Drug prescribing indicators in primary health care centers in Bahrain

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ABSTRACT

Objective: To estimate drug use indicators in primary health care centers in the Ministry of Health, Bahrain.

Methods: Four out of 20 primary health care centers in Bahrain were selected and prescriptions of one day (July 30, 2003), were collected, reviewed and analyzed.

Results: The study showed that the average number of drugs per encounter was 2.6, while the percentage of prescriptions containing injections were 8.3%, and antibiotics were 26.2%. The percentage of drugs prescribed by generic name was 14.3%, and those from the National Drug List were 99.8%.

Conclusion: Parameters, such as average number of drugs prescribed, are in line with many countries. However, injection prescribing was higher than European countries, but low in comparison with many countries in Asia and Africa. Antibiotic prescribing was close to European countries, and lower when compared to some Asian and African countries. We need an intervention program to promote the use of generic names, as it is quite low.

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Prescribing continues to grow at approximately 9% a year, and two-thirds of all general practice consultations generate a prescription. Previous research highlights the importance of critical approaches to prescribing as a tool to define and measure appropriateness of prescribing, it is important to note that prescribing indicators are not a measure of poor performance; rather they identify problems that may require investigations by other methods, usually audit.[1] Reguera and Gomez[2] concluded that drug prescribing indicators are useful tools to assess the degree, which primary care drug therapy guidelines are followed by measuring the percentage of prescriptions written for active ingredients out of the total number of prescriptions; they added that the degree, which the District Drug Therapy Guide is followed is related positively to quality of prescribing. Prescribing indicators were used to identify prescribing that was potentially not in line with national and regional prescribing guideline recommendations; this means that prescribing indicators based solely on pharmacy prescription data can be a useful tool to evaluate drug prescribing.[3] Davis et al[4] stated that the principle influence on prescribing task is diagnosis followed by practitioner identity, while patient, practitioner and practice have little systematic influence. There is growing importance of a drug consumption automated database in assessing drug utilization. It reduces the need for time, money, and people to perform valid scientific investigations in pharmacoepidemiology, as well as in other areas of health research.[5] Our aim was to estimate the drug use indicators in primary health care centers at the Ministry of Health in Bahrain.

Methods. Four primary health care centers were randomly selected from a total of 20 primary health care centers in Bahrain (the selected health

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centres were Jidhafs, Shaikh Sabah, East Riffa and Sitra). All prescriptions issued from these 4 health centers by family physicians and general practitioners on the assigned day (July 30, 2003) were collected. Antenatal and dental prescriptions were excluded, as these are considered specialized services, and their prescriptions are almost standard in the majority. The collected prescriptions were analyzed for the prescribing indicators as per WHO guidelines for drug use investigation using a similar sheet.[6] The collected prescriptions were analyzed using MS Excel program using the format recommended by WHO guidelines for the following drug use indicators: average number of drugs per encounter, percentage of drugs written in generic name, percentage of prescriptions containing injections and antibiotics and the percentage of drugs prescribed from the National Drug list (approved drug list for primary health care at the Ministry of Health in Bahrain, which contains 342 items and all of these in generic names).[7] The Health Sector in Bahrain is provided mainly by Government through its 2 main hospitals of 1,169 beds, and a network of 20 primary health care centers that provide comprehensive curative and preventive care including maternal and child health care with its components of ante-natal, postnatal, family planning, and child welfare developmental assessments. The private sector also has place through (310) clinics and 6 hospitals of 213 beds. The national drug policy in Bahrain is controlled and monitored by pharmacy and drug control Directorate in the Ministry of Health. Drugs are provided free of charge to patients in all government facilities.

Results. Seven hundred and twenty prescriptions were collected containing 1,890 drugs with an average of 2.6 drugs per encounter. The number of prescriptions containing injections was 60 representing 8.3% of total prescriptions. The prescriptions containing antibiotic were 189 (26.2%). The number of generic drugs written in all prescriptions was 271 (14.3%) only, and 99.8% of the prescribed drugs were from the approved National Drug List for Primary Health Care. Comparison of results for the 4 health centers serving the same population (30,000) with similar facilities and services, showed that 2 health centers (Jidhafs and East Riffa) had lower percentages (5.7%) of injections, as the overall average was 8.3%. Shaikh Sabah Health Center had the lowest percentage of antibiotics (13.8%) in comparison to overall average (26.2%). Generic prescribing was also highest in Shaikh Sabah Health Center. There was no significant difference among health centers regarding prescribing from National Drug List **(Table 1)**.

Discussion. The average number of drugs per encounter (2.6) in this study is similar to those from countries such as Saudi Arabia (1.44), Tanzania (2.2), Mozambique (2.4) and Indonesia (3.3). This study showed higher figures of prescriptions containing injections (8.3%) than the European country Andorra (3%), but low figures when compared to higher percentages in Yemen (46%), Cameron (51%), and Swaziland (54%). This could be due to the change in attitude of primary care physicians from prescribing injections in higher numbers in the past towards prescribing oral drugs, where appropriate. The percentage of prescriptions with antibiotics (systemic or local) was 26.2%, which is close to Andorra (27%) and low compared to Uganda (53%), Swaziland (54%), Saudi Arabia (56.2%), Jordan (60.9%) and Sudan (63%). This result reflects a positive attitude in limiting the use of antibiotics. An important factor that may play a role in this respect is that family physicians in primary health centers are in the majority, reaching up to 75% of all physicians, these family physicians

Table 1 - Drug use indicators total and comparison between health centers.

Description	Jidhafs HC n (%)	Shaikh Sabah HC n (%)	East Riffa HC n (%)	Sitra HC n (%)	Total n (%)
Total n of prescriptions	280 (38.9)	125 (17.4)	123 (17)	192 (26.7)	720 (100)
Total n of drugs	742 (39.3)	384 (20.3)	275 (14.5)	489 (25.9)	1890 (100)
Drugs written in generic	100 (13.5)	69 (17.9)	34 (12.4)	68 (13.9)	271 (14.3)
Prescriptions containing antibiotics	93 (33.2)	36 (28.8)	17 (13.8)	43 (22.4)	189 (26.2)
Prescriptions containing injections	16 (5.7)	18 (14.4)	7 (5.7)	19 (9.9)	60 (8.3)
Prescribed drugs from NDL	741 (99.9)	384 (100)	275 (100)	488 (99.7)	1888 (99.8)
Average drugs per encounter	2.7	3.1	2.2	2.5	2.6

NDL - national drug list, HC - health centers

are trained through structured training programs in the hospital and primary care for 4 years. The percentage of drugs prescribed by generic name was only 14.3%, which is higher than Ireland (4.6%) but low in relation to results in countries such as, Tanzania (82%), Uganda (86%) and Zimbabwe (94%). Therefore, this issue requires to be addressed through continuing medical education programs and a drug policy should be developed to enforce generic prescribing. The percentage of prescribed drugs from the National Drug list was 99.8%, which is high compared to Tanzania (83.9%), Jordan (93%), and Ghana (93.2%).[8-14]

The compared results between the 4 health centers was not specific to anyone of them, and could not be related to one specific factor, further research will be needed to study these differences. The results of this study indicate that the overall prescribing rate by primary care physicians is in line with many countries, prescribing of injections was higher than European countries, but lower than many countries in Asia and Africa. Antibiotics' prescribing was close to European counties, and lower when compared to countries in Asia and Africa. Adherence to the National Drug List was very high, and there is a need for intervention to improve prescribing with generic names and development of drug policy. Further studies of retrospective format that could include all primary care health centers at different intervals during the year will provide comprehensive data on national drug use indicators in primary care in Bahrain. The need to evaluate other indicators of health care is also important.

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