Cost of Service Inquiry for Dispensing Practices

Department of Health

September 2010

FINAL REPORT

PRICEWATERHOUSECOOPERS

Contents

List of tables

List of tables (cont.)

List of figures

List of figures (cont.)

List of figures (cont.)

1. Executive summary

1. Executive summary

Background and context

There are currently over 1,100 dispensing GP practices in England. As community pharmacies are not viable in many rural areas, dispensing doctors can play a crucial role in ensuring that patients have access to, and receive, their medicines from their GP practice dispensary without having to make an additional, possibly long journey, to their nearest pharmacy. Dispensing practices provide dispensing services to approximately 3.5 million NHS patients*.

The Department of Health (DH) has identified a number of concerns regarding the GP dispensing system and the appropriateness of the existing funding regime. One particular issue has been the relative cost-effectiveness of dispensing GP practices to the NHS. During negotiations on the 2010/11 General Medical Services (GMS) contract in 2009, the Department of Health (DH), NHS Employers and the General Practitioners Committee (GPC) of the British Medical Association (BMA) agreed to hold a Cost of Service Inquiry examining dispensing fees, discounts, and overall income and investment by dispensing GP practices.

In February 2010, the DH commissioned PricewaterhouseCoopers LLP (PwC) to ascertain both the income derived from, and the costs incurred by, a dispensing GP practice in providing dispensing (pharmaceutical) services in England, and thus to arrive at an estimate of the overall profit for such services. PwC has worked alongside a Steering Group when undertaking this work. The group comprises representatives from the DH, Dispensing Doctors' Association (DDA), GPC and NHS Employers.

Scope of work

Our work examines the overall income derived from, and costs incurred by, dispensing services provided by dispensing GP practices in England.

Our analysis is based on financial and operational information provided to us by a sample of dispensing GP practices identified from across the country. We have not audited this information for accuracy, although we have performed some consistency checks on the data, much of which has been drawn from practices' own audited accounts.

This work reflects a number of key issues, including a consideration of **property costs** and a **fair rate of return** on investment. In addition to this, the work aims to provide some evidence for whether **dispensing income and costs** vary according to the **type of dispensing practice** under consideration. Other key issues include how **geographic coverage** and operational **risks** may affect the income and costs of dispensing GP practices, as well as providing some comment on **efficiencies** and **forward-looking** factors related to providing dispensing services.

The definition of "dispensing services" in this work excludes activities (and associated income and costs) relating to personally-administered (PA) items, as well as prescribing activities, since these are also incurred by GP practices that are not otherwise permitted to dispense to patients.

*Based on data from the Department of Health.

1. Executive summary

Approach and methodology

In order to examine the overall income derived from, and costs incurred by, dispensing services provided by a dispensing GP practice in England it is necessary to identify separately both operating income and costs associated with:

- **Dispensing services**: these include dispensing and any related activities for example managing the dispensary, drug stock management, Dispensing Review of Use of Medicines (DRUMs).
- **Non-dispensing services:** these include all general medical / clinical and related activities, for example, seeing patients, prescribing drugs, as well as activities relating to personally administered (PA) drugs.

Our approach to allocating income and costs to each of the above services consisted of three phases of work:

Phase 1: Define economic income and costs

In this report, we define "overall accounting profit" as the difference between the total operating income and total operating costs that appear within the financial accounts of practices*.

However, we believe that accounting operating costs underestimate the true economic costs of the practice. This is because economic costs should also include:

- The **cost of a partner's time** spent carrying out GP duties in the practice. We did not use partner's drawings as a measure of the cost of a partner as this incorporates an element of profit. Instead, we aimed to estimate partner base pay with the profit element stripped out; and
- A **fair return (or "capital costs")**, which represents the minimum return that a company should earn on invested capital in order to provide sufficient returns to the investors who are financing the business.

This would mean that the **accounting profit is greater than the economic profit**.

*Including inflation to 2009/10 prices and an adjustment to strip out private dispensing income – please see section 4 for details.

We believe that, by deducting partner base pay and a fair return, the economic profit more closely reflects the true profits of the practice than the accounting profit. Consequently, **unless otherwise specified, all estimates of profit provided within this report reflect economic profits**.

Phase 2: Develop the methodological framework for assessing operating income and costs

- **Income apportionment methodology:** The income derived by dispensing GP practices largely consists of payments received from the Government for providing specific services. These payments can be separately identified within the financial accounts of dispensing practices. Therefore the allocation of practice income to dispensing and non-dispensing services can be achieved by reference to the financial accounts of dispensing practices. Dispensing GP practices also receive certain payments to reimburse practices for costs that are "common" to both parts of the business, for example, property reimbursement. One way to allocate these would be in line with the allocations determined for the costs which they reimburse. In addition, practices **are** able to identify income generated from prescribing and dispensing personally administered items as well as private services, for example, vaccinations.
- **Cost apportionment methodology:** Unlike operating income, within financial accounts operating costs are typically grouped according to cost categories e.g. staff costs, property costs, rather than by type of activity or service.

  The allocation of operating costs to dispensing and non-dispensing services is therefore a relatively more complex exercise than the allocation of operating income. We considered two approaches to allocating costs between dispensing and on-dispensing services:

  – **Fully Allocated Costs (FAC) approach**, whereby costs are allocated in proportion to various measures of output generated or resources used e.g. share of floor space, share of full-time equivalent staff; and

1. Executive summary

Phase 2: Develop the methodological framework (cont.)

- **Long Run Incremental Cost (LRIC) approach**, whereby costs are allocated by hypothesising what costs would be ***avoided*** (or not incurred) in a hypothetical scenario where that activity is no longer performed. So the LRIC of dispensing activities can be quantified by considering which costs would no longer be incurred if a practice stopped offering all dispensing services and retained only non-dispensing activities. Similarly, non-dispensing LRIC can be quantified by considering which costs would no longer be incurred if a practice stopped offering all non-dispensing (general medical / clinical) services and retained only dispensing activities.
- Within the LRIC approach, some proportion of costs incurred by dispensing GP practices cannot be clearly attributed incrementally to either dispensing or non-dispensing services, but support both sets of activities. Although by definition common costs are not incrementally associated with dispensing or non-dispensing business, they are incurred by GP practices and need to be reflected in the fees and overall reimbursement for services provided if the practice is to remain financially viable in the long run. We adopted two approaches to apportioning common costs:
  - Equi-proportional mark-up (EPMU) –this is where common costs are apportioned based on the relative size of each user's avoidable costs; and
  - Standalone costs – this approach would allocate all common costs to either dispensing or general medical / clinical activities.

Phase 3: Fair return analysis

- Fair return represents the minimum return that a company should earn on invested capital in order to provide sufficient returns to the investors who are financing the business. Our approach to assessing the level of 'fair return' for dispensing GP practices is summarised as follows:
  1. Using data supplied by the practices visited, we have estimated an average tangible asset base for the typical dispensing practice;
  2. To this we have added an estimate of the intangible asset base. We have estimated the value of intangible assets using a variety of methods;
  3. The sum of the tangible and intangible asset base is equal to the total asset base for an average dispensing practice.
  4. We have then calculated a fair return by applying the weighted average cost of capital to the total asset base.
- The fair return, also known as the cost of capital, is a real cost to the business, with the same status as costs of goods sold and operating costs. In other words, in order for a business to be viable, it must earn a sufficient level of turnover to cover its costs of goods sold, operating costs and its cost of capital.

Phase 4: Survey analysis

- Our approach to estimating income and costs associated with dispensing and non-dispensing services relies on analysing recent financial and operational data obtained from dispensing practices in England. It was not practical to invite all dispensing practices in England to participate in this study. Instead we identified a representative sample from which we obtained the necessary information. At the start of the study we considered two alternative approaches to conducting the survey:

1. Executive summary

  - **Option 1 Postal / telephone survey:** this would be based on a sample of 200 dispensing practices and would allow limited questioning; and
  - **Option 2 Detailed on-site questionnaires:** this would be based on a sample of 20 dispensing practices and would enable more in-depth questioning.

- Before conducting the main survey we undertook an initial pilot survey involving five practices. The purpose of the pilot was to: 1) gain as full an understanding as possible of the operational, financial and organisational aspects of different types of dispensing GP practices, in order to evaluate how the main survey should be carried out; and 2) to help the Steering Group form a view as to whether Option 1 or Option 2 was most likely to provide robust evidence on which to base future negotiations.
- Once the pilot survey was completed, PwC and the Steering Group met to discuss the outcome of the pilot survey and carried out an assessment of the two options for conducting the main survey. The overall conclusion was that whilst Option 1 would provide a sample size of 200, which is sufficiently large to be statistically robust, there were some concerns that the data obtained would potentially result in less accurate results due to a lower level of detail and quality.
- Following careful consideration, the Steering Group members unanimously agreed that we should proceed with Option 2 for the purpose of completing the main survey.
- For the main survey, we used the data provided to us from the National Health Application & Infrastructure Services (part of NHS Connecting for Health) and NHS Prescription Services (part of NHS BSA) to select our sample of 20 practices across England. To achieve this, we used a stratified random sampling technique on the basis of two criteria, similar to the pilot survey sampling: the total practice list size; and proportion of patients registered as eligible for dispensing. The full list of dispensing practices was sorted first by proportion of dispensing patients, and then by list size, resulting in the identification of six strata. Strata are denoted by whether they have a high (H), medium (M) or low (L) proportion of dispensing patients based on the sampling criteria, and whether they have a 'big' (B) or 'small' (S) list size. The key sample characteristics are summarised in the table below:

Table 1: Final sampled practices by stratum

Stratum	No. of practices	Range of proportion of dispensing patients*/#	Range of list sizes**/#	No. of practices with branch surgeries
H-B	4	60% - 100%	5,500 – 11,000	3
M-B	4	40% - 50%	9,500 – 19,500	1
L-B	2	25% - 30%	12,500 – 23,000	2
H-S	5	85% - 100%	1,500 – 4,000	1
M-S	3	30% - 70%	3,500 – 7,000	1
L-S	2	20% - 25%	6,000 – 7,500	1

Source: PwC analysis

* These ranges may exhibit some overlap (for instance, the lower bound of stratum H-B is below the upper bound of stratum M-S) due to inconsistencies between the data provided used for sampling and the figures confirmed by the practices themselves. Where conflicts arose, we have used the data provided by the practices.

** Overlapping list size boundaries between "Big" and "Small" strata arise from the sampling methodology used. Proportion of dispensing patients was used as the primary stratifying criteria, and therefore differing list size distributions within the three initial strata meant that the list sizes considered in each stratum were not mutually exclusive.

Rounded to nearest 5%/500 patients

1. Executive summary

Results and overall assessment

The results presented here are based on **economic profits**, where the **costs used to calculate profits include a fair return on both tangible and intangible assets** for each activity (which we also refer to as “capital costs”, and is a return to cover the risks we understand that practices face), **as well as an estimate of partner base pay** (i.e. the pay that a partner would receive if they were salaried, which excludes a share of profits and is hence lower than partner drawings).

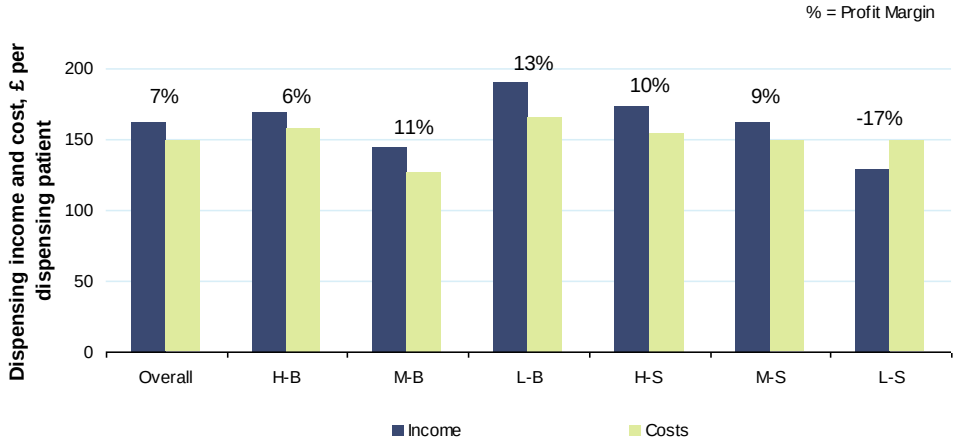
1. EPMU approach

A summary of the results of the analysis described above is presented in the figures to the right which show the costs and income apportioned to the dispensing increment, including a mark-up for common costs based on EPMU. These are normalised for each practice by dividing by the number of dispensing patients on the practice list, before being aggregated to give stratum-level averages.

The profit margins (calculated as: (income – costs) / income) range between -17% to 13% across the strata for FAC, and -3% to 18% for LRIC.

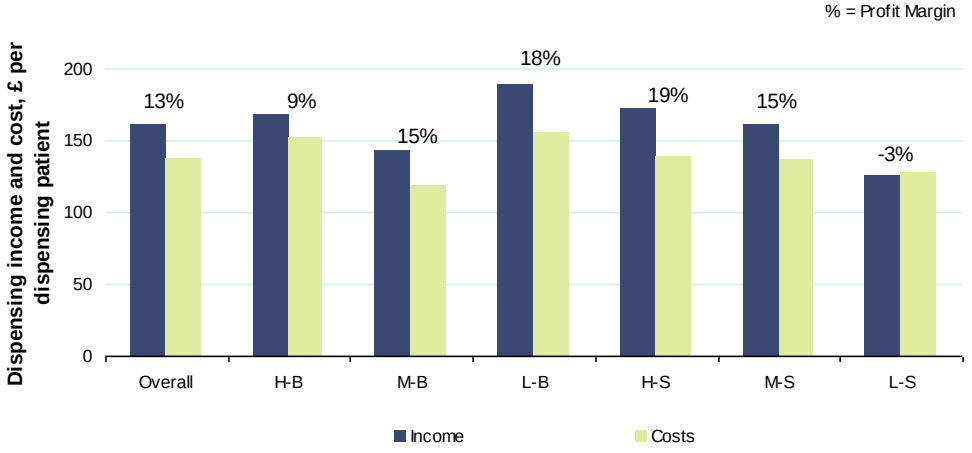
The LRIC method results in consistently higher profit margins relative to the FAC method. The LRIC approach results in *lower* costs being allocated to dispensing services because the amount of costs, particularly in relation to staff, that is avoidable in the absence of dispensing is less than the current amount of resources devoted to dispensing-related activities.

Figure 1: FAC allocation of dispensing costs and income per dispensing patient



Source: Practice visits, PwC Analysis

Figure 2: LRIC allocation of dispensing costs and income per dispensing patient



Source: Practice visits, PwC Analysis

1. Executive summary

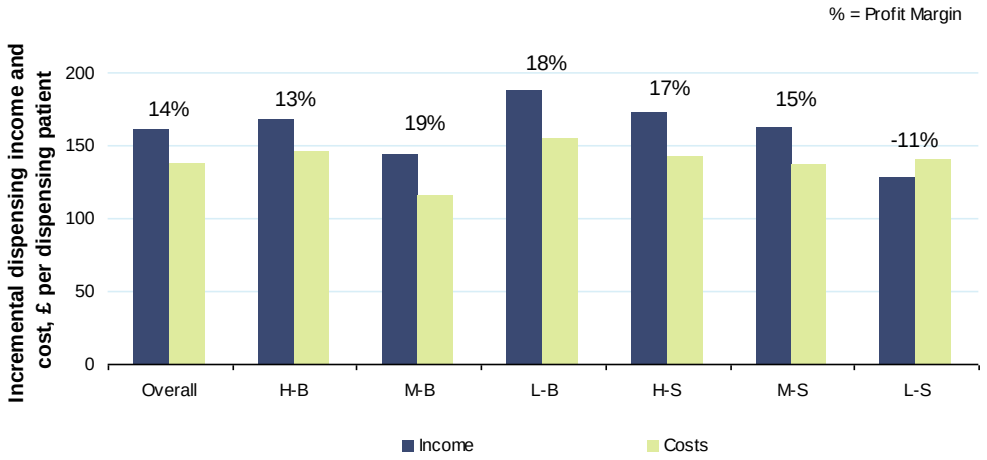
Results and overall assessment (cont.)

1. Standalone approach

This is achieved by fully allocating common income and costs to the general medical / clinical increment (and thus total income and costs for dispensing is equal to its incremental income and costs, with no allocation of common income and costs). This effectively represents the situation in which general medical / clinical activities are the core operations of the practice and dispensing activities are an ancillary extension of practice operations. As such, the dispensing increment would not bear any common costs and the general medical / clinical element of the business would bear all common costs. This allows us to consider the general medical / clinical element of the business as a standalone unit.

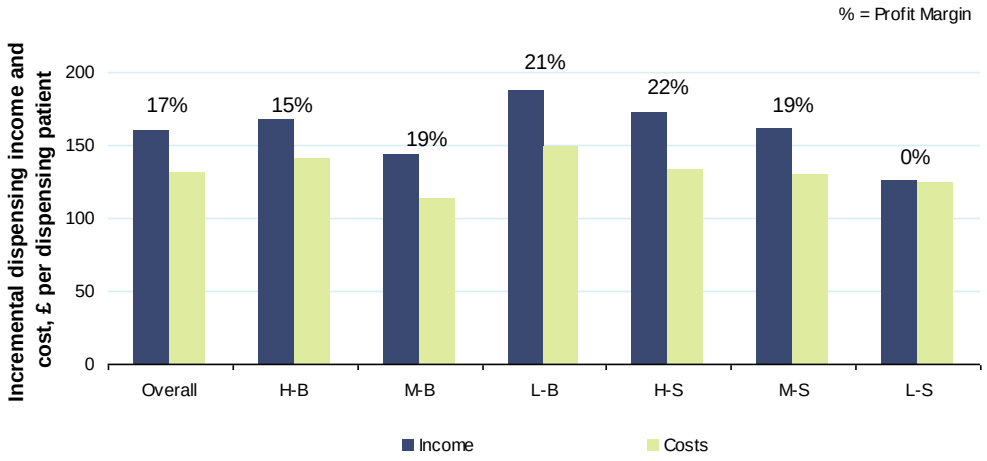
The diagrams to the right show allocated dispensing income and costs under this method where the profit margins range from -11% to 22%. The reduction in allocation of common costs apportioned to dispensing leads to increased normalised income and higher profit margins for the dispensing increment across all strata.

Figure 3: FAC allocation of dispensing costs and income per dispensing patient, incremental



Source: Practice visits, PwC Analysis

Figure 4: LRIC allocation of dispensing costs and income per dispensing patient, incremental



Source: Practice visits, PwC Analysis

1. Executive summary

The table below summarises the dispensing profit margins estimated under each combination of incremental and common income and cost apportionment methods, based on **economic profits**, where the costs used to calculate this include a fair return on both tangible and intangible assets for each activity (which we also refer to as "capital costs") and include an estimate of what partner base pay may be (i.e. what a partner may be paid if they did not receive a share of profits, and which would thus be lower than partner drawings). Please note that **these results should be interpreted in the light of**:

- The scope of work under which we carried out this analysis. We were asked to focus on estimating the overall income derived from, and costs incurred by, dispensing services provided by a dispensing GP practice in England. As such, we have not considered individual drug categories or general medical / clinical income and costs in any detail;
- The survey approach that we have been advised to implement and the FAC and LRIC estimation methods we have chosen to adopt; and
- Assumptions about the operational and organisational structure of dispensing practices, which involves considering whether dispensing is part of the core operations of the practice, or whether it is an 'ancillary' or 'secondary' activity that is 'added on'. This would affect whether FAC or LRIC is more appropriate. It would also affect whether EPMU should be used to apportion common costs, as opposed to the case where general medical / clinical activities bear all common costs.

Table 2: Summary of dispensing profit margins# under each incremental and common income and cost apportionment methods, economic profits (based on costs that include fair returns and partner base pay)

Incremental income and cost apportionment	Common income and cost apportionment	Overall	Stratum					
			H-B	M-B	L-B	H-S	M-S	L-S
FAC	**EPMU**	7%	6%	11%	13%	10%	9%	-17%
LRIC	**EPMU**	13%	9%	15%	18%	19%	15%	-3%
FAC	**Incremental** (assumes general medical / clinical bears all common costs)	14%	13%	19%	18%	17%	15%	-11%
LRIC	**Incremental** (assumes general medical / clinical bears all common costs)	17%	15%	19%	21%	22%	19%	0%
FAC	**Midpoint**^ between incremental and EPMU profit margins	10%	10%	15%	15%	14%	12%	-14%
LRIC	**Midpoint**^ between incremental and EPMU profit margins	15%	12%	17%	19%	20%	17%	-1%

Source: Practice visits, PwC analysis

Rounded to the nearest percentage point.
^ These are midpoints of the stratum-level results, rather than practice-level midpoints averaged for each strata.

1. Executive summary

Discussion of results

In assessing and interpreting the overall results, we have considered the following issues:

- **Sensitivity of results:** We undertook an analysis of how sensitive the results are to changes in a selection of key inputs including drug costs (assuming drug reimbursement is constant, based on comments from some practices that drugs reimbursement has not kept up with rising drug costs); dispensing fees (assuming a constant volume of dispensing); pre-tax, nominal WACC; intangible asset value; and partner base pay. The results suggest that the overall dispensing profit margin would fall to 0% if drug costs increased by 11% under the FAC and EPMU approach (assuming all other factors are held constant). On the other hand dispensing profits are not particularly sensitive to changes in the level of dispensing fee income. Similarly, the overall profit margin does not vary significantly with changes in the WACC and intangible asset value as a percentage of revenues.
- **Assessment of FAC v LRIC methods:** Whilst the LRIC method has better economic grounding and greater regulatory precedents, it potentially requires more judgement as it is based on a hypothetical scenario and therefore more difficult to apply in practice. Furthermore, the LRIC approach results in a lower apportionment of costs to dispensing activities and may be deemed to underestimate the current cost of providing dispensing activities.
- **Assessment of EMPU and standalone methods:** The choice of EPMU versus standalone as a basis for apportioning common costs is dependent on whether dispensing is considered 'core' to the operations of the practice, or whether it is an 'ancillary' service. Arguably dispensing activities are undertaken in support of general medical / clinical activities, and should be treated as purely incremental to the stand-alone general medical / clinical basis.
- **Qualitative comments received from practices:** In addition to the quantitative analysis conducted on income, costs and profits, we also supplemented this by collecting some qualitative information from the practice. We asked practices for commentary on the following key issues:

  - ***Significant changes to their costs and income:*** Most practices reported a reduction in discounts received from wholesalers and / or an introduction of a small-order surcharge. One practice reported that the reduction in discounts was so severe it resulted in a cashflow problem and losing a dispensing member of staff. Others tried to mitigate the effect by consolidating their orders or joining a buying group.
  - ***Impact of reduction in dispensing fees***: Most practices reported that whilst this reduction has not caused any major cashflow problems yet, the effect will not be known until the next available financial accounts. It is likely that the reduction in fees will result in a fall in profitability and potentially cutting down on costs. In the most extreme case, a few practices reported the need to expand or arrange an extra overdraft.
  - ***Risks associated with running a dispensing practice:*** We asked practices to comment on how relevant various risks were to their practice including cashflow risk; risk of new pharmacy opening; regulatory risk; and risk of urbanisation. The overall feedback indicated that regulatory risk is the greatest risk. Some practices considered the risk of a new pharmacy opening to be a high risk, although this is fairly location specific. Cashflow risk and risk of urbanisation were mostly considered to be low risk.
  - ***Effect of practice location:*** On the whole most practices have not reported a significant impact on their income, costs and operations due to their location and relative rurality although some reported that the additional travel time and fuel costs were a disadvantage.
  - ***Community impact of providing dispensing services:*** All practices suggested that if the practice were to cease providing dispensing services, there would be a series of negative effects including a reduction in quality of care and a reduction in patient access and convenience, and that this effect would be particularly severe for elderly patients. Many practices indicated that they would have to reduce costs significantly if they were to remain viable. Some practices also believed that a loss of dispensing services would increase the burden on other NHS services, particularly secondary care services.

2. Introduction

2. Introduction

Background and context

There are currently over 1,100 dispensing GP practices in England alone, and they provide dispensing services to approximately 3.5 million NHS patients*. As community pharmacies are not commercially viable in some rural areas, these practices can provide a particularly valuable service to patients by ensuring they can obtain medicines they have been prescribed without travelling for prohibitive amounts of time.

During negotiations on the 2010/11 General Medical Services (GMS) contract in 2009, the Department of Health (DH), NHS Employers and the General Practitioners Committee (GPC) of the British Medical Association (BMA) agreed to hold a Cost of Service Inquiry covering dispensing fees, discounts, and overall income and investment by dispensing GP practices. The Cost of Service Inquiry is intended to help provide an evidence base to inform future negotiations. It is thus essential that the income, costs and characteristics of the range of dispensing practices today are captured, using rigorous methodologies. A Steering Group with representation from the DH, Dispensing Doctors' Association (DDA), GPC and NHS Employers has been established to guide the progress of this inquiry.

Objectives

In February 2010, the DH commissioned PricewaterhouseCoopers LLP (PwC) to ascertain both the income derived from, and the costs incurred by, a dispensing GP practice in providing dispensing (pharmaceutical) services in England, and thus to arrive at an estimate of the overall profit for such services. PwC have developed a robust, economics based approach, in conjunction with the Steering Group in order to provide a useful basis for future negotiations.

Scope of work

Our work examines the overall income derived from, and costs incurred by, dispensing services provided by a dispensing GP practice in England.

This work seeks to provide the basis for forming a view on a number of key issues, including a consideration of **property costs** and a **fair rate of return** on investment. In addition to this, the work aims to provide some evidence for whether **dispensing income and costs** vary according to the **type of dispensing practice** under consideration. Other key issues include how **geographic coverage** and operational **risks** may affect the income and costs of dispensing GP practices, as well as providing some comment on **efficiencies** and **forward-looking** factors related to providing dispensing services.

The definition of "dispensing services" in this work excludes the income and costs relating to personally-administered (PA) items, as well as prescribing activities, since these are also incurred by GP practices that are not otherwise permitted to dispense to patients.

In the course of our work, we consider general medical / clinical income and costs of dispensing GP practices to reach a view on the "common" income and costs of these practices. However, it is out of the scope of this work to examine general medical / clinical income, costs or profits in any detail. Similarly, we do not seek to examine in any detail the reimbursement, costs, discounts and value added tax (VAT) of individual drugs.

Following an initial pilot survey, we were instructed to carry out the main analysis based on data gathered during 20 practice visits rather than postal/telephone survey data from a much larger sample of practices.

Our analysis is based on financial and operational information provided to us by the dispensing GP practices we have included in our sample. We have not audited this information for accuracy, although we have performed some consistency checks.

*Based on DH data.

2. Introduction

It is important to note that exercises of this type are inherently complex and require the exercise of judgement. In order to address this we have:

- Requested clarification and provided challenge on data received from practices, and validated data after practice visits where appropriate;
- Consulted the Steering Group and industry experts regularly on key aspects of this work, including the overall approach, sampling methodology, materials for practice visits and the resulting analysis; and
- Drawn on our extensive experience of implementing a similar methodology for other clients.

Structure of this report

The remainder of this report is structured as follows:

- Section 3 provides an overview of the methodological framework and overall approach adopted in conducting the analysis. This includes a description of the pilot and main surveys.
- Section 4 provides a summary of dispensing GP practice characteristics sampled within our survey and general observations from the surveys, before presenting a detailed assessment of practice income, practice costs and economic profits in relation to dispensing services and general medical / clinical services.
- Section 5 discusses the overall results and what implications these may have on future GMS contract negotiations. This includes a consideration of the sensitivity of results presented; an assessment of the FAC and LRIC methodologies; an assessment of methods for common cost apportionment; and qualitative comments made by the sampled practices.

3. Approach and methodology

3. Approach and methodology

In this section we discuss the overall approach and methodology adopted in conducting the analysis. The approach consisted of the following five main phases of work:

1. Define economic (as opposed to accounting) income and costs;
2. Determine the methodological framework for assessing income and costs;
3. Conduct the pilot survey;
4. Decide on the format of the main analysis; and
5. Conduct the main survey and validate the data.

Each of these phases are described in more detail below.

3.1 Economic income and costs

In this report, we define "overall accounting profit" as the difference between **the total operating income and total operating costs that appear within the financial accounts of practices***.

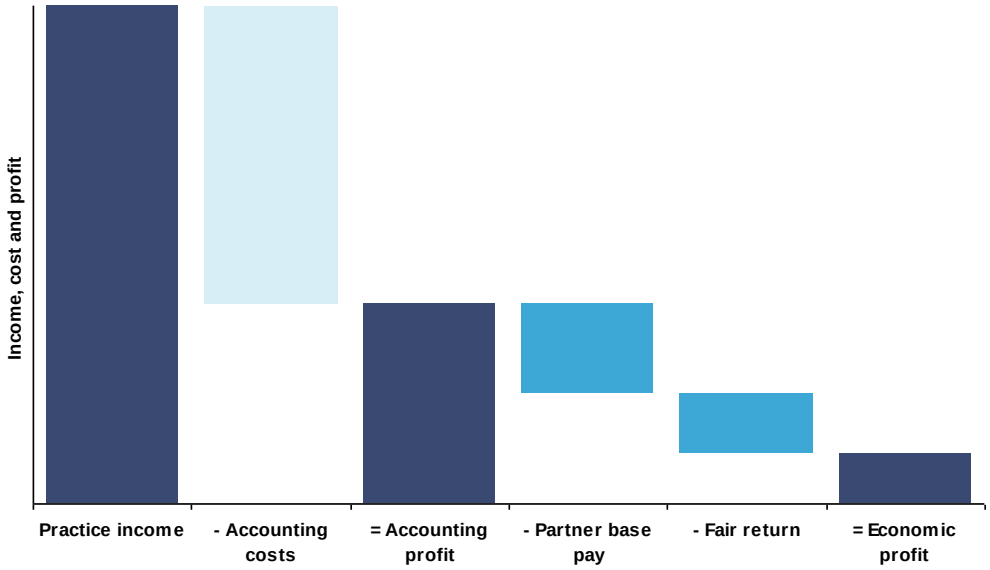
However, we believe that accounting operating costs underestimate the true economic costs of the practice. This is because it does not account for:

- The **cost of a partner's time** spent carrying out GP duties in the practice. We did not use partner's drawings as a measure of the cost of a partner as this incorporates an element of profit. Instead, we aimed to estimate partner base pay with the profit element stripped out i.e. the pay that a partner would receive if they were salaried (please see section 4.5 for more details); and
- A **fair return (or capital costs)**, which represents the minimum return that a company should earn on invested capital in order to provide sufficient returns to the investors who are financing the business.

Consequently, while we consider a practice's accounting income to be equal to economic income, we believe that economic costs are larger than accounting costs, because economic costs also include partner base pay and a fair return. This causes **economic profits to be lower than accounting profits**. The difference between accounting and economic profits is shown with illustrative data in the figure on the right.

*Including inflation to 2009/10 prices and an adjustment to strip out private dispensing income – please see section 4 for details.

Figure 5: Difference between accounting and economic profits – illustrative data



Source: PwC analysis, illustrative data

We believe that, by deducting partner base pay and a fair return, the economic profit more closely reflects the true profits of the practice than the accounting profit. Consequently, **unless otherwise specified, all estimates of profit provided within this report reflect economic profits**.

3. Approach and methodology

3.2 Methodological framework

Operating income and costs

In this section we discuss the overall framework employed to allocate income derived from, and costs incurred by, dispensing GP practices between dispensing and non-dispensing services as defined below:

- **Dispensing services**: these include dispensing and any related activities, for example managing the dispensary, drug stock management, and Dispensing Review of Use of Medicines (DRUMs).
- **Non-dispensing services:** these include all general medical / clinical and related activities, for example, seeing patients, prescribing drugs, as well as activities relating to personally administered (PA) drugs.

Our approach to allocating income and costs to each of the two services provided by dispensing GP practices is discussed below.

Income apportionment methodology

The income derived by dispensing GP practices largely consists of payments received from the Government for providing specific services. Separate payments are made for individual services, for example extended hours or minor surgery, which means that individual payments can be allocated to dispensing and non-dispensing services. Dispensing GP practices also receive certain payments to reimburse practices for costs that are 'common' to both parts of the business, for example, property reimbursement. One way to allocate these would be in line with the allocations determined for the costs which they reimburse. In addition, practices are able to identify income generated from prescribing and dispensing personally administered items as well as private services, for example, vaccinations.

Cost apportionment methodology

Financial accounts tend to group operating costs according to cost categories e.g. staff costs, property costs rather than by type of activity. The allocation of operating costs to dispensing and non-dispensing services is therefore a relatively more complex exercise than the allocation of operating income.

We considered two approaches to allocating costs:

- Fully Allocated Costs (FAC) approach; and
- Long Run Incremental Cost (LRIC) approach.

FAC approach

The FAC methodology allocates costs in proportion to various measures of output generated or resources used. In our analysis we consider the following metrics for allocating costs using an FAC approach:

- Input drivers: share of floor space, share of full-time equivalent staff
- Output drivers: share of items dispensing, share of patients
- Value drivers: revenue

LRIC approach

In regulatory matters (such as market inquiries by the competition authorities), economic costs are typically defined as the long run incremental costs (LRIC).

The LRIC of dispensing services can be calculated as the additional costs that would be required to add the dispensing services to an existing non-dispensing practice. Within LRIC long run refers to a time period over which all costs, including depreciation (and therefore assets) are variable or can be optimised to match the requirements of a business. Similarly the LRIC of the non-dispensing services is calculated as the additional costs that would be incurred in adding the non-dispensing services to an existing dispensing only business.

3. Approach and methodology
3.2 Methodological framework (cont.)

LRIC approach (cont.)

Though LRIC is an incremental concept it is generally estimated by considering avoidable costs. Effectively the incremental cost of some activity is assessed by hypothesising that the activity is no longer performed and considering what costs would be ***avoided*** (or not incurred). So the LRIC of dispensing activities can be quantified by considering which costs would no longer be incurred if a practice stopped offering all dispensing services and retained only non-dispensing activities. Similarly, non-dispensing LRIC can be quantified by considering which costs would no longer be incurred if a practice stopped offering all non-dispensing services and retained only dispensing activities.

Some proportion of costs incurred by dispensing GP practices cannot be clearly attributed incrementally to either dispensing or non-dispensing services, but support both sets of activities. These common costs can be calculated by subtracting dispensing and non-dispensing LRICs from the total costs. Although by definition common costs are not incrementally associated with dispensing or non-dispensing business, they are incurred by GP practices and need to be reflected in the fees and remuneration if the practice is to remain financially viable in the long run. Several approaches are available to determine how these common costs should be recovered from each of the activities which we discuss below.

It would be possible to carry out analysis at a more disaggregated level (by, for example, distinguishing between NHS and private dispensing related activities or even between each of the different types of dispensing drugs), however this was not relevant for the purpose of this inquiry.

Common cost apportionment methods

Choosing an appropriate method for apportioning common costs is therefore particularly important. We considered four main ways of apportioning common costs:

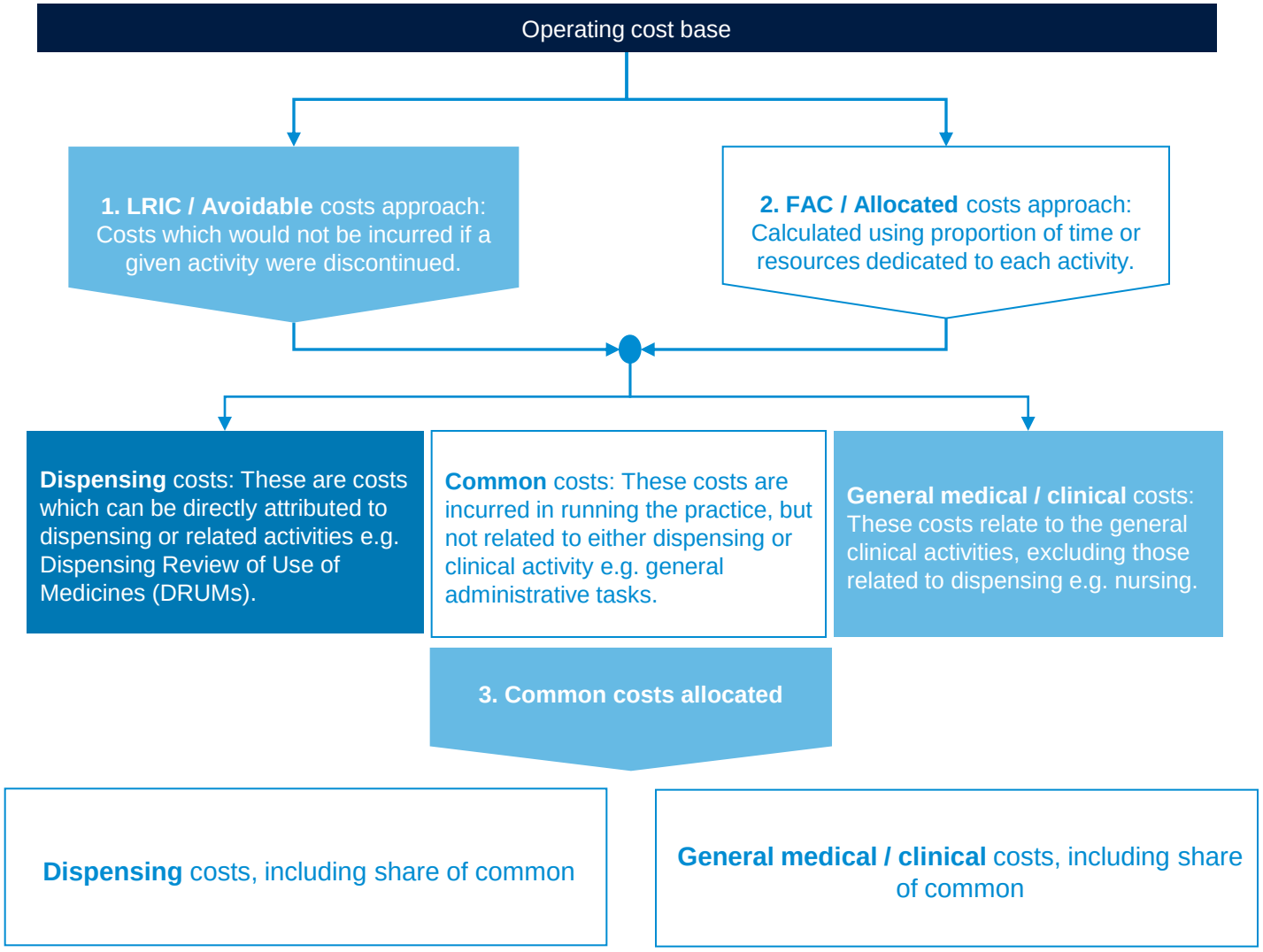
- Equi-proportional mark-up (EPMU) – this is where common costs are apportioned based on the relative size of each user's avoidable costs;
- Fully allocated costs (FAC) – where common costs are apportioned based on a measure of output generated or resources used e.g. in line with floor space or share of staff;
- Standalone costs – this approach would allocate all common costs to either dispensing activities or general medical / clinical activities; and
- Ramsey pricing – common costs are apportioned so as to minimise the impact on the volume of products and services demanded, based on the relative price sensitivity of different types of consumers. However, we did not include this method of common cost apportionment in our analysis since it would be very difficult to apply to primary health markets, where the users of the services (i.e. patients) do not face an explicit price for consuming these services.

The following diagram provides an illustration of the FAC and LRIC approaches to allocating costs to dispensing and non-dispensing services.

3. Approach and methodology

3.2 Methodological framework (cont.)

Figure 6: Cost apportionment methods



3. Approach and methodology
3.2 Methodological framework (cont.)

Fair returns analysis

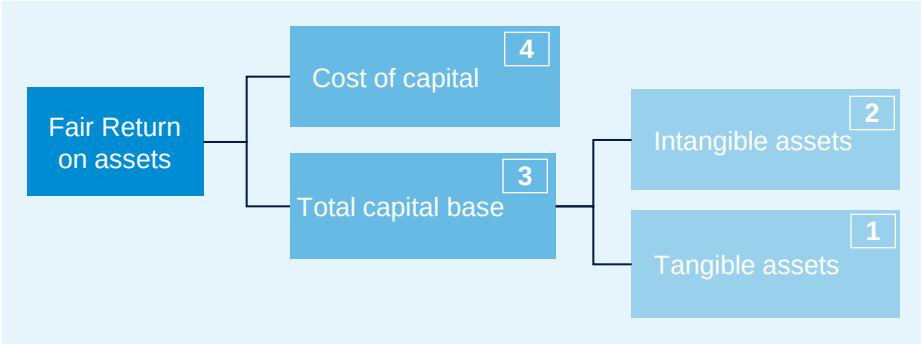
In this section we provide an overview of the overall approach to assessing the fair return for dispensing practices.

As outlined in section 3.1, the fair return represents the minimum return that a company should earn on invested capital in order to provide sufficient returns to the investors who are financing the business. This return is required to compensate investors for the inherent risks of the business in which they are investing. Our approach to assessing the level of "fair return" for dispensing GP practices can be summarised as follows:

1. We estimate an average tangible asset base for the typical dispensing practice.
2. To this we add an estimate of the intangible asset base. This estimated value of intangible assets is found using a variety of top-down and bottom-up methods.
3. The sum of tangible and intangible asset base is equal to the total asset base for an average dispensing practice.
4. This is then used to calculate a fair return by applying the weighted average cost of capital to the total asset base.

This is illustrated in the figure below.

Figure 7: Estimating the fair return on assets



Each of the key components to the fair return calculation are discussed below:

1. **Tangible assets:** These are the physical assets of a business. There are a number of tangible assets that are likely to be employed by most dispensing practices across England including:
   - Fixtures and fittings e.g. clinical equipment, shelving, furniture;
   - IT assets e.g. computers and software; and
   - Stock e.g. drugs held for the dispensary.

Tangible asset values can be found in the statutory accounts of dispensing practices but these do not necessarily represent their true economic values. There is extensive precedent* to suggest that these accounting values should be adjusted so that they represent true economic values.

We therefore estimated the true economic values by reference to current market values or replacement value of such assets.** The asset value on the balance sheet should therefore be replaced with the net replacement value or modern equivalent asset value.

*For example: "The supply of banking services by clearing banks to small and medium-sized enterprises: A report on the supply of banking services by clearing banks to small and medium-sized enterprises within the UK", Competition Commission (14 March 2002); and "Home credit market investigation", Competition Commission, (30 November 2006).

**The net replacement cost/modern equivalent asset value ("MEA") is the lowest cost of replacing the asset, assuming current requirements and the optimal configuration of assets, such that the same level of goods or services is produced. The justification for using this as the proxy for the asset base on which a dispensing practice would be able to earn a return in a competitive market is that a new entrant would, in theory, be able to enter a market (without entry barriers) at the lowest cost of replacing the asset.

3. Approach and methodology
3.2 Methodological framework (cont.)

2. **Intangible assets**: Intangible assets employed by businesses include brand, customer loyalty, intellectual property, and the human capital of staff. The value of intangible assets can be inferred from the difference between the total value of a business (or the purchase price in a transaction) and the fair market value of the business or the price paid for the acquired tangible assets. The recognition of, and valuation of, intangible assets is accepted practice under accounting standards, and the existence of intangible assets has been accepted by regulators. For example, the Competition Commission recognised in the Small and Medium Sized (SME) banking enquiry and in its review of mobile phone companies and supermarkets that among the adjustments that should be made to Return on Equity (RoE) before comparing to the cost of equity was an adjustment for intangible assets in the asset base. In assessing the intangible assets that may exist within dispensing practices we have applied a number of alternative approaches, including:
   - an examination of the amount paid on transactions *above* the fair market value of the acquired tangible assets involving broadly similar comparator companies in the UK and US;
   - a hypothetical comparison of the value of an established dispensing practice compared with a start-up practice; and
   - a consideration of the internally generated human capital assets of a typical dispensing practice.

3. **Fair return on assets:** The fair return on assets can be calculated by applying the weighted average cost of capital (WACC) to the sum of the tangible and intangible assets (total capital base). In calculating the WACC, we have considered comparable companies in the pharmacy, primary care and utilities sectors in order to determine the riskiness of a dispensing practice. Using these groupings allows us to consider the different operational elements of a dispensing practice's business, while taking into account its publicly funded nature.

Fair return on assets as an economic cost

It is important to note here that the "fair return", also known as the cost of capital, is a real cost to the business, with the same status as costs of goods sold and operating costs. In other words, in order for a business to be viable, it must earn a sufficient level of turnover to cover its costs of goods sold, operating costs and its cost of capital. In the context of DH funding of dispensing GP practices, what we have referred to as "fair return" is actually another cost that needs to be covered in order for the businesses to be viable.

3. Approach and methodology

3.3 Pilot survey

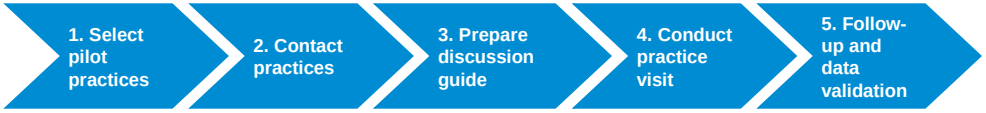
Key objectives of the pilot survey

The approach outlined in section 3.2 necessitates obtaining details on both the income derived from, and costs incurred from a representative sample of dispensing practices. Prior to carrying out the main survey of dispensing practices, we conducted a pilot survey with five practices to gain as full an understanding as possible of the operational, financial and organisational aspects of different types of dispensing GP practices, in order better to evaluate how the main survey should be carried out. In particular, during the pilot survey we aimed to:

- Gain a detailed understanding of how dispensing practices operate, by:
  - Gaining an overall understanding of the operations of different types of dispensing practices, the structure of dispensing practices' income, staffing and costs, and how these might be affected by factors such as the proportion of revenue made up by dispensing income and the relative rurality of the practice's location; and
  - Developing a qualitative understanding of the relevant issues that may affect the level of drug reimbursement and cost of drugs, including key operating risks faced by dispensing practices.
- Check the clarity and appropriateness of the survey methodology, by:
  - Presenting potential survey questions on the practices' income, cost, assets and operations, and obtaining feedback on the wording of questions and how straightforward they are to answer;
  - Discussing whether, in the view of practice owners, our proposed questions and methodology would provide a fair reflection of their income, costs and overall profits, and whether there were any missing key questions; and
  - Discussing necessary screening questions to ensure we talked to the most appropriate individual.
- Determine data availability and usefulness; specifically:
  - Understand the types of income, cost and asset information that can be obtained from practices, and what data would be very time-consuming to obtain;
  - Discuss dispensing practices' willingness and ability to provide data;
  - Gain an understanding of accounting norms and obtain examples of practice accounts; and
  - Obtain any suggestions for how to maximise the quality and accuracy of data.

Conducting the pilot survey

The pilot survey was carried out based on the following processes.



These are outlined in more detail below.

1. Select pilot practices

In order to fulfil the key objectives of the pilot survey, we aimed to select five practices that would represent a range of different types of dispensing practices. The sampling process was undertaken using data provided by National Health Application & Infrastructure Services (part of NHS Connecting for Health – we will refer to this as "NHS Connecting for Health" from this point on) and NHS Prescription Services (part of NHS BSA – we will refer to this as "NHS Prescription Services" from this point on). We considered a number of potential criteria contained in this data on which to select the five practices, and following discussions with the Steering Group, we believed that **practice list size** and the **proportion of patients that are dispensing patients** are two particularly influential factors on the operational and financial structure of a practice. Thus, we formed a random stratified sampling methodology based on these two criteria in order to select five practices that represented a range of both practice list size and proportion of dispensing patients.

Other factors we considered were the total number of items dispensed, geographical location, and degree of rurality. The first of these was well correlated with number of dispensing patients, so we did not consider it necessary to include it. Geographical location and degree of rurality were not explicitly used as sampling criteria, but our sample was cross-referenced against these measures to ensure a reasonable spread was achieved.

3. Approach and methodology
3.3 Pilot survey (cont.)

2. Contact practices

Having selected five practices, we proceeded to send these practices a sponsorship letter from the Steering Group that briefly outlined the context, objectives and process of this work. Practices were then contacted by Richard West, the Chairman of the DDA, via telephone as confirmation of the DDA's sponsorship of this study.

Following this, PwC called the practices to explain in further detail the purpose of the study, the type of information required and to arrange a suitable time to visit the practice in order to ask a series of questions. At this stage, practices were also e-mailed a pre-visit information request containing data we hoped would inform questions to be asked on the visit, including practice accounts, payroll information and stock and asset registers.

3. Prepare discussion guide

In advance of the practice visits, PwC prepared a discussion guide containing a list of questions that would help to test what data could or could not be easily obtained from the practices. This discussion guide was formulated with the help of Richard West, and approved by the Steering Group prior to being used in the pilot visits.

We also incorporated data, mainly details on income and cost from financial accounts, that practices provided us with from the pre-visit information request.

The finalised pilot discussion guide covered the following key areas:

- Key practice operational details
- Details of the practice list
- Discussion of enhanced services offered
- Key risks to operating a dispensing practice
- Discussion of the financial accounts provided
- Staff cost allocations
- Property values and floor space allocations
- Operating cost allocations
- Detailed asset replacement cost estimates and intangible asset valuation
- Discussion of owners' participation and remuneration
- Qualitative consideration of the practice's broader impact on the community

4. Conduct practice visits

PwC then visited each practice, meeting with the practice manager, often at least one partner of the practice and occasionally with a dispensing manager or dispenser as well. On average, these visits lasted three hours, during which PwC personnel asked questions from the discussion guide, clarified any responses received and provided challenge where appropriate.

Participating practices were offered a small reimbursement of £100 for their contribution to the study.

5. Follow-up and data validation

After the visits, PwC followed up with practices on any requested information that was not provided before or during the visit, for example payroll data and property measurements or allocations.

PwC then undertook a data validation process that included checking financial information provided **against the accounts provided by the practices**. We also asked any necessary clarification questions on allocations and other data provided during the visit.

3. Approach and methodology
3.3 Pilot survey (cont.)

Key learnings from the pilot survey

General observations

At each stage of the pilot survey process, we observed the following:

- The five practices selected displayed a range of characteristics, varying in list size, proportion of dispensing patients and rurality.
- Out of the five practices initially approached, only one declined to take part. Some of the practices commented that receiving the sponsorship letter, and the call from Richard West in particular, contributed significantly to their decision to participate.
- All pilot practices were able to provide a fairly detailed set of accounts in advance of the visit, separating out dispensing income and costs. This gave us confidence that we would be likely to receive financial accounts of a similar level of detail from all the practices in the main survey.
- For each visit, at least one senior staff member (usually the practice manager) or partner was present for the full duration of the visit. We noticed during the pilot visits that partners had a better overview of practice operations as a whole, while practice managers were more familiar with locating data. We therefore felt that the best arrangement was to have one partner *and* the practice manager present at each visit, an arrangement we requested where possible in the main survey.
- After the visit, all practices were happy to be contacted for follow-up questions and data queries. This was a reassuring sign that the pilot survey was well-received, and indicated that there were likely to be opportunities to follow-up on the main survey.

Data requested and received

In general, pilot practices were able to provide most of the data requested by PwC. The key learnings from the pilot survey regarding available data were:

- All practices were able to provide financial accounts that provided dispensing revenue and cost of drugs, stock value at balance sheet date and notional rent where the property is freehold. Some practice accounts also split out private dispensing revenue and cost of drugs.
- All practices were able to provide payroll data, split by staff roles. However, this often required some following up after the visit and was not always provided in a standardised format. To streamline the data collection process during the main survey, we sent out a payroll data template as part of the pre-visit information request.
- All practices were able to give staff time and practice floor space allocations based **both** on the FAC and LRIC methods. There were previously concerns that the LRIC method would be more difficult for practice partners and staff to apply due to its use of hypothetical scenarios, and also that the two methods would yield very different results. The pilot survey demonstrated that (although requiring some explanation) the LRIC method could be applied in the context of dispensing practices, and also that both methods appeared to give roughly comparable and reasonable estimates.
- In terms of data on asset values required for our fair returns analysis, two out of the five pilot practices were unable to give estimates for the replacement cost of fixtures and fittings, and none of the practices were able to provide any estimates of intangible assets. As a lesson for the main survey, we simplified our question on estimating the value of fixtures and fittings, and amended our questions on intangible assets to include a number of estimation methods (please see section 3.5 for more detail).

Results incorporating the five pilot practices can be found in Annex 1.

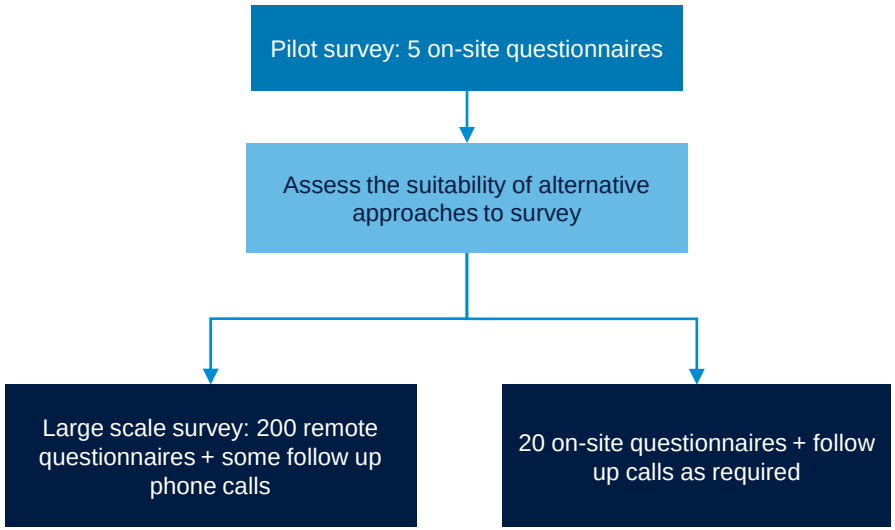
3. Approach and methodology

3.4 Assessment of survey options

At the start of the project we envisaged two alternative approaches to completing the main survey:

- **Option 1 Postal / telephone survey:** this would be based on a sample of 200 dispensing practices and would allow limited questioning; and
- **Option 2 Detailed on-site questionnaires:** this would be based on a sample of 20 dispensing practices and would enable more in-depth questioning.

Figure 8: Assessment of survey options



Our assessment of the survey options involved consideration of the following criteria:

- **Representativeness**: If the costs of practices vary significantly, either due to different organisational structures or geographic location, a larger sample may be required. Our pilot survey suggested that there are number of key characteristics which could be identified through a sample of 20, although the greater the sample size the more accurately the population would be represented.
- **In-depth analysis of cost variation and efficiencies**: A small sample size may not provide adequate data points for stratifying practices into more subgroups, or identifying and analysing outliers. On this basis, we considered a larger sample would be the preferred choice.
- **Quality assurance of responses**: A small sample would enable face-to-face meetings and greater ability to follow up and/or verify responses with individual practices.
- **Response rate and complexity of questions that can be asked**: Face-to-face or telephone contact with each practice would be more difficult for a larger sample, which is likely to reduce the response rate significantly and the complexity of questions that can be asked (e.g. current staff time allocations versus avoidability). We therefore considered a small sample to perform better on the basis of this criteria.
- **Length of time required**: We estimated that both options would take similar amounts of time.

On the 24 March 2010, the Steering Group* and PwC met to discuss the outcome of the pilot survey and our assessment of the survey options as set out above. The overall conclusion was that whilst Option 1 would provide a sample size of 200, which is sufficiently large to be statistically robust, there were some concerns that the data obtained would potentially result in less accurate results due to a lower level of detail and quality.

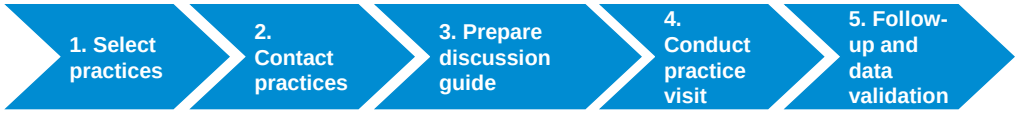
Furthermore, members of the Steering Group considered there to be little variation in income and costs amongst comparable groups of dispensing practices. Following careful consideration, the Steering Group members unanimously agreed that we should proceed with Option 2 for the purpose of completing the main survey.

* This meeting included representatives from the DH, DDA, GPC and NHS Employers. A complete list of meetings can be found in Annex 2.

3. Approach and methodology

3.5 Main survey and data validation

The main survey followed a similar process as the pilot, drawing on experience gathered in the earlier stage, and was conducted as follows:

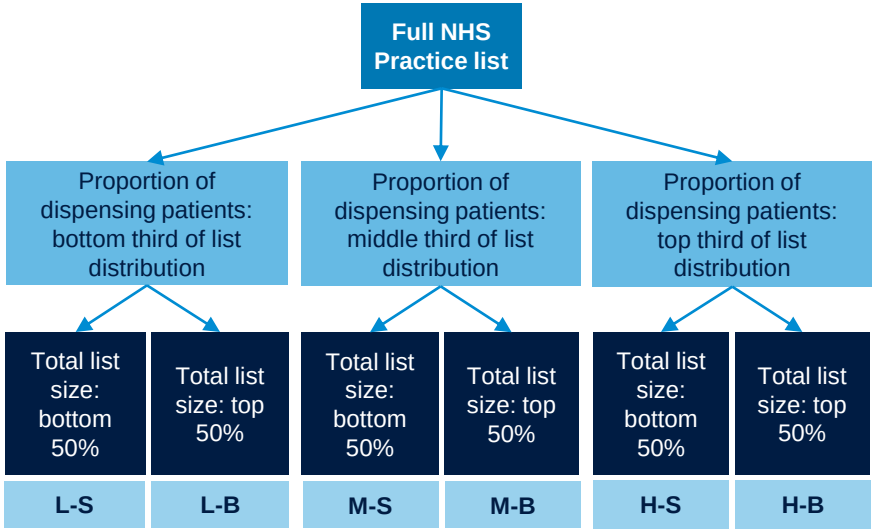


1. Select sample practices

Having determined to use a sample of 20 practices for the main survey, we used the data provided to us from NHS Connecting for Health and NHS Prescription Services to select our sample practices. To achieve this, we used a stratified random sampling technique on the basis of two criteria, similar to the pilot survey sampling: the total practice list size; and proportion of patients registered as eligible for dispensing.

The full list of dispensing practices was sorted on these metrics (first by proportion of dispensing patients and second by list size) and six strata identified as follows:

Figure 9: Stratified sampling methodology for main survey



The full sampling process is explained in further detail in Annex 3. Strata are denoted by whether they have a high (H), medium (M) or low (L) proportion of dispensing patients based on the sampling criteria, and whether they have a "big" (B) or "small" (S) list size within each third of the distribution. The table below summarises the characteristics of each stratum.

Table 3: Characteristics of sampling strata

Stratum	Range of proportion of dispensing patients	Range of list sizes*
H-B	63.0% - 100.0%	4,261 – 16,406
M-B	31.8% - 62.9%	7,536 – 22,669
L-B	0.0% - 31.7%	8,929 – 27,634
H-S	63.0% - 100.0%	711 – 4,251
M-S	31.8% - 62.9%	1,575 – 7,514
L-S	0.0% - 31.7%	1,657 – 8,894

Source: NHS Connecting for Health, NHS Prescription Services, PwC analysis

In order to account for the likelihood of some practices being unable to participate, we took an initial sample of 30 practices, five from each of the strata outlined above.

*Overlapping list size boundaries between “big" and “small" strata arise from the sampling methodology used. Proportion of dispensing patients was used as the primary stratifying criteria, and therefore differing list size distributions within the three initial strata meant that the list sizes considered in each stratum were not mutually exclusive.

3. Approach and methodology

3.5 Main survey and data validation (cont.)

2. Contact practices

Each of the 30 practices in our initial sample were sent a letter by PwC, on behalf of the DH, DDA, NHS Employers and the GPC. Upon receiving confirmation of delivery, PwC contacted the practices by telephone, and spoke to either a partner or practice manager in order to provide further information on the study. If the person contacted was willing to consider participating in the survey, an email was sent to the practice giving further details about the survey and a pre-visit information request. The latter included a request for accounts, staff payroll data and, where possible, floor space measurements. Following difficulties with collecting payroll data in a consistent format for the pilot survey, practices were sent a template to enter payroll data in advance of practice visits. Follow-up phone calls and emails were made as appropriate to clarify questions and to confirm visit details.

Although during the pilot survey the Chairman of the DDA was able to telephone the sampled practices in advance, this was not considered appropriate for the main survey as it would compromise the anonymity of the participants. However, a webcast was independently published on the DDA website to inform its members of this work.

3. Revise discussion guide

Following the results of the pilot survey, the discussion guide used during visits in the main survey was amended to reflect both learnings from the pilot survey and comments from the Steering Group. The full discussion guide is reproduced in Annex 4.

The main changes made to the discussion guide used in the main survey were as follows:

- A number of questions were added relating to the impact of the recent changes relating to income and costs;
- Questions relating to tangible assets were simplified so that only replacement estimates for overall fixtures and fittings were requested (further details on tangible assets can be found in Annex 5);
- Several questions were added to estimate intangible assets based on a number of approaches (further details on these approaches can be found in Annex 6); and
- The discussion guide was re-ordered so that more qualitative questions were grouped together and preceded by the quantitative questions. This enabled similar questions to be asked together and allowed the discussion to flow better.

The following slide gives a summary of the revised discussion guide and the information requested during the practice visits.

3. Approach and methodology

3.5 Main survey and data validation (cont.)

Section	Operational details 1	Financial accounts 2	Cost allocations 3	Fair return 4	Qualitative consideration 5
Key questions	The first part of the discussion guide asked for some qualitative details regarding the day-to-day operation of the practice and its structure. Practices were asked to confirm the **patient list size** and the **proportions of dispensing and private patients** registered with the practice. Details of **additional or enhanced services** offered were discussed, and the extent to which these services were reliant upon dispensing income, necessary for the fair returns analysis on avoidable services.	The survey then moved on to a **discussion of the financial accounts** provided by the practice prior to the visit. PwC entered operating income and costs from the accounts into a template, classifying these into broader categories that will be discussed in section 4.4 and 4.5. The practices were asked to identify any significant **changes to their costs and income** since the accounts provided. Additionally, significant **changes in the overall cost of drugs and discount**, and the impact of recent changes to dispensing fees were discussed. This was to capture any significant forward-looking impact that may need to be taken into account in the analysis.	The next section considered the **allocation of staff costs** based on both the FAC and LRIC methods, where practices provided an appropriate breakdown of staff and partner time dedicated to dispensing, general medical / clinical and common activities. This has been used to inform our staff cost allocations. A similar exercise was conducted with respect to floor space requirements, in order to inform the **allocation of property costs**, and other cost items linked to the floor space used. Finally, allocations were requested for other cost items, with a view to ascertaining an appropriate **apportionment of operating costs.**	Our analysis of **tangible asset values** required estimates of the replacement cost of practice fixtures and fittings. This was followed by consideration of **intangible assets**, requiring participants to give estimates relating to "Greenfield" scenarios and human capital allocation.	The final part of the discussion guide covered some more **qualitative considerations**, focusing on the risks associated with running a dispensing practice, how the practice's location (and relative rurality) affects its income, costs and operations, and the impact of the practice on the community in which it operates.

3. Approach and methodology

3.5 Main survey and data validation (cont.)

4. Conduct practice visits

PwC then visited each of the 20 practices, meeting with practice managers, partners and occasionally dispensing staff where they were available. These discussions lasted between two to three and a half hours, depending on the extent of required clarification and the nature of participants' responses.

As with the pilot survey, participating practices were offered a small reimbursement of £100 for their contribution to the study.

5. Follow-ups and data validation

Obtaining the practice accounts prior to each of the visits enabled us to pre-fill the discussion guides before arrival, allowing a discussion of any income or cost items which appeared anomalous or which were not easily classified.

Following the visits PwC followed-up with the practices on any missing or additional data required. Similar to the pilot survey, PwC then undertook a data validation process that included checking financial information provided **against the accounts provided by the practices**. We also asked any necessary clarification questions on allocations and other data provided during the visit.

4. Results

4. Results

In this section we discuss the overall results from the full survey. This is divided into the following sub-sections:

1. Summary of the characteristics of the final sampled practices;

2. General observations on the survey and data collection process;

3. Success rates regarding the data requested and received from the sampled practices;

4. Discussion of results and allocations of practice income;

5. Discussion of results and allocations of practice costs; and

6. Presentation of overall results.

Each of these are described in more detail below.

The results detailed in this section refer only to the 20 practices in the full survey. The results including the pilot practices are presented in Annex 1.

The results have all been inflated to average 2009/10 prices on the basis of Retail Prices Index (RPI) data sourced from the UK Office of National Statistics. We have chosen to use RPI since it is a broader measure of inflation in the economy that also includes housing costs, and is often used in setting wages across sectors. One possible refinement to this analysis may be to source and apply inflation indices that are specific to different categories of income and costs e.g. property cost inflation.

4.1 Sample characteristics

The final 20 practices selected for the sample fell into the strata outlined above as shown in the table below.

The sampled practices appear to capture a wide range of list sizes (ranging from around 1,500 to 23,000 patients), and of proportions of dispensing patients (from around 20% to 99%) . The uneven distribution of sampled practices reflects the difficulty encountered in attempting to enlist practices from some strata to take part. Particular difficulties were found with stratum L-B and L-S, in each of which only two practices from our sample were willing to participate.

Table 4: Final sampled practices by stratum

Stratum	No. of practices	Range of proportion of dispensing patients*/#	Range of list sizes**/#	No. of practices with branch surgeries
H-B	4	60% - 100%	5,500 – 11,000	3
M-B	4	40% - 50%	9,500 – 19,500	1
L-B	2	25% - 30%	12,500 – 23,000	2
H-S	5	85% - 100%	1,500 – 4,000	1
M-S	3	30% - 70%	3,500 – 7,000	1
L-S	2	20% - 25%	6,000 – 7,500	1

Sources: Practice visits, NHS Connecting for Health, NHS Prescription Services, PwC analysis

Notably, stratum L-B and L-S represent those practices with a relatively low proportion of dispensing patients, suggesting an element of self-selection among the sample; those practices for whom dispensing is a large portion of their business appear to have been more willing to participate than those for whom it is a lesser consideration.

The practices participating in stratum L-B and L-S also appear to have larger list sizes than those in other strata with a “big” and “small” list size, respectively. As practices with a lower proportion of dispensing, there may be a number of reasons that larger practices would self-select into the sample, perhaps because they have a greater degree of flexibility among their staff and are able to find time to participate, or because dispensing costs and income represent larger absolute sums than for smaller practices.

Of the 20 practices sampled, 10 operated from more than one practice site, often operating one or more smaller branch surgeries in local villages in addition to the main practice. A larger proportion of practices falling into the strata containing larger practices (H-B, M-B and L-B) have branch surgeries.

The map on the slide which follows illustrates the geographical locations of the 20 practices visited, along with the locations of the five pilot practices. We have not provided detailed locations of each practice in order to preserve their anonymity.

* These ranges may exhibit some overlap (for instance, the lower bound of stratum H-B is below the upper bound of stratum M-S) due to inconsistencies between the data provided used for sampling and the figures confirmed by the practices themselves. Where conflicts arose, we have used the data provided by the practices.

** Overlapping list size boundaries between "Big" and "Small" strata arise from the sampling methodology used. Proportion of dispensing patients was used as the primary stratifying criteria, and therefore differing list size distributions within the three initial strata meant that the list sizes considered in each stratum were not mutually exclusive.

Rounded to nearest 5%/500 patients.

4. Results

4.1 Sample characteristics (cont.)

Figure 10: Map of main survey and pilot practices

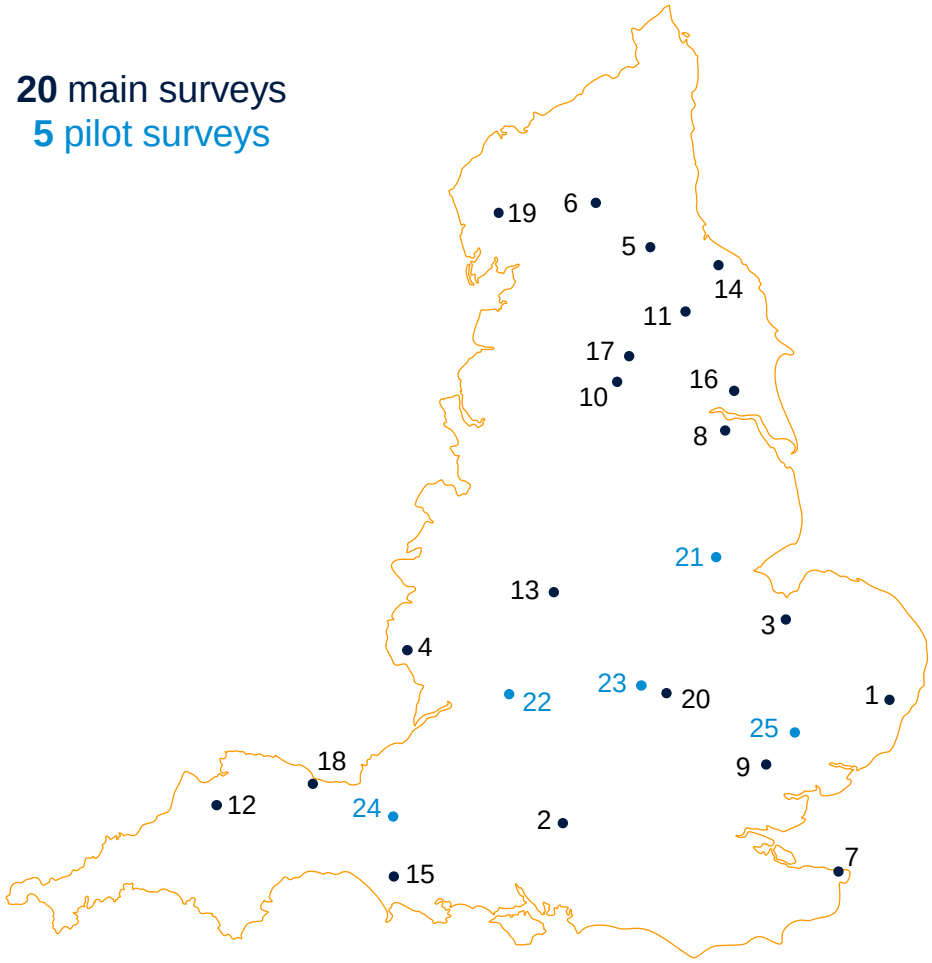
Main Survey Practices

1. H-B 1
2. H-B 3
3. H-B 4
4. H-B 6
5. M-B1
6. M-B3
7. M-B4
8. M-B5
9. L-B 5
10. L-B 8
11. H-S 1
12. H-S 3
13. H-S 5
14. H-S 7
15. H-S 8
16. M-S 7
17. M-S 8
18. M-S 9
19. L-S 4
20. L- S 24

Pilot

21. H-S P1
22. L-B P2
23. H-B P3
24. H-B P4
25. H-B P5

20 main surveys
5 pilot surveys



4. Results
4.1 Sample characteristics (cont.)

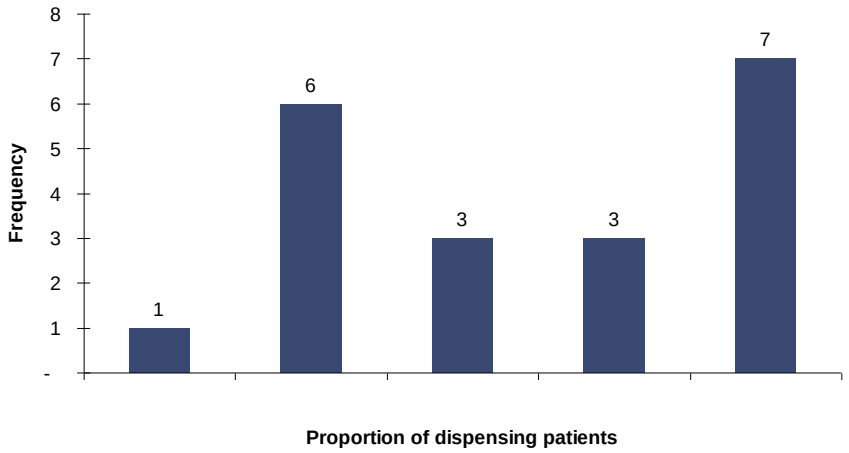
The charts to the right illustrate the sample and population distributions of dispensing patient proportion.

With a sample size of only 20 practices, we cannot hope for a perfect reproduction of the sample distribution. However, as the charts show, the overall shape of the sample distribution is reasonably similar to that of the overall population.

Key points to note are:

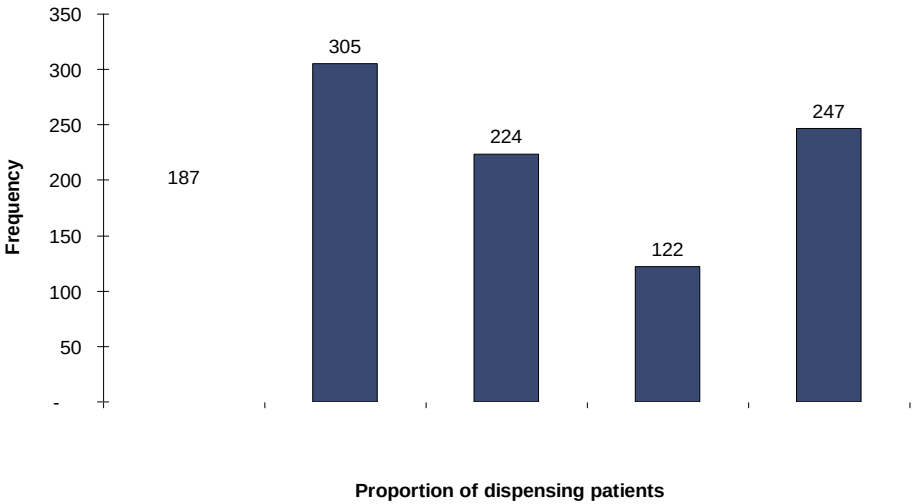
- The "double peaked" distribution shown in the population data on the lower chart shows up well in our sample of 20, with the 20-39% and 80-100% ranges clearly showing higher incidences than the other groups.
- The lowest category, 0-19%, appears to be underrepresented in our sample data. As noted on the previous slide, this is likely due to a degree of self-selection of practices to whom dispensing related cashflows constitute a greater portion of their overall costs and income.

Figure 11: Sample distribution of proportion of dispensing patients



Sources: Practice visits, NHS Connecting for Health, NHS Prescription Services, PwC analysis

Figure 12: Population distribution of proportion of dispensing patients



Sources: Practice visits, NHS Connecting for Health, NHS Prescription Services, PwC analysis

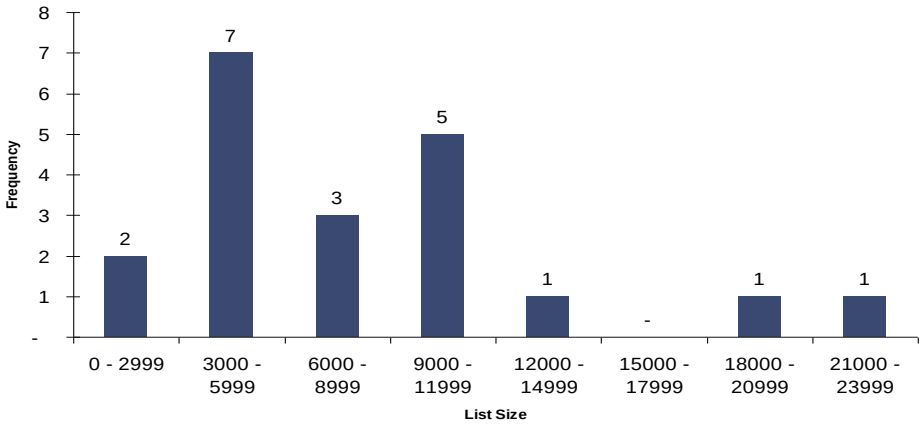
4. Results
4.1 Sample characteristics (cont.)

These charts illustrate the distribution of list size for the sample of 20 and the overall population.

Here again, our sample replicates the distribution of the population reasonably well. The positively skewed distribution is clearly identifiable, though our sample does not neglect the very large practices in the right tail.

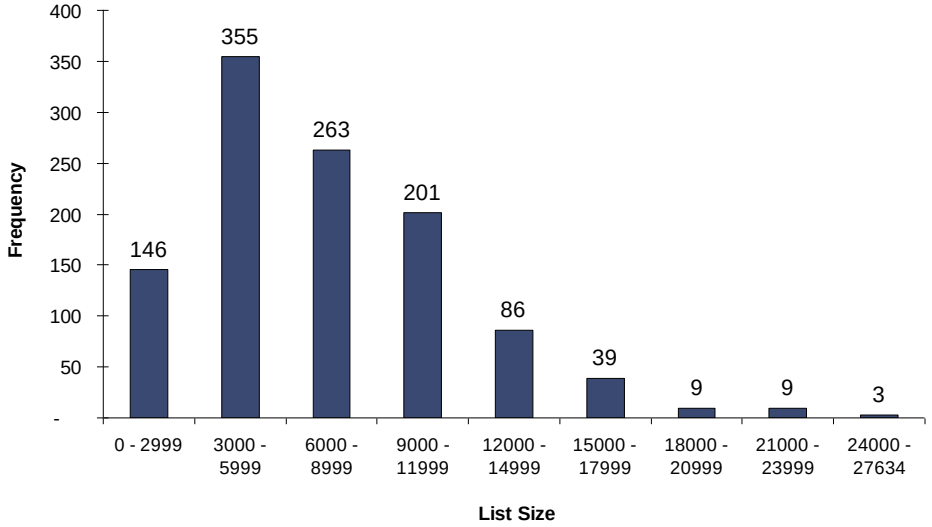
However, the sampled practices do appear to under-represent the mid-sized practices, with the 6000-8999 group appearing to be underweighted. Again, with a sample size of only 20 practices from a population of some 1,100, this is to be expected.

Figure 13: Sample distribution of list size



Sources: Practice visits, NHS Connecting for Health, NHS Prescription Services, PwC analysis

Figure 14: Population distribution of list size



Sources: Practice visits, NHS Connecting for Health, NHS Prescription Services, PwC analysis

4. Results
4.2 General observations

Participation

Of the 30 practices approached in the initial sample, and discounting one practice that had to be excluded because it was considered atypical (this practice shared a dispensary with another independent practice), the overall response rate achieved was just under 40%, a figure which is below expectations and considerably below the 80% achieved in the pilot study. We believe this may be partly due to the fact that it was not possible for the Chairman of the DDA personally to contact the practices in the main sample as he had done in the pilot.

Following the failure to achieve a full sample of 20 from the initial list of practices, the sample was extended a further three times in order to fulfil the requirement of a sample size of 20 practices. This resulted in an eventual overall success rate of 33%, having contacted a total of 60 practices.

The response rates for individual strata are given in the table below.

The response rates vary widely across the strata, as can be seen in the table on the right. Notably, the two strata with the lowest response rates are L-B and L-S, those practices whose practice list includes the lowest proportion of dispensing patients. Stratum L-S, in particular, proved very difficult to find willing participants for, giving a response rate of only 13% based on a total of 16 practices contacted. Those declining to take part were not noticeably smaller or larger than the average practice within the strata.

Table 5: Response rates by stratum

Stratum	Response rate	Total number of practices contacted
H-B	44%	9
M-B	50%	8
L-B	25%	8
H-S	63%	8
M-S	27%	11
L-S	13%	16
Overall	**33%**	**60**

Source: PwC analysis

4. Results
4.2 General observations (cont.)

Pre-visit information

All of the practices were able to provide the requested accounts information prior to the visit. All accounts had a 2009 year end with the exception of one which had a 2008 year end. Payroll data was not received for six practices in advance.

Some practices were also able to give practice dimensions in advance of the visit.

During the visit

For each visit, at least one senior staff member or partner was present for the full duration.

The visits varied in length from just over two hours to around three and a half hours.

It was valuable to meet face-to-face with staff members in order to explain the more conceptual questions in person.

Following the visit

All practices indicated their willingness to be re-contacted following the visits, and in the instances where it was necessary to do so, the vast majority were able to provide the information requested. Most were expedient in doing so.

4. Results
4.3 Data requested and received

Key	
	None of the practices in the stratum have provided this data
	Fewer than 50% of the practices in the stratum have provided this data
	Between 50 and 100% of the practices in the stratum have provided this data
	100% of the practices in the stratum have provided this data

Table 6: Key data requested and received

Key Data requested	Received from each stratum					
	H-B	M-B	L-B	H-S	M-S	L-S
Section 1: Operational details						
Details of patient list and additional services offered by the practice						
Section 2: Financial accounts						
Discussion of financial account provided and changes to costs and income						
Section 3: Cost allocations						
Estimates for the allocation of staff, property and other operating costs						
Section 4: Fair return						
Replacement cost of **fixtures and fittings** for the consideration of tangible assets						
Data for **avoidable services capitalisation** intangibles valuation method						
Data for **human capital capitalisation** intangibles valuation method						
Data for **"Greenfield" scenario** intangibles valuation method						
Section 5: Qualitative considerations						
Discussion of risks faced and the qualitative impact of dispensing practice						

Source: Practice visits, PwC analysis

4. Results

4.4 Main types of operating income

This subsection outlines the main types of operating income we analysed for each practice. These are: dispensing income (adjusted for non-NHS and personally administered (PA) items); general medical / clinical income; and income items with some common elements. These are outlined in more detail below.

Dispensing income

Overview

"Dispensing income" refers to practice income items that are wholly attributable to dispensing activities within the practice. These were taken from the financial accounts of each practice, and consist mainly of:

- Drugs reimbursement – the PPA reimbursement for the drug costs that practices have incurred*;
- Dispensing fees – a per-item fee (calculated on a sliding scale) that practices receive from the NHS for dispensing drugs and giving personally-administered items; and
- Dispensing Services Quality Scheme (DSQS) – NHS income that practices receive for meeting the criteria of DSQS, including minimum qualifications and hours of work experience per week for dispensary staff**.

1) Adjustments for personally administered (PA) items

Before undertaking analysis, the drugs reimbursement and dispensing fees from the practice accounts had to be adjusted to account for the inclusion of PA items#.

PA items consist of drugs that are prescribed and administered directly to the patient by the GP e.g. insulin injections. GP practices are reimbursed for the cost of these items as part of the drugs reimbursement, and are paid a dispensing fee on each PA item administered.

Since non-dispensing GP practices can also provide PA services, we did not consider this as specifically related to dispensing activities. Therefore, we reduced the drugs reimbursement, dispensing fees and "other" NHS dispensing income by estimates of PA income as a proportion of total income for each of these categories. These estimates were obtained mainly from asking the relevant staff in each practice. However, where the practice staff felt unable to give these estimates, we used:

- NHS data on PA reimbursement as a proportion of drugs reimbursement to adjust drugs reimbursement income; and
- Since there was no NHS data readily available for dispensing fees, we took an average of PA fees as a proportion of dispensing fees reported by other practices in the same stratum.

The estimated PA income for these categories was then added back to general medical / clinical income, since it related to medical services that all GP practices can provide.

* In very simple terms, this is calculated based on the cost of drugs that practices incur in providing dispensing and personally administered services, minus a discount set by the Department of Health. As set out in section 2, it was not in our scope of work to look at the method of calculating the drug reimbursement for individual drugs or drug categories in any detail.

**There is also a fourth category of "other" NHS dispensing income, which includes a negligible amount of dispensing-related income that is specific to a few practices and do not fall into the other dispensing income categories, for example drug resales to practice staff members.

We assume that "other" NHS dispensing income, where this is relevant, must also be adjusted in line with drugs reimbursement.

4. Results

4.4 Main types of operating income (cont.)

Dispensing income (cont.)

The table below summarises, on average for each stratum, the estimates of PA income as a proportion of drugs reimbursement and dispensing fees that we have used for adjustments. These proportions appear to be particularly high for the two practices in stratum L-S, but there otherwise does not appear to be a clear pattern in the other strata.

Table 7: PA income estimates used for adjustments (%)

	PA income, % dispensing income	PA income, % dispensing fee
H-B	7.9%	3.0%
M-B	7.4%	7.6%
L-B	3.3%	2.3%
H-S	4.7%	3.4%
M-S	4.4%	3.8%
L-S	21.1%	15.0%

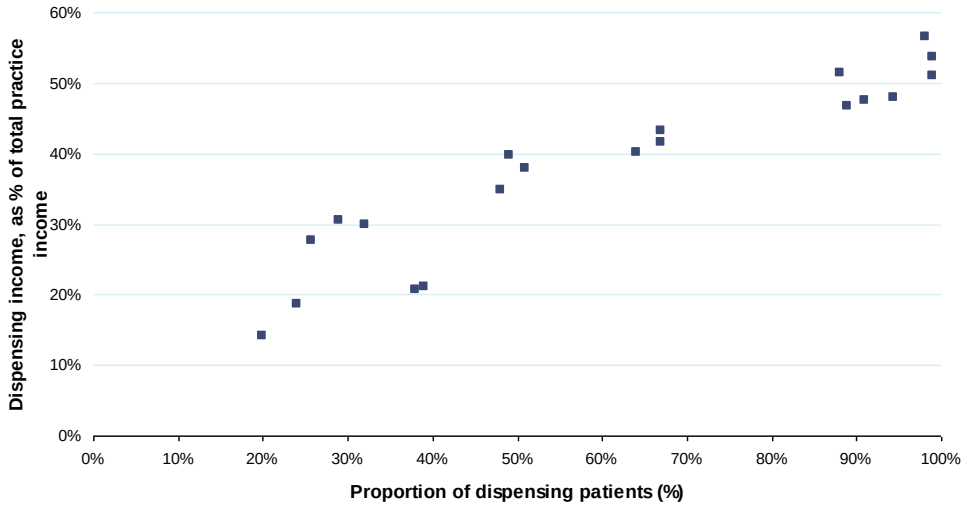
Source: Practice visits, NHS Prescription Services and PwC analysis (where practices could not give estimates)

2) Adjustment for non-NHS dispensing income

Many dispensing practices earn a very small proportion of non-NHS or private dispensing income, usually consisting of travel vaccinations or the cost of dispensing some over-the-counter items that are not covered by the NHS (e.g. Viagra). Most practices in the main survey did not split out non-NHS (i.e. private) dispensing income separately in their accounts, and reported that this is in any case a very insignificant proportion of their income, typically less than 1%. Consequently, since this amount is typically negligible and cannot be estimated with any accuracy, we do not adjust for private dispensing income in most cases. However, in a minority of practices where this small amount of private dispensing income has been split out in practice accounts, we have subtracted it from dispensing income and excluded it from the analysis.

As a sense check on the data that we have received, we looked at the relationship between the adjusted dispensing income (as a proportion of total practice income) and proportion of dispensing patients for different practices. This is illustrated in the scatter graph below. The graph demonstrates that dispensing income is positively correlated with the proportion of dispensing patients for the practices surveyed. This suggests that as dispensing becomes a more important part of the practice's operations (i.e. the proportion of dispensing patients increases), the higher is the proportion of income received from dispensing, as would be expected.

Figure 15: Relationship between dispensing income and proportion of dispensing patients



Sources: Practice accounts and visits, PwC analysis

4. Results
4.4 Main types of operating income (cont.)

General medical / clinical income

The bulk of the remaining practice income falls under the "general medical / clinical income" category. This consists of the income that practices have confirmed as specifically-related to general medical / clinical activities. While it is not in the scope of our work to examine the individual components of general medical / clinical income in any detail, it would typically include:

- Core NHS income for the practice, either the Global Sum (if under a General Medical Services (GMS) contract) or Personal Medical Services (PMS) contract income;
- Income for providing enhanced services;
- Income for the Quality and Outcomes Framework (QOF); and
- Miscellaneous income from both NHS and outside sources, including for medical reports and research – this may vary greatly between practices.

Income items with common elements

Some income items contain a component which is common i.e. a component that is not clearly related specifically to either dispensing or general medical / clinical activities. The two main income items that fall into this category are:

- Property income – this is reimbursement (usually from the local Primary Care Trust (PCT)) for the costs of practice premises, and may consist of actual rent on a leasehold property or notional* rent on a freehold property. If the income is notional rent, we assume that this has been calculated to take into account both the upkeep costs of the property and a fair return on (i.e. the capital costs of) owning on the property.
- Property income (cont.) – We make this assumption because actual rent on leasehold properties should theoretically be calculated so that the landlord would recover both the operating and capital costs of that property. Thus, if the notional rent reimbursement has been correctly calculated by PCTs as the amount that practices would have been charged if they were leasing the property, this assumption should hold.

  Given this, we further assume that property income more or less exactly offsets property costs, and so should be apportioned according to property cost allocations based on floor space, which can be apportioned between dispensing, general medical / clinical and common areas. (detailed further in section 4.5).
- Training income – this is income for training practice staff, and its purposes varies with each practice. This may include reimbursement of the cost of training courses undertaken by the practice, or grants for specific items of training. Because of its varied nature, there are some elements of training income for most practices that are intended for all staff and can thus be considered as common income.

* We are aware that some PCTs make the distinction between "notional" and "cost" rent paid to practices. Our understanding is that, based on this distinction, "notional" rent is the reimbursement of existing freehold property, whereas "cost" rent is a reimbursement of PCT purpose-built properties and includes reimbursement of the construction costs. However, for the purposes of our analysis and this report, we do not make this distinction as we consider both to be a reimbursement to practices for both the operating and capital costs incurred on freehold property. Hence, from this point onwards, "notional rent" in the context of our analysis refers to both "notional" and "cost' rent.

4. Results

4.4 Main types of operating income (cont.)

Overall allocation of operating income

The table below summarises each component of income after all adjustments as a proportion of total practice income, averaged across each strata across all sample practices. General medical / clinical income is the largest part of income for all practices, followed by drugs reimbursement.

Table 8: Components of dispensing income, as % of total practice income, by stratum*

	Drugs reimbursement	Dispensing fees	DSQS	**Total dispensing income**	**General medical / clinical income**	**Property income**	**Training income**
H-B	36%	10%	1%	47%	49%	4%	0.2%
M-B	21%	7%	0%	29%	64%	7%	1.0%
L-B	23%	5%	0%	29%	65%	6%	0.1%
H-S	38%	11%	1%	50%	46%	4%	0.7%
M-S	30%	6%	1%	37%	60%	3%	0.0%
L-S	12%	4%	0%	16%	75%	6%	2.4%

Source: Practice accounts and visits, PwC analysis for adjustments

There appears to be some variation of the proportions within each stratum, with stratum M-B showing the largest standard deviation** in drugs reimbursement (with drugs reimbursement ranging from 16% to 31%) and in general medical / clinical income (range of 56% to 72%). Despite this variation, the pattern of general medical / clinical income making up the largest part of income, followed by drugs reimbursement, appears to hold for all practices except for two in stratum H-S (where drugs reimbursement is marginally higher than general medical / clinical income).

These splits in operating income are very similar to the same splits that include the five pilot practices in the stratum averages. Please refer to Annex 1 for more details on the results including the pilot practices.

* Results may not sum to exactly 100% due to rounding. “Total dispensing income” is the sum of the first three columns.

**The sample standard deviation is a measure of dispersion around the mean for a sample of data. It is calculated as the square root of the squared deviations from the mean, divided by one less the number of observations in the sample.

4. Results

4.4 Main types of operating income (cont.)

Overall allocation of operating income

The graphs on the right summarise dispensing, general medical / clinical and common income as a proportion of total practice income, averaged across each stratum across all sample practices. Total income amounts are indicated at the top of the bars.

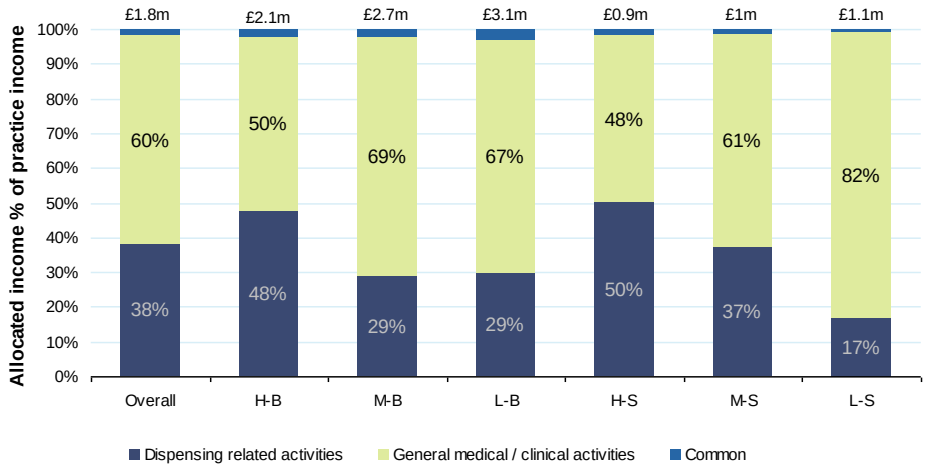
There is a slightly different allocation of income using the FAC and LRIC methods due to the differing allocations under each method for property income.

Overall, and for strata with low to medium proportions of dispensing patients (strata M-B, L-B, M-S and L-S), the majority of practice income is derived from general medical / clinical activities. This is particularly the case for stratum L-S, which obtains on average over 80% of practice income from general medical / clinical activities. However, for practices with a high proportion of dispensing, the percentage of income that is derived from dispensing activities rises to about half.

The degree to which these allocations vary within each stratum appears to differ. While M-B shows the highest standard deviation, all practices within this stratum derive the majority of practice income from general medical / clinical activities. Conversely, practices in strata H-B and H-S vary around an even split, with some deriving over half of income from dispensing and some under half. Despite the variation, the pattern of practices with a high proportion of dispensing deriving more of their income from dispensing activities still holds across the practices.

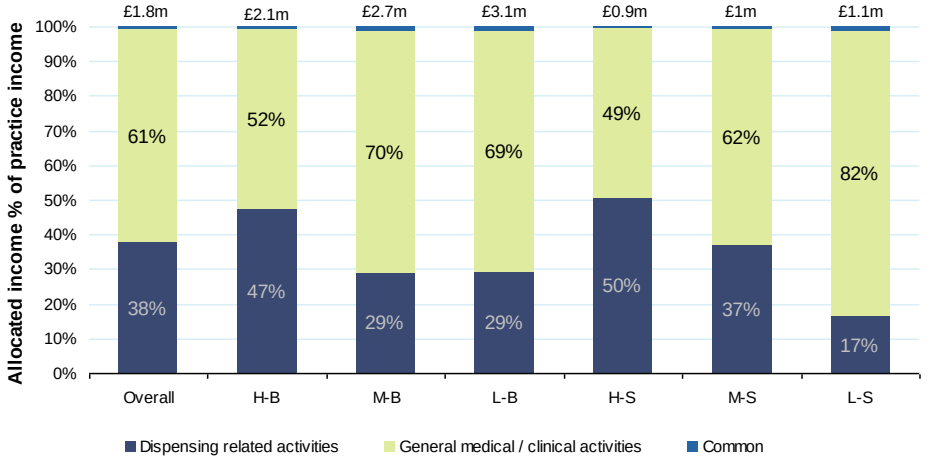
These allocations are very similar for the results that include the five pilot practices in the stratum averages. The one exception to this is stratum L-B, which contains an outlying pilot practice that has a large list size but only dispenses in one very small branch surgery (out of three branch surgeries), causing dispensing income to appear small as a proportion of total income. Please refer to Annex 1 for more details on the results including the pilot practices.

Figure 16: Main types of operating income – FAC allocation



Sources: Practice visits, PwC analysis

Figure 17: Main types of operating income – LRIC allocation



Sources: Practice visits, PwC analysis

4. Results

4.5 Treatment of different operating cost types

Overview

This section will look at the operating costs incurred by the practices sampled. Practice operating costs have been categorised into seven groups for the purposes of this analysis: **drug costs, staff costs, property costs, training costs, depreciation, miscellaneous general medical / clinical costs** and **other operating costs.** The costs which fall into each of these categories and their allocations will be explained in further detail in the sections which follow.

The table below outlines the breakdown of cost categories as a proportion of total practice operating costs.

Table 9: Operating costs by type, as % of total practice operating costs, by stratum*

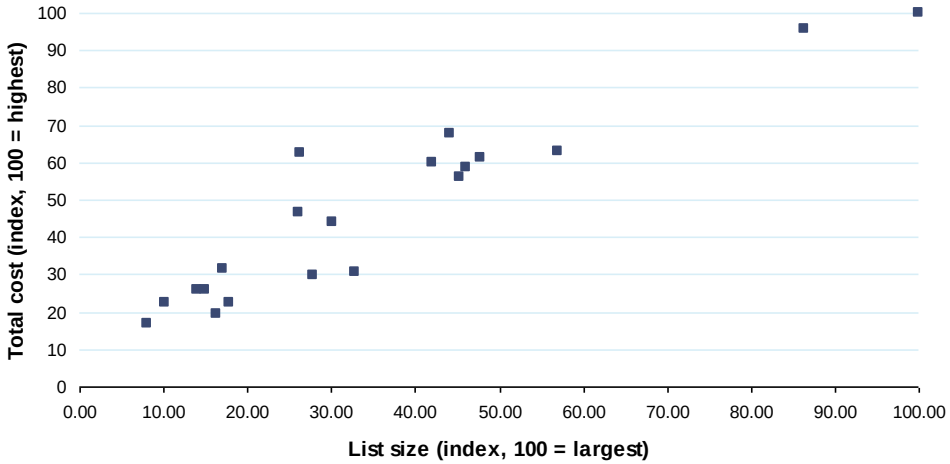
	Drug costs	Staff costs	Property costs	Training Costs	Depreciation	Miscellaneous general medical / clinical costs	Other operating costs
H-B	35.2%	49.6%	6.9%	0.2%	0.6%	3.2%	4.4%
M-B	21.3%	59.5%	8.6%	0.2%	0.6%	4.3%	5.6%
L-B	21.0%	59.9%	7.8%	0.1%	0.6%	3.9%	6.7%
H-S	38.2%	47.3%	5.5%	0.2%	0.6%	3.0%	5.3%
M-S	27.4%	55.8%	4.4%	0.2%	0.6%	2.5%	9.2%
L-S	15.3%	66.7%	7.7%	0.2%	0.6%	2.4%	7.1%

Source: Practice visits, PwC analysis

* Results may not sum to exactly 100% due to rounding

The following chart shows total practice costs plotted against total list size. This provides a useful illustration; we would anticipate total costs to be positively correlated with list size due to the higher costs associated with dealing with a larger number of patients. This correlation is clearly observable.

Figure 18: Total practice operating cost vs. practice list size



Source: Practice accounts, NHS Connecting for Health, PwC analysis

4. Results

4.5 Treatment of different operating cost types (cont.)

Drug costs

One of the largest cost items in dispensing practices' accounts relates to the cost of drugs dispensed. For the sampled practices, this cost contributed between 13% and 45% of overall operating costs.

This cost is driven largely by the volume of drugs prescribed and, as expected, is a larger proportion of costs for practices for whom dispensing patients constitute a large proportion of the practice list. It is also dependent upon the discounts that practices are able to negotiate with drug manufacturers and wholesalers.

Most practices listed cost of drugs sold in the accounts provided. However, in order to come to comparable figures it was necessary to make some adjustments to these figures. Having made these adjustments, we have allocated the remaining value fully to the dispensing cost increment.

1) Adjustment for private dispensing

We have been careful to exclude costs relating to privately dispensed drugs, including Viagra and travel vaccines. In many cases, practices which dispensed significant quantities of medications privately separated this cost out from NHS cost of drugs in their accounts, allowing us to exclude it. When this was not the case, practices were asked during the visits to give an estimate of the proportion of drug costs which could be attributed to private dispensing. In most cases this was negligible, and where it was not the appropriate cost line in the accounts has been adjusted to exclude the relevant portion.

2) Adjustment for PA items

Similarly, PA items can be provided by both dispensing and non-dispensing GPs, and thus should not be considered as dispensing-specific cost of drugs. To account for this, we asked each of the practices to provide an estimate of the proportion of their drug cost which relates to PA items. Most were able to provide this information. Where they were not, they confirmed that it would be possible to use the proportion of drug income relating to PA items as an appropriate proxy for PA costs. Given this, we have used the data from the NHS Prescription Services and NHS BSA, which gives a breakdown of practice drug reimbursement into PA and non-PA items.

Having ascertained the appropriate proportion of drug costs associated with PA items, this sum was removed from the total cost of drugs line, and categorised as general medical / clinical cost of good sold.

The table below shows the proportion of total costs associated with dispensing drug costs, and as a normalised figure per dispensing patient. The analysis gives a figure in the region of £100 per patient, per annum. As anticipated, drug costs as a percentage of total practice costs is higher for the more dispensing-intensive practices (strata H-B and H-S).

There is some variation within each stratum (for strata M-B in particular, the percentage of drug costs ranges from 13% to 28%), which may reflect differing abilities to negotiate discounts, whether based on greater bulk purchases or the availability of alternative suppliers. However, the general pattern of higher percentages of drug costs for more dispensing-intensive practices still holds.

These allocations are very similar for the results that include the five pilot practices in the stratum averages except for stratum L-B, which contains an outlying pilot practice that has a large list size but only dispenses in one very small branch surgery. Please refer to Annex 1 for more details on the results including the pilot practices.

Table 10: Drugs costs, as % of total practice operating costs and per dispensing patient, by stratum

	Drug costs % of total practice costs	Drug costs per dispensing patient (£)
H-B	35%	109
M-B	21%	87
L-B	21%	116
H-S	38%	112
M-S	27%	107
L-S	15%	100

Source: Practice visits, NHS Prescription Services (for some PA adjustments), PwC analysis

4. Results

4.5 Treatment of different operating cost types (cont.)

Staff costs

In this section we discuss the following:

- Overall approach to analysing staff pay;
- Methodology behind estimating allocations for staff costs; and
- Other typical staff-related cost items included in this analysis.

Analysis of staff pay

The majority of staff costs included in this analysis is comprised of annual gross staff pay, which would include any overtime pay and bonuses, as well as pensions and National Insurance contributions.

We analysed staff costs by job role because we expect that the allocation of costs will vary considerably across staff groups. In consultation with the Steering Group (particularly Richard West, Chairman of the DDA) and having tested the staff allocation methodology in the pilot survey, we analysed staff costs by the following key staff roles:

- Partners;
- Salaried GPs and trainee doctors;
- Dispensers and dispensing assistants;
- Pharmacists;
- Nurse and nurse assistants;
- Practice and business managers;
- Secretaries;
- Receptionists;
- Information technology staff;
- Drivers; and
- Cleaners and any other staff roles.

Based on a template that was sent as part of the pre-visit information request, practices provided PwC with annual gross staff pay for (anonymised) staff members under each of the key staff roles listed.

We considered partner pay separately. We did not use partner's drawings as a measure of the cost of a partner as this incorporates an element of profit and would thus be a measure of profit earned rather than the cost of a partner. Consequently, we aimed to estimate partner base pay with the profit element stripped out i.e. the pay that a partner would receive if they were salaried.

We based our estimate on data from the 2007/08 GP Earnings and Expenses Enquiry and 2006/07 GP Workload Survey, where we scaled up average annual pay for GPMS salaried GP in rural practices (£52,573) by the extra proportion of hours per week that the average partner worked (38.2 hours per week) compared with the average salaried GP (23.8 hours per week) to give an estimate of £84,382.

We understand that this is a very rough estimate of the pay a partner would receive if they were salaried, as this does not also factor in their greater experience, seniority and responsibilities for running the practice. However, these other factors are very difficult to quantify, so we believe the estimate we are using for the purposes of this analysis is a reasonable (if slightly conservative) one given available data.

We have looked at the distribution of salaried GP pay in the EEQ data, which suggests that on average GPMS salaried GP pay peaks at ages 50-59 (where the average gross income is £60,539), and that only about 8% of salaried GPMS GPs earn more than £80,000. This suggests that our estimate of £84,382 for a partner's base pay should capture the higher end of the GP salary distribution. Nonetheless, we have undertaken some analysis on the sensitivity of the results to this estimate (please see section 5.1 for further details).

The base pay estimate of £84,382 is assumed for the partners of all sample practices, roughly in proportion to the drawings of each partner (to take into account any partners who obviously work part-time)*. The estimated total partner base pay is then added as adjustment to staff costs in the practice accounts.

* For practices where some partners have drawings that are significantly less than others in the practice and we have not been explicitly advised on the number of full-time partners, we take each of these partners' drawings as a proportion of the average drawings of other partners whom we think are full-time in the practice. We are aware that some partners may have significantly lower drawings due to owning a much smaller equity stake in the practice. However, we think this is less likely than the case where the partner works part-time, and that this method of adjustment is a reasonable one.

4. Results

4.5 Treatment of different operating cost types (cont.)

Staff costs (cont.)

We have also included some small staff-related costs in this analysis, typically including:

- Staff uniforms;
- Staff entertainment or welfare budgets;
- Recruitment fees; and
- Any small sundry staff-related costs.

We have included these costs in our staff cost analysis because we assume that these staff-related costs would vary more or less directly with the levels of staffing in the practice. Thus, we believe that a reasonable method of apportioning these costs would be to do so in line with staff time allocations.

We have not included training costs in this stage of the analysis. The treatment of training spend is discussed later on in this section.

Methodology for estimating staff cost allocations

Based on the key staff roles listed above, we then asked partners and practice staff during the practice visits for estimates of staff time allocations in order to apportion staff costs. We asked for allocations based on the:

- FAC method – under this method, we asked practices for the percentages of staff hours **currently** spent on each of dispensing, general medical / clinical and common activities for each staff role.
- LRIC method – under this method, we asked practices for the percentages of staff time for each staff role that could hypothetically be avoided in the absence of: 1) dispensing activities; and 2) general medical / clinical activities. For example, in the absence of dispensing activities, many practices reported that they could avoid all (i.e. 100%) of the time that dispensers work at the practice. Similarly, in the absence of general medical / clinical activities (where, hypothetically, the practice becomes a small independent dispensary or pharmacy), many practices reported that they could avoid 100% of salaried GPs' time. The residual amount of each staff role's time that cannot be avoided in either case becomes the staff time allocation to "common" activities.

One particular point that has been made by many practices is that, while GP partners are more or less fully avoidable in the absence of general medical / clinical activities, they would be replaced by a pharmacist. This in effect means that, even without general medical / clinical activities, the practice would not be able to totally "save" the time (and hence the salary costs) of partner GPs – they would have to employ a pharmacist instead. The proportion of GP partner costs that are unavoidable in this case is thus the ratio of the average pay for a pharmacist to the salary cost for a partner.

Where practices identified particular staff members with duties and time allocations that differed from the norm in the practice for their staff role, we have considered these individuals separately. However, in general we have not sought to analyse each individual staff member's time allocations in great detail, since this would have been an onerous time burden on the practices surveyed.

The table below summarises the cost for each main staff role as a proportion of total staff payroll cost, and the FAC and LRIC allocations for these, by stratum.

Please note that for the "Pharmacists, dispensers, dispensing assistants and drivers" staff role category, staff time allocations to dispensing activities may be less than 100%. This is likely to be because dispensers and dispensing assistants in some practices also undertake general medical / clinical roles and practice administration tasks. For example in stratum M-B, where the dispensing allocation is 71.4% under the FAC approach, there are two practices where dispensing staff also undertake general medical / clinical tasks such as dealing with repeat prescriptions (which staff in a non-dispensing GP practice may also do) and handling practice administration.

4. Results
4.5 Treatment of different operating cost types (cont.)

Staff costs (cont.)

Table 11: Staff pay as a % of total payroll, staff cost FAC and LRIC allocations (%), by stratum

	Staff pay as % of total payroll	FAC allocations			LRIC allocations		
		Dispensing	General medical / clinical	Common	Dispensing	General medical / clinical	Common
Stratum H-B							
Partners	**46.7%**	3.9%	86.1%	10.0%	0.2%	77.0%	22.8%
Salaried GPs, locums and trainee doctors	**9.4%**	2.0%	95.5%	2.5%	0.0%	91.9%	8.1%
Pharmacists, dispensers, dispensing assistants and drivers	**15.7%**	98.5%	0.0%	1.5%	100.0%	0.0%	0.0%
Nurses and nursing assistants	**9.0%**	0.6%	96.9%	2.5%	0.0%	99.4%	0.6%
Practice and business managers	**5.8%**	13.5%	12.5%	74.0%	7.5%	65.0%	27.5%
Secretaries, receptionists and IT staff	**12.6%**	11.2%	69.0%	19.8%	4.9%	92.6%	2.5%
Cleaners and others	**0.9%**	6.8%	27.6%	65.6%	6.3%	65.5%	28.3%
Stratum M-B							
Partners	**43.5%**	4.1%	85.6%	10.3%	3.6%	86.5%	9.9%
Salaried GPs, locums and trainee doctors	**14.0%**	1.3%	95.0%	3.8%	0.0%	92.7%	7.3%
Pharmacists, dispensers, dispensing assistants and drivers	**7.6%**	71.4%	12.5%	16.1%	61.2%	10.0%	28.8%
Nurses and nursing assistants	**11.9%**	0.0%	92.6%	7.4%	0.0%	100.0%	0.0%
Practice and business managers	**7.7%**	17.8%	0.0%	82.2%	18.4%	67.4%	14.3%
Secretaries, receptionists and IT staff	**13.1%**	0.2%	50.0%	49.8%	0.2%	82.0%	17.8%
Cleaners and others	**2.2%**	6.0%	63.1%	30.8%	1.8%	68.2%	30.0%
Stratum L-B							
Partners	**34.1%**	2.4%	94.7%	2.9%	0.0%	90.3%	9.7%
Salaried GPs, locums and trainee doctors	**22.8%**	0.5%	99.0%	0.5%	0.0%	94.0%	6.0%
Pharmacists, dispensers, dispensing assistants and drivers	**6.3%**	100.0%	0.0%	0.0%	98.8%	1.2%	0.0%
Nurses and nursing assistants	**12.2%**	2.8%	96.7%	0.5%	2.3%	97.7%	0.0%
Practice and business managers	**5.5%**	9.3%	39.7%	51.0%	5.6%	89.6%	4.9%
Secretaries, receptionists and IT staff	**17.9%**	5.1%	76.9%	18.0%	3.3%	96.7%	0.0%
Cleaners and others	**1.1%**	6.0%	49.2%	44.8%	6.0%	56.2%	37.8%

* Results may not sum to exactly 100% due to rounding

4. Results

4.5 Treatment of different operating cost types (cont.)

Staff costs (cont.)

Table 11: Staff pay as a % of total payroll, staff cost FAC and LRIC allocations (%), by stratum (cont.)

	Staff pay as % of total payroll	FAC allocations			LRIC allocations		
		Dispensing	General medical / clinical	Common	Dispensing	General medical / clinical	Common
Stratum H-S							
Partners	**46.2%**	5.0%	84.0%	11.0%	1.0%	81.8%	17.2%
Salaried GPs, locums and trainee doctors	**7.0%**	0.0%	98.8%	1.3%	0.0%	100.0%	0.0%
Pharmacists, dispensers, dispensing assistants and drivers	**12.4%**	92.9%	0.0%	7.1%	85.8%	0.0%	14.2%
Nurses and nursing assistants	**13.0%**	3.0%	83.5%	13.5%	0.0%	99.0%	1.0%
Practice and business managers	**8.5%**	18.8%	17.5%	63.8%	1.3%	63.8%	35.0%
Secretaries, receptionists and IT staff	**11.3%**	12.2%	38.1%	49.7%	6.2%	87.5%	6.3%
Cleaners and others	**1.7%**	10.5%	31.0%	58.5%	5.4%	64.6%	30.1%
Stratum M-S							
Partners	**48.8%**	2.8%	94.3%	2.8%	0.7%	92.2%	7.1%
Salaried GPs, locums and trainee doctors	**13.2%**	0.0%	75.4%	24.6%	0.0%	100.0%	0.0%
Pharmacists, dispensers, dispensing assistants and drivers	**8.7%**	81.1%	14.0%	5.0%	75.8%	5.7%	18.5%
Nurses and nursing assistants	**9.5%**	0.0%	98.9%	1.1%	0.0%	100.0%	0.0%
Practice and business managers	**6.2%**	9.0%	15.8%	75.2%	3.3%	60.0%	36.7%
Secretaries, receptionists and IT staff	**11.9%**	8.5%	32.2%	59.3%	8.7%	49.0%	42.4%
Cleaners and others	**1.6%**	0.0%	5.0%	95.0%	0.0%	9.5%	90.5%
Stratum L-S							
Partners	**51.9%**	3.8%	93.0%	3.2%	0.0%	94.1%	5.9%
Salaried GPs, locums and trainee doctors	**11.6%**	0.0%	100.0%	0.0%	0.0%	100.0%	0.0%
Pharmacists, dispensers, dispensing assistants and drivers	**4.6%**	100.0%	0.0%	0.0%	90.0%	10.0%	0.0%
Nurses and nursing assistants	**9.0%**	0.0%	100.0%	0.0%	0.0%	100.0%	0.0%
Practice and business managers	**7.4%**	6.5%	14.3%	79.3%	5.0%	80.0%	15.0%
Secretaries, receptionists and IT staff	**14.7%**	4.1%	95.9%	0.0%	1.9%	98.1%	0.0%
Cleaners and others	**0.7%**	8.0%	79.1%	12.9%	2.2%	82.1%	15.6%

* Results may not sum to exactly 100% due to rounding

4. Results

4.5 Treatment of different operating cost types (cont.)

Staff costs (cont.)

By weighting the allocations for each staff role by their pay as a proportion of the total payroll, we arrive at overall staff cost allocations for each practice that we then use to apportion the staff cost items discussed above. The graphs on the right summarise the average percentage allocations for staff costs by stratum under each allocation method.

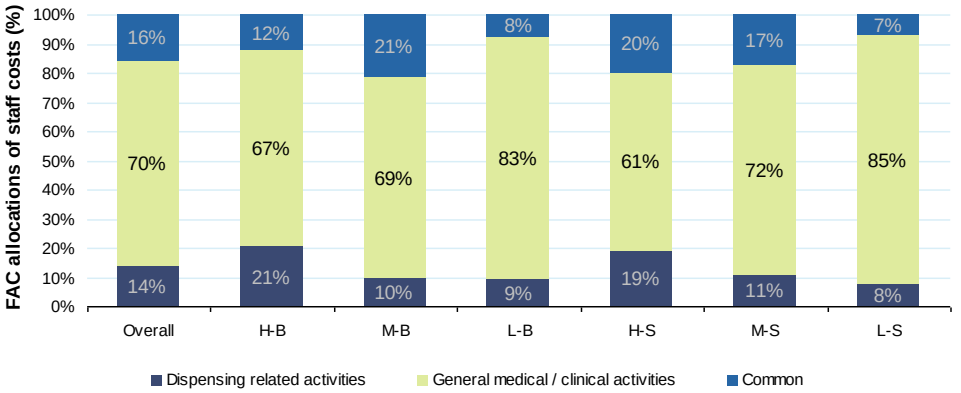
The majority of staff costs are allocated to general medical / clinical activities under both allocation methods, with the highest proportion going to dispensing-related activities for practices with a high proportion of dispensing patients (strata H-B and H-S), as would be expected.

The LRIC method seems to produce consistently lower allocations to dispensing. This is likely to be because the time currently spent by some staff roles such as partners and practice managers would not be avoided in the absence of dispensing-related activities – it would merely be filled by general medical / clinical-related tasks. Thus, the amount of staff time that is avoidable in the absence of dispensing is likely to be less than the current amount of time spent on dispensing-related activities.

As may be expected, there is some variation in staffing levels within stratum, reflecting the organisation of individual practices – in particular, stratum H-B contains one practice with a particularly high staff allocation to dispensing-related activities (32%), reflecting a higher-than-average number of dispensing assistants. However, even stripped of this practice, the pattern of noticeably higher staff allocations in practices with a higher proportion of dispensing patients remains unchanged.

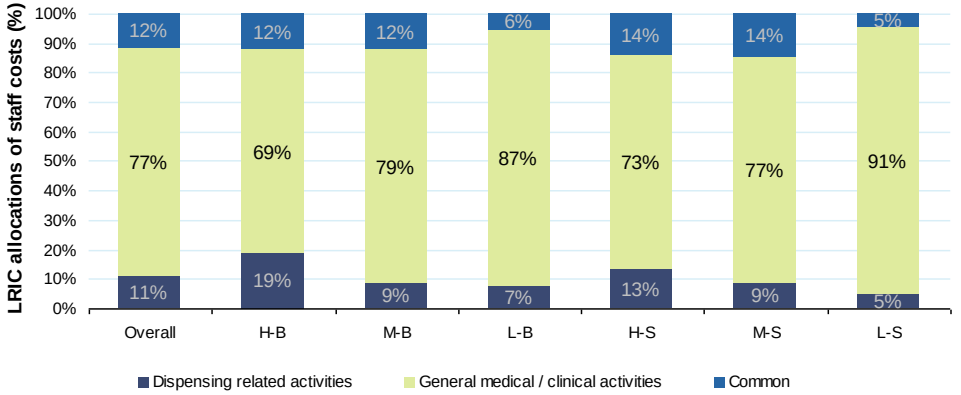
These staff allocations are fairly similar to those that include the five pilot practices in the stratum averages. Please refer to Annex 1 for more details on the results including the pilot practices.

Figure 19: Staff cost allocations, FAC approach



Sources: Practice visits, PwC analysis

Figure 20: Staff cost allocations, LRIC approach



Sources: Practice visits, PwC analysis

4. Results
4.5 Treatment of different operating cost types (cont.)

Property costs

Property costs typically represent the largest individual overhead cost item after staff and drug costs, accounting for between 4.0% and 10.2% of total operating costs. Costs in this category fall into three subcategories as detailed in the following table:

Table 12: Components of property costs, as % of total property costs*

	Actual or notional rent	Rates and water	Utilities, including heating and lighting
H-B	64.6%	18.3%	17.1%
M-B	72.0%	17.9%	10.1%
L-B	67.5%	9.9%	22.6%
H-S	64.8%	20.7%	14.5%
M-S	68.8%	14.9%	16.3%
L-S	65.8%	20.2%	14.1%

Source: Practice accounts and visits, PwC analysis

The allocation of these costs has been achieved through discussions with practices to ascertain the usage of property floor space.

- For the FAC allocations, practices were asked to give **existing** floor space measurements for the practice and any branch surgeries. We asked for them to separate this total area into dispensing, general medical / clinical and common areas based on the existing proportion of the practice area dedicated to each activity. Typically, space allocated to the dispensing increment consisted of the dispensary and any additional stock rooms. Consultation and treatment rooms fell into the general medical / clinical increment and corridors, administrative offices, waiting and reception areas were considered to be common.
- For LRIC allocations, practices were asked to consider the percentage of floor space that **could hypothetically be avoided** in the absence of: 1) dispensing activities; and 2) general medical / clinical activities. Practices with purpose-built premises found this easier to consider than those that have rented premises. In these instances, in addition to whether less floor space would be required, it was necessary to consider whether it would be possible to rent a suitable smaller building in the vicinity, thereby making the costs truly avoidable.

  Assessing the degree of avoidability under the hypothetical scenario that the practice no longer offered any general medical / clinical services was also a difficult question, simply due to the conceptual difficulty in imagining the circumstance we were asking to be considered.

  Having ascertained estimates for the space avoidable in each of the hypothetical circumstances, any floor space unaccounted for (i.e. that cannot be avoided in either circumstance) was allocated to common areas.

The charts below show the allocations of practice property costs according to the methodology outlined above.

* Results may not sum to exactly 100% due to rounding

4. Results
4.5 Treatment of different operating cost types (cont.)

Property costs (cont.)

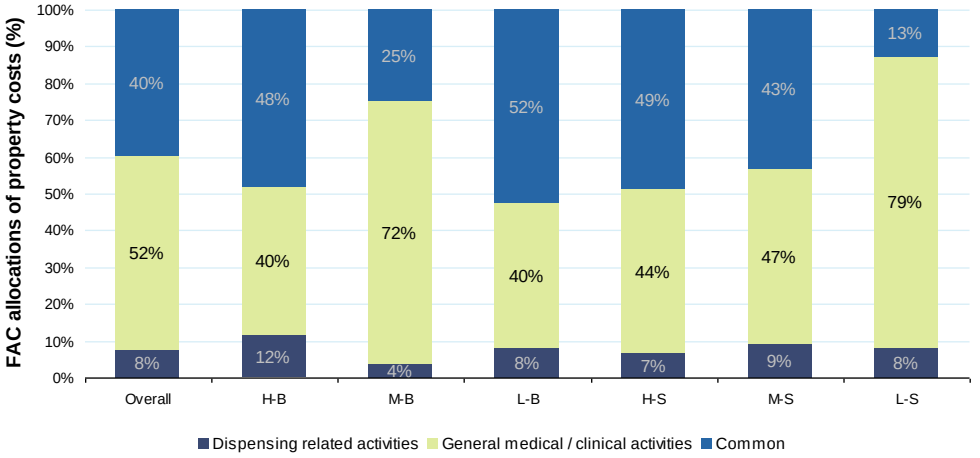
The property allocations for each practice appear to vary across the strata as well as within stratum, with the highest share apportioned to dispensing activities in stratum H-B. The relationship across practices is not obvious, possibly because for some practices the dispensary floor space is fairly dependent on the configuration of the practice (e.g. whether it is purpose-built with a dispensary or whether the dispensary is simply a converted room).

Another possible reason for variations in the allocation of property costs to dispensing activities is that under the LRIC method, a part of the dispensary area may not be avoidable even without dispensing activities (particularly for the smaller practices), since this floor space would simply be used for a different purpose. For example, one practice in stratum L-S reported that it currently uses 10% of floor space for dispensing under the FAC method, but would not be able to avoid any of it under the LRIC method (i.e. allocation to dispensing would be 0%).

Property cost allocations to general medical / clinical activities appear to be consistently and considerably higher under the LRIC method when compared with the FAC method. This is because practice floor space that is currently used for common purposes (and thus would be classified as “common” under the FAC method), for example waiting rooms, are likely to be avoided in the absence of general medical / clinical activities under the LRIC method.

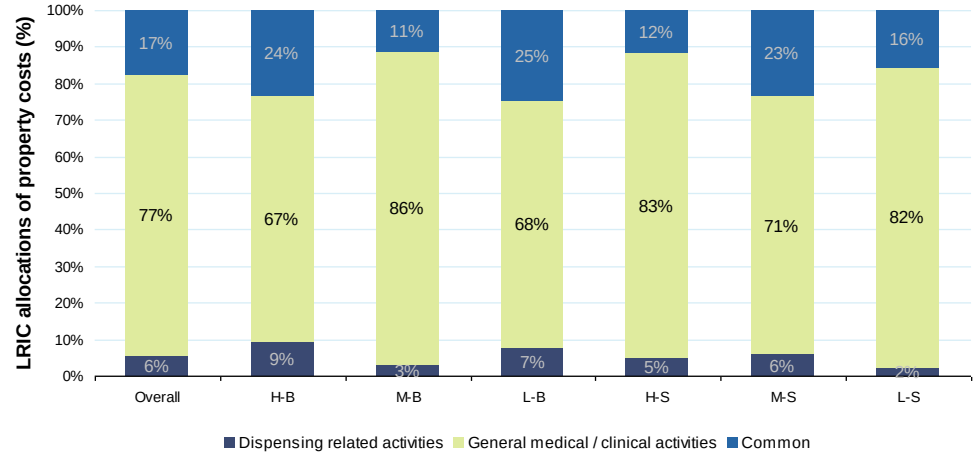
Including the five pilot practices in these average property allocations does not appear to make a notable difference – please refer to Annex 1 for more details on the results including the pilot practices.

Figure 21: Property costs, FAC allocations



Source: Practice visits, PwC analysis

Figure 22: Property costs, LRIC allocations



Source: Practice visits, PwC analysis

4. Results
4.5 Treatment of different operating cost types (cont.)

Training costs

Costs relating to the training of practice staff are considered here. While some practices reported that a portion of their annual training spend was covered by the PCT under which they operated, a cost line in the accounts relating to staff training could be identified in most cases.

A typical practice's training costs consisted of:

- General update training for all staff – including health and safety training. Costs associated with this type of training was typically allocated according to overall staff cost allocations.
- Required training for dispensing staff – such as NVQ-2 courses in order to meet national dispensing staff qualification requirements. This cost was fully allocated to the dispensing increment.
- Training courses for clinical staff – including update courses for nurses and GPs. This cost was fully allocated to the general medical / clinical increment.
- Administrative skills training for receptionists and support staff, allocated to the common increment.

As detailed in the overview slide at the beginning of this section, training costs according to this analysis constitute a small portion of overall practice operating costs across all strata; in the range of 0.1% to 0.6% of total costs.

This overall cost has been allocated according to the responses of survey participants, who were asked to give estimates of the proportion of training costs dedicated to staff primarily engaged in dispensing and those whose primary duties relate to general medical / clinical functions.

Depreciation

The depreciation cost recorded in the accounts may not reflect the economic value of assets (based on net replacement cost.**). We therefore replace the accounting depreciation cost with an implied economic depreciation based on the economic value of assets.

Tangible asset values were ascertained during practice visits; sampled practices were asked to give an estimate of the replacement cost of their fixed assets, split into three categories; **fixtures and fittings, IT equipment** and **motor vehicles**. However, the majority of practices stated that their IT equipment was almost, if not entirely PCT owned, and hence ought not to be considered as an asset to the practice itself. Motor vehicles were only relevant to a minority of practices and constituted a very small proportion of overall asset values, so we have similarly excluded these from our analysis.

Given a replacement estimate for fixtures and fittings, we also asked practices to provide an estimate of the length of the refit cycle for these assets.

Most practices were able to provide estimates for either replacement value or refit cycles, some giving both. We have taken a simple average of replacement values given, normalised as a percentage of total practice income, and applied this to all of the practices across the sample. Similarly, the refit cycle estimates have been averaged across those practices able to provide this information and applied to the full sample. This has given us a replacement cost estimate for fixtures and fittings of 6.8% of total annual practice income, and an average refit cycle of 13 years.

Again assuming straight line depreciation, we can estimate the economic depreciation as the total replacement cost spread evenly across the 13 year refit cycle. This method gives a value for depreciation cost which is around 0.5% to 0.6% of total practice operating costs.

**The net replacement cost/modern equivalent asset value ('MEA') is the lowest cost of replacing the asset, assuming current requirements and the optimal configuration of assets, such that the same level of goods or services is produced. The justification for using this as the proxy for the asset base on which a dispensing practice would be able to earn a return in a competitive market is that a new entrant would, in theory, be able to enter a market (without entry barriers) at the lowest cost of replacing the asset.

4. Results

4.5 Treatment of different operating cost types (cont.)

Depreciation (cont.)

Depreciation costs have been allocated between dispensing, general medical / clinical and common increments in line with the property cost allocations. We consider this an appropriate treatment because the depreciation cost has been derived from the replacement values of fixtures and fittings, which we assume to be evenly spread throughout the different functioning physical areas of the practice.

Miscellaneous general medical / clinical costs

The analysis of medical and clinical costs is not included in the scope of this work and therefore we have not assessed this section of costs in great detail. Costs falling into this category include those associated with provision of medical / clinical practice which do not fall into staff costs. The largest inclusions are typically for medical cost of goods sold and Medical Protection premia, while other items include NHS levies and out of hours expenses. Typically, this item is a relatively small portion of overall practice costs; our analysis gives estimates of this cost item in the range 0.3% to 8.3%.

These costs have been fully allocated to the general medical / clinical cost increment.

Other operating costs

The final cost category encompasses all those costs which do not fall within staff costs, property costs, training costs or depreciation and are too small to be considered alone. Total other operating costs range quite widely, accounting for between 2.7% and 10.5% of total operating costs across the six strata.

Within the "other operating costs" category fall a number of different miscellaneous cost items, the largest of which are outlined in the table which follows:

Table 13: Largest constituents of "other operating costs" category, % of total category cost

	% of "other operating costs" category, average across six strata	Brief description
Locum Costs	21.9%	Locum insurance costs
Subscriptions	12.4%	Professional bodies (e.g. BMA, DDA)
Professional Fees	15.3%	Accountancy, legal & advisory fees
"Other Common Costs"	11.4%	Miscellaneous items ("sundry expenses" etc.)
Repair and maintenance costs	9.5%	Facilities repairs and maintenance

Source: Practice accounts and visits, PwC analysis

Other operating costs (cont.)

The remainder of the other operating costs category consists of:

- Bank charges;
- Hire of equipment;
- Stationery & Postage;
- Insurance;
- Cleaning costs (other than cleaning staff);
- IT maintenance; and
- Vehicle expense.

The charts below show the allocation of other operating costs under FAC and LRIC approaches, based on allocations given to us during the practice visits.

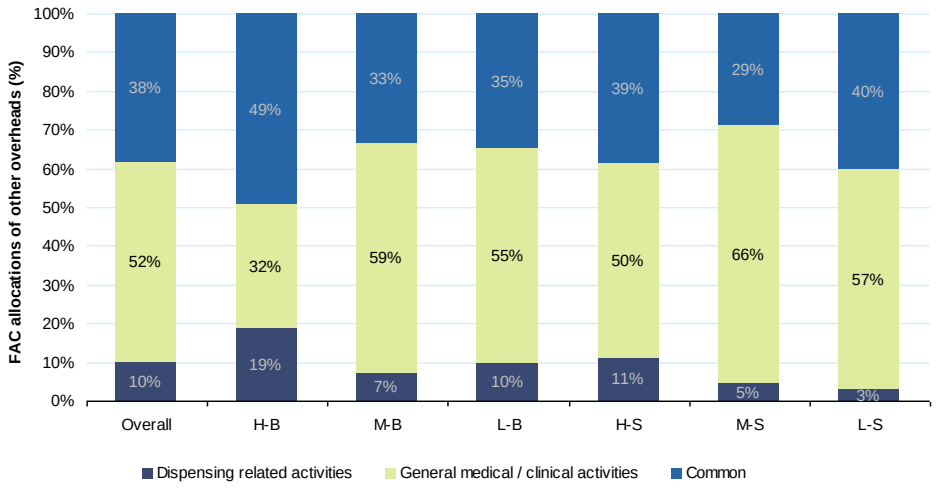
Because of the mixed nature of these costs, there is some variation on their allocation within each stratum. However, since these costs are a relatively small proportion of total practice costs, they should not have an undue effect on overall cost allocations.

These allocations show some variation when the five pilot practices are included. However, these costs are also a relatively small proportion of total practice costs for the pilot practices. Please see Annex 1 for more details.

4. Results

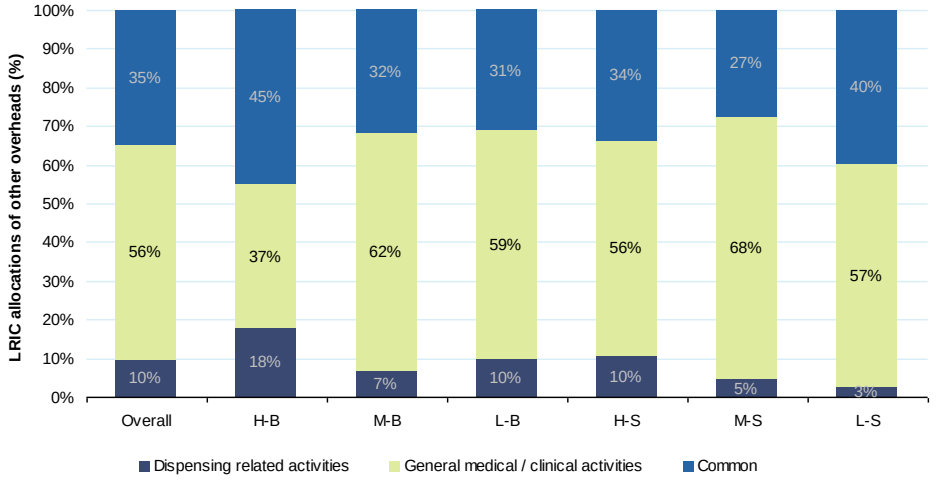
4.5 Treatment of different operating cost types (cont.)

Figure 23: Other operating costs, FAC allocations



Source: Practice visits, PwC analysis

Figure 24: Other operating costs, LRIC allocations



Source: Practice visits, PwC analysis

4. Results

4.6 Fair return (capital costs) analysis

This section outlines our estimates for the fair return for dispensing practices in England.

WACC

We have calculated a pre-tax, nominal cost of capital for dispensing GP practices of 17.4%. The table below provides a summary of our WACC calculation and key underlying assumptions. Further details of the methodology and assumptions are provided in Annex 7.

Table 14: Summary of WACC calculation

	Symbol	Value
Nominal risk-free rate	R_f	4.5%
Debt Margin	m	2.1%
Tax Shield	T_c	28%
Cost of Debt (post-tax shield)	K_d p-t	4.8%
Asset Beta	b_a	0.6
Debt/Equity Ratio (D/E)	D/E	37.5%
Equity Beta	b_e	0.9
Target Gearing (D/D+E)	D/(D+E)	24.7%
EMRP	EMRP	5.0%
Small Company Premium	SCP	6.3%
Cost of Equity (% pre-tax)	K_e	21.0%
Cost of Equity (% post-tax)	K_e p-t	15.1%
Nominal, Post-tax WACC (%)	**Post-tax WACC**	**12.6%**
Nominal, Pre-tax WACC (%)	**Pre-tax WACC**	**17.4%**

Sources: Capital IQ, Datastream, Ibbotson 2010 report, PwC analysis

Tangibles

Based on the information provided by the sampled dispensing practices, we have estimated the economic value of tangible assets which consists of fixtures and fittings and stock. The table below summarises our estimates of tangible assets, represented as a percentage of revenue. We estimate the tangible asset base to be 8.1% of revenue on average. Details of the underlying calculations can be found in Annex 5.

Table 15: Tangible assets by type as % of income

	Fixtures and fittings	Stock	**Total tangible assets**
H-B	6.8%	1.6%	8.4%
M-B	6.8%	1.5%	8.3%
L-B	6.8%	1.6%	8.4%
H-S	6.8%	1.2%	8.0%
M-S	6.8%	1.2%	8.0%
L-S	6.8%	0.5%	7.3%
Overall average	6.8%	1.3%	8.1%

Sources: Practice accounts and visits, PwC analysis

4. Results

4.6 Fair return (capital costs) analysis (cont.)

Intangibles

Our analysis of intangible asset values provided us with three estimates of the return on intangible assets, as follows:

Table 16: Intangible asset value as % of income

Method	Intangible asset value (as percentage of turnover)
Comparable transactions	**33% *(33% to 76%)****
Capitalisation of human capital	**0.4% *(0.1% to 0.9%)***
Greenfield assessment	**70% *(22% to 183%)***

Sources: Dealogic, ThomsonOne, practice accounts and visits, PwC analysis

Each of the three approaches have their shortcomings. In particular, the comparable transactions approach uses both US and UK pharmacies and primary care providers and relies on potentially depressed market values (this would result in an underestimation of intangible assets) and historic net asset values (this would result in an overestimation of intangible assets).

Capitalisation of human capital is likely to underestimate the total intangible value as this does not capture the value attributable to relationship with patients, which is a key intangible for dispensing practices.

In theory, the Greenfield assessment, although hypothetical, should provide the most accurate results as it is based on a direct assessment of the current dispensing practice market in England. However the evidence from our survey responses and industry experts suggests that this is a particularly difficult exercise in the context of dispensing practices and may vary significantly depending on the location (e.g. rural, semi-rural, distance from nearest pharmacy). Unsurprisingly, the results from this approach ranged from 22% to 183% which we considered to be too wide to provide a meaningful basis from which to draw any conclusions.

Given that no single method is ideal, we consider that the comparable transactions method provided the most reliable and appropriate estimate of the intangible asset value, resulting in an estimate of 33% as a percentage of turnover.

Fair return on total assets

The fair return on total assets is calculated by multiplying the sum of tangible and intangible assets by the WACC**, which represents the minimum fair rate of return required to investors to compensate them for the risk undertaken through investment in the business, also known as capital costs.

Allocation of fair return on assets

The fair return on tangible assets are allocated in line with floor space allocations between dispensing, general medical / clinical and common activities. There is no obvious basis for allocating the fair return on intangible assets as there is no robust way to identify which part of the overall practice drives the intangible asset value. We therefore believe that it is most appropriate to allocate the fair return on intangibles to common business activities.

The following tables show the total fair return and how this is allocated between each of the three activities, based on both the FAC and LRIC approaches.

* We use the lower bound of the range calculated for comparable transactions. Details of the reason for this can be found in Annex 6
For tangible assets, we apply to WACC to an **averagely depreciated asset, found by dividing the full capitalised asset value by two.
Results may not sum to exactly 100% due to rounding

4. Results

4.6 Fair return (capital costs) analysis

Allocation of fair return on assets (cont.)

Table 17: Fair return by type as % of income, by stratum, FAC allocations

	Dispensing	General medical / clinical	Common
H-B	0.2%	0.2%	6.1%
M-B	0.1%	0.4%	5.9%
L-B	0.2%	0.3%	6.1%
H-S	0.1%	0.3%	6.1%
M-S	0.2%	0.3%	6.1%
L-S	0.1%	0.5%	5.9%

Sources: Practice visits, PwC analysis

Table 18: Fair return by type as % of income, by stratum, LRIC allocations

	Dispensing	General medical / clinical	Common
H-B	0.2%	0.4%	5.9%
M-B	0.1%	0.5%	5.9%
L-B	0.2%	0.4%	5.9%
H-S	0.1%	0.5%	5.9%
M-S	0.1%	0.4%	5.9%
L-S	0.1%	0.5%	5.9%

Sources: Practice visits, PwC analysis

Results may not sum to exactly 100% due to rounding

4. Results

4.7 Overall cost allocations

Based on the analysis on operating costs and fair returns above, the overall cost allocations are shown in the graphs on the right.

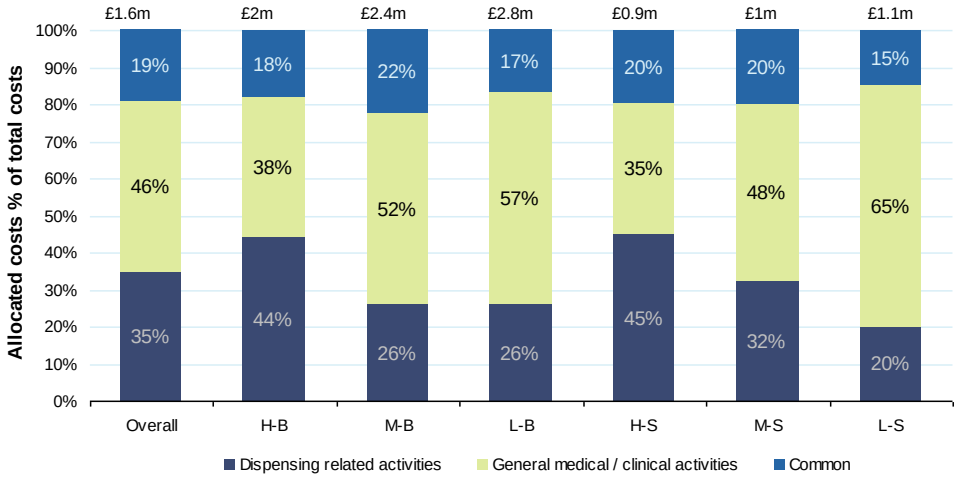
The apportionment of costs to dispensing varies. Practices with a high proportion of dispensing (strata H-B and H-S) have allocations of over 40% of total costs to dispensing, while other practices have between a fifth and a third of costs allocated to dispensing. However, it should be noted that these allocations include drug reimbursement, which causes the cost allocation to dispensing to appear quite high.

There is some variation within each stratum, with stratum M-B showing the highest standard deviation, perhaps due to the range in dispensing proportion and list size within the stratum. For practices with a high proportion of dispensing, the percentage of costs allocated to dispensing activities fluctuates between 40% and 50% - for the larger practices (stratum H-B), this appears to depend more on how much gets allocated to common, perhaps reflecting greater shared resources and functions (e.g. business managers, administrative staff) in practices of this size.

The allocation of total costs to general medical / clinical activities appears to vary somewhat between the FAC and LRIC allocation methods. This is likely to be most sensitive to staff allocations, where staff roles that currently have both dispensing and general medical / clinical responsibilities are more likely to be avoidable under the absence of general medical / clinical activities e.g. partners and practice managers.

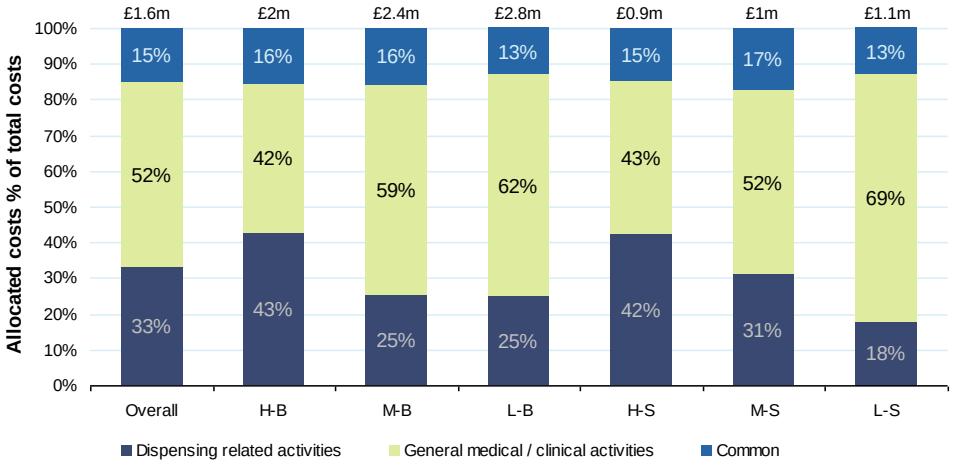
These allocations are very similar for the results that include the five pilot practices in the stratum averages except for stratum L-B, which contains an outlying pilot practice that has a large list size but only dispenses in one very small branch surgery. Please refer to Annex 1 for more details on the results including the pilot practices.

Figure 25: Total costs, FAC allocations



Source: Practice visits, PwC analysis

Figure 26: Total costs, LRIC allocations



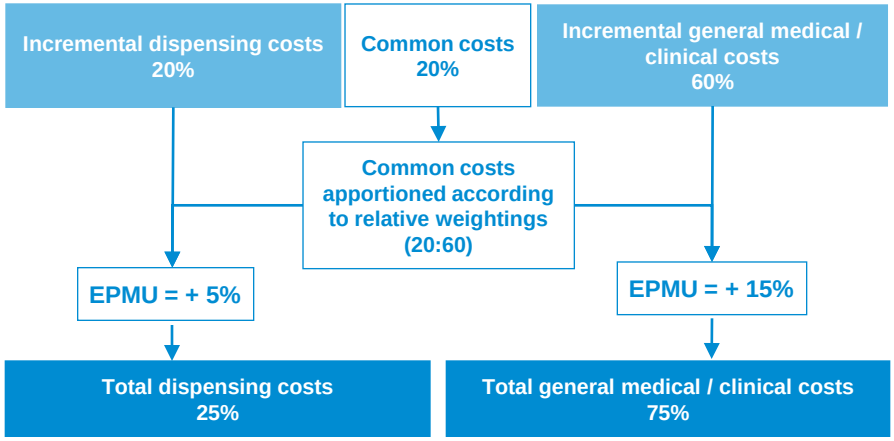
Source: Practice visits, PwC analysis

4. Results
4.8 Overall results

The results on the preceding slide show costs and income split into three increments: **dispensing**, **general medical / clinical** and **common**. However, in order to complete the cost allocation it is necessary for us to apportion the common costs appropriately so that we are able to categorise costs into just the first two groupings. This is achieved through the Equi-Proportional Mark-Up (EPMU) method, as described briefly in section 3.2.

EPMU requires us to allocate common income and costs according to the relative proportions of the **incremental costs** for dispensing activities and general medical / clinical activities. A hypothetical example showing this process for allocating costs is illustrated below, whereby incremental dispensing and general medical / clinical costs each account for 20% and 60% of total costs respectively. The remaining common costs, which amounts to 20% of total costs, are allocated to each increment based on the relative proportions of dispensing and general medical / clinical LRICs. This results in an allocation of 5% to the dispensing increment (calculated as 20%/(20% + 60%)*20%) and an allocation of 15% to the general medical / clinical increment.

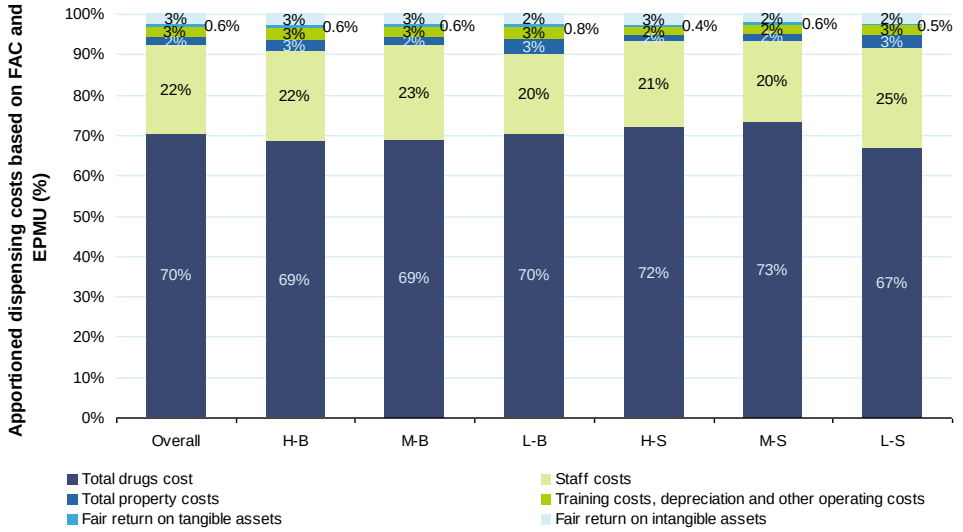
Figure 27: Illustration of common cost apportionment based on EPMU



In performing the EPMU calculations we exclude cost of drugs from the incremental dispensing costs. We do this because drug costs are a major component of overall practice costs which, because they are directly reimbursed by the PCT, are effectively passed through and do not represent a direct cost which the practice has to bear. Including them would therefore artificially skew the allocation of common costs towards dispensing activities.

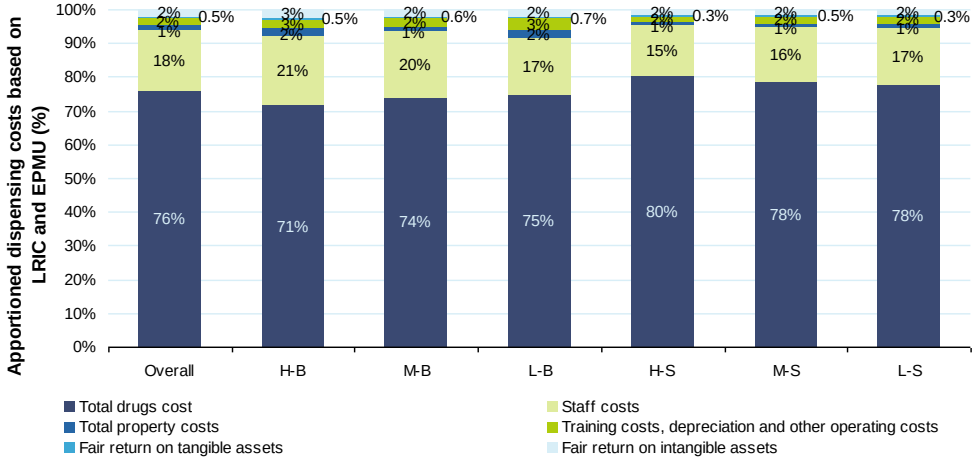
After allocating the common element for each type of operating cost and for the fair return estimates based on the EPMU methodology, we can show the breakdown of total dispensing costs, seen in the graphs below.

Figure 28: Total dispensing costs split by cost type, FAC and EPMU allocations



Source: Practice visits, PwC analysis

Figure 29: Total dispensing costs split by cost type, LRIC and EPMU allocations



Source: Practice visits, PwC analysis

4. Results
4.8 Overall results (cont.)

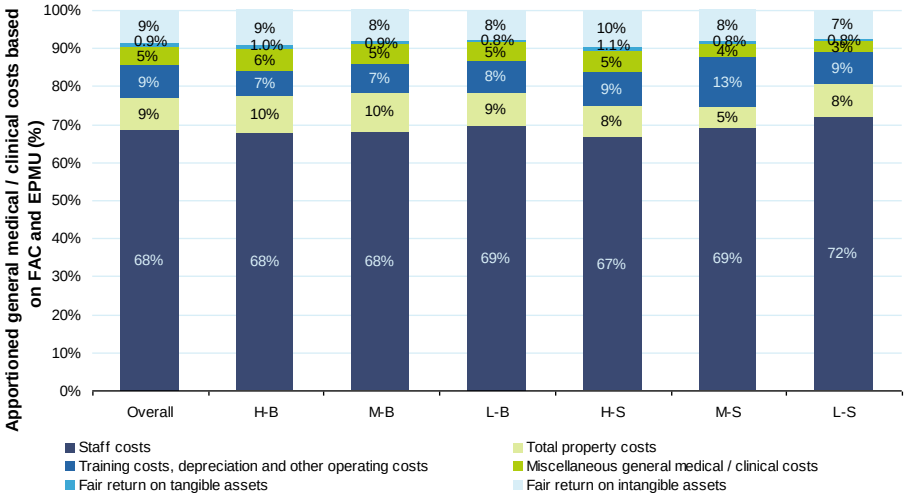
As can be seen in Figures 28 and 29 above, the large majority of dispensing costs are made up of drugs costs, followed distantly by staff costs. Property costs are about a tenth the size of staff costs for dispensing, and are roughly the same percentage of total dispensing costs as all other operating costs. Fair return on tangible assets are a negligible percentage of total dispensing costs, whereas fair return on intangible assets, based on current assumptions (please see section 4.6 for more details), make up roughly the same percentage of total dispensing costs as property costs.

Differences between FAC and LRIC are mainly driven by the proportion of staff costs apportioned to dispensing activities under each method, with LRIC consistently resulting in a lower proportion of staff costs apportioned to dispensing. As discussed before, this is because the time currently spent by some staff roles such as partners and practice managers would be replaced with general medical / clinical tasks rather than avoided in the absence of dispensing activities.

The graphs on the right show the breakdown of total general medical / clinical costs into different cost types. For all strata, about 70% of general medical / clinical costs are staff costs, a pattern that appears to hold for almost all practices within each stratum. As seen in section 4.5, about 40% of this is estimated partner base pay (i.e. what a partner may be paid if they did not receive a share of profits). The next largest cost category is property costs, which is roughly the same size (as a percentage of total general medical / clinical costs) as training, depreciation and other operating costs and the fair return on intangible assets. Fair return on tangible assets appear to be a negligible percentage of total general medical / clinical costs across all practices.

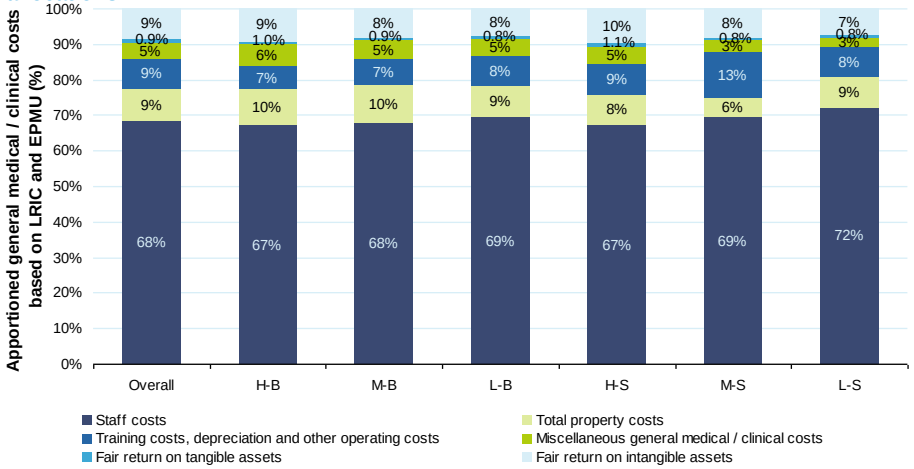
These breakdowns of dispensing and general medical / clinical costs are very similar to those including the five pilot practices – please see Annex 1 for further detail.

Figure 30: Total general medical / clinical costs split by cost type, FAC and EPMU allocations



Source: Practice visits, PwC analysis

Figure 31: Total general medical / clinical costs split by cost type, LRIC and EPMU allocations



Source: Practice visits, PwC analysis

4. Results
4.8 Overall results (cont.)

The next pages illustrate the income, costs and economic profit margins that we have estimated for dispensing and general medical / clinical activities based on EPMU, under each of the LRIC and FAC methods. The graphs on the right show the costs and income apportioned to the dispensing increment, including a mark-up for common costs based on EPMU. These are normalised for each practice by dividing by the number of dispensing patients on the practice list, before being aggregated to give stratum-level averages.

The profit margins are summarised again in a table on page 71.

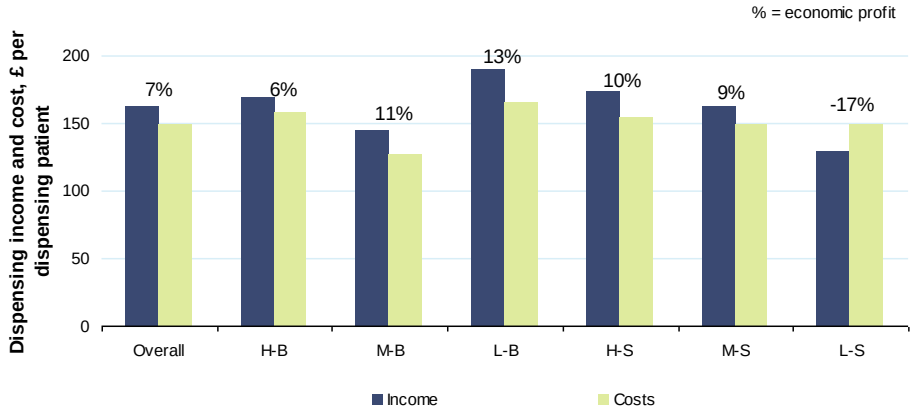
The profit measures we have estimated are based on **economic profits**. As outlined in section 3.1, this is where the costs used to calculate this include a fair return on both tangible and intangible assets for each activity (which we also refer to as “capital costs”), as well as an estimate of partner base pay (i.e. what a partner may be paid if they did not receive a share of profits). Consequently, any economic profit measures that we have estimated are likely to be lower than accounting profits e.g. those found in practice accounts.

The LRIC method results in consistently higher profit margins relative to the FAC method. As discussed in Section 4.5, this is because the LRIC approach results in *lower* costs because the amount of avoidable costs in the absence of dispensing is less than the current amount of resources devoted to dispensing-related activities. This is particularly the case for staff costs.

The profit margins (calculated as: (income – costs) / income) range between -17% to 13% across the strata for FAC, and -3% to 19% for LRIC. The dispensing profit margins do vary noticeably within each stratum, and profit margins for individual practices appear to be sensitive to the staff cost allocations provided under each allocation method. This suggests that practice-specific factors, such as staff structures and efficiency, play a role in levels of profitability.

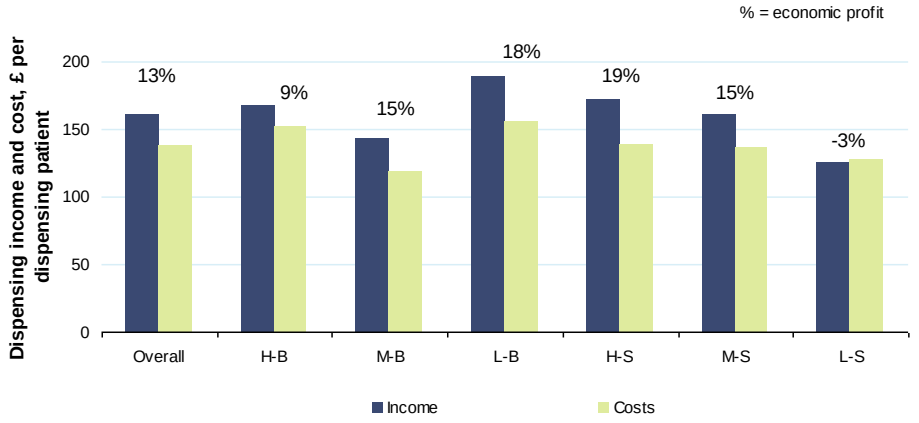
An interesting point to note is that profit margins are considerably lower than the overall average for strata L-B and L-S under both FAC and LRIC approaches. This suggests that dispensing is considerably less profitable for practices with a proportion of dispensing patients below a certain threshold. This is discussed in more detail later on in this section.

Figure 32: Total dispensing income and costs per dispensing patient, EPMU, FAC allocation



Source: Practice visits, PwC analysis

Figure 33: Total dispensing income and costs per dispensing patient, EPMU, LRIC allocation



Source: Practice visits, PwC analysis

4. Results

4.8 Overall results (cont.)

The charts shown here illustrate the apportioned income, costs and resulting profit margin associated with general medical / clinical activities, including the allocation of common costs according to the EPMU method.

Here, we have normalised costs across each of the patients receiving general medical / clinical services, by dividing by the total practice list size, before being aggregated to give stratum-level averages.

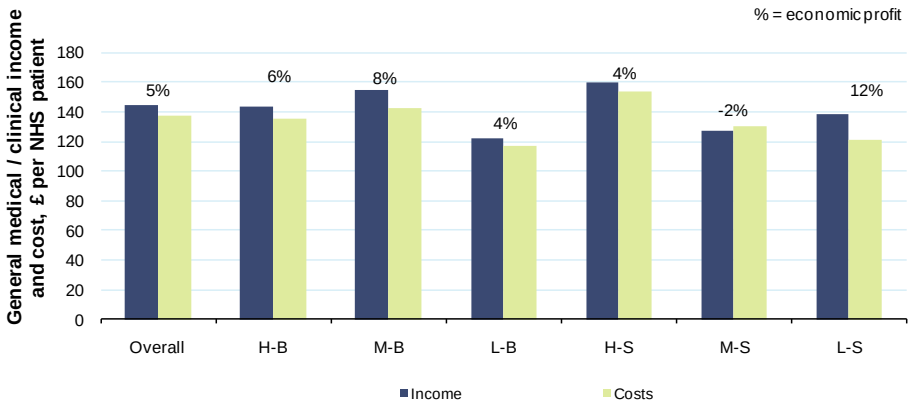
Overall, general medical / clinical profit margins for the sample vary around 5% based on the FAC method, and around 1% based on the LRIC method. Apart from stratum L-S, these profit margins are on average lower for each stratum than the dispensing profit margins, although variation within each stratum means that this is not true for all practices.

For general medical / clinical activities, the LRIC method results in consistently lower profit margins relative to the FAC method. Where profit margins are sufficiently small, one method may result in a profit while the other results in a loss – for example in stratum H-S. The reasoning behind this is the reverse of that for dispensing activities - the amount of avoidable costs in the absence of general medical / clinical is more than the current amount of resources devoted to general medical / clinical-related activities, since some staff roles (such as partners) that deal with both dispensing and general medical / clinical tasks could potentially be fully avoided in the absence of such activities.

Stratum L-S appears to make a noticeably higher profit margin on general medical / clinical activities than the other practices. Given that practices surveyed in this stratum appear to make a loss on average on dispensing activities, the analysis suggests that general medical / clinical profits may actually support the provision of dispensing activities in this stratum.

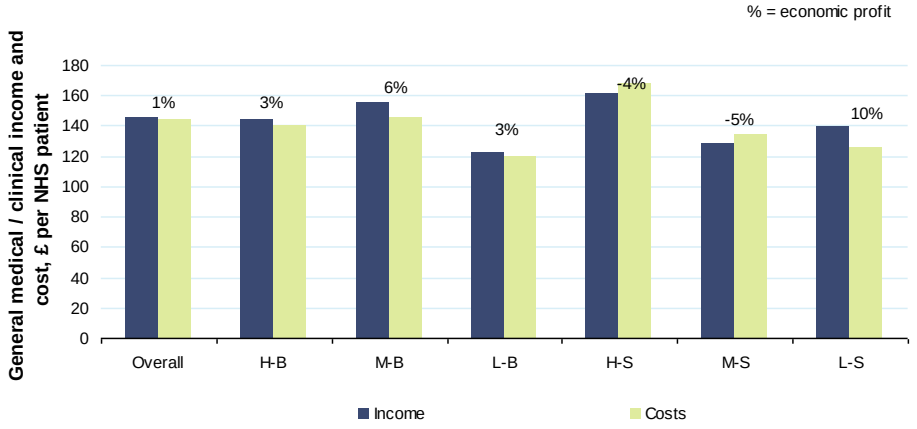
These results are fairly similar to the results that include the five pilot practices, apart from dispensing profit margins for stratum L-B under the FAC method, which is about 8 percentage points lower for results that include the pilot practices. Please refer to Annex 1 for more details.

Figure 34: Total general medical / clinical income and costs per NHS patient, EPMU, FAC allocation



Source: Practice visits, PwC analysis

Figure 35: Total general medical / clinical income and costs per NHS patient, EPMU, LRIC allocation



Source: Practice visits, PwC analysis

4. Results

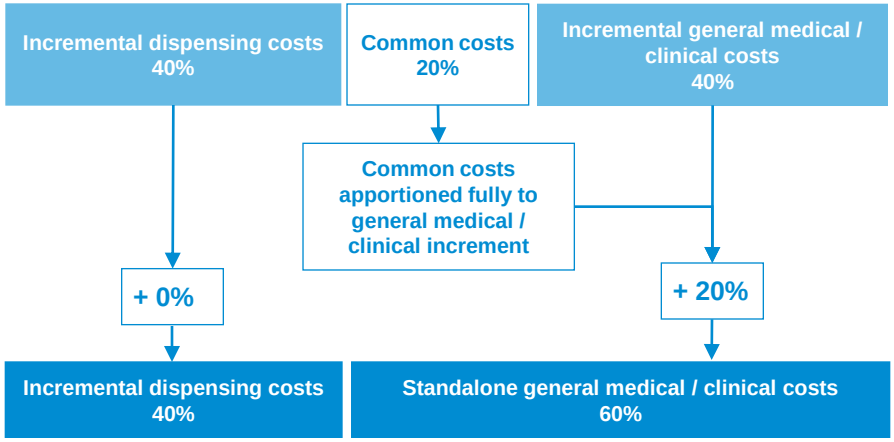
4.8 Overall results (cont.)

Analysis of standalone costs

This part of our analysis allows us to consider the general medical / clinical element of the business as a standalone unit.

This is achieved by fully allocating common income and costs to the general medical / clinical increment (and thus total income and costs for dispensing is equal to its incremental income and costs). This effectively represents the situation in which general medical / clinical activities are the “core” operations of the practice and dispensing activities are an “ancillary” extension of practice operations. As such, the dispensing increment would not bear any common costs. The following diagram demonstrates this approach for allocating costs with illustrative numbers.

Figure 36: Illustration of common cost apportionment based on standalone cost analysis

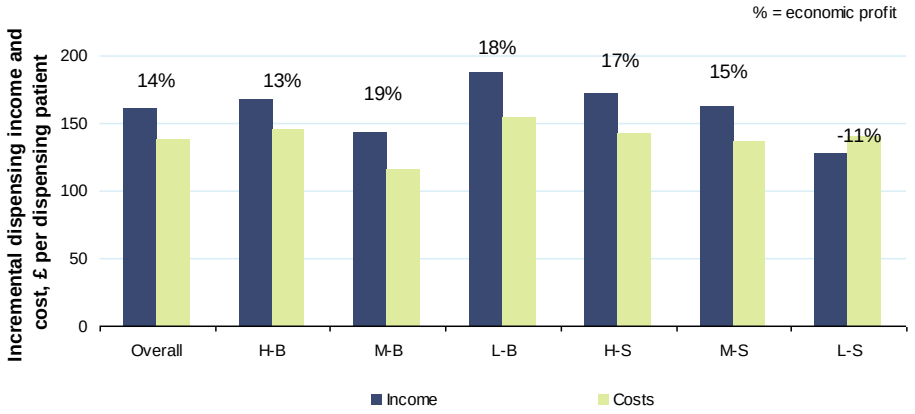


As can be seen above, this common income and cost apportionment method would result in an estimate of dispensing income and costs that would not contain any common elements (i.e. **"incremental"** dispensing income and costs), and an estimate for general medical / clinical that contains all the common income and costs identified (i.e. **"standalone"** general medical / clinical income and costs).

The diagrams to the right show allocated dispensing income and costs under this method. Again, the profit measures in the graphs are based on **economic profit**. The reduction in the amount of common costs apportioned to dispensing leads to higher normalised income and profit margins for the dispensing increment across all strata.

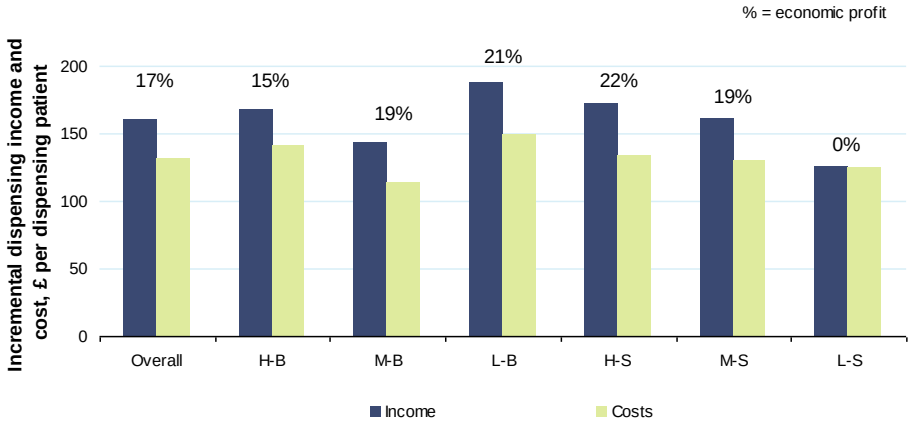
The profit margins in the graphs below are summarised again in a table on page 71.

Figure 37: Incremental dispensing income and costs per dispensing patient (assumes general medical / clinical bears all common costs), FAC allocation



Source: Practice visits, PwC analysis

Figure 38: Incremental dispensing income and costs per dispensing patient (assumes general medical / clinical bears all common costs), LRIC allocation



Source: Practice visits, PwC analysis

4. Results
4.8 Overall results (cont.)

Analysis of standalone costs (cont.)

The figures shown to the right illustrate the income, cost and profit for the general medical / clinical increment under the standalone apportionment method.

This standalone analysis allows us to assess, by comparison with the EPMU results detailed above, the extent to which net dispensing income offsets the costs of general medical / clinical activities.

The standalone analysis, by apportioning all of common costs to general medical / clinical activities, naturally increases the cost element and reduces profit margins in this increment.

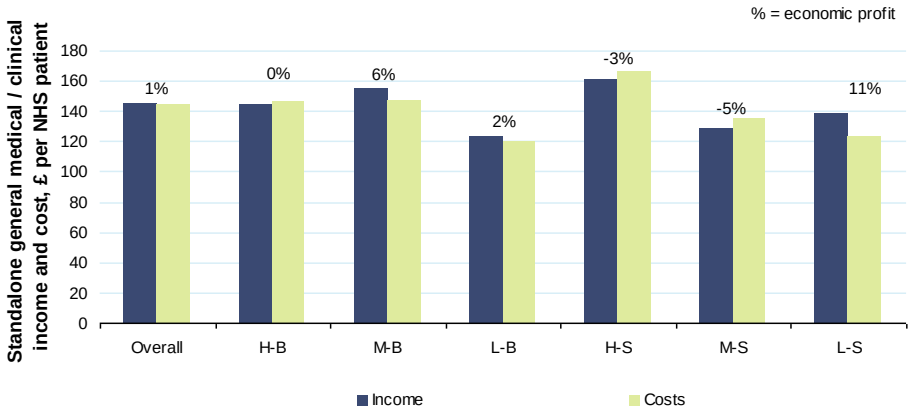
In the instance that general medical / clinical activities were heavily supported by dispensing income, we would anticipate profit margins to fall below zero, reflecting the necessity of cross-subsidy from dispensing in order to support this increment.

The graphs to the right suggests that cross-subsidisation may occur in some strata. In particular, strata H-S and M-S both have negative profit margins for general medical / clinical activities on a standalone basis and strongly positive incremental profit margins for dispensing activities under both FAC and LRIC, suggesting that dispensing activities may be supporting general medical / clinical activities in these strata. Cross-subsidisation may also be occurring in stratum H-B, where standalone general medical / clinical profit margins are at or just below break-even on average.

However, it does not appear any cross-subsidisation is taking place in stratum M-B, where only one out of four practices make a loss on general medical / clinical activities on a standalone basis. There also does not appear to be any cross-subsidisation in stratum L-S, where as discussed before it appears to be more likely that the reverse is true, with general medical / clinical activities supporting dispensing activities.

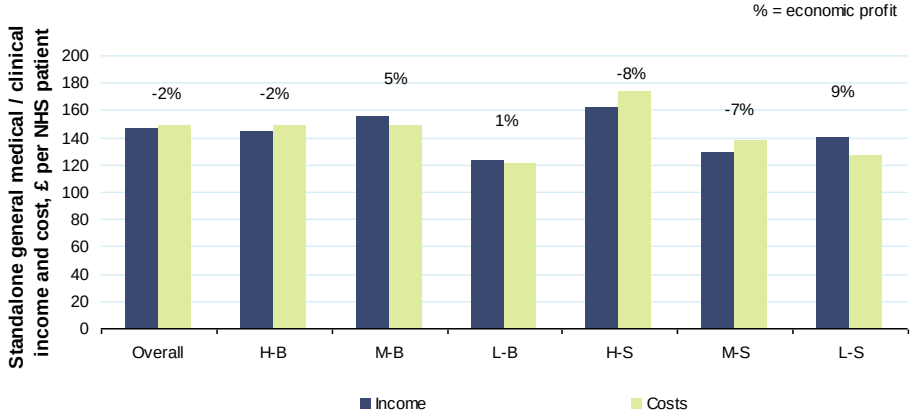
These income and cost results are fairly similar to those including the five pilot practices – please see Annex 1 for more details.

Figure 39: Standalone general medical / clinical costs and income per NHS patient, FAC allocation



Source: Practice visits, PwC analysis

Figure 40: Standalone general medical / clinical costs and income per NHS patient, LRIC allocation



Source: Practice visits, PwC analysis

4. Results
4.8 Overall results (cont.)

The table below summarises the dispensing profit margins estimated under each combination of incremental and common income and cost apportionment methods, based on **economic profits**. As outlined in section 3.1, this is where the costs used to calculate this include a fair return on both tangible and intangible assets for each activity (which we also refer to as "capital costs") as well as an estimate of what partner base pay (i.e. what a partner may be paid if they did not receive a share of profits). Please note that **these results should be interpreted in the light of**:

- The scope of work under which we carried out this analysis (please see section 2 for more details). We were asked to focus on estimating the overall income derived from, and costs incurred by, dispensing services provided by a dispensing GP practice in England. As such, we have not considered individual drug categories or general medical / clinical income and costs in any detail;
- The survey approach that we have been advised to implement and the FAC and LRIC estimation methods we have chosen to adopt (please see section 3 for more details); and
- Assumptions about the operational and organisational structure of dispensing practices, which involves considering whether dispensing is part of the core operations of the practice, or whether it is an 'ancillary' or 'secondary' activity that is 'added on'. This would affect whether FAC or LRIC is more appropriate. It would also affect whether EPMU should be used to apportion common costs, as opposed to the case where general medical / clinical activities bear all common costs (please see section 5 below for a more detailed discussion).

Table 19: Summary of dispensing profit margins# under each incremental and common income and cost apportionment methods, economic profits (based on costs that include fair returns and partner base pay)

Incremental income and cost apportionment	Common income and cost apportionment	Overall	Stratum					
			H-B	M-B	L-B	H-S	M-S	L-S
FAC	**EPMU**	7%	6%	11%	13%	10%	9%	-17%
LRIC	**EPMU**	13%	9%	15%	18%	19%	15%	-3%
FAC	**Incremental** (assumes general medical / clinical bears all common costs)	14%	13%	19%	18%	17%	15%	-11%
LRIC	**Incremental** (assumes general medical / clinical bears all common costs)	17%	15%	19%	21%	22%	19%	0%
FAC	**Midpoint^** between incremental and EPMU profit margins	10%	10%	15%	15%	14%	12%	-14%
LRIC	**Midpoint^** between incremental and EPMU profit margins	15%	12%	17%	19%	20%	17%	-1%

Source: Practice accounts and visits, PwC analysis

Rounded to the nearest percentage point.
^ These are midpoints of the stratum-level results, rather than practice-level midpoints averaged for each strata.

4. Results

4.8 Overall results (cont.)

The table below summarises overall **economic profits**. As outlined in section 3.1, this is where the costs used to calculate this include a fair return on both tangible and intangible assets for each activity (which we also refer to as "capital costs") as well as an estimate of partner base pay (i.e. what a partner may be paid without a share of profits). The table shows: the overall practice-level profit margins by strata; overall income, costs and profits per NHS patient; and – as a sense check – profits per partner (where the number of partners have been adjusted to reflect full-time equivalents – please see section 4.5 for more details). Overall profit margins are around 7% on average for all practices. There is some variation in profits within each stratum, with 15% being the highest profit margin in the sample and two practices making a loss of 2% on the basis of economic profits.

As before, these results should be interpreted in the light of the scope of work which we carried out, and the survey approach that we have been advised to implement.

Table 20: Summary of overall profit margins (%)#; overall income, costs and profits per NHS patient (£) and overall profit per partner (£000s), economic profits (based on costs that include fair returns and partner base pay)

	Overall	Stratum					
		H-B	M-B	L-B	H-S	M-S	L-S
Overall practice-level **profit margin**	7%	6%	10%	7%	7%	3%	8%
Overall income per NHS patient (£)	246	281	220	174	323	205	167
Overall cost per NHS patient (£)	229	265	199	162	300	200	154
Overall profit per NHS patient (£)	17	16	21	12	24	5	13
Overall profit per partner (full-time equivalent) (£000s)	38	33	50	55	39	26	23

Source: Practice accounts and visits, PwC analysis

Rounded to the nearest percentage point.

4. Results
4.8 Overall results (cont.)

For reference, we have also included the measures shown in tables 19 and 20, but based on **accounting profits**. As outlined in section 3.1, this is the measure of profits based only on the income and costs found in the financial accounts of the practices (with adjustments made for PA items and inflation), and consequently **exclude** a fair return on both tangible and intangible assets for each activity and **do not incorporate** an estimate of partner base pay in costs. As such, these profits may be interpreted as the implied earnings that partners take home, before considering fair returns and compensating partners for the time they spend working in the practice.

However, we believe that true profits should be measured after considering the risks that partners undertake when investing in the business (which is measured by the fair returns) and the cost of the time partners spend actually undertaking GP duties. Consequently, we still consider **economic profits as the most relevant measure of profits**, and include the results below only for reference.

As before, please note **these results should be interpreted in the light of**:

- The scope of work under which we carried out this analysis (please see section 2 for more details);
- The survey approach that we have been advised to implement and the FAC and LRIC estimation methods we have chosen to adopt (please see section 3 for more details); and
- Assumptions about the operational and organisational structure of dispensing practices (please see section 5 below for a more detailed discussion).

Table 21: Summary of dispensing profit margins under each incremental and common income and cost apportionment methods, accounting profits

Incremental income and cost apportionment	Common income and cost apportionment	Overall	Stratum					
			H-B	M-B	L-B	H-S	M-S	L-S
FAC	**EPMU**	11%	11%	16%	17%	14%	9%	-7%
LRIC	**EPMU**	17%	13%	21%	20%	21%	16%	-1%
FAC	**Incremental** (assumes general medical / clinical bears all common costs)	16%	15%	21%	20%	19%	17%	-3%
LRIC	**Incremental** (assumes general medical / clinical bears all common costs)	19%	16%	23%	21%	23%	20%	1%
FAC	**Midpoint** between incremental and EPMU profit margins#	14%	13%	19%	18%	16%	13%	-5%
LRIC	**Midpoint** between incremental and EPMU profit margins#	18%	15%	22%	21%	22%	18%	0%

Source: Practice accounts and visits, PwC analysis

These are midpoints of the stratum-level results, rather than practice-level midpoints averaged for each strata.

4. Results

4.8 Overall results (cont.)

The table below summarises, based on **accounting profits**: the overall practice-level profit margins by strata; overall income, costs and profits per NHS patient; and – as a sense check – profits per partner (where the number of partners have been adjusted to reflect full-time equivalents – please see section 4.5 for more details). Overall accounting profit margins are around 33% on average for all practices, with no practices making a loss on an accounting basis. As before, these results should be interpreted in the light of the scope of work under which we carried out this analysis, and the survey approach that we have been advised to implement.

Table 22: Summary of overall profit margins (%); overall income, costs and profits per NHS patient (£) and overall profit per partner (£000s), accounting profits

	Overall	Stratum					
		H-B	M-B	L-B	H-S	M-S	L-S
Overall practice-level **profit margin**	33%	30%	35%	31%	30%	31%	44%
Overall income per NHS patient (£)	246	281	220	174	323	205	167
Overall cost per NHS patient (£)	167	197	144	120	225	141	94
Overall profit per NHS patient (£)	79	84	76	54	98	64	73
Overall profit per partner (full-time equivalent) (£000s)	158	154	169	183	161	144	130

Source: Practice accounts and visits, PwC analysis

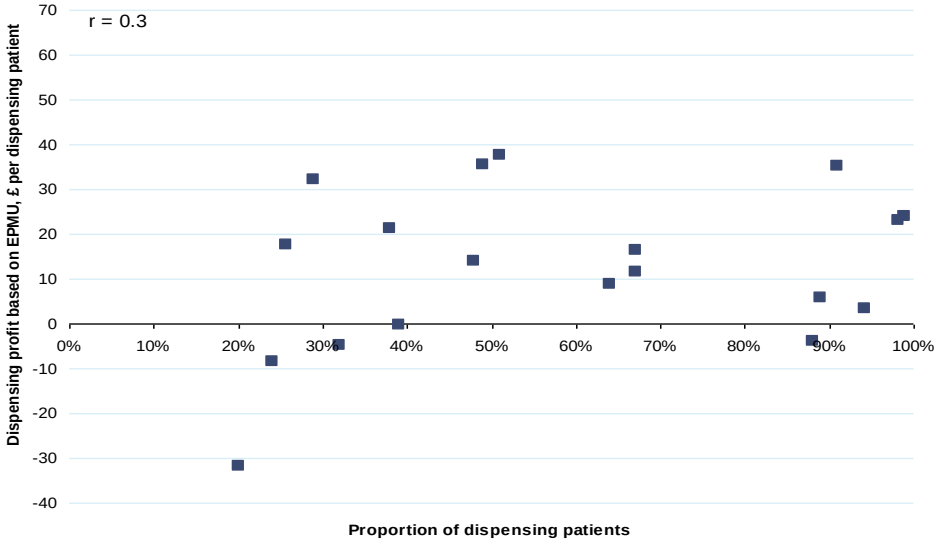
4. Results
4.8 Overall results (cont.)

The following graphs explore the relationship between the characteristics of the sample and income, costs and profit. All income, costs and profit shown are based on EPMU.

The graphs on the right illustrate the relationship between dispensing profit per dispensing patient and the proportion of dispensing patients for the sample practices. It is difficult to draw firm conclusions from a sample of only 20 practices. However, the relationships suggest that:

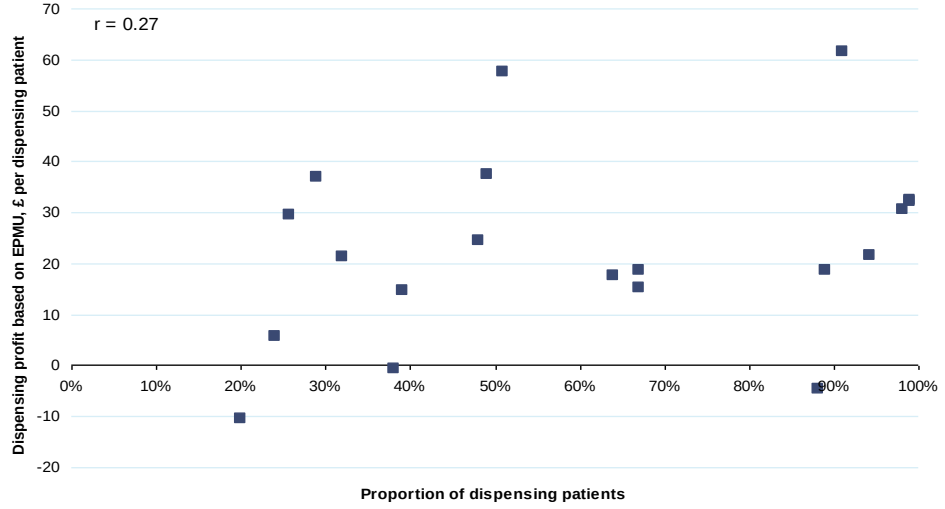
- For both the FAC and LRIC methods, dispensing profit per dispensing patient is mildly positively correlated with the proportion of dispensing patients. This appears to be because both overall dispensing income and costs per patient are mildly positively correlated with the proportion of dispensing patients.
- These relationships suggest that the practices do not have any significant fixed dispensing costs that would result in noticeable economies of scale in dispensing operations. Given that the positive correlations are not very strong, it is unclear whether increases in dispensing costs per patient are related to efficiency factors or whether it is a reflection of patient mix e.g. practices with higher proportions of dispensing tend to be located in areas with an ageing population, which may increase dispensing costs per dispensing patient.
- The two practices that make the largest losses under the FAC method appear to have a low proportion of dispensing patients and a relatively small list size (i.e. they are in stratum L-S). This suggests that, while there are no significant economies of scale in providing dispensing services, there may be some **minimum** scale of operations required to make dispensing worthwhile for practices.
- The FAC method appears to give lower profits. Because this apportionment method is based on the **current** or **existing** resources spent on dispensing activities, it is likely to allocate a greater proportion of costs to dispensing than the LRIC method.

Figure 41: Dispensing profit per dispensing patient and proportion of dispensing patients, FAC allocations



Sources: Practice accounts and visits, PwC analysis.

Figure 42: Dispensing profit per dispensing patient and proportion of dispensing patients, LRIC allocations



Sources: Practice accounts and visits, PwC analysis.

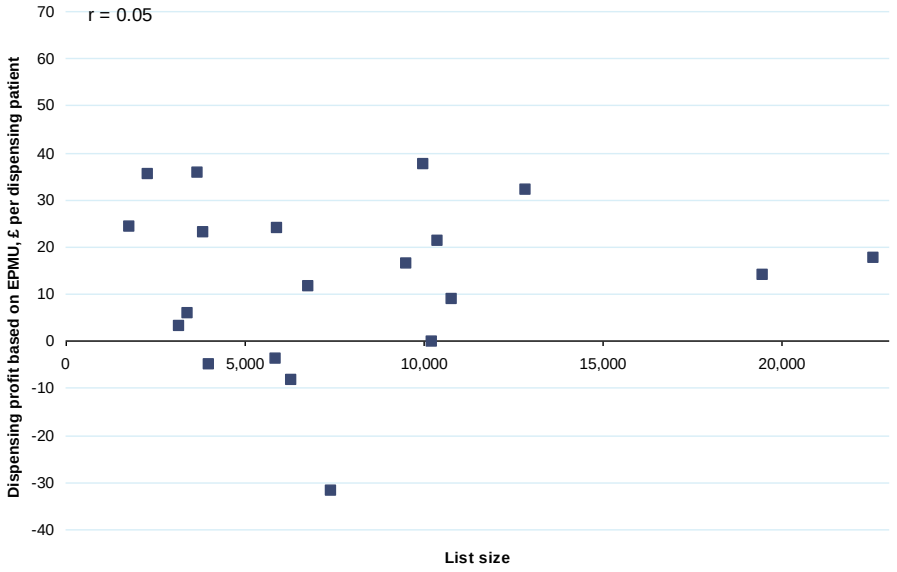
4. Results

4.8 Overall results (cont.)

The relationship between dispensing profit per dispensing patient and list size for the sample practices can be seen from the graphs on the right. It appears that:

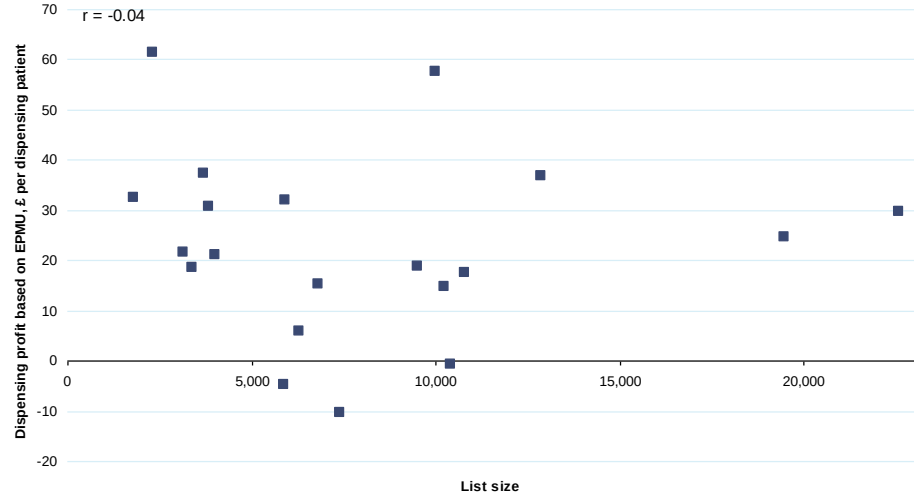
- Dispensing profit per dispensing patient appears to have close to zero correlation with list size. Intuitively, dispensing profit per dispensing patient would be more closely related to the operational structure of the practice (based on the proportion of dispensing patients) rather than its size (as measured by list size).
- In particular, dispensing costs per dispensing patient is very weakly negatively correlated with list size (r is -0.13 for FAC and -0.06 for LRIC), suggesting that the size of the practice may lower dispensing costs per patient very slightly. This relationship implies that the sample dispensing practices generally do not have large fixed common costs (e.g. large amounts of common property costs) that might create noticeable economies of scale as practices increase in size.
- The stratified random sampling method used in this survey has caused two particularly large practices with list sizes of over 19,000 to be included in the analysis. However, their dispensing income, costs and profit per dispensing patient do not appear particularly out of line with the rest of the sample, and so should not skew the results.

Figure 43: Dispensing profit per dispensing patient and list size, FAC allocations



Sources: Practice accounts and visits, PwC analysis.

Figure 44: Dispensing profit per dispensing patient and list size, LRIC allocations



Sources: Practice accounts and visits, PwC analysis.

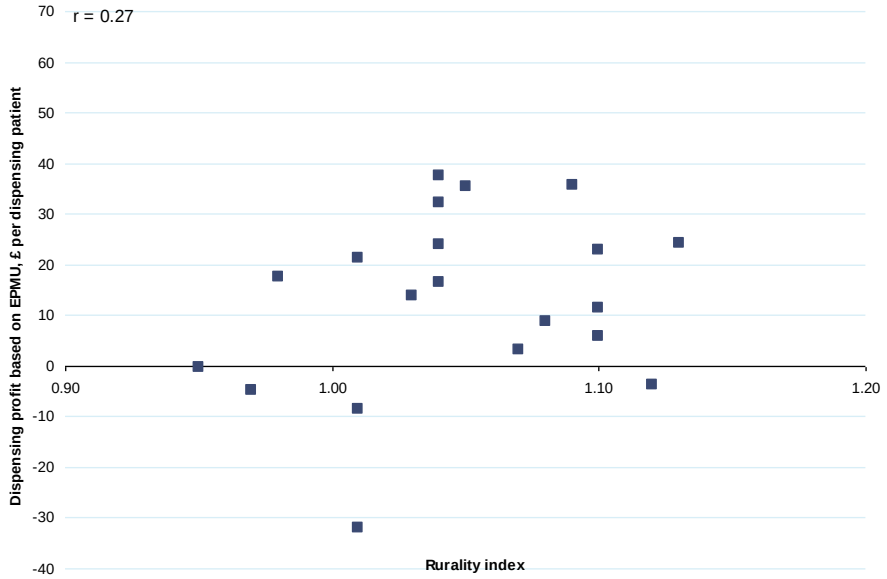
4. Results

4.8 Overall results (cont.)

The graphs on the right show how dispensing profit per dispensing patient varies with rurality (as measured by the Rurality Index from the NHS Prescription Services data, where a higher index number indicates a higher degree of rurality) for the sample practices. It can be observed that:

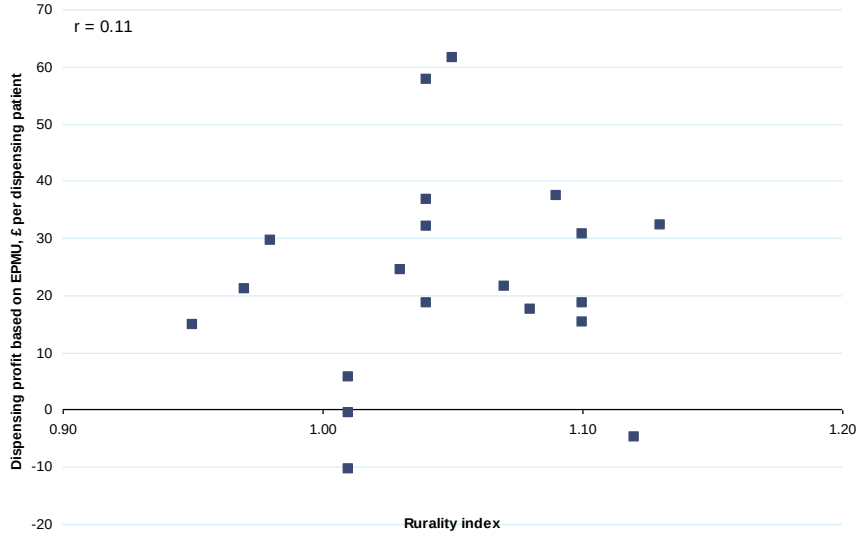
- Dispensing profit per dispensing patient appears to be very weakly correlated with rurality. This confirms our initial intuition when developing the sampling methodology that other characteristics, such as proportion of dispensing patients, may better capture how dispensing income and costs may vary between different types of practices.
- Dispensing costs per dispensing patient does not appear to be particularly correlated with rurality (r is 0.04 and 0.20 for FAC and LRIC respectively). This suggests that differences in degrees of rurality between dispensing practices does not have a material effect on dispensing costs.
- In particular, the practice that makes the largest loss does not appear to be noticeably more rural than the rest of the sample.

Figure 45: Dispensing profit per dispensing patient and rurality, FAC allocations



Sources: Practice accounts and visits, PwC analysis.

Figure 46: Dispensing profit per dispensing patient and rurality, LRIC allocations



Sources: Practice accounts and visits, PwC analysis.

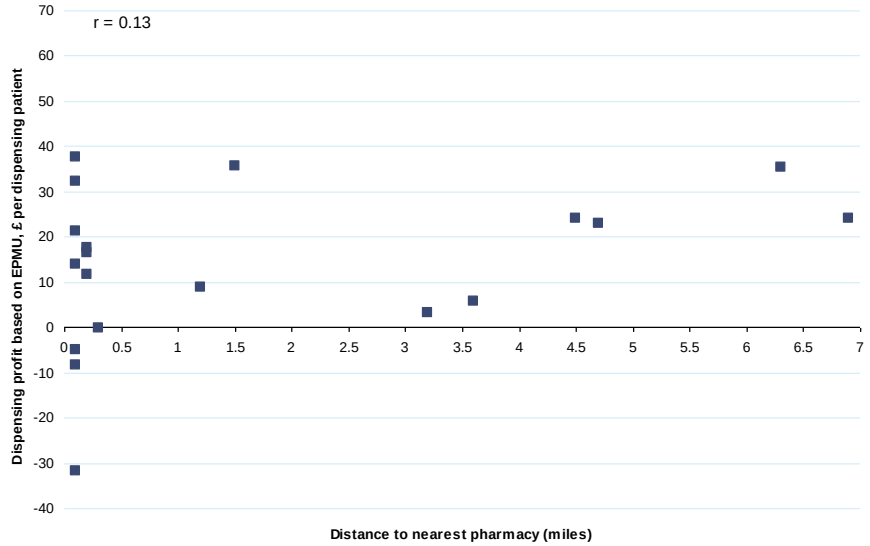
4. Results

4.8 Overall results (cont.)

We have also examined the relationship between dispensing profit per dispensing patient, and the distance to the nearest pharmacy (based on Google Maps and confirmed with most practices) for each of the sample practices, illustrated by the graphs on the right. It can be seen that:

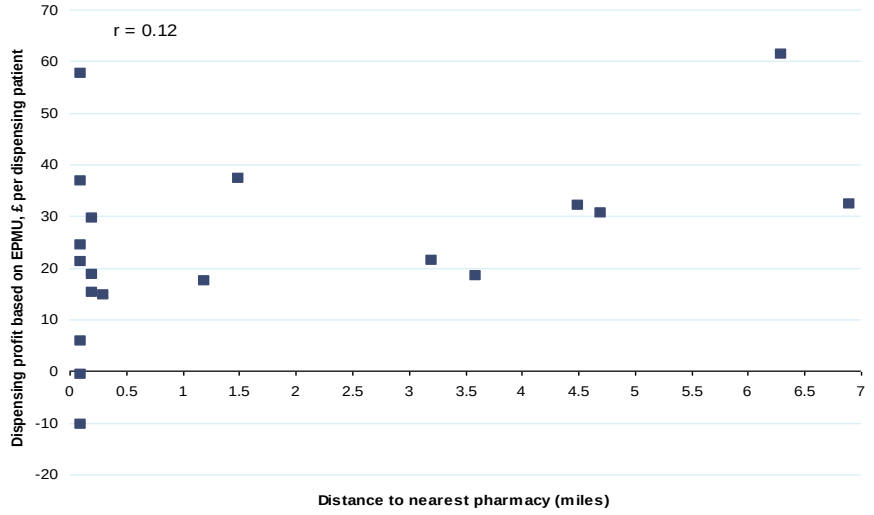
- Dispensing profit per dispensing patient is weakly positively correlated with the distance to the nearest pharmacy. This suggests that being further away from another dispensing service-provider has a very small positive effect on practices' profitability.
- However, as may be expected, practice distances to the nearest pharmacy show strong positive correlation with practices' proportion of dispensing patients, as well as some positive correlation with rurality and negative correlation with list size. Given these relationships, it is difficult to gauge whether distance to the nearest pharmacy does have a notable effect on dispensing profitability, or if it merely acts as a proxy for the other characteristics we have considered in this section.

Figure 47: Dispensing profit per dispensing patient and distance to nearest pharmacy, FAC allocations



Sources: Practice accounts and visits, PwC analysis.

Figure 48: Dispensing profit per dispensing patient and distance to nearest pharmacy, LRIC allocations



Sources: Practice accounts and visits, PwC analysis.

4. Results

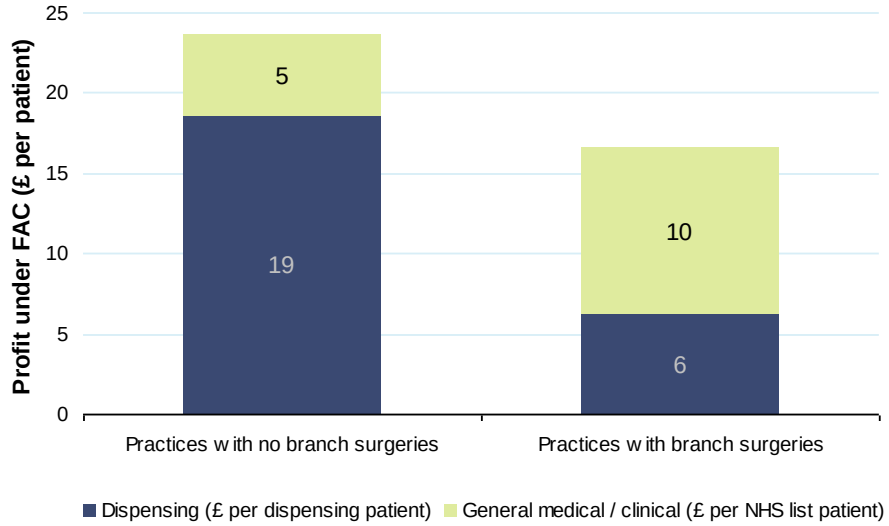
4.8 Overall results (cont.)

Another relationship we examined is whether having branch surgeries would affect dispensing profitability. This is illustrated in the graphs on the right, which illustrate the average dispensing profit per dispensing patient and average general medical / clinical profit per NHS patient for practices with and without branch surgeries.

Dispensing profits appear to be significantly lower for those *with* branch surgeries, but general medical / clinical profits appear to be significantly higher for these practices. There are some possible reasons for this:

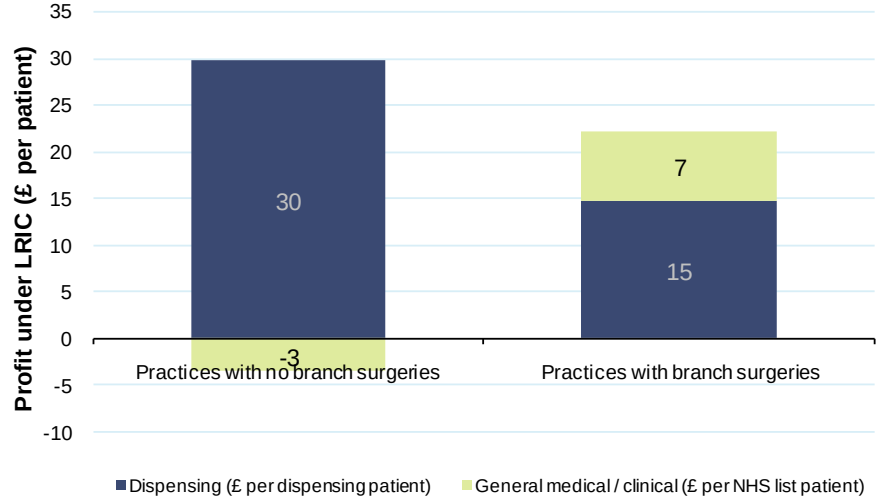
- 6 out of the 9 practices with branch surgeries are in a stratum with a relatively "big" list size (i.e. strata H-B, M-B and L-B), which would make intuitive sense. This may also be the practices with a lower proportion of dispensing patients, biasing the dispensing profit per dispensing patient downwards and causing more of practice profits to be derived from general medical / clinical activities.
- Anecdotally, some practices have reported to us that branch surgeries are less profitable than the main surgery, and the former tend to be opened more due to unmet demand – often for dispensing services – rather than boosting profitability. This lower profitability in branch surgeries may mean that the dispensing profitability of practices with branch surgeries would be lower than those without branch surgeries.
- However, it is likely that only practices making a sufficient level of profit on general medical / clinical activities would consider branch surgeries to be viable. This may result in practices with branch surgeries to also be those with higher general medical / clinical profits.

Figure 49: Average dispensing profit per dispensing patient and general medical clinical profit per NHS patient, for practices with and without branch surgeries, FAC allocations



Sources: Practice accounts and visits, PwC analysis.

Figure 50: Average dispensing profit per dispensing patient and general medical clinical profit per NHS patient, for practices with and without branch surgeries, LRIC allocations



Sources: Practice accounts and visits, PwC analysis.

5. Discussion of results

5. Discussion of results

In this section we discuss the results presented above, including:

- Sensitivity analysis of the results;
- A discussion of how suitable the FAC and LRIC methods are for this analysis;
- A consideration of the circumstances under which common costs should be apportioned on EPMU versus a standalone basis;
- Qualitative comments received from the practices to supplement our quantitative results; and
- Concluding remarks.

5.1 Sensitivity analysis of the results

As part of our scope of work to consider how forward-looking factors and other possible changes may affect the results presented in section 4, we have also undertaken analysis of how sensitive the results on economic profits are to changes in various key inputs. The key inputs we seek to flex are:

- Drugs costs for all practices, holding reimbursement constant – it has been reflected by the practices sampled that dispensing profit is particularly sensitive to changes in this input, since it is a large part of dispensing costs, and some practices have commented that drug reimbursement has not kept up with increases in drugs costs (see section 5.4 for further details on comments received from practices);
- Income from dispensing fees for all practices, assuming that dispensing volumes remain constant – this is to test the impact of changes in dispensing fee, including the recent decrease of 8.9% implemented last October;
- Pre-tax nominal WACC estimate, which would affect all fair returns calculations;
- Intangible asset value as a proportion of revenue, which are used to calculate the fair returns; and
- Partner base pay (i.e. what a partner may be paid if they did not receive a share of profits) – this is currently based on an assessment of annual pay for GPMS salaried GPs in rural practices 2007/08 EEQ data, as discussed in section 4.5.

Since we are mainly interested in how dispensing results on the whole vary in relation to changes in the inputs outlined above, we only show the sensitivity analysis conducted on the average dispensing profit margin across all 20 practices, based on the FAC apportionment method and common income and costs allocated based on EPMU. The outputs of the sensitivity analysis are presented below.

Table 23: Sensitivity analysis on drugs costs and dispensing fees, impact on dispensing profit margin (based on FAC and EPMU, %), economic profits*

	% change in drugs costs (assuming drug reimbursement unchanged)				
% change in dispensing fees	**-11.0%**	**-5.5%**	**0%**	**+5.5%**	**+11.0%**
+8.9%	16%	12%	9%	5%	2%
0%	14%	11%	**7%**	3%	0%
-8.9%	12%	9%	5%	2%	-2%

Source: PwC analysis.

The table above shows the average dispensing profit margin for all 20 practices based on FAC and EPMU cost allocation methods for different percentage changes in the drugs costs and dispensing fees income, for example, for a combined increase in drugs costs of 11% and increase of dispensing fees income of 8.9%, the average dispensing profit margin would fall to 2%. The yellow-highlighted cell is the "base case" profit margin i.e. the profit margin with the current inputs into the analysis (as presented in section 4).

The sensitivity analysis suggests that for a 11% increase in drugs costs, all other inputs constant, the average dispensing profit margin would fall to 0% i.e. practices would on average just break even. However, it appears that an 8.9% decrease in dispensing fee income would only reduce dispensing profit margin by 2 percentage points to 5% under this analysis.

* The range of percentage change in drugs costs was chosen based on the percentage increase that would result in the average practice breaking even (dispensing profit margin is 0%), while the range in the percentage change in dispensing fees income was chosen based on the recent decrease in dispensing fees income of 8.9%.

5. Discussion of results

5.1 Sensitivity analysis of the results (cont.)

Table 24: Sensitivity analysis on WACC (on a nominal, pre-tax basis) and intangible asset value (as % of revenues), impact on dispensing profit margin (based on FAC and EPMU, %), economic profits*

	WACC (nominal, pre-tax)				
Intangible asset value, % of revenues	**10%**	**15%**	**17%**	**20%**	**25%**
0%	10%	9%	9%	9%	9%
33%	8%	7%	**7%**	7%	6%
50%	8%	6%	6%	5%	4%
100%	6%	3%	2%	1%	-1%
150%	3%	0%	-1%	-3%	-6%

Source: PwC analysis.

The table above shows the average dispensing profit margin for all 20 practices based on FAC and EPMU cost allocation methods for different WACC and intangible asset value inputs. The yellow-highlighted cell is the "base case" profit margin i.e. the profit margin with the current inputs into the analysis.

The table demonstrates that as the intangible asset value (as a percentage of revenues) increases, the profit margin becomes more sensitive to changes in WACC as may be expected, since the absolute value of the fair return becomes larger.

The sensitivity analysis suggests that for an increase of WACC to 25%, assuming all other inputs remain constant, the profit margin would fall by 1 percentage point to 6%. This suggests that, even if the WACC estimate were uncertain, dispensing profit margins would not vary significantly with this input.

The analysis also estimates that if the intangible asset value were tripled from its current proportions to 100% of revenues, the profit margin would fall 5 percentage points to 2%, assuming all other inputs constant. This suggests that dispensing profit margins are more sensitive to the intangible asset value, but that this input only has a considerable impact if it were underestimated by multiples of its current value.

* The range of inputs chosen for this sensitivity analysis were based on making a high-level judgment on the approximate potential maximum and minimum values for these inputs.

We also carry out sensitivity analysis on our estimate of partner base pay below.

As before, we are mainly interested in how dispensing results on the whole vary in relation to changes in the inputs outlined above. We thus show the partner base pay sensitivity analysis conducted on the average dispensing profit margin across all 20 practices, based on FAC and EPMU as before.

However, as a sense check we also show the sensitivity analysis on the overall practice profit margin, as well as average practice profit per partner (on a full-time equivalent basis) across the 20 practices.

5. Discussion of results

5.1 Sensitivity analysis of the results (cont.)

Table 25: Sensitivity analysis on partner pay, impact on dispensing profit margin (based on FAC and EPMU, %), overall practice profit margin and average practice profit per partner, economic profits^

Partner base pay estimate (£ per partner)	Dispensing profit margin (%)	Overall practice profit margin (%)	Average practice profit per partner (£000s)
52,573	7%	14%	71
84,382	**7%**	**7%**	**38**
100,000	7%	3%	22
150,000	6%	-8%	-30
200,000	5%	-20%	-82

Source: PwC analysis.

The table above shows the average dispensing profit margin based on FAC and EPMU cost allocation, overall practice profit margin and practice profit per partner for all 20 practices methods for different partner base pay inputs. The yellow-highlighted cells are the "base case" profit margins i.e. the profit margins with the current inputs into the analysis.

The analysis shows that dispensing profit margins have very low sensitivity to partner base pay estimates, with an increase of partner base pay to £200,000 per partner (more than double the current estimate) only reducing the dispensing profit margin by 2 percentage points. This is not surprising, as very little partner time is allocated to dispensing activities across all practices.

However, overall profit margins and profit per partner are highly sensitive to partner base pay estimates. This is because partner base pay already makes up around 40% of staff costs in the base case, causing any further increases to have a large impact on overall profits. Based on the sensitivity analysis, an increase in partner base pay to £150,000 per partner would result in a decrease in overall profit margins to -8% on average across the 20 practices.

It should be noted that there are several limitations to this type of sensitivity analysis:

- The analysis estimates the impact of changes in one or two inputs while holding all other factors constant. In reality, changes are likely to have knock-on effects that will affect how the dispensing profit margin varies.
- In particular, the analysis does not explicitly consider *volumes* of activity, whereas in reality any changes in this would probably affect several income and cost lines at once e.g. changes in dispensing volumes would impact drugs costs, drugs reimbursement *and* dispensing fees, among other income and cost lines.
- The changes to the inputs are applied linearly, without considering which elements of income and costs are fixed or variable. While less relevant for the inputs considered in this section, this would affect any attempts to flex inputs that may have fixed elements e.g. property costs.
- For forward-looking changes e.g. the 8.9% reduction in dispensing income, this analysis merely assesses the impact of changes based on **an assumed steady-state level of income and costs**. No other income and costs have been projected, so the analysis cannot be taken as an accurate forecast of average dispensing profits for the next year.

Taking into account these limitations, this sensitivity analysis can still be seen as reasonable high-level estimates of how average dispensing profit margins may vary with changes in different inputs.

^ The range of inputs chosen for this sensitivity analysis were based on average annual pay for GPMS salaried GP in rural practices from 2007/08 EEQ data, the latter adjusted for the average hours worked a week for GP partners as discussed in section 4.5, and three higher pay estimates to test the sensitivity of the results, with £200,000 deemed as the upper possible bound for GP pay without a share of profit.

5. Discussion of results

5.2 Assessment of FAC v LRIC methods

In assessing the suitability of the FAC and LRIC methods, we have considered the following key considerations:

- Defensibility – this considers which method has the better grounding in economic principles and a greater number of regulatory precedents;
- Objectivity – this takes into account the degree of judgement required to estimate the allocations;
- Ease of use – this examines which method is easier to apply; and
- Apportionment to dispensing activities – which method apportions a greater portion of costs to dispensing, and whether the basis for doing so is appropriate, will need to be considered.

Our view on how each method measures on the criteria outlined above are summarised in the table below.

Key	
	Measures higher against criterion
	Measures lower against criterion

Table 26: Summary assessment of FAC v LRIC methods

Key considerations	FAC method	LRIC method	Comments
Defensibility			The LRIC method is better grounded in the economic principles of incremental income and costs, and has a greater number of regulatory precedents, including use in market inquiries by competition authorities.
Objectivity			Because the FAC method is based on **current** or **existing** proportions of resources spent on each type of activity, this requires less use of judgment than the LRIC method, which are based on judging the avoidability of different costs.
Ease of use			FAC is easier to apply in estimating allocations. The LRIC method is more difficult to use because it is based on considering hypothetical scenarios, some of which may be difficult to imagine e.g. a dispensing practice with no general medical / clinical activities.
Apportionment of costs to dispensing activities			The FAC method gives a higher apportionment of costs to dispensing activities. As discussed in section 4.7, this is because the FAC method is based on current or existing allocations of resources, which is likely to be greater than the avoidable proportion of dispensing costs under the LRIC method since some resources e.g. partners' time would simply be diverted to other uses in the absence of dispensing activities. Whether this higher apportionment is appropriate would depend on whether the avoidable allocation may be deemed to underestimate the current cost of providing dispensing activities. This may occur if dispensing is only a secondary or ancillary activity to the core operations of the practice, and so while it currently utilises a certain amount of resources (higher FAC allocation), these resources could easily be switched back to core practice operations if there were no dispensing activity (lower LRIC allocation). This concept of dispensing as an ancillary activity is discussed further in the following section.

5. Discussion of results

5.3 Apportionment of common costs

EPMU, as explained in section 3.2, is one basis for apportioning common costs that may be appropriate if the increments under consideration are all considered to be "core" or "primary" to the operations of the practice. This methodology more closely reflects the relative contribution and importance of the two segments and has in the past been applied by regulatory sectors in other sectors.

As outlined in section 4.7, common cost apportionment on a standalone basis may be appropriate in such a business where the overall operations are skewed to one activity rather than another. In other words, if one increment is considered the "core" operations of the practice, while the other increment is considered "secondary" or "ancillary". In an extreme case, the costs of the "core" increment would be exactly the same regardless of whether the "secondary" increment existed.

If the "core" and "secondary" concepts apply, the former should bear all the common costs, while the latter should bear none. This is based on the assumption that the "core" operations would continue to exist **in the absence of** the ancillary operations, whereas it is highly unlikely for the reverse to be true. There are two possibilities of apportioning common costs on a standalone basis:

- General medical / clinical activities are "core" (and dispensing is "ancillary"): In this case, common costs would be apportioned on a standalone basis and would be borne wholly by general medical / clinical activities. As discussed in section 4.7, this would reduce the profit margins of general medical / clinical activities and increase the profit margins of dispensing activities when compared with EPMU.
- Dispensing activities are "core" (and general medical / clinical is "ancillary"): In this case, common costs would be apportioned on a standalone basis and would be borne wholly by dispensing activities. We consider this model of operations, where dispensing operations would continue in the absence of general medical / clinical (and the latter would collapse without the former), to be unlikely.

The choice of EPMU versus standalone as a basis for apportioning common costs is thus dependent on whether dispensing is considered "core" to the operations of the practice, or whether it is an "ancillary" service. Arguably dispensing activities are undertaken in support of general medical / clinical activities, and should be treated as purely incremental to the stand-alone general medical / clinical business.

5.4 Qualitative comments received from practices

In addition to the quantitative data collected for the analysis presented in section 4, we also supplemented this by collecting some qualitative information from the practices, as outlined in more detail in section 3.5. In particular we asked practices for commentary on the following five key topics:

- Significant changes to their costs and income since the accounts provided, particularly the impact of changes to the overall cost of drugs and discounts;
- The impact of a recent reduction in dispensing fees of 8.9% (implemented in October 2009);
- The risks associated with running a dispensing practice;
- How the practice's location (and relative rurality) affects its income, costs and operations; and
- The impact of the dispensing services the practice provides on the community in which it operates.

The comments we received from the practices on each of these topics are summarised below.

Changes to the overall cost of drugs and discounts

- 13 out of the 18 practices that answered this question reported a tightening on the discounts received from wholesalers and suppliers. This is mainly due to new arrangements where major pharmaceutical companies often only distribute through one or two suppliers, reducing the bargaining power of practices, which now have a greatly reduced (if any) choice in suppliers.
- Compounding the effect of the reduction in discounts, a few practices have also reported experiencing a small-order surcharge, and that drugs reimbursement does not reflect this reduction in discounts.
- One practice reported that the reduction in discount from a particular supplier was so severe it resulted in a cashflow problem and losing a dispensing member of staff.
- One or two practices have tried to mitigate the effect of reduced discounts, either through consolidating all their orders and using only one supplier, or joining a buying group e.g. PSUK.

5. Discussion of results

5.4 Qualitative comments received from practices (cont.)

Changes to the overall cost of drugs and discounts (cont.)

- About a quarter of practices also discussed the impact of a shift towards Category M drugs. This concerns the shift towards a certain category of generic drugs* that have a set price reimbursement, which practices reported are very low and do not adequately reflect changes in the purchasing cost of the drugs.
- Related to the shift to Category M, some practices reported that their PCTs have also been trying to incentivise the shift to generics through Prescribing Incentive Schemes, which reward practices with the lowest prescribing costs in the PCT.

In response to these comments, we have examined the potential impact of changes in drug costs, assuming a constant level of drugs reimbursement, in our sensitivity analysis in section 5.1. As set out in section 2, it is not within our scope of work to examine the impact of individual drug categories (e.g. Category M, other generics), but it would be noted here that several practices have raised the issue of potential perverse prescribing and dispensing incentives during our survey. Practices have reported that profits (in terms of the difference between reimbursement and cost) on different types of drugs often vary widely, incentivising practices to prescribe and dispense drugs – often generic drugs – that make the greatest profit. Some practices have expressed concern that this relegates prescribing and dispensing based on suitability and patient safety to secondary importance.

Impact of recent reduction in dispensing fees

- Most practices reported that while the quantitative impact of the reduction will not be clear until the next set of accounts, it is likely to hit profitability and require an increase in productivity, either in cutting down on new purchases or finding cost efficiencies elsewhere.
- Three out of the 20 practices that answered this question reported that the cut in dispensing fees contributed to the need to freeze staff pay, while two out of the 20 practices reported the need to expand or arrange an extra overdraft (of £25,000).
- The majority of practices, however, reported that this reduction in dispensing fees has not caused any major cashflow problems as yet.

Our sensitivity analysis above attempts to estimate the impact of the reduction in dispensing fees. While it appears that the reduction would decrease profitability, it does not appear to have a very significant impact.

Risks associated with running a dispensing practice

In asking for comments on the risks association with running a dispensing practice, we presented practices with a list of typical risk factors we had formulated based on the pilot surveys and consultation with the Steering Group. We then asked practices to rank these "high", "medium" or "low" according to the amount of risk each factor posed to practice operations, and to supplement this list with any other risk factors we may have omitted. These are summarised as follows:

- Cashflow risk – 12 out of the 17 practices that gave a response to this thought that cashflow risk was a low risk to their practice operations.
- Risk of new pharmacies opening – 9 out of 17 practices thought this was a low risk, while the other 8 practices thought is was a medium to high risk. This risk is fairly location-specific, which may explain the dichotomy in views.
- Regulatory risk – this is the risk that regulations related to the provision of dispensing services may change adversely for dispensing practices e.g. a tightening in the criteria allowing GP practices to dispense drugs. 11 out of 15 practices thought that regulatory risk was a medium to high risk.
- Risk of urbanisation (and the loss of dispensing patients from the local area) – 14 out of 17 practices thought that the risk of urbanisation was a low risk to their operations. This is likely to be because most practices tend to be situated either in protected green zones or in areas with an ageing population and more or less constant population levels.

Our fair returns analysis, which is based on comparators we believe to have similar risk profiles to dispensing practices, attempts to capture some of the risks outlined above and to incorporate these as a cost to the practice (please see section 3.2 for a further discussion of this).

* Generic drugs are drugs that no longer have patent protection, and thus can be produced and distributed by manufacturers other than the original developer.

5. Discussion of results

5.4 Qualitative comments received from practices (cont.)

Effect of practice location (and relative rurality) on income, costs and operations

- Out of the 15 practices that gave a reply, 6 reported that the main impact is on the time spent and the fuel costs related to doctors making home visits.
- Two practices reported that they were able to provide fewer services due to their rurality, due to travel times (e.g. for a drug delivery service) or insufficient referrals from other practices to support various clinics. One practice mentioned difficulties in recruiting qualified staff from nearby areas.
- On the whole, most practices have not reported a significant impact on their income, costs and operations due to their location and relative rurality.

This appears to confirm the results in section 4.7, which show a fairly weak correlation between rurality and practice profit.

Community impact of providing dispensing services

This question was phrased as the effects on the community and the NHS if the practice were to **stop** providing dispensing services.

- Out of the 20 practices that answered this question, 14 reported a reduction in patient access and convenience since they would have to travel further (sometimes into the nearest town) to obtain medication. 9 practices highlighted that this effect would be particularly severe on a growing proportion of elderly patients in the area who do not drive. 7 practices thought that this would also generally reduce the quality of care to their patients.
- 12 practices reported they would have to lay off staff, while 4 practices posited that the loss of dispensing income would cause the whole GP practice to become unviable.
- In terms of the impact on the NHS, 6 practices believed it would also increase the burden on other NHS services, particularly secondary care services. However, practices seemed to be divided on the potential impact of ceasing dispensing services on NHS spending. 4 practices thought that this would increase NHS spending, while 2 practices thought this would save NHS money, but to the detriment of patient care.

Annex 1: Results including pilot practices

Annex 1: Results including pilot practices

The aim of this annex is to compare the differences between the results of the analysis with only the 20 practices visited in the main survey (as presented in section 4), and results that also include the five pilot practices (i.e. all 25 practices that were visited in both the pilot and main surveys). As such, this annex will not contain any fresh commentary on patterns and trends in the data collected, but will **present the key results including the five practices** and focus on any notable differences between the two sets of results.

In terms of the strata that the five pilot practices belong to:

- Three pilot practices fall into stratum H-B;
- One pilot practice falls into stratum H-S; and
- One pilot practice falls into stratum L-B.

As a consequence, results for strata M-B, M-S and L-S are unaltered when compared with the main survey analysis.

Overall allocation of operating income

The table below summarises each component of income after all adjustments as a proportion of total practice income, averaged across each strata across all sample practices.

Table 27: Components of dispensing income, as % of total practice income, by stratum, including pilot practices*

	Drugs reimbursement	Dispensing fees	DSQS	**Total dispensing income**	**General medical / clinical income**	**Property income**	**Training income**
H-B	35%	10%	1%	46%	50%	4%	0.2%
M-B	21%	7%	0%	29%	64%	7%	1.0%
L-B	17%	4%	0%	21%	72%	7%	0.1%
H-S	38%	11%	1%	50%	46%	3%	0.6%
M-S	30%	6%	1%	37%	60%	3%	0.0%
L-S	12%	4%	0%	16%	75%	6%	2.4%

Source: Practice accounts and visits, PwC analysis for adjustments

These splits in operating income are very similar to the same splits presented in section 4.4. The main difference is in stratum L-B, where drugs reimbursement is 6 percentage points lower and general medical / clinical income is 7 percentage points higher than the results with only 20 practices. The main cause of this difference is an outlying pilot practice in this stratum, which has a large list size but only dispenses in one very small branch surgery (out of three branch surgeries). This is an unusual operational structure in comparison to the other practices within stratum L-B and as a result appears to have a significantly lower dispensing income as a proportion of total income.

* Results may not sum to exactly 100% due to rounding. “Total dispensing income” is the sum of the first three columns.

**The sample standard deviation is a measure of dispersion around the mean for a sample of data. It is calculated as the square root of the squared deviations from the mean, divided by one less the number of observations in the sample.

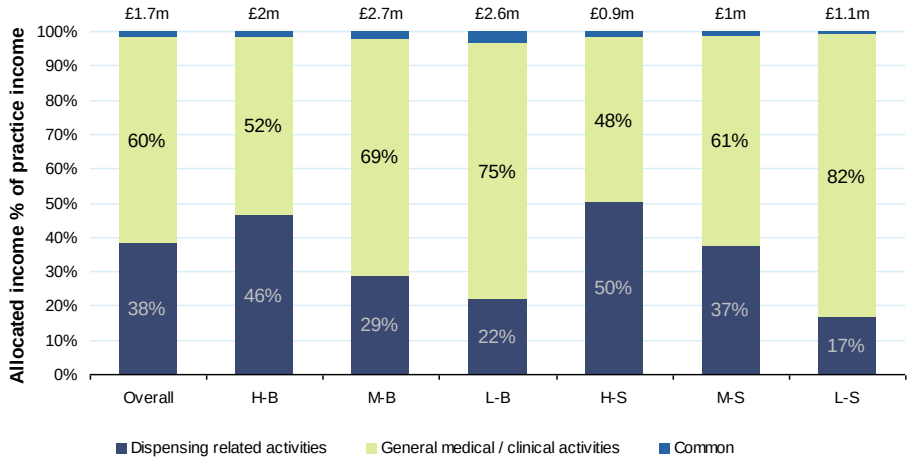
Annex 1: Results including pilot practices (cont.)

Overall allocation of operating income

The graphs on the right summarise dispensing, general medical / clinical and common income as a proportion of total practice income, averaged across each stratum across all pilot and main survey practices. Total income amounts are indicated at the top of the bars.

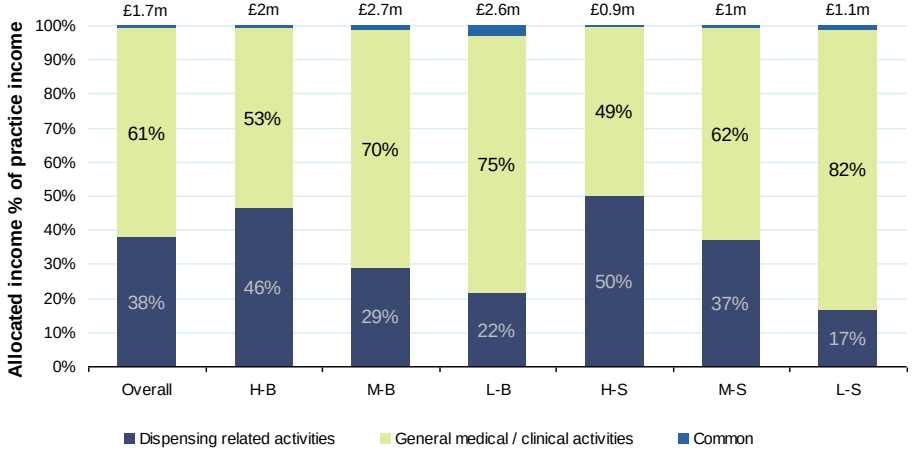
These allocations are very similar for the results that include the 20 main survey practices only. The one exception to this is stratum L-B, where dispensing income as a percentage of total operating income is 8 percentage points lower based on the FAC method than the results in section 4.4, again because of the outlying pilot practice that has a large list size but only dispenses in one very small branch surgery.

Figure 51: Main types of operating income – FAC allocation, including pilot practices



Sources: Practice visits, PwC analysis

Figure 52: Main types of operating income – LRIC allocation, including pilot practices



Sources: Practice visits, PwC analysis

Annex 1: Results including pilot practices (cont.)

Drug costs

These allocations are very similar for the results that include only the 20 main survey practices apart from two exceptions. For stratum H-B, where drug costs per dispensing patient are £9 higher than the results including only the 20 practices. This appears to be due to one particular pilot practice with particularly high drug costs per dispensing patient, perhaps reflecting prescribing patterns or patient mix.

Stratum L-B contains an outlying pilot practice that has a large list size but only dispenses in one very small branch surgery, causing the stratum averages to be lower than the results including only 20 practices.

Table 28: Drugs costs, as % of total practice costs and per dispensing patient, by stratum, including pilot practices

	Drug costs % of total practice costs	Drug costs per dispensing patient (£)
H-B	35%	118
M-B	21%	87
L-B	16%	95
H-S	37%	109
M-S	27%	107
L-S	15%	100

Source: Practice visits, NHS Prescription Services (for some PA adjustments), PwC analysis

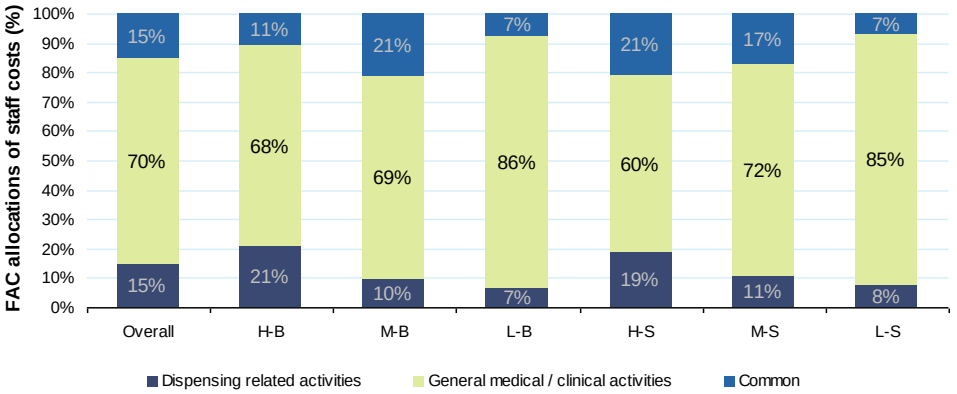
Annex 1: Results including pilot practices (cont.)

Staff costs

The graphs on the right summarise the average percentage allocations for staff costs by stratum under each allocation method.

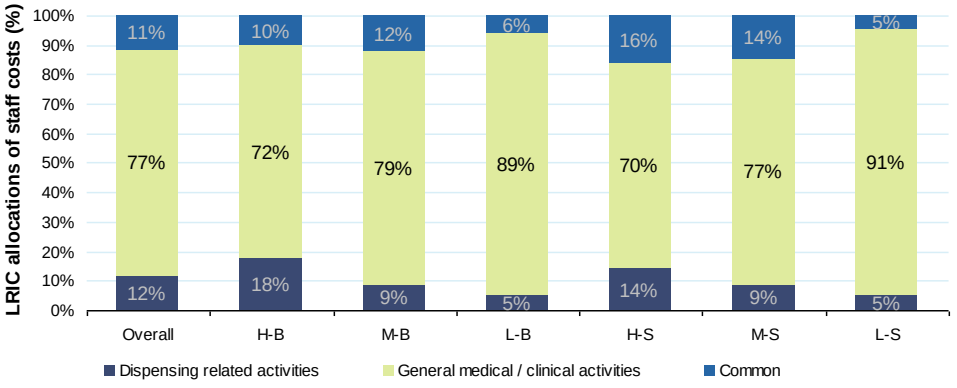
These staff allocations are fairly similar to those that include only the 20 main survey practices. Although the outlying pilot practice in stratum L-B has the lowest allocation of staff costs to dispensing-related activities out of all the practices (0.2% based on the LRIC method), it has not greatly biased the stratum average downwards.

Figure 53: Staff cost allocations – FAC, including pilot practices



Sources: Practice visits, PwC analysis

Figure 54: Staff cost allocations – LRIC, including pilot practices



Sources: Practice visits, PwC analysis

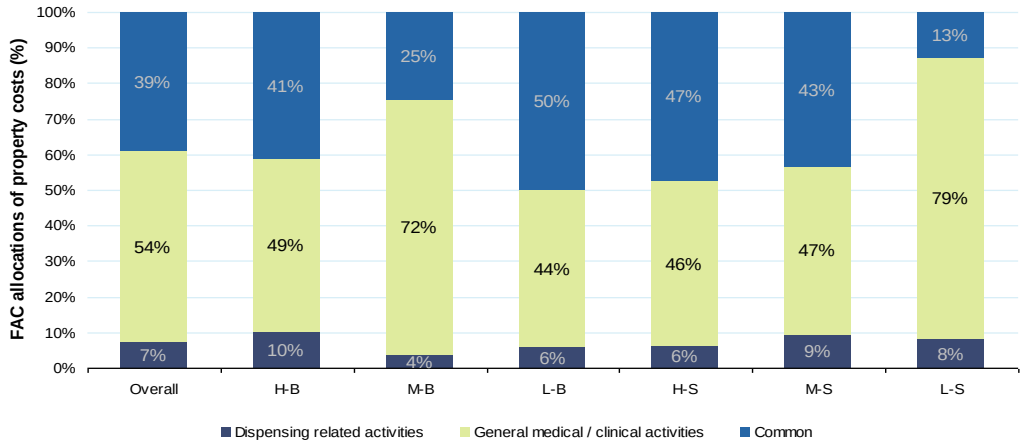
Annex 1: Results including pilot practices (cont.)

Property costs

Including the five pilot practices in average property cost allocations does not appear to make a notable difference, as shown in the graphs on the right. The biggest difference in percentage point terms appears to be stratum L-B under the LRIC method, where allocations are 14 percentage points lower than the results including only 20 practices. This appears again to be due to the outlying practice in this stratum, where dispensing services are provided in a branch surgery so small the practice manager reported that no floorspace is avoidable*.

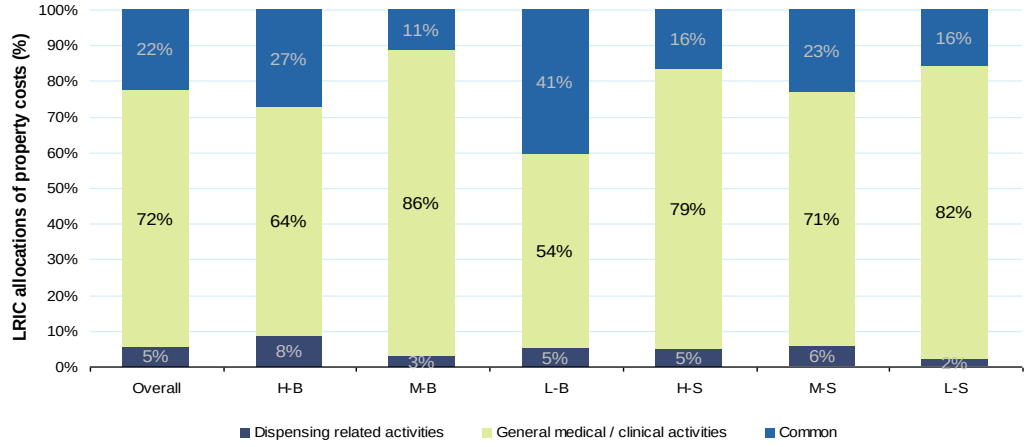
*Property allocations for this surgery have been adjusted from those presented in the initial pilot results in order to ensure they are on the same basis as the full survey results. Floorspace measurements had previously been given for the dispensing branch only, so the floorspace (excluding the portion allocated to dispensing) has been scaled up to reflect the floorspace of the entire practice across all surgeries. This has been done based on assuming an equal floorspace requirement for all patients across the practice and using the ratio of the total practice list size to the dispensing branch surgery list size.

Figure 55: Property costs, FAC allocations, including pilot practices



Sources: Practice visits, PwC analysis

Figure 56: Property costs, LRIC allocations, including pilot practices



Sources: Practice visits, PwC analysis

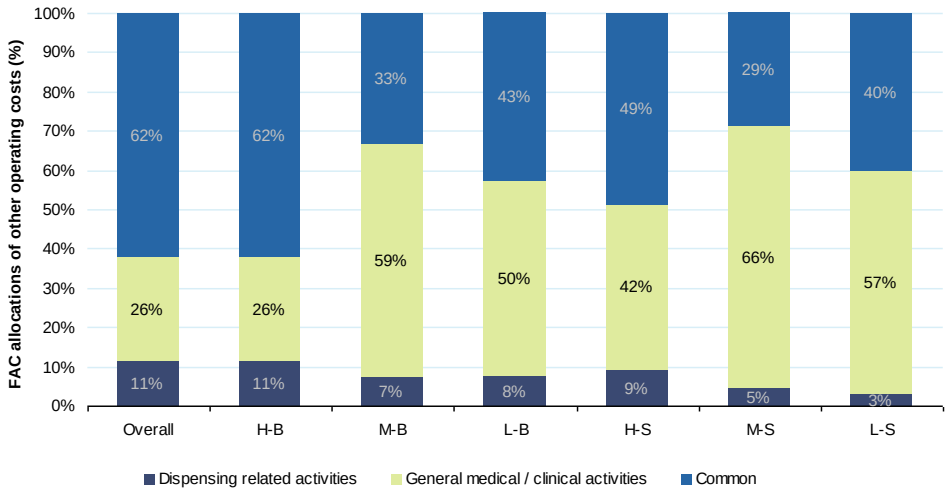
Annex 1: Results including pilot practices (cont.)

Other operating costs

Allocations of other operating costs appear to show some variation when the five pilot practices are included. For example, there is a much greater allocation of these costs to common when the five pilot practices are included. This may reflect the simplifying assumptions made for the pilot analysis, since these cost items were examined in far less detail than during main survey visits.

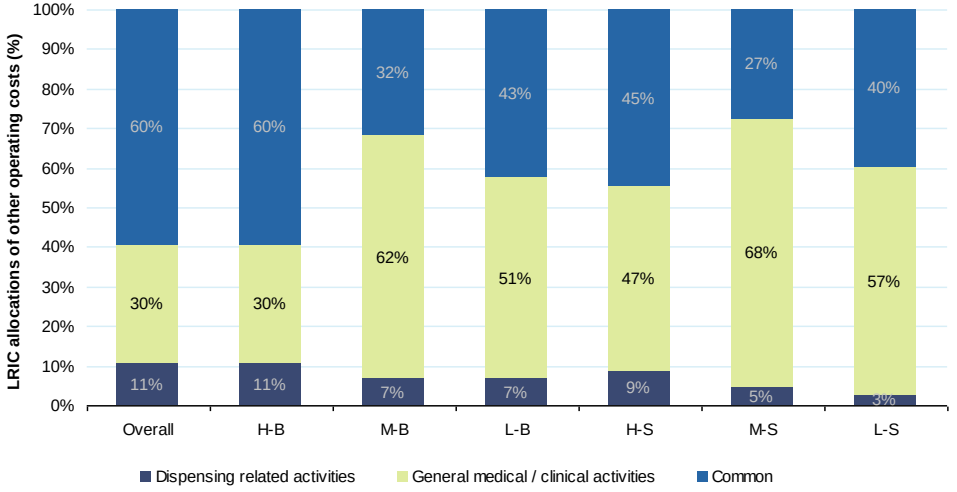
However, these costs are also a relatively small proportion of total costs for the pilot practices, and so should not have a major impact on the overall allocation of practice costs.

Figure 57: Other operating costs, FAC allocations, including pilot practices



Sources: Practice visits, PwC analysis

Figure 58: Other operating costs, LRIC allocations, including pilot practices



Sources: Practice visits, PwC analysis

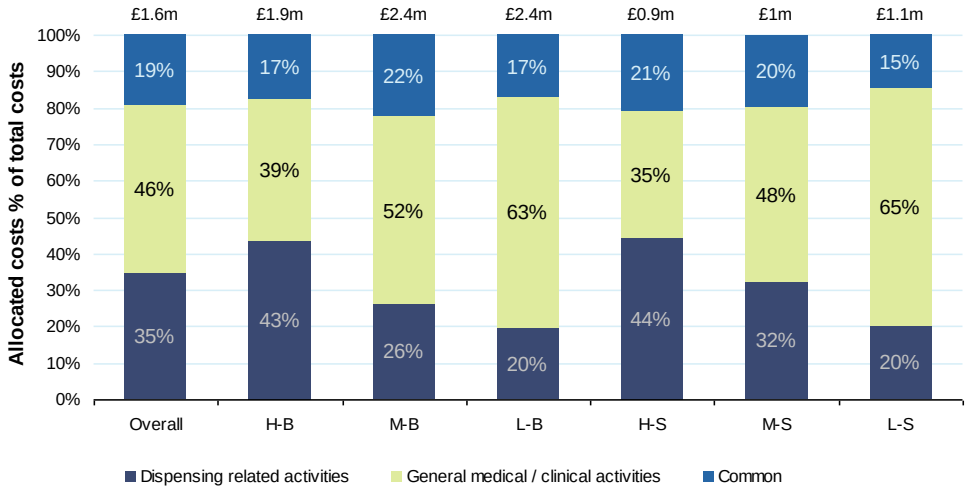
Annex 1: Results including pilot practices (cont.)

Overall cost allocations

Overall cost allocations including the pilot practices are shown on the graphs on the right. These allocations are very similar for the results that include only 20 practices in the stratum averages.

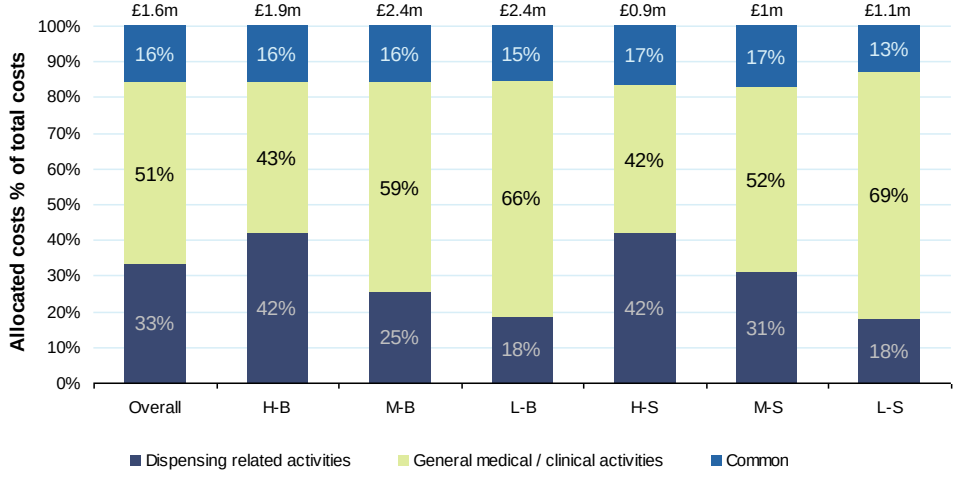
The one exception to this is stratum L-B, due to the outlying practice in this stratum where a very small percentage of costs (5% based on LRIC) are allocated to dispensing activities.

Figure 59: Total costs, FAC allocations, including pilot practices



Sources: Practice visits, PwC analysis

Figure 60: Total costs, LRIC allocations, including pilot practices



Sources: Practice visits, PwC analysis

Annex 1: Results including pilot practices (cont.)

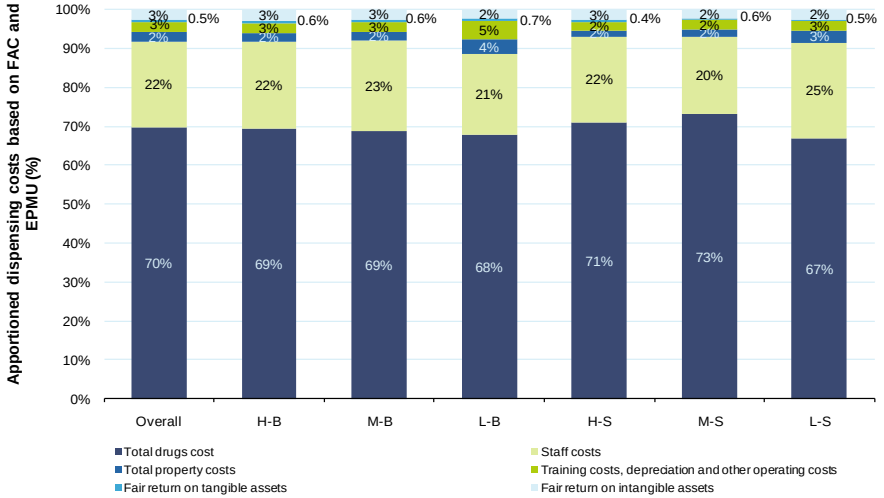
Breakdown of dispensing costs

The breakdown of total dispensing costs for all 25 practices, based on allocating the common element for each type of cost based on EPMU, are seen in the graphs on the right.

These are very similar to those that include only 20 practices, with the vast majority of costs being composed of drugs costs, followed by staff costs. Property costs, the remaining operating costs and fair return on intangible assets are roughly similar proportions, with fair return on tangible assets making up a negligible amount.

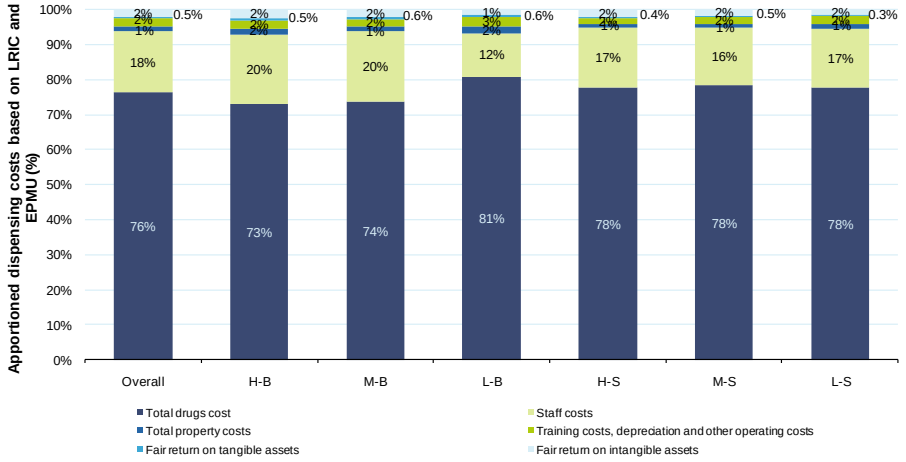
The greatest difference between these results and those that include only 20 practices are again for stratum L-B, where total drugs costs are 6 percentage points higher based on LRIC in the results on the right. This is because, for the outlying practice in this stratum, very few other costs are avoidable if there were no dispensing activities, causing drug costs to be a larger proportion of total dispensing costs than for other practices in the stratum.

Figure 61: Total dispensing costs split by cost type, FAC and EPMU allocations, including pilot practices



Source: Practice visits, PwC analysis

Figure 62: Total dispensing costs split by cost type, LRIC and EPMU allocations, including pilot practices



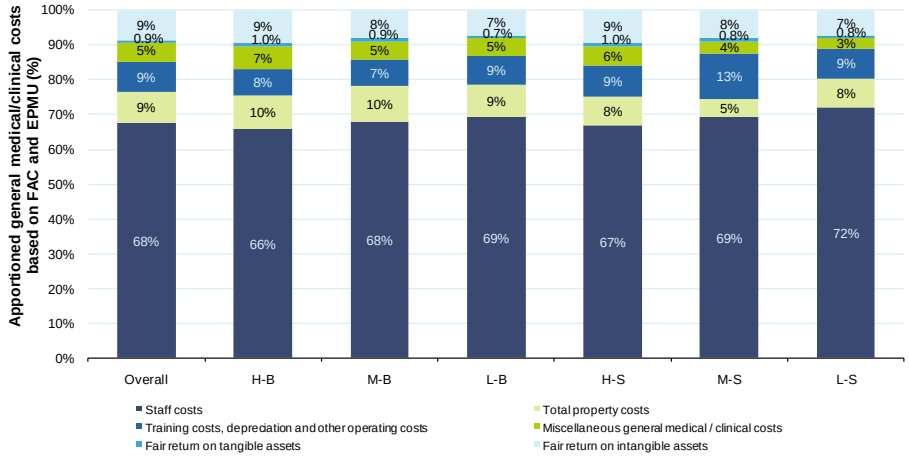
Source: Practice visits, PwC analysis

Annex 1: Results including pilot practices (cont.)

Breakdown of general medical / clinical costs

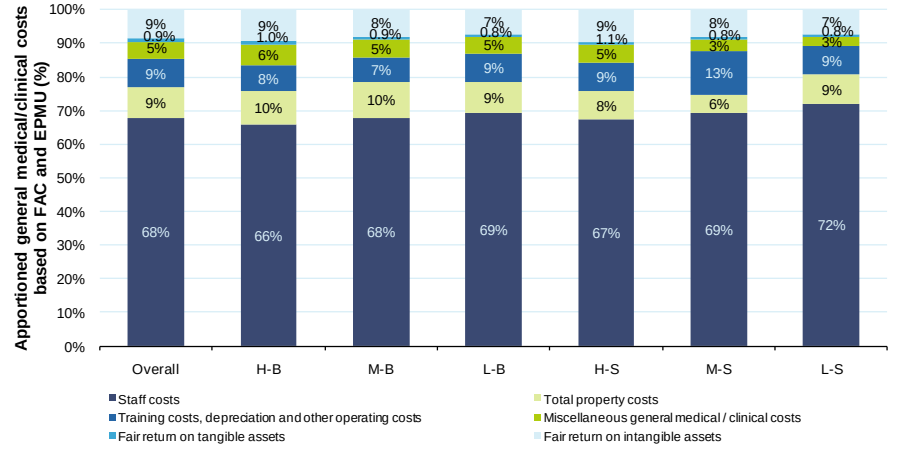
The graphs on the right show the breakdown of total general medical / clinical costs into different cost types for all 25 practices. This breakdown is very similar to the results with only 20 practices, with differences of up to only 3 percentage points between the two.

Figure 63: Total general medical / clinical costs split by cost type, FAC and EPMU allocations, including pilot practices



Sources: Practice visits, PwC analysis

Figure 64: Total general medical / clinical costs split by cost type, LRIC and EPMU allocations, including pilot practices



Sources: Practice visits, PwC analysis

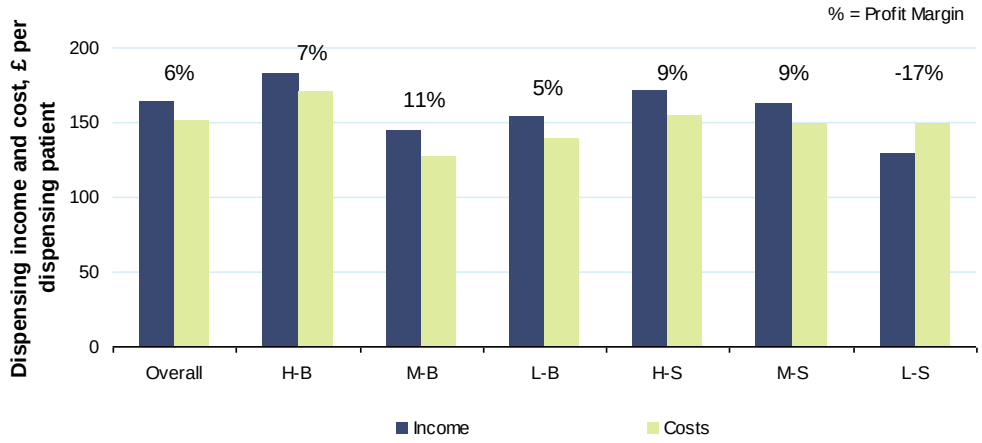
Annex 1: Results including pilot practices (cont.)

Income, costs and profits

The next pages illustrate the income, costs and economic profit margins that we have estimated for dispensing and general medical / clinical activities based on EPMU, under each of the LRIC and FAC methods, for all 25 practices. As outlined in section 4.8, the profit measures we have estimated are based on **economic profits**, where the costs used to calculate this include a fair return on both tangible and intangible assets for each activity (which we also refer to as "capital costs") as well as an estimate of partner base pay (i.e. what a partner may be paid if they did not receive a share of profits).

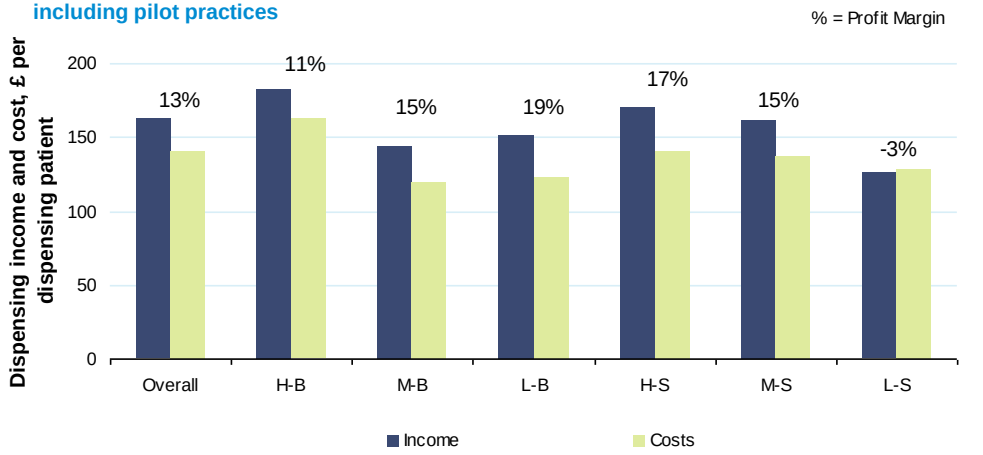
The profit margins between this set of results and those in section 4.8 with only 20 practices are very similar, apart from stratum L-B under the FAC method. This is again due to the outlying practice in this stratum, which makes a loss under the FAC method but makes a profit under the LRIC method due to current dispensing costs being larger than avoidable dispensing costs.

Figure 65: Total dispensing income and costs per dispensing patient, EPMU, FAC allocation, including pilot practices



Source: Practice visits, PwC analysis

Figure 66: Total dispensing income and costs per dispensing patient, EPMU, LRIC allocation, including pilot practices



Source: Practice visits, PwC analysis

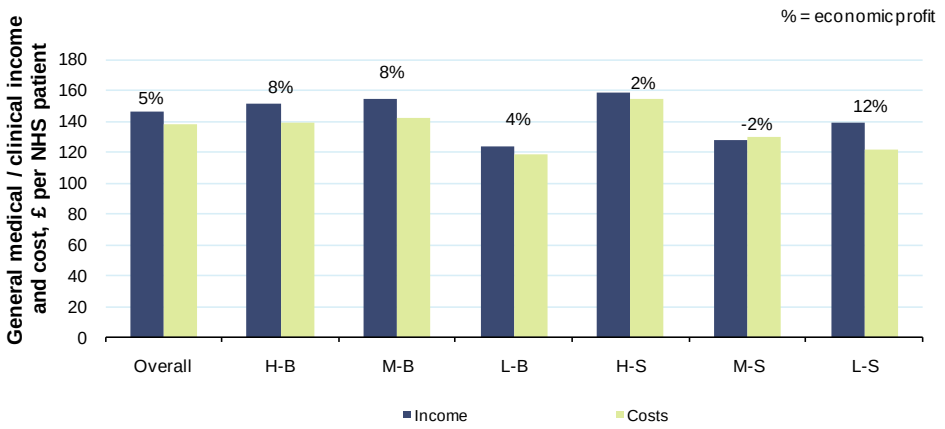
Annex 1: Results including pilot practices (cont.)

Income, costs and profits (cont.)

The charts shown here illustrate the apportioned income, costs and resulting profit margin associated with general medical / clinical activities, including the allocation of common costs according to the EPMU method, for all 25 practices.

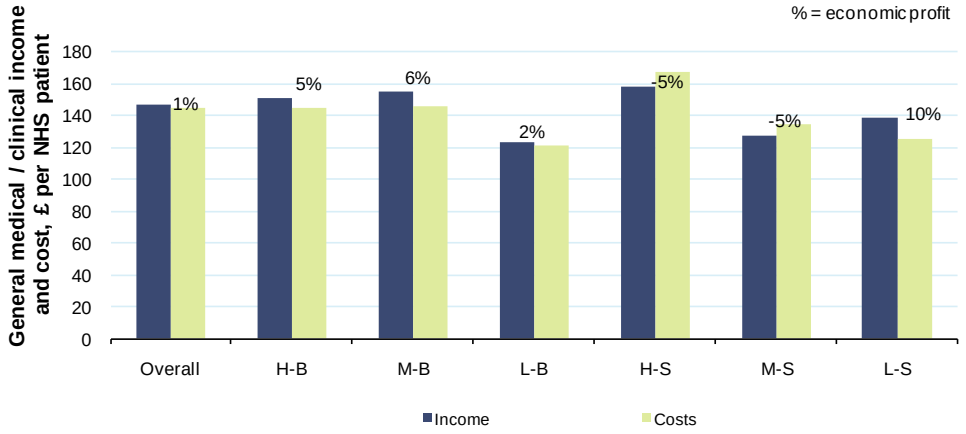
These results are very similar to the results that include only 20 practices, with up to only 2 percentage points difference between the two sets of results.

Figure 67: Total general medical / clinical income and costs per NHS patient, EPMU, FAC allocation, including pilot practices



Source: Practice visits, PwC analysis

Figure 68: Total general medical / clinical income and costs per NHS patient, EPMU, LRIC allocation, including pilot practices



Source: Practice visits, PwC analysis

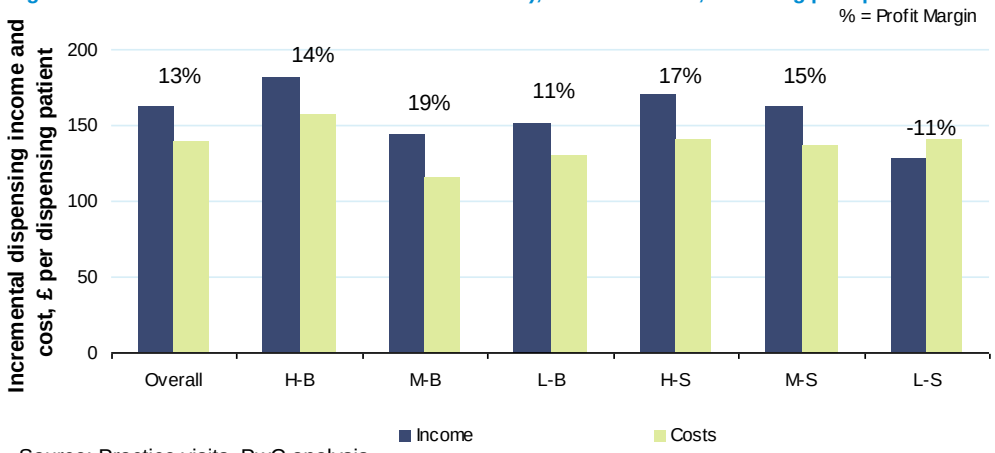
Annex 1: Results including pilot practices (cont.)

Analysis of standalone costs

The figures shown to the right illustrate the income, cost and profit for dispensing activities based on an analysis of standalone costs, assuming that general medical / clinical activities bear all common costs.

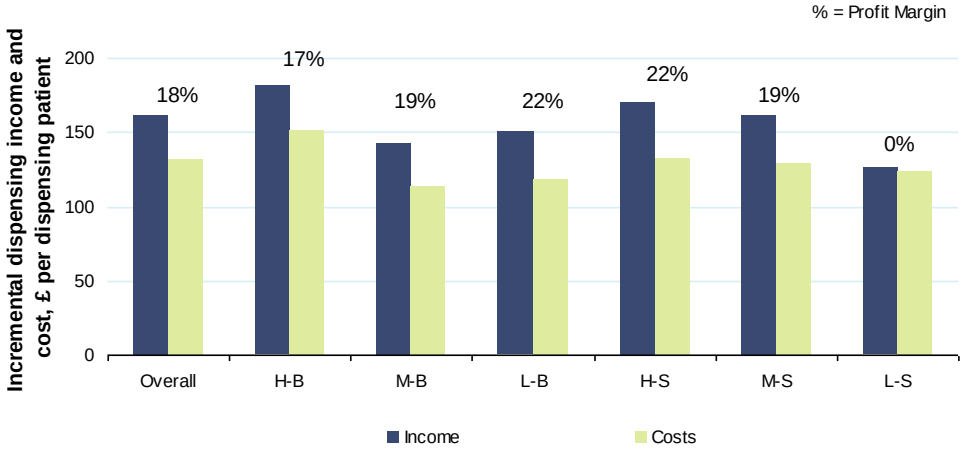
These income and cost results are very similar to those including only 20 practices, apart from stratum L-B under the FAC method. This is again due to the outlying practice in this stratum, which makes a loss (even on an incremental basis) under the FAC method but makes a profit under the LRIC method due to current dispensing costs being larger than avoidable dispensing costs.

Figure 69: Incremental dispensing income and costs per dispensing patient (assumes general medical / clinical bears all common costs), FAC allocation, including pilot practices



Source: Practice visits, PwC analysis

Figure 70: Incremental dispensing income and costs per dispensing patient (assumes general medical / clinical bears all common costs), LRIC allocation, including pilot practices



Source: Practice visits, PwC analysis

Annex 1: Results including pilot practices (cont.)

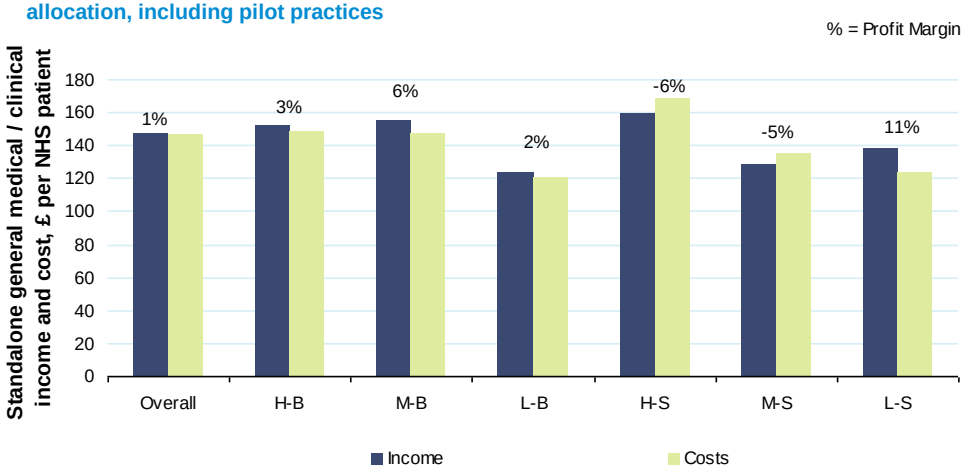
Analysis of standalone costs (cont.)

The figures shown to the right illustrate the income, cost and profit for the general medical / clinical increment under the standalone apportionment method.

These results are very similar to the results that include only 20 practices, with up to only 3 percentage points difference between the two sets of results.

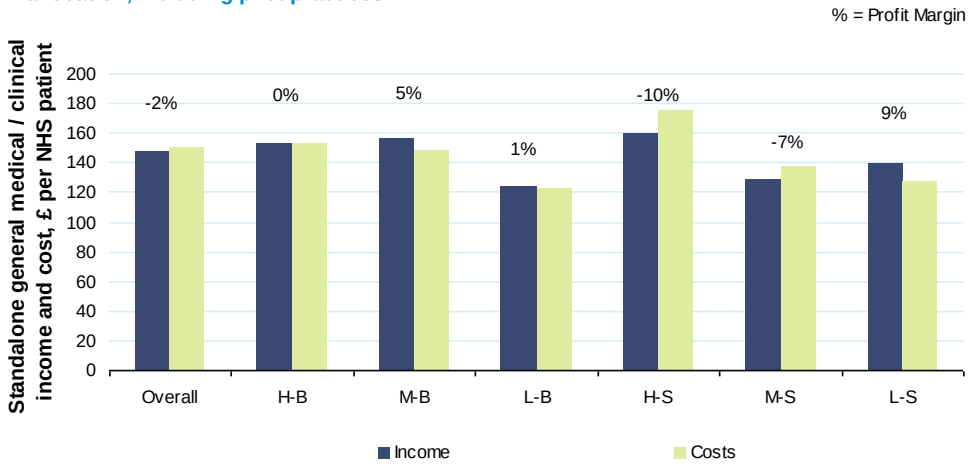
As explained in section 4.8, some strata exhibit strong positive incremental dispensing profit margins but negative standalone general medical / clinical profit margins, particularly strata H-S and M-S. This suggests some cross-subsidisation of general medical / clinical services by profits from dispensing services for these strata.

Figure 71: Standalone general medical / clinical costs and income per NHS patient, FAC allocation, including pilot practices



Source: Practice visits, PwC analysis

Figure 72: Standalone general medical / clinical costs and income per NHS patient, LRIC allocation, including pilot practices



Source: Practice visits, PwC analysis

Annex 1: Results including pilot practices (cont.)

The table below summarises the dispensing profit margins estimated under each combination of incremental and common income and cost apportionment methods. These profit margins are based on **economic profits**, where the costs used to calculate this include a fair return on both tangible and intangible assets for each activity (which we also refer to as "capital costs"), and include an estimate of partner base pay (i.e. what a partner may be paid if they did not receive a share of profits), for all 25 practices. As outlined in section 4.8, please note that **these results should be interpreted in the light of**: our scope of work; the survey approach that we have been advised to implement and the FAC and LRIC estimation methods we have chosen to adopt; and assumptions about the operational and organisational structure of dispensing practices.

These results are very similar to those including only 20 practices (apart from stratum L-B under the FAC method, which as previously mentioned contains an outlying practice with a large list size but only provides dispensing services in one very small branch surgery).

Table 29: Summary of dispensing profit margins# under each incremental and common income and cost apportionment methods, including pilot practices, economic profits (based on costs that include fair returns and partner base pay)

Incremental income and cost apportionment	Common income and cost apportionment	Overall	Stratum					
			H-B	M-B	L-B	H-S	M-S	L-S
FAC	**EPMU**	6%	7%	11%	5%	9%	9%	-17%
LRIC	**EPMU**	13%	11%	15%	19%	17%	15%	-3%
FAC	**Incremental** (assumes general medical / clinical bears all common costs)	13%	14%	19%	11%	17%	15%	-11%
LRIC	**Incremental** (assumes general medical / clinical bears all common costs)	18%	17%	19%	22%	22%	19%	0%
FAC	**Midpoint**^ between incremental and EPMU profit margins	10%	11%	15%	8%	13%	12%	-14%
LRIC	**Midpoint**^ between incremental and EPMU profit margins	16%	14%	17%	21%	19%	17%	-1%

Source: Practice accounts and visits, PwC analysis

Rounded to the nearest percentage point.
^ These are midpoints of the stratum-level results, rather than practice-level midpoints averaged for each strata.

Annex 1: Results including pilot practices (cont.)

The table below summarises the overall practice-level profit margins by strata for all 25 practices. As before, these are **economic profits**, where the costs used to calculate this include a fair return on both tangible and intangible assets for each activity (which we also refer to as "capital costs"), and include an estimate of partner base pay (i.e. what a partner may be paid if they did not receive a share of profits). Similar to results for only 20 practices, overall profit margins are around 7% on average for all practices, with some variation in profits within each stratum.

As before, these results should be interpreted in the light of the scope of work under which we carried out this analysis, and the survey approach that we have been advised to implement.

Table 30: Summary of overall profit margins (%)#; overall income, costs and profits per NHS patient (£) and overall profit per partner (£000s), including pilot practices, economic profits (based on costs that include fair returns and partner base pay)

	Overall	Stratum					
		H-B	M-B	L-B	H-S	M-S	L-S
Overall practice-level **profit margin**	7%	8%	10%	5%	6%	3%	8%
Overall income per NHS patient (£)	249	285	220	161	319	205	167
Overall cost per NHS patient (£)	232	263	199	152	300	200	154
Overall profit per NHS patient (£)	17	22	21	9	19	5	13
Overall profit per partner (full-time equivalent) (£000s)	36	41	50	38	31	26	23

Source: Practice accounts and visits, PwC analysis

Rounded to the nearest percentage point.

Annex 2: Summary of key meetings

Annex 2: Summary of key meetings

Table 31: List of key meetings

Date	Participants	Description
26 January 2010	Andrew Laycock (DH) James Crosbie (DH) Edward Bramley-Harker (PwC) Nazanin Naini (PwC)	Discussion of data requirements and data availability.
4 February 2010	Andrew Laycock (DH) James Crosbie (DH) Mark Wilson (DH) Danny Palnock (DH) David Bailey (BMA, GPC) John Ford (BMA, GPC) Matt Isom (BMA, GPC) Richard West (DDA) Tim Oger (PwC) Edward Bramley-Harker (PwC) Nazanin Naini (PwC)	Kick off meeting including a discussion of: •Objectives •Project plan •General approach •Key considerations •Pilot survey
9 February 2010	Richard West (DDA) Cherryl Ng (PwC) Nazanin Naini (PwC)	Discussion and appraisal of pilot survey questions and approach.
24 March 2010	Andrew Laycock (DH) Jenny Smith (DH) Caroline McGregor Johnson (NHS Employers) David Bailey (BMA, GPC) Matt Isom (BMA, GPC) Richard West (DDA) Tim Oger (PwC) Edward Bramley-Harker (PwC) Nazanin Naini (PwC)	Presentation of results from pilot survey and assessment of options for main survey.

Source: PwC

Annex 2: Summary of key meetings (cont.)

Table 31: List of key meetings (cont.)

Date	Participants	Description
18 May 2010	Richard Armstrong (DH) Andrew Laycock (DH) Edward Bramley-Harker (PwC) Nazanin Naini (PwC) Cherryl Ng (PwC)	Discussion of report structure.
20 July 2010	Richard Armstrong (DH) Andrew Laycock (DH) James Crosbie (DH) Mark Wilson (DH) Danny Palnock (DH) Andrew Clapperton (NHS Employers) Caroline McGregor-Johnson (NHS Employers) David Bailey (BMA, GPC) Will Jones (BMA, GPC) Richard West (DDA) Tim Oger (PwC) Tim Wilson (PwC) Edward Bramley-Harker (PwC) Nazanin Naini (PwC) Cherryl Ng (PwC) Matt Elliott (PwC)	Discussion of draft report on findings from the main and pilot surveys.

Source: PwC

Annex 3: Sampling framework and methodology

Annex 3: Sampling framework and methodology

The following is a replication of a paper prepared by PwC for the Steering Group on the sampling methodology for the purpose of the main survey.

Introduction

PricewaterhouseCoopers LLP (PwC) have been commissioned by the Department of Health (DH) to undertake an independent study to ascertain income derived from, and costs that would be incurred by, a dispensing GP practice in England in providing dispensing (pharmaceutical) services. Throughout this study, PwC will be working closely with a Steering Group of representatives from the Dispensing Doctors' Association (DDA), General Practitioners' Committee of the British Medical Association (BMA), NHS Employers and the Welsh Assembly Government.

Based on learnings from the series of pilot visits we conducted in mid-March, we are now looking to roll out the main survey for this work based on a sample of 20 dispensing practices. The purpose of the main survey is to collect data that will inform our understanding of the income and costs for dispensing practices, including a fair return on assets, as well as to gain an insight into how these might vary for different types of dispensing practices across England. In particular, we will aim to:

- Understand the organisational structure and operational aspects of practices, such as whether the practice has branch surgeries and how the proportion of dispensing patients may affect how the practice is run;
- Collect income and cost data, including dispensing and general medical / clinical income, cost of drugs, payroll and property cost data, and data on other operating costs;
- Obtain estimates of how practice staff time and floor space are allocated to dispensing, general medical / clinical and common activities;
- Gain an understanding of how other operating costs could be allocated between dispensing, general medical / clinical and common activities; and
- Obtain any available estimates of the replacement costs of property, fixtures and fittings and any other tangible assets for the practices.

This note sets out an overview of the sampling methodology of dispensing practices for the purpose of the main survey.

Approach to sample selection

Overview

PwC will use stratified random sampling to select a sample of dispensing practices in England. This entails splitting (or stratifying) all dispensing practices into sub-groups based on a number of key criteria, and then randomly selecting a proportionate number of practices from each sub-group.

Using stratified random sampling ensures that all key types of dispensing practices (i.e. all key sub-groups) of interest are represented in the sample. This sample will be asked to participate in an on-site visit and also to submit their financial data as well as other relevant pieces of information.

Annex 3: Sampling framework and methodology (cont.)

Stratification criteria

For the purpose of the main survey it is important that the data collected are reasonably representative of the population. With a sample size of 20 practices, it is important to ensure that the sample contains a mix of practices, reflecting factors that we believe are important influences on costs and/or income.

Similar to the pilot survey stage, we considered a number of potential criteria on which to select our sample, including: size of practice; size of dispensing list; location of practice, including degree of rurality and region in England where the practice is located (in order to capture regional differences in price levels); gender and average age of patients (to reflect how patient mix may impact on dispensing costs); and practice distance from a pharmacy.

However, the number of stratifying criteria that can be applied – and which criteria these should be – are constrained by the following factors:

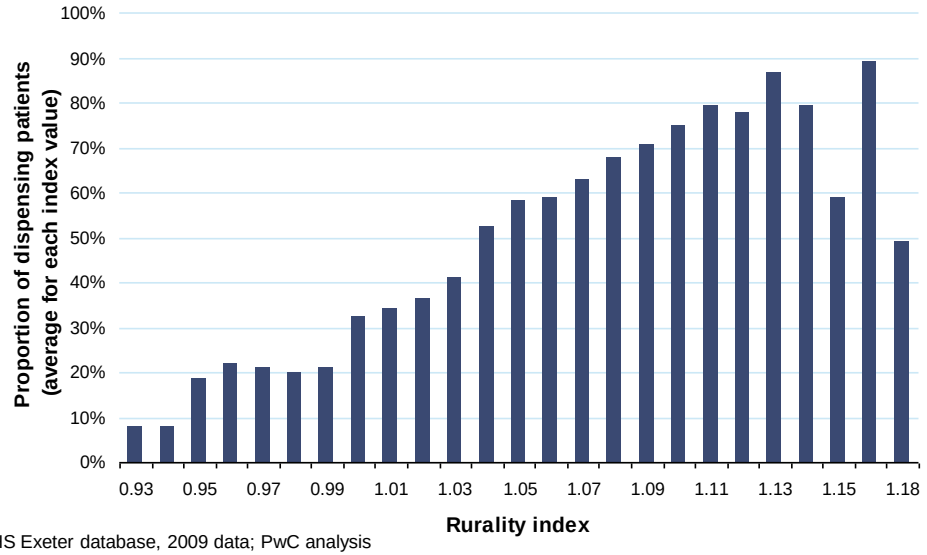
- Sample size – the smaller the sample size, the fewer the number of criteria that can be applied to select the sample. This is to ensure each sub-group is represented by a reasonable number of practices in the sample.
- Correlation between criteria – if there is a strong relationship between two or more stratifying criteria, a sample based solely on these criteria is unlikely to represent the different types of dispensing practices in England.
- Information collected during pilot visits – this should also be taken into account when deciding on criteria. For example, several practices informed us that the proportion of dispensing patients affected the composition of their income, and thus how they would structure their operations.

Taking the above into account, we concluded the three key dimensions that may have particular influence on dispensing-related income and costs are: size of dispensing list; practice size; and the location of the practice, both in terms of the geographic region that the practice is located in, and its degree of rurality.

However, we have decided not to include the location of the practice in the sample selection criteria. In terms of regional location, a sample size of 20 is insufficient to ensure that the data will be geographically representative. As a substitute, regional variations in costs could in principle be proxied from other sources such as the Annual Survey of Hours and Earnings (ASHE) conducted by the ONS. We have also decided not to include degree of rurality in the sample selection criteria. This is because we have found a fairly strong positive relationship between the location of the practice, as measured by its degree of rurality, and the size of the dispensing list, as measured by the practice's proportion of dispensing patient. The following figure illustrates the relationship.

Annex 3: Sampling framework and methodology (cont.)

Figure 73: Relationship between proportion of dispensing patients and degree of rurality



Source: NHS Exeter database, 2009 data; PwC analysis

The correlation coefficient for the two factors is 0.64, indicating a strong positive correlation*. Intuitively, this strong positive relationship arises because practices with a higher proportion of dispensing patients are likely to have a higher proportion of patients living in very rural locations. Thus, any sample selected based on the proportion of dispensing patients should also represent a mix of rurality. Given this, we have decided to include proportion of dispensing patients as a sample selection criterion, since this should reflect both the rurality and operational structure of practices, and we have decided not to include degree of rurality as a separate criterion.

We have decided to include practice size as a sample selection criteria, since this would reflect any potential economies of scale e.g. in relation to overhead costs. Practice size could be proxied by a number of measures, including list size, number of GPs or volume of dispensing as measured by the number of items dispensed over the year. Given that the overall scale of a practice's operations are most likely to be determined by the number of patients it serves, we have decided to include list size as a sample selection criterion, judging it to be the most appropriate measure of practice size.

The data we have been provided with to select the sample for the main survey comes largely from the NHS Exeter computer database, apart from data on the number of dispensing patients, which were sourced from NHS Prescription Services. This gives us data for 1,111 dispensing practices, which we take as the total population of dispensing practices. We were provided with NHS Exeter data for 2007 to 2009, where the data were taken at September of each year, and NHS Prescription Services data for October 2008 and October 2009[2**]

* A correlation coefficient is a unit-independent measure of the strength and direction of the relationship between two variables. A correlation coefficient of ±1 indicates a perfect linear relationship between the two variables. At the other extreme, a correlation coefficient of 0 indicates that no linear relationship exists. The closer the correlation coefficient is to ±1, the stronger the linear relationship is between the two variables.

** Since these datasets relate primarily to patient numbers and non-financial data, they are unlikely to be materially affected by the mismatch of one month in the data collection (September versus October), or by the fact that the data are spot values rather than annual averages.

Annex 3: Sampling framework and methodology (cont.)

To select a sample based on list size and proportion of dispensing patients, we will use the “listsize” field from the September 2009 NHS Exeter data and the number of dispensing patients from the October 2009 NHS Prescription Service data (as a percentage of “listsize”).

Sample selection method

While this work will be based on surveying 20 practices, it is unlikely that all the practices we initially contact will consent to take part in this survey. At the pilot stage, one out of the five practices we initially contacted turned down the opportunity to participate. Adopting a more conservative assumption for the main survey, we aim to begin with an initial sample of 30 practices, which allows for a drop out rate of about one in every three practices.

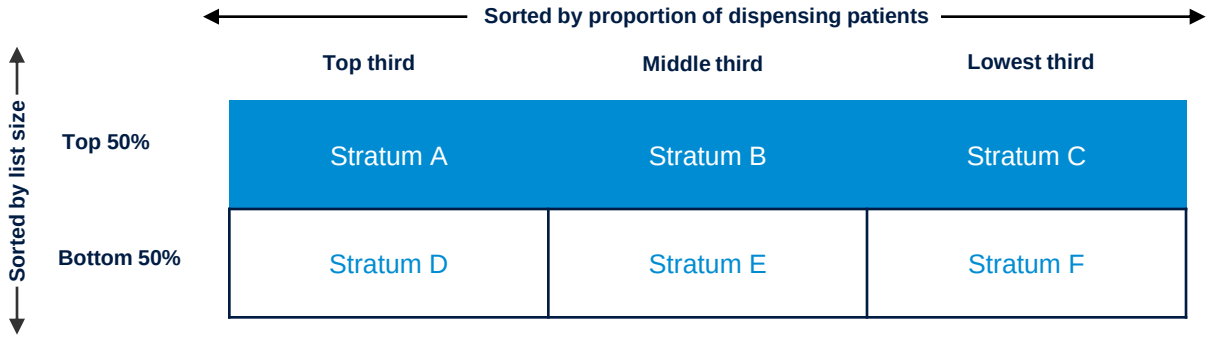
Based on the two criteria of proportion of dispensing patients and list size, we propose to carry out the sample selection as follows:

1. Sort the total population of dispensing practices by proportion of dispensing patients and then split the population into terciles. This should give the top third, middle third and lowest third of practices by proportion of dispensing patients, with approximately 370 practices in each third.
2. Sort the practices within each tercile by list size and divide each further into two equal halves (i.e. each tercile would be split in two around the median), giving the top and bottom 50% of practices based on list size in each tercile.

This method should thus give six roughly equal strata, each with approximately one-sixth of the total population in them. This amounts to about 185 practices in each strata. Using proportionate allocation, we would randomly select one-sixth of the initial sample i.e. 5 practices from each strata. Figure 74 illustrates these six strata, where:

- Strata **A**, **B and C** represent the **largest 50%** of practices that are also the **top third, middle third and lowest third by proportion of dispensing patients**, respectively; and
- Strata **D, E and F** represent the **smallest 50%** of practices that are also **top third, middle third and lowest third by proportion of dispensing patients**, respectively.

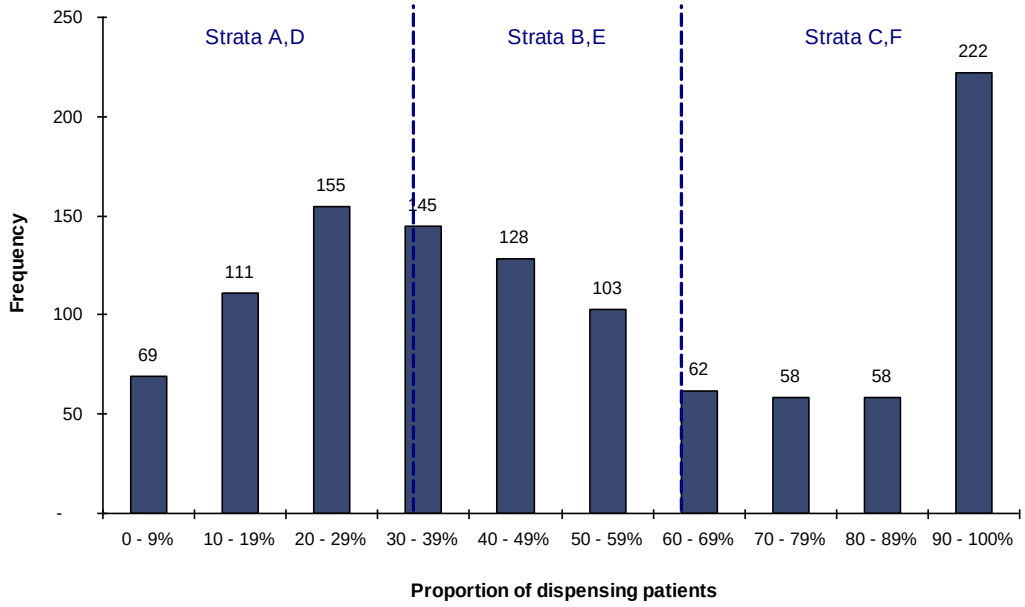
Figure 74: Strata for sample selection



Annex 3: Sampling framework and methodology (cont.)

The characteristics of the sub-groups that are captured in each stratum can be examined in more detail by separately examining the effects of stratifying by proportion of dispensing patients and of stratifying by list size. The figure below illustrates the likely splits in the population based on stratification into thirds by proportion of dispensing patients.

Figure 75: Population frequency by proportion of dispensing patients, stratification into thirds



Source: NHS Exeter database, 2009 data; PwC analysis

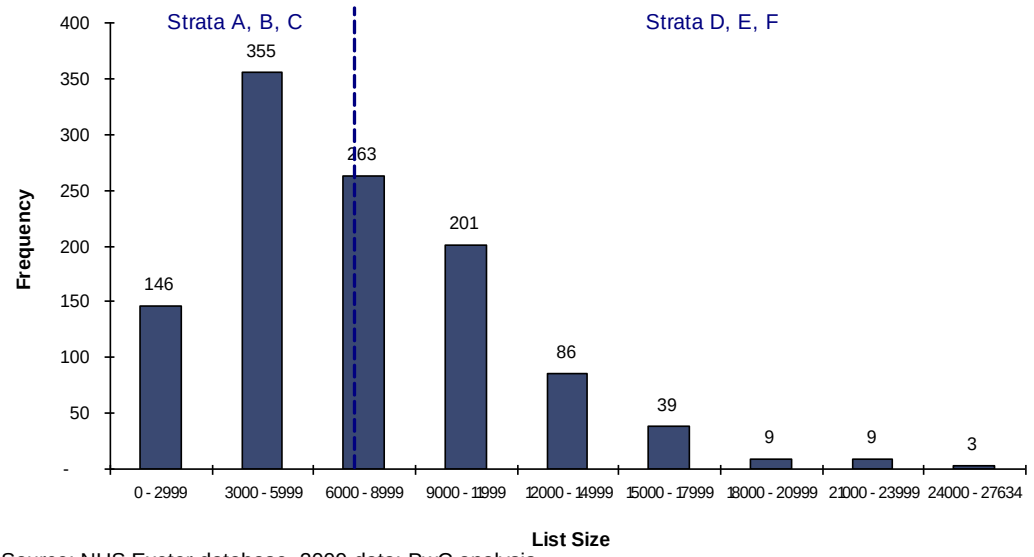
Annex 3: Sampling framework and methodology (cont.)

There appears to be a considerable number of practices that have 90% -100% dispensing patients, but also a noticeable number with 20% - 29% dispensing patients. Given this double-peaked distribution, dividing the practice population into thirds should mean that sampling from:

- Strata A and D would ensure practices with a relatively low proportion of dispensing patients are represented, possibly including a practice with 20% - 29% dispensing patients;
- Strata C and F should capture practices with very high proportions of dispensing patients, with a relatively high probability of selecting at least one practice with 90% - 100% dispensing patients; and
- Strata B and E will represent practices in between the two extremes in the sample.

In terms of stratification by list size, the likely splits in the population resulting from dividing the population into halves (with 555 practices in each half) are illustrated in the figure below.

Figure 76: Population frequency by proportion of list size, stratification into halves



Source: NHS Exeter database, 2009 data; PwC analysis

Over half of all practices have a list size of around 3,000 - 9,000 patients, but there appears to be a long “tail” in the distribution where a small number of practices have considerably larger list sizes. By dividing practices into top and bottom 50% by size, the sample should capture a representative number of practices from both ends of the distribution.

Annex 4: Main survey discussion guide

Annex 4: Main survey discussion guide

[This document sets out the questions that PwC intend to ask during the practice visit. It will be used for PwC's reference and will not be handed over to the practice.]

Date of interview

Attending from PwC

Person(s) interviewed

General information

1. Please provide the name and contact details for the individual who is responsible for completing these questions.

Principal contact name	
Title	
Address 1	
Address 2	
Address 3	
County	
Postcode	
Phone number	
E-mail	

2. How many hours a week is this practice open?

   Mon – Fri:

   Saturday:

   Sunday:

3. Has this practice been dispensing for less than 10 years?

4. If the answer to 3 is "yes", when did the practice begin dispensing?

[Assume that practices chosen for the survey have been screened for continuous trading and latest ownership changes.]

Annex 4: Main survey discussion guide (cont.)

5. Which of the following best describes the contracting arrangement for your practice?

Description	✓
a. General Medical Services (GMS) contract	
b. Personal Medical Services (PMS) contract	
c. Alternative Providers Medical Services (APMS) contract	
d. Primary Care Trust Medical Services (PCTMS) contract	

6. Which of the following best describes how this practice is structured?

Description	✓
a. Single-handed practice	
b. Partnership (more than 1 GP), standalone	
c. Partnership (more than 1 GP), standalone	
b. Partnership (more than 1 GP), standalone	

[All questions to be answered **for the period of the accounts provided**, or as close as possible, unless otherwise specified]

7. How many patients are on the practice list? [x in NHS data]

8. What is the percentage of dispensing patients? [x in NHS data]

9. What percentage of items is dispensed privately?

Annex 4: Main survey discussion guide (cont.)

10. Are there any additional services that you currently provide that are specifically dispensing related e.g. drug transport / delivery schemes, or contain aspects that are dispensing-related? Please indicate any dispensing related services that are not reimbursed. For reference, a list of common GP practice services is provided below. [The list below is a helpful prompt for the interviewer during the visit and should not be taken to be comprehensive.]

Service	Dispensing- related, reimbursed (✓)	Dispensing- related, not reimbursed (✓)
Out of hours and extended hours service		
Flu vaccinations and childhood immunisation		
General / travel immunisations		
Minor surgery and minor injuries services		
Alcohol and substance misuse maintenance care		
Contraceptive services e.g. IUCD		
Sexual health clinic		
Minor injuries service		
Intrapartum care and neonatal examinations within 24 hours of birth		
Anticoagulant monitoring		
Smoking cessation clinic		
Asthma / COPD / pulmonary clinic		
Cardiac rehabilitation programme		
Diabetes management services		
Weight management services		
Drug transport/delivery scheme		
Medicine management scheme		
Electronic repeat dispensing (for the practice, not EPS)		

Annex 4: Main survey discussion guide (cont.)

11. Does dispensing related income impact on any services you currently offer e.g. out-of-hours home visits? If so, please list the services and the impact of dispensing related income on these.

If dispensing related income supports some of these services, which or what proportion of these services would not be provided if the practice stopped receiving dispensing related income?

What costs can be saved if your practice stopped providing these services?

On average, how many years would the patients using these services stay with your practice? [This question is used to estimate how long these services may have 'lasted' i.e. the life of the intangible patient relationship asset.]

years

Guidance on definitions

We would like to clarify the definitions of terms we will use in the questions to follow.

Accounts provided

In the questions that follow, we would like to be able to combine your responses with the financial accounts that you have kindly sent us in response to our information request. Throughout this visit we will refer to these accounts as the accounts provided.

Dispensing related activities

To split income, costs or staff time between dispensing related activities, general medical / clinical activities and common activities, these are the definitions that we will be using:

- Dispensing related activities include dispensing drugs directly to patients, administrative tasks such as drug purchase, stock control and clinical governance;
- General medical / clinical activities include GP services and related activities including prescribing drugs; and
- Common activities are activities that are more difficult to separate out into dispensing related and general medical / clinical activities, such as general staff/business management and cleaning.

Annex 4: Main survey discussion guide (cont.)

Financial information

12. Are there any reasons why the financial data collected for the 12 months of the accounts provided might be unrepresentative of a typical year? If so, to what extent are these reasons likely to have affected the figures given?

13. Please supply as much of the following financial information from the accounts provided as possible. Please let us know if we have left out any typical revenue or cost items. [Assume this information will have been mostly completed before the practice visit.]

Profit and loss items	Amount during the year of the accounts provided (£)	Relevant cost line(s) in practice accounts
Total revenue		
Of which dispensing related revenue		
NHS dispensing revenue		
Private drugs sales		
Of which non-dispensing revenue		
NHS income		
Non-NHS income		
Of which common revenue		
Training income		
Property income		
Total cost of goods sold		
Total drugs bill		
General medical / clinical consumables		

Profit and loss items	Amount during the year of the accounts provided (£)	Relevant cost line(s) in practice accounts
OVERHEAD COSTS		
Staff costs (including overtime, bonuses, pensions and NI contributions; excluding remuneration for practice owners)		
Property costs: either – actual rental costs (if practice occupies a leasehold property); or – estimated rental (if freehold property, the notional rent reimbursed will be entered here).		
Staff training		
Rates and water		
Utilities (excluding water) (including light, heat, water, telephone, internet access)		
Repairs and maintenance		
Hire of equipment		
Professional fees (e.g. external accountants and legal advisors)		
Professional body subscriptions		
Stationery & Postage		
Bank charges & Interest		
Insurance		
Cleaning		
IT maintenance		

Annex 4: Main survey discussion guide (cont.)

Profit and loss items	Amount during the year of the accounts provided (£)	Relevant cost line(s) in practice accounts
Vehicle expense		
Total depreciation (if available, please provide breakdown below)		
Of which property depreciation		
Of which equipment		
Of which fixtures and fittings		
Of which motor vehicles		
Of which IT		
Other depreciation		
Other costs (excluding costs of goods sold and amortisation):		
Of which are common		
Of which are NHS only		

14. Have there been any significant changes in the overall cost of drugs and discount since the latest set of accounts? Please could you provide an estimate of the amount of change (either in £ or percentage terms) for: a) the overall cost of drugs; and b) the discount available. What has been the impact of this?

15. What has been the impact of the 8.9% reduction in dispensing fees implemented in October 2009? Would you have any examples of this? [For example, if it created a major cash flow problem, when did this occur and what measures were necessary to mitigate it e.g. an overdraft?]

16. Have there been any significant changes affecting other income and costs since the latest set of accounts? If so, please could you provide an estimate of the amount of change (either in £ or percentage terms). What has been the impact of this?

Annex 4: Main survey discussion guide (cont.)

Staff costs

[For the next questions on staff costs, we assume that before the visit we will already have received, for each staff role, the annual gross wage or salary (including overtime, bonuses, pensions and NI contributions) during the period of the **accounts provided**.]

17. Have there been any significant changes in staff hours, roles or costs since the period of the account provided? Please could you provide an estimate of the amount of change (either in £ or percentage terms).

18. For each staff type, please provide an estimate of the proportion of their time **currently** spent on each of the following types of task. The total of the percentages provided in each row should equal 100%. GP time spent on writing prescriptions should not be included under "dispensing related activities". [This is referred to as the fully allocated cost (FAC) approach.]

Role	Dispensing related activities – proportion of time currently spent	General medical / clinical activities – proportion of time currently spent	Common / General business admin activities – proportion of time currently spent
Partners			
Salaried GPs			
Locums			
Trainee doctors			
Dispensers			
Dispensing assistants			
Pharmacists			
Nurses & nurses assistants			
Practice manager			
Secretary			
Information technology staff			
Receptionists			
Delivery / Drivers			
Cleaners			
Other (please specify)			
Other (please specify)			
Other (please specify)			

Annex 4: Main survey discussion guide (cont.)

[The next question is very similar to the one above and adopts a long run incremental cost (LRIC) approach. We have included both approaches in order to understand the relationship between FAC and LRIC. The final results may only utilise one of these approaches, after an analysis of which appears to be more appropriate.]

19. In this question, we use purely hypothetical scenarios to try to allocate staff type spent between different activities.

For each staff type, please use the table below to provide an estimate of the proportion of their time that may be 'avoided' (i.e. do not need to be worked) in each of the following scenarios:

- If there were **no dispensing activities** – that is, if this practice were a non-dispensing GP practice only. In this scenario, for example, it may be possible to 'avoid' all the time worked by the dispensing technicians / assistants.
- If there were **no general medical / clinical activities** – this is a hypothetical scenario where the GP practice did not provide any other medical services except dispensing drugs. In this scenario, for example, it may be possible to 'avoid' some of the non-dispensing GPs' time.

The remaining proportion of staff time, which is time that cannot be clearly avoided in either scenario, is considered 'common'.

The scenarios should **exclude** indirect or second-order effects – for example, under the scenario excluding general medical / clinical activities, please assume the same level of dispensing, rather than expanding to substitute for the loss of non-dispensing activities.

The total of the percentages provided in each row should equal 100%.

Role	Dispensing related activities – proportion of time that is avoidable	General medical / clinical activities – proportion of time that is avoidable	Common / general business admin activities – proportion of time that is avoidable
Partners			
Salaried GPs			
Locums			
Trainee doctors			
Dispensers			
Dispensing assistants			
Pharmacists			
Nurses & nurses assistants			
Practice manager			
Secretary			
Information technology staff			
Receptionists			
Delivery / Drivers			
Cleaners			
Other (please specify)			
Other (please specify)			
Other (please specify)			

Annex 4: Main survey discussion guide (cont.)

Property costs

Please choose the most appropriate option.

Option	
a) The premises occupied by this practice are held on a leasehold basis (pay annual rent) Please specify the **annual rent from the accounts provided** Please give an approximate estimate of the **market value of an equivalent property in this area.**	£…… £……
b) The premises occupied by this practice are held on a freehold basis (no need to pay rent) Please specify the approximate **annual cost to rent an equivalent property in this area.** Please also give an estimate of the **market value of this property.**	£…… £……

[The next table asks for two very similar splits of floor space, which have been included in order to understand the relationship between FAC and LRIC. The final results may only utilise one of these approaches, after an analysis of which appears to be more appropriate.]

21. Floor space measurements. Please estimate the floor space of your practice and how this space is used [refer to Question 20 guidance on avoidability].

Description	
Percentage of area currently used for dispensing activities	
Percentage of area currently used for general medical / clinical activities	
Percentage of area that is currently common (e.g. waiting room, corridors)	
Total area	100%
Percentage of avoidable area if there were no dispensing activities	
Percentage of avoidable area if there were no general medical / clinical activities	
Percentage of area that is common	
Total area	100%

Annex 4: Main survey discussion guide (cont.)

Other operating costs

22. What, in your opinion, are the key determinants / drivers of the operating costs identified in your practice accounts (apart from depreciation costs, which will be addressed in the next section on assets)?

[The following table may vary depending on the financial accounts provided prior to the practice visit.]

Other operating costs	Relevant cost line(s) in practice accounts / Brief description	Key drivers (e.g. staff training may be determined by the number of staff)
Staff training		
Repairs and maintenance		
Hire of equipment		
Professional fees		
Professional body subscriptions		
Stationery & postage		
Bank charges & interest		
Insurance		
IT		
Vehicle expense		
Other costs – of which are common		

Assets

23. Please estimate how much it would cost to replace each of the assets listed with a brand new equivalent, and how long the planned refit cycle is for each asset. Please inform us if we have left out any assets typical of a dispensing practice.

Asset	Total replacement cost estimate (£)	Planned refit cycle (years)
Practice premises (Please include the value of all fixtures and fittings as well as the labour costs involved in refitting the practice premises.)		
IT equipment – dispensing related, general medical / clinical and common equipment (if applicable – a lot of the IT equipment may be PCT-owned)		
Motor vehicles (Provide estimate only if this practice has a dedicated vehicle used for services such as prescription collection or delivery.)		
Other assets (Please specify below.) Asset 1…… Asset 2…… Asset 3……		

Annex 4: Main survey discussion guide (cont.)

The following two questions aim to estimate any intangible assets of the practice – that is, the additional value of the practice over and above the value of its tangible assets. Examples of intangible assets include patient relationships and a skilled workforce. However, these questions do not aim to separate out the different components of the practice's intangible assets, only to obtain an estimate for the practice as a whole.

Assuming this year's income is at steady-state, how many years would it take a hypothetical start-up dispensing practice in the same location as your practice to reach a steady-state level of income?

_____ years

What percentage of the steady-state income are you likely to each in each of those (i.e. what is the start-up profile until steady state is reached)?

Year	1	2	3	4	5	6	7	8	9	10
% steady-state income that could be built up (cumulative)										

[The next question aims to estimate the value of intangible assets specifically relating to the staff training that the practice has invested in.]

Of the training spend you occur, what proportion is aimed at increasing staff skill levels (as opposed to the maintenance of these skills)? _____ **%**

What is the average staff tenure at your practice?

_____ years

Additional operational information

26. Has the patient list either increased or decreased significantly over the past 10 years?

27. How do you think the practice's location, and its relative rurality, affects its income, costs and operations? E.g. the practice may experience lower discounts if distributors are located further away.

Annex 4: Main survey discussion guide (cont.)

28. We identified the following key risks to operating a dispensing practice. Please let us know if there are any other key risk considerations.

Key risk identified	High / medium / low?	Comments
Cash flow risk – e.g. changes to timing / terms of the NHS Prescription Pricing Division (PPD) against supplier payments		
Supplier risk – risk arising from changes in wholesale operations		
Regulatory – risks due to changes to the way the sector is regulated e.g. criteria for a new pharmacy opening in the area, patient eligibility criteria for a dispensing doctor		
Opening of new pharmacies – loss of dispensing patients due to new pharmacy or supermarket openings		
Urbanisation – growth of towns and villages could lead to reduction in dispensing patients		
Other (please specify)		

29. Do you plan to purchase new equipment or undertake any other significant investment in the next 12 months? Please list use and estimated costs for each if applicable.

[The following question focuses more on the qualitative rather than quantitative impact of no longer having a dispensing practice in the area.]

30. If you practice were to cease operating as a dispensing practice, what would be the impact on each of the following:

A Your practice

B The wider community

C The NHS

Annex 4: Main survey discussion guide (cont.)

Other

31. Please could you send a copy of your statutory accounts (and management accounts if different) if not already provided, and any other information arising from the questions in this survey to:

    Nazanin.naini@uk.pwc.com

    1 Embankment Place, London WC2N 6RH

    As a token of our appreciation for your valuable help in this work, we will be reimbursing each participating practice with £100. In order to do this, would it be possible to obtain the following information?

    Payee Name

    Payee Address

    Bank Details

    Account Name

    Sort code

    Account No

    Please quote reference

33. Would you be willing to be re-contacted by PwC if we have any follow-up questions for you?

34. Are there any further comments or questions that you have at this time? We would appreciate some feedback on this survey (suggestions / recommendations / anything we've missed) if you have any.

Thank you once again for your valuable participation in this Inquiry.

Annex 5: Tangible assets

Annex 5: Tangible assets

In this section we set out our detailed approach to assessing the tangible asset base for dispensing practices in England.

Approach to estimating tangible assets

Tangible asset values can be found in the statutory accounts of GP practices but these do not necessarily represent their true economic values. There is extensive precedent* to suggest that these accounting values should be adjusted so that they represent true economic values.

In the context of dispensing practices, this is particularly applicable to the following tangible assets:

- Fixtures and fittings;
- Vehicles;
- IT assets; and
- Stock.

We address each in more detail below.

Fixtures and fittings

Fixtures and fittings in relation to dispensing practices will typically include specialist medical equipment, desks, shelving, fridges, cupboards and cabinets. The accounting values recorded on the balance sheet for these assets may not reflect the net current replacement cost.** The asset value on the balance sheet should therefore be replaced with the net replacement value or modern equivalent asset value. Assets values are then included at half the replacement cost, reflecting the average age of assets and corresponding depreciated asset value amongst dispensing practices in England.

Vehicles

Some of the practices we visited were engaged in delivering prescriptions to patients, requiring the use of delivery vehicles for this purpose. Such a vehicle would represent a tangible asset for the practice. However, practices offering this service were in a minority of those sampled, so we do not believe it appropriate to include vehicle costs in the asset base of a “typical” dispensing practice.

*For example: "The supply of banking services by clearing banks to small and medium-sized enterprises: A report on the supply of banking services by clearing banks to small and medium-sized enterprises within the UK”, Competition Commission (14 March 2002); and “Home credit market investigation”, Competition Commission, (30 November 2006).

**The net replacement cost/modern equivalent asset value (“MEA”) is the lowest cost of replacing the asset, assuming current requirements and the optimal configuration of assets, such that the same level of goods or services is produced. The justification for using this as the proxy for the asset base on which a dispensing practice would be able to earn a return in a competitive market is that a new entrant would, in theory, be able to enter a market (without entry barriers) at the lowest cost of replacing the asset.

Annex 5: Tangible assets (cont.)

IT assets

IT assets form a key part of the asset base of businesses such as dispensing practices where core functions are increasingly dependent on such assets. However, the accounting values recorded on the balance sheet may not reflect the net current replacement cost of the IT systems and platforms. For this reason the asset value on the balance sheet should be replaced with the net replacement value or modern equivalent value. As with fixtures and fittings, this can be estimated as half the replacement cost.

Stock

The dispensary part of the business will hold some amount of stock which is considered to be part of the tangible asset base. Typically such stock would include prescription medications and other medical supplies.

Building/leasehold assets

The building in which dispensing practices operate, if owned on a freehold basis, would represent a significant tangible asset to the practice. Equally, any major improvements made to a building occupied through a lease would need to be capitalised to recognise their value to the practice. However, due to the nature of the reimbursement mechanism for rental costs of dispensing practices, we do not believe it appropriate to include these assets in the asset base of the typical practice. The reimbursement from the local Primary Care Trust, whether in the form of notional or cost rent for buildings occupied on a freehold basis, or reimbursement for explicit rental costs, should include a consideration of the return expected on these assets, and therefore calculating a fair return on them here would constitute an exercise in double counting.

Limitations to our analysis

While we have considered all of the asset classes above, it has not been possible to obtain sufficient data during our research to assess the values of all of these in practice. Notably, it has been very difficult to obtain information regarding the typical IT costs associated with a dispensing practice, and additionally, many practices stated that much of their IT equipment was PCT-owned and maintained, thereby negating the need to consider it as a direct asset of the practice.

Annex 5: Tangible assets (cont.)

Estimating the tangible asset base for dispensing practices

During the survey we asked respondents to provide re-fit estimates for fixtures and fittings, split into the key asset classes described previously. Some but not all practices were able to provide re-fit estimates and very few were able to provide a breakdown of re-fit estimates into the key asset classes. Due to the limited number of responses obtained, we considered that the best estimate of tangible asset values for dispensing practices would be based on an average of all responses obtained. Expressed as a percentage of total revenue, this resulted in an overall fixtures and fittings estimate of 6.8%. We then used this figure to estimate the fixtures and fittings for all 20 practices within our sample.

We were able to estimate the stock value for each of the practices within our sample based on the practice accounts. On average, this came to 1.3% of revenue. There was little variation across strata, with the exception of stratum L-S where stock was particularly low at 0.5% revenue. One possible explanation for this may be the low proportion of dispensing combined with “small” size which would imply that this group of practices does not need to hold as much stock but is also not able to hold as much stock as the “Big” practices.

The sum of stock and fixtures and fittings results in the overall tangible asset value ranging from 7.3% to 8.4% expressed as a percentage of revenue, and an overall average of 8.1%.

Table 32: Tangible assets by type, percentage of revenue

	Fixtures and fittings	Stock	**Total tangible assets**
H-B	6.8%	1.6%	8.4%
M-B	6.8%	1.5%	8.3%
L-B	6.8%	1.6%	8.4%
H-S	6.8%	1.2%	8.1%
M-S	6.8%	1.2%	8.0%
L-S	6.8%	0.5%	7.3%
Overall average	6.8%	1.3%	8.1%

Source: Practice visits, PwC analysis

Annex 6: Intangible assets

Annex 6: Intangible assets

In this section we define what is meant by the term “intangible assets”, highlight the importance of these assets to the value of a business over and above the level of tangible assets contained within that business, and discuss methods of calculating the value of intangible assets within an enterprise. Using these methods, we estimate the intangible asset base for dispensing GP practices.

Approach to estimating intangible assets

Goodwill and intangible assets

The terms “goodwill” and “intangible assets” could be considered interchangeable, although as accounting standards have developed the terms increasingly have specific uses in practice.

Where identifiable intangible assets can be identified, we recognise these as separate intangible assets. Thus goodwill is a general term which captures any residual unidentifiable intangible value within a business.

We discuss each term in more detail below.

Goodwill

Goodwill is a term that is well-recognised as a concept in accounting, tax and legal frameworks. It is most often considered in the context of an acquisition of a business or individual assets. For example, it is often calculated in acquisitions, for accounting purposes, as the difference between the total value of the business enterprise (or purchase price) and the fair market value of the acquired tangible assets.

Calculated in this way, goodwill includes not only all the identifiable intangible assets in existence within the business, but also encompasses the value of any other factors relating to the business (e.g. intangible assets that are not, or cannot be separately identified, synergies achieved through acquisition, or monopoly profits expected to be earned). Furthermore, if a business has been acquired at an inflated price, this excess payment will also be recorded as goodwill.

Goodwill is often categorised in two ways:

- Institutional or practice goodwill. This goodwill results from the collective operations of, and the collective assembling of assets within, a business enterprise.
- Professional goodwill. This can be considered to have two components:
  - The first component relates to the goodwill created by the reputation, skills and training of the workforce (in the case of the dispensing practices, the practice partners and their staff).
  - The second component relates to the goodwill created by the location, longevity, assembled assets and operational procedures of the business.

Annex 6: Intangible assets (cont.)

Within dispensing GP practices both types of goodwill are likely to be relevant. The skills and reputation of the practice staff are important, but the overall perception of the surgery by existing and prospective patients is also vital.

Whilst goodwill has traditionally been used as an all encompassing term for factors or assets within a business other than tangible assets, in recent years there has been a move towards identifying specific intangible assets within the business, and allocating value to them if acquired.

Intangible assets

In an industry-recognised text on valuing intangible assets by Smith and Parr*, intangible assets are defined as:

> *"all the elements of a business enterprise that exist in addition to monetary and tangible assets. They are the elements after working capital and fixed assets that make the business work and often are the primary contributors to the earning power of the enterprise".*

Note that Smith and Parr emphasise that intangible assets are "often" the most important assets of a business. Smith and Parr go on to categorise intangible assets as rights, relationships, undefined intangibles and intellectual property.

The recognition, and valuation, of intangible assets is accepted practice under various accounting standards. Indeed, accounting standards increasingly require acquired goodwill to be allocated, in so far as is possible, to specific intangible assets. For example, International and US financial reporting standards require identifiable intangible assets to be capitalised on the balance sheet when businesses are acquired.

Costs associated with building or maintaining intangible assets can, under International reporting standards which all UK listed companies apply, be capitalised depending on whether certain criteria are met. Otherwise they are written off in the period in which they are incurred. However, in underlying terms such expenditure contributes to the creation and maintenance of economic assets on which investors would require a company to earn an appropriate rate of return in the future.

The US accounting standards setter, the Financial Accounting Standards Board (FASB), defines assets in relation to the probable future economic benefit that can be obtained from them. As such, *"assets may be acquired without cost, they may be intangible, and although not exchangeable they may be usable by the entity in producing or distributing other goods or services."*** It further states that *"anything that is commonly bought and sold has future economic benefits, including the individual items that a buyer obtains and is willing to pay for in a "basket purchase' or a business combination".#*

Intangible assets can therefore be considered as identifiable components that would otherwise be recorded as goodwill.

*Valuation of Intellectual Property and Intangible Assets, Gordon V. Smith and Russell L. Parr.

**Paragraph 26, Statement of Financial Accounting Concepts No. 6, Financial Accounting Standards Board.

#Paragraph 173, ibid.

Annex 6: Intangible assets (cont.)

Categorising intangible assets

Individual intangible assets are often grouped into distinct categories, with the assets in each category similar in nature and function, and where similar valuation methodologies and economic characteristics apply to that group of assets. Intangible assets could be grouped as follows:

- Marketing-related (e.g. brand, trademark);
- Customer-related (e.g. customer lists, customer relationships);
- Contract-related (e.g. favourable supplier or other product/service contracts);
- Human capital-related (e.g. employment agreements, a trained and assembled workforce);
- Technology-related (e.g. patented/unpatented technology, technical documentation, trade secrets);
- Data processing-related (e.g. computer software, automated databases);
- Location-related (e.g. lease agreements);
- Literary-related (e.g. musical works, literary copyrights); and
- Goodwill-related (e.g. going concern value).

Estimating the value of intangible assets

We have identified certain key intangible assets which are likely to exist in a typical dispensing GP's practice through discussions with industry experts, members of the Steering Group, dispensing GP practices and through our own understanding of the industry. We believe that there are two key intangibles that are relevant to the sector:

- **Accumulated human capital:** This refers to the uncapitalised training expense incurred by dispensing practices in order to train its workforce, thereby enhancing employee performance. This is a cost which results in a higher skilled workforce, which represents an asset to the practice.
- **Patient relationships and reputational effects:** Similarly to the importance of customer loyalty to a commercial business, dispensing GP practices derive value from the relationships it has with its patients. This value may come from patients choosing to buy their medications from the practice despite there being an alternative pharmacy, or perhaps choosing to visit a surgery which is not the closest to their home because of an existing relationship with a doctor at a more distant practice or a higher quality of service offering.

Annex 6: Intangible assets (cont.)

In light of the fact that it is illegal to sell goodwill in GP practices in England, it is necessary to come to a valuation of intangible assets by other means. To do this, we have considered a variety of alternative valuation techniques, both “top-down” and “bottom-up”.

Top-down approaches

There are a variety of methods within this approach, but all attempt to establish the value of intangible assets by reference to a proxy measure – for example, the excess of market capitalisation of a company over its tangible net asset base.

A commonly used top-down approach involves examining the amount of goodwill paid on transactions where the target company is comparable to dispensing GP practices, which results in an implied value for intangibles. This method relies on the assumption that an established business will have built up intangible assets over time and that investors would implicitly recognise the intangible asset base by placing a premium on an established business compared to a start-up. The cost of acquiring a mature dispensing GP practice would therefore reflect the fact that the business included intangible assets or factors that were not necessarily represented on the balance sheet.

In conducting this analysis we acknowledge that it is very difficult to find a perfect comparator to a dispensing GP practice, and have therefore looked at transactions involving two distinct sets of comparators which have similar operations to that of a dispensing practice. Specifically, we have looked at transactions in the **primary care** sector, and in the **pharmacy** industry, reflecting dispensing practices’ dispensing element.

Following an initial search for relevant transactions in the UK market and finding that examples were relatively scarce, we have further expanded our search to include relevant recent transactions from the US. While the regulatory environment in the United States is quite different from that in the UK, we consider it important to have a range of examples of transactions from which we can draw a balanced judgement, rather than rely upon a very small number of transactions and restrict our analysis to the UK market.

A shortlist of potential transactions we considered is presented on the next slide, together with our reasons for having included or excluded them from our analysis. The subsequent slide gives the intangible estimates for our selected comparator transactions.

Annex 6: Intangible assets (cont.)

Table 33: Potential transactions for intangible asset valuation

Target	Bidder	Sector	Year	Notes	Include?	Reason for exclusion, if applicable
AC Ferguson (Chemist) Ltd	Independent Pharmacy Care Centres plc	UK - Pharmacy	2006	Acquisition of a local peer by a UK based dispensing chemists' firm	No	Private company - insufficient data available
E Moss Ltd	Independent Pharmacy Care Centres plc	UK – Pharmacy	2007	Acquisition of a local peer by a UK based dispensing chemists' firm	No	Private company - insufficient data available
Munro Pharmacy Ltd	Franz Haniel & Cie GmbH	UK – Pharmacy	2008	Acquisition of a local competitor by German owned Lloyds pharmacy Ltd	No	Private company - insufficient data available
Independent Pharmacy Care	Admenta Holdings Ltd	UK – Pharmacy	2007	UK Pharmacy operator acquired by an investment arm of Lloyds pharmacy Ltd	No	Private company - insufficient data available
Numark plc	Phoenix Pharmahandel AG & Co KG	UK – Pharmacy	2005	UK pharmacy chain bought by German pharmaceutical wholesaler	Yes	~
Alliance Boots plc	Kohlberg Kravis Roberts & Co - KKR	UK – Pharmacy	2007	Purchase of remaining share capital in Alliance Boots not already owned by US private equity firm KKR	Yes	~
Integrated Dental Holdings PLC	Merrill Lynch Global Private	UK – Primary Care	2008	Undiscolsed stake in dental pracitce provider bought by Merill Lynch's private equity arm	No	Required data unavailable from known sources
Oasis Healthcare PLC	Duke Street Capital	UK – Primary Care	2007	Dental practice provider bought in its entirety by a newly created company Duke Street Capital Oasis Acquisitions Ltd	Yes	~
Network Pharmaceuticals Inc	Longs Drug Stores Corp	US – Pharmacy	2006	Purchase of a local drug store chain purchased by national competitor	No	Required data unavailable from known sources
Duane Reade Inc	Walgreen Co	US – Pharmacy	2010	Purchase of a local drug store chain purchased by national competitor	No	Private company - insufficient data available
CVS Caremark Corp	CVS Caremark Corp	US – Pharmacy	2008	Repurchase of $2bn of outstanding stock of large pharmacy retailer	No	Incomplete transaction
Allion Healthcare Inc	HIG Capital LLC	US – Pharmacy	2010	Large US drugstore chain acquired by private equity firm	Yes	~
Longs Drug Stores Corp	CVS Caremark Corp	US – Pharmacy	2008	Purchase of major national drugstore operator by a competitor	Yes	~
NationsHealth Inc	ComVest NationsHealth Holdings	US – Pharmacy	2009	Purchase of a large drug wholesaler and retailer by a private investment firm	Yes	~
Curative Health Services Inc	Bondholders	US – Primary Care	2006	US operator of specialist wound care centres offering comprehensive wound care programs	No	Company engages only in specialist wound care – not considered to be a suitable comparator
MediPlan Corp	Centene Corp	US – Primary Care	2006	US Health care services provider bought by a managed care program operator	No	Private company - insufficient data available
Pernix Therapeutics Inc	Golf Trust of America Inc	US – Primary Care	2010	US Pediatrics and Primary Care clinic bought by Golf Trust of America, Inc.	No	Private company - insufficient data available
Symbion Inc	Crestview Partners LLC	US – Primary Care	2007	US primary care provider offering minor surgery clinics across the US, bought by Private Equity investment firm	Yes	~
Caremark Rx Inc	CVS Corp	US – Primary Care	2007	US provider of prescription benefit management services and disease management bought by a large drug store chain	Yes	~

Source: Dealogic, ThomsonOne, PwC analysis

Annex 6: Intangible assets (cont.)

A list of the transactions that have been used in our analysis of intangibles is provided below, along with the goodwill estimates as a percentage of the sales.

Our top-down approach gives us a broad range for the value of intangible assets, from 1%-76%. However, this is skewed downwards by two outlying measurements of 1% and 2%, relating to the acquisitions of Allion Healthcare and NationsHealth Inc, respectively. Notably, these are the two most recent transactions in the sample, both occurring during the recent market turmoil which has lead to a dearth of transaction activity and hugely deflated purchase prices. We therefore consider it appropriate to exclude these two measurements from the analysis.

Excluding these two gives us a range for intangible value of 33% to 76% of target sales, and an average figure of 55%. Given the size of the observed transactions, it is likely that the resulting intangible value estimates will include an element of brand value which would not be relevant to dispensing practices. We therefore took a conservative approach and used the lower end of the range for estimating the intangible asset value of a typical dispensing practice.

Table 34: Intangible valuations for chosen comparator transactions

Target	Bidder	Sector	Year	Target sales in acquisition year ($m)	Goodwill as % of sales
Numark plc	Phoenix Pharmahandel AG & Co KG	UK – Pharmacy	2005	48.1	76%
Alliance Boots plc	Kohlberg Kravis Roberts & Co - KKR	UK – Pharmacy	2007	22,572.9	46%
Oasis Healthcare PLC	Duke Street Capital	UK – Primary Care	2007	177.5	68%
Allion Healthcare Inc	HIG Capital LLC	US – Pharmacy	2010	385.2	1%
Longs Drug Stores Corp	CVS Caremark Corp	US – Pharmacy	2008	5,372.5	33%
NationsHealth Inc	ComVest NationsHealth Holdings	US – Pharmacy	2009	89.9	2%
Symbion Inc	Crestview Partners LLC	US – Primary Care	2007	301.5	66%
Caremark Rx Inc	CVS Corp	US – Primary Care	2007	32,991.3	43%
Range (excluding outliers)					**33% - 76%**
Average (excluding outliers)					**55%**

Source: Dealogic, ThomsonOne, PwC analysis

Annex 6: Intangible assets (cont.)

Bottom-up approaches

These approaches seek to identify and quantify individual intangible assets within dispensing practices, drawing on the responses received to questions asked during the survey process. We have applied three different approaches to assess intangible asset values in this manner.

1) Capitalisation of avoidable services

This approach looks to place a value upon the additional services offered by dispensing practices over and above those which it is contracted to provide. Such discretionary services constitute an investment in intangible assets to the extent that it is assumed they are provided to enhance the service patients receive, despite the practice not being specifically incentivised to provide them.

During the survey process we asked practices to give details of any services which they provide but for which they are not reimbursed, and further asked whether there are any services which are not necessarily dispensing related, but which are supported by dispensing income. This was asked because it is acknowledged that dispensing practices are able to make margins on their dispensing income streams which are over and above those achieved on provision of general medical and clinical services. Thus, this income represents cash flow which could be used to invest in discretionary services should the practice choose to do so.

This method allows a value to be placed on intangibles through the capitalisation of costs which might be avoided if these discretionary services were not provided. As an investment in the intangible patient relationship asset, the costs are capitalised over the expected length of the patient relationship. The length of this relationship (i.e. the average length of time a patient using the identified discretionary services might be expected to be registered with the practice) was asked of the practices during the survey. The total annual discretionary cost was multiplied by the length of the relationship, and dividing the result by two in order to account for depreciation over the long term.

Due to the relative complexity of this concept and the naturally subjective nature of the questions, many of the practices questioned were unable to give adequate responses to these questions. As a result we decided the results of this approach were unreliable and could not be used as the basis for estimating the value of intangibles assets.

2) Capitalisation of human capital investment

As previously identified, investment in staff training which is aimed to increase the staff skills set represents an investment in the value of those staff to the practice. In order to estimate the value of this asset, we asked the practices to provide us with an indication of the proportion of their annual training spend which was dedicated to increasing staff skill levels as opposed to maintaining the existing skill level. We then capitalised this cost based on the average tenure of staff, representing the length of time over which the practice derives benefit from the asset. This capitalisation is achieved in the same way as the capitalisation of avoidable services. Table 36 provides a summary of the intangible asset relating to human capital, as a percentage of income.

Annex 6: Intangible assets (cont.)

3) Hypothetical "Greenfield" assessment

A third possible method to assessing the value of intangible assets for a dispensing GP practice is to conduct a "Greenfield" assessment. This involves a comparison of a hypothetical start-up dispensing practice with a hypothetical established practice that has created intangible assets over a number of years.

During the survey we asked respondents to consider the hypothetical situation in which the existing practice were to be replaced by a new practice, identical in terms of its operations, location and staff but with no existing registered patients. Based on an assumption of the most recent years' income being representative of the steady state income for the practice, we then asked how long it would likely take for that level of income to be achieved by the new, start-up practice.

This exercise effectively allows us to place a value upon the patient relationship and reputational effects, since it is assumed that any income foregone in the initial years before steady state income is achieved is foregone because the practice has not yet established these relationships or built the reputation which enables it to command this income.

By ascertaining the likely duration of the period over which this intangible asset is built up, and an estimate of the reduced income over the "building" years, we are able to come to a valuation of the income shortfall from steady state turnover in the short term which we can attribute to the relationship and reputational asset. For the purposes of clarification, an illustrative turnover start-up profile is shown in the table which follows.

The intangible asset value is calculated as the difference in the present value of the forecasted cash flows, discounted at the appropriate pre-tax, real discount rate calculated as 15%, under the "Greenfield" and steady state scenarios.

Table 35: Illustrative "greenfield" startup profile

	Years from launch					
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Turnover (as a percentage of steady state turnover)	**0%**	**20%**	**40%**	**60%**	**80%**	**100%**

Annex 6: Intangible assets (cont.)

Estimating the value of intangible assets

Our analysis of intangible asset values provided us with three estimates of the return on intangible assets, as follows:

Table 36: Intangible valuations

Method	Intangible asset value (as percentage of turnover)
Comparable transactions	**33% *(33% - 76%)***
Capitalisation of human capital	**0.4% *(0.2% to 0.6%)***
Greenfield assessment	**71% *(28% to 102%)***

Sources: Dealogic, ThomsonOne, practice accounts and visits, PwC analysis

Each of the three approaches have their shortcomings. In particular:

- The comparable transactions approach uses both US and UK pharmacies and primary care providers and relies on potentially depressed market values (this would result in an underestimation of intangible assets) and historic net asset values (this would result in an overestimation of intangible assets);
- Capitalisation of human capital is likely to underestimate the total intangible value as this does not capture the value attributable to relationship with patients which is a key intangible for dispensing practices.
- In theory, the Greenfield assessment, although hypothetical, should provide the most accurate results as it is based on direct assessment of the current dispensing practice market in England. However the evidence from our survey responses and industry experts suggests that this is a particularly difficult exercise in the context of dispensing practices and may vary significantly depending on the location (e.g. rural, semi-rural, distance from nearest pharmacy). Unsurprisingly, the results from this approach ranged from 28% to 102% which we considered to be too wide to provide a meaningful basis from which to draw any conclusions.

No single method is ideal, however for the reasons described above, we consider that that the comparable transactions provided the most reliable and appropriate estimate of the intangible asset value, resulting in an estimate of 33% as a percentage of turnover.

Annex 7: Weighted Average Cost of Capital

Annex 7: Weighted Average Cost of Capital (cont.)

The Weighted average Cost of Capital, or WACC, is a measure of the minimum fair rate of return required to investors to compensate them for the risk undertaken through investment in a business. The WACC approach has strong theoretical underpinnings and, as such, is nearly universally used by economic regulators.

The WACC reflects the fact that firms are generally financed through a mixture of debt and equity finance, providers of which face differing levels of risk. Using the WACC approach, the overall measure of the cost of capital of a firm is calculated using the formula:

$$WACC = \frac{D}{D+E} k_D (1-T) + \frac{E}{D+E} k_E$$

where

D is the value is debt in the capital structure;

E is the value of equity in the capital structure;

k_D is the pre-tax cost of debt;

k_E is the post-tax cost of equity; and

T is the corporate tax rate.

To estimate the overall WACC, each of the individual elements of the formula need to be determined. In the remainder of this section we outline in detail our approach to the estimation each of these elements, before pulling them all together and presenting our WACC estimates. First, however, we discuss the types of risks faced by dispensing practices and their impact on the required rate of return for investors.

Risk in the dispensing GP practice sector

The standard framework for calculating the cost of equity is the Capital Asset Pricing Model (CAPM). The CAPM is the most commonly used approach for commercial and regulatory purposes. A key aspect of the CAPM framework is that it distinguishes between specific risks and systematic risks, as follows:

- **Specific risks** are those risks which are specific to a company or project, and can be "diversified away" by holding a portfolio of investments. That is, by holding a diversified portfolio of equity investments, an equity investor is not exposed to such risks since those investments which perform badly due to specific risk factors can be expected to be offset by investments which perform well for specific risk reasons and vice versa. Since equity investors need not be exposed to specific risks they do not affect required returns, and hence are not captured in the standard cost of equity, but should be reflected in the calculation of the expected cash flows from the project.

Annex 7: Weighted Average Cost of Capital (cont.)

- **Systematic risk** refers to risk factors which affect all equity investments simultaneously in the same direction to a greater or lesser extent, and hence cannot be diversified away. Movements in economy wide factors such as changes in the GDP growth rate, interest rates, savings rates and inflation contribute to systematic risk. These risks are captured in the cost of equity and hence WACC. Beta is a measure of this risk (i.e. the systematic risk associated with a particular equity investment, relative to the average risk of investing in the equity market. If a particular investment is of average risk, beta = 1; beta is greater than 1 for a more than average risky investment and less than 1 for a less risky investment. The higher the beta, the higher is the exposure to systematic risk, and hence the higher is the cost of equity.

During our survey we asked practices to identify key risk factors which their businesses faced, in order to provide some context to the risks for which hypothetical investors are being compensated through the WACC. We presented practices with a list of typical risk factors we had formulated based on the pilot surveys and consultation with the Steering Group. We then asked practices to rank these "high", "medium" or "low" according to the amount of risk each factor posed to practice operations, and to supplement this list with any other risk factors we may have omitted. The following table provides a summary of the comments provided by the practices sampled

Table 37: Key risk considerations for dispensing practices

Risk consideration	Comments
Cash flow risk – e.g. changes to timing / terms of the NHS Prescription Pricing Division (PPD) against supplier payments	12 out of the 17 practices that gave a response to this thought that cashflow risk was a low risk to their practice operations.
Supplier risk – risk arising from changes in wholesale operations	13 out of the 18 practices reported a tightening/reduction on the discounts received from wholesalers and suppliers to be a key risk. This is mainly due to new arrangements where major pharmaceutical companies often only distribute through one or two suppliers, reducing the bargaining power of practices, which now have a greatly reduced (if any) choice in suppliers. Compounding the effect of the reduction in discounts, a few practices have also reported experiencing a small-order surcharge, and that drugs reimbursement does not reflect this reduction in discounts.
Regulatory – risks due to changes to the way the sector is regulated e.g. criteria for a new pharmacy opening in the area, patient eligibility criteria for a dispensing doctor	11 out of 15 practices thought that regulatory risk was a medium to high risk.
Opening of new pharmacies – loss of dispensing patients due to new pharmacy or supermarket openings	9 out of 17 practices thought this was a low risk, while the other 8 practices thought is was a medium to high risk. This risk is fairly location-specific, which may explain the dichotomy in views.
Urbanisation – growth of towns and villages could lead to reduction in dispensing patients	14 out of 17 practices thought that the risk of urbanisation was a low risk to their operations. This is likely to be because most practices tend to be situated either in protected green zones or in areas with an ageing population and more or less constant population levels.

Annex 7: Weighted Average Cost of Capital (cont.)

Calculating the cost of Equity

The standard framework for calculating the cost of equity is the Capital Asset Pricing Model (CAPM). The CAPM is the most commonly used approach for commercial and regulatory purposes This framework assumes that equity investors require their investment to yield at least the return available on risk-free instruments (e.g. UK government bonds). Added to this risk-free rate of return, equity investors expect a premium for the additional risk involved in an equity investment.

This premium is defined as the general equity market risk premium (EMRP) multiplied by the equity beta. The EMRP is the additional expected return an investor demands for putting investing in equities of average risk. The equity beta is a measure of the "riskiness" of a particular equity investment relative to the average equity investment. In particular, it is a measure of the degree of systematic risk for a particular investment.

We have included a Small Company Risk Premium (SCP) in our CAPM cost of equity estimate. Empirically the case for including such a factor is strong and important when calculating the cost of equity for small companies. In addition, the use on a SCP has been endorsed by regulators, including the Competition Commission.

Under the CAPM, the cost of equity CAPM, including the SCP, can be expressed as follows:

$$k_E = r_f + (\beta \text{xEMRP}) + \text{SCP}$$

where r_f is the risk-free rate;

β is the equity beta;

EMRP is the equity market risk premium; and

SCP is the small company premium.

Risk-free rate

Under the CAPM approach to the estimation of the cost of equity, the risk-free rate should be the return on an assets that has returns that are uncorrelated with movements in the market portfolio. In practice, such an asset does not exist and thus the true risk-free rate is not observable.

Annex 7: Weighted Average Cost of Capital (cont.)

In practice, the redemption yields on “safe”, liquid, financial instruments, which are considered to have negligible default risk, are generally used as approximations of the risk-free rate. To determine the nominal risk-free rate, the yield on bonds issued by a reliable sovereign state is used as a proxy. Given that we are interested in the cost of equity for dispensing practices in the UK, we have used the yield on UK government bonds as an estimate of the risk-free rate.

The maturity of the risk-free rate should represent the typical investment horizon within the GP sector, which is in the range of 5-20 years. Normally, this would suggest that we should use UK government bonds with a 10 year maturity in our analysis. However, given recent events in the financial markets, the yield on UK government bonds may be artificially driven down by investors choosing low risk assets in a flight to quality during volatile financial markets. While in fundamental terms we believe the risk-free rate should have come down due to a decrease in inflation expectations and more depressed views of future economic growth, it is not clear that the yields observed on 10-year UK government bonds reflect these fundamentals rather than temporary market factors.

Historically there has been a spread of approximately 10-20 basis points (bps) between the 10- and 20-year yields. However, over the past year we have seen this spread increase to a maximum of approximately 100 bps, as the 10-year bond yield has fallen more significantly than the 20-year bond yield, which has been relatively stable.

This suggests that 20 year UK government bond yields have been less distorted by current market conditions, whilst still reflecting the shift in fundamentals described above. As at the end of Q1 2010 the five-year average yield on 20 year government bonds was around 4.5%. This is the figure that we have used in our estimation of the WACC for dispensing GP practices as a proxy for the stable 10-year rate.

Equity market risk premium

The EMRP is the additional expected return that an investor demands for the additional risk faced when investing in equities of average risk, compared to a risk-free investment. Our estimate of the EMRP is based on a survey of both ex post and ex ante studies of the EMRP. Key results from these studies are presented below.

Where possible, both geometric and arithmetic mean returns are provided. The geometric mean return gives a measure of the average annual return achieved by an investor as if the investor enters into a buy and hold strategy for the whole period considered. The arithmetic mean return is equal to the average of all the single year returns over the period. We consider both methods of calculating average excess returns.

The table below provides a summary of some particularly well known studies on the ex post EMRP.

Annex 7: Weighted Average Cost of Capital (cont.)

Table 38: Ex-post estimates of EMRP

Source	Time period considered	EMRP geometric mean (%)	EMRP arithmetic mean (%)
DMS (2009): UK	1900-2008	3.6	5.0
Barclays Capital (2007): UK	1900-2006	4.2	n/a

Source: DMS (2009), Barclays Capital (2007)

The table below presents some studies on the ex-ante EMRP. It should be noted that there are two main sources of ex ante EMRP estimates:

- Implied value: EMRP is implied from the required rate of return calculated using a dividend growth model; and
- Survey of expectations: aggregate investors' expectations about returns from investing in the market as a whole are derived by survey.

Table 39: Ex-ante estimates of EMRP

Source	EMRP (%)	Comments
Competition Commission (2008)	3.8 - 5.0	Based on DGM
Welch – geometric mean (2008)	4.0 – 6.0	Based on a survey of 400 finance professors
Welch – arithmetic mean (2008)	4.5 – 7.0	Based on a survey of 400 finance professors
Gregory – geometric mean (2007)	1.7 – 3.3	Based on divided and earning growth models
Gregory – arithmetic mean (2007)	2.0 – 3.9	Based on divided and earning growth models
Competition Commission (2008)	2.1 – 3.3	Based on dividend growth models
Claus and Thomas (2001)	3.4	Based on dividend growth models

Source: Competition Commission (2008), Welch (2008), Gregory (2007), Competition Commission (2007), Claus & Thomas (2001).

Annex 7: Weighted Average Cost of Capital (cont.)

We have taken into account both ex post and ex ante estimates of EMRP, as well as the following factors when seeking to establish an appropriate EMRP:

- Current high levels of implied equity market volatility;
- Low equity valuations, which cannot be solely attributed to a reduction in forward looking earnings expectations; and
- The significant discounting required to attract equity in rights issues and share placements.

To assist us in forming an opinion we have considered some recent studies on the EMRP that have taken these market developments into account and that have adjusted their long term EMRP estimates accordingly. These are summarized in the table below.

Table 40: Recent views on the EMRP taking into consideration financial market developments

Source	Date	EMRP (%)	Author's comments
Grabowski	Jan-09	6.0	Using an EMRP derived during "normal" economic times will underestimate the cost of equity.
Citigroup	Dec-08	5.1 – 5.3	Adjusted from 4.0% to reflect the long term re-prising of risk.
Nomura	Oct-08	8.0	Risky financial assets such as equities have significant risk premia embedded in them, to reflect the expectation of policy failure.

Source: Grabowski (2009), Citigroup Global Markets (2008), Nomura (2008).

Over a medium to long term time horizon we would expect equity market volatility to drop from current levels, but to still be higher than the low levels of 2005/6. We thus expect the EMRP to trend to 5.0% over time.

Therefore, we adopt an EMRP of 5.0% for the purposes of this analysis.

Annex 7: Weighted Average Cost of Capital (cont.)

Equity beta

A key input to the CAPM approach to the estimation of the cost of equity is the equity beta, which measures the sensitivity of a specific equity's returns to systematic risk. It can be estimated by regressing the returns of the equity against the returns of the overall market. The stronger the correlation, and the greater the amplitude of any movement in returns, the higher the risk associated with an investment.

Ideally, to measure the systematic risk of the provision of dispensing GP practice we would examine the returns of listed companies that exclusively provide these services. In practice, no such companies exist in the UK. Even internationally, we have not been able to identify any comparators that exclusively provide primary care and medications dispensary services, akin to a dispensing practice.

As an alternative to direct comparators, we have identified listed companies whose activities fall into one of three industry classifications, in order to synthesise as closely as possible the systematic risk profile of a dispensing practice.

1) The first group of comparators operate in the **primary care** sector. Our inclusion of these companies aims to replicate the medical and clinical element of the service provided by dispensing practices. In order to extend our comparator set as broadly as possible, we have taken example from developed economies around the world. Given that dispensing GP practices are a subset of primary care sector, the systematic risk exposure is likely to be comparable to that of the primary care sector

2) Our second group of comparators operate in the **pharmacy** sector. This group of companies may provide a useful benchmark for the systematic risk of the dispensing activities of a typical dispensing practices. Again, we have looked at a global sample of companies in developed economies, and require that at least 65% of a selected comparator's revenues are from prescription pharmacy operations, in order to eliminate those which rely heavily on retail sales and more closely represent the dispensing element of a typical dispensing practice.

3) While the above two classifications are engaged in the healthcare sector, and by virtue of this are likely to exhibit a relatively low risk profile due to the necessity of the service provided, we were concerned that use of these two groups alone would neglect the risk mitigation afforded to dispensing practices as a result of being publicly funded under the NHS. As a result, we have included as a third group a selection of **UK Utilities** to reflect the risk of a UK regulated industry.

Whilst neither of these groups of companies offer perfect comparators to dispensing practices, for reasons described above, they are considered to exhibit similar levels of systematic risk exposure and therefore provide a reasonable basis for estimating the equity beta for dispensing GP practices.

A list of comparators meeting our screening criteria is presented on the next page.

Annex 7: Weighted Average Cost of Capital (cont.)

Table 41: Comparators meeting screening criteria to be included in Beta analysis

Primary care providers	
Medco health Solutions inc.	Medco Health Solutions, Inc., a healthcare company, provides clinically driven pharmacy services for private and public employers, health plans, labor unions, government agencies, and individuals in the United States and internationally.
Centene Corp.	Centene Corporation operates as a multiline healthcare company in the United States. It operates through two segments, Medicaid Managed Care and Specialty Services. The Medicaid Managed Care segment provides medicaid and medicaid-related health plan coverage to individuals through government subsidized programs, including medicaid, the state children's health insurance program, foster care, and medicare special needs plans, as well as aged, blind, or disabled (ABD) program.
Mediclin AG	MEDICLIN Aktiengesellschaft provides medical rehabilitation, hospital, and nursing care services in Germany. It operates acute-care facilities, post-acute care facilities, nursing care facilities, and medical care units.
Retail pharmacies	
Walgreen Co.	Walgreen Co., together with its subsidiaries, operates a chain of drugstores in the United States. The drugstores sell prescription and non-prescription drugs, and general merchandise.
Sugi Holdings Co. Ltd.	Sugi Holdings Co., Ltd., through its subsidiaries, engages in the retail of pharmaceutical products and related products in Japan. It operates in two segments, Pharmacy and Drug.
Catalyst Health Solutions, inc.	Catalyst Health Solutions, Inc., together with its subsidiaries, operates as a pharmacy benefit management company in the United States. The company provides its clients with plan designs, clinical programs, physician orientation programs, and member education through an electronic point-of-sale system for eligibility verification and plan design information, as well as offers access to rebate arrangements for various branded pharmaceuticals.
Bioscrip Inc.	BioScrip, Inc., a specialty pharmaceutical healthcare organization, provides medications and management solutions for chronic and other healthcare conditions in the United States. It operates through two segments, Specialty Pharmacy Services and Traditional Pharmacy Services.
CVS Caremark Corporation	CVS Caremark Corporation operates as a pharmacy services company in the United States. It operates in two segments, Pharmacy Services and Retail Pharmacy.
UK Ulitities	
National Grid Plc	National Grid plc, together with its subsidiaries, engages in the transmission and distribution of electricity and gas in the United Kingdom and the United States. Its Transmission business owns and operates high voltage electricity transmission network in England, Scotland, and Wales; the gas national transmission system in Great Britain; the electricity interconnector between England and France; storage facilities for liquefied natural gas (LNG); and high voltage electricity transmission networks in New York and in New England.
Scottish and Southern Energy plc	Scottish and Southern Energy plc, through its subsidiaries, engages in the generation, transmission, distribution, and supply of electricity. It also involves in the storage, distribution, and supply of gas; energy trading; and electrical and utility contracting activities.
United Utilities Plc	United Utilities Group PLC, through its subsidiaries, engages in the ownership, operation, and maintenance of water and wastewater networks in the United Kingdom and internationally. It supplies water covering a population of approximately 7 million people, and 2.9 million households and business premises; and involves in the collection and treatment of wastewater through a network of 43,419 kilometers of sewers.
Severn Trent Plc	Severn Trent Plc engages in the supply of water, and treatment and disposal of sewage principally in the United States, the United Kingdom, and Europe. It develops various technologies and products focused on disinfection, filtration, and adsorption.
Pennon Group Plc	Pennon Group Plc, through its subsidiaries, provides water and sewerage services in the United Kingdom. The company serves a region of 10,300 square kilometers with 1.65 million residents and approximately 10 million annual visitors.

Source: Capital IQ

Annex 7: Weighted Average Cost of Capital (cont.)

In addition to those comparators listed on the previous page, we also considered several other potential public comparator companies, and a number were excluded due to having unusual capital structures, outlying beta values or not being deemed to have a sufficiently comparable business description to constitute a meaningful comparator to a dispensing practice.

It should be noted that the betas calculated from historical market data are equity betas. They indicate the risk that equity providers bore by investing in the companies examined given that the companies had a particular level of gearing. The existence of debt finance in companies increases the risk to equity investors as debt has first call on available cash for investors. Equity betas are thus higher than the underlying "asset" betas (which are the betas that would reflect the risk borne by equity investors were the company financed by equity only, and there was no additional financial risk to equity providers associated with the inclusion of debt).

Asset betas have been derived from the observable equity betas by employing an appropriate adjustment formula:

$$\beta_e = \beta_a \left(1 + \frac{D}{E}\right)$$

The table on the next slide presents equity betas, debt/equity (D/E) ratios and asset betas for each comparator.

Annex 7: Weighted Average Cost of Capital (cont.)

Table 42: Beta estimates for comparable companies

	Equity Beta (regressed against local indices)	D/E Ratio	Asset beta
Primary care providers			
Medco health Solutions inc.	0.7	15%	0.6
Centene Corp.	1.1	22%	0.9
Mediclin AG	0.8	76%	0.5
Group Average	**0.8**	**37%**	**0.6**
Retail pharmacies			
Walgreen Co.	0.9	3%	0.8
Sugi Holdings Co. Ltd.	0.8	1%	0.8
Catalyst Health Solutions, inc.	0.9	0%	0.9
Bioscrip Inc.	1.7	47%	1.1
CVS Caremark Corporation	0.8	18%	0.7
Group Average	**1.0**	**14%**	**0.9**
UK Utilities			
National Grid Plc	0.6	121%	0.3
Scottish and Southern Energy plc	0.7	36%	0.5
United Utilities Plc	0.6	112%	0.3
Severn Trent Plc	0.6	128%	0.3
Pennon Group Plc	0.7	104%	0.3
Group Average	**0.6**	**100%**	**0.3**

Source: Capital IQ, PwC analysis

Annex 7: Weighted Average Cost of Capital (cont.)

The beta analysis provides us with a range of estimates for the asset beta. As might be expected, the beta for primary care providers lies somewhere between that calculated for utilities and for retail pharmacies. We believe that, to reflect the public funding element in dispensing practice, it is appropriate to use a figure in the bottom of the range between primary care and pharmacy providers. This gives us an asset beta for dispensing practices of **0.6.** Relevering this beta using the mean D/E ratio for primary care providers gives an equity beta estimate of **0.9.**

Small company risk premium

Investors bear additional risks when investing in small and less liquid companies. The small company risk premia relate to the findings of Fama and French, who suggested that the CAPM may be mis-specified with respect to size. Such premia have been adopted by UK regulators in setting prices (for example, OFWAT and the Competition Commission).

The most common practice when estimating the small company risk premium, and the approach most technically consistent with CAPM, is to apply a beta adjusted size premium. In order to estimate this beta-adjusted size premium given the size of the companies analysed, we have utilised long-term US equity returns in excess of CAPM data generated by Ibbotson Associates, which measure "size" based on market value (market capitalisation).

Based on this study, we have concluded that a UK dispensing practice is likely to fall within the lowest decile measured (i.e. Market Capitalisation of less than $219m), and as such we apply the largest small company premium of 6.28**%*.**

Calculating the cost of debt

The cost of debt can be observed from market information by examining the long-term debt margins (i.e. the additional premium over and above the risk-free rate or the return on government bonds) which banks and other debt providers require for lending money to companies such as pharmacies and primary care providers. Based on our comparator set, the credit rating for a typical pharmacy or primary care business lies around A-BBB (Standard & Poor's). We have thus estimated the debt margin by calculating the difference between the risk-free rate and the yield for corporate debt at the A and BBB credit ratings in the UK over the last four quarters. The averages are shown in the table on the next slide.

***Ibbotson (2010)

Annex 7: Weighted Average Cost of Capital (cont.)

Table 43: Debt margins

	Average 2009 Q2 to 2010 Q1
UK Risk-free rate (average)	4.33%
UK 10-year Composite (A)	6.44%
UK 10-year Composite (BBB)	7.32%
Margin on A rated bonds	**2.10%**
Margin on BBB rated bonds	**2.98%**

Source: Capital IQ, PwC analysis

Following a similar logic to that used in choosing our equity beta, we believe it more appropriate to use a debt margin towards the lower end of this range, due to the publicly funded element of dispensing practices which would lead to a lower risk rating than a pure private company. Hence, we have used a debt margin in our WACC calculations of **2.1%**.

In order to convert a post-tax WACC to a pre-tax WACC, the post-tax WACC should be "uplifted" by the UK corporate tax rate. For 2010, the UK corporate tax rate is 28%.

The uplift can be calculated as follows: pre-tax WACC = post-tax WACC/(1-corporation tax).

Annex 7: Weighted Average Cost of Capital (cont.)

Calculating the WACC

Our final WACC calculations are presented in the table below.

Table 44: Summary of overall nominal WACC calculation

	Symbol	Value	Notes
Nominal risk-free rate	R_f	4.5%	20 year yield on UK government bond
Debt Margin	m	2.1%	A to BBB benchmark debt margins
Tax Shield	T_c	28%	UK Corporation tax rate
Cost of Debt (pre-tax)	**K_d**	**6.6%**	**R_f + m**
Cost of Debt (post-tax shield)	K_d p-t	4.8%	**K_d * (1-T_c)**
Asset Beta	b_a	0.6	Primary care asset betas
Debt/Equity Ratio (D/E)	D/E	37.5%	Primary care D/E ratio
Equity Beta	b_e	0.9	B_a * (1+D/E)
Target Gearing (D/D+E)	D/(D+E)	24.7%	Primary care gearing ratio
EMRP	EMRP	5.0%	PwC assumption
Small Company Premium	SCP	6.3%	Source: Ibbotson (2010)
Cost of Equity (% pre-tax)	K_e	21.0%	K_e p-t / (1-T_c)
Cost of Equity (% post-tax)	K_e p-t	15.1%	R_f + b_e * EMRP + SCP
Nominal, Post-tax WACC (%)	**Post-tax WACC**	**12.6%**	**K_d*(D/D+E)*(1-T_c) + K_e*(E/D+E)**
Nominal, Pre-tax WACC (%)	**Pre-tax WACC**	**17.4%**	**Post-tax WACC/(1-T_c)**

Source: Capital IQ, PwC analysis

Appendix 1: Additional analysis following from Steering Group meeting on Tuesday 20th July 2010

1. Dispensing income and costs per item dispensed

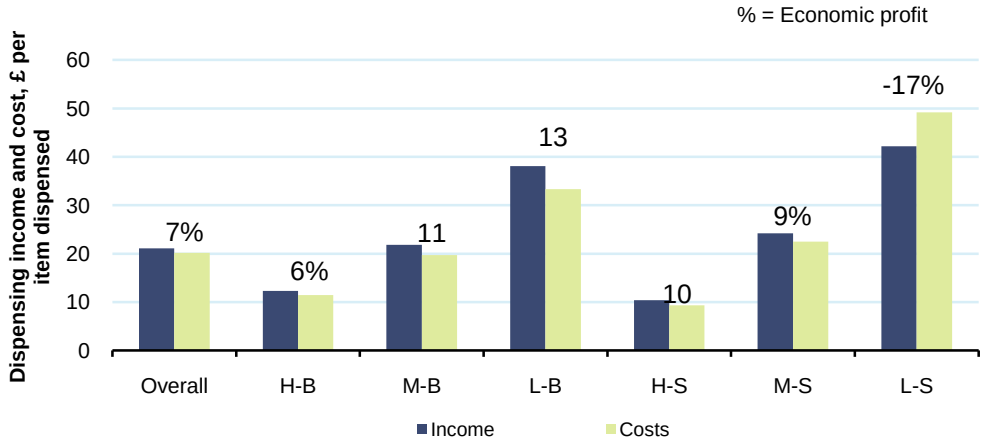
This note addresses issues raised at the Steering Group meeting held on 20th July 2010 during discussions of the main COSI report entitled “Cost of service inquiry for dispensing practices”[1].

Some members of the Steering Group expressed a desire to see dispensing income and costs measured by fee items dispensed; the following analysis shows these results, based on the FAC and EPMU approach. The figure suggests that on average, dispensing income[2] and dispensing cost[3] per item dispensed are £21 and £20 respectively. As might have been expected, income and costs per item are higher for practices with a low proportion of dispensing patients (i.e. strata L-B and L-S) and lower for practices with a high proportion of dispensing patients (i.e. strata H-B and H-S). This figure is comparable to Figure 32 in our main COSI report which shows dispensing income and costs per dispensing patient. As expected the economic profit margins in both sets of results are the same

To achieve this measure, we have used an imputed measure of the number of items dispensed, as this data are not readily available. Using data on practices’ monthly prescribed items for 2008 and 2009, we have calculated an annualised figure for each practice based on a year end date of March 2009, the most commonly-occurring account end date for the practices sampled. However, this is an imperfect measure of items dispensed, as not all of these items will have been dispensed by the practice. To give a rough proxy of dispensed items, this annual figure has then been scaled by the proportion of dispensing patients on the practice list. Overall cost and income figures have then been divided by this number to give a rough estimate of income, costs and profit per item dispensed. This approach assumes that prescribing volumes are evenly distributed across dispensing and non-dispensing patients. We believe that this may underestimate the actual number of items dispensed considering that prescribing volumes are likely to be skewed towards dispensing patients.

Furthermore, some members of the Steering Group expressed an interest in understanding the level of dispensing costs per item excluding drugs cost. We provide these results in the table below for both the FAC and LRIC apportionment methods, based on the imputed measure of items dispensed as explained above[4].

Figure 1: FAC allocation of dispensing costs and income per item dispensed



Source: Practice accounts and visits, PwC analysis

Table 1: Dispensing costs per item excluding drugs cost, FAC and LRIC methods (£)

Stratum	Dispensing costs per item excluding drugs costs (£)	
	FAC	LRIC
Overall	6.2	4.5
H-B	3.6	3.2
M-B	6.1	5.1
L-B	10.3	8.2
H-S	2.6	1.7
M-S	6.7	4.5
L-S	16.3	9.4

Notes:
1 This report was sent to the Steering Group members on 2 July 2010.
2 Dispensing income mainly consists of drugs reimbursement, dispensing fees, Dispensing Services Quality Scheme income, a proportion of property and training income.
3 Dispensing cost mainly consists of drug costs, and a proportion of staff costs, property costs, training costs, depreciation and other operating costs.
4 These results differ slightly from subtracting an estimate of drugs cost per dispensing item based on the percentages in Figures 28 and 29 of the main report. This is because the results presented here are based on averaging individual practice results, rather than subtracting drugs cost at the stratum level.

2. Sensitivity of results to Personally Administered Drug adjustments

Our main analysis adjusts drug reimbursement and cost of drugs figures to remove costs associated with Personally Administered drugs, which can be administered by dispensing- and non-dispensing GPs alike. As such, we have not considered it appropriate to include PA-related items as part of dispensing-related costs.

However, the point was raised at the meeting that a number of such PA items, particularly Insulin, are not routinely dispensed by non-dispensing GPs, and that it might therefore be inappropriate to fully exclude these costs from our assessment of dispensing profits. To test the sensitivity of dispensing profits to these PA items we have, for purposes of illustration, reproduced below the overall dispensing cost, income and profit margin results if all PA adjustments are removed, such that full drug costs and income are captured.

The unadjusted results show higher overall profit margins to dispensing when PA items are not removed from dispensing costs and income, implying that the profit margins on administering such items are higher than the average for dispensing drugs. The effects on overall margins are relatively small, however, reflecting the small adjustments made to costs and income for PA items in our original analysis.

It is worth nothing that higher margins are not observed across all stratum; strata L-B and H-S show a reduction in profits, the former by some 6% under the LRIC approach. L-S also shows a notably large change in profitability when PA items are included, this is reflective of the small sample sizes in stratum H-S and L-S; each of these contain one practice who reported relatively large discrepancies between PA income and costs, whose influence skews the result for the stratum as a whole. Nevertheless, the overall effect on profit margins of including PA costs and income is small.

Table 2: Summary of dispensing profit margins under each incremental and common income and cost apportionment methods, EPMU, economics profits (based on costs that include fair returns and partner base pay)

Incremental income and cost apportionment	Overall	Stratum					
		H-B	M-B	L-B	H-S	M-S	L-S
FAC – With PA adjustment	**7%**	6%	11%	13%	10%	9%	-17%
FAC – No PA adjustment	**8%**	8%	13%	8%	10%	10%	-8%
LRIC – With PA adjustment	**13%**	9%	15%	18%	19%	15%	-3%
LRIC – No PA adjustment	**14%**	11%	16%	12%	18%	16%	3%

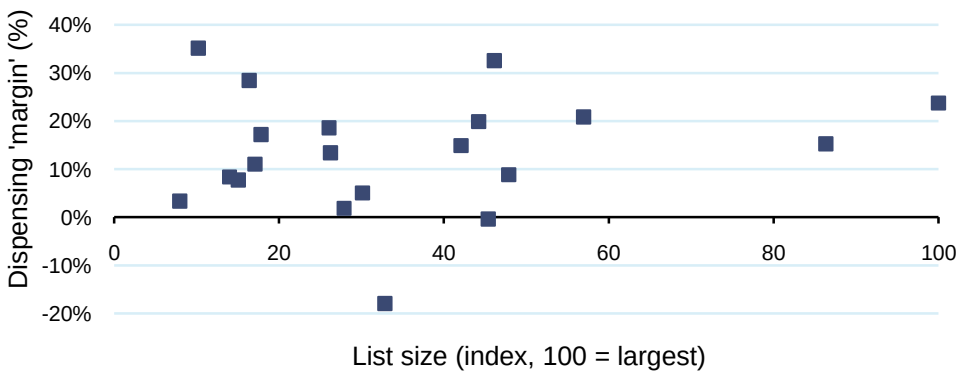
Source: Practice accounts and visits, PwC analysis

3. Relationship between dispensing ‘margin’ and list size

The possibility of investigating the relationship between dispensing margin (calculated as the simple difference between drug reimbursement and cost of drugs, as a percentage of the latter) by the Steering Group members was also discussed during the meeting. PwC expressed reservations that this was an oversimplified measure, and does not take the composition of drug bills and reimbursement into account, since data on specific drug types is not readily available from invoices. In addition, our estimates of drug reimbursement and cost of drugs obtained from practice accounts could relate to different time periods due to the lag between practices incurring costs and being reimbursed for drugs purchased. Furthermore, the existence of stock write offs would also mean that the cost of drugs and drug reimbursement shown in practice accounts are not perfectly comparable. Hence, the following should be considered an indicative analysis only.

As the chart above shows, it is very difficult to discern a relationship between these two variables for the sampled practices. A simple regression of the two variables indicates that a basic linear model would explain less than 1% of the variation of the two indicators relative to one another, leading us to believe that there is not a causal relationship to be found in the data we have available.

Figure 2: Dispensing margin (%) and list size



Source: Practice accounts and visits, NHS Connecting for Health, NHS Prescription Services, PwC analysis

4. Clarification of £84,382 GP salary assumption

The £84,382 figure is derived from the 2007/08 Earnings & Expenses Enquiry, using the average annual pay for GPMS salaried GP in rural practices (£52,573), scaled up by the extra proportion of hours per week that the average partner worked (38.2 hours per week) compared with the average salaried GP (23.8 hours per week).

The question raised at the Steering Group meeting was whether this figure included pension and benefit income, or was purely a salary figure. We have studied the source document and find that employee pension contributions are included in the £53,573 figure used in the calculations, but are adjusted to exclude employer contributions. There is no mention in the document as to whether this sum includes benefits as part of wider compensation packages.

Sensitivity analysis of the impact of the partner base pay estimate on dispensing profit margins, overall practice profit margins and average profit per partner can be found in section 5.1 of the main body of the report.

5. Practices showing training income in their accounts

Of the 20 practices in the main survey, 13 list some amount of training income. This rises to 16 of 25 when the pilot practices are included. This training income ranges in value from around £450 to £50,000, and captures a range items, including payments from the PCT for providing medical training facilities or taking on trainee staff. As such, many are direct reimbursement of expense, and as such do not have any overall impact on profits. Exceptions to this arise when practices have specifically advised us during visits that training income ought to be allocated differently to training costs. On average, training income accounts for less than 1% of total practice income.

6. Accounting dates for sampled practices

All practice accounts were inflated using the following dates such that all prices are current as at financial year 2009-10 prices. However, it was voiced during the meeting on the 20th August that a list of end dates would be useful in order to be able to consider the likelihood that the effects of the dispensing fee changes made in October 2009 will have yet shown in the accounts provided. This is shown below for the practices sampled in both the main and pilot surveys.

Only three set of accounts were for a year end after the date the change to dispensing fees came into effect, so it is highly unlikely that the effects of this will be reflected in the results. Our sensitivity analysis laid out in section 5 of the main report can nevertheless be used to provide an estimate, all other things constant, of the effect of such a change.

Table 3: Year end dates for sampled practices

Practice[5]	Accounts End Date
H-B 1	30-Jun-09
H-B 3	30-Jun-09
H-B 4	31-Mar-09
H-B 6	31-Mar-09
M-B 1	31-Mar-09
M-B 3	30-Apr-09
M-B 4	31-May-09
M-B 5	31-Mar-09
L-B 5	31-Mar-09
L-B 8	31-Mar-09
H-S 1	30-Jun-08
H-S 3	31-Mar-09
H-S 5	30-Nov-09
H-S 7	31-Mar-09
H-S 8	31-Dec-09
M-S 7	31-Mar-09
M-S 8	31-Mar-09
M-S 9	30-Jun-09
L-S 4	30-Jun-09
L-S 24	30-Jun-09
H-S P1	31-Mar-09
L-B P2	30-Sep-09
L-B P3	31-Dec-08
H-B P4	30-Jun-09
H-B P9	30-Jun-09

Source: Practice accounts

Notes: 5 Practice numbers are not sequential as they refer to the order in which practices were selected during the sampling process. The non-sequential numerical suffixes to the practice names reflects that some practices declined to take part.

Important Notice

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