Intermediate care—a good thing?

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Abstract

In this paper, the intermediate care concept will be developed, and a new definition proposed. The evidence on effectiveness will be summarised, focusing on comprehensive geriatric assessment, admission avoidance, nurse-led units for post-acute care, and supported early discharge arrangements. It is a working premise of the paper that, in principle, intermediate care is not only a ‘good’ but also a necessary ‘thing’. However, with the exception of comprehensive assessment, the evidence for many services that fall under the broad rubric of intermediate care is lacking, inconclusive or negative. The implications of this for both practice and research will be discussed.

Background

A number of factors converge to place intermediate care at centre stage in health care debates (Figure 1). First, especially in Europe and North America, the demographic transition is associated with increasing numbers of people who live long lives with multiple chronic conditions, leading to complex issues of medical management. The associated pressures to manage demand for hospital beds have been fierce [1]. Demographic changes affect not only patients but also professionals. Nursing shortages notwithstanding, the NHS labour force includes many experienced staff who seek, and are likely to be capable of, new roles and greater clinical autonomy [2].

Secondly, the great twentieth century benefits of medical technology and associated professional specialisation have also incurred some costs. Low technology aspects of treatment have lost status and may constitute a gap in care [3]. The culture of care—what might be called ‘expert nurturing’—is itself controversial, for some professionals implying a passive approach to treatment and for others representing an essential component in recovery [4–6].

Thirdly, certain UK policy developments are relevant. Last year’s NHS Plan features intermediate care prominently [7]. The requirement that health and local authorities develop joint investment plans may enable providers to make tangible progress in integrating therapeutic and financial intent. A recent survey found that between April 1998 and October 1999, the area of greatest progress in organizing primary care services for elderly patients was in intermediate care [8]. Primary care groups/trusts may allow for more innovative approaches with older patients. The experimentation through Personal Medical Service (PMS) pilots represents the vanguard of such development, with 31% of first-wave pilots using new contract flexibilities to improve quality of care for elderly people [9].

The concept of intermediate care

Defining intermediate care has been difficult and sometimes contentious [10, 11 (see Table 1)]. Review of the literature identifies both themes and conflicts [12]. For example, there is general agreement that intermediate care services are supportive rather than directive. The model of care is seen to follow nursing rather than medicine, in that patients are viewed holistically and ‘care’ rather than ‘cure’ dominates. A third theme is that care is delivered in or near the patient’s home, or in a home-like setting. The important common element here is an interest in maximising patients’ and families’ access, comfort and control. Finally, a small set of care elements feature consistently. These are holistic assessment, timely re-assessment, flexible input from a multi-professional team and, significantly, a plan either to send the patient home as quickly as possible or to keep the patient out of hospital in the first place.

At the same time, there are important disagreements. One is a lack of consensus on the goal of intermediate care, including whether it is primarily patient-focused or organization-focused. Patient-focused goals have been variously described as ‘recovery’, ‘maintaining people in their homes’ and ‘finding suitable alternatives (to home)’ [13, 14]. Organizational objectives tend to emphasise shorter lengths of stay, lower costs, improved throughput or more appropriate hospital admissions, but also
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Figure 1. Influences on development of intermediate care.

include nursing development [15-17]. Vaughan and Lathlean attend to both, stressing ‘timely therapeutic intervention’ to ‘divert hospital admissions’ [18].

There is further disagreement about the intensity of care. Some authors [19, 20] emphasise low-tech nurturing, but care options such as hospital-at-home may be predicated on home-based delivery of ever more intensive technologies. Pearson et al. (1993) and Steiner’s (1997) characterizations would allow one venue for intermediate care to be the hospital, whereas Coulter (1998) rejects the idea by definition [5, 12, 21]. LeMesurier and Cumella (1999) not only embrace hospital- and home-based options but would include ‘re-ablement’ services delivered in nursing homes [22]. Finally, there is a lack of consensus on the appropriate users. McCormack’s definition would allow for frail or demented patients’ inclusion, as would Coulter’s; Pearson et al.’s would not [14, 19, 21].

Different understandings will lead to strikingly different admission criteria and models of care. Or so it would seem. In practice, there seems to be a general recognition that the patients most likely to be referred to intermediate care services are elderly, frail, with a mixture of medical and social needs, and with highly variable rehabilitative potential—an observation which has, understandably, alarmed the British Geriatrics Society [11]. The following definition, which reiterates some and modifies other elements of that proposed earlier by the author [12], is now proposed:

Intermediate care refers to services or activities concerned with patients’ transitions between hospital and home, and from medical/social dependence to functional independence. It is intended either for post-acute patients requiring recuperative support, or for community dwellers (usually frail or chronically ill) who are at short-term risk of avoidable hospital admission.

This definition embraces some features presented in Table 1 and rejects others. First, intermediate care would not take in high-tech treatments, even if home-based, because the goals are to support and restore health rather than to lower the cost of care for acutely ill patients. Secondly, it is not meant to be a holding tank for people with a poor prognosis; intermediate care should have a therapeutic, not an administrative, function. Thirdly, the setting for services is not restricted; it is the model of care that matters. Fourthly, intermediate care is not meant to be the health sector’s synonym for community-based (or residential) continuing care. Instead there is an expectation that professional involvement will be short-term, even if for some chronic care patients it is intermittent rather than one-off. Finally, the relevance of services designed to divert admissions is accepted, as is the likely combination of health and social care needs.

Table 1. Key features of intermediate care definitions*

<table>
<thead>
<tr>
<th>Source</th>
<th>Key features</th>
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<tr>
<td>Armstrong &amp; Baker (1994)</td>
<td>Care setting near but not at home, primary care (GP and nursing) emphasis, low intensity</td>
</tr>
<tr>
<td>Brooten et al. (1988)</td>
<td>Home-based supportive services, reliance on discharge planning, emphasis on recovery</td>
</tr>
<tr>
<td>Coulter (1998)</td>
<td>Beyond traditional primary care but does not require acute hospital, includes services that ‘substitute’ and care for people with ‘complex needs’</td>
</tr>
<tr>
<td>LeMesurier and Cumella (1999)</td>
<td>Four separate levels defined by care needs: in-hospital intensive multidisciplinary support, health-led acute or chronic care at home, ongoing support consisting mainly of therapy and social care, and continuing care in residential or nursing home</td>
</tr>
<tr>
<td>McCormack (1992)</td>
<td>Locally based, bridge between secondary and primary care, goals not primarily medical, discharge destination can be to home or institution</td>
</tr>
<tr>
<td>Pearson, Punton &amp; Durant (1992)</td>
<td>Goals are rehabilitative, nurturing and educational rather than medical, patients have high potential for independent functioning, discharge destination to own home</td>
</tr>
<tr>
<td>Steiner (1997)</td>
<td>Range of services, focus on transition from hospital to home and medical dependence to functional independence, objectives not primarily medical, discharge destination identified, recovery or restoration of health thought realistic</td>
</tr>
<tr>
<td>Vaughan and Lathlean (1999)</td>
<td>Services near or in home, goal is to divert hospital admissions (preventive or post-discharge), emphasis on timely therapeutic intervention</td>
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Models of intermediate care

A wide range of services and settings have been promoted as types of intermediate care. It has been reported that every health authority in the UK now contracts for at least some services that fall under the rubric of intermediate care [18]. In addition to those noted in Table 2, community assessment and rehabilitation schemes (CARTs) and ‘EPICS’ schemes based on the American On Lok and PACE models have also been described [23].

Some of the services fit neatly with the definition just proposed, and most fit well with at least one of the models presented in Table 1. Most proponents of intermediate care advocate a complex menu of services, suggesting that the larger and more complicated the service mixture, the more likely it is that patients will receive appropriately targeted treatments [18, 24]. In theory at least, a comprehensive intermediate care strategy might embrace all of the services listed in Table 2, as well as palliative care, crisis care management, or nurse-led education after a new diagnosis of chronic disease. All contribute to a ‘whole systems’ approach to transitional care for older people [24].

The evidence

The discussion above was based in part on the literature, in part on results of a series of conferences and workshops convened by the King’s Fund in England, which brought together commissioners and providers of health and social care, academics and policymakers, all with expertise and interest in transitional services for older people [10, 12, 18, 24]. As such, it summarises current thinking and perceptions from the field. In this section, the research evidence for intermediate care will be examined, focusing on one core element of care—comprehensive assessment—and three important genres of intermediate care services: admission avoidance, nurse-led inpatient units, and supported early discharge schemes.

Methods

The following databases were searched: Medline, Cochrane Library, the York DARE database, Social Science Citation Index, CINAHL and EconLit. Key words included ‘intermediate care’ and each of the

<table>
<thead>
<tr>
<th>Table 2. Models of intermediate care*</th>
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<tbody>
<tr>
<td>Service type</td>
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<tr>
<td><strong>Admission avoidance</strong></td>
</tr>
<tr>
<td>Rapid response teams</td>
</tr>
<tr>
<td>GP nursing home beds</td>
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<tr>
<td><strong>Post-acute care</strong></td>
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<tr>
<td>Inpatient nursing beds</td>
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<tr>
<td>(‘nurse-led units’)</td>
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<td>Supported discharge schemes</td>
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<tr>
<td>Hospital-at-home</td>
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<tr>
<td>Social services rehabilitation</td>
</tr>
<tr>
<td><strong>Either pre- or post-acute</strong></td>
</tr>
<tr>
<td>Community hospital</td>
</tr>
<tr>
<td>Community care centre</td>
</tr>
<tr>
<td>Hotel beds/patient hotel</td>
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</tbody>
</table>

different models described earlier. The terms ‘review’ or ‘systematic review’ were added when the searches produced more than 1000 hits, and the age field was limited to over 60 years. ‘Primary care’, ‘GP’, ‘social services’ and ‘geriatrics/ian’ were also used in combination with key words. When a systematic review or meta-analysis had been conducted this was accepted as the standard, provided its methods were clearly explained. In the absence of a standard, literature reviews were taken as acceptable summaries or, lacking even that, individual published studies were assessed for the quality of evidence. The objective was to assess the nature and quality of evidence for effectiveness, distinguishing between types of intermediate care interventions.

Findings

The Cochrane Library contains one systematic review directly pertinent to intermediate care and three of potential interest. The first is Shepperd and Lilfe’s 1997 examination of hospital-at-home versus inpatient hospital care, findings from which will be reported below [25]. Currell et al’s review of the effects of telemedicine versus face to face patient care may have some relevance, given that five of the seven trials included in the review used telemedicine to advise patients with chronic disease [26]. The method was found to be feasible and acceptable to patients but there were no clinical benefits and inconclusive results on other outcomes. Forster et al’s review of medical day hospital care for elderly patients versus alternative forms of care reflected an emphasis on day hospitals as a type of continuing rather than short-term therapy, so does not fit the intermediate care model particularly well [27]. Langhorne et al’s review of hospital-at-home services to help acute stroke patients avoid hospital admission is of interest, although predicated on a single diagnosis [28]. Four trials were deemed acceptable (outcome data available for three) and no statistically significant differences between intervention and control groups were found. The authors concluded that a radical shift away from acute hospital treatment was unsupported. In addition to these Cochrane reviews, a number of other systematic and general literature reviews were also identified; their findings will now be summarised.

Comprehensive geriatric assessment (CGA)

The strongest evidence is from Stuck et al’s meta-analysis, which examined 28 controlled trials from six countries (Nc=4959, Ns=4912) [29]. Five different CGA models were tested: the hospital-based geriatric evaluation and management (GEM) unit; the inpatient geriatric consultation service, an on-call arrangement for acute medical wards; the home assessment service (HAS), in-home CGA for older people at home; the hospital to home assessment services (effectively, supported discharge); and the outpatient assessment service. Pooling across studies revealed that inpatient GEM units decreased six months’ mortality by 35%. HAS decreased 36 months’ mortality by 14%. GEM, HAS and hospital-to-home assessment all improved living location. GEM units improved physical function at six and 12 months. No significant differences in outcomes were observed for outpatient or consultative assessment. In further analysis, ambulatory follow-up and having strong medical control over the recommendations were found to be strongly associated with improved outcomes. In contrast, the characteristics of the study population—for example, cognitive impairment—were not predictors of effectiveness. Since this meta-analysis in 1993, there have been no further syntheses of data. Individual studies tend to emphasise issues related to targeting.

Admission avoidance

No reviews were identified in this area. Evidence is lacking in the area of GP use of nursing home beds, probably because it is a fairly new development, and little exists beyond programme description or pilot results for rapid response initiatives [30]. There is considerable literature on nurse-led telephone triage and its role in out-of-hours primary care, but most of it tends to be either descriptive reports—often quite detailed—or before-and-after evaluations focusing on organization and process rather than on patient outcomes [31, 32]. An exception is Lattimer et al’s randomized controlled trial (RCT) of one GP cooperative’s nurse telephone consultation service (N=14,492 calls over the 12-month study period) which found that substantial reductions in GP contacts were not associated with any increase in adverse events, defined as emergency hospital admissions within 24 hours and within 3 days of contact and deaths within 7 days of contact [33].

Nurse-led post-acute units

Two literature reviews examined the effectiveness of nurse-led inpatient care for post-acute patients [12, 34]. Both describe a small number of randomized controlled studies, based on one therapeutic nursing unit in the US and two nursing development units in the UK, which claimed significant benefits for nurse-led care but were identified in both reviews as seriously flawed methodologically [5, 19, 35]. Limitations included small sample sizes, biased control groups, failure to adjust for differences between treatment and comparison groups, analyses that did not account for differential attrition, or use of a ‘partisan supporter’ as lead evaluator. The authors concluded that no judgements about effectiveness could be made. Since then, results from a new RCT have been published [36]. The study avoided many of the earlier methodological problems. Its main findings
were that there were no significant differences between treatment and control in functional independence at discharge, discharge destination or in-patient mortality. There appeared to be a trend, however, in the direction of more inpatient deaths for NLU patients and more discharges to nursing home for control group patients. Length of hospital stay was significantly longer, by 18 days on average, for patients in the nurse-led unit. These findings contradicted early, more positive, outcomes reported after piloting [15].

**Supported early discharge**

Of all intermediate care models, this is the best researched. Three systematic reviews were found where the population of interest was elderly, frail or chronically ill and the post-discharge services were not determined by presenting diagnosis [37–39]. Although all are confined to RCTs, variations in the inclusion criteria make for overlap but not duplication. In addition, a Cochrane review of hospital-at-home schemes and a systematic review of post-fracture geriatric rehabilitation programmes were identified [25, 40]. Not all of the geriatric rehabilitation models fit the intermediate care framework but one category, supported early discharge, does. Finally, since the hospital-at-home review, findings from two more well-designed RCTs have been published [41–44].

Dunn’s review of post-hospital discharge schemes in England and Wales, 1985–1995, identified eight appropriate studies [37]. One concluded the intervention was effective, four had mixed results, and three found no significant differences between treatment and control. Bours et al.’s review covered English, French and Dutch-language articles from 1981–1994. Seventeen studies were included but only three were judged to be of good methodological quality. Examining outcome measures of medical consumption, quality of life, quality of care, compliance and costs, the researchers reported that 57% of monitored outcomes showed no difference between treatment and control and the remainder were consistently contradictory across studies [38]. Hyde et al.’s review extended through 1997 and included nine ‘randomized or quasi-randomized’ controlled studies. These researchers asserted ‘relative certainty’ that supported discharge is significantly associated with a greater proportion of patients living at home 6–12 months after hospital admission, relative to patients receiving usual care. They also observed a consistent and related pattern of less institutionalization during the same period, without differences in mortality. Findings on hospital admissions during the follow-up period were mixed (four indicating beneficial effects of supported discharge, two the opposite, and two no difference). It was not considered possible to draw conclusions about the effects on functional status or patient/carer satisfaction.

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The hospital-at-home schemes are also inconclusive. As Illiffe noted, the findings ‘reassure advocates without satisfying the sceptics’ [45]. In a systematic review, Shepperd and Illiffe identified only five studies that met methodological criteria for inclusion and advised that there was not sufficient evidence to support widespread implementation [25]. Subsequently two trials comparing hospital-at-home to usual hospital post-acute care found virtually no significant differences in outcomes between treatment and control groups [41, 43]. The exceptions were that, in one study, hip replacement patients receiving hospital-at-home showed greater gains in quality of life and, in the other, hospital-at-home patients reported greater involvement in decisions. Both studies concluded that, given the finding of no difference, costs became paramount. Shepperd et al.’s analysis found no reductions in total health care costs and some indication that for elderly medical patients receiving hospital-at-home, costs were shifted from hospital to primary care [42]. In contrast, Coast et al.’s analysis found that the mean cost of hospital-at-home care was significantly less than the mean cost of conventional post-acute treatment [44].

Lastly, in Cameron et al.’s systematic review, six studies of post-fracture early supported discharge were included. Findings suggest that this approach reduces total length of stay in hospital, is associated with a statistically non-significant increase in readmission rates, is significantly more likely to return patients to their previous living arrangement and, from ‘a health and social services perspective,’ is likely to be cost-saving [40].

**Summary**

The evidence, then, is a mixture of benefit, deficit and considerable uncertainty. The amorphous results may be due to the complexity and variability of the interventions or it may be due to methodological problems with the evaluations. Some forms of intermediate care simply may not work. A comprehensive meta-analysis would be useful, when sufficient data are available.

**Implications, opportunities and challenges**

Although the reviews conclude that there is insufficient evidence to support widespread implementation of one service approach or another, the dynamic environment in which health policy developments occur does not always allow for caution. It is in this context that suggestions about the future of intermediate care are proffered.

For those who would consider developing an intermediate care strategy, the caution must come in the planning, organization and monitoring of services. There are numerous issues to confront. First, conceptually, the very notion of intermediate care challenges...
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assumptions about stability and risk. At some point, the balance of clinical risk shifts and it becomes more desirable to have a patient out of hospital than in, because iatrogenic illness is now a greater threat than relapse. Professionals recognize this, but disagree in their specification of that balance point. Intermediate care assumes a less conservative approach than usual care.

Secondly, there is the question of whether intermediate care is just rehabilitation by another name. At times, and according to some models, it would seem to be. Yet many UK rehabilitation wards do not grant access to people over age 65. Moreover, the rehabilitation profession has been known to resist the word ‘care’ because, for them, it smacks of passivity and disempowerment. There is a necessity, then, to clarify the attitude towards care; that is, to come to a conclusion regarding the degree to which an intermediate care service provides expert nurturing and the degree to which it offers rehabilitation _per se_. At the other end of the spectrum, perhaps, it will be crucial to decide whether the goal of intermediate care is clinical and therapeutic in nature or, candidly, an issue of bed management. If the latter, then there may be cause for concern about neglect of older patients’ medical needs.

Thirdly, on an operational level, there are issues to resolve about the composition of the professional team and what their training needs are. There is also the matter of professional turf. Because intermediate care services are multidisciplinary, boundary-crossing and usually draw referrals from a broad base, impact will be diffuse and fostering professional ownership will be difficult. This can threaten viability.

Fourthly, economically, little progress in financing intermediate care can be made until the various stakeholders acknowledge the differences that exist in acute, community, primary care and social service budgeting cultures. It would also be useful to identify likely winners and losers, and to respond to that. It is the overall cost-benefit equation that needs to be determined and that should guide decisions about development.

Finally, there are implications for research. The key questions are easy to identify:

- Which services are best, for which patients, at which point?
- Which professionals should be involved, doing what, at which point?
- What is the bottom line, financially?

Methodologically, it quickly becomes more difficult. Two examples will suffice: (i) In order to evaluate effectiveness, desired outcomes must be specified clearly. But many intermediate care services come into existence only because they hold promise for a wide range of agendas, some of which conflict. There are those who would take a benign view of multiple agendas (it can be called ownership). But research with the clearest conclusions tends to assess effectiveness with reference to a single agenda. Whose shall it be? (ii) The second thorny issue is the ‘black box’ versus single-intervention idea. Research is best at providing answers when the intervention is clearly defined, but intermediate care is all about flexible response and lots of choice. Thus validity trades off against the capacity to detect effects.

**Conclusion**

It is difficult to imagine a high quality care of older people that neglects to attend to clinical transitions or ignores the interplay between medical and personal factors. Yet, although the value of intensive models of geriatric assessment and follow-up seems well established, other evaluation results are inconsistent or inconclusive. Despite the uncertainty, intermediate care services are pervasive and developing rapidly. In such a context the question is not so much “is intermediate care a good thing?” as it is “how can we get the best from intermediate care development?” Intermediate care is only one part—but it is a legitimate part—of good geriatric care. As such, it merits continued attention and involvement from those with critical expertise.

**References**


