

Hernia repair and time off work in Oxford

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SUMMARY. The variation in time off work was investigated in 261 men aged between 18 and 65 years whose inguinal herniae were repaired in Oxford hospitals in 1971/72 and 1974/75. The average time off was 51 calendar days compared with 70 days nationally. Complications, a heavy job, low sick pay, and family worries were found to be the main factors associated with increased time off, although they accounted for only 42 per cent of the variance. Men stopping smoking at the surgeon's request had less time off, and so had men who had been given an estimate before their operation of their likely duration of absence, especially when the estimate was given by the surgeon.

Introduction

TWO major factors in the rise in sickness absence in Great Britain have been an increase in short-term absence in the young and a greater number of long-term sick. However, although for most causes of incapacity for work there was no significant increase in median duration if 1962/63 is compared with 1967/68, there was such an increase for four groups of disorders: varicose veins, silicosis and occupational pulmonary fibrosis, synovitis, bursitis and tenosynovitis, and hernia of the abdominal cavity (Whitehead, 1971).

Repair of hernia is the commonest operation in men and is the third commonest in British hospitals (OPCS *et al.*, 1978). There is much to be said for trying to find out why some men get back to work more quickly than others (Acheson, 1970). Morris and his colleagues (1968) have shown that age, duration of hospital stay, nature of occupation, postoperative illness, pre-operative work loss, type of operation, chronic disability, and grade of surgeon account for only a quarter of the variation in the duration of convalescence. We have

studied these and other factors in the duration of hospital stay and time off work in men having hernia repair in Oxford.

Method

One hundred and forty-six men aged over 18 and under 65 years admitted from the waiting list to the Radcliffe Infirmary and Churchill Hospital for the single operation of inguinal or scrotal repair in the year 1 August 1974 to 31 July 1975 were asked to complete, before entering hospital, a questionnaire giving demographic, social, and occupational information. Of these, 106 were also interviewed before operation or after discharge. With their permission, details of their hospital stay and National Insurance records were obtained. Information about absence for one civil servant and three post office employees with sick pay provisions independent of the National Insurance Fund was obtained from the employers.

Time off work was measured in calendar days, from the first day of the period which included the day of operation to the last day of incapacity. Two men were re-admitted to hospital during the study year because of recurrence of hernia; length of stay in hospital and duration of time off work associated with their first operation were analysed.

There were 168 men who were not included in the 1974/75 study. In 103 the forms requesting participation did not arrive in time; three refused; 10 did not claim sickness benefit; 18 were admitted as emergencies, three as day cases, and 23 had operations in addition to hernia repair. One man was drawing invalidity benefit before operation; medical records could not be obtained for three civil servants, and four men were operated on in the private block. Analysis of their hospital notes showed that in age, time on waiting list and hospital stay these 168 men did not differ significantly from the study population.

Outcome Study

One hundred and fifteen men similarly selected but not interviewed in 1971/72 were combined with the 146 men in 1974/75 to give a total study population of 261 (in 1971/72 three men off work for more than six months were excluded from the analysis; there were no such men in 1974/75).

Results

Apart from the smaller number of men who were operated on in the Churchill Hospital in 1971/72, because only two months' admissions to it were analysed, the only significant differences in hospital

Table 1. 1971/72 and 1974/75 men compared.

Year	Number of men	Hospital days	Days off work	Time on waiting list in weeks	Nylon darn operations
1971/72	115	4.7 ± 2.3	51.9 ± 21.1	32 ± 49	81
1974/75	146	5.0 ± 1.9	48.7 ± 23.7	22 ± 25	134
		Difference not significant	Difference not significant	Difference significant at 5 per cent level	Difference significant at 0.1 per cent level

Table 2. Hospital stay and time off work of 261 men.

		Days in hospital			Days off work			
		Number of men	Mean	Standard deviation	Significance of difference	Mean	Standard deviation	Significance of difference
All		261	4.9	2.1		51	23	
Hospital	Radcliffe	171	4.9	2.2	NS	53	21	**
	Churchill	90	4.8	2.0		46	24	
Smoking habits	Not known	17	4.3	1.8		48	20	
	Non-smoker	81	5.0	2.2		46	21	
	Ex-smoker	35	4.9	2.8		56	18	
	Fewer than 20 cigarettes a day	48	5.0	2.2	NS	55	21	*(excluding not known)
	Twenty or more	49	4.9	1.7		55	29	
	Pipe, cigar	25	4.8	1.5		46	21	
	Stopped smoking within six months preceding operation	6	2.8	0.4		38	22	
Previous serious illness	Not known	1	1.0	—		8	—	
	Severe	59	5.4	2.6	*	53	26	NS
	Mild	66	5.0	2.2		52	20	
	None	135	4.6	1.7		49	23	
Age in years	18 to 19	3	3.0	1.0		28	12	
	20 to 24	10	4.3	1.3		38	15	
	25 to 29	11	4.6	1.9		50	23	
	30 to 34	20	4.3	1.3	NS	44	27	NS
	35 to 39	20	5.2	2.2		52	29	
	40 to 44	21	4.7	1.9		42	17	
	45 to 49	35	4.7	2.1		49	19	
	50 to 54	47	5.0	1.9		53	21	
		55 to 59	34	5.3	2.8		55	19
	60 to 64	60	4.9	2.2		56	26	
Grade of surgeon	Consultant	61	5.5	2.3		47	19	
	Registrar	184	4.7	2.0	*	52	24	NS
	House surgeon	16	4.6	1.4		42	17	
Type of operation	Not known	1	5.0	—		32	—	
	Nylon darn	215	4.8	2.1	**(excluding not known)	51	23	NS
	Bassini	13	6.7	2.6		54	21	
	Macarthur	9	4.1	1.2		46	10	
	Other	23	4.9	2.2		46	16	
Postoperative complications	Not known	1	5.0	—		32	—	
	None	208	4.4	1.4		49	21	
	Wound infection	17	7.8	3.4	***	53	19	*
	Chest complication	16	5.3	2.4		66	24	
	Other	19	7.3	3.2		55	36	

Outcome Study

stay and time off work between the 1971/72 and 1974/75 groups were in length of time on the waiting list (which decreased), an increase in the proportion of herniae repaired by nylon darn (Table 1), and a change in smoking habits. Men in 1974/75 included a higher proportion of ex-smokers, of pipe and cigar smokers, and of men who stopped smoking at their surgeon's request, and there was a decrease in men smoking 20 cigarettes a day or over.

Seventy of the 261 men were being operated on for a recurrence of hernia, the others for the first time. Altogether there were 301 herniae, 169 right and 132 left. About a quarter of men had consulted a surgeon within two months of developing the hernia and a quarter within six months. About 15 per cent consulted

within a year, a further 15 per cent within two years, and the remaining 20 per cent at anything up to 20 years after onset. Over 40 per cent had done so because of pain and almost 40 per cent because they had noticed a lump. Fifteen per cent had consulted because the lump they had was getting bigger; in some cases no reason was recorded.

Length of hospital stay

The average length of hospital stay was 4.9 days (Table 2). Age, civil status, social class, hospital, smoking habits, presence of cough on admission, sick pay, and type of operation did not appear to influence its duration. The factors which did were a history of previous serious illness, grade of surgeon, and postoperative

Table 2. (continued)

		Days in hospital			Days off work			
		Number of men	Mean	Standard deviation	Significance of difference	Mean	Standard deviation	Significance of difference
<i>Sick pay</i>	Not known (a)	10	5.5	2.4		58	48	
	Self-employed (b)	19	4.7	1.2		38	24	
	Unemployed (c)	6	4.8	1.2		55	22	*** (excluding a, b, and c)
	None	86	4.7	2.2	NS	59	22	
	Less than normal earnings	36	4.8	2.1		48	19	
	Equal to normal earnings	95	5.1	2.2		46	19	
	More than normal earnings	9	4.2	1.2		43	16	
<i>Type of occupation</i>	Not known	1	5.0	—		54	—	
	Sedentary	91	5.1	2.0		44	18	
	Occasional heavy lifting	101	4.6	2.0	NS	50	21	***
	Regular heavy lifting	68	4.9	2.4		61	27	
<i>Social class</i>	1	17	4.2	1.3	NS	32	20	***
	2	45	4.8	1.7		40	14	
	3	120	4.8	2.0		52	20	
	4	76	5.1	2.6		59	26	
	5	3	4.0	1.0		54	8	
<i>Length of estimate (weeks)</i>	Not given	193	4.9	2.2		52	23	
	Two	1	4.0	—		36	—	
	Three	16	4.6	1.3		33	17	
	Four	13	4.6	1.8		43	17	
	Five	9	5.6	2.9		46	11	
	Six	15	4.3	1.4	NS	54	26	** (excluding not given)
	Seven	2	5.5	3.5		41	18	
	Eight	6	5.0	1.1		63	20	
	Nine	1	3.0	—		89	—	
	10	1	6.0	—		68	—	
	12	3	3.7	0.6		69	20	
	20	1	6.0	—		25	—	
<i>Who estimated</i>	No-one	193	4.9	2.2		52	23	
	General practitioner	22	4.9	1.8	NS	53	24	
	Surgeon	28	4.4	1.4		37	18	
	Friend/relative	18	4.9	2.2		53	21	
<i>Previous duration of absence (days per year at risk)</i>	0 to 2.49	111	4.7	2.2			46	23
	2.5 to 6.99	75	5.2	2.3	NS	52	19	*
	7.0 to 20.99	63	4.7	1.8		57	25	
	21.0 upwards	12	4.7	1.1		56	22	
<i>Previous frequency of absence (spells per year at risk)</i>	0	25	4.9	2.0		40	22	
	0.1 to 1	46	5.1	2.7		43	20	
	1.1 to 2	52	5.0	1.8	NS	50	20	*
	2.1 to 4	71	5.1	1.9		56	27	
	4.1 to 7	52	4.3	1.8		52	19	
	Over 7	15	4.8	1.4		60	20	

NS = not significant *p = 0.05 **p = 0.01 ***p = 0.001

Outcome Study

Complications. Men operated on by a consultant spent nearly a day longer in hospital. This was not because consultants operated on a higher proportion of men with a history of serious illness (Table 3). Wound infection, rather than chest complications, was associated with a longer stay in hospital.

Duration of time off work

The average length of time off work was 51 calendar days (compared with 70 calendar days nationally) and 236 men claimed sickness benefit from the day they entered hospital, which was usually the day before

Table 3. Relationship between grade of operator and history of previous serious illness.

Operator	Previous illnesses*			Total
	Severe	Mild	None	
Consultant	12	13	36	61
Registrar	43	48	92	183
House surgeon	4	5	7	16
Total	59	66	135	260

*History missing in one case
 $\chi^2 = 1.89$, d.f. = 4, $p = 0.7551$ (not significant)

operation. The remaining 25 were off work before operation for periods up to 71 days. Postoperative complications, type of job, amount of sick pay, social class, smoking habits, the hospital, whether an estimate of time off work had been given, who gave the estimate, and previous frequency and duration of sickness absence all significantly affected time off work (Table 2).

Postoperative complications, particularly chest complications, were associated with more time off. The heavier the job the longer the time off, and the higher the sick pay and social class the shorter. There was a significant relationship between social class and full income during sickness ($\chi^2 = 71.18$, d.f. = 12, $p = 0.00001$). The more a man smoked, the more time off he had. The six men who stopped smoking, having been asked to do so at their initial outpatient appointment, took on average 38 days to return to work.

Men operated on in the Churchill Hospital had less time off than those at the Radcliffe Infirmary.

Only about a quarter of all men had been given an estimate of their time off work before entering hospital. Those who were given one had less time off than those who were not, and those whose estimate had been given by the surgeon had least time off of all. There was no

Table 4. Hospital stay and time off work of 106 men interviewed in 1974/75.

		Days in hospital		Days off work		Significance of difference		
		Number of men	Mean	Standard deviation	Mean		Standard deviation	
All		106	4.9	2.0	47	22		
Children at home	None	43	5.4	2.6	48	22		
	One	26	4.4	1.2	49	23		
	Two	21	4.6	1.4	45	20	NS	
	Three	11	4.5	1.8	38	20		
	Four	4	5.3	1.7	57	29		
	Six	1	5.0	—	67	—		
Wife working	Not at work	44	4.9	1.6	48	22		
	Full time	18	4.7	1.3	37	14	*(not applicable excluded)	
	Part time	34	5.3	2.8	52	22		
	Not applicable	10	4.0	1.6	45	31		
Job satisfaction	Did not answer	8	4.3	1.2	57	26		
	Very satisfactory	35	5.6	2.5	47	25		
	Fairly satisfactory	50	4.6	1.8	45	19	NS	
	Neither satisfied nor dissatisfied	8	4.6	1.1	47	26		
	Very dissatisfied	5	4.6	1.7	51	16		
Sport or hobby	None	0	19	5.1	2.4	55	19	
	Active sport	1	15	4.5	1.1	43	20	
	Vigorous hobby	2	30	5.2	2.7	55	27	
	More than one active	3	8	4.0	1.3	31	15	*(between groups 0, 1, 2, 3, 4 and 5, 6, 7, 8)
	More than one vigorous	4	12	5.1	1.9	50	20	
	Inactive sport	5	1	4.0	—	25	—	
	Non-vigorous hobby	6	11	4.4	1.6	38	14	
	More than one inactive	7	2	4.0	1.4	24	2	
More than one non-vigorous	8	8	5.6	0.7	39	7		
Paid holidays yearly	Did not answer or not applicable	17	4.1	1.3	55	26	**(excluding no answers)	
	One to 10 days	2	6.5	0.7	20	8		
	11 to 19 days	25	4.8	2.0	55	26		
	20 to 29 days	45	4.8	1.7	45	19		
	More than 30 days	17	6.1	3.1	36	11		

Outcome Study

relationship between social class and the source of the estimate ($\chi^2 = 9.92$, d.f. = 6, $p = 12.59$).

The more time off a man had during his working career and the more often he had taken time off, the longer absence was likely to be after hernia repair.

Factors such as recurrence, type of operation, grade of surgeon, previous serious illness (categorized from the hospital notes) appeared to have had little effect on time off work.

In multiple regression analysis of the data on 259 of the 261 men, occupation type, social class, complications, and age explained 25 per cent of the variation in time off work. None of the other variables listed in Table 2 increased the amount of variance explained.

Men interviewed in 1974/75

The 106 men interviewed in 1974/75 spent on average 4.9 days in hospital and 47 days off work (Table 4).

From the additional information they provided, number of factors were found to have a significant effect on their absence from work. A wife working full time was associated with less time off, as were sport or hobby participation and job interest (but not "satisfaction"). The higher the number of paid holidays yearly the less time taken off work. Family worries were associated with an increase in time off.

In multiple regression analysis of the data on 96 of the 106 men, type of occupation, social class, complications, and family worries explained 42 per cent of the variation in time off work. None of the additional variables listed in Table 4 increased the amount of the variance explained.

Precision of diagnosis on final medical certificate

Repair of hernia unspecified was recorded on 179 (69 per cent) of final sickness certificates. In 29 (11 per cent)

Table 4. (continued)

		Days in hospital		Days off work		Significance of difference	
		Number of men	Mean	Standard deviation	Mean		Standard deviation
<i>Interesting work</i>	Did not answer	8	4.6	1.4	57	27	*(excluding no answers and not applicable)
	Strong disagreement	4	4.0	0.8	66	14	
	Slight disagreement	9	5.4	2.7	50	12	
	Slight agreement	24	4.9	1.8	52	25	
	Strong agreement	60	4.9	2.1	42	20	
	Not applicable	1	6.0	—	82	—	
<i>Good take-home pay</i>	Did not answer	8	4.6	1.4	57	27	NS
	Strong disagreement	5	5.0	1.6	44	21	
	Slight disagreement	8	3.9	1.1	51	17	
	Slight agreement	34	4.7	2.6	45	22	
	Strong agreement	46	5.2	1.8	47	21	
	Not applicable	5	5.4	1.1	46	31	
<i>Good hours</i>	Did not answer	8	4.6	1.4	57	27	NS
	Strong disagreement	5	6.2	3.5	45	14	
	Slight disagreement	6	4.2	1.5	32	18	
	Slight agreement	20	4.9	1.9	51	23	
	Strong agreement	61	4.9	2.1	46	21	
	Not applicable	6	5.3	1.0	52	31	
<i>Most important things</i>	Did not answer	7	5.0	1.9	35	11	NS
	Work	27	5.0	2.4	42	23	
	Family	69	4.9	1.9	50	22	
	Spare time	3	3.3	1.1	46	26	
<i>Biggest source of worry</i>	Did not answer	10	5.6	2.8	45	22	*** (excluding no answers)
	Family	51	5.0	1.8	55	24	
	Job	30	4.5	1.4	38	16	
	Other	15	4.7	3.0	41	16	
<i>Most pleasant things</i>	Did not answer	11	5.0	2.1	36	13	NS
	Family/home	81	4.8	1.8	51	23	
	Spare time	11	5.4	3.4	38	12	
	Job	3	5.7	0.6	28	4	
<i>Most interesting things</i>	Did not answer	12	5.3	2.1	39	10	** (excluding no answers)
	Spare time	26	4.2	1.3	49	22	
	Work	24	5.5	2.3	37	21	
	Family	44	4.8	1.8	54	22	

NS = not significant * $p = 0.05$ ** $p = 0.01$ *** $p = 0.001$

it was possible to identify that the patient had had an inguinal herniorrhaphy. The remaining 20 per cent of diagnoses included "operation" or "hospital admission" and others such as "postoperative debility" and "bronchitis" which had apparently followed operation.

Discussion

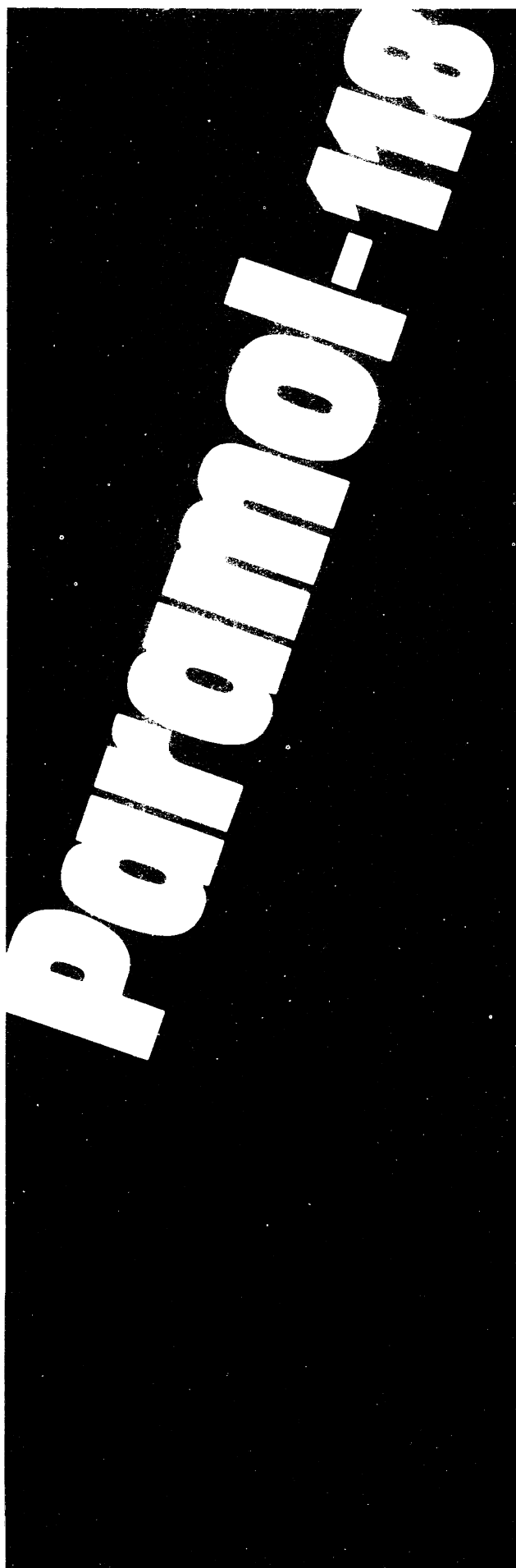
Ross (1975) has argued that patient activity is restricted for far too long in British practice and that four weeks' absence after hernia repair should be the maximum. The majority of the nonmedical factors we examined have already been shown to have an association with duration of sickness absence. The important ones are sick pay and type of job. Several studies have shown that the higher the sick pay and the lighter the job the less time off work (Saffair, 1958; Ministry of Pensions and National Insurance, 1964 and 1965; Gardner *et al.*, 1968). Some other factors which have been shown to have an effect we were unable to confirm.

The number of children at home did not affect sickness absence in our study as it has been shown to do in other surveys (Shepherd and Walker, 1958; DHSS, 1970). Though a man with a large family may be more subject to repeated infection and for this and other reasons take more time off than average over a period of years, he may still need no more time off after operation than anyone else.

In our study also, in contrast with that of the General Household Survey (OPCS, 1973) job satisfaction did not appear to affect length of absence. Though one may postulate that a man may be satisfied with his job from the point of view of pay, working conditions, and relations with colleagues but may still not be very interested in it, we suspect that the lack of precision of the instruments we used (Bennett, 1974) to measure job satisfaction and job interest was probably responsible for the anomalies.

Conclusion

The value of the study lay in re-emphasizing the effect of medical opinion on men's expectations and the importance of explaining to a candidate for operation the implications from the point of view of absence from work (Moss and Dohan, 1958). Such explanation in the case of hernia repair comes better from the surgeon than the general practitioner. Doctors may often be unaware of the consequences of too cautious a prognosis (Taylor and Fairrie, 1968). That only 68 of the 261 men were given an estimate by anyone at all may account for the failure of multiple regression analysis to demonstrate that being given an estimate had an independent effect on duration of absence. Our study did not show whether it was a question of some surgeons giving an estimate to each of their patients or all surgeons giving an estimate to a selected number. However, it was not a question of men of higher social class asking for, or being given, an estimate of time off.





COLLEGE ACCOMMODATION

Charges for college accommodation are reduced for members (i.e. fellows, members and associates). Members of overseas colleges are welcome when rooms are available. All charges for accommodation include breakfast and are subject to VAT. A service charge of 12½ per cent is added. Children aged 12 years and over, when accompanied by their parents, can always be accommodated; for those between the ages of six and 12 years, two rooms are being made available on a trial basis. Children under the age of six cannot be accommodated and dogs are not allowed. Residents are asked to arrive before 18.30 hours to take up their reservations.

From 1 April 1980, charges will be (per night):

	Members	Others
Single room	£8	£16
Double room	£16	£32
Flat 1	£25	£40
Flat 3 (self-catering with kitchen)	£35	£60

Charges are also reduced for members hiring reception rooms compared with outside organizations which apply to hold meetings at the College. All hirings are subject to approval and VAT is added.

	Members	Others
Long room	£60	£120
John Hunt room	£40	£80
Common room and terrace	£40	£80
Kitchen/Dining room	£20	£40
Jephcott room	£40	£80

Enquiries should be addressed to:

**The Accommodation Secretary,
Royal College of General Practitioners,
14 Princes Gate, Hyde Park,
London SW7 1PU.
Tel: 01-581 3232.**

Whenever possible bookings should be made well in advance and in writing. Telephone bookings can be accepted only between 9.30 hours and 17.30 hours on Mondays to Fridays. Outside these hours, an Autophone service is available.

Again, men who accepted the surgeon's advice at their initial outpatient appointment to stop smoking may have been those who were keener to return to work anyway. However, they took significantly less time off than average and it may be that the prospect of a surgical operation, like a myocardial infarction, makes men more receptive to medical advice to stop smoking.

Finally, in 20 per cent of final sickness certificates it was not possible to identify that the patient had had a hernia repair. The National Insurance statistics which are derived from final sickness certificates may, therefore, have a similar margin of error.

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