King's Fund

National Evaluation of Total Purchasing
Pilot Projects
Working Paper

Hospital activity changes and total purchasing in 1996/7

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This report has been produced to disseminate research findings and promote good practice in health and social care. It has not been professionally copy-edited or proof-read.

The Total Purchasing National Evaluation Team (TP-NET)

The national evaluation of total purchasing pilots in England and Scotland is a collective effort by a large consortium of health services researchers. The study is led by the King's Fund, but also involves the National Primary Care Research and Development Centre at Manchester, Salford and York Universities, together with researchers from the Universities of Edinburgh, Bristol, Southampton, York and Birmingham; the London School of Hygiene and Tropical Medicine; and the London School of Economics and Political Science. More information about the evaluation as a whole is available from: Gill Malbon, King's Fund, 11-13 Cavendish Square, London W1M 0AN.

Acknowledgements

Thanks are due to many members of TP-NET who contributed to the national evaluation's interview data. Particular thanks are due to Judy Robison and Ray Robinson for providing data on the TPPs' contracting methods, Gill Malbon and Nick Goodwin for sharing their analyses and responding to the resulting questions, and Nick Mays for commenting on a draft of this report. Thanks also to Mike Davidge for sharing his experience of HSMC's evaluation of the Berkshire Integrated Purchasing Project, and Tim Marshall for statistical advice.

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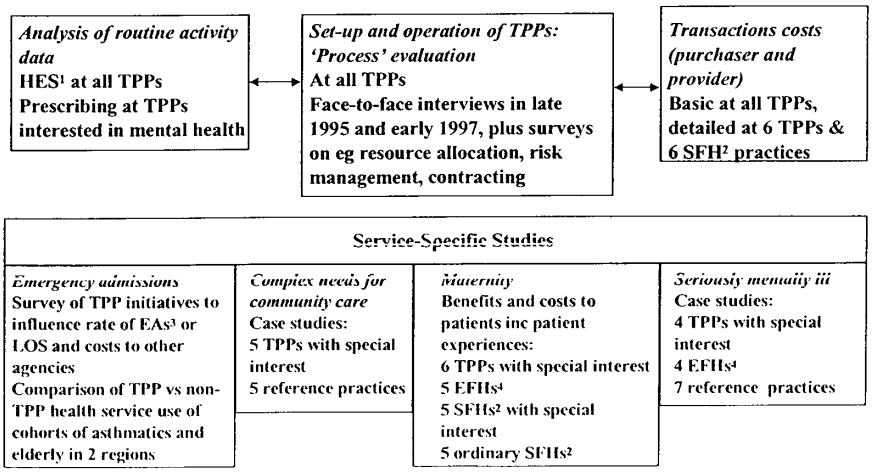
Preface: The National Evaluation of Total Purchasing Pilot Projects

Total Purchasing Pilot Projects allow for the purchasing of potentially all hospital and community health services by fundholding general practices which began their preparations for contracting in April 1995. Since 'total purchasing' (TP) represented an important extension of the already controversial fundholding scheme, the Department of Health decided to commission an assessment of the costs and benefits of this NHS Executive initiative. This working paper represents part of the final reporting of the evaluation which began data collection in October 1995 (mid-way through the total purchasing pilots' (TPPs') preparatory year). Other titles in this series of working papers are listed on page iii.

The evaluation amounts to a programme of inter-linked studies was undertaken by a large consortium of researchers from different universities led from the King's Fund. Full details of the participants are given on the back cover of this report. All 53 of the 'first wave' TPPs and the 35 'second wave' pilots which began a year later are being studied. The diagram below summarises the main elements of the research which has at its core an analysis of how TP was implemented at all projects and with what consequences, for example, in terms of hospital activity changes. These elements are linked to a series of studies at sub-samples of TPPs which attempt to compare the costs and benefits of TP with conventional health authority purchasing for specific services (emergency admissions, community care, maternity and mental health). In these parts of the evaluation, comparisons are also made between extended fundholding (EFH), where practices take on a new responsibility for purchasing in a single service area (e.g. maternity or mental health) and TP, where practices purchase more widely.

Main components of National Evaluation of First Wave Total Purchasing Pilot Projects



[1] HES = hospital episode statistics, [2] SFH = standard fundholding, [3] EAs = emergency admissions, [4] EFH = extended fundholding pilot

Further details about the evaluation design and methods are available in the interim report of the evaluation which was published by the King's Fund early in 1998 and entitled *Total purchasing: a step towards Primary Care Groups*.

The evaluation would not have been possible without the co-operation and interest shown by all the staff involved in the TPPs. We are very grateful, principally for the time people have given up to be interviewed, whether in practices, health authorities, Trusts, social services departments or elsewhere in the health and social care system.

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King's Fund, London
June 1999

Abbreviations

FCE	Finished Consultant Episode
HA	Health Authority
HES	Hospital Episode Statistics
LCH	local community hospital
LOS	length of stay
MAH	main acute hospital
MAT	main acute trust
MCT	main community trust
OBDs	occupied bed days
PACT	Proactive care teams
SMR1	Scottish Morbidity Record 1
TP-NET	Total purchasing national evaluation team
TPP	Total Purchasing Pilot
TPP site	one or more practices from a TPP operating as a single unit

National Evaluation of Total Purchasing Pilot Projects
Main Reports and Working Papers

Title and Authors	*ISBN*

Main Reports

Nicholas Mays, Nick Goodwin, Gwyn Bevan, Sally Wyke on behalf of the Total Purchasing National Evaluation Team (1997). *Total purchasing: a profile of the national pilot projects*	1 85717 138 1
Nicholas Mays, Nick Goodwin, Amanda Killoran, Gill Malbon on behalf of the Total Purchasing National Evaluation Team (1998). *Total purchasing: a step towards primary care groups*	1 85717 187 X
Amanda Killoran, Nicholas Mays, Sally Wyke, Gill Malbon (1999) *Total Purchasing: A step towards new primary care organisations.* London: King's Fund	1-85717-242-6

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Gill Malbon, Nicholas Mays, Amanda Killoran, Nick Goodwin *A profile of second wave total purchasing pilots: lessons learned from the first wave* 1 85717 195 0

Amanda Killoran, Jenny Griffiths, John Posnett, Nicholas Mays *What can we learn from the total purchasing pilots about the management costs of Primary Care Groups? A briefing paper for health authorities* 1 85717 201 9

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Forthcoming reports from the final year of the national evaluation

Killoran A, Abbott S, Malbon G, Mays N, Wyke S, Goodwin N (1999) *The transition from TPPs to PCGs: lessons for PCG development.*

Malbon G, Mays N, Killoran A, Wyke S, Goodwin N (1999) *What were the achievements of TPPs in their second year and how can they be explained?*

Goodwin N, Abbott S, Baxter K, Evans D, Killoran A, Malbon G, Mays N, Scott J, Wyke S (1999) *Analysis and implications of eleven case studies.*

Lee J, Gask L, Roland M, Donnan S (1999) *Total Purchasing and Extended Fundholding of Mental Health Services: Final Report.*

Wyke S et al (1999) *National evaluation of general practice-based purchasing of maternity care: Final report.*

Forthcoming book from the national evaluation of TPPs

Nicholas Mays, Sally Wyke, Nick Goodwin, Gill Malbon (eds) 1999 *Can General Practitioners purchase health care? The total purchasing experiment in Britain.*

Executive Summary

Total Purchasing was introduced as an extension of GP fundholding. It was intended that Total Purchasing Pilots (TPPs) would purchase most, if not all, hospital and community health services for their patients via delegated budgets from their local health authority and independent, activity-sensitive contracts. In particular, the presence of a budget constraint was seen as a means of giving GPs an incentive to manage their expenditure on potentially expensive hospital care more appropriately by, for example, reducing emergency admissions or reducing hospital length of stay.

The 'first-wave' TPP sites were distinguished by five types according to the TP-NET typology. This report summarises the hospital activity analysis for two of these types, 'Commissioner' TPPs and 'Co-purchaser' TPPs, because both these TPP types had contracting arrangements in place relating to secondary care. Commissioner TPPs directly purchased a range of TP-related services (those not covered by fundholding) via their own budgets and independent contracts to achieve changes in secondary care. Co-purchaser TPPs did not hold budgets and/or undertake any direct purchasing, but attempted to change health authority purchasing activities, by entering into 'joint' contracting arrangements with the host health authority.

The main objective of the hospital activity analysis was to compare changes in hospital activity, in the areas for which TPPs had objectives, with those of comparators. Two comparators were used: the 'HA-wide' comparator (all other practices in the local health authority) and the 'local' comparator (the practices in the local health authority sharing the TPP's main provider). Three comparisons were made between the TPP and (i) the local comparator and activity at the TPP's main provider, (ii) the local comparator and activity across all providers, and (iii) the HA-wide comparator and activity across all providers. In each case 'success' for a TPP was defined as better performance than the comparator as indicated by the percentage change in the relevant activity. Hence, a 'successful' TPP experienced a smaller increase or larger decrease in admissions or length of stay compared to its comparator. Thus, the analysis was intended to provide an indication of progress made by the TPPs which did not rely on their claims, and also took into account the experience of local practices.

The comparison between each TPP and its local comparator and activity across all providers was chosen as the main indicator of 'success', although each of the three comparisons made in the analysis warrants consideration (see the Discussion section below).

Hospital activity data were available for acute hospital care in 1996/7 for 20 of the 23 Commissioner TPP sites, and 9 of the 11 Co-purchaser TPP sites. All 20 Commissioner TPP sites had objectives to either reduce acute emergency admissions or reduce acute hospital length of stay. The activity analysis indicates that 16 of the 20 Commissioner TPP sites were

'successful' in at least one of these objectives. Seven of the nine Co-purchaser TPP sites had objectives to either reduce acute emergency admissions or reduce acute hospital length of stay and five were 'successful' in achieving at least one of these.

Table 1 summarises these activity analysis findings. Table 1 distinguishes between main TPP objectives and those of secondary importance.

Table 1: Summary activity analysis results: the percentage of 'successful' Commissioner and Co-purchaser TPP sites (compared to local comparators and activity across all providers) with objectives relating to emergency admissions or length of stay in 1996/7

Objective	% of 'successful' TPP sites (and number) 'main' or 'secondary' objective	% of 'successful' TPP sites (and number) 'main' objective only
Commissioners		
emergency admissions	56% (9/16)	70% (7/10)
length of stay	50% (9/18)	50% (6/12)
Co-purchasers		
emergency admissions	60% (3/5)	100% (3/3)
length of stay	75% (3/4)	75% (3/4)

The 'successful' Commissioner TPP sites used a range of methods to prevent acute emergency admissions, the most common being the use of community-based nursing teams and community hospital GP beds. With regard to reducing acute emergency length of stay, project nurses were usually used to facilitate the early discharge of patients to community hospital GP beds.

While five Co-purchaser TPP sites were 'successful' in achieving at least one of their objectives to either reduce acute emergency admissions or reduce acute hospital length of stay, it is noteworthy that these TPP sites had originally wanted to be Commissioners in 1996/7. In addition, the innovations introduced by the Co-purchasers were usually funded by the host Health Authorities, and did not have financial repercussions for the affected hospital providers.

Commissioner and Co-purchaser TPPs often attempted to substitute community hospitals or nursing homes as venues for care in place of acute hospitals. The Hospital Episode Statistics data does not include nursing home activity, and in two cases NHS community hospital activity were missing from the datasets. Hence, the analysis enabled shifts to NHS community hospitals be picked up in all but two cases, while the change in nursing home activity could not be detected. For example, one particularly successful Commissioner TPP achieved the early discharge of emergency geriatric cases from an acute hospital to a community hospital rehabilitation facility. However, this resulted in an increase in overall

occupied bed days (see Appendix 5). The overall cost implications of such shifts depend on the unit costs of each facility and the financial implications depend on the contracts in place.

The sixteen 'successful' Commissioner TPPs usually held sophisticated block or cost and volume contracts with prices based on Finished Consultant Episodes (FCEs) at average specialty cost. Cost savings were reported to have been achieved or to have met predicted levels for half (7/14) these main acute contracts. Robinson *et al*, 1998, reported the difficulty experienced by TPPs that wished to move away from contracting on FCEs towards, for example, cost per day or cost per admission. The 'successful' Commissioner TPPs show that progress made in changing service provision need not be accompanied by a contract currency which reflects the activity changes and may not lead to savings. Hence, activity changes need not equate to an efficiency gain to the local health system as a whole.

Conclusions:

- TPP 'Commissioning' can be an effective method to bring about change in the pattern of use of secondary care services, at least in those TPPs which chose to make it a priority.
- However, most Commissioner TPP sites were not able to negotiate length of stay-sensitive pricing.
- Co-purchaser TPP sites also achieved some successes. However the fact that many of them intended initially to operate as Commissioners limits the conclusions that can be drawn about co-purchasing as a model.
- Primary Care Groups (PCGs) at Level II will be similar to Commissioner TPPs with regard to their budgetary responsibility for the purchase/commissioning of health care. Hence, there is considerable potential for Level II PCGs to manage demand for unplanned secondary services at least as well, if not better, than the health authorities have done to date. Whether this leads to efficiency gains depends on managing total demand and releasing resources from acute hospital contracts.

1 Introduction

This Working Paper summarises the findings from the analysis of routine data on hospital activity which forms part of the national evaluation of Total Purchasing Pilots. This analysis covered the TPPs' preparatory year (1995/6) and their first 'live' year (1996/7). The analysis provides evidence about the extent of changes made in hospital activity by TPPs which chose to make service changes in the acute hospital sector. In addition, it provides some evidence on the extent to which such changes achieved financial objectives and the impact of different contracting methods.

1.1 TPPs and the management of secondary care

Total Purchasing was introduced as an extension of GP fundholding. It was intended that TPPs would purchase most, if not all, hospital and community health services for their patients via delegated budgets from their local health authority and independent, activity-sensitive contracts. In particular, the presence of a budget constraint was seen as a means of giving GPs an incentive to manage their expenditure on potentially expensive hospital care more appropriately by, for example, reducing emergency admissions or reducing hospital length of stay.

Total Purchasing first arose as four local 'pioneer' initiatives. The first of these to go 'live' was Bromsgrove TPP in April 1994. In October 1994 the NHS Executive and the Scottish Office Department of Health announced the 'first wave' of national pilots. These began a preparatory year in April 1995.

However, the first wave TPPs did not all develop in line with the extended fundholding model. TP-NET developed a typology for the TPPs to capture this diversity in 1996/7 (Mays *et al*, 1998a, p17) (Table 1.1).

Table 1.1 TPP Typology in 1996/7[1]

	Number (%) of TPPs	Number (%) of TPP sites
Commissioners	22 (42.3)	23 (41.8)
Co-purchasers	9 (17.3)	11 (20)
Primary care developers	8 (15.4)	8 (14.5)
Developmental pilots	11 (21.2)	11 (20.0)
Under-developed pilots	2 (3.8)	2 (3.6)
Total	52 (100.0)	55 (100.0)

'Commissioners' were defined as 'projects directly purchasing in TP-related service areas with their own budgets and independent contracts to achieve changes in secondary care'.[2] 'Co-purchasers' were defined as 'projects not holding a budget and/or undertaking no direct purchasing, but attempting to change HA purchasing activities'[3], by entering into 'joint' contracting arrangements with the host Health Authority. Commissioners made up 42% of the TPP sites, and Co-purchasers were less common and accounted for 20% of the TPP sites. This left 38% of TPP sites that pursued objectives relating to primary care or were still developing in 1996/7.

When considering the achievement of objectives relating to the management of secondary care it is appropriate to take into account whether the TPPs secured the status of a Commissioner or Co-purchaser, which indicates that they had mechanisms in place for influencing secondary providers and had an interest in managing secondary care. The TPPs which were Primary Care Developers or Developmental TPPs in 1996/7, for whatever reason, offer little insight into the potential of a primary care organisation to influence hospital services, even if they originally had purchasing objectives relating to secondary care.[4]

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[1] One TPP classified as a 'Commissioner' in Mays *et al* (1998a) is classified as a 'Co-purchaser' in this report. This is because although the TPP held one independent contract with a community provider, all acute activity was covered by 'joint' health authority contracts.
Fifty three TPPs originally formed the first wave. Four of these TPPs dropped out of the project during 1996/7. In addition, two TPPs are regarded as each comprising four separate 'sites'. One TPP split for all practical purposes into four separate sites following health authority boundary changes, and the other operated at practice level with different providers. Another TPP is regarded as a single site, even though each of its seven practices operated separately, because data on objectives was collected for one of the seven practices only. Hence, this report records 49 TPPs and 55 TPP sites in 1996/7.

[2] Mays *et al* (1998a) p17.

[3] Mays *et al* (1998a) p17.

[4] Examination of the Mays *et al* (1998a) findings in the light of the TPP typology, indicates that some of the 'primary care developers' and 'developmental pilots' originally had objectives relating to secondary care. This suggests that these TPPs wanted to be 'commissioners' or 'co-purchasers' in 1996/7. Some of the 'primary care developers' and 'developmental pilots' originally had objectives relating to secondary care, and the fact that they did not actually manage secondary care provides the reason for some of the failures to achieve objectives reported by Mays *et al* (1998a).

1.2 Objectives relating to hospital activity

An increase in emergency admissions to acute hospitals has been evident for several years (NHS Confederation, 1997) and the consequent pressure on resources has focused attention on the need to better manage the use of hospital services. While many factors influence the level of hospital activity, Total Purchasing gave GPs the opportunity to both directly manage acute hospital use and to change service provision. TPPs were able to take steps to prevent emergency admissions to acute hospitals by developing services to provide care in a more appropriate setting. In addition, as part of the goal to ensure that acute hospital beds are only occupied by patients who need to be in an acute hospital setting, TPP GPs could also take action to facilitate the timely discharge of their patients from acute beds.

Table 1.2 Commissioner and Co-purchaser TPP sites with objectives relating to emergency admissions or length of stay in 1996/7[5]

Objective	Number of TPP sites with this as a 'main' objective	Number of TPP sites with this as a 'secondary' objective	Number of TPP sites with no such objective
emergency admissions			
Commissioners	11	7	4
Co-purchasers	4	2	5
length of stay			
Commissioners	12	6	5
Co-purchasers	4	0	6

Table 1.2 summarises the objectives of the Commissioner and Co-purchaser TPP sites relating to emergency admissions and length of stay.[6] The table distinguishes between 'main' and 'secondary' objectives in order to take into account the way the TPPs prioritised their objectives.[7]

Only three (13%) of the Commissioner TPP sites (Cm5, Cm7 and Cm10) had main objectives relating to both emergency admissions and length of stay, while all 22 Commissioners, for which data on objectives were collected, had a main objective to reduce emergency admissions or length of stay. One (9%) of the Co-purchaser TPP sites (Cp1) had main objectives relating to both emergency admissions and length of stay, while two (18%) Co-purchasers did not have a main objective to reduce emergency admissions or length of stay.

[5] One Commissioner TPP 'site' is excluded from this table and the analysis because each of the seven practices in the TPP operated independently and data on objectives was collected for one of the seven practices only.

[6] The objectives data was recorded in the TP-NET second round interviews with TPP Project Managers and Lead GPs in 1997, and reviewed in 1998. This report distinguishes between an objective to reduce the number of emergency admissions to hospital and an objective relating to the management of A&E department attendances. The finding by Mays *et al*, (1998a) that 32 TPPs had a main objective relating to emergency services in 1996/7, and that 44% of these TPPs were reported to have achieved their objective, did not make this distinction. The differences in the findings relating to objectives between Mays *et al* (1998a), and this report are noted in Appendix 1.

[7] Note that this definition of a 'main' objective is not the same as that used by Mays *et al* 1998a, which classified the top four objectives as 'main' objectives.

2 Methods

2.1 Data collection

As the national English Hospital Episode Statistics (HES) dataset for 1995/6 and 1996/7 did not include the registered GP practice code, it was necessary to collect the data from more direct sources. Permission to access HES data was sought from the Chief Executives of all TPPs' host Health Authorities in England, and similarly permission to access Scottish Morbidity Record 1 (SMR1) data was sought from the Chief Executives of the host Health Boards in Scotland. All Health Authorities and Health Boards gave their permission to access activity data for their residents. The Information and Statistics Division of the National Health Service in Scotland supplied the SMR1 data for the five host Health Boards, including practice code. HES data for all 40 Health Authorities were collected.[8]

The HES data from five HAs were not analysed because they were missing considerable numbers of Finished Consultant Episodes (FCEs), either because all data from individual trusts were missing or all data for particular periods were missing. The analysis that follows refers to the 20 'Commissioner' and 8 'Co-purchaser' TPPs for which complete acute hospital data were available.

2.2 Analysis

The focus was on the medical and surgical specialties[9], depending on the TPP sites' objectives. Maternity and mental health activity are the subject of separate analyses (work in progress).

The change in activity of each TPP site between the preparatory year (1995/6) and the first 'live' year (1996/7) was compared to all other practices within the host Health Authority and to 'local' comparator practices. Local comparator practices were defined as those similarly reliant on the same acute hospital, thus enabling changes at provider level to be controlled for.[10]

[8] Most Health Authorities supplied their own data. However, one NHSE Regional Office supplied HES data for three Health Authorities, and one Health Authority supplied data for itself and another HA.

[9] In this report 'medical' specialties are defined as all FCEs with HES specialty function codes between 300 and 460 plus 620. Similarly 'surgical' specialties are defined as all FCEs with HES Specialty Function codes between 100 and 190.

[10] Those practices with 20 or more FCEs and 50% or more of all FCEs (regardless of the HES Speciality Function code) at the TPP's main provider in 1995/6.

The percentage change in the number of FCEs by patient classification[11] and 'admission method' (emergency, elective or transfer[12]) was examined for each TPP site and associated comparators. In order to take account of the differences in the ratios of FCEs to admissions across different hospitals, the percentage change in the number of hospital admissions was also analysed.[13] Percentage change in the average length of stay per FCE, and per admission, and the number of total occupied bed days were also analysed.

'Success' for a TPP was defined as better performance than the local comparator group as indicated by the percentage change in relevant activity at the TPP's main acute provider. Hence, a 'successful' TPP experienced a bigger change in the desired direction, or a smaller change in the undesirable direction, in admissions or length of stay compared to its local comparator.

All FCEs with total occupied bed days (OBDs) of more than 365 days were excluded from this analysis.[14]

The preliminary findings for each TPP site were sent to the TPP Project Manager and local Health Authority Information Manager with an invitation to comment. The findings generated a range of interest from the TPPs. A high level of interest often occurred because the activity analyses were much more detailed than those commonly available to the TPPs. A low level of interest from a few TPPs seemed to be associated with general fatigue with requests for assistance from the TP-NET. Some TPPs responded by supplying their own activity records, which varied greatly in terms of coverage (the number of providers included, count of FCEs or admissions, emergencies or all non-electives), source (HA data or data supplied by trusts, either monthly or annually). Three TPPs suggested that the findings understated the change in activity they had experienced. However, none of these TPPs were able to provide data which supported their claims when analysed using this report's method. This report takes into account the feedback received during this process.

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[11] HES defines 'ordinary admission' FCEs as those with HES Patient Classification code 1. 'Ordinary admission' FCEs exclude FCEs relating to day case admissions, mothers and babies using delivery facilities only (and regular day or night admissions, which are not required for central submission to HES.) HES defines 'day case' FCEs as those with HES Patient Classification code 2.

[12] As defined in the NHS Information Management Group HES Codes, Classifications and Definitions version 3.1.

[13] Some hospital 'spells' include more than FCE. The first FCE in a spell is recorded with HES Episode Number code 1, if a second FCE is present it has Episode Number code 2, etc.. Hence, the number of hospital admissions relating to ordinary admission FCEs is defined as the count of FCEs with HES Patient Classification code 1 and Episode Number code 1.

2.3 Data quality

Information Department staff from a number of Health Authorities helped to improve the data quality by explaining idiosyncrasies of their data. However, the quality of HES data supplied varied from Health Authority to Health Authority.

The FCEs were checked for non-standard use of codes for the specialty function, admission method, episode number and provider. Where possible, local variations in coding practice were taken into account. Some specific data quality issues are outlined in Appendix 2. In addition, duplicate FCEs were excluded when possible (see Appendix 2).[15]

The analysis grouped FCEs for the TPPs and comparator groups using the registered practice code, and consequently FCEs for which a practice code could not readily be determined were excluded (see Appendix 2). Where possible missing practice codes were updated using the NHS Organisational Code files if a registered GP code was present.

2.4 Statistical significance test

Differences in the number of FCEs and the number of admissions were analysed assuming a Poisson Distribution[16] which assumes that events occur randomly and independently in time with a constant rate. In the absence of well established methods for the statistical analysis of occupied bed days, the same assumptions have been applied to the latter.

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[14] The following example illustrates how OBDs are counted for FCEs that do not start and finish within one HES year (April to March). An FCE starting in year 1 and finishing in year 2 is recorded in the FCE count for year 2. All the OBDs for the FCE (in year 1 and year 2) are recorded in the OBD count for year 2.

[15] Note that FCEs associated with 'FCE inflation' would not be classified as duplicates. FCE inflation was reported by some HAs and TPPs to be a problem. In this report the results tables present percentage change figures for the number of admissions, rather than FCEs, and the average length of stay per admission, rather than the average LOS per FCE. This approach is intended, in part, to accommodate the reported differences in practice relating to the generation of FCEs

[16] The methodology is illustrated by the following example: Let T refer to the TPP, and C refer to the comparator group. Let 1 refer to year 1, 2 to year 2. Let N be the number of admissions observed, and hence NT1, NC2 etc.. It is assumed that N must be greater than 10.
This leads to: $V(NT2/NT1) = (V(NT2) + RT^2 \times V(NT1))/NT1^2$ and
$V(NC2/NC1) = (V(NC2) + RC^2 \times V(NC1))/NC1^2$
and the variance of the difference between them being the sum of the variances. The standard error is then the square root of the whole.
Example: suppose NT1 = 400, NT2 = 500, NC1 = 1600 and NC2 = 1700.
Then RT = 1.25, and RC = 1.0625 (representing a 25% and 6.25% increase in admissions for the TPP and others respectively).
Then $V(RT-RC) = (500 + 1.25^2 \times 400)/400^2 + (1700 + 1.0625^2 \times 1600)/1600^2$
$= (500 + 625)/160000 + (1700 + 1806.25)/2560000$
$0.00703125 + 0.0013696 = 0.0084008$
Standard Error = 0.091656
Difference = 0.25 - 0.0625 = 0.1875
Difference/Standard Error = 2.0457, which is assessed as significant when referred to a standard distribution table. The P value in this example = 2 x (1 - NORMSDIST(v(2.0457²))) = 0.041

3 Results

3.1 Commissioner TPP sites with objectives to reduce acute emergency admissions

Table 3.1 summarises the different approaches used by 10 Commissioner TPP sites with a main objective to reduce acute emergency admissions in 1996/7.

Table 3.1 Summary of the activity focus and methods used by the Commissioner TPP sites with a main objective to reduce acute emergency admissions in 1996/7.

TPP site code	Activity focus	Main methods	Comment
Cm1	Medical specialties	Use of HA initiated and HA-wide 'fast response service' which provided nurse led hospital-at-home care, plus linked social worker.	Fast response service scheme started in September/October 1996.
Cm2	Medical specialties for the elderly	Introduced GP beds at the local community hospital for elderly rehabilitation, facilitated by a medical assessment unit at the main acute hospital.	The necessary arrangements were not completed in 1996/7.
Cm3	Medical specialties for the elderly	Developed proactive care teams (PACTs) for specific service areas including the elderly.	PACTs were initially piloted at practice level. Main achievement reported was groundwork completed for 1997/8.
Cm4	Geriatrics	Increased use of GP beds at local community hospital, which is part of the main acute trust.	Initiative developed in collaboration with the main acute trust and started in November 1996.
Cm5	Geriatrics	Use of care protocols and increased use of community nurses.	Seven of the eight practices in the TPP joined an out-of-hours GP co-operative.
Cm6	All specialties	Introduced a hospital discharge team, increased use of pre-existing hospital-at-home care, and used nursing homes.	A discharge planning co-ordinator was appointed in August 1996. The scheme went live in January 1997.
Cm7	All specialties	Introduced a GP care rota at the local community hospital, and created three GP assistant posts.	Initiated an 'intermediate care' block contract with the Health Board.
Cm8	Medical specialties	Appointed a social care co-ordinator in about September 1996, and nurse facilitator in March 1997.	Developed a plan for an A&E triage nurse which was implemented in March 1997.
Cm9	All specialties	Admissions protocol monitored and reviewed by appointed primary care liaison manager.	The site went 'live' in 1995/6. The manager's hours were increased to full-time during 1996/7
Cm10	All specialties	Appointed a primary care liaison manager, increased use of local community hospitals and initiated nursing home use.	The site went 'live' in 1995/6. The establishment of a health and social services care team outside TP was reported to be the main achievement.

The most common initiatives, each cited four times, involved admissions to community hospitals, facilitated by the introduction of GP beds or increased GP care, or the use of community nursing teams to prevent admissions. The use of nursing homes and liaison manager/nurse facilitator roles were each cited three times. Treatment protocols and specific social services links were each cited twice.

Table 3.1 also shows that for four of the 10 Commissioners the initiatives were not limited to specific specialties, while four of these 10 sites concentrated on their elderly patients.

Table 3.2 shows for each of the Commissioner TPP sites with a main objective to reduce acute emergency admissions, the number of practices in the site and the site's total list size in April 1996. Table 3.2 shows the specialties covered by each TPP site's activity focus, the main acute contract type and whether the initiative was 'successful'. As noted above, 'success' for a TPP was defined as better performance than the local comparator as indicated by the percentage change in relevant activity across all hospital providers. Hence, a 'successful' TPP experienced a smaller increase or larger decrease in admissions or length of stay compared to its local comparator.

Table 3.2 also shows the results for each of the Commissioner TPP sites with a main objective to reduce acute emergency admissions. All the summary results tables present the findings in the following format:

- For the relevant activity, the percentage change in the number of admissions (or the average length of stay) between the preparatory year and the first 'live' year is presented for each TPP both at its main acute provider and across all hospital providers. Three comparisons are shown. First, the change in the number of admissions for the TPP at the main provider is shown next to the change in the number of admissions experienced by the local comparator practices at the same provider. Second, the change in the number of admissions for the TPP is compared to the change in the number of admissions experienced by the local comparator practices across all providers. The difference in percentage change between the TPP and local comparator across all providers was used to indicate 'success' for the TPP. Third, in order to compare the TPP's performance with all other practices in the host Health Authority, the change in the number of admissions for this group of practices is shown.

- For each of the three comparisons, the P value shown records the statistical significance indicated by the test described above.

- In addition, in each results table, percentage change figures are presented for all TPPs added together, and with the comparator groups similarly added together. The percentage change figures are also presented for the groups of TPPs recorded as 'successful' and 'unsuccessful'.

Table 3.2 shows that 70% (7/10) of the Commissioner TPP sites with a main objective to reduce acute emergency admissions in 1996/7 were 'successful'. Cost and volume or sophisticated block contracts with the main acute providers were generally used and prices were usually calculated on FCEs at average specialty cost. The average population for the 'successful' TPP sites was nearly 46,000 and the average number of practices was 4.4.

Table 3.2 records the percentage change figures for these TPP sites and their comparators. The number of admissions of the TPP sites was often small which limits the scope for testing for statistical significance. However, the TPP-comparator aggregated comparisons were in the 'right' direction which is encouraging. In addition, the differences in percentage change between the aggregated 'successful' TPP sites and their comparators were significant. For example, across all hospital providers the number of emergency admissions for the 'successful' TPP sites decreased by 3.6%, in contrast to increases of 2.5% for the 'local' comparators and 0.5% for all other practices in all the host Health Authorities. The difference in change between the TPP group and the comparator group was statistically significant at the 1% level and 5% level respectively.

Table 3.2 Commissioner TPP sites with a main objective to reduce acute emergency admissions in 1996/7: analysis findings.[17]

TPP site code	number of pract.	total list size	specialties targeted by objective	contract type	contract currency	'success' from HES analysis	number of adm.†	% change in admissions between 1995/6 and 1996/7							
								Main provider			All providers				
								TPP	Local	P	TPP	Local	P	HA- wide	P
Cm1	1	19,000	medicine	cost and volume	FCEs	yes	454	-7.7	1.3	0.2	-5.4	7.8 -*	0.04	3.7	0.13
Cm2	4	46,500	medicine for over 75s	sophisticated block	FCEs	yes	546	-1.3	6.2	0.32	1.1	9.9	0.24	4.5	0.58
Cm3	3	23,000	medicine for over 75s	sophisticated block	FCEs	yes	228	6.1	12.8	0.52	3.3	12.1	0.37	7.7	0.64
Cm4	5	43,000	geriatrics	cost and volume	adm.	yes	699	-10.0	-1.4	0.18	-10.7	-3.7	0.22	-2.3	0.11
Cm5[18]	8	70,000	geriatrics	simple block	FCEs	yes	779	-5.8	1.1	0.37	-3.9	1.2	0.48	3.4	0.18
Cm6	8	79,300	medicine for over 75s	sophisticated block	FCEs	yes	657	-2.6	1.2	0.56	0.1	3.2	0.59	4.1	0.43
Cm7[19]	2	40,000	medicine and surgery	cost per case	FCEs	yes	657	-6.5	-1.5	0.35	-2.9	-0.9	0.69	2.8	0.24
Cm8	1	16,000	medicine for over 75s	cost and volume	FCEs	no	67	17.9	-3.6	0.29	2.9	-3.4	0.59	3.4	0.97
Cm9[20]	1	8,500	medicine and surgery	cost and volume	FCEs	no	261	-4.2	-3.9	0.97	-2.2	-8.8	0.38	-2.8	0.94
Cm10[21]	1	14,000	medicine and surgery	cost and volume	FCEs	no	499	0.6	-3.9	0.5	1.6	-8.8	0.07	-2.9	0.41
averages															
all TPPs	3.4	35,930				no	4847	-4.1	-0.6	0.10	-2.8	-2.1	0.71	-1.1	0.34
7 succ.	4.4	45,829				yes	4020	-5.0	1.1 -*	0.01	-3.6	2.5 -**	0.01	0.5 -*	0.05
3 not su.	1	12,833				no	827	0.5	-3.9	0.39	0.7	-8.2 *	0.04	-2.2	0.49

[17] One TPP site (Cm21) in this group is omitted from the analysis because the HES data were incomplete.
† The total number of admissions for the TPP site in the relevant specialties at its main provider in 1995/6.
[18] Data from one trust in the host HA was excluded from the analysis because 74% of its 1996/7 FCEs were missing specialty function codes.
[19] This TPP is in Scotland and hence the analysis uses SMR1 data.
[20] This TPP site went 'live' in 1995/6.
[21] This TPP site went 'live' in 1995/6.

Table 3.3 shows that for six Commissioner TPP sites with a 'secondary' objective to reduce acute emergency admissions, the most common initiatives cited also involved admissions to community hospitals, facilitated by the introduction of GP beds or increased GP care, or the use of community nursing teams to prevent admissions.

Table 3.3 Summary of the activity focus and methods used by the Commissioner TPP sites with a 'secondary' objective to reduce acute emergency admissions in 1996/7.[22]

TPP site code	Activity focus	Main methods	Comment
Cm11	Medical specialties for the elderly	'Rapid response' project with community trust staff supporting primary care nurses.	TPP and community trust collaboration.
Cm12	Medical specialties	Initiatives included the use of a 24 hour district nursing service and nursing home beds.	
Cm13	Geriatrics	Appointed a nurse facilitator and introduced rehabilitation beds at community hospital with GP care.	Direct admissions to the community hospital facility were initiated on a small scale towards the end of 1996/7. Seven such admissions were reported.
Cm14	Medical specialties	Introduced the use of nursing home beds staffed by TPP personnel, and employed a discharge liaison nurse.	The TPP described the arrangements as having worked well, although on a small scale.
Cm15	All specialties for older patients	Initiated rehabilitation team based at the local community hospital.	Operational for only about three months during the second half of 1996/7.
Cm16	Medical specialties	Planned to introduce GP beds at the local hospital.	No action was taken because, the TPP reported, it would have been necessary to close beds at the main acute hospital.

Table 3.4 shows the results for the Commissioner TPP sites with a 'secondary' objective to reduce acute emergency admissions in 1996/7. As noted above, for a range of reasons the impact in 1996/7 of the initiatives undertaken by these TPP sites was expected to be generally slight (see Table 3.3). Hence, it is not surprising that only 33% (2/6) of the Commissioner TPP sites with a 'secondary' objective to reduce acute emergency admissions in 1996/7 were 'successful'. Sophisticated block contracts with the main acute providers were generally used, and only two of the TPP sites moved away from pricing on FCEs at average specialty cost. The average population for the 'successful' TPP sites was 23,650 and the average number of practices was 3.

[22] TPP Cm21 is omitted from Table 3.3 because the TPP is excluded from the analysis because the host Health Authority was unable to supply HES data for 1995/6. The TPP planned to use nursing home beds for direct admissions and to facilitate early discharge. However, although the local acute trust agreed to a length of stay sensitive contract, which was regarded as being necessary in order to release funding for the nursing home activity, the project did not proceed. Lack of support from GPs in the TPP and concern expressed by Social Services were cited as reasons for the inaction.

Table 3.4 Commissioner TPP sites with a 'secondary' objective to reduce acute emergency admissions in 1996/7: analysis findings.[23]

TPP site code	number of pract.	total list size	specialties targeted by objective	contract type	contract currency	'success' from HES analysis	number of adm.†	% change in admissions between 1995/6 and 1996/7							
								Main provider			All providers				
								TPP	Local	P	TPP	Local	P	HA- wide	P
Cm11	5	35,000	medicine for over 75s	sophisticated block	OBDs	yes	205	11.7	7.3	0.73	14.0	32.9	0.12	21.2	0.50
Cm12	1	12,300	medicine	sophisticated block	FCEs	yes	507	3.8	5.6	0.78	5.4	6.2	0.91	5.0	0.95
Cm13	3	30,000	geriatrics	cost per case	FCEs	no	289	3.5	1.8	0.85	5.8	3.6	0.81	5.1	0.94
Cm14	1	12,000	medicine	cost per case	OBDs	no	146	22.6	6.2	0.23	4.2	1.4	0.76	1.2	0.74
Cm15	3	29,200	med. & surg. over 60s	sophisticated block	FCEs	no	453	-0.9	-6.2	0.43	-0.9	-5.4	0.44	-2.6	0.77
Cm16	6	35,000	medicine and surgery	sophisticated block	FCEs	no	1346	15.9	2.6 **	<0.01	19.6	4.6 **	<0.01	2.3 **	<0.01
averages															
all TPPs	3.2	25,583				no	2946	10.0	1.8 **	<0.01	11.3	1.7 **	<0.01	2.4 **	<0.01
2 succ.	3	23,650				yes	712	6.0	5.7	0.96	8.2	8.5	0.96	6.7	0.79
4 not su.	3.2	26,550				no	2439	11.4	1.0 *	0.01	12.3	0.9 **	<0.01	1.7 **	<0.01

[23] One TPP site (Cm22) in this group is omitted from the analysis because the HES data were incomplete.
† The total number of admissions for the TPP site in the relevant specialties at its main provider in 1995/6.

3.2 Commissioner TPP sites with objectives to reduce acute emergency length of stay

Table 3.5 shows a range of approaches employed by the 12 Commissioner TPP sites with a main objective to reduce acute emergency length of stay in 1996/7.

Table 3.5 Summary of the activity focus and methods used by the Commissioner TPP sites with a main objective to reduce acute emergency length of stay in 1996/7.

TPP site code	Activity focus	Main methods	Comment
Cm5	All specialties	Appointed a project nurse to examine discharge arrangements.	The project nurse resigned and the initiative was not pursued.
Cm7	Surgical specialties	Improved practice-based discharge planning arrangements, and early discharged post-operative patients to the local community hospital.	GP care at the local community hospital was increased.
Cm10	All specialties	Appointed a primary care liaison manager who facilitated early discharge of acute cases to the local community hospitals.	The site went 'live' in 1995/6. The establishment of a health and social services care team outside TP was reported to be the main achievement.
Cm11	Medical specialties for the elderly	Appointed a project nurse who facilitated early discharge of acute cases to GP beds at the local community hospital.	The TPP reported that the biggest obstacle to better discharge arrangements was the lack of social services co-operation.
Cm12	All specialties	Instigated GP ward rounds at the main acute hospital.	Initiative started in September 1996, following the appointment of an additional GP partner. The TPP experienced difficulties in identifying patients on the wards.
Cm13	Geriatrics	Appointed a utilisation nurse who facilitated early discharge to a TPP instigated rehabilitation facility, which included GP care, at the local community hospital.	The local community hospital rehabilitation facility comprised 16 beds funded by the TPP and 2 beds funded by the HA.
Cm14	Medical specialties	Appointed a discharge liaison nurse who facilitated early discharge of acute cases to nursing home beds.	The number of nursing home beds used by the TPP was increased during 1996/7. The TPP provided a range of care support for the nursing home patients.
Cm15	All specialties for older patients	TPP initiated rehabilitation team, based at the local community hospital, facilitated early discharge of acute cases.	Operational for only about three months during the second half of 1996/7.

Table 3.5 cont. Summary of the activity focus and methods used by the Commissioner TPP sites with a main objective to reduce acute emergency length of stay in 1996/7.

Cm17	Medical specialties	Appointed a nurse co-ordinator who facilitated early discharge of cases from the main acute hospital.	The nurse was appointed half way through 1996/7.
Cm18	All specialties for older patients	Appointed practice-based discharge liaison nurses who facilitated early discharge of acute cases to home or community hospital GP beds.	The nurses were appointed in October 1996.
Cm19	All specialties, particularly electiveTHRs	Appointed a liaison nurse who facilitated early discharge of acute cases to the local community hospital.	
Cm20	Medical specialties	The main acute trust faxed a daily admissions list to the TPP GPs.	Although the main acute trust refused to agree a LOS sensitive contract, it did release £25,000 in anticipation of reduced LOS.

Community hospitals were used to receive early discharged acute patients by 58% (7/12) of the Commissioner TPP sites with a main objective to reduce acute emergency LOS. Additional nursing staff were introduced by 67% (8/12) of these pilots.

Table 3.6 show that 50% (6/12) of the Commissioner TPP sites with a main objective to reduce acute emergency LOS were 'successful'. All six 'successes' introduced new nursing roles and two of these TPPs instigated community hospital based rehabilitation initiatives. See appendix 5 for more information about TPP Cm13.

Table 3.6 Commissioner TPP sites with a main objective to reduce acute emergency LOS in 1996/7: analysis findings.

TPP site code	number of pract.	total list size	specialties targeted by objective	contract type	contract currency	'success' from HES analysis	number of adm.†	% change in average LOS between 1995/6 and 1996/7				
								Main provider		All providers		
								TPP	Local	TPP	Local	HA- wide
Cm13	3	30,000	geriatrics	cost per case	FCEs	yes	289	-30.8	-4.6	-28.4	-2.7	0.3
Cm15	3	29,200	med. & surg. over 60s	sophisticated block	FCEs	yes	453	-15.3	1.3	-14.3	4.5	14.1
Cm14[24]	1	12,000	medicine	cost per case	OBDs	yes	146	-21.7	2.3	-8.8	-2.4	-2.3
Cm5[25]	8	70,000	medicine and surgery	simple block	FCEs	yes	2513	-8.3	-1.4	-7.2	-1.5	4.6
Cm17	1	25,000	medicine	cost and volume	OBDs	yes	521	6.7	5.5	-0.9	4.3	0.7
Cm18[26]	5	57,000	med. & surg. over 75s	sophisticated block	FCEs	yes	359	10.5	-5.2	3.0	8.0	3.5
Cm19[27]	1	15,000	elective THRs	cost and volume	FCEs	no	6	15.5	2.5	8.3	2.9	-2.3
Cm10[28]	1	14,000	medicine and surgery	cost and volume	FCEs	no	499	28.7	4.7	15.9	2.3	3.1
Cm7[29]	2	40,000	surgery	cost per case	FCEs	no	347	24.3	0.3	17.4	0.9	-0.5
Cm12[30]	1	12,300	medicine	sophisticated block	FCEs	no	507	-7.9	-19.2	-8.5	-18.6	-11.2
Cm11	5	35,000	medicine for 75s plus	sophisticated block	OBDs	no	205	6.8	-17.4	14.7	-7.3	8.2
Cm20[31]	1	11,600	medicine	simple block	FCEs	no	292	0.7	-35.6	-2.6	-26.0	-8.2
averages												
all 12							6137	-3.9	-3.3	-3.9	-0.7	0.4
6 succ.							4281	-7.5	-0.3	-7.2	2.0	3.8
6 not su.							1856	8.5	-10.1	6.6	-7.0	-3.1

† The total number of admissions for the TPP site in the relevant specialties at its main provider in 1995/6.

[24] Figures for the second main acute hospital are shown.

[25] Data from one trust in the host HA was excluded from the analysis because 74% of its 1996/7 FCEs were missing specialty function codes.

[26] Data for the last quarter of 1996/7 was unavailable. Hence, the analysis relates to the first three quarters of 1995/6 and 1996/7.

[27] Note: only 8 THRs are recorded for the TPP in 1995/6. In addition, despite the TPP's increase in average LOS at the main acute provider, the TPP's average LOS was nearly 17% lower than that for the local comparator group at the main acute provider in 1996/7. This suggests that the TPP did have an impact on the main acute provider bed use for THR cases compared to the comparators.

[28] This pilot practice went 'live' in 1995/6. The average LOS for the pilot practice was relatively low in 1995/6.

[29] Cm7 is in Scotland and hence the analysis uses SMR1 data.

[30] The aim was to reduce OBDs for all activity at the main provider by 5% to 10% by reducing LOS for, in the main, emergency medical admissions. Total OBDs across all specialties decreased by 4.1% at main provider.

[30] Note very small local comparator group.

[31] Note very small local comparator group.

Six Commissioner TPP sites had a 'secondary' objective to reduce acute emergency LOS, and Table 3.7 shows that nurse roles were again often introduced.

Table 3.7 Summary of the activity focus and methods used by the Commissioner TPP sites with a 'secondary' objective to reduce acute emergency length of stay in 1996/7.

TPP site code	Activity focus	Main methods	Comment
Cm3	Geriatrics	Developed proactive care teams (PACTs) for specific service areas including the elderly.	PACTs were initially piloted at practice level. Main achievement reported was groundwork completed for 1997/8.
Cm4	Geriatrics	Increased use of GP beds at local community hospital, which is part of the main acute trust.	Initiative developed in collaboration with the main acute trust and started in November 1996.
Cm6	All specialties	Introduced a hospital discharge team, increased use of pre-existing hospital-at-home care, and used nursing homes.	A discharge planning co-ordinator was appointed in August 1996, and the scheme went live in January 1997.
Cm8	Medical specialties	Planned to use social care co-ordinator to facilitate early discharge.	The objective was not pursued because the main provider refused to introduce LOS sensitive pricing.
Cm9	Fractured neck of femur	Introduced treatment protocols, co-ordinated by a primary care liaison manager.	The TPP went 'live' in 1995/6.
Cm16	Medical specialties	Planned to introduce GP beds at the local hospital.	No action was taken because, the TPP reported, it would have been necessary to close beds at the main acute hospital.

Table 3.8 shows that 50% (3/6) of the Commissioner TPP sites with a 'secondary' objective to reduce acute emergency LOS were 'successful'. One of the four 'successes' (Cm16) reported that it took no action to achieve the objective because in order to fund new GP beds at the local community hospital it would have been necessary to close beds at the main acute hospital. The two 'successes' that took action (Cm9 and Cm3) both introduced new nursing roles, and in the multi-practice site the nursing roles were part of larger care teams.

Table 3.8 Commissioner TPP sites with a 'secondary' objective to reduce acute emergency LOS in 1996/7: analysis findings.

TPP site code	number of pract.	total list size	specialties targeted by objective	contract type	contract currency	'success' from HES analysis	number of adm.†	% change in average LOS between 1995/6 and 1996/7				
								Main provider		All providers		
								TPP	Local	TPP	Local	HA- wide
Cm9[32]	1	8,500	Fractured femur[33]	cost and volume	FCEs	yes	8	-18.5	28.4	-18.5	26.6	-6.7
Cm3	3	23,000	geriatrics	sophisticated block	FCEs	yes	185	-4.9	6.5	-4.0	6.8	5.0
Cm16	6	35,000	medicine and surgery	sophisticated block	FCEs	yes	1346	-0.7	2.0	-1.2	0.5	-9.4
Cm6	8	79,300	medicine for over 75s	sophisticated block	FCEs	no	657	3.2	3.0	4.7	1.9	-0.5
Cm8	1	16,000	medicine for over 75s	cost and volume	FCEs	no	67	15.4	-1.6	-0.9	-6.2	-7.8
Cm4[34]	5	43,000	geriatrics	cost and volume	adm.	no	699	10.0	-3.3	1.6	-6.6	-7.4
averages												
all 6	4	34,133				yes	3169	0.7	2.9	-2.7	0.1	-4.8
3 succ.	3.3	21,167				yes	1746	-1.6	6.1	-2.2	4.3	-5.1
3 not su.	4.7	46,100				no	1423	6.8	0.7	2.8	-2.4	-4.4

† The total number of admissions for the TPP site in the relevant specialties at its main provider in 1995/6.

[32] This pilot practice went 'live' in 1995/6.

[33] Fractured neck of femur, emergency and transfer admissions.

[34] The average LOS per emergency geriatric admission for the TPP was substantially lower than that for the local comparator group at the main provider, in each year. Not a great concern because the contract currency was admissions.

3.3 Co-purchaser TPP sites with objectives to reduce acute emergency admissions

Two of the Co-purchaser TPP sites with a main objective to reduce acute emergency admissions in 1996/7 did not regard themselves as being fully 'live' as purchasers (Table 3.9).[35] The third Co-purchaser secured an independent contract with a community provider and did not activity attempt to reduce acute emergence admissions. However, Table 3.11 shows that these three TPP sites were 'successful' in terms of the analysis.

Table 3.9 Summary of the activity focus and methods used by the Co-purchaser TPP sites with a main objective to reduce acute emergency admissions in 1996/7.[36]

TPP site code	Activity focus	Main methods	Comment
Cp1	Medical specialties	Initiated nursing home and convalescent home use.	Budget setting and contracting difficulties were not resolved, and hence 1996/7 was reported to be best described as a 'shadow' year. Nursing home activity was funded by the HA
Cp2	All specialties	Increased out-of-hours care by the TPP GPs.	'Essentially a preparatory year' with developments financed by the HA. TPP planned to have independent main acute contract in 1997/8.
Cp3	All specialties	Plan to review acute emergency admissions. Piloted use of nursing homes in place of geriatric community hospital admissions.	Admissions were not formally reviewed following HA advice that emergency admission rates were lower than the HA average.

Table 3.10 shows that the two Co-purchaser TPP sites with a 'secondary' objective to reduce acute emergency admissions in 1996/7 both used nursing homes. Table 3.12 shows that neither of these TPP sites was 'successful' in terms of the analysis.

[35] A fourth Co-purchaser TPP site had a main objective to reduce acute emergency admissions, but is omitted here because it was excluded from the HES analysis because of data quality problems.

[36] TPP Cp10 is omitted from Table 3.14 because the TPP is excluded from the analysis because the HES data for the host Health Authority was incomplete. TPP Cp10 reported in the second round interviews (March 1997) that it had instigated a link with Social Services so that the GPs on call could contact Social Services at any time about mainly elderly patients who would otherwise be admitted to hospital for social reasons. However, two months into 1996/7 the GP co-operative was formed which had increased the number of GPs on the on call rota from 10 to about 100. This change was perceived to have weakened the potential for the initiative. It was also noted that the number of 'social' admissions had always been few.

Table 3.10 Summary of the activity focus and methods used by the Co-purchaser TPP sites with a 'secondary' objective to reduce acute emergency admissions in 1996/7.

TPP site code	Activity focus	Main methods	Comment
Cp4	All specialties for the elderly.	Use of a nursing home as an alternative to acute or community hospital admissions.	Small scale only, funded from an ECR budget. Initially instigated because on one occasion no hospital beds were available.
Cp5	Medical specialties	Initiated nursing home use, and employed an additional nurse.	Budget setting and contracting difficulties were not resolved, and hence 1996/7 was reported to be best described as a shadow year. Nursing home activity was funded by the HA

The Co-purchaser TPP Cp6 has been excluded from the above 'objectives' tables because although the TPP originally intended actively to manage emergency admissions, the TPP decided not go 'live' in 1996/7, and so did not pursue this objective.

Table 3.11 Co-purchaser TPP sites with a main objective to reduce acute emergency admissions in 1996/7: analysis findings.[37]

TPP site code	number of pract.	total list size	specialties targeted by objective	contract type	contract currency	'success' from HES analysis	number of adm.†	% change in admissions between 1995/6 and 1996/7					
								Main provider			All providers		
								TPP	Local	P	TPP	Local	P	HA- wide	P
Cp1	1	6,900	medicine	simple block	FCEs	yes	308	-11.4	1.6	0.08	-10.5	0.5	0.14	3.7	0.05
Cp2	3	20,000	medicine and surgery	sophisticated block	FCEs	yes	1342	-12.5	-1.0 -*	0.01	-12.9	-2.5 -*	0.02	-6.6	0.06
Cp3[38]	5	39,000	medicine and surgery	sophisticated block	FCEs	yes	1247	14.0	7.4	0.39	7.4	11.8	0.5	6.4	0.77
average all 3	3	21,967				yes	2897	-1.0	1.4	0.40	-1.5	0.5	0.41	1.0	0.26

Table 3.12 Co-purchaser TPP sites with a secondary objective to reduce acute emergency admissions in 1996/7: analysis findings.

TPP site code	number of pract.	total list size	specialties targeted by objective	contract type	contract currency	'success' from HES analysis	number of adm. †	% change in admissions between 1995/6 and 1996/7					
								Main provider			All providers		
								TPP	Local	P	TPP	Local	P	HA- wide	P
Cp4[39]	3	28,000	med. & surg. over 75s	sophisticated block	FCEs	no	309	7.4	-2.1	0.94	7.3	-2.0	0.96	-6.0	1.00
Cp5	1	10,200	medicine	simple block	FCEs	no	322	23.6	1.6 *	0.02	23.5	0.5 *	0.01	3.2 *	0.03
average both	2	19,100				no	631	15.7	0.9 *	0.02	15.4	-0.1 *	0.01	0.5 *	0.02

[37] One TPP site (Cp10) in this group is omitted from the analysis because the HES data were incomplete.

† The total number of admissions for the TPP site in the relevant specialties at its main provider in 1995/6.

[38] Cp3 was classified as a 'Co-purchaser' in this report because although it had an independent contract with its main community trust, the TPP held a joint HA contract with its main acute trust.

[39] Elective admissions at the main community trust were also included within the scope of the initiative.

3.4 Co-purchaser TPP sites with objectives to reduce acute emergency length of stay

Nursing home beds were used by three of the four Co-purchaser TPP sites with a main objective to reduce acute emergency length of stay in 1996/7 (Table 3.13).

Table 3.13 Summary of the activity focus and methods used by the Co-purchaser TPP sites with a main objective to reduce acute emergency length of stay in 1996/7.

TPP site code	Activity focus	Main methods	Comment
Cp1	Medical specialties	Initiated nursing home and convalescent home use.	Budget setting and contracting difficulties were not resolved, and hence 1996/7 was reported to be best described as a 'shadow' year. Nursing home activity was funded by the HA.
Cp5	Medical specialties	Initiated nursing home use, and employed an additional nurse.	Budget setting and contracting difficulties were not resolved, and hence 1996/7 was reported to be best described as a 'shadow' year. Nursing home activity was funded by the HA.
Cp6	Medical specialties	Appointed a social worker/care worker (joint funded with Social Services) and supported bid to instigate a medical assessment unit at the main acute provider.	TPP did not go 'live' in terms of purchasing, in part due to budget setting difficulties.
Cp7	Medical specialties	Initiated nursing home use.	Budget setting and contracting difficulties were not resolved, and hence 1996/7 was reported to be best described as a 'shadow' year. Nursing home activity was funded by the HA.

The results Table 3.14 shows that 75% (3/4) of the Co-purchaser TPP sites with a main objective to reduce acute emergency LOS were 'successes'.

Table 3.14 Co-purchaser TPP sites with a main objective to reduce acute emergency LOS in 1996/7: analysis findings.

TPP site code	number of pract.	total list size	specialties targeted by objective	contract type	contract currency	'success' from HES analysis	number of adm.†	% change in average LOS between 1995/6 and 1996/7				
								Main provider		All providers		
								TPP	Local	TPP	Local	HA- wide
Cp6	5	45,000	medicine	sophisticated block	FCEs	yes	843	-9.2	6.3	-13.1	1.8	2.0
Cp7	2	9,400	medicine	simple block	FCEs	yes	250	-16.2	-6.6	-11.3	-5.4	-8.1
Cp1	1	6,900	medicine	simple block	FCEs	yes	308	-25.1	-12.4	-11.8	-11.4	-6.7
Cp5	1	10,200	medicine	simple block	FCEs	no	322	1.8	-12.4	6.3	-11.4	-6.7
averages												
all 4	2.25	17,875				no	749	-11.6	-8.7	-10.9	-7.6	-6.1
3 succ.	2.7	20,433				yes	1071	-12.3	-7.0	-11.4	-6.2	-5.8

† The total number of admissions for the TPP site in the relevant specialties at its main provider in 1995/6.

3.5 Resource implications of activity changes

All 20 Commissioner TPP sites, for which hospital activity data was available, had objectives to either reduce acute emergency admissions or reduce acute hospital length of stay. The analysis indicates that 16 of the 20 Commissioner TPP sites were 'successful' in at least one of these objectives.

Table 3.15 shows that 12 of the 16 'successful' Commissioner TPP sites held sophisticated block or cost and volume main acute contracts. Prices relating to the relevant activity were based on FCEs at average specialty cost in 11 of the 16 contracts. Half (7/14) of the TPPs reported that cost savings associated with their main acute contracts had met predicted levels. This finding is not surprising. Robinson *et al*, 1998, reported the difficulty experienced by TPPs that wished to move away from contracting for FCEs. The 'successful' TPPs show that progress made in changing service provision was not necessarily accompanied by a contract currency which reflected the activity changes.

Table 3.15 'Successful' Commissioner TPP sites and their main acute contracts[40]

TPP site code	Main acute contract type for activity relating to objectives	Main acute contract currency for activity relating to objectives	Main acute contract cost outcome / comment
Cm1	cost and volume	FCEs	Cost savings conformed to the levels predicted.
Cm2	sophisticated block	FCEs	Cost savings were not as predicted.
Cm3	sophisticated block	FCEs	Cost savings were not as predicted.
Cm4	cost and volume	admissions	Cost savings were not as predicted.
Cm5	simple block	FCEs	
Cm6	sophisticated block	FCEs	Activity and unit costs were as predicted. TPP estimated a cost saving from the hospital-at-home activity.
Cm7	cost per case	cost per case	
Cm8	cost and volume	FCEs	Data missing.
Cm9	cost and volume	FCEs	Contract set on the basis of a 5% reduction in FCEs from reduced emergency admissions. Cost savings were not as predicted, but savings were achieved.
Cm11	sophisticated block	OBDs	Cost savings were not as predicted.
Cm12	sophisticated block	FCEs	Cost savings conformed to the levels predicted.

[40] Sources: TP-NET first contracting methods survey 1996/7 (Robinson *et al* 1998), TP-NET second contracting methods survey December 1997 (Robison *et al* 1999) plus interviews with TPP staff.

Table 3.15 cont. 'Successful' Commissioner TPP sites and their main acute contracts

Cm13	cost per case	cost per case	TPP reported a slight cost saving resulting from the use of community hospital beds. Although the main acute contract pricing was LOS sensitive for geriatrics, pricing on FCE numbers was problematic and the possibility of arbitration was considered.
Cm14	cost per case	cost per case	Cost savings were not as predicted.
Cm15	sophisticated block	FCEs	Cost savings conformed to the levels predicted.
Cm16	sophisticated block	FCEs	Activity and unit costs were not as predicted.
Cm18	sophisticated block	FCEs	Cost savings conformed to the levels predicted.

Another measure of resource use is the overall change in total OBDs across all NHS hospital providers. However, it is not necessarily the case that total OBDs would be expected to decrease as a result of the changes introduced by the TPPs. This is because TPPs often attempted to substitute community hospital OBDs for acute hospital OBDs. The Commissioner TPP Cm13 illustrates this (see appendix 5). Indeed, TPP Cm13 shows that the successful early discharge of emergency geriatric cases from an acute hospital to a community hospital rehabilitation facility can result in an increase in overall OBDs.

4 Discussion

4.1 The use of routine hospital activity data

The analysis of routine hospital activity data provides some evidence about the extent of change in the use of hospital services experienced by the TPPs. This experience can then be considered in the light of the TPPs' strategies for influencing secondary services. The use of comparators enables the analysis to go further than the corroboration of TPPs' reported claims for service changes (Goodwin *et al*, 1998).[41]

The quality of HES data supplied varied, and it is clear that there is considerable scope for some Health Authorities to improve the accuracy of the datasets for their residents. In particular, there appears to be an important role for some Health Authorities to help Trusts in their area improve the quality of the data they generate. However, the use of the local comparators in particular overcomes to some extent the difficulty of comparing activity changes for TPPs across different Health Authorities.

The analysis reported here is concerned with changes in hospital activity and not overall efficiency. It is possible that a TPP could be 'successful' in terms of the analysis even if overall costs have increased.

4.2 Defining 'success' in relation to the three comparisons.

Table 4.1 summarises the analysis findings for each of the three comparisons for the Commissioner TPPs. The overall number of 'successful' TPPs varied little across the three comparisons. However, the small number of TPP sites resulted in marked differences in percentage change.

The comparison between each TPP and its local comparator and relevant activity across all providers was chosen as the main indicator of 'success' for two main reasons. First, the local comparator was chosen in preference to the HA-wide comparator because the geographical proximity of the local comparator practices was likely to promote similar patient demographics. Second, although the main acute provider often provided a natural focus for attention by each TPP, the proportion of total activity for each TPP at its main provider varied considerably. Hence, by definition a comparison of changes in activity across all hospital providers gives a more complete picture of differences in overall activity change.

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[41] The HES analysis reported in Goodwin *et al* (1998) found that 66% (8/12) of Commissioner TPPs had been successful in reducing emergency admissions, and 57% (8/14) of Commissioner TPPs had been successful in reducing hospital length of stay. This finding compares to the current analysis which found that 56% (9/16) of Commissioner TPPs had been successful in reducing emergency admissions, and 50% (9/18) of Commissioner TPPs had been successful in reducing hospital length of stay. The main difference between these findings is due to three factors. First, the current analysis is not restricted to those TPPs identified in Goodwin *et al* (1998) has having reported claims of 'success'. Second, more HES data were available for the current analysis. Third, the 'success' criterion used in each analysis was not the same.

Table 4.1 Summary results for Commissioner TPPs showing all three comparisons: percentage of 'successful' TPP sites with objectives relating to emergency admissions or length of stay in 1996/7

Objective	Comparison	% of 'successful' TPP sites (and number) 'main' or 'secondary' objective	% of 'successful' TPP sites (and number) 'main' objective only
emergency admissions	Local comparator: activity at TPP's main provider	56% (9/16)	80% (8/10)
	Local comparator: activity across all providers	56% (9/16)	70% (7/10)
	HA-wide comparator: activity across all providers	56% (9/16)	80% (8/10)
length of stay	Local comparator: activity at TPP's main provider	39% (7/18)	33% (4/12)
	Local comparator: activity across all providers	50% (9/18)	50% (6/12)
	HA-wide comparator: activity across all providers	44% (8/18)	50% (6/12)

4.3 Progress during the first 'live' year

All 20 TPP Commissioners included in the activity data analysis had objectives relating to emergency admissions or length of stay. The analysis findings indicate that 56% (9/16) of the Commissioners with a main or secondary objective to reduce acute emergency admissions were 'successful'. In addition, 50% (9/18) of the Commissioners with a main or secondary objective to reduce acute emergency length of stay were also 'successful'.

The 'successful' Commissioner TPP sites used a range of methods to prevent acute emergency admissions (Table 4.2), the most common being the use of community-based nursing teams. With regard to reducing acute emergency length of stay, project nurses were usually used to facilitate the early discharge of patients to community hospital GP beds.

Table 4.2 Summary of the main methods used by the 16 'successful' Commissioner TPP sites to achieve objectives relating to emergency admissions or length of stay in 1996/7

main methods used by the TPPs[42]	to reduce acute emergency admissions		to reduce acute emergency length of stay	
	main objective	secondary objective	main objective	secondary objective
community nursing teams	4	2	1	2
community hospital GP care/beds	3		3	
TPP project nurses	1		5	
social worker/social services link	1			
treatment protocols	1			
nursing homes	1	1	1	1

The TPPs attempted to change acute hospital activity in line with their own particular objectives and available resources. The TPPs usually made use of local facilities such as GP beds or nursing homes, rather than instigating completely new services. Hence, the range of approaches taken by the TPPs tended to reflect the presence of local opportunities.

Three factors should be taken into account when considering these findings:

- The Commissioners faced a difficult challenge. In order to reduce acute hospital activity, it was necessary to develop alternative services, such as community nursing teams or community hospital GP beds facilitated by liaison nurses. At the same time it was necessary to fund this new activity by reducing expenditure on acute hospital services. This predicament constrained initiatives. For example, some Commissioners felt unable to initiate early discharge initiatives because their main provider would not agree to LOS-sensitive contracting. In this situation the Health Authorities were generally unwilling to back their TPPs.
- The Commissioners found it difficult to move away from the common practice of basing the price of inpatient activity on FCE numbers. The prices relating to the relevant activity covered by the TPPs' main acute contracts were based on FCEs at average specialty cost for 75% (12/16) of the 'successful' Commissioners. In addition, cost savings were reported to have been achieved or to have met predicted levels in only six of these main acute contracts. Thus, the financial sustainability of service changes is uncertain given the resistance from acute providers.
- Many Commissioners introduced new services during 1996/7, which started on a small scale and developed during the year. Hence, any change in activity measured year on year is likely to underestimate the achievement. Further analysis on changes in 1997/8 will follow.

[42] Note: some TPP sites used more than one main method to achieve each objective.

These results suggest that TPP 'commissioning' can be an effective method to bring about changes to the use of secondary care services. The Commissioner TPP sites demonstrated great initiative by starting to change the pattern of hospital use in order to meet local objectives. At the same time most sites were not able to negotiate length of stay sensitive pricing in the first live year which is vital for the efficient use of available funds in the long term.

Seven of the nine Co-purchasers included in the activity data analysis had objectives relating to emergency admissions or length of stay. The analysis findings indicate that 60% (3/5) of the Co-purchasers with a main or secondary objective to reduce acute emergency admissions were 'successful'. In addition, 75% (3/4) of the Co-purchasers with a main or secondary objective to reduce acute emergency length of stay were also 'successful'.

These results suggest that TPP 'co-purchasing' may also be an effective method to bring about change in the use of secondary care services. However, any change in activity cannot be considered in isolation and two factors are important:

- Six of the seven Co-purchasers with objectives relating to emergency admissions or length of stay wanted to operate as Commissioners rather than Co-purchasers. For these TPP sites, existence as Co-purchasers in 1996/7 had been necessary either because of budget setting difficulties or as a requirement before further development before going 'live' as Commissioners.
- The innovations introduced by the Co-purchasers were usually funded by the host Health Authorities, and did not have financial repercussions for the affected hospital providers. (One TPP funded its use of nursing home beds from the ECR budget it was delegated by the Health Authority.)

4.4 Primary Care Groups and secondary care

Total Purchasing shows that it is possible to get GPs to work on one of the most intractable problems in the NHS - how to manage unplanned demand. The White Paper *The New NHS* acknowledges Total Purchasing as one of the commissioning models on which Primary Care Groups (PCGs) have been developed (Secretary of State for Health, 1997). Total Purchasing was demanding for GPs who had to devote considerable time and energy, and accept new responsibilities. These TPP GPs were of course all volunteers while all GPs will belong to a PCG. Given that some TPPs were not interested in commissioning or shaping secondary care (Table 2), a considerable proportion of PCGs may be content to function at Level I, rather than take on the challenge of being responsible for commissioning. However, PCGs at Level II will be similar to Commissioner TPPs with regard to their budgetary responsibility for the purchase/commissioning of health care.

Nevertheless, Level II PCGs will not be selected groups of experienced fundholders, even if they have clear objectives relating to secondary care. Clearly it will take time for them to get to grips with changing hospital use. In addition, if PCGs do not have ready access to GP beds, nursing homes or hospital-at-homes services, it will take longer for them to produce change.

The extent to which Level II PCGs will be able to emulate the early changes made by Commissioner TPPs to hospital service use will be greatly influenced by the level of co-operation they receive from acute hospital trusts. The range of intermediate services instigated by the Commissioner TPPs will only be sustainable if appropriate resources are released from the acute hospital sector. In the past there has been no clear obligation for acute trusts to acknowledge financial implications relating to reductions in admissions or length of stay. Hence, the longer term service agreements envisaged under the 'New NHS' arrangements will require careful management given the new 'statutory duty of partnership'.

References

Goodwin N, Mays N, McLeod H, Malbon G, Raftery J on behalf of the Total Purchasing National Evaluation Team (1998). Evaluation of total purchasing pilots in England and Scotland and implications for primary care groups in England: personal interviews and analysis of routine data. BMJ 317;256-9.

Mays N, Goodwin N, Malbon G, Leese B, Mahon A, Wyke S (1998a) What were the achievements of Total Purchasing Pilots in their first year and how can they be explained? London: King's Fund.

Mays N, Goodwin N, Killoran A, Malbon G (1998b) Total Purchasing Pilots A step towards Primary Care Groups London: King's Fund.

NHS Confederation (1997) Tackling emergency NHS admissions: policy into practice Birmingham: NHS Confederation Best Practice Paper 1.

Robinson R, Robison J, Raftery J (1998) Contracting by Total Purchasing Pilot Projects 1996-97 London: King's Fund.

Robison J, Robinson R, Raftery J, McLeod H (1999). Contracting by total purchasing pilot projects 1997-1998. Total Purchasing National Evaluation Team Working Paper. London: King's Fund.

Secretary of State for Health (1997) The New NHS: modern dependable London: The Stationery Office.

Appendix 1 - Discrepancy between previous findings relating to emergency services and current analysis

Mays *et al* (1998a) showed that 32 TPPs had a main objective relating to emergency services in 1996/7, and that 44% of these TPPs reported having achieved their objective. This differs from the current analysis for three reasons. First, Mays et al analysed objectives to reduce the number of emergency admissions to hospital and objectives relating to the management of A&E department attendances together. Second, they analysed all the TPPs together rather than by 'type'. Third, the two analyses defined a main purchasing objective differently. Finally, in Mays *et al's* analysis a TPP would be recorded as an achiever if it reported bringing about a desired service change. This reported change would not necessarily have an impact on overall activity in the relevant area as recorded in HES.

1 Objectives concerning A&E attendances rather than emergency admissions

Three Commissioner TPPs included in the earlier findings of Mays *et al* (1998a) have been excluded from the current results tables because their objective related to A&E attendances rather than emergency admissions:

- TPP Cm17 reported that it had intended to treat more minor injuries at the practice, in order to reduce emergency attendances at the local hospital A&E facility, but this idea was not pursued because it "would have meant closing down the hospital's minor injuries unit." However, the TPP also noted that the local hospital A&E facility had been downgraded to a nurse-run service and in consequence more patients had been going to the TPP, rather than the hospital.

- TPP Cm19 reported an objective to ensure that the ambulance service would take appropriate cases, with 'trivial problems', to the local community hospital, rather than 20 miles to the main acute provider. The TPP reported in the second round interviews that 'in fact the numbers are small' and that patients had been taken to the local community hospital when appropriate.

- TPP Cm23 was excluded from the activity analysis because data on objectives were collected from only one of seven independently operating practices in the TPP. The TPP practice reported that all practices in the TPP had a 'common purpose' to investigate the appropriateness of the usage of A&E services. The practices were reported to be part of a GP out-of-hours co-operative, and the TPP practice reported that its proposal for developing a practice-based primary care centre had been rejected for out-of-hours

- development fund support. The out-of-hours co-operative was not thought to have affected emergency admission rates.

2 TPP 'type'

Nine of the 32 TPPs included in the Mays *et al* (1998a) findings have been excluded from the results tables in this report because they did not achieve a Commissioner or Co-purchaser structure, which likely to be necessary to facilitate initiatives directed at secondary care.

Five Developmental TTPs were reported by Mays *et al* (1998a) to have objectives relating to emergency services. Two (De1 and De2) were recorded as 'successes' and three (De3, De4 and De5) were recorded as 'unsuccessful':

- TPP De1 reported in the first round interviews that it did not plan to make any service changes in 1996/7. The second round interviews confirmed that emergency care was not thought to be a priority issue for the TPP. The TPP employed a 'tracker' nurse to monitor the secondary care provided to TPP patients.

- TPP De2 reported in the second round interviews that it had been 'looking at' A&E attendances, and that it had changed practice with regard to emergency admissions.

- TPP De3 reported that it had not achieved its objectives because of delays resulting from health authority wide service reviews. A review of acute bed use was reported to prevented any action concerning the TPP's plans to develop the use of beds for rehabilitation and respite care at its local cottage hospital.

- TPP De4 reported in the second round interviews (March 1997) that its objective related to A&E attendances, rather than emergency admissions. Following a detailed six month audit of A&E attenders at the main acute provider, the TPP was developing a pilot triage service for all A&E attenders.

- TPP De5 reported that it had not achieved its objective relating to emergency services because its main provider could not provide information on activity and, in addition, a practice including the GP with the lead interest in emergency admissions withdrew from the project.

Four Primary Care Developer TPPs (Pr1, Pr2, Pr3 and Pr4) were reported by Mays *et al* (1998a) to have not achieved their objectives relating to emergency services.

- TPP Pr1 reported in the second round interviews (March 1997) that it did not intend to influence emergency admissions.

- TPP Pr2 reported in the second round interviews that action to prevent emergency admissions by an emergency assessment centre was 'only in the very early stages' and that reducing acute admissions was not a main objective for 1996/7.

- TPP Pr3 reported an objective relating to A&E attendances rather than emergency admissions. The TPP reported that its plan for developing a minor injuries unit had been deferred because of the possibility that it would interfere with a recently formed out-of-hours co-operative.

- TPP Pr4 reported in the second round interviews (March 1997) that it had found that inappropriate admissions, particularly among the elderly, were not a problem and that the TPP was sharing the national experience of rising emergency admissions. The initial ideas for pre-admission clinics, which had not been a main objective, had been replaced by periodic discussions about admissions with hospital registrars.

3 Other differences in the classification of relevant TPPs compared to the Mays *et al* (1998a) findings.

- TPP Cm18 was reported by Mays *et al* (1998a) to have achieved its objective relating to emergency services. This TPP is included in the 'no objectives' table because the TPP reported subsequently in the second round interviews (February 1997) that action to prevent emergency admissions by 'better gatekeeping at casualty itself' was 'more for the medium to long term' and was not a main objective. HES data for the host HA was incomplete.

- TPP Cp6 has not been classified as a TPP with an objective to reduce emergency admissions because although the TPP originally intended to actively manage emergency admissions, the TPP decided not go 'live' in 1996/7, and so did not pursue this objective. Mays *et al* (1998a) reported it as having not achieved its objective relating to emergency services.

Appendix 2 - Hospital Episode Statistics (HES) data quality issues

1 Duplicate Finished Consultant Episodes (FCEs)

Some Trusts generate 'duplicate' FCEs. These are copies of FCEs and not FCEs associated with 'FCE inflation'. When two or more FCEs had the same entries in all of the following fields (date of birth, sex, postcode, admission date, discharge date, episode start date, episode end date and episode number) and the admission date was before the discharge date, all but the first recorded FCE were excluded (see Table 21). The criterion that the admission date was before the discharge date was used because if both dates were the same, legitimate FCEs would have been classified as duplicates when patients had been admitted and discharged twice on the same day. For one Health Authority 27% of all FCEs supplied for 1995/6 and 1996/7 were duplicates. The Health Authority could not explain the presence of duplicates and stated that it did not check for duplicates as the HES data were 'pre-checked'. The Health Authority subsequently supplied a different set of HES data for 1995/6 and 1996/7 but was unable to why it differed from the first set of data.

2 FCE inflation

FCEs associated with 'FCE inflation' would not be classified as duplicates. FCE inflation was reported by some HAs and TPPs to be a problem. In order to accommodate the reported differences in practice relating to the generation of FCEs, in this report the results tables present percentage change figures for the number of admissions, rather than the number of FCEs, and the average length of stay per admission, rather than the average LOS per FCE.

3 Missing data

GP Practice codes — The analysis groups FCEs for the TPPs and comparator groups using the GP practice code. Few Health Authorities supplied HES data with complete GP practice coverage. In order to minimise the number of excluded FCEs due to missing GP practice codes, the registered GP code was used when present to generate GP practice codes. On a number of occasions help was sought from Health Authorities in order to help identify practice codes for FCEs. For example, when GPs appear to have retired long before FCEs occur it raises doubts about the appropriate Practice code. (See Table 21.)

Discharge Destination codes — These should provide important data on, for example, any change in use of nursing homes to receive patients transferred from hospital. However, the data is often missing.

4 Non-standard codes

Admission Method codes — Some Trusts do not use the national HES codes. For example, one Trust used Admission Method code 20 for transfer cases (which should have Admission Method code 81). Emergency admissions use codes 21, 22, 23, 24 and 28. Hence, without checking the use of the 20 code, it would be easy to assume that any code in the 20s should be included in the emergency admissions. When the use of the 20 code was checked, the Health Authority stated that it knew that the relevant Trust used the 20 code instead 81 because the Trust's system would not accept the use of the 81 code.

Specialty Function codes — The use of non-standard Specialty Function codes by some Trusts is not uncommon.

Table A2.1 The percentage of all FCEs in 1995/6 and 1996/7 relating to residents of the host Health Authority excluded

TPP site code	% of all FCEs for host HA excluded because of missing GP practice code	% of all FCEs for host HA excluded because classified as duplicates
Cm9	4.6	0.12
Cm1	2.2	0.05
Cm4	2.2	†
Cm2	1.9	0.46
Cm5[43]	4.7	0.05
Cm3	5.5	0.50
Cm6	7.0	1.63
Cm7	†	0.13
Cm8	†	†
Cm10	4.5	0.12
Cp3	1.3	0.32
Cm12	0.9	0.11
Cm11	8.6	0.06
Cm13	0.7	0.38
Cm15	2.3	0.13
Cm16	0.9	0.11
Cm14	1.0	†
Cm20	0.4	0.07
Cm17	1.5	0.05
Cm19	3.6	0.05
Cp1	0.4	0.07
Cp2	0.9	0.05
Cp4	3.7	0.08
Cp5	0.4	0.07
Cp6	5.0	0.09

[43] Data from one trust in the host HA was excluded from the analysis because 74% of its 1996/7 FCEs were missing specialty function codes.

Table A2.1 cont. The percentage of all FCEs in 1995/6 and 1996/7 relating to residents of the host Health Authority excluded

Cp9	5.5	†
Cp7	0.4	0.07
Cp8	1.2	†
Cm18	5.6	†

† Data not checked due to the absence of necessary data fields

5 Incorrect use of codes

Admission Method codes — When patients are transferred from an acute hospital in one Trust to a community hospital in another Trust the FCEs relating to the community hospital activity should have the transfer Admission Method code 81. However, on two occasions when the community hospital FCEs were checked direct with the provider it was found that FCEs relating to transferred patients have been recorded as 'elective - booked' (Admission Method code 12). In addition to making it more difficult to identify FCEs relating to TPP patients that have been early discharged from an acute hospital, this type of coding error, for example, distorts waiting list statistics (which are based on FCEs with Admission Method codes 11 'elective - waiting list' and 12.)

Provider codes — The Provider code usually comprises three letters followed by two numbers, such as 'ABC00' or 'ABC03'. 'ABC00' identifies a particular Trust, while the numbers '01', '02' or '03', etc, identify particular hospitals within the Trust. However, some Trusts with more than one hospital, submit all the Trust's FCEs with the Provider code for one of their hospitals.

GP Practice codes — As noted above under 'missing data' action has been taken to minimise the number of FCEs excluded because of missing GP practice codes. As part of this process for one dataset a GP code was identified that was associated with a large number of FCEs with no practice code, in addition to FCEs having two different practice codes, all at one Trust. This was suspicious because the GP code related to a long-standing single-handed practice. The Trust checked its records and stated that they had had problems with their PAS system which had been upgraded a number of times during 1995/6. The Trust concluded that the GP practice coding was incorrect and stated that the practice code was not properly audited before being sent to the purchasers.

Appendix 3 - TPP sites with no objective to reduce acute emergency admissions or length of stay

1 Commissioner TPP sites

Table A3.1 shows that there were four Commissioner TPP sites with no objective to reduce acute emergency admissions in 1996/7. Three of the four TPP sites were single practices and the average population for the TPP sites was 27,150.

The behaviour of the TPP sites indicates that considerable changes can occur in admission numbers, both increases and decreases, relative to local practices. The degree to which these changes were due simply to the effect of TPP status or randon variation in demand for hospital services cannot be ascertained.

There were two Commissioner TPP sites with no objective to reduce acute emergency length of stay in 1996/7 (Table A3.2). The average number of practices in each TPP site was 2.5 and the average population for the TPP sites was 32,750.

2 Co-purchaser TPP sites

Table A3.3 shows that there were four Co-purchaser TPP sites with no objective to reduce acute emergency admissions in 1996/7. The average number of practices in each TPP site was 2.5 and the average population for the TPP sites was 23,788.

Table A3.4 shows that there were five Co-purchaser TPP sites with no objective to reduce acute emergency length of stay in 1996/7. The average number of practices in each TPP site was 2.8 and the average population for the TPP sites was 25,550.

Table A3.1 Commissioner TPP sites with no objective to reduce acute emergency admissions in 1996/7: analysis findings.

TPP site code	number of pract.	total list size	specialties targeted by objective	contract type	contract currency	number of adm.†	% change in admissions between 1995/6 and 1996/7							
							Main provider			All providers				
							TPP	Local	P	TPP	Local	P	HA- wide	P
Cm20	1	11,600	medicine and surgery	simple block	FCEs	476	-12.6	2.8	0.39	-12.5	13.8 -*	0.02	2.0 -**	<0.01
Cm19	1	15,000	medicine and surgery	cost and volume	FCEs	351	24.8	9.9	0.10	6.5	10.2	0.49	2.8	0.49
Cm18	5	57,000	medicine and surgery	sophisticated block	FCEs	1318	7.4	2.3	0.31	-2.0	-1.2	0.85	-1.0	0.77
Cm17	1	25,000	medicine and surgery	cost and volume	FCEs	799	-11.4	-12.6	0.80	-12.2	-14.0	0.67	-7.7	0.30
average all 4	2	27,150				2944	1.1	-3.9	0.07	-4.4	-4.8	0.85	-1.2	0.13

Table A3.2 Commissioner TPP sites with no objective to reduce acute emergency LOS in 1996/7: analysis findings.[44]

TPP site code	number of pract.	total list size	specialties targeted by objective	contract type	contract currency	number of adm.†	% change in average LOS between 1995/6 and 1996/7				
							Main provider		All providers		
							TPP	Local	TPP	Local	HA- wide
Cm1	1	19,000	medicine and surgery	cost and volume	FCEs	634	-4.0	1.2	-7.5	-4.7	-4.0
Cm2	4	46,500	medicine and surgery	sophisticated block	FCEs	1,668	-10.2	-14.5	-2.0	-1.9	-3.9
average both	2.5	32,750				2,302	-8.5	-8.7	-1.3	-3.1	-3.9

† The total number of admissions for the TPP site in the relevant specialties at its main provider in 1995/6.

[44] Two TPP sites (Cm21 and Cm22) in this group are omitted from the analysis because the HES data were incomplete.

Table A3.3 Co-purchaser TPP sites with no objective to reduce acute emergency admissions in 1996/7: analysis findings. [45]

TPP site code	number of pract.	total list size	specialties targeted by objective	contract type	contract currency	number of adm.†	% change in admissions between 1995/6 and 1996/7							
							Main provider			All providers				
							TPP	Local	P	TPP	Local	P	HA- wide	P
Cp6	5	45,000	medicine and surgery	sophisticated block	FCEs	1257	-0.7	3.9	0.31	-2.0	-0.6	0.73	1.7	0.33
Cp8	2	19,500	medicine and surgery	simple block	FCEs	749	4.4	-23.0 **	<0.01	5.7	6.4	0.91	10.2	0.41
Cp9	1	21,250	medicine and surgery	cost and volume	FCEs	1591	3.2	4.4	0.92	4.6	4.7	0.98	2.5	0.58
Cp7	2	9,400	medicine and surgery	simple block	FCEs	424	16.3	2.1	0.07	15.2	4.3	0.13	1.5	0.05
average all 4	2.5	23,788				4021	3.9	-0.5	0.07	3.6	4.1	0.85	3.3	0.90

Table A3.4 Co-purchaser TPP sites with no objective to reduce acute emergency LOS in 1996/7: analysis findings. [47]

TPP site code	number of pract.	total list size	specialties targeted by objective	contract type	contract currency	number of adm.†	% change in average LOS between 1995/6 and 1996/7				
							Main provider		All providers		
							TPP	Local	TPP	Local	HA- wide
Cp4	3	28,000	medicine and surgery	sophisticated block	FCEs	1042	9.9	15.7	6.8	11.3	6.3
Cp2	3	20,000	medicine and surgery	sophisticated block	FCEs	1342	1.4	1.1	0.9	4.4	2.1
Cp8	2	19,500	medicine and surgery	simple block	FCEs	749	20.6	5.7	16.4	1.6	-1.6
Cp9	1	21,250	medicine and surgery	cost and volume	FCEs	1591	15.2	-4.1	14.1	-3.8	-2.8
Cp3	5	39,000	medicine and surgery	sophisticated block	FCEs	1247	8.2	10.2	3.6	4.9	-9.0
average all 5	2.8	25,550				5971	12.1	4.2	8.5	2.1	-0.7

[45] One TPP site (Cp11) in this group is omitted from the analysis because the HES data were incomplete.
† The total number of admissions for the TPP site in the relevant specialties at its main provider in 1995/6.
[47] Two TPP sites (Cp10 and Cp11) in this group are omitted from the analysis because the HES data were incomplete.

Appendix 4 - Total Purchasing Pilot code Cm1

1 Summary

The TPP reported that a main objective for its first 'live' year was to reduce inappropriate emergency medical admissions. The TPP reported that the most important development had been the TPP's use of a Health Authority initiated 'fast response service', which was available to all HA practices and provided nurse led hospital-at-home care.

The hospital activity analysis indicates that the TPP reduced emergency medical admissions by 5.4% across all hospital providers, compared to increases of 7.7% for the local comparator practices and 3.7% for all practices in the HA other than the TPP. The TPP stated that its main acute contract had under-performed, and the TPP reduced emergency medical admissions by over 4% at its main acute provider.

2 Background

The TPP is a single practice which covered a population of 19,000 with 9 GPs in April 1996. It accounted for 10% of medical and surgical ordinary admissions by practices within the host Health Authority in 1995/6. The TPP's main acute hospital (MAH1) accounted for 66% of this activity by the TPP. The 19 practices in the host health authority sharing the TPP's main acute hospital as their main provider accounted for 49% of medical and surgical ordinary admissions by practices within the health authority in 1995/6. The TPP is a second wave standard fundholder and 11 of the local comparator practices are fundholders.[48]

3 Aims and progress reported by the TPP

A main aim reported by the TPP was to reduce inappropriate emergency medical admissions.[49] The initiative reported to be most important was a 'fast response' service providing nurse led hospital-at-home care, which was initiated by the health authority for use across the health authority. The TPP reported having used the 'fast response service' 16 times, which had prevented 12 admissions during the 8 weeks following its introduction in September/October 1997. The TPP also reported that the hospital-at-home activity had averaged about one patient per week since November 1996.[50]

The lead GP reported that the TPP used the 'fast response' service more than other practices in the HA because they had the incentive. The TPP reported that its main acute contract, which was based on the 1995/6 activity level, had "under-performed month after month".[51]

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[48] The fundholders comprise 2 second wave, 3 fifth wave, 2 fourth wave, 1 fifth wave and 1 sixth wave practice.
[49] Source: TP-NET second round lead GP interview 1997.
[50] Source: TPP Project Manager, 1998.

The TPP reported that it had integrated district and practice nurses into one team which was making use of treatment protocols. The TPP also has a social worker 'within the team' who is reported to have facilitated more rapid referrals for those requiring social services' care. In addition, the TPP reported that some patients had been admitted to nursing homes rather than hospital because of the fast response team and links to social services. The TPP indicated that it had not purchased nursing home beds itself, but was considering this option.

The TPP planned to review data on LOS and requested their main acute trust notify them of the presence of patients who have stayed 14 days. The TPP did not take any action influence LOS in 1996/7.

In April 1996 the TPP's main providers, MAH1 and MAH2, merged to form one trust. One consequence of this reported by the TPP was the removal of most A&E facilities to the MAH2 site which is further away from the TPP practice. Hence, the TPP reported a reduction in A&E attendance "by default".[52] The lead GP reported an increase in cuts, bruises and minor falls coming to the practice.

4 Contracting Status

In 1996/7 the TPP had one independent contract. Emergency admissions and obstetrics were covered by a cost and volume arrangement and elective admissions were cost per case, with prices based on FCEs at average specialty cost.[53] The TPP reported that activity, unit costs and cost savings conformed to the levels predicted in the contract for 1996/7, while service quality improvements did not conform to the contract specifications.[54]

5 Overall change in hospital activity

Table A4.1 shows the average change figures, between the TPP's preparatory year and first year, at the level of total activity for medical and surgical specialties, including emergencies, electives and transfers.[55] Figures are given for the TPP's main providers, MAH1 and MAH2, as well as for all providers.

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[51] Source: TP-NET second round lead GP interview 1997.
[52] Ibid..
[53] Source: TP-NET first contracting methods survey 1996/7.
[54] Source: TP-NET second contracting methods survey December 1997.
[55] HES data notes: The data were checked for duplicate FCEs. In this case, 0.05% of all 1995/6 and 1996/7 FCEs were regarded as duplicates and excluded. In addition, the analysis grouped activity using the GP practice code, and consequently FCEs for which a practice code could not readily be determined were excluded. 0.77% of 1995/6 FCEs relating to host Health Authority residents were excluded for this reason while 0.84% of 1996/7 FCEs were similarly excluded. The 'local comparator practices', defined as those similarly reliant on the same provider[55], and in this case limited to the earliest non-TPP fundholders in the health authority. If the choice of 'local comparator practices' had been limited to those practices sharing the TPP's main provider, 60 of the 66 non-TPP practices in the health authority would have qualified. There were no first or second wave fundholders in the health authority, apart from the TPP practices and hence the five third wave fundholders were selected.

All medicine and surgery -	% change between 95/6 & 96/7					% change between 95/6 & 96/7					% change between 95/6 & 96/7				
emergencies, electives and transfers	MAH1					MAH2					All providers				
	TPP	Local		All HA		TPP	Local		All HA		TPP	Local		All HA	
number of day case FCEs	-9.77	-10.2		-11.72		55.91	-16.21	**	-8.38	**	4.02	-12.36	**	-10.66	*
number of ordinary admission FCEs	-20.1	-16.03		-15.34		55.24	40.62		14.97	**	-4.4	-2.74		-1.15	
number of ordinary admissions	-19.96	-14.25		-13.63		42.86	35.25		13.09	*	-6.85	-2.53		-1.37	
Total OBDs for ord. adm. FCEs	-16.85	-14.84		-14.03	-*	25.14	33.75		8.04	**	-9.65	-5.57	-**	-5.11	-**
Average LOS per ordinary adm. FCE	4.06	1.42		1.54		-19.39	-4.89		-6.03		-5.5	-2.91		-4.01	
Average LOS per ordinary admission	3.88	-0.69		-0.47		-12.4	-1.11		-4.47		-3.01	-3.12		-3.8	

Table A4.1

Across all providers the number of medical and surgical ordinary admissions decreased for the TPP by more than for the comparator groups, while the TPP and both comparators experienced similar reductions in average LOS. As a result of these change the TPP experienced the largest reduction in total OBDs. The difference in change in total OBDs between the TPP and each comparator was statistically significant.

Admissions for the TPP and both comparators decreased at MAH1 and increased at MAH2 (Table A4.1).

Table A4.2 shows that average LOS across all providers was highest for the TPP in both years, compared to the comparator groups.

All medicine and surgery - emergencies, electives and transfers																		
	TPP						Local Practices						All HA Practices other than TPP					
Average LOS	1995/6			1996/7			1995/6			1996/7			1995/6			1996/7		
	H1	H2	Total	H1	H2	Total	H1	H2	Total	H1	H2	Total	H1	H2	Total	H1	H2	Total
per ord. ad. FCE	9.04	6.43	8.05	9.41	5.18	7.61	8.92	5.49	7.68	9.05	5.22	7.45	8.74	5.78	7.31	8.88	5.43	7.02
per ord. adm.	9.77	6.90	8.62	10.1	6.05	8.36	9.76	5.83	8.29	9.69	5.77	8.03	9.54	6.36	7.99	9.49	6.08	7.68

Table A4.2

6 Emergency activity

Table A4.3 shows that across all providers, the number of medical and surgical emergency admissions reduced for the TPP by over 4% in contrast to the increases of about 4% for the comparator groups. The difference in change between the TPP and the comparators was mainly due to medical activity and the difference between the TPP's reduction of 5.4% and the local comparator's increase of 7.7% was statistically significant.

Emergencies	% Change between 95/6 and 96/7				% Change between 95/6 and 96/7				% Change between 95/6 and 96/7			
number of ordinary admissions	MAH1				MAH2				All Providers			
	TPP	Local		All HA	TPP	Local		All HA	TPP	Local		All HA
All medicine and surgery	-17.51	-11.85		-11.67	79.13	68.38		21.39	**	-4.23	4.48		3.90
All medicine	-7.71	1.29		1.33	14.67	40.39		9.58		-5.42	7.75	-*	3.68
Surgery	-42.22	-42.72		-41.80	200.00	117.11		50.49	**	-1.56	-2.21		4.38

Table A4.3

The change in use of MAH1 and MAH2 following their merger, and the movement of most A&E facilities to the MAH2 site which is further away from the TPP practice, is also clear from Table A4.3. The number of medical and surgical emergency admissions at both main acute hospitals decreased by 2.67% for the TPP, although the number of FCEs relating to this activity remained constant.

7 Emergency medical activity

Focusing on medical emergencies, Table A4.4 shows that the average LOS reduced for the TPP by more than for the comparators. Hence, the total OBDs for TPP patients reduced by 14.8%, compared to almost no change for all other HA practices and an increase of 3.4% for the local comparator group.

All medicine - emergencies	% change between 95/6 & 96/7											
	MAH1				MAH2				All providers			
	TPP	Local		All HA	TPP	Local		All HA	TPP	Local		All HA
number of ordinary admission FCEs	-7.57	-1.53		-1.32	17.86	43.64		10.19	-4.43	6.54		3.58
number of ordinary admissions	-7.71	1.29		1.33	14.67	40.39		9.58	-5.42	7.75	-*	3.68
Total OBDs for ord. adm. FCEs	-17.11	-1.92	-**	-2.46	-**	25.89	48.72	-*	5.75	*	-14.76	3.42	-**	-0.42	-**
Average LOS per ordinary adm. FCE	-10.32	-0.40		-1.16		6.81	3.54		-4.03		-10.81	-2.93		-3.86	
Average LOS per ordinary admission	-10.18	-3.17		-3.74		9.79	5.93		-3.50		-9.88	-4.02		-3.95	

Table A4.4

TPP						
All medicine - emergencies	1995/6			1996/7		
	MAH1	MAH2	All providers	MAH1	MAH2	All providers
number of ordinary admission FCEs	502	84	632	464	99	604
number of ordinary admissions	454	75	572	419	86	541
Total OBDs for ord. adm. FCEs	5237	394	6055	4341	496	5161

Table A4.5 records the medical emergency activity figures for the TPP.

Across all providers the TPP had the highest average LOS for emergency medical activity in 1995/6, compared to the comparators (Table A4.6). In 1996/7 the average LOS for the TPP was lower than that for the local comparator group.

All medicine - emergencies																		
	TPP						Local Practices						All HA Practices other than TPP					
Average LOS	1995/6			1996/7			1995/6			1996/7			1995/6			1996/7		
	H1	H2	Total	H1	H2	Total	H1	H2	Total	H1	H2	Total	H1	H2	Total	H1	H2	Total
per ord. ad. FCE	10.43	4.69	9.58	9.36	5.01	8.54	10.5	4.43	9.09	10.4	4.59	8.82	10.5	5.66	8.47	10.3	5.43	8.14
per ord. adm.	11.54	5.25	10.59	10.4	5.77	9.54	11.9	4.95	10.27	11.5	5.24	9.86	11.9	6.47	9.71	11.4	6.25	9.33

Table A4.6

8 Elective activity

Across all hospital providers the TPP and both comparators shared a trend for reductions in elective ordinary admissions/FCEs, average LOS and total OBDs, as shown in Table A4.6. However, day case activity increased for the TPP by over 4% in contrast to reductions of over 10% for the comparators.

All medicine and surgery - electives	% change between 95/6 & 96/7						% change between 95/6 & 96/7						% change between 95/6 & 96/7					
	MAH1						MAH2						All providers					
	TPP	Local		All HA			TPP	Local		All HA			TPP	Local		All HA		
number of day case FCEs	-9.77	-10.20		-11.72			55.91	-16.21	**	-8.38	**		4.17	-12.36	**	-10.66	*	
number of ordinary admission FCEs	-26.64	-19.07		-16.91			22.92	2.12		-2.14			-8.92	-11.67		-9.62		
number of ordinary admissions	-25.37	-19.24		-17.08			17.71	1.36		-2.71			-8.88	-12.10		-9.83		
Total OBDs for ord. adm. FCEs	-14.76	-27.75	**	-24.03	**		-20.27	2.35	-**	-8.07	-*		-12.98	-14.31		-13.43		
Average LOS per ordinary adm. FCE	16.20	-10.74		-8.58			-35.13	0.22		-6.06			-4.46	-2.99		-4.22		
Average LOS per ordinary admission	14.22	-10.55		-8.39			-32.26	0.97		-5.51			-4.50	-2.52		-4.00		

Table A4.7

Across all hospital providers the average LOS associated with elective activity was highest for the TPP in both years (Table A4.8).

All medicine and surgery - electives																		
	TPP						Local Practices						All HA Practices other than TPP					
Average LOS	1995/6			1996/7			1995/6			1996/7			1995/6			1996/7		
	H1	H2	Total	H1	H2	Total	H1	H2	Total	H1	H2	Total	H1	H2	Total	H1	H2	Total
per ord. ad. FCE	5.74	6.27	5.45	6.67	4.07	5.21	5.76	5.26	5.27	5.14	5.27	5.11	5.73	5.13	5.17	5.24	4.82	4.95
per ord. adm.	5.87	6.27	5.55	6.70	4.25	5.30	5.81	5.30	5.32	5.20	5.35	5.19	5.77	5.20	5.24	5.29	4.91	5.03

Table A4.8

9 Conclusion

The TPP achieved its objective to reduce emergency medical admissions both in absolute and relative terms. In addition, cost savings associated with the TPP's main acute contract conformed to the levels predicted.

Appendix 5 - Total Purchasing Pilot code Cm13

1 Summary

The TPP reported a main objective to reduce the length of stay for emergency geriatric admissions at its main acute provider, by early discharging to a community rehabilitation facility which was initiated by the TPP. In addition, the TPP had a secondary aim to avoid acute emergency geriatric admissions by admitting appropriate cases direct to the community hospital.

The hospital activity analysis indicates that the average LOS for emergency geriatric admissions to its main acute provider reduced by 30.8% for the TPP. The total OBDs for all medical and surgical activity at the acute trust reduced by 10.7% for the TPP, while overall total OBDs for the TPP across all providers increased by 8.2%. The analysis indicates that the TPP succeeded in early discharging patients from the acute provider to the local community hospital. In addition a small number of patients were admitted direct to the community hospital which would have otherwise have been admitted to the main acute hospital.

2 Background

The TPP is multi-practice and in April 1996 it covered an urban locality of 30,000 people with 17 GPs. Its three practices accounted for 6% of medical and surgical ordinary admissions by practices within the host Health Authority in 1995/6. The TPP's main acute trust (MAT) accounted for 90% of this activity by the TPP. A further 71% of medical and surgical ordinary admissions by practices within the Health Authority related to the other 74 practices sharing the MAT as main provider. The TPP practices are all first wave standard fundholders, and few of the 74 local comparator practices were fundholders until the sixth or seventh wave.[56]

3 Aims and progress reported by the TPP

The TPP reported a main objective to reduce the length of stay for emergency geriatric admissions at its main acute provider, by early discharging to a community rehabilitation facility which was initiated by the TPP.

In May 1996 an 18 bed rehabilitation facility was established at the TPP's local community hospital. The facility was seen as a collaborative venture between the TPP, Health Authority, and the community and acute trusts. Two of the beds were financed by the HA and 16 by the TPP. The HA funded beds were used by five practices located within the HA.[57]

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[56] There were no first or second wave fundholders, 3 third wave, 2 fourth wave, 1 fifth wave, 15 sixth wave and 11 seventh wave in the local practices group.

[57] Source: information supplied by the LCH Hospital Manager, 1998.

All the TPP's patients at the main acute trust were assessed by the TPP's resource utilisation nurse/nurse facilitator. When appropriate patients were moved into local community hospital for rehabilitation, where they were supervised by a team including two consultant geriatricians from the acute trust and two TPP GPs, working as hospital practitioners.

In addition, from October 1996 the TPP started admitting patients directly to the local community hospital. "There has been a small but significant number of direct admission of people who are not acutely ill, but who need intensive nursing care."[58]

The TPP also reported major service developments relating to maternity services which are outside the scope of this report.

4 Contracting Status

In 1996/7 the TPP had seven independent contracts in 1996/7. All services covered by the main acute contract were charged at cost per case, except for a simple block element covering A&E, GUM services and midwifery. The contract currency was based on FCEs at average specialty cost, and had length of stay sensitive prices in some specialties including geriatrics.[59] The local community hospital activity was managed with a simple block contract.[60]

One of the main problems[61] reported by the TPP related to its main acute contract. The TPP regarded the practice of counting activity in FCEs as unacceptable and "at the extreme end of how you define these sorts of things"[62], and cited multiple FCE counting. The TPP reported that for "10% less activity" the trust wanted to charge the TPP £100,000 more than the contract value. The TPP indicated that it wished to take the matter to arbitration, and "they ended up signing off a reasonable sum of money, so all the rigid counting was a complete waste of time."

The TPP reported that if the local community hospital activity had taken place at the acute trust, the cost to the TPP would have been greater.[63]

Standard fundholding activity is managed separately at practice level.

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[58] Source: TP-NET second round interview with the Lead GP, June 1997.
[59] Source: TP-NET first contracting methods survey 1996/7.
[60] Source: information supplied by the TPP, 1998.
[61] The other two problems cited by the Lead GP were political uncertainty and the lost of the TPP site manager due to promotion.
[62] Source: TP-NET second round interview with the Lead GP, June 1997.
[63] Source: information supplied by the TPP, 1998.

5 Overall change in hospital activity

All medicine and surgery -	% Change between 95/6 and 96/7					% Change between 95/6 and 96/7				
emergencies, electives and transfers	Main acute trust					All Providers				
	TPP	Local		All HA		TPP	Local		All HA	
number of day case FCEs	13.97	12.92		11.98		18.68	12.73		11.04	
number of ordinary admission FCEs	-0.25	2.55		2.45		3.93	3.85		3.40	
number of ordinary admissions	-0.55	1.48		1.47		4.31	2.82		2.27	
Total OBDs for ord. adm. FCEs	-10.69	-0.16	-**	-0.16	-**	8.21	5.21	**	5.74	*
Average LOS per ordinary adm. FCE	-10.47	-2.64		-2.54		4.12	1.31		2.27	
Average LOS per ordinary admission	-10.20	-1.61		-1.60		3.74	2.33		3.39	

Table A5.2

Table A5.2 shows the percentage change figures, between the TPP's preparatory year and first live year, at the level of total activity for medical and surgical specialties, including emergencies, electives and transfers.[64]

Across all providers the number of admissions, the average LOS and the total number of OBDs increased by more for the TPP than the comparators.

At the TPP's main acute trust (MAT) the number of ordinary admissions decreased slightly for the TPP compared to small increases at both comparator groups. The total OBDs decreased by 10.7% for the TPP compared to a reduction of 0.2% for both the local comparator practices and all practices within the HA except for the TPP. In both cases the difference was statistically significant at the 1% level. This finding confirms the TPP's claim to have reduced activity in its main acute contract by 10%.

All medicine and surgery -	TPP				Local practices				All HA practices other than TPP			
emergencies, electives and transfers	1995/6		1996/7		1995/6		1996/7		1995/6		1996/7	
	MAT	Total	MAT	Total	MAT	Total	MAT	Total	MAT	Total	MAT	Total
Average LOS per ordinary adm. FCE	5.11	5.17	4.58	5.38	4.87	5.03	4.75	5.09	4.82	5.30	4.70	5.42
Average LOS per ordinary admission	6.32	6.28	5.67	6.52	5.95	6.06	5.86	6.20	5.86	6.19	5.77	6.40

Table A5.1

For all groups the average LOS decreased at the TPP's main provider, while increasing across all providers. It can be seen from Table A5.1 that the TPP's average LOS at the main provider fell below that for the comparator groups in 1996/7. Across all providers the average LOS was similar for the TPP and both comparators in 1996/7.

[64] Hospital Episode Statistics data notes: The data used for the local community hospital in 1996/7 was supplied by the hospital, and the data used for the other community trust activity in 1996/7 was supplied by the trust. This analysis grouped activity using the GP practice code, and consequently FCEs for which a practice code could not readily be determined were excluded. 0.76% of 1995/6 FCEs relating to host Health Authority residents were excluded for this reason while 0.64% of 1996/7 FCEs were similarly excluded.

6 Emergency activity

Table A5.3 below shows that for the TPP and comparators reductions in surgical emergency admissions were balanced by roughly similar increases in emergency medical admissions. Across all providers, the TPP faced the smallest of the slight increases in emergency admissions.

Emergencies	% Change between 95/6 and 96/7			% Change between 95/6 and 96/7		
number of ordinary admissions	Main acute trust			All Providers		
	TPP	Local	All HA	TPP	Local	All HA
All medicine and surgery	0.26	0.19	0.12	0.40	1.03	0.92
All medicine	2.19	0.65	0.80	2.75	1.75	2.06
Surgery	-2.99	-0.67	-1.12	-3.49	-0.29	-1.30

Table A5.3

7 Medical emergency activity

All medicine - emergencies	% Change between 95/6 and 96/7				% Change between 95/6 and 96/7			
	Main acute trust				All Providers			
	TPP	Local		All HA	TPP	Local		All HA
number of ordinary admission FCEs	1.26	3.00		3.03	1.91	3.94		4.27
number of ordinary admissions	2.19	0.65		0.80	2.75	1.75		2.06
Total OBDs for ord. adm. FCEs	-21.29	0.60	-**	0.83	-19.48	3.08	-**	5.99
Average LOS per ordinary adm. FCE	-22.27	-2.33		-2.14	-20.99	-0.82		1.65
Average LOS per ordinary admissions	-22.98	-0.05		0.03	-21.63	1.31		3.85

Table A5.4

Focussing on medical emergency activity, Table A5.4 shows a substantial reduction in average LOS and total OBDs for the TPP across all providers and at the MAT, compared to modest increases for both comparator groups.

The TPP went from having the highest to lowest average LOS, both at its main provider and across all providers (Table A5.5).

All medicine - emergencies	TPP				Local practices				All HA practices other than TPP			
	1995/6		1996/7		1995/6		1996/7		1995/6		1996/7	
	MAT	Total	MAT	Total	MAT	Total	MAT	Total	MAT	Total	MAT	Total
Average LOS per ordinary adm. FCE	5.96	5.99	4.63	4.74	5.19	5.27	5.07	5.23	5.18	5.74	5.07	5.83
Average LOS per ordinary admission	8.39	8.35	6.46	6.54	7.09	7.12	7.09	7.21	7.08	7.35	7.08	7.63

Table A5.5

8 Geriatric medicine

The trend for similar increases in medical emergency admissions accompanied by a substantial reduction in average LOS and total OBDs for the TPP is most pronounced when activity is limited to geriatric medicine (main specialty code 430), as shown below:

Geriatric medicine - emergencies	% Change between 95/6 and 96/7					% Change between 95/6 and 96/7				
	Main acute trust					All Providers				
	TPP	Local		All HA		TPP	Local		All HA	
number of ordinary admission FCEs	-3.44	4.98		4.58		-1.05	6.72		8.39	
number of ordinary admissions	3.46	1.80		1.56		5.82	3.61		5.10	
Total OBDs for ord. adm. FCEs	-28.40	-2.86	-**	-2.79	-**	-24.22	0.78	-**	5.36	-**
Average LOS per ordinary adm. FCE	-25.85	-7.47		-7.05		-23.42	-5.57		-2.79	
Average LOS per ordinary admissions	-30.80	-4.57		-4.28		-28.39	-2.74		0.25	

Table A5.6

The TPP's average LOS across all providers and the MAT was lower than that for the comparators in 1995/6 (Table A5.7). The substantial reductions in average LOS for the TPP led to an average LOS at the MAT for emergency geriatric medicine which was 40% lower than that for the comparators in 1996/7.

Geriatric medicine - emergencies	TPP				Local practices				All HA practices other than TPP			
	1995/6		1996/7		1995/6		1996/7		1995/6		1996/7	
	MAT	Total	MAT	Total	MAT	Total	MAT	Total	MAT	Total	MAT	Total
Average LOS per ordinary adm. FCE	12.16	12.15	9.02	9.30	12.49	12.67	11.56	11.97	12.44	13.66	11.57	13.28
Average LOS per ordinary adm. admission	15.91	15.85	11.01	11.35	16.17	16.36	15.43	15.92	16.13	17.10	15.44	17.15

Table A5.7

9 Inter hospital transfers

When total OBDs for both emergency and transfer geriatric FCEs are added together, it is evident that the reduction of 28.2% for the TPP at the main provider was offset by a total increase across all providers of 14.5%. This was the result of the patients transferred from the MAT to the local community hospital.

In 1996/7 108 of the 115 geriatric admissions to Shipley Hospital by the TPP were transfers from the MAT. Nearly 34% of all geriatric admissions to the MAT in 1996/7 were transferred to the LCH. These geriatric transfers generated a total of 1,802 OBDs at the community hospital (Table A5.8).

Geriatric medicine -	TPP						Local practices						All HA practices other than TPP					
emergencies &	1995/6			1996/7			1995/6			1996/7			1995/6			1996/7		
transfers	MAT	LCH	Total	MAT	LCH	Total	MAT	LCH	Total	MAT	LCH	Total	MAT	LCH	Total	MAT	LCH	Total
no. of ord. adm. FCEs	380	0	384	371	115	491	3554	0	3668	3771	35	3990	3604	0	4974	3811	39	5459
no. of ordinary admissions	291	0	295	304	115	422	2744	0	2840	2831	35	3014	2779	0	3972	2860	39	4238
Total OBDs for ord. admissions	4631	0	4663	3323	1941	5340	44481	0	46568	44203	888	48973	44936	0	68720	44712	975	73616
Av. LOS per ord. admission FCE	12.19	-	12.14	8.96	16.88	10.88	12.52	-	12.70	11.72	25.37	12.27	12.47	-	13.82	11.73	25.00	13.49
Av. LOS per ord. admission	15.91	-	15.81	10.93	16.88	12.65	16.21	-	16.40	15.61	25.37	16.25	16.17	-	17.30	15.63	25.00	17.37

Table A5.8

10 Elective activity

Overall, the number of elective ordinary admission FCEs and ordinary admissions reduced for the TPP compared to increases for both comparators. Table A5.9 records these changes and their statistical significance.

All medicine and surgery - electives	% Change between 95/6 and 96/7					% Change between 95/6 and 96/7				
	Main acute trust					All Providers				
	TPP	Local		All HA		TPP	Local		All HA	
number of day case FCEs	13.97	12.92		11.98		18.68	12.73		11.04	
number of ordinary admission FCEs	-2.75	2.81		2.85		-3.50	5.15	-*	4.09	
number of ordinary admissions	-3.55	3.85		3.86		-4.56	5.71	-*	4.42	-*
Total OBDs for ord. adm. FCEs	7.26	-1.71	**	-1.43	**	14.30	12.93		12.70	
Average LOS per ordinary adm. FCE	10.30	-4.39		-4.16		18.44	7.39		8.27	
Average LOS per ordinary admission	11.20	-5.36		-5.09		19.76	6.83		7.93	

Table A5.9

The average LOS associated with elective activity across all providers increased by more for the TPP compared to both comparator groups. Table A5.10 shows that the increase in average LOS for elective work at the TPP resulted in the TPP having a higher average LOS than the comparators in 1996/7.

All medicine and surgery - electives	TPP				Local practices				All HA practices other than TPP			
	1995/6		1996/7		1995/6		1996/7		1995/6		1996/7	
	MAT	Total	MAT	Total	MAT	Total	MAT	Total	MAT	Total	MAT	Total
Average LOS per ordinary adm. FCE	3.62	3.83	3.99	4.54	3.68	3.89	3.52	4.18	3.61	3.95	3.46	4.28
Average LOS per ordinary admission	3.99	4.17	4.44	4.99	4.03	4.23	3.81	4.52	3.94	4.23	3.74	4.56

Table A5.10

11 Conclusion

The TPP achieved its main objective to reduce length of stay for acute emergency geriatric admissions. The TPP also had a 'secondary' objective to reduce the number of acute emergency geriatric admissions. Although the TPP admitted seven geriatric cases direct to its new community hospital rehabilitation facility instead of the main acute trust, the TPP still experienced an increase in acute emergency geriatric admissions. TPP reported a slight cost saving resulting from the use of the community hospital. Although the main acute contract pricing was LOS sensitive for geriatrics, the contract management was problematic.

[redacted]

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