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Lessons from international experience in controlling pharmaceutical expenditure III: regulating industry

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This is the third of three papers that review international policies to control spending on drugs and to improve the efficiency of drug use. This paper reviews policies regulating the supply of drugs, particularly licensing and reimbursement controls, price and profit regulation. Price and profit controls contain few incentives for improving cost effective use of drugs, and focus on cost containment and profitability of domestic industry. Carefully monitored economic evaluation could lead to improvements in efficiency and benefits to patients and the health care system.

In this series of three papers we describe recent policies to control spending on drugs in several developed countries which can provide insights for British health policy. We also examine rigorous evaluative studies, where they are available, to assess the impact of these policies on prescribing. Details of our literature search are in the first paper in our series.

In this paper we review policies intended to regulate the behaviour of drug manufacturers, particularly governments' control of licensing, reimbursement, and prices and profit. Previous papers have examined policies aimed at influencing the behaviour of doctors and of patients.

Licensing and reimbursement

Most countries require evidence of efficacy and safety for licensing new drugs, but none requires evidence of cost effectiveness. Licensing may be "ultimately the most powerful economic control as it can exclude products from the market,"[1] and an increasing number of countries include economic factors when deciding whether to reimburse products. Many governments may restrict publicly reimbursed drugs by positive lists (Australia, New Zealand, Italy, France) or negative lists (Germany, Ireland, the Netherlands, Spain, United Kingdom). Decisions are based on information about safety and efficacy, professional opinion, and, occasionally, cost effectiveness. Australia and the province of Ontario in Canada were the first to include data on cost effectiveness data in decisions about reimbursement. France, Britain, and the United States have also implemented some policies to encourage the provision of economic data. The objective of these policies is to increase the cost effectiveness of the use of drugs, but the approach between countries has varied.

Since 1993, drug companies have been required to include an economic evaluation in applications for reimbursement through the pharmaceutical benefit scheme in Australia.[2,3] New drugs with no demonstrable advantage over existing products are offered at the same price. Where clinical trials show superiority, incremental cost effectiveness is assessed to determine whether a product represents value for money at the price sought. While the deliberations of the advisory committee are confidential, some recommendations have received press coverage, such as failure to agree prices for sumatriptan and salmeterol and rejection of applications to list finasteride for prostatic hypertrophy and DNAse for cystic fibrosis. In some cases economic analyses have been used to justify higher prices than might have been achieved before economic criteria became mandatory.[4]

In October 1991 Ontario published draft guidelines for economic analyses that were to be included in submissions for listing in the Ontario formulary.[5-7] During 1992 the Canadian Coordinating Office for Health Technology Assessment developed a set of guidelines that each province in Canada could adopt as it saw fit.[8] These guidelines have evolved through a broad consultative process.[4]

In France reimbursement is reviewed by the Transparency Commission and a Drug Economic Committee. About a third of submissions includes a pharmacoeconomic study.[9] The final price offered takes into account the characteristics of the company and expected benefits to the economy. The hospital sector negotiates prices directly with manufacturers. The United States Food and Drugs Administration has published principles for the review of pharmacoeconomic studies,[10] and the American drug industry association has developed voluntary guidelines for measuring the cost effectiveness of drugs.[11] The Health Care Financing Administration also includes cost effectiveness criteria for determining reimbursement under Medicare.

The British government is encouraging the use of economic evaluation of new drug products, by agreeing voluntary "guidelines for the economic evaluation of pharmaceuticals"[12] with the Association of the British Pharmaceutical Industry. Manufacturers are not required to submit economic evaluations either for licensing or reimbursement purposes.

Price controls

Governments commonly set prices for drugs, and many countries have cut prices. Britain is unique in allowing freedom of pricing but controlling prices indirectly by setting target profits. In Britain a 2.5% cut in profit targets was negotiated in 1993, and prices of existing products were frozen until 1996.

REFERENCE PRICING

In reference price systems, a reimbursement price is set for a therapeutic category of drugs and patients pay any difference between the cost of the product prescribed and the reference price. The reference price may be the average price of drugs in a category (the Netherlands,[13] Germany[14]), the lowest priced drug (New Zealand), or the lowest priced generic drug plus

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some amount (10% in Sweden). New and innovative (breakthrough) drugs are not covered by reference price systems. Introduction of a reference price scheme may result in manufacturers cutting the price of drugs priced above the reference price. This occurred in Sweden after the introduction of the scheme in 1993, as companies anticipated that consumers would not pay the higher price.[15]

In the Netherlands experience with reference pricing, introduced in 1991, has been mixed.[16] Overall spending on drugs has increased (by 11% from 1991 to 1992), but the government claims that the scheme contains costs. Costs of drugs covered by reference prices have increased less than predicted, but the costs of non-classified drugs have increased annually by more than 20% since 1988.[16] The Dutch government is considering tightening the scheme by barring new drugs from the list of fully reimbursed drugs unless there is no pharmacological alternative.

Germany's reference pricing system lowers prices for products where there are alternatives without patent protection. For example, all angiotensin converting enzyme inhibitors are to be given fixed level reimbursement with captopril when it becomes off patent, thus categorising the other drugs in this class as essentially equivalent.[17] About half of all drug sales in Germany are regulated by reference prices.[18]

OTHER PRICE CONTROLS

Until 1994 Italy's pricing system used a formula based on the costs of raw materials weighted by the spread of disease, innovation, manufacturing technology, and the economic impact of the product. However, widely varying prices were assigned to similar products.[19] In Spain maximum prices are set for each product, comprising total cost and company profit. Italy and Spain have average drug prices at or below the European average, suggesting that strict "cost plus" pricing may have advantages. However, variation in prices has caused Italy to change to a system of external comparison, and both countries are considering reference pricing schemes.

Direct price control can lead to differences in prices between countries, effectively leading to cross-subsidisation of the costs of developing drugs. This has created incentives for the import and resale of drugs between countries. In the European Union the absence of trade barriers has meant drug companies cannot prevent the movement of products from one market to another except by special agreements such as recent restrictions on exports from Spain. Such policies are encouraged by some countries, particularly the Netherlands and Germany, and may have an impact on prices. This encourages systems of external comparison, and the Republic of Ireland has recently introduced a formula of comparing the prices in five countries to establish a Northern European Price in order to avoid its historically high prices due to its links with Britain.[20] Italy links its prices to the average in Britain, France, Germany, and Spain.

France has a system of volume related price cuts. If expensive drugs pose a financial threat to the reimbursement, budget prices may be reduced.[20] Recent imposed price cuts ranged from 3% to 20%, and the products affected included omeprazole and ciprofloxacin.[21] Although France has consistently the lowest priced drugs in Europe (see table 1), high consumption of drugs makes overall spending on drugs 17% of total cost of health care. Despite having the joint highest priced drugs in Europe (based on a purchasing power parity comparison as in table 1), Britain spends about 10% of health care expenditure on drugs. This shows the need to consider regulation of supply (such as price controls) alongside attempts to control demand.

Table 1—*Prices of drugs in relation to average price in European Union and when allowance is made for prices in general (purchasing power parity)*

Country	Price index		Purchasing power parity comparison in 1991
	1991	1993	
Belgium	101	116	99
Denmark	143	133	112
France	64	63	61
Germany	111	106	96
Greece	86	85	128
Ireland	130	133	134
Italy	96	96	99
Luxembourg	95	97	98
Netherlands	134	148	136
Portugal	58	67	102
Spain	84	93	98
United Kingdom	125	123	136

Data taken from World Health Organisation.[20]

PROFIT REGULATION

Only two countries in Europe control the profits of drug manufacturers. Spain includes a profit margin of 12-18% in its cost plus pricing scheme. Britain uses control of profits instead of regulating prices of drugs. The Pharmaceutical Price Regulation Scheme is a voluntary agreement between the Department of Health and the Association of the British Pharmaceutical Industry.[22] Companies negotiate target profits from sales of drugs to the NHS at 17-21% of rate of return on investment in research and development. Firms set their own prices and can negotiate increases to achieve the target rate if they forecast that profits will be less than 75% of their target return.[22] Companies earning excessive profits may be required to cut prices to the NHS, as apparently happened in the recently negotiated 35% price cut for fluoxetine. The scheme was renewed in 1993 for a period of five years, with a possible review in 1996.

Regulation of profits avoids the need to identify separately the costs of research and development and other costs for each product.[1] However it may result in perverse incentives, in particular by reducing inducements to control costs. It may also conflict with other measures to contain costs by allowing companies to increase prices when profits are threatened by reduced sales. Profit regulation makes no attempt to link prescribing with cost effectiveness. Could it be viewed as a policy of subsidising the drug industry from the health care budget?

Other supply side measures

Most governments have a fixed profit margin for drug wholesalers and retailers, and this may facilitate the control of costs. The wide variation in prices of branded drugs has led to parallel importing by the wholesale pharmacy sector. This is encouraged actively by some countries, particularly the Netherlands and Germany, and this is likely to have an impact on drug prices.

Use of generic drugs is encouraged in most countries, but only Germany, Denmark, the United States, and the Netherlands allow pharmacists to substitute generic drugs for proprietary brands. Generic substitution has been promoted in Britain[23 24] but is opposed by the drug industry. Despite this opposition, the use of generic drugs has grown considerably, from about 16% of prescriptions in 1977 to 54% in 1994, and this proportion continues to rise. Generic substitution may reduce spending on drugs, but it can tackle only part of the problem of containing costs as new drugs are patent protected and their increased use will not be affected.

Drug prices in the United States are considerably higher than in other industrialised countries, and rising

costs have resulted in proposals for federal regulations. Large purchasing groups and health maintenance organisations are using their purchasing power to reduce drug prices, and the American government is turning to managed care schemes. There is considerable debate about drug prices in the United States, with media attention on vulnerable groups who cannot afford essential treatments and stories of "price gouging" (such as claims that a company charges $1.75 for 36 tablets of a drug when it is used to treat sheep and $230 when it is used to treat humans).[25] In 1990 Congress passed legislation enabling state Medicaid programmes to benefit from price differentials in the drug industry.[26] Participating manufacturers must refund state Medicaid programmes with the difference between the price of a drug charged to Medicaid and the lower of the average charged for the product less 12.5% (10% for generics) or the lowest price for that drug dispensed to any insurer or purchaser in that state. In return for the refunds, the participating manufacturers gain unrestricted access to Medicaid formularies.[27] The impact of this legislation has not been substantial, largely because of an increase in the lowest prices of drugs relative to average market prices reducing potential discounts.[28]

Conclusions

Devices to regulate drug prices are relatively crude ways of controlling costs. There are limited attempts to encourage cost effectiveness by regulating prices. Price negotiations in France and the use of reference pricing systems may begin to do this by allowing a premium price only if there is evidence of important therapeutic benefit. However, without the use of carefully monitored economic evaluation (such as in Australia), price regulation remains a crude method of containing costs and may result in poorer treatment of patients or increased overall costs to the health care system if expensive but cost effective drugs are discouraged.

We did not identify any rigorous evaluations of the impact of different policies to control drug prices, although they are practically possible. There has been much interest internationally in developments in Australia, where price negotiation is informed by the cost effectiveness of new products, but rigorous evaluation of the impact of this approach is required. The British system, based on controlling profits rather than drug prices or reimbursement, contains no incentives for improving cost effectiveness of the use of drugs. Careful evaluation of international experience could inform future British policies for price regulation and may lead to improvements in efficiency, with consequent benefits to patients, the health care system, and society.

Until recently, international regulatory policies have concentrated on the safety and efficacy of drugs, with costs contained by budgetary measures. Policy makers have also tended to look separately at regulations of supply and control of demand and incentives, failing to consider the market as a whole. In order to avoid the inefficient use of resources, the regulators of the drug industry should encourage the cost effective use of drugs, examining both cost (price) and use.

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