Improving Evidence Based Care For Stroke Patient’s In The Acute Medical Unit

Steven Lorimer
Anne Davidson
Overview

• Background
• AMU 2009
• Culture
• Then
• Now
• Education
• Future
Background

• PRI hospital info (222 beds)

• 29 bedded unit + 1 assessment bed

• 600 patients per month

• Medical and surgical emergency admissions

• Perth city and rural area (population approximately 150,000)
Where We Were

- Original Stroke unit comprised of 8 rehab beds with patients decanted into MFE wards if these were full

- Stroke Unit staff were reluctant to feedback areas for improvement to the AMU

- Stroke unit waited to hear from the AMU regarding potential admissions

- Lack of publicity/media coverage
Acute Medical Unit - 2009

- Stroke patients were not always seen as a medical emergency
- Medical on-call team were not proactive regarding CT scanning in the out-of-hours period
- Nursing staff did not challenge this practice
- Nurses had on the job training
- No structure/evidence to their learning
- Patients were admitted to AMU and then moved onto Acute medical ward (Ward 3), then onto Stroke Unit within PRI
- Patients were not necessarily screened promptly
Changing The Culture

- Developing a new stroke patient pathway for PRI following a Rapid Improvement Event (2009/10)
- Seeing the patient with a stroke, as a medical emergency
- Focus on practical/theoretical education
- Promotion of STARs training
- Keep an accurate training record
- Increase staff knowledge to ensure patient pathway followed
- Setting up of a Stroke Pathway Quality Improvement Group
- Development of ‘stroke pack’ for AMU
Stroke Champion

- SCN sourced a willing volunteer…
- Previous stroke knowledge
- Vested interested in stroke patient
- Motivated/driven
- Ability to engage the team
- Ability to engage MDT Team.
  e.g. engaged with SALT team for education
Improvements In AMU

• Aligned all our improvements with the Scottish Stroke Care Standards and Stroke SIGN Guidelines

• Looked at what was being missed – QI Group, exception reporting and compliance reviews

• Investigated through exception reporting why things were getting missed

• Needed an easy and quick document

• Could see ‘At a glance’ what had been done
Evolution Of Checklist

- Ask opinions
- Staff, Stroke Unit & Medical staff
- Amended over and over
- Captured new staff as they started in AMU
Creation Of Checklist

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Developed by Anne Davidson and Stephen Lettner (Ward 4, PRI) in conjunction with the PRI Strokes Quality Improvement Group November 2013, Review November 2015.
What We Gained

- Helps staff focus on priorities
- Ability to answer queries regarding what was still to be done
- Assisting audit
- Focus on essential care bundle for Stroke patients
- Handover to Stroke Unit more effective
Improvements For Patients

• Safer care, evidenced based practice
• Patients are prioritised
• Quality assurance in care delivery
• Nurses knowledge of stroke care improved
• Nurses feeling empowered
• Transfer to Stroke Unit promptly
• Reduced time of patient unnecessarily remaining NBM
Education

- In-house sessions
- Practical teaching of swallow screen
- Awareness of pack and its contents
- Supporting staff to undertake core competency STARs modules
- All staff trained/untrained to do core competencies
- Advanced STARs modules – promoting this in the senior nursing team – open to all
## AMU Stroke Training Record

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Swallow Assessment Chart

Tayside Screening Form for Swallowing Difficulties in Stroke
(To be used in conjunction with the Dysphagia Management in Adult Stroke protocol)

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<tbody>
<tr>
<td>Screening Completed by</td>
<td>Date</td>
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</table>

BEFORE SCREENING CAN BE CARRIED OUT

Is the mouth clean? If NO, carry out oral hygiene

Is the patient alert and able to maintain an upright position?

If NO, to any of the above please try again in 24 hours.

---

**SWALLOW SCREENING TEST**

**Step 1**
Give 1 teaspoon of water 3 times
Is the swallow absent or delayed?
Does the patient cough?
Ask patient to say “Ah”. Does the voice sound wet/gurgly?

If YES to any:
Nil By Mouth
Refer to Speech and Language Therapy

No

**Step 2**
Give 1 sip of water from a glass 4 times
Is the swallow absent or delayed?
Does the patient cough?
Ask the patient to say “Ah”. Does the voice sound wet/gurgly?

If YES to any:
Nil By Mouth
Refer to Speech and Language Therapy

No

**Step 3**
Ask the patient to drink 1/3 glass of water
Is the swallow absent or delayed?
Does the patient cough?
Ask the patient to say “Ah”. Does the voice sound wet/gurgly?

If YES to any:
Nil By Mouth
Refer to Speech and Language Therapy

No

**Step 4**
Give the patient soft diet and normal fluids
Continue to monitor and observe.
If there are any difficulties return to NBM and refer to SLT.

No

**Step 5**
If no difficulties noted with soft diet for 48 hours move onto normal diet.
If there are any further difficulties return to NBM and refer to SLT.

Soft Diet and Fluids started on:

Failed at Step:

Referred to SLT on:

---

Swallowing Screening Test - Guidance Notes

This screening tool is for use by Qualified Nursing Staff

It should:
- Prevent patients being kept Nil By Mouth unnecessarily.
- Identify patients who can commence oral intake.
- Identify patients with swallowing difficulties who should be Nil By Mouth and referred to SLT.

This screening test should **not** be used if the patient is already under Speech and Language Therapy management. Please contact SLT department should you have concerns regarding these patients.

Please Note – patients with communication difficulties should be referred to Speech and Language Therapy in the usual manner BUT this should **NOT** prevent swallow screening from being carried out.

Please Ensure:
- All patient details, including location, are completed.
- The form is kept and the outcome recorded in the Nursing Notes – including patients who pass the screen.
- If swallowing difficulties are noted once the patient commences a diet, return to Nil By Mouth and refer to SLT in the usual manner.

Any comments or questions should be referred to the Department of Speech and Language Therapy.
# Glasgow Coma Scale

Reference Card: Neurological Observation Chart

<table>
<thead>
<tr>
<th>RECORD No.</th>
<th>NEUROLOGICAL OBSERVATION CHART</th>
<th>DATE</th>
<th>TIME</th>
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<tbody>
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</table>

**Eyes:**
- Opened by tapping
- Closed by squeezing

**Coma Scale:**
- Oriented
- Confused
- Inappropriate words
- Incoherent speech
- None

**Motor Response:**
- Spontaneous
- To speech
- To pain
- None

**Speech:**
- Stereotyped
- Inappropriate words
- Incoherent speech
- None

**Pupil Size (mm):**
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12

**Respiration:**
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12

**PUPILS:**
- Right
  - Size
  - Reaction
- Left
  - Size
  - Reaction

**Level of Consciousness:**
- Normal wakefulness
- Mild alterations
- Severe alterations
- No response

**Leg Movement:**
- Normal power
- Midpower
- Severe weakness
- Extension
- No response

**Arm Movement:**
- Normal power
- Midpower
- Severe weakness
- Extension
- No response
SEWS chart
**Blood Monitoring Chart**

**SIGN GUIDELINES**

Blood glucose management

Hyperglycaemia occurs in 20% to 63% of patients admitted with ischaemic stroke and in the absence of prior diabetes. Acute post-stroke hyperglycaemia is associated with larger infarct volumes and cortical involvement, which may be associated with ischaemia of the insular cortex. Hyperglycaemia at any time after acute stroke is an important determinant of infarct expansion and may be associated with poorer functional outcome.

A meta-analysis suggests that the relative risk of death in hyperglycaemic non-diabetic stroke patients is increased by 3.3 (95% CI 2.3 to 4.6). Observational data suggest that over a third of patients with ischaemic stroke without previously diagnosed type 2 diabetes may have impaired glucose tolerance or diabetes confirmed by oral glucose tolerance test (OGTT), which persists at discharge.

No evidence was identified to support early active treatment of mild to moderate hyperglycaemia in patients with acute ischaemic stroke. A Randomized controlled trial (RCT) comparing a 24 hour glucose/potassium/insulin (GKI) infusion with standard intravenous saline infusion in 933 patients with a blood glucose level between 7 and 17 mmol/L was terminated early due to slow recruitment. There was no difference in mortality or other measured outcomes between the two groups. The GKI regimen used was labour intensive and there was a 16% risk of persisting low glucose requiring ‘rescue treatment’. There was an absolute reduction in glucose of 0.57 mmol/L compared to saline infusion. Potential confounders included an effect on blood pressure in the insulin treated group and a lack of standardisation of management after 24 hours.

Routine use of insulin regimens to lower blood glucose in patients with moderate hyperglycaemia after acute stroke is not recommended.

Patients with hyperglycaemia (random blood glucose >7 mmol/L) should be formally assessed (by OGTT) to exclude or confirm a diagnosis of impaired glucose tolerance or diabetes.

Hypoglycaemia should be corrected according to local protocols.

Patients with diabetes should be treated according to local protocols.

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<th>Ward</th>
<th>Date</th>
<th>Time (repeated every 4 hours)</th>
<th>Ketones</th>
<th>Urine/Blood</th>
<th>Blood Glucose</th>
<th>Date</th>
<th>Time (repeated every 4 hours)</th>
<th>Ketones</th>
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Compiled by CH S Lorimer Ward 4 PRI
Stroke Liaison Referral Form

- When patient is discharged from AMU
- So that patient is appropriately followed up, previous may have been missed
Information for family/patients

- We obtained information leaflets
- Ensure staff aware of these leaflets
- Provide verbal and written information
Initial Challenges

- Blood sugars were not always being done 4 hourly
- Staff removing individual items from stroke packs
- Capturing ‘new starts’ to AMU
- If pack wasn’t used the information was haphazard
Stroke Patients Today In The AMU

• Staff actively promote appropriate treatment of patients thus ensuring:
  – CT scanning occurs on day of admission
  – swallow screen and neurological observations are prioritised on admission and aspirin is appropriately prescribed
  – Blood glucose monitoring undertaken

• Improvement in communication with Stroke Unit regarding in-patients and pending transfers

• Stroke unit actively ‘pull’ patients into unit

• Feedback from the Stroke Unit which identifies staff who failed to follow the stroke patient pathway appropriately

• Regular stroke education for nursing staff
Feedback

- Staff feel they now have the confidence to safely look after a patient with a stroke
- Support from project lead in stroke care
- Statistics showing steady improvement
- Our stroke consultants are proactive and approachable
Future

- Ever evolving in correlation with national guidelines
- Continue to look at individual patients who fail to meet standards
- Open to criticism
- Patient feedback
Admission To The Stroke Unit By Day 1

Admission to the stroke unit by day 1

Year

Percentage

2009 2010 2011 2012 2013

79
81
88

7
67

Percentage

NHS Tayside
Swallow Screening

Swallow screening

<table>
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<th>Year</th>
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