ADMISSIONS FROM SURGICAL WAITING LISTS

BY

DAVID MORRIS, M.D., D.P.H.¹

G. ALLAN HALL

AND

ALAN J. HANDYSIDE, B.Sc.

Department of Preventive Medicine and Public Health, The University, Sheffield

Many factors tend to reduce the efficiency of bed utilization in general hospitals. A numerically small, but clinically well-recognized, cause of wastage arises from the failure of waiting list patients to attend for admission when offered beds. The relative severity of the problem varies between clinical specialties, according to the proportions of total admissions accounted for by waiting list patients. In general medicine, such wastage is small, waiting list admissions being only about 16% of total admissions (Ministry of Health and General Register Office, 1963); in general surgery, gynaecology, and E.N.T. surgery, however, the corresponding proportions are of the order of 45%, 62%, and 84%, respectively, so that the problem is potentially more serious.

In a study involving two London hospitals, the reasons given by patients who failed to attend for admission were investigated (Croome, Ingram, and Qvist, 1964). Of 7,119 patients sent for, 1,630 (22.9%) failed to attend; and of the 1,630, 63% gave reasons which Croome *et al.* considered to be 'irresponsible'. In a more limited study at Mansfield, Ward-McQuaid (1964) reported a non-arrival rate of 25% among general surgical patients. However, in a subsequent study of male patients undergoing repair of inguinal hernia in the Mansfield hospitals (Morris, Ward, and Handyside, 1968), the non-arrival rate encountered was less than 11%. This apparently striking difference in behaviour between two groups drawn from the same population prompted further study of waiting list patients in this area.

METHOD

Data were collected in respect of waiting list patients, who were offered beds for elective surgical investigation or treatment at King's Mill Hospital

between 1 March and 31 August 1967. The data collected were those recorded on the forms used by the Medical Records Office to notify patients that a bed is available. Included were details of the age and sex of patients; the clinical specialty and consultant; in some instances, the nature of the intended operative procedure; the proposed date of admission; and the date of completion of the form. In addition, data were collected concerning patients who were notified by telephone or telegram, together with the date of any communication received from patients indicating that they would not be attending for admission as requested.

During the six-month period under consideration, 2,104 forms were prepared, requesting attendance for admission of patients in the specialties of general surgery, gynaecology, E.N.T. surgery, and ophthalmology. This total does not include 25 patients whose notifications were cancelled before the intended day of admission; but it does include 50 patients who attended for admission as requested, and were sent home because they were unfit for operation or because no bed was available for them. The 2,104 forms concerned 1,904 patients, of whom 160 were sent for twice, and 20 were sent for three times during the study. Because others of the 1,904 may have been sent for once or more prior to the commencement of the study, no attempt was made to differentiate between patients according to the number of times they were offered beds. In the presentation of the results, the number of 'patients sent for' will be considered as 2,104. Of this total, 373 patients did not attend for admission, an overall non-arrival rate of 17.7%.

RESULTS

AGE AND SEX

Table I shows the distribution by age and sex of the patients concerned. The proportion who did

¹Requests for reprints should be addressed to Dr. D. Morris, Sheffield Regional Hospital Board, Old Fulwood Road, Sheffield S10 3TH.

TABLE I
RESPONSE OF PATIENTS ASKED TO ATTEND FOR ADMISSION, BY AGE AND SEX

Age	Males				Females			
	Sent for (no.)	Attending (no.)	Not Attending (no.) (%)		Sent for (no.)	Attending (no.)	Not Attending (no.) (%)	
Below 15	183	158	25	13.7	171	146	25	14.6
15—	59	50	9	15.3	135	105	30	22.2
25—	75	57	18	24.0	249	187	62	24.9
35—	74	60	14	18.9	273	230	43	15.8
45—	113	93	20	17.7	228	187	41	18.0
55—	107	90	17	15.9	154	131	23	14.9
65—	65	54	11	16.9	120	104	16	13.3
75 and over	33	28	5	15.2	47	38	9	19.1
Not known	5	4	1	20.0	13	9	4	30.8
All ages	714	594	120	16.8	1,390	1,137	253	18.2

not attend was slightly higher in women than in men, but the overall difference in behaviour between the sexes was not statistically significant ($\chi^2_1 = 0.629$; $P > 0.25$). In both sexes together, the non-arrival rate was high among young adults, sufficient to produce a significant irregularity in the joint distribution ($\chi^2_2 = 17.420$; $P < 0.025$).

The nature of the data collected does not permit a more detailed consideration of these patterns. The relatively high non-arrival rates among young adults may be attributable, in part, to the potentially less serious nature of the illnesses they suffer; and factors which would prevail among young women are menstrual activity and the pressure of domestic commitments.

TIMING OF ADMISSIONS

The secular pattern of non-arrivals is shown in Table II. There is a small increase in the rate for the

TABLE II
RESPONSE OF PATIENTS ACCORDING TO MONTH IN WHICH ASKED TO ATTEND FOR ADMISSION

Month of Proposed Admission	Sent for (no.)	Attending (no.)	Not Attending (no.) (%)	
March	303	251	52	17.2
April	350	291	59	16.9
May	375	314	61	16.3
June	376	308	67	17.8
July	372	309	64	17.2
August	283	218	65	23.0
September	45	40	5	11.1
Entire period	2,104	1,731	373	17.7

$$\chi^2_6 = 7.556 \quad P > 0.25$$

month of August, and a fall in the rate applicable to the small number of patients admitted during September, but no significant secular trend is apparent. It might be expected that compliance with a notification to attend for admission would be affected if the proposed date of admission coincided with family holidays. Table III shows the non-

TABLE III
RESPONSE OF PATIENTS ASKED TO ATTEND FOR ADMISSION AT SELECTED HOLIDAY PERIODS

Proposed Timing of Admission	Sent for (no.)	Attending (no.)	Not Attending (no.) (%)	
Easter weekend (24 to 27 March)	23	18	5	21.7
Spring holiday (27 to 29 May)	29	18	11	37.9
Factory holidays (30 July to 12 August)	134	96	38	28.4
All holiday periods	186	132	54	29.0
Remainder of study period	1,918	1,599	319	16.6

$$\chi^2_1 = 17.876 \quad P < 0.001$$

arrivals associated with the specific holiday periods which occurred during the study. The numbers of patients asked to attend for admission during the Easter and Spring holiday weekends are small, but the proportion of non-arrivals at holiday periods was almost twice as high as at other times; and the difference between the proportions is of high statistical significance.

METHODS OF NOTIFICATION

The study of waiting lists by the Institute of Hospital Administrators (1963) considered some of the methods used to notify patients that beds were available for them. Among the instances cited were the teaching hospital which 'calls in 80% of its patients by telegram and 10% by telephone'; and the general hospital, of whose patients 75% were summoned by messenger. Although the report gives no details of the response to these techniques, it might be thought that the 'urgency' commonly associated with telegrams would elicit lower non-arrival rates. In the present study, there was a poorer response to notification by letter than to notification by telegram, telephone or verbal communication, as shown in Table IV. The difference in response to the two types of technique of notifica-

TABLE IV

RESPONSE OF PATIENTS TO DIFFERENT METHODS OF REQUESTING ATTENDANCE FOR ADMISSION

Method of Notification	Notice Given (days)	Sent for (no.)	Attending (no.)	Not Attending (no.)	(%)
Letter	≤2	679	535	144	21.2
	>2	1,315	1,101	214	16.3
	Total	1,994	1,636	358	18.0
Telegram, telephone or verbal	≤2	96	83	13	13.5
	>2	14	12	2	14.3
	Total	110	95	15	13.6
All patients		2,104	1,731	373	17.7

Notice ≤ 2 days: $\chi^2_1 = 3.060$ $P > 0.05$

Totals: $\chi^2_1 = 1.332$ $P > 0.10$

tion was not statistically significant, however, either in the study group as a whole or where the amount of notice given to patients was two days or less.

SPECIALTIES AND OPERATIONS

While there is no significant difference between the non-arrival rates encountered in the various clinical specialties (Table V), there are wide variations in the rates associated with the operative

TABLE V

RESPONSE OF PATIENTS ACCORDING TO CLINICAL SPECIALTY

Specialty	Sent for (no.)	Attending (no.)	Not Attending (no.)	(%)
General surgery	636	541	95	14.9
Gynaecology	726	580	146	20.1
E.N.T. surgery	441	360	81	18.4
Ophthalmology	301	250	51	16.9
All specialties	2,104	1,731	373	17.7

$\chi^2_3 = 6.479$ $P > 0.05$

procedures envisaged for the patients. It is emphasized that the operations listed in Table VI are not necessarily those which were ultimately performed; the list merely indicates the intended operative procedures, so far as these could be ascertained from the data available.

It will be seen that major abdominal operations and operations associated with potentially serious underlying pathology, such as breast operations and cervical biopsy, have low non-arrival rates. In antithesis, such procedures as the repair of inguinal hernia or uterine prolapse, and ligation or stripping of varicose veins, have high non-arrival rates. It is possible that this variation reflects the attitudes of patients concerning the seriousness of their ill-

TABLE VI

RESPONSE OF PATIENTS ACCORDING TO SITE OR NATURE OF INTENDED OPERATIVE PROCEDURE

Site or Nature of Operation	Sent for (no.)	Not Attending (no.)	(%)
General surgery			
Stomach and duodenum	46	1	2.2
Biliary tract	40	2	5.0
'Laparotomy'	19	1	5.3
Circumcision, orchidopexy, excision of hydrocele	38	3	7.8
Breast	84	8	9.5
Inguinal hernia	87	23	26.4
Haemorrhoidectomy	43	10	23.3
Varicose veins	75	21	28.0
Gynaecology			
'Laparotomy'	29	3	10.3
Hysterectomy, myomectomy	49	5	10.2
Cervical biopsy	25		
'Gynae minors' (D & C cautery)	360	71	19.7
Repair of prolapse	175	43	24.6
E.N.T. and ophthalmology			
Tonsillectomy, adenoidectomy	206	34	16.5
Operations on eardrum	78	14	18.0
Resection of nasal septum	37	10	27.0
Nasal polypectomy	42	13	31.0
Removal of cataract	138	24	17.4
Correction of strabismus	109	17	15.6
All other operations	349	65	18.6
Operation not specified	75	5	6.7
All patients	2,104	373	17.7

nesses, or the degree of physical discomfort entailed. Another factor which must be considered is the length of time that patients had spent on the waiting lists before being offered beds. Grundy, Hitchens, and Lewis-Faning (1956) demonstrated that the non-arrival rate increases with the length of time spent on the waiting lists; and the Institute of Hospital Administrators reiterated the view that 'the likelihood of a patient failing to take advantage of the offer of a bed increases the longer the waiting period is before the first offer . . .' (Institute of Hospital Administrators, 1963).

Unfortunately, data were not readily available concerning the length of time spent on the waiting lists by the individual patients in this study. However, some impression may be obtained from Hospital Activity Analysis, which came into general operation at King's Mill Hospital during the study period. It is emphasized that the data used do not relate specifically to the patients in the study; and that, while the operations listed in Table VI were the 'intended' procedures, those in Table VII are retrospective descriptions of procedures carried out. Table VII shows the waiting times of patients admitted for various operations during the first six months after the introduction of H.A.A. to this hospital. It will be seen that the operations in Table VI which carry a high non-arrival rate are generally the same as those in Table VII where the waiting time is long. There is thus the possibility that much

TABLE VII
PERCENTAGE DISTRIBUTION OF PATIENTS UNDERGOING SELECTED OPERATIONS, BY AMOUNT OF TIME SPENT ON WAITING LIST PRIOR TO ADMISSION

Nature of Operation (G.R.O. Class. No.)	Patients Admitted (100 %)	Time spent on Waiting List (days)					Mean Waiting Time (days)
		< 30	30-89	90-179	180-359	360 +	
		Percentage of Patients					
Stomach and duodenum (420-427, 430, 431, 433)	36	58.3	13.9	16.7	8.4	2.8	66.9
Biliary tract (514-529)	35	45.7	28.6	11.4	11.4	2.9	78.1
Laparotomy (400)	18	72.2	11.1	11.1	5.6	—	39.6
Male genitalia (680-682, 685, 686, 690, 696)	23	52.2	30.4	13.0	4.3	—	50.9
Breast (380-383, 386)	65	87.7	7.7	1.5	3.0	—	24.5
Inguinal hernia (402)	78	33.3	18.0	14.1	25.6	9.0	150.8
Haemorrhoidectomy (483)	34	14.7	14.7	23.5	26.4	20.6	243.7
Varicose veins (913, 916)	36	19.4	11.1	11.1	36.1	22.2	232.7
Hysterectomy, myomectomy (721-724, 727)	74	33.8	20.3	12.2	32.4	1.3	130.1
Gynae minors (731-733)	209	29.7	21.5	13.4	33.5	1.9	128.5
Biopsy of cervix (734)	9	77.8	11.1	—	11.1	—	47.8
Repair of prolapse (743, 744)	79	2.5	11.4	6.3	64.5	15.2	260.5
Tonsillectomy and/or adenoidectomy (261-263)	171	8.8	11.1	40.9	33.3	5.8	170.3
Operations on eardrum (203)	43	9.3	51.2	20.9	11.6	7.0	114.7
Removal of cataract (170, 173)	99	25.2	27.3	20.2	22.2	5.1	118.9
Correction of strabismus (109-115)	138	14.5	15.2	13.8	37.7	18.8	202.1
All other operations	412	36.2	24.3	18.7	18.4	2.4	101.6
No operations	68	50.0	14.7	10.3	20.6	4.4	103.7
All patients	1,627	30.8	19.7	17.4	26.1	6.0	133.5

(Derived from Hospital Activity Analysis data relating to patients admitted to King's Mill Hospital between 1 July and 31 December 1967)

of the variation in non-arrival rates associated with different operations is not characteristic of the operations themselves, but, in keeping with the findings of Grundy *et al.* (1956), reflects the delay before operation.

AMOUNT OF NOTICE GIVEN

Table VIII shows the non-arrival pattern associated with various amounts of notice given to patients concerning their admissions. In calculating the notice given, it has been assumed that the letters of notification were received by the first postal delivery on the day after they were posted. The 'amount of notice given' is the number of days between this assumed receipt of notification and the requested time of admission. There is a general decrease in the non-arrival rate as the amount of notice given increases, until the last group, of patients

given more than seven days notice, when the non-arrival rate suddenly increases.

Lest the high rate in this last group be construed as an illustration of the pointlessness of giving patients too much notice of admission, it should be explained that this group contained disproportionately large numbers of patients who, for reasons already demonstrated, might be expected to exhibit high non-arrival rates. Thus, 42.7% of this group were women aged between 15 and 34, as compared to 17.3% of the patients given seven days notice or less; 17.1% of this group were asked to attend for admission at holiday periods, as against 8.5% in the remainder of the study group; and 74.4% were recorded as undergoing operations whose associated non-arrival rates (Table VI) exceeded the overall mean of 17.7%, compared to 41.3% of the remaining patients. The differences between these proportions are statistically significant at 0.1%, 1.0%, and 0.1%, respectively. The downward trend in non-arrival rates with increasing notice, when the group given more than seven days notice is excluded, was examined using the regression technique described by Maxwell (1961); a highly significant linear association was found between declining non-arrival rates and increasing amounts of notice given ($P < 0.005$).

CONSULTANTS

Another area in which substantial variations in the non-arrival rates were encountered related to the consultants responsible for the care of the patients; these variations are shown in Table IX.

TABLE VIII
RESPONSE OF PATIENTS ACCORDING TO AMOUNT OF NOTICE OF ADMISSION GIVEN

Amount of Notice Given (days)	Sent for (no.)	Attending (no.)	Not Attending (no.)	(%)
≤1	362	277	85	23.5
2	413	341	72	17.4
3	478	392	86	18.0
4	324	277	47	14.5
5	275	234	41	14.9
6	132	113	19	14.4
7	38	33	5	13.2
> 7	82	64	18	21.9
All patients	2,104	1,731	373	17.7

$$\chi^2 = 14.625 \quad P < 0.05$$

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TABLE IX
RESPONSE OF PATIENTS ACCORDING TO IDENTITY OF
CONSULTANTS RESPONSIBLE FOR THEIR CARE

Consultant	Sent for (no.)	Attending (no.)	Not Attending (no.)	(%)
A	297	251	46	15.5
B	122	102	20	16.4
C	229	197	32	14.0
D	263	218	45	17.1
E	144	126	18	12.5
F	179	148	31	17.3
G	237	197	40	16.9
H	204	163	41	20.1
I	429	329	100	23.3
All consultants	2,104	1,731	373	17.7

$$\chi^2_8 = 16.247 \quad P < 0.05$$

Since the clinical specialty does not appear to have any bearing upon the non-arrival rate, the differences between consultants, which must be considered in attempting to account for their non-arrival patterns, are the amount of notice which they give to patients and the structure of their patient populations. The marginally significant differences in the non-arrival

rates for individual consultants may be examined further, using the technique of 'partitioning' (Maxwell, 1961), as shown in Table X. On the basis of non-arrivals, it can be shown that consultants A to E form a homogeneous group ($\chi^2_4 = 1.971$; $P > 0.50$), and consultants F to I form another homogeneous group ($\chi^2_3 = 5.118$; $P > 0.10$); but the difference between these two groups is of high statistical significance ($\chi^2_1 = 8.833$; $P < 0.005$) so that the consultants may be divided into two discrete groups, one group having generally low non-arrival rates and the other having generally high non-arrival rates.

The line of division between these two groups is not entirely arbitrary, as may be seen from Table XI. The mean amount of notice given by consultants A to E is greater than three days; that given by consultants F to I is less than three days. Regarding administrative procedures, only minimal delays occur in notifying patients that beds are available for them after consultants have advised the Medical Records Office which patients are to be admitted. Most letters of notification are sent out on the same day that the Records Office is given the names of the patients, and all are sent out within 24 hours. Where a large volume of work requires the identification of 'priorities' for notification, the selection is in favour of the patients who are to receive the shortest notification. The data presented in Table XI may thus be regarded as a fair representation of the behaviour of the individual consultants.

In order to eliminate the possibility of the patients' ages affecting the non-arrival rates for the consultants, the data were standardized by the age and sex of patients, and also by the patterns of amount of notice of admission given by the consultants. The observed numbers of non-arrivals for the two groups of consultants were expressed as percentages of the 'expected' numbers thus derived, to give the 'stan-

TABLE X
PARTITIONING OF DATA PRESENTED IN TABLE IX

Consultant	Sent for	Attending	Not Attending
A	297	251	46
B	122	102	20
C	229	197	32
D	263	218	45
E	144	126	18
Totals	1,055	894	161
F	179	148	31
G	237	197	40
H	204	163	41
I	429	329	100
Totals	1,049	837	212
All consultants	2,104	1,731	373

$$\chi^2_1 = 8.833 \quad P < 0.005$$

TABLE XI
PERCENTAGE DISTRIBUTION OF PATIENTS BY AMOUNT OF NOTICE OF ADMISSION GIVEN TO THEM BY EACH CONSULTANT

Consultant	Patients Sent for (100%)	Amount of Notice Given (days)								Mean Notice Given (days)
		≤1	2	3	4	5	6	7	> 7	
		Percentage of Patients								
A	297	0.7	2.7	2.0	11.4	42.8	11.4	7.1	21.9	5.67
B	122	9.8	7.4	18.9	45.1	1.6	6.6	—	10.7	4.09
C	229	20.5	3.9	7.0	26.6	17.5	20.1	3.9	0.4	3.96
D	263	11.4	19.0	16.0	14.8	24.7	11.8	1.5	0.8	3.68
E	144	11.1	27.1	18.7	26.4	14.6	0.7	0.7	0.7	3.15
F	179	11.2	16.2	41.3	29.0	1.7	0.6	—	—	2.96
G	237	17.3	12.2	48.5	13.1	7.2	1.7	—	—	2.86
H	204	3.4	36.3	59.8	0.5	—	—	—	—	2.57
I	429	43.6	38.7	12.4	3.0	—	1.6	0.7	—	1.85
All consultants	2,104	17.2	19.6	22.7	15.4	13.1	6.3	1.8	3.9	3.34

TABLE XII

CRUDE AND STANDARDIZED NON-ARRIVAL RATIOS
FOR CONSULTANTS, GROUPED ACCORDING TO MEAN
NOTICE OF ADMISSION GIVEN TO PATIENTS

Consultants	Mean Notice Given (days)	Non-arrival Ratios		
		Crude	Standardized by Age and Sex of Patients	Standardized by Notice Given to Patients
A, B, C, D, and E	> 3	86.1	84.1	91.2
F, G, H, and I	< 3	114.0	116.8	107.9
Significance of differ- ences between ratios		P < 0.01	P < 0.01	P > 0.10

standardized non-arrival ratios' shown in Table XII; also given are the 'crude non-arrival ratios' derived from the overall pattern of non-arrivals. The differences between the ratios for the two groups of consultants were tested, using the technique described by the Registrar-General for the comparison of standardized mortality ratios (General Register Office, 1967). There is a difference of high statistical significance between the crude ratios for the two groups. Standardization by the age and sex of the patients has the effect of slightly enhancing this difference, so that this factor can play little part in accounting for the differing non-arrival patterns.

When the data are standardized by the amount of notice given, however, the difference between the non-arrival ratios is not statistically significant. In this situation, there is no evidence to suggest that the ratios are different, and if this is attributable to standardization by the amount of notice given to patients by the consultants, it is highly probable that this factor is of considerable importance in relation to the pattern of non-arrivals.

Of the other factors which affect the non-arrival rates, and may account for the residual difference between the non-arrival ratios, one which must be considered again is the length of time spent by patients on the waiting lists. The Hospital Activity Analysis data used to prepare Table VII were also used to construct Table XIII, which shows the distribution of waiting times before admission for patients under the care of consultants in the two groups. Once again, the patients covered by Table XIII do not correspond to those in the study, but the data suggest that those consultants whose non-arrival rates are low are better able to reduce the delay for patients before admission.

The amount of notice given to patients is also of importance in relation to the replacement of patients who indicate that they will be unable to attend for admission. Of the 373 patients who did not attend for admission in the present study, 195 (52%) so-

TABLE XIII

PERCENTAGE DISTRIBUTION OF PATIENTS TREATED BY CONSULTANTS IN TWO GROUPS, BY AMOUNT OF TIME
SPENT ON WAITING LIST PRIOR TO ADMISSION

Consultants	Patients Admitted (100%)	Time Spent on Waiting List (days)						Mean Waiting Time (days)
		< 30	30-89	90-179	180-269	270-359	360 +	
		Percentage of Patients						
A, B, C, D, and E	860	42.7	25.5	13.8	6.3	7.4	4.3	95.7
F, G, H, and I	767	17.3	13.3	21.4	22.7	17.3	8.0	175.8
All consultants	1,627	30.8	19.7	17.4	14.0	12.1	6.0	133.5

Derived from Hospital Activity Analysis data relating to patients admitted to King's Mill Hospital between 1 July and 31 December 1967)

TABLE XIV

ASSOCIATION BETWEEN AMOUNT OF NOTICE OF ADMISSION GIVEN TO PATIENTS, AND AMOUNT OF NOTICE RECEIVED
FROM PATIENTS INDICATING INTENDED NON-ARRIVAL

Notice Given to Patients (days)	Notice of Intended Non-arrival Received from Patients (days)									Totals
	None	1	2	3	4	5	6	7	> 7	
≤ 1	49	36	—	—	—	—	—	—	—	85
2	32	9	31	—	—	—	—	—	—	72
3	39	16	13	18	—	—	—	—	—	86
4	24	3	5	5	10	—	—	—	—	47
5	20	2	3	5	6	5	—	—	—	41
6	6	2	4	—	2	3	2	—	—	19
7	2	—	2	—	—	—	1	—	—	5
> 7	6	2	1	1	—	—	3	2	3	18
Totals	178	70	59	29	18	8	6	2	3	373

r = 0.430 P < 0.001

informed the Records Office before the day arranged for their admission. Table XIV shows that there was a highly significant correlation between the amount of notice given to patients and the amount received from them. It must be accepted that some patients will disregard letters offering in-patient accommodation; but the greater the amount of notice given to patients, the better the prospect of replacing those unable to attend for admission.

DISCUSSION

The findings of this and other studies suggest that the following factors contribute to the non-arrival of waiting list patients when they are offered beds:

- (1) the age of the patient;
- (2) the length of time spent by the patient on the waiting list before a bed becomes available;
- (3) the timing of requested admission, particularly in relation to holiday periods;
- (4) the amount of notice of admission given to the patient.

Within the system of admission of waiting list patients which appears to be prevalent in British hospitals, the first two of these factors are not amenable to control by hospital authorities. The effects of the third could only be mitigated by avoiding elective admissions at holiday periods and accepting an even greater wastage in the utilization of in-patient resources. It may be possible, however, to circumvent the influence of all three factors by modification of the admission procedures.

The fourth factor, the amount of notice given to patients, is directly controllable by the hospital authorities. 'The efficient use of beds in acute hospitals inevitably entails that some patients must be called into hospital at short notice' (Institute of Hospital Administrators, 1963); but the numbers of such patients may be minimized by increasing the amount of notice routinely given. Accepting that, when patients indicate their inability to accept offers of in-patient accommodation, their replacements are given shorter notice, the replacements can be given notice of three or four days if it is customary to give notice of five or six days to the patients who are called first. The patterns of amount of notice given in the present study indicate that some of the consultants concerned endeavoured routinely to give their patients four days notice or more; but others considered two or three days to be quite sufficient. The amount of notice given did not appear to bear any relationship to the demands of practice in the various clinical specialties, so that it

would be possible for some of the consultants to modify their current procedures.

The overall pattern of notice given to patients in the present study was not unusually short. The Institute of Hospital Administrators (1963) reported that, in their sample of 92 hospitals, there 'appeared to be twelve hospitals where some or all patients may receive no more than 24 hours notice of admission', and a further six where the 'normal' amount of notice was two or three days. Croome *et al.* (1964) suggested that 'short notice does not seem to be the main reason for non-filling of beds'; but the largest group of refusals in their study, patients who failed to arrive because of domestic and business reasons, might have been more closely scrutinized. One might consider the hypothetical instance of a woman with a young family, given 24 hours notice of admission after being on a waiting list for 18 months; she may not give 'too short notice' as the reason for declining the offer of a bed, but the stated reason, the necessity to make arrangements for the care of the children, relates directly to the time allowed to her to make such arrangements.

Perhaps the most important single factor to be considered in relation to admission from the waiting list is effective communication between hospital and patient. Certainly, it is in this factor that the prevention of wastage in bed utilization resulting from non-arrivals lies. Of the hospitals surveyed by the I.H.A., only one-third carried out regular review of waiting lists, to ensure their accuracy. Further, 'only fourteen hospitals indicated that they operate any system of giving patients preliminary notice that they are likely to be called in, and only in the case of five of these hospitals is the system of general application'. It would appear that many hospitals in this country make no effort to communicate with patients between the time when they are put on the waiting lists and the time they are offered beds. If the system of 'urgent' or 'priority' admissions has any practical meaning, it should be possible to give patients in this category an indication of the probable timing of admission when their names are added to the waiting list. Those patients who have to spend more than three months on the waiting list could be advised of impending admission when the rate of dealing with waiting list patients indicates that they will be sent for in three to four weeks time. At the time of preliminary communication, they could be asked whether or not they will be able to attend for admission; patients declining, or failing to reply, could then be replaced without difficulty.

Neither this technique, nor any other, can guarantee that all waiting list patients will attend for admission as requested. The intercurrent of colds

and accidents would prevent the arrival of a few who had previously indicated their intention to accept the offered bed. But it is probable that some preliminary notification would reduce the non-arrival rates. In the present study, 72 male patients with inguinal hernia were given between one and seven days notice of admission (mean, 4.18 days) without any preliminary communication; the non-arrival rate was 27.8%. In the previous study of hernia patients in the same population (Morris *et al.*, 1968), preliminary communication was an incidental part of the methodology, all patients being circularized some three weeks prior to admission, and all being given six or seven days notice of admission; the non-arrival rate was 10.6%. The earlier study involved male patients who were slightly younger, but on the basis of available data the two groups studied appear to have been similar in all other respects. While other, unrecognized factors may have contributed to the lower non-arrival rate in the earlier study, the statistically significant difference ($p < 0.001$) between the behaviour of patients in the two studies must be attributed, in some measure, to preliminary communication and longer notice of admission.

SUMMARY

A study is described, investigating some of the factors which may account for the failure of waiting list patients to attend for admission when offered beds. The factors which are considered to be of importance are the age of the patient, the time he spends on the waiting list before admission, the coincidence of admissions with holiday periods, and the amount of notice of admission given to the

patient. Possible methods of reducing the numbers of patients who fail to attend for admission are discussed.

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