The maximum medical aid price programme

A review of the concept and of its ability to reduce expenditure on medicines

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Summary

Medicine prices in South Africa have increased significantly in recent years. Furthermore, a consideration of expenditure on medicines by medical schemes shows that this component of health care costs had grown to 26,1% in 1988, which is high by comparison with other Western economies. The use of generic medicines offers one possible solution to rising expenditure. For savings to be optimised, however, generics need to be used on a planned and structured basis. The maximum medical aid price (MMAP) system of the Pharmaceutical Society of South Africa provides such a programme.

MMAP is a programme through which certain medical schemes elect to pay only a specified maximum price for off-patent products that have generic equivalents. Although MMAP does not require substitution by generic medicines, it does have the effect of encouraging their use.

Two case studies measuring the savings that can be achieved through adoption of MMAP by medical schemes are reviewed. Although they differ in their respective methodologies, their results are consistent and show that savings of about 9,3% were possible in 1989. Medical schemes with higher proportions of older members tend to show greater savings. The studies also show that the potential for achieving savings through the use of MMAP increases with the passage of time.

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Medicine prices have increased significantly in recent years. Over the past 5 years, the medicines price index has risen by 152,0% (20,3% per annum). The consumer price index (CPI) increased by 108,4% (15,8% per annum) over the same 5-year period. Thus the annual increase in medicine prices has exceeded the annual increase in the CPI by an average of 4,5% per year over the period 1984-1989.[1]

Expenditure on medicines by medical schemes in the private sector in South Africa, already high at 25,3% in 1977, had grown by 1988 to 26,1% of total expenditure.[2] These figures exclude the patient's contribution in the form of co-payments and, in respect of many medical aid schemes, also exclude expenditure on medicines for hospitalised patients. An accurate estimate of aggregate expenditure on medicines in the private sector would be closer to 30% of total expenditure. This

compares with about 9% in the USA, 12% in the UK, and an average of 16% for all EEC countries.[3,4] It is evident that the relative expenditure on medicines in South Africa is considerably higher than in other Western countries.

When cognisance is taken of the fact that medicine price levels in South Africa are estimated to be 19,3% higher than in the UK,[5] it becomes apparent that the wide disparity in expenditure between these two countries can only partially be attributed to differences in their price levels. Of key significance, then, are likely to be differences in patterns of utilisation of medicines.

Utilisation has many facets: it is dependent on factors including the incidence of morbidity, access to health services, application of rational prescribing practices, patient expectations, and product selection. In respect of product selection, a major trend in many countries has been a movement toward the use of generic medicines. In the USA, for example, the percentage of prescriptions written in generic (i.e. chemical) terms was 36% in 1987.[6]

Generic medicines

In general terms, a generic medicine is an alternative (and generally less expensive) brand of an ex-patented product of original research. A generic equivalent, more specifically, is a medicine that is chemically and pharmaceutically identical to another.[7]

Generic substitution is said to have taken place when a generic equivalent product is dispensed instead of the original brand of the product. Such 'substitution' may be performed by the prescriber himself, at the time of prescribing, or he may simply use the approved (generic, or chemical) name of the product, leaving choice of brand to the dispenser: this is referred to as generic prescribing.

Savings from the use of generics can be significant, as price differences between generic products and their equivalent original brands vary between 15% and 85%. A report in December 1988 (D. Boyce — unpublished data) showed that a basket of generic products was 46,3% less expensive than a comparable basket of original products. Table I illustrates some of the recent price differences.

For optimum savings to be achieved, the use of generics should take place on a planned and structured basis. This is achieved in various ways in other countries; it may include the use of a formulary or so-called 'positive list' as in France and Italy,[8] or may take a form such as that of the maximum acceptable cost system in use in the USA.[9] Significant savings have been reported using such structured programmes.

In South Africa, generic substitution has been common practice in State and provincial hospitals for a number of decades. Although no studies on the savings achieved by generic substitution in the public sector in South Africa have been reported, expenditure on medicines by the State constitutes less than 10% of total public sector health expenditure.[10] The extent of these savings is dramatic when these figures are compared with current medicines expenditure of approximately 30% in the private sector. It is recognised that these savings cannot be attributed solely to the use of generic medicines: the tender market itself is an important factor in reducing medicines expenditure. Nevertheless, it is the very existence of generic alternatives that makes tender purchasing as cost-effective as it is.

In the private sector, the Pharmaceutical Society of South Africa has developed the maximum medical aid price (MMAP) programme in an attempt to facilitate savings.[11]

The MMAP concept

MMAP is a programme through which certain medical schemes elect to pay only a specified maximum price for off-patent products that have generic equivalents.

It is analogous to the difference between the consultation fee for general practitioners determined by the Medical Association of South Africa and the medical scheme tariff (Scale of Benefits) set by the Representative Association of Medical Schemes. While the practitioner may charge the MASA fee, the patient will only be reimbursed at the RAMS tariff.

The objectives of the MMAP programme are not to dictate what is prescribed by the medical practitioner, but to limit the amount that the medical scheme will be liable for. MMAP specifies a maximum price: it does not specify a product or brand to be supplied. However, it will tend to have the effect of encouraging the use of generic products by the public.

The MMAP list

The list of MMAP maximum prices is issued every 6 months to participating medical schemes and pharmacies. This list contains the generic names (e.g. diazepam) and the maximum reimbursable prices of approximately 80 products and their available variants (e.g. different strengths and dosage forms), respectively.[12] All manufacturers are invited to tender their products for inclusion in the list. The conditions set for consideration in the tender selection process include that the price quoted by the manufacturer will not be increased during the subsequent 6-month period; that the product is registered with the Medicines Control Council; that the product is available nationally; that it is available in treatment pack sizes;

TABLE I. EXAMPLES OF PRICE DIFFERENCES BETWEEN ORIGINAL AND GENERIC BRANDS, MARCH 1989

		Wholesale price (R)		
Generic product (unbranded)	Pack size	Original brand	Generic brand	% saving
Ampicillin 250 mg capsules	**20**	**5,94**	**4,58**	**22,9**
Methyldopa 250 mg tablets	**100**	**36,12**	**19,72**	**45,4**
Allopurinol 300 mg tablets	**30**	**30,63**	**15,36**	**49,9**
Co-trimoxazole adult tablets	**20**	**13,31**	**5,20**	**60,9**
Propranolol 40 mg tablets	**50**	**23,67**	**7,33**	**69,0**
Diazepam 5 mg tablets	**100**	**25,45**	**3,83**	**85,0**
Furosemide 40 mg tablets	**250**	**177,43**	**14,70**	**91,7**

TABLE II. EXAMPLES OF FOUR TYPICAL ENTRIES IN THE MMAP LIST

No. in list	Approved name	Strength	Form	Pack	Maximum dispensed price before prof. fee (R)	Product examples
1	**Allopurinol**	**100 mg**	**Tablets**	**100**	**25,92**	**Lo-uric** **Puricos**
		300 mg	**Tablets**	**30**	**23,07**	**Lo-uric** **Puricos** **Ethipurinol**
5	**Amoxycillin trihydrate**	**250 mg**	**Capsules**	**15**	**9,00**	**Rocillin**
		500 mg	**Capsules**	**15**	**16,50**	**Rocillin**
		125 mg/5 ml	**Syrup**	**100 ml**	**9,64**	**Moxypen**
		250 mg/5 ml	**Syrup**	**100 ml**	**16,60**	**Moxypen**
21	**Diazepam**	**2 mg**	**Tablets**	**100**	**6,00**	**Diaquel** **Ethipam**
		5 mg	**Tablets**	**100**	**6,00**	**Diaquel** **Ethipam**
		10 mg	**Tablets**	**30**	**6,21**	**Pax**
31	**Furosemide (frusemide)**	**40 mg**	**Tablets**	**30**	**8,30**	**Hydrex** **Puresis** **Aquasin**

and that the product is backed by legal liability guarantees in respect of quality.

The brand that sets the maximum price for any particular product is selected on the basis of its competitive price, although it may not necessarily be the lowest price tendered. Other practical considerations may play a role in the selection.

For any particular product, therefore, several generic brands usually fall within the maximum reimbursable price (Table II).

It has been estimated that in 1988 the products on the MMAP list represented approximately 20% of all prescription items dispensed in the private sector.[13]

MMAP in practice

Patients, pharmacists and, where applicable, doctors are notified of a medical scheme's intention to implement MMAP, and the *modus operandi* is explained. In an effort to gain co-operation and support, the beneficial effects of cost savings to the members of the scheme are explained. Members benefit directly from reduced expenditure, reduced co-payments, and a 'stretching' of their annual medicine allowances allowed by their respective schemes.

In medical schemes where MMAP is established, medical practitioners tend to prescribe generic products within the maximum permitted price in an effort to be of assistance to their patients. However, in the stage of adoption of the MMAP programme by a scheme, before members and their medical practitioners are acquainted with the scheme, it is not uncommon for prescribers to prescribe products that are priced higher than the MMAP price. In these instances the patient has two options. He may accept the product prescribed and pay the excess over the MMAP price. Alternatively, the patient may decide to ask the medical practitioner to prescribe a product within the MMAP price range. Often the pharmacist is requested by the patient to perform this communication on his behalf. Legally, the pharmacist may not substitute one product for another without the prior permission of the prescriber.[14]

The growth of MMAP

MMAP was first implemented in 1985. Since then it has become a significant feature of the medicines delivery system in South Africa. Certain major medical schemes have adopted MMAP, as have the provincial authorities of the Transvaal, the Orange Free State, and the Cape (in these latter cases, for ambulatory patients).

Cost savings achieved by MMAP

Of great importance to medical scheme administrators and other health care policy makers is the extent to which cost savings occur using MMAP, and what factors may affect these savings. The results of two case studies are discussed below.

Case study 1 — generic substitution and cost savings in the OFS in 1985

This was the earliest implementation of the MMAP concept. In 1985, the Provincial Hospitals Department of the OFS Administration provided health services to ambulatory patients, who are primarily State pensioners, by utilising the services of district surgeons. Prescriptions written for these patients were dispensed by private sector retail pharmacies throughout the Province. In an effort to contain costs, the Administration approved the implementation, in May 1985, of a programme similar to the present MMAP programme, with the exception that the compilation of the product list was not formalised in the way it is today. Manufacturers were not systematically invited to tender for inclusion of their products on the list, which contained generic brands that represented savings over the prices of the equivalent original brands. In addition, where pharmacists were able to obtain cost savings on listed products through bulk purchasing, these savings were passed on to the Province by the pharmacists. Initially the use of the listed products was not compulsory for either prescribers or pharmacists.

An earlier paper by the authors investigated the success of this programme in achieving savings;[15] 404 789 prescription items dispensed during the 6-month period of the programme were analysed, and 78 substitutable products were selected for detailed analysis. Using baseline data from the period before implementation of the programme, savings were defined as the amount that would have been spent had the programme not been implemented. The post-programme residual effects on the prescribing habits of the doctor cohort were also examined.

The results showed that the 78 substitutable original-brand products selected for analysis all lost market share to their listed generic equivalents, though at varying rates and to differing extents. The overall trend in the market share of original brands is illustrated in Fig. 1, which shows the gradual effects of the voluntary participation by members, practitioners and pharmacists, the fact that maximum savings had not yet been achieved at termination of the programme, and the residual effect on prescribing in the first quarter of 1986.

By the 6th month of the programme, savings had reached 6,2% of overall expenditure; at this stage, savings had not yet reached their full potential, which was calculated to be 11,5%. Potential savings had risen to 16,1% by 1988.

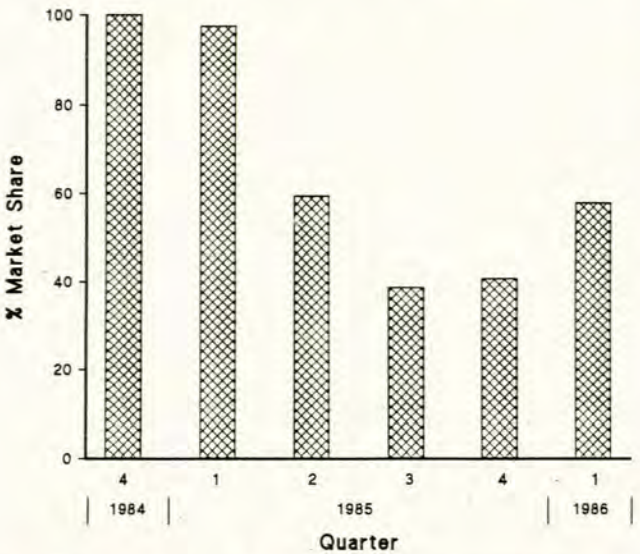

Fig. 1. Overall trend in market share of substitutable original brands, OFS 1985.

Case study 2 — the impact of MMAP on the Local Authorities Medical Aid Fund (LAMAF) in 1988/89

LAMAF is a private-sector scheme for municipal employees in the Cape Province. Before implementation of MMAP the average price of a LAMAF prescription was 8,3% above the private sector national average. MMAP was implemented by LAMAF in October 1988.

In a study of the first 5 months of operation of MMAP, 110 000 prescriptions were analysed.[13] Trends in average prescription prices of LAMAF prescriptions were compared with trends in non-LAMAF prescriptions. The difference between these trend-lines was used to obtain an estimated value for LAMAF prescriptions had MMAP not been applied. This, in turn, was used to calculate the percentage savings achieved through the implementation of MMAP (Fig. 2).

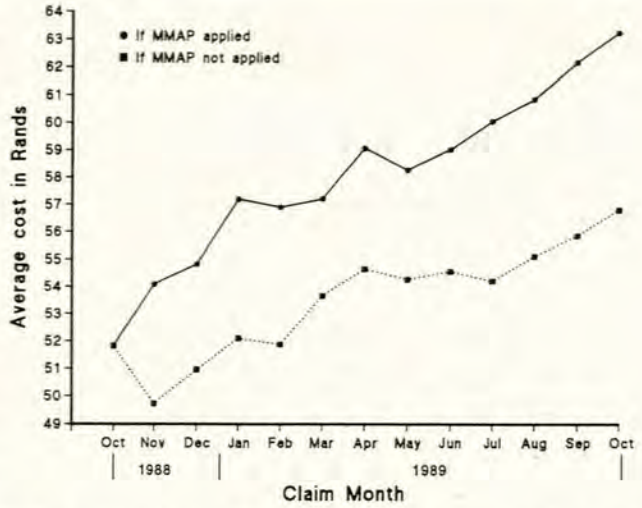

Fig. 2. Trend in average cost per LAMAF prescription — MMAP applied/not applied.

The authors show that the average cost of a LAMAF prescription dropped sharply when MMAP was introduced and fell to below the national average prescription price. Furthermore, they show that the savings achieved by the scheme over the initial 5-month period represented 7,9% of its anticipated expenditure had MMAP not been introduced.

Analysis of the impact of MMAP on the expenditure by LAMAF on medicines for the first 12 months of the programme — October 1988 — September 1989 — shows that savings during this period were 9,3% (Fig. 3).[16] It should also be noted that the average cost of a LAMAF prescription rose more slowly than that of other prescriptions.

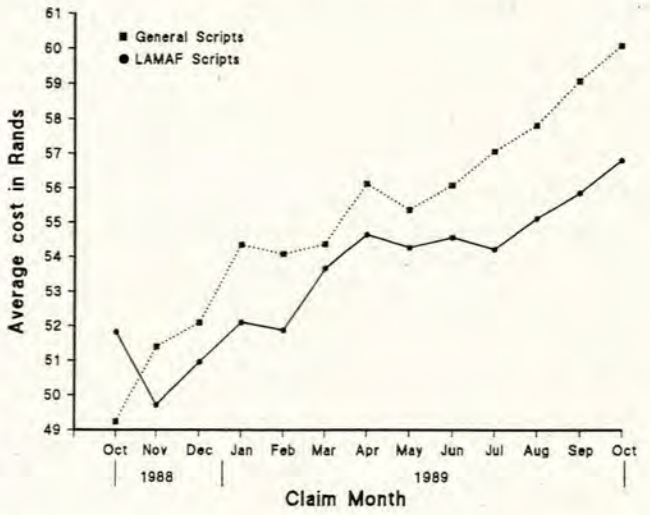

Fig. 3. Trend in average cost per prescription — general v. LAMAF.

Discussion

Savings

Although the two studies reviewed in this paper differ somewhat in methodology, both show that MMAP is able to effect significant savings in medicines expenditure for large patient groups.

Case study 2, conducted in 1988/89, shows overall savings for the medical scheme concerned of 9,3% of projected expenditure on medicines. Case study 1, which was based on a sample of patients with a markedly different demographic profile, showed a potential saving of 11,5%, although the actual saving achieved was 6,2%. Failure to reach potential savings was due to the policy of voluntary participation (see below) and the fact that the programme was prematurely terminated.

Age/membership profile

Age distribution of medical scheme membership is the single most important factor in determining the scheme's potential savings from MMAP. Case study 2 was based on a private sector medical scheme which provided services to members as well as to their families. Age distribution within this scheme resembled that of the total white population and, as such, would have contained a proportion of aged members. However, in the first case study, all patients were old-age pensioners; dependants — and children in particular — were excluded. The aged have a higher incidence of chronic conditions requiring long-term medication, and many generic (MMAP) medicines are available in these therapeutic classes. The savings on these long-term treatments are significantly higher than savings in respect of short-term treatments. Hence the savings (potentially 16,1% in 1988) achieved by MMAP in the OFS geriatric sample could be expected to be higher than those achieved in the other case study. Similarly, at an individual patient level, and in medical schemes, older patients have more opportunity than younger people to obtain savings on their prescription purchases when using MMAP.

The passage of time

The savings that can be achieved using MMAP increase with the passage of time for a number of reasons. Firstly, product patents continue to expire each year and such products become susceptible to competition from generic equivalent products; the variety of generic products available therefore continues to increase annually. Secondly, with the prospect of an expanding market for generic products, new generic manufacturers enter this market, thereby increasing the number of available generic products and the competition between these products. Thirdly, increasing pressure on the budgets of third-party payers in a price-sensitive market provides an opportunity for expansion of the generic market. These factors result in increasing price competition, cheaper generics, and larger potential savings.

Mandatory v. voluntary participation

The time taken to reach optimal savings using MMAP is influenced by whether participation is voluntary or mandatory.

As is evident in case study 2, mandatory implementation of MMAP results in immediate savings at the maximum potential level. Voluntary participation, on the other hand (as in case study 1), results in a more gradual increase in savings that may take some time to reach its maximum level, and is likely to be less than that which could be achieved with mandatory participation.

Rational therapeutics

Although not inherent in MMAP, the authors believe that the use of MMAP is likely to heighten medical practitioners' awareness of their prescribing habits. Patients also become more aware of the choice of prescribed product, and its price. It is probable that the prescriber under these conditions will prescribe more thoughtfully, more rationally, and with an increased awareness of cost.

Conclusion

The studies reviewed show that MMAP provides a viable option for administrators of medical schemes and other health care managers to effect significant savings in expenditure on medicines. These savings, in respect of a large group of people of normal age distribution, were of the order of 9,3% in 1989. A saving in excess of 16% in 1988 could have been anticipated in groups with a higher proportion of older people.

In addition, the studies show that the potential savings in any given group tend to increase with the passage of time.

REFERENCES

1. Boyce DG. Medicine price trends. *S Afr Pharm J* 1990 (in press).
2. Registrar of Medical Scheme. *Report of the Registrar of Medical Schemes for the Year Ended 31 December 1989*. Pretoria: Central Council for Medical Schemes, 1990.
3. Redwood H. *The Pharmaceuticals Industry: Trends, Problems and Achievements*. Felixstowe, Suffolk: Oldwicks Press, 1987: 101-104.
4. Chew R. *The Pharmaceutical Industry and the Nation's Health*. London: Association of the British Pharmaceutical Industry, 1988: 33.
5. Boyce DG. Medicine price levels in South Africa are compared to international medicines price levels (Paper presented at the SA Academy of Pharmaceutical Sciences Congress, Johannesburg, 24-26 April 1990).
6. World Health Organisation. *The World Drug Situation*. Geneva: WHO 1988: 29.
7. Ballantyne JW. re: Definitions (Letter). *S Afr Pharm J* 1986; **53:** 53.
8. Chew R, Teeling Smith G, Wells N. *Pharmaceuticals in Seven Nations*. London: Office of Health Economics, 1985.
9. Lee AJ, Hefner D, Hardy R. *Health Care Financing Grants and Contracts Report: Evaluation of the Maximum Allowable Cost (MAC) for Drugs Program*. Washington, DC: DHHS Health Care Financing Administration, 1980.
10. Browne G, Chairman. *Fifth Interim Report of the Commission of Enquiry into Health Services: Interim Report on Pharmaceutical Services*. (The 'Browne Commission'). Pretoria: Government Printer, 1985.
11. Sutherland DG. *Plans for the Greater Involvement of the Private Sector in the Supply of Pharmaceutical Services in the Republic of South Africa*. Johannesburg: Pharmaceutical Society of South Africa, 1985: 88-119.
12. Pharmaceutical Society of South Africa. *Maximum Medical Aid Price (MMAP) Listing: Period effective: 1 January 1990 to 30 June 1990*. Johannesburg: PSSA, Dec 1989.
13. Bloom W, Goldston R. The impact of the MMAP system on local authorities prescriptions processed by the PSSA CWP checking office (Oct 1988 - March 1989). *S Afr Pharm J* 1989; **56:** 199-201.
14. South African Pharmacy Council. Rules relating to acts or omissions in respect of which the Council may take disciplinary steps (promulgated in terms of Section 41(1) of Pharmacy Act of 1974). *Government Gazette* 1989; 11792, R.599.
15. Boyce DG, Bartlett GA. Generic substitution and cost savings in the Orange Free State in 1985. *S Afr Pharm J* 1989; **56:** 142-146.
16. Bloom W. The Impact of the MMAP system on local authorities prescriptions processed by the PSSA CWP checking office: an analysis of the first 12 months of dispensing October 1988 to September 1989. *S Afr Pharm J* 1990; **57:** 61-62.