

What is happening to English neurology?

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Clin Med
 2008;8:576–8

ABSTRACT – Neurology in England is expanding rapidly. In 2005 there were, on average, 7.2 (2.5) new and 16.8 (8.6) follow-up appointments per 1,000 population, an increase of 24% and 19% respectively since 2003. The chance of an individual being seen in this specialty varies widely according to primary care trust. This paper considers the causes and implications for neurological health, service delivery and neurology training.

KEY WORDS: expansion, neurology, postcode, service provision, waiting lists

Introduction

In the UK one in eight presentations to general practice and 20% of acute admissions may have a significant neurological component but neurologists are relatively rare.¹ The current figure, of one neurologist per 117,000 population, lags well behind the USA (one per 22,000) and the majority of European countries (France, for example, has one per 38,000). The practical consequence of a limited supply of neurologists in the UK has been that patients with neurological problems (for example stroke and dementia) may not have been seen by a neurologist, their symptoms instead managed by general practice and other specialties. With such a scarce resource, equality of access seems important. The Association of British Neurologists has advocated expansion; if this is occurring it should happen in a way that best benefits the population as a whole.²

In 1989 one neurologist diligently recorded his NHS practice in Gloucestershire.³ Working alone, 1,066 new patients were referred to him each year from a population of 512,200 (or 2.1 referrals per 1,000 population). In Gloucestershire, expansion has undoubtedly happened, with over 4,000 new patients now referred to neurology each year and seen by four neurologists. When Stevens published his report he did not have access to other data but information collected by the Department of Health (DH) means that it is now possible to look at referrals, by primary care trust (PCT) of residence, to neurology throughout England. This study looks at the national picture, and change in neurology in England between 2003 and 2005. The political background in England during this time was of waiting list targets, increasing health spending, and allocation of health

service expenditure by PCTs. The intention was to examine how the specialty was expanding, whether (in this specialty of high demand) there was inequality in access and if this was changing.

Method

Data was obtained from the DH (Hospital Episode Statistics, NHS Health and Social Care Information Centre) for new and follow-up attendance (fixed consultant episodes) at neurology outpatients, according to PCT of residence in England, between April 2003–March 2004 and April 2005–March 2006. Resident population in each PCT was obtained from the NHS Health and Social Care Information Centre based on registered patient lists in practices affiliated to each PCT in 2004. In each case only data for those aged 15 years or older were considered and the figures adjusted to give attendance in outpatient neurology per 1,000 resident population of PCT over 15 years old. Complete data for Scotland, Wales and Northern Ireland were not available for analysis. In 2003, data from eight English PCTs were incomplete and therefore not included in all analyses. In 2005 data were available from all 303 PCTs in England.

Results

In 2003 (n=295 PCTs) there was an average of 5.8 (2.4) new patient appointments and 14.1 (8.1) follow-up appointments in neurology per 1,000 population, while in 2005 (n=303 PCTs) it was 7.2 (2.5) for new and 16.8 (8.6) for follow-up appointments. There was a 24% increase in new, and a 19% increase in follow-up, neurology appointments attended by residents of 295 PCTs between 2003 and 2005.

In the 31 PCTs making up the London PCT areas there was a 22% increase in new appointments and a 20% increase in follow-up appointments over the same period. Outside of the London PCTs in 2003 (n=264) there was an average of 5.6 (2.3) new appointments per 1,000 population, while the average in the 31 London PCTs was 8.1 (2.1). In 2005 outside of London (n=272) the average number of new appointments in neurology per 1,000 population was 6.9 (2.4), while in London it was 9.9 (2.1).

Figure 1 shows the number of PCTs referring a given number of patients per 1,000 population in 2003 and in 2005. Primary care trusts in which recent

consultant appointments had been made showed a rapid increase in new appointments per 1,000 population between 2003 and 2005. In general the further a PCT was from a teaching hospital the lower the number of outpatient appointments in neurology attended by its residents.

Discussion

What is happening?

The number of new patients seen in English neurology outpatient departments is increasing dramatically. The large increase nationally over two years is no surprise, given the 300% increase in referrals to this one department since 1986.² It is unlikely that there has been a similar rise in incidence of neurological symptoms or disease. The overall number of consultations in general practice is not changing but a change in the nature of consultation, if for example more patients were attending with neurological symptoms, could be responsible.⁴ Stevens recorded that 24% of referrals came from within hospital. In 2006 this number had increased to 29%. The rise in referrals in England has been accompanied by a similar increase (24%) in consultant neurologists.⁵

Why is it happening?

The increasing supply of neurology shows a successful national response to increased demand, enforced by waiting list targets. As waiting lists have fallen doctors may be referring to neurology in preference to other specialties and neurology's rise may have been at the expense of others; a similar study in general medicine or elderly care, for example, would be informative. There may also have been a change in the nature and practice of the referring doctors, if recently appointed doctors were more likely to refer, or if established doctors were changing practice. General practitioners (GPs) and other non-neurologists are not comfortable with diag-

nosing and managing neurology.⁶ Guidance from the National Institute for Health and Clinical Excellence (NICE) on Parkinson's disease, multiple sclerosis and epilepsy state that suspected illness should be referred quickly to an expert.^{7,8,9} Neurological symptoms (eg weakness, tingling and blacking out) are often non-specific but such learned guidance favours referral over judicious observation. Neurologists may also be offering wider services, for example in cerebrovascular disease or dementia.

The rapid rise in new patient referrals therefore seems an inevitable consequence of high expectation from patients and NICE, a lack of confidence in neurological skill in the referring doctors, and a reduction in the waiting list barrier to NHS neurology.

Is expansion a good thing?

A headache or a stroke may be best managed by a neurologist but the evidence, if needed, is scanty.^{10,11} Expansion is being driven by demand but, if funding is limited, neurology may yet need to prove its value to public health. One positive outcome from expansion led by an outpatient waiting list target would be greater involvement in inpatient care. This would be lost if, in order to meet targets, job plans became 'outpatient-heavy' and 'inpatient-light'. A cheap way to reduce the wait for new patients is to increase the 'new-to-follow-up' ratio. The figures suggest that, nationally, the increase in capacity has also allowed neurologists to follow up their patients. However, if local expansion is limited and a high new-to-follow-up ratio is imposed in the face of massively rising demand, the worried well would gain priority over the neurologically sick.

Is there inequity in access?

The population served by an English neurologist varies by a factor of 4.26. Across England in 2005 there was enormous variation (from one to 15 per 1,000) in the chance of an individual being seen depending upon where they live.⁵ Local and short-term arrangements are partly responsible. A new consultant or waiting list initiative produces a rapid rise in appointments. For example new appointments for Plymouth Teaching PCT residents rose from five to 12 per 1,000 residents between 2003 and 2005 as consultants increased from six to 10 (Dr M Sadler, personal communication). Primary care trusts might have chosen to limit referrals in some areas or to appoint non-specialists to see neurology referrals. In some areas patients may have preferred (or were compelled) to use neurology services outside of the NHS. It must be a concern that a specialty in such demand and after huge expansion should still be unfairly distributed.

Why is there inequity?

An individual is more likely to be seen in neurology if they live near a neurological centre, for example London, Oxford, Newcastle or Sheffield. Over a third of London PCTs were in the top 20 (of 305 English PCTs) for new patient appointments in 2005 and a Londoner had, on average, a 43% higher chance of

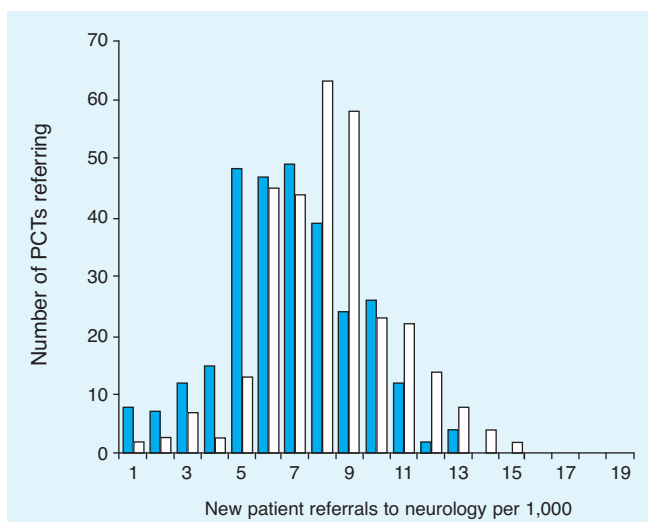


Fig 1. Chart showing the number of primary care trusts (PCTs) in England referring a given annual number of patients, in 2003 (blue) and 2005 (white).

being seen by a neurologist than someone living outside of the capital. The population served by one neurologist in London is between 43,000 and 63,000 in comparison to between 103,000 and >143,000 elsewhere in England and >143,000 in Wales and Northern Ireland.⁵ Despite the high provision in London in 2003 (8.1 new patients per 1,000) the ceiling for referral number had not been reached and expansion continued as elsewhere. One explanation for the inequity is that the early presence of neurology in London and other regional centres has encouraged the use and, therefore, further expansion of neurology. In parts of the country historically less well served, referrals remain low, the patients presumably managed by GPs or other specialists. Characteristics of the population (and their doctors) close to teaching centres might also be responsible – perhaps a more ill or demanding population would be referred more by doctors with a greater awareness of local neurology services and less keen to manage the patients themselves or to use another speciality.

What are the implications for practice and training?

It may be that neurologists in England once saw only those patients considered highly likely to have neurological disease. One criterion for investigating non-specific symptoms was that the referrer was sufficiently concerned to refer despite the existing barriers (perhaps they recognised that presenting with non-specific symptoms was not typical of that individual). Neurological practice and training therefore might need to acknowledge that English neurologists now see a less filtered population, where extensive investigation into non-specific symptoms could be costly and unhelpful. Neurological illness will be more concentrated in clinics in the areas of low provision away from teaching centres, though there may be fewer senior neurologists around to teach.

What can or should be done?

If expansion continues there may, eventually, be stasis in demand in some areas (though perhaps not until levels in London have been met), new consultant appointments in areas of continuing demand, and ultimately equality of access. The problem is that, at least in the shorter term, the provision of more neurology appears to promote a local increase in demand. Choose and Book could make things worse, with providers of short waiting lists gaining resources to provide more appointments. The concern must be that if expansion is limited the current inequalities will persist.

Cautions

There are several cautions concerning the interpretation of this data. For individual PCTs there will be individual explanations such as new consultant appointments, screening or re-directing referrals. A confounder may be multiple neurological opinions on one individual. The data are only as good as the DH data collection, still very much in its infancy. Finally the data should not be interpreted as being any measure of quality of neurological

care; the DH figures do not indicate whether a patient is seen by consultant, registrar, senior house officer or GP clinical assistant.

Acknowledgements

Data are taken from tables collected and compiled from the DH. Copyright © 2007, The Information Centre. All rights reserved. This work remains the sole and exclusive property of The Information Centre and may only be reproduced where there is explicit reference to the ownership of The Information Centre.¹³ I thank my neurological colleagues locally and nationally for their contribution.

Conflict of interest

I moved from training in general practice into neurology and then from a consultant post in an area of high demand and low expansion to a similar post in an area of average demand and adequate provision. This work and comment have been shaped by the experience.

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