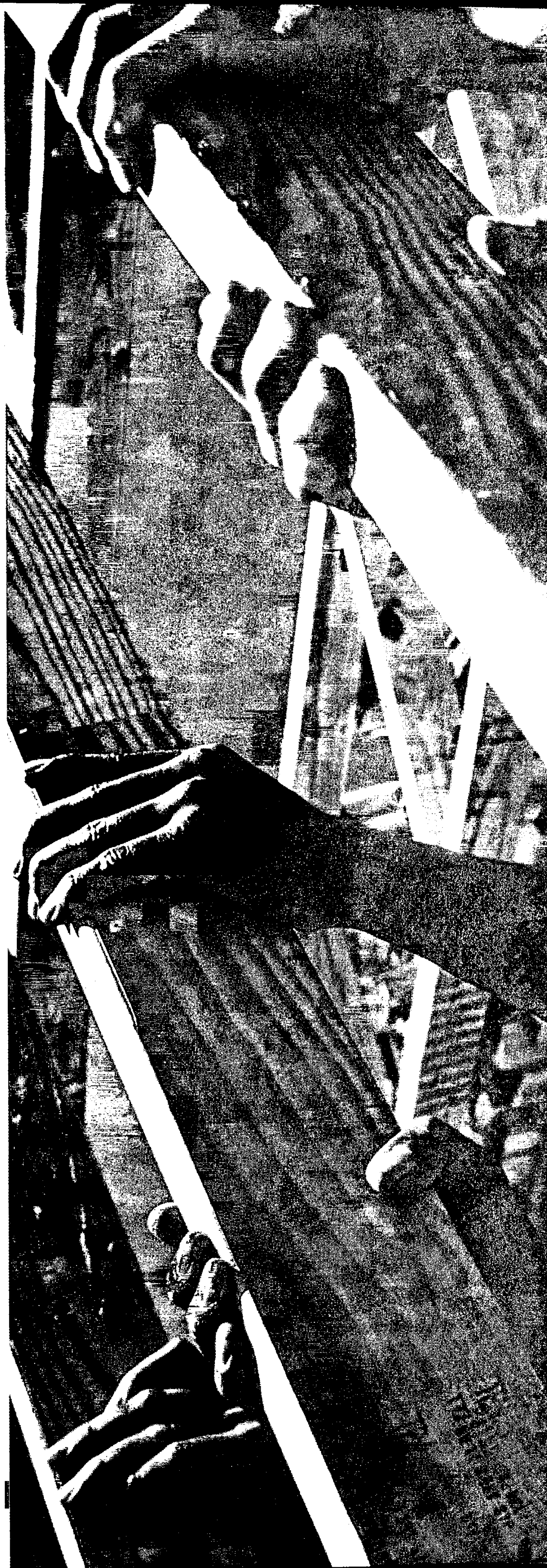
King's Fund

Throw out the Bricks, Build the Service

Shifting acute hospital-based care into alternative settings

J. Spiby,
P. Bridger, J. Mallender,
N. Goswami, J. Schofield



King's Fund
Publishing
11–13 Cavendish Square
London W1M 0AN

Throw out the Bricks, Build the Service

Shifting acute hospital-based care into alternative settings

Throw out the Bricks, Build the Service

Shifting acute hospital-based care into alternative settings

J. Spiby, P. Bridger, J. Mallender, N. Goswami, J. Schofield

Department of Public Health Medicine, Bromley Health • MHA

King's Fund

Published by
King's Fund Publishing
11–13 Cavendish Square
London W1M 0AN
Tel: 0171 307 2400

© King's Fund 1995

First published 1995

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic or mechanical, photocopying, recording and/or otherwise without the prior written permission of the publishers. This book may not be lent, resold, hired out or otherwise disposed of by way of trade in any form, binding or cover other than that in which it is published, without the prior consent of the publishers.

ISBN 1 85717 103 9

A CIP catalogue record for this book is available from the British Library

Distributed by Bournemouth English Book Centre (BEBC)
PO Box 1496
Poole
Dorset
BH12 3YD
Tel: 0800 262260
Fax: 0800 262266

Cover photograph: Zigy Kaluzny/Tony Stone Images

Printed and bound in Great Britain by FS Print & Design

Contents

Acknowledgements vii
Executive summary ix

1 Introduction 1
2 Medicine 7
3 Care of the elderly 10
4 Paediatric medicine 14
5 Surgery 17
6 Obstetrics 22
7 Mental health 24
8 Management issues 29
9 Financial issues 34

Conclusion 38

Acknowledgements

The study team would like to acknowledge the assistance and advice provided by GPs, external experts, and the staff of Bromley Health, Bromley Hospitals NHS Trust and Ravensbourne NHS Trust. Without this co-operation, the compilation of this report would not have been possible.

The working papers for each specialty which provide the background analysis, by diagnosis or procedure, which substantiates the overall predictions are available from: Dr J. Spiby, Director of Public Health, Bromley Health, Hayes, Kent BR3 3QL.

Executive summary

Bromley Health's Department of Public Health, in collaboration with a health planning consultancy, MHA, undertook a research project on the interface between acute, primary and community health services. Co-funded by South Thames (East) Regional Health Authority and the King's Fund, the study sought to assess the potential for shifting acute care into primary and community care settings in Bromley. It was conducted with the participation of clinical staff from Bromley Hospitals Trust (acute hospital), Ravensbourne Trust (community and mental health), local GPs and other interested parties.

The study took place in 1993 within the context of:

- An increasing policy emphasis on primary and community services, with more centralised, 'high-tech' acute hospitals serving larger populations;

- Bromley Health's five-year strategy plan, which envisages a greater role for the delivery of health services in primary and community settings;

- Serious estate and service pressures on Bromley Hospitals Trust (multiple hospital sites, poorly maintained estates and problems concerning junior doctors' hours all pointed to a need to review and rationalise service provision).

Across a range of specialty areas (medicine, care of the elderly, paediatric medicine, surgery, obstetrics and mental health), the study aimed to identify what care currently provided in an acute general hospital (AGH) might be provided in a non-acute setting, and the financial and non-financial considerations of such a strategy. This involved an extensive series of interviews with consultants and GPs to establish which types of patient did not need to be treated in an AGH. To gain a broader, longer-term perspective, local views were discussed with a wider audience, including clinicians with specialised interests (e.g., oncology) and public health experts. Specialty-specific workshops were organised to discuss findings and identify issues. The workshop participants included consultants, GPs, nurses, general managers and representatives from social services and voluntary groups.

In paediatrics it was estimated that 50 per cent of the care could be provided at home. One third of the medical beds used could be relocated to alternative settings and, although most elderly patients needed some AGH care, over 50 per cent of that care could be provided off the AGH site.

In some specialties, such as paediatrics, there appeared to be broad consensus on the feasibility of providing acute health services in the community, albeit with considerably extended community provision. In others, for example adult acute mentally ill, local opinion varied more widely. The study indicated that if changes are to be implemented successfully, it will be necessary to:

- Ensure quality, particularly with regard to the need for explicit protocols on admission, discharge and care programmes;

- Examine the pivotal role of GPs and the primary health care team in the provision of primary and community care, in view of the radical changes in organisation, management and remuneration that will be required;

- Cater for the possibility of professional isolation when care is provided from multiple settings, a factor which may inhibit peer group review and support, and possibly the quality of care;

- Provide training and education to develop the required skills (e.g., specialised nurses and community consultants will be needed, as will a review of the curriculum for undergraduate medical students and the training requirements for junior doctors);

- Involve the public in planning and implementing these changes so as to ensure that their views are reflected in the changes and that they have a better understanding of why some cherished hospitals may have to be close (in particular, the perception that sick people should be in a hospital, and that certain types of hospital are better than others, may need to be challenged);

- Develop a better understanding of the local implications of the changes in terms of costs, funding arrangements and organisational relationships across different acute and community health service providers.

The study was initiated just prior to major changes in managerial and clinical personnel and before the impact of the separation of the Health Authority (the purchaser) and the Trusts (the providers) was felt. At that time, there was only one GP fundholding practice in the Borough.

Since the study, many of the developments to enable the reduction in reliance on the AGH have begun (e.g., acute home-care paediatric team, community stroke team, day surgery centre, special gastroenterology and cardiology). Regional funding has also been made available for the redevelopment of Beckenham Hospital as a polyclinic and OrpingtonHospital to start to move towards being a local hospital. However, still more needs to be done to move away completely from an AGH-dominated service.

Chapter 1

Introduction

In recent years there has been growing support, backed up by policy statements, for an expansion of the role of primary and community care. Particular emphasis has been placed on substituting some types of acute hospital care by primary and community care, whereby acute diagnosis, treatment and care take place in a non-acute hospital setting.

Evidence of the viability of such substitution is patchy and often inconclusive. Evaluations have tended to focus on a narrow range of services, sometimes for a particular disease problem, or on a few options covering only part of the full spectrum of possible care settings. More comprehensive cost and quality assessments are lacking. There do not appear to be any major studies on the interface between acute, primary and community care services across the whole spectrum of health service provision for a particular locality.

The Bromley study was designed with this purpose in mind. That is, it set out to identify, at a particular point in time, what scope there is for achieving a shift from traditionally hospital-based care into primary and community care settings while still meeting the needs of Bromley residents. The specific objectives of the study were to:

- Define an appropriate model that might work in Bromley and that was based on local perceptions rather than theoretical assumptions;

- Gain a better understanding of the barriers to change in Bromley.

The study was undertaken by a multi-disciplinary team comprising consultants in public health medicine and economists and experts in public sector management. The team encouraged and obtained the active involvement of consultants, GPs and staff from other agencies. In addition, special emphasis was placed on data analysis based on a detailed review of hospital care provided at the level of an individual finished consultant episode (FCE). Considerable changes have occurred since the study was undertaken, and some of them are referred to in this report.

Profile of Bromley health service

To understand and interpret the findings of this study, and assess their applicability elsewhere, it is necessary to have some knowledge of the local health service. The main elements of this service are outlined here.

- *Bromley Health* has the responsibility for co-ordinating the purchase of primary and secondary health services for the residents of Bromley. Comprising Bromley District Health Authority (DHA) and Bromley Family Health Services Authority (FHSA), it has operated as a unitary authority since April 1992.

- *Bromley Hospitals Trust* is the main local unit providing acute services, accounting for some 76 per cent of Bromley Health's commissioned acute hospital activity. In 1993 there was an accident and emergency (A&E) service and about 165 inpatient beds at Bromley Hospital, and a further 347 acute beds at Farnborough and 147 at Orpington Hospitals (this number had changed to 203, 319 and 103, respectively, by 1995). Beckenham Hospital provides outpatient and day services. Like many other provider units in the Region, the Trust is planning to rationalise acute health services in order to improve service quality, reduce costs and prices and replace old and/or poorly maintained capital stock. An outline Business Case has been approved whereby the A&E centre will be transferred to Farnborough, supported by a restructuring of the services provided at Orpington and Beckenham Hospitals.

- *Ravensbourne Trust* provides mental health, community and priority care services to the residents of Bromley. These services include district nursing and health visiting services, a full range of paramedical services, children's services and a comprehensive inpatient and outpatient mental health service.

- *Primary care* in Bromley is provided by 156 GPs and 104 practice nurses, as well as dentists, pharmacists and opticians. Until 1995, there were only three GP fundholding practices in the borough.

- *Bromley Local Authority* is at the forefront of contracting out services, and thus there is a small core staff. The launch of the Joint Commissioning Healthy Bromley Strategy for Health Promotion has strengthened the health role of the council.

- *The voluntary sector* is well developed in Bromley, with a wide range of organisations providing direct care for all groups. No assessment has been made of the level of resources invested in the voluntary sector but it clearly provides a higher level of service than in many other boroughs and covers many of the traditional statutory sector functions.

- *The private sector* plays a major role in Bromley. It is estimated that 25 per cent of the residents have some form of private health care insurance.

Figure 1 shows the location of the NHS Trust hospitals in Bromley.

At the time of the study, there were a number of features of Bromley's health service that tended to focus attention on acute hospital care and away from alternative ways of providing care. The prevailing conservatism among the local population was also evident to some extent in the medical community, which displayed a reluctance to be at the forefront of change. Until a few years ago, this was reflected in the lack of a clear strategy for developing day surgery or for the provision of specialist services such as gastroenterology, genito-urinary medicine, a dedicated breast care service and AGH cardiology. Another factor which has inhibited change has been the 30-year-old concentration on planning for a new hospital in Bromley which has yet to materialise and has produced a tendency to short-termism and planning blight.

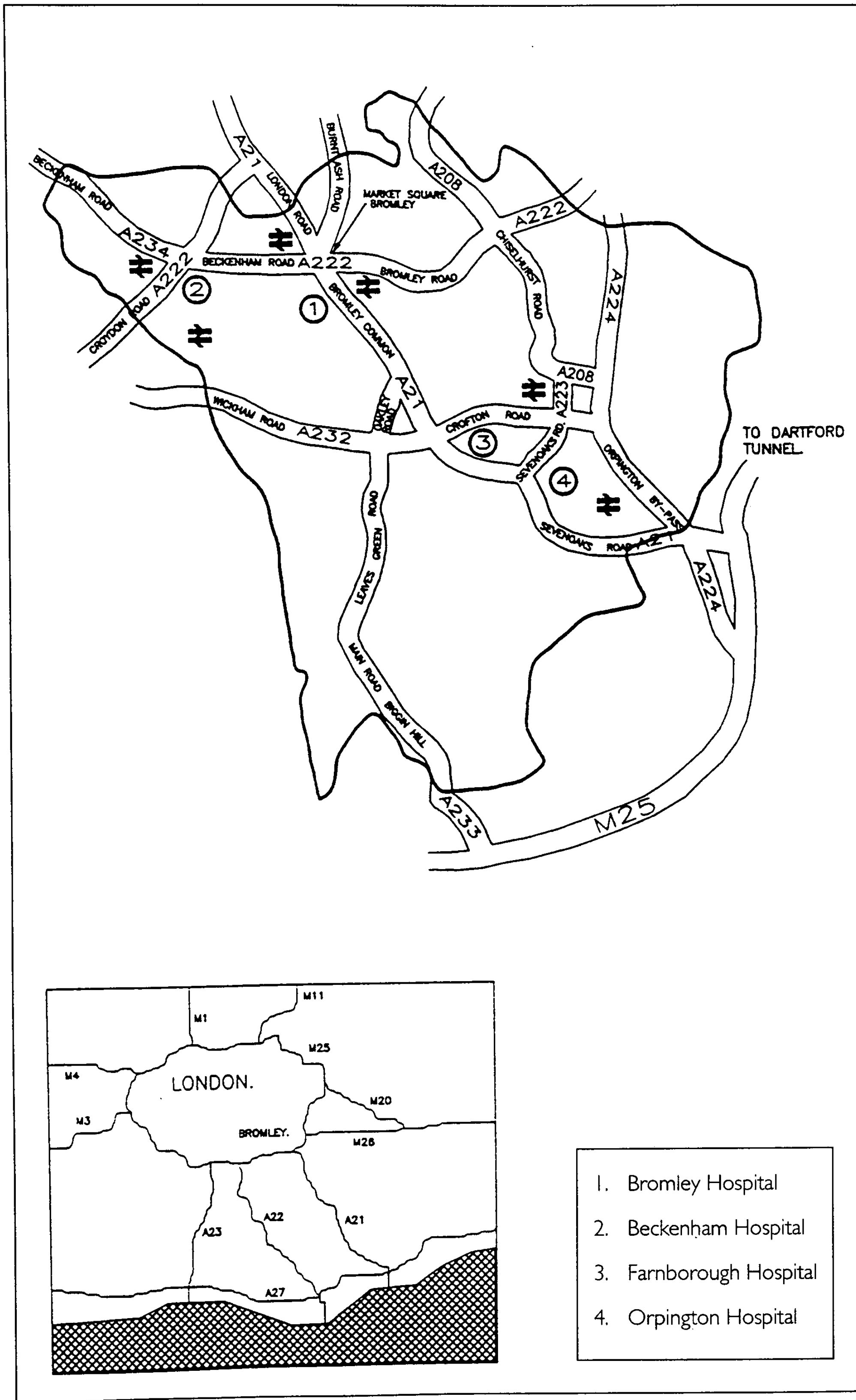


Figure 1 Location of the NHS Trust hospitals in Bromley

Study method

The study team sought to test what was possible in Bromley in 1993, not to impose theoretical and radical models of care on the existing service which would not be acceptable locally. There is already a body of literature about what is achievable in optimal conditions. The study aimed to produce a realistic analysis of what is achievable, rather than what might be. It was appropriate, therefore, to adopt a pragmatic approach and use local data, opinions and experiences based on interviews with local practitioners, resorting only where necessary to published literature and external expert opinions.

Identifying the settings

The working hypothesis of the study was: *'There is no need for a district general hospital.'* To test this hypothesis, it was necessary to establish the degree to which services currently offered by a hospital

Box 1 HEALTH CARE SETTINGS

The acute general hospital (AGH): Core specialties located in an AGH – acute medicine, surgery for emergency, unplanned and planned complex care, obstetrics and emergency gynaecology and paediatrics.

The elective resource centre: For planned non-complex, low-risk, high-volume areas of surgery.

The day surgery unit: For patients who need investigation or operation on a planned basis but not an overnight stay (excluding minor operative procedures undertaken in outpatient or A&E departments).

The polyclinic: A facility for people requiring the services of many agencies across the full spectrum of health and social services, supported by a range of diagnostic and assessment facilities but no inpatient beds.

The local or community hospital: A hospital with inpatient beds managed by consultants, nurses or GPs providing non-complex medical care for patients requiring nursing, rehabilitation or respite care based on a clearly defined programme of care with clear end points (long-stay patients would not be cared for in a local hospital).

The patient's own home (especially the hospital-at-home concept): Hospital-at-home is a specific consultant-managed service which is designed to provide intensive acute care in the patient's own home, and is thus essentially a substitution of location rather than service.

The GP's surgery and associated premises: The GP's surgery is the base for the GP and other primary care staff to hold consultations and clinics. It is an option for a wider range of activities such as minor surgery, consultant-led outpatient clinics and some diagnostic services, and could provide an organisational basis for community teams and members of the public.

Mental health settings: These include venues such as mental health centres, mental health nursing homes, specialist units and women's complexes.

Other settings: These include dedicated hospice facilities (often privately funded) for people with terminal illness, and nursing and residential homes for people with long-term care needs.

could be provided in alternative health care settings. These settings, summarised in Box 1, were defined at the outset of the study, and then adapted and developed as the study progressed.

In principle, it is possible to group one or more of the settings together. The resulting economies of scale and scope through resource sharing and the co-terminosity of different services could alter the range of activities undertaken. For example, placing an elective resource centre and a day surgery unit on the same site as an AGH would allow the sharing of resources. It could also extend the range of patients cared for in these settings to include older and younger patients, and offer planned surgical work which is more complex than would be possible in a separate facility. In addition, the types of work undertaken in a day surgery unit and an elective resource centre make them natural partners.

Data gathering and analysis

The process of data gathering and analysis, illustrated in Figure 2, began with the Director of Public Health identifying a local hospital specialist and a general practitioner for each of the six specialty areas being studied (medicine, care of the elderly, paediatric medicine, surgery, obstetrics and mental

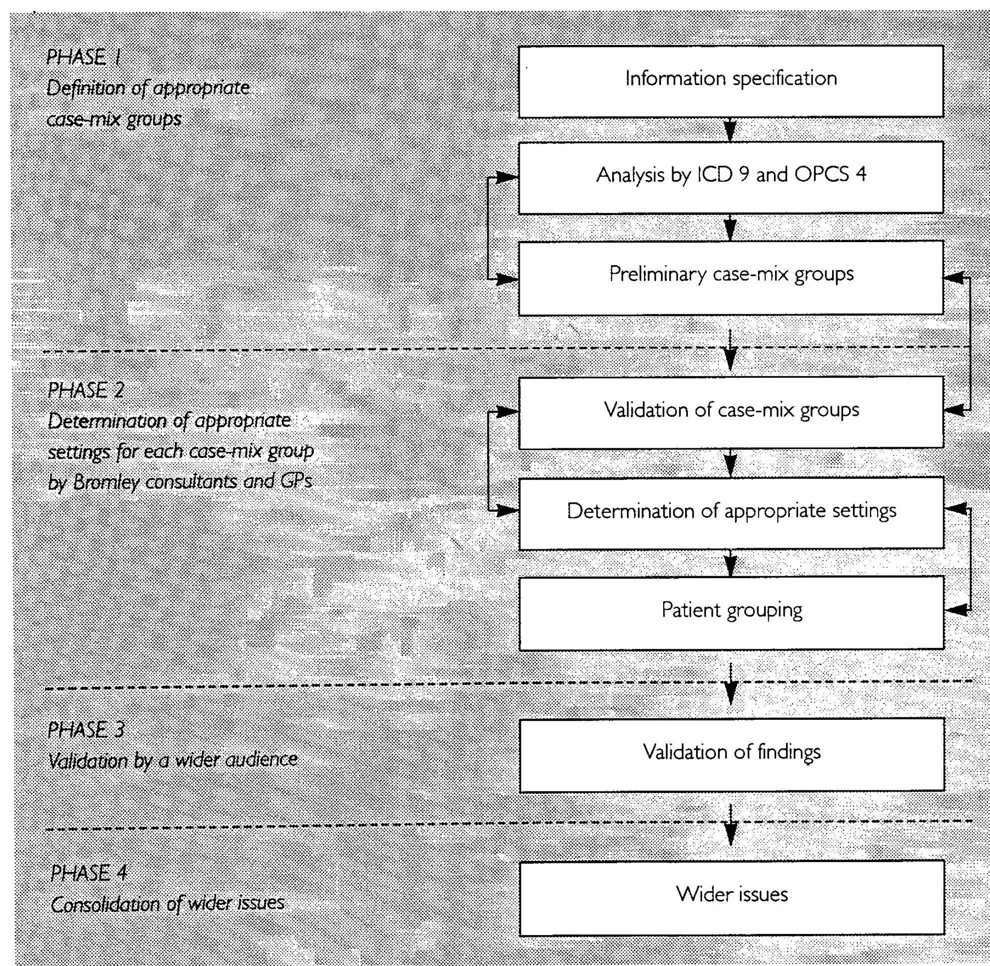


Figure 2 Analytical process used in the Bromley study

health). On the basis of the hypothesis that there is no need for an AGH, these individuals were interviewed to produce an initial outline of what services might be provided from alternative settings. Where it was considered that a sub-specialty, usually provided by an AGH, was not locally available, or where there was about to be a new consultant appointment with additional experience, opinions from outside Bromley were sought.

The study team used data from the Contract Minimum Data Set and other relevant databases to assess the views and information provided by the local practitioners during the initial interviews. In line with the rest of the study, the data were analysed on a specialty-specific basis. The initial focus was on analysis by FCEs and occupied bed days by primary diagnosis for medical specialties and procedure for surgical specialties. Groups of individual diagnostic codes or procedures were combined to produce a set of case-mix groups within each specialty. The appropriateness of these groups was assessed by the consultants, and revised where necessary. This method of data analysis was particularly difficult with regard to mental health issues, as discussed later. The lack of adequate outpatient data was also considered to be significant, especially for specialties with a major outpatient focus (e.g., dermatology and neurology). After further data analysis another set of interviews was held to clarify earlier points and agree the criteria upon which treatment in non-acute settings was justified. These discussions involved consultants and GPs.

The results and analysis of these interviews were then discussed at a series of specialty-specific workshops attended by local staff (including hospital doctors, GPs, nurses, paramedics, managers and local authority representatives); attendance was determined to some extent by whether or not staff were interested in the study, and therefore it could not be said to be representative. The participants also considered the broader issues involved in the hypothetical shifts to alternative settings, including resource requirements and the desirability of such changes. The conclusions reached at these workshops form the basis of the following chapters.

Chapter 2

Medicine

Patients require medical attention in hospital for the assessment, diagnosis and treatment of acute medical conditions and for the care and stabilisation of chronic medical conditions. Medical emergencies have changed considerably in recent years, with a rapid decline in most infectious diseases and gastro-intestinal emergencies (e.g., haemorrhage and perforations) but an increase in asthma, other respiratory conditions, cancer and sexually transmitted diseases.

Over time, medicine has been characterised by increasing specialisation, with new medical specialties and sub-specialties evolving in response to changing epidemiology and medical technology (*see* Box 2). In addition, the way in which care is managed has changed radically, with the establishment of dedicated units, such as stroke units, home-based technologies and drug therapies.

In the study, the main aim was to determine whether, for a range of medical conditions, there is scope for:

- The physician to manage the care of the patient in an alternative setting;
- Transferring the clinical responsibility for some or all elements of care to the GP or another community-based health professional (e.g., a specialist practice nurse).

Box 2 EVOLUTION OF MEDICAL SPECIALTIES

Specialty	*Year of establishment*
Nephrology	1968
Nuclear medicine	1970
Accident and emergency	1973
Clinical pharmacology and therapeutics	1974
Endocrinology (diabetes and endocrinology, 1987)	1975
Gastroenterology	1975
Audiological medicine	1976
Medical oncology	1976
Clinical genetics	1979
Occupational health	1983
Palliative medicine	1989
Rehabilitation	1990

Source: Health & Personal Social Services Statistics for England, 1992

The assessment of what could be transferred from the AGH setting into an alternative setting was based on an analysis of specific groups of medical conditions. Among these were cardiology, cerebrovascular diseases, respiratory diseases, neurology, diabetes, endocrinology, dermatology and rheumatology. For each group, the analysis focused on identifying which conditions needed to be cared for in an AGH and why.

To quantify the effect on patient workloads and hospital occupied-bed days, the study team applied certain working assumptions to patient activity data for Bromley residents. On this basis, it is estimated that about one-third of the medical beds used by Bromley residents, currently classified as acute hospital beds, could technically be provided in an alternative, mainly local hospital setting. These patients would be those whose main requirement was rehabilitation, respite or stabilisation during an acute exacerbation of a chronic illness. Local clinicians feel that this is an optimistic assessment of the scope for change since it relies on GPs taking on an additional workload.

It is useful to look a little further into the nature of the medical service which would be available at the local hospital. In essence, it would be characterised by:

- An extensive rehabilitation service for patients who have passed the 'life-threatening' stage of their care;

- A nursing service for patients with chronic conditions who need to be stabilised until able to return home.

The local preference was for the provision of rehabilitation in a hospital setting rather than in a home setting, with patients receiving care as inpatients or, where appropriate, on a day-case basis. There is, therefore, significant potential for such services to be delivered in a dedicated consultant-led rehabilitation unit which encompasses stroke rehabilitation and other forms of rehabilitation and does not have to be located in an AGH.

Patients with chronic medical conditions could be cared for under the supervision of GPs and specialist practitioners linked to specialist clinics. The availability of GP-managed beds in a local hospital setting may give GPs an alternative to home-based care. When added to the services for older patients, respite patients and other categories, this could provide sufficient critical mass for a viable GP-managed unit. However, locally this was not a popular option among hospital consultants or GPs.

There would be ample scope for providing an extensive range of outpatient clinics away from the main AGH site, although those clinics which required access to high-tech facilities would probably be best located at the main site.

Case Study 1 MEDICINE

Cerebrovascular disease

Many stroke victims are admitted to the AGH for investigation, observation and treatment. This allows the diagnosis to be confirmed but is often used to provide care, assessment and rehabilitation. As yet, there is no proven effective medical intervention for stroke victims. However, diagnosis may be required to exclude the small proportion of treatable causes of stroke. Anticipated medical and/or surgical advances could radically alter the scope for treating stroke and emphasise the need for a comprehensive understanding of the prevalence of the condition locally.

All unconscious patients and those whose consciousness is fluctuating should be admitted to the AGH for inpatient care. However, almost all patients recovering from stroke can be transferred for rehabilitation either at home or in a local hospital setting.

Some local GPs consider that home-based intensive rehabilitation can be very isolating and that the moral support which comes with staying in a dedicated unit with other stroke victims is of great benefit. Nevertheless, home-based rehabilitation has a clear place and may be of benefit to some patients after discharge from hospital.

Case Study 2 MEDICINE

Respiratory diseases

Patients with emphysema, lung cancer and other respiratory symptoms dominate the distribution of occupied beds for patients staying for longer than 14 days. In general, patients with acute respiratory conditions need to be admitted to AGHs for diagnosis and inpatient treatment. However, the following groups of patients could be cared for in a local hospital by trained practitioners or at home for all their care:

- Those suffering from long-term chronic respiratory diseases such as emphysema;
- Non-acute asthmatics;
- Patients recovering from an acute phase of pleurisy;
- Patients with lung cancer.

Also, after the first few days of acute care, as many as 50 per cent of patients with chronic respiratory conditions do not require AGH services.

Patients with lung cancer should rarely be admitted to an AGH. Medical treatment is usually palliative and can be given as a day case or at home. In principle, a local hospital could provide care for the terminally ill as part of a general GP-managed ward, although other models include a dedicated hospice unit as part of an acute ward.

Chapter 3

Care of the elderly

Care of the elderly has developed as a specialty in response to the particular health care needs of an increasingly elderly population, who are more likely to suffer from chronic illness and/or multiple pathologies. As a specialty, it originally developed as a positive alternative to the old workhouse infirmaries, providing acute medical and surgical interventions. Health authorities inherited many different facilities when the NHS was first established, reflecting the different models of care that had evolved across the country.

Medical care is only part of the multi-disciplinary resources required to care for the elderly. Today, the specialty comprises four main elements of care:

- Acute assessment and care;
- Rehabilitation;
- Respite care;
- Continuing care.

As attempts are made to reduce lengths of stay in hospital, attention has focused increasingly on those aspects of patient care which could be catered for in a different way. In addition, recent legislation has transferred responsibility for respite and continuing care from health authorities to local authorities, with an increasing reliance on private sector provision. Within the hospital, medical care is considered to fall into two broad categories: acute care and rehabilitation.

Different models for care of the elderly have developed in the country, based more or less on the above classification. There is also variation in whether such care is provided as an integral part of general medicine or on an age-related basis. There is general agreement that all acute cases should be admitted to an AGH. This ensures that all elderly patients have access to appropriate diagnostic and treatment facilities, and allows those treated by consultants in other specialties to have access to specialist second opinion, if necessary. However, there is less consensus on whether non-acute elements of care could or should be provided in an alternative setting.

In practice, the decision on whether all services are provided by an AGH depends upon a number of local factors, including:

- The availability of facilities;
- Geographical factors;
- The views of consultants;
- The structure of other local services.

To analyse the type of care being provided by the Bromley Hospitals Trust, a census had been undertaken of all patients, grouping them according to the care they were receiving. This exercise

was carried out on three occasions. The results are summarised in Figure 3 and show that more than 60 per cent of the patients were receiving nursing, rehabilitation or respite care or were awaiting discharge. Clearly, some or all of these patients could be cared for entirely or partly away from an AGH.

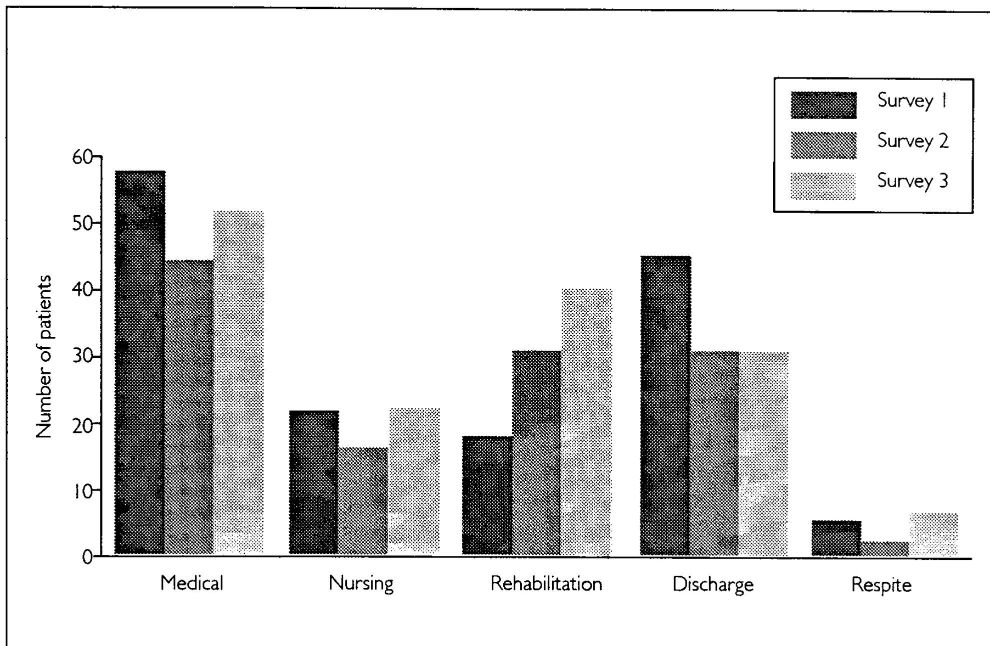


Figure 3 Results of three surveys conducted on the types of care being provided for the elderly in Bromley

There is a degree of consensus that respite and long-stay care, if appropriate, could be provided away from an AGH. This applies also to some aspects of rehabilitation, although this is more contentious as it is difficult to assess exactly when patient care switches from acute to rehabilitation. In many hospitals, a formal distinction is not made.

It is difficult to quantify the scale of the service for the elderly that could be provided in settings other than an AGH because:

- There are large areas of overlap with other specialties, especially general medicine;
- Elderly patients tend to be admitted for co-morbidities, rather than only one condition; many patients may share the same primary diagnosis, but their secondary diagnosis may have different health care needs;
- As most patients are admitted in response to a crisis on top of chronic illness, consideration of alternative settings for different stages of care is more appropriate, although moving the location of care may be considered detrimental to patients.

Models of care

Notwithstanding the difficulties outlined above, two models of care were considered.

- *Model 1:* All care provided in an AGH, with patients transferred home or to long-stay care settings once their requirements for acute and rehabilitation care come to an end. In the opinion of local clinicians and GPs, this is the preferred model for Bromley.

- *Model 2:* Providing acute care in an AGH and rehabilitation in a local hospital. In Bromley, local hospital facilities exist at Orpington Hospital and thus this model is already being implemented.

Model 1 implies that all beds and care would be provided by an AGH. Model 2 would allow more than 90 per cent of patients to receive all or part of their care in an AGH, but the 'treat and transfer' policy would result in a broadly equal distribution of beds across the AGH and the local hospital.

The reservations expressed about the application of these models to Bromley are outlined here.

The AGH model (Model 1)

- This model is based on patients being discharged early, which in turn depends upon adequate and appropriate resources being available in the community. This was not thought to be the case in Bromley.

- The short, sharp period of care envisaged under this single-site option would result in high demand for ongoing care. In particular, services such as transportation to and from day-hospital facilities would need to be in place, and social services would need to ensure that there was an adequate level of provision for day sitting and night sitting.

- The model depends upon patients having informal carers who are accessible, fit and willing (for example, toilet use was highlighted as a particular problem for some patients who are cared for at home).

The local hospital model (Model 2)

- This model would involve patients being moved around and possibly 'made to feel like cattle'. Their transfer to another setting could result in at least an initial period of inertia, which would add to the overall average length of stay in hospital.

- The model might be seen as a 'back to the future' option in Bromley, where there have been problems in staffing the local hospital. GPs have been reluctant to provide cover, and nurses tend to see such places as being a cul-de-sac in terms of career development.

- If patients awaiting discharge are transferred, there is always the possibility that the local hospital would become a 'dumping ground'. To prevent this happening, there would need to be strict admission and discharge protocols

Increasing the number of locations for care provision must be cost-effective if the quality of care is to be maintained.

A third option – a halfway house between the AGH and local hospital models – was considered worth exploring. This would involve some patients being transferred to a local hospital facility, and others being discharged directly to their normal place of residence. The latter would require an enhanced level of community support and, as in the case of the AGH model, it was felt that, unless there was a corresponding transfer of resources and adequate community support, patients might suffer.

Chapter 4

Paediatric medicine

Paediatric medicine has evolved as a specialty to distinguish the care provided for children (defined as 15 years old and younger) from that provided for adults. The philosophy has been to try to keep the parent and child together to reduce the trauma associated with medical care. Parents' wishes are respected more so than in other specialties, and this has contributed to a more open-door policy. Paradoxically, as the health care status of children has increased, so has the level of admissions, particularly for emergency and acute conditions. This reflects reduced tolerance of ill health among children and an increase in hospital-based technology to treat acute conditions.

Unlike other specialties there is considerable consensus on general approaches to paediatric care. The overall aim is to prevent admissions by containing and managing care in the community. The suitability of the home as a potential setting for care provision depends upon professional support and competent, confident parents.

In this study, the focus was on treatment rates and alternative models of care. The information needed for the study came from the literature and the interviews. The analysis concentrated on current activity and on assessing the potential for treating patients in the community and for reducing lengths of stay through earlier discharge. Summaries of the findings are provided in Box 3. The findings indicated that it would still be necessary to admit all very young children, especially for the first diagnosis of a medical condition. Apart from this group, however, almost 50 per cent of current hospital-based care could be provided at home, *but* only if there is a community-based acute paediatric team and a corresponding development of additional skills, particularly among community-based paediatric nurses.

- *A community-based acute paediatric support team* would need to be sufficiently large to cover the main skills required and provide 24-hour availability throughout the district. The team would need to provide direct treatment and to support parents as well as educate them. It would need back-up from a medical team, including hospital consultants and fully trained GPs.

- *A walk-in clinic for urgent assessment of children* would need to be reasonably accessible and open seven days a week at set hours in the day and early evening. There should be such clinics at several sites in the borough but the logistics in Bromley's case make it more likely that there would be a clinic, run by a registrar with consultant back-up, at only one hospital site.

- *Skills in primary care* among GPs have increased considerably with the introduction of vocational training but there are still limitations in terms of the total number of GPs trained and the extent of specialist knowledge. Meeting the increased demands which would face a community-based paediatric team would require regular training programmes for GPs and their staff and possibly the development of some specialist paediatric skills among GPs. The latter would be difficult in Bromley because there are few practices large enough to develop such specialisation.

Box 3 Settings for Paediatric Care

Gastro-intestinal infection

Children would not usually be admitted with gastro-intestinal infection unless they were severely dehydrated or very small. Some children are admitted if problems continue for some time as the family becomes unsure or unable to cope any longer. In general, GPs are very good at treating diarrhoea and vomiting. To reduce admissions, further development of GP and community nurse skills would be required to ensure full support for the family. Paediatric-trained nurses in the community would need to be available for at least 18 hours a day. A major task in the acute phase would be to supervise fluid input and output, which could necessitate visits every few hours. A paediatric nurse could supervise the child's fluid management. Children with certain infections (e.g., salmonella, shigella and campylobacter) would not be admitted to hospital because of the possibility of cross infection, unless the child was severely ill, when hospitalisation would be required.

Diabetes

On average, 20 new diabetic cases are diagnosed every year in Bromley. Admission could almost always be avoided if there was a full community team with specialist skills in diabetes. This would include community sessions for doctors with a 24-hour on-call team of nurses and available back-up skills (e.g., dieticians).

Epilepsy and febrile convulsions

Epilepsy is treated mainly in outpatient units. Children admitted with epilepsy are mainly in status epilepsy or require stabilisation of uncontrolled epilepsy. A day-case facility for investigating, monitoring and changing treatment might reduce the number of admissions slightly. Between two and four cases of patients with febrile convulsions are admitted weekly (probably defined under another heading, such as upper respiratory tract infection). Most of them do not need admission and, with an increased level of GP awareness and quick diagnosis, they could be cared for at home on a day-case consultant-led basis. Community paediatric nurses would be required to provide support to families.

Acute upper respiratory infections (tonsillitis, laryngitis, croup and upper respiratory tract infection, including otitis media)

Tonsillitis and otitis media should be treated at home unless the child has bacteraemic septicaemia or is severely dehydrated. A small percentage of laryngitis/croup cases are ill enough to be admitted. The level of admission could be reduced with enhanced awareness and skills in the community and short-stay observation wards for intermediate cases. Community support would need to be a fully equipped, 24-hour service. Many of these children are admitted in the evening when parents become concerned about their ability to cope.

Bronchiolitis

Most bronchiolitis cases requiring admission are the very young as they are particularly vulnerable and can be very ill. They need special care because of feeding problems and require oxygen therapy. Many of them need tube feeding and nebuliser therapy. Some cases, especially in the slightly older age group, could be cared for at home in the right social environment and if there was 24-hour nursing support with appropriate equipment and medical back-up. At present, most cases are admitted for only the first few days during which they are in the most acute phase of the illness.

Chapter 4

Paediatric medicine

Paediatric medicine has evolved as a specialty to distinguish the care provided for children (defined as 15 years old and younger) from that provided for adults. The philosophy has been to try to keep the parent and child together to reduce the trauma associated with medical care. Parents' wishes are respected more so than in other specialties, and this has contributed to a more open-door policy. Paradoxically, as the health care status of children has increased, so has the level of admissions, particularly for emergency and acute conditions. This reflects reduced tolerance of ill health among children and an increase in hospital-based technology to treat acute conditions.

Unlike other specialties there is considerable consensus on general approaches to paediatric care. The overall aim is to prevent admissions by containing and managing care in the community. The suitability of the home as a potential setting for care provision depends upon professional support and competent, confident parents.

In this study, the focus was on treatment rates and alternative models of care. The information needed for the study came from the literature and the interviews. The analysis concentrated on current activity and on assessing the potential for treating patients in the community and for reducing lengths of stay through earlier discharge. Summaries of the findings are provided in Box 3. The findings indicated that it would still be necessary to admit all very young children, especially for the first diagnosis of a medical condition. Apart from this group, however, almost 50 per cent of current hospital-based care could be provided at home, *but* only if there is a community-based acute paediatric team and a corresponding development of additional skills, particularly among community-based paediatric nurses.

- *A community-based acute paediatric support team* would need to be sufficiently large to cover the main skills required and provide 24-hour availability throughout the district. The team would need to provide direct treatment and to support parents as well as educate them. It would need back-up from a medical team, including hospital consultants and fully trained GPs.

- *A walk-in clinic for urgent assessment of children* would need to be reasonably accessible and open seven days a week at set hours in the day and early evening. There should be such clinics at several sites in the borough but the logistics in Bromley's case make it more likely that there would be a clinic, run by a registrar with consultant back-up, at only one hospital site.

- *Skills in primary care* among GPs have increased considerably with the introduction of vocational training but there are still limitations in terms of the total number of GPs trained and the extent of specialist knowledge. Meeting the increased demands which would face a community-based paediatric team would require regular training programmes for GPs and their staff and possibly the development of some specialist paediatric skills among GPs. The latter would be difficult in Bromley because there are few practices large enough to develop such specialisation.

Box 3 Settings for Paediatric Care

Gastro-intestinal infection

Children would not usually be admitted with gastro-intestinal infection unless they were severely dehydrated or very small. Some children are admitted if problems continue for some time as the family becomes unsure or unable to cope any longer. In general, GPs are very good at treating diarrhoea and vomiting. To reduce admissions, further development of GP and community nurse skills would be required to ensure full support for the family. Paediatric-trained nurses in the community would need to be available for at least 18 hours a day. A major task in the acute phase would be to supervise fluid input and output, which could necessitate visits every few hours. A paediatric nurse could supervise the child's fluid management. Children with certain infections (e.g., salmonella, shigella and campylobacter) would not be admitted to hospital because of the possibility of cross infection, unless the child was severely ill, when hospitalisation would be required.

Diabetes

On average, 20 new diabetic cases are diagnosed every year in Bromley. Admission could almost always be avoided if there was a full community team with specialist skills in diabetes. This would include community sessions for doctors with a 24-hour on-call team of nurses and available back-up skills (e.g., dieticians).

Epilepsy and febrile convulsions

Epilepsy is treated mainly in outpatient units. Children admitted with epilepsy are mainly in status epilepsy or require stabilisation of uncontrolled epilepsy. A day-case facility for investigating, monitoring and changing treatment might reduce the number of admissions slightly. Between two and four cases of patients with febrile convulsions are admitted weekly (probably defined under another heading, such as upper respiratory tract infection). Most of them do not need admission and, with an increased level of GP awareness and quick diagnosis, they could be cared for at home on a day-case consultant-led basis. Community paediatric nurses would be required to provide support to families.

Acute upper respiratory infections (tonsillitis, laryngitis, croup and upper respiratory tract infection, including otitis media)

Tonsillitis and otitis media should be treated at home unless the child has bacteraemic septicaemia or is severely dehydrated. A small percentage of laryngitis/croup cases are ill enough to be admitted. The level of admission could be reduced with enhanced awareness and skills in the community and short-stay observation wards for intermediate cases. Community support would need to be a fully equipped, 24-hour service. Many of these children are admitted in the evening when parents become concerned about their ability to cope.

Bronchiolitis

Most bronchiolitis cases requiring admission are the very young as they are particularly vulnerable and can be very ill. They need special care because of feeding problems and require oxygen therapy. Many of them need tube feeding and nebuliser therapy. Some cases, especially in the slightly older age group, could be cared for at home in the right social environment and if there was 24-hour nursing support with appropriate equipment and medical back-up. At present, most cases are admitted for only the first few days during which they are in the most acute phase of the illness.

Box 3 (cont.)

Pneumonia

Children are admitted if respiratorily embarrassed or if there are underlying medical conditions such as cystic fibrosis or congenital heart disease. Their admission is to confirm the diagnosis and make an assessment, especiallly in the younger age group. Generally, these patients have a short stay, but more of them could be cared for at home if a paediatric care team could administer intra-venous (IV) antibiotics and there was a community physiotherapist available. Again, this would require medical back-up.

Asthma

In general, babies, first-diagnosis and seriously respiratorily embarrassed children are admitted. Admissions also support parents where social conditions are inadequate or there is insufficient GP back-up. If a nebuliser is not available in the community, children aged 0-2 years may be admitted. A considerable number could be cared for at home or cases could be prevented if there was increased awareness of paediatric asthma among GPs, consistent treatment in the community, easy access to a GP, open clinic for advice and a community paediatric team fully equipped and available 24 hours a day.

Urinary tract infection and urinary tract disorders

Children are admitted for treatment if they have septicaemia and require IV antibiotics. Some admissions might be avoided if there were increased skills in primary care and protocols for further management. Inpatient stays might be reduced by a day or two if community paediatric nurses were available to give IV antibiotics.

Special care baby unit

Patients are admitted mainly for respiratory distress, prematurity, congenital problems, jaundice, hypoglycaemia and hypothermia. About half of these problems are attributable to low birth weight, and the babies are discharged when they have reached an appropriate weight and are feeding well. Premature babies are considered to be those under 36 weeks' gestation. Community support could drastically reduce the length of stay in the unit. Babies could not be discharged unless the GP agreed and there was appropriate 24-hour nursing and medical (probably consultant) support in the community. Early discharge would not be appropriate for all families; factors to consider would include family support, the number of siblings and home conditions.

Chapter 5

Surgery

The resources of the NHS are being used more intensively in surgery than in the other specialties. More patients are being treated and fewer beds occupied as a result of improved diagnosis, advances in drug therapy, safer anaesthesia, developments in treatment methods and a better understanding of the danger of bed rest. Better living conditions and the improved basic health of patients have resulted in earlier discharges.

Pressures to increase throughput have arisen from the increasing demands for hospital services and the growing waiting lists for elective surgery. Higher hospital admission rates and a decline in lengths of stay have been encouraged by new technical developments, clinical practices and management of beds. Technological advances have involved a move away from open surgery towards less invasive techniques, and hence there has been a significant expansion in day surgery. The Royal College of Surgeons has estimated that 50 per cent of elective surgery can now be performed as day surgery. In the USA it is envisaged that, by the year 2000, between 80 and 90 per cent of surgery will be performed as day surgery. Some examples of minimally invasive surgery are given in Box 4.

In its 1991 review of acute services, South East Thames Regional Health Authority described four main hospital functions – from low-dependency outpatient work to emergency, trauma and other urgent work – for which there should be a flexible range of facilities provided by an AGH, an elective resource centre, a local hospital and a polyclinic. For surgery, these facilities would include:

- *Acute general hospital:* The entry point for emergency conditions, offering high-tech support services, including life-support systems;

- *Day surgery unit:* Ideally, a self-contained surgical unit with its own admission suite, wards, theatre, recovery area and administrative facilities;

- *Elective resource centre:* For elective surgery and planned investigation, with a predicted length of stay; no emergency work;

- *Local/community hospitals:* Outreach outpatient services and, in certain circumstances, post-operative inpatients for the period of recovery;

- *Polyclinics:* A variety of primary care facilities and outpatient functions, including minor outpatient surgery.

Overall, the findings of the study have confirmed the conclusion reached by a number of other reviews, namely that considerably more activity can be undertaken in a dedicated day-surgery unit than is currently the case. However, low volumes of work make it difficult to support the need for a geographically separate local elective resource centre, especially as more and more patients would

Box 4 Examples of Minimally Invasive Surgery

Hernia repairs

Laparoscope can be used for 90 per cent of hernia repairs and is contraindicated if the patient has had previous abdominal surgery. It is particularly suitable for bilateral or recurrent hernias.

In open surgery, the risk of recurrence using the Shouldice repair is low (1 per cent). The risk of recurrence following laparoscopic hernia repairs is unknown and the results of long-term studies are awaited.

Currently, less than 10 per cent of centres are performing laparoscopic hernia repairs and this is unlikely to increase in the future. Laparoscopic repairs cost considerably more than conventional open surgery, as the equipment is more expensive and the procedure takes three times as long. It would prove more cost effective for a trained surgeon to repair an inguinal hernia using the Shouldice technique with a local anaesthetic as this technique has a low recurrence and complication rate and a local anaesthetic requires careful handling of the tissues, so the patient recovers more quickly.

Appendectomy

About 80 per cent of acute appendices could be removed laparoscopically. Patients with suspected acute appendicitis are admitted and laparoscoped immediately. An acute appendix is removed laparoscopically and the patient can be discharged from hospital after 24 hours. If the appendix looks normal on laparoscopy, the patient can usually be discharged within 24 hours. If some other condition requiring intervention is diagnosed, such as pelvic inflammatory disease, appropriate treatment can be instigated and complications prevented. This is an alternative to the usual procedure of admitting all patients with suspected appendicitis for observation for 24 hours.

Laparoscopic appendectomy is arguably preferable from the patient management point of view, assuming the risks of a general anaesthetic are taken into account, particularly for young women in whom the diagnosis can be difficult. In some cases, almost half the appendices removed from women of child-bearing age have been found to be normal. Patients who undergo laparoscopic appendectomy may be discharged on the second post-operative day and fit to return to work after a week.

However, if everyone with abdominal pain is laparoscoped, many unnecessary operations may be performed. There is also the problem of who performs the laparoscopic surgery in an acute situation. It is particularly important that, even in the middle of the night, an appropriately trained surgeon will be available on a regular basis.

In the future, if minimally invasive appendectomy replaces traditional surgery, patients would require very little nursing care after 24 hours.

Cholecystectomy

Laparoscopic cholecystectomy is now an accepted method of removing the gall bladder. After this type of surgery, patients can return home the following day, in contrast to about a week's stay after conventional surgery. About 95 per cent of gall bladders can be removed using this method, including acute

Box 4 (cont.)

cholecystectomies. Less than 5 per cent of laparoscopic procedures require conversion to open surgery. Laparoscopic cholecystectomy is a more expensive procedure than open surgery, because of the cost of the disposable equipment, but overall it is cost-effective because of the reduced length of stay in hospital.

Minimal access surgery using the laparoscope reduces the trauma of access inherent in open abdominal surgery. Its advantages include reduced post-operative ileus and discomfort and an accelerated recovery with early return to full activity. It virtually abolishes all wound-related complications, early and late. It is applicable to between 80 and 90 per cent of patients with symptomatic gallstone disease.

Colonic surgery

Laparoscopic colonic surgery has the same potential benefits – a shorter post-operative stay and less post-operative pain – as laparoscopic cholecystectomy. Randomised trials are needed, comparing laparoscopic assisted colonic surgery with open surgery with regard to long-term survival, local recurrence rates and the effect of adjuvant therapy. In the short term, the oncological safety of laparoscopic surgery for malignant disease of the colon is the same as that for open surgery.

be treated on a day-case basis in the future, thereby further reducing the potential size of such a centre. It appears that a separate dedicated unit would be worth developing only if it were to serve a much larger catchment area.

There are also opportunities for more care to be provided in the community. However, a review of the available literature indicated that there is no reason to assume that performing minor procedures in primary/community care settings, although preferred by patients, will reduce the number of minor surgical procedures undertaken in a hospital setting.

Other opportunities for non-acute care include early discharge either to the patient's home or to a local hospital for post-operative care. However, there was little local support for this because:

- Care at home would need to be administered by a specialist community nurse, and the necessary training in a diverse range of procedures would be unlikely to make this a cost-effective option in Bromley;
- Transfer to a local hospital, especially for elderly patients, may be disruptive and therefore actually lead to an increase in lengths of stay.

Case Study 3 SURGERY (TRAUMA AND ORTHOPAEDIC)

Reduction of bone fracture

This is an emergency procedure. Bone fractures are invariably associated with other, often major, injuries and patients are therefore admitted to the AGH through the A&E department.

There are two types of fracture, each requiring a different form of treatment.

- Open fractures require surgery to the bone and other damaged tissues. There is a considerable risk of infection. Patients may require extensive specialist care, particularly if they have other major injuries. During the period in which they require specialist supervision, these patients should be in the AGH. If they require a period of convalescence, this could take place either at home or in the local hospital.
- Closed fractures require surgical reduction but length of stay depends upon the age of the patient and the site of the fracture. Fractured hips usually occur in elderly people and are life-threatening. The presence of other co-existing medical conditions will affect speed of recovery. Currently, home circumstances (whether the patient lives alone or with elderly relatives) have a considerable influence on length of stay in hospital. Convalescence could take place at home or in the local hospital. Some units work closely with the geriatric service which assumes clinical responsibility early in the post-operative phase.

Hip replacements

The Bromley surgeon involved in the study considered it necessary for patients to be operated on in the AGH and then discharged after about 10 days to hospital-at-home care or nursing care at the local hospital. Nurses would be required to be trained in the care of post-operative hip replacement patients. The most frequent complication following this type of procedure is a deep vein thrombosis. Again, the geriatric department may have an active role in rehabilitation.

Knee replacements

The Bromley surgeon considered it necessary for patients to be operated on in the AGH and then discharged to hospital-at-home care after about a week. Post-operative knee replacement patients require intensive physiotherapy on a daily basis. A passive-motion machine, which costs about £400, is necessary for this therapy, is portable and could be transported to the patient's home by the hospital-at-home team and operated by the patient for two weeks.

Arthroscopy

An arthroscopy may need to be performed urgently, either on the same day or on the next operating list. Patients for urgent arthroscopy are admitted via the A&E department and the operation is therefore performed in the AGH. Elective arthroscopies are suitable for the day surgery unit or, if an overnight stay is considered necessary, the elective resource centre.

It is possible to assess correctly about 70 per cent of patients who require day surgery. Patients need to stay overnight if the arthroscopy has lasted over an hour or is at the end of the afternoon list.

Case Study 3 (cont.)

Immobilisation

Plaster casts are required for most fractures, and these are available in the A&E department. Patients are not usually admitted if they only require splints. Patients with lower limb fractures, in particular, need to be admitted to the AGH at least overnight, after which they can be discharged, with crutches. The term 'other immobilisations' generally refers to people with back pain, some of whom will be admitted through the A&E department. Increasingly, treatment is active and does not involve admission or surgery.

Hallux valgus

This procedure is suitable for the day surgery list. Patients require two or three days of post-operative physiotherapy to improve mobility. Pain relief is required.

Carpal tunnel decompression

The ideal setting for this procedure is the day surgery unit. An overnight stay is rarely necessary.

Excision of ganglion

This procedure is suitable for the day surgery unit. However, the polyclinic is an alternative setting for those ganglions which require only a local anaesthetic.

Orthopaedic minor surgery

For orthopaedic minor surgery a general anaesthetic is considered preferable where possible, as an alternative to Bier's block which may not always work very well. Therefore, minor surgical procedures are more suited to the day surgery unit than the polyclinic.

Chapter 6

Obstetrics

Obstetric care is the care of women during pregnancy, delivery and the post-natal period. It is unusual in that the majority of patients are not ill, but pregnant, although pregnancy can have associated morbidity. The capacity of an AGH to provide obstetric care has always followed the changing face of this type of care. For at least two centuries there has been controversy about where women should have their babies and who should attend them, although often this debate has taken place without adequate statistical analysis, experimental evidence or epidemiological information.

There has been an increase in hospital care and delivery and in intervention at delivery, resulting partly from increasing medicalisation in this area. This medicalisation is based on the assumption that it is safer, but there is no clear consensus on the medical justification for delivery in hospital in most normal deliveries. The past ten years have seen a major change in attitudes, brought about primarily by the opinions voiced by women, women's research groups and midwives.

The issue of safety and the lack of consensus on whether small maternity units are safer than midwife deliveries are fundamental to where care is delivered. Until recently, it was generally accepted that hospital deliveries were safer; this belief is increasingly being challenged but has not been overridden. The mother and her baby should be at the centre of all planning and provision of maternity care and women should be active partners in decision making. There is a body of support for providing more ante-natal care in the community and reducing routine visits where these have no proven benefit.

Policy in 1994 focused on women having choice. Thus, local services had to offer a range of choices, including home delivery and a variety of hospital services. Choice also involves the issue of who takes the professional lead for maternity care – midwife, GP or hospital consultant – and to what extent this care is shared.

With regard to the present study, the key issue, therefore, appears to be the requirements of women rather than the development of a rational model based on clinical capacity. The choices range from the community midwife providing the sole professional input in a home delivery situation to a consultant-led service provided by the hospital for ante-natal care and delivery. A sub-group of the Maternity Liaison Group is currently reviewing the issue in Bromley. Obstetricians, GPs, midwives, public health officials and the lay public are all represented. No decisions have been made yet on the final structure of services. However, before major changes occur, further evaluation and discussion will be required.

Ante-natal care

A range of ante-natal care is provided in Bromley, depending upon the requirements of individual women and the care provided by GPs. Some 86 per cent of the GPs are on the FHSA obstetric list,

although, as indicated earlier, in most cases they provide only ante- and post-natal care. There are consultant- and midwife-led clinics at all four hospitals in Bromley.

It is estimated that 15 per cent of women require consultant-led ante-natal care because they request it or because of their medical or obstetric history or specific social problems. Of the rest, 10 per cent require shared care with the GP only and the remainder shared care with a midwife and GP, according to what is relevant to the GP's practice. About 50 per cent of women could receive midwife-led care only but in reality this number would be much smaller, for three reasons: there are too few midwives able to provide sole care; consumers wish to receive medical care; and the GPs continue to be involved.

At present there are 17 ante-natal beds in Bromley. With the introduction of a day assessment unit, domiciliary foetal monitoring and an early pregnancy service for potential miscarriages, it is estimated that the number of beds could be reduced by 25 per cent.

Chapter 7

Mental health

Patients suffering from mental illness have traditionally obtained care for acute conditions from psychiatric units attached to a district general hospital and for chronic conditions from long-stay psychiatric hospitals. Over the past 12–15 years this pattern has changed radically, with services evolving away from the large long-stay mental health hospitals to care provision in the community and, simultaneously, the development of services at the AGH for the diagnosis, investigation and treatment of acute conditions. In many cases, the AGH has also served as an administrative and co-ordinating body for the community services and as a base for the local consultant psychiatrists, as well as providing facilities to enable liaison psychiatry to take place in support of other specialties. The case for an AGH-based mental health service is outlined in Box 5.

The key philosophical trend in service delivery has been to encourage patients to lead as normal a life as possible away from institution-based services. This philosophy has been reflected in the Care in the Community legislation. The move to community-based care has also been facilitated by developments in drug therapy (particularly for those patients suffering from schizophrenia) and a

Box 5 THE CASE FOR THE AGH PROVIDING MENTAL HEALTH SERVICES

The factors in favour of the AGH providing mental health services include:

- The clinical integration of psychiatry with other clinical specialties (to enhance clinical critical mass and promote liaison psychiatry);
- The proximity to general hospital services, and thus the availability of clinical support in its widest sense (especially important here is the need to have access to a full range of diagnostic modalities, particularly for dealing with organic mental illness);
- The maintenance and promotion of clinical training and development of good practice;
- The direct link to services such as A&E (which is important for attempted suidice and para-suicide cases) and obstetrics (there can be psychiatric complications associated with childbirth);
- The reduction in the stigma attached to suffering from mental illness;
- The attraction to clinicians (when psychiatry is located in an AGH, it is seen as mainstream hospital medicine rather than a marginalised specialty).

Essentially, the current model places the AGH at the centre of all services. The AGH also acts as the centre for emergency and intensive care facilities for mental illness; it provides a secure facility where necessary, and generally meets al the requirements specified under the Mental Health Act 1983.

general reassessment of the treatment and rehabilitation regimes for sub-acute and chronically ill cases. Such care involves a multi-disciplinary approach to treatment, using many agencies. There is now a range of alternative settings where mental health services could be provided (*see* Figure 4).

Difficulties in planning mental health care

It is generally recognised that mental illness is not a unitary disorder. There is no 'ideal' model of care. It is also a relapsing illness with co-morbidities and it is characterised by multiple referral sources and increasingly disintegrating loci of care where no single organisation is responsible for the care regime required. Any discussion on reducing the role of the AGH immediately raises the question of how to ensure that the whole service structure is not put in jeopardy.

Appropriateness of service delivery

The study method used and the data available provided no empirical evidence on appropriate care and outcome. Indeed, looking at the evidence on personality disorders, alcohol and substance abuse,

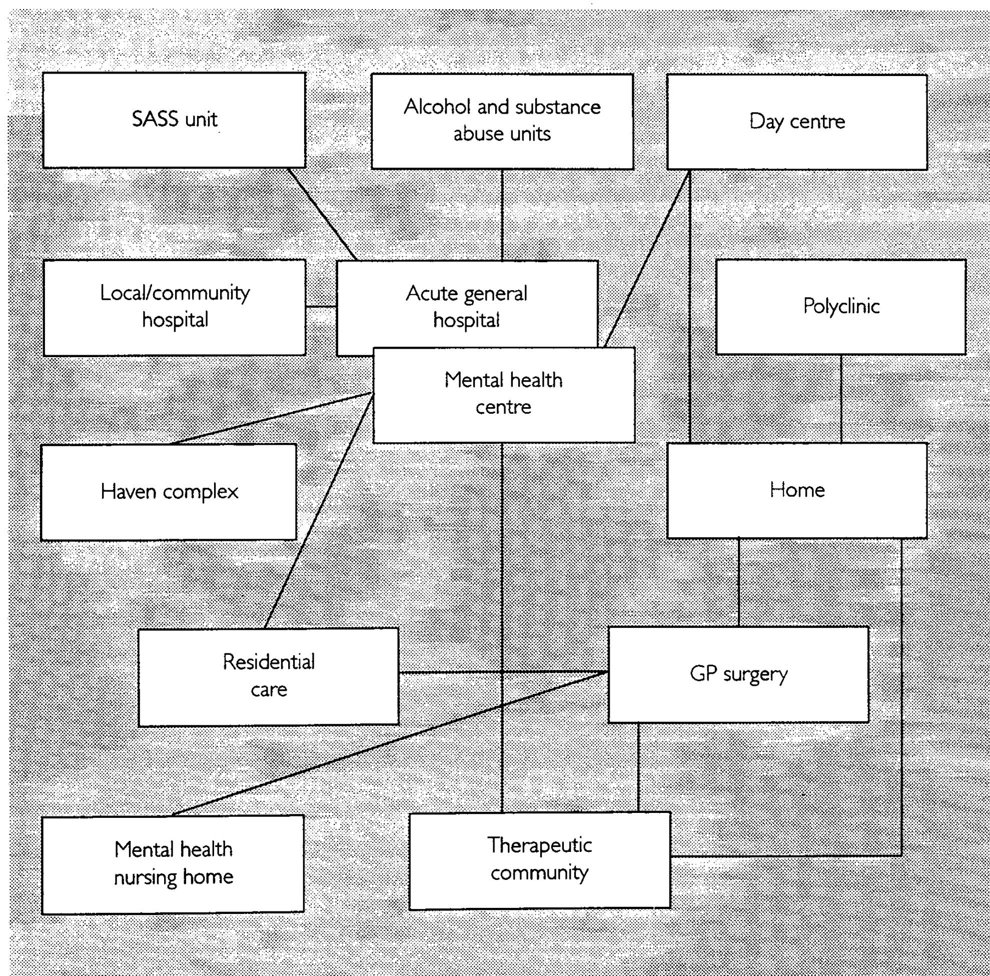


Figure 4 Potential range of settings available for the delivery of mental health services

both within the literature and from professionals, it is debatable whether a positive outcome can be directly influenced by NHS provision. This does not mean that there should not be any NHS provision, but rather that a multi-agency model is required, probably outside the AGH.

There is a significant need for care for pre-senile and senile psychoses. The number of people aged over 85 in Britain will increase over the next two decades and it is this group that is at the highest risk from dementia. About 20–25 per cent of this group are susceptible to dementia, and where this occurs it is often compounded by a physical disability. Adequate community care for these patients is costly and imposes a considerable burden on families. Research indicates that residential care is more effective than respite care in reducing stress in the carers of demented relatives. This group of people could be cared for outside of the AGH. However, the issue of the most appropriate location for their care needs to be addressed, and more research is needed in this area. Units for elderly people with severe mental illness can be constructed anywhere in the locality but there is a danger of recreating the long-stay institutions if the provision of such units is not coupled with the provision of community and domiciliary services.

The role of primary care

Primary care is assumed to be based at the GP level. However, in the case of mental health, the mental health centre could be used as the primary care base. Certainly, the study has shown that there should not be secondary referral prevention at primary care level; it is impracticable to ask GPs to cover the range of mental illness they see at primary care level.

The feedback from the GPs is that they feel the burden of this community co-ordination falling inappropriately upon them, and this burden is likely to increase in the future.

The partial-hospital concept

If the AGH is to be seen as the centre for intensive, highly dependent mental health care, then the idea of a partial-hospital concept may be helpful in envisaging new scenarios for the delivery of services to the mentally ill. The concept involves having an acute halfway-house provision for those patients who can no longer be sustained in the community but need a short-term admission to nursed care. This is one role which could be provided by the mental health centre, but its effective use would also depend upon having a crisis intervention team for those patients living outside institutional care who may need rapid admission to a hospital-type bed.

Medical training

As with the other specialties, a discussion of alternative settings raises the question of the impact upon medical training. The non-AGH models will depend upon a consultant outreach service, where some consultants may be permanently based in the community. Considerable thought, therefore, will need to be given to the mechanism for the accreditation of medical training in these dispersed settings. It also needs to be established how new models of care might accord with vocational training schemes for general practice. Special attention needs to be given to whether the future levels of expertise expected from GPs within mental health are too great.

Family and carer support

Undoubtedly, moves towards community-based acute care for the mentally ill will put additional stress upon families and carers. Among the issues here are how to gain sufficient information about the way families cope and how to validate family and carer tolerance. The need to address these issues is not based solely on concern for the family; it also takes into account the effect of the family's behaviour on the patient. This is especially pertinent in the case of schizophrenia as there appears to be a direct link between expressed emotion within the family and its impact upon patients with schizophrenia. If members of a patient's family are to become substitute carers, they will need specialised training, support from professionals and some family audit to monitor the effectiveness of their care.

Management of community care

What, then, is the solution for the co-ordination of dispersed service delivery? The potential loss of the hospital as the administrative safety net means that there will be a need for some form of community mental health co-ordinating body. No further work has been conducted in this study on identifying such a body. At this stage, however, it appears that the identification of a key worker would be crucial to managerial cohesiveness.

Case Study 4 MENTAL HEALTH

People who could be cared for outside of hospital include those with:

- *Senile and pre-senile organic psychotic disorders:* This is one of the major categories of care in the adult mental health service. It is extremely difficult to identify an ideal setting for caring for the elderly severely mentally infirm (ESMI) as this is determined by the level of dependency of the patient and the ability of the carer to cope. An ESMI unit could be accommodated in practically any location, from an AGH site to a community setting.

- *Alcohol and drug dependency syndromes:* Research has not been successful in establishing definitive ways to stop alcohol abuse. Patients with alcohol and drug dependency problems often require an AGH for treatment or are admitted to one because it is more socially acceptable. For both alcohol and drug abuse, detoxification can be undertaken in a designated unit outside the AGH or at home with community support.

- *Personality disorders:* People with this condition are described as difficult, with persistent disturbances of personality; they tend to be continuous trouble to themselves and others, as well as to GPs from whom they receive much of their time-consuming care. There is an argument that these people are not mentally ill and that what they need is not psychiatric care but psychotherapeutic care with intensive therapy in a non-medical setting, supported by skilled personnel, especially community nurses, psychotherapists and GPs. They require fairly intensive attention as their general inability to cope may result in social and family breakdown, thus calling for an inter-agency approach.

Case Study 5 MENTAL HEALTH

In mental health, the recovery stage can be in an outpatient programme but not at home. Patients will not normally have much contact with their GPs at this stage. Ongoing therapeutic care in the community is possible but there should be ready access to a day hospital or drop-in centre for support. A safety-net approach is needed for dispersed care in the community, as patients require a great deal of monitoring, liaison and highly skilled care.

Complications of childbirth and associated psychiatric disorders: These tend to occur within the immediate post-natal period and therefore patients need to be admitted to an acute but separate ward area of the AGH, ideally with access for the baby.

Eating disorders: Most people with eating disorders can be cared for in the community under the supervision of the GP. Occasionally, admission is required, usually into a specialist psychiatric facility with support for physical problems.

Forensic psychiatry: This category requires assessment and liaison with the judiciary and needs a stand-alone secure facility at a regional secure unit or SASS before onward transmission to a specialist hospital for mentally ill patients with criminal convictions. Often, short-term assessment is needed at the secure unit, prior to a court recommendation. Should such facilities not be available, this may result in inappropriate prison sentences being handed down. These facilities may also be used for patients discharged from the special hospitals as the first part of rehabilitation in the community.

Chapter 8

Management issues

Trying to identify the interface between an AGH and primary and community health care services illustrates many of the ambiguities of health care. The extremes can be established – what clearly has to be undertaken in a hospital setting and what clearly does not require hospital care. Much of the rest depends upon the personal choice of patients and professionals, tradition and practice, existing facilities and, occasionally, what appears to be pure fate. It is this grey area that the study explores, as well as the issues that are important to consider when looking to the future and deciding where care should be provided. Many of the issues are common to all the specialties, although different in emphasis; a few are specialty-specific. As Bromley is in a position to change its present pattern of services, these issues require careful consideration and resolution.

Quality

Any challenge to the role of the AGH should be based on the expectation that it will lead to a higher quality of care and a more cost-effective use of resources. The policy of reducing dependence on hospitals and increasing local services and the role of primary care has its roots in the expectation of higher-quality care, especially in terms of local access, and better use of limited resources. While there is some evidence to support the former, considerable research is still needed to assess the impact on clinical effectiveness and appropriateness. Recent work on the substitution of AGH services by GPs in the area of minor surgery suggests that substitution does not occur; rather, a new client group is served and a previously unmet demand is met. During the study, GPs expressed doubts as to whether care at home automatically meant higher-quality care. They regularly saw elderly patients who had remained in their own homes, with or without adequate community support, but whose quality of life had deteriorated because of social isolation.

A major problem regarding the quality of care is its measurement. Medical and clinical audits are barely established within the existing organisations and the interface audit between primary, secondary and community services is generally simplistic, usually consisting of one service auditing the other. A truly integrated quality audit will need considerable development not only in terms of measuring quality but also in setting up the processes which will complete the audit cycle.

Staff

The most consistent factor mentioned throughout the study was the major change implied for all professionals if care is to move from an AGH setting.

Acquiring new skills

Staff outside the AGH will require a new range of skills if patients are to remain in the community or be discharged earlier than usual. Conversely, staff who have previously been hospital based will

need to acquire the capacity to work in the community. Within the hospital, if new technologies which would ensure that patients were discharged more quickly or not admitted in the first place (e.g., minimum invasive surgery, imaging diagnostics and therapeutics) are to be fully utilised, all staff will need appropriate training. These skills would have to be developed by existing staff; in addition, specifically skilled personnel would need to be recruited. It is also clear that there would have to be a substantial shift in pre-registration nursing and medical curricula to include a far wider appreciation of the world outside the hospital.

The successful movement of services to new settings will also require changes in skill-mix and the development of independent practitioners (e.g., nurse practitioners and midwives). Single-site hospitals tend to support the concentration of skills in a few professionals; more dispersed care patterns require appropriate skills to be spread among a greater number of workers. This process of breaking down professional barriers is already happening but it will require significant development if some of the projections in the study are to be achieved.

Alongside specific technical skills, attention needs to be given to developing the managerial skills required for working primarily in the community, as staff would be expected to carry a higher level of responsibility and to work without the hierarchial support commonly present in hospitals.

Professional links

Medical and nursing staff expressed concern that shifting care to non-AGH settings may lead to professional isolation. This issue would need to be addressed, partly by providing alternative sources of professional support, but also by encouraging staff to feel functional outside the close professional networks characteristic of hospitals. One of the concerns expressed by nurses was the lack of career pathways within local hospitals; like their patients, they felt stuck in a cul-de-sac. The present status of staff working in the community and in primary care would need to be reviewed, a process that is already happening with regard to the role of GPs, following the 1990 NHS reforms.

New practitioners

During the study it became clear that the assumption that work in the community setting would automatically be undertaken by existing community and primary care staff needed to be questioned. Just as the specialty of psychiatry has seen the development of community psychiatrists, so too other specialties might see similar community or outreach development, with professionals taking their hospital practice to the patient. This can be expected, for example, with paediatrics, care of the elderly and chronic disease care.

Carers

Care in the community, especially to the extent explored by this study, inevitably increases demands on families and carers. Even where community support is extensive, families and carers still face increased responsibility. For many carers, the level of professional support, resources and facilities, including respite care, is acceptable. But this is not always so, and already, with the growing emphasis on care in the community for the elderly, some families are resisting the raised expectations.

Historically, women have generally provided informal care. Increasingly, however, these women also go out to work (60 per cent of women in Bromley have full- or part-time jobs). They have increased expectations of their role in society, and so will not be available to provide extensive care.

Bromley will also need to consider how to support carers (whether informal or paid) in terms of providing training for their role, support for routine needs and emergencies, and networks to ensure they do not become emotionally or socially isolated. Much of the housing in Bromley, a middle-class suburban area, is suitable or easily adapted for care at home. However, the increased demand for home-based care (e.g., hospital-at-home, dialysis and rehabilitation) will lead to an increased demand for housing extensions and adaptations. Health and safety issues will also need to be addressed. Employers may be required to acknowledge the needs of those members of staff who are also informal carers and to ensure that the working conditions are flexible enough to enable carers to undertake their dual role. This is especially an issue for the many people in Bromley who commute to London to work.

Patients and consumers

Patient choice is an essential component of change, if services are to be shifted from AGH settings to community settings. This was strongly expressed by those looking at the care of elderly patients and patients with long-term medical conditions. Many of these people wish to remain at home with support from community services, but others would consider this to be socially isolating and unacceptable, and would request residential or inpatient care.

Maternity care is another area where patients have clearly expressed their desire for choice about where they deliver their babies. To satisfy local requirements, community and hospital services are needed, although Government policy is still strongly denied by medical staff.

A key issue for health service purchasers and providers is the balance between ensuring the full range of choice while maintaining clinical safety and maximising cost-effectiveness. Potentially, more choice is more expensive. Increased choice also requires that patients understand the implications of the choices to ensure that they make appropriate selections. Patient expectation is based mainly on present patterns of care; thus, an acutely ill patient expects to be admitted to hospital. Such expectations will need to be changed if the population is to accept any drastic shift of care to the community.

One of the most important operational and practical problems that needs to be addressed, particularly if community and primary care services are to be increased, is the availability of transport for patients to and from services such as outpatient and rehabilitation facilities. The network of community and primary care facilities will be supported by more specialist consultation or rehabilitation facilities, and it is inevitable that in Bromley, a borough with several local hospitals, patients will need to travel. Although 65 per cent of people in the borough have a car, this tends not to include the group that needs to travel for medical attention, especially elderly people and people with physical disabilities. A far more patient-oriented system than that presently available will be needed to cater for the potential increase in transport needs.

Orpington Hospital already acts as a local hospital for elderly patients. Although the community cherishes the local hospital, despite the reduction in the range of services the hospital offers compared with 20 years ago, it is nonetheless sometimes perceived to be a second-class hospital, lacking the latest technologies. To ensure that local hospitals are not seen in this light, efforts to present a positive profile of these hospitals are required. More importantly, the running of local hospitals will need to be in the hands of staff who believe that their hospital has a clear role and identity and is not a dumping ground for elderly and chronically ill people. Negative perceptions have to be overcome, both in terms of education and reality, in order to make the new style of services work. Patients also need to understand the changes if they are to make the best use of the restructured services.

The organisation

Massive changes in primary, community and secondary care are needed if the projections identified in this study are to be achieved. New managerial structures will have to be put in place, as will procedures to ensure accountability for dispersed services which cross existing geographical and service boundaries. A number of questions immediately arise.

- Who will be the agent of change?
- How will the developments be realistically co-ordinated so as to encourage change, not stifle it?
- How will the community teams work?
- To whom will the community teams report?
- What level of service will GPs manage?
- Will all GPs take on the same responsibilities and roles?
- Will the hospitals shrink and what will their relationship be with the new community services, outreach or inreach?
- What size community teams will be required for the different functions?
- What will the relationship be between community teams for the different care groups (e.g., stroke victims and mentally ill people) and between teams for different age groups (e.g., children and adults with asthma)?
- Will the present divisions based on medical specialties in hospitals be appropriate in the community?
- How big will the specialist community teams need to be to ensure an adequate range of skills; how will this affect the AGH; and will it be cost-effective in relation to the size of the population?
- Will trusts, especially community trusts, share staff, or will the private sector come to the fore?

Key organisational issues

In Bromley, a major organisational issue to address is the *barrier inherent in having two trusts*, one for hospital services and the other for community services. Theoretically, trusts were established to encourage competition and hence the development of services. However, this competition can inhibit change and prevent the integration of services which the consumer should expect to be seamless.

Another key organisational question in Bromley is the *accessibility of the 'new' AGH services*. Historically, in densely populated urban areas, district hospital services have been within easy access and thus have often been used as an extension of primary care. Within this proposed new model, with low-tech services being transferred into the primary and community care settings, the local population will not have the same degree of access to an A&E department and other hospital-based services. Despite the availability of low-tech facilities locally, it can be anticipated that the local population will still expect an easily accessible hospital and may strongly oppose what they see as 'cuts' in the service. Bromley residents have already shown that they will travel to London teaching hospitals or even farther afield if necessary, but they have also fought long and hard for an adequate level of access to a local hospital when this has been threatened.

Ownership can be a major constraint to change. The development of polyclinics, rehabilitation centres, outreach services and local hospitals all raise the question of who owns the facility. In this age of hospital and community trusts, GP fundholders and purchasers who commission but do not own resources, this issue will need careful negotiation. Already in the South Thames Region the development of several polyclinics has been delayed because non-fundholding GPs are unwilling to share premises with fundholders, for fear of their patients transferring to another doctor's list. In Bromley, this has been resolved by the hospital trust developing the facility for use by their consultants, the GPs and a range of other practitioners willing to rent space. However, to the purist proponent of primary care development, this is seen to be too hospital dominated. Remaining within the hospital remit could constrain the scope for development and change; conversely, it may encourage a redefinition of roles and the interface between primary and secondary services.

Communication is another organisational issue to consider as a potential constraint to successful change. The poor capacity of medical practitioners to communicate effectively with patients and between themselves has often been highlighted. With further fragmentation, dispersion and evolution, the need to ensure effective communication channels has to be high on the agenda.

The role of other agencies will increase. Over the past few years, as hospitals and long-term care institutions have reduced lengths of stay or closed, the increased community burden has fallen not only on other NHS facilities and on families but also on other agencies, especially social services departments and voluntary organisations. This has inevitably increased tensions between organisations, although in the longer term this may be resolved with the responsibility for community care and resources being invested with local authorities. The study was unable to explore with relevant agencies the implications for these agencies of moving services away from the hospital, but this issue cannot be ignored. The NHS and Community Care Act 1990 has shown that such changes can be effected, albeit slowly, but such a major shift in policy should not be undertaken without realistic assumptions of the capacity for local authorities to respond.

Chapter 9

Financial issues

In principle, all decisions concerning change in care models should be informed by decision-making tools such as options appraisal. In this way, it is possible to combine the costs and benefits of changes in service delivery (as described in Chapter 8) with the financial implications of the changes. The assessment of these implications, however, is complex, primarily because:

- The NHS costs themselves fall on different agencies within the health service, cutting across the hospital, community and primary divide;
- There may be significant public sector cost implications which fall on other agencies, such as social services and social security, which are difficult to estimate;
- There may be significant short- and long-term costs to families and carers which will not be uniform for all patients or patient groups;
- Many of the long-term costs are difficult to assess, especially where reforms will involve changes in behaviour, organisation, skill-mix and training requirements.

In practice, even those costs which are easily and unambiguously measured will vary according to local circumstances.

Identifying costs

Human resource costs

Human resource costs will be the most significant financial factor. Many of the issues affecting the human resource costs associated with the changes are driven by the need to utilise people in a different way, compared with the more traditional AGH health care model.

The costs faced by other agencies are often neglected, but the provision of social services support can be crucial to the effective transfer of care into primary and community settings. As discussed earlier, social service expenditure in Bromley is comparatively low. It may need to be increased significantly if patients are to benefit from early discharge or avoid being admitted to hospital.

The human resource cost most often neglected is the cost to family carers. Much of the research in this area has focused on the long-term cost of caring for those whose period of acute illness is over (long-term sick people, and elderly and mentally ill people living at home). Such costs include, for example, loss of earnings during the period of caring and loss of earning potential thereafter. However, as the trend towards home care continues, there will be costs associated with the short-term care of those who cannot be left alone. An example of this is home-based care for children, where the whole philosophy is based on the benefits of transferring some elements of nursing care from health

professional staff to parental carers. The actual cost in terms of the opportunity cost of these resources will vary according to individual circumstances. However, it is an important consideration, especially for those on whom the responsibility for caring falls.

Non-pay costs

Non-pay costs may also be an important consideration in terms of the financial implications of change. The most important example of how these might vary as a result of changes in the location of care is transport costs, an issue raised at several of the workshops. The ability to transport patients to and from hospitals for day treatment, where currently they stay in hospital, is an important factor in the successful shift of services from the hospital to the home or community.

Hotel costs provide a potential for savings. For example, accommodation, food, heat and light costs will be reduced as the accommodation requirements for patients are transferred to other agencies, institutions or the home. In many cases this may be a real resource saving, since the short-term care at home of a sick member of the family will have only a marginal impact on the accommodation costs of the individual family affected. Taken together, they may lead to a significant downsizing of expensive overnight accommodation in hospital settings.

Capital costs

Capital costs and estate running costs are the areas where there will be most variation in local conditions. The capital costs associated with restructuring AGHs will be heavily influenced by the historical distribution of hospital facilities and appropriate premises. In Bromley, the capital costs are driven by the existence of hospital buildings in different parts of the borough, in different states of repair and with different open market site values. What is an appropriate investment solution for Bromley, therefore, may be entirely inappropriate elsewhere. Bromley can make good use of the excellent facilities at Orpington as a local hospital, and the facilities at Beckenham as a polyclinic. Were the local proposals to be based on the construction of completely new facilities, the economic rationale for this physical restructuring of services would be considerably weakened.

Other costs which may be important, especially with regard to patients with chronic medical conditions, are the costs of home adaptations and equipment which enable people to be independent or to be cared for at home. In terms of hospital costs, the need to use more sophisticated diagnostic and minimally invasive surgical techniques in order to reduce lengths of stay will also have important implications, especially where these are duplicated across different locations and used inefficiently.

The incidence of costs

The incidence of costs across different agencies makes it difficult to provide a comprehensive assessment of the resource implications of the changes described earlier. Identifying costs will be difficult enough for one agency alone. For some services, where extensive home- and community-based provision is envisaged, a pan-agency approach will be required to obtain a true picture of costs.

Even within the health service, the identification of costs is not straightforward. In principle, it should be possible to assess current budgets in detail for each affected trust (AGH and community)

and determine how these will change as patient responsibilities are transferred. However, many of the costs are dependent upon detailed assessments of, in some cases, radical changes to the trust's current cost structure and may involve:

- A 'bottom-up' assessment of the new staffing requirements across all professional and non-professional staff groups and across all locations of care;
- Assessing the impact on unit costs of changes in skill-mix, grade-mix, training and reimbursement packages (e.g., with regard to GPs).

Notwithstanding these difficulties, an accurate assessment of the change in the running costs of a service (e.g., the establishment of a community paediatric team or a polyclinic) is essential if informed decisions are to be made about the potential costs and benefits.

Incentives for change

Part of the problem of analysing the financial costs of change is that existing services are the responsibility of specific organisations, each with their own budget and financial arrangements. Much of the analysis of services has demonstrated that care can and/or should be transferred to an alternative setting. However, costs are incurred across different agencies, and for services to be effectively transferred there needs to be an accompanying transfer of resources.

In the current organisational structure the incentive for any one agency to make rational decisions is limited. For example, costs incurred by social services or informal carers are not felt by the health authority, for whom these costs are a 'free good'. There is therefore an incentive for the health authority to transfer care. Social services, however, may not be keen to accept even a small cost addition, even if overall savings to the economy are large. The only means by which this change can be effected is if the health authority accepts a transfer of resources and budgetary responsibility. The problem is even more pronounced, on a micro level, if, for example, the transfer of care to a community setting means that a hospital consultant has to transfer part of his/her budget to a GP.

Although some of these issues may be addressed in the longer term with the establishment of merged DHAs and FHSAs which will have to work more closely with social services, the current organisational structure is likely to act as a barrier to change for some time.

Summary

Many of the issues highlighted above reinforce the main finding of the Bromley study, namely that the cost implications of the changes:

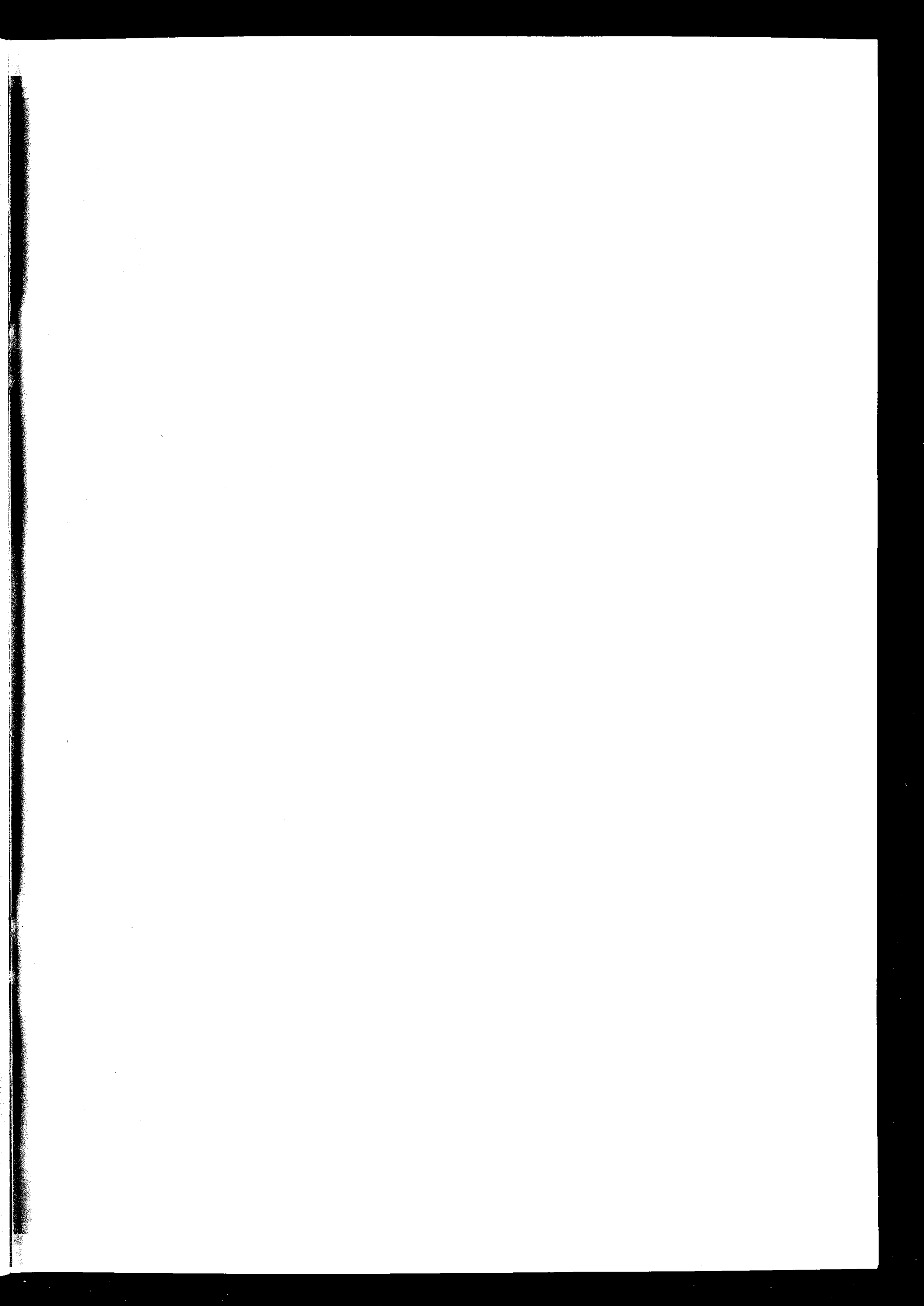
- Will be significantly influenced by local factors which are likely to vary across the country;
- Are difficult to identify as they are borne by different agencies and, in the wider economy, by carers;
- Are, at present, subject to some speculation, especially as the staff costs associated with some of the concepts of new types of health professionals are yet to be determined.

It is not possible for a particular locality to use the situation in another locality to assess whether the shift of acute care to primary and community settings will result in a reduction or an increase in the costs of delivering health care. In each case a detailed local study of the costs, followed by post-project evaluation, is required.

Conclusion

The Bromley study has not uncovered any radically new options for delivering care in an alternative setting. Instead, it has demonstrated the continued need for Bromley residents to have access to an AGH facility, but it has also shown that a considerable amount of the care currently provided in an AGH setting could be provided in alternative settings. If the potential for such a large-scale transfer were to be realised, a number of other issues would also need to addressed simultaneously, not least a real transfer of resources away from the acute sector into the primary and community settings. Even if this was possible, the rationale for implementing such a change needs to be more clearly defined. With the possible exception of paediatric services, the study has not been able to conclude that such a change would result in an improvement in the quality of care provided or that the change was preferred by patients and their carers. In addition, any development of primary and community care services may lead to an increased demand for AGH services as more unmet demands are identified. Lastly, although there is an implicit assumption that primary and community care will be less expensive, the complexities of the separate funding structures of different organisations did not allow this to be tested. In many instances, if the same types of service are to be provided, there is reason to assume that costs may well be higher.

The real value of the study has not been in identifying radical solutions but in providing a greater understanding for local providers and purchasers of the services that are delivered to the local population. The potential for changing this configuration has been examined, and the use of data has been central in facilitating discussion. Although a number of questions have been raised with regard to the quality of the data, activity data have provided the central focus for the analysis. They have provided a basis for the discussion and, in some cases, the resolution of some issues. The data have acted as a focal point for bringing people from different backgrounds and organisations together and furthered the debate on what the needs are and how these needs can be appropriately met. The study has already contributed towards the development of Bromley Health's Commissioning Strategy.



This report is the result of a major study examining the links between acute, primary and community services in Bromley, Kent. Results of the study – funded by the King's Fund and South Thames (East) RHA – contributed to Bromley Health's future strategy for change and led to the redevelopment of a local hospital as a polyclinic.

The book works through the range of specialities usually found within acute hospitals and reviews the potential for a shift to community and primary care settings. It also considers the management and financial issues involved in transferring services.

ISBN 1-85717-103-9

9 781857 171037 >