

# Executive Summary

## Wessex Strategic Clinical Network

### Neurology Intelligence Report

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# Forewords

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There was a look of incredulity from a patient representative: “How can you possibly develop a neurology strategy without data?” This would seem self-evident to most people, but the simple fact is, there has been relatively little use of data to help support service redesign strategy in neurology.

Things are changing, but until recently service data has been hard to access, and difficult to analyse in clinically meaningful ways. With the help of NCS, Wilmington Healthcare Commissioning Excellence, and the Wessex CLAHRC, we have used routinely collected Hospital Episode Statistics (HES) data, to try and develop a clearer picture of neurology service provision in Wessex.

In this report, we have tried to link neurology data analysis with practical examples of how service delivery has been improved in other areas across the country, so as to encourage and facilitate efforts here in Wessex. It has been challenging to refine the data and present it in a way that is both useful, and easy to interpret. I hope we have succeeded.

**Dr Christopher Kipps**

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It is a great pleasure to write a foreword to this in-depth analysis on the management of neurological conditions in Wessex. It highlights important information, not only for the Wessex region, but is relevant to all Neurology Clinical Networks in England.

The lack of robust data to inform service delivery in neurology has prevented significant improvement in neurology services for many years. Service delivery cannot be improved without details of how services are performing, and we cannot hope to make a difference if we do not know what will make most impact and provide the best outcomes for patients.

The development of the Neurology Intelligence Network has been a huge step forward for neurology over the last two years. It is beginning to allow us to understand much more about how the public access neurology services, and how provision of these services varies across the country.

This report takes that intelligence a step further, analysing more closely how people with different neurological conditions utilise hospital services and why. It demonstrates a substantial local increase in demand for neurological services over the past five years, but also that access to emergency hospital care often takes place not through neurology but through different specialties: general medicine, accident and emergency and elderly care departments. It further highlights how, for example, a stronger focus on integrated care pathways and the earlier treatment of infections in the community could significantly impact the number of emergency hospital admissions for people with long-term neurological conditions. The report emphasises practical measures, already implemented in various parts of the country, that could be used locally to improve community and emergency care in neurology. I hope that the report will help spark numerous conversations with commissioners and providers, and deliver change in how services are organised. Although every Clinical Network is different, the findings will provide a framework for assessment of local neurological service delivery in other networks in England.

This is a major step forward, and I commend the determination and leadership of Dr Kipps and his team in developing this.

**David Bateman**

National Clinical Director for Adult Neurology Conditions for NHS England

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# Summary

Hospital Episode Statistics (HES) data was analysed from across Wessex for the period 2009-2014 across a range of neurological conditions. Of these, five conditions (headache, epilepsy, neuromuscular conditions, Parkinson's disease and multiple sclerosis) were considered in greater detail. Admission rates, spend, length of stay and re-admission rates showed considerable variation across the region. Further analysis of admitting specialty, co-morbidities and outpatient access identified areas with implications for service improvement activity.

This data report is a collaboration between the Wessex Strategic Clinical Network, the Wessex Collaboration for Leadership in Applied Health Research and Care (CLAHRC) and Neurological Commissioning Support.

Highlight findings from the data analysis:

- Indicative admission costs for neurological admissions are relatively high across Wessex (£73.6 million pa in 2013-14), but slightly below average annual cost per head of population (£1.6 million per 100,000 people).
- Substantial increase in neurological admissions over five year period to 2014 (49%), but reduction in indicative costs per admission (down by £44 compared with 2009), and 1% cost reduction since 2012-13.
- Decrease of £175 per admission for five major neurological conditions in five years to April 2014.
- Considerable variability in spend across Wessex, with five-year reduction in normalised indicative costs ranging from -18% to +12%.
- Reduction in unscheduled admissions across Wessex by one third in five years to 2014, but high variability (range -127% to +47%).
- Demographic factors (age) are significantly different across neurological spectrum, and can be expected to play a role in admission variation.
- Non-elective admissions dominated by headache and epilepsy by overall number of admissions and spend.
- Length of stay decreased across all major neurological conditions, and now averages 4.9 days.

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- High zero bed day and readmission rates for epilepsy and headache; high excess bed days and longer length of stay for Parkinson’s disease, multiple sclerosis and neuromuscular conditions.
  - Admission specialty varies considerably depending on neurological condition: epilepsy and headache are seldom managed directly by neurologists; multiple sclerosis and neuromuscular conditions have highest admissions under neurologists, but may reflect scheduled, rather than unscheduled care.
  - Modifiable comorbidities identified from analysis of comorbidity data:
    - high rate of fractures, falls and injuries in Parkinson’s disease, and high levels of urinary and respiratory tract infections.
    - high levels of urinary tract pathology (including infection) in multiple sclerosis, with other modifiable factors including falls and decubitus ulcers.
    - epilepsy data identified a high level of injury associated with the condition, and may represent a safety signal with respect to adequacy of community care.
    - neuromuscular conditions significantly associated with respiratory dysfunction, highlighting a potential focus for pathway re-design.
    - headache comorbidity shows a range of associations as secondary contributors to headache symptoms, and are probably not directly modifiable.
  - Outpatient capacity in Wessex has risen by over 75% in the past five years, but Wessex continues to have the lowest number of outpatient episodes per 100,000 population in southern England; new to follow-up ratios are better than in any other region.
  - Significant opportunity for pathway intervention based on analysis of data: emergency care for headache and epilepsy, long-term support and community care and admission avoidance for Parkinson’s disease, multiple sclerosis and neuromuscular conditions.
  - Comorbidity data potential indicator for effectiveness of pathway re-design and quality improvement efforts.

# Admissions summary

The data shows that headache and epilepsy are characterised by high presentation rates, high levels of zero bed day admissions, and overall low lengths of stay. Readmissions are particularly common in epilepsy, and not infrequent in headache. In contrast, Parkinson's disease, multiple sclerosis and inflammatory conditions, and neuromuscular conditions have lower admission rates, but admissions are typically longer and contribute significantly to excess bed days. Readmissions in this groups are less common.

This suggests we should consider a dual strategy for managing these admissions more effectively. Epilepsy and headache management may be improved through education of referrers and emergency staff, and rapid review by neurology where admission avoidance is possible. For Parkinson's disease, multiple sclerosis and neuromuscular conditions, enhanced admission prevention in primary and community care, early supported discharge and enhanced management of comorbidities which may be contributing to both presentation and delayed discharge, would be appropriate.

## Headache, Epilepsy

High admission rates  
Shorter length of stay  
High zero bed day rates  
Low excess bed days  
High readmission rates

### Focus on

- Front door emergency presentations
- Education referrers & emergency staff
- Rapid review (neurology)

## Movement disorders, MS, Neuromuscular

Lower admission rates  
Longer length of stay  
Low zero bed days  
High excess bed days  
Low readmission rates

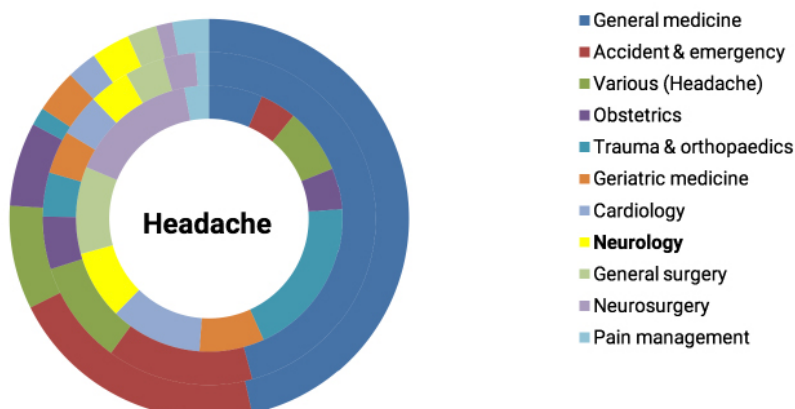
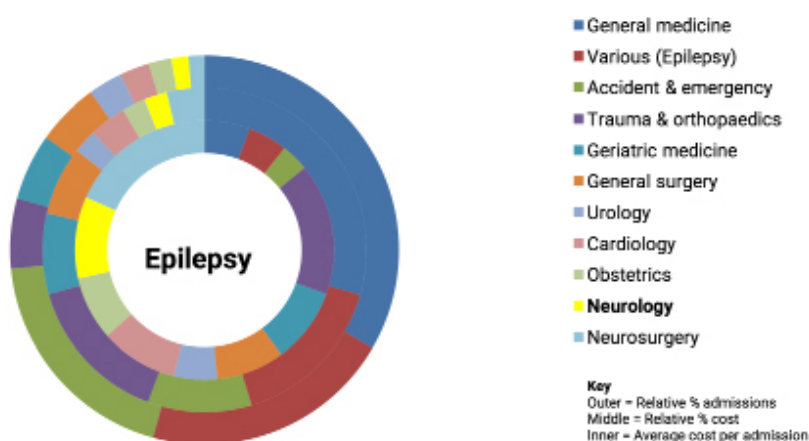
### Focus on

- Early supported discharge
- Admission prevention
- Enhanced primary care management of prominent neuro LTC & co-morbidities

# Admitting specialty

Across Wessex, there is considerable variation in the admitting specialty for different neurological conditions. This data is analysed by condition, and not by region, and there may be variation depending on local service provision. The data has been ranked for each condition by the proportion of admissions admitted under each specialty. Each diagram illustrated in the following figures shows the relative percentage of admissions attributable to neurology and other specialties, the relative indicative spend, and the average indicative spend per admission by each specialty.

For admissions with a primary diagnosis of epilepsy, neurology is the ninth ranked specialty with general medicine and accident and emergency responsible for most admissions.



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