



# Pharmaco Logical

The Newsletter of the Rational Drug Use Directorate  
Ministry of Health, Sultanate of Oman

Volume 1 Number 1, February 2005

**W**elcome to the first edition of the newsletter from the Directorate of Rational Drug Use (DRDU), Ministry of Health. This first edition is a special edition prepared for the 30<sup>th</sup> session of the 58<sup>th</sup> Conference of the Gulf Cooperation Council (GCC) Health Ministers' Council. This edition highlights research that has been conducted in the Sultanate in the past few years and illustrates some publications produced by the directorate. This work has been a collaborative effort by DRDU and some physicians and pharmacists in the regions. It is hoped to produce a regular newsletter featuring interesting articles, features and advice for all health workers in Oman.

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##### **Forthcoming Events & Information**



Some of the physicians, organisers and facilitators who attended the "Promoting Rational Drug Use; A Training of Trainers Course" in Muscat in 2002. The course was a collaborative effort between MoH, DRDU and WHO



#### **Contributors to this edition**

|                                   |  |
|-----------------------------------|--|
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## Introduction

The Directorate of Rational Drug Use was inaugurated on 15 April 2000 by Ministerial Decree No. 31/2000. The Directorate reports directly to the Office of HE the Undersecretary for Health Affairs.

The main objective of the Directorate is to maintain public health by ensuring the best use of pharmaceuticals for the population. All patients should expect to receive the right drug or treatment in the right dose for the correct period of time, with the appropriate advice and follow up and all with due regard to safety, efficacy, suitability and cost.

### The DRDU has the following functions

1. Research and assessment – to gather qualitative and quantitative measures of the pharmaceutical situation in Oman today.
2. Training – to sensitise health workers at all levels to rational drug use principles and to raise their awareness of the impact of irrational and wasteful practices. Similarly, and in parallel, to raise public awareness on the rational use of drugs.
3. Monitoring and supervision – follow up on the impact of the various interventions taken to reduce irrational drug use practices.

### Strategies to Achieve Goals

- Research
  - Collection of baseline data using WHO core prescribing, dispensing and patient care indicators

- Clinical analysis of prescriptions from the field
- Induction workshops for
  - new general practitioners to Oman
  - Medical interns
  - Pharmacists & Assistant pharmacists
  - Nurses
- Written and oral exams for new GPs
- Teaching part of therapeutics course at the Medical College of Sultan Qaboos University
- Patient orientated research
  - Household & patient exit surveys
  - Public Education Campaigns in Rational Drug Use using mass media techniques
- Targeted Publications
  - The Oman National Formulary (ONF)
  - Handbook of Pharmacotherapy Guideline Charts for Common Illnesses in Primary Health Care

### Some Specific Problems Identified

- A large number of expatriate health employees with a diversity of backgrounds, bringing a variety of experiences and beliefs into the country
- Free medication in the public sector leading to high demand and some abuses
- Lack of control of prescribing and dispensing in the private sector.
- Lack of public education programmes in rational use of drug
- A shortage of human resources

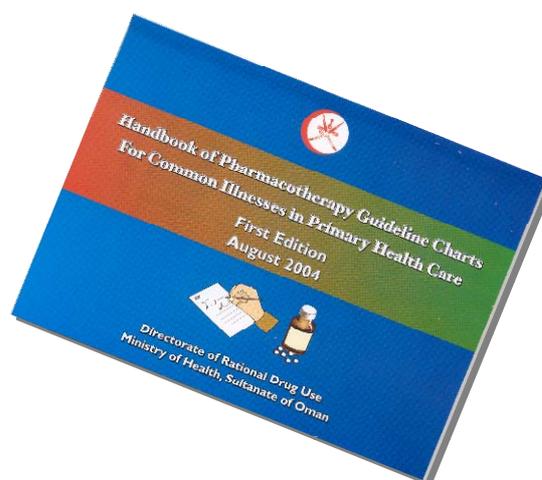
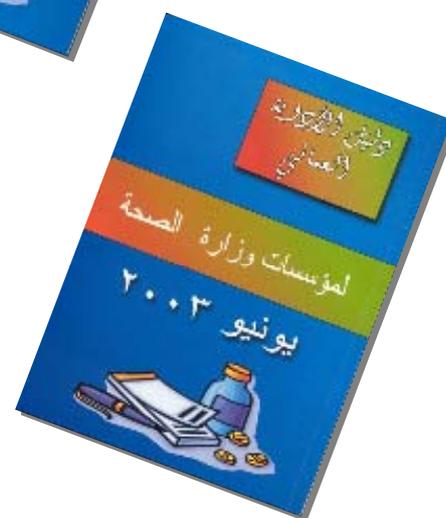
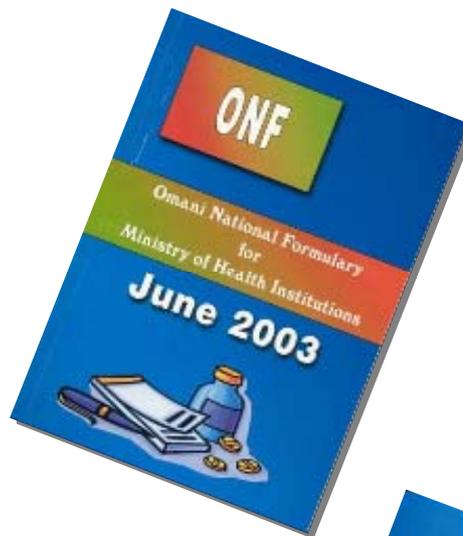
## Major training workshops

In collaboration with WHO

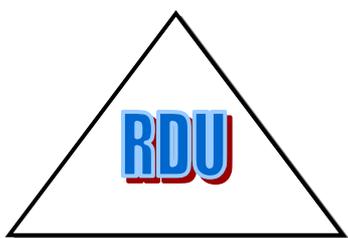
In October 2002 a 10 day workshop was arranged. This was a training of trainers workshop on “Promoting Rational Drug Use” and was attended by around 30 Physicians from all health regions of Oman and from the surrounding GCC countries. This successful course has now spun off into the regions where initiatives and interventions have been planned in liaison with the DRDU.

Recently (January 2005), a 3 day training of trainers course on “Promoting Rational Drug Use in the Community” was held in Muscat. The course participants were drawn from all 10 health regions of the Sultanate. The trainees were made up of 10 physicians, 10 pharmacists and 10 health educators.

**Publications:**



**Prescriber**



**Patient**

**Pharmacist**

**Core philosophy**

The Directorate of Rational Drug Use is a firm believer in the partnership model of pharmaceutical care as adequately represented by the logo illustrated above. The partnership is mainly between prescribers, pharmacists and patients with the DRDU at the core and ever ready to facilitate and promote activities

**Research**

**Rejection of Prescription Medicines at Out Patient Departments<sup>1</sup>**

Brian C Gunn<sup>2</sup>, Abdul-Rasoul Waysse<sup>2</sup>, Batool Jaffer Suleiman<sup>3</sup>

**Introduction & Background:** This research stems from observations from clinical prescription checking that, on occasions, prescriptions were marked “**patient refused**” or “**patient rejected**”. As the drugs refused were usually associated with serious and often chronic conditions it was decided to investigate further the reasons for this refusal. It was also hoped to establish the extent of this phenomenon throughout the Sultanate.

**Methods:** Assistant pharmacists working in the field were selected as research assistants for this study. They were asked to interview any patient who refused or rejected medicine and to gather reasons where appropriate. They were not asked to lead the patients towards any particular answer. To aid in this task a form was designed which contained 17 possible reasons for refusal or rejection of medicine. One reason was a ‘catch all’ to cover almost every other possibility.

Over a 3 month period the information was collected and returned to the directorate by mail or fax. The results were collated and charted as shown below.

**Results & Discussion :**

<sup>1</sup> Refer to DRDU for a full account of this study – to be published

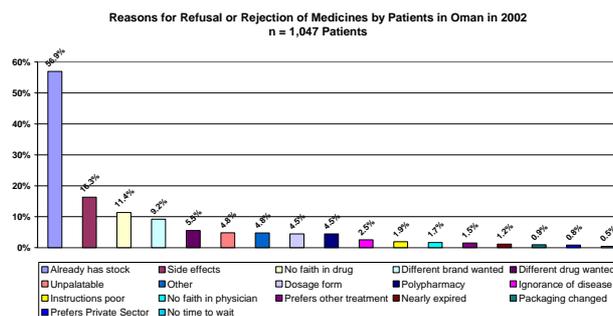
<sup>2</sup> DRDU Team

<sup>3</sup> Director

|                              |       |
|------------------------------|-------|
| <b>Total Forms</b>           | 1,047 |
| <b>No of drugs refused</b>   | 1,303 |
| <b>No of drugs dispensed</b> | 4,178 |
| <b>No of reasons given</b>   | 1,680 |
| <b>Average no of reasons</b> | 1.3   |

In the current study one third of medicine prescribed was refused or rejected.

The reasons for rejection were totalled and then charted. The major reason for rejection (57%) was that patients had a stock of the same or similar drugs at home. This was followed by fear, or previous experience, of side effects. 13% of drugs were rejected by patients having no faith in the prescribed drug. Next followed a patient’s desire for a particular brand or for a particular drug (10% and 6% respectively). Reasons such as unpalatability or a different dosage form or polypharmacy accounted for some of the other significant reasons. The number of drugs rejected for the remaining reasons was fairly small (2% or less).

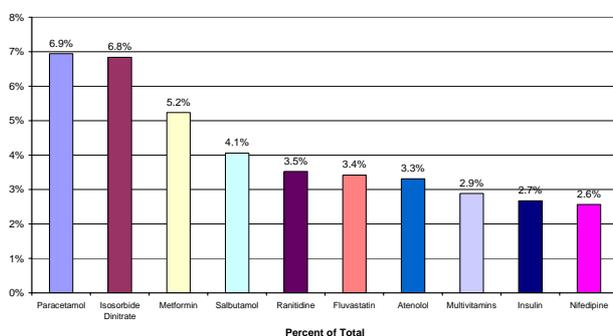


Some of the undocumented reasons given for rejection included:- “*dose too big*”, and “*doctor prescribed 60 days treatment but I only want to take 30 days treatment and come back*”

The current sample was studied over a 3 month period and the results are very significant. Once the OPD attendance figures became available in 2003 the rejection rate was calculated for each of the facilities studied based on an average 3

monthly attendance. The results varied considerably from 0.003% to a high of 2% (average of 0.169%). If extrapolated over the country the result would reveal a considerable wastage of resources and time. The nature of the rejected medicines is also highly significant. The top 10 rejected medicines and the therapeutic class of the drugs involved were analysed. Many are for chronic or serious conditions such as hypertension and diabetes.

Top 10 Drugs Rejected Voluntarily by Patients. N = 111 Total Drugs



**Conclusions:** The results could be due to a lack of patient health-worker communication; patients' ignorance of the seriousness of their disease; patient "drug shopping" or faulty distribution of some medicines. Patient education is vital to improve concordance in this area. It should be borne in mind that these results reflect only rejection of medicines at the pharmacy counter. There is no way of knowing how many drugs are discarded or unused once patients have left the facility. Perhaps a medicines D.U.M.P.<sup>4</sup> campaign should be tried as an experiment (*see future events on last page*).

#### Key Points:

1. Many patients appear to be given medication that they do not really need or may not want. There may be a number of social and or psychological reasons why this is the case.
2. Improved communication between health workers and patients should help to improve concordance and minimise waste.
3. In the present study only drugs which were rejected at the pharmacy counter were considered and this is likely to be only the tip of the iceberg.

<sup>4</sup> Disposal of Unwanted Medicines and Pills

**An Intervention Study Using WHO Core**

**Prescribing Indicators in Seeb Wilayat**

*Fatima Al-Ajmi<sup>5</sup>, Ahlam Ali<sup>6</sup>*

**Back Ground:** Physician experience, knowledge and preference for certain drugs such as antibiotics results in variation of prescribing patterns between health centres. In addition, the management of drugs by each health centre is variable resulting in differences in cost exhibited by each health centre.

**Objectives:**

- a) To improve drug management system by physician and pharmacy staff
- b) To identify physician prescribing pattern
- c) To identify cost of expired drug
- d) To evaluate the result annually

**Methodology:** Data of 2003 was collected retrospectively

- 1. a systematic random sample of 600 OPD visits in general clinic
- 2. total annual Issued Prescription reports generated from the computer system
- 3. total condemnation vouchers (cost of expired drugs)

These data were compared to 2004 data

**Results & Discussion:**

**Table 1**

| Indicator                               | 2003     | 2004    |
|---|----------|---------|
| <b>Drug management indicators</b>       |          |         |
| Issued prescriptions against OPD visits | 71 %     | 70%     |
| Cost per prescription                   | 0.339 OR | 0.32 OR |
| Expired drug cost                       | 2053 OR  | 693 OR  |
| <b>Physician prescribing pattern</b>    |          |         |

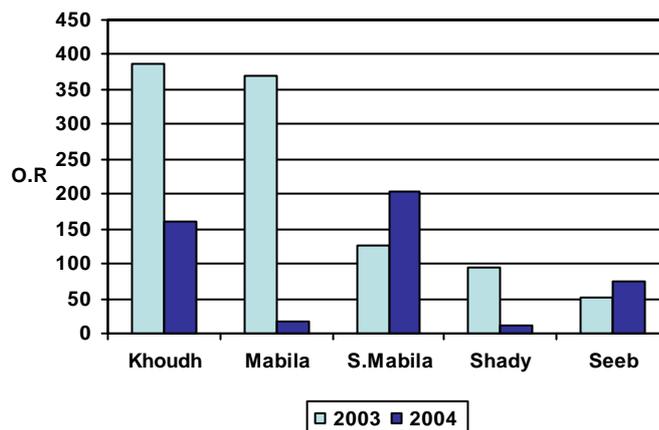
<sup>5</sup> Physician & Director of Health Services Seeb Wilayat, Muscat Governorate

<sup>6</sup> Regional Pharmacist, Seeb Wilayat

|                                  |                |         |
|----------------------------------|----------------|---------|
| Number of drugs per prescription | 2              | 2       |
| Antibiotic                       | 14 %-27 %      | 14%-21% |
| Antihistamine                    | Average of 46% | 37%-62% |
| NSAIDs                           | 13%-17%        | 2%-18%  |

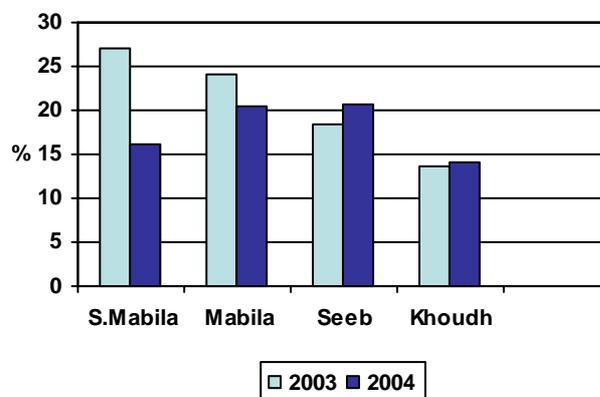
**Graph 1**

**Expired Drugs value in Omani Rials**



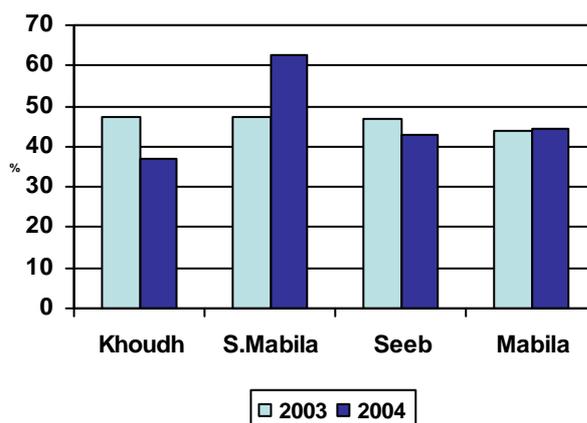
**Graph 2**

**Antibiotic prescribing in general clinic**



**Graph 3**

**Anti-histamin prescribing pattern in General clinic**



**Conclusions:**

Expired drugs cost

The cost of wasted drugs due to expiry was reduced by 66%. This was achieved through circulation of short expired drug among health centres, however, South Maabela HC still needs to work on reducing the cost.

Physician prescribing pattern

- a) Antibiotics prescribing pattern improved from 21% to 19%. This reduction was highest in South Maabela and Maabela in 2004. This was through CME on rational use of antibiotics. In South Maabela, periodic counterchecking of physician prescribing pattern of antibiotics was monitored by the MOIC.
- b) Antihistamine prescribing increased in South Maabela H/C 47% to 62% This maybe due to physicians changing from antibiotic to antihistamine prescribing.
- c) NSAIDs prescribing improved dramatically in Khoud HC from 14% to 2% by emphasizing the use of paracetamol instead of NSAIDs in certain arthritis cases.

**Conclusion:** a combination of managerial and educational interventions has proved successful in improving overall cost reduction and reduced prescribing of antibiotics and some NSAIDs. Data were presented to the Wilayat Drug & Therapeutic committee which meets twice annually to follow up corrective plans.

- Indicators were incorporated in the HC quality objectives

It is intended to target the following in 2005:

- Follow-up of Antibiotic/antihistamine consumption
- Follow up of expired drugs in South Maabela HC
- Focus on Al-Khoud HC in reducing NSAID prescribing

*Original copy of the study can be requested from Directorate of Health services in Seeb @ +(968) 99260372*

**Key Point:**

*This study demonstrates what is likely to happen when a specific drug group is targeted e.g. antibiotics. Although a reduction in antibiotic prescribing was achieved there was a compensatory increase in antihistamine prescribing in at least two health centres. This phenomenon has been observed in other studies and researchers should be aware of this 'rebound' effect.*

## Rationalizing Antibiotic Use in Primary Health Care: Muscat Health Centre's Experience.

Hassan Al-Lawaty, A. J<sup>7</sup>

**Background:** Irrational use of antibiotics not only costs avoidably unnecessary money to the health care system, it also affects patient care adversely and adds a very dangerous burden to the already existing problem of antibiotics resistance known worldwide. This problem has been recognized in Muscat Health Center among other health centers and together with the directorate of rational use of drugs in the Ministry of Health a pilot study for rationalizing the use of antibiotics in primary health care was planned and executed.

**Aims:** The aim was to study the effects of evidence-based guidelines on the use of antibiotics in PHC combined with supervisory follow up and feedback on the trends of use of antibiotics.

**Methodology:** The study was conducted over six months and included three types of antibiotics in two dosage forms. The doctors were asked to read some chosen literature about the evidence-based use of antibiotics in the commonest conditions seen in primary care practice. The same doctors were informed periodically about the nonconformities of their prescriptions with the evidence-based material.

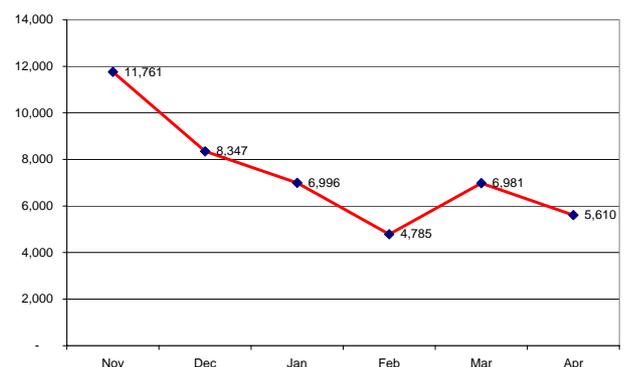
**Results:** Antibiotic usage rates were monitored in the health center during the period of the study (with intervention) as well as for six months thereafter (without intervention). The results included a total reduction of usage rates of

antibiotics by 53% at the end of the study period compared with baseline rates. The follow-up period showed persistence of the trend of rate of usage of the antibiotics found during the study period.

**Conclusion:** The study concluded that an evidence-based approach in the reorientation of doctors in the primary care practice about the rational use of antibiotics combined with supervisory feedback is a successful method in cutting down the inappropriately used antibiotics.

**Discussion:** This study used a combination of two interventions, namely, the scientific intervention of evidence-based guidelines on usage of antibiotics and the administrative intervention of periodic and regular monitoring and feedback to the doctors. We believe that this combination is inseparable and necessary. A crude indicator was also developed by this study to monitor the antibiotics usage. This indicator is the ratio of antibiotics to total number of patients served by the health center in a period of time. It is the recommendation of this study to conduct further studies on a wider scale to highlight the effectiveness of this approach towards rationalizing the usage of antibiotics in primary health care services.

Monitoring Antibiotic Consumption During the Study



<sup>7</sup> MOIC Muscat Health Centre

**Rationalizing the use of NSAIDs in PHC:**

**Wilayat Muttrah Experience**

*Huda A. K Al-Lawaty*

**Background:** Non-steroidal anti-inflammatory drugs (NSAIDs) have been extensively used in primary health care to treat a wide group of disorders characterized by pain. This is exacerbated in primary health care as many cases take longer to diagnose and it is difficult to tailor specific therapies. Thus symptomatic therapies lead occasionally to irrational use of NSAIDs. Together with the Directorate of Rational Use of Drugs in the Ministry of Health, this issue was tackled with a study in Wilayat Muttrah.

**Aims:** The main aim of the study was to rationalize the use of certain drugs in primary health care centers

**Methodology:** The study started with the utilization of Diclofenac sodium (**Olfen®**) Injections. High consumption of Olfen® Injections was very evident due to either the doctor’s habit in prescribing the drug or patients preference for Olfen® injection as painkiller. This triggered Wilayat Muttrah Health Services to conduct a study comprising of different phases from November 2003 to March 2004. First phase was involved in identifying the Olfen® prescription per each health center and per each doctor. Phase two concentrated on staff awareness and education about Olfen® injection consumption. Phase three involved supervision, monitoring and auditing of Olfen® consumption.

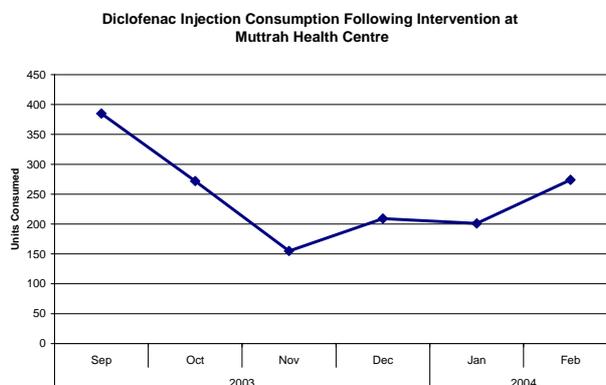
**Results:** The outcome of the process led to a reduction in Olfen® consumption from September 2003 to February 2004 by 28%.

The following table shows total reduction in consumption of Olfen® injection in four health centers in Wilayat Muttrah from September 2003 to February 2004.

| M./HC          | Sep | Oct | Nov | Dec | Jan | Feb | Reduction  |
|----------------|-----|-----|-----|-----|-----|-----|------------|
| <b>Ruwi</b>    | 80  | 41  | 23  | 52  | 28  | 38  | 52%        |
| <b>Wattaya</b> | 68  | 43  | 27  | 31  | 33  | 38  | 44%        |
| <b>Muttrah</b> | 157 | 169 | 72  | 63  | 87  | 126 | 19%        |
| <b>WK</b>      | 84  | 21  | 34  | 71  | 59  | 78  | 7%         |
| <b>Total</b>   | 389 | 274 | 156 | 217 | 207 | 280 | <b>28%</b> |

**Conclusion:** Rationalizing drug use is feasible, cost-effective, and safe for patients. It requires continuous supervision, awareness, and monitoring. Therefore it is not a one off process and should become embedded in the daily work.

**Discussion:** This study used a similar approach to that conducted in Muscat Health Center for the use of antibiotics. Not surprisingly, a similar pattern of outcomes resulted though the drugs are different. This is a good indication that this methodology and approach of scientific re-orientation combined with supervisory follow up and feedback to the prescriber is successful in changing the behavior of the doctors in primary health care.



## KAP<sup>8</sup> Survey on the Community Concepts of Drug Use at a Local Health Centre in South Sharqiyah Region-Sultanate of Oman.

Musallam Said Al-Araimi<sup>9</sup>

**Objective :** To assess the general public's knowledge , attitudes and practice on drug use.

**Method :** Questionnaire. N = 95 patients

**Results :** 9% of the candidates were females among which 84% were between 20-35 years of age with 84% of them having a high school education level.

83% of the surveyed population received some form of advice or an explanation of the drug prescribed either by the prescriber or the dispenser while 11.5% did not.

82% visited the health centre between 2-3 times in the month of the survey. 71% of the sample questioned were satisfied with the drugs prescribed in the previous visits .

In a question about the storage of medications at home 62% were storing the drugs in a fridge while only 9.5% in a box and 22% in a drawer.

In a question about how frequent the patient uses a non-prescribed drugs on many occasions.

65% of the concerned sample was not demanding for specific medications.

**Discussion:** The local health centre where the survey was conducted is located in the South Sharqiyah region in the city of Sur where the total population is more than 66,000

Whereby the health services are provided through different health facilities including a referral hospital with secondary care facilities.

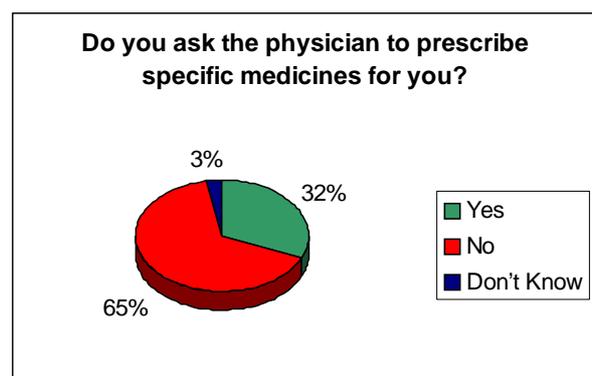
The health centre manpower include 1 doctor / 4 nurses / 1 medical orderly / 1 assistant pharmacist and 1 lab technician.

The data show that there are still a few misuse concepts which need to be tackled with a comprehensive approach of health education in a well organised, multidisciplinary team education campaign.

The community generally showed the attitude of accepting the counselling that comes from the concerned personnel and the willingness to comply as long as they feel it is for their health benefits .

**Conclusion:** The community needs information and education on medicines and appropriate treatment seeking strategies because of the important role of pharmaceuticals in modern health care. A major health education campaign is needed to promote the understandings of the community members in the rational use of drugs and its potential public health and economic contribution to society .

### Example Chart :



<sup>8</sup> KAP = Knowledge, attitudes and practices

<sup>9</sup> Physician, Dept of Child Health, Sur Hospital

## Assessing Quality of Patient Care In Health Centres

Syed Asrar Ali<sup>10</sup>, Batool Jaffer Suleiman<sup>11</sup>

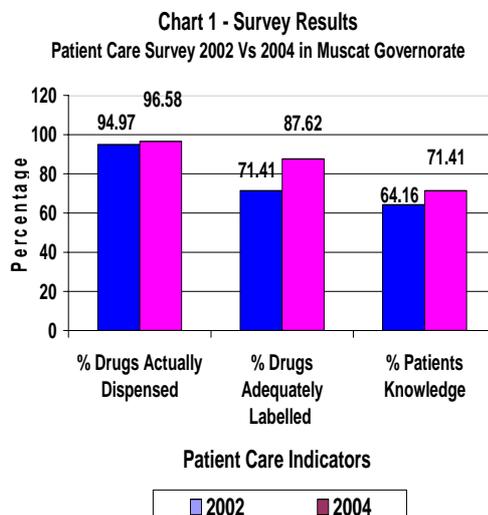
**Background:** Prior to 2000 there was evidence to suggest that there was inappropriate use of drugs and several irrationalities in patient care in Oman. Two patient care surveys (2002 and 2004) were conducted to assess and try to improve the quality of primary care initially in Muscat Governorate.

**Methodology:** A prospective survey based on WHO methodology was conducted. Four chosen patient care indicators were assessed. These were, *number of drugs per prescription, number of drugs actually dispensed, number of generic drugs written, standard of drug labelling and patient's knowledge about their prescribed drugs.* Data were collected by patients' exit interviews. Thirty OPD patients were interviewed per facility and their prescriptions were analysed.

**Results:** Charts 1 and 2 show a summary of the results. In the 2002 survey two labelling parameters were assessed. These were, *drug dosage instructions and duration of treatment.* In 2004 the two parameters showed improvement. No other labelling parameters have been implemented yet. Overall drug labelling was inadequate and the use of generic names was rare.

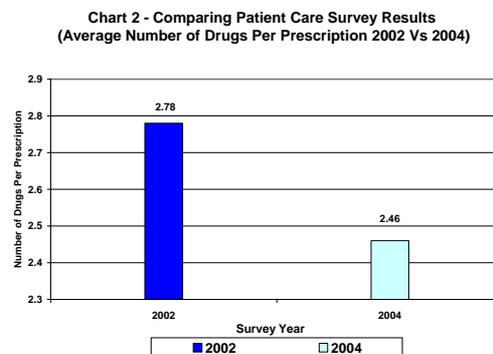
**Discussion:** Most results were encouraging. Assessment of patient care indicators revealed improvement. A reduction in the number of drugs per prescription indicates a reduction in *polypharmacy.* Drug availability was generally

good. Drug labelling can be improved with computerisation and proper staff training. Patients' knowledge about their prescribed drugs can be improved by public education on rational use of drugs.



### Conclusions:

The 2004 survey revealed improvement in all four indicators but they still need periodic monitoring and control. There should be



vigorous commitment to quality improvement which will prevent unnecessary and possibly harmful care. This will also minimise waste and help to promote overall rational use.

<sup>10</sup> Senior Physician DRDU team

<sup>11</sup> Director DRDU

**Forthcoming events & information**

Mark your calendar or diary with the date **15<sup>th</sup> April 2005**. This is the anniversary of the formation of the Directorate of Rational Drug Use.

**Ask About Your Medicines**

As part of the celebrations it is intended to have an “**Ask about your medicines**” campaign.

The campaign will be run in most of the major shopping malls or stores in Muscat. The general public will be encouraged to seek out impartial information about various medications used for common conditions in Oman.

**D.U.M.P.**

Another planned activity will be to run a medicines disposal or D.U.M.P. campaign

**Endnote:**

The title of this newsletter was derived by combining the elements of Pharmacotherapy and Logical meaning Rational to make **Pharmaco Logical**. It seems to be a very fitting title considering the content of this newsletter

*For more information on any article in this publication or for the submission of future articles please contact:*

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