

Changes in local clinical practice following an experiment in medical care: evaluation of evaluation

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SUMMARY The changes in clinical practice following a randomised controlled trial of early discharge for inguinal hernia and varicose veins are reviewed. A significant reduction in mean length of stay was recorded in the study area between 1970 (the year before the start of the study) and 1975 (two complete years after the study). This change was not found in two adjacent health districts.

Introduction

A previous paper described the methodology and results of a randomised controlled trial of early discharge for inguinal hernia and varicose veins (Adler *et al.*, 1978). The results of that research suggest that early discharge for patients with these two conditions is justified, and that surgeons should be encouraged to adopt this type of management. The finding that early discharge is safe and acceptable to patients was communicated to those working in the study area. The study ended in March, 1973, and the preliminary findings were presented later that year. This paper reviews the changes in clinical practice which have occurred in the area as a result of these suggestions since completion of the research.

Results

Since the study did not include an evaluation of change in policy, Hospital Activity Analysis (HAA)

data have been examined to monitor any changes. The latest complete HAA report for the study area (Farnham and Frimley) is for 1975, two complete years after the end of the study. After reorganisation of the National Health Service in 1974, this area became the West Surrey and North-east Hampshire District. Unfortunately, it is not possible to compare the study area with the rest of England and Wales at this point in time, because the latest available report on the Hospital In-patient Enquiry is for 1973, the same year in which the study was being carried out.

In West Surrey and North-east Hampshire in 1975, the mean length of stay for inguinal hernia patients aged 15 to 64 years inclusive was 4.7 days, and for varicose veins patients 3.5 days. This represents a reduction in mean length of stay since 1970 (the year before the start of the study) of 3.8 and 3.4 days respectively; that is, a reduction by nearly half for the two conditions. The cumulative frequency for the time from admission to discharge

Table 1 *Cumulative frequency for the time from admission to discharge and from operation to discharge for patients aged 15 to 64 years inclusive in study area*

Days in hospital Admission to discharge	Operation to discharge	Inguinal hernias		Varicose veins	
		Cumulative percentage of patients discharged 1970	1975	Cumulative percentage of patients discharged 1970	1975
1		0.7			8.3
2	1	1.5	8.7		19.6
3	2	6.1	26.3	4.8	49.5
4	3	10.6	59.6	10.4	85.7
5	4	13.7	76.6	23.7	96.5
6	5	19.0	85.9	30.7	98.5
7	6	33.5	92.3	67.1	99.0
8	7	49.6	95.9	90.2	
9	8	58.0		92.3	99.5
10	9	70.9	97.0	97.2	
11	10	90.0	98.2	97.9	
12	11	94.6	98.9	98.6	
13	12	98.4		100.0	
14	13	100.0	99.4		
15	14		100.0		100.0

is shown in Table 1. Virtually all patients are admitted to hospital on the day before the operation, so a length of stay of three days is equivalent to 48-hour discharge. Figure 1 shows the distribution of length of stay in 1970 and 1975 for inguinal hernia and varicose vein patients. There has been a marked shift in the distribution and the rate of discharge.

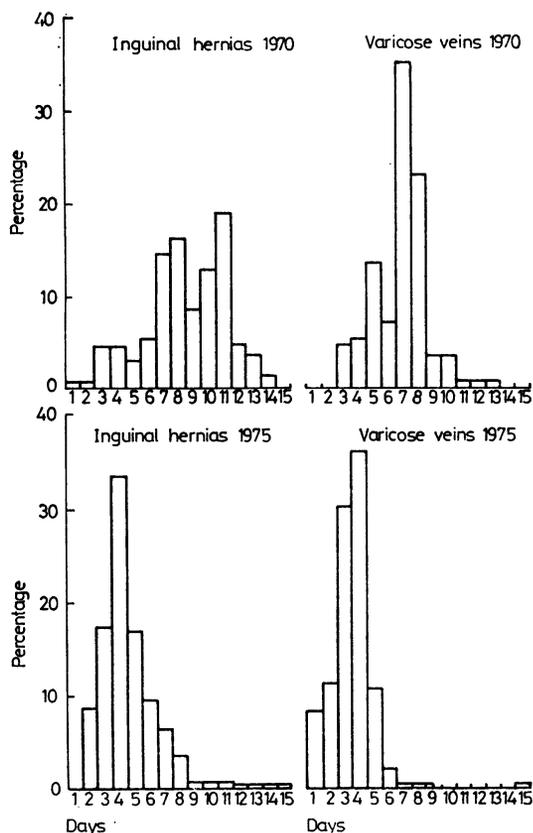


Fig. 1 Distribution of days between admission and discharge in study area for patients aged 15-64 years inclusive with inguinal hernia and varicose veins.

In the course of the study, 50% of potential patients were excluded as unsuitable for early discharge because of surgical, medical and social contraindications, and they were kept in hospital for longer periods. It is likely that these contraindications would still exist, and that the same proportion of patients would have been kept longer in hospital for similar reasons in 1975. Thus it could be expected that only approximately half of all patients would be discharged after two days if the policy of early discharge was being applied. In 1970, only four per cent of vein patients were discharged after

48 hours compared with 49% in 1975; for hernia patients, the proportion had risen from six per cent to 26%. For vein patients, it appears that early discharge has been accepted. Although only 26% of hernia patients left hospital after 48 hours, this proportion increased to 59% by three days after operation, which is only 24 hours later than recommended. In 1970 it took nearly three times as long to achieve this level (58% at eight days).

It has not been possible to contrast the study area (West Surrey and North-east Hampshire Health District) with the rest of England and Wales, so a comparison has been made with the two adjacent health districts in Surrey; namely, south-west and north-west Surrey (Fig. 2). The cumulative frequency for the time between admission and discharge for these two districts compared with the study area is shown in Fig. 3. In comparison with the study area, there has been a much smaller shift. For south-west Surrey the rate of discharge has decreased slightly, and for north-west Surrey it has increased slightly. Table 2 shows the changes in mean duration of stay and acute beds per thousand for the three districts. In the study area, the reduction in mean length of stay for inguinal hernia and varicose vein patients between 1970 and 1975 was statistically significant. A significant change was also found for south-west Surrey but instead of coming down, the mean length of stay increased. The other area which showed a reduction in mean length of stay was north-west Surrey, but this was far less marked than in the study area, and was not statistically significant for either of the two conditions. Although the study area showed the largest reduction in length of stay compared with south-west and north-west Surrey, the number of acute beds fell by contrast with the other areas, where there was an increase. This reduction in beds was extremely small (1%) compared with the very large reduction in mean length of stay for inguinal hernias (44%) and varicose veins (49%), and it is unlikely to have accounted for the implementation of an early discharge policy.

A one-way analysis of variance was performed to compare the mean lengths of stay for hernia and vein patients in 1970 and 1975 by different health districts. For inguinal hernias, the differences between districts were statistically significant in 1970 and in 1975. It is interesting to note that whereas the study area had the longest mean length of stay for inguinal hernias in 1970, this had changed by 1975 to the shortest of all. There was no statistically significant difference in the mean length of stay for varicose vein patients in 1970, but there was in 1975. Once again the study area changed during this period from the highest mean length of stay to the lowest.

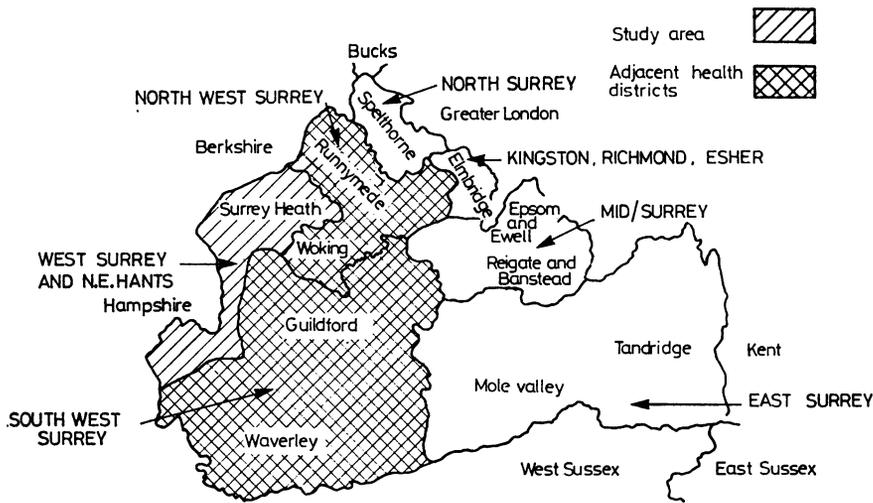


Fig. 2 Surrey health districts.

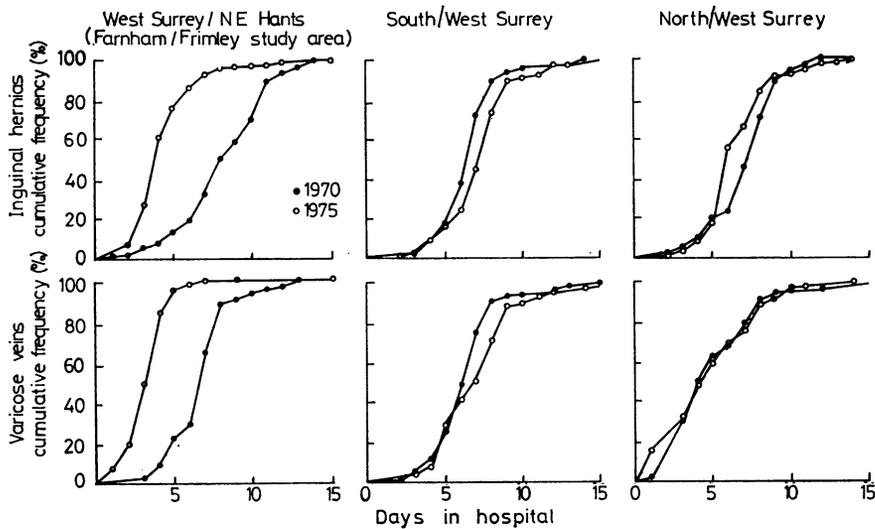


Fig. 3 Cumulative frequency for the time between admission and discharge in study area and two adjacent health districts for patients aged 15 to 64 years inclusive with inguinal hernia and varicose veins.

Local factors, such as a shortage of adequate domiciliary services, could account for the differences between the three areas. This is only partially borne out by looking at the changes in district nursing sisters for these areas between 1970 and 1975. In west Surrey and north-east Hampshire, the complement of district nursing staff increased by 9%, in north-west Surrey by 47%, and in south-west

Surrey there was no change. This may have contributed to the fact that south-west Surrey was the only one of the three areas showing an increased length of stay for inguinal hernias and for varicose veins. However, it could have been expected that the area with the largest increase in staff would also have shown the largest reduction in length of stay, but this was not so.

Table 2 Mean length of stay for inguinal hernia and varicose vein patients aged 15 to 64 years inclusive in study area and two adjacent health districts

Health district	Mean length of stay (days)						No of acute beds per thousand population		
	Inguinal hernias			Varicose veins			1970	1975	Percentage change (1970 = 100%)
	1970	1975	Percentage change (1970=100%)	1970	1975	Percentage change (1970=100%)			
West Surrey/NE Hampshire, (Farnham/Frimley study area)	8.5	4.7	-44.7	6.9	3.5	-49.2	1.77	1.74	-1.6
South-west Surrey	6.9	7.6	+10.1	6.7	7.3	+8.9	3.17	3.30	+4.1
North-west Surrey	7.4	6.9	-6.7	5.9	5.1	-13.5	2.46	2.74	+11.3
1970 : 1975	Inguinal hernias		West Surrey/NE Hampshire	$t = 13.85$	300 df	$P < 0.000001$			
			South-west Surrey	$t = 2.48$	211 df	$P < 0.02$			
			North-west Surrey	$t = 1.78$	203 df	$0.05 < P < 0.10$			
	Varicose veins		West Surrey/NE Hampshire	$t = 19.06$	347 df	$P < 0.000001$			
			South-west Surrey	$t = 2.27$	330 df	$P < 0.05$			
			North-west Surrey	$t = 1.11$	179 df	$0.2 < P < 0.3$			
Analysis of variance between districts	Inguinal hernias 1970		$F_{2,299} = 14.36$	$P < 0.001$					
	Inguinal hernias 1975		$F_{2,415} = 74.72$	$P < 0.001$					
	Varicose veins 1970		$F_{2,373} = 1.97$	$0.1 < P < 0.25$					
	Varicose veins 1975		$F_{2,481} = 134.63$	$P < 0.001$					

It is extremely encouraging that the policy of early discharge has been implemented in the study area, and that it has been particularly marked by comparison with the two adjacent control areas. This suggests that the research findings played a part in changing clinical practice in the study area. I am grateful to Elizabeth Belsey, Karen Dunnell, and David Miller for their comments and advice. This work formed the basis of an M.D. thesis (University of London).

Reprints from: M. W. Adler, Department of Community Medicine, Middlesex Hospital Medical School, London W1N 8AA.

References

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