The shape of things to come

Finance and commissioning assurance plan
Stroke

Appendix 7d
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1 Introduction

This paper aims to provide assurance to the Joint Committee of Primary Care Trusts (JCPCT) that the proposals for the stroke system are affordable and that plans exist to commission the new stroke services and ensure that the benefits are delivered.

2 Executive summary

- Stroke is the third largest cause of deaths in the UK and the largest cause of adult disability. Compelling evidence exists that the proposals will lead to fewer deaths and improved patient outcomes;
- Primary Care Trusts (PCT) are committed to provide the £23 million of additional funds per year needed to deliver the Healthcare for London acute stroke care programme;
- Cost effectiveness measures used in the National Stroke Strategy indicate that the National Stroke Strategy proposals delivered value for money;
- The cost of the proposal is consistent with costs calculated in the National Stroke Strategy;
- A new tariff has been calculated to support the new model of care;
- Transitional arrangements have been considered.

3 Scope and context

The proposals are limited to the changes to acute stroke care proposed in the consultation. This does not include the costs of prevention or post-acute rehabilitation; these will need to be addressed at PCT level. The work to estimate the activity and costs associated with the proposed stroke system was set out in chapter 14 of the pre-consultation business case (PCBC). This paper looks at the additional work that has been undertaken since the publication of the PCBC.

The paper takes the following format:

Part A – Description of assurance affecting the decision to be taken by the JCPCT
i) Any factors that determine whether a particular decision or option should be discounted (Section 4)
ii) Any factors that influence a decision and should be considered (Section 5, covering baseline cost, incremental cost, affordability, cost/benefit)

Part B – Description of matters relevant to implementation
Section 6, covering commissioning and the provider landscape
4 Part A (i) – Any factors that determine whether a particular decision/option should be discounted

There are no factors that lead the project to recommend that a particular option or decision should be discounted.

5 Part A (ii) – Any factors that influence a decision and should be considered

5.1 Baseline revenue cost

5.1.1 Summary of findings presented in the PCBC

The following was presented as an estimate of the baseline revenue costs existing in the system:

<table>
<thead>
<tr>
<th>Table 1 – Baseline costs</th>
<th>£m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust</td>
<td>80.9</td>
</tr>
<tr>
<td>PCT rehabilitation and community care</td>
<td>55.5</td>
</tr>
<tr>
<td>Ambulance</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>139.4</strong></td>
</tr>
</tbody>
</table>

The costs were presented at 2008/09 price levels, with the trust element calculated from 2006/07 activity and 2008/09 tariff.

5.1.2 Additional work

The methodology for assessing the baseline cost for the acute component of the pathway has been updated to be based on 2007/08 activity and 2009/10 tariffs. Other than for the expected price base changes, this has not changed the baseline in a material way.

5.1.3 Further comment

The baseline estimates originally calculated are still considered to be a reasonable representation of the system costs within London.

5.2 Incremental revenue cost

5.2.1 Summary of findings presented in the PCBC

The PCBC identified £23.5m as the additional full year cost of implementing the acute stroke pathway in London.
Table 2 – Incremental costs

<table>
<thead>
<tr>
<th></th>
<th>£m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute care</td>
<td>20.4</td>
</tr>
<tr>
<td>Thrombolysis</td>
<td>0.7</td>
</tr>
<tr>
<td>Rehabilitation and community care (*)(**)</td>
<td>1.2</td>
</tr>
<tr>
<td>Ambulance</td>
<td>1.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>23.5</td>
</tr>
</tbody>
</table>

(*) This is an estimate of the additional ‘downstream’ cost that would result from the changes to the acute pathway proposed by the stroke project. Two opposing scenarios were considered to understand the impact on PCT rehabilitation and community care costs; one in which more patients survive but in a heavily dependant state and one where many patients are less disabled and need less on-going care. For prudence, the costs included in the table relate to the former scenario, which is the more costly.

(**) Achieving the performance standards for rehabilitation and community care proposed by the stroke strategy does not form part of the consultation, and therefore these costs have not been derived. Nevertheless initial studies have indicated that although there is great variability between PCTs, there is a need for investment. This is for local PCT implementation.

As well as updating the activity and price base as described above, the project has reviewed the impact of forecast changes to bed numbers. The following have been considered:

- population and demographic change;
- further consideration of the likely length of stay (LoS) in a HASU;
- consideration of the mimic rate and the LoS of mimics;
- re-working the overall LoS saving in the SU so that it is based on those units with above average LoSs moving down to the London average;
- consideration of an increase in hospitalisation rates for those boroughs with below London-average rates;
- consideration of the impact of increased application of the Face Arm Speech Time-to-call (FAST) test by the population;
- inclusion of beds for stroke related procedures;
- modification of the bed requirement for the new Transient Ischaemic Attack (TIA) pathway;
- allowance for the impact of prevention strategies;
- allowance for activity from non-London PCTs;
- estimate of the impact of Early Supported Discharge.

This results in a proposal for an estimated bed requirement of 132 HASU beds and 598 SU beds.

5.2.2 Further comment

The original estimates of the cost of the new system are still considered to be a reasonable representation of the additional costs for the London system.

5.3 Affordability

5.3.1 Findings presented in the PCBC

The recurrent additional cost of the new proposed stroke service is estimated to be £23.5m (see Table 2) which equates to 0.17% of the PCT recurrent baselines (based on PCT recurrent allocations of £13.3bn). PCTs are committed to provide these funds.

The phasing of the additional recurrent costs identified would depend on the pace that providers achieve the required criteria and implement the new services. The
largest element relates to costs in acute units and by assessing provider
preparedness it was estimated that the additional cost to the London system of the
acute phase would be £3m (2009/10), £17m (2010/11), £20m (2011/12). PCTs have
made provision in their 2009/10 commissioning strategic plans for the increased
expenditure on inpatient stroke services in line with these earlier estimates.

5.3.2 Additional work

Phasing of costs
Provider implementation plans have been revised and the estimated cost calculated
is similar to previous estimates. This is shown below:

Table 3 – Revised estimate cost to PCTs of acute phase

<table>
<thead>
<tr>
<th></th>
<th>2009/10 £m</th>
<th>2010/11 £m</th>
<th>2011/12 £m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyper-acute stroke unit (HASU)</td>
<td>0.6</td>
<td>9.8</td>
<td>10.4</td>
</tr>
<tr>
<td>Stroke unit (SU)</td>
<td>3.4</td>
<td>9.7</td>
<td>10.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4.0</strong></td>
<td><strong>19.5</strong></td>
<td><strong>20.4</strong></td>
</tr>
</tbody>
</table>

Anticipating savings from influencing the volume of stroke activity
The costs presented in section 5.2.1 represent an increase in the unit cost of treating
stroke. However evidence presented in Section 5.4 suggests that improved TIA
services, along with other prevention strategies, will exert a downward pressure on
activity. This has not been quantified although it will act to contain overall expenditure
on stroke.

Variability of costs to commissioners and provider economies of scale
The charge that is levied to commissioners is determined by the tariff noted in section
6.1. In the short term the cost to commissioners is not affected by the number of
units, but is dependent on the activity undertaken.

Whilst the project has not explicitly considered how unit costs vary in relation to the
size of units (HASU or SU), it can reasonably be expected that greater economies of
scale will be achieved in a system with a higher number of beds in each location and
therefore a lower number of units.

5.3.3 Further comment

The affordability estimates originally calculated are still considered to be reasonable
and valid and supported by PCTs.

5.4 Cost / benefit

5.4.1 Findings presented in the PCBC

The results of the research conducted for the UK *National Stroke Strategy*, published
by the Department of Health in December 2007, indicated that the overall cost per
quality-adjusted life year (QALY\(^1\)) gained of implementing the recommendations in
the *National Stroke Strategy* was estimated to be £2,500. This is well within the cost-
effectiveness threshold used by the National Institute of Health and Clinical

\(^1\) A QALY takes into account both the quantity and the quality of life generated by healthcare
interventions. It is the arithmetic product of life expectancy and a measure of the quality of the
remaining life years
Excellence (£20,000 - £30,000) and the Department for Transport’s ‘Value of preventing a fatality’ (which is equivalent to a value per QALY of £38,000).

The £2,500 cost per QALY of implementing the National Stroke Strategy relates to the whole of the stroke pathway including prevention, treatment and rehabilitation as well as acute care. However, it does provide clear evidence that an investment in stroke treatment is considered to be a cost-effective healthcare intervention.

In addition, the National Stroke Strategy provided a range of costs for the estimated gross stroke investment for England and Wales. When the inpatient treatment element was related to the London population, an estimated London investment was calculated. The proposed costs identified in section 5.2.1 were within the range presented in the National Stroke Strategy.

5.4.2 Additional work

There is a significant body of research over the last two decades that has looked at the costs and the benefits of stroke care all over the world. Included in this is a large amount of work devoted to the question of whether dedicated stroke units, which may or may not cost more than conventional care, provide a greater economic benefit overall.

This section presents some of that research and reflects the overwhelming consensus that dedicated stroke units do provide a long-term economic benefit.

- Youman et al.\(^2\) developed a model to estimate the total average cost of a stroke and its consequences over a five-year period. The results showed that the cost to the NHS, in 2001/2002 prices is £15,306 over five years, but this rises to £29,405 if informal carer costs are taken into account. The researchers concluded that “As well as being a considerable cause of morbidity and mortality, stroke is also a huge cost burden to both the UK’s NHS and the carers of stroke victims.”

- In 1997 the Stroke Unit Trialists’ Collaboration\(^3\) carried out a systematic review of 19 studies that compared the outcomes of organised in-patient stroke care with contemporary conventional care. The analysis found that organised stroke care resulted in a significant reduction in death, dependency and the need for institutional care when compared to conventional care. Although this study did not look specifically at resources, it was noted that no significant impact on resources was observed.

- Other studies have specifically looked at the cost element of specialist stroke care over conventional care and in this area there is overwhelming evidence to show that providing stroke care through dedicated stroke facilities is cost-effective over the life-time of a stroke victim.

- Launois et al.\(^4\) carried out research in order to determine the cost-effectiveness of stroke units compared with conventional care in France. They found that although treatment in a stroke unit was more expensive than in conventional care (€34,638 versus €30,983), the cost per life year gained without disability was only €1,359. This cost was much lower than the threshold of €53,400 used to determine if a treatment is cost effective.

• Asplund\(^5\) looked at stroke care in Scandinavia and found that the additional cost of a stroke unit over a conventional care setting was 530 USD per patient admitted. This cost however, was paid back nearly 12 times over because the costs associated with the long-term disability fell by 6,000 USD per patient for those treated in a stroke unit.

• Cavallini et al.\(^6\) also demonstrated that stroke patients treated on a general ward had a longer length of stay than patients treated in a stroke unit.

• Rothwell et al.\(^7\) found that early initiation of existing prevention treatments after a TIA or a mini-stroke led to an 80% reduction in the risk of an early recurrent stroke. This rate of reduction would lead to an estimated reduction of 10,000 cases in the total number of strokes per year in the UK.

• Sudlow and Warlow\(^8\) have recently commented that the plans put forward by Healthcare for London have too great an emphasis on hyper-acute care and the provision of thrombolysis. They note that better stroke unit care and use of aspirin have a larger proportionate effect than thrombolysis on its own. Nevertheless, the estimates that they present suggest a net benefit of approximately 1,000 people avoiding death or dependency. Two responses to this article (Syme\(^9\) and Losseff et al\(^10\)) noted that the proposed model of care is balanced, with consideration given to all aspects of provision.

5.4.3 Further comment

Although it is difficult to be specific about the financial impact of the proposals, existing evidence indicates that, when similar changes have been introduced, they have generated measurably better outcomes for patients and wider societal benefits. These benefits would include, for example: benefits to families and carers as fewer patients are dependant following their stroke, lower rates of institutionalisation, reduction in the numbers claiming disability allowance, more people returning to work following a stroke or not stopping work due to a stroke being prevented.

The evidence also indicates that future reductions in the volumes of strokes occurring should generate cost reductions.

\(^8\) Sudlow and Warlow: Getting the priorities right for stroke care
\(^10\) Losseff et al: 'The London Stroke Strategy is comprehensive and will be a quantum leap forward', (BMJ June 2009)
6 Part B – Description of matters relevant to implementation

6.1 Commissioning

6.1.1 Findings presented in the PCBC

Tariff
A tariff approach was devised to relate to the new model of care. This involved splitting the existing tariff into two elements: a tariff for the HASU component based on bed-days and a tariff for the SU element based on spells. It was noted that the Department of Health is considering basing the national stroke tariffs on a ‘best practice’ approach. As such the ‘London’ tariff approach would become convergent with the national tariff and is likely to be short term. In addition, future stroke tariffs will be subject to the same requirements to drive up productivity as will apply to any other service.

Application of tariff
Consideration was given to the possibility that providers would be at different stages in developing their ability to deliver the standards outlined. A stepped approach to funding, known as the ‘partial designation’ tariff was designed.

6.1.2 Additional work

Commissioning arrangements
PCTs retain ultimate responsibility for commissioning stroke services, though the commissioning arrangements will be delegated to sector acute commissioning units.

Under the contracting guidance for 2009/10, non-London PCTs will have the option to contract directly with each provider or move to a new model of co-ordinated contracting where appropriate.

Tariff
The tariffs were specified under Healthcare Resource Groups v3.5 (HRG v3.5) and have now been updated to HRG4. Unlike for other types of activity where HRG4 generally increases the number of codes available, the number of codes relevant to stroke activity reduces. (This is as a result of HRG4 not including any differentiation for patient age in relation to stroke activity.)

Application of tariff
Further work has been undertaken with the stroke network directors to:

1. Specify the criteria used to determine transition and the related funding steps.

The purpose of the partial designation tariff is to acknowledge that a stepped approach to obtaining the additional resource and achieving the performance

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11 Strictly speaking, two sets of prices were created; a neutral tariff and a ‘London’ tariff. The neutral planning tariff was constructed so that it should represent the current average London status quo. The principle used in deriving the ‘London’ tariff was that it should inject the relevant new funding shown in the London acute system.

12 If co-ordinated commissioning arrangements are used, a provider may have a contract co-ordinated by a single PCT in each Strategic Health Authority (SHA). Other commissioners within the SHA, whose service users use the provider, will be an associate commissioner for that contract. SHAs have discretion to agree how these arrangements work locally and across SHA boundaries. These arrangements could significantly reduce the overall number of contracts and strengthen the commissioning relationship with providers, without confusing governance and accountability.
targets is reasonable. This balances the need to fund provider costs fairly whilst at
the same time encouraging and rewarding providers for progressing to achieve
the full HASU / SU standards. The approach is set out in more detail in the
‘Implementation and transition assurance paper’.

2. Specify how the new tariff arrangements apply as the organisations transition from
current practice to new practice.

At the start of the new service, it is likely that a mixed economy will exist which will
require rules to determine how the tariff will apply. For example, depending on the
initial scale of provision of HASU beds within a given sector, not all patients will be
taken to a HASU. Consequently some of the patients arriving at a ‘new’ SU may
have come from a HASU and some from that Trust’s own accident and
emergency department. The rules specify when the old or new tariffs apply to
each organisation.

Further tariff issues – transient ischaemic attack
The stroke project acknowledges the potential charging issue that results from the
different hospitalisation approaches that Trusts follow for patients suffering from
transient ischaemic attack (TIA). In simple terms only those high risk TIA patients
should require inpatient hospital care, whilst the low risk patients could be treated in
a TIA clinic setting. However there is a perception that this is not how the system
currently works and that too many patients with TIAs are hospitalised (possibly in
order to facilitate access to diagnostic testing). Discussions with the stroke network
directors indicated a preference to have one tariff for inpatient TIA care regardless of
setting and to ensure that contracts contained a mechanism to performance monitor
the level of TIA inpatient activity.

The stroke project is aware that there are a number of ways to charge for TIA clinics
and recommends that commissioners adopt a ‘package of care’ approach, whereby a
standard price, which includes the outpatient attendance and diagnostic tests, is
used.

Further tariff issues – early supported discharge (ESD)
Healthcare for London has not proposed a mechanism to unbundle the SU tariff
further (for example to allow for Early Supported Discharge), but does not want this
to be a barrier to progress. The principles in the HRG4 guidance would apply.

6.1.3 Further comment

Contracting arrangements will be in place to support the introduction of the new
stroke services.

6.2 Impact on providers

6.2.1 Findings presented in the PCBC

Provider landscape
When operational, the proposed HASUs will be undertaking the initial acute phase of
care for all stroke activity. This activity is currently taking place across all of the
existing hospitals in London that undertake stroke activity. The income shift that this
represents is approximately £8.5m and will happen as a result of the new tariff
proposal. Similarly, activity in the units that are not designated as SUs would cease
and this activity would be picked up by the SUs that are designated. This income shift
is estimated as £5.2m.
The maximum income loss for a Trust no longer providing stroke services is approximately 2% of the Trust’s total income and the maximum income gains for those Trusts taking on additional services are approximately 1.5% of their income. (The above calculations are stated before the additional funding is released into the system.)

**Transitional arrangements**
Double running costs are likely, but need to be minimised. These will stem from inefficiencies in scaling costs down to match activity reductions. The greatest income loss takes place in the hospitals that it is proposed would not be designated as SUs and local health economies will need to ensure costs are reduced as quickly as possible. Financial transitioning arrangements are up to local health economies to agree.

**Capital costs**
Trusts are expected to support the capital costs from their own capital financing arrangements.

**6.2.2 Additional work**
The costs originally calculated are still considered to be a reasonable representation of the income shifts as a result of the new system.

**6.2.3 Further comment**
A productivity gain has already been anticipated from shortening the overall length of stay. Nevertheless, in the financially challenged environment that is anticipated, Trusts will have to explore all avenues to continue to increase productivity and reduce costs.

**7 Conclusion**
There is a clear health benefit case to proceed. The costs initially calculated by Healthcare for London are still considered to be reasonable and are in line with those presented in the *National Stroke Strategy*. A tariff and contracting mechanism has been constructed to support the new system.