

# Variation in levels of uptake of Enhanced Primary Care item numbers between medical practices, within Divisions of General Practice and jurisdictions

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## Abstract

*We aimed to report on variation in levels of uptake of services between medical practices across Divisions of General Practice, and jurisdictions, through the Enhanced Primary Care (EPC) program between November 1999 and October 2001. No Divisions had levels of EPC uptake outside upper control limits plus/minus three standard deviations the national level, suggesting limited substantial systematic variation relating to high uptake. Four Divisions had rates of practices providing EPC services (33.3%-67.7%) substantially lower than the national rate (81.2%). For all EPC services combined and for health assessments (HAs) there is substantial variation between practices in almost all Divisions of General Practice, and in some this is extreme. For care plans (CPs), while several Divisions show wide variation in rates across practices (and in a few there is extreme variation), in other Divisions there are very low rates of CP across all practices. For case conferences (CCs) the picture is even more extreme, and these patterns are expressed across all jurisdictions. There is substantial variation in the level of uptake of EPC services across medical practices in Australia.*

## The Enhanced Primary Care Package

The Enhanced Primary Care (EPC) package was launched by the Federal Government in the 1999 budget. The aim of the EPC package is to improve the health and the quality of life of older Australians, of people with chronic conditions, and of those with multidisciplinary care needs (Commonwealth Department of Health and Aged Care, 1999). The EPC package comprises a range of initiatives including additional coordinated care trials, chronic disease self-management demonstration projects, establishment of Carelink, and the introduction of new EPC items on the Medicare Benefits Schedule (MBS).

The EPC MBS items allow general practitioners (GPs) to undertake or participate in activities that support the broad aims of the EPC package. These activities comprise health assessments for older people, care planning for patients with chronic, complex and on-going care needs, and also multi-disciplinary case conferencing (Commonwealth Department of Health and Aged Care, 1999).

We have previously reported, in the first four papers in this series, (Wilkinson 2002a, Wilkinson 2002b, Wilkinson 2002c, Wilkinson 2002d) on trends in uptake of items for health assessment (HA), care plans (CP) and case conferences (CC); on variation in uptake between Divisions of General Practice; and on characteristics of patients who have had EPC services and general practitioners who have provided these services. Here we report on the variation in levels of uptake of EPC services between medical practices across Divisions of General Practice, and jurisdictions.

## Methods

### Data source and EPC services, patient and practitioner details

The main methods are as reported in the first paper in this series (Wilkinson 2002a). Additional methods relevant to this paper are included below.

## Analyses

Data on levels of EPC service uptake at medical practice level is restricted to those practices registered for the Practice Incentives Program or PIP (Commonwealth Department of Health and Aged Care, 2001). In all, 4273 PIP-registered practices provided 351,472 EPC services during the two-year study period. This makes up 81.2% of PIP-registered practices, and 94.6% of EPC services. We excluded data from seven practices (314 EPC services) not associated with a named Division of General Practice. We also excluded data on services provided by 215 (4%) practices, when reporting on levels of uptake per full time equivalent (FTE) general practitioner, as the number of non-referred attendances (NRAs) was not given.

The practice uptake rate was calculated with the denominator as the number of practices registered with PIP for the November 2001 payment quarter, and the numerator as the number of PIP practices doing EPC work (defined as at least one GP claiming at least one EPC item number) at any time in the two-year study period.

To identify whether systematic factors were influencing uptake of EPC services, we graphed the observed Divisional rate minus national rates of practice uptake with control lines for  $\pm 3$  standard errors, based on the binomial distribution. Variation charts are an extension of traditional control charts that have been used in manufacturing quality control for many years. Control charts plot the measurements of individual components over time, with lines set at  $\pm 3$  standard errors (which equates to a 99% confidence interval). If several measurements fall outside this range then the system is considered to be out-of-control. Variation charts (plotted across hospitals, health regions etc rather than time) have been used in health related fields for more than a decade, and follow the same principles.

For the purpose of this paper, even if all Divisions are performing equally in terms of uptake of EPC, their rates will vary just due to random variation, and so some Divisions will lie above the national rate and some below. The precision of the estimate of a Division's rate is measured in terms of the standard error, which is influenced by the value of the national rate and the size of the Division. The standard error is hence larger for small Divisions.

Divisions lying outside the control lines indicate potential outliers. The interpretation of this is not statistical, but rather depends on the magnitude of the difference between the observed rate and the national rate, and whether a difference of that size is thought to be of practical importance.

We created scatter plots to demonstrate the variation in levels of EPC uptake for the practices within each Division of General Practice (data not shown here). We measured the median number of EPC services per full-time equivalent (FTE) general practitioner, for the Division as a whole, and the interquartile range for the Division, indicating the amount of variation between the practices in each Division. Plots were generated for all EPC services combined, HAs only, CPs only and CCs only, and results ordered from highest to lowest.

We also generated box plots of each Division (not shown here), stratified by jurisdiction, providing the mean, median, IQR and range for each Division, hence providing a measure of the variation between and within Divisions and practices, and across jurisdictions.

## Results

### Variation between Divisions

No Divisions had levels of EPC uptake outside the upper control limits (Figure 1), although four or five were close to the line. This suggests that there was little substantial systematic variation relating to high uptake of EPC by practices (and hence Divisions).

However four Divisions had rates of practices providing EPC services (33.3%, 62.5%, 62.1% and 67.7% respectively) substantially lower than the national rate (81.2%), and are seen in Figure 1 as points below the lower control line. This suggests that there may be adverse factors (or an absence of facilitating factors) in these Divisions that impede practices from rendering EPC services. It is also worth noting that some other Divisions also had low rates of uptake but these Divisions also have low numbers of practices participating in PIP and therefore their low rates may be due random variation.

### Variation between practices

For all EPC services combined and for HA alone there is substantial variation in almost all Divisions of General Practice, as indicated by wide values for the interquartile range around the median. A narrow interquartile range would indicate that most practices are providing similar rates (per FTE) of EPC service, but this is only seen for a small number of Divisions. Within some Divisions there seems to be quite extreme variation in rates of service provided, indicated by a very wide interquartile range.

For CPs, where overall rates of uptake are lower than HAs, the pattern is rather different. While several Divisions show wide variation in rates across practices (and in a few there is extreme variation), in other Divisions there are very low median values and very narrow interquartile ranges, indicating very low rates of CPs across all practices in these Divisions.

The picture for CCs is an even more extreme version of the pattern for CPs. In this case, almost all Divisions and their respective practices have done hardly any CCs. However for three Divisions, including the two Divisions with the highest median rates, the interquartile ranges are very high, indicating a small number of practices are responsible for the high Divisional rate.

### Variation between jurisdictions

Box plots for HA rates in Divisions, stratified by state (Australian Capital Territory, Northern Territory and Tasmania were omitted due to the very small number of Division in these jurisdictions) showed that patterns in each state are similar. There is a gradient in median uptake rates per FTE in each state, with a substantial interquartile range that is similar in each state. The extreme values for the full range of Divisional rates are greater (up to around 300) in the larger states than the smaller states (around 200). This is largely driven by a small number of practices with less than 1 FTE GP that are doing relatively more HAs than are more "normal" practices.

## Discussion

These data demonstrate that there is substantial variation in the levels of uptake of the various EPC services across medical practices in Australia. While there is no evidence for systematic differences across the different states studied, there is substantial variation within Divisions of General Practice.

By setting control lines at 3 standard errors around the national average value we have been able to demonstrate that, while there is indeed some variation, we did not find evidence for substantial systematic high uptake in any Divisions. However we did identify four Divisions with substantially lower levels of uptake than is expected. It will be important to determine through further enquiry within these Divisions what inhibiting factors (or lack of facilitating factors) existed to cause this.

The EPC MBS item numbers were promoted with a Division-level program of GP support. It is possible that the Division program in these four "low uptake" Divisions was somewhat less effective than in other Divisions,

either at Division (implementation) or practice (reception) level. The fact that there is no evidence for substantial variation in rate of high uptake suggests that the Division programs in the large majority of Divisions had similar impact.

Examining levels of uptake across practices within a Division, we note marked variation for all EPC service combined and for HA. This marked variation occurs in almost all Divisions and in some it is extreme, indicating that activity is driven by a small number of "high performing" practices.

For CPs and CCs the picture is even more extreme. Levels of uptake are lower still, and for most Divisions almost all practices have low levels of uptake (hence limited variation). However in the few Divisions with higher levels of uptake the variation tends to be greater, indicating that some practices are doing many more services than are others. A notable exception is the Division with the highest level of CPs, as it has fairly low variation.

These findings need to be explored further through our fieldwork to determine what factors are driving the variation. It seems that most variation is driven at the individual doctor and practice level with Division-level factors being less influential, but this needs confirmation. It is notable that there is no evidence for systematic differences in uptake across states, again suggesting that widespread, system-level change in medical practice has not yet occurred with the EPC program.

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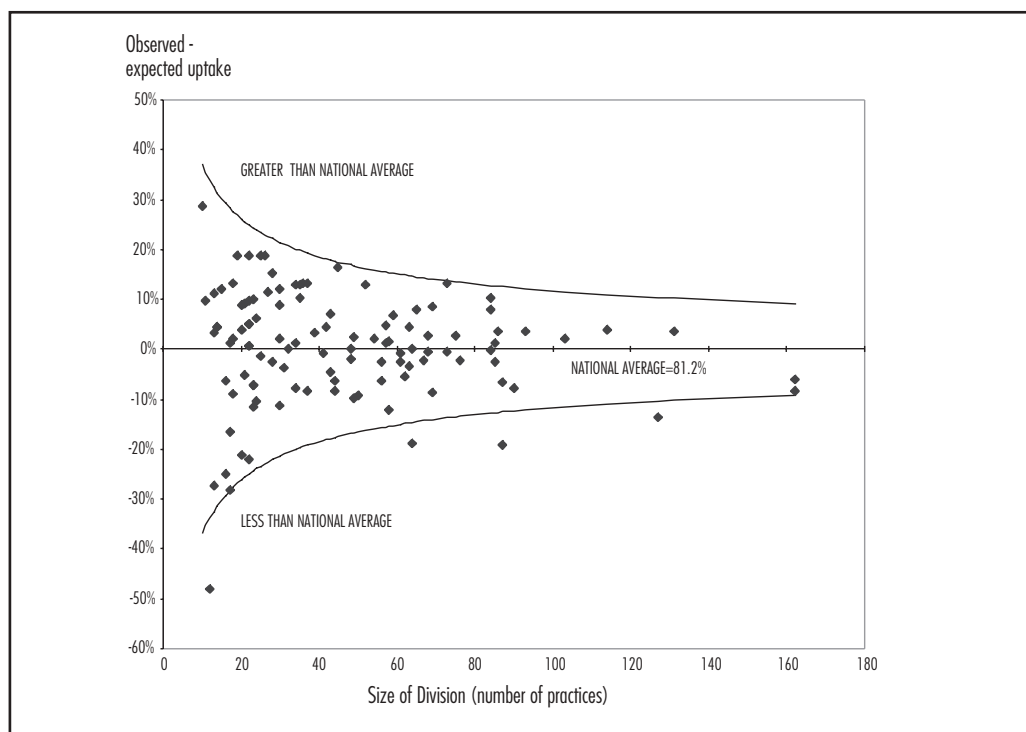
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**Figure 1. Difference between levels of EPC uptake for PIP registered practices and the national average uptake for each Division of General Practice\*, with  $\pm 3$  standard error control lines.**



\* Twelve divisions with less than 10 practices registered with PIP in November 2001 were excluded from this Figure, as the Department of Health and Ageing does not provide the number of practices registered.