National Report on Stroke Services in Scottish Hospitals
Data relating to 2005/2006

Scottish Stroke Care Audit
June 2007

Executive Summary

Introduction

There is strong evidence that well organised stroke care improves the outcome of patients having a stroke. In Scotland SIGN and NHSQIS have developed guidelines and standards aimed at delivering that care. The Scottish Stroke Care Audit monitors the quality of care provided by the hospitals in all NHS Boards by collating data collected by the Managed Clinical Networks (MCNs). These data are used by the Scottish Executive Health Department to monitor progress against the NHSQIS standards for stroke and its CHD & Stroke Strategy.

NHS Boards are expected to identify aspects of their stroke services which do not meet National Standards and to work with their stroke MCNs to improve their performance. This latest National Report includes data describing the quality of stroke care in each acute hospital grouped by NHS Board during 2005 and 2006. This allows each hospital and NHS Board to not only compare their performance with national standards, but also with other organisations. Hospitals with less satisfactory performance can hopefully learn from those where services are of higher quality. The main report has been circulated widely and is available online (http://www.strokeaudit.scot.nhs.uk/).

This Executive Summary aims to provide a very brief overview of the results of the audit. We have tabulated the main results for Scotland overall in 2005 (the most recent year for which we have complete data for all hospitals) and for each hospital grouped by NHS Board in 2006.

We have colour coded the summary results to emphasise where services:

- Meet or exceed National Standards **Green**
- Do not meet National Standards but are performing at the average or better than the average for Scotland in 2005 **Red**
- Do not meet National Standards and are performing worse than the average for Scotland in 2005 **Black**

Five key quality indicators are:

Proportion of stroke patients admitted to a Stroke Unit within 1 day of admission to hospital. Stroke unit care is associated with reduced risk of dying and disability after a stroke. The NHSQIS standard is that at least 70% of patients should be admitted to a stroke unit within a day of admission.

Proportion having a documented Swallow screen on day of admission. About half of all stroke patients will not be able to swallow safely on admission to hospital. If given fluids or food inappropriately patients may develop, and possibly die from, pneumonia and if not treated appropriately they may become dehydrated and malnourished which may lead to slowed recovery and/or worse outcome. The NHSQIS standard is that all patients should have a swallow screen within a day of admission.

Proportion having a brain scan within 2 days of admission. A brain scan is essential to confirm the diagnosis of stroke and to distinguish stroke due to ischaemia (a blocked blood vessel) or a haemorrhage (burst blood vessel). Treatments for a blocked blood vessel are very dangerous to those with a burst blood vessel. The NHSQIS standard is that at least 80% should have a brain scan within 2 days of admission.

Proportion of patients with ischaemic stroke who receive aspirin within 2 days of admission. Aspirin given within the first 2 days reduces the proportion of patients having recurrent strokes and residual disability. The NHSQIS standard is that all patients should receive aspirin within 2 days unless contraindicated.

Proportion of patients with a mini stroke (transient ischaemic attack), who do not need immediate admission, assessed in a specialist neurovascular within 14 and 7 days of receipt of referral. The risk of a stroke within the first week is at least 10%. Appropriate treatment can halve this risk but only if started very early. The NHSQIS standard is that 80% should be seen within 14 days and ideally within 7 days.

Understanding the Performance indicators

Good or bad performance with respect to these five indicators, and the many others available in the main report, will usually reflect the actual performance of the service. However, if the audit methodology is not strictly adhered to the local data may be misleading – most likely they will give a reassuringly good measure of performance. For instance, if the audit does not include patients managed outwith the stroke unit an overly optimistic view of the quality of the service will result. In the long run this will harm patients.

Complete data for patients is not available till after their hospital discharge. Therefore, it is almost impossible to have complete data which reflects performance for patients admitted within the last few months. The audit is inevitably at least 6 months out of date.

For some indicators the NHSQIS standard (swallow screen and aspirin) is virtually impossible to meet (**Green**) since it requires ALL patients to receive the specified care. In these case it is important to look for year on year improvement towards the standard.

NHSQIS Standards, Summary Table

- **Green** - Meet or exceed National Standards
- **Red** - Do not meet National Standards but are performing better than the average for Scotland in 2005
- **Black** - Do not meet National Standards and are performing worse than the average for Scotland in 2005.

Hospital	Admitted to SU <= 1 day %	Swallow <= 1 day %	Brain scan <= 2 days %	Aspirin <= 2 days %	NV clinic <= 14 days %	NV clinic <= 7 days %
2005 Scotland – wide	50	44	79	56	58	30
Aberdeen Royal Infirmary	66	46	72	73	68	41
Ninewells Hospital	53	41	92	60	n/a	n/a
Perth Royal Infirmary	1	24	76	41	80	32
Stracathro Hospital	NR*	NR*	NR*	NR*	95	80
Royal Infirmary Edinburgh	50	31	82	50	NR	NR
St Johns Hospital (Livingston)	25	53	74	61	23	7
Western General Hospital	55	38	94	75	77	27
Glasgow Royal Infirmary	64	81	81	60	n/a	n/a
Stobhill Hospital	49	67	90	67	n/a	n/a
Western Infirmary Glasgow	82	83	97	86	n/a	n/a
Southern General Hospital	90	67	97	78	n/a	n/a
Victoria Infirmary Glasgow	8	42	88	65	n/a	n/a
Inverclyde Royal Hospital	42	28	86	60	25	18
Royal Alexandra Hospital	45	n/a	83	31	n/a	n/a
Vale of Leven (Dumbarton)	27	n/a	79	16	NR	NR
Ayr Hospital	71	58	82	54	30	9
Crosshouse Hospital	67	70	82	62	97	80
Hairmyres Hospital	68	39	77	66	32	15
Monklands Hospital	76	33	71	65	99	68
Wishaw General Hospital	50	46	83	70	98	94
Forth Valley Hospital	46	62	89	65	n/a	n/a
Borders General Hospital	63	45	91	75	n/a	n/a

Hospital	Admitted to SU <= 1 day %	Swallow <= 1 day %	Brain scan <= 2 days %	Aspirin <= 2 days %	NV clinic <= 14 days %	NV clinic <= 7 days %
Dumfries & Gall. Royal Infirmary	51	63	83	61	85	35
Raigmore Hospital	16	27	63	42	71	26
Lorn & Islands (Oban)	91	0	91	42	93	83
Belford Hospital (Fort William)	NR	n/a	n/a	n/a	NR	NR
Caithness Hospital	NR	n/a	n/a	n/a	NR	NR
Queen Margaret Hospital	39	36	57	44	45	14
Victoria Hospital, Kirkcaldy	5	35	78	50	11	5
Orkney	29	24	43	92	NR	NR
Shetland	NR	n/a	40	75	NR	NR
Western Isles	NR	31	61	58	NR	NR

n/a = not available (hospital does not collect or has not reported the data)
NR = not relevant (usually because service does not exist)
NR* = Inpatient rehab service only, recorded as part of the local acute hospital service

Measures to Improve Performance
At a National Meeting in June 07 clinicians, MCN managers and audit staff shared their experiences of changing services to improve performance. Some of the changes are listed below and are described in more detail in the main report.

Proportion of stroke patients admitted to a Stroke Unit within 1 day of admission to hospital.

- Direct admissions to stroke unit from front door of hospital
- Adequate numbers of stroke unit beds
- Avoiding boarders and some protection of beds (cf Coronary care)
- Working with bed managers and good communication between stroke unit and front door
- Stroke team visiting acute assessment area to assess patients and divert them to stroke unit

Proportion having a documented Swallow screen on day of admission.

- Direct admission to stroke unit where staff are trained to assess swallowing
- Training of nursing staff in the stroke unit, in medical assessment and in other wards
- Protocol and integrated care pathway to document assessment – the problem is that the screen is sometimes done but not recorded clearly

Proportion having a brain scan within 2 days of admission.

- Direct admission to stroke unit
- Protocol for scanning developed jointly with radiology
- Appropriate priority given to stroke patients
- Scanning available at weekends
- No need for routine immediate reporting by radiologist out of hours

Proportion of patients with ischaemic stroke who receive aspirin within 2 days of admission.

- Direct admission to stroke unit
- *Early brain scanning*
- Protocol or integrated care pathway
- Nurse prescribed aspirin

Proportion of patients with a mini stroke (transient ischaemic attack), who do not need immediate admission, assessed in a specialist neurovascular within 14 and 7 days of receipt of referral.

- Adequate capacity in "One Stop" Neurovascular clinic to cope with numbers of referrals
- TIA telephone hotline to allow GPs to contact stroke specialist directly to arrange appropriate assessment
- Electronic referrals
- More flexible clinic system

Conclusions
The introduction of the Stroke Strategy has been associated with significant improvement in most, if not all, hospitals. The quality of stroke services varies greatly across Scotland. Urgent action is required in some since their poor performance is likely to be reflected in poor outcomes (more deaths and more disability) for their patients. Also, poor care leads to longer lengths of hospital stay, greater residual dependency and thus higher costs to health services. No hospital meets all the NHSQIS standards, so all need to strive to improve their stroke services.

Contacts

Any questions about SSCA should be referred to the Co-ordinating Centre. Please refer questions on this report to Robin Flaig. Please refer questions on the SSCA system to Mike McDowall. For general questions about the Audit please contact Martin Dennis, Chair of the National Advisory Committee for Stroke.

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