Neurology
*A new approach for London*

NHS
London Clinical Networks

# Community neurology service

*For common neurological conditions*

December 2016

## Acknowledgements

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## Contents

# Foreword

***More than four million people in England are living with a neurological condition.***

In 2012/13 the NHS invested £3.3 billion in neurological services, yet substantial inconsistencies remain in the services patients receive. Reports indicate 64 percent of neurological admissions to a hospital are on an emergency basis -- with more than half of the neurological programme budget spent on unplanned admissions. London has the highest rate of referrals to adult neurology outpatients in the country, yet despite this, the rates of unplanned admissions remain high.

The London Neurology Clinical Network's Quality and Safety Organisational Audit[1] found no hospital where patients with a primary neurological diagnosis were systematically admitted under a neurological specialist from emergency departments. Additionally, integrated care systems for patients with neurologic conditions are poorly developed.

The London Neuroscience Clinical Network proposes a new commissioning approach to address these issues and raise the quality and efficiency of services for people with neurologic conditions.

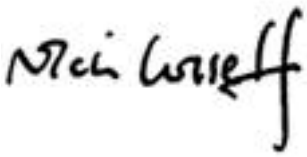
**This paper describes one of three interlocking models examining new approaches to:**

» **The management of common conditions in the community by a provider network, using a tiered approach.**

» **Improved acute neurology services at a secondary care level led by neurologists.**

» **The adoption of patients with neurologic conditions into integrated care systems by providing the tools necessary to make this successful.**

Most importantly, we wish to raise the profile of this very important group of patients with commissioners, challenging the status quo of services that are outdated for current needs.



Nick Losseff
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1. London Neuroscience Clinical Network, *London organisational audit of secondary and tertiary neurological care providers* (2014)
Link: http://www.londonscn.nhs.uk/publication/london-neuro-quality-and-safety-organisational-audit/

# Introduction

**This paper recommends the commissioning of a new approach to address issues of quality, efficiency and responsiveness in the care of people with common neurological conditions (headache, dizziness, transient loss of consciousness).**

The new model uses a networked and tiered approach across a Sustainability and Transformation Plan (STP) landscape. It provides access to appropriate levels of expertise and takes a more proactive approach, where high risk individuals are identified earlier through greater collaboration between primary and secondary care. The majority of patients with common neurological conditions do not require hospital management and proactive care is very likely to reduce unplanned, emergency admissions and unnecessary outpatient appointments.

## Targeted outcomes

- Improve response time and diagnosis averting the development of chronic problems.
- Reduce outpatient appointments for common conditions by 17 per cent[1] where the current cost is £3 million.
- Encourage rational prescribing, as specialist reviews are likely to standardise drug usage, counsel on lifestyle impacts on the condition (eg migraine, manage medication overuse headache.
- Reduce ambulance callouts.
- Provide active referral management both into the integrated system and onward to secondary care.
- Allow dissemination of skills across the primary / secondary care interface.
- Co-ordinated care between primary and secondary care; improved collaboration and communication.
- Better, more cost effective use of available drugs (generics over branded).

## Current landscape

There are two million people living with a neurological condition in London[2]. Many of these are common conditions such as headache (including migraine, 1.7 million people), dizzy spells and faints and fits which includes epilepsy.

Data from the Neurological Alliance[2] finds that:

- The prevalence of neurological conditions is increasing by 3 per cent per year.
- Sixty per cent of outpatient appointments are for common neurological conditions.
- Seventeen per cent of all consultations in primary care involve neurological symptoms.
- Ten per cent of emergency attendances and 19 per cent of admissions are for neurological conditions.
- Emergency admissions account for 64 per cent of neurological admissions.

For the majority of patients, the entry to the common conditions pathway will be through the local general practitioner (GP). The next steps will be influenced by a variety of factors:

- Experience of the GP to manage the neurological condition
- Short consultation time (7-10 minutes) to achieve a diagnosis
- Access to neurological opinion to aid decision making (post consultation, *see note above*) or a referral to a neurological outpatient appointment or GP with a special interest (GPwSI).

Feedback from GPs attending a 2016 Network masterclass on these conditions revealed that *70 per cent felt they had no effective mechanism for obtaining a responsive neurological opinion.*

1. Proportion of common conditions outpatients appointments that could have been managed in the community. Perception of neurologists on their outpatient clinics (Straw poll of neurologists involved in Network projects) and King's College Hospital audit.



2. Neuro numbers, Neurological Alliance (2014) Link

## Case for change

The key arguments for service change are:

1. There are large numbers of common neurological conditions unnecessarily seen in outpatient departments (OPD). We believe they could be managed better in primary care (education / networking), with self-help (referral management).
- » London has a high rate of neurology referrals to hospital compared to England; 30 of 32 London CCGs have referral rates greater than the England average[3].
- » The Network estimates that 50 to 60 per cent of referrals are for common conditions, and 30 per cent of these could have been managed in the community[4]. This is the target cohort. (See Appendix 1).

2. Heavy usage of OPD capacity with large numbers of unnecessary appointments means response is slow, and significant numbers go to Accident & Emergency (A&E), leading to admission by non-neurologically trained personnel.
- » The average waiting time for OPD is nine weeks, but the range can be between 3 to 16 weeks.
- » A 2015 Network acute neurology pilot identified that people with headache and faints / fits were the highest neurological attenders in A&E.

3. Neurologists occupied in OPD cannot input sufficiently into acute neurology services[5] *(see HANS paper),* meaning some neurological conditions cannot be seen and managed during a crisis, which has implications on outcomes and long term costs.

4. The failure to correctly diagnose and treat some episodic common conditions can lead to chronic disease, creating long term cost implications and impacting a patient's quality of life.

5. GP, A&E and outpatients focus on diagnosis and immediate relief of symptom. Personal care plans are provided, but there is local variation. More could be done to provide effective self-management, understanding the condition and the consequences of personal lifestyle. There is a significant rate of returners to A&E and medication over use.
- » In 2015/16 there were 8,692 common condition readmissions, of those, 11 per cent were the third readmission or more[6].

6. Ad hoc education events alone are not likely to be sufficient to adequately address variation in managing common conditions in the community (including long term approaches, work pressures, competing attention of other disease groups, and personal interest). The content of events tends to be generic; patient-based discussions are more valuable.

7. Lack of frequency of exposure to the conditions, confidence and limited consultation time make managing common neurological conditions challenging for GP. Current work pressures, GP recruitment and retention will not improve neurological services within primary care in the short to medium term.

**The Network proposes a shift from reactive outpatients to proactive support for acute neurology and community neurology services.**

### Impact on patients

Accessibility, timeliness, and near to home services are key needs identified in the Neurological Alliance's patient audit[7]. Earlier diagnosis and treatment of common conditions and better management during a crisis with added focus on self-management will build confidence of the patient to manage their condition with positive implications on work, social life and family.

3. Public Health England, Fingertips data, Link (2015)
4. Network estimate: review of neurology general outpatient clinics, King's audit.
5. London neuroscience network, hyper-acute neurology team, a new approach for London, Link (2016)
6. SUS SEM tNR, Inpatient admissions & readmissions in 2015/16 for migraine, headache, dizziness, hypotension, syncope and epilepsy
7. Neurological Alliance, *The invisible patients: Revealing the state of neurology services* Link (2015)

## New approach

**The Network believes that there is an opportunity to create a network of provision, across a defined geographical area, using a tiered approach for the management of common neurological conditions.**

To support **primary care (*tier 1*)** we propose a **community neurology nurse specialist (*tier 2*)** to provide a clinical service supported by a **networked hub of neurologists (*tier 3 – within secondary care*)** and other existing professions.

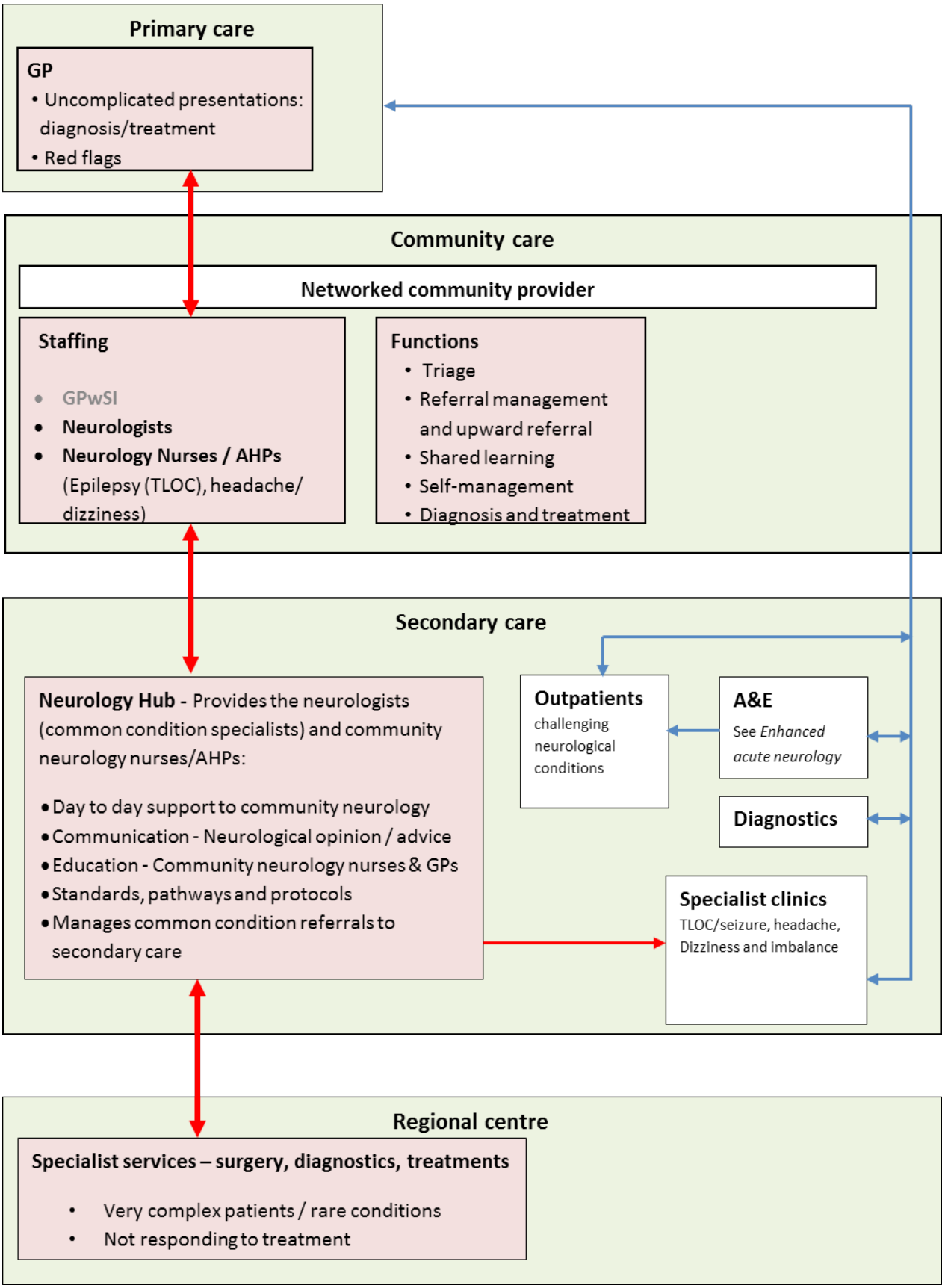
The service can be located in different parts of the geographical area using existing infrastructure – GP practices or community hospitals.

The introduction of the community neurology nurse will provide an expert to support primary care manage these conditions. A key element to this expertise is frequency of exposure to these conditions and the direct link to the hub for additional support. The neurology nurse will provide those elements of care that are difficult due to limited time or confidence but do not require a hospital appointment e.g. supporting lifestyle or behavioural changes that are needed to manage symptoms in addition to medication; treatments such as for benign paroxysmal positional vertigo (BPPV) using appropriate tests and manoeuvres.

The All Party Parliamentary Group on primary headache disorders stated:

> *"Specialist nurses provide a key cost effective service to address the burden of headache. However, the current level of specialist headache nurse provision is inadequate. There needs be a sufficient number of adequately trained and well supervised specialist headache nurses in posts across the country to meet the demand of the high cohort of headache patients. Reduced spending on nurse posts in times of austerity will only yield short-term savings and further limit the support available for headache patients. Commissioners need to look at the models of good practice that exist, and consider the wider cost implications and health improvements that specialist nurses can provide in the long-term."*

## Neurology community services | Outline model



# How the model works

## Primary care

The GP still provides the entry point for patients and will identify suitable patients for the community neurology nurse using a referral protocol. The protocol will require the GP to manage common condition patients but the community neurology service will be available to provide diagnostic and treatment support or to triage patients for referral to outpatients.

The GP will be responsible for the identification of red flags.

Some areas will have a GPwSI providing an expert service linked to a neurology department.

## Community neurology service - Nurse specialist/therapist

*(See Appendix 3 for case study.)*

Initially, a nurse specialist (alternatively, an allied health professional [AHP] or physician assistant) is trained on one common condition (headache, dizziness or faints/fits/epilepsy). We believe it would be possible for a nurse specialist to become competent in headache and dizziness. Epilepsy is likely to be a standalone role. The nurse specialist would triage GP referrals received for these conditions for either management in the community or referral to the hub for outpatients or specialist neurology clinics.
They would be competent to identify, test and manage:

- Major primary headache, red flags, potential secondary headache.
- BPPV, postural hypotension, and vestibular migraine and red flags.
- Syncope – neurological cause, epilepsy (post diagnosis) and red flags.

Activities could include:

- Clinics (new and follow-up) - Treatment and provision of self-management / lifestyle support to manage the condition, working to clinical and referral protocols. (Ideally all patients attending A&E ought to be followed up at the community service in 2 to 3 weeks to review medications, enforce self-help / rescue regime and education to influence future behaviour.)
- Risk stratification / case management.
- Audit and research.
- Education and advice to practices.
- Liaison and communication - Psychological services, social services, third sector services, rehabilitation, housing, employment.

## Neurology hub

The neurology hub is a team of neurologists drawn from secondary care to provide support for neurological opinion to GPs, and the community neurology specialist nurse. The service would use IT to facilitate communication (eg Skype, Kinesis). Patients not deemed suitable for community management would be seen in a specialist clinic (condition specific) within the local hospital by hub clinicians or, alternatively, would be seen in an outpatient clinic or hot clinic provided by the hyperacute neurology team. (*See the Network's acute neurology model.*) The specialist clinic option is preferred as it ensures the patient is seen by condition specialist. Neurologists can rotate through the hub to maintain expertise.

This service is less standardised with a smaller number of more complex presentations of the common conditions.

## Neurologists

The nurse alone will not be sufficient to reduce variation in primary care neurological competence. Neurologists would be required to spend one PA per day within the locality for the first year*. Thereafter it would depend how the model evolves and the competence of the nurse role.

The hub is to serve as the source of expert advice to support diagnosis, treatment and appropriate referral for more challenging symptoms. It would provide clear pathways to other existing services required by the patients and the clinical governance and quality for the service through review, clinical audit, research, education and training via working within the practices and educational forums.

* Information governance issues would have to be addressed depending on the employment approach.

## Neurology MDT

An additional option would be a neurology multi-disciplinary team (MDT) meeting that would support the management of more complex patients and could involve the community neurology nurse, social services, Improving Access to Psychological Therapies (IAPT) psychologist and relevant AHP and third sector. This may be a valuable resource for existing referral management systems.

## Service structure

- Initially available 9am to 5pm, Monday to Friday.
- Referral to be responsive to see patient within a short time frame (eg within a few days).
- Example workday structure:
  - Morning - Clinics (new and follow-up)
  - Afternoon - Liaison, audit, education, home visits
- The neurologist and community neurology nurse would provide clinics located at one to three GP practices or community building within the geographical area. They would require IT access to GP systems and hospital systems for patient notes.

## Capacity of community neurology nurse specialist

The capacity of a community nurse with five half-day clinics per week is 1,840 appointments per year (*See Appendix 1.*) The majority of common conditions will still be seen first by the GP. Those that would trigger an outpatient appointment or require additional support (eg self-management) would create demand for this community service. An exact calculation of the number of nurses required would depend on the populations involved. As an example, we have calculated numbers required for an STP approach (*below*) with the following assumptions:

- The target population for the model is based on 75 per cent of the number of outpatient appointments found not to require a neurologist (per annum, as not all of these cases would be managed by the community neurology nurse).
- Each new patient has one follow-up.

(*Current neurological admissions data and costs for CCG and STP is provided in Appendix 2.*)

There could be several deployment approaches with the model, which could include a GPwSI. One approach for an STP area would be one neurology community team with two nurses full time, five days per week, and a neurologist providing outreach half-days every day for five days per week. All can operate from a number of sites during the week. Several local trusts could provide neurologists for the community service on a rota basis.

Further modelling is required to identify the mix of headache/dizzy spells for a neuro community nurse and transient loss of consciousness (TLOC, or epilepsy) nurse.

In addition to the potential for reduced hospital based outpatient appointments for these conditions, we cannot calculate the impact on A&E attendance and admission or the reduction in GP consultations for these patients once an initial referral has been made.

*Illustration of numbers per STP footprint*

| STP area | Outpatient appointment not requiring neurologist | Suitable for community service (75%) | Follow ups (1 for each new patient) | Potential appointments (outpatient + follow up) | Number of CCGs | Number of nurse specialists (capacity: 1,840 appointments pa.) |
|---|---|---|---|---|---|---|
| NC | 3184 | 2,388 | 2,388 | 4,776 | 5 | 2.5 |
| NE | 2327 | 1,745 | 1745 | 3,490 | 6 | 1.8 |
| NW | 3773 | 2,830 | 2,830 | 5659 | 8 | 3.0 |
| SE | 2595 | 1,946 | 1,946 | 3,893 | 6 | 2.1 |
| SW | 2550 | 1,913 | 1,913 | 3,825 | 6 | 2.1 |

We believe there would be a reduction in the number of attendances and admissions by this patient cohort. Our acute neurology pilots all identified headache and fits as the most common reason for attendance and most were admitted for 0 to 3 days.

Although the model shifts these conditions away from hospital based management and provides support for primary care management the waiting lists for outpatient are likely to fill current clinics.

Commissioners and trusts would have to agree the number of outpatient clinics to be provided. Once the waiting lists have moved through a cycle with the community service in operation those on the lists will be of a more neurologically complex or challenging nature.

## Training of nurse specialist

Nurse options: Clinical nurse specialist (band 6-7) or a nurse practitioner (band 7-8) who can prescribe.

They would have an underpinning qualification and receive in-house training for the common neurological condition.

A training syllabus and competency framework will be required from the hub.

Training duration

- One month training in hospital under hub neurologists. Duration depends on concentration of neurologist's activity on the condition. More than one neurologist could be involved to provide concentrated exposure to the condition.
- Three months under supervision.
- Three to six months half-day per week based at the hospital for training – case review.
- Twelve months to be competent.
- Two half-day sessions per month at hospital for CPD and case audit.

## Employer

Options would be for CCGs to commission the service with a GP federation working in partnership with secondary care providers, as in the Camden epilepsy community service.

However, other *Five Year Forward View* models would suit this model: multispecialty community providers (MCPs), or as part of a hospital trust as a primary and acute care system (PACS). Links should be to an acute hospital with A&E in order to provide the support for the community, chronic and emergency patients and where the benefits from admission avoidance are realised.

For the community neurology nurse it would be essential to be able to access primary care IT systems for updating directly patient records. A shared system is required.

Responsibility for prescriptions would need to be agreed.

## Equipment

- Room to carry out clinic (couch, blood pressure monitor).
- Tablet PC with internet connection.
- Access to GP and hospital systems, email.
- Mobile phone with video.

# Costs of current system

## Outpatient for London

*Note: Available neurology datasets do not breakdown outpatient and A&E data to a condition level.*

Data from the Public Health England (PHE) neurology profiles[9] identifies that there were 80,158 outpatient appointments in London CCGs during 2013/14 for an adult population aged 20 and above. At 2015/16 Enhanced Tariff Prices Option this would cost London £17,554,000.

*See Appendix 2 for a CCG and STP breakdown of outpatient and admission data.*

| Number of outpatient appts age 20+ | Cost outpatient appt (£216) | Number of follow-up age 20+ | Cost of follow-up |
|---|---|---|---|
| **80,158** | **£17,554,602** | **109,571** | **£13,586,804** |

| Estimate of common condition outpatient appt (60%) | Estimate 30% of common conditions do not require a neurologist (target cohort) | Cost of referrals not requiring a neurologist. (£216) |
|---|---|---|
| **48,095** | **14,428** | **£3,159,000** |

## Admissions for London

| Ordinary inpatient admissions | Day case admissions | Total admissions | Cost of elective admissions |
|---|---|---|---|
| **102,336** | **47,589** | **149,925** | **£32,426,000** |

| Emergency admissions | Cost of non-elective admissions |
|---|---|
| **79,430** | **£75,800,000** |

## Financial costs of community neurology service for an STP

| Description | Cost per annum for model |
|---|---|
| 1.0 WTE community based nurse Band 7 – Epilepsy/ neuro TLOC | £31,383-£41,373 Estimate £50,000 including on costs |
| 1.0 WTE community based nurse Band 7 – Headache/ dizziness | £31,383-£41,373 Estimate £50,000 including on cost |
| 0.6 WTE consultant neurologist. (1 PA per day, 5 days) | £70,000 with on costs (mid-point £85,000 pa.) |
| Travel expenses - Community neurology nurse | Depends on location and number of clinics sites |
| Equipment | £2000 (start-up) |
| Overheads & administration<br>» Admin support<br>» Stationary<br>» Room rental | Would depend on model implemented – requires local modelling |
| Diagnostics | Would depend on model implemented |

## Summary of current and model costs for an STP

£3,116,448 - Current outpatient costs for common conditions in London (target patient group – unnecessary referral, 14,428 appointments, at £216 per appointment)
***£623,290 - Average across five STPs***

£1,789,072 - One common condition follow up per outpatient appointment in London (target patients – unnecessary referral, 14,428 appointments, at £124 per follow-up)
***£357,814 - Average across five STPs***

**£981,103 - Total cost of target patient group for average STP population**

## Model costs

2 WTE nurses and 0.6 WTE neurologist under £200,000 (£170,000 staff cost) (eg team covers STP area visiting 1-3 sites)

Public Health England, Neurology profiles, Link

## Risks

Patients are still referred to outpatients – just in case reasons / patient pressure and fear of complaint

- Service is overwhelmed due to stimulated demand – impact on response time and care management time.
- GPs are de-skilled through referring all patients to the service.
- Not able to recruit suitable candidates – trained nurses.
- Initially only open during working hours.
- Single handed nurse – cover arrangements.
- Information governance.
- IT systems access.

## Recommendations

- Discussion with interested parties from December. 2016 Offer to work with STP or CCG to develop the model in terms of activity and costings.
- Pilot 2017
- Evaluation of pilot 2018

Public Health England, Neurology profiles, Link

# Appendix 1 | Network review of common conditions and clinical sessions

## Clinical sessions

| Number of working weeks / year | Clinics / week (Clinic = 4 hours) | Patients / clinic 30 minutes *Option: Could be split into new (30 minutes) and follow-up (15 minutes).* | Patients / year |
|---|---|---|---|
| 46 | 5 | 8 | 1,840 |

## Outpatient and common conditions – Network review

| **Outpatients in London (2014/15)** | **Headache (30%)** | **Dizzy spells (15%)** | **TLOC (15%)** | **Total** |
|---|---|---|---|---|
| 80,708 | 24,212 | 12,106 | 12,106 | **48,425** |
| Potential saving (not require outpatients attendance) (30% Headache & dizzy spells, 25% TLOC) | 7,264 | 3,632 | 3,027 | **13,922** |
| Cost if managed in hospital setting (£216) | £1,568,964 | £784,482 | £653,735 | **£3,007,180** |

# Appendix 2 | CCG / STP breakdown of outpatients and follow up

(2013/14. PHE NIN hospital data)

| Area Name | Number of outpatient appointments | Cost of outpatient appointments (£216 - First Attendance - Single Professional) | Estimate: Common condition appointments (60%) | Unnecessary outpatient referrals 30% | Estimate: Cost of uneceassary outpatient referrals (£218) managed by nurse | Number of follow-ups | Cost of follow-up (£124 - Follow Up Attendance - Single Professional) |
|---|---|---|---|---|---|---|---|
| North Central London STP | | | | | | | |
| NHS Barnet CCG | 4870 | £1,051,920 | 2922 | 877 | £191,975 | 6164.00 | £764,336 |
| NHS Camden CCG | 3532 | £762,912 | 2119 | 636 | £139,231 | 3714.00 | £460,536 |
| NHS Enfield CCG | 3701 | £799,416 | 2221 | 666 | £145,893 | 4415.00 | £547,460 |
| NHS Haringey CCG | 2489 | £537,624 | 1493 | 448 | £98,116 | 3091.00 | £383,284 |
| NHS Islington CCG | 3099 | £669,384 | 1859 | 558 | £122,163 | 3436.00 | £426,064 |
| Subtotal STP | 17,691 | £3,821,256 | 10,615 | 3,184 | £697,379 | 20,820 | £2,581,680 |
| North East London STP | | | | | | | |
| NHS Barking And Dagenham CCG | 1381 | £298,296 | 829 | 249 | £54,439 | 2057.00 | £255,068 |
| NHS City And Hackney CCG | 2282 | £492,912 | 1369 | 411 | £89,956 | 3138.00 | £389,112 |
| NHS Havering CCG | 1872 | £404,352 | 1123 | 337 | £73,794 | 3577.00 | £443,548 |
| NHS Newham CCG | 1525 | £329,400 | 915 | 275 | £60,116 | 2252.00 | £279,248 |
| NHS Redbridge CCG | 2198 | £474,768 | 1319 | 396 | £86,645 | 3673.00 | £455,452 |
| NHS Tower Hamlets CCG | 1547 | £334,152 | 928 | 278 | £60,983 | 2082.00 | £258,168 |
| NHS Waltham Forest CCG | 2123 | £458,568 | 1274 | 382 | £83,689 | 3162.00 | £392,088 |
| Subtotal STP | 12928 | £2,792,448 | 7757 | 2327 | £509,622 | 19941.00 | £2,472,684 |
| North West London STP | | | | | | | |
| NHS Brent CCG | 3474 | £750,384 | 2084 | 625 | £136,945 | 4201.00 | £520,924 |
| NHS Central London (Westminster) CCG | 1868 | £403,488 | 1121 | 336 | £73,637 | 2626.00 | £325,624 |
| NHS Ealing CCG | 3511 | £758,376 | 2107 | 632 | £138,404 | 6233.00 | £772,892 |
| NHS Hammersmith & Fulham CCG | 2390 | £516,240 | 1434 | 430 | £94,214 | 3468.00 | £430,032 |
| NHS Harrow CCG | 2399 | £518,184 | 1439 | 432 | £94,569 | 3059.00 | £379,316 |
| NHS Hillingdon CCG | 2284 | £493,344 | 1370 | 411 | £90,035 | 3312.00 | £410,688 |
| NHS Hounslow CCG | 2254 | £486,864 | 1352 | 406 | £88,853 | 3750.00 | £465,000 |
| NHS West London (K&C & QPP) CCG | 2779 | £600,264 | 1667 | 500 | £109,548 | 3754.00 | £465,496 |
| Subtotal STP | 20959 | £4,527,144 | 12575 | 3773 | £826,204 | 30403.00 | £3,769,972 |
| | | | | | | | |
| **London total** | **80,158** | **£17,314,128** | **48,095** | **14,428** | **£3,159,828** | **109,571** | **£13,586,804** |

# Appendix 2 | CCG / STP breakdown of outpatients and follow up

(2013/14. PHE NIN hospital data)

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|---|---|---|---|---|---|---|---|
| South East London STP | | | | | | | |
| NHS Bexley CCG | 2024 | £437,184 | 1214 | 364 | £79,786 | 3112.00 | £385,888 |
| NHS Bromley CCG | 2010 | £434,160 | 1206 | 362 | £79,234 | 3027.00 | £375,348 |
| NHS Greenwich CCG | 2286 | £493,776 | 1372 | 411 | £90,114 | 3031.00 | £375,844 |
| NHS Lambeth CCG | 3098 | £669,168 | 1859 | 558 | £122,123 | 3746.00 | £464,504 |
| NHS Lewisham CCG | 2389 | £516,024 | 1433 | 430 | £94,174 | 3482.00 | £431,768 |
| NHS Southwark CCG | 2607 | £563,112 | 1564 | 469 | £102,768 | 3593.00 | £445,532 |
| Subtotal STP | 14414 | £3,113,424 | 8648 | 2595 | £568,200 | 19991.00 | £2,478,884 |
| South West London STP | | | | | | | |
| NHS Croydon CCG | 2721 | £587,736 | 1633 | 490 | £107,262 | 3783.00 | £469,092 |
| NHS Kingston CCG | 1565 | £338,040 | 939 | 282 | £61,692 | 2313.00 | £286,812 |
| NHS Merton CCG | 2255 | £487,080 | 1353 | 406 | £88,892 | 2787.00 | £345,588 |
| NHS Richmond CCG | 1947 | £420,552 | 1168 | 350 | £76,751 | 2852.00 | £353,648 |
| NHS Sutton CCG | 1764 | £381,024 | 1058 | 318 | £69,537 | 2321.00 | £287,804 |
| NHS Wandsworth CCG | 3914 | £845,424 | 2348 | 705 | £154,290 | 4360.00 | £540,640 |
| Subtotal STP | 14166 | £3,059,856 | 8500 | 2550 | £558,424 | 18416.00 | £2,283,584 |
| | | | | | | | |
| **London total** | **80,158** | **£17,314,128** | **48,095** | **14,428** | **£3,159,828** | **109,571** | **£13,586,804** |

# Appendix 3 | CCG / STP breakdown of hospital admissions

(HES, 2014/15)

| | Elective | | Non elective | | Total | |
|---|---|---|---|---|---|---|
| CCG | Total elective admissions | Elective admissions - spend £ | Non elective admissions | Non elective admissions - spend £ | Total admissions | Total admissions - spend £ |
| North Central London STP | | | | | | |
| NHS Barnet CCG | 7,071 | 1,295,555 | 3,706 | 3,680,627 | 10,777 | 4,976,183 |
| NHS Camden CCG | 4,291 | 801,548 | 2,288 | 1,568,479 | 6,579 | 2,373,491 |
| NHS Enfield CCG | 6,318 | 1,085,722 | 3,063 | 3,010,530 | 9,381 | 4,096,252 |
| NHS Haringey CCG | 4,412 | 1,203,933 | 2,260 | 2,295,406 | 6,672 | 3,499,339 |
| NHS Islington CCG | 4,898 | 943,045 | 2,327 | 1,821,197 | 7,225 | 2,764,242 |
| NC London STP | 26,990 | 5,329,803 | 13,644 | 12,376,239 | 40,634 | 17,709,507 |
| North East London STP | | | | | | |
| NHS Barking and Dagenham CCG | 3,406 | 590,710 | 1,856 | 1,427,256 | 5,262 | 2,019,007 |
| NHS City and Hackney CCG | 4,003 | 847,139 | 2,348 | 2,182,615 | 6,351 | 3,029,754 |
| NHS Havering CCG | 5,011 | 956,039 | 2,478 | 2,762,927 | 7,489 | 3,718,966 |
| NHS Newham CCG | 4,432 | 877,079 | 2,728 | 2,527,564 | 7,160 | 3,404,643 |
| NHS Redbridge CCG | 5,011 | 862,338 | 2,671 | 2,356,205 | 7,682 | 3,218,543 |
| NHS Tower Hamlets CCG | 3,661 | 750,237 | 1,969 | 2,501,303 | 5,630 | 3,252,266 |
| NHS Waltham Forest CCG | 4,632 | 947,606 | 2,685 | 2,572,195 | 7,317 | 3,519,801 |
| NE London STP | 30,156 | 5,831,148 | 16,735 | 16,330,065 | 46,891 | 22,162,980 |
| North West London STP | | | | | | |
| NHS Brent CCG | 6,156 | 1,088,683 | 3,178 | 2,774,612 | 9,334 | 3,863,295 |
| NHS Central London (Westminster) CCG | 2,647 | 588,529 | 1,416 | 1,441,832 | 4,063 | 2,030,362 |
| NHS Ealing CCG | 7,138 | 1,685,421 | 3,997 | 3,255,170 | 11,135 | 4,940,591 |
| NHS Hammersmith and Fulham CCG | 3,475 | 687,959 | 2,009 | 1,806,536 | 5,484 | 2,494,495 |
| NHS Harrow CCG | 4,715 | 947,098 | 2,304 | 2,096,721 | 7,019 | 3,043,818 |
| NHS Hillingdon CCG | 6,423 | 1,203,994 | 3,196 | 2,944,868 | 9,619 | 4,148,862 |
| NHS Hounslow CCG | 4,788 | 1,129,167 | 2,783 | 3,053,162 | 7,571 | 4,182,329 |
| NHS West London CCG | 3,625 | 880,964 | 1,912 | 1,882,785 | 5,537 | 2,763,749 |
| NW London STP | 38,967 | 8,211,815 | 20,795 | 19,255,686 | 59,762 | 27,467,501 |
| **London total** | **149,925** | **32,425,991** | **79,430** | **75,482,853** | **229,355** | **107,914,077** |

# Appendix 3 | CCG / STP breakdown of hospital admissions

(HES, 2014/15)

| | Elective | | Non elective | | Total | |
|---|---|---|---|---|---|---|
| CCG | Total elective admissions | Elective admissions - spend £ | Non elective admissions | Non elective admissions - spend £ | Total admissions | Total admissions - spend £ |
| South East London STP | | | | | | |
| | | | | | | |
| NHS Bexley CCG | 4,110 | 934,825 | 2,126 | 2,640,020 | 6,236 | 3,574,845 |
| NHS Bromley CCG | 6,405 | 1,593,217 | 3,354 | 2,804,907 | 9,759 | 4,398,123 |
| NHS Greenwich CCG | 4,177 | 1,062,075 | 2,027 | 2,489,405 | 6,204 | 3,551,480 |
| NHS Lambeth CCG | 5,317 | 1,389,751 | 2,960 | 2,409,430 | 8,277 | 3,799,181 |
| NHS Lewisham CCG | 4,632 | 1,226,721 | 2,454 | 2,299,187 | 7,086 | 3,525,909 |
| NHS Southwark CCG | 4,769 | 1,008,235 | 2,702 | 2,176,736 | 7,471 | 3,184,971 |
| South East London STP | 29,410 | 7,214,824 | 15,623 | 14,819,685 | 45,033 | 22,034,509 |
| South West London STP | | | | | | |
| NHS Croydon CCG | 5,598 | 1,445,240 | 2,918 | 3,792,562 | 8,516 | 5,237,803 |
| NHS Kingston CCG | 2,943 | 656,473 | 1,345 | 1,241,008 | 4,288 | 1,897,482 |
| NHS Merton CCG | 3,715 | 745,518 | 1,981 | 1,532,625 | 5,696 | 2,278,143 |
| NHS Richmond CCG | 3,132 | 777,647 | 1,561 | 1,648,337 | 4,693 | 2,425,984 |
| NHS Sutton CCG | 4,056 | 817,621 | 2,092 | 2,323,579 | 6,148 | 3,141,200 |
| NHS Wandsworth CCG | 4,958 | 1,395,902 | 2,736 | 2,163,067 | 7,694 | 3,558,968 |
| South West London STP | 24,402 | 5,838,401 | 12,633 | 12,701,178 | 37,035 | 18,539,580 |
| | | | | | | |
| **London total** | **149,925** | **32,425,991** | **79,430** | **75,482,853** | **229,355** | **107,914,077** |
| | | | | | | |

## Appendix 4 | CCG / STP Common conditions admissions

| CCG | Common conditions - total admissions | % of total neurology admissions | Common conditions - total spend | % of total neurology spend | Readmissions: Migraine, headache, dizziness, hypotension, syncope and epilepsy |
|---|---|---|---|---|---|
| North Central London | | | | | |
| NHS Barnet CCG | 1,262 | 12% | 867,555 | 17% | 333 |
| NHS Camden CCG | 941 | 14% | 520,407 | 22% | 191 |
| NHS Enfield CCG | 1,153 | 12% | 720,709 | 18% | 265 |
| NHS Haringey CCG | 1,072 | 16% | 652,808 | 19% | 209 |
| NHS Islington CCG | 1,276 | 18% | 690,092 | 25% | 205 |
| NC London STP | 5,704 | 14% | 3,451,571 | 19% | 1,203 |
| North East London | | | | | |
| NHS Barking and Dagenham CCG | 830 | 16% | 555,306 | 28% | 153 |
| NHS City and Hackney CCG | 917 | 14% | 572,843 | 19% | 239 |
| NHS Havering CCG | 941 | 13% | 628,745 | 17% | 215 |
| NHS Newham CCG | 1,226 | 17% | 759,609 | 22% | 188 |
| NHS Redbridge CCG | 1,032 | 13% | 591,826 | 18% | 221 |
| NHS Tower Hamlets CCG | 927 | 16% | 603,757 | 19% | 194 |
| NHS Waltham Forest CCG | 1,267 | 17% | 762,456 | 22% | 204 |
| NELondon STP | 7,140 | 15% | 4,474,542 | 20% | 1414 |
| North West London | | | | | |
| NHS Brent CCG | 1,267 | 14% | 754,749 | 20% | 431 |
| NHS Central London (Westminster) CCG | 673 | 17% | 425,089 | 21% | 156 |
| NHS Ealing CCG | 1,632 | 15% | 990,516 | 20% | 499 |
| NHS Hammersmith and Fulham CCG | 998 | 18% | 490,539 | 20% | 262 |
| NHS Harrow CCG | 957 | 14% | 594,356 | 20% | 341 |
| NHS Hillingdon CCG | 1,445 | 15% | 819,828 | 20% | 178 |
| NHS Hounslow CCG | 1,434 | 19% | 776,619 | 19% | 520 |
| NHS West London CCG | 958 | 17% | 548,312 | 20% | 170 |
| NW London STP | 9,364 | 16% | 5,400,008 | 20% | 2557 |
| | | | | | |
| **London total** | **35,293** | **15%** | **20,908,553** | **19%** | **8,692** |
| | | | | | |

## Appendix 4 | CCG / STP Common conditions admissions

| CCG | Common conditions - total admissions | % of total neurology admissions | Common conditions - total spend | % of total neurology spend | Readmissions: Migraine, headache, dizziness, hypotension, syncope and epilepsy |
|---|---|---|---|---|---|
| South East London | | | | | |
| NHS Bexley CCG | 899 | 14% | 496,508 | 14% | 300 |
| NHS Bromley CCG | 1,323 | 14% | 620,448 | 14% | 377 |
| NHS Greenwich CCG | 910 | 15% | 626,137 | 18% | 278 |
| NHS Lambeth CCG | 1,521 | 18% | 776,265 | 20% | 341 |
| NHS Lewisham CCG | 1,104 | 16% | 855,499 | 24% | 136 |
| NHS Southwark CCG | 1,327 | 18% | 599,110 | 19% | 206 |
| SE London STP | 7,084 | 16% | 3,973,967 | 18% | 1638 |
| South West London | | | | | |
| NHS Croydon CCG | 1,815 | 21% | 1,104,427 | 21% | 538 |
| NHS Kingston CCG | 436 | 10% | 283,481 | 15% | 146 |
| NHS Merton CCG | 947 | 17% | 491,059 | 22% | 285 |
| NHS Richmond CCG | 619 | 13% | 365,834 | 15% | 306 |
| NHS Sutton CCG | 933 | 15% | 620,311 | 20% | 250 |
| NHS Wandsworth CCG | 1,251 | 16% | 743,353 | 21% | 355 |
| SW London STP | 6,001 | 16% | 3,608,465 | 19% | 1880 |
| | | | | | |
| **London total** | **35,293** | **15%** | **20,908,553** | **19%** | **8,692** |
| | | | | | |

# Appendix 5 | Data sources

### Hospital activity data

| | |
|---|---|
| Definition | Hospital admissions over the age of 20 with a mention of a neurological condition (as defined by ICD-10 codescategories by the NIN to fall under neurology); Common condition data is based on primary diagnosis category" |
| Source | Neurology Intelligence Network (NIN), Public Health England |
| Data source | Hospital Episode Statistics (HES), Admitted Patient Care dataset |
| Time period | 2014/15 |
| Published | October 2016 |
| Link | www.yhpho.org.uk//resource/view.aspx?RID=242946 |

### Spend data

| | |
|---|---|
| Definition | Spend on neurology conditions (as defined by the neurology programme budget) |
| Source | Commissioning for Value - Neurology focus pack |
| Data source | SUS SEM (Secondary User Services Extract Mart), Admitted Patient Care dataset |
| Time period | 2014/15 |
| Published | October 2016 |
| Link | www.england.nhs.uk/rightcare/intel/cfv/data-packs/ |

### Readmissions

| | |
|---|---|
| Definition | Readmissions |
| Source | NHS England - operational information for commissioning team. |
| Data source | SUS SEM – (not published) based on total admissions (elective and non-elective) primary neurology diagnosis only. |
| Time period | 2015/16 |
| Published | Not published |
| Link | www.england.nhs.uk/rightcare/intel/cfv/data-packs/ |

### Outpatient

| | |
|---|---|
| Definition | Outpatient - New outpatient neurology appointments for those aged 20+ (Consultant) |
| Source | Neurology Intelligence Network (NIN), Public Health England |
| Data source | Hospital Episode Statistics (HES), Outpatient dataset |
| Time period | 2013/14 |
| Published | 2015 |
| Link | https://fingertips.phe.org.uk/profile-group/mental-health/profile/neurology/data |

# Appendix 6 | Case study: *Headache nurse specialist*

Sandwell and West Birmingham Hospitals NHS Trust (SWBH) trained a senior ward sister as a clinical nurse specialist for headache. The diagnostic headache nurse specialist service was introduced to our sub-regional neurology unit to:

» Diagnose migraine, tension-type headache and medication overuse headache
» Advise GPs on the treatment of these disorders
» Collaborate with consultant neurologists in managing more complex headache disorders.

The Sandwell and West Birmingham population is around 500,000.

## Key recommendations

» By introducing a headache nurse specialist, it can reduce the time consultants need to spend with simple headache disorders.
» The specialist nurse can improve the quality of service for patients (including reduced waiting times and quicker access to specialised treatments for cluster headache and chronic migraine).
» By reducing the number of patients referred for imaging, pressure is relieved from imaging and costs are reduced.

## Challenge

A huge proportion of referrals to SWBH services were headaches (39%). In Neurology, headaches have always been a problem; this is because some general practitioners (GPs) are not sufficiently confident to diagnose/treat a variety of headache disorders. At SWBH, screening had previously been conducted by a general physician. With the increasing number of referrals and follow-up appointments senior ward sister (band 7) was trained to screen for headache disorders.

## Solution

The specialist nurse was trained in the differential diagnosis of headache disorders. Over 6 months, patients with non-acute headache disorders were seen separately by the nurse and one of three consultant neurologists; both performing a history and neurological examination. The nurse and the consultants were responsible for reaching an independent diagnosis for the various headache disorders. There was excellent agreement between the nurse and the neurologist.

The nurse led service offered six clinics per week, seeing 20-25 new and 34-40 follow-up patients. Each new patient had at least 30 minutes (more if necessary) and follow-ups had 15 minute appointments. Administration time was approximately 16 hours per week, but this included self-development, teaching etc. The nurse receives supervised teaching once per week, with a consultant neurologist with a specialist interest in headaches from University Hospitals Birmingham. The nurse does not have any ward duties and clinics are paid at nurse level. The service is now contracted with our clinical commissioning group (CCG) as an integral part of the neurology service.

The nurse service is busy, seeing 800+ of new patients per year.  The service has developed to include:

» Cluster headache service
» Advises GPs on the management of follow-up patients
» Attends GP meetings and teaching sessions
» Rceives referrals directly from GPs
» Mentors and teaches student nurses, medical students, headache nurses, GPs and other specialist nurses. Teaching is individualised for each group, as are the learning outcomes. Therefore, each session is different and often specifically built.

# Appendix 6 | Case study: *Headache nurse specialist*

The nurse is not a prescriber, but follows protocols agreed with the consultant neurologists on treating common headache disorders based on the British Association for the Study of Headache (BASH) and NICE guidance. As such, GPs are given recommendations on using triptans for migraine and cluster headache. GPs are not allowed to order oxygen after changes to the regulations; therefore the nurse arranges home oxygen for cluster patients with local agreement and support of the respiratory physiology team.

## Outcomes

When conducting the training, we knew cases of serious headache disorders would be unlikely. Therefore we trained a series of role players to present to the nurse and consultant. These 'actors' were specifically trained to present with either benign or sinister headaches.
Consultants diagnosed 239 patients with:

» Tension-type headache (47%)
» Migraine (39%)
» Other headache disorders (14%).

The nurse agreed with the consultant in:

» 92% of cases of tension-type headache
» 91% of those with migraine
» 61% of other diagnoses.

Where the nurse did not agree with the diagnosis, most would have been referred for a consultant opinion. Furthermore, the nurse specialist and the consultant misdiagnosed the same three out of 13 role players. An audit over five years the nurse saw 3,655 new patients with headache disorders with good patient satisfaction levels and no complaints from patients or GPs. 14.5% (530 of 3,655) patients underwent cranial imaging. From these results we were confident the nurse was capable of working independently and she has been ever since.

## Barriers and levers

The key barrier to setting up this service was funding. It required a great leap of faith from the trust but was in line with the goals at the time to reduce outpatient waiting time and minimise expense.

## Appendix 7 | Glossary

| | |
|---|---|
| A&E | Accident and Emergency |
| ABN | Association of British Neurologists |
| AHP | Allied health professional |
| AMU | Acute medical unit |
| BPPV | Benign paroxysmal positional vertigo |
| CCG | Clinical Commissioning Group |
| CDU | Clinical decisions unit |
| CPD | Continuing professional development |
| CT | Computed tomography |
| ED | Emergency department |
| EEG | Electroencephalogram |
| EMG | Electromyography |
| GP | General practioner |
| GPwSI | GP with a special interest |
| HANU | Hyper acute neurology unit |
| HEE | Health Education England |
| IAPT | Improving Access to Psychological Therapies |
| ITU | Intensive therapy unit |
| MCP | Multispecialty community provider |
| MRI | Magnetic resonance imaging |
| NASSAU | Neurology acute short stay admission units |
| NICE | National Institute for Health and Care Excellence |
| OPD | Outpatient departments |
| PACS | Primary and acute care system |
| RCP | Royal College of Physicians |
| SpR | Specialist registrar |
| STP | Sustainability and Transformation Plan |
| SUS | Secondary uses service |
| TLOC | Transient loss of consciousness |
| WTE | Whole time equivalent |