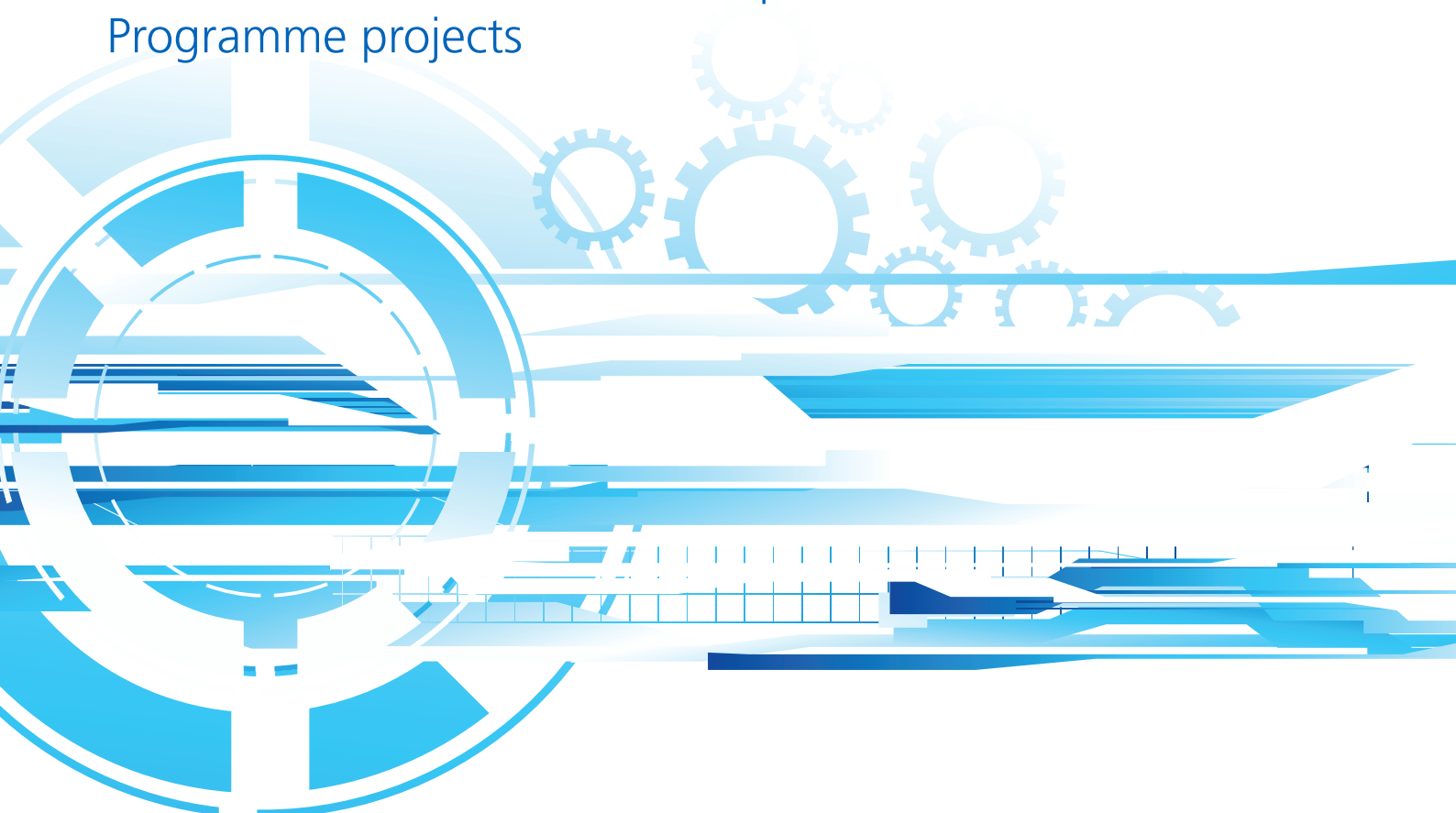




## Stroke Improvement Programme

Implementing best practice in acute care:  
case studies from the Stroke Improvement  
Programme projects



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# Introduction

Since March 2009, ten projects worked with the Stroke Improvement Programme to explore how to improve the care they provide for their patients. Their experience has led to the identification of the some key actions.

The suggestions, experiences and examples provided in this document are intended to generate ideas, to show what is possible when teams work constructively together and to guide planning for improvement activities. Nine out of the 10 sites are included in this publication.

The Stroke Improvement Programme continuously publishes materials to help those striving to improve stroke and TIA services. All materials are available on the Stroke Improvement Programme web site at:

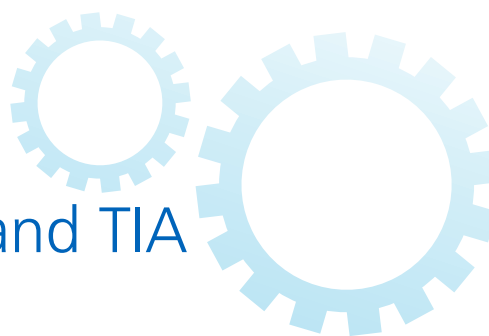
[www.improvement.nhs.uk/stroke](http://www.improvement.nhs.uk/stroke)

Contacts for each of the projects are included. Full details of the service improvement can be found at:

[www.improvement.nhs.uk/stroke](http://www.improvement.nhs.uk/stroke)

## TOP TIPS

- Protect stroke unit beds
- Actively cooperate with the rest of the hospital
- Develop a flexible, stroke skilled workforce
- Work with stroke survivors and carers
- Build an active partnership with A&E
- Work with the ambulance service
- Move to six days a week working for therapy services



# Sustainable acute stroke and TIA management programme

Milton Keynes Hospital NHS Foundation Trust

## Aims

The project in Milton Keynes aimed to achieve a patient-centred pathway for stroke, and worked across several areas of their stroke and TIA service. The main aims for the acute stroke portion of this work were to improve access and quality of care through:

- ensuring all patients with acute stroke were admitted directly to an acute stroke unit equipped and staffed to be able to deliver high quality care
- providing timely access to diagnostics both within and out of hours
- ensuring seamless transfer of care from acute stroke rehabilitation to the community based rehabilitation

## Issues

At the start of the project, there was a high proportion of stroke outliers on other medical wards. The proportion of stroke patients spending at least 90% of their stay on a stroke unit was, on average, 45%, and 20% of patients were not receiving brain imaging within 24 hours.

## Actions

The need for 'fast track' bed was agreed with acute stroke unit clinicians, the bed management team and divisional manager. Use of the bed is monitored and reported weekly, and it is kept solely for use by stroke patients to enable timely transfer from A&E and the clinical decision unit.

To ensure stroke patients identified in A&E or clinical decision unit do not transfer to another ward, a bed management protocol was put in place and shared around the trust to ensure members of staff across all levels identify the urgency of transferring a patient to the acute stroke unit.

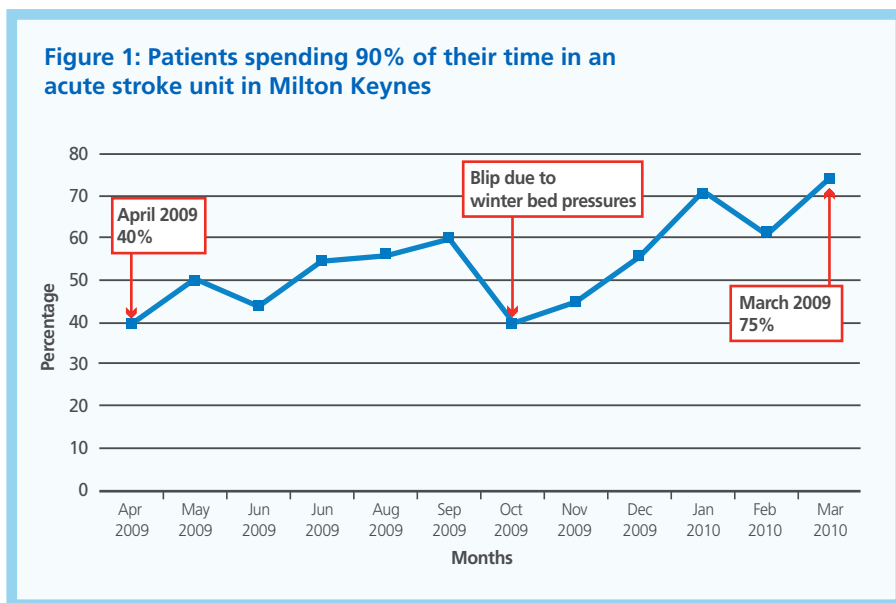
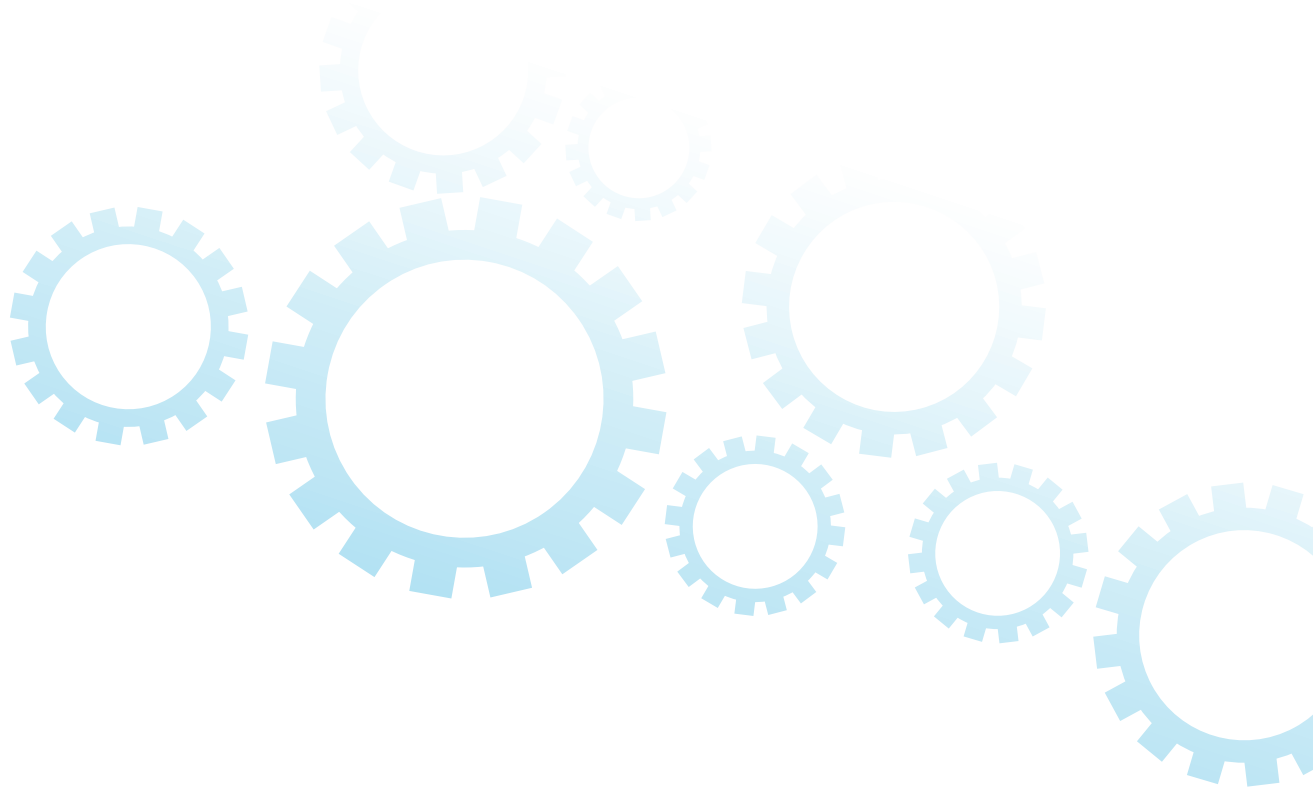
Multiple workshops were held with acute and community staff involved in stroke patient care to map the pathway a patient has access to, identify current constraints in hospital and the community, involve staff on the ground in suggesting improvements, and develop transfer of information across teams. This helped healthcare professionals put into perspective their role in the

wider patient journey, and increased awareness of the importance of stroke as a specialism.

A 'productive board' listing all patients, and key information on their status and care, was installed to improve ward organisation. This enabled staff to better plan patient care, enable safe discharge, and improve communication amongst all those involved in a patients care.

## Outcomes

By the end of the project, all stroke patients received brain imaging within 24 hours of arrival at hospital. The proportion of stroke patients spending at least 90% of their time in hospital on a stroke unit increased from 50% to 70% and continues to improve (see figure 1).



Communication around the hospital has been improved and there is much greater awareness and recognition of stroke within the trust.

**Contact**

**Nicola Evans**

Project Manager

Milton Keynes Hospital NHS

Foundation Trust

[nicola.evans@mkhospital.nhs.uk](mailto:nicola.evans@mkhospital.nhs.uk)

# Direct access into the stroke hyper acute unit (DASH)

Nottingham University Hospitals NHS Trust



## Aims

The central aim of the Nottingham project was that individuals who had a stroke had rapid and equitable access to the stroke hyper-acute service. This would include admission directly to the stroke unit when arriving at the hospital, as opposed to admission through A&E. Patients should be admitted, assessed and, where appropriate, treated with thrombolysis within three hours of onset of symptoms.

## Issues

At the start of the project there were patients being admitted directly onto the stroke unit, but lower in number than compared with those being transferred from the A&E situated on a campus five miles across the city, and from the emergency admissions unit which was on the same site as the stroke unit.

Patients began to arrive on the stroke unit from A&E without a call being made to the stroke unit to advise them in advance. Telephone calls and triage of the calls were not reliably recorded.

## Actions

As many stakeholders as possible were involved to gain commitment, including the support and sponsorship of the chief executive, along with clinical and medical directors.

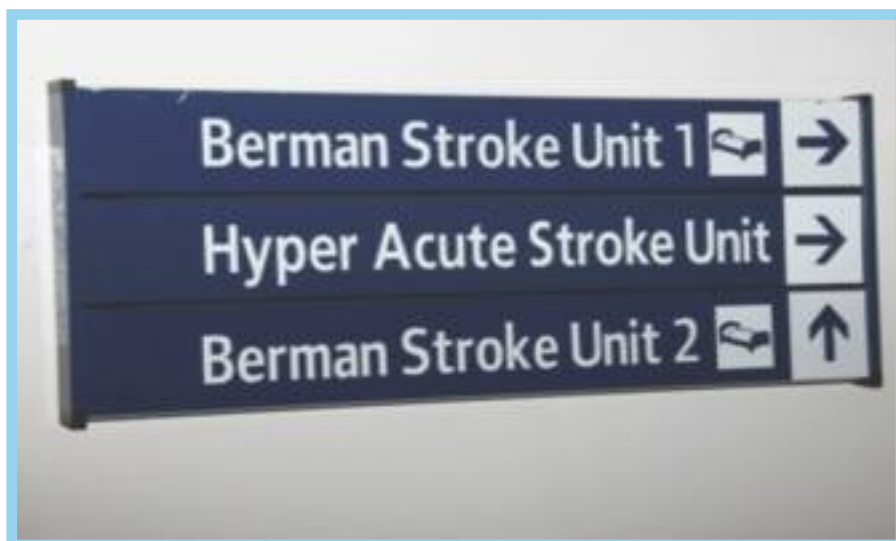
The existing pathway was 'process mapped' to identify what worked well and the gaps in service. Communication and monitoring work was systematically undertaken. This included contacting the ambulance service to ensure they had the pathway information and supported the project, and collecting information weekly on stroke admissions to A&E to enable challenge of the ambulance service to explore why patients were not admitted directly into the stroke unit. Common themes that arose were that crews were unaware of admission protocol, unsure of time for admission, and there was confusion around thrombolysis.

To ensure that the ambulance crews were fully informed of changes which would affect the patients pathway, work was undertaken with East Midlands Ambulance Service



management to produce bulletins containing the direct access policy, and more importantly, the direct phone number for the telephone on the stroke unit, known as 'the bat phone'.

To help distinguish the 'bat phone' from the several other phones on the unit, a new ring tone and flashing light was installed to alert the team to the emergency response required.



This new phone and number alerts staff on the ward immediately when a patient is going to be transferred, giving them the opportunity to triage, and then give advice to the crew on where to take the patient.

Information was sent to all GPs asking them to contact the stroke unit if they assessed a patient with stroke symptoms. A further request was sent with a reminder that the call to East Midlands Ambulance Service should include the instructions for an emergency ambulance, and not a routine admission. The vehicle to be sent must also be a four wheel vehicle with a two manned crew.

'Walking the patient pathway' was carried out by both clinical and non-clinical members of the team, and highlighted a number of problems that could be easily and rapidly addressed, such as the A&E not having the 'bat phone' number displayed, even though the 'bat phone' number had been included on the stroke emergency department pathway poster.

### Outcomes

The project has successfully produced a direct access route into the hyper-acute stroke unit. All suspected stroke patients are now referred directly to the stroke unit via the 'bat phone'.

The 'bat phone' changed the pathway for the patient almost immediately, with everyone concerned fully aware of what was happening, where the patient was to be sent and what would happen next. There was a reduction in delays in transfer, and a decrease in the number of patients being admitted via A&E. FAST-negative patients later confirmed as a stroke are then sent directly to the stroke unit from A&E.

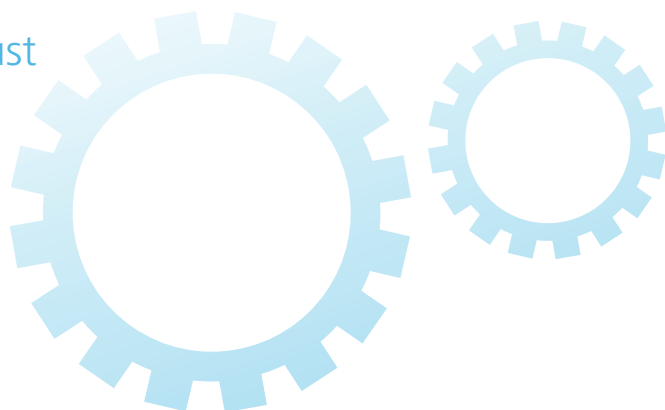
All ambulance crews now assess patients at site and report their findings to the triage nurse, who records all relevant information on new documentation in readiness for the arrival of the patient. The unit now has new signs identifying where they are located, which helps with directions for both ambulance crews and relatives.

### Contact

**Heather McCormack**  
Service Development Manager  
East Midlands Cardiac  
and Stroke Network  
[heather.mccormack@nhs.net](mailto:heather.mccormack@nhs.net)

# Improving acute stroke care in Poole

Poole Hospitals NHS Foundation Trust



## Aims

The team from the Integrated Stroke Unit at Poole Hospital aimed to improve direct admissions to the unit, and increase the percentage of patients spending more than 90% of their hospital stay there. As part of this they wanted to consolidate the hyper-acute service experience for all stroke admissions and improve their thrombolysis service.

## Issues

A lot of work had been done across the stroke network to improve the urgent response by ambulance teams to stroke in the area and develop provision of 24 hour thrombolysis, but the number of patients thrombolysed at Poole remained low. The team had tried a number of initiatives over the years to improve the quality of service, but were not achieving the standards around assessment and treatment of stroke for every patient, and only 37% of stroke patients were admitted to the unit within four hours.

## Actions

After raising stroke higher on the trust agenda through widespread communication and process mapping (including bed managers and high dependency unit staff). A new patient pathway was agreed, focusing specifically on the part of the pathway from arrival at hospital to completion of the multi-disciplinary team assessment. This would minimise unnecessary delays for patients being admitted and ensure a safe but speedy pathway for thrombolysis patients both in and out of hours.

The team put in place an ambulance pre-alert system to ensure A&E, the stroke team and other key staff were aware of any potential thrombolysis patient en route to the hospital to speed up the response time on arrival. They established training in thrombolysis and telemedicine for all relevant staff, from ambulance crews through to radiology. Additional nursing staff for the acute stroke unit to support thrombolysed patients were secured, protocols agreed for the senior nurse practitioner to request CT scans, and all registered nurses and medical staff undertook training in safe swallow screening.

A 'Patient Group Directive' was established for aspirin to assist delivery to appropriate patients within 24 hours of admission. Extending the developments to stroke patients who were not suitable for thrombolysis, they created an 'assessment trolley' on the acute stroke unit to speed their assessment and admission process. Local agreements with a neighbouring trust enabled 24 hour thrombolysis to commence in November 2009, supported by a range of publicity and visits from the team to local GPs.

## Outcomes

Stroke patients are now more likely to be thrombolysed, to be admitted directly to acute stroke unit, to have timely swallow screening and brain scanning and to be commenced on antiplatelet therapy within 24 hours.

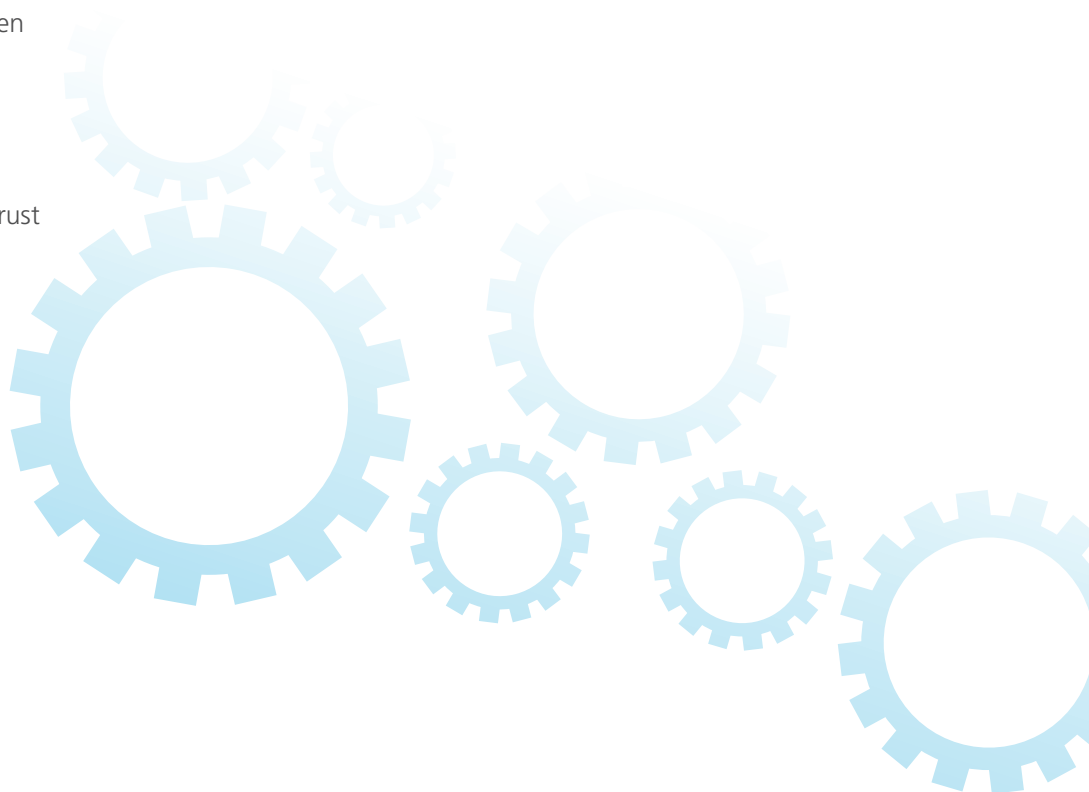


Data shows that thrombolysis rates have improved from 1.4% at the start of the project to 5.6% by March 2010, and mean door-to-needle time had reduced steadily from 120 minutes in January to 96 minutes by March 2010. The percentage of patients receiving aspirin within 24 hours of admission has risen by 40% and brain scanning within 24 hours by 16%. The percentage of patients admitted to the acute stroke unit within four hours of arrival has risen from 50% to 76%.

**Contact****Dr Suzanne Ragab**

Stroke Consultant

Poole Hospitals NHS Foundation Trust

[suzanne.ragab@poole.nhs.uk](mailto:suzanne.ragab@poole.nhs.uk)

# Improving access to the acute stroke unit

Queens Hospital NHS Foundation Trust



## Aims

The team from Queens Hospital aimed to increase the numbers of patients that access the acute stroke unit) through direct admission protocols from A&E. They also wanted to enhance the stroke pathway from A&E to the acute stroke unit and include TIA admissions, provide 24 hour admission to support stroke thrombolysis and to develop the acute stroke unit staff to support A&E in managing stroke patients and facilitating transfer.

## Issues

Initially, most stroke patients were admitted to the emergency admissions unit for at least 24 hours and transferred to the stroke unit later. No protection of stroke unit beds meant the six beds in the stroke unit were often used for care of the elderly and medical admissions.

All high risk TIA patients were admitted and managed as inpatients, and the thrombolysis service only ran 9am to 5pm on weekdays.

## Actions

The TIA service was completely redesigned to include a five day a week drop in clinic, with a single point of referral and dedicated carotid ultrasound slots. All referrals and carotid requests were screened by a stroke coordinator, and a direct referral pathway for those patients needing vascular surgery was established.

The thrombolysis service was extended to 9am to 8pm weekdays using on call registrars to manage calls and provision of an in-house radiographer until 8pm. An out of hours pathway was developed to support staff. Developments included daily provision of an admission bed on the stroke unit to support thrombolysis.


An agreement was put in place with the imaging department to routinely scan all stroke patients over weekends and bank holidays. This included provision for tele-radiology so radiologists could read scans at home.

A stroke unit admission protocol was written and agreed and a competency based in-house training programme put in place on the acute stroke unit. Developments on the stroke unit were linked in with hospital emergency pathway redesign to make sure acute stroke was included in daily operations meetings and bed allocation was used appropriately.

## Outcomes

TIA patients are now managed on an outpatient basis, avoiding admission, and most are now seen within 24 hours.

The acute stroke unit now runs much more smoothly. Patients are identified by bed management earlier and are allocated to the stroke unit quicker. Communication between clinicians and capacity management is much improved. The proportion of patients spending 90% of their stay on the stroke unit has increased from 71% to 89%. Now 96% of stroke patients are scanned within 24 hours, compared to 70% at the start of the project.



A&E now recognise the importance of the stroke pathway and the benefits of thrombolysis. More patients are being assessed for suitability and the stroke service has joined the IST-3 research trial.<sup>1</sup>

Two members of the stroke team received the trusts service improvement award this year.

**Contact****Peter Tari**

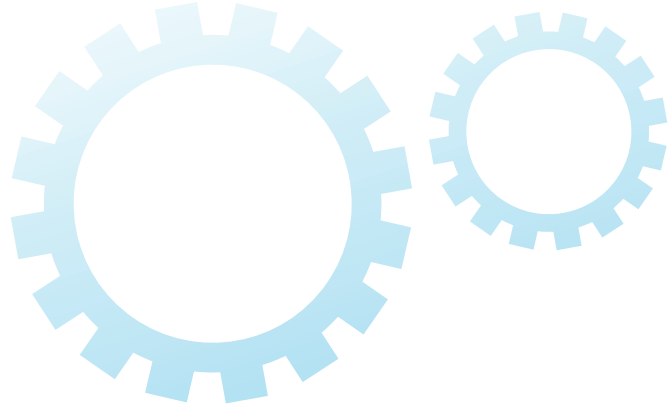
Stroke Co-ordinator  
Queens Hospital NHS  
Foundation Trust

[peter.tari@burtonh-tr.wmids.nhs.uk](mailto:peter.tari@burtonh-tr.wmids.nhs.uk)

<sup>1</sup>The Third International Stroke Trial (IST-3) of thrombolysis for acute ischaemic stroke: an international multi-centre, randomised, controlled trial to investigate the safety and efficacy of treatment with intravenous recombinant tissue plasminogen activator (rt-PA) within six hours of onset of acute ischaemic stroke. For further information, see [www.controlled-trials.com](http://www.controlled-trials.com)

# Royal United Hospital, Bath, Stroke 2010

Royal United Hospital, Bath



## Aims

The team from the acute stroke unit at Royal United Hospital, Bath aimed to improve access to the unit and develop the services provided there. The existing stroke services would be expanded to include a hyper-acute unit and to provide thrombolysis 24 hours a day. These improvements would be evident through measures on speed of access to the unit, time spent on the unit and scanning promptness.

## Issues

The biggest problem was getting all stroke patients in the trust onto the acute stroke unit. Despite proactively tracking stroke patients within the hospital and managing beds closely, in the 2008 National Sentinel Audit, only 36% of patients spent 90% of their stay on a stroke unit. In addition, only 2% were admitted to a stroke unit within four hours of admission to hospital.

Patient focus groups, run with the help of The Stroke Association, highlighted how bad acute stroke patients' experiences were when on the medical assessment unit for several days.

## Actions

Systematic modelling showed that bed numbers were inadequate for demand on the unit. In addition, existing beds were integrated on a 28 bed ward shared with neurology, which resulted in a lack of clear identify for the acute stroke unit. Calculations showed that 26 acute stroke unit beds were needed to ensure all stroke patients could be directly admitted from A&E, even at times of peak stroke admissions.

Board level sign up to improving stroke services was obtained to make this a priority within the trust. Stroke and neurology services were separated into two ward areas to give each specialty its own clear identity. This left a 28 bed ward, including one six bed area that was converted into a hyper-acute stroke unit and reduced to four beds.

Support for bed availability was provided by agreeing equity of the acute stroke unit with the coronary care unit within the trust in terms of bed and site management. Every day at the site meeting, the availability of a stroke bed is checked in the same way as a cardiac bed. As soon as a stroke patient is admitted to acute stroke unit, bed management prioritise clearing another bed.

## Outcomes

As there is now, for the first time, an entire ward clearly signposted 'Acute Stroke Unit', the service's profile within the trust has been raised, morale for staff much improved and a clear mandate given to gear the ward around providing the best stroke care.

Patients are now admitted directly from A&E to the acute stroke unit, bypassing the medical admissions unit and other wards. By the third week of direct admissions, length of stay had reduced from 18 to 5.5 days. Staff throughout the hospital, from infection control to bed management, commented on the dramatic change in the unit.

Twenty eight patients have already been thrombolysed in the last year compared to 12 the year before. The service has been significantly improved with no extra money, and the reduced length of stay has resulted in cost savings to the trust.

## Contact

### Dr Louise Shaw

Consultant Stroke Physician  
Royal United Hospital, Bath  
[louise.Shaw@ruh-bath.swest.nhs.uk](mailto:louise.Shaw@ruh-bath.swest.nhs.uk)

# Fast access to stroke care pathway

## Sandwell and West Birmingham Hospitals NHS Trust



### Aims

The core aim of the team in Sandwell was to develop a direct admission pathway and protocol for all stroke patients. This would improve care and result in patients being transferred directly to an acute stroke unit from A&E within four hours, spending at least 90% of their hospital stay on a stroke unit, and receiving timely swallow assessment and brain scanning.

### Issues

At the start of the project, the stroke pathway meant patients went through the emergency assessment unit before going to the stroke unit. There could be a delay of a day or more before the patients were admitted to the stroke unit; those who had minor strokes could be discharged home without reaching the stroke unit at all.

Although there was a clear pathway established, the thrombolysis service was from 9am to 5pm weekdays only.

### Actions

Two initial consultation exercises were held with all staff and also patients and carers. This led to a plan of areas to be reviewed and developed and had management support and engagement. An initial review of the pathway confirmed that there were often long delays in admission to the stroke unit.

A process of meetings and discussions were held over a period of time with the acute on-call teams, A&E, the stroke unit and radiology teams. The agreed path was to admit patients directly from A&E, following a medical review there with the co-operation of the on call teams, and patients should receive their CT head scans before transfer to the stroke unit, all within 24 hours.

However, everyday pressures meant that the new pathway required continuously reinforcing, monitoring and reviewing. There was agreement from management, bed management and the stroke unit that there would always be a bed available on the stroke unit. Any delays in A&E were escalated up to the on call manager.

An audit clerk has been recruited and the information department have developed a monitoring system that highlights patients that do not spend 90% of their time on a stroke unit. This allows the pathway to be continuously checked and data to be validated easily. There is a weekly review of the patient's pathway and a monthly stroke action group (including representation from all departments) which provides support for development of the wider stroke service.

### Outcomes

A staff and patient and carer engagement process, called 'listening in action', was successful in raising awareness of stroke and engaging all key stakeholders.

Stroke has become recognised as an emergency and it is acknowledged widely that 'time is brain'. Scans are done faster and suspected stroke patients are transferred directly from A&E to the stroke unit. There has been a significant increase in patients being scanned in a timely manner, and there is always a bed available on the stroke unit.

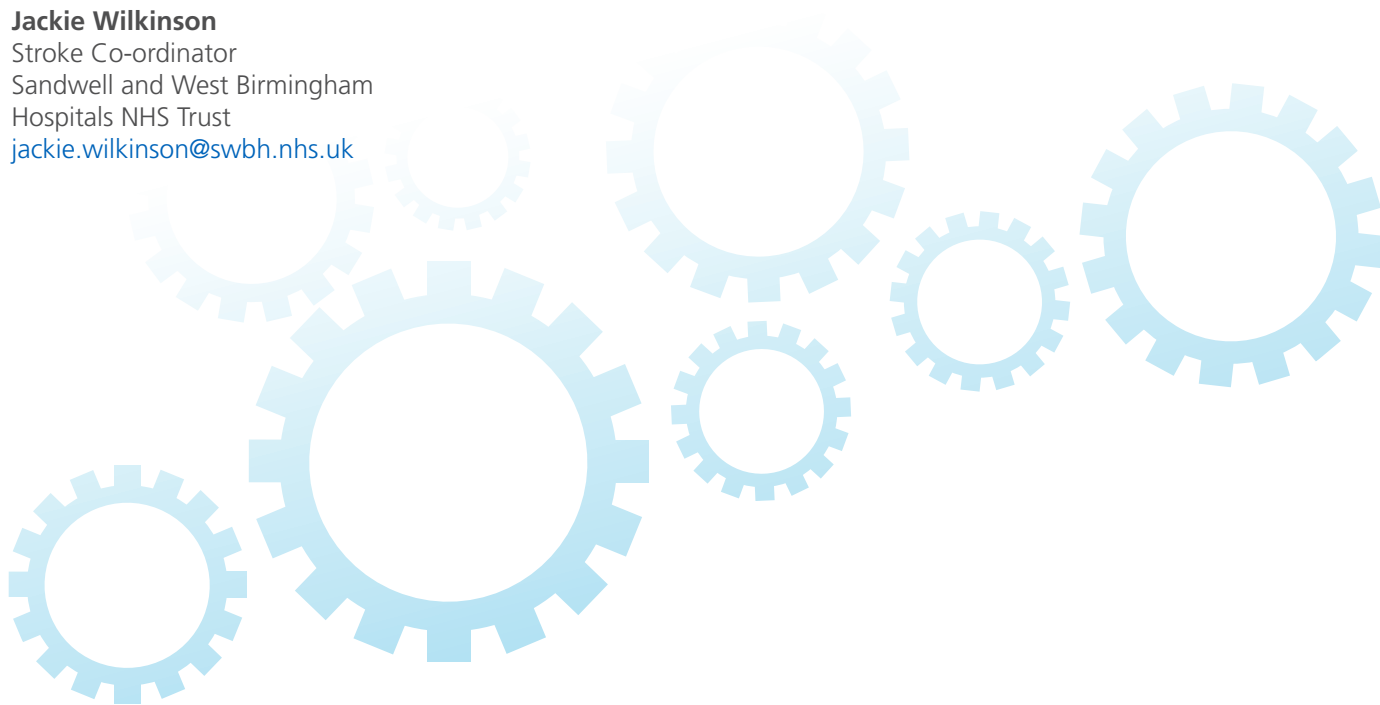
The most significant change is the recognition of stroke and team development across a wide range of departments from the ambulance service, A&E, bed management, radiology, the acute stroke unit and general management.

There is now a 24 hour thrombolysis service including a comprehensive pathway and a structured education programme for both doctors and nurses.

**Contact**

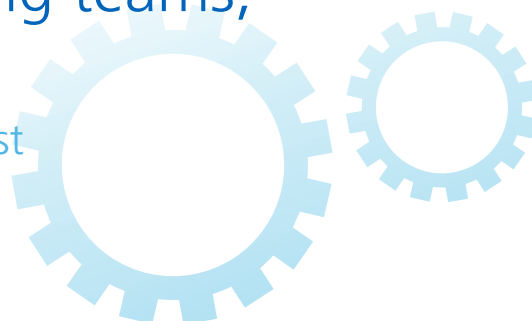
**Jackie Wilkinson**

Stroke Co-ordinator  
Sandwell and West Birmingham  
Hospitals NHS Trust  
[jackie.wilkinson@swbh.nhs.uk](mailto:jackie.wilkinson@swbh.nhs.uk)



# Acute stroke care: 'building teams, building stroke services'

Surrey and Sussex Healthcare NHS Trust



## Aims

The project aimed to develop an effective stroke team, which would drive their stroke service forward and to develop comprehensive interdisciplinary working. This would support wider aspirations around improving the acute stroke service, including establishing an acute pathway for direct access to specialist stroke services, introducing a thrombolysis service, improved access to brain imaging and patients spending more of their stay on the stroke unit.

## Issues

The acute stroke unit comprised 21 beds, but lacked a formal bed policy or stroke pathway. The service had been led by successive locum consultants for two years, and selection of patients for the acute stroke unit was made by on call medical staff, resulting in an ad hoc approach. CT was accessed via the 'next day early bird slot' system. The trust did not have a thrombolysis service for eligible patients and so FAST positive patients were diverted to other trusts. Only 7% of patients were directly admitted from the A&E and 56% of stroke patients did not spend any time on acute stroke unit.

Having had a long period of time with different clinical leadership and styles, morale on the ward was low.

## Actions

Two key actions have facilitated improved bed management and flow:

1. the introduction of a fast-track bed for patients who can be moved off the acute stroke unit, and a daily bed status form to highlight delays to discharge is presented at the daily 9am bed meeting
2. a 24 hour stroke outreach team now identifies and tracks stroke patients within the hospital, with a supernumery bleep holder during the day, a senior acute stroke unit nurse at night and other outreach nurses who proactively seek stroke patients from the wards

Through engagement with radiology, a dedicated bleep is held by a duty radiographer for 24 hours and acute stroke patients are automatically added to the urgent protocol for next CT scan slot.

Many initial difficulties within the service stemmed from the lack of a unified vision of its future amongst the team. The project was used to set objectives with timeframes in which to map the changes, and establish working groups to achieve them.

Senior team members organised training for junior members as well as ensuring core competencies were met, and specific training on goal planning was given to therapy and nursing staff. As a result, working practices have gradually developed, delivering a more cohesive approach. This includes interprofessional support for the daily ward rounds to enable status updates, effective discharge planning and a predicted date of discharge for each patient.

A new whiteboard has become the centre of the teams' activities, allowing rapid knowledge of the current status of each patient, including their predicted discharge date and destination. This allows the weekly interdisciplinary team meetings to focus on patient centred, specific goals and trialling different outcome tools.

Two experienced stroke consultant physicians have been in post since January 2010, bringing new leadership and direction to the service, with new ideas for development and productivity. The new stroke pathway commenced in January 2010, and an 8am to 10pm thrombolysis service was launched with four consultant physicians working the rota, supported by off-site CT viewing.

### Outcomes

Significant improvements have been made to access to the acute stroke services and compliance with vital signs targets is better. Direct admissions peaked at 60% in February 2010, with 67% of patients achieving 90% stays on the acute stroke unit, and 86% of patients spending some of their hospital stay on the acute stroke unit. By March 2010, 66% of patients had CT scans within three hours.

The team feels that much improvement is due to the development of the outreach service, crucially incorporating a dedicated bleep holder, presence in A&E and proactive approach. This has been further enhanced by staff enthusiasm, positive PR for the stroke service and improved relations with radiology.

The bed status sheet has been invaluable in highlighting where problems are encountered on a daily basis and has given the team permission to actively manage their own beds. Documentation of the interdisciplinary team has improved

and become clearer, encapsulating status and goals, and a simple summary sheet for better communication with patients and relatives. Average length of stay has steadily reduced from 20.4 to 13.7 days.

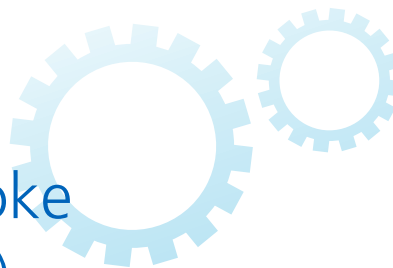
A recent staff feedback exercise showed positive attitudes and examples of considerably improved mutual professional regard and understanding. A key learning point has been that the team is more powerful as a whole than the sum of its parts, and that forward progression need not rely on any one individual. With mutual respect and an understanding of each others roles a team can work effectively without a single leader. When a team is motivated and empowered, it has direct effects on patient care and outcome measurements.

### Contact

#### Dr Natalie Powell

Specialist Registrar in Stroke  
Surrey and Sussex Healthcare  
NHS Trust  
East Surrey Hospital  
[natalie.powell@sash.nhs.uk](mailto:natalie.powell@sash.nhs.uk)





# EASY (early admission to stroke unit your brain heals quicker)

Worcestershire Acute Hospitals NHS Trust

## Aims

The team aimed to improve patient access to the acute stroke unit, and ensure those transferred to other wards are identified and moved to acute stroke unit promptly. This was coupled with specific aims to speed up physiotherapy assessment, improve discharge processes and develop staff education and training.

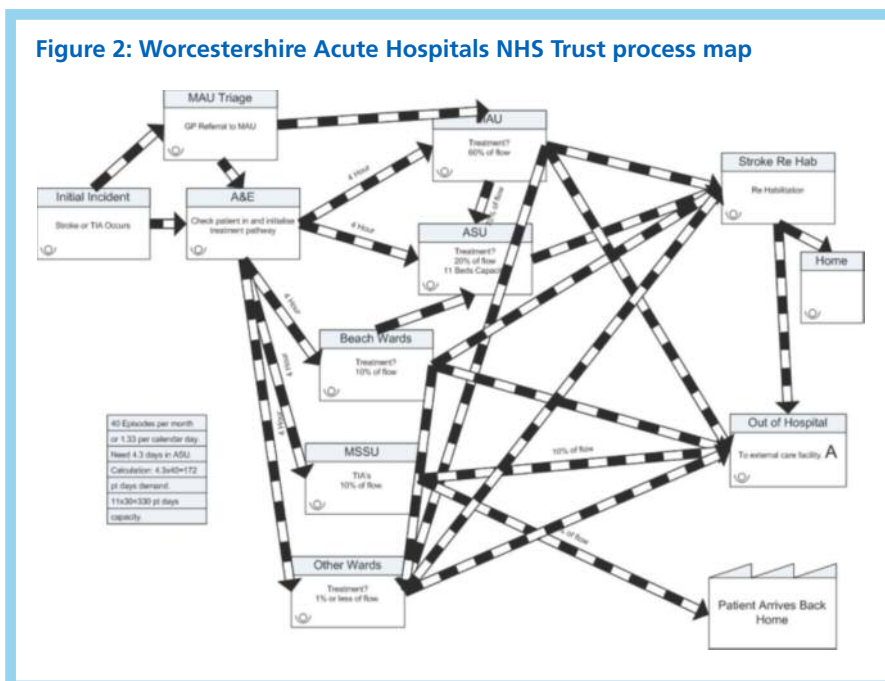
## Issues

Initially, only 20% of patients were directly transferred to the acute stroke unit from A&E and/or the medical admissions unit. There were daily issues with patients with stroke on other wards and stroke beds filled with non-stroke patients.

Process mapping showed the pathway for stroke patients was complicated and confused (see figure 2). There was no formal programme of education for staff, rehabilitation was bed-based and only one consultant physician was undertaking thrombolysis.

## Actions

The service improvement lead for the trust ran a pathway exercise with a group from the trust and the PCT to plot the current pathway and design a better one.



A key step in the project was to promote the stroke service status as an urgent specialist service, similar to cardiology. This raised the profile of improving the quality of stroke management and care within the trust by prioritising stroke patients, and ensured stroke was considered at bed meetings three times a day.

A capacity mapping exercise was undertaken to look at the number of acute stroke beds and the number needed. An agreement was made to ring-fence beds on the acute stroke units countywide, and three additional acute stroke beds opened in August 2009. Two new appointments of stroke specialist

nurses enabled an overview of where all patients are, and helped to work closely with the bed manager to transfer patients appropriately.

The team set up a formal programme of education and training for staff working in stroke units, including thrombolysis training days, and undertook a workforce mapping exercise. There was increased awareness of how fundamental it is to manage the 'back door', i.e. improving rehabilitation and speeding up discharge. Although delays still occur with social services discharging patients, close liaison with the community stroke team has enabled improved patients flows.

**Outcomes**

Access to the stroke unit and the proportion of time spent on the unit has been increasing month by month, with an increase in direct admissions from A&E or the medical admission unit. Physiotherapy assessment has improved, and the Commissioning for Quality and Innovation (CQUIN) for the service achieved<sup>2</sup>

There are now daily multidisciplinary team meetings on the acute stroke unit and all stroke patients are discussed at all bed meetings three times a day. The acute stroke unit on the Worcester site has been reconfigured to have its own staff (who are not rotated), and the

appointment of a family and carer support worker from The Stroke Association offers inpatient and post-discharge follow up. The stroke rehabilitation ward has been upgraded in line with privacy and dignity guidelines and further clinic slots opened for high-risk TIA patients to avoid admission.

A successful 'stroke school' has been established, and further sessions are being delivered, giving staff greater insight into their work and the work of other members of the team. A cardiovascular disease degree module at Worcester University has also been set up.

**Contact**

**Elaine Stratford**  
 Stroke Specialist Nurse  
 Worcestershire Acute  
 Hospitals NHS Trust  
[elaine.stratford@worcsacute.nhs.uk](mailto:elaine.stratford@worcsacute.nhs.uk)

**Figure 3: Percentage of stroke patients spending at least 90% of their time on a stroke ward**



<sup>2</sup>Further information on CQUIN can be found on the Department of Health website at: [www.dh.gov.uk](http://www.dh.gov.uk)

# One call does all: smoothing the transfer from the emergency room to the acute stroke unit

Yeovil District Hospital NHS Foundation Trust

## Aims

The team wanted to improve the process for all acute stroke patients being admitted and make the service less dependent on individual staff. It was envisaged that this would increase the likelihood of success of expanding the thrombolysis service into evenings and the weekend.

## Issues

There was agreement within the team on perceived key issues, but an absence of readily available data to support this. Firstly, challenges around early assessment for stroke patients in A&E, and secondly, insufficient capacity on the stroke unit because of difficulties with timely transfer to the community.

## Actions

The team held monthly meetings with time divided between the two key issues to help them remain clear and progress with both aspects. Money released by a reduction of clinical hours of the consultant nurse was transferred into two posts for stroke within A&E, thereby smoothing the process of training and developing protocols in stroke amongst A&E staff.

The issue of outlying stroke patients was highlighted to senior staff by creating a daily list. This meant that the process of transfer onto the stroke unit became less dependant on the knowledge of any one professional and reduced the number of duplicate phone calls.

To tackle challenges around transfer out of the unit, work with community teams reduced the paperwork trail and streamlined the process where possible. As there were three PCTs, each with different referral processes, this was a complex task. To resolve this, at each multidisciplinary team meeting, the stroke unit team would code each patient red (medically unfit) amber (ready for transfer within 72 hours) or green (fit for transfer), and then share this with the appropriate PCT link team. The community team now anticipate patients that will be ready for discharge in the next few weeks, and take the necessary actions locally.

All the newly developed documentation, protocols, and training information for stroke was transferred onto the trust intranet, for use as the key resource and for the stroke team collectively to keep it up to date.

## Outcomes

Stroke patients are being triaged more quickly in A&E. Initially, data collection showed no significant improvement in either initial diagnosis or direct admissions, but this may be due to the recent extension of the thrombolysis service to 8am to 11pm Monday to Friday, which had meant additional training of medical and nursing staff. As with other teams, local factors, such as ward closures and peaks in admissions, may have skewed the picture for direct admissions, although there is now a confidence that a change in thinking has been embedded, and that all staff are working collectively to ensure access to the stroke unit from A&E.

Despite problems created by ward closures for infection control creating 'bumps in the road', progress continues towards the aspiration for '90% stay on a stroke unit'.

The length of stay for Somerset patients in the last three months has reduced from 18 days to 13 days; whilst the only change in practice has been the smooth, consistent, transfer of information from the acute trust to the PCT on a weekly basis.

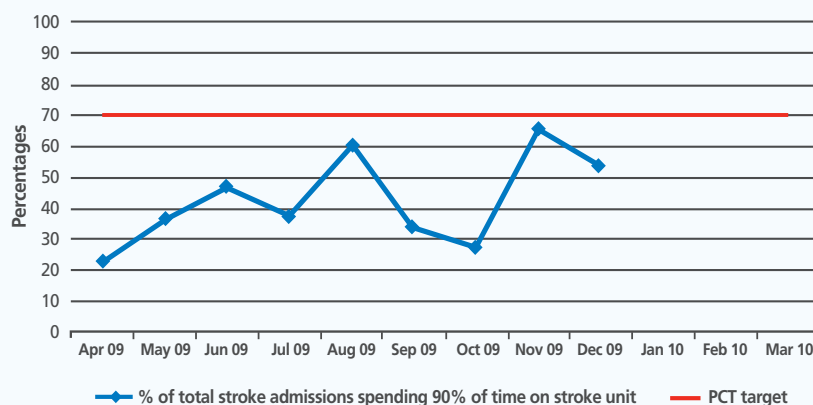
The team feel that the appointment of a stroke link within A&E has resulted in a greater than expected improvement in knowledge and stroke care, which is evidenced by increased attendance of A&E staff at stroke study days. Data collection will continue, as it has helped quantify 'gut feelings' and demonstrate improvements, however small. The service is now viewed less as a Monday to Friday service across all parts of the organisation, with more recognition being given to the importance of timely intervention, particularly in relation to brain scanning and direct admissions.

### Contact

#### Caroline Lawson

Consultant Nurse – Stroke  
Yeovil District Hospital NHS  
Foundation Trust  
[caroline.lawson@ydh.nhs.uk](mailto:caroline.lawson@ydh.nhs.uk)

**Figure 4: 90% stay on a stroke unit**



# Stroke Resources



## **Stroke Improvement Programme website**

The Stroke Improvement Programme website offers information and resources on improving stroke and TIA services, including:

- information on topical issues affecting stroke and TIA services
- presentations from events and meetings
- examples of successful redesign and stroke improvement in stroke and TIA services
- information on measures

[www.improvement.nhs.uk/stroke](http://www.improvement.nhs.uk/stroke)

## **Sustainability Checklist, NHS Cancer Improvement Programme**

A checklist containing key questions to ask about your project or service to ensure plans are in place to sustain the improvement.

[www.improvement.nhs.uk/cancer/documents/inpatients/Sustainability\\_Checklist.pdf](http://www.improvement.nhs.uk/cancer/documents/inpatients/Sustainability_Checklist.pdf)

## **The Sustainability Toolkit, NHS Heart Improvement Programme**

Although focused on improving cardiac pathways, The Sustainability Toolkit provides useful information and examples on how to sustain improvements. It also contains resources on capturing data, measurement and analysis.

[www.improvement.nhs.uk/heart/sustainability](http://www.improvement.nhs.uk/heart/sustainability)

## **Trainer's Resource Pack – An Introduction to Service Improvement, NHS Improvement**

The Trainer's Resource Pack - An Introduction to Service Improvement, is a collection of tried and tested training modules for service redesign tools and techniques, and change management skills.

[www.heart.nhs.uk/trainers\\_resource\\_pack.htm](http://www.heart.nhs.uk/trainers_resource_pack.htm)

## **Guidance on Risk Assessment and Stroke Prevention for Atrial Fibrillation (GRASP-AF) Tool**

This tool should be used as part of a systematic approach to the identification, diagnosis and optimal management of patients with AF to reduce their risk of stroke.

Developed collaboratively and piloted by the West Yorkshire Cardiovascular Network, the Leeds Arrhythmia team and PRIMIS+, as part of the AF in primary care projects, made available nationally through NHS Improvement.

[www.improvement.nhs.uk/graspaf](http://www.improvement.nhs.uk/graspaf)

## **Atrial Fibrillation documents, NHS Improvement**

The following documents are available to download from the Stroke Improvement website

[www.improvement.nhs.uk/stroke](http://www.improvement.nhs.uk/stroke)

## **Atrial fibrillation in primary care: making an impact on stroke prevention, October 2009**

This document aims to capture the final summary of their individual approach, lessons learned, improvements to practice and quality outcomes, also sharing tools and resources developed to enable other health communities to drive this agenda forward.

### **Commissioning for Stroke Prevention in Primary Care - The Role of Atrial Fibrillation, June 2009**

Developed following a national consensus meeting of opinion leaders in the field, this document is to develop a concerted strategy towards the management of AF in primary care, in particular anticoagulant management and its significance in relation to reduction in the risk of stroke.

### **Atrial Fibrillation in Primary Care National Priority Project, April 2008**

A summary document produced in April 2008 including descriptions, supporting information and key learning from the local projects that were part of the Atrial Fibrillation in Primary Care national priority project.

### **Atrial Fibrillation in Primary Care Resources and Learning, April 2008**

This online resource is a tool produced in April 2008 that captured the learning from the local project sites that worked on the Atrial Fibrillation in Primary Care national priority project. The resource provides documents, guidelines, presentations, proformas and algorithms developed and used by the local priority projects.

### **Stroke Improvement Programme e-bulletin**

Containing updates, news and information for anyone interested in developing stroke services, the Stroke Improvement Programme e-bulletin is essential for anyone working in stroke and TIA services.

The Stroke Improvement Programme e-bulletin is published every two weeks and the latest edition is available on the Stroke Improvement website [www.improvement.nhs.uk/stroke](http://www.improvement.nhs.uk/stroke). If you would like to subscribe to the Stroke Improvement e-bulletin, please email [anne.coleman@improvement.nhs.uk](mailto:anne.coleman@improvement.nhs.uk).

### **NHS Improvement System**

The NHS Improvement System is a free, comprehensive online resource supporting quality improvement in NHS services, offering a range of service improvement tools, case studies and resources.

The Improvement System gives NHS staff the capability to record, track and report on projects, share improvement stories and documents, access Statistical Process Control (SPC) software, Demand and Capacity tools and a Patient Pathway Analyser, all within a secure environment. [www.improvement.nhs.uk/improvementsystem](http://www.improvement.nhs.uk/improvementsystem)  
Email: [support@improvement.nhs.uk](mailto:support@improvement.nhs.uk)

### **Sustainability Model, NHS Institute of Innovation and Improvement**

The Sustainability Model is a diagnostic tool that is used to predict the likelihood of sustainability for your improvement project and provides practical advice on how you might increase the likelihood of sustainability for your improvement initiative.

[www.institute.nhs.uk/sustainability\\_model/general/welcome\\_to\\_sustainability.html](http://www.institute.nhs.uk/sustainability_model/general/welcome_to_sustainability.html)

### **Improvement Leaders' Guides, NHS Institute for Innovation and Improvement**

A series of service improvement guides, including a guide to sustainability and how it can be used in improvement work. The NHS Institute for Innovation and Improvement website also contains worksheets for measuring improvement.

[www.institute.nhs.uk/index.php?option=com\\_content&task=view&id=134&Itemid=351](http://www.institute.nhs.uk/index.php?option=com_content&task=view&id=134&Itemid=351)

### **StrokEngine-Assess**

This website provides evidence to support stroke rehabilitation assessment tools.

[www.medicine.mcgill.ca/strokengine-assess](http://www.medicine.mcgill.ca/strokengine-assess)

### **Spreading good practice documents and information, Sarah Fraser & Associates Ltd**

Sarah Fraser is an independent consultant who works with NHS organisations on how good practice spreads and how improvements can be made. The website contains a number of free resources on spreading good practice and improvements.

[www.sfassociates.biz/sitebody/MultiMedia/Documents.php](http://www.sfassociates.biz/sitebody/MultiMedia/Documents.php)



# Further information

## **Stroke Improvement Programme National Team**

NHS Improvement - Stroke  
Improvement Programme  
3rd Floor, St John's House,  
East Street, Leicester LE1 6NB

Tel: 0116 222 5184

Fax: 0116 222 5101

[www.improvement.nhs.uk/stroke](http://www.improvement.nhs.uk/stroke)

Email: [info@improvement.nhs.uk](mailto:info@improvement.nhs.uk)



## NHS Improvement

With over ten years practical service improvement experience in cancer, diagnostics and heart, NHS Improvement aims to achieve sustainable effective pathways and systems, share improvement resources and learning, increase impact and ensure value for money to improve the efficiency and quality of NHS services.

Working with clinical networks and NHS organisations across England, NHS Improvement helps to transform, deliver and build sustainable improvements across the entire pathway of care in cancer, diagnostics, heart, lung and stroke services.

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3rd Floor | St John's House | East Street | Leicester | LE1 6NB

Telephone: 0116 222 5184 | Fax: 0116 222 5101

[www.improvement.nhs.uk/stroke](http://www.improvement.nhs.uk/stroke)



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