Brit. J. prev. soc. Med. (1969), **23**, 196–202

PATTERNS OF HOSPITALIZATION IN ENGLAND AND ISRAEL

BY

H. S. HALEVI, Ph.D.

Assistant Director-General, State of Israel, Ministry of Health, Jerusalem, Israel

In countries with different standards of living and various levels of socio-economic development there is a tendency towards a steady rise in health expenditure, in absolute figures and as a proportion of the national income and the gross national product or expenditure. Almost invariably hospitalization takes a lion's share of the total health expenditure. These developments direct the attention of medical economists and of health and hospital administrators to the patterns of hospitalization. Research workers try to find in these patterns some thread which will lead to a better understanding of efficiency and proper use of the very expensive hospital beds and facilities. It is generally accepted that each national pattern is an outcome of its history; special circumstances and specific attitudes and international comparisons may therefore be hazardous and dangerous. But there is certainly truth in the statement of a W.H.O. Symposium (1967):

"International comparisons of results, of methods, of means of study, and of the indices, norms and standards used are highly useful, so that all countries can learn from each other".

Much work and effort has been invested in clarifying the problem of need and demand in regard to hospital beds and in reaching an optimal ratio of beds which should satisfy the medical needs and the economic potential of different countries. It is unnecessary to repeat or summarize all the literature on this subject. Several papers are mentioned in the references (Airth and Newell, 1962; Forsyth and Logan, 1960; Glasser, 1967; McNerney, 1962; Peterson, Burgess, Berfenstam, Smedby, Logan, and Pearson, 1967). The common characteristic of most of these publications is that they are based on crude rates of hospitalization, disregarding the diagnosis. This is easily understood because not many countries possess or publish comprehensive diagnostic statistics of hospitalization. The aim of this paper is to contribute to this specific point, by a comparative study of the frequency of hospitalization under selected diagnoses in England and Wales and in Israel.

The Two Countries

Since the introduction of the National Health Service (N.H.S.) in 1948, England and Wales has served as the subject of many interesting, stimulating, sometimes objective, and sometimes subjective, studies by English and foreign authors. With regard to Israel the interested reader may be directed to several publications which give a general picture of the country and its health services (Grushka, 1968; Halevi, 1964a).

In Tables I and II some general data on the demography, health services, and hospitals in the two countries are presented.

No figures are available for the occupancy of beds in the United Kingdom, but, according to information from different sources, it seems that it can be estimated at approximately 80%.

In Israel there is still a certain difference in the use of medical facilities and in vital statistics between the Jewish and non-Jewish parts of the population. The non-Jews, who still live within their traditional framework, consult doctors and hospitals less. In 1962 there were 86·9 hospital discharges from general beds per 1000 non-Jews as against 123·7 discharges for Jews (Halevi, 1964b). The hospitaliza-

TABLE I

SELECTED DEMOGRAPHIC AND HEALTH DATA, UNITED KINGDOM AND ISRAEL, 1961

	U.K.	Israel
Population (thousands)	52,964	2,185
Per capita national income (U.S. $)	1,172*	1,042†
Live birth rate	17·9	25·4
Infant mortality rate	22·8	28·8‡
% of deaths at age 50 and over	88·9	71·0
Life expectancy		
Males	68·0§§	70·5
Females	73·9§§	73·6
Physicians per 10,000 population	11·0	25·7
Nurses and midwives per 10,000 population	21·3	24·3
Total current health expenditure as % of G.N.P.	4·0	5·9
Total current health expenditure as % of national income	4·9	7·4

*Exchange rate used for conversion into U.S. $: 0·3562
† ,, ,, ,, ,, ,, ,, ,, ,, 1·8
‡Total population. The Jewish rate was 24·3
§1962

TABLE II
SELECTED MEDICAL CARE DATA, UNITED KINGDOM AND ISRAEL, 1962

	U.K.	Israel
Hospital beds per 1,000 population		
All hospitals	10·1	7·04
Short-stay	4·35	3·02
Psychiatry	4·5	2·32
Admissions per 1,000 population		
All hospitals	90·5	127·5
Short-stay*	82·2	119·7
Obstetrics	11·1	25·0
Psychiatry	5·0	3·8
Mean length of stay (days)		
All hospitals	33·5	N.A.
Short-stay	14·8	9·0
% of occupancy of beds		
All hospitals	N.A.	97·8
Short-stay	N.A.	98·4
Average per capita doctor/patient contacts annually	4·5–5·0	10·0–12·0

*Includes obstetrics N.A. = Not available

tion of non-Jews reflects to a lesser degree than for Jews the needs of this stratum, and their morbidity. The following analysis therefore applies only to Jews in Israel.

METHOD

The study compares the frequency of hospitalization under 18 selected diagnoses. Only diagnoses that are comparable in definition and interpretation by the medical profession in the two countries have been selected.

For the year 1961 comparable data were published in both countries. In both this was a census year, and data on the population enable a calculation of rates of hospitalized morbidity to be made. For England and Wales the discharge rates for relevant diagnostic groups by age and sex were taken from the Hospital In-patient Enquiry (Ministry of Health and General Register Office, 1964). This enquiry was based on a 10% sample of all discharges from N.H.S. hospitals.

Israel publishes annually diagnostic statistics of hospitalized patients, based on a 12·5% sample of discharges from all hospitals, excluding mental institutions, institutions for the mentally defective, and maternity departments in general hospitals (Ministry of Health and Central Bureau of Statistics, 1961). Cases in which the age of the patient was unknown were distributed among the age groups proportionally to the known cases.

In both countries the figures apply to discharges and not to cases of disease. Readmissions of the same patient, as well as transfers from one institution to another (in Israel, also from one department to another in the same hospital), were counted separately and tend therefore to inflate the sample.

RESULTS

In Table III specific discharge rates for selected diseases by sex and age are presented.

Of the 18 diagnoses, in one only was the difference negligible (malignant neoplasm of the breast). In 11 groups the Israeli rates were considerably higher, while in six the English rates were higher (diabetes mellitus, strabismus, varicose veins, tonsils and adenoids, peptic ulcer, and appendicitis). In most cases this applied to both sexes and to all ages. But there are several exceptions. Hospitalization for asthma was less prevalent in Israel in the two younger age groups (0–14), whereas in the other three groups the rates for Israel were higher than those for England and Wales; the average crude rates for Israel were also higher than for England and Wales. All rates in Israel for varicose veins of the lower extremities were lower than in England, with one exception, men aged 65 and over. The rates for hypertrophy of the tonsils and adenoids were considerably lower in Israel for children up to the age of 14; after this age there was no appreciable difference between the two countries.

There seems to be a connexion between the rate of hospitalization and the average length of stay in hospital. Table IV presents the mean number of hospital days per discharge under selected diagnoses. Data for England and Wales differentiate between male and female, whereas the Israeli figures are for both sexes combined.

Of the 11 diseases for which the rate of discharge was greater in Israel than in England, in eight the stay was shorter in Israel and only in two was it longer than in England; in one case the stay was the same in the two countries. This does not apply to the six diagnoses for which the rate of discharge in Israel was lower: in four of these the stay was also shorter in Israel, while in two the stay was longer.

The Jewish population of Israel is very heterogeneous in origin. Jews from all parts of the world have immigrated into this small country during the last two decades, and there are considerable differences between communities, according to their country of origin. Rates are available for the diseases under review by continent of birth of the patient. These rates are influenced by the age composition of each origin. All the children born in Israel belong to the "Israel-born community" and constitute a very young group; children up to the age of 15 constituted over 70% of this group in 1961, whereas people aged over 45 comprised hardly 3%, including only 0·5% of people over 65 years. At the other extreme are Jews born in Europe or in America: the percentage of children (up to 15) among them was only 8%, as against 40% aged

TABLE III

SPECIFIC DISCHARGE RATES FOR SELECTED DISEASES, BY SEX AND AGE, ENGLAND AND WALES AND ISRAEL, 1961

Diagnosis	Code No.	Sex	Country	Total	Age Group				
					0–4	5–14	15–44	45–64	65+
Diseases of skin and cellular tissue	19	M	England	14·9	20·3	13·7	13·7	14·1	19·7
	89		Israel	27·6	36·2	25·4	29·6	22·3	19·6
	19	F	England	12·9	17·6	10·9	11·4	12·9	16·3
	89		Israel	21·6	33·1	17·0	17·9	22·0	28·2
Malignant neoplasm of breast	23	M	England	0·2	—	—	0·0	0·3	0·9
	24		Israel	0·2	—	—	—	0·4	3·2
	23	F	England	10·8	0·1	0·0	4·6	21·7	23·8
	24		Israel	11·6	—	—	6·4	36·1	32·2
Leukaemia	28	M	England	1·6	1·2	0·9	0·7	2·2	4·9
	29		Israel	3·4	1·5	1·7	2·1	6·1	12·9
	28	F	England	1·2	1·1	0·7	0·5	1·6	2·9
	29		Israel	1·6	—	1·4	1·4	1·8	6·3
Asthma	40	M	England	3·8	5·9	5·4	2·5	4·3	3·6
	37		Israel	6·0	3·9	4·5	4·4	9·4	13·7
	40	F	England	4·5	5·8	2·8	4·2	5·8	4·2
	37		Israel	5·9	2·2	2·9	6·2	9·2	8·3
Diabetes mellitus	42	M	England	6·5	1·0	3·2	4·2	9·2	19·9
	40		Israel	5·2	—	0·7	26·8	13·6	20·2
	42	F	England	8·9	1·0	3·0	3·8	11·0	28·4
	40		Israel	7·7	—	1·4	3·3	19·2	39·0
Strabismus	91	M	England	5·2	20·4	17·7	1·4	4·0	0·4
	46		Israel	3·9	4·6	10·6	1·9	0·3	—
	91	F	England	4·4	21·9	13·6	15·8	4·7	0·6
	46		Israel	3·4	4·9	10·0	1·2	0·2	0·4
Cataract	92	M	England	4·7	0·7	0·8	0·8	5·4	29·8
	47		Israel	6·3	0·7	1·4	1·0	10·9	65·5
	92	F	England	6·5	0·6	0·7	0·4	5·5	33·2
	47		Israel	7·4	—	0·4	0·8	14·8	71·8
Glaucoma	93	M	England	2·2	0·1	0·0	0·5	3·7	10·6
	49		Israel	3·5	0·1	0·3	1·3	8·9	22·4
	93	F	England	3·0	0·1	0·1	0·3	4·0	12·5
	49		Israel	4·6	0·1	0·2	1·0	13·3	28·0
Rheumatic fever	110	M	England	0·9	0·4	2·6	0·8	0·4	0·0
	52		Israel	6·0	2·2	16·6	3·8	1·4	—
	110	F	England	0·8	0·2	2·2	0·8	0·3	0·2
	52		Israel	5·4	3·1	16·2	2·6	0·4	0·2
Chronic rheumatic heart disease	111	M	England	2·0	0·1	0·2	1·9	3·7	2·3
	53		Israel	5·8	—	1·1	6·0	11·9	8·1
	111	F	England	5·0	—	0·2	4·9	9·3	4·9
	53		Israel	10·0	—	2·3	11·2	20·4	12·1
Arteriosclerotic heart disease, including coronary disease	112	M	England	21·3	—	0·1	3·4	47·8	81·8
	54–5		Israel	49·6	—	—	5·9	151·4	311·9
	112	F	England	10·8	—	—	0·6	13·9	49·0
	54–5		Israel	30·0	—	—	1·7	57·7	244·9
Varicose veins of lower extremities	116	M	England	7·0	0·1	0·1	8·5	12·5	4·1
	60		Israel	3·5	—	—	4·0	6·7	11·7
	116	F	England	13·5	0·1	0·2	18·5	20·4	7·9
	60		Israel	7·8	—	—	9·3	18·8	6·1
Haemorrhoids	117	M	England	7·4	0·1	0·1	7·6	13·9	7·7
	61		Israel	13·0	—	—	18·8	23·7	12·9
	117	F	England	4·1	0·1	0·0	4·6	7·0	3·6
	61		Israel	6·2	—	—	6·1	16·4	6·3

continued

TABLE III—*continued*

Diagnosis	Code No.	Sex	Country	Total	Age Group				
					0–4	5–14	15–44	45–64	65+
Hypertrophy of tonsils and adenoids	124–5	M	England	40·7	85·5	182·7	10·1	1·2	0·6
	68		Israel	32·3	66·1	82·0	12·6	0·5	—
	124–5	F	England	38·9	70·7	185·9	17·8	1·3	0·2
	68		Israel	31·7	37·3	88·5	16·9	1·4	—
Peptic ulcer	131	M	England	21·7	0·2	0·4	17·5	41·7	41·1
	70–1		Israel	15·6	—	1·4	15·9	31·2	51·4
	131	F	England	7·7	0·2	0·2	5·2	12·4	17·5
	70–1		Israel	7·2	—	0·4	6·8	16·4	18·6
Appendicitis	132–4	M	England	26·8	6·7	52·1	33·2	14·0	9·8
	72		Israel	17·5	5·8	25·9	19·5	11·7	6·5
	132–4	F	England	28·4	4·8	47·9	44·1	12·3	8·7
	72		Israel	14·5	1·7	16·5	21·2	8·5	—
Hernia	135	M	England	34·9	52·4	11·4	21·2	57·2	58·1
	73		Israel	53·1	73·0	23·8	37·0	98·2	76·0
	135	F	England	11·0	11·4	2·5	5·9	16·1	23·4
	73		Israel	21·3	19·9	9·3	17·3	38·1	43·4
Hyperplasia of prostate	150	M	England	11·7	—	—	0·2	12·3	89·4
	81		Israel	15·5	—	—	—	37·8	154·8

TABLE IV

MEAN HOSPITAL DAYS PER DISCHARGE FOR SELECTED DISEASES, ENGLAND AND WALES AND ISRAEL, 1961

Disease	England and Wales			Israel	
	Code No.	Hospital Days*		Code No.	Hospital Days
		M	F		
Diseases of skin and cellular tissue	19	18·3	17·7	89	11·4
Malignant neoplasm of breast	23	19·3	26·4	24	26·2
Leukaemia	28	16·2	20·9	29	15·0
Asthma	40	17·2	15·2	37	11·6
Diabetes mellitus	42	24·3	30·8	40	19·6
Strabismus	91	7·4	7·2	46	16·0
Cataract	92	15·9	16·8	47	16·3
Glaucoma	93	13·7	13·6	49	15·7
Rheumatic fever	110	43·3	38·6	52	35·1
Chronic rheumatic heart disease	111	25·6	26·2	53	19·4
Arteriosclerotic heart disease, including coronary disease	112	25·6	46·3	54·5	16·4 (13·3–16·9)
Varicose veins of lower extremities	116	12·6	12·9	60	15·1
Haemorrhoids	117	11·9	12·2	61	9·5
Hypertrophy of tonsils and adenoids	124–5	3·6–4·4	3·7–4·6	68	1·7
Peptic ulcer	131	19·1	21·9	70–1	16·3 (16·2–16·7)
Appendicitis	132–4	9·7–16·1	9·7–17·3	72	9·6
Hernia	135	11·2	14·2	73	9·4
Hyperplasia of prostate	150	23·8	—	81	23·1

*Mean bed-days

45–64 and 10% aged 65 and over. The Jews born in Asia and Africa constitute a middle group between the other two. Very considerable differences are evident also in the rates of hospitalization for the various communities (Table V).

These examples of specific discharge rates for Israeli Jews, by country of birth, throw additional light on the international comparison (Table III). The crude discharge rate for varicose veins was less in Israel than in England, but this was caused mainly by the oriental communities born in Asia and Africa; the discharge rate for European Jews was higher than that for England. The same applies to hyperplasia of the prostate: the crude discharge rate for Israel (15·5) was higher than that for England (11·7). When analysing the specific rates for each origin and age group, very low rates are found for African-born Jews. Even among those over 65 years, there were only 24 discharges for this disease per 10,000 men. Those born in Asia had a rate similar to those born in Africa for the 45–64 age group (22·5), but for the oldest age group the rate

TABLE V

SPECIFIC DISCHARGE RATES FOR CERTAIN DISEASES, BY AGE AND COUNTRY OF BIRTH, ISRAEL, 1961

Diagnosis	Place of Birth	Total	Age Group				
			0–4	5–14	15–44	45–64	65+
Asthma	Total	5·9	3·1	3·7	5·3	9·3	10·9
	Israel	3·6	3·0	3·9	3·6	2·3	8·8
	Asia	12·9	28·1	4·0	11·3	21·2	15·8
	Africa	6·8	—	4·5	6·5	10·7	14·3
	Europe	4·7	—	1·6	2·1	6·9	9·1
Varicose veins of lower extremities	Total	5·6	—	—	6·6	12·6	8·8
	Israel	1·2	—	—	4·1	4·5	17·6
	Asia	2·3	—	—	1·9	5·5	—
	Africa	3·8	—	—	5·9	2·7	—
	Europe	12·5	—	—	11·5	16·0	12·0
Hyperplasia of prostate (males only)	Total	15·5	—	—	—	37·8	154·8
	Israel	1·6	—	—	—	40·3	122·5
	Asia	10·7	—	—	—	22·5	83·2
	Africa	4·5	—	—	—	25·9	23·9
	Europe	36·3	—	—	—	42·3	196·7

was almost four times greater than for the African born (83·2). The two other communities (born in Europe and Israel) had considerably higher discharge rates in the two age groups. With the exception of the African-born community, all other groups had higher discharge rates than England.

DISCUSSION

It could be assumed from the hospital facilities that discharge rates would be greater in England and Wales than in Israel. The number of general short-term beds per 1,000 population is greater in England and Wales, but their occupancy is lower. These two situations together could influence the pattern of hospitalization in England and Wales in the direction of more and easier admissions and, consequently, more discharges (Weckwerth, 1965). But for most diseases the discharge rates in Israel were higher. There are two reasons for the difference in discharge rates—medico-sociological and administrative.

For diseases which are rarely hospitalized in Israel, probably only the most serious and complicated cases are admitted and they therefore stay longer in hospital. This may be true for strabismus and varicose veins which are not routinely hospitalized. Varicose veins are treated mainly in the out-patient department, in a conservative way, and only a few patients undergo operation. Owing to the shortage of ophthalmological beds for children, strabismus is not given priority for admission except in severe cases. Diabetes mellitus is treated mainly in the out-patient department and for fixing a balanced diet hospitalization is usually not requested. Tonsil and adenoid operations are not advised routinely at a young age by Israeli doctors, and this lowers the discharge rates for this disease.

From the administrative point of view we shall consider two possibilities. It may be that under the N.H.S. the absence of any financial obstacle to hospitalization plays a more active role than in Israel. But even in Israel over 80% of the population are health insured, and no direct payment is requested from them when they apply for care. Among the non-insured the two economic extremes are included. Social, destitute cases may sometimes experience a delay in hospitalization because of formalities and referrals by social agencies. But there is no feeling that, because of an inability to pay, medically indigent patients are not admitted to hospital. In Israel direct payments constitute only a small proportion of the cost of general hospitalization. No exact figures are available, but the estimate is approximately 12–15%.

Another factor which could influence the figures for Israel is readmission (Newell, 1964). Because the average stay in Israel is shorter than in England and Wales, it may be that readmission for the same disease occurs more often in Israel. There are no comprehensive figures to elucidate this point, either for England and Wales or for Israel. Official statistics are based on discharges which may inflate the actual number of cases. The question of readmission is generally overlooked; even in the monumental and comprehensive work of McNerney (1962) on *Hospital and Medical Economics* in the United States of America this item does not appear in the subject index. For Israel some fragmentary data are available. In two hospitals a follow-up was done of all patients discharged during one year, and in a third hospital comparable data were supplied for four years (counting readmissions during each year separately). These figures also exclude transfers from one department to another in the same hospital. Such transfers constituted 2·53% of all

TABLE VI

READMISSIONS UNDER SELECTED DIAGNOSES IN THREE HOSPITALS, ISRAEL

Diagnosis	No. of Admissions per 100 Patients					
	Hadassah University Hospital 1962	T.A. Municipal Hospital 1962	Hasharon Hospital, Labour Sick Fund			
			1961	1962	1963	1964
Malignant neoplasm of breast	—	—	122	112	124	118
Leukaemia	100	141	155	131	150	167
Asthma	117	115	130	129	134	131
Diabetes mellitus	108	100	110	118	115	114
Strabismus	100	(100)	—	—	—	—
Cataract	103	102	111	—	—	—
Glaucoma	114	107	—	—	—	—
Rheumatic fever	(100)	105	123	117	119	118
Chronic rheumatic heart disease	109	132	125	115	126	121
Arteriosclerotic heart disease	111	111	120	117	123	119
Varicose veins of lower extremities	(100)	107	117	122	121	113
Haemorrhoids	(100)	102	102	106	105	103
Hypertrophy of tonsils and adenoids	—	—	105	110	106	104
Peptic ulcer	107	106	114	112	118	113
Appendicitis	—	101	106	105	107	102
Hernia	100	102	105	106	106	103
Hyperplasia of prostate	105	106	112	117	109	116

Figures in parentheses are based on less than 10 cases.

discharges in general short-term hospitals in Israel for the year 1961 (Halevi, 1963). In government hospitals there were 3·93% transfers among the total discharges, whereas in hospitals of the Labour Sick Fund there were only 1·95%, and in proprietary hospitals less than 0·25%. This very small proportion is due to the few specialized departments in such hospitals. The results are presented in Table VI.

In a study of infant morbidity in the Jerusalem district during 1964 (Davies, 1965) it was found that 935 infants were admitted to hospital 1,320 times; there were 141 admissions per 100 hospitalized infants. This last figure is based on the pooled data of three general hospitals in Jerusalem.

There are sometimes differences between hospitals in Israel with regard to readmission (Table VII).

The frequency of readmission was higher in Hasharon Hospital than in the other two, and was lowest in the Hadassah University Hospital, Jerusalem. The recording and follow-up of patients readmitted to Hasharon Hospital were more complete and precise. The four years' series of Hasharon Hospital shows a high degree of consistency, which may serve also as a sign of reliability.

TABLE VII

READMISSIONS IN THREE HOSPITALS (ISRAEL) UNDER SELECTED DIAGNOSES*

Hospital	Year	No. of Patients admitted				
		Total	Times			
			1	2	3	4+
Hasharon	1961	1673	1481	163	27	2
	1962	1827	1617	181	25	4
	1963	1624	1415	172	31	6
	1964	1649	1466	157	22	4
T.A. Municipality†	1962	3262	3072	155	30	5
Hadassah University‡	1962	921	883	31	4	3

*For list of diagnoses see Table VI.
†Excludes malignant neoplasm of breast and hypertrophy of tonsils and adenoids.
‡Exclues the two diagnoses in note † and appendicitis. Includes only medical, surgical, urological, and ophthalmological departments.

Acheson dealt with readmissions in his lecture to the International Symposium on Automation of Population Register Systems (Acheson, 1967). From the Record Linkage Study in the Oxford area he mentioned that for cancer of the breast readmission influenced the discharge rate considerably; whereas the crude discharge rate per 10,000 population per annum was 51·3, the corrected rate was only 41·1, giving a reduction factor of 19·9%. This corresponds very closely with that of Hasharon Hospital. But in Oxford the whole area was considered as one unit whereas in Israel each hospital is considered separately.

The problem of readmission in the Oxford Record Linkage Study Area was analysed in more detail by Acheson and Barr (1965). During 1962 in this area 22,525 patients were discharged. Of these, 68·3% had one in-patient spell, 19·4% had two spells, 7·6% three spells, 2·8% four spells, and 1·9% five spells or more. This rate of readmission in Oxford was even greater than in Hasharon Hospital where less than 0·5% were readmitted four times or more. The authors found the following readmission rates for defined conditions: carcinoma of breast—14·4%; diabetes—10·0%; strabismus—4·1%; arteriosclerotic heart disease—4·6%; varicose veins—2·0%; haemorrhoids—1·5%; hypertrophy of tonsils and adenoids—0·3%; ulcer of duodenum—4·7%; hernia—1·6%. For most of these diseases Israel had more readmissions than Oxford. We are faced

therefore with a higher crude readmission rate in Oxford, despite the fact that specific rates for some defined diseases point to a preponderance in Israel.

Peterson (1965) noted differences in the hospitalization rate between the United States of America and England and Wales. Discussing England's lower rate he said: "The reason for England's low hospitalization rate is its salaried full-time specialist staff. An independent specialist staff can readily control the number of admissions. Since these specialists have been chosen on the basis of their good judgement, their selection of patients for hospitalization should reflect their good judgement". This explanation does not apply to Israel, although there, as in England, there is a full-time salaried specialist staff. Even when a specialist has a "limited right to private practice" his right to admit patients is controlled by the administration of the hospital.

There is a possibility that age composition may be one factor causing the difference between England and Israel. The Oxford study showed that rates of readmission were "falling from infancy to a minimum in childhood and then rising again throughout adult life". Since the proportion of old people in the English population is considerably greater than in Israel (5·3% over 65 years in 1961) this may cause a higher readmission rate in Oxford.

SUMMARY

A comparison was made of the discharge rates for hospitalized patients in 18 disease categories in England and Wales and in Israel. For 11 diseases the rate in Israel was higher, and only in six was the rate higher in England and Wales. This applied to crude rates as well as to specific rates by sex and age group.

For eight of the 11 diseases for which the Israeli discharge rate was higher, the average stay was shorter in Israel. These two opposed tendencies may be connected and interdependent.

Reasons for this situation are discussed, especially the possible influence of readmission. From available fragmentary data it seems that the English rate of readmission is higher, possibly due to a greater proportion of old people. This may partly explain the difference in discharge rates between the two countries.

Dr. R. J. C. Pearson of the Medical Care Research Unit, University of Manchester, drew my attention to this problem.

My late dear son, Herzl, who fell in the Six Days' War (June 1967) for the freedom of our country, and dignity of our people, did most of the statistical work in the calculation of the discharge rates.

Mrs. S. Zeligson-Singer, of the Department of Medical Statistics, Central Office of the Labour Sick Fund, Tel Aviv, helped to obtain the data on readmission to Hasharon Hospital.

REFERENCES

ACHESON, E. D. (1967). A pilot study in the integration of certain records for a community. Information Processing Association in Israel. *Proceedings of the International Symposium on Automation of Population Register Systems, Jerusalem*, 25–28 *September*, 1967, p. 302.

—— and BARR, A. (1965). Multiple spells of in-patient treatment in a calendar year. *Brit. J. prev. soc. Med.*, **19**, 182.

AIRTH, A. D., and NEWELL, D. J. (1962). *The Demand for Hospital Beds: Results of an Enquiry on Tees-side.* University of Durham, Newcastle upon Tyne.

DAVIES, A. M. (1965). Socio-Ethnological Factors in Infant Morbidity and Mortality. Progress Report No. 2 to the Children's Bureau. Grant agreement: WA/CB/ISRAEL-16 (Mimeographed).

FORSYTH, G., and LOGAN, R. F. L. (1960). *The Demand for Medical Care: A Study of the Case-Load in the Barrow and Furness Group of Hospitals.* Oxford University Press, London.

GLASSER, M. A. (1967). Planning for hospital and extended care facilities: issues of public policy. *Amer. J. publ. Hlth.*, **57**, 1728.

GRUSHKA. TH. (ed.) (1968). *Health Services in Israel.* Ministry of Health, Jerusalem.

HALEVI, H. S. (1963). Institutions for hospitalisation and the movement of hospitalised patients in 1961. *Statist. Bull. Israel*, Part E. **14**, 207.

—— (1964a). Health services in Israel: their organisation, utilisation and financing. *Med. Care*, **2**, 231.

—— (1964b). Institutions for hospitalization and the movement of hospitalized patients in 1962. *Statist. Bull. Israel*, Part E, **15**, 93.

MCNERNEY, W. J. (1962). *Hospital and Medical Economics.* Vol. 2, pp. 719–847. Hospital Research and Educational Trust, Chicago.

MINISTRY OF HEALTH AND CENTRAL BUREAU OF STATISTICS (1964). *Diagnostic Statistics of Hospitalized Patients*, 1961. Special Series No. 169. Jerusalem.

MINISTRY OF HEALTH AND GENERAL REGISTER OFFICE (1964). *Report on Hospital In-Patient Enquiry for the Year* 1961. *Part II: Detailed Tables.* H.M.S.O. London.

NEWELL, D. J. (1964). Problems in estimating the demand for hospital beds. *J. chron. Dis.*, **17**, 749.

PETERSON, O. L. (1965). Medical care research: counterbalance to opinion and habit. In *Hospitals, Doctors, and the Public Interest*, pp. 156–157. Ed. Knowles, J. H., Harvard University Press, Cambridge, Mass.

——, BURGESS, A. M., BERFENSTAM, R., SMEDBY, B., LOGAN, R. F. L., and PEARSON, R. J. C. (1967). What is value for money in medical care? *Lancet*, **1**, 771.

WECKWERTH, V. E. (1965). How to use—and misuse—average length of stay data. *Mod. Hosp.*, **105**, No. 4 (Oct.), p. 114.

WORLD HEALTH ORGANIZATION, REGIONAL OFFICE FOR EUROPE (1967). *The Efficiency of Medical Care: Report on a Symposium, Copenhagen*, 4–8 *July*, 1966, p. 28. Copenhagen.