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The effects of new pricing and copayment schemes for pharmaceuticals in South Korea

Iyn-Hyang Lee [a], Karen Bloor [b,*], Catherine Hewitt [b], Alan Maynard [b]

[a] College of Pharmacy, Ajou University, Republic of Korea
[b] Department of Health Sciences, University of York, UK

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ABSTRACT

Objectives: This study examined the effect of new Korean pricing and copayment schemes for pharmaceuticals (1) on per patient drug expenditure, utilisation and unit prices of overall pharmaceuticals; (2) on the utilisation of essential medications and (3) on the utilisation of less costly alternatives to the study medication.
Methods: Interrupted time series analysis using retrospective observational data.
Results: The increasing trend of per patient drug expenditure fell gradually after the introduction of a new copayment scheme. The segmented regression model suggested that per patient drug expenditure might decrease by about 12% 1 year after the copayment increase, compared with the absence of such a policy, with few changes in overall utilisation and unit prices. The level of savings was much smaller when the new price scheme was included, while the effects of a price cut were inconclusive due to the short time period before an additional policy change. Based on the segmented regression models, we estimate that the number of patients filling their antihyperlipidemics prescriptions decreased by 18% in the corresponding period. Those prescribed generic and brand-named antihyperlipidemics declined by around 16 and 19%, respectively, indicating little evidence of generic substitution resulting from the copayment increase. Few changes were found in the use of antihypertensives.
Conclusions: The policies under consideration appear to contain costs not by the intended mechanisms, such as substituting generics for brand name products, but by reducing patients' access to costly therapies regardless of clinical necessity. Thus, concerns were raised about potentially compromising overall health and loss of equity in pharmaceutical utilisation.

1. Introduction

Over recent decades in South Korea, expenditure on and access to pharmaceuticals have evolved into national concerns, giving rise to intense debate. Korea has an ageing population, with increasing chronic conditions and substantially increasing health expenditure [1]. In the pharmaceutical market, after a policy of separation of prescribing and dispensing that has legally stopped doctors from dispensing and pharmacists from prescribing since 2000, pharmaceutical expenditure surged, partly because of cost shifting from the private to the public sector by transferring drugs with private expenses in community pharmacy into those in publicly funded authorised prescription [1–4]. Evidence also suggests that rising expenditure has been associated with an increasing use of expensive drugs [2,5–8].

To contain the rising pharmaceutical bill, the Korean authorities enacted a new pricing scheme, aiming to

* Corresponding author at: Area 4, Seebohm Rowntree Building, University of York, Heslington, York YO10 5DD, United Kingdom.
Tel.: +44 01904 321321; fax: +44 01904 321320.
E-mail address: karen.bloor@york.ac.uk (K. Bloor).

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contain pharmaceutical expenditure and facilitate cost-effective purchasing in 2006 [9]. This was followed by an extension of coinsurance (a selective increase in patient charges), aiming to increase price sensitivity in patients, particularly those with temporary symptoms such as the common cold [9].

Empirical evidence from other settings suggests pessimistic prospects for these strategies to achieve their intended purposes. Direct price control may be hard to contain costs [10,11] as firms have sought "bypass" strategies and or increased the volume of sales [12]. Regulations restraining patient demand have been demonstrated to affect not only the utilisation of discretionary drugs, but also essential medications [13,14], affecting disproportionately disadvantaged groups [15–18]. This may adversely influence overall societal health and increase cost of illness by allowing the development of more serious conditions [18–22].

Existing evidence has mostly been produced in North America, and may lack generalisability to the South Korean context [23,24]. In this study, we firstly seek to examine whether the pharmaceutical policies achieved the intended policy objectives in the overall pharmaceutical market in South Korea. Secondly, we aim to explore whether the interventions prevent patients from accessing chronic medications, possibly worsening health conditions; and thirdly whether policies encouraged the utilisation of less costly alternatives.

2. Policy background

2.1. Reimbursement pricing

The Pharmaceutical Expenditure Rationalisation Plan (PERP), a comprehensive pharmaceutical regulation package, was enacted in December 2006 (Table 1). It comprised four components – price, volume, and quality control, and market restructuring. PERP introduced two fundamental changes: a positive list and formal request for economic evidence in reimbursement decisions (which has resulted in little change in available pharmaceuticals at the time of study); and a price agreement for new chemical entities (NCEs).

Previously, prices for NCEs were determined by a cross-national comparison, which was criticised as inflationary because it included seven rich comparators including France, Germany, Italy, Japan, Switzerland, the UK and the US [25,26]. PERP replaced the cross-national comparison with a price agreement which would consider economic evidence as the most crucial parameter of pricing.[1] An initial price is reassessed in the second year according to sales volume during the first year. For all off-patent products, a price cut of 20% is implemented when the first generic counterpart is submitted for listing. The pricing system for generics was unchanged. Since November 2001, the first five generic products must price at least 20% lower than the original branded equivalent and the sixth generic should offer an additional 10% price cut relative to the least expensive product. Thus, the new system, cutting the price of the off-patent original drugs by 20%, also reduced generic prices equal to 64% of the price of the original counterpart in the previous system. For instance, 'GenericA', a generic product of the 'OriginalA' (price 100) was priced at the maximum of 80 (i.e. 0.8×100) in the previous system. Now, it is priced at maximum 64 (i.e. $0.8 \times 0.8 \times 100$) because the price of 'OriginalA' is reduced to 80 in the new system.

Table 1
Policy and synopsis.

Date	Policy	Synopsis
July 2000	Separation of prescribing and dispensing of drugs (SPD)	Preventing doctors from dispensing and pharmacists from prescribing by law
January 2007	Pharmaceutical expenditure rationalisation plan (PERP)	Introducing (1) price cut after patient expiry by 20%; (2) price agreement; (3) positive list system
August 2007	30% coinsurance for outpatient prescription drugs	Converting fixed copayment per prescription to 30% coinsurance system for non-senior patients

2.2. Copayments

The Korean National Health Insurance (NHI) system has had a copayment scheme since its inception in 1977. Between 2001 and July 2007, patients paid a fixed copayment of 1500 KRW per prescription at community pharmacies, unless the costs per prescription (including a dispensing fee) exceeded 10,000 KRW (exchange rate: 1 $US = 950 KRW at July 2007). If exceeding the limit (e.g. prescriptions for chronic medications generally issued on a monthly–trimonthly basis in Korea), patients should pay 30% of total costs per prescription. In 2006, nearly 60% of prescriptions were priced less than the upper limit, and average costs per prescription were about 7500 KRW. Hence, patients prescribed medications costing less than 10,000 KRW per prescription (e.g. prescriptions for 3 days common cold remedies) paid only around 20% of total expenses [27]. Critics have suggested that a fixed copayment encourages spending on temporary illnesses and, as a result, may be inconsistent with the social security purpose of health insurance. Seniors, those with severe diseases (e.g. cancers), or lower income households pay slightly less.[2] A copayment ceiling has been implemented since July 2004, with the NHI subsidizing all extra costs exceeding a certain limit.[3]

From August 2007 onwards, the authorities applied 30% coinsurance for patients aged between 6 and 64 at any rate of total costs per prescription (Table 1). The elderly population remain in a dual system and a slightly lower

[1] Pharmaceutical Price Agreement Guideline, National Health Insurance Corporation Official Instruction 2006-122; provision 11.

[2] National Health Insurance Act Regulation; provision 10-2.

[3] National Health Insurance Act Regulation; provision 22-1.