiotherapist [] WTE
- f. Occupational therapist [] WTE
- g. Dietitian [] WTE
- h. Psychologist [] WTE
- i. Other (please specify).....

19 (i) Is there a specialist stroke community team (i.e. treats stroke only) in your area for continuing longer- term management? Yes No

*19 (ii) Is there a generic community team (i.e. treats stroke among other conditions) in your area for continuing longer-term management? Yes No

MIXED REHABILITATION UNIT (GENERIC REHABILITATION UNIT)

Definition: A Mixed rehabilitation unit (generic rehabilitation unit) – a multidisciplinary team (including specialist nursing staff) in a ward providing a generic rehabilitation service but not exclusively caring for stroke patients.

20. Do you have, or have access to a mixed (generic) rehabilitation unit (managing patients with a range of problems including stroke)?

Yes No

If NO, please proceed to Q 20 (iv)

*20 i) Is this unit on site off site other
tick all that apply.

*20 ii) How many beds are in the unit? []

*20 iii) How many beds are for stroke patients? []

OTHER MODEL OF STROKE CARE

*20 (iv) What is the model of stroke care at your hospital if not addressed by the above options ?

Briefly describe

*20 (v) How many of the following *nursing* staff are there usually on duty at 10.00 in the morning (on a normal week-day) in the unit?

- a. Qualified nurses []
- b. Care assistants []

Enter 0 if no staff of that grade

*20 (vi) Which of the following team members are present in the unit?
(Tick all that apply)

- a. Doctor [] WTE
- b. Social worker [] WTE
- c. Speech and language therapist [] WTE
- d. Physiotherapist [] WTE
- e. Occupational therapist [] WTE
- f. Dietician [] WTE
- g. Psychologist [] WTE
- h. Other (please specify).....

Enter 0 if no staff of that grade

SECTION SEVEN IMAGING**SITE CODE:** []**IMAGING****Computerised Tomography Scanning**

21. Please tick all that apply to your CT scanning service

Availability		<u>Inpatients</u>	<u>Outpatients</u>	<u>Accident/ Emergency*</u>
a)	None available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	Access weekdays only	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c)	Routine scanning within 48 hours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d)	Emergency scanning within 24 hours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e)	Outpatient scanning within 2 weeks for minor stroke/TIA		<input type="checkbox"/>	<input type="checkbox"/>
f)	Access to consultant neuroradiologist cover for stroke patients within 3 hours of admission	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Magnetic Resonance Image Scanning

22. Please tick all that apply to your MRI scanning service

Availability		Inpatients	Outpatients	<u>Accident/ Emergency*</u>
a)	None available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	Access weekdays only	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c)	Non urgent scanning within 48 hours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d)	Emergency scanning within 24 hours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e)	Outpatient scanning within 2 weeks for minor stroke/TIA		<input type="checkbox"/>	<input type="checkbox"/>

Carotid Doppler

23. Please tick all that apply to your CAROTID DOPPLER service

Availability		Inpatients	Outpatients	<u>Accident/ Emergency*</u>
a)	None available on site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b)	Access weekdays only on site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c)	Appointment routinely within 14 days	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d)	Emergency scanning within 24 hours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e)	Outpatient scanning within 2 weeks for minor stroke/TIA		<input type="checkbox"/>	<input type="checkbox"/>

SECTION EIGHT TIA/NEUROVASCULAR SERVICE SITE CODE: []

TIA/NEUROVASCULAR SERVICE

24. Do you have a neurovascular clinic? Yes No

IF YES,

24 i) How many clinics within a 4 week period? []

ii) What is the current average waiting time for an appointment? []
days

25 Do you have a service, which enables patients to be seen
and investigated within 7 days of minor stroke or TIA? Yes No

CAROTID ENDARTERECTOMY

These questions do not relate to quality standards but are to provide validation of carotid endarterectomy audit data.

26 i) Is carotid endarterectomy surgery performed within the hospital? Yes No

26 ii) **If NO,**

Which hospital do you send patients to?

.....

26 iii) **If YES,**

a) No. of surgeons performing carotid endarterectomy within the hospital []

b) No. of procedures performed within the last 12 months in the hospital []

c)* No. of patients referred from stroke services for carotid endarterectomy []

OTHER AREAS

27 i) Are there agreed stroke protocols between acute and primary care service(s)? Yes No

27 ii) Are there agreed TIA protocols between acute and primary care service(s)? Yes No

MEDICAL STAFF

28. i) Is there a consultant physician with specialist knowledge of stroke who is **formally recognised** as having principal responsibility for stroke services? Yes No
28. ii) How many formal sessions are there per week of senior doctor time for the management of stroke (including Outpatient Clinics):
- a) Consultant [] sessions per week
- b) Registrar [] sessions per week
- c) Senior House officer [] sessions per week
- d)* Is this reflected in a formal sessional commitment? Yes No

OTHER STROKE SPECIALIST ROLES

29 i) Stroke Co-ordinator	Do you have a stroke co-ordinator? Yes <input type="radio"/> No <input type="radio"/>			
	IF Yes: Services offered (Tick all that apply)			
	Clinics	Service Development	Therapy planning	Long term community support
Inpatient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outpatient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

A CLINICAL NURSE SPECIALIST IN STROKE CARE*

DEFINITION: is a nurse in specialist practice who has undertaken formal recognised post registration education relevant to stroke at higher diploma level. Such formal education is underpinned by extensive experience and clinical expertise in stroke care. The specialist practice will encompass a major clinical focus, which comprises assessment, planning, delivery and evaluation of stroke care given to patients and their carers in hospital, community and outpatient settings. The specialist nurse will work closely with medical and paramedical staff and may make alterations in prescribed clinical options along agreed protocol driven guidelines. The specialist also participates in nursing research and audit and acts as a consultant in education and clinical practice to nursing colleagues and the wider multidisciplinary team.

29 ii) Stroke Specialist Nurse e.g. clinical nurse specialist	Do you have a stroke Specialist nurse? Yes <input type="radio"/> No <input type="radio"/>			
	If Yes: Services offered (Tick all that apply)			
	Clinics	Service Development	Therapy planning	Long term community support
Inpatient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outpatient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

29 iii) Specialist therapist/s with specialist knowledge of stroke	Do you have a specialist therapist/s with specialist knowledge of stroke? Eg Clinical Specialist. Specify therapist How many? [] Yes <input type="radio"/> No <input type="radio"/> If Yes Services offered (Tick all that apply)			
	Clinics	Service Development	Therapy planning	Long term community support
Inpatient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outpatient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION ELEVEN INTERDISCIPLINARY SERVICES SITE CODE: []

INTERDISCIPLINARY SERVICES

For the following questions answers for Stroke Unit apply to any type of stroke unit (acute, rehabilitation or combined) and are distinct from a generic rehabilitation unit (managing patients with a range of problems including stroke). And All wards, Some and None refer to all wards in the hospital other than stroke unit or rehabilitation unit wards

30. Is access to specialist nursing support routine for: (please mark all that apply)

		<u>If applicable</u>	<u>Other wards in the hospital</u>			
		Stroke Unit	Generic Rehab Unit	All Wards	Some Wards	None
i.	Continence advice?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ii.	Pressure sore prevention?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
iii.	Stroke Care?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Continuing Education

31. i) Is there an in-house programme for the continuing education of qualified staff in management of stroke?

<u>If applicable</u>	<u>Other wards in the hospital</u>			
Stroke Unit	Generic Rehab Unit	All Wards	Some Wards	None
<input type="checkbox"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>

31. ii) Is there an identified in-house training programme, which includes issues relevant to the management of stroke for non-qualified clinical staff?

<u>If applicable</u>	<u>Other wards in the hospital</u>			
Stroke Unit	Generic Rehab Unit	All Wards	Some Wards	None
<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

TEAM WORKING

Records

- 32 i) Do all professions contribute to a single set of patient records for the management of stroke? (please mark all that apply)

If applicable Other wards in the hospital

Stroke None Unit	Generic Rehab Unit	All Wards	Some	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

32. ii) Does the Hospital have an interdisciplinary care pathway for stroke?

Yes No

TEAM MEETINGS

33. i) Are there team meetings for the interchange of information about individual patients? (please mark all that apply)

If applicable Other wards in the hospital

Stroke Unit	Generic Rehab Unit	All Wards	Some	None
<input type="checkbox"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>

- (ii) * Are these meetings exclusively for stroke patients ? Yes No

- (iii) * How often are team meetings held? []

33. iv) Which of the following disciplines regularly attend the team meetings? (please mark all that apply)

If applicable Other wards in the hospital

	Stroke Unit	Generic Rehab Unit	All Wards	Some	None
a. Clinical Psychology	<input type="checkbox"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>
b. Dietetics	<input type="checkbox"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>
c. Medicine (senior doctor)	<input type="checkbox"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>
d. Nursing	<input type="checkbox"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>
e. Occupational Therapy	<input type="checkbox"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>
f. Physiotherapy	<input type="checkbox"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>
g. Medical Social Work	<input type="checkbox"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>
h. Speech & Language Therapy	<input type="checkbox"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>
i. Other (state which)	[]	[]		[]	[]

AGREED ASSESSMENT MEASURES

34. Is there a locally agreed assessment protocol for stroke, which indicates the appropriate use of agreed measures for the following?

- | | | |
|------|---|--|
| i) | Conscious level (e.g. Glasgow coma scale) | Yes <input type="radio"/> No <input type="radio"/> |
| ii) | Motor impairment ((e.g. MRC, Motricity Index) | Yes <input type="radio"/> No <input type="radio"/> |
| iii) | Cognitive function (e.g. Mental Test score) | Yes <input type="radio"/> No <input type="radio"/> |
| iv) | Activities of Daily Living (eg Barthel, FIM) | Yes <input type="radio"/> No <input type="radio"/> |
| v) | Stroke Severity Scale (e.g. SSS, NIH) | Yes <input type="radio"/> No <input type="radio"/> |

Availability of Information to Inform Practice

35. Do staff have ready access to: (please mark all that apply)

	<u>If applicable</u>		<u>Other wards in the hospital</u>			
	Stroke Unit	Generic Rehab Unit	All Wards	Some	None	
i. Reference information on the functional assessment/measurement tools used locally?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ii. Practice / hospital guidelines on:						
a) Clinical management of stroke	<input type="checkbox"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) Continence management	<input type="checkbox"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) Swallowing difficulties	<input type="checkbox"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) Pressure area care	<input type="checkbox"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
iii. Up-to-date information on local and national patients/ carers support organisations?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
iv. Records of all patients' management in the acute phase of stroke?	<input type="checkbox"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SECTION FOURTEEN COMMUNICATION SITE CODE: []

COMMUNICATION WITH PATIENTS AND CARERS

<u>If applicable</u>	<u>Other wards in the hospital</u>			
Stroke	Generic	All	Some	None
Unit	Rehab	Wards		
Unit	Unit			

36. Does the organisation of the ward/unit enable patients to have access to their management plan?
 (Please mark all that apply)

37. Is there patient information literature **displayed** in unit/ward on the following?
 (please mark all that apply)

<u>If applicable</u>	<u>Other wards in the hospital</u>			
Stroke	Generic	All	Some	None
Unit	Rehab	Wards		
Unit	Unit			

- | | | | | | | |
|------|--|--------------------------|--------------------------|-----------------------|-----------------------|-----------------------|
| i) | Patient / carer information literature on stroke | <input type="checkbox"/> | <input type="checkbox"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ii) | Patient versions of national or local guidelines/standards | <input type="checkbox"/> | <input type="checkbox"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| iii) | Community Services | <input type="checkbox"/> | <input type="checkbox"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| iv) | Carer's Benefit/allowance | <input type="checkbox"/> | <input type="checkbox"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| v) | Local voluntary agencies e.g. Volunteer Stroke Scheme VSS | <input type="checkbox"/> | <input type="checkbox"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| vi) | How to complain? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

38. Does the Stroke service have formal links with patients' and carers' organisations for communication on service provision, audit and future plans? Yes No
39. Is there a community user group for stroke? Yes No
40. Is there a policy to give patients a named contact on transfer from hospital to community? Yes No

SECTION FIFTEEN* DISCHARGE PLANNING / REHABILITATION

SITE CODE: []

*41 (i) Do you send a discharge summary to the GP? Yes No

*41 (ii) Do you have a hospital / community stroke liaison person/nurse? Yes No

*41 (iii) Do you have access to the following community services?

(please rate level of access - tick all that apply)

	no access	very limited access	quite limited	good	excellent
a. Public Health Nurse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Physiotherapist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Occupational Therapist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Social Worker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Speech/language therapist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Dietitian	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Psychologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Community Liaison Psychiatric Nurse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Community Liaison Psychiatric Service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Other (please specify).....					

*41 (iv) Do you have a day hospital in your hospital? Yes No

IF No, please proceed to Q42

*41 (v) In the day hospital is there open access to those under 65 years with stroke?

Yes No

*41 (vi) Does the day hospital have therapy cover? Yes No

(please mark all that apply and indicate WTE)

- | | | |
|----------------------------------|--|--------------|
| a. Nursing | Yes <input type="radio"/> No <input type="radio"/> | [] WTE |
| b. Physiotherapist | Yes <input type="radio"/> No <input type="radio"/> | [] WTE |
| b. Occupational therapist | Yes <input type="radio"/> No <input type="radio"/> | [] WTE |
| c. Social worker | Yes <input type="radio"/> No <input type="radio"/> | [] WTE |
| d. Speech and language therapist | Yes <input type="radio"/> No <input type="radio"/> | [] WTE |
| e. Psychologist | Yes <input type="radio"/> No <input type="radio"/> | [] WTE |
| f. Dietician | Yes <input type="radio"/> No <input type="radio"/> | [] WTE |
| g. other please specify..... | | |

*41 (vii) How often can patients be seen in the day hospital? []

*41 (viii) How many patients are seen in the day hospital in one year? []

*41 (xi) How many of these are stroke patients? []

SECTION SIXTEEN* STROKE SERVICE PLANS SITE CODE: []

***STROKE SERVICE PLANS**

*42. What are your hospitals plans for stroke services?

*43. Have you submitted a plan for stroke services in your service plan?

NOTES

This section is for you to clarify your answers to any questions. Identify the question number(s), which applies to each comment.

A large, empty rectangular box with a thin black border, intended for the user to write notes or clarify answers to questions. The box is currently blank.

Checklist for Clinical Audit to be completed for each site by Interviewer

Appendix 2 - Summary of Changes Proforma Irish Stroke Audit 2006

ROYAL COLLEGE OF PHYSICIANS
NATIONAL SENTINEL STROKE AUDIT 2004
ORGANISATIONAL AUDIT PROFORMA
IHF MODIFICATIONS

Preamble

The Audit Proforma that has been chosen for use in the audit of hospital-based stroke services in Ireland is the Royal College of Physicians (UK) National Sentinel Stroke Audit 2004 Organisational Audit Proforma. Not only does this provide our project with a thoroughly developed and validated audit tool, but it also allows for comparison of data with relatively contemporaneous data from the UK. It is for this reason that significant variations from the RCP Audit Proforma are not encouraged.

It is necessary, however, to make some adjustments for application in the Irish context.

Modifications

Dates need to be altered throughout to reflect your own project dates

The word 'Trust' throughout should be replaced with 'Hospital'

Pg 1	Add:	Interview Date Hospital Size
	Omit:	Rehabilitation / Community Hospital Trust Caseload
	Expand:	See Section on Presentation at Hospital attached
Pg 5	Add:	Social Work to Q15
Pg 8	Add:	Additional column for A/E to each of Q21, Q22 and Q23
Pg 9	Change	14 days to 7 days
Pg 11	Add:	Definition of Stroke Specialist Nurse
Pg 12	Omit:	Q29 (iii) completely. Does not apply
Pg 15	Change	Q33 (i) to How often are team meetingsetc
Pg 17	Changes	to Q37 to reflect the Irish context and service environment are acceptable. Suggestions are as follows: <ul style="list-style-type: none">- Patient and Carer Information literature on stroke- Carer's Benefit / Carer's allowance-

Additional modifications made by the National Stroke Audit Research Team following team Review and Pilot Studies in May / June 2006

Pg 1	Q 2	specify acute stroke
Pg 2	Q 3 (v) and (vi)	add onsite and off site access for CT / MRI
	Q 3 (xi)	add therapy assessment within 24 hours of referral
Pg 3	Q 4	separate medical assessment unit and general medical ward
Pg 10	Q19 (ii)	add generic rehab community team
Pg 11	Q 20 (i) (ii) and (iii)	add whether on of off site, no of beds, no of stroke beds
Pg 12	@ 20 (iv)	expand to capture staffing levels for other models of stroke care
Pg 15	Q 26 c	no of patients referred for carotid endarterectomy from stroke service
Pg 16	Q 28 ii d	specify if formal sessional commitment
Pg 20	Q 33 ii and iii	are meetings exclusive for stroke, frequency
Pg 24	Q 41	all sections added for discharge planning/rehabilitation / Section 15
Pg 26	Q 42 and 43	added regarding planned stroke services at site / Section 16

Appendix 3 - Irish Heart Foundation National Stroke Review Group Members

The National Stroke Review Group members:

1.	Independent Chairperson	Dr John Bowman
2.	Health Services Executive (HSE)	Dr Siobhan Jennings
3.	Department of Health and Children	Vacant
4.	Faculty of Radiologists RCSI	Dr Paul Brennan
5.	Institute of Community Health Nurses	Ms Breda Cleary
6.	Irish Heart Foundation	Dr Brian Maurer
7.	Clinical Epidemiology/IHF Board	Dr Mary Codd
8.	Volunteer Stroke Scheme	Ms Anne Copeland
9.	Neurological Alliance of Ireland	Ms Audrey Craven
10.	Irish Association of Speech & Language Therapists	Ms Aisling Creed
11.	Royal College of Physicians Ireland	Dr Morgan Crowe
12.	Irish Association of Rehabilitation Medicine	Dr Mark Delargy
13.	An Bord Altranais	Ms Mary Durkin
14.	Irish Society of Chartered Physiotherapists	Ms Sinead McEvoy
15.	Irish Consultant Neurologists Association	Dr Peter Kelly
16.	Psychological Society of Ireland	Ms Sheila Kennedy
17.	Faculty of Public Health	Dr Bob McDonnell
18.	Irish Society for Physicians in Geriatric Medicine	Dr Rhiona Mulcahy
19.	Irish Nutrition and Dietetic Institute	Ms Patricia Munnely
20.	Association of Occupational Therapists	Ms Tracy Swanton
21.	Royal College of Surgeons in Ireland	Mr AE Wood

Other members

The ICGP has agreed to assist us with research involving its members, but has been unable to provide a representative to sit on the National Stroke Review Group.

Dr Denis O'Mahony, Cork University Hospital is also a member of the review group.

Appendix 4 – Participating hospitals

Adelaide & Meath Hospital inc. National Children's Hospital Tallaght
Beaumont Hospital
James Connolly Memorial Hospital
Mater Misericordiae University Hospital
St. Colmcille's Hospital
St. James's Hospital
St. Michael's Hospital
St. Vincent's University Hospital
Naas General Hospital
St. Luke's General Hospital Kilkenny
South Tipperary General Hospital Clonmel
Waterford Regional Hospital
Wexford General Hospital
Kerry General Hospital
Bantry General Hospital
Cork University Hospital
Mallow General Hospital
Mercy University Hospital
South Infirmary/Victoria Hospital
Midwestern Regional Hospital Ennis
Midwestern Regional Hospital Limerick
Midwestern Regional Hospital Nenagh
Sligo General Hospital
Letterkenny General Hospital
Portiuncula Hospital
University College Hospital Galway
Roscommon County Hospital
Merlin Park Regional Hospital Galway
Mayo General Hospital
Midland Regional Hospital at Portlaoise
Midland Regional Hospital at Tullamore
Midland Regional Hospital at Mullingar
Monaghan General Hospital
Our Lady's Hospital Navan
Louth County Hospital Dundalk
Our Lady of Lourdes Hospital Drogheda
Cavan General Hospital

Appendix 5

Table 3.23 What are your hospitals plans for stroke services? (Q42) (23 sites)

Facilities

Dedicated stroke units beds requested range from 6-15 with appropriate MDT team, all ages access
Monitoring for stroke beds
Rehabilitation unit

Staffing

Consultant posts: geriatrician, neurologist, rehabilitation
Allied health professionals
Clinical nurse specialist post
Advanced nurse practitioner post

Services - Acute management

Set up 24/7 thrombolysis service
Rapid assessment register
Set up acute care protocols with A/E
Links to ambulance services and general practitioners.

Services other

Doppler services improvements / development
Neurovascular clinics and outpatients
CT scanner

Rehabilitation / access to services

Better access for those with stroke under 65 years
Outpatient therapy service
Early support discharge teams
Access to NRH for under-65
Liaison staff
