TECHNICAL REPORT

Prescribing in primary care

Understanding what shapes GPs' prescribing choices and how might these be changed

Amanda Scoggins, Jan Tiessen, Tom Ling, Lila Rabinovich

RAND EUROPE

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Prepared for the National Audit Office

RAND EUROPE

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Preface

This report, which was commissioned by the National Audit Office (NAO), presents the results of a prescribing in primary care study which aims to understand what shapes general practitioners' (GPs') prescribing decisions, and how the cost efficiency of prescribing might be improved in the future. This qualitative study contributes to the NAO's larger investigation into prescribing in primary care in England, and more specifically how financial savings can be delivered by helping primary care prescribing to deliver better value for patients.

The approach consisted of initial desk-based research and an investigation in two carefully selected Primary Care Trusts (PCTs). In each PCT we conducted three interviews with senior managers to identify prescribing issues. This was followed by two focus groups with GPs and, finally, a workshop involving PCT senior managers, GPs, and other knowledgeable individuals (such as pharmacists) to discuss prescribing influences, communication and marketing strategies, and ways to improve the cost efficiency of GPs' prescribing.

Twenty-seven recommendations were mentioned by participants during the interviews, focus groups, and workshops. Based on the views of participants, the recommendations were clustered into six themes: (1) improving communication to improve the cost efficiency of GP prescribing; (2) getting the incentive right; (3) addressing the whole prescribing community; (4) promoting GP commitment to the whole primary health care system; (5) facilitating cooperation and peer meetings and (6) getting the message through to patients.

This report will be of particular interest to the NAO Health Value for Money Team. It will also be relevant for other national audit bodies, PCTs, GPs, policymakers and wider stakeholder communities concerned with cost-effective prescribing.

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Summary

1. The National Audit Office (NAO) commissioned RAND Europe to conduct a qualitative study into general practitioners' (GPs') prescribing behaviour. This qualitative study contributes to the NAO's larger investigation into prescribing in primary care in England, and more specifically how financial savings can be delivered by helping primary care prescribing to deliver better value for patients.

2. The study aims to understand what shapes GPs' prescribing decisions, and how the cost efficiency of prescribing might be improved in the future. The context is one in which it is recognized that there are considerable variations in the growth of GP prescribing costs nationally. Guidelines to encourage more consistently appropriate prescribing practices were produced by the Audit Commission as far back as 1994, and, more recently, National Institute of Health and Clinical Excellence (NICE) guidelines have provided detailed guidance for specific treatments. It was estimated in June 2006 that the use of generic statins alone, as part of an improved prescribing behaviour, could save in excess of £2 billion over five years.

Approach

3. The approach of the study consisted of five key tasks. The first task involved initial desk-based research and selection of two Primary Care Trusts (PCTs), each representing cases with relatively low and high adherence to NICE guidance on the prescribing of statins – a practice which was taken as a proxy for prescribing efficiency. The chosen trusts were Northumberland Care Trust (Northumberland PCT) and Greater Peterborough Primary Care Partnership (Peterborough PCT).

4. To identify preliminary prescribing issues, senior managers in each PCT were interviewed (Task 2). The purpose of the interviews was to elicit their views on GPs' prescribing practice, what they believe influence this, and how they believe prescribing behaviour might be encouraged to change in the future. The approach taken at the trust-level to monitor and influence prescribing practice was also considered. This stage helped identify specific measures taken by the PCT to incentivize GPs and to influence prescribing behaviour in general.

5. This step was followed by two GP focus groups within each PCT (Task 3). The purpose of the focus group was to elicit discussion about the GPs' current experiences of prescribing practice, how they appraise information from different sources, what influences their prescribing practices, and how they might be encouraged to change practices in the future. GPs were given the opportunity to comment on a range of

publicity material made available by drug companies and the PCT, and were asked about the feasibility, suitability and acceptability of different strategies to improve the cost efficiency of prescribing.

6. Subsequently, a workshop was held within each PCT involving PCT senior managers, GPs, and other knowledgeable individuals (such as pharmacists) to explore preliminary findings and to identify practical steps that might be taken to improve the cost efficiency of prescribing at the GP and PCT levels (Task 4).

7. The final task (Task 5) involved synthesizing and analyzing the findings from the interviews, focus groups and workshops, and also the wider literature. Initially, this task resulted in the identification of a set of factors which influence GPs' prescribing decisions.

Influences on GP prescribing decisions

8. GP prescribing behaviour is influenced by many factors, which operate at different levels in the health care system. At the national or international levels, clear evidence on treatments and drugs presented in authoritative journals was a significant influence. At the PCT level, influences included local guidelines, newsletters, site visits by prescribing advisers, personalized contacts, and recommendations from specialist or consultants in the secondary health care setting. At the practice level, the professional experience of the GP, the clinical needs of the patient, patient demand, peer networks, and drug company representatives may influence prescribing.

Improving cost efficiency of GP prescribing

9. During the interviews, focus groups and workshops, participants were also asked to identify ways to improve the cost efficiency of prescribing behaviour of GPs. In line with our brief, the majority of the discussions focused on initiatives which could be carried out at the PCT or practice level. A summary of participants' recommendations is presented in Table 1.

Table 1— Summary of Participants' Recommendations

	Structures		Processes	
Measure / Level	**Organizational**	**Rules**	**Information and Communication**	**Cooperation and Collaboration**
Macro	▪ Create a national organization to identify and spread best practice. This should actively try to change behaviour.*	▪ Set national targets for prescribing in key areas to support the position of PCTs. ▪ Introduce national guidelines on which new drugs can and cannot be prescribed. ▪ Ban direct visits of drug reps. to GPs, instead channelling influence through national institutions (or a single national body). ▪ Introduce nationally a structured procedure (e.g. core competency frameworks) to support the prescribing process. ▪ Limit the availability of drugs in the NHS.	▪ Improve patient education through accessible information about drug evidence. ▪ Increase, through national campaigns, patient awareness of the limited possibilities of the NHS, the cost of treatments, and alternative treatments. ▪ Publish national benchmarks on PCTs' prescribing performance. ▪ Use national media as a tool to disseminate information.	
Meso	▪ Drug costs in acute care should be transferred into PCTs' responsibility.	▪ Create incentives for GPs to improve their prescribing. ▪ Tighten GMS contracts to create more formal means to enforce good prescribing. ▪ Align prescribing incentives between primary and secondary care. ▪ Introduce prescribing incentive schemes which: —consider and allow substitutes to prescribing, e.g. counselling, prevention, and alternative therapies —provide additional finance for work required to change prescribing behaviour —allocate more resources towards public health prevention.	▪ Communicate PCT policies to the *whole* prescribing community. ▪ Organize regular meetings with key representatives of local prescribing stakeholders. ▪ PCTs provide supportive mechanisms for GPs, e.g. alternative sources of care for patients and alternative therapies, e.g. osteopathy or counselling.	▪ Improve cooperation with the wider local prescribing community through joint working groups, etc. ▪ Encourage collaborative working with pharmacy advisers, GPs, consultants, and specialists. ▪ Work closely with secondary care to understand the basis for their prescribing decisions.
Micro	▪ Abolish dispensing practices.			▪ Support peer-group meetings and facilitate networking among them. ▪ Allow GPs to collaborate with pharmacists, e.g. GPs could decide on the dose and pharmacists could decide which drug is cost-effective.

* While this is similar to the role of the National Prescribing Centre (NPC), this was suggested by a GP. The NPC was not mentioned during interviews, focus groups or workshops.

10. After analyzing the 27 recommendations and taking into account the key observations and influences on GP prescribing, the recommendations may be clustered into six key themes, outlined below. Each theme generally encompasses more than one recommendation and had support from multiple stakeholders, including GPs, PCT managers, pharmacists, and prescribing advisers.

    Improving communication to improve the cost efficiency of prescribing. Cutting through all three levels of the system, a targeted, systematic and coherent communication strategy creates knowledge, awareness and commitment among GPs, patients and other stakeholders. This could involve the dissemination of clear national and international evidence; the development of a clear, targeted communication and translation strategy by PCT for the whole prescribing community; and developing personalized communication channels at the practice level.

    Getting the incentives right. The interdependence of primary and secondary care prescribing makes an alignment of the incentives of both systems an important aspect of prescribing. Possible measures could include, for example, revising the varying costs of drugs in primary and secondary health care, or revising incentives that may exist in dispensary practices to prescribe high-cost and high-profit-margin drugs.

    Addressing the whole prescribing community. Any strategy, be it aligning incentives or improving communication has to reach beyond the narrow PCT–GP prescribing relationship. Involving the whole of the local prescribing community (including consultants, specialists, prescribing advisers, nurses, and pharmacists, etc.) offers great potential for reducing prescribing expenditures, as these originate partly outside of the PCTs' control. Strategies that include the whole prescribing community could involve the establishment of personalized communication links as well as organized meetings of key persons.

    Promoting GP commitment to the whole primary health care system. Making the budgetary constraints of the PCT one factor in GPs' prescribing decisions should be the aim of PCT strategy. Communication efforts should stress that GPs are part of a wider system on whose resources they draw, indicating that there are trade-offs between the resources they need for prescribing and other benefits that could be provided to patients. As the formal means to hold GPs accountable for their prescribing are very limited, soft approaches aimed at engaging the GPs are of crucial importance. These approaches are mainly concerned with communication and includes site visits to GPs by prescribing advisers, and the communication and full explanation of the PCT policies to the GPs via letters and newsletters.

    Facilitating cooperation and peer meetings. Cooperation between different practices and with the secondary and acute sector as well as peer meetings should be actively encouraged by the PCT. Peer contact, via formal and informal mechanisms, proved to be an important source of knowledge and an important method to curb excessive spending by some GPs.

    Getting the message through to the patients. Communicating the limitations of the PCTs' resources, the cost of prescriptions, and the available evidence of alternative

lower-cost treatments to the patients should be an important aspect of any national and local communication strategy.

11. To improve the cost efficiency of prescribing behaviour of GPs overall, measures at only one level of the prescribing system are unlikely to succeed. Because of the interdependence of the relevant levels within the national health care system, a comprehensive approach comprising a set of measures at all levels of the system is likely to have a higher impact than isolated measures at each of them. Figure 1 illustrates this way of thinking, pointing out the most important measures for improving the cost efficiency of prescribing at the macro (national/international), meso (PCT) and micro (GP–patient interface) levels.

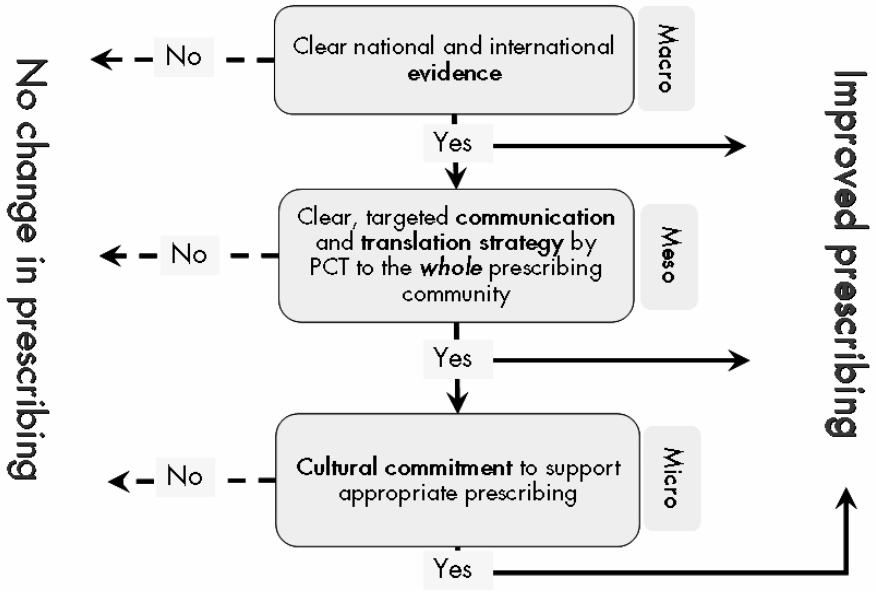

Figure 1—Improving the Cost-efficiency of Prescribing Behaviour

Acknowledgments

We are thankful to Northumberland Care Trust and Greater Peterborough Primary Care Partnership for accepting our invitation to take part in this study. In particular we would like to thank Sue Simkins, Support Manager to Chief Executive and Dr Prassad, Professional Executive Chair at Greater Peterborough Primary Care Partnership; and Nadeem Shah, Lead Pharmacist at Northumberland Care Trust for helping RAND Europe to organize participants and venues for the interviews, focus groups and workshops in a brief study period of four weeks. We would like to thank all those people (in particular, staff at the Primary Care Trusts and General Practitioners) who contributed to the study through attending interviews, focus groups and workshops.

We would also like to thank colleagues at RAND Europe—Dr Chris Van Stolk for temporary project management, and Dr Jonathan Grant and Edward Nason for providing useful and insightful comments during the quality assurance process. In addition, we would like to thanks the project team at the National Audit Office for providing continued support and valuable inputs through out the course of this study.

CHAPTER 1 Introduction

General practitioner (GP) prescribing accounts for £7.8 billion per year, or approximately 10 percent of National Health Service (NHS) expenditure (NHSBSA Prescription Pricing Division, 2006). GPs also account for over 98 percent of the prescriptions written (NHSBSA Prescription Pricing Division, 2006a). There are considerable variations in GP prescribing costs and these are not fully explained by variations in patient mix (Anthony et al., 2000). GPs at the top of the range have annual prescribing costs that are almost twice as high as those at the bottom of the range. This variation cannot be accounted for purely in terms of differences in underlying need for health care, and is more likely to be the result of individual prescribing behaviour. Indeed, many prescribing decisions in general practice may not depend on recognized pharmacological effects (Watkins et al., 2004). Guidelines to encourage more consistent prescribing practices were produced by the Audit Commission as far back as 1994, and, more recently National Institute for Health and Clinical Excellence (NICE) guidelines provided detailed guidance for specific treatments (Audit Commission, 1994; NICE, 2006). It was estimated in June 2006 that the use of generic statins alone could save in excess of £2 billion over five years (Moon and Bogle, 2006).

Research conducted jointly by RAND, University College London and the Harvard Medical School suggested that sustaining quality improvement in health care rests on important—but varied and complex—organizational and cultural foundations (Robert et al., 2005). The same research drew attention to macro-level supports within which micro-systems of quality improvement might flourish. These are mediated and managed by what might be termed, following House et al. (1995), a meso-paradigm for quality (for our purposes, this includes the organization, culture and leadership at the level of the Primary Care Trust (PCT)). It was also understood that clinicians respond to data about the quality of their work in different ways and with different degrees of success, although it was at least becoming clear that performance evidence on its own neither changes practice nor delivers the intended improvement in outcomes (Grimshaw et al., 2001; 2004). NICE guidelines, for example, are known to have had only an uneven impact on evidence-based medicine (Sheldon et al., 2004). There are therefore, potentially, considerable gains to be made in delivering improved value for money by understanding the specific circumstances under which GPs work.

The National Audit Office (NAO) Value for Money Health Team is currently investigating the cost efficiency of prescribing in primary care in England, and more specifically how financial savings can be delivered by helping primary care prescribing to

deliver better value for patients. The NAO is independent of government and reports to Parliament's Committee of Public Accounts on the use of public funds. The NAO audits the accounts of all central government departments and produces around 60 reports each year on the value for money of the expenditure of these departments.

The NAO's investigation into prescribing in primary care has three strands. The first two strands have been completed by the NAO. These included a survey of prescribing advisers in all PCTs, and a survey of 1,000 GPs. The final strand was commissioned from RAND Europe and is a qualitative study which aims to understand what shapes GPs' prescribing decisions, and how the cost efficiency of prescribing might be improved in the future. The purpose of this report is to outline the approach and results of this final strand.

The remainder of the report comprises three chapters. Chapters 2 and 3 outline the qualitative study's approach and key observations respectively. Chapter 4 draws lessons from the key observations and identifies possible recommendations for improving the cost efficiency of GP prescribing in the future.

CHAPTER 2 Approach

The approach consisted of five key tasks: (1) the selection of two in-depth case studies; (2) interviews with senior managers in each PCT; (3) focus groups with GPs; (4) workshops involving senior managers and GPs; and finally (5) synthesis and analysis of the findings. These tasks are outlined in Figure 2 and explained in detail below.

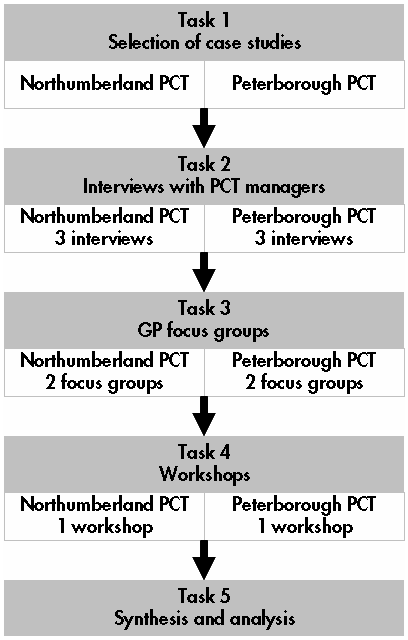

Figure 2—Summary of Approach

2.1 Task 1: Selection of case studies

The purpose of this task was to select two PCTs: one PCT which had relatively low adherence to statin-prescribing guidelines, and another which exhibited relatively high adherence to statin-prescribing guidelines.

The NICE guidance, *Statins for the prevention of cardiovascular events,* states, "when the decision has been made to prescribe a statin, it is recommended that therapy should usually be initiated with a drug with a low acquisition cost (taking into account required daily dose and product price per dose)" (NICE, 2006). Therefore the percentage of higher-cost statin prescribing in a PCT may be used as a proxy indicator for cost-effectiveness across all therapeutic areas.

Three months' data to March 2006, which ranked all PCTs in England on the percentage of higher-cost statin prescribing, was obtained by the NAO from the Department of Health.[1] For those PCTs in the top (1–31) and bottom (272–303) decile, we extracted information on age, ethnicity, deprivation,[2] and Quality and Outcomes Framework (QOF)[3] rank to ensure each PCT invited to participate in the study had relatively similar characteristics to reduce confounding.

On the September 13 2006, a letter from the NAO, along with the project description, was emailed and posted initially to the Chief Executives of four PCTs, two high adherence and two low adherence PCTs, inviting them to participate in the study. The invitation was followed up two days later with a telephone call from RAND Europe. The final trusts selected to participate were Northumberland Care Trust (Northumberland PCT) and Greater Peterborough Primary Care Partnership (Peterborough PCT).

[1] Percentage of higher-cost statins: the number of prescription items for high-cost statins (i.e. other than simvastatin and pravastatin) divided by the total number of prescriptions for all statins (excluding combination products). In general, the lower the level of high-cost prescribing the better. For a full definition of how this is calculated go to: www.productivity.nhs.uk/definitions

[2] For deprivation, we ranked all PCTs in England from least to most deprived. Deprivation is an unweighted combination of four 2001 census variables: unemployment, overcrowding, car ownership and low social class (Social Class IV or V) (Morgan and Baker, 2006).

[3] The Quality and Outcomes Framework (QOF) measures a general practice's achievement against a scorecard of 146 evidence-based indicators, allowing a possible score of 1050 points. The evidence-based indicators span four domains: clinical, organizational, patient experience and additional services. The QOF also rewards breadth of care through holistic care, quality practice and access (see: http://www.dhsspsni.gov.uk/qof_context).

Table 2—Characteristics of Participating Primary Care Trusts

		Northumberland Care Trust	Greater Peterborough Primary Care Partnership[a]
Age (%)	Aged < 15 yrs	18.8%	21.8%
	Aged 15–64 yrs	63.6%	64.0%
	Aged 65+ yrs	17.6%	14.2%
Ethnicity (%)	White	99%	91.3%
	Asian	0.3%	5.7%
	Black	0.1%	1.1%
	Mixed	0.3%	1.3%
	Other	0.2%	0.6%
Deprivation rank[b]		121	137
QOF rank[c]		150	99
Percentage higher-cost statin prescribing[d]		22.5%	59.7%

[a]The number of PCTs in England will be reduced from 303 to 152. This was expected to happen in October 2006. The data for Greater Peterborough averages data from North Peterborough PCT and South Peterborough PCT.

[b]Deprivation data was provided by the University of Manchester National Primary Research and Development Centre.

[c]QOF rank was provided by the Department of Health Information Centre.

[d]Initial analysis by the NAO and Keele University indicates that across statins *and* ACE Inhibitors / Angiotensin-2 Receptor Antagonists (A2RAs) Northumberland PCT is a more cost-effective prescriber than Peterborough PCT.

SOURCE: UK 2001 Census, National Statistics:
http://www.statistics.gov.uk/census/

2.2 Task 2: Interviews with senior managers

In early October we conducted three interviews with senior managers in each PCT. The purpose of the interviews was to elicit their views on GPs' prescribing practice, what they believe influences this and how they believe prescribing behaviour might be encouraged to change in the future (see Appendix A for interview protocol). We also wanted to understand the approach taken at the trust level to monitor and influence prescribing practice. This included consideration of trust-level arrangements for managing the flow of information about NICE guidelines and the measures taken to encourage uptake. This stage would also identify other specific measures taken by the trust to incentivize GPs and to influence prescribing behaviour in general. Senior managers interviewed were from a range of areas including pharmacy, finance, operations, and public health. Interviews were semi-structured, face-to-face, and lasted for approximately one hour. Detailed notes were taken during the interview and from these a list of key points was derived.

2.3 Task 3: Focus groups

The purpose of the focus groups involving GPs was to elicit discussion about their current experience of prescribing practice, what they do in relation to prescribing practice, how

they appraise information from different sources, what influences this, and how it might be encouraged to change in the future (see Box 1). This included an opportunity for GPs to comment on a range of publicity material made available by both pharmaceutical companies and the PCT. Finally, participants were asked about the feasibility, suitability and acceptability of different strategies to improve the cost efficiency of prescribing (see Appendix B for focus group protocol).

> A focus group is a planned discussion among a small group (4-12) stakeholders facilitated by a skilled moderator. It is designed to obtain information about people's preferences and values pertaining to a defined topic and why these are held. This is done be observing the structured discussion of an interactive group in a permissive, non-threatening environment.

Box 1–Definition of a focus group

Source: Slocum (2003)

During October we held four 90-minute focus groups with GPs. Two focus groups were held within each PCT. The aim was to recruit eight GPs for each focus group. We attempted to choose venues which were relatively accessible to GPs and ran the focus groups over lunch time to avoid clashes with GPs' surgery times. The PCTs were responsible for choosing which GPs to invite.

In Peterborough, Dr Prassad, Professional Executive Chair at Peterborough PCT personally contacted 24 GPs by telephone for the first focus group, and 22 GPs for the second focus group. GPs were also sent a cover email from the PCT, with a letter attached from RAND Europe outlining the purpose of the focus group, the wider study context and the focus group protocol.

In Peterborough, two GPs declined to attend in advance owing to other commitments. Eight GPs were expected to attend each focus group, but approximately half "did not show" on the day.

In Northumberland PCT, Nadeem Shah, Chief Pharmacist, sent out letters to approximately 30 practices inviting their GPs to attend either focus group. RAND Europe followed up the invitation a couple of days later with a telephone call to the Practice Managers to see whether any GPs could attend. Only one GP was able to attend the second focus group, so we postponed the session by one week in an attempt to increase attendance. The reasons given by GPs for not being able to attend the focus group included: a limited number of GPs in the practice meant attending the focus groups would require hiring a locum; lack of interest; prior commitments; and too short notice. Table 3 shows the number of attendees at the focus groups.

Each focus group was facilitated by Professor Tom Ling. Detailed notes were taken during the focus groups and from these a list of key points was derived.

Table 3—GPs' Attendance at Focus Groups

Focus Group	No. of GP attendees
1 – Greater Peterborough Primary Care Partnership	4
2 – Greater Peterborough Primary Care Partnership	5
3 – Northumberland Care Trust	5*
4 – Northumberland Care Trust	2

*Only one attendee was a GP. The remaining attendees included, e.g., Medicines Manager Facilitators. All non-GP views were treated with caution.

2.4 Task 4: Workshop

The purpose of the workshop was to elicit discussion about what GPs and the PCTs can do to influence prescribing. It focused on identifying what is suitable, feasible and acceptable to the PCTs, and attempted to identify practical steps that can be taken to improve the cost efficiency of prescribing (see Appendix C for workshop protocol and Box 2 for a workshop definition). For example, participants were asked to describe how they would go about increasing the use of generic statins to X percent (a figure agreed by the workshop participants) within one year at the level of the PCT and general practice, and also to identify possible barriers, facilitators and risks. The aim was to recruit 10 to 12 senior managers, GPs and other knowledgeable individuals (for example nurse prescribers and pharmacists).

> Workshops are often a useful and productive way to bring together different strands of research, identify common themes and conclusions, and in some cases prioritize recommendations. Workshops often enable experts and lay participants (i.e. multiple stakeholders) to participate equally and provide an opportunity to get or enhance user buy-in.

Box 2–Definition of workshop used by RAND Europe

On the October 25 and November 7 2006, a 90-minute workshop involving GPs and PCT senior managers, and knowledgeable individuals (e.g. pharmacists) was held in Peterborough PCT and Northumberland PCT, respectively. Each potential attendee was sent a cover email from the PCT, with a letter from RAND Europe inviting them to attend the workshop together with the workshop protocol attached. The PCTs were responsible for choosing which GPs and senior managers to invite. In Peterborough PCT the Pharmacy Team was invited to attend.

For the Northumberland workshop, RAND Europe called 35 pharmacies in Morpeth, Ashington, Blyth, and nearby areas to see if the pharmacists were willing to attend the workshop. RAND Europe sent further information to three pharmacies who expressed an interest in attending the workshop. The majority of pharmacists could not attend because the workshop was being held during work hours.

RAND Europe and the PCTs attempted to choose venues which were relatively accessible to both parties and ran the workshops over lunch time to avoid clashes with GPs' surgery times. Each workshop was facilitated by Professor Tom Ling. Participants and the

facilitator sat in a circle for the discussion. Detailed notes were taken during the workshop and from these a list of key points was derived.

Table 3—Attendance at Workshops

Workshop	No. GPs and Pharmacists	PCT	Total no. Participants
1 – Greater Peterborough Primary Care Partnership	5	3	8
2 – Northumberland Care Trust	1	3	4

2.5 Task 5: Synthesis and analysis

This task involved synthesizing and analyzing the findings from the interviews, focus groups and workshops. The research team met several times to discuss key observations from the focus group and workshop discussion. We also presented preliminary findings to members of the Value for Money Health Team at the National Audit Office.

CHAPTER 3 Key observations

3.1 The problem of GP prescribing

The PCTs were asked whether they felt there was a prescribing problem. Both PCTs acknowledged there is a national problem with prescribing, especially with the limited prescribing of generics by GPs. Generic drugs are usually much less expensive than their brand-name counterparts, even though both drugs may have the same active ingredients. This price difference is mainly due to the high cost of research and development associated with producing brand-name drugs; however, there are other factors to consider. Advertising costs for brand-name drugs are extremely high, and recouping this cost is a major consideration when a drug's retail price is set by its manufacturer. Northumberland PCT acknowledged they were at the upper tier in terms of relatively good adherence to prescribing guidelines, however they felt that *all* PCTs experience problems with prescribing costs, and that cost-efficient prescribing within their PCT could be further improved. Peterborough PCT gave the overall impression that the Trust was performing well under difficult circumstances. In Peterborough PCT one senior manager perceived the problem to be financial rather than clinical. In Northumberland PCT it was mentioned there should be increased prescribing of certain drugs (e.g. drugs to reduce the risk of heart attacks) and more screening programs to help reduce patients' risk of entering the health system down-stream at greater cost to the NHS. GPs also acknowledged problems with prescribing. GPs were concerned that finding cheaper drugs to prescribe was difficult; there is not enough time with individual patients; and generic drugs were not always the best for the patients' condition. GPs attributed prescribing problems to the frequently shifting PCT guidelines (especially related to statins), and the influence of specialist and acute-sector prescribing. One GP mentioned there was a tension between prescribing cost-effective drugs and being the patient advocate.

3.2 Influences on GP prescribing behaviour

There are many factors which may influence GP prescribing behaviour. These factors may operate at the macro, meso, or micro levels, or operate across all three. The macro level lies outside the local setting of PCTs and GPs in the national as well as international context. The macro-level generally encompasses the sphere of influence and responsibilities of the national government, but there are also situations where a quasi-governmental entity or voluntary body performs the functions acting in the public interest or on behalf of, but outside of, government. The meso-level encompasses factors operating at the intermediate

level—in this case at the PCT level. The micro-level is concerned with the clinical care level—or in this case with the interface involving patients and GPs. These levels are not dissimilar to the four tiers—national, regional, institutional, and individual—representing different functional levels within a health care system or health sector as described by Leatherman and Sutherland (2003).

Figure 3 conceptualizes the factors that we were told influence GP prescribing behaviour at the macro, meso and micro levels. These factors were put forward to us during the interviews, focus groups, and workshops. In line with our brief, the majority of our discussions focused on factors operating at the meso and micro levels, which largely reflected the make-up of the participants in the interviews, focus groups, and workshops. The factors influencing GP prescribing behaviour are explained in detail below, and where appropriate we draw upon the wider literature and evidence.

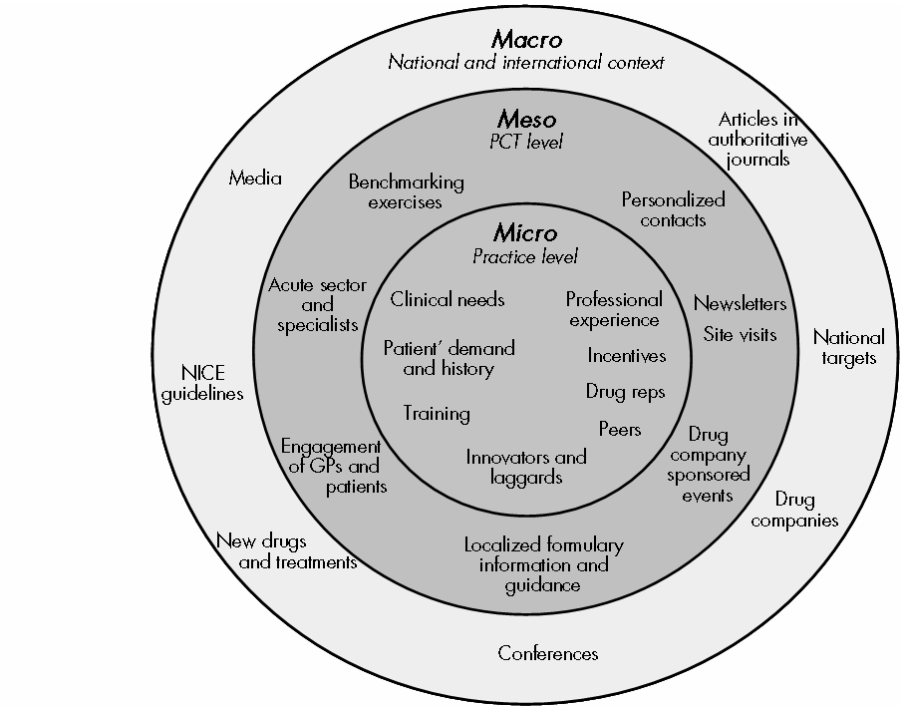

Figure 3—Factors Influencing GP Prescribing

3.2.1 Macro-level factors influencing GP prescribing behaviour

Clear national and international evidence on treatments and drugs presented in authoritative journals

A significant influence on GP prescribing emphasised during focus group discussions was the availability of clear evidence on treatments and drugs presented in authoritative journals, such as the *British Medical Journal* or pharmaceutical journals. The quality of the evidence was considered to be very important. For example one GP said, *"I only prescribe new drugs if a clear evidence base is available."* A previous study also found that journal articles are one of the greatest influence on GP prescribing, along with discussing

prescribing issues with peers and recommendations from a specialist (Wathen and Dean, 2004).

NICE guidelines need to be translated to be applicable in the local context

NICE guidelines were also said to influence GPs' prescribing behaviour. However, they need to be translated to be applicable in the local context. Preliminary observations from the "Survey of Prescribing Advisory in England by the NAO" suggest that GPs distinguish between the usefulness and the objectivity of information. Workshop participants were asked to comment on a preliminary observation that NICE guidelines compared to other sources of information, such as PCT information, were perceived as "objective", but not a very "useful" source of information. This relationship is depicted in Figure 4. Objective information (such as NICE guidelines) mirrors the uncertainty of scientific findings and was readily considered by GPs as ambiguous and too far removed from practice work to be applicable. PCTs often attempt to remove these ambiguities in adapting the guidance notes to the local context, making the PCT guidance notes less scientific and clearer to follow. This process involves the prioritization of some options and the down grading of others. This might be based on the clinical needs of the local population, but can also be motivated by budgetary concerns of the PCT. Through this process of prioritizing some options, the information becomes useful, but less objective, especially as the PCTs are often considered to be mainly driven by a budgetary agenda. Neither PCT nor NICE guidance was considered to be useful *and* objective (the upper right hand quadrant in Figure 4), however both make separate contributions towards good quality prescribing.

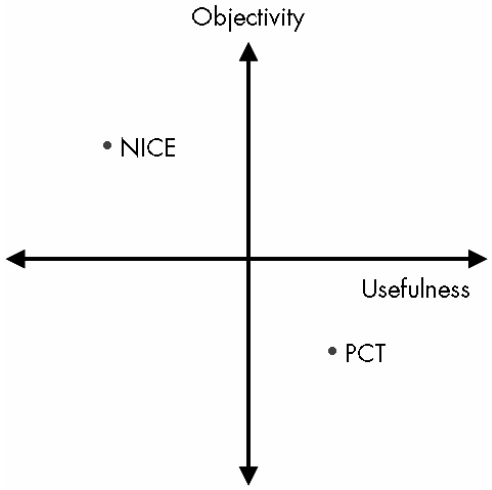

Figure 4—Perceptions of information sources for GP prescribing

One GP stated that "although NICE guidelines are objective, they cannot be considered useful in the local context. NICE guidelines need local interpretation and adoption to serve as a useful basis for prescribing decisions." Another GP stated that "the NICE guidelines are too vague to be applicable as a direct guideline for prescribing." Further, the PCT said "because there is so much misinterpretation of guidelines, the PCT had employed a clinically-led group which helps interpret guidance."

A previous study found NICE guidance in isolation had little impact on GP prescribing. Where the guidance coincided with information from other sources, or personal

experience, there was some evidence that technology appraisals triggered an increase in prescribing, but that this was not always sustained (Wathen and Dean, 2004). Carthy et al. (2000) found that other prescribing supports, including the British National Formulary, and decision support packages such as PRODIGY (Prescribing Rationally with Decision support in General Practice) were key influences on prescribing behaviour. However, neither of these prescribing supports were spontaneously mentioned during the interviews, focus groups, and workshop discussions.

National media raises awareness of certain diseases and treatments, and influences patient demand

National media can raise awareness of certain diseases and treatments, and influence patient demand. GPs recognized that the public often reacts quickly to news coverage and media. They commented that patients may get information on new (and expensive) drugs or treatments from the Internet and the newspapers and then request the drug from their GP. GPs felt that this type of patient demand was generally easy to manage, because usually it only involves explaining to the patient that there isn't much reliable evidence on the drug in question. Astrom et al. (2002) found that "advertisement in journals and magazines" and "Internet information" had less influence on GPs' prescribing behaviour relative to other influences, such as "recommendations from a specialist".

The development of new drugs or treatments influences prescribing behaviour

The uptake of new drugs and treatments is largely dependent on the individual characteristics of the GP, in particular whether the GP is an "innovator" or "laggard". We examine this point in further detail in section 3.2.3, which examines micro-level factors influencing GP prescribing behaviour. Pallot (1996) argued that new technological advances, particularly those involving expensive medications, increase public expectations and are partly responsible for a soaring national drugs bill.

3.2.2 Meso-level factors influencing GP prescribing behaviour

There are many factors operating at the PCT (or meso) level that we were told may influence GP prescribing. The various strategies employed by Peterborough PCT and Northumberland PCT are summarized in Table 5 and explained in further detail below. The key differences between Northumberland PCT and Peterborough PCT appeared to be in the way the PCT communicates with practices. While both PCTs used a personalized approach (for example issuing practices prescribing actions plans, prescribing reports, and newsletters) Northumberland PCT appeared to have a more systematic approach to communication relative to the more ad-hoc approach adopted in Peterborough PCT. For example, Northumberland PCT's systematic approach included selecting two key contacts within each practice and opinion leaders within the PCT. Opinion leaders are GPs selected by the PCT that are considered to be effective at influencing their peer group's prescribing behaviour. Another difference was the PCTs' attitude to drug companies. Peterborough PCT seems to have adopted a more cautious approach towards drug companies than Northumberland PCT. For example, Northumberland PCT regularly allows drug companies to sponsor quarterly meetings for chief prescribing GP leads, but Peterborough had recently updated their hospitality policy to ensure the PCT adopts a cautious approach to sponsorship in the future.

Table 5—Strategies Employed by Greater Peterborough Primary Care Partnership and Northumberland Care Trust to Influence GP Prescribing Behaviour

	Peterborough PCT	Northumberland PCT
Approach	• Emphasizes 'cost-effective' prescribing rather than focusing solely on the cost of drugs • Balances GPs' practice-based knowledge through the expertise of prescribing advisers, who try to develop detailed practice plans	• Emphasizes 'cost-effective' prescribing rather than focusing solely on the cost of drugs • Attempts to 'facilitate' GPs' prescribing decisions rather than influence them through own expertise and knowledge
Number of practices	• 33 GP practices • 3 dispensing practices	• 46 GP practices • 21 dispensing practices
PCT attitude to drug companys	• Hospitality policy ensures a "cautious approach" to sponsorship is adopted in the future. GPs encouraged not to accept visits from drug company representatives. • PCT employees only entitled to see drug company representatives in non-work time	• Allows a drug company to sponsor quarterly meetings for chief prescribing GP leads • PCT employees only entitled to see drug company representatives in non-work time
Ways PCT communicates with practices	• Adopts personalized, ad-hoc approach to communication • Acknowledges the importance of good, personalized (informal) relationships to the prescribing community • Issues newsletters on topical issues • Uses GMS contract as last resort, but in the past has issued warnings to some practices • Favours "Getting GPs in the same room" • Sends a prescribing practice representative to each practice to discuss prescribing action plans with GP, pharmacist adviser and technician • Relies, to some degree, on local and personal networks to influence GP prescribing behaviour • Uses practice prescribing action plans, outlining budget, priority prescribing areas, targets and potential cost savings	• Adopts personalized, systematic, approach to communication • Definition of communication channels to each practice and to opinion leaders in peer group –two contact people in each practice – GP and non-GP –approx. five opinion leaders working within PCT • Medicines Management Team • Issues bi-monthly newsletters • Holds workshops with GPs • Issues quarterly prescribing reports • Holds quarterly meetings with GP practice prescribing leads • Uses GMS contract as last resort • Uses practice prescribing action plans, outlining budget and priority areas for prescribing
Format of information provision	• Hardcopy and email newsletters with colourful comparative information (including bar charts)	• Standardized, clear and consistent messages that are repeated often, for example at meetings, or via newsletters and SPIDER website • Provision of localized information through Internet platform (content management platform)
Monitoring methods	• Prescribing data from Prescribing Pricing Authority within PCT • Feedback information on percentage of drug expenditure, including comparative practice level information • Focus monitoring on top five drugs and the most expensive single expenditure blocks	• Prescribing data from Prescribing Pricing Authority within PCT • Annual monitoring visits by the PCT • Self-assessment by GPs and PCT • Monthly meeting with Medicines Management Team

Provision of tailor-made information, e.g. local guidelines, newsletters, website

PCTs provide tailor-made information to GP practices in various formats to help inform their prescribing, for example through the web, newsletters, and local guidelines. For example, in July 2006 Northumberland PCT launched the SPIDER (Specific Performance Information Developed through Evidence and Rationale) website (www.spider-nhs.com). The website provides a platform for the health care community in Northumberland to acquire knowledge, exchange views and information and collaborate with health care experts. The aim of the website is to create a single source of information for the GPs. The portal, includes amongst other things, BBC Health Live, medicine news, local news and events, information on guidelines, newsletters, and a discussion forum in which members of the PCT can follow discussions between the GPs, and contribute and moderate if necessary. The website has formulary management information which is continually being updated and extended to cover new disease areas. The PCT mentioned this was one means of attempting to "facilitate rather than influence GP prescribing behaviour." Additionally, this website is an attempt to channel as much information as possible through a local gateway, making it easily accessible as well as relevant to the local public. Currently, all practices are registered, and in total there are 184 registered users, including GPs as well as practice support staff, such as practice medicine managers.

GPs generally felt that PCT guidance can be very useful, especially if the information is "short and well laid out". Northumberland PCT emphasized the importance of providing GPs with information that was in a standardized, clear format which gave consistent messages.

Workshop participants were asked to comment on preliminary findings from the "Survey of Prescribing Advisory in England by the National Audit Office", which found that PCT information is perceived as "useful", but not a very "objective", source of information (Figure 4). The survey finding was supported by workshop participants. Several GPs felt that PCT information was not objective because it took into account budgetary aspects as well as clinical outcomes. For example, one GP said PCT information was "dominated" by budgetary concerns.

Comparative information and prescribing action plans may increase pressure on practices to improve prescribing behaviour

All practices receive reports on their prescribing costs on a regular basis from their PCT. The information, which is standardized for age, sex, and temporary resident composition of GPs' lists for the health authorities in England, allows each practice to compare themselves against other practices in the PCT. For example, within Northumberland PCT, practices are sent quarterly prescribing reports which list key performance indicators and outline the financial position of the PCT. The report also lists the top twenty drugs (by cost) and top ten disease areas (e.g. cardiovascular disease, infections, respiratory). Both PCTs obtained similar monitoring information and use this information to develop practice level prescribing action plans, which attempt to prioritize areas where the most effective financial savings can be made. Most GPs felt that due to limited time (and resource), their practice was able to focus on only two or three areas in prescribing at any one time. One concern voiced by PCT senior managers was the time lag (approx. 3–4 months) before seeing whether the action plan had been successfully implemented by the practice. A couple of GPs commented they would like to receive more information on how

their prescribing costs rank nationally, but overall comparative information at the PCT level was held to be more useful to GPs because of the local variations in the disease areas of concern. One GP commented that "comparative information influences my prescribing behaviour to some degree." This might be, for example, because comparative information increases pressure on practices to improve the cost-efficiency of prescribing in an improvement area, which had been identified by the PCT. Both PCTs stated they do not receive GP prescribing behaviour monitoring data from other PCTs.

Direct, personalized visits by prescribing advisers to selected GPs and practices

Both PCTs influence prescribing behaviour through direct, personalized visits by prescribing advisers to selected GPs and practices. Peterborough PCT sends a prescribing adviser to each practice to discuss the key prescribing areas where cost-effective saving can be made. Northumberland PCT has two contact people in each practice, one GP and one non-GP (a practice medicines manager) to help influence cost-efficient prescribing behaviour, and to monitor and implement prescribing actions plans. Northumberland PCT only conducts annual monitoring visits because their practices are relatively dispersed.

Currently there are limited incentive schemes, but this may increase through practice-based commissioning budgets

Practice-based commissioning is a government policy which devolves responsibility for commissioning services from PCTs to local GP practices. Practices are given a commissioning budget which they will have responsibility for using in order to provide services (Department of Health, 2004). One PCT manager commented that practice-based commissioning may make GPs more aware of PCTs' budgets and encourage them to improve cost-efficient prescribing. A couple of GPs were concerned that this might create perverse incentives; although practices' prescribing costs diminish, it may subsequently result in higher downstream or acute health care costs.

Communication with the local prescribing community in primary as well as in secondary and acute care

There are various formal and informal communication channels in the primary and secondary health care prescribing communities (including consultants, specialists, pharmacy advisers, and GPs) which may influence prescribing behaviour. Local networks were described as an effective means to target inappropriate prescribing. For example, PCT managers in Northumberland mentioned that the community pharmacist could be a useful source of information on prescribing behaviour, especially for identifying GPs with inappropriate prescribing behaviour, such as prescribing drugs which are not allowed in the UK.

Engaging doctors and patients, e.g. GP forums, seminars and media campaigns

Both PCTs acknowledged that "getting GPs in the same room" was a particularly useful way to influence prescribing behaviour. Acknowledging the high level of the GPs' professional qualifications and experience, the PCT did not want to come across as being too forthright. PCTs were also aware that GPs may disengage if they are repeatedly given the same message. Northumberland PCT engages GPs by holding quarterly Practice Medicines Management Collaborative meetings, which are attended by prescribing leads in each GP practice. These meetings highlight findings from the prescribing reports and may involve group work on practice prescribing action plans. During these meetings,

prescribing leads are also given a self-assessment form, whereby they are asked to identify major prescribing areas where improvements can be made. Within one month of attending the quarterly meetings, GPs receive feedback on their self-assessments from the PCT, and a prescribing action plan is drawn up identifying major prescribing areas and actions to be taken.

Using the General Medical Services (GMS) contract as a last resort to curtail "excessive prescribing"

The GMS contract defines excessive prescribing as "prescribing drugs whose cost or quality, in relation to any patient, is by reason of the character of the drug, medicine or appliance in question in excess of that which is reasonably necessary for the proper treatment of that patients" (British Medical Association, 2006). While PCT managers felt that this clause was important in the contract, they would only ask for it to be used as a last resort to curtail "excessive prescribing". Peterborough PCT had issued warnings to practices about "excessive prescribing" behaviour. A generally held view was that the initial approach to health professionals who are perceived to prescribe "excessively", which is usually identified in the first instance by the local PCO prescribing adviser, should be by way of education or through professional peer pressure. In the absence of an agreed course of action, the PCT will need to consider whether there is sufficient evidence to demonstrate that the contractor's prescribing practice constitutes a breach of their contractual requirement. If there has been a breach of contract, then the PCT will need to consider what action it wishes to take against the contractor. This might involve issuing a breach or remedial notice or invoking a contract sanction.

Prescribing behaviour of acute sector and specialists may shape patient demand

Prescribing behaviour of consultants and other doctors in the secondary health care setting may influence patients' demand from their GP. GPs mentioned that this was problematic when the drugs prescribed by consultants were "expensive" and would not be the drug of choice in primary health care. One PCT manager attributed this problem partly to the different drug prices operating between the primary and secondary health care systems. Different drug prices allow for discriminatory pricing by the drug companies. This means they might give hospitals substantial discounts on drugs which are initially prescribed only by the hospital and then covered by primary care (which has to pay the standard price). As prescribing decisions by hospital consultants are usually not challenged by GPs, this allows the drug companies to recoup the initial losses in hospital care by increasing sales in primary care. The possibility of hospitals buying drugs in bulk has a similar effect on PCTs' prescribing budgets. Drugs which are considered cost-efficient in the hospital setting can be rather expensive in primary care when the prices differ.

In this context, GPs considered patient education to be very important, especially regarding the cost of prescriptions, but this would be better addressed at the macro level. For example, one GP said, "if GPs have to justify economics then it feels like patient rights are being sacrificed." Astrom et al. (2002) found that recommendations from specialists to GPs are one of the greatest influences on GP prescribing.

Drug companies influencing opinion leaders in the local primary and secondary health care settings

Both PCTs had hospitality policies to deal with drug companies, and acknowledged that the drug companies often have more effective and better resourced communication capabilities than the PCT. Peterborough PCT encouraged all practices not to accept visits from drug representatives because "drug company information is biased". While Peterborough PCT's clinical governance afternoons were regularly supported by pharmaceutical industry representatives, the PCT had recently updated their hospitality policy to ensure that a "cautious approach" to sponsorship was adopted in the future. Northumberland PCT appeared to have a less restrictive policy towards drug companies. For example, Northumberland PCT allowed drug companies to sponsor their quarterly meetings with lead GP prescribers. Northumberland PCT felt it was more effective to let the GPs arrive at their own judgment regarding drug company visits. One GP in Northumberland said, "I feel obliged to talk to pharmaceutical companies at these (quarterly meetings) events, but I ignore what they say. I don't think pharmaceutical companies influence my prescribing." One PCT felt that the drug companies use "shock strategies" that tend to overplay the products' benefits; in addition they use pressure groups (such as Diabetes UK). Drug companies may also target specialists in secondary health care to trial a new drug, but the benefits of the drug will have limited benefits outside the hospital setting. While one PCT manager felt that the drug companies had "small influences" on GPs' prescribing behaviour, another PCT manager felt that the GPs are "heavily influenced by drug representatives".

Both PCTs conducted horizon-scanning activities in an attempt to pre-warn practices, usually by way of newsletter, before new drugs go onto the market. Peterborough PCT commented that at times it was very difficult for the PCT to respond to the GPs in a timely fashion with information and advice because the drug companies are "very clever in the way they release information to the media".

3.2.3 Micro-level factors influencing GP prescribing behaviour

Professional experience of the prescribing GP

GPs' knowledge and professional experience is a key influence on prescribing. Training was also considered important. One GP commented, "I make prescribing decisions based on the formulary in my head". A previous study also found that personal "head-held drug formulary" established during medical training endorses self-belief in prescribing ability through habit and familiarity (Carthy et al., 2000). Watkins et al. (2003) recognized that knowledge of drugs and drugs cost and sources of information; the level of postgraduate medical education; social and logistic factors such as role perception of GPs and time pressures; the number of GPs in the practice; and attitudes to generic and branded products all have an important relationship with GP prescribing rates and costs.

One PCT manager felt that GPs' knowledge and education about drugs and therapeutics was weak, and that this type of knowledge was not emphasized enough in postgraduate education.

Clinical needs of patients, based on condition and history

Overall, GPs acknowledged that understanding the clinical needs of patient is their primary concern. For example, one GP mentioned that "in an ideal world we would only

need to consider addressing the patient" (i.e. the budgetary aspect of prescribing drugs would disappear). One GP explained there was a tension between "being a gatekeeper (i.e. prescribing cost-effective drugs) and being a patient advocate".

Willingness to change prescribing behaviour

The willingness to change prescribing behaviour depended on (1) the convenience of the use of a drug and its substitute; (2) the financial incentives and savings involved; (3) the available evidence on the alternative treatment, such as counselling or osteopathy and (4) perceived patient or practice benefit. One GP explained that a drug that can be taken once a day is going to be more popular than a drug that needs to be taken three times a day and "patients will always say yes to the better drug". Another GP felt "switching had no benefit for the patient or practice", which may cause resistance to changing GPs prescribing behaviour. Financial concerns also shaped prescribing behaviour. For example, one GP commented that their prescribing behaviour would change if "the generic drug is equally effective, if the cost savings offset the additional effort, and if changing drug would have a considerable impact on the prescribing budget, and also if the price of the drug was seen to remain relatively stable."

Another GP commented that if it provides the same benefit as a more expensive drug, then the cheaper drug would be prescribed; if however the evidence suggests that the more expensive drug is more beneficial then this would be the preferred prescription. Furthermore, if two drugs cost the same, then the drug with the additional benefits would be prescribed. Carthy et al. (2000) found that prescribing costs were a key influence on prescribing.

One GP said that in one instance they had not changed existing patients' prescriptions with a cheaper drug because this would have required at least 1200 patients receiving a 10-minute appointment with a nurse for a blood test. Another GP said that if the concern was mostly financial then they were more likely to use their own prescribing discretion than follow the guidelines.

Patient demand and the competence to mediate them

Another influence mentioned by GPs was patient' demand. As mentioned previously, patient' demand may stem from information received from the Internet and the newspapers. Demand may also stem from previous prescriptions received from specialists or the acute health care sector. GPs felt that this type of patient demand was generally easy to manage; usually it only involves explaining to the patient that there isn't much reliable evidence on the drug in question Previous studies have shown that whether or not a GP gave a prescription was significantly associated with the patient's expectations of receiving a prescription (Webb and Lloyd, 1994; Britten and Ukoumunne, 1997; Cockburn and Pit, 1997). Carthy et al. (2000) found excessive patient demand was considered to influence prescribing.

Presence of own dispensing activities and related financial incentives

PCTs were aware that some dispensing practices may be unduly influenced to prescribe drugs that subsequently create higher profit margins for the practice. Prescribing decisions may also be influenced if the dispensary has an excess supply of a particular drug. A previous study reported that GPs with high prescribing costs were significantly more likely to work in dispensing practices. They were also more likely to see drug company

representatives more frequently and try out new drugs on an "ad hoc basis" (Watkins et al., 2003). Northumberland PCT had a higher percentage on dispensary practices (46%) compared to Peterborough PCT (9%) (Table 2). Senior managers in Northumberland PCT generally feel that their dispensing practices had "good prescribing." This was not surprising given that Nothumberland PCT was ranked in the top decile at cost-effective statin prescribing. In Northumberland PCT, the high-cost prescribing practices were more likely to have locums, highly demanding patients, and serve relatively deprived populations.

Information collected by the GPs from various sources (NICE, PCT, Pharmaceutical Reps etc.)

GPs collect information from various sources including authoritative journals, NICE and PCT guidelines. Many also collect information from pharmaceutical representatives, and acknowledge that this helps them keep up-to date with developments. During the focus group discussions, GPs were asked how they dealt with pharmaceutical representatives. There was a lot of variation amongst the GPs on how they viewed drug company representatives. For example, one GP said, "I don't let drug company representatives into my practice". Another GP had accepted three or four visits by drug representatives since the beginning of the year, and had allowed the drug companies to sponsor "practice away days".

Most GPs appreciated that marketing techniques could influence their prescribing, but generally expressed confidence in their ability to withstand commercial sales pressure. Most GPs felt that advice from drug representatives was selective or contained half truths. One GP said that "if the drug company brings in a new product I will not adopt it unless someone else I know has tried it". Another GP mentioned they "pretend to listen" to drug representatives. Another GP felt that drug companies bring about beneficial awareness of new drugs to the practice, and the face-to-face contact makes it easier to remember the drug. One GP felt that "good drug company representatives are sometimes belittled because of the cynical nature we have towards them".

Another study found that while GPs valued technical data from pharmaceutical companies, GPs were not unduly influenced by the drug company visits (Carthy et al., 2000). Astrom et al. (2002) found that "visits from drug representatives" had less influence on GP prescribing behaviour relative to other influences such as journal articles and recommendations from specialists.

A couple of GPs mentioned that receiving information via email was better than as hard copy because the source of the information was immediately apparent.

Peer-group experience and pressures

In Northumberland PCT, GP networks and the quarterly meetings with lead GP prescribers from each practice were particularly important because the practices are relatively dispersed. The GPs also mentioned that formal and informal networks within each practice also helped influence prescribing behaviour. For example, two GPs mentioned their practices had regular (weekly or monthly) practice meetings where prescribing behaviour would be addressed along with new evidence. At these meetings practice-level prescribing would be discussed. Prescribing concerns related to individual patients was more likely to be discussed at morning tea time, which is also an important

informal networking time. Carthy et al. (2000) also found that peer influences were a key influence upon prescribing.

The character of GPs: Innovators, Laggards and Mavericks

The character of the GP appears to influence prescribing behaviour. In both PCTs there was acknowledgement of the "innovator" and "laggard" prescriber. The term "innovator" was typically used to describe a GP who is likely to prescribe new drugs more often, whereas a "laggard" is likely to have slower uptake of new drugs and developments. GPs felt it was important to have both types of prescribers, because, as one GP mentioned, innovators "need to exist to try new drugs because otherwise nothing would change". A previous study showed the variation in prescribing influences amongst high and low prescribers (based on Health Authority prescribing data) (Prosser and Walley, 2003). High prescribers reported 173 new drug initiations while the lowest prescribers described 19. There were no significant differences between high and low groups in terms of gender, number of years qualified or whether they were working full or part-time. Table 6 shows the comparison of prescribing influences found in the Prosser and Walley (2003) study.

Table 6—Factors Influencing GP Prescribers (from Prosser and Walley, 2003)

Influences cited	High prescribers (% of 173 new drug initiations)*	Low prescribers (% of 19 new drug initiations)*
Pharmaceutical representatives	46	10
Failure of current treatment	23	31
Patient request	21	32
Hospital/consultant colleague	13	58
Guidelines	10	26
GP colleagues	9	0
Adverts/mailings	9	0
Curiosity	6	0
Nurse	5	10
GP press	5	5
BNF/Mims	3	5
PCG/HA influence	3	0
Peer-reviewed literature	2	16
Self-medication	1	0
Pharmacist	1	0

*Prescribing decisions were often influenced by more than one factor, therefore the percentage total does not sum to 100%

SOURCE: Prosser and Walley (2003) p.585

During the workshop, PCT managers explained that some practices have "maverick" prescribers. While "the innovator" is likely to be "slightly off tangent" in one prescribing area, the "maverick" prescriber is likely to have "erratic" prescribing behaviour over multiple prescribing areas. Interviews conducted by Carthy et al. (2000) with 17 GPs in Avon (UK) found that GPs considered themselves cautious and conservative prescribers.

Coherence of prescribing strategy within the practice

During the interviews, PCT managers pointed towards the importance of having a coherent prescribing policy within each practice. Having such a policy in place allows for better control of deviant prescribers within a practice, and also acts as an effective tool to communicate the PCT's policies to the GPs. Carthy et al. (2000) also found that having a practice prescribing policy was a key influence upon prescribing.

Understanding the overall limitations of the PCT's spending and budget

During the focus-group discussions, GPs acknowledged that communicating the overall limitations of the PCT's resources was an important aspect of convincing the patients to accept alternative treatments. However, they would prefer it if such communication were to originate at national or PCT level, rather than having to explain the PCT policy to the patients themselves. PCTs acknowledged there was a danger in pushing prescribing levels too low because this may result in higher costs downstream, for example in the acute sector.

CHAPTER 4 Improving the cost-efficiency of GP prescribing

4.1 Developing ways to improve cost-efficient prescribing

During the interviews and the focus groups, and especially during the workshops, the participants were encouraged to develop ideas and recommendations to improve the cost-efficiency of GPs' prescribing in their respective PCTs. During the interviews and focus groups, we asked: "What are the most important things that would improve prescribing behaviour in England?" and "How could your colleagues be encouraged to improve their practice?" During the workshops, participants were asked as a group how they would increase the use of generic statins to X percent (a figure agreed by the workshop participants) within one year.

Some recommendations were put forward only after participants were prompted with the idea (e.g. "What about the Healthcare Commission?"), while some came up without prompting. The recommendations varied in elaborateness and abstraction, and more often than not reflected the participants' affiliated organization (i.e. the PCT or GP practice). A note of caution is necessary, as the small number of interviewees, focus group and workshop participants as well as the selection of only two PCTs may limit the validity of the results in a wider context. However, the experience of the directly involved GPs and PCT managers is an invaluable source of knowledge.

If we group the recommendations presented to us by participants as well as those which can be extracted from the key observations of this project, we can attribute them to four different dimensions of the institutional set up of primary care:

- organizational
- rules
- information and communications
- cooperation and collaboration.

These dimensions can be safely assumed to strongly influence the prescribing behaviour within the PCT and these aspects are, to a certain degree, amenable to change.

Probably the most obvious measure is to change the **organizational** arrangements of the primary care prescribing community. This might happen through the creation or abolition

of organizations, or a redistribution of responsibilities and competences between existing organizations. A second way of changing the structural foundations would be to develop new formal **rules**; for example, national targets, national hospitality policies towards pharmaceutical representatives, or new incentive schemes for GPs.

In contrast, measures might target the processes rather than the formal structures of the prescribing set up. The two types of processes that seem to be the most apparent are: (1) the **flow of information and the communication** between different actors and levels with the system; and (2) aspects of **cooperation and collaboration** between different actors in the system. Conceptually, these different aspects of improving prescribing can be combined with the three levels (macro, meso, and micro) of influencing factors to produce a matrix of recommendations (Table 7).

4.2 Ways to improve the cost efficiency of GP prescribing

Table 7 summarizes the recommendations given by participants during the interviews, focus groups and workshops for improving the cost efficiency of GP prescribing; a brief explanation is given below. In total there were 27 recommendations. In line with our brief, the majority of discussions focused on initiatives that could be carried out at the PCT or practice level. The results of the workshop exercise on measures to improve prescribing generic statins is provided in 4.2.5.

4.2.1 Organizational

Organizations are usually a prime target for change during health system reforms (Scott et al., 2003). However, suggestions for changing the organizational set up of primary health care did not have a very prominent position in participants' recommendations. One respondent stated the wish for a national re-organization designed to identify and spread best practice to the PCTs, but without further specifying relationships to already existing national organizations.

Abolishing, or replacing, dispensing practices was proposed by some participants in order to reduce the incentives to prescribe the more expensive, high profit margin drugs. However, as noted by participants, this may not be feasible given that new arrangements to secure the drug supply in rural areas would have to be implemented.

To tackle the problems of diverging incentives between primary and secondary/acute sector prescribing, one participant proposed a fairly radical solution. By including secondary health care prescribing spending into the PCTs' budgets, all perverse incentives could be removed.

Table 7—Summary of Participants' Recommendations

	Structures		Processes	
Measure / Level	**Organizational**	**Rules**	**Information and Communication**	**Cooperation and Collaboration**
Macro	▪ Create a national organization to identify and spread best practice. This should actively try to change behaviour.*	▪ Set national targets for prescribing in key areas to support the position of PCTs. ▪ Introduce national guidelines on which new drugs can and cannot be prescribed. ▪ Ban direct visits of drug reps. to GPs, instead channelling influence through national institutions (or a single national body). ▪ Introduce nationally a structured procedure (e.g. core competency frameworks) to support the prescribing process. ▪ Limit the availability of drugs in the NHS.	▪ Improve patient education through accessible information about drug evidence. ▪ Increase, through national campaigns, patient awareness of the limited possibilities of the NHS, the cost of treatments, and alternative treatments. ▪ Publish national benchmarks on PCTs' prescribing performance. ▪ Use national media as a tool to disseminate information.	
Meso	▪ Drug costs in acute care should be transferred into PCTs' responsibility.	▪ Create incentives for GPs to improve their prescribing. ▪ Tighten GMS contracts to create more formal means to enforce good prescribing. ▪ Align prescribing incentives between primary and secondary care. ▪ Introduce prescribing incentive schemes which: —consider and allow substitutes to prescribing, e.g. counselling, prevention, and alternative therapies —provide additional finance for work required to change prescribing behaviour —allocate more resources towards public health prevention.	▪ Communicate PCT policies to the *whole* prescribing community. ▪ Organize regular meetings with key representatives of local prescribing stakeholders. ▪ PCTs provide supportive mechanisms for GPs, e.g. alternative sources of care for patients and alternative therapies, e.g. osteopathy or counselling.	▪ Improve cooperation with the wider local prescribing community through joint working groups, etc. ▪ Encourage collaborative working with pharmacy advisers, GPs, consultants, and specialists. ▪ Work closely with secondary care to understand the basis for their prescribing decisions.
Micro	▪ Abolish dispensing practices.			▪ Support peer-group meetings and facilitate networking among them. ▪ Allow GPs to collaborate with pharmacists, e.g. GPs could decide on the dose and pharmacists could decide which drug is cost-effective.

* While this is similar to the role of the National Prescribing Centre (NPC), this was suggested by a GP. The NPC was not mentioned during interviews, focus groups or workshops.

4.2.2 Rules

Rules, in the form of incentives and disincentives, and also in the form of targets or imperatives, were often mentioned as possible levers to change prescribing. In particular, increased national action was recommended by quite a few interviewees, although usually it was not the prime recommendation. National actions were recommended in setting prescribing targets for the use or non-use of certain drugs; in limiting the availability of drugs in the NHS (e.g. for non-life threatening conditions); and in producing less ambiguous prescribing guidelines. Additionally, one participant proposed to limit the availability of drugs in the NHS as a whole.

Aligning incentives between primary and secondary health care has often been pointed out as being crucial to control the PCTs' prescribing expenditures.

National regulatory action was also suggested by one participant to universally ban visits of drug representatives to practices and PCTs. While the focus of the PCTs' employees was primarily on improving the prescribing behaviour within the existing system, a number of GPs pointed out other measures that could be used instead of prescription drugs. They proposed increased counselling, increased prevention and alternative therapies (such as osteopathy) to limit the amount of prescribing.

4.2.3 Information and communication

A number of GPs suggested that improving patients' knowledge about prescribing would be an important step to improving prescribing. One saw patient education and empowerment as a primary tool for improving the quality of prescribing. Awareness of prescribing would also lead to better clinical results, as patients would be more likely to take their medication according to the instruction.

Most of the GPs, however, were primarily concerned with creating awareness of the needs of the PCT and NHS as a whole. They felt that, ideally, patients should understand that the resources of the PCT are limited; that, for example, a switch to cheaper generics would free resources that could be used for improving other areas of the PCTs work. Thus patient education would be a tool for reducing the resistance of patients to changes in prescribing which don't have a clinical motivation but, rather, a budgetary one. This would ease the pressures on GPs who are now faced with having to explain the policies of the NHS and the PCT to their patients.

While not mentioned by the GPs themselves, the "education" of GPs featured high on PCTs' wish lists. They suggested that GPs should have up-to-date knowledge about drugs and prices, as well as being made aware of the PCT's needs and its budget constraints. This should help in implementing new prescribing policies and remove obstacles to quicker adjustments in prescribing policies. Additionally, PCTs would like it to be clear to GPs that they are interested in *cost-effective* rather than *cheap* prescribing.

4.2.4 Cooperation and collaboration

Engaging the wider professional community at the PCT level was considered crucial by GPs as well PCT representatives in improving local prescribing behaviour. This wider professional community consists of consultants in the acute sector, and specialists and

pharmacists at the local level. All of these groups have a considerable influence on prescribing budgets, without being formally included in the PCTs' governance structures.

A number of participants recommended raising awareness among specialists and consultants, improving communication between the different actors at the local level, and finding more binding arrangements for cooperation and collaboration also at the local level.

According to one GP, even pharmacists could become involved in prescribing, by shifting the choice of the specific drug to the pharmacist, thus leading to joint decision-making by GP and pharmacist on the right drug. However, one pharmacist pointed out that this could be problematic, given that pharmacists might be less aware of patients' symptoms and potential contraindications.

4.2.5 Workshop exercise

During the workshops, participants were asked how they would increase the use of generic statins to X per cent (a figure agreed by the workshop participants) within one year. Box 3 and Box 4 provide a summary of the results of this exercise for Peterborough PCT and Northumberland PCT, respectively.

Greater Peterborough Primary Care Partnership

Target: Increase generic statin GP prescribing from 62 percent to 80 percent

Measures:

1. Ensure the evidence underlying the change in medication is clear and unambiguous.
2. Raise patient awareness of:
    a. the limited budget available in the PCT and the NHS as a whole, and the additional patient benefits which could gained by improving the cost-efficiency of prescribing
    b. the rationale behind switches in medication and the fact that the new medicine is in no way worse than the original one.
3. Engage the whole prescribing community, consisting of:
    a. acute sector
    b. secondary care
    c. pharmacists
    d. prescribing nurses.
4. Concentrate on the most important drugs (i.e. prioritize), preferably those with the highest impact on the budget. Only a limited number of drugs should be addressed simultaneously to improve prescribing and enough time should be allowed to implement the changes.
5. Exert professional pressure on people who resist change.

Box 3—Greater Peterborough Primary Care partnership: Measures to increase generic statin prescribing in primary care (workshop exercise)

Northumberland Care Trust

Target: Increase generic statin GP prescribing from 73 percent to 83 percent

Measures:

1. Improve GP education by:
    a. providing clear evidence and knowledge about generic statins
    b. increasing the awareness of the budgetary constraints of the PCT.
2. Introduce one-to-one work with practices, e.g. through practice-level action plans.
3. Introduce meetings with GPs to:
    a. communicate PCT policy
    b. trigger peer discussions and pressure
    c. facilitate mutual learning
    d. present performance data.
4. Specify rules of engaging GPs and how monitoring is going to take place— when, how, and by whom.

Box 4—Measures to increase generic statin prescribing in primary care: Northumberland workshop responses

4.3 Prioritizing ways to improve GP prescribing

After analyzing the 27 recommendations made by GPs and taking into account the key observations and influences on GP prescribing, the recommendations may be clustered into six key themes. Each of the themes, outlined below, generally encompasses more than one recommendation and had support from multiple stakeholders, including GPs, PCT managers, pharmacists, and prescribing advisers.

1. Improving communication to improve the cost efficiency of GP prescribing

Communication probably stands out as the single most important factor in improving prescribing. Cutting through all three levels of the system, a targeted, systematic and coherent communication strategy creates knowledge, awareness and commitment among GPs, patients and other stakeholders. At the national level, authoritative sources presenting clear national and international evidence are an invaluable source of information for GPs; in addition the evidence can be used to support PCTs' policies. The PCT (meso-) level is at the centre of communication activities as it fulfils a translating function for knowledge, and has to communicate national and local policies to the local prescribers. The results of our research indicate that information (e.g. about prescribing guidelines) is best provided in short, easily readable format. Personal contacts are also very important; thus a strategy which has personalized communication channels to all relevant prescribing stakeholders, offers an important asset to influence prescribing where necessary.

2. Getting the incentives right

The interdependence of primary and secondary health care prescribing makes an alignment of the incentives of both systems an important aspect of improving cost-efficient prescribing. Having different prices for the same drugs in primary and secondary health care leads to sub-optimal outcomes in the total prescribing system and for the NHS. One might also consider revising the combination of prescribing and dispensing activities in dispensing practices, as these have high incentives to prescribe high cost, high profit margin drug brands.

3. Addressing the whole prescribing community

Any strategy, be it aimed at aligning incentives or improving communication, has to reach beyond the narrow PCT—GP prescribing relationship. To involve the whole of the local prescribing community (including consultants, specialists, prescribing advisers, nurses, and pharmacists) offers great potential for reducing prescribing expenditures, as these originate partly outside of the PCTs' control. Strategies to include the whole prescribing community could involve the establishment of personalized communication links by the PCT, for example organizing meetings involving consultants and GPs and other key persons.

4. Promoting GP commitment to the whole primary health care system

Making the budgetary constraints of the PCT one factor in GPs' prescribing decisions should be the aim of PCT strategy. Communication efforts should stress that GPs are part of a wider system on whose resources they draw, indicating that there are trade-offs between the resources they need for prescribing and other benefits that could be provided to patients. As formal means to hold GPs accountable for their prescribing are very limited,

soft approaches to engaging the GPs are of crucial importance. Such softer techniques, that are mainly related to communication, include site visits to GPs by prescribing advisers, and the communication and full explanation of the PCT policies to GPs via letters and newsletters.

5. Facilitating cooperation and peer meetings

Cooperation between different practices and with the secondary and acute sector as well as peer meetings should be actively encouraged by the PCT. GPs and practice managers should also support peer contact through formal and informal means. Peer contact proved to be an important source of knowledge and an important method to curb excessive spending by some GPs.

6. Getting the message through to the patients

Although the benefits of providing general medical information to the patients are disputed, communicating the limitations of the PCTs' resources, the cost of prescriptions, and the available evidence of alternative lower cost treatments to the patients should be an important aspect of any national and local communication strategy. This might increase the acceptance of switchovers to new (generic) drugs as well as ease the pressure on GPs.

Overall, to improve the cost-efficiency of GP prescribing, measures at only one level of the prescribing system are unlikely to succeed. The interdependence between the relevant levels of the national health care system means a comprehensive approach comprising a set of measures at all the levels of the system is likely to have a higher impact than isolated measures at each of them. Figure 5 illustrates this way of thinking, pointing out the most important measures to improve the cost-efficiency of prescribing at the macro (national/international), meso (PCT) and micro (GP—patient interface) levels.

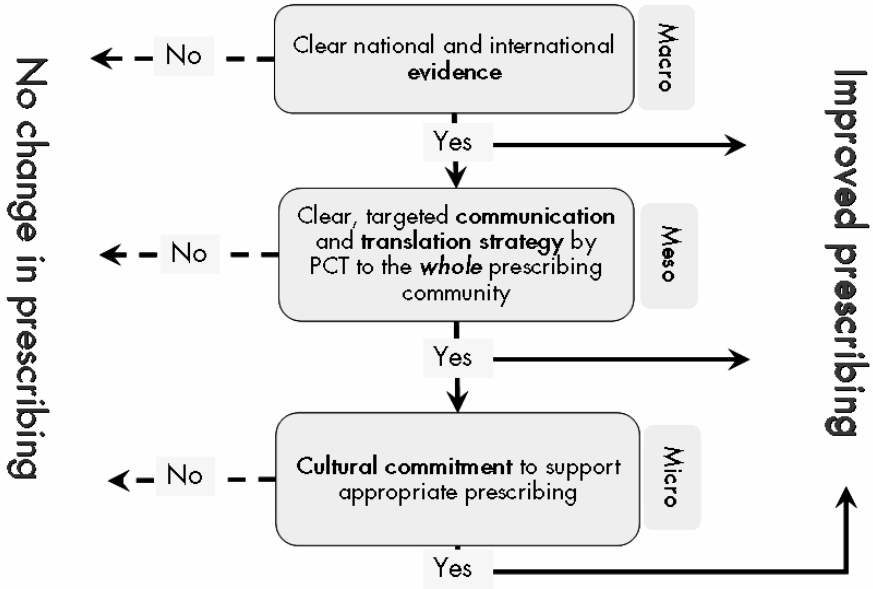

Figure 5—Improving the Cost-efficiency of Prescribing Behaviour

REFERENCES

Reference List

Anthony, J., Avery, S. R., Heron, T., Crombie, R., Whynes, D., Pringle, M., Baines, D., and R. Petchey, "A Prescription for Improvement? An Observational Study to Identify How General Practices Vary in their Growth in Prescribing Costs," *British Medical Journal,* Vol 321, 2000, pp. 276-281.

Astrom, K., Duggan, C., and I. Bates, "Influences on Prescribing: The Perceptions of General Practitioners in Two Primary Care Trusts," *The International Journal of Pharmacy Practice,* Vol. 10(suppl), 2002, pp. R10.

Audit Commission, *A prescription for improvement: towards rational prescribing in general practice,* London: HMSO, 1994.

British Medical Association, Revisions to the GMS contract, 2006/07 Delivering Investment in General Practice, 2006, http://www.ehiprimarycare.com/tc_domainsBin/Document_Library0282/2006_Revisions_to_GMS_contract_-_full.pdf (as of November 15, 2006)

Britten, N., and O. Ukoumunne, "The Influence of Patients' Hopes of Receiving a Prescription on Doctors' Perceptions and the Decision to Prescribe: A Questionnaire Survey," *British Medical Journal,* Vol 315, 1997, pp. 1506-1510.

Carthy, P., Harvey, I., Brawn, R., and C. Watkins, "A Study of Factors Associated with Cost and Variation in Prescribing Among GPs," *Family Practice,* Vol. 17, No. 1, 2000, pp. 36-41.

Cockburn, J., and S. Pit, "Prescribing Behaviour in Clinical Practice: Patients' Expectations and Doctors' Perceptions of Patients' Expectations: A Questionnaire Study," *British Medical Journal,* Vol. 315, 1997, pp. 520-523.

Department of Health, *Practice Based Commissioning; Promoting clinical engagement.* London: Department of Health, 2004.

Grimshaw, J.M., Shirran, L., Thomas, R., Mowatt, G., Fraser, C., Bero, L., Grilli, R., Harvey, E., Oxman, A., and M.A. O'Brien, "Changing provider behaviour: an overview of systematic reviews of interventions," *Medical Care,* Vol 39(8 Suppl 2), 2001, pp. II2-45.

Grimshaw, J.M., Thomas, R.E., MacLennan, G., Fraser, C., Ramsay, C.R., Vale, L., Whitty, P., Eccles, M.P., Matowe, L., Shirran, L., Wensing, M., Dijkstra, R., and C. Donaldson, "Effectiveness and Efficiency of Guideline Dissemination and

Implementation Strategies," *Health Technology Assessment,* Vol. 8, No. 6, 2004, pp. 1-72.

House, R., Rousseau, D., and M. Thomas-Hunt, "The Meso Paradigm: A Framework for the Integration of Micro and Macro Organisational Behaviour," *Research in Organisational Behaviour,* Vol. 17, 1995, pp. 71-114.

Leatherman, Sheila, and Kim Sutherland, *The Quest for Quality in the NHS: A Mid-term Evaluation of the Ten-year Quality Agenda,* London: The Nuffield Trust, 2003.

Moon, J., and R. Bogle, "Sitching Statins," *British Medical Journal* Vol. 332, 2006, pp. 1344-1345.

Morgan, O., and A. Baker, "Measuring Deprivation in England and Wales using 2001 Carstairs Scores," *Health Statistics Quarterly,* September 29, 2006, http://www.statistics.gov.uk/CCI/article.asp?ID=1645&Pos=1&ColRank=1&Rank=192 (as of October 9, 2006).

National Institute for Health and Clinical Excellence, "Statins for the Prevention of Cardiovascular Events," *Technology Appraisal*, Vol 94, January 2006, www.nice.org.uk/TA094 (as of November 15, 2006).

NHSBSA Prescription Pricing Division, Update on growth in prescription volume and cost year to June 2006, 2006, http://www.ppa.org.uk/pdfs/publications/SMT_V&C_report_ 200606.pdf (as of November 15, 2006).

NHSBSA Prescription Pricing Division, data files on prescribing data for number of items for different types of prescribers from August 2005 to July 2006, 2006a.

Pallot, P, "The Cost of Living," *Health Services Journal,* May 30, 1996, pp. 11.

Prosser, H., and T. Walley, "New Drug Uptake: Qualitative Comparison of High and Low Prescribing GPs' Attitudes and Approach," *Family Practice,* Vol. 20, No. 5, 2003, pp. 583-591.

Robert, G., Bate, P., and P. Mendel, "Organising for Quality: Journeys of Improvement at Leading Hospitals and Healthcare Systems in the US, UK, and Netherlands," Research Briefing: University College London, RAND Corporation, Harvard Medical School, 2005.

Scott, T., Mannion, R., Davies, H., and M. Marshall, "The Quantitative Measurement of Organisational Culture in Health Care: A Review of the Available Instruments," *Health Services Research,* Vol. 38, No. 3, 2003, pp. 923-943.

Sheldon, T., Cullum, N., Dawson, D., Lankshear, L., Lowson, K., Watt, I., West, P., Wright, D., and J. Wright, "What's the Evidence that NICE Guidance has been Implemented? Results from a National Evaluation using Time Series Analysis, Audit of Patients' Notes, and Interviews," *British Medical Journal,* Vol. 329, No. 7473, 2004, pp. 999.

Slocum, Nikki, *Participatory methods toolkit. A practitioner's manual,* King Baudouin Foundation and the Flemish Institute for Science and Technology Assessment in

collaboration with the United Nations University – Comparative Regional Integration Studies, December 2003.

Wathen, B., and T. Dean, "An Evaluation of the Impact of NICE Guidance on GP Prescribing," *British Journal of General Practice,* Vol. 54, 2004, pp. 103-107.

Watkins, C., Harvey, I., Carthy, P., Moore, L., Robinson, E., and R. Brawn, "Attitudes and Behaviour of General Practitioners and their Prescribing Costs: A National Cross Sectional Survey," *Quality and Safety in Health Care,* Vol. 12, 2003, pp. 29-34.

Watkins, C., Timm, A., Gooberman-Hill, R., Harvey, I., Haines, A., and J. Donovan, "Factors Affecting Feasibility and Acceptability of a Practice-based Educational Intervention to Support Evidence-based Prescribing: A Qualitative Study," *Family Practice,* Vol. 21, No. 6, 2004, pp. 661-669.

Webb, S., and M. Lloyd, "Prescribing and Referral in General Practice: A Study of Patients' Expectations and Doctors' Actions," *British Journal of General Practice,* Vol. 44, 1994, pp. 165-169.

APPENDICES

Appendix A: Interview protocol

GP prescribing interview protocol

Interviewee: _____ **Interviewer:** _____

Date: _____ **Site:**_____

This research aims to understand what shapes GP prescribing decisions, and how this might be changed. The context is one in which it is recognized that there are considerable variations in general practice prescribing costs nationally. There is also a belief that some of this variation is not evidence-based. Guidelines to encourage more consistently appropriate prescribing practices were produced by the Audit Commission as far back as 1994 and more recently, NICE guidelines provide detailed guidelines for specific treatments. It was estimated in June 2006 that the use of generic statins alone could save in excess of £2 billion over five years. Research conducted jointly by RAND, University College London and the Harvard Medical School suggested that sustaining quality improvement in health care rested on important—but varied and complex organizational and cultural foundations. The same research drew attention to macro-level supports within which micro-systems of quality improvement might flourish which are mediated and managed by what might be termed, following House and colleagues, a meso-paradigm for quality (for our purposes, this includes the organization, culture and leadership at the level of the PCT). It was also understood that clinicians respond to data about the quality of their work in different ways and with different degrees of success, although it was at least becoming clear that performance evidence on its own does not bring about a change in practice or the intended improvement in outcomes. NICE guidelines, for example, were known to have had only an uneven impact on evidence-based medicine. There are therefore, potentially, considerable gains to be made in delivering improved value for money by understanding the specific circumstances under which GPs work.

Objectives: The interviews will elicit discussion of the current experience of senior management of PCTs of GP's prescribing practice, what they believe influences this, and how they believe prescribing behaviour might be encouraged to change in the future.

Description of the participants: The interviews will be conducted with around 5 senior managers from each of two PCTs. The PCTs serve populations with broadly similar

demographics and have similar deprivation indicators. Each PCT will be asked to suggest senior managers who are particularly involved in prescribing practice.

Informed consent: Informed consent forms will be distributed and collected by RAND or the PCT prior to the interview.

Description of interviews: The interviewee and interviewers will sit around a table or across a room in a work-related but not excessively formal setting. The interviewer will begin by introducing himself/herself and explain the purpose of the interview is to learn about the GP prescribing and how it might be modified. The interview will last around 60 minutes. It will be audio-recorded and a note taker will be present alongside the interviewer. The note taker may add questions if he/she believes that an area has been missed or under-examined but the interviewer will remain in control of the interview.

Scheduling the focus group: The interview will be held at a time suitable to the interviewee and agreed with the PCT.

Interview Guide

The interview will be semi-structured to allow the discussion to be informed and, where necessary, led by the expertise of the interviewee. The following questions will provide the framework for the interview. While questions that are not listed here may be asked in order to follow up on participant responses, the discussion will centre on these main questions. The introduction and debriefing statements will be read to interviewees.

Introduction

The purpose of this study is to find out what influences current prescribing in general practice and how this might be changed, if at all, in the future. Everything that you say here will be kept confidential. We will say who we interviewed but we will not ascribe any views to particular individuals. We will record this interview for our own record and erase the recording when the study is completed.

My name is (XXXX) and I am from RAND Europe. I have left some cards on the table if you want to find out more about us or to contact me about this interview. We have been asked to do this piece of work by the National Audit Office as part of a larger study it is doing on prescribing practice. I have put the NAO's website on the (wall/whiteboard/ flipchart) if you want to find out more about them.

1. How do you think GPs in your PCT currently make prescribing decisions?
   - What evidence do they use?
   - How important is past experience?
   - Role of patients?
   - Role of PCT
   - Role of drug companies
   - Other influences?
2. What do you think would encourage GPs in your PCT to change their prescribing?

1. What should the role of the PCT be in this?
2. What strategies does your PCT have in place?
3. What do you monitor?
4. What should you monitor?
5. What information do you feedback to GPs?
6. Do you actively try to counteract the influence of the drug companies?

3. What other organizations should be actively trying to change behaviour? (prompt if necessary – NICE, patient groups, Healthcare Commission)
4. What are the risks and dangers of trying to influence behaviour?
   - How might these risks be managed?
5. Do you think that there is a problem generally with prescribing in your PCT?
   - When is this most commonly a problem (if it is perceived to be a problem)? How could it be improved?
6. What are the most important things that would improve prescribing behaviour in England? Who should take responsibility?

Follow-up questions will be asked, when appropriate. Also guidance about any documentary evidence/guidance etc. will be sought.

Debriefing

I would like to thank you for your participation. I also want to restate that what you have shared with me is confidential. Finally, I want to provide you with a chance to ask any questions that you might have about this research. Do you have any questions for me?

Appendix B: Focus group protocol

GP prescribing focus group protocol

No of participants: _____ **Facilitator:** _____

Date: _____ **Site:**_____

This research aims to understand what shapes GP prescribing decisions, and how this might be changed. The context is one in which it is recognized that there are considerable variations in general practice prescribing costs nationally. There is also a belief that some of this variation is not evidence-based. Guidelines to encourage more consistently appropriate prescribing practices were produced by the Audit Commission as far back as 1994 and more recently, NICE guidelines provide detailed guidelines for specific treatments. It was estimated in June 2006 that the use of generic statins alone could save in excess of £2 billion over five years. Research conducted jointly by RAND, University College London and the Harvard Medical School suggested that sustaining quality improvement in health care rested on important—but varied and complex—organizational and cultural foundations. The same research drew attention to macro-level supports within which micro-systems of quality improvement might flourish which are mediated and managed by what might be termed, following House and colleagues, a meso-paradigm for quality (for our purposes, this includes the organization, culture and leadership at the level of the PCT). It was also understood that clinicians respond to data about the quality of their work in different ways and with different degrees of success, although it was at least becoming clear that performance evidence on its own does not bring about a change in practice or the intended improvement in outcomes. NICE guidelines, for example, were known to have had only an uneven impact on evidence-based medicine. There are therefore, potentially, considerable gains to be made in delivering improved value for money by understanding the specific circumstances under which GPs work.

Objectives: The focus group will elicit discussion of the current experience of prescribing practice, what GPs do in relation to prescribing practice, how they appraise information from different sources, what influences this, and how it might be encouraged to change in the future. This will include an opportunity for GPs to comment on a range of publicity material made available by both pharmaceutical companies and the PCT. Finally, participants will be asked about the feasibility, suitability and acceptability of different strategies to improve prescribing practice.

Description of the participants: The focus groups will be conducted with around 8 GPs from two PCTs. The PCTs serve populations with broadly similar demographics and have similar deprivation indicators. There will be two focus groups in each PCT.

Informed consent: Informed consent forms will be distributed and collected by RAND or the PCT prior to the focus groups.

Description of the focus group: The participants and the facilitator will sit in a circle or around a table for the discussion. The facilitator will begin the meeting by introducing himself and explaining that the purpose of the focus group session will be to learn about the GP prescribing and how it might be modified. The focus group meeting will last between 75 and 95 minutes. It will be audio-recorded.

Scheduling the focus group: The focus group will be held at a time suitable to GPs and agreed with the PCT.

Focus Group Guide

The following questions will provide the framework for the focus group discussion. While questions that are not listed here may be asked in order to follow up on participant responses, the focus group discussion will centre on these main questions. The introduction and debriefing statements will be read to participants.

Introduction

The purpose of this study is to find out what influences current prescribing in general practice and how this might be changed, if at all, in the future. Everything that you say here will be kept confidential. We will say who we met with but we will not ascribe any views to particular individuals. We will record this for our own record and erase the recording when the study is completed.

My name is (Tom Ling) and I am from RAND Europe. I have left some cards on the table if you want to find out more about us. We have been asked to do this piece of work by the National Audit Office as part of a larger study it is doing on prescribing practice. I have put the NAO's website on the (wall/whiteboard/flipchart) if you want to find out more about them.

Questions and prompts

7. How do you currently make prescribing decisions?
    - What evidence do you use?
    - How do you use information provided by the PCT/pharmaceutical companies?
    - Is the sales representative important?
    - Are you influenced by the training and other opportunities made available by pharmaceutical companies?
    - How important is past experience?
    - Are you influenced by the quality of promotional material (other than the purely medical evidence)?

- Do you all agree with that?

8. What encourages you to change your prescribing?
   - Can you describe a situation when you changed your prescribing habit?
   - What caused you to change?
   - What makes you think you might need to change your prescribing practice?
   - How do learn about new treatments?
   - What does the PCT do to influence you?
   - How effective is this?
   - Do patients ever influence you with their views?
   - What about colleagues/practice influences?
   - Do you all agree?
9. Do you think that there is a problem generally with prescribing in general practice?
   - If it is a problem when is it most likely to occur?
   - How could it be improved (even if it is currently quite good?)
   - What could you personally do to make it better?
10. How could your colleagues be encouraged to improve their practice?

Debriefing

I would like to thank you for your participation. I also want to restate that what you have shared with me is confidential. Finally, I want to provide you with a chance to ask any questions that you might have about this research. Do you have any questions for me?

Venues

Focus group 1

Date:	October 18, 2006, 13:00–14:30
Location:	Bretton Medical Practice (health education room)
	Rightwell East, Bretton
	Peterborough, PE3 8DT

Focus group 2

Date:	October 20, 2006, 13:00–14:30
Location:	Bretton Medical Practice (health education room)
	Rightwell East, Bretton
	Peterborough, PE3 8DT

Focus group 3

Date:	October 30, 2006, 13:00–14:30
Location:	Longhirst Hall
	Longhirst, Morpeth
	Northumberland, NE61 3LL

Focus group 4

Date:	November 7, 2006, 12:30 – 14:00
Location:	Longhirst Hall
	Longhirst, Morpeth
	Northumberland, NE61 3LL

Appendix C: Workshop protocol

GP prescribing workshop protocol

No of participants: _____ **Facilitator:** _____

Date: _____ **Site:**_____

This research aims to understand what shapes GP prescribing decisions, and how this might be changed. The context is one in which it is recognized that there are considerable variations in general practice prescribing costs nationally. There is also a belief that some of this variation is not evidence-based. Guidelines to encourage more consistently appropriate prescribing practices were produced by the Audit Commission as far back as 1994 and more recently, NICE guidelines provide detailed guidelines for specific treatments. It was estimated in June 2006 that the use of generic statins alone could save in excess of £2 billion over five years. Research conducted jointly by RAND, University College London and the Harvard Medical School suggested that sustaining quality improvement in health care rested on important—but varied and complex—organizational and cultural foundations. The same research drew attention to macro-level supports within which micro-systems of quality improvement might flourish which are mediated and managed by what might be termed, following House and colleagues, a meso-paradigm for quality (for our purposes, this includes the organization, culture and leadership at the level of the PCT). It was also understood that clinicians respond to data about the quality of their work in different ways and with different degrees of success, although it was at least becoming clear that performance evidence on its own does not bring about a change in practice or the intended improvement in outcomes. NICE guidelines, for example, were known to have had only an uneven impact on evidence-based medicine. There are therefore, potentially, considerable gains to be made in delivering improved value for money by understanding the specific circumstances under which GPs work.

Objectives: The workshop will elicit discussion of what PCTs can do to influence GP prescribing. It will therefore focus on identifying what is suitable, feasible and acceptable to the PCTs. It will therefore seek to identify practical steps that can be taken to improve prescribing practice.

Description of the participants: Around 10-12 workshop participants would involve senior management, GPs, and other knowledgeable individuals (for example nurse

prescribers and pharmacists) who may be able to suggest a different approach. There will be on workshop in each PCT.

Description of the workshop: The workshop will be organized around a table with enough space to break into three groups. There will be three flip charts with pens and blue tac. The facilitator will begin the workshop by introducing himself and explaining that the purpose of the session will be to identify practical actions that could be taken at the PCT level to improve GP prescribing. The meeting will last between 75 and 95 minutes. It will be audio-recorded.

Scheduling the workshop: The workshop will be held at a time suitable to participants.

Workshop Guide

The following will provide the framework for the workshop.

Introduction (5 minutes)

The purpose of this study is to find out what influences current prescribing in general practice and how this might be changed, if at all, in the future. Everything that you say here will be kept confidential. We will say who we met with but we will not ascribe any views to particular individuals. We will record this for our own record and erase the recording when the study is completed. I have left my card on the table and if you want to get in touch after the meeting please don't hesitate to get in touch.

Activity 1: Plenary Discussion (20 minutes)

The National survey being conducted by the NAO has shown a couple of things that we would like your help understanding. First, GPs are much more likely than prescribing advisers to believe that prescribing information can be useful even if they think it is not objective. Can you explain this apparent mystery? How is a source of information useful if it is not objective?

Please look at the flip chart which shows sources of information that were useful but not objective; and another list of sources that were objective but not useful.

List 1	*List 2*
PCT prescribing advisers	London New Drug Group
PCT newsletters	PRODIGY
PCT formularies	Scientific journals
GPs	Guidance from professionals
Consultants	Guidance from NICE

Please outline the current role of the PCT in influencing GP practice. Are we agreed on this role? Can we identify the key areas where the PCT could be effective?

Activity 2: Group work (40 minutes)

You have to increase the use of generic statins to X% within one year. Describe how you would go about this at the level of the PCT/general practice. Identify possible barriers, facilitators and risks.

Activity 3: Plenary (25 minutes)

Feedback and discussion leading to a prioritized list (if possible) for action.

Activity 4: Thanks and our next steps (5 minutes)

Venues

Workshop 1

Date:	October 25, 2006, 13:00–14:30
Location:	Bretton Medical Practice (health education room)
	Rightwell East, Bretton
	Peterborough, PE3 8DT

Workshop 2

Date:	November 7, 2006, 11:00–12:30
Location:	Longhirst Hall
	Longhirst, Morpeth
	Northumberland, NE61 3LL