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# Examples of how to use PACT reports

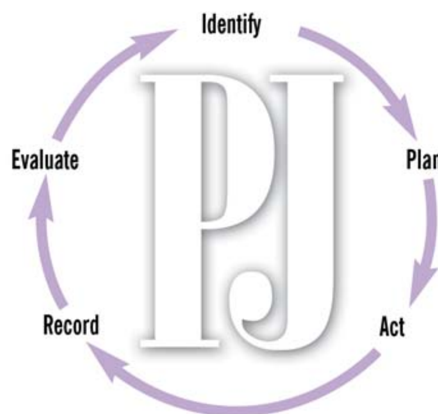
In this final article in our series on measuring prescribing, **Suzanne Jones** and **Helen Kendall** describe the information available in PACT reports and catalogues and show how it can be used to change prescribing practices for the better

Prescribing analysis and cost (known as PACT) data are collated and made available in a series of reports from the Prescription Pricing Authority (PPA). The reports tell practices and GPs what drugs and appliances have been prescribed, and how much prescribing has cost over a given period. Reports consist of aggregated information, obtained by capturing details from dispensed prescriptions.

Data are captured from prescriptions dispensed by community pharmacies and include items administered by GPs, such as vaccinations. The details extracted are:

- The name, strength and form of the drug
- The quantity prescribed
- The month in which the prescription was dispensed
- The "prescriber identifier" (a unique code allocated to each prescriber)
- The practice identifier for nurse and supplementary prescribers (so that costs can be attributed to the relevant practice)

The PPA does not capture patient details, such as name, age and address, so prescription information stored on the PPA mainframe computer cannot be linked directly to an individual patient. Dosage and duration of treatment details are also not captured. Prescriptions do not state the medical condition for which a drug is prescribed, but this may change with the electronic transmission of prescriptions.




## Identify knowledge gaps

1. What data are contained in paper PACT reports?
2. Do you know how to apply the information contained in PACT reports?
3. How are prescribing data used to make informed decisions when formulating prescribing advice?

Before reading on, think about how this article may help you to do your job better. The Royal Pharmaceutical Society's areas of competence for pharmacists are listed in "Plan and record," (available at: www.rpsgb.org/education). This article relates to "the effective and efficient application of information" (see appendix 4 of "Plan and record").

## Presentation of data

PACT data allow prescribing to be analysed in terms of British National Formulary chapter down to drug presentation level. This involves vast amounts of data because there can be hundreds of products in a BNF chapter.

In practice, 11 BNF chapters account for over 90 per cent of the total cost of prescribing. In England from July to September 2003, the 11 BNF chapters with the highest prescribing cost (in descending order) were: cardiovascular system, central nervous system, respiratory system, endocrine system, gastrointestinal system, musculoskeletal and joint diseases, malignant disease and immunosuppression, nutrition and blood, infections, obstetrics, gynaecology and urinary tract disorders, and skin.

For most practices, it is common to see the same six BNF chapters at the top of the prescribing cost ranking, although their order can vary depending on the patient population served by each practice. These six chapters should be the main focus when analysing prescribing.

At BNF section level, 20 sections account for 75 per cent of the total national cost. In England, from July to September 2003, the top five sections (in descending order) were: lipid-regulating drugs, antihypertensive therapy, ulcer-healing drugs, nitrates, calcium-channel blockers and potassium channel activators, and drugs used in diabetes. The top BNF sections vary from practice to practice. Some sections are affected by season. For example, vaccines and antisera is one of the top sections in the quarter to December but not in other quarters due to prescribing of influenza vaccines.

Pharmacists who provide prescribing support to practices use PACT information, routinely, as a starting point to help get a feel for a practice's prescribing habits and to prioritise areas that the practice needs to review. PACT information does not suggest a particular prescribing pattern is wrong but it does highlight areas that may need further investigation.

When examining PACT data it is useful to have a number of reference sources at hand to compare costs and alternative treatments. These include the BNF, Drug Tariff, and the *Chemist and Druggist* price list. Other publications such as *MeReC Bulletins* and the *Drug and Therapeutics Bulletin* provide constructive prescribing advice. It is also useful to consider reviews and guidelines that influence prescribing habits, such as national service frameworks and National Institute for Clinical Excellence guidance.

## PACT standard report

The PACT standard report details a practice's total costs, total number of items prescribed and cost per item. The first page of the report (practice prescribing costs) compares a GP's individual prescribing costs and the practice prescribing costs with those of its PCT and the national equivalent, illustrated in Figure 1.

**Practice prescribing costs**

| | | Change from last year (%) |
|---|---|---|
| Your practice | £196,193 | 2 |
| PCT equivalent | £198,346 | 9 |
| National equivalent | £180,524 | 9 |

Your practice costs are **below** the PCT equivalent by 1%
Your practice costs are **above** the national equivalent by 9%

**Figure 1: Example of the PACT standard report practice prescribing costs**

When analysing prescribing, cost and items can be meaningless if viewed in isolation. Large practices will have high costs and small practices low costs. What we need to know is whether the prescribing for a practice is higher (or lower) when compared with others in the PCT. In Figure 1, the PCT and national equivalents are calculated based on the practice prescribing units (PUs — see *PJ*, 17 January, pp58–60). Therefore, if you looked at PACT data for more than one practice in the same PCT, the national and PCT equivalents will be different because of differences in practice list size and patient ages and hence PUs. Comparing practice prescribing to a PCT equivalent may be useful but there can be wide variations in prescribing costs between practices, usually due to demographic differences. For example, some practices may have a high percentage of young patients or individuals who require expensive

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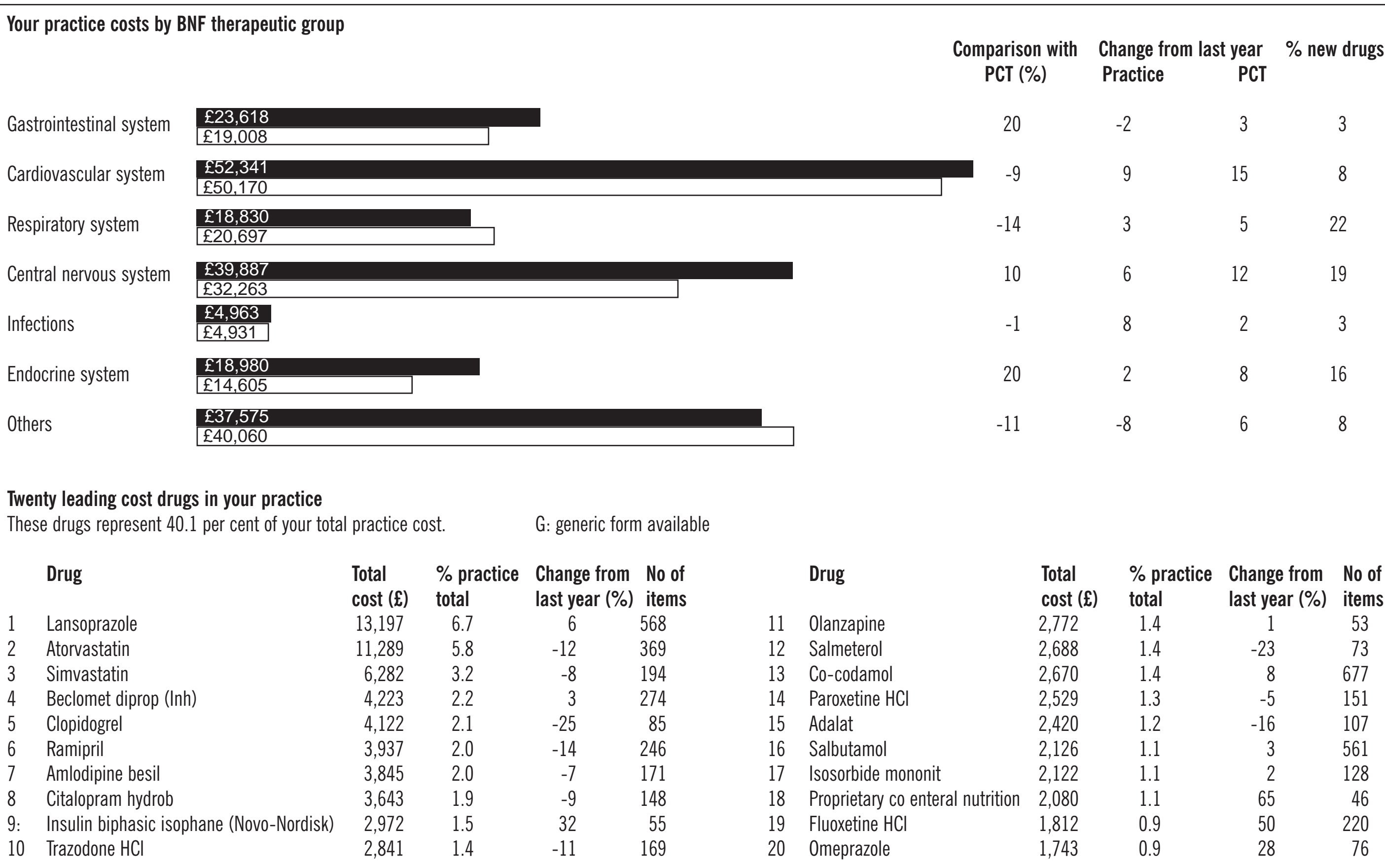


**Your practice costs by BNF therapeutic group**

| | Practice cost | PCT cost | Comparison with PCT (%) | Change from last year Practice | Change from last year PCT | % new drugs |
|---|---|---|---|---|---|---|
| Gastrointestinal system | £23,618 | £19,008 | 20 | -2 | 3 | 3 |
| Cardiovascular system | £52,341 | £50,170 | -9 | 9 | 15 | 8 |
| Respiratory system | £18,830 | £20,697 | -14 | 3 | 5 | 22 |
| Central nervous system | £39,887 | £32,263 | 10 | 6 | 12 | 19 |
| Infections | £4,963 | £4,931 | -1 | 8 | 2 | 3 |
| Endocrine system | £18,980 | £14,605 | 20 | 2 | 8 | 16 |
| Others | £37,575 | £40,060 | -11 | -8 | 6 | 8 |

**Twenty leading cost drugs in your practice**

These drugs represent 40.1 per cent of your total practice cost. G: generic form available

| | Drug | Total cost (£) | % practice total | Change from last year (%) | No of items | | Drug | Total cost (£) | % practice total | Change from last year (%) | No of items |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Lansoprazole | 13,197 | 6.7 | 6 | 568 | 11 | Olanzapine | 2,772 | 1.4 | 1 | 53 |
| 2 | Atorvastatin | 11,289 | 5.8 | -12 | 369 | 12 | Salmeterol | 2,688 | 1.4 | -23 | 73 |
| 3 | Simvastatin | 6,282 | 3.2 | -8 | 194 | 13 | Co-codamol | 2,670 | 1.4 | 8 | 677 |
| 4 | Beclomet diprop (Inh) | 4,223 | 2.2 | 3 | 274 | 14 | Paroxetine HCl | 2,529 | 1.3 | -5 | 151 |
| 5 | Clopidogrel | 4,122 | 2.1 | -25 | 85 | 15 | Adalat | 2,420 | 1.2 | -16 | 107 |
| 6 | Ramipril | 3,937 | 2.0 | -14 | 246 | 16 | Salbutamol | 2,126 | 1.1 | 3 | 561 |
| 7 | Amlodipine besil | 3,845 | 2.0 | -7 | 171 | 17 | Isosorbide mononit | 2,122 | 1.1 | 2 | 128 |
| 8 | Citalopram hydrob | 3,643 | 1.9 | -9 | 148 | 18 | Proprietary co enteral nutrition | 2,080 | 1.1 | 65 | 46 |
| 9: | Insulin biphasic isophane (Novo-Nordisk) | 2,972 | 1.5 | 32 | 55 | 19 | Fluoxetine HCl | 1,812 | 0.9 | 50 | 220 |
| 10 | Trazodone HCl | 2,841 | 1.4 | -11 | 169 | 20 | Omeprazole | 1,743 | 0.9 | 28 | 76 |

**Figure 2: Example of the information on p2 of a PACT standard report**

drugs (eg, patients with AIDS) and these factors should be noted.

**Practice costs by therapeutic group** Quarterly practice costs by six BNF chapters are shown on the second page of the PACT report (Figure 2). The percentage of costs for "new drugs" are also shown for each chapter. This means that for three years after the PPA first receives a prescription for a new drug, the prescribing of that drug is highlighted as a percentage of prescribing for its BNF chapter. Comparing practice prescribing with PCT prescribing for the six chapters can indicate interesting differences. For example, looking at the change from last year on Figure 2 the practice costs do not appear to be growing as quickly as for the PCT in most areas. However practice spending on gastrointestinal system drugs is 20 per cent higher than the PCT spend. This could suggest the GPs are prescribing greater quantities of gastrointestinal drugs, more expensive drugs or both.

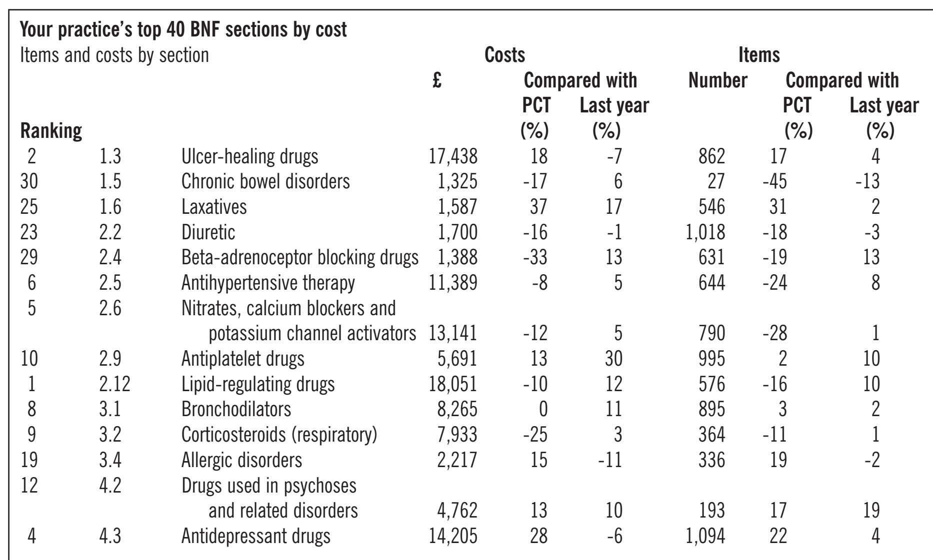
Occasionally, the costs change may be unusually high or low compared with that in the previous year. There can be a variety of reasons for this. For example, the practice may have increased the number of GPs or patients (thus increasing prescribing) or it may have implemented an initiative that has led to less wasteful prescribing (eg, a medicines management or repeat dispensing scheme).

The top 20 leading cost drugs are also shown on p2 of the PACT report (see Figure 2). These represent 40 per cent of total prescribing costs for the practice so can be a good starting point for investigating spending. This list is generally made up of drugs that are either prescribed in high volume (eg, co-codamol) or are expensive (eg, clopidogrel) or both. In our example, lansoprazole is the practice's leading cost drug but for many practices the leading cost drug is a cardiovascular drug.

If a branded drug appears and a generic version is available a "G" is shown beside the drug. This can be useful for practices wishing to increase generic prescribing.

**Number of items prescribed** On p3 of the PACT report, the number of items prescribed is shown by BNF chapter. It is useful to look at items alongside cost per item because variables like the interval for repeat prescriptions will affect the number of items. In addition, the number of items prescribed and dispensed generically is shown.

The number of generic items dispensed is always lower than the number of generically prescribed items because there will not always be a generic equivalent available. However, if the difference is large, this may be a useful



**Your practice's top 40 BNF sections by cost**

Items and costs by section

| Ranking | | | Costs £ | Costs compared with PCT (%) | Costs compared with Last year (%) | Items Number | Items compared with PCT (%) | Items compared with Last year (%) |
|---|---|---|---|---|---|---|---|---|
| 2 | 1.3 | Ulcer-healing drugs | 17,438 | 18 | -7 | 862 | 17 | 4 |
| 30 | 1.5 | Chronic bowel disorders | 1,325 | -17 | 6 | 27 | -45 | -13 |
| 25 | 1.6 | Laxatives | 1,587 | 37 | 17 | 546 | 31 | 2 |
| 23 | 2.2 | Diuretic | 1,700 | -16 | -1 | 1,018 | -18 | -3 |
| 29 | 2.4 | Beta-adrenoceptor blocking drugs | 1,388 | -33 | 13 | 631 | -19 | 13 |
| 6 | 2.5 | Antihypertensive therapy | 11,389 | -8 | 5 | 644 | -24 | 8 |
| 5 | 2.6 | Nitrates, calcium blockers and potassium channel activators | 13,141 | -12 | 5 | 790 | -28 | 1 |
| 10 | 2.9 | Antiplatelet drugs | 5,691 | 13 | 30 | 995 | 2 | 10 |
| 1 | 2.12 | Lipid-regulating drugs | 18,051 | -10 | 12 | 576 | -16 | 10 |
| 8 | 3.1 | Bronchodilators | 8,265 | 0 | 11 | 895 | 3 | 2 |
| 9 | 3.2 | Corticosteroids (respiratory) | 7,933 | -25 | 3 | 364 | -11 | 1 |
| 19 | 3.4 | Allergic disorders | 2,217 | 15 | -11 | 336 | 19 | -2 |
| 12 | 4.2 | Drugs used in psychoses and related disorders | 4,762 | 13 | 10 | 193 | 17 | 19 |
| 4 | 4.3 | Antidepressant drugs | 14,205 | 28 | -6 | 1,094 | 22 | 4 |

**Figure 3: Extract of a PACT standard report showing a practice's top 40 BNF sections by cost**

area to work on — it may be possible to use more generic products and generate cost savings. It should be noted, however, that there are instances where the Committee on Safety of Medicines recommends that prescribing should be by brand (eg, diltiazem products).

**Top BNF sections by cost** Other data available in the PACT report include the top 40 BNF sections by cost. Looking at the extract in Figure 3, entries are in order of BNF section and their ranking is shown on the left hand side. Comparisons with the PCT and the previous year are given.

From Figure 3 we can see that antidepressants are ranked as fourth highest BNF section by spend for the practice with a total cost of £14,205, which is 28 per cent higher than the PCT average. However, the number of items for antidepressants is only 22 per cent above the PCT average. This suggests that the antidepressants prescribed were of higher than average cost.

## Pact prescribing catalogue

Antidepressant prescribing could then be examined further using a PACT prescribing catalogue. This contains a full inventory of the practice's prescriptions received by the PPA. Catalogues are available, at the prescriber's request, for information on any period between one and 24 months. Information can be requested for all BNF chapters, or for selected chapters and a full PACT catalogue can be several hundred pages long.

The catalogues are designed to provide flexibility and consist of three sections providing varying levels of detail. Sections can be ordered individually or in combination and used for a range of analyses.

**Summary of prescribing** A section called the "summary of prescribing" can be ordered for one or any combination of BNF chapters. It provides a breakdown of prescribing by BNF section and paragraph within the requested BNF chapter.

**Concise catalogue** A concise catalogue can be ordered for any grouping from a BNF chapter down to an individual product, allowing you to target certain areas and reducing the amount of paper used. It allows you to monitor prescribing of a particular product and this is useful when developing a practice formulary or monitoring formulary compliance.

**Full catalogue** The third section is the full catalogue. This can be can be ordered for any grouping from BNF chapter down to an individual product, providing a complete breakdown of prescribing. This allows you to monitor prescribing at quantity level. Each presentation entry lists:

- Quantity prescribed (eg, number of tablets)
- The number of items prescribed
- Quantity x items
- Cost

The PACT catalogue can be used in conjunction with the PACT standard report to allow in-depth analysis of specific high-cost sections and drugs.

An extract from a full prescribing catalogue for antidepressants is shown in Figure 4. This would give a breakdown of all antidepressant presentations prescribed, listed by the quantities prescribed. The average duration of treatment for each prescription could be estimated using average daily quantity (ADQ) or defined daily dose (DDD) values because we do not know whether 56 tablets have been prescribed as once or twice daily doses, for example (see *PJ*, 17 January, pp58–60).

The extract shows data for citalopram prescribing and subtotals of number of items and cost, for all the selective serotonin reuptake inhibitors (SSRIs) prescribed in the requested period. We can see that in this practice, citalopram and sertraline account for 37 per cent of all SSRI items and 53 per cent of cost. Note that citalopram also appears in the 20 leading cost drugs (Figure 2). The remainder of SSRI prescribing was for fluoxetine and paroxetine. The patent for these two drugs has expired and their prices have been falling. The practice could, therefore, be advised to prescribe fluoxetine or paroxetine where possible because there is no evidence to suggest that citalopram and sertraline are more effective than other SSRIs.

When investigating PACT data it is important to bear in mind that just because a practice has high prescribing costs this does not necessarily mean its GPs are bad prescribers; in fact the practice may be prescribing more appropriately than a low cost practice if, for example, it is correctly targeting high-risk cardiovascular patients for lipid-regulating therapy. Very low cost prescribing can be irrational — it may indicate that only symptomatic treatment is being provided, but this is not easily identifiable from PACT.

| | Quantity | No of items | Quantity x items | cost (£) |
|---|---|---|---|---|
| **4.3.3 Selective serotonin re-uptake inhibitors** | | | | |
| Citalopram hydrob tab 10mg | 28 | 14 | 392 | 134.96 |
| | 56 | 7 | 392 | 134.96 |
| | 168 | 2 | 336 | 115.68 |
| | | 23 | 1120 | 385.60 |
| Citalopram hydrob tab 20mg | 7 | 11 | 77 | 44.11 |
| | 14 | 20 | 280 | 160.40 |
| | 28 | 29 | 812 | 464.87 |
| | 56 | 46 | 2,576 | 1,474.76 |
| | 84 | 1 | 84 | 48.09 |
| | 112 | 6 | 672 | 384.72 |
| | 168 | 2 | 336 | 192.36 |
| | | 115 | 4837 | 2,769.31 |
| Citalopram hydrob tab 40mg | 28 | 2 | 56 | 54.20 |
| | 56 | 8 | 448 | 433.60 |
| | | 10 | 504 | 487.80 |
| **Subtotal citalopram hydrob** | | 148 | | 3,642.7 |
| **Subtotal fluoxetine HCl** | | 220 | | 1811.8 |
| **Subtotal paroxetine HCl** | | 151 | | 2,528.9 |
| **Subtotal sertraline HCl** | | 67 | | 1,248.3 |
| **Subtotal 4.3.3** | | 586 | | 9,231.6 |

**Figure 4: An extract from a full prescribing catalogue**

## Conclusion

GPs have received PACT data for many years now and they have encouraged reviews of prescribing habits for rationality and quality, even where prescribing costs are not higher than expected. Moreover, PACT data have been shown to influence prescribing habits. For example, using PACT data has changed patterns of prescribing for specific targeted drug groups, such as ulcer-healing drugs, and increased the overall generic prescribing rate.

The advent of unified budgets for PCTs, the increasing demands on GP time and the greater variety and complexity of medicines mean that practices and PCTs require considerable additional professional prescribing support to help them optimise their use of medicines. Pharmacists have a unique blend of skills to allow them to work closely with GPs to achieve this and improve patient care.

## Action: practice points

Reading is only one way to undertake CPD and the Society will expect to see various approaches in a pharmacist's CPD portfolio.

1. Ask a local practice if you can see an example of a PACT standard report — identify from this how the practice prescribing compares to the PCT.
2. Think about any local factors you are aware of that may affect a practice's prescribing patterns.
3. Think about what data a PACT catalogue could provide to help you identify whether cost savings could be made in the use of proton pump inhibitors.

## Evaluate

For your work to be presented as CPD, you need to evaluate your reading and any other activities. Answer the following three questions:

What have you learnt?
How has it added value to your practice? (Have you applied this learning or had any feedback?)
What will you do now and how will this be achieved?