

Who prescribe better: doctors or dispensers?

Lynette Palmer & Durodami Lisk

Doctors in Sierra Leone were more rational than dispensers in that they prescribed antibiotics in a smaller percentage of encounters with patients and averaged fewer drugs per prescription. They were less rational than dispensers, however, in that they prescribed generics less often and made less use of the country's essential drugs list.

The rational use of drugs is especially important in developing countries with very limited health budgets. In Sierra Leone, where doctors are scarce, considerable reliance is placed on dispensers, community health officers and nurses for the prescribing of drugs and many other vital aspects of health care. Significant numbers of patients in the country's urbanized Western Area are treated by non-medical health workers, particularly dispensers who have a background in nursing and have undergone training for three years in basic pharmacology and drug use.

A study was made on prescribing practices at 20 health facilities, including health centres, hospital outpatient departments and private clinics, in the Western Area of Sierra Leone. Ten of the facilities were run by doctors and ten by dispensers with varying degrees of experience. Five of the doctors were physician specialists in general practice and five were medical

officers. The dispensers had all been practising for at least ten years. The prescribers were not advised of the specific objectives of the study but were assured of confidentiality. Data were collected simultaneously from all the facilities over a period of eight weeks in accordance with standard procedures (1).

Doctors vs. dispensers

Significant differences were found between doctors and dispensers regarding the number of drugs per prescription (2.7 and 3.5 respectively), the percentage of encounters resulting in the prescription of antibiotics (40% and 54%), the percentage of drugs prescribed as generics (45% and 59%), and the percentage of drugs prescribed which were on the essential drugs list (25% and 38%).

The percentages of encounters with patients which resulted in injections being given were 24% for doctors and 31% for dispensers and, although the difference was not statistically significant, seven of the facilities run by doctors had values below the arbitrary standard of 30% (1), whereas only four of those operated by dispensers were in this category.

The authors are with the College of Medicine and Allied Health Sciences, University of Sierra Leone. Correspondence should be addressed to Dr Lisk at: The Medical Clinic, P.O. Box 1200, Freetown, Sierra Leone. Tel: (232) 22 224400. Fax: (232) 22 222161; e-mail: drlisk@srl.healthnet.org

Specialist vs. non-specialist doctors

Among the doctors, specialists prescribed fewer drugs than non-specialists, the figures being 2.4 and 3.0 per prescription respectively; the corresponding values were 33% and 47% for the percentages of encounters in which antibiotics were prescribed, 10% and 37% for the percentages of encounters in which injectables were prescribed, and 22% and 29% for drugs prescribed that were on the essential drugs list. These results were apparently a result of the differences in training and experience between the specialists and non-specialists.

In general

Children under 5 years of age had the highest probability of receiving antibiotics from doctors and dispensers taken together: 78% of encounters involving this age group resulted in the prescription of an antibiotic. The frequency of antibiotic prescribing decreased with the ages of the patients, the values for people in the age groups 5–14, 15–45 and over 45 years being 61%, 45% and 24% respectively. A similar but less pronounced trend was observed for injections, values of 37%, 35% 27% and 13% being recorded for the successive age groups.

The mean number of drugs per prescription for doctors and dispensers taken together was 3.1, which is within the range reported for 12 other developing countries (2). However, values above 3 were recorded for only two of these countries, suggesting that Sierra Leone has a comparatively high level of polypharmacy. The fact that the indicator was higher for dispensers than doctors probably reflected a difference in basic prescribing knowledge. In addition, however, it has to be taken

into account that dispensers frequently sell the drugs they prescribe to patients.

The overall use of antibiotics in health facilities was also similar to that in other developing countries (2). The wide range

As the level of training rises, polypharmacy evidently diminishes and fewer antibiotics and injections are prescribed. At the same time, however, fewer generics are prescribed and less use is made of the essential drugs list.

of values in Sierra Leone may be explained by the different kinds of facilities which offer prescribing services. For instance, a high level of antibiotic use occurred in a facility where most of the patients were children who frequently presented with infections.

Injectables were used in percentages of encounters ranging from 7% to 67% in different facilities, and the mean of 27% compared favourably with values reported from other countries. The absence of a significant difference between doctors and dispensers in this matter was possibly attributable to the influence of preferences expressed by patients, which may also have had a bearing on the wide variation.

Most facilities prescribed over 40% of drugs as generics, but the overall percentage of drugs prescribed which were on the essential drugs list was only 31.5%, a failing probably attributable in large measure to the unavailability of copies of the list.

The lower value for generics prescribed by doctors may reflect influence exerted by

the pharmaceutical industry. Doctors are well informed about proprietary brands through the distribution of free samples and brochures and the organization of seminars by the manufacturers, and so tend to prescribe them rather than generic drugs. Most dispensers, on the other hand, have worked in state facilities where the drugs dispensed and sold are predominantly generics.

The differences in prescribing patterns between doctors and dispensers were similar to those between specialist and non-specialist doctors. As the level of training

The lower value for generics prescribed by doctors may reflect influence exerted by the pharmaceutical industry.

rises, polypharmacy evidently diminishes and fewer antibiotics and injections are

prescribed. At the same time, however, fewer generics are prescribed and less use is made of the essential drugs list.

In the rural parts of Sierra Leone, where the level of training is generally lower than in the urban Western Area, it is unlikely that drug utilization is any better than that described above. However, further surveys are necessary in order to obtain a full understanding of the reasons behind irrational drug use in the country so that soundly based corrective interventions can be made. ■

References

1. *How to investigate drug use in health facilities: selected drug use indicators*. Geneva, World Health Organization, 1993 (unpublished document WHO/DAP/93.1).
2. **Hogerzeil HV et al.** Field tests for rational drug use in twelve developing countries. *Lancet*, 1993, **342**: 1408–1410.