



The association between the quality of epilepsy management in primary care, general practice population deprivation status and epilepsy-related emergency hospitalisations

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Summary

Objective: To examine whether there is an association between the quality of epilepsy care, as measured by the Quality and Outcomes Framework of the 2004 General Practitioner contract for England, practice population deprivation status and epilepsy-related emergency hospitalisation.

Methods: Linear regression analysis was used to examine the association between the proportion of epilepsy-treated seizure-free patients and the proportion of epilepsy-treated patients with at least one epilepsy-related emergency hospitalisation at the individual practice level, adjusting for practice population deprivation status. The analysis was subsequently repeated by using the rate of epilepsy-related hospitalisations among epilepsy-treated patients (as opposed to the number of patients with at least one hospitalisation), during the same study period.

Results: After adjusting for practice population deprivation status, there was a significant inverse association between the proportion of epilepsy-treated seizure-free patients and the proportion of epilepsy-treated patients with at least one epilepsy-related emergency hospitalisation. For every 1% increase in the proportion of seizure-free epilepsy-treated patients there was a 0.43% reduction in the number of patients with at least one epilepsy-related emergency hospitalisation (95% Confidence Interval: −0.09 to −0.78, p : 0.014).

Discussion: The findings indicate a significant and relatively strong relationship between the quality of epilepsy management in primary care (proportion of sei-

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zure-free patients) and an important care outcome (epilepsy-related emergency hospitalisation). The findings support the current and future use of Quality Outcomes Framework indicators to measure the quality of epilepsy care.

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Introduction

In England and Wales, most general practitioners (GPs) are employed by the government as independent contractors. A revised General Medical Services (GMS) contract for GPs was introduced in April 2004 (<http://www.dh.gov.uk/PolicyAndGuidance/OrganisationPolicy/PrimaryCare/PrimaryCareContracting/fs/en> accessed January 2007). The new contract linked the GPs income to the quality of care provided for several chronic diseases. Quality of care is measured using a number of indicators included in the Quality and Outcomes Framework (QOF) relating to ten different chronic disease groups, including epilepsy (see Box 1). General practices are financially rewarded for achieving a high number of "points" against the quality indicators. Importantly, measurement of quality indicators largely relies on own assessment of achievement of relevant processes or outcomes of care, by GPs and other general practice staff. Participation in the post-2004 GMS contract is voluntary.¹

For most quality indicators, the numerator represents a count of the number of patients for whom a clinical indicator has been met and the denominator is a count of all patients with the related condition. However, the denominator may not always be the same as the number of patients on the disease register as practices are able to exclude patients with the use of an "exception code". Anecdotally,

Box 1. Quality indicators for epilepsy within QOF.

Epilepsy 1. The practice can produce a register of patients receiving drug treatment for epilepsy.

Epilepsy 2. The percentage of patients aged 16 and over on drug treatment for epilepsy who have a record of seizure frequency in the previous 15 months.

Epilepsy 3. The percentage of patients aged 16 and over on drug treatment for epilepsy who have a record of medication review in the previous 15 months.

Epilepsy 4. The percentage of patients aged 16 and over on drug treatment for epilepsy who have been seizure free for the last 12 months recorded in the last 15 months.

in the case of "Epilepsy Quality Indicator 4" (see Box 1) most patients are excluded on the basis of already receiving the maximum tolerated doses of anti-convulsant therapy.

Although QOF care quality indicators are evidence-based and clearly relevant to quality improvement in processes of care^{2,3} whether they are also associated with improvement in more distant care outcomes, such as hospitalisation for epilepsy, is uncertain. Moreover, QOF does not include information on such care outcomes, for example, on emergency hospitalisations of practice patients. The relationship between processes and outcomes of care has been a long-standing subject of academic investigation⁴ and previous studies have indicated that there is an association between poor-seizure control and healthcare utilisation.⁵

Therefore, general practices with a lower percentage of patients recorded as seizure-free could be expected to have a higher proportion of their patients admitted to acute care. Although implicit in the development of QOF is the assumption that the agreed quality indicators are true surrogate markers of care quality, direct empirical evidence about the validity of the indicators is missing. In principle, if quality indicators truly reflect the quality of care in a given disease area, an association with more distant care outcomes, such as emergency hospitalisations, should be expected. We therefore conducted a study to examine the potential association, at the practice level, between the proportion of patients aged 16 years or older on drug treatment for epilepsy declared as "seizure-free" for a 12-month period and epilepsy-related emergency hospitalisations in National Health Service (NHS) hospitals in Norfolk, Suffolk and Cambridgeshire.

Methods

For the three counties of England, Norfolk, Suffolk and Cambridgeshire, general practices QOF data relating to epilepsy indicators for the 12-month period April 2004 to March 2005 were accessed through the NHS Information Centre website (www.ic.nhs.uk/services/qof/data, accessed October 2006). By each individual general practice, the proportion of patients who were recorded as seizure free was calculated using the relevant number of

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