COST OF THE DRUGS DISPENSED FROM PRIMARY HEALTH CARE CENTERS FOR SUMMER VISITORS TO ASEER REGION

Abdullah I. Al-Sharif, FFCM(KFU),* Yahia M. Al-Khaldi, ABFM†
*The General Directorate of Health Affairs, Aseer Region, †Health Science College for Boys, Abha, Saudi Arabia

Objectives: Recognize the patterns and the cost of the drugs dispensed to summer visitors who attended Primary Health Care Centers (PHCCs) in Aseer region.

Methods: This study was conducted in Aseer region during the summer of 1998. The investigators designed and distributed special forms on which were blanks for names, age, sex, diagnosis and drugs that were prescribed for summer visitors who attended PHCCs in Aseer region. At the end of season, all the forms were collected and analyzed manually by well-trained nurses and assistant pharmacists. The cost of the drugs was calculated according to the price list provided by the Medical Supply Department.

Results: A total of 96327 forms were evaluated. These represented 25% of the total number of prescriptions issued by PHCC physicians during the summer season. The total cost of the drugs dispensed was 190533 Riyals (190533 Saudi Riyals) which is approximately 50808 US dollars (50808 US dollars). This represented 20% of the total expenditure on dispensing drugs in Aseer region during that season.

Correspondence to:
Dr. Abdullah I. Al-Sharif, P.O. Box 1129, Abha, Saudi Arabia

Cost of Dispensed Drugs for Tourists to Aseer Region  41
total cost of the dispensed drugs was estimated as 190533 SR (50808$). About 20% of what was dispensed was for summer visitors who had utilized the PHCC services in Aseer region. Antibiotics and painkillers cost 42% and 21% of the total cost respectively.

Conclusion: This study showed that the cost of drugs for summer visitors in Aseer region was 20.5% of the total drug cost. This additional cost should be considered in planning the drug budget.

Key Words: Cost, primary health care centers, summer visitors, Aseer region.

INTRODUCTION
Aseer region has become one of the most common summer resort areas in Saudi Arabia. Thousands of tourists come to this region every summer to spend their vacation and to enjoy different recreational and scientific activities. During the summer of 1997, it was estimated that the total number of summer visitors was 1.3 million. Two different studies found that there was a dramatic increase in the utilization of primary health care services by these visitors, which resulted in an overload of the services. Both studies found that most of the visitors attended the clinics for curative purposes and were eventually prescribed medications. As a matter of fact, expenditures, particularly for diagnostic and therapeutic aspects of the health care services, had become very high. Although the patterns and the cost of the health care services are important, there has been no report or study on them.

The objectives of this paper are to recognize the patterns and the cost of the drugs dispensed to the visitors who utilized the primary health care services in Aseer region during the summer season of 1998.

METHODS
This study was conducted in the Aseer region during the summer season of 1998. The investigators designed special forms which were distributed to all PHCCs in the region. On each form were the name, sex, and residence of the patient as well as the diagnosis, types and quantities of drugs dispensed, and the duration for which they were to be taken. A summer visitor was defined as any person who came from other regions of Saudi Arabia or other countries during the summer. All visitors who attended PHCCs for medical care during this season were provided with the above-mentioned form which was completed by the treating physicians at the end of each consultation. At the end of the summer, all forms were collected and analyzed. The types and amounts of drugs that were documented in those forms were analyzed manually by well-trained nurses and pharmacists’ assistants. The drugs were classified according to the essential drug list in primary health care while the costs of drugs were calculated according to the drug price list provided by the medical supply department in the Directorate General of the Health Affairs, Aseer region.

The following formula was used to estimate the total cost of the dispensed drugs during the study period. \( E = A \times B \). 'E' represents the total estimated cost of dispensed drugs, 'A' represents the average cost of each prescription, 'B' represents the total number of prescription issued during the study period.

RESULTS
The PHCC physicians in the Aseer region issued a total of 387727 forms and
prescriptions during the summer. Twenty-five percent (96327 forms) were for the visitors who utilized the PHCCs health services. Eighty-thousand of those forms were evaluated for this study. The remaining forms (17%) were excluded due to the lack of information on the quantity of the dispensed drugs and the duration for which they were to be taken.

The actual cost of dispensed drugs for the visitors was 190533 SR (50,808$). On average, each prescription cost 2.4 SR. The total cost of the dispensed drugs for all clients who attended PHCCs during the study period was estimated as 930545 SR. As a result, 20.5% of the cost of the dispensed drugs was for the visitors who utilized PHCC services during the study period. The costs of the dispensed drugs are summarized according to their pharmacological group in Table 1.

| Pharmacological group | Cost in SR | Cost in $ | % of cost |
|-----------------------|------------|-----------|-----------|
| Antibiotics           | 80307      | 21415     | 42.1      |
| Pain killers & NSAIDs | 40572      | 10819     | 21.3      |
| Drugs for ARI         | 30721      | 8192      | 16.1      |
| Drugs for gastrointestinal diseases | 14731 | 3928 | 7.7 |
| Creams, drops and ointment | 14449 | 3853 | 7.6 |
| Vitamins              | 7084       | 1889      | 3.7       |
| Drugs for hypertension & diabetes | 2150 | 573 | 1.2 |
| Others                | 519        | 138       | 0.3       |
| **Total**             | **190533** | **50807** | **100**   |

In the current study, antibiotics cost accounted for 42% of the total cost, painkillers such as Paracetamol and Non-Steroid Anti-inflammatory Drugs (NSAID) cost 21%, drugs that were used for the management of respiratory and gastrointestinal morbidity represented 16%, and 7.7% of the total drugs cost respectively. Multivitamins, ointments, creams and other less commonly used drugs made up less than 10% of the total cost.

**DISCUSSION**

Management of common health problems and the provision of essential drugs are two important elements of primary health care. Most morbidity reports from PHC settings in Saudi Arabia revealed that 40-60% of consultations were for acute respiratory infections (ARI). It is evident that though most acute respiratory diseases are self-limiting illnesses that do not need antimicrobial therapy, studies have found that most ARI cases were given antibiotics. Our study revealed that 42% of the total cost of the drugs dispensed for summer visitors was for antibiotics. This finding is similar to that reported by Berman who found that antibiotics were the most commonly prescribed drugs and accounted for 50% of the total drug budget. In spite of the lack of evidence of the effectiveness of remedies commonly prescribed by physicians for the relief of coughs and sore throat, it was found that 16% of the total cost of the dispensed medication covered such remedies. To rationalize the prescription for ARI, it is mandatory to set limits to the protocol issued by Khoja et al.

Painkillers such as Paracetamol and NSAIDs accounted for 21% of the total cost of drugs. These drugs are commonly prescribed for the relief of fever, muscular, and skeletal aches. Their overuse is dangerous and could lead to many medical problems such as liver, kidney, and gastric diseases. PHCC physicians and pharmacists should give priority to educating patients on this issue.

Gastrointestinal diseases were the second on the list of health problems among the
summer visitors. However, the drugs prescribed for such problems accounted for 7.7% of the total cost. The reasons for the discrepancy between the high rate of gastrointestinal disorders and low cost of medications prescribed may be that most of gastrointestinal problems do not need antibiotics and can be treated with cheap drugs including oral rehydration solutions and antacids. Generally, the cost of the dispensed drugs for summer visitors represented about 20.5% of the total of drugs dispensed during the study period. Drug costs in this study were based on actual prices. In addition to the fact that 17% of the forms were not evaluated, the absence of other studies for comparison as well as the wide variations in the prices of drugs between government and private sectors suggest that there should be caution in interpreting the results in this study.

In conclusion, this study showed that the cost of the dispensed drugs for summer visitors was 20.5% of the total drug cost. This additional cost should be considered in the planning of the drug budget for Aseer region.

REFERENCES

1. Al-Kahtani MM. Tourism. Principles and Concepts. Applied Study in Aseer Region, Kingdom of Saudi Arabia. 2nd ed. Al-Alm Publisher; 1997. (Arabic version).
2. Al-Kahtani MM, Ibrahim AA. Size of tourism flow and characteristics of summer visitors to Aseer Region in 1997. Analytic study. Abha (KSA): Chamber of Commerce and Industry; Abha: 1997. (Arabic version).
3. Mahfouz AAR, Hamid A. An epidemiologic study of primary care service utilization of summer visitors to Abha, Asir region. J Community Health 1993; 18:121-5.
4. Al-Sharif AI, Al-Khulidi YM, Al-Shahrani AM. Utilization of primary health care during summer. Saudi Medical Journal 2000; 21(4): 376-8.
5. Al-Mazrou Y, Al-Shehri S, Rao M, Khoja TA. Principles and practice of primary health care. 1st ed. Riyadh; Ministry of Health; 1991.
6. Al-Shamari SA, Jalal JA, Olubuyide IO, Bangboye EA. A prospective study of the morbidity pattern of patients seen at university primary care clinic. Ann Saudi Med 1994; 14(1):22-5.
7. Khattab MS, Campbell J, Badawi I. Morbidity pattern in study health problem for patients attending primary care clinics, King Faisal Military Hospital, Khamis Mushayt. Saudi Medical Journal 1997; 18(3): 231-5.
8. Annual Health Report - Kingdom of Saudi Arabia. Riyadh; Ministry of Health: 1998.
9. Al-Faris EA, Al-Awad A. Audit of prescribing patterns in Saudi primary health care: What lesson can be learned? Ann Saudi Med 1999; 19(4): 317-21.
10. Windark A, Tomasik T, Jacobs HM, de Melker RA. Are antibiotics overprescribed in Poland? Management of upper respiratory tract infections in primary health care region of Warszawa, Wola. Family Practice 1996; 13(5): 445-9.
11. Nyquist AC, Gonzales R, Steiner JF, Sande MA. Antibiotic prescribing for children with colds, upper respiratory tract infections and bronchitis. JAMA 1998; 279:875-7.
12. Khoja TA, Al-Mohammed KK, Al-Hawwas M, Al-Qurashi M. National protocol for diagnosis and treatment of acute respiratory infections among children in health centers and small hospitals. 2nd ed. Riyadh; Ministry of Health: 1997.
13. Al-Nooman NN, Al-Khafajei AMB. The misuse of antibiotics in acute respiratory infections in children, a problem-solving learning exercise. Eastern Mediterranean Health Journal 1997; 3(2): 345-56.
14. Mainous AG III, Hueston WJ, Clark JR. Antibiotics and upper respiratory infection. Do some folks think there is a cure for common cold? Fam Pract 1996; 42:357-61.
15. Rosenstein N, Phillips WR, Gerber MA, et al. The common cold: principles of judicious use of antimicrobial agents. Pediatrics 1998; 101(supp1): S181-4.
16. Berman JR, Zaran FK, Rybak MJ. Pharmacy-based antimicrobial monitoring service. American Journal of Hospital Pharmacy 1992; 49:1701-6.
17. Iqbal I, Pervaz S, Biag S. Management of children with acute respiratory infections (ARI) by general practitioners in Multan: An observational study. J Pak Med Assoc 1997; 47(24): 24-8.