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Intermediate Care

A conceptual framework and review of the literature

Andrea Steiner

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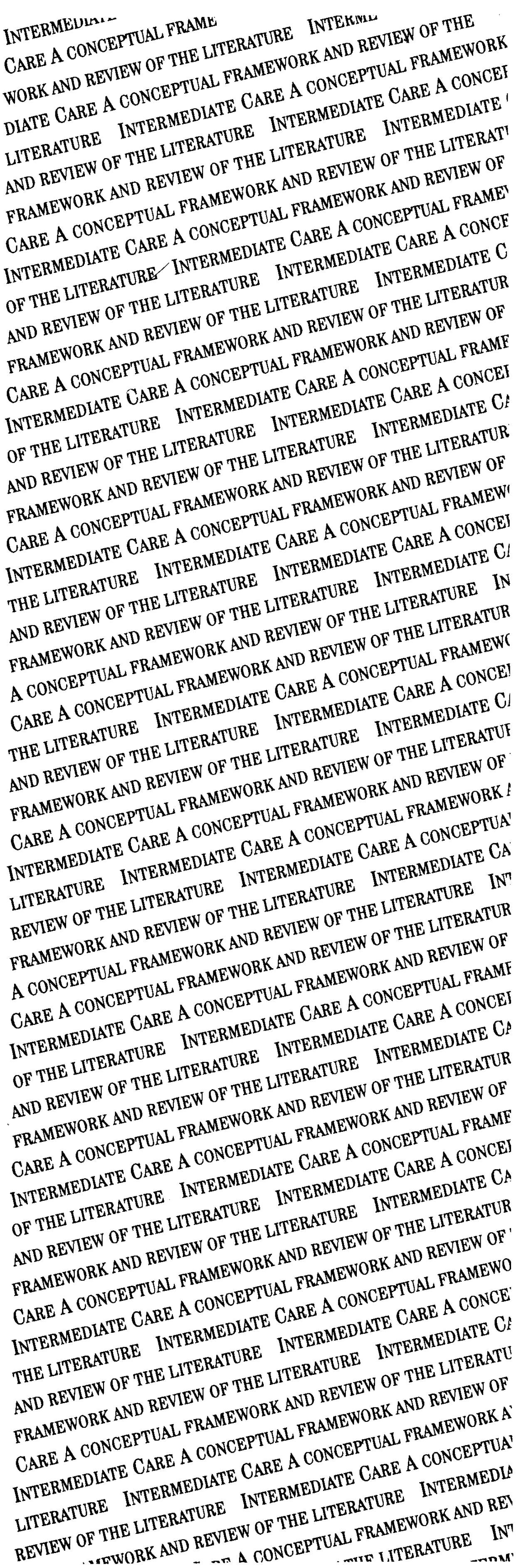

Intermediate Care

A conceptual framework and review of the literature

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This report has been produced to promote dissemination of good practice and quality improvement in health and social care. It has not been professionally edited.

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Preface

This is a report based on work undertaken on behalf of the King's Fund London Commission as part of its comprehensive review of London's health services. In 1992, the first King's Fund London Commission reported on the condition of London's acute health services, in *London Health Care 2010.* This second London Commission is reviewing the changes that have taken place over the past four years, in order to suggest a pattern of health services to serve London into the 21st century, and to indicate how such services might be achieved.

The report was commissioned in conjunction with Barbara Vaughan, Programme Director, Nursing Developments Programme, which is part of the King's Fund Development Centre who are sponsoring its publication.

Intermediate Care : A Conceptual Framework and Review of the Literature is one of the supporting papers which has helped to inform the work of the London Commission. The remit for this report, which is outlined more fully in Section One, was to describe the range of services which could be classified as intermediate care, to devise an appropriate taxonomy, report on the extent and quality of the literature and evidence of effectiveness and to analyse the findings in terms of conclusions, policy issues and unanswered questions, all of which are addressed more fully in the main body of the report. In Section Two definitions from a wide range of sources within the literature have been set out in order to be able to develop a conceptual framework which clarifies the meaning and purpose of the service. Section Three provides an overview of the existing models described as intermediate care alongside a critique of the evidence available of their efficacy while Section Four deals with other models of potential relevance. Finally Section Five raises questions in relation to both research and policy issues for the future.

The report offers a valuable overview of this important topic which is currently raising many questions for both service providers and those with a responsibility for commissioning health care. Critically it offers a clear conceptual framework which clarifies potential users of such a service alongside their anticipated outcomes. The report highlights the complexity of undertaking evaluative work in this area and makes clear recommendations for future work in order to gain a greater insight into the efficacy of such a service.

This report will undoubtedly provide valuable background reading for those responsible for health care policy, alongside both service providers and commissioners. It should also be of interest to the academic and health services research communities who may be considering future evaluation strategies.

Acknowledgements

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Section 1

Introduction

It is widely recognised that there is a group of people who have health care needs which, while not requiring the facilities of the acute hospital sector, do demand considerable support to regain a maximum level of health. A number of different initiatives have been explored to meet this diverse group's needs, yet there is little agreement about what is meant by intermediate (or transitional) care; the needs and size of the potential target group who may benefit; the objectives of the care alternatives; and the efficacy of the services.

It is the purpose of this literature review to:

- describe the range of services that may be usefully categorised as intermediate care;
- devise a typology or taxonomy of these services;
- report on the extent and quality of literature on intermediate care;
- present the evidence regarding effectiveness; and
- analyse the findings in terms of main conclusions, policy issues and unanswered questions.

Because intermediate care is not a recognised organisational component of existing health care delivery systems, the development of a conceptual framework was taken as a fundamental pre-condition of any reviews of scope or effectiveness. Section 2 presents arguments for and against including in such a framework various services that have been described as intermediate care. It introduces both broad and narrow definitions, with the recommendation that the narrow definition be adopted in order to best clarify the strengths of intermediate care and the service niche it occupies. It will be argued that intermediate care is a *function* rather than a discrete service, and that clarity regarding that function will allow for appropriate staff training, programme development, and evaluation of outcomes and cost-effectiveness.

Section 3 describes a range of existing health care structures for delivering intermediate services. It presents options that have been explicitly described as intermediate care, or that clearly fit the narrow definition developed in Section 2. The primary models reviewed are the community hospital, the Lambeth Community Care Centre, nursing-led inpatient services, the patient hotel, and supported early discharge schemes, including the Hospital at Home.

In reviewing the literature on intermediate care's effectiveness, an effort has been made to select exemplars of research on a wide range of intermediate care services, as well as a set of services that overlap with the intermediate care function. It will be seen that most of the assessments undertaken have followed qualitative research methodologies. As such, they have produced a range of themes regarding organisational influences, professionals' perceptions of their roles as well as their satisfaction, and patients' and families' involvement. However, with only a few exceptions, observed themes have not been tested in rigorously designed evaluations. Moreover, most of the evaluations that included quantitative analyses used simple and often inadequate statistical techniques. The implications of this for making inferences about intermediate care's potential effects on the health service are also discussed, in Section 3 and again in Section 5.

In Section 4, a second set of models are presented. These are not examples of intermediate care *per se*, but ways of organising delivery of care to ensure that patients' transitions from one level of care to another are managed smoothly and cost-effectively. An emphasis is placed on continuum of care models, including vertically integrated managed care systems, the mental health continuum of care, and a range of community-based case management models targeted to older people. In addition, discharge planning as configured in the U.S. is included for its striking overlaps with intermediate care functions. As in Section 3, where feasible, reference to the literature on these models' effectiveness will be presented.

Section 5 concludes the report with some comments about how to evaluate the literature that has been presented, and some observations on the potential for incorporating the intermediate care function into existing or developing systems of care.

Section 2

Definitions and Conceptual Framework

2.1 Introduction

In this section, some of the usages of the terms "intermediate" and "transitional" care will be reviewed, with the objective of developing an analytic framework that is relevant to the King's Fund London Commission's inquiry into *Systems of Health Care Delivery*. After discussing various options identified in the literature a working definition and conceptual framework is proposed that embraces the purpose and potential of intermediate care services.

At present, intermediate care is not a universally accepted component of the U.K. system. Thus, if existing and new services are to be amalgamated into a service niche that has specific objectives, professional skill requirements, and auditable outcomes, a conceptual framework is needed. By creating a framework that emphasises what *could* be, rather than what *is*, one avoids missing valuable options simply because they do not fit with existing paradigms of care. At the same time - and importantly - distinctions can be made between intermediate care and other service functions so as to clarify their place in the continuum of care.

2.2 Background

Although the interest in progressive patient care is not new (Kane, 1996), several factors have combined recently to revive interest in integrated services overall and intermediate care options in particular.

First, "seamless care" has become a health policy buzzword to denote the important concept of delivering the right amount of the right service at the right point in the continuum of care. Shortell (1994) has defined this point as the one "at which the greatest value is added." Intermediate care is argued to promote seamless care by filling both preventive and post-acute treatment gaps in the continuum and by offering good value-for-money substitutions for conventional approaches to treatment. Consistent with this emphasis, the recent *Priorities and Planning Guidance for the NHS: 1996/1997* stresses the importance of partnership across health and social care sectors and the need to integrate services to improve efficiency and minimise confusion for users.

Second, NHS financial incentives encourage more economical use of existing services and development of new options if needed. For some years now, the provider-purchaser split has intensified pressures to provide health services at the lowest possible cost. The advent of GP and total fundholding also promotes innovations in service delivery, such as disease management programmes, hospital/primary care liaison managers, and other managed care interventions to prevent or shorten hospital stays (Steiner and Robinson, 1996). Both in the U.K. and abroad, health policy analysts (for example Luft, 1978) have demonstrated that reducing expensive inpatient services, including admissions themselves, is an important feature of successful efforts to contain overall health care costs. Various intermediate care options have been proposed to reduce inpatient treatment at acute care hospitals (Pearson et al., 1992; McCormack, 1993).

Third, Cassel (1992) and others have noted that, in recent decades, medical advances have enabled people born with serious disabilities not only to survive, but to extend their lifespan well beyond previous expectations, albeit with chronic care needs that can fall between health and social services, and which are neither "secondary" nor "primary" in nature. Both for this population and others - including newborn infants needing post-hospital support and older patients facing rehabilitation - the rapid diffusion of new medical technologies has made it possible to bring increasingly intensive therapies into people's homes, and to treat a wide range of patients and conditions outside the acute care setting (Marks, 1991).

Fourth, in certain areas of intermediate care, a considerable amount of developmental work has now been completed. Two examples are nursing development units (Cole and Vaughan, 1994) and post-hospital support schemes (Dunn, 1996). Given demonstrated instances of administrative feasibility and programme acceptability to both patients and professionals, it is possible that the ground has been laid to introduce intermediate care services deliberately and more broadly than ever before, and to conduct rigorous evaluations on a large scale.

Finally, the imperatives of a global demographic transition, resulting in overall population ageing, require the health service to anticipate the medical and functional needs of increasing numbers of elderly people. Chronic care is certain to be one category of need, and the NHS and Community Care Act called for increased efforts to prevent or delay institutionalisation, giving Local Authorities new budgets to implement case management services and facilitate delivery of community-based care. However, elderly patients' contacts with the acute care sector are also of concern.

Observers note that patients aged over 75 use 40 percent of all U.K. hospital beds. More troubling than the mere idea that older people use a high proportion of hospital services is the fact that re-admission rates are very high for this age group. In 1983, Graham and Livesey found that nearly 25 percent of geriatric hospitalisations represented re-admissions within the past year. Similarly, in 1988, Townsend et al. reported that more than half of hospitalised patients aged 75 or older would be readmitted within 18 months of discharge. Given that economic and policy incentives encourage shorter average lengths of stay, the likelihood is that, unless providers develop post-acute treatment options, the already high re-admission rates for older patients will continue to rise - at considerable expense to the health care system as well as to the detriment of patients (Clement et al., 1994).[1]

Thus demands for more sophisticated forms of post-hospital care arise at both ends of the age spectrum, demand for appropriate treatment of chronic conditions exists for people at all points along the way, and interest in preventing hospital admissions is growing. These can challenge conventional systems of health care delivery, because the nature of these new demands blurs the lines between health and social care as well as between what is appropriate for government to pay for and what may constitute over-dependence on the public sector. (To what extent, for example, is "quality of life" the government's responsibility?)

Rationalising bed use is only one aspect of intermediate care's intuitive appeal. McCormack (1993) and others have noted that people prefer to be at, or close to, home whenever possible, and intermediate care is seen as a service category that emphasises treatment in, or near to, a person's home. Even when hospital-based, the paradigm of intermediate care focuses on the transition away from the status of "patient" towards the restoration of "person." Care elements such as the extent to which family members participate in rehabilitation or

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[1] Whether acute hospital beds really are being used inappropriately is a matter of debate. It is anecdotally accepted that many patients - particularly aged ones - are admitted to hospital for what are called social rather than medical reasons. Moreover, it is widely believed that many patients become medically stable in hospital but linger because of difficulties organising care at home or elsewhere. However, the research findings conflict. For example, in a study to assess the potential demand for patient hotels (see Section 3), Harvey et al. (1993) claimed that 10 percent of their large study sample would have been suitable for a low-intensity "hotel bed" option. Similarly, Coast et al. (1996) found that, depending on whether it was a GP or consultant panel making the judgments, six to 14 percent of patients admitted to a rural acute care hospital's general medicine or care of the elderly wards might have been appropriate candidates for alternative forms of care. In contrast, however, Victor and Khakoo (1994) reported that, over a one-week period, only five of 689 admissions to an inner London NHS trust could actually be classed as inappropriate.

convalescent care, the degree of responsibility for self-care that patients are encouraged to adopt, and even the way the nurses and other therapists dress on the ward reinforce a humanistic approach and a dynamic conceptualisation of illness, recovery, and health (see, for example, Pearson, 1983; Pearson et al., 1992).

Given that financial and policy incentives support development of the continuum of care, and demographic and technological advances both demand and permit innovative, fluid approaches to health care treatments, the time may well be ripe to promote intermediate care as a potentially cost-effective addition to the current set of services. However, as the above discussion suggests, there are those who view intermediate care as a potential panacea. Moreover, as the rest of this section will demonstrate, a daunting range of services have been considered, at least by some, as intermediate care. Using the term as a depository for all sub-acute, "not-chronic-not-primary" treatment does a disservice to existing types of rehabilitative and continuing health and social care. It also fails to clarify the potential of a distinct, coherent service category which would fulfil a specifically transitional care function. In what follows, then, an effort will be made to disentangle some of these threads.

2.3 Definitions Proposed in the Literature

Four definitions identified in the literature will indicate the diversity of approaches to describing and, indeed, to providing intermediate or transitional care; also see Table 2.1. They are as follows:

- In their evaluation of the Lambeth Community Care Centre, Armstrong and Baker (1995) defined intermediate care as "low intensity care where patients can obtain clinical input from the nursing staff and their GPs, whilst being close to their own homes." This definition is interesting for its emphasis on nurses and GPs, its description of care as "low intensity" and its assumption that, although close to home, intermediate care does not occur *in* the home.

- In contrast, Brooten et al. (1988) defined "transitional home follow-up care" as "care from discharge planning through the period of normally expected physiologic recovery." Here, the central features are discharge planning (which implies needs assessment and arrangement for supportive services), home-based care and an emphasis on recovery.

Table 2.1

Key Features of Some Intermediate Care Definitions[1]

Source	Key Features
Armstrong and Baker, 1994	Care setting near but not at home, primary care (GP and nursing) emphasis, low intensity.
Brooten et al., 1988	Home-based supportive services, reliance on discharge planning, emphasis on recovery.
McCormack, 1993	Locally based, bridge between secondary and primary care, goals not primarily medical, discharge destination can be to home or institution.
Pearson et al., 1992	Goals are rehabilitative, nurturing, and educational rather than medical, patients have high potential for independent functioning, discharge destination to own home.

1. Table presents examples, not a comprehensive collection, of intermediate care definitions.

- McCormack (1993) emphasised the need for a service that is "locally based, not essentially medically orientated, and that bridges the gap between secondary and primary care." He lauded intermediate care options such as early discharge and Hospital at Home schemes, but noted that some carers find the home-based options too demanding and that some patients prefer the security of hospital-based care. McCormack favoured community hospitals as a prime intermediate care resource not only for bridging between secondary and primary sectors, but also for "providing a comprehensive range of services aimed at maintaining patients in their own homes or helping them to find a suitable alternative." What is most important about this definition is that the care is local, the goals not primarily medical and that intermediate care can be a sort of staging ground for deciding on subsequent alternatives; that is, recovery *per se* is not necessarily the endpoint of treatment.

- Finally, in their description and evaluation of a primary nursing unit, Pearson et al. (1992) defined intermediate care as "patient-centred care for those whose medical need has been replaced by the need for support, nurturing, and teaching." This definition emphasises the move away from the medical toward functional and/or convalescent goals. Patients were eligible for admission to the primary nursing unit only if they required rehabilitation, had been independent prior to the acute admission, and expected to be discharged home.

Thus, both themes and conflicts emerge, as follows:

- One theme is that ***services are supportive*** in nature.

- Another theme is that the ***model of care follows nursing more than medicine***. At a minimum, it views patients holistically rather than in terms of a specific diagnosis.

- A third theme is that ***care is delivered in, or near to, the patient's home***. The definitions are not specific in this regard but it seems that the significant common element is an interest in maximising patients' and families' access, comfort, and control. Marks (1991) has also noted that home-based delivery of care can be cost-saving, both because of a freed hospital bed and the substitution of informal for formal carers.

- A conflict is the ***lack of consensus regarding the goal of intermediate care***. Is it "recovery" or "maintenance in the home" or "finding suitable alternatives"? Sometimes (for example, with post-fracture rehabilitation) the intervention will be much the same regardless of the goal. In other instances, the patients selected for intermediate care are carefully screened with specific reference to their capacity to achieve therapeutic goals. This is a critical issue, to be discussed further, because both effective delivery and appropriate evaluation depend on establishing explicit criteria for success.

- There is also a ***lack of consensus regarding the intensity of care***. Armstrong and Baker describe intermediate care services as low intensity and Pearson et al. stress nurturing and education but, as will be seen below, certain care options are predicated on home-based delivery of ever more intensive technologies. Are these "intermediate care"?

- Finally, there is a ***lack of consensus regarding the appropriate users***, i.e. the target patient group most likely to benefit from intermediate care. McCormack's definition would allow for frail or demented patients' inclusion; Pearson et al.'s would not.

2.4 Towards a Conceptual Framework

A pragmatic conceptual framework should retain those factors identified as thematic; namely, the move away from hospital-based intensive medical treatment and a concomitant emphasis on local or even home-based care. In addition, it should resolve those issues where there is conflict. As a path towards resolution, it is reasonable to take guidance from the terms (intermediate or transitional) themselves. They imply a "between-ness." In turn, the notion of between-ness further suggests that usual systems of care are not organised to deliver the seamless services recommended by the Department of Health; that is, there are gaps.

But intermediate between what and what? Numerous possibilities have been described. In what follows, a range of organisational (i.e., service) endpoints and the service alternatives that have been developed or proposed to fit between them will be described and evaluated with reference to their appropriateness in a conceptual model of intermediate care. Subsequently, several more general (and less clear) distinctions that can characterise intermediate care will also be presented. These will be discussed, but only after a working definition has been proposed. The reason is that none of the general distinctions can be interpreted rigidly to any positive effect; rather, they are important as mediating factors in the organisation of care.

Organisationally, intermediate care has been described in the literature as falling between the following health care endpoints:

- Acute emergency and general hospital-based care;
- Intensive hospital care and no care;
- Hospital and home;
- Home and hospital;
- Home and institution (i.e., nursing home);
- Highly supervised treatment and independent (unsupervised) living; and possibly between
- Hospital and death (no care) for patients with terminal illness.

More generally, intermediate care can be viewed as coming between:

- Acute and chronic care, wherever delivered;
- Secondary and primary care;
- Medical dependence and social/functional independence; and
- High cost care and low/no cost care.

2.4.1 Between Emergency and General Hospital-Based Care

A sizeable literature (e.g., Porath et al., 1995, Zimmerman et al., 1995) exists about a form of hospital care called intermediate care units. They are designed to replace emergency intensive care units as the treatment site for critically ill patients with less intensive wards within the hospital. The referenced studies took place in Israel and the U.S., respectively, but shared a common focus on intermediate care units as cost-saving alternatives to conventional intensive care units. The studies demonstrated high accuracy in triaging patients so that "graded critical care" could be provided without jeopardising patients and at a greatly reduced cost. Comparable intermediate care units are used to treat pre-term or special-care neonates (see, e.g., Holditch-Davis et al., 1995, Rieger and Henderson-Smart, 1995).

In a U.K.-based study, Thompson and Singer (1995) surveyed "high dependency units" (HDUs). They found that the 39 general HDUs existing in the U.K. at the time of their survey were evenly divided between step-down facilities for discharged intensive care patients (a less costly option) and step-up facilities for patients coming from general wards (possibly a more costly alternative). HDUs were variable in size, facilities and monitoring procedures. No information was available about their effectiveness.

2.4.2 Between Intensive Hospital Care and Observation Only

In this instance, the literature describes experimental step-down units for low-level monitoring of low-risk patients, typically with coronary problems (e.g., Gaspoz et al., 1994, Weingarten et al., 1990). Rather than using coronary care units for hospital patients who were admitted for the purpose of ruling out acute myocardial infarction or ischemia, short-stay coronary observation units were used instead. In controlled intervention trials, both sets of authors found these to be cost-effective alternatives to usual care. Another example of "less acute" care would be day surgery, whereby patients have minor (and sometimes not so minor) surgery on an outpatient basis. In the U.S. and the U.K., this has proved very attractive from a financial point of view, without any observable problems for patients; in fact, most patients prefer the shorter time at the hospital (Cuschieri, 1993).

2.4.3 Evaluation (I)

In these first two instances of intermediate care units, the goal was to enhance appropriate delivery of care along the continuum of patient need. It was achieved by creating new services that substituted lower-cost care for conventional services. This fits nicely with the intermediate concept of a bridge between services. In addition, in the second instance, low intensity care was anticipated, and patient selection was based on this expectation; this is also consistent with at least some of the definitions just presented.

On the other hand, despite being referred to as intermediate care units, these services have a strictly medical orientation that is in conflict with intermediate care definitions. Nor was the care necessarily local; in fact, the conceptual import of "local" care would not be fulfilled by these variations on intensive medical observation and therapy. Rather than filling a gap between acute and non-acute, or between medical and social, the services described fall into a different section of the continuum of care. They are versions of ***step-down or step-up secondary care***.

2.4.4 Between Hospital and Home

An array of services have been established or tested for patients who are medically stable but not fully recovered. As noted in Table 2.2, these services include:

- Community hospitals;
- Community care centres (a variation on the community hospital);
- Cooperative care centres (a hospital-based option);
- Patient hotel beds (for pre- or post-acute patients);
- Inpatient nursing beds (could be in acute-care or community hospitals);
- Supported early discharge schemes; and
- Hospital at home services (a type of early-discharge programme).

Table 2.2
Intermediate Care: Between Hospital and Home

Type of Service	Description of Service
Community hospital	A unit that functions either as part of an acute Trust or as a local extension of primary care. Provides a range of different services, including rehabilitation, convalescence, discharge planning, visiting consultant outpatient care, minor casualty services, direct access services, and minor surgery.
Community care centre	A model of care based on the Lambeth Community Care Centre. Local community has direct access to a range of therapies and inpatient services which do not require major technical interventions or medical specialist management. Short stays are intended, selection criteria include pre-identified discharge plan, respite services also offered. Nurse-led; medical cover from GPs.
Cooperative care centre	An American model providing hotel-type facilities where both patient and partner are admitted and the partner retains the principal caring role, backed up by health care workers. Goal is to reduce demands on health care professionals' time, provide a safe environment with immediate access to medical support, and develop self-care skills for patient and partner.
Hotel beds / patient hotel	Initially a Swedish model. Unmonitored beds which pre- or post-acute patients can use. Primary U.K. application to date has been to provide convalescent care to patients with low-intensity needs who lack home support.
Inpatient nursing beds	Similar to all of the above, but there is a clearly identified clinical objective: to improve quality of life and ability to live independently. Intensive therapeutic input from nurses and PAMs. Admission criteria include pre-identified discharge destination, rehabilitative potential and established need for nursing (rather than medical) care.
Supported discharge schemes	A wide range of service packages that begin with early discharge planning and tend to include multidisciplinary needs assessment, home visits and, possibly, arrangements for supportive services.
Hospital at home	A specific form of supported discharge targeted to people who require some kind of technical intervention and who have sufficient home-based social support to allow health professionals to train informal carers and ensure continuity of care.

The clinical goals of such services can vary from intensive rehabilitation to gentler forms of convalescence or, in some cases, negotiated long-term care placement. Most services can be, or are, supervised by nurses. None qualify as both secondary and primarily medical in focus; nearly all are community- or home-based; even the primary nursing wards in acute care hospitals attempt to create home-like atmospheres in a variety of ways (including, for example, decor, lack of uniforms, and open-door policies to families and carers).

What distinguishes this category of services, at least in principle, is the presence of a therapeutic goal that ***focuses on the transition from illness to health*** by moving from a pathological focus (the diagnosis) to a holistic one (the functioning individual). This may involve specific services, education, or confidence building, but the role of the health professional is to collaborate with the patient in restoring health. As such, it is argued that this category of services - this type of treatment function - constitutes the quintessential descriptor of intermediate care. At the same time, it is important to note that some of the services listed above - for example, treatment in a community hospital or stays in a community care centre - are provided under quite different assumptions. This will be discussed further in Sections 2.4.6 and 2.4.8. In addition, trends in post-acute health care delivery favour a different constellation of services altogether. For example, in a review of home health care technology, Banta (1992) argued that the greatest potential for future technology would be equipment to support functioning - especially mobility, bathing, toileting or dressing - but noted that this has not been the priority of the health care system or the home technologies industry.

2.4.5 Between Home and Hospital

Services in this category have as their focus the ***prevention of an acute hospitalisation***. Patients with chronic disease such as diabetes or asthma, or those with acute illness - such as a mild pneumonia - that could be managed unintensively would be likely candidates for care. The goal is two-fold: to save the expense of acute hospitalisation and to provide treatment appropriate to the patient's need. Delivery of care could be in the home, as with mobile technologies, or at virtually any of the sites listed above.

Instead of step-down treatments, however, these services represent a sort of step-up. Patients would most likely be referred by their GP (or, conceivably, from social services) rather than a hospital-based consultant. As with the hospital-to-home patients, this group is sub-acutely ill; however, rather than emerging from an acute episode, the patients are slipping towards one. These distinctions are worth making because, although site, staff, and even the interventions may overlap, the costs and benefits of step-down and step-up treatment are likely to differ. It is easier to demonstrate cost savings, for example, when the comparator is an acute hospitalisation than when convalescent hospital days are compared to staying at home, or to home discharge with little or no supportive input. Rehabilitation can be a slow and labour-intensive process. Thus, the incentives to promote such programmes are likely to differ, and the patient subgroups may trade off against each other as candidates for intermediate care.

Finally, it is easier to view some of the services in this category as intermediate care than others. Treating an elderly person for her pneumonia in a community hospital may not only be a cost-effective alternative to acute hospital admission, but may also constitute local care and allow for more personal attention from nurses and family. On the other hand, providing high-technology services in the home, such as respiratory equipment or enteral (naso-gastric tube) nutrition, can also be a cost-effective alternative to acute hospital admission, but continues to be highly medical in nature. It is home-based and effective, but whether it falls into the intermediate care paradigm will depend on definitions and conceptual emphasis.

2.4.6 Between Home and Long-Term Care Institution

This category would be more controversially included. It refers to home care, case management, other community care arrangements, and respite including day hospitals and day centres. The goal of these services is the ***prevention or delay of long-term care placement***. Likely users include frail or cognitively impaired elderly, chronically disabled, the severely mentally ill and their carers. Because the services required by these population groups overlap to a great extent with those appropriate for patients with transitional care needs, and because both care settings (whether home or in hospital/freestanding care units) and service providers overlap as well, there is a tendency (*viz.*, e.g., McCormack) to consider them as intermediate care. However, there are equally strong arguments for exclusion from an intermediate care paradigm; these range from the theoretical to the political.

There are four main principles for exclusion. First, recovery is not a realistic goal. In some cases, patient education or empowerment is feasible; in other cases, it is not. Hence the purpose of these services is maintenance rather than therapeutic gain. Second, many of the services target the carer, not the patient. To the extent that the patient derives benefit from treatment, it is indirect. Third, the transition - if indeed there is one - can be expected to occur over a far longer time period than would be the case for patients in the process of rehabilitation from, or re-adjustment to, a new injury or illness. This time factor would influence programme planning, staffing requirements, and - importantly - assessments of effectiveness. Finally, given that the services themselves duplicate or overlap with community care, there may be professional culture as well as organisational barriers to implementing a coordinated intermediate care programme that targets people with chronic care needs.

These are the objections. The reality is that many community hospitals and community care centres feature respite services, for example, as one of their primary activities. Armstrong and Baker (1995) found that 47-55 percent of admissions to the Lambeth Community Care Centre were for respite care, though only four of 20 beds had been specifically designated for that purpose. One could omit respite services - or home care - from the intermediate care paradigm, on principle, but it would be far more difficult to omit them from practice.

The same setting, the same staff, a different objective: these are ingredients for confusion. If a culture of intermediate care is to be established, it is a conceptual confusion that will require resolution. This will be discussed in Section 2.4.8.

2.4.7 Between Highly Supervised Treatment and Independent (Unsupervised) Living

Although listed as a separate category of intermediate care, this case is nested in some of those mentioned above. It is the arena of ***patient education to encourage self-care and adaptation to new diagnoses of chronic disease***. It is noted separately to highlight the fact that it is another controversial inclusion, in this case because the activity could be conducted on an outpatient basis or at the primary care level. However, given that various post-discharge support schemes and community care centre models emphasise patient empowerment and function-oriented rehabilitative care, the intermediate care settings may be ideal places to conduct this type of transitional or adaptive patient education.

2.4.8 Evaluation (II)

In considering the fit between an intermediate care paradigm and the inventory of services provided to people between hospital and home, home and hospital, or home and residential/nursing home care, there appears to be a confusion between the locus of care and the purpose or function of care.

In the past, community hospitals have been used as long-stay settings for frail or cognitively impaired elderly; many continue to function with a far greater emphasis on convalescence than rehabilitation. In addition, some community hospitals have diversified by providing day surgery - a form of acute care - and/or respite services, which are targeted to carers rather than patients. Even when respite patients receive physiotherapy or other types of restorative care, the therapeutic objective has more to do with maintenance of current function than restoration of former function.

Proponents of community hospitals are quick to note the many potential uses of a local, low-intensity health care site. But the literature becomes garbled at times, suggesting that all of these applications may be types of intermediate care. This would be a mistake. Although community hospitals, other types of community-based health centres, or agencies to deliver high-technology therapies in the home may all find it good business to provide a diverse set of services, each provider should clearly distinguish the services offered according to their likely user groups and therapeutic objectives. This will influence the way that health professionals are trained, care is organised, staff derive job satisfaction, managers monitor quality, and purchasers decide what to include in service contracts.

These categories of services, overlapping in all features but their target groups and intentions for care, highlight the fact that intermediate care is a function rather than a discrete service or set of services; and, moreover, that it is a function which is distinct from all others but that can be fulfilled by currently active professionals and organised in existing settings. At the same time, this very feature can also be a weakness, because it crosses organisational boundaries and can threaten professional turf.

2.4.9 Between Hospital and No Care for Terminally Ill Patients

Finally, palliative care has been raised as a type of intermediate care service, probably because of the commonality of setting. There is good consensus that terminally ill patients do not benefit from acute care hospitalisation (Chambers and Oakhill, 1995). For example, Cartwright (1991) surveyed the general practitioners, hospital consultants and community nurses involved in caring for a random sample of 800 people aged 15 or older who died in 1987 to learn their perceptions of the balance of care between hospitals and community. Information was obtained on 80 percent of patients, and provider group survey response rates varied from 62 to 92 percent. She found high consensus among the three professional groups, all in favour of locating more pre-death care in the home but perceiving inadequacies in home health and district nursing services. Less than 10 percent of any group would have wanted more acute hospital-based hospice care; however, they expressed concern that patients' pain tended to be poorly controlled at home.

Palliative care has as its objective the ***compassionate treatment, near to or at home, of terminally ill patients***. It is akin to intermediate care in that its focus is on the whole person, and the goals are not primarily medical. It is, of course, transitional. Setting palliative care outside the acute care hospital promises both cost savings and more appropriate use of resources. However, by definition, recovery is not a feasible objective.

2.5 Working Definition of Intermediate Care and Proposed Conceptual Framework

A **broad definition** of intermediate care would take into account the functional overlap between transitional care settings, staff and activities and certain types of lower-intensity, chronic community, or even primary care services. Such a definition might state that intermediate care was

- *An approach to health care intended to facilitate patients' transitions from illness to recovery, or to prevent their transition from home-managed chronic impairment to institution-based dependence, or to help terminally ill people be as comfortable as possible at the end of their lives.*

This broad definition would lead to a literature search that would provide insight into the issues pertaining to implementation and potential effectiveness of systems of care falling between acute secondary care and primary medical care. It might also allow different services to be mapped onto both existing and proposed physical or organisational settings. But, given the most important conceptual features of intermediate care, the broad definition does not satisfy. It papers over too many conflicts, and fails to clarify sufficiently.

Table 2.3 summarises the fit between the types of services described above as candidates for intermediate care and the conceptual desiderata that frame intermediate care as an approach to health care delivery. These are: (1) the service is designed to facilitate a transition; (2) the care provided is not primarily medical in focus; (3) the care is intermediate between real endpoints; and (4) recovery or health gain is the therapeutic goal. The third and fourth criteria represent a resolution of the definitional conflict noted in Section 2.3 regarding the objectives of care. The choices were predicated on the conclusions, first, that the functions of providing non-medical transitional care to people who will not regain health and whose "endpoint" is either death or institutional placement are already well-established in the health and social care systems; and, second, that those who would include such users and services in the intermediate care framework are confusing form with function.

It can be seen that only one category --- services between standard acute hospital care and independent living at home --- fulfils all four criteria. This, then, would be a **narrow definition** of intermediate care:

- *That range of services designed to facilitate the transition from hospital to home, and from medical dependence to functional independence, where the objectives of care are not primarily medical, the patient's discharge destination is anticipated, and a clinical outcome of recovery (or restoration of health) is desired.*

Table 2.3
Intermediate Care: Fit Between Concepts and Care Options

Conceptual Criterion	Services Fitting the Conceptualisation
Service designed to facilitate a transition[1]	[1] [3] [6] [7]
Care is not primarily medical in focus[2]	[3] [4] [5] [6] [7]
Care is intermediate between real endpoints[3]	[1] [3] [6] [7]
Recovery/health improvement is the therapeutic goal[4]	[1] [3] [4]

[1] Other services are geared to preventing an undesired transition.

[2] Other services are primarily medical in focus.

[3] Care is "intermediate" between one actual and one hypothetical endpoint.

[4] Other services do not expect recovery or restoration of health.

KEY
[1] between acute emergency care and general secondary care;
[2] between intensive secondary care and no care (observational units);
[3] between hospital and home;
[4] between home and hospital;
[5] between home and institution;
[6] between highly supervised care and independent living (self-care/adaptive education for patients with new diagnoses);
[7] between hospital and death (palliative care).

Such a definition highlights these services' unique point along the continuum of care. This is distinct from acute care at a lower price, because its focus is functional and holistic rather than strictly medical. It is also distinct from chronic care services focused on maintenance rather than improvement. Finally, it is rigorous, in that services that could be delivered more efficiently at another level (e.g., patient education) are excluded as stand-alone examples of intermediate care.

The discussion of intermediate care models in Sections 3 and 4 will be broad, and will include models borrowed from other care categories. However, the literature review which accompanies those discussions, of evidence on the effectiveness of the models, will emphasise published data regarding the services that fit the narrow definition.

2.6 Caveats and General Distinctions

In the discussion above, a working definition of intermediate care was arrived at by methodical consideration of the types of services *called* intermediate care in the literature; in other words, a pragmatic approach was adopted. Another approach would be more theoretical. This was eschewed because it raises more confusion than it resolves; however, the issues that emerge from a consideration of general concepts bear importantly on the framework just presented, and are presented below. The first three help to clarify the conceptual framework; the last has implications for implementing or evaluating intermediate care programmes.

2.6.1 Between Secondary and Primary Care

The emphasis on intermediate care as coming, most commonly, between the acute phase of hospitalisation and a patient's return home implies that intermediate care fits nicely between secondary and primary care. To some extent, this is true. For example, the Lambeth Community Care Centre is largely GP-managed. Similarly, if home care interventions were organised to prevent acute hospital admissions, it would most likely be the primary care physician who would arrange and monitor the services. However, this conceptualisation casts an inappropriately medical, or medicalised, light on the intermediate care paradigm.

One important goal of intermediate care is to help patients move out of their "medical identity" or "patient role" (see, e.g., Radley, 1994) back to a self-image as a "normal" individual. Doctors, including GPs, may not be best positioned to achieve this. Moreover, as noted above, many of the intermediate care services are supervised by nurses. Nearly all are delivered by health professionals other than doctors, including district nurses, physiotherapists, occupational therapists, nutritionists, social service providers, or volunteers (see Sections 3 and 4). Although medical input is a likely component of intermediate care, it is emphatically not the dominant one; that is one aspect of its potential to reduce costs. Thus, the concept of intermediate care as coming "between" primary and secondary care, or vice-versa, is not strictly apt.

2.6.2 Between Acute and Chronic Conditions

Delivering care at a point intermediate between acute and chronic stages of illness would seem to be one of the central defining characteristics of transitional services. Yet definitions can be difficult, particularly because the candidates for such care may be partially dependent at the best of times or have multiple health problems that introduce an element of chronicity into even the most acute of medical events.

One example is the older population. By no means do all older people have multiple health problems, and many are fit. Nonetheless, it is an axiom of geriatric medicine that with increasing age, it takes longer for an individual to regain homeostasis (physiological balance) after trauma (Kenney, 1982). Thus, although hospitalised people of all ages have a stage between initial acute trauma and full recovery, the elderly are likely to be high users of intermediate care, if only because they can be expected to need it for a longer period of time than younger patients. The fact that many older people do have multiple health problems, and are not fit, introduces the element of chronic care into the equation. Services that are meant to be transitional may have to include careful discharge planning, because the transition may indeed be from acute to chronic care, rather than from dependence to independence.

2.6.3 Between Medical Dependence and Functional Independence

The meaning of independence must be questioned as well. For some people, intermediate care can serve a rehabilitative function with an endpoint of health restored to its original high level. For others, the endpoint will fall short of perfect restoration. Moreover, even if all patients were to regain their former health status, they might not regain independence. For example, children with chronic or terminal disease, people with physical or learning disability, or people with mental illness might reject "independence" as a reasonable objective of care. For them, the goal may to recover enough to remain out of acute care or permanent institutionalisation, rather than making any direct translation to functional status and their capacity to make choices.

In another example, the case of newborns, post-hospital discharge support schemes have been touted as an intermediate care solution that allows for cost-saving early discharge (Braveman et al., 1995). Yet obviously, the infants will not be independent for years to come. Independence is not the point. The goal of the intermediate care described in the literature is to monitor mothers and babies so as to prevent medical complications; it is to safely facilitate the transition to home, but with an eye to ensuring medical stability rather than embracing non-medical objectives. Its goal is independence in that the mother-child unit become capable of self-care, but whether this is true intermediate care or another version of step-down secondary service is a matter for debate.

2.6.4 Between High-Cost Care and Low-Cost or No Care

The final general category to describe intermediate care's niche refers to expenditures. It is recognised that the services introduced above will not be cost-free, but it is hoped that they will be cost-saving. Depending on the intervention, this may or may not be a realistic expectation (see Section 4). At a minimum, there is an important conceptual difference between services designed to substitute for acute care, at a savings to purchasers and without danger to patients - possibly to the preference of patients, as well as nurses and therapists - and services designed to fill a gap in the continuum of care, even if it requires investment. The former are far more likely to be promoted, implemented, and rigorously evaluated than the latter; both, however, may be critical to developing this component of health care delivery.

2.7 Services that Border on Intermediate Care

To conclude this section, three types of services that border on, or overlap with, intermediate care will be described. These are not models of service delivery; rather, they are existing or developing paradigms of health care that would have to be reckoned with in the development of intermediate care services.

2.7.1 Shared Care

Shared care is a manifestation of the growing policy emphasis on a primary care-led NHS (NHSE, 1994) whereby hospital outpatient treatment and consultant management of chronic disease are replaced by an arrangement that gives GPs equal access to the patient's medical records and improves consultant-GP communications. Although it doesn't involve new services *per se*, the information systems and communications strategies are themselves intermediate - or bridging - between secondary and primary care (Godber et al., 1996). Moreover, because they have tended to focus on chronic disease, shared care arrangements are likely to involve the management of patient transitions from time to time.

In two rigorous evaluations of shared care (DICE, 1994; GRASSIC, 1994), randomised controlled trials tested the effectiveness of a common computerised medical records system and enhanced communication between health care sectors in increasing the proportion of care that could be managed at the primary care level; reducing costs; maintaining or improving clinical outcomes; and maintaining or improving satisfaction with care. The DICE study found that for diabetic adults in the study (n=230) process elements such as patient screening and continuity of care were better under the shared approach and outcomes were the same; however, shared care was 42 percent (£23) more costly per patient, on average, than the conventional treatment approach. In contrast, looking at a larger sample of patients with asthma (n=912), the GRASSIC group observed slightly lower costs for shared care and higher satisfaction, with no significant differences in clinical outcomes.

2.7.2 Community Care

Following the 1989 Griffiths White Paper, *Caring for People*, the NHS and Community Care Act of 1990 stipulated that local authorities would be the lead agencies to develop community care, including assessment of people's need for residential care and design of care packages that would enable people at risk of institutionalisation to remain in their homes for as long as possible (Ham, 1992). Although Allsop (1995) described community care as an area where "there has been a significant gap between policies and their realisation," local authorities now receive budgets for case management which are flexible for purchasing services across NHS and social services boundaries.

This is a prime example of a service category that not only borders on, but can easily overlap with, intermediate care. The important distinction, however, is that a different group of people would be targeted for care and expected to benefit from services. Community care clients have ongoing needs and can be expected to receive services designed - at best - to maintain function, and probably not to improve it.[2] Such maintenance would be appropriately judged a successful outcome of care. In contrast, intermediate care patients are post- or pre-acutely ill. They are assumed to be below their normal functioning level, and to require support to return to the original state. To maintain patients at the functional level identified when care began would not be a successful outcome at all.

However, the social and health service agencies that provide community care services could well be mobilised to offer intermediate care as well. Presumably, the service mix would be richer in rehabilitative activities but, even there, a case manager would be well positioned to make that determination. Thus, local authority-based community care could be viewed as a resource for those who would develop intermediate care options, and community care providers must be viewed as relevant players if duplication of services is to be avoided.

2.7.3 Continuing Care

Finally, in conjunction with the NHS and Community Care Act, the Department of Health has evolved a continuing care policy that sets stricter limits than ever before on which patients are deemed appropriate users of long-stay hospital beds. Regional health authorities have been required to produce written standards for continuing care, and the use of hospital beds for chronically ill, frail, or demented patients is gradually falling out of favour.

Most continuing care beds are allocated to elderly patients. Ham (1992) states that national policy has been to move towards a mix of geriatric beds that keeps 30 percent in acute care settings and the rest, presumably, in freestanding long-stay or community hospitals. Consequently, there are many patients who occupy hospital beds without any clinical expectations of recovery. As with community care, then, there is an overlap of service site and personnel, but a divergence of target population and intent.

If intermediate care were to be developed, it is certain that older patients would be a large (although not the only) user group. It is highly unlikely that new beds would be allocated to this purpose; rather, some of the existing geriatric beds might be diverted, as was the case with the Oxfordshire experimental nursing development unit (Pearson et al., 1992). This means that existing services - in this case hospital beds and associated personnel - are, once again, both a potential resource and a force to be reckoned with.

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[2] This is an assumption. Some recent research (e.g., Manton, 1988; Strawbridge et al., 1992) suggests that function can improve, even in older people at risk of institutionalisation. Nonetheless, the objective of care in this context is maintenance, not restoration.

2.8 Summary

This concludes the section on conceptualising intermediate care. To reiterate, intermediate care is not a universally accepted component of the U.K. system. Thus, if existing and new services are to be amalgamated into a service niche that has specific objectives, professional skill requirements, and auditable outcomes, a working definition and clear conceptual framework is needed. Many programmes of care already exist that, in principle, could be mobilised to meet intermediate care needs; it is argued, then, that intermediate care is a *function* rather than a discrete service.

Two definitions have been presented. Intermediate care can be defined broadly to include a wide set of services designed to smooth the transitions between hospital and home, treat chronically or terminally ill people without recourse to hospital care, and prevent long-term institutionalisation.

Alternatively - and preferably, according to this author - it can be defined more narrowly as ***that range of services designed to facilitate the transition from hospital to home, and from medical dependence to functional independence, where the objectives of care are not primarily medical, the patient's discharge destination is anticipated, and a clinical outcome of recovery (or restoration of health) is desired.*** The advantage of the narrow definition is that it clearly distinguishes intermediate care from acute care at a lower price, because its focus is functional and holistic rather than strictly medical; it further distinguishes intermediate care from chronic care services, because its objectives are focused on improvement rather than maintenance; and it is rigorous, in that services that could be delivered more efficiently at another point along the continuum of care have been excluded.

It should be noted, however, that the *need* for intermediate care - that is, for restorative support that is health-related but not strictly medical - could, in principle, be identified by a range of health or social service professionals outside the hospital setting, and that the intermediate care function could, in principle, be fulfilled in contexts other than the strictly "between hospital and home."

Lastly, the point was developed that intermediate care services border on, or overlap with, a range of existing options including shared care, community care, and continuing care. These can offer a foundation from which to develop intermediate care structures, but also could constitute a barrier to developing or implementing a new paradigm of care.

In the next two sections of the report, a series of existing and potentially relevant models for delivering intermediate care will be presented. In the case of models fitting the narrow definition of intermediate care services, the evidence on their effectiveness will be offered as well.

Section 3
Models of Intermediate Care and Evidence on Effectiveness

3.1 Introduction

This section describes a range of health care structures for delivering intermediate services. It presents options that have been explicitly described as intermediate care, or that clearly fit the narrow definition presented in Section 2. The models listed in Table 2.2 are emphasised, specifically: the community hospital, the Lambeth Community Care Centre, nurse-led inpatient care and other interventions, the patient hotel, supported early discharge schemes, and the Hospital at Home.

Certain of these models (e.g., the hospital at home schemes) have been researched in some depth, and selected findings regarding their effectiveness will be presented. In other cases, the literature is confined almost entirely to description or advocacy. Many evaluations that have been published are qualitative in nature; as such, they can provide insights into process, motivation, and perceptions of effectiveness but cannot offer definitive generalisable conclusions. Those evaluations that included quantitative analyses tended to use simple and often inadequate statistical techniques. Because this is the current state of the art, examples of each type of study are included below.

3.2 The Community Hospital

According to McCormack (1993) community hospitals constitute three percent of the acute beds in the NHS, amounting to some 10,000 beds in 350 hospitals. Roughly 15 percent of GPs have access to community hospital beds. The hospitals treat people from explicitly defined geographic areas. They are nursing-led, with medical support provided primarily by general practitioners, although specialist care is also provided on request. In some cases, community hospitals maintain specialist clinics so that certain types of consultant care are available on a regular basis.

McCormack describes the suitable patients as *"those who, though requiring hospital care as they cannot be managed at home, do not require the facilities of the district general hospital nor the continuous services of a specialist team; those who would derive benefit from an extended period of care which could not be reasonably provided in their own homes, in an acute hospital, or in a specialist unit; those who because of age or psychosocial circumstances require an extended period of rehabilitation from a multidisciplinary team to recover from an acute episode of illness or treatment."* Emrys-Roberts made a similar recommendation in 1968, and claimed that the "technological miracles" of district general hospitals were not needed by as many as 60 percent of admitted patients.

There have been a number of studies designed to assess the proportion of patients admitted to community hospitals who would have had to be admitted to district general hospitals, if the community care were unavailable. Estimates ranged widely: Weston-Smith et al. (1973) set it at only three percent per year; Kernick and Davies (1976) at nearly 50 percent; and Humphreys (1973) at 79 percent. Weston-Smith et al. also reported, however, that 70 percent of patients treated at the district general hospital could have been admitted to community hospital with equal outcomes. Both the methodologies and the findings signal bias, however. As Armstrong and Baker (1995) note, each of these studies relied on the researchers themselves judging appropriateness of treatment, based on their retrospective assessments of medical records. All judgements were subjective, and no analyses of patients' relative outcomes were undertaken. Moreover, each examined only a single community hospital's records.

In a more rigorous effort to assess the same issue, Baker et al. (1986) took advantage of a natural experiment, as it were, and compared average hospital bed days per 10,000 people for three groups: (*i*) GP practices in Oxford city, none of which had access to community hospitals; (*ii*) GP practices elsewhere in the Oxford region, also without access to community hospitals; and (*iii*) GP practices in the Oxford region that did have access to community hospitals. In all, 67 practices with 498,000 registered patients were included.

The researchers found that, for practices with access to community hospitals, patients aged 65 or older used about half as many general medical or geriatric days at the district general hospital as patients in practices without access. Even patients under 65 used only about 75 percent as many days. Bed use rates in other medical specialties were also slightly lower for those with community hospital access, compared to those without.

However, the combined utilisation rates for community and district hospital days, across all specialties, indicated that age-standardised bed use rates by populations with community hospital access were about two percent higher than Oxford city rates and about six percent higher than non-city rates in areas without access. No cost analyses were undertaken, although the high community hospital substitution rate and relatively low rate of additional community hospital days suggest that, had it been measured, savings would have been observed for the populations with access to community care.

The authors estimated that the community hospital substitution for district general hospital care amounted to a reduction of about five beds per 10,000 population per day for geriatric and general medical wards, and of one bed per 10,000 population per day for other specialties. Regarding the increased overall use, they offered three possible explanations. First, they speculated that some patients who could have been cared for at home were entering, or staying longer than necessary in, community hospitals. Alternatively, some patients who needed hospital care received home treatment because their doctors lacked access to appropriate beds. Third, practices without access to community hospitals may have sent patients to private institutional care, at health authority expense. Because the study did not examine patient outcomes, none of these possibilities could be confirmed.

Another line of research into community hospital care has been descriptive. For example, in 1971, Kyle found that patients in Brecon, Wales were admitted for a wide variety of reasons and concluded that GPs used community hospitals to offer more comprehensive care to patients than would otherwise have been possible. In a follow-up study in 1990, Treasure and Davies found that GPs in the same area were using the community hospital for an even higher proportion of admissions than in the past (78 percent, compared to 57 percent in 1971), with a relative savings of £18 per day for each admission. Similarly, the proportion referred to outpatient care at the community hospital rather than the district hospital had increased from 55 percent to 71 percent. In Leicestershire, Tomlinson et al. (1995) surveyed the county's eight community hospitals and found that 70 percent of patients were aged 75 or older. Thirty-five percent of patients were admitted for acute care, 31 percent for respite, 22 percent for rehabilitation, and the rest for palliative or "other" reasons. Most patients had received low levels of home-based support prior to admission; most were discharged to their own home. Only 15 percent had been transferred from consultant beds, i.e., could be considered intermediate care patients according to the strictest hospital-to-home definition; however, if all acute care and rehabilitation were included, 57 percent of patients would be termed users of intermediate care.

3.2.1 Current Developments (the Oxfordshire example)

Although community hospitals have the potential to provide intermediate care services, and although it is clear that they are at least partial substitutes for acute hospital care, it is by no means obvious that their role as intermediate care delivery systems has been fully developed. In this regard, the outcomes of a recent community hospitals development project conducted by the Oxfordshire Community Health NHS Trust is instructive. It suggests that the term "intermediate care" is becoming accepted, and that community hospitals - whose survival within the NHS is under threat (see, e.g., Ramaiah, 1994) - are interested in developing or marketing themselves as intermediate care facilities.

At the same time, McCormack's final report (1996) clearly conveys the sense that change will be tolerated only if it is incremental. Moreover, although community hospital staff wanted to provide four discrete types of services to the community, they did not find it appropriate to draw a distinction between, say, intermediate and respite care. The assumption appears to be that if the service is provided at the community hospital, then it is *by definition* intermediate care.

As part of the final report, an admission philosophy was presented. Its central features were as follows:

- *an objective of maintaining and resettling people in their own home (this includes residential and nursing homes);*
- *an emphasis on rehabilitation, based on an assumption of subsequent discharge (though "recognising that this process may for some people take a long time");*
- *no distinction made between admission criteria for patients coming from acute care and criteria for patients admitted from home (i.e., equal access);*
- *acknowledgement that "at times" the leader of the patient's care should be a nurse or therapist, and that in these cases other nurses or therapists should make direct referrals, provided the GP agrees to provide medical support when necessary (the protocol indicates that terminally ill patients are most likely to fall into this category);*
- *types of care will be: acute medical, rehabilitation, respite, and terminal/palliative.*

It is as though a new model is given with one hand - emphasis on rehabilitation, expectation of home discharge, appropriateness of nurse/therapist leadership and direct referrals from other nurses and therapists - and taken away with the other. Why would a *therapist* be wanted for palliative care? Why is it necessary to emphasise that rehabilitation will, for some patients, *take a long time* (as in the "old" model of long-stay care)? The protocol is transparent with negotiated outcomes.

McCormack asserted that the original intentions of the project - to maximise productivity and create a cultural shift from 11 separate hospitals to a "local hospital structure" of 350 beds and a range of outpatient services - were realised "as intended" and that demonstrable improvements in within- and between-Trust collaboration were evident; however, the author claimed that it was difficult to quantify either the phenomenon or its impact on patient care. Protocols are due to be implemented by the end of 1996. It may be that in the next phase of development, it will be possible to provide objective evidence of the effects of developing an intermediate care model in a local hospital setting.

3.3 Lambeth Community Care Centre

One of the best-known alternative models of health care delivery in the U.K. is the Lambeth Community Care Centre (LCCC) in London. It opened in 1985, after a decade of development. In a book describing the evolution of the centre, Wilce (1988) quoted excerpts from the initial statement of purpose, as follows:

- *The Centre exists to provide a new type of care and rehabilitation for local patients at a level intermediate between home and hospital...*
- *A multidisciplinary approach will be emphasised...*
- *Treatment plans will be geared to maximising the potential activity of the patient following discharge from the Centre...*
- *The explicit aim of work... will be to maintain the patient's own freedom to make his/her own decisions about treatment and activity whilst in the Centre, acting on the advice of staff...*

The LCCC is a 20-bed unit that employs 30 staff, 16 of whom are nurses (Armstrong and Baker, 1995). Like the community hospital, its major services are inpatient care, outpatient clinics and therapies, and a day centre. All referrals come through the patient's GP, with any GP within a one-mile radius of the centre eligible to use it. In practice, GP referrals for inpatient care and outpatient physiotherapy are dominated by three large surgeries; even after adjusting for list size, they monopolise the centre.[3] In addition, the policy of using local-area GPs as gatekeepers has had the perverse effect of providing access to out-of-area patients with local GPs while denying use to neighbourhood residents whose doctors practice outside the one-mile radius.

However, the model of access is an interesting one. It is distinctly different from community hospital models, where patients can be referred by GP or consultant. Consultants can use the LCCC for post-acute care but they are required to go through the patient's GP, which is, effectively, a shared care arrangement with enhanced communications. In all cases, the GP must sign a contract taking full clinical responsibility for an admitted patient; when

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[3] These same practices also refer patients to other inpatient hospitals at significantly higher rates than other area surgeries; hence, the domination may have less to do with "turf" than with an aggressive practice style.

Armstrong and Baker conducted their evaluation, for instance, contracts were held by 50 GPs in 14 local practices.

The mix of inpatient services is virtually identical to community hospital admissions. A high proportion of overnight stays - 46 percent - are for respite. Remarkably, the proportion of transfers from the acute care hospital are also very close: 16 percent for the Lambeth centre, compared to 15 percent in Leicestershire (per Tomlinson et al., 1995). Whether patients are due to be admitted from hospital or the community, nurses conduct pre-admission screening to ascertain their ability to manage the patient's care.

Outpatient services include physiotherapy, orthopaedic surgery clinics, dentistry, and chiropody. The day centre incorporates physiotherapy and occupational therapy with its social function when appropriate. The great majority of inpatient admissions are elderly patients - 87 percent are aged 65 or older - and two out of three are women. In 1994, eight percent of patients died (terminal care is one of the LCCC's functions); of the rest, 90 percent were discharged to their usual residence.

Armstrong and Baker attempted to assess the cost-effectiveness of treatment at LCCC, using the acute-care St. Thomas's Hospital as a reference point. First, they reported that average lengths of stay were virtually identical: 12.7 days in St. Thomas's, 12.8 days at Lambeth. This is probably owing, in part, to LCCC's clear therapeutic objectives and generally strict limits to maximum lengths of stay. For example, rehabilitation admissions are intended to last no longer than 28 days. Although Armstrong and Baker reported some bending of the rules, patients with severe problems recuperating will be relocated.

Second, using Trust estimates of costs for a day of geriatric ward care (possibly an overestimate, in that general medical costs are lower and LCCC patients could have been treated on either ward, had they been admitted to acute care instead), the cost comparisons clearly favour the intermediate care setting: £276 per night, on average, at St. Thomas's, compared to £171 per night, on average, at LCCC.

The researchers found no data on the relative effectiveness of the two facilities, nor any information regarding casemix. They note that, although the district general hospital has more sophisticated technology to hand, the literature suggests that most patients have no need of it; hence, it is not necessarily the case that the acute hospital patients are, by definition, sicker - and more in need of intensive medical care - than the community care population.

The evaluation indicated that the intermediate care facility served multiple purposes. For low-intensity acute care, GPs felt it substituted for the district general hospital. For rehabilitation and physiotherapy, it provided a faster track. Finally, for respite, it was one of the few available places to fill what was perceived as an otherwise unmet need. Some services, then, could be conceptualised as lower-cost substitutes with the added advantage of a high nurse-to-patient ratio, whereas others were complements to existing care options.

3.4 Nurse-led Inpatient Care: the Primary Nursing Model

In this section, a number of experiments with a still-innovative model of post-acute inpatient nursing, pioneered in nursing development units, will be described. The seminal demonstrations relating to intermediate care have been selected for description; however, nursing development units can emphasise different aspects of care. They continue to be encouraged by the King's Fund, and innovations in nurses' central role in providing intermediate as well as other types of services continue to evolve (see, for example, Cole and Vaughan, 1994).

The model of intermediate care that is emphasised below is based on primary nursing which encompasses both a system of work allocation and a philosophy of care. According to Pearson (1983), it is a development of the case method, which was the practice norm in the first decades of this century. With this method, one nurse provided all the care for a single patient, and could both practice with autonomy and develop a close therapeutic relationship with her patient. Today, although that approach is not administratively or economically feasible, the primary nursing model attempts to regain some of the depth of personal connection with patients by giving nurses round the clock responsibility for a set of patients who are aware of the special relationship.

The extension of the primary nursing approach, which can be practised in many health care settings, into the nursing-led inpatient unit is a more radical development. It involves a deliberate transition from the intensive medical to a therapeutic nursing model, for those patients deemed appropriate (see the conceptual framework in Section 2) and only when the patient is ready.

3.4.1 Loeb Centre for Nursing and Rehabilitation

It was Lydia Hall who pioneered this model of practice which became known simply as the Loeb model (see, for example, Degerhammar and Wade, 1991). According to Pearson et al.

(1992), Hall conceptualised her philosophy of nursing as three overlapping circles of "care (focused on the patient's bodily needs), core (the engagement of the nurse her- or himself), and cure (emphasising multidisciplinary activities, with the nurse acting as patient advocate)." The connection between patient and nurse was acknowledged as serious and intimate, and of therapeutic benefit almost by definition.

Beginning in the early 1960s, Montefiore Hospital in New York City opened a centre to treat patients who were referred by hospital doctors for transfer into nursing-led care. The most suitable candidates for admission to the nursing unit at the Loeb Centre were those whose greatest needs were for "care" and "core" - that is, for what the nurse could give, rather than for services provided in other parts of the hospital.

The Loeb Centre accepted patients provided they were at least 16 years old, required intensive nursing *in the intermediate setting* (that is, between hospital and home), had been recommended by a doctor, were expected to remain in the unit for at least one week, and were likely to return home on discharge. A considerable effort was made to exclude patients who had other options, or who were unlikely to benefit. The intermediate care unit was not to be taken as a staging platform for institutional placement, nor was it to substitute for community nursing. Moreover, patients expected to require long hospitalisations were also rejected, with a recommendation that existing long-stay rehabilitation, geriatric, or tuberculosis wards for example would be more appropriate.

In an evaluation of the longitudinal study of the Loeb Centre's experimental nursing beds, Hall et al. (1975) reported that, compared to patients who had not received therapeutic nursing in the unit, patients who stayed in nursing beds had fewer hospital re-admissions and reported better quality of life, greater functional independence, and higher satisfaction. The final report for the project was filed in 1975, but the holistic, restorative, intermediate care function of therapeutic nursing continues to inspire practitioners today. In England, as will be seen below, a series of projects have attempted to replicate or adapt the model locally.

3.4.2 Burford Nursing Development Unit

In 1981, Pearson (1983, 1992) was engaged by the Oxfordshire Health Authority to lead a nursing development unit whose purpose was to pilot innovative approaches to delivering nursing care. The site selected for this purpose was the nine-bed Burford Hospital, in a rural part of the county. Pearson adopted the Loeb philosophy of "rehabilitative, nurturing nursing" and, after two years of development, shifted the paradigm of care from a medical to a primary nursing model, as these examples of practice indicate:

- *A nurse had 24-hour accountability for her patients.*
- *Nurses worked in partnership with patients, providing informed choice.*
- *Care was patient-centred rather than task-centred.*
- *Nurses were involved in the decision to admit, and coordinated team decisions regarding when to discharge, patients.*

Pearson received two years' funding from the Monument Trust to open three additional beds and conduct a pilot study to evaluate the quality and cost of care in the nursing unit, compared to care for similar patients treated in the acute care hospital. Fractured neck of femur treated by internal fixation was selected as an appropriate medical condition for study. Patient outcomes were compared for three groups: those willing to be in the study but who refused the possibility of transfer to post-acute nursing (control group 1; *n*=82); those willing to be randomised and who were subsequently assigned to remain in acute care (control group 2; *n*=25); and those who were randomised to post-acute nursing care at Burford (treatment group; *n*=45).

Patients were interviewed on discharge and again six weeks, then six months, after discharge. On discharge, no significant differences were observed between groups in their level of independence, average life satisfaction score, or average satisfaction with care. After six months, dependency had decreased for all groups, again with no significant differences between them. However, control group patients used twice as much home-based professional support as the treatment group, and life satisfaction had increased significantly for the treatment group patients (p=.02) but not for controls. As expected, treatment group patients had shorter lengths of stay in acute care. Overall, total lengths of stay were the same between groups. Costs were slightly (3 percent) less for the nursing unit patients; this is effectively a null result, and is somewhat puzzling. Finally, nursing audit scores indicated significantly better quality of care in the nursing unit (p<.001), although this would be influenced by the way quality of care was measured.

Although the statistical significance of comparisons between groups was tested, no adjustment was made for systematic bias between groups. Nor did the evaluators reweight their analyses to account for having assigned nearly twice as many patients, of those willing to be randomised, to the treatment group as to the control group. These are serious shortcomings, particularly in light of the methods used to group study subjects. Even with perfect randomisation, though, the numbers are small enough that some post-stratification would probably be needed to make an objective estimation of the effect that nursing unit treatment had on the outcomes of interest.

Nonetheless, the pilot was considered a success, and a larger experiment with stricter randomisation was recommended and duly funded.

3.4.3 Oxford Nursing Development Unit

Again, following Hall's model - that as an acute care hospital patient's need for intensive medical care falls, the need for "rehabilitative, nurturing nursing" rises - Pearson et al. now (in 1985) created the first nursing-led inpatient service in the U.K. Its purpose was to

- *admit and care for patients whose primary need was for intensive nursing;*
- *increase knowledge about the range of effectiveness of different nursing therapies;*
- *develop forms of nursing which facilitate the involvement of patients as partners and increase the patients' knowledge and control of their own health; and*
- *teach post-basic nurses advanced nursing practice.*

The evaluation's objective was to validate the pilot results, with a more ambitious and improved study design. Study hypotheses were that patients' outcomes, utilisation rates, and costs of care would be no worse than those of patients treated conventionally, outside the nursing unit.

This time, the study sample consisted of 164 patients aged 60 or older, who were admitted to the acute care hospital for fractured neck of femur, stroke, amputated lower limb, or total hysterectomy (no referrals were made for the last diagnostic category). As in the Loeb Centre, patients had to have been living independently before hospitalisation, cognitively intact, and expecting to be discharged home. The study sample was stratified on age, gender, and diagnosis; random assignment produced 87 patients in the treatment group, and 77 in control. As in the pilot, the measurement points were at discharge, and six weeks, then six months, post-discharge.

The study suffered from a high attrition rate; in the end, 99 patients were available for analysis, with a disproportionate number of drop-outs from the control group. Using available data, the central findings are summarised in Table 3.1.

The authors concluded that the experiment was a resounding success. All project hypotheses were confirmed. Treatment that combined acute services with nursing-led inpatient care was no worse, and possibly better, than conventional treatment according to a completely medical model. Again, however, there was no statistical control for underlying severity of illness or other differences between groups. In addition, there was high and uneven attrition. Hence a finding such as the sizeable mortality difference must be interpreted with caution.

Table 3.1
Results of Evaluation of Oxfordshire Nursing Development Unit

Outcome Measure	Finding
Average length of stay (acute + post-acute phases)	47.2 days for treatment group 42.9 days for control group[1]
Dependency at discharge	treatment group significantly better
Dependency at 6 weeks / 6 months	no significant difference
Life satisfaction (all time points)	no significant difference
Satisfaction with care	treatment group significantly more satisfied
Quality of nursing care	experimental unit significantly better
Cost per inpatient day	treatment group significantly lower
Total costs per patient	no significant difference
Proportion discharged home	66% for treatment group 41% for control group
Proportion that died during study period	7% of treatment group 21% of control group

1. By diagnosis, the nursing unit treated stroke patients faster than the control group, but took longer with orthopaedic rehabilitation. Each comparison was statistically significant.

3.4.4 Nursing Development Units in Elderly Care

Another experiment in nursing development units is described by MacGuire et al. (1993). This study began in 1988, at the Kingsmead Hospital in Mid-Staffordshire Health Authority. At that time, Kingsmead was part of the Health Authority's Elderly Care Unit. MacGuire et al. note that the 1980s were a time when primary nursing received enthusiastic attention. In this case, the transition occurred over a six-month period. As part of the shift to a primary nursing model, each patient was allocated to a named nurse with 24-hour responsibility for that patient. Evaluators monitored the way that staff spent their time on each of three wards - two initially designed to be control groups, but with one switching its approach midway.

They discovered that nurses on the primary care ward spent more time than nurses on the other wards talking with patients and their relatives.

Quality of care, as measured by QUALPACS, improved on the pilot ward; but there was a secular trend in that direction anyway, with quality improving on the other wards as well. In this evaluation, patient satisfaction was the same on all wards. However, the "harder" outcomes, regarding patient turnover, length of stay, mortality, and re-admission rates tended to favour the primary nursing model. More patients were treated in the primary nursing ward than on the other wards, and more patients were in hospital for short stays. More achieved restoration of function, fewer died, and there were no significant differences in hospital re-admission rates. The nurses themselves were generally very positive about the changed model. None wanted to return to delivering care as they had before implementation of the primary nursing approach.

The authors were cautious about their findings, but it appeared that the primary care model as implemented in Mid-Staffordshire was reasonably successful. Again, the same caveats as in the Pearson evaluations apply here; the analyses undertaken could not confirm whether observed differences in performance were actually due to the experimental condition, or not.

3.4.5 Summary

These demonstrations of nursing-led inpatient care are simply examples of projects designed to shift the culture of nursing and medical care in the direction of intermediate care services. The model continues to propagate (see, for example, Evans and Griffiths, 1994; Griffiths and Evans, 1995) and to find support for evaluating its effectiveness. Yet, interestingly, many of the units that opened and produced decent results and even some measurable benefits over usual care have since closed. It is possible that the Health Service has re-organised so much in the last decade that innovations cannot find the time to become embedded into the structures of health care delivery.

It is also possible that, despite the popularity of this kind of intermediate care with nurses (and, in some studies, with patients as well; in no case did patients prefer another model), the mainly qualitative studies that have emerged thus far cannot persuade policy makers of their efficacy. Neutral results may not be enough to justify the administrative or political costs of reorganisation. To this end, the need for multi-centre independent evaluation, following a rigorous methodology and using sophisticated statistical techniques must be emphasised.

3.5 Inpatient Education for People with Congestive Heart Failure

As noted in Section 2, although patient education can be delivered in a variety of settings, it is sometimes most natural for nurses to take the lead during the intermediate phase of acute care, when patients are stabilised but still require considerable support to adjust to a new physical condition or serious diagnosis before discharge home. As such, inpatient intermediate care with an educational focus may prove a cost-effective option.

In St. Louis, Missouri, Rich et al. (1995) conducted a prospective randomised controlled trial to investigate the effect of a nurse-directed, multidisciplinary intervention on hospital re-admission rates within 90 days of hospital discharge, quality of life, and costs of care for high-risk patients admitted for congestive heart failure (CHF).

The intervention consisted of intensive education by a nurse about CHF and how to manage it. Treatment group patients (*n*=142 in treatment group, 140 in control group) were given an educational booklet that had been designed for the project, met with a dietician for individual assessment and advice (with nurses' follow-up reinforcement), consulted with social services regarding discharge planning, had their medications analysed by a geriatric cardiologist who attempted to simplify the regimen wherever possible, and received intensive follow-up at home and by telephone during the 90-day period after discharge. The nurse was responsible for patient education, coordination of assessments and counselling sessions, and reinforcement or support during and after hospitalisation.

Results indicated that 90-day survival without re-admission was achieved in 64 percent of intervention group patients, compared to 54 percent of the control group (p=.09). Intervention group patients were only half as likely to experience a re-admission to hospital (p=.02). The number of re-admissions for heart failure was reduced by 56 percent in the treatment group (p=.04) whereas re-admissions for other causes was reduced by 29 percent (statistically non-significant). Quality of life scores at 90 days improved more from baseline for patients in the treatment group than the control group (p=.001). Because of the reduction in re-admissions, the overall cost of care was $460 (about £300) less per patient in the treatment group.

The authors concluded that a nurse-directed, multidisciplinary intervention can improve quality of life and reduce hospital use and costs for older patients with congestive heart failure.

In this instance, nurses carried primary responsibility for arranging a complete intermediate care plan. In addition, the nurse engaged in pre-discharge education and support of the patient, once the sub-acute phase of care began. It is worth noting that although the researchers attempted a thorough cost analysis, the intervention itself was quite intensive. Thus, to implement the programme for all CHF patients in a hospital would be a high-priced endeavour. On the other hand, it is not obvious that a general intervention would be appropriate. Rich et al. carefully selected their study sample before randomisation, retaining only cognitively intact, non-institutionalised patients at high risk of early re-admission. It is another example of targeting intermediate care services to those most likely to benefit.

3.6 Nursing Education: The Yale Geriatric Care Program

The Yale Geriatric Care Program is an innovative, nursing-centred model that was implemented in 1990 - 1991 (Inouye et al., 1993a) and subsequently evaluated with a reasonably strong study design (Inouye et al., 1993b). It will also be part of a prospective meta-analysis, the Hospital Outcomes Project for the Elderly (HOPE; Margitic et al., 1993). The intervention was designed to improve geriatric nursing skills throughout an acute care hospital. As such, it is less a model of intermediate care than a model of training in intermediate care.

Using an integrated model that involved primary nurses, geriatric resource nurses, gerontological nurse practitioners, and geriatricians, an intervention team identified and monitored frail older patients during twice-weekly rounds, led ward-based geriatric educational programmes for all nurses, and provided special programmes for nurses wishing to specialise in geriatric care. All educational interventions were documented for subsequent analysis.

At the end of one year, the programme had been implemented on four units. Specific educational interventions were made regarding the nursing care of nearly 250 patients. They ranged from general clarification of goals (92 percent of cases) to specific recommendations for managing immobility (41 percent), continence problems (41 percent), pressure sore treatment or prevention (41 percent), confusion (25 percent) and adjustment of medications (17 percent). Recommendations were followed in more than two thirds of cases.

Subsequently, a prospective cohort study with stratified and matched cohort analysis was undertaken to evaluate the Geriatric Care Program's effectiveness on the general medical wards of a large teaching hospital. The main outcome of interest was functional decline, defined as a net decline in five activities of daily living. In stratified analyses of 216 patients, the researchers found that the intervention was associated with a beneficial outcome in patients with a problem at baseline (either delirium, functional impairment, incontinence, or pressure sores); they were 20 percent less likely than the comparison group to have declined. No effects were observed for patients without such problems on admission.

After matching patients on the number of baseline "target conditions" and their risk of functional decline, the intervention group was found to experience less than two-thirds the decline of the comparison group. Intervention group patients received more interventions specifically focused on improving function, such as physiotherapy. However, per-day hospital costs did not increase. Clearly, nurses following the new model of care had a beneficial impact on their patients' function.

It is difficult to identify the degree to which these services were "intermediate" *per se*. Services were provided on an acute care ward, and the authors did not specify whether patients received interventions early or late in their overall stay. However, the outcome of interest was patients' functional status, and the objectives of care restorative.

The evaluation indicated that patients with pre-morbid functional problems would make good candidates for primary and expert gerontological nursing care. Further, it reinforces the importance of a comparison group: had the evaluations looked only at the intervention group before and after treatment, they would have observed a functional decline associated with primary nursing - when, in fact, primary nursing was associated with a reduction in the extent of decline, relative to conventional care.

3.7 The Patient Hotel

This model of intermediate care was pioneered in Sweden, where it is a routine part of the health care delivery structure. Patient hotels have also been used in the U.S., although they are still somewhat unusual (Audit Commission, 1992).[4] They are freestanding three-star hotel accommodations adjacent to the acute care hospital. Often, qualified nurses are employed as

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[4] One American variation on the patient hotel is the cooperative care centre, which also provides hotel-type facilities for both patient and partner. Ideal service users are patients with new diagnoses who have a partner to provide supportive care. While in the cooperative care centre, the partner carries the main responsibility for care, with help and encouragement from health professionals. The goal of this service is to reduce demands on health care staff, provide a safe environment with immediate access to medical support, and educate patients in self-care and partners in caring skills.

receptionists; however, the expectation is that patients will manage their own medication and other care needs. Relatives may also stay, but will be charged. In many instances, patient hotels are privately operated.

In this model, the suitable users are patients who are *"entirely self-caring, mobile, and able to manage their own medication and* *__either__* *need to be resident for at least one night in the hospital site... __or__, having recently required acute care, are awaiting planned discharge and cannot go elsewhere in the meantime"* (Harvey et al., 1993). Typically, these will be people who are undergoing diagnostic investigations or low-level therapies. Because their presence at the hospital is required, but they are not expected to need monitoring between treatments or tests, a more pleasant and less costly environment is provided. Unlike community hospitals, long stays are neither expected nor allowed; one night is usual and five days are often taken as a maximum.

No evaluations of patient hotel services were found. Rather, articles tended either to promote the model or be alarmist about it; they were published in commercial health service magazines or newspapers (see, e.g., Pesmen, 1989; *The Observer*, 1992; see also NHSME, 1992). Other references in the literature (e.g., Abrahamsson et al., 1995) make it apparent that Swedish patient hotels are also used to house hospital research subjects. According to Vaughan (1996), the primary U.K. application to date has been to use patient hotels to provide convalescent care to patients with low-intensity needs who lack home support. Also, Harvey et al. (1993) conducted a study in Wales to estimate the proportion of hospital patients suitable for patient hotel accommodation, and to gauge patient and staff views about the option.

In the Welsh study, during a two-month period, seven census days were selected at random and inpatients in virtually all wards (n=3972) were assessed by a consultant and a senior nurse for their suitability *on that day* as users of a patient hotel facility. The overall proportion of patients deemed suitable was 10.2 percent. The likely users came from obstetrics and gynaecology, general surgery, general medicine, and geriatric medicine. Nearly half were originally admitted as emergencies. About one third of potential users resided outside the immediate geographical area. In most cases, the reason for accommodation was either a simple investigation or low-level monitoring (for example, either before or after surgery). The average anticipated length of stay was 2.4 days.

To validate the clinicians' choices, a random sample of 70 patients deemed suitable for the patient hotel was further assessed by a member of the research staff. With a second opinion, 10 percent would have been excluded because of inadequate mobility. The same sub-sample was queried about the acceptability of such a service; 85 percent reacted positively, although a significant minority would object to the patient hotel also being open to the general public. Similarly, 90 percent of staff surveyed approved of the patient hotel in principle, but 62 percent disapproved of opening it to the general public.

This study provides hypothetical support for the patient hotel as a component of intermediate care. It suggests that approximately ten percent of patients might spend a portion of their acute care stay in a lower-cost and more holistic setting. Interestingly, in more than half the cases, the anticipated patient population differed from the expected users of community care, i.e., they were not geriatric patients. What is needed now are well-designed studies to test the cost-effectiveness and acceptability of the patient hotel option in the U.K.

3.8 Early and Supported Discharge Schemes: Infants and Children

For health care providers who seek ways to safely reduce hospital lengths of stay, supported early discharge schemes - effectively, pre-planned home-based intermediate care - can be an attractive option. It is not surprising, then, that they have been more carefully studied than any of the intermediate care alternatives described in this section. One of the best-established and most researched areas of supported early discharge is maternity. Another area, less commonly studied, is early discharge of paediatric patients. Children are believed to suffer the disruption of hospitalisation particularly acutely; hence, innovations to keep them at home are greatly desired.

3.8.1 Newborns and their Mothers

Researchers debate the appropriateness of early discharge for newborns and their mothers. Casiro et al. (1993) favoured early discharge, noting that although modern advances in perinatal care have dramatically improved the survival chances of low birthweight infants, prolonged hospitalisation increases the risk of complications. In contrast, Braveman et al. (1995) argued that with shortened hospital stays, women have less time for in-hospital learning about breastfeeding and other aspects of infant care; nor can the mother and infant be clinically monitored during a vulnerable period.

The body of published research suggests that, on balance, early discharge for a carefully screened subgroup, with pre-discharge preparation and post-discharge home visits, can be both safe and cost-effective. That is, early discharge without intermediate care can be dangerous, but targeted intermediate care can not only protect infants but improve quality of care.

In one U.K. study, Rieger and Henderson-Smart (1995) used a before-and-after design to evaluate an early discharge and home support programme for families of special-care infants, the centrepiece of which was what the researchers termed "extended care." By providing support in the home, mother and infant were able to be discharged earlier than before the program was implemented. GP and obstetrician visits were reduced and children was judged to be less difficult. Part of the intervention was to transfer infants from an intensive care facility to a nursery closer to where the family lived. This resulted in direct savings on ambulance costs as well as freeing the ambulance service for other emergencies. Finally, no increase in measures of maternal anxiety were observed.

The authors concluded that the Neonatal Early Discharge and Family Support Programme was a worthwhile extension to inpatient intensive care. However, a before-and-after study design is not capable of revealing whether the differences observed were due to the supported early discharge programme, or part of a trend toward shorter hospital stays and increased use of community services for all patients.

In Canada, Casiro et al. (1993) also evaluated an intervention of early discharge with support for high-risk infants; in this case, the researchers used a randomised controlled design to study 101 low birthweight babies. The intervention provided public health nursing, including home visits and telephone contact, and homemaker services for up to eight weeks, depending on assessed need. After one year, analyses indicated that there had been a significant reduction in average length of stay in hospital for infants who weighed 1501 to 2000 grams at birth, but not for neonates under the 1500-gram threshold. There were no deaths and no group differences in re-admissions, use of ambulatory care, or scores on a scale that measured the quality of an infant's home environment. However, the *minimum* cost of hospital care was approximately £545 per day, while the *total* cost of community-based services averaged £390 per infant.

Kotagal et al. (1995) also found that a supported early discharge programme was associated with dramatic savings. The programme provided home health care, outpatient clinics, and physician care to patients identified as low risk for the intervention. During a seven-month period when the programme was implemented, an estimated 2073 days of hospital care and approximately £1.8 million were saved. The reduction of hospital charges was 30 times greater than the programme expenses. Again, no infants died. Only one was readmitted to hospital for what turned out to be a four-day stay.

Finally, Braveman et al. (1995) conducted a critical review of the literature on early discharge of newborn infants. They examined early discharge with and without posthospital support. Only the former will be reviewed here, as they are the programmes which constitute intermediate care. There were three such studies that defined early discharge as less than 24 hours after birth (Avery et al., 1982; Carty and Bradley, 1990; Nabors and Herndon, 1956), eight that defined it as 24 to 48 hours after birth (Conrad et al., 1989; James et al., 1987; Jansson, 1985; Norr et al., 1989; Welt et al., 1993; Waldenstrom et al., 1987, 1988; Williams and Cooper, 1993; Yanover et al., 1976), and six that defined it as longer than 48 hours (Arthurton and Bamford, 1967; Brooten et al., 1986, 1994; Craig and Muirhead, 1967; Guerriero, 1943; Hellman et al., 1962). As the citations indicate, the reviewers' time frame went back to pre-World War II. The relevance of the early studies must be questioned, given the tremendous medical advances since those years.

The authors were justifiably critical of the methodological limitations of most of the studies. Many lacked comparison groups, had small sample sizes, or drew hasty conclusions given the data. Braveman et al.'s summary of the literature was that early discharge with repeated home visiting by a nurse may be safe for a carefully selected group of newborns and their families. Predictors of success are populations that are "medically, psychosocially, and economically at low risk." Carefully screened women who prefer early discharge and receive intensive home follow-up may have improved well-being and better adjustment, relative to other mothers. The findings regarding possible increases in infant morbidity were not conclusive, given the sample sizes; nor could the studies detect clinically significant differences in rehospitalisation rates.

3.8.2 Children

Although flawed in their designs, two studies (Atwell and Gow, 1985; Bash et al., 1994) serve to characterise the endpoints of posthospital intermediate care interventions for children. In the U.S., Bash et al. conducted a cost analysis of an early-discharge programme with "enhanced communication between patient and specialist" for children with cancer who were hospitalised with acute infections, mostly earaches. This is a rather minimal intervention. Children (*n*=74) who were deemed low-risk were discharged home approximately five days earlier than they would have been under traditional care. The length of stay savings was estimated by measuring the number of days that children continued to have neutropenia (abnormally low leukocytes) at home.

Twenty children were lost to follow-up; of those remaining, treatment cost approximately $5000 (£3125) less per patient, on average, than it would have with longer hospitalisation. Although the authors claimed sizeable savings without harm to the children, the study is probably biased. The sample was small; early discharges who were readmitted to hospital were excluded from the cost analyses; clinicians' and outpatient fees were not measured; and the savings calculations assumed constant per-day hospital costs when it is usually the case that the first inpatient days are the most expensive.

The second study (Atwell and Gow, 1985) was also a cost analysis, in this case of early discharge after day surgery, with follow-up from paediatric-trained district nurses. Focusing on children under five years old, nearly 8,000 visits from district nurses were reviewed and costed, along with the cost of day hospital nursing as required. This is a moderately intensive intermediate care package. Benefits of reduced trauma and lower risk of cross-infection were assumed rather than ascertained; like the Bash et al. study, there was no inpatient comparison group. The researchers found that total costs for all cases studied over a one-year period amounted to £85,000 compared to the £300,000 that would have been spent, if patients had remained in hospital. The latter figure was calculated by assigning average per-day costs for each type of surgery undertaken. Although the validity of this study is severely limited by its study design, it again suggests that early discharge brings large savings.

3.9 Early and Supported Discharge Schemes: Rehabilitation for Elderly Patients

Three bodies of work will be discussed here. The first is a literature review by Dunn (1996) in which she examined eight post-hospital discharge schemes targeted to elderly patients. The second consists of a series of publications regarding two separate studies assessing the effectiveness of post-discharge rehabilitation for stroke, and an attempt to integrate their results with a sort of meta-analysis (Gladman et al., 1993, 1994a, 1994b, 1995; Young and Forster 1991, 1992, 1993). Finally, several other studies - examining cataract care, follow-up for fractured neck of femur, and in-home posthospital team care for mixed diagnoses - will be summarised.

3.9.1 Systematic Review of U.K. Interventions

Dunn's review of posthospital discharge schemes in England and Wales - defined as "*services which offer more than normal provision to patients in their own homes on discharge from hospital*" - begins with the observation that in the last 10 years, only eight studies have been evaluated with a concurrent control group. Findings regarding effectiveness were decidedly mixed, as follows:

- First, in an intervention that provided domiciliary rehabilitation to stroke patients identified by their GPs, Wade et al. (1985) found almost ***no significant differences*** between those who received supportive care (*n*=440) and those who did not (*n*=417 patients in a different district nursing unit for whom the team was unavailable). The groups were similar in hospital admission rates, as well as the proportion able to be discharged home early. There were no differences in measures of functional recovery or emotional adjustment. Carer stress was also approximately equal between groups.

- Second, Anand and Pryor (1989) evaluated a home rehabilitation scheme for patients with fractured neck of femur that was developed in the context of the Peterborough Hospital at Home programme (HaH; see below). Patients assessed as suitable for the intervention but living outside the catchment area were used as controls. About 40 percent of hip fracture patients were deemed appropriate for early discharge. ***Outcomes were mixed***. Those with the HaH intervention spent less time as inpatients but experienced more fracture-related re-admissions than the comparison group. There were no mortality differences observed. The treatment group regained pre-injury independence more quickly but, within several months, the groups had equalised in their functional ability. HaH was considerably less costly than conventional care (£722 per patient, on average) in part because the effects of substituting social services or informal care for formal health care services were not included in the economic evaluation.

- Third, Victor and Vetter (1988) found that extra home help did not enable severely disabled elderly patients (n=98 treatment, 75 comparison group) to reduce their length of stay, re-admission rates, probability of long-term care placement, or mortality rates; nor did it improve patients' physical function or depression levels. There were ***no significant differences***.

- Fourth, a study evaluated by Townsend et al. (1988, 1992) had more ***equivocal findings***. Using a large sample (n=903) and randomised controlled design, the evaluation examined the effects of a multidisciplinary intervention that involved in-hospital contact, team support on the day of discharge, and fairly intensive contacts during the first two weeks at home. Although at three months there were no significant differences between groups, at 18 months the intervention group had significantly fewer re-admissions than the control group. The difference amounted to a savings of £220,000. However, the magnitude of savings may not be valid because the 18-month follow-up study was subject to a 28 percent attrition rate, and the cost-effectiveness calculations were unsophisticated

- Fifth, Challis et al. (1991a, 1991b) used multipurpose workers to help frail elderly patients who required long-term care but wanted to remain in their homes. Referrals were made by a multidisciplinary team. Control group subjects were long-stay patients in an adjacent district with comparable practice styles. ***Results were mixed***. At discharge, the treatment group had been in hospital for significantly less time than the control group. In the first six months of the study, the treatment group had a significantly higher mortality rate than the control group. However, survivors' well-being improved over the six-month period post-discharge, and carers showed less distress than control group patients' families. Costs were approximately equal between intervention and control.

- Sixth, Martin et al. (1994) evaluated an intervention that offered services to a carefully selected patient subgroup - eight percent of discharges, or 54 people - who were deemed suitable candidates for an intervention to help people remain in their homes, despite initial post-hospital frailty. They received intensive nurse-managed multidisciplinary services in their home immediately upon discharge and thereafter for up to six weeks. Initial contact was made while the patient was still in hospital. Study subjects were reassessed frequently over the six-week period, and re-evaluated after six and 12 months. The ***intervention appeared to be effective***. Treatment group members had fewer re-admissions and were more likely to remain in their homes at the end of 12 months. There were no differences observed in mortality rates, physical or mental functioning, or morale.

- Seventh, Donald et al. (1995) evaluated a scheme that used a multidisciplinary team of nurse, occupational and physiotherapists, and a multipurpose worker to help another carefully selected group of patients (*n*=30 in each group) return home earlier than would be expected. The ***intervention was successful in achieving earlier discharge*** for patients, by five days, on average. ***However, at six months, there were no differences*** in the proportion still alive, in a nursing home, or living at home; nor in their functional status, morale, or use of services.

- Finally, Dunn et al. (1994) assessed the effectiveness of a single post-discharge contact with a health visitor in limiting re-admissions. Patients (n=204) were randomised to a health visitor intervention or usual care. The intervention made ***no significant impact*** on re-admission rates or number of re-admission days.

3.9.2 Home-based Rehabilitation for Stroke

Turning to the stroke rehabilitation studies, both were randomised trials. In the first, Young and Forster evaluated the Bradford Community Stroke Trial (BCST; n=124), which compared home physiotherapy with after-care in geriatric day hospitals. The study showed that patients given physiotherapy at home had significantly greater functional independence at six months than those treated in a day hospital. Patients were assessed two and six months post-discharge; no information was collected after that.

The domiciliary stroke rehabilitation study in Nottingham (DOMINO) was a stratified randomised trial (n=327), in which an in-home rehabilitation service was compared with routine hospital-based rehabilitation services (i.e., outpatient departments and day hospitals) for post-hospital stroke patients. At six months, no differences in functional ability or perceived health were observed, overall. However, subgroup analyses indicated that patients discharged to domiciliary rehabilitation from the local Stroke Unit, who were a relatively young and pre-morbidly healthy group, had better “household and leisure abilities” than control group patients. In contrast, patients discharged to the treatment from the local Geriatric Unit were more likely to die or be institutionalised than those randomised to hospital-based rehabilitation.

At 12 months’ follow-up, there were no significant differences in outcomes between the groups. Again, significantly more geriatric discharges in the treatment group than the control had a bad outcome; however, the original advantage observed for Stroke Unit patients in the treatment group had disappeared. The authors concluded that for frail elderly, day hospital-based rehabilitation (i.e., the control group condition) appeared to provide better quality care.

The two sets of researchers decided to merge their records (up to six months' outcomes for the DOMINO study) in order to attempt some reconciliation of contradictory findings. (As noted, the BCST showed marginally better treatment at home for significantly lower cost, whereas the DOMINO study indicated that hospital-based treatment produced marginally better outcomes at significantly lower costs, at least for older, frail patients.) Pooled analyses suggested that "there is little to choose from between home- and hospital-based therapy in terms of efficacy" and that choices could legitimately be made on the basis of relative cost.

3.9.3 Other Geriatric Studies

Four other studies examined the effectiveness of posthospital home care for elderly patients, as follows:

- Ancona-Berk and Chalmers (1986) administered five different home care packages to groups of ***cataract patients*** (total *n*=62) and compared the costs of care to average costs for patients remaining in hospital for cataract surgery and follow-up. No assessment of patient outcomes was made; however, the researchers found that most of the intermediate care schemes were more expensive, on average, than usual inpatient care. However, if external costs were excluded, the two most limited home care options were less expensive than usual care (£585 and £429 for intermediate care, vs. £595 for hospital treatment, on average per patient). Obviously, the small sample sizes severely limit the generalisability of findings, and the failure to assess patient outcomes limits the study's usefulness.

- In Sweden, Melin et al. (1995) conducted an randomised controlled trial (*n*=249) to assess the effectiveness of posthospital interdisciplinary home care - including physician, physiotherapist, 24-hour nursing, and geriatric consultation as needed - for older patients with a ***wide range of principal diagnoses*** deemed stable enough to be discharged from acute care. Patients had to have at least some functional limitations and at least one chronic condition. They were followed for six months; central outcomes were mortality, functional status (ADL and IADL), and ability to walk outdoors. After controlling for possible confounding factors, the intervention was found to increase the probability of independent ambulation (p=.027). A trend was also observed in the direction of improved function for group receiving team care. The researchers reported that ten patients were treated to benefit one.

- In Australia, Farnworth et al. (1994) used a before-and-after study design to assess the effects of an early discharge with domiciliary team care for ***hip fracture*** patients. No significant differences were observed in clinical outcomes (complications, living arrangement, mortality). However, the intermediate care ("after") group was discharged 1.6 days earlier, on average, than the usual care ("before") group, and overall treatment was less expensive (Australian $9,280 for supported early discharge group, compared to $11,060 for the usual care patients). As with other studies of this design, no adjustment was made for possible changes in treatment patterns between time points, nor for possible differences in patient populations.

- Finally, another Australian study (Sikorsky and Senior, 1993) evaluated a multidisciplinary posthospital intervention for ***hip fracture*** patients; again, it was a before-and-after design (n=615 in the "after" group; unknown sample size "before"). Clinical outcomes were not discussed; however, the intermediate care group had considerably shorter average lengths of stay (18.9 days compared to 28) and total costs were significantly lower ($1.1 million compared to $1.3 million for usual care).

3.10 Early and Supported Discharge Schemes: Other Users

Although most posthospital intermediate care programmes apply to newborns, children, and the elderly, supported discharge schemes have been tested for other populations as well.

For example, Kessels-Buikhuisen et al. (1994) studied the effects of early discharge with post-acute support for 279 adults who had ***day surgery*** (categorised as hernia, varices, anal surgery, or "other"). The patient's GP, consultant, and district nurse coordinated follow-up care for the six weeks after surgery. Central outcomes were hospital re-admission, patient satisfaction, and health professionals' labour costs compared to the estimated cost of a three-day hospitalisation. No patients had to be readmitted to hospital, and 90 percent expressed high satisfaction with their follow-up care. Costs were substantially equal for the two approaches: £88 on average for the home-based intermediate care, £87 for the hospital-based treatment. The authors concluded that the supported early discharge plan was preferable, in that it was cost-neutral and highly acceptable to patients. They did not report how the freed hospital beds were used; nor did they conduct sensitivity analyses regarding length of stay or inpatient expenditure assumptions.

In an earlier study of a similar intervention (Prescott et al., 1978) GP- and district nurse-delivered home care after ***day surgery*** for varicose veins or hernia was found to be considerably less expensive than either after-care in a convalescent (community) hospital or in the acute-care hospital's surgical ward. Comparative costs were (in 1975/76 prices) £16 per patient, on average, for home-based follow-up, £38 for community hospital care, and £46 for acute-care hospital convalescence. The study sample (*n*=360) was equally divided among the three follow-up alternatives; however, the authors did not state whether they were randomly or systematically allocated - an important omission.

In the U.S., Litvak et al. (1987) compared usual inpatient care to early discharge with an indwelling haemovac drain for women who had modified radical ***mastectomy*** for breast cancer. Forty women - 20 per group, selected systematically to identify appropriate candidates for early discharge - were followed prospectively for 18 months post-surgery. The early discharge group received nursing and other outpatient support. Intermediate care patients tended to be younger than hospital-based patients. They were discharged one week earlier, on average (after 2.7 days rather than 9.7 days), and each received an average of 2.5 nursing visits. Cost savings were substantial: $2,106 per intermediate care patient, compared to $7,672 per hospital patient. Both the charges and length of stay findings were statistically significant ($p<.001$). One intermediate care patient was readmitted due to wound infection; two in-hospital patients experienced complications; otherwise, there were no adverse outcomes. The authors acknowledged that patient selection played an important role in the study; however, they concluded that certain post-mastectomy patients can be discharged home soon after surgery with close nursing follow-up, without sacrificing quality of care. They also suggested that the intermediate care intervention could well generalise to other procedures that require a post-operative drain.

The last study in this section also examined the effects of supported early discharge, this time after vaginal ***hysterectomy*** (Hancock and Scott, 1993). The intervention consisted of daily home nursing visits for one week after discharge. Before surgery, 50 women out of 62 were deemed appropriate for early (72-hour) discharge; no relevant comorbidities or complications, whether physical or mental, were anticipated. The study found that 30 patients were actually discharged after 72 hours; 12 others were discharged one or two days later. (Six had abdominal rather than vaginal hysterectomies, and two patients experienced high fever after surgery so remained in hospital.) Of the early discharges, there were two minor complications and two re-admissions. Over 93 percent of the first (earliest discharge) group reported high satisfaction with treatment and follow-up; however, only 63 percent of the patients discharged after four or five days were as satisfied. The authors asserted that the intermediate care programme was appropriate. As with many studies reported in this section, the lack of a comparison group and the small sample make it difficult to interpret the relevance of their findings.

3.11 Early and Supported Discharge Schemes: Hospital at Home

The last form of intermediate care services focusing on early discharge is the Hospital at Home (HaH) model. Because they have been much studied (and are likely to be covered by other reviewers as part of the *London Commission* effort), these studies will be touched on only briefly, with particular reference to the model's more recent development as a posthospital intervention. Examples of the literature, rather than a comprehensive review, are offered.

The Hospital at Home model originated in France, although Knowelden et al. (1991) note that similar interventions operate in various other countries as well. It derives from two principles: that many patients do not require the expensive services of an acute care hospital, though they have been appropriately admitted at the outset; and that some patients would prefer to be treated at home.

The first UK model was in Peterborough, and served mainly terminally ill cancer patients. In recent years, HaH schemes have proliferated and diversified to include virtually all types of patients except midwifery and psychiatric care (Marks, 1991). Given that most referrals come from GPs rather than consultants, it would be included in this section on post-discharge support schemes only controversially, except that as noted above, a post-discharge component for orthogeriatric patients has been developed (Anand and Pryor, 1989). There are also early discharge HaH schemes for children with orthopaedic diagnoses and certain chronic conditions (Meeds and Pryor, 1990; Jennings, 1994) and for women recovering from major gynaecological surgery (Hackman and Navaneethan, 1993).

Despite methodological limitations to the evaluations, Hospital at Home arrangements have generally been shown to be cost-saving without damage to patient outcomes. Often, re-admission rates are higher than conventional treatment, but average length of stay is shorter and costs are considerably lower (see, for example, Hollingworth et al., 1993; O'Cathain, 1994). The programmes are clearly intermediate between hospital and home but, as noted above, they are also mainly medical in focus. They tend to rely not only on nursing input but also, importantly, on substituting informal caring for formal services. It is the substitution which constitutes a large proportion of achieved savings.

3.12 Early and Supported Discharge Schemes: Summary

Many evaluations of post-discharge intermediate care have been hampered by weak designs or small samples. As such it is impossible to draw confident conclusions about the effectiveness of the approach. The discussion in this report (Sections 3.8 - 3.11) examined 24 published studies focused on newborns and their mothers, children, women undergoing mastectomy or hysterectomy, and adults of all ages undergoing fairly minor day surgery. All of the programmes for infants and children reported positive findings, including significant cost savings in the 83 percent of studies that investigated it, for the intermediate care option. However, only one of these conclusions (Casiro et al., 1993) was based on a randomised controlled study.[5]

For programmes that targeted elderly patients, six reported some benefits to supported early discharge schemes; two indicated that intermediate care was worse than hospital-based treatment; and five found no significant difference between care alternatives. Only six studies examined cost implications: four reported substantial savings, one no difference, and one found that intermediate care was more expensive than usual care - although the finding was sensitive to assumptions.

The failure to establish firm conclusions about posthospital forms of intermediate care for older people probably is not due simply to the evaluations' methodological weaknesses. Unlike most of the research on other age groups, 71 percent of studies described used a comparison group. It is true that the studies controlled for underlying group differences only rarely, and comparison groups were not determined at random; nonetheless, the overall methodological quality of these designs was better than those described elsewhere in this report. More likely, the equivocal results reflect the confusion identified in Section 2 regarding the purpose and appropriate recipients of transitional services. Study samples were mixed between those confined to patients likely to benefit from a rehabilitative approach and those likely to require continuing support; in many cases, no distinction was made between these patient subgroups at all.

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[5] In addition to the Casiro et al. study, Braveman et al.'s review included six RCTs of early discharge with home follow-up (out of 17) but none had sufficient sample sizes to produce generalisable results. Note that if the 17 studies are counted separately, the number of evaluations reported on here increases to 40.

3.13 Conclusion

It is difficult to demonstrate from these reviews a clear advantage to any but the more medicalised of intermediate care options. Nor, however, do the conventional approaches to treatment dominate. In large part, the problem is one of study design. Very few rigorous, statistically controlled analyses have been undertaken on a scale sufficient to identify the isolated influence of an intermediate care intervention.

In addition, as alluded to above, there appears to be some confusion about who constitutes the appropriate user of intermediate care services. It is obvious from the literature that older people have been identified as the major recipients. However, aged patients are not the only appropriate beneficiaries of intermediate care interventions. Newborns, chronically ill children, mentally ill people, disabled individuals, day surgery patients, and people with serious new diagnoses can all benefit, at least theoretically, from intermediate care interventions. In a number of cases reported in this section, the burden of evidence points in that direction.

More important, not all older people are appropriate candidates for intermediate care's transitional, restorative function. For many intermediate care options, the people best able to benefit are cognitively intact, non-institutionalised, and - if the Loeb model is to be taken seriously - at high risk of early re-admission. They have to be motivated. Some of the literature reported here reflected the importance of targeting; others evaluated programmes that did not subscribe to such a narrow approach.

A conservative estimate of the proportion of older patients who, under the narrow definition offered in Section 2, would be suitable candidates for intermediate care would be between 15 and 25 percent depending on the spectrum of intermediate care services available. The estimate is based on the proportion of community hospital patients who are routinely admitted from hospital rather than from the community, plus the proportion of older patients who were identified as potentially suitable candidates for a patient hotel. Admittedly, it is a strict definition which omits GP-ordered admissions from the community. Expanding the anticipated user population to include these patients still would comprise only about two thirds of elderly patients. Given that patients from hospital or community will include a proportion who are previously institutionalised and/or cognitively impaired, perhaps a rough estimate at the high end would be that some 50 percent of elderly healthcare users could benefit from intermediate care services.

A subset of the remaining 50 percent can be expected to be very high users of continuing care, including supportive services provided in some of the same settings and by many of the same professionals as "intermediate care proper." They are an important, but distinct, group in the continuum of care. Thus, from a planning perspective, if one were trying to anticipate "what older people need," intermediate care services would be one ingredient in meeting some individuals' constellation of health and social care demands. If, instead, one focused on how to integrate an intermediate care service into the wider continuum of care, one could expect older people to be disproportionately high users, but it would be a select group of elderly who comprised that user population.

Section 4

Models of Potential Relevance to Intermediate Care: A Systems Approach

4.1 Introduction

The second set of models to be discussed borrow from delivery options that might be relevant to the intermediate care paradigm, and that could be expected either to fit well with the objectives and style of intermediate care, or to fit well with potential developments in health care delivery overall. They are not intermediate care delivery systems *per se*. Rather, they are ways of organising delivery to ensure that patients' needs - including the intermediate care function - are met in a good quality, cost-effective manner. In some cases, the components of care strongly resemble those that make up intermediate care interventions; in others, it is the coordination and integration of services that is of note.

In this context, the following concepts will be explored: discharge planning (especially as implemented in the U.S.), vertically integrated managed health care systems, the continuum of care in mental health treatment, and the continuum of care for frail elderly. In the last category, both American and Canadian models will be described, including community-based case management, the social health maintenance organisation, and the extended nursing home. As in Section 3, where it is available, reference to the literature on these models' effectiveness will be presented.

4.2 Discharge Planning

According to Marks (1994), the purpose of discharge planning is to "bridge the gap between hospital and home." Potthoff et al. (1994) take a broader view. They note that, for many older or chronically ill patients, a hospital admission is only one stage in a series of treatments; to focus only on the point of discharge from acute care hospital ignores the social factors that arise from, or influence, use of hospital services.

After reviewing numerous definitions, the authors cite Feather's (1993) as the ideal; that is: *"A series of events which occur soon after a person is admitted to any given health care setting. Its purpose is to facilitate continuity of care, it is based on an assessment of individuals' health care needs, it maximises client independence, and it gives consideration to comfort, compassion, and economical methods of delivering health care services."*

Similarly, O'Hare and Terry (1988) advocate that discharge planning should occur in many settings besides the hospital, including nursing homes, ambulatory care clinics, day surgery centres, community home care agencies, other community providers, emergency rooms, rehabilitation centres, and doctors' offices.

Although U.K. researchers have examined discharge planning for well over 20 years, with support from the policy sector (*viz.*, Department of Health, 1989a, 1989b, 1992a, 1992b), Marks notes that the incentives to develop discharge planning as an administratively and professionally distinct function within hospitals or other health care settings are far weaker than in the U.S. There, post-acute transfer arrangements (as well as inpatient lengths of stay) are not automatic but must be negotiated and legally defensible. The recognition of discharge planning as a distinct function in the continuum of care has been associated with the development of standardised databases that contain information about patients' pre-admission function, disability levels, home environment, and family support - elements important to planning effective intermediate care. These items tend to be poorly or inconsistently recorded in the U.K. (Marks, 1994; Steiner et al., 1996).

Numerous authors - among them, McKeehan (1981), Proctor and Morrow-Howell (1990), and Mamon et al. (1992) - have enumerated sets of discharge planning tasks. The parallels to intermediate care are striking. For example, Mamon et al. list four responsibilities, as follows:

- ***patient assessment***;
- ***developing a plan***;
- ***providing services***, including family and patient education, and service referral; and
- ***follow-up evaluation***.

In addition to these, Proctor and Morrow-Howell emphasise identifying patients' and families' preferences and resources, and coordinating "plans and paperwork" among hospital personnel, community agencies, institutions, and reimbursement sources. Significantly, Potthoff et al. distinguish between choosing a type of post-acute care and choosing the particular provider of that service. As the researchers note, "Not all options are equivalent."

An important distinction between discharge planning and intermediate care is that very few of the discharge planning definitions include direct provision of services; none involve direct responsibility for nursing or assistive therapies. However, a possible model for intermediate care in the NHS would be to develop discharge planning and intermediate care services in tandem, so that appropriate arrangements could be negotiated smoothly and without duplication. Not all discharge assessments would result in delivery of intermediate care; in contrast, all intermediate care would begin with an early discharge assessment and a negotiated plan of posthospital or post-acute support.

It can be seen that, as configured in the U.S., discharge planning is a *process* that focuses on information, negotiation, coordination, and successful timing. Potthoff et al. found that the process was enhanced by state of the art use of computer technology, extension of the job description beyond arranging services to include supporting patients and families in hospital and afterwards, and operation within the context of vertically integrated managed care systems (see below). It was weakened by organisational structures that treat discharge planning as an independent cost centre instead of folding it into a bundled package of care, because discharge planning cannot generate revenue for a hospital; hence, if the service is not taken as part of an integrated set of treatment-related services, and purchased as such, it may fail to be properly supported. Kane et al. (1993) have argued in favour of bundling acute and post-acute services, on the basis that it would eliminate incentives to cost-shift and would increase both the emphasis on patient outcomes and the efficiency of service delivery.

Discharge planning has grown in response to continuing pressures to reduce patients' time in hospital. Providers find it in their interest to shift the burden of care to posthospital modalities, and planning has become essential to prevent re-admissions or other undesired outcomes. If similar pressures continue to develop in the U.K., the importance of coordinating patients' transitions can also be expected to grow.

4.3 Vertically Integrated Managed Health Care Systems

Vertical integration in medical settings typically involves merging independent physicians, physician groups, and hospitals to create an organised health care network. The quintessential example would be the health maintenance organisation (HMO), in which financial and clinical management are combined, and doctors' incentives favour selecting services that produce the best patient outcomes with the lowest levels of resource use (Steiner and Robinson, 1996). Because there is single ownership, management, and budget for the panoply of services a patient might need, providers have little reason to retain patients inappropriately, shift them from one cost centre to another, or dissuade them from care that has demonstrated therapeutic benefit.

In a network-model HMO, for example, the network may consist of an acute care hospital, a rehabilitation hospital, a psychiatric hospital, a general outpatient clinic, one or more ambulatory care centres for primary care services, a nursing home, a home health nursing program, and an outpatient pharmacy (Shortell et al., 1994).

Shortell (1988) notes that vertically integrated health care systems are not just a loose collection of provider groups under a common corporate umbrella; rather, in the strongest systems, a common culture of care is shared by all members. Further, there is a unified, system-wide strategic planning process; system-wide financial planning and control mechanisms; an integrated approach to recruiting, training, and retaining staff; shared decision-making and information support; and an integrated quality assurance system.

Sumerall et al. (1995) argue that such systems have numerous advantages. Because "the firm" has less uncertainty - its budgets are determined prospectively by annual patient enrolment - it is likely to develop services more creatively. Any capital investment will be into its own product, since the system is integrated. This would make the organisation stronger, which would put it in a position to invest elsewhere, i.e. to diversify and develop new services, in the future. Since physicians and other health professionals within the system have strong financial incentives to limit utilisation and prevent adverse outcomes such as unplanned re-admissions to hospital, they are more likely to cooperate than to shift the responsibility for patient care inappropriately. This makes for greater efficiency. Further, the organisation can take advantage of economies of scope because patient information and clerical functions needn't be duplicated. All this makes it easier for patients to move from one level of care to another.

Though presented more as advocacy than analysis, the authors' arguments have merit. In a systematic review of the U.S. literature on managed care, Steiner and Robinson found that managed care organisations achieve lower levels of health service utilisation than conventional U.S. fee-for-service models of care, with virtually no significant differences in the quality of care. In terms of their capacity to successfully deliver intermediate care services, Fitzgerald et al.'s study of hip fracture treatment (1988) found that HMO physicians discharged 51 percent more patients than other doctors to a nursing home, but had 54 percent *fewer* patients still there at the end of one year. Thus, the managed care physicians were able to treat patients at the most cost-effective point on the continuum of care and produce equivalent or improved functional outcomes.

Given that development of the intermediate care function relies on all providers making the best use of sub-acute care alternatives, service delivery models that create common incentives and are indifferent between retaining or shifting responsibility for treatment, except insofar as it is a cost-effective approach for that particular patient, would be particularly attractive.

4.4 The Continuum of Care: A Mental Health Care Model

Following a somewhat similar paradigm, Lefkovitz (1995) has described a model of health care delivery for mental or behavioural health that, in his words, shifts from "the traditional two-tiered model of care" that favours inpatient and outpatient treatment as the sole discrete alternatives, to a new model based on "a broad and fluid continuum of services." The continuum can be described both in terms of structure and process.

Structurally, a mental health continuum consists of various types of care that differ either in terms of function or intensity, or both. Decisions about whom to treat where emphasise coordination and "smooth, efficient movement" from one level to another. In other words, and similar to the intermediate care conceptual framework, the clinical focus is on transition and restoration.

Lefkovitz cites the following characteristics of an effective continuum of care:

- ***Multiple levels of care***. In mental health, these include inpatient admissions, residential treatment centres, partial hospitalisation, intensive outpatient treatment, in-home care, halfway houses, non-intensive outpatient treatment, and well-being or preventive care services. For children and adolescents, interventions with family or school might also be appropriate. In addition, sub-acute transitional wards are developing in hospital; residential care is newly emphasising no-frills units, assisted living programmes in flats, group homes, "quarter-way" houses, and other innovations; and ambulatory treatments have at least three levels, from four to 20 hours per week with more or less aggressive monitoring of the patient.

- ***Efficient and appropriate access***. A gatekeeper system is required to assess the patient's needs, financial and social support resources, and to identify the availability of services. Although this could be hospital-based, a more holistic and less costly system would be based somewhere neutral with respect to any particular level of care. Lefkovitz recommends developing a community-based access centre, which would provide crisis intervention, assessment, triage, and referral.

Seamless flow within the system. As noted numerous times in this report, seamless flow means no duplication of records, no re-registering of the patient, no repeat paperwork. Information should follow patients as they move along the continuum.

Although the model is fully described, no empirical data on effectiveness was provided. However, Bickman et al. (1996) conducted a rigorously-designed study to see whether children and adolescents treated for mental health problems under a continuum of care model differed in their use of hospital treatment from children and adolescents in a comparison setting, where the only care options were outpatient or inpatient treatment.

The study occurred in the context of a U.S. military programme[6] to evaluate the cost-effectiveness of the continuum of care. Continuum services included all those covered under traditional health insurance coverage but also featured "intermediate-level services" such as in-home counselling, after-school group therapy, day treatment, halfway houses, specialised group homes, and 24-hour crisis intervention. All patients were assessed upon first contact with the system, and case managers worked with a multidisciplinary team to determine an appropriate level of treatment.

Assignment to treatment or comparison group was a function of study site; each was in a different region of the country. In addition, demographic, mental functioning, and other clinical data were collected as covariates. Statistical analyses centred on logistic regression to predict the effect of the continuum model on hospitalisation, after controlling for potentially confounding factors. In fact, children at the two sites did differ systematically, so the statistical adjustment was important. The sample size was 842.

The findings were dramatically in favour of the continuum of care model. Bickman et al. found that, after controlling for other factors, children at the comparison site were more than four times as likely as continuum of care children to have been hospitalised ($p<.05$). In both groups, children with greater prior use of mental health services were more likely to be hospitalised, as were children with worse functional status, as measured by self-harm, delinquency, and school functioning. However, in addition to these factors, comparison group doctors also were significantly more likely to hospitalise children for mood disorders. This was not needed in the continuum of care setting, because a richer set of treatment alternatives was available.

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[6] The programme was carried out under the auspices of the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS).

The authors concluded that integrated treatment, that begins with multidisciplinary assessment and where providers can choose from a wide range of available treatments, can greatly reduce hospitalisation rates for children with mental health problems.

4.5 The Continuum of Care: Models for Elderly People

The final set of continuum models have been proposed, or are in practice, for frail elderly. Most of them centre on case management, which is similar to discharge planning in that it requires patient (or "client") screening, assessment, care planning, service implementation, and monitoring. But it is a longer-term enterprise and tends not be hospital-based. The longer time trajectory requires reassessment and adjustments to arranged service packages. Moreover, the culture of case management has tended in the past to emphasise social needs over health care requirements.

In these ways, the models bear more directly on the broad definition of intermediate care than the narrow one. The transitions they target are most commonly between home and long-term care placement. They are included in this section because not only their conceptualisation of the older population's needs - for social as well as health care - but also the problems faced in achieving effective results may be instructive. In addition, although the examples below are geared to the elderly, many of the programmes could be extended to chronically ill or disabled people of any age.

4.5.1 The National Long-Term Care Channeling Project

Channeling was a 10-state collaborative demonstration project that compared a simple case management intervention to a case management-plus-service-provision model, in terms of their capacity to prevent institutionalisation and reduce long-term care expenditures. The programme failed, in that very little reduction in institutional use was achieved. Formal services replaced informal care, which pleased users and their families alike; however, from a public policy perspective, that was not a desired objective (Christianson, 1988). Analysts speculated that one reason for the Channeling Project's failure was that it placed too much emphasis on personal care (e.g., bathing) and not enough on attending to clients' very real and possibly neglected health care needs. The speculations gave rise to a new emphasis in experiments targeted to frail elderly. In addition, the Channeling Project put the question of social values back on the long-term care agenda: If a service is popular, and improves perceived quality of life but does not reduce costs, what do we as a society want to do about it?

4.5.2 The Social Health Maintenance Organisation (S/HMO)

The Social Health Maintenance Organisation (S/HMO) explicitly combines social and health care - both acute and long-term - into a single case-managed delivery system. As with Channeling, the project is targeted at older Medicare beneficiaries (65+ years). It is predicated upon the belief that an integrated approach to older people's health and social care (such as considering carer availability and support) will facilitate more appropriate treatment plans and reduce long-term care expenditures. Efficiency gains can then be used to fund expanded benefits (Newcomer et al., 1990).

The programmes are ongoing. In the first wave, Yordi (1988) found that the model's success depended in large part on the demonstration sites' organisational arrangements. Programmes that added social or long-term care services to existing health care systems were more effective than programmes that began with a long-term care organisation and tried to contract medical services for the first time. At least initially, S/HMOs were more costly than anticipated, and programmes had to set quotas on the number of functionally dependent elderly they would enrol.

4.5.3 Programme of All-inclusive Care for the Elderly (PACE)

The PACE projects replicate an integrated care model pioneered by On Lok Senior Health Services in San Francisco. The On Lok programme explicitly acknowledged that its service population - low-income older Chinese-Americans - used services differently from white middle-class people and would be willing to accept existing services only if they were presented in ways that suited cultural expectations. From the start, On Lok embraced flexibility as a critical aspect of the care package.

The federal government agreed to fund the programme on a capitation basis; in this way, providers became responsible for fiscal management and the government would not be at risk. At the same time, the global budget allowed for maximum leeway in specifying services. On Lok was extremely successful in preventing institutionalisation and increasing appropriate use of primary care.

Today, 15 programmes around the country are attempting to replicate the On Lok model with different user populations. PACE providers offer a full range of primary, acute, and long-term care services. Multidisciplinary case management and day health centres feature prominently in the model - not unlike community hospitals or community care centres in the U.K. Evaluation results are expected in the coming year (Saucier, 1996).

4.5.4 Robert Wood Johnson Foundation's Hospital Initiatives in Long-Term Care

In 1982, the Robert Wood Johnson Foundation funded a $6.5 million programme for 24 selected hospitals to develop institutional and home-based services to meet the health care needs of the elderly. The programme's goal was to "postpone or prevent institutionalisation, reduce acute hospitalisations, and retard the deterioration of personal functioning" (Robert Wood Johnson Foundation, 1982).

These were hospital-based comprehensive case-management programmes, and were expected to integrate health and social services with greater ease than ever before. However, doctors continued to make minimal use of the available services. Only 30 percent of referrals came from physicians. In addition, only 20 percent of the projects were located within existing discharge planning departments; most discharge planners were either unaware of what case managers did, or resentful of what they perceived as a duplication of their own responsibilities. Most hospitals elected not to continue the service when the demonstration project ended (MacAdam et al., 1989).

4.5.5 Canadian Service Model for Vulnerable Elderly

Shapiro (1993) described an approach to care for vulnerable elderly - that is, older people at risk of institutionalisation - that is being adopted in several Canadian provinces. Once again, the goal is *"to provide a continuum of care, in which vulnerable elders can move from one health care locus to another, more appropriate place smoothly, quickly, and in accordance with their urgency of need."* This system, the author adds, *"also enables a community to make the best use of limited acute and long-term bed resources."*

The service components in this continuum of care for older people are as follows:

- ***"Sensitive physicians"***. Doctors are encouraged to keep people in their communities.
- ***A community care programme***. The core of this component is home assessment and arrangement/provision of supportive health, personal care, and social services. Shapiro recommends that both a nurse and a social worker make the home visit, that clinical information be provided by the primary care physician, and that one person - a nurse when the patient's health is unstable, a social worker when it is social status that

is most unstable - be responsible for coordinating care and monitoring or re-assessing the need for care over time.

- ***A geriatric assessment and rehabilitation unit.*** This seems to be what in England is called the community hospital. It is expected to be fairly small, and its purpose is to provide consultative and direct services to people referred by GPs, hospital staff, or community care managers; it is also an "emergency resource" for these providers.
- ***Adult day care.*** This service has a social function for the older person, but is viewed primarily as a respite opportunity for informal carers.
- ***Respite care resources.*** Shapiro stresses that respite beds should be carefully rationed, with preference given to people whose carers are temporarily out of town.
- ***Long-term care beds.*** Whether in free-standing institutions such as nursing homes or in long-stay hospitals, Shapiro argues that a common gatekeeper should coordinate use of these beds. The assessment team should determine whether a person needs so much supportive care that it will be less costly for them to be placed in a long-term care setting; if so, the first available bed (wherever it is) should be given to that person.

An interesting feature of the model is that it insists on a single-entry system to make the most of limited resources. Single-entry is considered the vehicle by which duplication of services can be avoided, and rationing according to greatest need can be implemented. Shapiro has no qualms about acknowledging the need to set priorities, and argues that providing services to people who don't truly need them can result in an unhealthy over-dependence on the part of the older person. Given the centrality of an initial home assessment to determine a person's needs, Shapiro supports those programmes (in Alberta and Manitoba) that locate the gatekeeping function in the community care programme, as opposed to the hospital or doctor's office.

Again, there is no evidence on the effectiveness or cost-effectiveness of the implemented model. However, in two small evaluations, one study found that although home care nurses and social workers agreed in their ratings of patients' functional status, they had low levels of agreement on the adequacy of social circumstances and even lower agreement rates in their assessment of mental function. This suggests that both specialists would indeed be needed to conduct a proper assessment. In the second study, researchers found that team case management cost less than individual case management because it resulted in more judicious use of services.

4.5.6 Comprehensive Geriatric Care, or the Extended Nursing Home

Finally, in the U.S., Burton (1994) described a nursing home-based continuum of services for older people, The Johns Hopkins Geriatrics Center. It has been in operation in Baltimore, Maryland since 1983. The centre began by linking an existing long-term care facility to an outpatient medical practice (run by four full-time physicians) on the same site and implementing a physician house call programme. In subsequent years, the centre added an adult day care programme, a comprehensive geriatric assessment clinic, a continence evaluation and management programme, a geropsychiatric clinic, a metabolic bone clinic, a chronic ventilator unit, a rehabilitation unit, and a sub-acute care unit. During the same period, the acute hospital added a geriatric unit. The programmes are self-supporting in that all primary care programmes are reimbursed under the government's Medicare programme.

No formal evaluations have been conducted of the centre's effectiveness; however, Burton identified three crucial components to creating an integrated continuum of care, as follows:

- ***On-site GP and consultative surgeries***. Burton hypothesised that having doctors on site on a daily basis would improve both the quality and integration of patient care. Physicians with offices in or adjacent to a nursing home would not be confined to treating only nursing home residents; however, their routine presence would make it natural for doctors to play a larger role in nursing home planning and operations management. Another expected benefit would be the "substantial and appropriate" reduction in transfers to the acute-care hospital for treatment or diagnostic work-ups. By treating cognitively impaired patients in a familiar environment, physicians would protect these patients from the significant deteriorations in physical and mental function - and the concomitant increase in serious medical complications - known to result from disorienting transfers (Tresch et al., 1985; Morton and Creditor, 1993). Finally, as the health professionals who commonly visit the acute hospital on a daily basis, doctors - "more than any other member of the health care team" - have the potential to act as the bridge between acute and long-term care.

- ***Adult day care programme.*** As with the Canadian model, day care is viewed as a central component of the continuum of care. Burton argues that nursing homes are likely to have common-room space and appropriately skilled staff to administer such programmes, which allows for economies of scale. Earlier discharge from hospital is possible if good adult day care programmes exist, and permanent moves to a nursing home can be prevented as well.

- ***Physician house call programme*.** The third component is a programme that serves home-bound community residents. Doctors could collaborate with home health care agencies (akin to district nursing working in tandem with social services' home care). Multidisciplinary team meetings, based at the nursing home, would be central to care planning, for the purposes of treatment, prevention of institutional placement, and planning secure discharge of nursing home patients to their homes.

What is distinctive about this programme is the establishment of a centre that reaches in two directions: towards the acute care hospital, by providing a range of resources that reduce admissions and make secure discharge possible; and towards the community, by offering services that facilitate independent living. A further feature that is critical to the model advocated by Burton is the ongoing, on-site involvement of doctors.

More than many of the other models presented in this section, the extended nursing home seems to be a true example of intermediate care. It is multi-faceted in its service provision. Like the Lambeth Community Centre, GPs are placed firmly at the centre. However, there is little mention of nursing. The services that have developed during the Geriatric Center's life place heavy emphasis on the medical options in addition to more functionally-oriented programmes of care.

4.6 Lessons and Themes

In addition to emphasising a concept of care that is fluid and dynamic, as opposed to switching from one steady state to another, the models presented here as having potential relevance to intermediate care had the following characteristics:

- Most emphasised the importance of good information and, equally, the importance of collecting it from the patient only once. Information-gathering efforts should not be duplicative.

- Many also emphasised the importance of a gatekeeping function to coordinate planning and services, as well as to rationalise the delivery of care. Although an acute care hospital setting might seem to have organisational advantages, the literature suggests this is not so. District hospitals are a relatively high-cost setting that inevitably reinforce a medical model of care, rather than a holistic one. Gatekeeping might be better set in a community hospital, community centre, or comparable milieu. Also the Hospital Initiatives demonstration suggested that unless clinicians have mentally adjusted to a model of care that includes early assessment of post-acute options, planning services offered in the acute setting will simply be ignored.

- The range of intermediate care services was broad and diverse; however, points of commonality included: centrality of patient assessment, centrality of GPs, provision of adult day care, and multidisciplinary decision-making.

- Integration of financial and therapeutic control encourages use of the full spectrum of care options, whereas separation encourages each provider sector to protect its own turf and to cost-shift wherever possible.

The relationship between intermediate care and discharge planning could be extremely important. If fully operationalised, not all discharge assessments would result in delivery of intermediate care; but all intermediate care *would* begin with a discharge assessment (and a negotiated plan of posthospital support). Home assessment could play a similar role *vis-à-vis* intermediate care facilities, by identifying suitable candidates and opening negotiations for service.

Section 5

Research and Policy Issues

Several concluding comments are in order.

First, regarding the state of the literature, it must be re-emphasised that the selections in this report were chosen for breadth rather than depth. The report has as its main objective the development of a useful and relevant framework for thinking about a set of services which, despite their existence for well over twenty years, remain controversial - possibly because of conceptual confusions that made service planning and evaluation exceptionally challenging.

Second, although there is a vast literature, much of it uses small samples and is qualitative at heart rather than quantitative. As such, it does not allow generalisation from the policy perspective - only from the perspective of programme developers, who can benefit greatly from a case study methodology.

Third, in assessing the import of the evidence presented, it is recommended that two questions be considered:

1. Are the measured outcomes the ones of most interest?
2. How much weight should a given study receive?

Regarding the first question, intermediate care has multiple potentially relevant outcomes. These include medical, functional, subjective well-being, living arrangement (especially living at home vs. institutional placement), carer, health professional (especially satisfaction) and managerial outcomes (including utilisation measures such as length of hospital stay, number/type/quality of contacts with health service personnel, and cost measures including direct and indirect, fixed and variable, and opportunity costs). Not only is it important to consider whether the outcomes measured are the ones that matter most, but also to consider whose point of view was implicitly expressed when the outcome measures were specified.

As to the second question, few studies to date meet the most rigorous criteria for scientific, generalisable research findings. Yet policy makers cannot wait and must make do with the evidence to hand. In this context, consumers of evaluative information should consider the extent to which a study meets or falls short of rigorous standards, and should weight findings

- even subjectively - to reflect the variations in methodological quality. Quality criteria include, most importantly, whether the sample size is adequate to produce generalisable findings, whether the study design includes a comparison group, and whether that group is strictly comparable to the treatment group. In order to draw confident inferences about a programme's costs and effectiveness, selection bias must be reduced, probably through statistical adjustment.

This is a particularly significant issue in intermediate care, because most schemes proceed on the basis of careful selection criteria used to identify appropriate candidates. Simple comparison of those discharged, for example, to ordinary care versus those included in a post-discharge support scheme will produce biased results and will offer no valid conclusions about the scheme's probability of working on a broader basis. Even allowing for an intention to provide intermediate care services only according to stringent selection criteria, those criteria need to be far more specific than "based on the judgement of the team" --- at least until programmes have been replicated and evaluated in multiple settings.

Fourth, the literature suggests that intermediate care is an area where GPs and nurses must work together as peers and collaborators. The very reference to community hospitals, which are said to be nursing-led, as "general practitioner hospitals" indicates clearly that the links between primary and intermediate care are fully as significant as those between secondary and intermediate care. Once again, the bridging function is highlighted.

Fifth, the literature suggests that services to chronically frail elderly are highly unlikely to be cost-savers, although they may be critically important to, and very much desired by, patient and family. Given the importance of ascertaining the cost-effectiveness of services, it becomes all the more important to maintain the conceptual distinction between transitional services with a restorative function and transitional services with a maintenance function. Appropriate users should be identified separately, and services should be planned and evaluated separately. A useful way to think about the issue is to consider which patients are appropriate candidates for discharge planning, and which for case management. Only then will it be possible to observe the *relative* costs and benefits of each type of intervention.

Finally, Section 4 concentrated to a large degree on concepts of a continuum of care. It is relevant to intermediate care because the capacity of intermediate care clinicians (that is, nurses and therapists) to achieve their objectives will be profoundly affected by the way that transitions are planned and executed. The actual nurturing and rehabilitative services, from primary nursing to care planning and follow-up, are almost certainly amenable to professional development and training efforts. However, the system of health care delivery that will support intermediate care services will have to maintain excellent information systems and encourage early assessment of the patient's situation, and strong communication and negotiation with patient and family/carers on the one hand, and with GPs, hospital health professionals, and consultants, on the other.

It is possible that the medical advances and demographic transitions discussed at the beginning of this report are causing a paradigm shift in what constitutes a useful health care system. Intermediate care services are wanted because people are better able to move from one health state to another than once was the case. It may be the moment, then, to ensure that its potential is rigorously investigated and carefully assessed.

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