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## Contents

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Executive summary</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Case for change</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>World-class stroke care in London</td>
<td>14</td>
</tr>
<tr>
<td>4</td>
<td>An assessment of stroke services in London</td>
<td>16</td>
</tr>
<tr>
<td>5</td>
<td>The future of stroke services</td>
<td>22</td>
</tr>
<tr>
<td>6</td>
<td>Investment case</td>
<td>36</td>
</tr>
<tr>
<td>7</td>
<td>Making it happen</td>
<td>42</td>
</tr>
<tr>
<td>8</td>
<td><strong>Appendix 1</strong>: Summary of recommendations</td>
<td>48</td>
</tr>
<tr>
<td>9</td>
<td><strong>Appendix 2</strong>: Performance standards for prevention, acute care and rehabilitation</td>
<td>51</td>
</tr>
<tr>
<td>10</td>
<td>Glossary</td>
<td>57</td>
</tr>
</tbody>
</table>
Executive summary

There must be a step-change in how stroke care is delivered in London. Stroke is the second highest cause of death and the most common cause of adult disability in the capital. The implementation of this strategy will save thousands of lives over future years. It will also reduce disability and allow many who suffer a stroke to regain full independence. Taking this strategy forward will require investment, and a new way of planning and delivering services. Healthcare for London believes it is important to accept this challenge. Londoners deserve nothing less.

1.1 Context

In 2007, Healthcare for London: A Framework for Action set out ambitious plans for improving the quality of health services across London. A key recommendation was for more specialised care delivered in dedicated, high-quality stroke units.

Sixty-seven percent of people who responded to Consulting the Capital, a London-wide public consultation based on A Framework for Action, supported plans to create specialised centres for the treatment of stroke.

Up to one in five people are more likely to survive a stroke, and the risk of long-term disability is reduced if treated in a specialist centre. Specialist centres will also improve the speed of recovery and reduce levels of disability for many people who suffer a stroke.

The need to improve stroke services is supported by the Department of Health’s National Stroke Strategy, as well as the Royal College of Physicians’ 2008 Sentinel Audit and recent guidelines from the National Institute for Health and Clinical Excellence (NICE). Latest sentinel audit figures show that improvements in stroke care in London have been slower than the rest of the country – and in some cases, performance has worsened.

Significant variation in services exists within London. Residents in outer London have a higher prevalence of stroke as the population is older, but currently have the most limited access to specialist services.

The financial impact of stroke is significant. At £2.8 billion per year, the direct costs of stroke in England make up four percent of the NHS budget.

This strategy outlines London’s plans for improving stroke care by introducing a new model of acute care, alongside recommendations for primary care trusts (PCTs) to strengthen stroke prevention and rehabilitation services. It aims to guide both commissioners and providers to deliver world-class stroke care in the capital.

In developing this strategy an inclusive and rigorous approach has been adopted. Recommendations, including performance standards, are based on extensive stakeholder engagement and analysis of clinical evidence.

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1 National Audit Office, Reducing Brain Damage: Faster access to better stroke care, Nov 2005
2 NHS annual expenditure figures, 2004-5
1.2 Prevention
Supporting people to live a healthy lifestyle and ensuring there is greater awareness of stroke and its symptoms will help reduce the number of strokes in London. Currently, only 40% of the UK public know the symptoms of stroke. Responding quickly and seeking medical help can greatly improve the outcome for stroke patients.

Most strokes are age-related. More than 75% occur in people over 65 years of age. Afro Caribbean and south Asian communities are also at higher risk.

Currently, London performs below the national average as measured by a variety of stroke prevention indicators. While London’s diverse population creates particular challenges such as language and social barriers, there is great potential to improve stroke prevention.

A strategy for stroke prevention has been developed providing clear standards for PCTs to improve their performance and to focus on communities and areas at highest risk. It is Healthcare for London’s goal to reduce inequalities.

1.3 Acute care
Healthcare for London aims to ensure that all Londoners have access to world-class stroke care. There are major variations across the capital in mortality and stroke care, including access to high-quality rapid diagnostics and stroke unit beds.

There is a low level of thrombolysis treatment (a clot-busting drug) across London, and in some areas, no access at all. It is clear from patients and carers that stroke services are not meeting expectations.

A milestone for the future of acute stroke services in the capital was reached in June 2008 when a Joint Committee of PCTs (JCPCT) agreed the development of specialist stroke services in London. This decision followed a public consultation which highlighted strong support for specialist services, including 24-hour centres offering high-quality expertise in diagnosing, treating and managing stroke patients.

In developing a strategy for improving stroke services in the capital, the stroke project identified new service specifications and performance standards, and defined three key services to provide acute care:

- hyper-acute stroke units (HASU) to provide the immediate response to a stroke;
- stroke units (SU) to provide multi-therapy rehabilitation and ongoing medical supervision following a patient’s hyper-acute stabilisation;
- transient ischaemic attack (TIA) assessment services to provide rapid diagnostic assessment and access to a specialist – within 24 hours for high-risk patients, and within seven days for low-risk patients.

Following engagement with key stakeholders it was concluded that the major step-change required in stroke care could only be achieved if all Londoners have equal access to a specialist unit.
The configuration of stroke services, including the location and number of HASUs, SUs and TIA assessment services required in London, will be the subject of a public consultation planned to start in January 2009. A designation process to determine options for configuration, which includes acute trusts bidding to run the new services, is currently underway. Around 130 specialist (HASU) beds will be required in the capital and around 550 stroke unit (SU) beds.

For thrombolysis to be most effective it must be administered within three hours of symptom onset. However, to ensure the best clinical outcomes, patients must receive specialist treatment as soon as possible. Therefore, every patient in London should have access to a HASU within a 30 minute ambulance journey and HASUs should be able to start thrombolysis for suitable patients within 30 minutes of arrival. Future stroke services in London need to be organised to ensure these standards are always reached.

1.4 Rehabilitation

Every year more than 6,000 Londoners are left with an impairment following a stroke. Alongside improved acute stroke care, effective rehabilitation can reduce the impact of disability for the stroke survivor, their family and friends.

In London, there are examples of good practice being implemented such as early supported discharge services and, family and carer support workers. However, there is wide variation in the availability of rehabilitation and community care services, with some areas having no dedicated community stroke service.

More co-ordinated services, including support services in hospital, in the home and in the community, would help people access the right services at the right time.

A strategy for rehabilitation has been developed providing recommendations and performance standards to assist PCTs commission services that are easy to navigate and that respond to patient and carer needs.

“I never thought about this illness...you don’t. You are a whole person and you can do things by yourself. But after a stroke, your life changes.”
1.5 Implementation

Londoners can expect to see a new stroke service start to take shape from autumn 2009, subject to the outcomes of the public consultation. An 18-month transition plan for achieving standards will be in place, and stroke networks will work with acute trusts and PCTs to ensure that the improvement plans are closely monitored.

PCTs will commission new services that aim to meet the higher performance standards required. For acute stroke care, the changes are expected to require additional investment by PCTs of around £23 million per year. An increase in workforce numbers and skills will also be required to deliver new stroke services.

A detailed performance monitoring and management framework is being developed by Healthcare for London to support PCTs and networks achieve these ambitions. A full list of performance standards is listed in the appendices.

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Key conclusions

- There must be a major step-change in how stroke care is delivered in London. Improvements in the capital have been slower than the rest of the country – and in some cases figures have worsened (Sentinel Audit 2008);
- Around one-third of strokes could potentially be prevented. NHS services have a role in increasing stroke awareness and education of both staff and the public and better management of medical risk factors such as high blood pressure;
- Londoners should be no more than 30 minutes travel from a HASU. On arrival, a stroke patient should be assessed by a specialist, and have a CT scan and clot-busting drugs (if appropriate), all within 30 minutes;
- Once stabilised (around 72 hours) patients should be moved from a HASU to a SU where they will receive high-quality rehabilitation care;
- Clinical stroke networks have been developed, similar to the model of care for cardiac and cancer patients, which will co-ordinate the development of stroke services, ensuring improvement in meeting the performance standards;
- Around £23 million per year is needed for additional investment by PCTs to deliver improved acute stroke care. Improved prevention and rehabilitation will also require investment;
- An increase in workforce numbers and skills will be required to deliver new stroke services;
- Improved inpatient rehabilitation is essential. Every PCT should also commission a community rehabilitation service and an early supported discharge service;
- New stroke services should start to be introduced by autumn 2009, subject to the outcome of the public consultation.
2.1 Introduction

This strategy is intended to guide both commissioners of services and providers in delivering world-class stroke care. It outlines London’s response to the National Stroke Strategy and A Framework for Action, which were both published in 2007, and describes the future of stroke services in the capital. Alongside recommendations for acute stroke care in London, this document summarises key recommendations from the preliminary acute stroke strategy (a consultative document) and strategies for:
- stroke prevention
- stroke rehabilitation and community care.

Full copies of these strategies are available from Healthcare for London’s website, www.healthcareforlondon.nhs.uk

The recommendations are supported by detailed performance standards (available in the appendices) and a full service specification for acute stroke care.

The project has developed these strategies with the help of the stroke project board, expert panels, site visits and pan-London events. The project has also benefited from input from key stakeholders, including:
- London stroke physicians
- London social services directors
- London cardiac and stroke network chairs
- London PCT and acute trust chief executives
- acute trust medical directors
- stroke network medical leads
- community care clinicians
- experts in prevention including public health clinicians
- patients, carers and public representatives.
2.2 Background

A Framework for Action

In July 2007, Professor Lord Darzi set out ambitious plans for improving the quality of health services across London in A Framework for Action. It cited the ‘uncontrolled growth in service provision’ as being ‘dangerous for patients’, highlighting the life-saving benefits of ‘dedicated, high-quality, specialist stroke units’.

Delivering world-class stroke care requires specialist multidisciplinary teams and rapid access to high-quality equipment 24 hours a day, seven days a week.

Healthcare for London

Funded by the 31 London PCTs, the Healthcare for London programme is designed to oversee improvements to healthcare in London, in line with A Framework for Action.

A three month public consultation, Consulting the Capital, was completed in March 2008, generating more than 5,000 responses. More than 67% of respondents supported plans to create specialised centres for the treatment of stroke. Three-quarters of respondents said they were in favour of direct transfers of stroke patients by ambulance to a specialist centre, providing ambulance staff had received appropriate training.

The stroke project is one of six initial Healthcare for London projects. The overarching goals are improved prevention and enhanced quality of services for stroke patients in the capital.

2.3 Context of the strategy

What is a stroke?

A stroke is a type of brain injury and is the second biggest killer in the UK. It is also the single most important cause of physical disability in London.

Around 74% of all strokes in London are ischaemic, caused when blood flowing to the brain is blocked. When blood vessels burst, the stroke is known as haemorrhagic. For both, the disruption of the blood supply to the brain causes brain cells to die. Cell death evolves over hours or days, and timely intervention can prevent further brain injury.

Strokes usually occur without warning. However many strokes are preventable, particularly if high blood pressure is monitored and controlled.

A TIA is often called a ‘mini’ or ‘mild’ stroke. The symptoms are similar to a full stroke however they do not last as long. A TIA can be a serious warning sign that unless urgent preventative action is taken a major stroke could occur.

National stroke developments

The Healthcare for London strategy is supported by the National Stroke Strategy, the Royal College of Physicians’ Sentinel Audit, and recent guidelines from NICE. The 2008 Sentinel Audit reported that only one-third of London hospitals were meeting the five characteristics of offering a quality acute stroke unit. While there has been some improvement since the 2006 audit, it falls short of the step-change required across the capital.

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3 Based on the South London Stroke Registry, London
Addressing health inequalities

A national target to address geographical inequalities in life expectancy and stroke was set in 2004⁴. The target aimed to accelerate improvement in the bottom 20% of the country for health and deprivation indicators. Eleven of the 70 boroughs identified in the lower 20% for health inequalities, were in London.

Stroke is a major cause of death and disability, contributing to the gap in cardiovascular mortality between these areas and the rest of the country. There is a higher stroke incidence and mortality rate in lower socioeconomic groups. The London Health Commission advised Healthcare for London on how to use the proposed changes to reduce inequalities and avoid negative impacts on groups already disadvantaged⁵. This advice has been taken into account when developing the strategy and in particular, the stroke prevention strategy.

In the acute stroke service, standards have been developed to ensure access to a world-class stroke service is available to all. In the rehabilitation strategy, standards have been developed to encourage care in the community, closer to a patient’s home. Further details on stroke inequalities are available in a separate paper on the Healthcare for London website.

The impact of reducing health inequalities through the implementation of the stroke strategy will be monitored.

Department of Health public service agreement inequalities target (2004 Spending Review)
Objective I:

Improve the health of the population. By 2010 increase life expectancy at birth in England to 78.6 years for men and to 82.5 years for women.

Substantially reduce mortality rates by 2010: from heart disease and stroke and related diseases by at least 40% in people under 75, with at least a 40% reduction in the inequalities gap between the fifth of areas with the worst health and deprivation indicators and the population as a whole.

The scale of the problem

Stroke is the cause of around 2,200 deaths in the capital each year. Nearly one percent of London’s population has suffered a stroke. The impact on hospital services is huge with more than 11,000 admissions for stroke in London, each year.

Currently only 53% of stroke patients are being treated on a dedicated stroke unit according to the 2008 Sentinel Audit. Out of the 30 hospitals in London, 10% were classed as regularly making patients wait more than 24 hours for a CT scan, with figures increasing to 20% during weekends.

Almost one-third of strokes⁶ are potentially preventable through lifestyle and risk factor management. Risk factors include hypertension, atrial fibrillation, and lifestyle factors such as smoking, obesity, and a poor diet, including high salt intake. Non-modifiable risks include old age, socioeconomic status, gender, ethnicity and genetic factors. Black and south Asian ethnic minorities are also at higher risk of stroke.

⁴ Department of Health Public Service Agreement inequalities target (2004 Spending Review)
⁶ ‘The case for preventing stroke’, Executive Briefing 2008, London Health Observatory
Management of these risk factors is as important for those who have never had a stroke as it is for existing stroke patients. The development of local prevention strategies and improvements to service delivery is critical to reducing inequalities across the capital.

In addition, if patients have had a TIA their risk of stroke is higher. There is a 20% risk of a full stroke within four weeks of having a TIA and evidence shows that investigating high-risk TIA patients within 24 hours could reduce the number of people who go on to have a stroke by 80%. Currently, only 35% of patients in the UK are investigated within seven days. In 2008, 37% of London hospitals don’t treat or investigate any high-risk TIA patients in less than 24 hours.

A 2005 National Audit Office report highlighted that nearly one in five GPs do not refer 20% or more of their TIA or stroke patients for further assessment. GPs were likely to wait more than six hours to refer a patient with TIA. This calls for urgent improvement to the current TIA pathways in London.

Costs of stroke in England and London

Stroke care has a significant impact on NHS spending. Each year it costs the NHS around £2.8 billion. These costs include hospital stay, diagnosis, tests and rehabilitation. Indirectly, stroke costs the wider economy around £7 billion a year, including informal care costs and lost productivity.

The direct costs of stroke in London have been calculated at £139 million per year. Further details are provided later in this document (investment case).

A Framework for Action highlighted European examples, including Germany and the Netherlands, where stroke spending is three times higher (per capita) on prevention and health promotion, than in the UK. A London analysis indicates that PCTs with the highest health needs spend less on prevention than areas with lower need.

Prevalence of stroke in London

The prevalence of stroke is modelled on the map on page 10. The map is based on the age profile of each area and extrapolated data from the South London Stroke Register. The map depicts the number of strokes predicted in electoral wards for 2008. While all wards within London can expect to have a number of people having a stroke (the minimum expected is about five), the more red the ward appears, the greater the number of strokes predicted to occur.

The main factors are ageing, followed by ethnicity and deprivation.

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7 National Audit Office, Reducing Brain Damage: Faster access to better stroke care, Nov 2005
This map indicates that the periphery of London has a greater prevalence of stroke. These areas also have a higher number of older residents as shown on page 11.
This map provides insight into the locations of the older population (ONS 2004) – men aged 65 years or older, and women aged 60 years or older. Areas which appear darker have a greater proportion of older people. Areas where a higher incidence of stroke is predicted, correspond closely with locations which have an older population.
There is a 60% greater incidence rate of stroke within the black African and black Caribbean populations, and at a considerably lower age (10 years less). Areas with higher proportions of these populations would logically be expected to have a higher number of people suffering stroke. However, this is not true. Comparing this map of BME (ONS 2004), with the incidence of stroke map, demonstrates an opposing trend. The reason for this is revealed by a review of London’s age and ethnic populations. Within London the proportion of black and minority ethnic people decreases steadily as age increases, to the point where the oldest populations are nearly entirely made up of caucasians.
Key conclusions

- Nearly one percent of London’s population has suffered a stroke;
- The impact on hospital services is huge with more than 11,000 people in London admitted to hospital following a stroke, each year;
- Only 53% of stroke patients are treated on a dedicated stroke ward;
- More than 33% of strokes are potentially preventable;
- Improving prevention will require increased investment;
- Sixty-seven percent of Londoners support plans to create more specialised centres for the treatment of stroke.

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Sentinel Audit 2006; 2008, London

'The case for preventing stroke', Executive Briefing 2008, London Health Observatory

Healthcare London, Consulting the Capital public consultation 2007/08

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This map of social deprivation scores (2004) indicates areas of greatest deprivation in red and lowest in blue. While age is a bigger risk factor for stroke, social deprivation is also related.
3.1 Stroke strategy objectives

Key objectives developed for the stroke strategy are in line with performance standards developed for prevention, acute care and rehabilitation.

- Reduce the number of strokes in London by supporting people to live a healthier lifestyle;
- Increase awareness of stroke and its symptoms;
- Deliver world-class stroke care and ensure this is provided across London;
- Enable stroke patients to achieve mutually agreed, realistic rehabilitative goals and maximise their recovery;
- Ensure carers and families are involved in the development of stroke services and their needs are considered.

These objectives will be the basis of a future evaluation of the stroke project’s impact. A number of measures for each of the objectives will be identified.

3.2 Patient outcomes and expectations

A number of outcomes have been established from a patient perspective. These were tested and developed with a range of patient representatives and patient organisations. They reflect the outcomes patients would like from a world-class stroke service, including prevention through to treatment, rehabilitation and ongoing care.

Public health prevention

- Understanding what risk factors and lifestyle choices make a stroke more likely;
- Increasing awareness amongst the public and healthcare professionals of the signs and symptoms of stroke;
- Reacting quickly to reduce the chance of a lasting impact on the lives of stroke survivors and their families.

Initial assessment

- Rapid transfer to the best hospital, as near to a person’s home as possible;
- Rapid diagnosis of the type of stroke followed by the best treatment, provided by someone who knows what they are doing;
- Trust in those involved in providing the best treatment and care, to give the best results for people who have had a stroke.

“To a great extent my recovery was due to a virtually immediate scan within two hours of being ambulanced into A&E.”
Ongoing management

- Someone specific to be available for patients, family and friends, during each step;
- Clarity of information and communication, which enables involvement in decisions;
- The best treatment and care, in the nearest place, by skilled, respectful people undertaken as a partnership between the person with stroke and people providing care;
- Help to understand what has happened, what is happening and what is likely to happen in the future;
- Professional help in coming to terms with what has happened. Support to meet the emotional and psychological consequences of stroke for those immediately affected;
- Dignity in the care and treatment given;
- Support, care and information shaped by the experiences and knowledge of people who have been affected by stroke;
- Practical guidance, strategies and help from a stroke-skilled workforce, about how people can help themselves;
- Information on how to reduce the chances of having another stroke.

Transfer of care

- Not getting ‘stuck’ in the system due to a lack of capacity or capability elsewhere;
- Being properly prepared, informed and supported in the lead up to discharge, and being confident that people will not ‘fall through gaps’;
- Not having to give the same or similar information to different people in each care setting;
- Going home as soon as a person is ready or able, with the right network of support, equipment and follow-up;
- Assessment of the needs of carers following transfer of care, reducing the necessity for crisis intervention.

Ongoing care

- Increasing public and healthcare professionals’ awareness of the long-term impact, consequences and significance of stroke, including communication disability;
- Awareness of the possible consequences and significance of living with stroke, disability and communication disability;
- Recognition that stroke does not have to mean the end-of-life. With an adequately funded and co-ordinated range of support from statutory and voluntary services, tailored to meet individual needs, stroke patients are able to return to active and fulfilling lives;
- Long-term support in recognition that rehabilitation and recovery for many will continue slowly over many years;
- Recognition that those affected by stroke are, or can become, experts in the management of their condition and should be enabled and supported by professionals;
- Implementing secondary prevention and appropriate assessments for all patients who have had a stroke or TIA.
An assessment of stroke services in London

In developing this strategy, a detailed analysis of the current state of stroke services in London was carried out.

4.1 Prevention

It is clear that more needs to be done to improve stroke prevention across London. Although many strokes could be prevented, there are still over 11,000 strokes in London per year. Currently London’s performance is poor when comparing main quality and outcome framework (QOF) indicators for stroke, with the rest of the country. The indicators are evidence-based measures of interventions by GPs for individual patients.

Performance across PCTs in London varies considerably, as does individual practice performance within a PCT in London. PCTs will work with GPs to improve management of medical risk factors, such as high blood pressure. Improving prevention will not prove easy and the biggest concerns highlighted by stakeholders were the lack of:

- Campaigns tailored for hard-to-reach and at-risk groups. There is a risk of adopting a one-size-fits-all approach which can fail to engage key groups. There is a need for more evidence about which campaigns work well with hard-to-reach and at-risk groups;
- Education amongst healthcare professionals in recognising risk factors and symptoms of stroke and TIs, as well as crucial training in lifestyle modification and how to help patients understand the importance of their medication;
- Knowledge sharing and a stroke prevention co-ordination role across London.

The stroke pathway

The stroke pathway is presented as a series of phases: Prevention, Acute, Rehabilitation. Each phase includes specific interventions and assessments to manage the stroke process effectively.
### 4.2 Acute care

Evidence shows that more lives are saved and long-term disability reduced when patients are cared for on a specialist stroke unit. The current configuration of stroke units in London is complex and varied with only 53% of patients treated on a dedicated stroke ward\(^\text{11}\). Many units run combined stroke beds, which are a mix of acute care beds and rehabilitation beds in one ward. It is therefore difficult to clarify exactly how many stroke beds provide high dependency care in London at any one time. The system as a whole has around 650 beds which could be hyper-acute or acute rehabilitation. There is also significant variation in the scale of units in London, with many small acute units and a number of larger units.

The latest figures from the 2008 *Sentinel Audit* are shown below compared with the 2006 figures. Although there is not complete consistency between the 2006 and 2008 audits, it is possible to assess progress. The comparison indicates a modest general improvement, however there continues to be a wide variance in performance of stroke care across London providers. Despite the overall improvement, five acute trusts received a lower overall score in 2008, and were relegated to a lower quartile within the national figures than in 2006.

“Stroke victims are dealt with by so many agencies and health teams. It is very easy to feel you have slipped through everyone’s net.”

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\(^{11}\) Sentinel Audit 2006 and 2008, London

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**Comparison of Sentinel Audit results (2006 and 2008), London**

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<tr>
<th>Total organisational score (% of audit criteria met)</th>
<th>2006</th>
<th>2008</th>
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<tr>
<td>Total organisational score (% of audit criteria met)</td>
<td>10</td>
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<td>50</td>
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<td>80</td>
<td>90</td>
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\(\text{2008} = \text{Hospital trust} \quad \text{2006} = \text{Hospital trust}\)
4.3 Rehabilitation and community care

Rehabilitation should begin as soon as possible after a person has a stroke and continue for as long as required to ensure the best possible recovery. Rehabilitation is provided in a variety of settings, including within acute and community hospitals, outpatient departments and a person’s home. Care services, such as personal care, are provided by social services and are usually delivered in a person’s own home.

There is great variation across London regarding the level of rehabilitation and community care services, including staff resources. Community stroke services are also configured differently in each borough, mostly delivered by generic teams. In some PCT areas there are currently no stroke community rehabilitation services, while others have dedicated stroke services. In a small number of areas, an early supported discharge service has been introduced, which has resulted in shorter hospital stays. The diagram (right) shows different types of services available in different parts of London.
Table 1: Key challenges

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<th>Challenge</th>
<th>Prevention</th>
<th>Acute</th>
<th>Rehabilitation</th>
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| **Workforce and skills**       | • Need for healthcare professionals to train in stroke and TIA risk factors, symptoms and lifestyle modifications;  
                                  • Mixed performance of GPs tracking hypertension in all patients.        | • Lack of specialists, for example stroke consultants available 24/7.                    | • Some staff have poor communication skills and a lack of integrated training. |
| **Information and technology (IT)** | • Appropriate information is not available at key points in pathway.         | • Information to assess quality of care is not routinely available.                      | • Lack of integration of IT systems between providers;  
                                  | • Few stroke registers exist;                                               |                                                                 | • Only a few providers have patient management IT tools in use for information and audit. |
| **Infrastructure**             | • Patients transferred to a HASU, have access to a CT scan and thrombolysis (if appropriate) within three hours of symptom onset. | • Variable ability of providers to manage patients in a stroke unit bed for the full length of stay. | • In some areas, no dedicated community stroke service exists. |
| **Transfer of care**           | • Public have limited awareness of TIA and stroke symptoms therefore do not seek urgent medical attention. | • Patients remain in hospital much longer than required in some trusts.                  | • Inconsistencies with access to seamless liaison between acute and community teams. |
| **Linkages**                   | • PCTs rarely support a co-ordinated approach to prevention by involving other PCTs, GPs, acute trusts, pharmacies, local employers, schools and job centres in prevention campaigns;  
                                  • Appropriate representation for prevention in each stroke network (such as public health and primary care). | • Co-ordination varies and, in some cases, is limited.                                   | • Access to social services is dependant upon boroughs;  
                                  | • PCTs need to be able to assess cost-effectiveness of stroke prevention campaigns. |                                                                 | • Only a small number of community stroke rehabilitation teams are fully integrated with social services. |
| **Finance**                    | • PCTs need to be able to assess cost-effectiveness of stroke prevention campaigns. | • TIA clinics do not have appropriate cost and tariff structures;  
                                  | • No tariff for hyper-acute care.                                           | • There is no clear system of recording intensity, duration and outcomes of community-based rehabilitation;  
                                  |                                                                 |                                                                 | • No tariff for community services. |

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Table 1: Key challenges

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<th>Challenge</th>
<th>Prevention</th>
<th>Acute</th>
<th>Rehabilitation</th>
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<tr>
<td><strong>Workforce and skills</strong></td>
<td>• Need for skilled multidisciplinary teams which are aware of the specific needs of stroke.</td>
<td>• Lack of specialists, for example stroke consultants available 24/7.</td>
<td>• Some staff have poor communication skills and a lack of integrated training.</td>
</tr>
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                                  • Appropriate representation for prevention in each stroke network (such as public health and primary care). | • Co-ordination varies and, in some cases, is limited.                                   | • Access to social services is dependant upon boroughs;  
                                  | • PCTs need to be able to assess cost-effectiveness of stroke prevention campaigns. |                                                                 | • Only a small number of community stroke rehabilitation teams are fully integrated with social services. |
| **Finance**                    | • PCTs need to be able to assess cost-effectiveness of stroke prevention campaigns. | • TIA clinics do not have appropriate cost and tariff structures;  
                                  | • No tariff for hyper-acute care.                                           | • There is no clear system of recording intensity, duration and outcomes of community-based rehabilitation;  
                                  |                                                                 |                                                                 | • No tariff for community services. |
4.4 Key challenges
As the strategy has developed, six key challenges have been identified. A full list of issues for each challenge has been developed through site visits and a number of pan-London events, each involving as many as 200 participants.
Examples of some of the issues are summarised in the table to the left.
Resolutions for each of these challenges are an important feature of the new stroke system design, and have been specifically addressed through the service specifications of each pathway and related performance standards.

Key conclusions
• London performs poorly on GP stroke prevention measures (QOF) compared with the rest of the country;
• The current quality and geographic spread of stroke units in London is varied, with five London trusts’ performance worsening from 2006 to 2008;*
• There is great variation of community stroke rehabilitation services and in some London PCT areas there are no stroke rehabilitation services.

5

The future of stroke services

A major step-change is required in the delivery of stroke care in the capital. This includes improving prevention and awareness, acute stroke care, and community rehabilitation.

5.1 Prevention

The Healthcare for London stroke prevention strategy makes recommendations to ensure prevention and awareness in primary and secondary care settings improves across the capital. Stroke prevention recommendations to be achieved by each PCT are outlined; however, it is up to individual PCTs to decide how to best implement them. Each PCT will need to develop detailed plans that reflect local needs and develop new ways to target at-risk and hard-to-reach groups, as well as considering what has previously worked well.

The stroke project team has worked closely with the vascular prevention programme for London and the Healthcare for London diabetes (long-term conditions) project to develop the recommendations. The stroke prevention strategy is available on Healthcare for London’s website.

Prevention recommendations

- PCTs should co-ordinate and support the education of health and social care professionals about stroke;
- All PCTs and acute trusts should develop and implement a comprehensive stroke prevention plan. This would be expected to integrate with, rather than replace, wider vascular and general health improvement plans;
- PCTs should be innovative when developing stroke prevention initiatives to ensure they reach hard-to-reach groups at risk of stroke;
- GP-led primary and secondary prevention (as measured by QOF) should be improved and analysed;
- Every PCT and acute trust should have in place:
  - management commitment and accountability to the prevention agenda
  - a named clinical lead for prevention
- NHS London should provide a public health role and focus to integrate stroke prevention messages into everyday life;
- PCTs should ensure that acute trusts are delivering secondary prevention;
- PCTs should incorporate measures to improve stroke and TIA awareness in commissioning strategic plans (CSPs) and use the Department of Health’s work on raising stroke awareness (beginning mid 2009) to strengthen the prevention message in their population.
5.2 Acute stroke care

A milestone for the future of stroke services in the capital was reached in June 2008 when the JCPCT agreed the development of specialist stroke services in London.

This decision followed a public consultation which highlighted strong support for specialist services, including 24 hour centres offering high-quality expertise in diagnosing, treating and managing stroke patients.

Travel times were identified as a key issue for many respondents and will be considered when determining the number and location of specialist units.

The proposal of around seven specialist centres was supported by the public and key organisations, however it was agreed by the JCPCT that the exact number and location of specialist centres should be subject to a further public consultation.

Following the JCPCT decision to develop specialist stroke services, the Healthcare for London stroke project team carried out a detailed analysis of services in London and proposals were presented in the preliminary acute stroke strategy, published in July 2008. The strategy was developed through a series of events with key stakeholders, clinical experts, patients and carers as well as representatives from patient groups.

The strategy highlighted the future vision for acute stroke services and detailed different ways to deliver the new stroke model outlined in A Framework for Action. Working with key stakeholders from the London stroke community it was concluded that a major step-change in stroke care could only be achieved if all Londoners have equal access to a specialist unit, within a reasonable travel time. A future model of stroke services, agreed with commissioners, has been designed to achieve this.

Three parts of the new acute stroke service in London were defined as:

- **hyper-acute stroke units (HASU)** – provide the immediate response to a stroke, where the patient is stabilised and receives primary intervention. The patient’s length of stay is typically no longer than 72 hours;
- **stroke units (SU)** – provide multi-therapy rehabilitation and ongoing medical supervision following a patient’s hyper-acute stabilisation. Length of stay varies and will last until the patient is well enough for discharge from an acute inpatient setting;
- **transient ischaemic attack (TIA) assessment services** – provide rapid diagnostic assessment and access to a specialist within 24 hours for high-risk patients, and within seven days for low-risk patients.
The future model of acute stroke care

- All stroke patients are taken by the London Ambulance Service (LAS) to the nearest HASU, located no more than 30 minutes travel time away.
- On arrival a patient must be assessed by a specialist, have access to a brain (CT) scan and receive clot-busting drugs (if appropriate), all within 30 minutes.
- Patients are transferred to a HASU bed where they receive high dependency care for the first 72 hours following admission. Once stabilised, the patient is transferred to a SU, either in the same hospital or closer to their home. Patients will be rehabilitated in the SU and discharged to the appropriate care in the community.

London requires around 130 HASU beds and around 550 SU beds. Viable options for the number and size of units will not be known until the designation process is complete.

While the first 72 hours spent on a HASU are crucial, the SU, where a patient will spend the majority of their hospital stay, plays a vital role. SUs are able to focus on the needs of stroke patients, and are resourced to provide a full range of specialist inputs from a dedicated multidisciplinary team. Evidence shows that this improves the clinical outcomes and the long-term recovery of stroke patients.

The risk of stroke is much higher immediately following a TIA; therefore, stroke services should be organised to treat the TIA as an emergency. TIA clinics will provide rapid access to clinical expertise, imaging and treatment within 24 hours of symptom onset for high-risk patients, and within seven days for lower risk patients.

“The Stroke Association accepts that specialist care requires the centralisation of more specialised services in fewer hospitals. This requires planned development with proper consideration being given to the infrastructure and workforce required to deliver such a service.”

The Stroke Association
Three hour window

Thrombolysis, a clot-busting drug, is a vital treatment in reducing the impact of ischaemic stroke. The window of opportunity for thrombolysis to be most effective is no more than three hours from the onset of a stroke. However, to ensure the best clinical outcomes, patients must receive specialist treatment as soon as possible.

Many actions must occur between the onset of a stroke and the start of treatment, including:
- Discovery that a person has had a stroke;
- Paramedics are called and an ambulance dispatched;
- An on-site assessment is made;
- The patient is transferred to a hospital with a HASU;
- On arrival at hospital a prompt diagnosis of an ischaemic stroke is made, including a CT scan, before thrombolysis is administered.
Therefore, working to ensure thrombolysis can be given as soon as possible (within no more than three hours), the stroke project board has followed expert clinical advice that every patient in London should have access to a HASU within a 30 minute ambulance journey and HASUs should be able to start thrombolysis for suitable patients within 30 minutes of arrival. Future stroke services in London need to be organised to ensure these standards are always reached.

Research suggests that after three hours thrombolysis may still offer benefits, however the impact is reduced. While clinicians may decide to thrombolise some patients during this window (three to four and a half hours following stroke), this is not the basis for gold-standard service configuration.

‘Time is brain’

The New England Journal of Medicine\(^{12}\) (NEJM):

- “Treatment with alteplase (a type of clot-busting drug) is nearly twice as efficacious when administered within the first 1.5 hours after the onset of stroke than it is 1.5 to 3 hours afterward.”
- “In the study alteplase was given 3 to 4.5 hours after symptom onset and this was associated with a modest yet significant improvement in clinical outcome.”

Time is Brain – Quantified\(^{14}\):

- “Each hour in which treatment fails to occur, the brain loses as many neurons as it does in almost 3.6 years of normal ageing.”

NEJM editorial\(^{15}\):

- “Stroke; the most common cause of disability in the world among adults, remains the only neurological disorder for which physicians are potentially able to completely reverse disabling deficits.”
- “From the moment the patient arrives at the door, every minute counts, and the only justifiable delays would be for performing brain imaging studies to exclude haemorrhage and for obtaining the results of a few simple laboratory tests.”
- “Every minute matters during a stroke.”


\(^{14}\) Saver J L, 2006, ‘Time is Brain-Quantified’, Stroke (37), 263-266

Reduced benefits of thrombolysis over time

- **Probability of benefit (adjusted odds ratio)**
- **Stroke onset to treatment time (OTT) [min]**
  - 60
  - 90
  - 120
  - 150
  - 180
  - 210
  - 240
  - 270
  - 300
  - 330
  - 360

- **Three hour window for best effect**
- **Line of benefit**
Acute designation process

Healthcare for London will work closely with stroke networks and acute providers to ensure prioritisation of the required steps for implementing any new stroke service.

A process of designation has commenced involving NHS providers in London bidding to deliver the three services; HASU, SU and TIA units (see map right). These bids will be evaluated by an external evaluation panel followed by a PCT-led panel that will assess the configurations of sites required, to ensure no Londoner is more than 30 minutes travel time from a HASU. A series of configurations will be proposed by the stroke project board. A JCPCT will agree the configurations that will be presented to the public through a major public consultation expected to commence in January 2009. Following the public consultation, the JCPCT will make a final decision on the configuration of HASUs, SUs and TIA services in London.

In parallel with the public consultation, a series of assessments will compare the impact of the proposed changes. The findings will be part of the decision-making process for the JCPCT.

The diagram below outlines the proposed timescales for the designation process.

---

**Proposed timeline for implementation**

<table>
<thead>
<tr>
<th>Prepare for bidding</th>
<th>Evaluate bids and configuration</th>
<th>Prepare for public consultation</th>
<th>Hold public consultation</th>
<th>JCPCT make decision</th>
<th>Begin to commission new services</th>
<th>18 month transition to full service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct 08 – Nov 08</td>
<td>Nov 08 – Dec 08</td>
<td>Dec 08</td>
<td>Jan 09 – Apr 09</td>
<td>Summer 09</td>
<td>Autumn 09</td>
<td>Late 09 onwards</td>
</tr>
</tbody>
</table>
Overlap of HASU providers within a 30 minute ambulance journey. Based on the 17 providers expressing interest in HASU services 30/10/08

Map 5: Availability of potential stroke providers

- 11 to 14 HASUs overlap
- 8 to 11 HASUs overlap
- 5 to 8 HASUs overlap
- 3 to 5 HASUs overlap

H = Hospital
Implementing the new acute stroke services

Acute trusts are expected to commence new services from autumn 2009, subject to the outcome of the public consultation. The diagram on page 31 outlines that for each service (HASU, SU or TIA) there will be a transition plan over the following 18 months until the expected standards are achieved. The stroke networks will work with providers and PCTs to ensure the improvement plans are closely monitored. Once the transition period is complete, only designated centres chosen by the JCPCT will be commissioned to provide hospital-based stroke services.

PCTs neighbouring London

Around 1,200 stroke patients are admitted to London trusts each year from PCTs outside London. Healthcare for London has engaged with neighbouring Strategic Health Authorities (SHAs). Those PCTs whose residents use London hospitals will have the opportunity to join the JCPCT that will agree the designation of acute stroke service providers.
Developing stroke services

Diagram shows the minimum criteria which designated providers will be required to meet at each point in time from go-live. These are identified as A, B, C, D in the service specification for HASU, SU and TIA services.

Managing transition

Newly designated service providers may not be able to provide the required volume of services at go-live. Commissioners will need to ensure that current levels of service are maintained during the implementation phase. Services provided by non-designated providers will need to be decommissioned over time, as services provided by designated providers come online.
5.3 Rehabilitation

Rehabilitation and care services should be delivered around the needs of the individual and their family. These include aspects of care related to clinical issues and residual impairments (including communication problems), but also to the person’s functional and activity-based goals and ongoing social participation. The psychosocial needs of the individual and their family, and their re-engagement back into society, also need to be addressed.

The Healthcare for London rehabilitation and community care strategy outlines recommendations based on feedback from service users, London commissioners and providers, examples of good practice and the National Stroke Strategy.

The recommendations aim to help PCT commissioners develop user-friendly rehabilitation services which respond to the needs of stroke patients and their carers. The stroke project will complete further work on long-term care and the links with primary and social care – including ensuring a person who has had a stroke regains functionality.
The following are overarching recommendations that all London PCTs should adopt in commissioning stroke rehabilitation services. Specific performance standards for these services are set out for inpatient and community rehabilitation, GPs and the voluntary sector. These are available in the *rehabilitation and community care strategy* and summarised in Appendix 1.

1. Inpatient rehabilitation should be available for all stroke patients. Rehabilitation starts as soon as possible and continues for as long as required. This must meet all of the performance standards.

2. Every PCT should commission a community rehabilitation service for stroke patients that includes staff with specialist stroke skills. The configuration of this service is for local determination but it must meet all of the performance standards.

3. Every PCT should commission an early supported discharge service that includes staff with specialist stroke skills. This service must meet all of the performance standards.

4. Everyone who has had a stroke, and their carers, should have:
   - A key support worker such as a family support worker or community matron to provide:
     - longer-term support;
     - navigation and advocacy;
     - a link with the inpatient and community rehabilitation teams and other care providers.
   - A designated person from health or social care who is the key contact for the patient and carer whilst in each setting, such as a therapist, social worker, or healthcare assistant.

5. For the first 12 months following a stroke, all individuals and carers will have a regular review and assessment of ongoing medical, social and emotional needs as both an inpatient and in the community.

The recommendations aim to greatly improve current rehabilitation services in London, reducing inequalities in provision that exist between different localities. The recommendations also aim to improve communication between different care settings and with the patient, as shown in the diagram on page 35. The diagram also represents components of the long-term care of patients and support to carers, which in the future will have stronger links with each other, enabling patients to seamlessly access rehabilitation for as long as required.
New approach to rehabilitation and long-term care

Key conclusions

- All PCTs and acute trusts should develop a comprehensive stroke prevention plan;
- All Londoners should be no more than 30 minutes from a specialist stroke unit. On arrival at a HASU, a stroke patient should have a CT scan and access to clot-busting drugs (if appropriate) within 30 minutes;
- Rehabilitation should be available to all stroke patients and should start as soon as possible. Every PCT should commission a community rehabilitation service and early supported discharge service;
- New stroke services will begin to be introduced by the end of 2009.
A detailed piece of work has been undertaken to understand the costs to PCTs of stroke care across the whole pathway. This included seeking information from service providers in both acute and community settings.

6.1 Methodology

A baseline exercise identified the costs of acute stroke services in London and the additional costs of providing the new enhanced service specification. In addition, the impact of the changes in the acute stroke part of the pathway on the PCT rehabilitation and community care costs was also modelled. The costs associated with stroke prevention have not been included in this analysis as they are delivered as part of overall NHS services.

<table>
<thead>
<tr>
<th>Current versus future costs</th>
<th>Current service (£ million)</th>
<th>New service</th>
<th>Investment (estimated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAS (and PTS)</td>
<td>£3m</td>
<td>£4m</td>
<td>£1m</td>
</tr>
<tr>
<td>Acute stroke</td>
<td>£72m (1), (4)</td>
<td>£93m</td>
<td>£21m (1)</td>
</tr>
<tr>
<td>Acute other (A&amp;E, CC, OP)</td>
<td>£9m</td>
<td>£9m</td>
<td>Nil</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>£55m</td>
<td>£56m</td>
<td>£1m (2), (3)</td>
</tr>
<tr>
<td>Total</td>
<td>£139m</td>
<td>£162m</td>
<td>£23m</td>
</tr>
</tbody>
</table>

(1) This relates to all London and non-London activity undertaken by London trusts
(2) Rehabilitation and community care costs in relation to changes in the acute system only
(3) The impact shown here is the upper end of the range of estimated costs
(4) This includes stroke related procedures
6.2 Overall costs of stroke in London

The costs were based on Payment by Results (PbR) tariffs for the acute pathway and include indirect costs and overheads. The calculations exclude costs of research and development and the multi-professional education and training (MPET) levy.

Many patients go on to have rehabilitation in the community and the costs of this were derived from a survey of London PCTs. Sixty percent of PCTs provided detailed financial returns and these were averaged and extrapolated across the whole of London to provide the figures opposite.

The modelling shows that the improvement will require an estimated investment of £23 million per annum.

Approximately 13% of stroke activity in the capital relates to patients who are residents outside of London. Non-London PCTs will also need to consider the funding impact of the London stroke strategy.

It should be noted that the investment needed to achieve the performance standards for PCT rehabilitation and community care proposed by the London stroke strategy have not yet been assessed and individual PCTs will need to calculate this.

These costing assumptions will inform the business case currently being prepared to support the public consultation.
6.3 Acute stroke care analysis

Following a detailed analysis of the new stroke service specifications, a new cost for acute stroke care has been calculated. The analysis shows that additional investment of around £20 million in acute care will be required. The increase has been divided into the two parts of the acute pathway: HASU and SU. The following diagram outlines where the additional costs are focused.

**Analysis for acute stroke care**

<table>
<thead>
<tr>
<th>Model</th>
<th>Current service</th>
<th>New service</th>
<th>Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute*</td>
<td>£65m</td>
<td>£85m</td>
<td>£20m</td>
</tr>
<tr>
<td>HASUs</td>
<td>Current service</td>
<td>£16m</td>
<td>New service</td>
</tr>
<tr>
<td></td>
<td>Resulting from increased nursing and imaging</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUs</td>
<td>Current service</td>
<td>£49m</td>
<td>New service</td>
</tr>
<tr>
<td></td>
<td>Resulting from increased nursing and medics (£11m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Less a two day length of stay (LoS) saving (£4m)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1: Based on HES 06/07 activity
Note 2: Includes TIA, excludes procedure related activity

*This excludes stroke related procedures and thrombolytic drugs*
Acute tariff options

NHS health services are paid for (commissioned) by PCTs. Most activity commissioned by PCTs from acute trusts falls within the PbR structure. PbR sets out a range of tariffs that apply nationally and cover a wide range of conditions. All of the different stroke conditions fall within PbR.

Whilst PbR remunerates trusts for the care they provide, it is generally considered that this may not encourage optimum efficiency. Issues include:

- Rewarding providers for admitting patients rather than preventing admissions;
- Not necessarily rewarding quality, innovation or health benefits;
- Not encouraging inter-organisational working.

These points have been considered (although not necessarily fully resolved) in the development of the proposed contracting rules set out below, which should apply across the whole of London.

The service specification is designed to reflect a new delivery model of care which is a step-change to the current model of care and care pathway. The current national tariff may therefore not be appropriate for the new model of care and there is support from NHS London, and the Department of Health to develop and implement a new tariff for London.

Work to date has focused on calculating a ‘planning tariff’ to support trusts in preparing submissions and business cases. It will be subject to change as any new tariff will need to be aligned with national guidance (including efficiency components) due to be published later in 2008.

In addition, it is worth noting that:

- This tariff is likely to be further refined as it may be subsumed into the national best practice tariff approach expected to begin in 2010/11. Stroke services will be one of the first areas to be considered and Healthcare for London has offered to contribute to the national work;
- The final tariff will have to take account of the latest Department of Health guidance on PbR (such as CQUIN – commissioning for quality and innovation).

The underlying principle of using any of these approaches is that the HASU and SU elements of the patient’s stay will be split. The HASU will be charged on a bed-day basis. The SU element will be charged on a spell basis. It is assumed that as good practice is implemented, length of stay will reduce in SUs. As a result, a London tariff will assume a reduction of two days. As NHS providers meet the additional quality service specifications then a graduated quality payment mechanism is required to reflect the cost incurred until the full service specification is achieved (see stepped criteria later in the document).
6.4 Rehabilitation

On average, each PCT currently spends £1.7 million per annum on stroke-related community care and rehabilitation, however this is an average and there is wide variation in identified spending.

Stroke rehabilitation costs in the community are expected to increase, driven by a need to meet the new performance standards. However, because of differences in current levels of provision and demand, each PCT will need to complete a detailed analysis of the level of investment needed for local rehabilitation and community care services.

Improvements in the care of stroke patients in acute hospitals will reduce mortality, and increasing the number of patients receiving thrombolysis will potentially reduce disability.

The financial impact of improvements in acute care has been explored using a theoretical model which suggests that the range of variation in costs may not be wide. The impact could range between an increase of 2.2% (equivalent to £1 million) in costs to a reduction of 5.3% in costs. Further detailed work is required as the new service is developed in order to track the impact.

Key conclusions

- Around £23 million of additional investment per year is needed to deliver improved acute stroke care. An element of the increased funding will need to be provided by non-London PCTs;
- London could pilot a new stroke tariff system for the UK;
- Each PCT will need to assess the investment required for community-based rehabilitation services, to meet the new performance standards.
Making it happen

7.1 Overall implementation
As commissioners, PCTs have a leading role in ensuring successful delivery of the changes. The role of stroke networks is also crucial in driving the improvement of stroke services over the next two years. Each section of this strategy has specific recommendations and from these, implementation proposals for the whole stroke pathway are being developed.

Within acute stroke care, a process of designation is underway and, a London-wide public consultation is expected to commence in January 2009. The importance of developing a stroke workforce that is able to deliver the new improved service specifications is vital and will require careful planning.

7.2 Key roles in delivering new services
The following roles have been identified for key organisations which will be essential in moving the strategy forwards, resulting in an integrated implementation approach for London.

- Healthcare for London – Ensure that designation work is completed promptly and the public consultation on the configuration of acute stroke services is completed, with a JCPCT decision expected in July 2009. Healthcare for London will evaluate the success of the stroke strategy implementation over the next three years.
PCTs – Prioritise investment in all aspects of stroke in their CSPs including developing specific implementation plans to ensure that rehabilitation services improve to meet the new performance standards.

Commissioners (e.g. Collaborative Commissioning Groups – CCGs) – Develop performance monitoring systems with stroke networks so as to track improvements in acute care.

Stroke networks – Work with providers to ensure development of stroke care. Networks will monitor progress and improvement in meeting the performance standards, and escalate issues to CCGs to take action if performance fails to improve.

Providers – Engage with stroke networks in developing the new services to meet the performance standards for acute care and rehabilitation.

More detailed work will be completed on the systems for monitoring performance standards, including defining the specific roles of those who will need to ensure stroke services are developed over the coming three years.

7.3 Consultation

The public consultation will cover the reconfiguration of acute stroke services. Rehabilitation and community services are extremely varied and as a result each PCT will have a different response to achieving the stroke strategy performance standards. If any changes to existing provision are proposed, they will be subject to an appropriate level of consultation, which may or may not include formal public consultation depending on the extent of the proposed changes.

“\nThe Forum supports the concentration of specialist care in a smaller number of specialist hospitals. It is hoped that these proposals will enable faster uptake of new treatments and better standards of care for patients.\n
The London Health Forum\n
7.4 Role of stroke networks

Stroke networks will have a unique role in enabling delivery of this strategy. Networks will give PCTs information about the level of service being provided and support providers in improving stroke care. Their role will also address innovation, education and training, audit, quality and clinical leadership.
Proposed role of stroke networks

Commissioners → Network board → Clinical leadership → Service providers → Service users

- Innovation: R&D networks, service redesign, technology
- Audit: Stroke registry
- Education & training: Opportunities across network
- Quality: Evaluation of performance, patient & carer involvement

Network connections
Stroke networks will be supported by additional investment in stroke service improvement. This totals £2.4 million over three years for the NHS in London. The funding will be initially managed by Healthcare for London; four key areas are covered by the funding:

- Improved emergency response to stroke;
- Prompt assessment and treatment of TIA;
- Improved response to stroke in the acute phase (to include developing hyper-acute model, ensuring rapid access to scans, thrombolysis and stroke units);
- Improved access to rehabilitation services.

In 2008/09 each stroke network will receive £100,000 to deliver on improvements in rehabilitation, coordinated by the network director. From 2009 to 2011, stroke networks can bid for funding to undertake specific projects:

- Developing best practice for patient transfers at all stages along the patient pathway;
- Enabling teams from high performing centres to help those of lesser quality to improve their services through peer review and support;
- Piloting an online system for transfer of patient data to ensure consistency and avoid repetition;
- Developing a rapid access TIA clinic for those with suspected TIA.

In addition, some of the funds will be used to evaluate the lessons learnt in implementing the stroke strategy, which will then be disseminated through other stroke networks and to the national stroke improvement team.

Over the next 12 months Healthcare for London will work with the stroke networks and PCTs to commission the new model of service for stroke. It is acknowledged that a number of stroke services are operating below standard and will need significant levels of support to be able to meet the new and more demanding performance standards required.
Workforce development

The stroke project has successfully bid for funding from NHS London for a workforce development project team to:

- Undertake a needs assessment of the skills and knowledge required along the stroke pathway for all healthcare professionals;
- Devise a leadership programme to develop leadership skills across the stroke community;
- Develop a core syllabus to deliver the skills and knowledge required to bridge the theory-practice gap;
- Identify and commission potential providers to undertake provision of training for the syllabus;
- Develop a standardised competency framework for all professional groups working with stroke patients.

This work will be aligned with other pan-London skills and workforce development plans for stroke services. The stroke strategy will not be able to fulfil its objectives unless the stroke workforce increases both in number and develops improved skills.

Key conclusions

- The role of stroke networks is crucial in driving the improvement of stroke services within the next two years;
- Stroke networks will be supported by an investment of £2.4 million over three years;
- An increase in workforce numbers and improved skills will be required to deliver new stroke services;
- A London-wide public consultation will begin in early 2009 on acute stroke services.
Appendix 1: Summary of recommendations

The following recommendations address many of the challenges identified. Detailed implementation plans are being developed to ensure these actions are undertaken, to enable the stroke strategy to achieve its objectives in the coming years. Below is a table outlining the key priorities for each workstream.

<table>
<thead>
<tr>
<th>Prevention</th>
<th>Recommendation</th>
<th>Responsibility</th>
<th>Timescale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>PCTs should co-ordinate and support the education of health and social care professionals in stroke.</td>
<td>PCTs</td>
<td>Plans by mid 2009</td>
</tr>
<tr>
<td>2.</td>
<td>All PCTs and acute trusts should develop and implement a comprehensive stroke prevention plan. This would be expected to integrate with, rather than replace, wider vascular and general health improvement plans.</td>
<td>PCTs and acute trusts</td>
<td>PCT plans by mid 2009</td>
</tr>
<tr>
<td>3.</td>
<td>PCTs should be innovative when developing stroke prevention initiatives to ensure they reach hard-to-reach groups at risk of stroke.</td>
<td>PCTs</td>
<td>Plans by end 2009</td>
</tr>
<tr>
<td>4.</td>
<td>GP-led primary and secondary prevention (as measured by QOF) should be improved and analysed.</td>
<td>PCTs</td>
<td>Early 2010</td>
</tr>
</tbody>
</table>
| 5.         | At the very minimum every healthcare organisation must have in place:  
• management commitment and accountability to the prevention agenda  
• a named clinical lead for prevention. | PCTs and acute trusts | Audit end 2009 |
| 6.         | NHS London should provide a public health role and focus for efforts to integrate stroke prevention messages into everyday life. | NHS London and PCTs | As soon as possible |
| 7.         | PCTs should increase the number of patients on stroke registers. | General practice | As soon as possible |
| 8.         | Primary and secondary prevention of stroke should be implemented across all PCTs. | PCTs | QOF based metrics early 2010 and then annually thereafter |
| 9.         | PCTs should ensure that healthcare providers are delivering secondary prevention messages to stroke and TIA patients and carers. | PCTs (QOF based metrics); NHS London audit of secondary prevention message | QOF metrics early 2010 and annually thereafter, audit mid 2009 and then annually thereafter |
| 10.        | PCTs should be incorporating stroke awareness into their plans and use the Department of Health’s work on raising stroke awareness (beginning mid 2009) to strengthen the prevention message in their population. | PCTs (plans) and NHS London (audit) | Plans by mid 2009; audit on stroke awareness mid 2009 and annually thereafter |
### Acute

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Responsibility</th>
<th>Timescale</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Evaluate quality of bids working with an external evaluation panel. Evaluate configuration of bids through a PCT led panel ensuring no-one is further than 30 minutes from a HASU in London.</td>
<td>Healthcare for London</td>
<td>November 2008</td>
</tr>
<tr>
<td>3. CCG chairs to consider options and make proposals to stroke project board. The JCPCT will agree the configurations to be publicly consulted on.</td>
<td>Healthcare for London</td>
<td>December 2008</td>
</tr>
</tbody>
</table>

### Rehabilitation

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Responsibility</th>
<th>Timescale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inpatient rehabilitation is available for all stroke patients; starts as soon as possible and continues for as long as required. This must meet all of the performance standards.</td>
<td>PCT</td>
<td>April 2011</td>
</tr>
<tr>
<td>2. Every PCT commissions a community rehabilitation service for stroke patients, including staff with stroke specialist skills. Service configuration is locally determined but it must meet all of the performance standards.</td>
<td>PCT</td>
<td>April 2011</td>
</tr>
<tr>
<td>3. Every PCT commissions an early supported discharge team, including staff with stroke specialist skills, for people who would benefit. This must meet all of the performance standards.</td>
<td>PCT</td>
<td>April 2011</td>
</tr>
</tbody>
</table>
| 4. All people who have had a stroke and their carers will have:  
  - A designated person from health or social care who is the key contact for the patient and carer whilst in each setting, for example a therapist, social worker or healthcare assistant;  
  - A person who is able to be the key support worker for the patient and carer, provide longer-term support, navigation and advocacy and link in with the inpatient and community rehabilitation teams and other care providers, for example a family support worker or community matron. | PCT            | April 2011 |
<p>| 5. Throughout the first 12 months following stroke, all people who have had a stroke and their carers should have a regular review and assessment of ongoing medical, social and emotional needs as both an inpatient and in the community. | PCT            | April 2011 |</p>
<table>
<thead>
<tr>
<th>General</th>
<th>Recommendation</th>
<th>Responsibility</th>
<th>Timescale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><strong>Networks</strong>: Develop the role of stroke networks.</td>
<td>Healthcare for London</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2.</td>
<td><strong>Performance monitoring and management framework</strong>: Develop a detailed framework to assist NHS organisations in identifying key responsibilities and defining roles, so as to track development of stroke services in coming years.</td>
<td>Healthcare for London</td>
<td>December 2008</td>
</tr>
<tr>
<td>3.</td>
<td><strong>Workforce CPD</strong>: Create detailed plans for the development of workforce requirements to support the improvement of stroke services in London.</td>
<td>Healthcare for London</td>
<td>July 2009</td>
</tr>
</tbody>
</table>
| 4.      | **Department of Health funding**:  
  - Develop best practice for patient transfers at all stages along the patient pathway;  
  - Enable teams from high performing centres to help those of lesser quality to improve their services through peer review and support;  
  - Pilot an online system for transfer of patient data to ensure consistency and avoid repetition;  
  - Develop a rapid access TIA clinic for those with suspected TIA. | Healthcare for London | From October 2008 |
## Appendix 2: Performance standards

<table>
<thead>
<tr>
<th>Standard</th>
<th>Summary of how recommendations will be measured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary and secondary prevention of stroke should be implemented across all PCTs.</td>
<td>QOF-based standards including (PCT standard) and excluding (pan-London standard) exception reporting.</td>
</tr>
<tr>
<td>PCTs should ensure that healthcare providers are delivering secondary prevention messages to stroke and TIA patients and carers.</td>
<td>A pan-London baseline audit of patients and carers will be conducted in mid 2009 and annually thereafter to examine whether they received secondary prevention advice and a consultation following discharge from inpatient or community stroke care.</td>
</tr>
<tr>
<td>PCTs should ensure healthcare providers are adhering to 90% best practice in secondary prevention.</td>
<td>A pan-London baseline audit by PCT should be conducted in mid 2009 and annually thereafter of secondary stroke prevention and Healthcare for London will be looking for evidence that PCTs are adhering to 90% best practice in secondary prevention.</td>
</tr>
<tr>
<td>PCTs should incorporate stroke awareness into their plans and use the Department of Health’s work on raising stroke awareness (beginning mid 2009) to strengthen the prevention message in their population.</td>
<td>A pan-London baseline audit will be carried out in mid 2009 and annually thereafter to track improvements in stroke awareness. A performance standard will be set based on this.</td>
</tr>
<tr>
<td>Number</td>
<td>Standard</td>
</tr>
<tr>
<td>--------</td>
<td>----------</td>
</tr>
<tr>
<td>L1</td>
<td>Percentage of patients admitted to A&amp;E within two hours from onset of symptoms, via ambulance service</td>
</tr>
<tr>
<td>H1</td>
<td>Percentage of stroke patients, identified as potentially eligible for thrombolysis treatment, to be scanned within next available CT slot (this must support a door-to-needle time of 30 minutes).</td>
</tr>
<tr>
<td>H2</td>
<td>Percentage of stroke patients eligible for thrombolysis, (to be thrombolysed) to receive thrombolysis treatment within 30 minutes of entry to A&amp;E (door-to-needle time).</td>
</tr>
<tr>
<td>H3</td>
<td>Percentage of stroke patients eligible for thrombolysis to receive thrombolysis within three hours of symptom onset, or as soon as possible of symptom onset.</td>
</tr>
<tr>
<td>H4</td>
<td>Percentage of stroke patients, identified as ineligible for thrombolysis treatment, to be scanned within 24 hours of admission to A&amp;E.</td>
</tr>
<tr>
<td>H5</td>
<td>Percentage of all stroke patients to be admitted to HASU directly from A&amp;E.</td>
</tr>
<tr>
<td>H6</td>
<td>Percentage of appropriate stroke patients to receive a swallow test within 24 hours of admission.</td>
</tr>
<tr>
<td>H7</td>
<td>Percentage of appropriate stroke patients to be weighed during admission.</td>
</tr>
<tr>
<td>H8</td>
<td>Percentage of appropriate patients to receive physiotherapist assessment within 72 hours of admission.</td>
</tr>
<tr>
<td>H9</td>
<td>Percentage of appropriate patients to receive continuous physiological monitoring (ECG, oximetry, blood pressure) by appropriately trained staff.</td>
</tr>
<tr>
<td>H10</td>
<td>Daily consultant level ward rounds.</td>
</tr>
<tr>
<td>H11</td>
<td>Provision of 24/7 consultant cover provided by at least six consultants on a rota who are able to make thrombolysis and hyper-acute treatment decisions.</td>
</tr>
<tr>
<td>H12</td>
<td>Provision of 24/7 nursing workforce to provide: 3.5 WTE nurses/bed giving a staffing ratio of 1:2 &amp; 80:20 trained to untrained skill mix.</td>
</tr>
<tr>
<td>H13</td>
<td>Percentage appropriate patients and carers to receive contemporary patient information provided in variety of formats.</td>
</tr>
<tr>
<td>Number</td>
<td>Standard</td>
</tr>
<tr>
<td>--------</td>
<td>----------</td>
</tr>
<tr>
<td>S1</td>
<td>Percentage of all stroke patients to be admitted directly to SU on HASU transfer.</td>
</tr>
<tr>
<td>S2</td>
<td>Percentage of patients to spend all of their in-hospital time in SU.</td>
</tr>
<tr>
<td>S3</td>
<td>Percentage of appropriate patients to receive a physiotherapist assessment within 72 hours of admission to SU.</td>
</tr>
<tr>
<td>S4</td>
<td>Percentage of appropriate patients to receive an occupational therapy assessment within seven days of admission to SU.</td>
</tr>
<tr>
<td>S5</td>
<td>Percentage of appropriate patients to be weighed within 72 hours of admission to SU.</td>
</tr>
<tr>
<td>S6</td>
<td>Percentage of appropriate patients to have their mood assessed by time of discharge.</td>
</tr>
<tr>
<td>S7</td>
<td>Patient access to a social worker.</td>
</tr>
<tr>
<td>S8</td>
<td>Provision of 24/7 nursing workforce to provide: 1.5 WTE nurses/bed &amp; 65:35 trained to untrained skill mix.</td>
</tr>
<tr>
<td>S9</td>
<td>Percentage of appropriate patients and carers to receive contemporary patient information and care plans provided in a variety of formats.</td>
</tr>
</tbody>
</table>

| T1 | Percentage of high-risk TIA patients to receive a specialist assessment and treatment within 24 hours of onset of symptoms. | 90% | Site specific | Regular |
| T2 | Percentage of appropriate (according to NICE guidelines) high-risk TIA patients to receive brain imaging within 24 hours of onset of symptoms. | 90% | Site specific | Regular |
| T3 | Percentage of low-risk TIA patients to receive a specialist assessment and treatment within seven days of onset of symptoms. | 90% | Site specific | Regular |
| T4 | Percentage of appropriate (according to NICE guidelines) low-risk TIA patients to receive brain imaging within seven days of onset of symptoms. | 90% | Site specific | Regular |
### Rehabilitation and community care

<table>
<thead>
<tr>
<th>Inpatient rehabilitation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number</strong></td>
</tr>
<tr>
<td><strong>RI1</strong></td>
</tr>
<tr>
<td><strong>RI2</strong></td>
</tr>
<tr>
<td><strong>RI3</strong></td>
</tr>
<tr>
<td><strong>RI4</strong></td>
</tr>
<tr>
<td><strong>RI5</strong></td>
</tr>
<tr>
<td><strong>RI6</strong></td>
</tr>
<tr>
<td><strong>RI7</strong></td>
</tr>
<tr>
<td><strong>RI8</strong></td>
</tr>
<tr>
<td><strong>RI9</strong></td>
</tr>
<tr>
<td>Number</td>
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<tr>
<td>--------</td>
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<tr>
<td></td>
</tr>
<tr>
<td>RC1</td>
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<td>RC2</td>
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<td>RC3</td>
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<td>RC4</td>
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<td>RC6</td>
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<td>RC7</td>
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<td>RC8</td>
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<tr>
<td>RC9</td>
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<tr>
<td>RC10</td>
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<tr>
<td>Number</td>
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<tr>
<td>--------</td>
</tr>
<tr>
<td>RG1</td>
</tr>
<tr>
<td>RG2</td>
</tr>
<tr>
<td>RG3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number</th>
<th>Standard</th>
<th>Target</th>
<th>Reporting frequency</th>
<th>Origin of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>RV1</td>
<td>Percentage of new clients contacted within two weeks of referral.</td>
<td>90%</td>
<td>6 monthly</td>
<td>Other</td>
</tr>
<tr>
<td>RV2</td>
<td>Percentage of locations with commissioned activity where a comprehensive set of standards and information about services offered is available.</td>
<td>100%</td>
<td>6 monthly</td>
<td>Other</td>
</tr>
<tr>
<td>RV3</td>
<td>Percentage of outcomes recorded for patients who have accessed voluntary services as part of their stroke care.</td>
<td>90%</td>
<td>6 monthly</td>
<td>Other</td>
</tr>
</tbody>
</table>
**Glossary**

**Acute**
Used to describe a disorder or symptom that comes on suddenly and needs urgent treatment. It is not necessarily severe and often lasts only a short time.

**Acute trusts**
Hospitals or a group of hospitals that provide acute (unplanned or emergency) care and elective (planned) medical treatment and surgical procedures.

**Atrial fibrillation**
Heart condition in which the upper left side of the heart beats out of rhythm with the other three chambers. It increases the risk of a blood clot forming inside the heart, which can travel to the brain and cause a TIA or stroke.

**Blood pressure**
The pressure of the blood against the walls of the main arteries. Pressure is highest when the ventricles in the heart contract (systole) and lowest when they relax (diastole).

**BME**
Refers to those people in black, Asian and minority ethnic groups.

**Brain scan**
Computerised imaging technique used to create pictures of the brain: using X-rays (CT scan) or magnetic fields and radio waves (MRI scan, f-MRI scan).

**Cardiovascular**
Referring to the heart (cardio), blood, and blood vessels (vascular).

**Care pathway**
A pre-determined plan of care for patients with a specific condition.

**Clinician**
Any health professional who is directly involved in the care and treatment of patients, for example, nurses, doctors, therapists and midwives.

**CCG**
Collaborative commissioning groups. A group of PCTs in a particular area who agree common commissioning goals.

**Commissioners**
The people who ensure health services are organised and funded in a way that best meets the needs of the community.

**Commissioning**
The full set of activities that local authorities and primary care trusts (PCTs) undertake to make sure that services funded by them, on behalf of the public, are used to meet the needs of the community fairly, efficiently and effectively.

**Community care**
Care which is provided outside a hospital setting.

**Community nursing**
A generic term covering health visiting, district nursing and school nursing.

**Computed tomography (CT)**
The X-ray technique most commonly used to examine the brain. Sometimes referred to as CAT – computed or computerised axial tomography.

**CPD**
Continuing Professional Development. The means by which members of a profession maintain, improve and broaden their knowledge and skills and develop the personal qualities required in their professional lives.
CVA
The abbreviation for ‘cerebro-vascular accident’, meaning stroke. The term is widely used but may cause confusion.

Diabetes
Diabetes mellitus is a condition in which the amount of glucose (sugar) in the blood is too high because the body cannot use it properly.

Diagnostics
Medical tests used to identify a medical condition or disease. Some common diagnostic procedures include measuring blood pressure, checking the pulse rate, listening to the heart with a stethoscope, urine tests, fecal tests, saliva tests, blood tests, medical imaging, electrocardiogram, hydrogen breath test and occasionally biopsy.

Disability
A substantial and long-term physical or mental impairment that reduces functions such as mobility, dexterity, speech, hearing, sight and memory, and adversely affects individual independence. The Disability Discrimination Act (2005) aims to increase opportunities for people with disabilities to take part in the everyday life of the community on an equal basis with others.

Door-to-needle time
Describes the time taken to administer clot-busting medication after a patient has entered A&E.

Early supported discharge (ESD)
A system where people can be discharged earlier than usual from hospital but continue to receive all the therapy that they need.

Electrocardiogram (ECG)
A test that measures and records the electrical activity of the heart in detail.

Electoral wards
The units used to elect local government councillors in metropolitan and non-metropolitan districts, unitary authorities and the London boroughs in England.

GP
General practitioner. GPs are among a group of health professionals who offer a first line of contact between patients and the NHS providing consultations in surgeries and through home visits.

Haemorrhage
The escape of blood from a ruptured blood vessel, externally or internally.

Haemorrhagic stroke
A stroke caused by a burst blood vessel bleeding into the brain (intracerebral haemorrhage) or into the surrounding areas (subarachnoid haemorrhage).

HASU
Hyper-acute stroke unit

Health inequalities
The health gap between disadvantaged groups or communities and others.

HES
Hospital episode statistics

Hospital trust
The organisation which runs one or more acute hospital.

Hypertension
High blood pressure, that is, consistently more than 140/90mmHg.

Impairment
Loss of function (e.g. weakness, loss of sensation, loss of speech).

Intermediate care
Integrated services for people that promote faster recovery from illness, prevent unnecessary hospital admissions and maximise independent living.
Inpatient
A patient who has gone through the full admission procedure and is occupying a hospital bed.

Information technology (IT)
General term used to describe technologies that help produce, manipulate, store, communicate, or disseminate information.

Ischaemic stroke
A type of stroke which happens when a clot blocks an artery carrying blood to the brain.

JCPCT
Joint Committee of Primary Care Trusts.

LAS
London Ambulance Service

Magnetic resonance imaging (MRI)
A type of scan that, instead of X-rays, uses a large, powerful magnet to create an image (picture) of part of the body. It provides detailed structural information on the brain, showing inflammation and bleeding, and changes over time.

Morbidity
Ill health due to a disease.

Mortality
A measure of deaths occurring in a given population, location, or other group of interest during an interval of time.

MRI scan
See ‘Magnetic resonance imaging’ above. Imaging technique used to create pictures of the brain using magnetic fields and radio waves.

Multidisciplinary team
A team involving many different professions, for example, doctors, nurses and therapists.

NHS London
The Strategic Health Authority (SHA) with responsibility for all the NHS healthcare services provided in London.

Neurology
The study of the structure, functioning and diseases of the nervous system.

NICE
National Institute for Health and Clinical Excellence: produces recommendations on the use of medicines, medical equipment, diagnostic tests and clinical and surgical procedures within the NHS.

Occupational therapist (OT)
A therapist who specialises in helping people to reach their maximum level of function and independence in all aspects of daily life.

Oximetry
A method of measuring the oxygen content of blood.

Payment by Results (PbR)
A nationally agreed set of tariffs to allow PCTs to commission at specialty level based on volumes adjusted for case mix using Healthcare Resource Groups (HRGs).

Physician
A doctor who specialises in the diagnosis of disease and treatment by other than surgical means.

Physiotherapist
A therapist who specialises in physical methods of treatment to promote healing and return to health and optimal functioning.

Prevention
A set of measures taken in advance of symptoms to prevent illness or injury. The emphasis is on preventing illnesses before they occur.

Primary care trust (PCT)
Statutory NHS bodies with responsibility for delivering healthcare and health improvements to their local areas. They commission or directly provide a range of community health services as part of their functions.

Psychosocial
The psychological, emotional and/or social aspects of health, disease, treatment, and/or rehabilitation.
PT
Physical therapy. The treatment consisting of exercising specific parts of the body such as the legs, arms, hands or neck, in an effort to strengthen, regain range of motion, relearn movement and/or rehabilitate the musculoskeletal system to improve function.

Quality and outcome framework (QOF)
A system for payment of GPs in the National Health Service, which rewards GPs for implementing good practice in their surgeries. The QOF comprises a range of criteria which are grouped into 4 domains: clinical, organisational, patient experience and additional services. The criteria are designed around best practice and have a number of points allocated for achievement.

Rehabilitation
The process of regaining function through active treatment, such as occupational therapy, physiotherapy and speech and language therapy.

Risk factors
The possible underlying causes (for stroke) such as smoking, high blood pressure, ethnic group, family history of stroke.

Social worker (care manager)
Professionally qualified employee of local Social Services Department who gives advice and practical help with social problems and needs. They also assess the eligibility of a person for community care services.

Speech and language therapy (SLT)
Rehabilitation specialism directed to the treatment of people with speech and language difficulties. This also covers treatment for swallowing problems.

Strategic Health Authority (SHA)
Responsible for developing strategies for local health services and ensuring high-quality performance. They manage the NHS locally and are a key link between the Department of Health and the NHS.

Stroke unit (SU)
Hospital facility for the effective management of patients with acute stroke by a multi-disciplinary team of specialists.

Thrombolysis
The use of drugs to break up a blood clot, a treatment which can be given to a small number of patients in the acute stage of ischaemic stroke.

Transient ischaemic attack (TIA)
A stroke-like event where the patient fully recovers within 24 hours of the start of symptoms.

Vocational rehabilitation
Services and support that help a person with impairments get a job, go to school, or get a volunteer position. For example, job counseling, computer training, and help finding a job.

WTE
Whole Time Equivalent. A measure of a staff member’s working time where WTE 1.0 is equivalent to one full-time role.