

## DRUG UTILIZATION STUDY IN HEALTH CENTERS AND REGENCY HOSPITALS

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*Daftar obat standard telah disusun oleh suatu team dari Departemen Kesehatan, pada akhir tahun 1974, kemudian daftar tersebut dicantumkan dalam buku Petunjuk Pelaksanaan Instruksi Presiden Republik Indonesia No. 7 tahun 1975 sebagai pedoman pelaksanaan pengadaan obat jadi.*

*Penelitian tentang pengadaan dan penggunaan obat di Puskesmas dan Rumah Sakit, telah diadakan pada tahun 1976-1977, di tiga Kabupaten, untuk mengetahui apakah obat yang tercantum dalam daftar obat standard, sudah sesuai dengan kebutuhan dalam pelayanan pengobatan.*

*Dalam penelitian ini, didapati bahwa jenis-jenis obat dalam daftar obat standard sudah dapat memenuhi kebutuhan therapie minimal di Puskesmas dan Rumah Sakit Kabupaten (tanpa spesialis). Jumlah dari masing-masing jenis obat perlu diperhitungkan kembali.*

*Obat-obat dalam bentuk kemasan anak-anak perlu disediakan, karena sebagian besar penderita terdiri dari anak-anak yang memerlukan dosis khusus. -*

In health care delivery system, individual medical care through government hospitals and health centers, play an important role, as the effects are felt directly by the people as consumers.

Attempts have been made by the Ministry of Health to improve the medical care services in health centers as well as in regency hospitals, by supplying adequate drugs in order to meet the need in the health services. This has been provided by special funds for drug supply through the Presidential Decree (Inpres) (2,3), respectively Rp.50,- and Rp.65,- per capita in 1975/1976 and 1976/1977. In order that the funds are used efficiently, a minimal guide line of the essential drug list was introduced in 1975 (4) as a guide for drug supply in government health centers and regency hospitals. Single drugs were recommended in the list, taking into consideration the cost and effectiveness.

This paper presents an evaluation that has been made on drug utilization following the minimal guide line of the essential drug list, in daily practice in the health centers as well as in the regency hospitals.

### MATERIAL AND METHOD

A list of the essential drugs was reviewed by a team consisting of medical specialists, pediatricians, dermatologists, dentists, pharmacists, epidemiologists, health center doctors and regency hospital doctors. The list was revised to meet certain criteria of the recommended drugs, i.e. safe, inexpensive and effective.

At the present moment medical care in health centers and regency hospitals, are mostly provided by nurses or auxilliary nurses, who have very limited knowledge in making diagnosis and giving treatment. In order to avoid misinterpretation on drug utilization, the nurses were trained, and a manual for "Diagnosis and treatment" was introduced to be used as a guide book (1). The recommended medicines were adjusted with the available drugs in the list

This study was conducted in three regencies, Kuningan and Sukahumi in West Java, and Lematang Ilir Ogan Tengah (LIOT) in South Sumatra. These regencies were selected, because they were not located on the main busy high

ways, so that they could represent most of the regencies in Java and Sumatra. In each regency, the trial was carried out in one regency hospital, one health centre with a medical doctor and another health center without a medical doctor. Regency hospitals, have an average of 40 beds, and medical services are provided by general practitioners.

The health centers selected for the study were at least 15 Km outside the regency capital, without any other health center or dispensary within a distance of 5 Km, so that the community demand on drugs could be measured in the health center.

Six medical interns were recruited and trained to act as field investigators, with the following duties :

1. To train the paramedical staff and supervise the daily activities providing medical care
2. To collect data on drug utilization
3. To collect data on side reactions of drugs.

Information on drug utilization was collected daily from patients cards of out-patient and in-patient departments, using precoded forms.

Out-patients, data was collected throughout the 3 month study period. Every episode of illness was recorded in separate forms in order to identify the required drugs for specific diseases, while in-patients data was collected from those admitted and discharged within the 3 month study period.

Diseases were classified according to the type of diseases mentioned in the manual of "Diagnosis and treatment" (1). Drugs were classified according to their main active substance and therapeutic indication.

## RESULTS

### Disease pattern.

During the study 9374 out-patients and 525 in-patients were recorded from 6 health centers and 3 regency hospitals, among which 30.24% of the cases suffered from respiratory symptoms, 16.23% skin diseases, 15.22% abdominal and digestive tract symptoms and 7.18% febrile symptoms table 1 .

The types of drugs used in hospitals and health centers differed significantly, more types of drugs were used in hospitals and health centers with doctors than in health centers without doctors. The major types of drugs used for treatment were oral "antipyretics and analgesics" in 38.98% of all the cases, and "penicillin-procain injection" in 36.17% of all the cases table 2.

Considering the varieties of drugs provided per episode of illness, it was observed that 45% of the cases in hospital out-patient clinic got 4 or more types of drugs, compared to 29% in health centers with doctors and 19% in health centers without doctors.

It was observed that 32.62% of the cases, taking the most commonly used drugs, were children under 10 years old, who would need dosage adjustment table 3 from the available standard packing for adults.

Out of 9899 patients treated, 15 cases had been observed to have drug side-reactions, among whom 12 patients had parenteral injections. In these 12 patients, 9 cases had procain-penicillin injection.

Table 1 Number of cases treated in Health centers and Regency Hospitals by symptomatic groups

Symptomatic group	Number of cases	Percentage
Respiratory	2,933	30.24
Skin disease	1,607	16.23
Abdominal & digestive tract	1,507	15.22
Febrile	711	7.18
Accidents	605	6.11
Eye disease	458	4.63
Neuro-muscular	449	4.54
Nutritional	443	4.48
Urinary tract	253	2.56
Ear disease	219	2.21
Dental and stomatologic disease	213	2.15
Cardio-vascular	197	1.99
Tumors	29	0.29
Others	215	2.18
<b>TOTAL</b>	<b>9,899</b>	<b>100.01</b>

Table 2 Major types of drugs utilized in Health Centers and Regency Hospitals

D R U G S	CASES TREATED			
	ORAL		PARENTAL	
	No. of Cases	% of Cases *	No. of Cases	% of Cases *
I. ANTIPYRETICS AND ANALGESIC	3,859	38.98	780	7.88
II. ANTIBIOTICS AND SULPHONAMIDES				
1. Penicilin procaïn	—	—	3,580	36.17
2. Chloramphenicol	476	4.80	3	0.03
3. Tetracycline	1,047	10.58	185	1.87
4. Trisulfa	2,600	26.27	—	—
III. VITAMIN				
1. Vit. B complex	1,018	10.28	782	7.90
2. Vitamin C	1,270	12.83	10	0.10
3. Liver extract	—	—	—	—
IV. ANTIHISTAMINS	1,722	17.40	865	8.74
V. ANTACIDS	833	8.41	—	—

\* % of cases = // of cases treated with the specific drug Total number of cases treated.

Table 3 Drug utilization by age groups

ORAL Drugs	AGE GROUPS				TOTAL
	UNDER 10 YEARS		10 YRS AND OVER		
	No. of Cases	% of Cases	No. of Cases	% of Cases	
I. ANTIPYRETICS & ANALGESICS	1,254	32.50	2,605	67.50	3,859
II. ANTIBIOTICS & SULPHONAMIDES					
1. Chloramphenicol	295	61.97	181	38.03	476
2. Tetracyclin	419	40.02	628	59.98	1,047
3. Trisulfa	1,244	47.85	1,356	52.15	2,600
III. ANTIHISTAMINES	625	36.30	1,097	63.70	1,722

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**PERPUSTAKAAN**

Drugs from the Presidential Decree were distributed in packages to the health centers and regency hospitals. Besides the Presidential Decree, the health services have a separate drug supply from Government Health Insurance Policy, and also self purchased.

## DISCUSSION

From this study it is observed that the recommended drug list could meet the therapeutic needs in medical services. Although additional types of drugs have been used for certain treatment; however, the treatment can be substituted by the drugs as recommended in the list of essential drugs.

The amounts of each type of drugs, should be readjusted, especially for analgesics-antipetetics, where antalgin (metamizol) is preferred rather than acetosal, which is known to cause epigastric pain.

Thirty-six percent of patients treated, consisted of children under 10 years of age, and most of them suffered from infectious diseases, therefore it is suggested to meet this purpose to provide analgesics-antipyretics and antibiotics-chemotherapeutics in the adjustable dosage for children, such as liquid, drops or paediatric tablets.

Four or more types of drugs are given to 19-45% out-patient visits, which have increased on the cost for treatment, while most of the patients have limited financial capacity. Therefore more effective use of drugs should be considered.

The costs of drugs, which are used frequently for the treatment of certain prevalent diseases, should be considered to meet the buying capacity of the patients, in order that the patients can get the right dosage and regiment as indicated. Otherwise the reduced dosage and regiment will not be effective, and instead may cause drug resistance.

For example, among 1507 patients with abdominal complains, 50% had diarrhoea. Oral electrolite for rehydration is frequently needed in these cases. The retailed price of the electrolite is Rp.50,- per package for 1 glass of water. One patient will need 10-20 packages which will cost Rp.500,- to Rp.1.000,- excluding examination and other fees.

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