

The seemingly inevitable growth in the demand for long-term care services and accompanying cost implications have spurred strong interest in seeking alternatives to nursing homes. The rationale for such alternatives is a mixture of prevention, displacement, and deinstitutionalization; none may result. The alternative services may prove to be additive rather than substitutive. Much research is needed to provide the basis for examining the variety of proposed alternatives to allow us to compare costs and benefits in some reasonable fashion.

Alternatives to Institutional Care of the Elderly: Beyond the Dichotomy¹

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The majority of those over age 65 in the U. S. reside in the community, enjoy at least moderate financial well-being and, although they consume disproportionate amounts of the health care dollar, perceive themselves to be in reasonably good health. Public attention, however, has increasingly focused on a different segment of the elderly — namely, the 5% who live in nursing homes or other institutions. In contrast to the first group, the institutional residents are likely to be very old, lack social supports, suffer from multiple physical disabilities as well as some degree of disorienting mental disability, and to perceive themselves in a much less optimistic light. Once an individual achieves age 65, he has one out of four chances of someday entering a nursing home (Kastenbaum & Candy, 1973). Institutional care for the aged is an increasingly expensive item in the federal budget, accounting for the fact that about 40% of the Medicaid bill now goes to services to the elderly (Hudson, 1978).

The nursing home is viewed by professional, patient, and citizen alike as an undesirable solution to the problem of dependency in old age. The call for alternatives to nursing home care has thus become a theme and a slogan spurred by public attention to fraud and abuse in the nursing home industry. The sense of outrage occasioned by the mounting bill is exacer-

bated by recognition that the taxpayer is not getting his money's worth.

Strong pressures, therefore, combine to encourage the search for alternatives to institutionalization for the elderly. The term "alternative" is an imprecise rallying cry; those who gather under its banner imbue the term with different shades of meaning depending on their own goals and reasons for dissatisfaction with the status quo. Some proponents are seeking a source of care to substitute for the institution so that a patient destined to become one of the 5% of institutional residents might be diverted elsewhere. Others have focused on the current population of nursing home residents, deriving estimates of how many might be cared for under alternative auspices. A third group champions a preventive approach, arguing that an investment in various forms of care for the elderly could prevent institutionalization in the future; here there is lack of clarity between the goal of prevention and that of postponement of admission to an institution. Depending on one's definition of the concept "alternative," one may view the nursing home as an organization which should be phased out as soon as possible or as one which should be strengthened as a rehabilitation center facilitating return to the community.

Discussions of long-term care alternatives tend to resemble cacophony more than symphony. In addition to confusion over different meanings of "alternative," other social themes are discordantly interspersed. There is no consensus on the reasons for the pursuit of alternatives; they may include desires to check costs, prevent fraud or abuse, or provide a better way

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of life for the elderly in their later years. Alternatives are pursued in the hopes that they will be both better and cheaper, yet such an ideal synthesis may be difficult to achieve. There has been almost no public discussion of what should be done if alternatives prove to be simultaneously better and more costly. While such value-laden discussions have been avoided, it has been at the cost of careful discussion of the goals which alternative programs seek. It would be indeed ironic if alternative mechanisms for care of the elderly such as a home services network were developed only to prove more expensive than nursing home care without eliminating fraud and abuse or even improving the well-being of the elderly.

The problem, then, which we address in this paper is one of identifying appropriate populations at risk, the strategies which might improve their conditions (or at least minimize the rate of deterioration) and the costs of such approaches. Crucial to this process is measurement of the health and social status of the various elderly populations at risk; without this ability it is impossible to specify the advantages or disadvantages of various alternatives in terms of their anticipated effects on the service recipients. In our discussion of anticipated benefits, we will also need to differentiate between long-run and short-run benefits—some alternatives may need to be put into place years before their expected benefit in terms of preventing institutional placement (e.g., preretirement counseling). It is always methodologically difficult to demonstrate the effectiveness of the preventive dollar or to make confident decisions about preventive expenditures given future uncertainties.

In assessing the costs of various alternative strategies, we require a common language which will distinguish between unit costs, program costs, and target group costs. We must apply epidemiological techniques to insure that we are comparing equivalent groups and assessing the relative benefits of alternative approaches. If, for example, alternatives to nursing home care are most useful for those who have a home in the community and it was found that nursing homes most often serve those who do not have a home in the community at the time of admission, discussion of the comparative effectiveness of the two modalities would be severely compromised. Similarly, researchers proposing to utilize cost effectiveness analysis must be prepared to look at the full range of costs, including the costs of services provided by family and

friends as well as the basic cost of living (Doherty & Hicks, 1975). Failure to do so will lead to inappropriate comparisons between institutional care and its alternatives (U. S. Comptroller General, 1977).

The Nursing Home as a Hybrid

The nursing home evolved as a hybrid between the hospital and a family surrogate. First deemed as an alternative to family care for a growing group of elderly without family resources, the nursing home gradually took on the configuration of a more medical model, in many ways the pale imitation of the hospital.

Families have traditionally provided both instrumental caretaking and affective, companionate services to elderly members. In some situations these roles may be effectively played by other types of informal social networks. The absence of the concrete caretaking services and the inability to perform them oneself propels the individual into a nursing home; it is important to differentiate between the instrumental and affective aspects of family ties since the latter may be present or absent independent of residence in a nursing home. If the need for instrumental services is responsible for many admissions, then alternative planning requires provision of direct personal services at a low level of technology and skill. The ability to sustain someone in the community may require assistance with chores such as cooking, cleaning, shopping, personal care, managing incontinence and doing the laundry. However, the provision of open-ended services of domestic laborers may be viewed by some as a frivolous use of tax dollars to provide luxuries at a time of growing economic austerity.

The decision to institutionalize is often made at a time of crisis, usually due to illness. The physician thus becomes a pivotal force; unfortunately, he is both inadequately trained to make such a decision and under tremendous pressure from external forces to act quickly and decisively. The path of least resistance may lead to the door of another institution like the nursing home.

Admission to a nursing home appears to be rather a final step. While it is true that almost three-fourths of the patients in nursing homes are discharged alive, the large majority of those patients are, in fact, discharged to other health facilities only to cycle back into the nursing home system. Only about one-quarter of all discharges see patients return to their places of

residence (NCHS, 1978). This observation can be traced to both physical and social causes. An individual entering a nursing home may cut off his access back to the community; most importantly, housing is relinquished and cannot be replaced at anywhere near the same cost. The nursing home milieu is often counter-therapeutic. Patients are likely to deteriorate within the institution and thus become increasingly less able to leave the institution the longer they remain within it (Kane, et al., 1976). Our nursing home institutions have been characterized as custodial rather than rehabilitative; few provide the necessary rehabilitative services to encourage independent living (Austin & Kosberg, 1976), nor are they reimbursed under a system which would encourage them to do so.

The Problem of Shifting Targets

Current market conditions place a premium on the medical rather than the social model. Funds are more abundant for individuals labeled as patients rather than as clients. Reimbursement mechanisms currently favor institutional care rather than alternatives. However, it would be erroneous to simply condemn the present funding posture as one born of ignorance or oversight. The problem is a far more subtle one which may be viewed epidemiologically.

Fig. 1 is an attempt to illustrate the dilemma. The simple bar graph labeled "A" approximates the current situation in which about two-thirds of the elderly population function without any support, another 30% function with only minimal support and about 5% require substantial support. Suppose we were to develop a set of alternatives designed to reduce the proportion of individuals requiring institutionalization. These alternatives would be targeted toward the

group in greatest need, but would also have great appeal for those currently functioning with minimal or no support. Providers would be especially attracted to this latter group because they are likely to make fewer demands and to show better results. The resulting distribution may resemble that shown in "B." The provision of increased services may thus lead directly to increased dependency. The likelihood of such an event will depend heavily on our ability to establish appropriate entrance requirements for such programs. These entrance-monitoring techniques will, in turn, depend heavily on the philosophic orientation of the program, that is, whether they are viewed as preventive alternatives, substitutive alternatives or institutionalization alternatives. The degree of utilization of these new programs will depend upon the social and economic incentives that are developed for them and within them.

There is no certainty that provision of additional services will actually have impact on the total amount of nursing home services rendered unless such programs are carefully tailored to meet the needs of specific target groups; moreover, each alternative program will necessarily embrace those who might profit by the service despite the fact that they are unlikely to require nursing home care. Thus, altering the centrality of the nursing home in our national care delivery system, which came about because of the interplay of economic and social forces and public policy, will not be easy.

Status of Present Policy

Our present policy for care of the aged has a strong institutional bias and our present policy rhetoric favors shifting the balance to community-based programs.

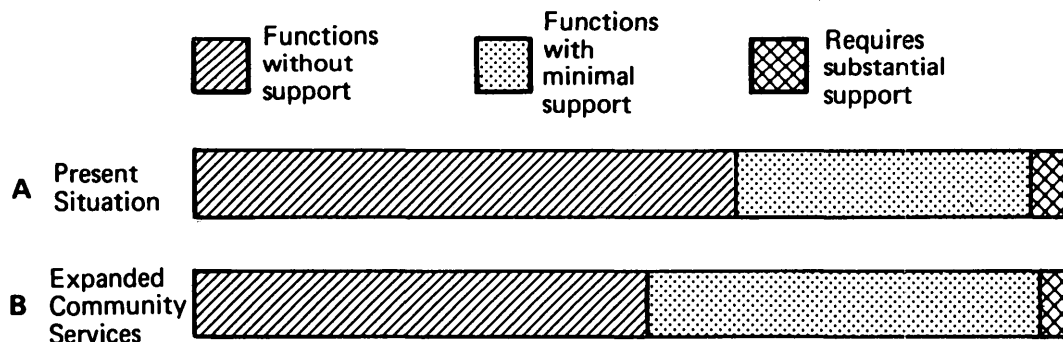


Fig. 1. Hypothetical distributions of the elderly population under two service provision programs.

Articulation of future policy will depend upon our ability to distinguish between several types of alternatives. A basic question, as yet not directly addressed, is the extent to which funding for alternatives is expected to be offset by savings resulting from a decrease in institutionalization. If the policy to pursue alternatives is used as a legitimizing vehicle to reduce the current support for institutions, some savings may occur although the savings may have no relationship to the improvement of care.

The recent painful experience of implementing "deinstitutionalization" in state mental hospitals is illustrative of the potential problem. The policy of deinstitutionalization, accompanied by a program of community mental health center development, did not lead to a higher level of care for former mental patients (Ruchlin, 1978); in fact, the newly established community mental health centers ultimately served a different population than the ex-mental hospital patient. Ex-hospital patients placed in nursing homes and newly-created boarding homes and hotels did not find the "community" a hospitable or receptive environment (Schmidt et al., 1977). Donahue (1978) has outlined the predictable and disastrous effects of the deinstitutionalization program in mental health. It might be emphasized that while the follow-up information available (since many state mental hospitals kept no records, this information is sketchy) shows former patients almost completely bereft of services, the new policy thrust did *not* result in less money being spent on mental health services.

The experience of deinstitutionalization of the mental hospitals makes one cautious of plunging into similar initiatives for current nursing home patients (some of whom are these same former state hospital patients). Several studies have suggested that patients currently placed in nursing homes could be cared for under other auspices (U. S. Congressional Budget Office, 1977; Williams, et al., 1973); however, this is not equivalent to saying that, once in the nursing home, patients may be returned to the community. The ability to leave an institution and return to the community depends on the quality of the institution and its ability to prevent "institutionalization," as well as the availability of appropriate support systems. We have already indicated that avenues of return to the community are often cut off at the time of nursing home admission.

Policy development has been hampered by an artificial distinction between institutions and

their alternatives. In fact, the utility of alternatives often depends on the presence of a high quality, institutionally-based service capable of diagnostic and rehabilitative functions, temporary admissions for social reasons (e.g., vacations of caretakers) and high quality of service for that subset whose social and health needs might be better met in institutions. In the British system, for example, a geriatric hospital service is used to assess new admissions in a triaging function. Those patients deemed rehabilitatable for community living are routed into appropriate treatment units. A similar program is followed in Scandinavia; these countries have discovered that successful community programming depends on ready access to health care, including flexible and reliable readmission procedures.

Unfortunately, despite the enthusiasm with which this pattern of patient triage has been adopted, there have been few hard studies to demonstrate its cost-effectiveness. Few explicit criteria for rehabilitation are available which have been tested in terms of their ability to avoid both false positives and false negatives. Long-term followup studies to document the results of a rehabilitative investment are infrequent.

Ironically two of the main thrusts for deinstitutionalization — concerns about fraud and abuse and concerns about costs — may be even more difficult to control under community placement alternatives. The greater degree of decentralization of service provision, the more difficult it will be to regulate practices. Similarly, the more numerous the units of service, the more costly the service may become. Original assumptions that community services would be cheaper were sometimes based on apples-to-oranges comparisons of a day of nursing home care with its complete housing function to the nursing and house-keeping aspects of home care *without* including the costs of shelter.

A policy that favors increasing activity in the area of alternatives may encourage providers of those services to reach out to those in less need in order to show a greater effect. To the extent that outcomes are compared to costs, the tendency to serve the most accessible and least needy will predominate. Thus recreational activities and congregate senior centers tend to serve the most socially active rather than reach out to the socially isolated. This creaming phenomenon is similar to events in the health insurance field which led to the passage of Medicare.

An antidote to such a contingency is the active pursuit of case finding and monitoring. For ex-

ample, in Sweden municipalities are obliged to insure that all persons living within their boundaries receive what care and assistance they need. In Stockholm this has been translated into a detailed survey of needs and a monitoring of services received. Several programs in this country (e.g., ACCESS in Monroe County, New York and TRIAGE in Connecticut) have sought to build upon the model of the health maintenance organization and appoint some organization — perhaps day care centers — to take direct responsibility for entire populations of the elderly within their jurisdiction. Without careful and costly monitoring, however, such a system may prove as ineffectual as Community Mental Health Center responsibility for ex-mental patients in their regions.

Status of Research

Unfortunately, research in the area of alternatives to nursing home care suffers from inadequate conceptualization of the issues, inappropriate comparisons, and fragmentation of efforts. Rarely do common premises underlie research efforts regarding definitions of good outcomes. The distinction between social and medical models emerges acutely. It is not clear what functions are to be maximized in programs at the cost of what other functions. Are there certain basic levels of outcomes that should be achieved by all in the targeted groups? For example, is it really possible to discuss the relative benefits of recreational activities vs primary medical care? If one is to choose between such alternatives, one must have a basis for determining their relative effectiveness that is not presently available. In fact, since programs are developed and evaluated in relative isolation, one is often left unsure of the comparability of different populations or even the extent of services received in addition to those of the program being evaluated.

Focusing the research effort. — One sign of the medical-social schism is the dichotomy between the major types of instruments proposed to identify the needs and outcomes of patients. The Department of HEW has championed a Patient Appraisal, Care Planning and Evaluation (PACE) Program which was developed by a consortium of universities. This instrument places heavy emphasis on the medical and nursing needs of long-term care patients — the PACE instrument and its derivatives may be said to represent the medical model. In contrast, the

Duke Center for the Study of Aging and Human Development, under funding from the Administration on Aging, developed a multidimensional functional assessment tool known as the OARS (Older Americans Resource and Services Programs) method. The OARS instrument uses data self-reported by the client to assess five general areas of impairment (social resources, economic resources, mental health, physical health, and activities of daily living) and may be said to represent the social model.

This instrument has been the keystone in a study conducted by the U. S. Government Accounting Office with the collaboration of Duke Univ. Utilizing the OARS instrument to measure various categories of impairment, 118 service agencies in Cleveland have been testing a procedure for disaggregating the actual components of service provided to individuals. When this system is in place it should be possible to measure changes of impairment level over time and to link the rates of those changes with the provision of comparable units of service; it will also be possible to examine natural rates of changes in impairment which occur in the absence of any particular service (Maddox & Dellinger, 1978). The disaggregation of services currently breaks out 25 functions in three general categories; these are basic living components (such as living quarters, transportation, unprepared foodstuffs), supportive care elements (such as periodic checking, continuous supervision, meal preparation), and remedial care components (physical therapy, nursing, counseling, retraining).

Another dimension to the issue is the question of identifying appropriate target groups. Data from several research projects suggest that different groups of patients may do better under different auspices.

In a quasi-experimental study, Mitchell (1978) compared cohorts of VA patients receiving nursing home care and home care. She found that the patients with the best prognoses tended to do best on home care while those with the worst prognoses did best with nursing home care. In general, those patients who received home care had fewer limitations in terms of their functional status index; and the functional status index at the outset of the experiment was the best predictor of future functional status.

Weissert (1978) has similarly expressed a note of caution about comparisons between adult day care and nursing homes. He notes that day care is not intended to be a wholesale substitute for

nursing home care, but is appropriate for that subset of nursing home patients who should not have been placed there in the first place or who no longer required such services. He also provides an important distinction between the day care center (also termed the multipurpose day care center) and the day hospital. The former tends to put far more emphasis on social, recreational and nutritional services while the latter is more firmly based in the medical model.

The importance of the effort to establish units of service cannot be exaggerated. The fact that this seminal effort is taking place does, however, highlight issues about the instrument used to measure the impairment. The OARS instrument has the advantage that it is self-administered, non-intrusive and relatively inexpensive. Its use in this context points up a number of issues. For example, the current level of analysis uses highly aggregated measures of impairment in order to make the calculations manageable. A number of assumptions are made in that process: Impairments in different categories are equivalent; various degrees of impairment for a given item can be usefully reduced to a dichotomy; various patterns within a category are equivalent. Much the same questions can be raised about the admittedly simplified classification of services. The effort at finding a common taxonomy for services suggests that a service has an intrinsic effect. It may well be that the effectiveness (and certainly the efficiency) of a given service will depend upon the context in which it is delivered.

Nonetheless, this effort represents an important beginning at addressing the issue at the heart of any discussion of alternatives to nursing home care. Clearly, further work will be needed to determine what level of aggregation of data is most useful in targeting impairment, what specific items are most associated with overall impairment, and how useful the instrument is in predicting future needs.

The whole question of the validity of self-report must also be given hard scrutiny. There is some evidence that the aged often present an optimistic picture in questionnaire responses, partly because they make comparisons to situations which "could be worse." It is also possible that once problems occur affecting housing, relationships or any particular area, a halo effect will influence all responses in a negative direction. In descriptions of populations, the under- and over-reporting might balance out; however, when further correlations are made to service requirements, the under- and over-reporting

may introduce distortions that call all conclusions into question. Finally, there is the caveat that once an instrument is used as the basis for policy decisions (e.g., for allocation of services or resources) it is inevitably subject to contamination (Campbell, 1975).

Demonstration projects. — Often service delivery approaches are first developed in the demonstration project context. In the U.S., the widespread concern over the cost of nursing home care and its deficiencies led to the series of demonstration projects funded under the authority of Section 222 of Public Law 92-603. These projects were intended to produce comparative data about the relative cost effectiveness of covering day care and homemaker programs under Medicare in six sites.

Unfortunately, the wide variation in the program activities, program costs and program participants across the several sites rendered summative evaluation difficult. Some intriguing tendencies emerged from the reanalysis of the data by staff of the National Ctr. for Health Services Research that attempted to control for the multiple confounding variables. Mortality rates were generally lower among those receiving expanded benefits than those who did not use them. Those using day care benefits had fewer SNF days and were more likely to retain their level of functioning than were the controls; no similar effects were seen with users of homemaker services. For both groups, however, the total Medicare payments were greater for the experimental groups than for the controls (Weisert et al., 1979). It must be recognized that these findings cannot readily be generalized in view of the potential for self-selection in utilization of the expanded benefits.

This extensive investment in the Section 222 Projects, together with several other federally sponsored projects of a similar nature (e.g., the Connecticut Triage project which used a quasi-experimental design to compare outcomes of clients receiving intensive coordinated services with those receiving regular care) highlight the difficulties in this type of research. Perhaps the most critical problem is the lack of a clearly defined research protocol. All too often, either by policy or circumstance, the evaluation effort is grafted onto a demonstration project already underway. If we are to invest in expensive *prospective* experiments such as these, they should be undertaken with well-conceived protocols, clearly delineated analysis plans and tight research designs.

Developing a technology for alternatives. — So much attention has been given to development of services to substitute for the nursing home that comparability with nursing home care has seemed to be the usual focus of research. There has been very little organized investigation of various packages within an "alternative" program. For example, it would be of interest to know whether hospital-based home health differs in any way, including cost, from home-health programs based in health departments or community agencies. It would also be important to explore the implications of the proprietary movement in home health, day care, and homemaking services to determine whether the auspices of the service or other organizational factors are associated with different outcomes. It would be useful to develop a research agenda around the various mixes of personnel that could be utilized on service delivery teams.

A well-developed research agenda in each specific program area (i.e., home health, day care, etc.) would begin to address questions framed in terms of the actual goals these programs can hope to achieve. As stated earlier, the elderly individual may have both instrumental and affective needs which cannot be met by relatives. Is it possible for the same personnel to meet both the practical and emotional needs of the client? Are such needs often enough combined in the same individual to make such dual focus on the part of the homemaker or health aide useful? Can one make effective use of non-professional workers who share the client's background or of elderly individuals themselves as workers or volunteers? What kind of day care programming is most helpful for various target groups? Should primary health services be linked to day care programming? Is it possible to develop streamlined techniques that would reduce the costs of home health and homemaking services? A host of similar program-specific questions suggest themselves. Thus far we have only made rudimentary beginnings at development of a technology for any of the alternative programs and have devoted more attention to finding ways of making alternatives cheaper than institutional care than to developing the most cost-effective approach to each individual alternative.

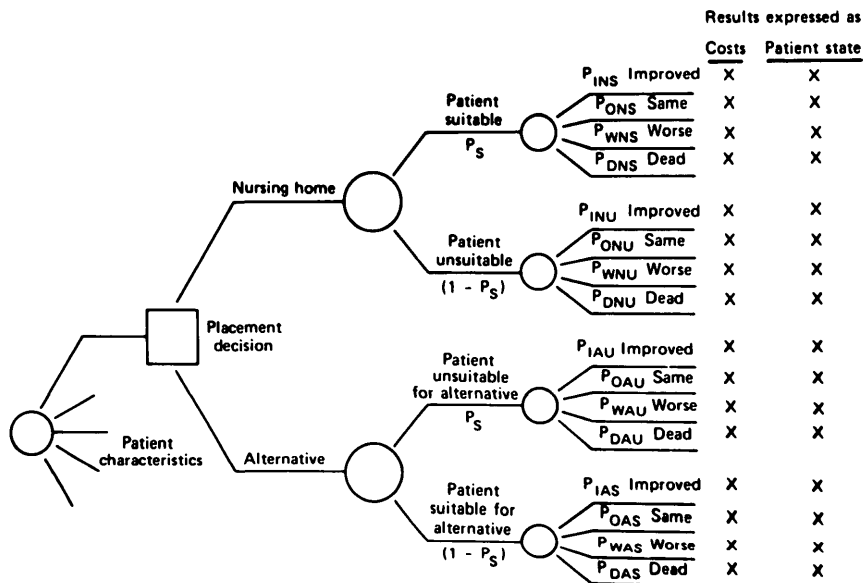
In the area of housing, there has been some research attention given to the desires of elderly persons and the adjustment levels associated with different kinds of housing patterns. For example, there is some preliminary data associating age-segregated housing with higher

survival rates compared to age-integrated housing (Harel & Harel, 1978). Brody (1978) and her colleagues are conducting a multifaceted project to examine the effects of various community housing arrangements; an intriguing early observation from this work is that individuals who decide not to move from their former housing have an increased mortality rate, compared to both those who follow through with moves to the sheltered housing and those who make other independent moves. Sherwood et al. (1978) used a quasi-experimental design to compare effects of admission to a medically-oriented sheltered housing project among physically impaired elderly with a carefully matched group of applicants who were not admitted. Results indicate that significantly fewer of the experimental group were admitted to long-term care facilities during the followup period. At the same time, the mortality rate for the experimental group was also lower. On the other hand, the experimental group experienced more hospitalizations and incurred more acute hospital days than did the control group. This decreased mortality rate among movers was also found in Carp's eight-year followup of a San Antonio housing project, but she also noted better health indices among the experimental group (Carp, 1977).

The decision to enter an institution, to leave an institution, or to seek alternative community services deserves some attention because of the growing body of research regarding the importance of personal control in the life of the individual (Seligman, 1975). It has been found among elderly groups in particular that the adverse effects of institutionalization may be an effect of lack of choice in entering the facility and that mortality rates on relocations may be due again to lack of choice rather than transfer trauma; Schulz and Brenner (1977) have reconciled opposing research findings through this explanation. We are just beginning to develop research thrusts that address the problem of reversing some of the deleterious effects of institutionalization, including the phenomenon of "learned helplessness" (Mercer & Kane, 1978). A hypothesis worthy of study is that alternative programs such as home health or day care may not be able to prove effectiveness unless they are chosen willingly by recipients.

Impact of Research

It is difficult to point to any direct relationships between the research going on in the area of alternatives to LTC and the changes in policy for



P_S = Probability of pt being more suitable for NH than for alternative
 P_{IXY} = Probability of patient improving given a placement X and suitability Y (of placement)
 P_{OXY} = Probability of patient staying the same given a placement X and suitability Y (of placement)
 P_{WXY} = Probability of patient getting worse given a placement X and suitability Y (of placement)
 P_{DXY} = Probability of patient dying given a placement X and suitability Y (of placement)

Fig. 2. Decision tree for placement of LTC patients.

those alternatives. These decisions appear to depend more on political pressures than on empirical information. As is often the case in this type of social research, the findings are not sufficiently clear that they can be unequivocally presented. Advocates for alternative points of view are more likely to cite selectively those points which support their preconceived position. Adding to this problem is the state of the art. The vast bulk of information, both from this country and abroad, is anecdotal rather than analytic. The few exceptions to this rule present findings from small numbers of cases from which generalizability is difficult. The lack of clear-cut, unambiguous results substantially reduces the impact of any research. Unfortunately, statistically significant differences on derived scales are not easily translated into meaningful results for the decisionmaker.

The problem of utilizing knowledge to assess the costs and benefits of alternatives to nursing home care may be illustrated by a simplified decision tree such as that shown in Fig. 2. We begin with a distribution of patients (or clients) which can be stratified according to a set of definable characteristics; these might include

demographic characteristics, functional status, income, assets, family and friends, and individual preferences. For each subset of patients, a placement decision is made. For the purposes of the model here we have shown the decision as a dichotomous one between the nursing home and an unspecified alternative. The alternative could refer to a specific single alternative or some combination of services.

Once assigned to either nursing home or the alternative, a proportion of patients will have been suitable and a proportion unsuitable for the assigned service. The placement for each group will lead to one of several outcomes. At a point in time it is then possible to examine the results from each contingency. These results may be expressed as a function of the costs accrued to date and the state of the patient. (The latter can be expressed in a variety of ways from the amount of support required to some comprehensive measure of health status or some measure of self-actualization.) The question of how to weight different combinations of outcomes (e.g., improved physical functioning, decreased mental status, improved life satisfaction) introduces a further wrinkle: whose value system should be

used to determine the utility weights for the various probabilities? Should the patient's values always be used to determine utility weightings or, for publicly supported programs, must we tap the value system of the public?

The model is presented to illustrate several points:

- (1) We lack the techniques at present to measure many of the results.
- (2) We lack the data to estimate the probabilities.
- (3) The number of different combinations of services and patient characteristics is vast.

Nonetheless, the model does serve as a framework to guide our work by identifying the kinds of research questions that need to be addressed. Where empirical data become too cumbersome or costly to collect, we will have to rely on expert judgment gathered in an organized fashion. Even this level of subjective data may be useful in distinguishing those alternative packages that appear to have the most potential for serving defined subgroups of the elderly.

Technology Transfer

The discussion up to now might suggest that we have little definitive knowledge to transfer into practice. On the other hand, within the last decade there has been considerable summarizing activity of our knowledge to date in the area of LTC and its alternatives.

Similarly, there has been attention in the professional and lay press on the subject of long-term care and a growing number of national meetings have turned their attention to aging, including the economics of aging. The Health Care Financing Administration of DHEW has announced its intention to formulate a clear long-term care policy. This policy may separate long-term care from the rest of health care financing in anticipation of a program of national health insurance.

The need for better education of health professionals and others engaged in the delivery of services to the elderly has begun to be recognized (Inst. of Medicine, 1978). While that debate may continue for some time as to whether the providers of geriatric care should be geriatric specialists or generalists with additional training in geriatrics, there is general recognition that the training of physicians, nurses, social workers and others must be substantially augmented to offer

information on aging and the aged. This training should include biologic and social aspects of aging, techniques for caring for the aged, services needed by the aged and the problems faced by the aged in obtaining these services.

A related problem in technology transfer concerns the fragmented delivery system for alternative programs. Presently the numerous small programs created under the Older Americans Act as well as an assortment of small and large voluntary and proprietary agencies are responsible for delivering the alternative programs (Binstock, 1978). In some instances, the funding base is too small to afford innovation; in other instances the competition between organizations and the pressure to show the best organizational results militates against careful coordinated application of research knowledge about targets most at risk and how to reach them.

Finally, one must address the problem of incentives for action. In the nursing home area, application of technology has certainly lagged behind its development, largely because there have been no incentives in the industry for improved performance. Technology directed toward achievement of particular outcomes is unlikely to be applied in alternative programs either unless appropriate incentives are developed to encourage the organizations to try to achieve the outcome. Reimbursement mechanisms seem the most likely kind of incentive which will foster transfer of technology.

In summary, there is currently great enthusiasm for the development of alternative models for institutionalization of the elderly. There is less evidence, however, that any type of technology is being transferred to buttress this enthusiasm on a foundation of meaningful information. Until the issues noted above are more widely discussed and some level of reconciliation achieved, it is unlikely that a great deal of progress will be made.

Recommendations

Before we can define our goals we must know more about where we want to go. We offer the following recommendations as next steps toward clarifying these goals. These recommendations are addressed broadly to both those who would undertake the tasks and those who would commission them.

- (1) A clear delineation of the alternative mechanisms to provide long-term care must

- be developed with a common vocabulary and a consensus as to measures of the outcomes, target populations, and costs that will be considered.
- (2) Preliminary decision analysis strategies should be utilized to evaluate the most feasible routes toward dealing with subsets of the population. Decision analysis will necessitate a clarification and specification of what types of outcomes we wish to maximize and how these different outcomes should be weighted relative to each other. The repertoire of outcomes should be broad enough to encompass socially desirable ends such as happiness and quality of life as well as the more usually considered elements such as functional status and costs.
 - (3) Methodological issues in measuring health status of the elderly must be clarified; these include testing the validity and reliability of self-report and the predictive as well as face validity of the measures.
 - (4) Specific research should be directed toward developing the concept of common units of service so that costs can be compared across differing programs (e.g., a refinement of the work described by Maddox and Dellinger (1978)). This research should place particular emphasis on assessing the context in which such service units are delivered.
 - (5) The emphasis on developing alternatives to nursing homes should not obscure the need for careful study of the cost-effectiveness of various strategies *within* given alternatives (e.g., day care, home health, sheltered housing).
 - (6) The enthusiasm for alternatives should not detract from the need to improve institutional care. A finite proportion of the elderly will continue to need care in such institutions, either as a prelude to reentering the community or as a strategy of choice. The need for careful targeting of institutional programs to subgroups of clients is crucial. In this regard, attention should be given to determining the best institution-based technology for serving extremely disoriented individuals.
 - (7) More attention should be given to the potential role of sheltered housing as an efficient and highly satisfying mode of delivering service. If priorities are given to the study of different kinds of alternatives, the sheltered housing concept seems to merit the highest consideration.
 - (8) To aid in the development of appropriate alternatives, further research must be conducted around the abilities of different family groups to provide care for the elderly. Here we must distinguish between physical care in the home of the relative, physical care in the home of the aged person, and emotional support.
 - (9) On the other side of the coin, the process of deinstitutionalization, especially in early phases, merits careful descriptive study. If it becomes a matter of policy to remove individuals from institutions to alternative arrangements, records should be kept of the kind of alternatives implemented and their outcomes at various time intervals. Follow-up of representative samples of those discharged is important to provide a minimum data base about the effects of deinstitutionalization policies in terms of the outcome measurements — health status, happiness, etc. — that have been developed. Here we would wish not to replicate the problem of mental health organizations which implemented deinstitutionalization programs but did not determine what happened to the individuals discharged.
 - (10) New methods of financing and developing incentives for providers to use technology must be considered. Emphasis here should be placed on reimbursing providers on the basis of the outcomes achieved (Kane & Kane, 1976). Such a comparison would require the development of adequate predictors of function for either individual clients or well-defined subgroups of clients.
 - (11) Professional education of physicians, nurses, social workers and other service providers should be augmented to include sufficient information on aging and the needs of the aged to allow these professionals to function effectively as both providers of care and brokers at those critical times when decisions about institutional placement are made.

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