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THE EVALUATION OF THE NATIONAL LONG TERM CARE DEMONSTRATION: FINAL REPORT

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CONTENTS

Table of Contents (continued)

Chapter — Page

Table of Contents (continued)

Chapter

Page

EXECUTIVE SUMMARY

In September 1980 the National Long Term Care Demonstration--known as channeling--was initiated by three units of the United States Department of Health and Human Services--the Office of the Assistant Secretary for Planning and Evaluation (ASPE), the Administration on Aging (AOA), and the Health Care Financing Administration (HCFA). It was to be a rigorous test of comprehensive case management of community care as a way to contain the rapidly increasing costs of long term care for the impaired elderly while providing adequate care to those in need.

A. THE INTERVENTION

Channeling was designed to use comprehensive case management to allocate community services appropriately to the frail elderly in need of long term care. The specific goal was to enable elderly persons, whenever appropriate, to stay in their own homes rather than entering nursing homes. Channeling financed direct community services, to a lesser or greater degree according to the channeling model, but always as part of a comprehensive plan for care in the community. It had no direct control over medical or nursing home expenditures.

Channeling was implemented to work through local channeling projects. The core of the intervention--i.e., case management--consisted of seven features:

> Outreach to identify and attract potential clients who were at high risk of entering a long term care institution
>
> Standardized eligibility screening to determine whether an applicant met the following preestablished criteria:

- o Age: had to be 65 years or older

- o Functional disability: had to have two moderate disabilities in performing activities of daily living (ADL), or three severe impairments in ability to perform instrumental activities of daily living (IADL), or two severe IADL impairments and one severe ADL disability. Cognitive or behavioral difficulties affecting ability to perform ADL could count as one of the severe IADL impairments.

- o Unmet needs: had to have an unmet need (expected to last for at least six months) for two or more services or an informal support system in danger of collapse.

- o Residence: had to be living in the community or (if institutionalized) certified as likely to be discharged within three months.

Comprehensive inperson assessment to identify individual client problems, resources, and service needs in preparation for developing a care plan

Initial care planning to specify the types and amounts of care required to meet the identified needs of clients

Service arrangement to implement the care plan through provision of both formal and informal in-home and community services

Ongoing monitoring to assure that services were appropriately delivered and continued to meet client needs

Periodic reassessment to adjust care plans to changing client needs.

Two models of channeling were tested. The basic case management model relied primarily on the core features. The channeling project assumed responsibility for helping clients gain access to needed services and for coordinating the services of multiple providers. This model provided a small amount of additional funding to purchase direct services to fill in gaps in existing programs. But it relied primarily on what was already available in each community, thus testing the premise that the major difficulties in the current system were problems of information and

coordination which could be largely solved by client-centered case management.

The financial control model differed from the basic model in several ways:

- It expanded service coverage to include a broad range of community services.
- It established a funds pool to ensure that services could be allocated on the basis of need and appropriateness rather than on the eligibility requirements of specific categorical programs.
- It empowered case managers to authorize the amount, duration, and scope of services paid out of the funds pool, making them accountable for the full package of community services.
- It imposed two limits on expenditures from the funds pool. First, for the entire caseload average estimated expenditures under care plans could not exceed 60 percent of the average nursing home rate in the area. Second, for an individual client estimated care plan expenditures could not exceed 85 percent of that rate without special approval.
- It required clients to share in the cost of services if their income exceeded 200 percent of the state's Supplemental Security Income (SSI) eligibility level plus the food stamp bonus amount.

B. THE DEMONSTRATION AND EVALUATION

In September of 1980, the participating states, a technical assistance contractor, and a national evaluation contractor were awarded contracts and began planning channeling. Among the criteria used for selection among states that competed to be part of channeling were demonstrated interest and commitment at the state level; capacity to perform the basic case management functions; whether channeling would represent a change from the existing system; and general quality of the

proposal. A local project in each state was then selected. The host agencies of these projects were well established as departments within existing human service organizations (typically area agencies on aging or private nonprofit service providers).

Initial plans had called for four different models of channeling to be tested in 23 sites, selected through two procurements. Federal cutbacks reduced the models to two and the number of sites to 10 making it necessary to select from among 10 already chosen 5 that would implement the financial control model. Selection of financial control sites was based on perceived capacity of the projects to implement the more complex financial model, combined with judgments about the existence in the remaining sites of real differences between the basic model and the existing service system. Both considerations led to assigning the financial control model to the richer service environments.

The 10 sites participating in the demonstration and their model designations were:

Basic Case Management Model	Financial Control Model
Baltimore, Maryland	Cleveland, Ohio
Eastern Kentucky	Greater Lynn, Massachusetts
Houston, Texas	Miami, Florida
Middlesex County, New Jersey	Philadelphia, Pennsylvania
Southern Maine	Rensselaer County, New York

The 10 local projects opened their doors to clients between February and June of 1982, and were fully operational through June of 1984. The projects were phased out of the federal program in March of 1985, although most continued to operate under state or other auspices.

The goal of the evaluation, in addition to documenting the implementation of channeling, was to identify its effect on:

- Use of formal health and long term care services, particularly hospital, nursing home, and community services
- Public and private expenditures for health services and long term care
- Individual outcomes including mortality, physical functioning, unmet service need, and social/psychological well-being
- Caregiving by family and friends, including the amount of care provided, the amount of financial support provided, and caregiver stress, satisfaction, and well-being.

To compare channeling's outcomes with what would have happened in the absence of channeling, the evaluation relied on an experimental design. Elderly persons referred to each channeling project were interviewed (most by telephone) to determine their eligibility for channeling. If found eligible, they were randomly assigned either to a treatment group whose members had the opportunity to participate in channeling or to a control group whose members did not receive demonstration services but continued to rely on whatever services were otherwise available in their community. Over the life of the demonstration (which included the period after the end of randomization for the research) 11,769 applicants were screened, 9,890 of whom were determined eligible. In all 6,341 persons were randomly assigned. Given the substantial death rate among this population as well as interview noncompletion, this yielded research samples of 3,372 to 6,326 elderly persons, depending on the analysis.

Several data sources were used. In addition to the telephone screening interviews, an extensive in-person survey was administered to the

elderly members of the research sample (both treatment and control groups) at baseline and 6, 12, and (for half the sample) 18 months thereafter. Another survey was administered (usually by telephone) to the primary informal caregivers of a subset of the sample members at baseline, and 6 and 12 months thereafter. Service use and cost data were collected from Medicare, Medicaid, and channeling records, and from providers directly; participant tracking data and project cost records were collected from the channeling projects; official death records were obtained from state agencies. Finally, federal, state, local, and project staff were interviewed about the implementation and operation of the demonstration.

The basic methodology was to measure differences between treatment and control groups in the average levels of the variables for which effects were expected. Multiple regression was used to estimate the averages because it controls for different distributions of treatment and control groups across sites and to some extent for different patterns of attrition. It also takes account of variation due to factors other than channeling, thus yielding more precise estimates. In addition to analyzing the effects by model, we examined effects disaggregated by site and by subgroups of the sample. There were few instances of significant differences in effects across models, sites, or subgroups.

C. FINDINGS ON IMPLEMENTATION

Channeling's selection criteria did identify an extremely frail group. Consistent with the eligibility criteria, clients reported major limitations in functioning--with over 22 percent unable to perform any of five common activities of daily living (ADL) (eating, transfer, toileting, dressing, bathing), 53 percent incontinent, and 81 percent restricted in

their mobility. There was also overwhelming dependence in instrumental activities of daily living (IADL), for example, meal preparation (88 percent), shopping (96 percent), housekeeping (97 percent), and a high number of unmet needs (averaging almost 4 out of 8 possible needs). Mental functioning was also limited; channeling sample members missed on average 3 to 4 items of a 10-item mental status questionnaire. Fifty-two percent reported incomes below $500 per month (which includes spouse income where applicable). Over one-third of the sample lived alone, although more than 90 percent reported receiving some informal care. Most (87 percent) had experienced a major stressful life event during the previous year. The average age of the channeling sample at baseline was 80 years. Nearly half reported a hospital admission in the 2-month period prior to channeling, and about three-fifths were already receiving in-home care.

The program elements were implemented largely as designed. Case managers successfully coordinated delivery of a broad range of services to those in the community. An in-person structured assessment, taking 75 minutes to complete, served the important clinical function of providing the basis for care planning as well as the research function of providing baseline data for the evaluation. Assessments were completed on all clients. Then a formalized care plan, which included both informal and formal services, was completed for each client and reviewed by a supervisor.

Case managers under the financial model reported being able to purchase services under the funds pool in all the specified service categories generally without constraint, although supply shortages limited the ordering of some services (e.g., homemaker services) in some sites.

Case managers under the basic model, consistent with design, relied primarily on a brokering approach to arrange services. They reported having great freedom to use the gap filling funds as needed. These funds were (as intended) a small fraction of the funds available to case managers under the financial model.

The cost controls of the financial control model were also implemented according to plan. They did not prove to be as binding a constraint as had been expected. Estimated care plan costs in the five projects ranged from 30 to 47 percent of the cost of a nursing home in the site--well below the average expenditure cap of 60 percent. However, case managers did report that the requirement of calculating costs and comparing them to the limit, and the ability to trade off expenditures among clients did increase their cost-consciousness.

Because the incomes of the vast majority of clients fell below the cost-sharing level and because key services were exempt from cost sharing, only about 5 percent of clients shared in the costs of their care. Even so, case managers under both models felt that cost sharing contributions increased both client and family interest in the care and their willingness to notify the case managers in instances of inadequate care.

Ongoing case management, including regular monitoring and formalized reassessment and care plan adjustment, was implemented successfully. Telephone contacts to monitor changes in clients' situations occurred in a majority of cases very frequently, in-person visits less frequently. Reassessments and care plan revisions occurred at 6-month intervals for the majority of clients. The initial requirement that the first reassessment occur at 3 months was relaxed, partly because of high

work loads but partly because case managers were in frequent contact with clients during that period in any case.

Although implementation across sites was remarkably uniform, implementation differed across models in ways which, though the differences were not large, could potentially influence the effects of the case management component. Total staff resources were approximately the same for the two models, but case managers under the basic model were able to spend a greater proportion of their time on direct client functions. This was probably due to the extra responsibilities under the financial model of ordering direct services and associated paperwork. Taken together the differences suggest that the basic model case managers may have provided more reassurance and personal support for clients and their informal caregivers than their counterparts under the financial model.

The technical evaluation design was implemented successfully. The large sample sizes made it unlikely that important channeling effects either went undetected or were seriously overestimated. The data collected on sample members provided measures of all the central outcomes of interest. In any evaluation, and particularly in one of channeling's scale and complexity, qualifications and uncertainties inevitably surround some of the results. Extensive methodological research, however, substantially reduces the risk that the basic conclusions of the channeling evaluation are subject to uncertainty due to sample attrition, estimation methodology, data noncomparability, or other technical matters.

The demonstration did not evaluate the effects of community care per se. Rather, it evaluated the effects of adding comprehensive case management and expanded community services to a system that already

provided a substantial amount of community care. Not only was service-based case management already available in the channeling sites; a limited amount of case management like channeling's in its comprehensiveness was also available. Ten to twenty percent of the control group received such comprehensive case management, more in financial than in basic sites. Receipt of direct community services was substantial also; 60-69 percent of controls received in-home care visits in the week six months after randomization, with the proportion receiving and the number of visits received being substantially greater in financial sites.

D. CHANNELING'S EFFECTS ON SERVICE USE AND COST

Service use and cost results are summarized in Table 1.

Channeling increased formal community service use. Community service use increased, not because of the substitution of community for nursing home care, but because of increased use among those in the community. The bulk of these services was in-home care from visiting service providers. Personal care and homemaker services--reported by practitioners to be the most difficult types of services to obtain in sufficient quantity under the existing system--increased the most. Community service increases were modest under the basic case management model (about half a visit a week over a control group average of 2.2 visits). They were substantial under the financial control model (more than 2 visits a week over a control group average of 2.8 visits). This difference is consistent with the models' different capacities to pay for community services.

Neither model had a major effect on informal caregiving, although the financial control model led to small reductions in some areas. Most

TABLE 1

CHANNELING EFFECTS ON SERVICE USE AND COST
DURING OR AT THE END OF THE FIRST YEAR

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Formal In-Home Services (visits per week)			
Basic Case Management Model	2.73	2.17	0.56**
Financial Control Model	4.93	2.75	2.18**
Informal Care (visits per week)			
Basic Case Management Model	3.0	2.9	0.1
Financial Control Model	2.6	3.1	-0.5
Nursing Home Use (percent in nursing home)			
Basic Case Management Model	11.6	13.0	-1.4
Financial Control Model	11.4	14.0	-2.6
Hospital Use (days per year)			
Basic Case Management Model	19.2	19.8	-0.6
Financial Control Model	25.6	26.8	-1.2
Costs (dollars per month alive)[a]			
Basic Case Management Model	1,413	1,330	83[b]
Financial Control Model	1,879	1,592	287[b]

[a]Averaged over the whole 18-month evaluation period.

[b]Statistical significance of the cost estimates was not calculated because the estimates were constructed as sums and products of separately estimated components.

**Statistically significant at the 1 percent level.

of the informal care received was from caregivers who lived with the sample member. The proportion of those caregivers giving care was not affected by either channeling model. The basic case management model did not affect the amount of care given by visiting family and friends either. Both treatment and control group members were receiving about three visits a week from visiting caregivers at the end of the first year. Under the financial control model treatment group members were receiving about two and a half visits a week at the end of the first year, compared to about three for control group members. Although this difference in visits was not statistically significant, the reduction in the proportion receiving such visits was significant under the financial control model. In particular, the proportion receiving help from friends and neighbors was significantly reduced under the financial model. The areas where small reductions were observed were the proportions receiving help with housework/laundry/shopping, help with meal preparation, delivery of prepared meals, and transportation.

Despite success in targeting an extremely frail population, channeling did not identify a population at high risk of nursing home placement, and did not substantially reduce nursing home use. At 12 months, 13 percent of control group members in the basic sites and 14 percent in the financial sites were in a nursing home. This was much lower than expected, given the channeling eligibility criteria. Even by 18 months (not shown) only 19 percent of surviving control group members were in a nursing home. Nursing home use was lower among the treatment than the control group under both models at 12 months but the differences were small and not significant.

The channeling population was frequently hospitalized and made heavy use of physicians and other medical services. Channeling did not affect these types of service use. Use of hospitals was considerable--45 to 46 percent of the control group had a hospital admission during the first six months after enrollment. During the first year of channeling the control group in the basic sites spent 19.8 days in the hospital and 26.8 days in the financial sites. Hospital use by the treatment group was virtually the same--19.2 days and 25.6 days, respectively--and the differences were not significant. Other medical service use (not shown) was also high. In the basic sites, 71 percent of members of the control group visited a physician during months 7-12 and in the financial sites 81 percent did so. Use of outpatient, x-ray, and laboratory services among control group members was also high--60-65 percent per 6-month period in the basic sites, 73-77 percent per 6-month period in the financial sites. There was no evidence that channeling had an effect on physician or other medical service use.

The costs of expanding case management and community services were not offset by reductions in nursing home or other costs. Channeling increased the costs of case management and direct service use by design. Since it had little effect on nursing home use and none on hospital, physician, or other medical service use, the cost increases were not offset by cost decreases in other areas. In the basic sites, control group costs (including all service and room and board costs) averaged about $1,330 per month alive. Channeling resulted in a net increase in these costs of $83 (6 percent). In the financial sites, control group costs averaged about $1,592 per month alive. Channeling resulted in a net increase in these

costs of $287 (18 percent). The cost burden was redistributed by channeling. Government costs increased by about 14 percent under the basic model, 28 percent under the financial model. Costs to clients and their families were reduced by about 7 percent under both models.

E. CHANNELING'S EFFECTS ON WELL-BEING, FUNCTIONING, AND MORTALITY

Channeling effects on well-being, functioning, and mortality are summarized in Table 2.

Channeling reduced unmet needs, increased clients' confidence in receipt of care, and increased their satisfaction with life. At the end of the first year the control group averaged one unmet need (out of a maximum of four). Both models of channeling reduced the number of unmet needs by 0.2 (equivalent to removing an unmet need for one out of five sample members). Both models of channeling increased the percentage expressing confidence that they would get needed care (increases of 8-9 percentage points over a control group average of just over 70 percent) and reported satisfaction with service arrangements. Both models also increased satisfaction with life generally, with the financial control model having the stronger effect (5.5 percentage points over a control group average of 56.3 percent). Channeling did not affect a number of other measures of quality of life for clients (including morale, social interactions, self-perceived health, and contentment).

Channeling increased informal caregivers' satisfaction with service arrangements and satisfaction with life. The majority of primary caregivers of the channeling client population expressed positive feelings about care arrangements and about their own life satisfaction. In the basic sites, for example, 76.8 percent of primary caregivers of control

TABLE 2

CHANNELING EFFECTS ON WELL-BEING, FUNCTIONING, AND MORTALITY AT THE END OF THE FIRST YEAR

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Unmet Needs (4 maximum)			
Basic Case Management Model	0.8	1.0	-0.2**
Financial Control Model	0.8	1.0	-0.2**
Confidence about Receiving Care: Elderly (percent)			
Basic Case Management Model	80.0	72.1	7.8**
Financial Control Model	80.0	71.0	9.0**
Satisfaction with Life: Elderly (percent)			
Basic Case Management Model	65.0	62.8	2.2
Financial Control Model	61.8	56.3	5.5*
Satisfaction with Care Arrangements: Caregivers (percent)			
Basic Case Management Model	83.2	76.8	6.4
Financial Control Model	91.1	71.8	19.3**
Satisfaction with Life: Caregivers (percent)			
Basic Case Management Model	79.2	75.3	3.9
Financial Control Model	67.8	59.0	8.8*
Disabilities in ADL (five maximum)			
Basic Case Management Model	2.3	2.2	0.1
Financial Control Model	2.5	2.3	0.2**
Mortality Rate (percent after one year)			
Basic Case Management Model	27.3	29.7	-2.4
Financial Control Model	27.5	27.4	0.1

*Statistically significant at the 5 percent level.
**Statistically significant at the 1 percent level.

group members said they were confident about care arrangements; in the financial sites 71.8 percent said they were. Channeling increased these high percentages to 83.2 and 91.1 percent, respectively, with the financial control difference being statistically significant. With respect to primary caregivers' satisfaction with life, in the basic sites 75.3 percent of primary caregivers of control group members expressed satisfaction, in the financial sites 59.0 percent. Here again channeling increased these percentages (to 79.2 and 67.8 percent, respectively) with the financial control difference being statistically significant. Channeling did not affect perceived emotional, physical, and financial strain due to caregiving, employment, or limitations on employment or personal activities.

Channeling did not affect measures of client functioning, with the possible exception of physical functioning under the financial model. The basic model did not affect ADL or any other measure of functioning. The financial model did not affect the number of days restricted to bed or the ability to perform IADL. However, the treatment group reported performing fewer personal care (ADL) tasks than the control group (2.3 tasks out of 5 versus 2.5)--a small, but statistically significant difference. Significantly lower levels of functioning were also reported on some individual ADL items. This could reflect a real change in functioning. But it could also be an artifact of measurement; perhaps treatment group members reported doing less simply because of the high level of assistance provided. These possibilities cannot be disentangled with the available data.

The channeling population was at high risk of dying. Channeling did not affect mortality. At the end of the first year, 29.7 percent of the control group members in the basic sites had died, 27.4 percent in the financial sites. By the end of the demonstration these rates had risen to 39 percent and 33 percent, respectively (not shown). Channeling did not significantly affect mortality.

F. CONFIDENCE IN THE RESULTS OF CHANNELING AS FIELDED

Inevitable uncertainty surrounds some results in any evaluation of this kind. However, there is, in our judgment, little doubt about the basic conclusions concerning the channeling demonstration as fielded. Three pieces of evidence increase our confidence in the results.

First, the results were generally consistent across the sites in which each model was tested, making it unlikely that effects in one or two sites dominated the results, or that there were significant offsetting results in different sites.

Second, changes of any plausible magnitude in the channeling results would not alter the basic conclusions about costs. A rough comparison of the costs of community and institutional care illustrates the point. Because the channeling population's risk of institutionalization was so low, the trade-off between cost in a nursing home and cost in the community plus channeling services indicates that the basic model would have had to reduce average nursing home use to less than half actual control group use just to break even. The financial control model, given its larger increases in community care, could not have broken even at all, because the required reduction in nursing home use would have exceeded total control group use.

Third, the channeling results are consistent with those of other community care demonstrations, which generally found (with one important exception discussed below) relatively low risk of nursing home use among the populations served, and insufficient nursing home cost savings to offset the increased costs of expanded case management and community services.

G. GENERALIZABILITY

The findings and conclusions reported here are, of course, for channeling as fielded in the 10 demonstration sites in 1982-1984. Determining whether the results are generalizable to other interventions, populations, or environments is difficult for any demonstration, and channeling is no exception. Assessment of these issues to the extent possible will, however, assist users of the research in making judgments about its applicability to their particular situation.

The intervention. Success of the demonstration makes it clear that the channeling intervention itself could be successfully replicated in other settings as a permanent program. Indeed, the demonstration's documented experience in case management, provider relations, and cost controls is a useful guide for practice in replication of channeling or in other case management programs.

The demonstration tested two models of a particular approach to long term care--comprehensive case management combined (in the financial control model) with expanded community services and cost controls. Thus, the demonstration cannot speak to the effectiveness of case management within other approaches (such as a social/health maintenance organization, mandatory preadmission screening, or vouchers).

The population served. Channeling was tested with the particular population who applied to channeling. Because of the voluntary nature of application, the population may have been a selected subset of the eligible population who had more needs related to an acute care episode and were more likely to be connected with the existing community care system. The channeling population turned out to have relatively low risk of institutionalization despite state of the art screening criteria and assessment techniques. Since channeling was designed there has been no new research suggesting alternative screening instruments for community care populations that appear substantially better able to separate those who will go into nursing homes from those who will stay in the community.

The one evaluation that used a randomized design and came to a different conclusion about the substitution of community for institutional care is of special interest in this regard. The South Carolina Long Term Care Project served a slightly more disabled population with high nursing home use among the control group (48 percent of the controls were institutionalized after 12 months). The reduction in nursing home use was substantial (40 days during the first year after enrollment--a 31 percent reduction). The South Carolina project differed from channeling and most of the other community care demonstrations in that it was integrated with the state's nursing home preadmission screen from which it received all its clients. Whether because of this or some other reason, it was able to reduce nursing home use and break even on (but not reduce) costs.

Environment. Whether the demonstration sites were similar to the nation with respect to the difficulty of admission to a nursing home and the availability of community services is particularly important to

interpreting the results. If nursing home beds were in shorter supply and community services more available in the demonstration sites than in the nation, channeling would have been less able to affect institutionalization rates than if it had been fielded elsewhere. Available evidence suggests that nursing home beds may have been somewhat less available than in the nation as a whole, but that severe shortages were probably not a major factor affecting channeling's outcomes for a majority of clients.

Data on the availability of community care are even more limited. Channeling sites were similar to the nation with respect to the proportion of states covering optional services under Medicaid and to home health expenditures under Medicare and Medicaid. No data on community care under other programs such as state home care programs are available. Given that the demonstration projects applied to participate in the demonstration through a competitive process, however, the case management and community care systems in the selected sites may have been more developed than in sites that did not apply or were not selected.

Conclusions. It is clear that channeling tested the effect of adding comprehensive case management and expanded community care to service systems that already provided such services to some of the frail elderly. It was not an evaluation of community care compared to its total absence. Its population, which voluntarily applied to the demonstration, was extremely frail and had unmet service need but turned out to be not at high risk of nursing home placement. Substantial reductions in nursing home use were not possible given that only a relatively small portion of the population would have used nursing homes even without channeling.

The channeling evidence indicates that expansion of case management and community services beyond what already exists does not lead to overall cost savings. But it does yield benefits in the form of increased in-home care, reduced unmet need, and improved satisfaction with life for clients and the informal caregivers who bear most of the care burden. Whether these benefits are commensurate with its costs is a decision for society to make.

TABLES

Tables (continued)

FIGURES

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The evaluation of the channeling demonstration required the collective effort of many people. At Mathematica Policy Research (MPR), George Carcagno directed the project with Deputy Project Director Judith Wooldridge and Project Manager Deborah Slatkin. Co-Principal Investigators Peter Kemper and Randall Brown directed the research design and conduct of the analysis. Survey Director Barbara Phillips with Susan Stephens, Joanna Cerf, Christine Moline, and Rita Stone developed the data collection plan and directed the dedicated field data collection and quality control staff who implemented it. Judith Wooldridge with Shari Miller Dunstan, Nancy Holden, Susan Hilton, Joan Mattei, Jennifer Schore, Phil Welsh, and Christine Whitebread developed the research data base and processed Medicare and Medicaid claims files. A number of individuals provided programming support during the course of the project including, during the final analysis phase, Daniel Buckley, Daniel Dexter, Joan Mattei, Richard Ross, and Laura Sedberry.

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Peter Kemper and Felicity Skidmore wrote this summary report based on a series of technical reports written by the team of analysts working on the evaluation. George Carcagno, Robert Applebaum, Jon Christianson, Barbara Phillips, Craig Thornton, and Joanna Will analyzed the implementation and operation of the channeling projects. Material drawn from their report appears throughout this summary report, particularly in Chapter I which discusses the design and implementation of the demonstration, Chapter III which discusses the eligibility criteria and client characteristics; Chapter IV on the implementation of case management under channeling; and Chapter V which discusses the service expansion and cost control elements of the channeling design. Peter Kemper directed the report on the evaluation design which forms the basis of Chapter II on that subject. Chapter II also draws on Barbara Phillips, Susan Stephens, and Joanna Cerf's report documenting the survey data collection plan and procedures. Randall Brown conducted the series of methodological analyses, including attrition bias, alternate estimation techniques, comparability of treatment and control group data, and proxy use, which do not appear in this nontechnical summary report but are documented in a separate volume. Walter Corson, Thomas Grannemann, Nancy Holden, and Craig Thornton analyzed channeling effects on the use of formal community services which are discussed in Chapter V. Jon Christianson analyzed channeling effects on informal caregiving which are discussed in Chapter VI. Judith Wooldridge and Jennifer Schore analyzed channeling effects on hospital and nursing home use which are discussed in Chapter VII. Craig Thornton and Shari Miller Dunstan analyzed channeling effects on costs which are discussed in Chapter VIII. Jennifer Schore conducted the analysis of mortality, Robert

Applebaum and Margaret Harrigan conducted the analysis of the quality of clients' lives, and Jon Christianson the analysis of quality of caregivers' lives, all of which are discussed in Chapter IX. Robert Applebaum, Margaret Harrigan, and Peter Kemper were responsible for the review of the evaluations of other community care demonstrations which is integrated throughout the report. Analysis of differences in effects across sites (conducted by Robert Applebaum, Randall Brown, and Peter Kemper), of differences in effects among subgroups of the client population (conducted by Thomas Grannemann, Jean Baldwin Grossman, and Shari Miller Dunstan), and of the effects of receipt of case management and formal services on the control group (conducted by Randall Brown and Barbara Phillips) are documented in separate technical reports.

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Mary Guthrie, Assistant Site Director

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CHAPTER I

THE CHANNELING DEMONSTRATION AND EXPECTED EFFECTS

The National Long Term Care Demonstration--known as channeling--was a rigorous test of the effectiveness of comprehensive case management as a way of containing the rapidly increasing costs of long term care of the elderly and improving the quality of life of elderly clients and the family and friends who care for them. Initiated by the Department of Health and Human Services, channeling used comprehensive case management to allocate community services to the elderly in need of long term care. It had no direct control over medical or nursing home care expenditures. It financed community services, to a lesser or greater degree according to the particular type of channeling, always as part of a comprehensive plan for care in the community.[1]

This report presents the results of the test. It is based on a series of detailed technical reports produced during the project covering evaluation design, survey instrumentation and administration, methodology, and estimated effects. A complete list of channeling reports appears at the back of this report.

A. THE INTERVENTION

Channeling was designed to serve severely impaired older persons who require long term care services for an extended period of time and who, in the absence of channeling, are at high risk of being institutionalized. For this group of people, the objective of channeling was to substitute services provided in the community--both formal services and the informal care provided by family and friends--for institutional care,

wherever community care was appropriate. This substitution was intended, in turn, to reduce costs and to improve the quality of life of its clients and their informal caregivers.

To achieve channeling's objective of managing the service use of impaired elderly clients at risk of institutionalization, its designers specified a set of core functions:[2]

Outreach, screening, and eligibility determination were designed to attract potential clients to channeling and identify within that group the persons who met the eligibility criteria. See Chapter III for full discussion.

Assessment, care planning, and service initiation followed. The assessment function was designed to collect the information on functioning, needs, financial resources, and personal and household characteristics necessary to develop a care plan. This plan, in turn, dictated the services to be arranged and initiated by the channeling case manager. See Chapter IV for full discussion.

Monitoring and reassessment followed for as long as clients remained in channeling. They were designed to ensure that services were provided as specified in the care plan and that the care plan was modified as needed. See Chapter IV for full discussion.

These core functions were common to both models of channeling. In addition, the basic case management model had one program feature, and the financial control model several, to enhance the case manager's ability to implement care plans while limiting the resources used.

1. The Basic Case Management Model

The basic case management model was designed to provide a strong test of the premise that the major difficulty in getting appropriate long

term care in the community is not lack of financing for services but lack of information about and ability to obtain and manage services under the existing service system, which leads to a mismatch of services and needs. Thus, case management was intended to determine needs, and to help arrange and coordinate services under the existing system. A limited amount of discretionary funds was provided for channeling projects to purchase community services to fill residual service gaps which would have prevented implementation of a comprehensive care plan.

2. The Financial Control Model

The financial control model added to the core channeling functions several features designed to test the premise that inadequate public financing of community services leads to inappropriate use of nursing homes. In order to alter service access and use while still controlling costs, the financial control model incorporated several additional features.

Service access and use were addressed through expanded service coverage, a funds pool, and case manager authorization power. The first extended funding to purchase community services not covered under existing government programs. The second used waivers to free Medicaid, Medicare, and other public program funds for channeling's use irrespective of clients' categorial eligibility.† The third gave case managers power to authorize the amount, duration, and scope of services paid for from the funds pool.

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†Clients did, however, have to be covered by Medicare Part A to be eligible for channeling in the financial control sites.

The cost control objective was addressed through a limit on average service expenditures (averaged across all clients), a limit on individual service expenditures, and cost sharing by clients. The limits on average and individual service expenditures were set at 60 percent and 85 percent, respectively, of prevailing nursing home rates. The cost sharing provision went into effect for clients with incomes in excess of a protected amount for services that would not otherwise have been available without charge. For more detail on the extra features of the financial model see Chapter V.

B. INTENDED EFFECTS

The channeling approach, like that of a number of other community care demonstrations, was designed with the overall objectives of controlling the costs of long term care while maintaining or improving the quality of clients' and informal caregivers' lives. How the specific effects were intended to come about is described briefly below.

Increased Use of Community Services. Channeling was intended to increase use of community services by providing in-home care to people who would otherwise have been in nursing homes. In addition, those who would have remained in the community in any case but with some service needs unmet were expected to increase their use of services under channeling. The increase in community service use was expected to be greater under the financial control than under the basic case management model because of the greater direct service purchasing power of the financial model. Estimated effects are presented in Chapter V.

Reduced Use of Nursing Homes. Substitution of community care for nursing home care was the primary intended effect of channeling, to be brought about directly through the activities of case managers and

indirectly through the lower price of community care to potential clients. Estimated effects are presented in Chapter VII.

Reduced Use of Hospitals. Increased use of community care was expected to reduce the use of hospitals to the extent that persons remain hospitalized longer than medically necessary because of inadequate care at home or a shortage of nursing home beds. This expected reduction might be offset to the extent that comprehensive case management identified medical problems that would otherwise have gone untreated. Estimated effects are presented in Chapter VII.

Reduced Costs of Long Term Care. Channeling was intended to reduce costs through the substitution of lower cost community care for nursing home and hospital care. The strength of this effect depends on whether channeling was able to reduce institutionalization. Estimated costs are presented in Chapter VIII.

Maintenance of Level of Informal Caregiving. The intended cost savings from increased use of community services and reduction in institutional care was based in part on the expectation that family and friends would--as a result of the support and encouragement from case managers and of direct services (such as respite care)--at least maintain their informal caregiving efforts. It was recognized, however, that some substitution of formal for informal care might occur. Estimated effects are presented in Chapter VI.

Improved Quality of Lives of Clients and Informal Caregivers. Channeling was intended to improve the quality of clients' lives in two ways. Lower use of nursing homes was expected to reduce some of the debilitating effects of forced relocation and institutionalization on

clients' functioning, on their life expectancy, and on their social/psychological well-being. Expanded community services were expected to reduce unmet needs, increase satisfaction with service arrangements, increase longevity, and improve social/psychological well-being. The well-being of informal caregivers was expected to improve because availability of respite care and case manager support was expected to reduce strain and anxiety about adequacy of care. Estimated effects are presented in Chapter IX.

C. ORGANIZATION AND IMPLEMENTATION OF THE DEMONSTRATION

The channeling initiative was intended to be a true national demonstration carried out by states and local entities within a uniform framework, rather than an assembly of relatively specialized local projects. The experience of prior community care initiatives was of substantial use to the channeling planners. Indeed, the features tested in them--screening and assessment, care planning, case management, expanded coverage of community services, and cost controls--as well as their evaluation provided the foundation for the channeling demonstration's design.

The U.S. Department of Health and Human Services had overall responsibility for the demonstration. Within the Department of Health and Human Services three agencies participated in the design and conduct of the demonstration: the Health Care Financing Administration, the Administration on Aging, and the Office of the Assistant Secretary for Planning and Evaluation. Responsibility for managing the initiative was lodged in the Office of the Assistant Secretary. A steering committee drawn from all three agencies determined basic demonstration policy. A

demonstration management team, made up of staff from the three agencies, managed the day to day operation of the demonstration.

Two contractors were chosen to support federal staff in conducting the demonstration. Mathematica Policy Research (MPR) was selected as the research contractor to develop the evaluation design, collect the necessary data, and analyze channeling's effects. MPR was supported by two major subcontractors--the Levinson Policy Institute at Brandeis University and Arthur Young and Co. The Temple University Institute on Aging was selected as the technical assistance contractor to assist in designing operational procedures, training project staff, and monitoring the implementation of the intended program design.

1. Selection of States and Sites

Twenty-eight states responded to an April 1980 request for proposals to operate channeling projects. Among the criteria used for the selection of states were evidence of interest and commitment to the project at the state level; capacity to perform the basic case management model functions; whether the proposed demonstration areas were such that the basic channeling intervention would represent a change from the existing system; and general quality of the proposal.

As part of the proposal, the governor in each applicant state designated a lead agency to be responsible for contributing to and overseeing implementation of the local channeling projects. In its proposal, each state could identify up to three potential sites where the demonstration might take place, with the understanding that one site eventually would be chosen. In September 1980 contracts were awarded to 12

states: Florida, Hawaii, Kentucky, Maine, Maryland, Massachusetts, Missouri, New Jersey, New York, Ohio, Pennsylvania, and Texas.

Once the states were selected, detailed proposals were prepared by the candidate sites as the basis for selection of subcontractor agencies to operate local channeling projects. The state agencies that applied for channeling projects generally encouraged a number of different organizations to request consideration as channeling project host agencies, although in no case did a state solicit proposals from more than one host agency in a specific site. Some states solicited formal proposals from agencies interested in operating a channeling project; others contacted specific organizations and asked them to apply for host agency status. Sites were selected in January 1981, after a process that involved review of the site proposals by the staffs of the three federal agencies and the technical assistance and evaluation contractors.

2. Designation of the Financial Model States

Initial plans for the demonstration included four different models of channeling to be tested in 23 sites, with the additional sites selected in a second procurement. Federal budget cutbacks subsequently ruled out a second procurement, compressed the design to two models as the maximum that could be feasibly tested, and reduced the number of sites included in the evaluation from 12 to 10. (Hawaii and Missouri were dropped from the evaluation although they continued to operate their channeling projects.) As a result, it became necessary to select from among the channeling projects already chosen those that would implement the financial control model. In June 1981 the federal team issued guidelines outlining the features planned for this model, and required state letters of intent to operate financial control projects.

All the states except Texas filed letters of intent to be designated to test the financial control model. They described their plans and capacities to implement the major features of the financial control model described above. In reviewing these applications, the Department of Health and Human Services emphasized satisfactory answers to two questions. First, did the project have the capacity to implement the more complex financial control model (a centralized local project organization, and a well-developed service system that could support it)? Second, in the remaining sites in which the basic model would be tested, would the difference between the basic model treatment and the existing service environments be large enough to enable channeling to have its intended effects? Both considerations worked to place the financial control model projects in the richer community service environments. In September 1981, after detailed negotiations with key state agency representatives, the Department of Health and Human Services designated the projects that would implement the financial control model of channeling. The sites and local host agencies, by model, are listed in Table I.1.

3. Operational Planning and Implementation

Staff from the federal agencies, contractors, and projects at both the state and site level were all involved in the design and implementation of channeling. The demonstrationwide participation in these activities was crucial to the establishment of uniform procedures across sites, the commitment of project staff to the evaluation objectives of the demonstration, and the faithfulness of program operators to the operational constraints imposed on them by the research requirements.

TABLE I.1

CHANNELING SITES AND HOST AGENCIES, BY MODEL

Basic Case Management Model	
Eastern Kentucky (8 counties):	Department of Social Services, State Department of Human Resources
Southern Maine (2 counties):	Southern Maine Senior Citizens, Inc.
Baltimore, Maryland:	City of Baltimore, Council on Aging and Retirement Education/Area Agency on Aging
Middlesex County, New Jersey:	County Department of Human Services
Houston, Texas:	Texas Research Institute for Mental Sciences
Financial Control Model	
Miami, Florida:	Miami Jewish Home and Hospital for the Aged
Greater Lynn, Massachusetts:	Greater Lynn Senior Services, Inc.
Rensselaer County, New York:	Rensselaer County Department on Aging
Cleveland, Ohio:	Western Reserve Area Agency on Aging
Philadelphia, Pennsylvania:	Philadelphia Corporation on Aging

SOURCE: Carcagno, et al. The Evaluation of the National Long Term Care Demonstration: The Planning and Operational Experience of the Channeling Projects. Table III.1.

The evaluation contractor developed the research and data collection plan. Their subcontractor, Arthur Young and Co., designed the automated system used by financial control model projects to monitor service expenditures. The evaluation contractor also established an institutional review board, which was responsible for ensuring the rights of channeling sample members were protected.

As part of the operational planning, the technical assistance contractor tested the procedures for informed consent, screening, baseline assessment, and client tracking, and trained project staff to conduct them. They also led the design of systems and procedures for casefinding, care planning, use of service expansion funds, client cost sharing, and the service audit/program review function.

Some projects began accepting clients in February 1982, after intensive operational planning and development of the evaluation design. By June 1982 all projects were in operation. Caseload buildup was slower than planned, particularly at the smaller sites, but by about a year later all projects had reached their planned caseloads. They operated a full caseload until June 1984. Between July 1984 and March 1985 they carried out plans to end federally supported operations. Eight of the projects continued operations under other auspices after the end of their federal contract support.

NOTES TO CHAPTER I

[1]This chapter is based on Carcagno et al. 1986.

[2]See Gottesman 1981.

CHAPTER II

EVALUATION ISSUES

Accurate assessment of the effects of a demonstration program requires an evaluation design that permits determination of how the actual experience of program participation differs from what it would have been in the absence of the program. Whether evaluation estimates of channeling effects provide a sound basis for determining the true effects of channeling on long term care costs and the well-being of elderly persons depends on the rigor of the evaluation design, the quality of the data collected, and the estimation methodology.[1]

A. EVALUATION DESIGNS OF OTHER DEMONSTRATIONS AND CHANNELING

Research on community care alternatives to institutionalization began in the late 1960s and early 1970s, with a series of small demonstrations that provided clients with case workers and a limited amount of expanded home health services.[2] These studies are not directly relevant to the current service system because use of home health care under Medicare and Medicaid had not grown to present levels. For example, one focused on visiting nursing care and several on home health aide care, both widely available today under Medicare and (for those with low incomes) Medicaid. Despite the fact that these studies tested a rather limited intervention and were evaluated with small samples, they demonstrated that field tests could be successfully undertaken, thus laying the foundation for larger, more comprehensive community care demonstrations.

Studies of the hypothetical costs of community care were undertaken during the later part of the 1970s.[3] In these studies a sample of older

persons with long term care needs was assessed, hypothetical community service packages constructed to meet these needs, and the cost of these service packages compared to the cost of institutional care. The results of the hypothetical service-package studies indicated that in most cases community care was less costly than institutional care. Proponents used these results to argue for an expansion of community care. Their critics were quick to point out, however, that direct comparisons with institutional care exaggerated the effects of community care because it could not be assumed that all those receiving community care would have been institutionalized without it. An appropriate comparison, in other words, would require some way to measure what the experiences of these people would have been without access to the indicated services.

Continued interest in the effects of community care alternatives led to a series of government-sponsored community care demonstrations--14 in all--to make comparisons based on actual experience rather than hypothetical ones. Here we discuss the channeling evaluation design, which was intended to correct some of the weaknesses apparent in their evaluations. The major evaluation dimensions of interest are summarized in Table II.1.

Number and Diversity of Sites. The channeling demonstration was implemented in 10 sites, 5 to test each channeling model, to reduce the likelihood that the results would be artifacts of a particular implementation of channeling or special characteristics of the service environment. (The sites are listed in Table I.1 above.) These 10 sites provided a relatively wide range of environments. Although six of the sites were located on the eastern seaboard, the geographic range included

TABLE II.1

EVALUATION METHODOLOGIES OF COMMUNITY CARE DEMONSTRATIONS

Demonstration (period evaluated)	States	Sites	Comparison Methodology	Sample Size	Months of Followup	Data Sources
Worcester Home Care (1973-1975)	1	1	Random assignment	485	12	Individual interviews Project records
NCHSR Day Care/Homemaker Experiment (1975-1977)	4	6	Random assignment	1,566	3, 6, 9, 12	Individual interviews Medicare records Project records
Triage (1976-1979)	1	1	Comparison group outside area (age differences)	502	6, 12, 18, 24	Individual interviews Diaries Project records Medicare records Medicaid records
Georgia AHS (1977-1980)	1	1	Random assignment	1,332	6, 12, 18, 24	Individual interviews Project records Medicaid records (with Medicare crossover)
ACCESS (1977-1980)	1	1	County-level comparison	--	24	Department of Social Service records
Wisconsin CCO (1978-1980)	1	1	Random assignment	417	6, 12	Individual interviews Medicaid records Death records
On Lok (1979-1983)	1	1	Comparison group outside area, matched on characteristics (race, sex, and institutionalization differences)	140	6, 12, 18, 24	Individual interviews Project records Provider records
MSSP (1980-1983)	1	8	Comparison group within and outside area, matched on whether in hospital, nursing home, or community (impairment differences)	4,200	6, 12	Individual interviews Medicaid records Medicare records
South Carolina LTC (1980-1984)	1	1	Random assignment	1,867	3, 6, 12, 18, 24, 36	Individual interviews Project records Medicaid records Medicare records

TABLE II.1 (Continued)

Demonstration (period evaluated)	States	Sites	Comparison Methodology	Sample Size	Months of Followup	Data Sources
Project OPEN (1980-1983)	1	1	Random assignment	335	6, 12, 18, 24, 30, 36	Individual interviews Project records Medicare records
Nursing Home Without Walls (1980-1983)	1	9	Comparison group within and outside area (age, race differences)	1,373	6, 12	Individual interviews Medicaid records Medicare records Food stamp records SSI records
New York City Home Care (1980-1983)	1	1	Comparison group outside area (impairment differences)	704	6, 12	Individual interviews Diaries Medicaid records Medicare records
Florida Pentastar (1981-1983)	1	5	Random assignment (plus comparison group outside area)	1,046	12, 18	Individual interviews Medicaid records Medicare records Food stamp records
San Diego LTC (1981-1983)	1	1	Random assignment	819	3, 6, 12, 18	Individual interviews Medicare records
Channeling (1982-1985)	10	10	Random assignment	6,326	6, 12, 18	Individual interviews Project records Medicaid records Medicare records Provider records Death records Caregiver interviews

SOURCE: Applebaum, Harrigan, and Kemper. The Evaluation of the National Long Term Care Demonstration: Tables Comparing Channeling to Other Community Care Demonstrations. Table 2.

states in the northeast, midwest, south, and southwest. There was also rural/urban diversity, ranging from cities like Baltimore, Cleveland, Houston, Miami, and Philadelphia to rural areas like Eastern Kentucky and Southern Maine.

The number and diversity of sites of the other demonstrations was quite limited. All except one were restricted to a single state, and ten were restricted to a single site.

Comparison Methodology. To measure the effect of a program it is essential to be able to contrast the experiences of the persons to whom the program services were available--the treatment group--with some measure of what the experiences of the same persons would have been if they had not had the benefit of the service opportunities provided by the demonstration.† This is done by selecting a group of persons as similar to the treatment group as possible except for the opportunity to receive demonstration services, and measuring their experiences as a benchmark against which to compare the experience of the treatment group.

One way is to select a group of nonparticipants and match them with participants so that the characteristics of the two groups are similar. Such comparison groups can be selected from the same or different catchment areas. Selection from the same area increases the likelihood that the two groups will be comparable because they are exposed to the same environment

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†One way, in principle, is to contrast the experience of the participants before and after program participation. For long term care this is not a sensible option because many changes over time other than the program itself--for example, recovery from an acute condition, the process of aging--affect outcomes. A before/after comparison will, thus, misestimate program effects by including the effects of changes over time that are independent of the demonstration as well as those attributable to it.

(such as size of service area, service availability, economic conditions). Selection from a different area (which can itself be matched with the demonstration area) has the advantage that the comparison group is almost certainly unaffected by the existence of the demonstration program. This is an important point because, to the extent that the comparison group is influenced by the existence of the demonstration, their experiences no longer provide an undistorted benchmark against which to measure the experience of program participants.

A second way to select a nonprogram benchmark group is by random assignment of eligible applicants either to receive the program services (treatment status) or to receive only those services regularly available in the community (control status). This is a much more powerful strategy, because it virtually ensures that, for a large sample, the average characteristics and environments of the treatment group are the same as those of the control group. The evaluation does not have to depend, as in the comparison group strategy, on its ability to measure a set of characteristics on which to match. In addition, however well comparison groups are matched on measured characteristics, there will always be unmeasured characteristics that are by definition unknowable and may distort the benchmark comparison in unknowable ways. The one potential disadvantage of random assignment is the same as the disadvantage of within-catchment area comparison groups--the possibility that the presence of the program may influence the experiences of the nonprogram group.

Of the 14 demonstrations other than channeling, 6 chose a comparison group strategy.[†] Each of these studies ended up with comparison groups that differed on at least one measured characteristic that could be expected to affect the results.[††] Eight chose a random assignment strategy.[†††]

The channeling evaluation chose the most powerful strategy--random assignment to treatment and control status. Considerable effort was spent designing random assignment and data collection procedures to minimize the possibility that control group experiences might be directly affected by channeling, or that the measurement of those experiences might be biased by different data collection strategies from those applied to the treatment group. (These efforts are described in the second section of this chapter.) Another potential bias in the evaluation could arise if channeling services substituted for services available in fixed amount under existing programs, thereby expanding the amount available to the control group. As it turned out (see Chapter VIII), such substitution for public programs other than Medicare and Medicaid was substantial only under the financial model (where it was intended under the funds pool). This is unlikely to have had a large effect on the control group in financial model

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[†]One of these did not have a comparison group in the sense in which we are using the term. Rather, it compared long term care expenditures under Medicaid in the demonstration county to those of six nondemonstration counties.

[††]For example, one had a race mismatch, with a treatment group predominantly Chinese and a comparison group predominantly Caucasian; another had a treatment group that was somewhat older than its comparison group; a third had both race and age differences.

[†††]One of these also had a small comparison group drawn from outside the demonstration catchment area.

sites, however, because except in two sites (Greater Lynn and Rensselaer County), the channeling caseload was small relative to the estimated channeling-eligible population (less than 10 percent). A final potential bias could arise if channeling altered the service environment. The channeling implementation research assessed whether channeling affected the service environment in the demonstration sites and concluded that such effects were quite limited and certainly too small to affect interpretation of the evaluation results.

The randomized experimental design used to evaluate channeling, thus, provides unbiased estimates of channeling's effects compared to the existing community care systems in the 10 demonstration sites. This is a very particular comparison, however. It is not a test of channeling compared to the total absence of case management and formal community services. Rather it compares channeling to the case management and formal services that already existed. Chapters IV and V examine the extent to which they already existed to aid in the interpretation of the comparison.

Because of the greater potential for bias in studies using a comparison group, we will maintain a distinction between them and those using randomized designs in subsequent chapters when we compare the results of channeling to those of other demonstrations.

Sample Size. The sample sizes of the other community care demonstrations span a wide range. The smallest used a sample of only 140 people. Four of the studies had sample sizes between 400 and 600. The largest of the other demonstrations used a sample size of 4,200, but it relied only on Medicaid and Medicare records for a matched comparison group. Channeling's overall sample at randomization was 6,326, about

evenly divided between the basic case management and financial control models.

Length and Frequency of Followup. Length of followup also varied among the other community care demonstrations. Of the 13 that used individual level data, all followed their respective samples for at least 12 months after program enrollment. Two followed at least some of their sample for 18 months. Five followed a subsample for two years or longer. Channeling followed the full sample for 12 months, and half the sample for 18 months.

Frequency of followup also varied across demonstrations. One demonstration had a single followup 12 months after enrollment. Another followed up at 12 and 18 months. Three demonstrations followed up every 3 months, at least for the first 6 months. The rest had followups at 6-month intervals, as did channeling.

Data Sources. Five potential sources of data are available to demonstrations of this kind: individual interviews with treatment and control (or comparison) groups,† demonstration project records (for clients only), public program records such as Medicare and Medicaid claims, provider records, and official death records.

The other demonstrations varied in the range of data sources they were able to exploit. Two were limited to a single data source (other than project records)--individual interviews with treatment and comparison groups in one case, and aggregate county social service department data in

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†Data collection from individuals can also include service use and cost diaries that the individuals maintain. They were collected in two of the other demonstrations.

the other. Six combined individual interviews with records data from Medicare, Medicaid, or project records, but did not collect both Medicaid and Medicare data.[†] The remaining six projects used individual interviews and both Medicaid and Medicare records. Channeling--in addition to individual interviews, project records, and Medicare and Medicaid records--collected from service providers data on the use and cost of services not covered by Medicare, Medicaid, or channeling; interviewed the primary informal caregivers of a subsample of the treatment and control groups; and obtained official death records.

B. THE PROCESS OF RANDOM ASSIGNMENT, BASELINE ASSESSMENT, AND FOLLOWUP INTERVIEWING

Initial eligibility for channeling was determined through a telephone screening interview administered to all applicants or their proxies before random assignment.[††] Those found eligible for channeling (eligibility criteria are discussed in Chapter III) were then randomly assigned (by evaluation staff) to treatment or control group status. Those assigned to the treatment group were referred to channeling case managers. Those assigned to the control group were referred by the special screening staff back to the agency that had originally referred them to channeling, so they continued to rely on the existing long term care system. Self and family referrals were directed to information and

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[†]One of these also collected official death records.

[††]Because of the frail nature of the channeling applicant population, over half the screening interviews were completed at least in part by proxies. Proxy involvement for a substantial portion of the applicant population in demonstrations of this sort is not atypical.

referral agencies. The design sought to minimize the possibility that channeling could affect the experience of the control group. The screening personnel were located separately from case management staff to ensure that case management staff would have no knowledge of applicants who might later be assigned to the control group. The decision to use telephone rather than inperson screening was also made in part to minimize control group members' contact with channeling.

Interviews with project staff and referral sources conducted as part of the implementation research indicated that these procedures were successful. Instances of direct effects of channeling on the control group or special efforts of providers on behalf of controls were extremely rare. These interviews also indicated that the randomization procedures were implemented as designed. Moreover, analysis of the characteristics of treatment and control groups at randomization concluded that randomization had worked, resulting in two groups that were very similar on a wide range of initial characteristics.[4]

The next step in the process, on average about a week after random assignment, was for both treatment and control groups to receive an assessment interview. Channeling assessment staff felt it necessary to do the assessment of clients themselves, because it was the basis for the care planning and case management that formed the core of the channeling approach. For them to do the assessments for the control group as well, however, would have violated the evaluation requirement that control group members be insulated from channeling. Therefore, evaluation staff administered the baseline interview to the control group. Different interviewing staff inevitably introduced the possibility of another danger

to the evaluation--noncomparability of data for the two groups.† To minimize this danger, the baseline instrument was the same for the two groups and the interviewer training was also standardized. Subsequent analysis indicated that some variables were not measured comparably, and they were dropped as control variables.[5]

The baseline assessment was the only interview that was administered in noncomparable fashion. All the followup interviews for both groups were administered by evaluation staff, and the records searches were done for the whole sample irrespective of treatment/control status.

C. DATA SOURCES AND SAMPLE SIZES FOR MEASURING CHANNELING EFFECTS

Channeling program effects were analyzed in seven areas using the following data:

Data on formal community service use were drawn from individual interviews with the elderly sample members or their proxies.

Data on nursing home use and hospital and other medical service use were drawn from Medicare claims records obtained centrally from the Health Care Financing Administration, and Medicaid claims records from the state Medicaid agency in each of the demonstration states. Medicare and Medicaid records were supplemented by billing records obtained directly from providers whenever individual interviews indicated use of a hospital or nursing home that would not be included in the Medicare and Medicaid records (primarily nursing home use paid for privately).

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†In only 5 of the 14 other demonstrations was the baseline assessment for both treatment and control or comparison groups done by the same persons.

Data on clients' life quality were drawn from the individual interviews and data on mortality from death records.

Data on informal caregivers' life quality were drawn from special interviews with primary caregivers. These special interviews were administered to a subsample of the persons primarily responsible for providing informal care to the elderly person. They were administered at baseline, and 6 and 12 months after enrollment.

Data on costs came from a variety of sources depending on the cost category. Nursing home, hospital, and other medical service costs were obtained from Medicare and Medicaid records, supplemented by provider billing records. Case management and formal community service costs were estimated differently depending on the funding source. The costs of community services paid for by Medicare, Medicaid, or the financial control model of channeling were obtained from the claims records of those programs. Channeling case management costs and basic model gap-filling service expenditures were estimated from aggregate channeling project cost reports. Costs paid for by other public programs and private individuals were based on records obtained from service providers identified in a 20 percent subsample of the individual interviews. The costs of room and board in the community and case management received by the control group were constructed from estimates of use obtained from the individual interviews multiplied by estimates of average unit costs. Finally, transfer program costs came directly from the individual interviews.

Data on the level of informal caregiving came from two sources: the individual interviews with the elderly sample members, which provided information on all informal care, and the special caregiver survey, which

provided more detailed information on care provided by the primary informal caregiver.

Figure II.1 provides a flow chart showing the linkages among all these data collection activities, from the initial telephone screening interview to determine program eligibility to the 18-month followup interview. Table II.2 shows data sources and maximum sample sizes for each subject area. (The actual number of observations available for a particular outcome depends upon the extent of nonresponse to that item.)

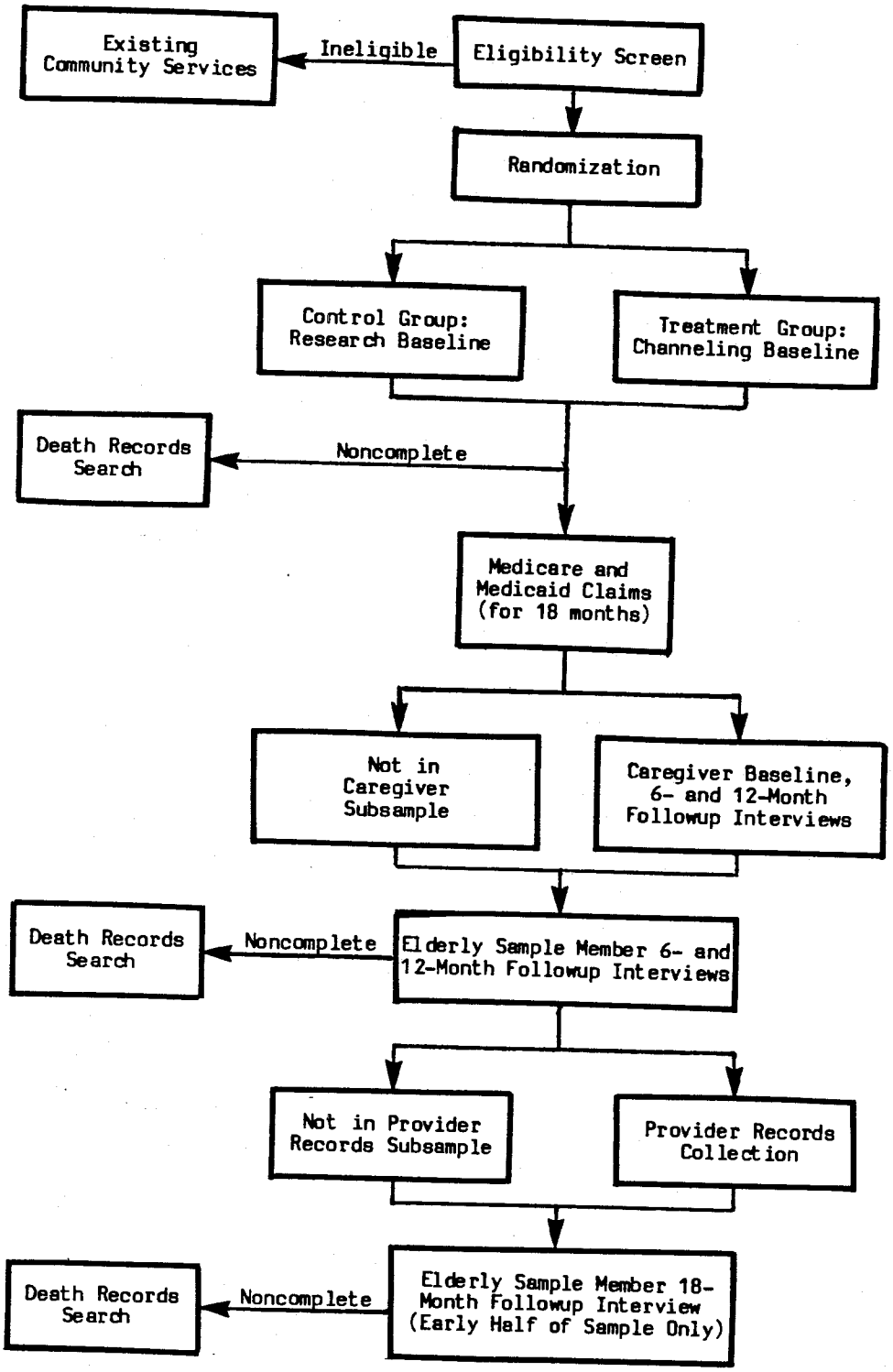
In addition to the data for analysis of channeling's effects, data were also collected on the implementation of the demonstration and program operations. These data came from interviews with channeling staff, service providers, and other knowledgeable people at the site level; project cost and client tracking reports; and public and project documents.

D. ESTIMATION METHODOLOGY

As noted in our discussion of random assignment, the essence of our estimation methodology was to measure differences between the experience of the treatment group (exposed to channeling) and the experience of the control group (like the treatment group except for their lack of exposure to channeling). We measure treatment/control differences by comparing for the two groups the average levels of the variables for which effects were expected. The averages are estimated by a statistical procedure (multiple

FIGURE II.1

LINKAGES AMONG DATA COLLECTION ACTIVITIES



SOURCE: Phillips, et al. The Evaluation of the National Long Term Care Demonstration: Survey Data Collection Design and Procedures. Figure I.1.

TABLE II.2

SUBJECT AREAS, DATA SOURCES, AND MAXIMUM SAMPLE SIZES

		Maximum Sample Sizes					
		Basic Case Management			Financial Control		
	Primary Data Sources	6 Months	12 Months	18 Months	6 Months	12 Months	18 Months
Formal Community Care	Individual Interviews	1647	1377	520	1803	1475	546
Nursing Home Use	Medicare/Medicaid Records Provider Records	2184	1876	741	2409	2023	774
Hospitals and Other Medical Services	Medicare/Medicaid Records Provider Records	2712	2291	1037	2842	2406	1017
Client Quality of Life	Individual Interviews	1937	1671	647	2061	1745	668
Mortality	Death Records Searches	3124	3124	1619	3202	3202	1546
Caregiver Quality of Life	Caregiver Interviews	515	401	--[a]	612	469	--[a]
Costs	Medicare/Medicaid Records Provider Records Channeling Project Cost Records Individual Interviews	--[b]	--[b]	--[b]	--[b]	--[b]	--[b]
Informal Care	Individual Interviews	1605	1345	510	1767	1456	534
	Caregiver Interviews	515	401	--[a]	612	469	--[a]

NOTE: Maximum sample sizes are the number of observations available for analysis in each area, except for a small number of observations lost due to item nonresponse for some measures.

[a]Informal Caregiver Survey was not repeated at 18 months.

[b]The cost analysis combines estimates from the analyses of the other subject areas.

regression) that adjusts for any observed differences between the two groups on initial characteristics that could affect outcomes.[†]

Whether an estimated treatment/control difference is interpreted as a real effect of channeling is judged according to standard rules of statistical significance. We consider an estimated difference to be evidence that channeling had an effect if it is statistically significant at the 5 percent level.[††] This criterion means that we will not attribute effects to channeling unless observed treatment/control differences are large enough that it is quite unlikely they are due simply to chance. Because of this, on the one hand, we may occasionally conclude that channeling had no effects when in fact effects existed; however, given the relatively large samples, such effects were probably too small to be of much substantive importance. On the other hand, a certain number of results (1 out of every 20 estimates) can be expected to be statistically significant by chance, i.e., even though channeling had no effect. To guard against both these errors of inference, we compare the estimated

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[†]Regression analysis controls for the different distributions of treatment and control groups across sites and to some extent for differences in the characteristics of the two groups due to different patterns of attrition. By taking into account the effects of other factors, regression may also produce more precise estimates of program effects. The variables used to adjust the estimates must, of course, be independent or channeling's expected effects. For this reason they are restricted to baseline data and data collected on the initial eligibility screen. See Brown 1986 concerning the specific variables used and a full explanation of the estimation methodology.

[††]Because most outcomes could be either increased or decreased by channeling--that is, hypotheses about the direction of channeling's effects were somewhat in doubt--the more stringent two-tail tests have been used throughout rather than one-tail tests that are appropriate when the expected direction of an effect is unquestionable. Use of the somewhat more stringent statistical criterion does not affect the basic conclusions.

effects across related outcome measures, time periods, and models, using the pattern of results to determine whether channeling had effects in areas for which the statistical tests do not all point in the same direction.

A number of technical questions inevitably arose about the quality of the estimates obtained, including the effects of sample attrition, the effects of proxy respondents, the validity of combining observations across sites, potential differences between the early half of the sample followed up for the 13-18 month period and the full sample, and the appropriateness of multiple regression versus alternative estimation techniques. Analysis of these issues indicated that the results reported here were generally not affected by any of these potential methodological problems.[6] In the isolated instances where a result may have been affected, we indicate that in subsequent chapters.

Estimates of channeling effects were obtained separately for the basic and financial control models throughout the evaluation, and tests were conducted of the equivalence of these effects. In general we find very few instances of significant differences between the two models in their effects. However, it must be recognized that this lack of significant differences does not necessarily imply that there would be no difference in the effectiveness of the two models if they had been implemented in the same locations. Other differences between the two sets of sites in factors such as the availability of nursing home beds and community services may have affected the results. Thus, estimated differences in effects of the two models reflect differences in the environments in which they were tested as well as differences between the two models.

In addition to analysis of the effects of the two channeling models, we examined channeling effects disaggregated by site and by subgroups of the sample.[7] There were few instances of statistically significant differences in effects across the channeling sites within each model. Furthermore, examination of each site independently found little evidence that any one site or group of sites was markedly more (or less) successful than the other sites.

Differences in channeling's effects across subgroups were analyzed using subgroups defined along these dimensions: disability (activities of daily living, continence, and cognitive functioning), Medicaid coverage, living arrangement/informal support, in a nursing home/waitlisted, unmet needs, referral sources, and risk of institutionalization (based on a full set of predictors). The major finding was the apparent uniformity of channeling effects across subgroups of the sample. No subgroup experienced effects significantly different from other groups for more than a few outcomes. (The one exception is noted in Chapter VII.)

NOTES TO CHAPTER II

[1]The channeling evaluation design is described fully in Kemper et al. 1982; the randomization and survey data collection procedures are detailed in Phillips et al. 1986; estimation methodology, and analyses of attrition bias and other potential methodological problems are discussed in Brown 1986 and Brown et al. 1986; representativeness of the channeling sites is analyzed in Carcagno et al. 1986, Chapters XIII and XIV.

[2]See, for example, Neilsen et al. 1970, Goldberg 1970, Katz et al. 1972, and Blenkner et al. 1974.

[3]See, for example, Greenberg 1974, Rathbone-McCuan and Lohn 1975, Brickner 1976, Sager 1977, General Accounting Office 1977.

[4]See Brown and Harrigan 1983 for evidence on the equivalence of the treatment and control groups.

[5]See Brown and Mossel 1984 for the technical analysis of the comparability of baseline measurement.

[6]See Brown 1986 for a summary of the extensive methodological work conducted as part of the evaluation.

[7]These analyses are reported in the technical reports on each outcome area. In addition, Applebaum, Brown, and Kemper 1986 conducted an analysis of differential effects across sites and Grannemann, Grossman, and Dunstan 1986 conducted an analysis of differential effects across subgroups.

CHAPTER III

CHANNELING CLIENTS

Definition and selection of the target population is a critical element in the design of health and human service programs. It is important not only in order to reach those for whom the services are most suited but also because the population served is a key determinant of program size and cost. The channeling demonstration, learning from the series of other long term care demonstrations, placed special emphasis on targeting, seeking to serve a frail elderly population at risk of institutionalization.

The characteristics of the channeling sample indicate that the eligibility criteria were observed. The resulting clients were old and frail. They were more frail on average than the sample members in most of the other demonstrations reviewed. Compared to the nursing home population they were younger, more often married, and slightly less disabled in activities of daily living. Finally, they were more likely to have had a recent hospital stay, to receive services from the existing system, to live alone, and to be on a nursing home waiting list than the general elderly population satisfying channeling's functional eligibility criteria.[1] As discussed in Chapter VII, however, they were at lower risk of institutionalization than expected.

A. ELIGIBILITY CRITERIA

Channeling's eligibility criteria were developed on the basis of the review of medical eligibility criteria for nursing home admission in the channeling states and of the literature on factors associated with

institutional placement[2]--as interpreted by a project advisory group which included federal and state officials, host agency and channeling project staff, staff from the technical assistance and evaluation contractors, and outside experts.

Major limitations in functioning were, it was generally agreed, an important factor determining institutionalization, and this served as the major eligibility criterion for the demonstration. To be eligible, applicants had to have at least moderate disabilities in two or more of the physical activities of daily living (ADL), three severe impairments in the instrumental activities of daily living (IADL), or two severe IADL impairments and one severe ADL disability.† Cognitive or behavioral difficulties affecting individual ability to perform activities of daily living could count as one of the severe IADL impairments.†† Although the minimum age for participation was 65, the functioning criteria were expected to identify a group substantially older than that.

Another requirement was that the client have at least two unmet needs in ADL or IADL. This was intended to guard against the danger that channeling would simply substitute for community services already available and being used. To ensure that the problems of potential clients were chronic, eligible applicants were required to have a prognosis based on the

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†For the specific ADL and IADL see footnote to Table III.1.

††Although primary emphasis was placed on the criterion requiring disabilities, an additional criterion provided for the exclusion of applicants who were too disabled to be appropriate for the level of community care that channeling could provide (e.g., applicants who were comatose or required oxygen that could not be self-administered). Because projects were permitted to develop their own operational definitions, this criterion was not uniformly defined across sites. In any case, very few applicants were excluded because they were too disabled.

subjective judgment of the screeners that these needs would continue for at least six months. The unmet need criterion could be met under a substitute criterion: that the informal support system--family and friends who provide care--was in danger of collapse (that would result in unmet needs). This criterion also required the subjective judgment of the screeners; however, as it turned out, in only a few cases (about 6 percent of clients) was it necessary to apply the alternative criterion (although an overwhelming majority were reported to have a fragile informal support system).

Because channeling was designed to prevent unnecessary institutionalization (rather than deinstitutionalize the already institutionalized population), applicants had to reside in the community, or if institutionalized, be certified as likely to be discharged within three months. Table III.1 summarizes the eligibility criteria used. (Residence in the catchment area and, for the financial control model, Medicare coverage were included as eligibility criteria for operational reasons.)

B. REFERRAL SOURCES

Application to channeling was voluntary. Channeling sought referral sources and engaged in outreach activities to identify applicants at risk of institutionalization. Hospitals, home health agencies, and social service providers were the major referral sources contacted by channeling. Some host agencies for the demonstration also served as major referral sources. Finally, channeling contacted nursing homes, nursing home preadmission screening units, and providers or potential providers of direct services to channeling, but these did not turn out to be major

TABLE III.1

CHANNELING DEMONSTRATION ELIGIBILITY CRITERIA

Age:	Must be 65 or over.
Functional Disability:	Must have two moderate ADL disabilities, or three severe IADL impairments, or two severe IADL impairments and one severe ADL disability. (Cognitive or behavioral difficulties affecting individual ability to perform activities of daily living could count as one of the severe IADL impairments.)[a]
Unmet Needs or Fragile Informal Support:	Must need help with at least two categories of service affected by functional disabilities or impairments for six months (meals, housework/shopping, medications, medical treatments at home, personal care), or have a fragile informal support system that may no longer be able to provide needed care.
Residence:	Must be living in community or (if institutionalized) certified as likely to be discharged within three months; must reside within project catchment area.
Medicare Coverage:	Must be Medicare Part A-eligible (for the financial control model).

[a]The six ADL activities included bathing, dressing, toileting, transfer, continence, and eating. The seven IADL activities were housekeeping, shopping, meal preparation, taking medicine, travel, using the telephone, and managing finances. For the purpose of the IADL eligibility criterion, the first two and the last three IADLs were aggregated into two combined categories. Thus there were four possible IADL areas under which applicants could qualify, plus the cognitive/behavioral impairment category which counted as one IADL item.

referral sources. In addition to the formal agency contacts, most channeling projects used direct community outreach. In all, channeling projects reported receiving referrals from over 20 types of referral sources.

The largest major category of eligible referrals came from health service providers, particularly hospitals and home health agencies (see Table III.2). A higher proportion of total eligible referrals came from these sources in the financial control than the basic sites--26 versus 19 percent from hospitals, and 22 versus 11 percent from home health agencies.

Very few eligible referrals under either model came from nursing homes, nursing home preadmission screens, or nursing home waiting lists. Although the number of referrals directly from nursing homes was not expected to be large (in fact, as indicated, applicants had to be certified as ready for discharge within three months), nursing home waiting lists and preadmission screens had been anticipated to be more important referral sources than they turned out to be. The primary reason was that in the majority of sites a preadmission screen did not exist. A second reason was that where screens did exist they generally referred only those clients who were not disabled enough to be nursing home-eligible. Finally, channeling projects did not aggressively pursue nursing home waiting lists because it was difficult to get access to those lists and because channeling staff generally felt that by the time individuals have decided to apply for institutional care, it is difficult to reverse the decision.

Physicians were also far less prevalent as referral sources than had been expected, accounting for about half of one percent of referrals (not shown). Channeling staff felt that physicians did not typically

TABLE III.2

REFERRAL SOURCES OF PERSONS SCREENED AS ELIGIBLE FOR CHANNELING
(percent)

Referral Source	Basic Case Management Model	Financial Control Model	All Sites
Health-Service Provider			
Hospital	19.4	26.0	22.7
Home health agency	11.3	22.4	16.9
Nursing home[a]	2.4	1.6	2.0
Family/friend/self	34.8	22.1	28.4
Social Service Agencies			
Senior center/nutrition	3.4	9.0	6.2
Casework/case management	5.8	4.7	5.3
Welfare/Medicaid	5.1	2.3	3.7
Information and referral	4.5	0.8	2.6
Channeling Outreach	1.0	2.8	1.9
Other[b]	12.2	8.3	10.3
Total	100.0	100.0	100.0

SOURCE: Carcagno, et al. The Evaluation of the National Long Term Care Demonstration: The Planning and Operational Experience of the Channeling Projects. Table VII.3.

SAMPLE SIZES: Basic model 3,336; financial model 3,386.

[a]Includes referrals from nursing home preadmission screens which accounted for 0.6 percent of total referrals, and nursing home waiting lists which accounted for 0.3 percent of total referrals.

[b]Includes referrals from physicians, homemaker services, home-delivered meals agencies, psychiatric facilities, counseling services, legal advocacy services, adult day care, and a category simply recorded as other.

consider community care options because they were relatively uninformed about them and tended to weigh the safety and 24-hour supervision advantages of nursing homes rather heavily.

Family, friends, and self-referrals were the next most important source after health service providers, constituting about 28 percent of eligible referrals.† Among family, friends, and self-referrals, referral by family members was by far the most common (8 out of 10, not shown).

Social service agencies (including case work/case management agencies, Departments of Public Welfare, senior centers, and information and referral agencies) accounted for nearly one-fifth of all eligible referrals for all sites taken together. That the yield from social service agencies was not higher is probably because their clients tended to be less frail than the channeling eligibility criteria required.

The volume of eligible referrals was somewhat lower than initially anticipated, particularly in the rural sites, which had smaller elderly populations, and in the basic case management sites, which did not have the expanded community services to attract clients that the financial control model had. As a consequence, the period of caseload buildup was extended two to four months to enroll sufficient sample for the evaluation.

C. SCREENING

The contacts on behalf of potential clients from service providers, friends or family members, and from the elderly individuals themselves,

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†This may be somewhat overestimated, since our site visit respondents indicated that some referrals by family, friends, or the elderly themselves were the result of recommendations from formal sources which on occasion suggested the informal route on the (erroneous) assumption that acceptance into the program was more likely.

were made with the screening units of the projects, which were responsible for determining eligibility. This was done through a set of questions (15 to 25 minutes in length) asked over the telephone.† There had been concern during the planning phase that it might not be possible to screen adequately over the telephone. In fact, staff reported that the process generally worked well. They felt most confident with the measures of physical functioning, reporting that assessment of unmet need and fragile informal support was more subjective and thus more difficult to determine systematically, particularly over the telephone.

Over the life of the demonstration (including the period after the end of randomization for the research) 11,769 applicants were screened, 9,890 (84 percent) of whom were determined eligible. Virtually all clients (97 percent) were in fact eligible based on the functioning criteria as reflected in the screening data. By far the majority (86 percent) of sample members qualified solely on the ADL criterion (had moderate disabilities in two of the six ADL tasks). The rest qualified either on the IADL component alone (severely impaired with respect to three of the IADL tasks) or on an ADL/IADL combination. More than 90 percent qualified on the unmet needs criterion. The rest of those eligible qualified on the fragile informal support alternative criterion.

At the baseline assessment, 80 percent of clients continued to be eligible. Fifteen percent continued in channeling, even though they did not satisfy all the formal eligibility criteria, based on case managers'

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†A small proportion of applicants was given an in-person screen, mostly those with no telephone or no access to a telephone (e.g., some of those in hospital or nursing home at the time of application).

judgments that continued participation would help them avoid institutionalization. Five percent were terminated because they were ineligible according to the baseline assessment.

D. CLIENT CHARACTERISTICS

Channeling clients experienced severe functional, health, social, and financial problems. Table III.3 summarizes the major characteristics of the channeling treatment group at baseline. The following discussion also provides detail not shown in the table.

Functioning. Channeling clients reported major limitations in their functioning. Eighty-four percent at baseline needed help with one or more activities of daily living (ADL), and 22 percent needed help with all five. Problems with incontinence were reported by over half (53 percent), and over four-fifths reported needing assistance with walking or being unable to walk at all. Impairments in instrumental activities of daily living (IADL) were reported by virtually all channeling clients. On average clients indicated that they needed help with over five of seven IADL tasks. Mental functioning, as measured by the short portable mental status questionnaire (SPMSQ)--which asked clients such questions as their age, day of the week, and name of the U.S. President--was also limited for the typical channeling client at baseline. On average clients missed between 3 and 4 of the 10 items, and 34 percent were classified as having severe mental impairments (missing more than five questions).[†]

[†]These numbers may understate cognitive impairments because they exclude cases where proxy respondents (e.g., a spouse or child) completed the interview because the sample member was unable to respond; cognitive impairment was a reason for reliance on proxy respondents.

TABLE III.3

CHARACTERISTICS OF CHANNELING TREATMENT GROUP AT BASELINE

	Basic Case Management Model	Financial Control Model	All Sites
Health and Functioning			
Any disability in ADL (percent)	83.4	84.2	83.9
Number of ADL disabilities (maximum 5)	2.7	2.8	2.7
Incontinent (percent)	52.5	53.6	53.1
Any impairment in IADL (percent)	99.5	99.8	99.7
Mental functioning (number incorrect on 10-item scale)	3.4	3.5	3.5
Days restricted to bed in last two months	19.5	20.1	19.8
Sociodemographic Characteristics			
Living alone (percent)	35.1	39.1	37.2
Age (years)	79.2	80.1	79.7
Ethnic group (percent white)	75.6	71.1	73.3
Sex (percent female)	71.9	70.6	71.2
Married (percent)	31.9	32.9	32.4
Income and Assets			
Monthly income (dollars)	567	572	570
Owns home (percent)	44.7	38.9	41.7
No assets other than home (percent)	59.4	55.1	57.2
Medicaid coverage (percent)	20.4	23.7	22.1
Life Quality			
Stressful life event in past year (percent)	86.0	87.4	86.7
Often lonely (percent)	27.0	25.7	26.3
No social contacts in past week (percent)	9.4	10.2	9.8
Number of unmet needs (maximum 8)	3.3	4.0	3.7
Not very satisfied with life (percent)	39.5	47.4	43.7
Waitlisted or applied to nursing home (percent)	7.3	6.3	6.8
Unwilling to go into nursing home (percent)	63.4	67.3	65.5
Prior Service Use			
Case management received (percent)	8.8	16.9	13.1
Regular formal in-home care (percent)	57.4	63.5	60.6
Regular informal in-home care (percent)	92.5	92.0	92.2
Hospital admission, past two months (percent)	47.2	49.9	48.7

SOURCE: Carcagno, et al. The Evaluation of the National Long Term Care Demonstration: The Planning and Operational Experience of the Channeling Projects. Tables VII.5, VII.9, VII.10, VII.12, VII.13, and VII.15.

SAMPLE SIZES: Basic model 1,638; financial model 1,815.

Health. A large majority of channeling clients reported their overall health as fair or poor at baseline (83 percent). Clients reported debilitating medical conditions such as heart trouble (47 percent), stroke (29 percent), cancer (12 percent), arthritis (71 percent), diabetes (21 percent), respiratory problems (25 percent), high blood pressure (43 percent), and paralysis (15 percent). Clients also reported that in the two months prior to entering channeling they had spent on average about 20 days restricted to bed most or all of the day.

Living Arrangement. Consistent with the demonstration eligibility criteria, most channeling clients were in the community at baseline. Approximately 12 percent of the clients were in a hospital at baseline. Few (less than 3 percent) of the clients were in a nursing home. Approximately 37 percent of the clients lived alone. The majority of the rest lived with either their spouse or spouse and children. In addition, 43 percent of the clients reported that one or more of their children lived within 30 minutes of the client's residence.

Demographic Characteristics. Channeling clients reported a mean age of 80 at baseline, the oldest client being 103. Seven out of 10 channeling clients were female. Almost three-quarters of channeling clients were white, 23 percent were black, and 4 percent were Hispanic.

Income, Assets, and Insurance Coverage. Channeling clients were poor at baseline: 52 percent reported incomes below $500 per month and 57 percent reported no assets other than a home.[†] Applicants to the financial

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[†]Income data were collected in 1982 and 1983. They include household income of clients and spouses (when one is present), but not incomes of any other household members.

control model were, as indicated, required to have Medicare coverage, but even in the basic sites almost all clients had Medicare coverage. Medicaid coverage was reported by 20 percent of the basic and 24 percent of the financial model clients.

Life Quality and Unmet Needs. A large majority of channeling clients (87 percent) reported experiencing a stressful life event in the year prior to application. Over 70 percent indicated the onset or worsening of a serious health condition, for example, and 38 percent reported the death of a close friend, relative, or spouse. Approximately 26 percent of the channeling clients reported being often lonely, and almost 17 percent reported at most one social contact in the week prior to the baseline.

Channeling clients were also asked to report unmet needs and, as discussed, this was one of the channeling eligibility criteria. Eight potential areas of unmet needs were examined (dressing, transfer, toileting, bathing, meal preparation, housekeeping, transportation, and medical treatments). Channeling clients reported on average over three unmet needs, with a high proportion of the clients reporting unmet needs with bathing (66 percent), housekeeping (68 percent), and meals (54 percent). Although a majority of the clients reported substantial unmet need, at the baseline assessment 24 percent in the basic case management sites and 13 percent in the financial control sites reported zero or one unmet need.

Prior Service Use. Service use prior to channeling was already substantial. An important minority of the channeling clients (9 percent in the basic case management sites and 17 percent in the financial control

sites) reported that someone from a formal case management agency helped them arrange for services prior to the baseline. Nearly half reported a hospital admission in the 2-month period prior to channeling, suggesting that an acute care episode may have precipitated application to channeling for many clients. In addition, 6 percent of the clients reported at least one admission into a nursing home during that 2-month period. About two-thirds of the sample, however, responded that they would not consider moving into a nursing home.

Many channeling clients were receiving some formal services from the existing community care system, more in financial control sites than in basic sites: 57 percent of clients in the basic case management sites and 64 percent in the financial control sites reported receiving some formal in-home care at baseline, with the average amount per client reported to be slightly over seven hours of care per week. In-home care from family and friends was reported by a high proportion of clients. Ninety-two percent under both models reported receiving some informal care at baseline.

E. CHANNELING SAMPLE COMPARED TO OTHER LONG TERM CARE POPULATIONS

This section compares the characteristics of the channeling sample with those of three other long term care populations: the samples of other community care demonstrations; the national nursing home population; and a simulated national sample eligible for channeling based on the functional program eligibility criteria.

1. Comparison with Other Community Care Demonstrations

All but one of the other demonstrations we reviewed developed eligibility criteria designed to narrow their target population to those at

risk of institutional placement. Three major types of criteria have been used. The first was documented service need, which was expected to be accompanied by a functional disability although a specific level of impairment was not specified. The second was documented service need plus a specified level of functional impairment. The third was identification of applicants through a nursing home preadmission screen, which included not only service need and measures of functioning but also application for nursing home admission.

Of the 13 demonstrations that attempted to serve those specifically at risk of nursing home placement, four used service need or indicators of it (e.g., hospitalizaton, loss of caregiver) without a specified functional impairment criterion. Seven specified levels of functional disability, which varied by demonstration. Channeling is classified as part of this group, although the channeling functional impairment requirement was intended to be more stringent than those of its predecessors. Only two linked entry to a nursing home preadmission screen.[3]

Compared to those of the other demonstrations, channeling clients generally were toward the frailer end of the disability range. Channeling clients reported at least one ADL disability in the vast majority of cases (84 percent); this was higher than 12 of the 14 other demonstrations, and for only one sample was the percentage substantially higher (95 percent) than channeling. Virtually 100 percent of the channeling sample were IADL-impaired. In this respect the channeling sample resembled those of six of the prior demonstrations, with more than 97 percent IADL-impaired. The information on incontinence is rather incomplete. For those demonstrations where it was measured separately, the channeling sample fell near the more

impaired end of the range (53 percent, versus a high of 60 percent and a low of 22 percent). Finally, the channeling sample was more cognitively impaired than all but one of the other samples. The channeling sample averaged 3.5 answers wrong out of a possible 10; the other highly impaired sample averaged 3.6; the others ranged downward to 0.6.

With respect to demographic characteristics, prior demonstrations exhibited considerable variation. Channeling was generally in the middle on the percent white, female, and married. Channeling had a smaller percentage living alone than all but three of the prior demonstrations, which may reflect the relatively high disability levels of the population rather than the availability of informal caregivers.[4]

2. Comparison with the National Nursing Home Population

Channeling sought to serve those at high risk of nursing home placement. Comparison of selected channeling client characteristics with those of nursing home residents nationwide indicates whether the channeling eligibility criteria produced a population similar to the population in nursing homes. Although similar characteristics are no guarantee that the channeling population was at high risk of institutionalization, a population substantially different on characteristics believed to be associated with nursing home placement (such as functional disability) would suggest failure to target those at risk).[†]

[†]The comparison is limited because the nursing home statistics cover all residents rather than just nursing home entrants. Moreover, characteristics of nursing home residents may have changed during the five to six years between the nursing home survey and channeling.

As can be seen in Table III.4, channeling clients and the nursing home population in 1977 were both 71 percent female. However, major differences existed on age, race, and marital status. The channeling sample was younger than nursing home residents, with 28 percent over age 85 among channeling clients compared to 40 percent in nursing homes. A much higher proportion of the channeling sample was nonwhite (27 percent versus 7 percent), reflecting in part the higher proportion of minorities in the channeling sites than in the nation. The channeling sample also had a much higher proportion of individuals who were married (32 percent) compared to the nursing home sample (12 percent).

With respect to measures of functioning, a slightly higher proportion of nursing home residents was disabled on all but one of the ADL tasks, but a higher proportion of the channeling sample was impaired on the continence and mobility measures (although the comparability of the latter two measures is subject to question).[†]

That channeling clients were somewhat younger, more likely to be black, more likely to be married, and slightly less disabled suggests that channeling may have served a slightly different population than that served by nursing homes. We return to the issue of institutionalization risk in Chapter VII.

[†]The comparison of the two samples is limited because of both different methods of data collection and different questionnaire wording. The channeling data were self-reported, whereas the nursing home data came from informed nursing home personnel. The wording of questions varied as well. For example, on the continence item the channeling assessment asked the sample member, "During the past week, did you accidentally wet or soil yourself?" The nursing home survey asked nursing home staff, "Does patient currently have any difficulty in controlling his/her bowels?"

TABLE III.4

CHANNELING SAMPLE CHARACTERISTICS COMPARED TO THOSE OF NURSING HOME RESIDENTS
(percent)

	Channeling	Nursing Home Residents
Age		
65-74	27.5	18.8
75-84	44.3	41.4
85+	28.1	40.0
Percent Female	71.2	71.2
Race		
White or other (not Hispanic)	73.3	92.6
Black (not Hispanic)	23.0	6.3
Hispanic	3.7	1.1
Married	32.4	11.9
ADL Disability		
Eating	25.0	32.6
Toileting	56.3	52.5
Dressing	60.6	69.4
Bathing	78.8	86.3
Mobility Impairment	81.5	66.1
Incontinent	53.1	45.3

SOURCE: Carcagno, et al. The Evaluation of the National Long Term Care Demonstration: The Planning and Operational Experience of the Channeling Projects. Table VII.7. The nursing home resident statistics are for 1977.

3. Comparison with the National Eligible Population

To get some indication of the size of the national population meeting channeling's functional eligibility requirements and how channeling clients compared with the nationally eligible population, we were able to use the sample of frail elderly who participated in the 1982 National Long Term Care survey. The survey was conducted on a nationally representative sample of 6,393 persons eligible for Medicare, who reported disability in at least one ADL or IADL task that had persisted for three months or more.[5]

The national data suggest that in 1982 about 1.3 million noninstitutionalized persons age 65 or over would have been eligible for channeling based on its functional criteria.[†] This amounts to 4.9 percent of the noninstitutionalized elderly population. For comparison, the channeling project caseloads, which ranged from 200 to 523, were less than 0.5 percent of the elderly population in the sites with the largest populations, and 1.1 to 1.6 percent in the three sites with the smallest ones.

Table III.5 compares the characteristics of channeling clients with those of the subset of the National Long Term Care Survey sample who met channeling's functional criteria. The channeling clients were similar to the simulated national eligible population in age, functional disability, and receipt of informal care. Mean age for both samples was just under 80. Not surprisingly, given the use of ADL to simulate the nationally eligible population, overall ADL disability status was similar; disability

[†]Eligibility was simulated by selecting cases which qualified on the channeling ADL criterion; the group qualifying under the IADL criterion had to be approximated because of data limitations. Unmet needs and fragile informal supports could not be used. (See Carcagno et al., 1986 Appendix B for a discussion of the methodology.) We are grateful to Ray Hanley for providing us with these tabulations from the national survey.

TABLE III.5

CHANNELING SAMPLE CHARACTERISTICS COMPARED TO THOSE OF SIMULATED NATIONAL SAMPLE FUNCTIONALLY ELIGIBLE FOR CHANNELING

	Channeling Sample	Simulated National Eligible Sample
Mean Age	79.7	78.5
Disability on ADL (percent)		
Eating	25.0	20.6
Transfer	52.7	45.2
Toileting	56.3	41.3
Dressing	60.6	63.9
Bathing	78.8	86.2
Impairment on IADL (percent)		
Meals	88.0	78.9
Housekeeping	97.4	68.3
Shopping	95.6	92.7
Money management	70.0	62.1
Telephone use	54.6	46.3
Percent Incontinent	53.1	53.8
Mental Functioning (number incorrect 1-10)	3.5	2.3
Regular Informal In-Home Care (percent)	92	96
Monthly Income (dollars)	570	644
Married (percent)	32.4	46.1
Female (percent)	71.3	63.0
Living Alone (percent)	37.2	16.6
Any Formal In-Home Care (percent)	60.6	33.9
Any Hospital Stays (percent in last two months)	48.7	20.1
Any Nursing Home Admissions (percent in last two months)	5.9	0.9
Percent on Nursing Home Waiting List	6.8	1.4

SOURCE: Carcagno, et al. The Evaluation of the National Long Term Care Demonstration: The Planning and Operational Experience of the Channeling Projects. Table VII.8.

in eating, transfer, and toileting was somewhat higher for the channeling sample, and dressing and bathing somewhat lower. The incidence of incontinence was practically identical. Impairment on IADL was consistently higher for the channeling sample than for the simulated national eligible sample, considerably so for housekeeping. The use of informal care was extremely high for both groups (92 percent for channeling, 96 percent for the simulated national eligible population), indicating the importance of informal care for the frail elderly.

The percent married, percent female, percent living alone, and mean monthly income all differed for the two samples. Channeling's sample was less likely to be married, more likely to be living alone, more likely to be female, and somewhat poorer than the simulated national sample.

The most conspicuous features of the table are the substantial differences in the use of formal services: in-home care, hospitals, and nursing homes. Channeling sample members at baseline (i.e., before receipt of channeling services) were almost twice as likely to be receiving formal in-home services, more than twice as likely to have had a hospital stay in the last two months, and more than six times as likely to have been in a nursing home as the national sample. In addition, 6.8 percent of the channeling sample were on a nursing home waiting list, versus 1.4 percent of the simulated national eligible population.

The two interviews asked different questions on attitudes toward nursing home placement (not shown). About two-thirds of channeling clients reported that they would not move into a nursing home under any circumstances. Of the simulated national eligible population, 94 percent of those with an opinion said they agreed with the statement that people go

to nursing homes only when there is no other place to live. Almost all (98 percent) agreed that it is better to stay out of a nursing home as long as you can.

The disparities in the actual use of hospitals and nursing homes prior to channeling provide support for the argument that persons often came to the attention of channeling because of some event (such as an acute care episode) that increased the likelihood that they would need more care. The occurrence of such an event may have been a factor differentiating those who applied for channeling from those who did not. The high level of receipt of in-home care suggests that many of those who applied were already connected with the existing service system.

Taken together, the systematic direction of the differences between the two groups suggests that channeling attracted applicants who differed from the general elderly population satisfying channeling's functional eligibility criteria. Channeling clients were more likely to have needs for postacute care, to receive formal care from the community care system, and to live alone than the simulated national population. Whether they were at greater risk of institutionalization, however, cannot be determined.

NOTES TO CHAPTER III

[1]For full detail on the material covered in this chapter, see Carcagno et al. 1986, Chapters VI and VII.

[2]Literature available when the eligibility criteria were being developed included Greenberg and Ginn 1979; Weissert et al. 1980; Vincente et al. 1979; Noelker and Beckman 1979; Brody 1977; Grauer and Birnbom 1975; Sherwood et al. 1977.

[3]See Applebaum, Harrigan, and Kemper 1986, Table 3.

[4]See Applebaum, Harrigan, and Kemper 1986, Table 4.

[5]For further information on the national long term care survey see Hanley 1984, Macken 1984, and Macken forthcoming.

CHAPTER IV

CASE MANAGEMENT

One of the assumptions of the designers of channeling was that the existing long term care system was characterized by fragmented direct services of various types and of limited availability, and that these services were uncoordinated because there was little or no comprehensive case management. The demonstration's basic objective was to test the effects of providing (1) comprehensive case management of community services and (2) expanded direct services (covering a broad range of community services under the financial control model, but a much more limited one under the basic case management model). This chapter compares receipt of channeling's comprehensive case management by the treatment group with receipt of comprehensive case management from other sources by the control group.

In general, the demonstration was successful in delivering comprehensive case management to the channeling treatment group. There were, however, contrary to initial assumptions, also some agencies in both basic and financial sites offering case management services that approached channeling's in their comprehensiveness. Some control group members received these services, but a much smaller proportion than the proportion of the treatment group members receiving case management under either model of channeling. It is also clear that a higher proportion of the control group received comprehensive case management in the financial control sites than in the basic case management sites.[1]

A. CASE MANAGEMENT RECEIVED BY THE TREATMENT GROUP

This section addresses whether channeling was implemented as intended. It then estimates the proportion of the treatment group that actually received case management.

1. Implementation of Comprehensive Case Management by Channeling

The demonstration placed a great deal of emphasis on implementing channeling as intended and in a consistent manner across sites. This was achieved through training and monitoring by the technical assistance contractor; involvement of project staff in planning of the evaluation as it affected project operations; and periodic meetings of all project directors to exchange information with one another, the technical assistance and evaluation contractors, and DHHS staff.[2]

Organization and Staffing. The demonstration design called for and obtained management and supervisory staff who met the standard professional qualifications of the field and were trained for channeling in a uniform manner. Most of the case managers had degrees in social work or other social science disciplines and/or human service experience; projects typically used nurses as supervisors or consultants. The case management and supervisory staff at each of the 10 sites also received standardized training in assessment, care planning, and other aspects of case management.

Case managers were expected to have small enough caseloads to allow them to spend enough time on individual clients to provide comprehensive case management. To meet this objective demonstration planners expected case managers to carry approximately 50 cases. Actual cases averaged 45 per case manager under the basic model and 49 under the financial control

model.[†] A service audit and program review function originally planned to monitor case management quality was not implemented in most projects and was later made optional. Finally, case managers were to be supervised closely. This objective was achieved, with a case manager to supervisor ratio of about six to one under the basic model and four to one under the financial model.

Initial Assessment, Care Planning, and Service Arrangement. The case management component was designed to include a comprehensive assessment, care planning, and service arranging process. In-person structured assessments, taking 75 minutes on average to complete, served the important clinical function of providing the basis for care planning as well as the research function of providing baseline data for the evaluation. They covered living arrangements, health and functioning, service use and needs, informal care, financial resources, eligibility for services, and demographic information. The assessment was to be completed within 9-11 days (seven working days) after the sample member was randomly assigned to the treatment group. Assessments were completed on all clients. Although the average completion time of 9 days was within the limit, assessments often took longer.

As intended, a formalized care plan which included both informal caregiving and formal services was completed for each participating client, and supervisory review was conducted on all care plans as well as their

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[†]Caseload estimates are not available for all the other community care demonstrations with which we are comparing channeling. The data we do have (for 6 of the 14) indicate a wide range--from a high of 125 clients per case manager to lows of 45-60. Thus, channeling was at the low end of the caseload range. See Applebaum, Harrigan, and Kemper 1986, Table 7.

revisions in response to reassessment. As described in Chapter I, the financial control model pooled the funds from Medicare, Medicaid, and local programs to give case managers authority over the amount, duration, and scope of services regardless of funding source. In general they reported being able to purchase services under the funds pool in all the service categories without difficulty, although effective authority to specify the amount and duration of services was limited in some cases.† Case managers under the basic model relied primarily on a brokering approach to arrange services, for which they required the approval of provider agencies. To enhance this service arrangement process, the design called for a small amount of gap-filling dollars to be used to purchase services needed to complete a care plan. Case managers did report being able to use these funds as intended.

There was a difference between the two models in the length of time it took for case managers to complete the care plan including written approval by both the supervisor and client. Case managers under the basic case management model took longer (the median was 22 days elapsed time between assessment and completion of the care plan versus 13 days under the financial control model), presumably because the ability to authorize and pay for direct services enabled the financial model case managers to reach agreement with clients more quickly than under the basic model. However, financial control case managers required more time to complete the

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†For example, when ordering home health services the home health agency staff also made a judgment about the appropriate level of services, and they and the channeling case managers jointly agreed on the amount and duration of services. In addition, supply shortages of some services (e.g., homemakers) limited what could be ordered in some sites.

assessment, to receive supervisory review of the care plan, and to arrange and initiate the first service, largely offsetting the time difference in achieving agreements with clients.

Overall, the time from eligibility screening to service initiation was over a month for half the clients under both models. (The median time was 33 days under the basic model and 32 days under the financial model.) Although channeling's intended focus on the chronic care needs of the target population implied a longer elapsed time than is typical of providers (such as home health agencies) that respond to acute care needs, channeling's elapsed times were longer than anticipated. The long elapsed times were attributed by project staff to the extensive assessment and care planning activities at intake and the workloads faced by case managers (which were perceived to be heavy given the frailty of the caseloads even though on average they were no heavier than anticipated by the channeling planners).†

Ongoing Case Management. After channeling projects had arranged for initial services it was expected that ongoing case management would be an important activity. To this end, the demonstration design specified regular monitoring contacts with clients to examine their condition and services received, and a formalized reassessment and care plan adjustment process.

Case managers were to have regular contacts with clients by telephone and in person. Most contact was by telephone. Only a few

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†Elapsed time data generally are not available for similar demonstrations or ongoing programs, so we do not know how typical or atypical these elapsed times to service initiation were.

clients did not receive regular telephone contact. In-person visits by case managers typically occurred much less frequently. Projects were to perform the initial formalized in-person reassessment and care plan revision after three months and further reassessments at 6-month intervals. The requirement for the first reassessment at three months was relaxed to six months early in the demonstration in part because of high workloads and in part because case managers were in frequent contact with clients during the care planning and service initiation period. The 6-month reassessments occurred on schedule for the majority of clients.

Compositional Differences in Case Management Activities between Models. The key components described above were thus implemented largely according to design. Implementation across sites within models was remarkably uniform. Implementation differed between the two models in several ways--such as lower caseloads, less supervision, and longer elapsed time between the assessment and initiation of services under the basic case management model than under the financial control model. These differences were not large, but they could potentially influence the effects of the case management component of channeling under the two models.

Total staff resources (as measured by expenditures) were approximately the same for the two models, although the resources devoted to different aspects of case management differed. The major difference between the two models was the relative amount of time spent on indirect functions such as administration, provider relations, and clerical support versus direct client functions. The financial control model spent 56 percent of its resources on these indirect functions compared to 43 percent under the basic model. This difference is explained by the additional

management time necessary under the financial model to deal with provider contracts, provider payments, and financial monitoring; and the additional case manager and clerical time devoted to ordering direct services and reconciling expenditures to date with services ordered at the end of each month. Paperwork connected with the service orders and month-end reconciliation, and the greater number of services for which the financial control projects had direct responsibility, contributed to this extra burden.†

The channeling technical assistance staff at Temple University conducted a study of a small sample (254) of case files and found some suggestive evidence of differences in case manager behavior between models, probably because of the responsibility under the financial model for authorizing direct services and associated paperwork.[3] For example, although client characteristics and needs at baseline were similar under the two models, financial control model case managers appear to have identified more problems with physical and mental functioning in response to which they were able to authorize in-home care and other direct services. The basic model case managers, in contrast, identified a broader range of problems of community living (such as lack of a telephone, inadequate financial resources, fragile informal supports, poor housing, and need for legal help). These differences suggest that the direct service authorization power under the financial model may have affected what case managers judged to be a service need.

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†Although both models emphasized cost control in the care planning process (for example, documenting costs in the care plan), only under the financial control model were case managers required to complete a cost calculation worksheet and examine the costs relative to the cap for each of their cases. Case managers under the basic case management model typically used the worksheets only for the unusually high cost cases.

Also potentially related to the difference in power to authorize services were differences between models in the proportion of activities recorded by case managers that involved providers rather than clients or informal caregivers.† Provider-related actions were much more important proportionally under the financial control model, and client or caregiver support actions much more important under the basic case management model. In addition, technical assistance staff interviews with case managers suggested that case managers under the basic model were more likely than those under the financial model to have encouraged informal caregivers to participate in the case management function. This may have been due to the need for family involvement with the existing system under the basic model, in contrast to the power to authorize payment for services which the case manager monitored directly under the financial model.

Although clearly not definitive evidence, taken together these differences suggest that the basic case management model may have led case managers to play a role that was broader and to provide more support for clients and their informal caregivers directly through reassurance and personal contact (rather than through the provision of formal services) than was the case under the financial control model.

2. Participation in Case Management by the Treatment Group

Our discussion so far has focused on the characteristics of the case management functions implemented under channeling. We now look at the proportion of those assigned to become channeling clients who actually

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†Examples of actions recorded in case files are: alter plan of care, negotiate with provider, reassess needs, and provide direct support to client (through counseling, caregiver support groups, etc.).

received case management. Channeling's case management could only have an effect to the extent that clients received it.

Table IV.1 shows the rates at which clients left the program at three stages of the case management process: between random assignment and assessment, between assessment and service initiation, and after service initiation.

Those who left between random assignment and assessment by definition did not receive any case management from channeling because they left before the first case management function. This was true for 11.0 percent of the clients in the basic case management model and 6.8 percent in the financial control model. This is the biggest difference in rates between the two models, most of it accounted for by differences in the rates of refusal to participate in channeling between the two models (7.8 percent under the basic model versus 3.1 percent under the financial control model).† Thus, it is probably due to the basic model's more limited ability to pay for services.

The proportions who left between assessment and service initiation were similar for the two models, with the rate slightly higher for the financial control model (10.7 percent for basic model clients versus 11.2 for financial model clients). Death or institutionalization accounted for over a third of the total at this stage for both models.

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†Because research interviewers were able to complete baseline interviews with about half the treatment group who left channeling without a completed baseline, attrition rates between randomization and assessment were somewhat lower for the analysis samples (which included only those for whom baseline data were available) than for the client caseloads.

TABLE IV.1

RATES AT WHICH CLIENTS LEFT CHANNELING DURING THE 12 MONTHS AFTER RANDOM ASSIGNMENT, BY REASON AND STAGE IN CASE MANAGEMENT PROCESS
(percent)

Reason for Leaving Channeling (percent)	Basic Case Management Model[a]				Financial Control Model			
	Between Random Assignment and Assessment	Between Assessment and Service Initiation	After Service Initiation	Total	Between Random Assignment and Assessment	Between Assessment and Service Initiation	After Service Initiation	Total
Died	1.7	2.7	14.0	18.4	1.8	2.0	14.6	18.4
Institutionalized	0.6	2.0	9.4	12.0	0.8	2.0	10.5	13.3
Refused	7.8	2.8	3.7	14.2	3.1	2.4	2.0	7.5
Insufficient Disability	0.1	2.2	0.8	3.1	0.2	2.4	1.2	3.8
Moved/Unable to Locate	0.4	0.4	2.4	3.2	0.4	0.3	1.8	2.5
Other	0.4	0.5	1.9	3.0	0.5	2.1	1.4	4.0
Total	11.0	10.7	32.2	53.8	6.8	11.2	31.5	49.5

SOURCE: Carcagno, et al. The Evaluation of the National Long Term Care Demonstration: The Planning and Operational Experience of the Channeling Projects. Table VIII.8.

SAMPLE SIZES: Basic model 2,108; financial model 2,498.

[a]Under the basic model, in some cases of urgent client need service initiation came before care plan completion. The times shown here are for care plan completion and service initiation, whichever came first.

Of the persons assigned to the channeling treatment group, therefore, 78.3 percent received case management services at least up to initiation of direct services under the basic model; 82.0 percent did so under the financial model. Under each model, of the roughly 20 percent who did not remain in channeling through completion of their care plan and initiation of services, about a third (7 percentage points) had died or been institutionalized.† Clients left channeling after service initiation at very similar rates for the two models (32.2 and 31.5 percent), three-quarters of which was due to death or institutionalization under both models.††

B. CASE MANAGEMENT RECEIVED BY THE CONTROL GROUP

The extent and comprehensiveness of the case management received by control group members defines what observed treatment/control differences actually measure. If the existing service environment lacked comprehensive case management, then the channeling demonstration, as intended, will have tested the effects of adding comprehensive case management to a fragmented service system. If, in contrast, the existing service environment already contained comprehensive case management, the demonstration will have tested only the effects of adding more comprehensive case management to what is already in place. If the control group were to receive as much

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†Although data are not available for all prior demonstrations and definitions of service initiation undoubtedly vary, the available evidence suggests that channeling was in the middle of the range of the other community care demonstrations. (See Applebaum, Harrigan, and Kemper 1986, Table 5.)

††When the sample is restricted to cases with baseline and followup interviews the financial control model has a lower rate departure from channeling than the basic model.

comprehensive case management as the treatment group under channeling, adding comprehensive case management to the existing service system would have no effect at all. (The direct service expansion component, of course, could nonetheless have an effect.)

In this section we describe the major kinds of case management available in the basic case management and financial control sites. Then we estimate the prevalence of receipt of comprehensive case management by the control group.

1. Kinds of Case Management Available

Case management is certainly not a new concept, and virtually all providers of direct services report managing their cases. The type of case management that typically exists is, however, service centered in that it is largely triggered by and provided in conjunction with some direct service or services. Such service-centered case management differs from comprehensive case management under channeling in three dimensions: the intensity of client/case manager interaction, breadth of services managed, and duration of the case management. Intensity is determined by the amount of time the case manager has to spend with each client which is largely determined, in turn, by the case manager's caseload. The breadth of services encompassed refers to how broadly the case manager views the problems of the clients and the services to be arranged to respond to them. Breadth of case management is encouraged by the structure and thoroughness of the assessment and care planning process and by careful supervisory review. The duration of involvement refers to how long the case manager is involved with the client. Indications of longer term involvement are formalized, scheduled reassessments and regular monitoring of client condition.

Service-centered Management. Because most case management in the existing system is derivative of the provision of direct services, these three dimensions of intensity, breadth, and duration tend to be determined primarily by the nature of the direct services provided or paid for by the agency providing the case management. Several illustrations of the type of limited service-centered case management that was part of the existing system in the channeling sites will highlight some of these differences.

Hospital discharge planners, for example, provided patient assessment, care planning, and service arrangement for the post-hospital care of their patients. The thoroughness of the assessment and care planning typically were heavily constrained by workloads and pressure to discharge patients quickly. The care plans typically encompassed medical and personal care needs, but stopped short of addressing other problems (e.g., housing quality, respite care for informal caregivers, nonmedical transportation). And there was no accountability for post-hospital care and little followup, except in some cases of limited telephone followup immediately after discharge to make sure the services in the care plan were in place. Thus, although a relatively broad range of services was sometimes encompassed by hospital discharge planners, involvement with the patient was of very limited duration.

County and city social service departments provided service-centered case management of nonmedical services, frequently homemaker services. Social service departments did not typically deal with very impaired clients. Orientation toward services available through their departments, plus staff training, made them less prepared to deal with medical needs than were hospital discharge units. Caseloads tended to be

high and contact intermittent, and there was typically no provision for regular reassessment other than for reevaluation of income eligibility requirements. Thus, although the involvement of county or city social services departments was in many cases long term, the intensity was generally very low, and the breadth of services limited.

Certified home health agencies provided assessment, care planning, service arrangement, and monitoring. Case management typically was provided as part of a direct service (usually a skilled service such as nursing or therapy). It tended to be medically oriented, rather than including the full range of social service needs, although personal care needs were typically addressed. The direct services provided as part of the care plan were also tailored to the requirements of funding programs (particularly Medicare). Finally, cases were frequently closed when the need for skilled care ended. A typical case was a patient covered by Medicare following an acute hospital episode whose care was terminated when Medicare coverage ran out. Thus, home health agencies' case management had some of the elements of comprehensive case management; but the services included in care plans centered around home health, the duration of involvement was limited to the period when home health care was provided, and there were no scheduled reassessments. This combination of factors places it only slightly closer to the type of comprehensive case management provided by channeling than that provided by hospital discharge planners and most city and county social services departments.

The above types of service-centered case management were present in all 10 channeling sites and would undoubtedly have been received by the vast majority of clients even in the absence of channeling. As indicated

in Chapter III, almost half the clients had been admitted to a hospital in the two months prior to channeling and many of these would have received hospital discharge planning. About 60 percent were receiving some formal in-home care and many of these would have received case management from the providers of home health or other in-home services. The widespread availability of this type of service-centered case management was expected. Indeed, one of the things channeling sought to test was the addition of comprehensive case management to the existing system of limited case management associated with specific services.

Comprehensive Case Management. In addition to the expected service-centered case management, some comprehensive case management was already available to some people in the sites in which channeling was tested. Although relatively few agencies provided case management as comprehensive as that provided by channeling, a number of agencies approached it. As part of the evaluation, we conducted site visits during which we documented the availability of such comprehensive case management. We categorized these agencies into four groups: mental health/counseling agencies, integrated social service agencies, state home care programs, and special programs. In general, the state home care and special programs offered more comprehensive case management than the other two groups.

In two sites (one basic and one financial) mental health/counseling agencies provided separate case management with elements of comprehensive case management. Although they took a relatively broad approach to services included and their caseloads were not high, the relatively short duration of their involvement distinguished them from channeling. In two

sites (both basic), integrated social service agencies were able to provide relatively comprehensive case management, encompassing a broader range of services for somewhat lower caseloads than many social service agencies.

Closer to channeling in five of the sites (two basic and three financial) were state home care programs.[†] These programs combined funding from several sources (such as Title III of the Older Americans Act, social services block grants, and special state funds) to provide home care to the elderly with long term care needs. Comprehensive case management was an important component of these programs, although there were some differences between these state home care programs and channeling with respect to caseload, thoroughness of the assessment and care plans, and breadth of services encompassed. They typically did not integrate health services (such as nurses and home health aides) into their care plans, which emphasized social services (such as homemakers, meals, and transportation). Finally, in two sites (both financial) special programs combined provision of nursing or home health aide services with case management at least as comprehensive as channeling's.

2. Prevalence of Comprehensive Case Management in the Demonstration Sites.

To provide an indication of how much comprehensive case management was available in the channeling sites, we asked sample members whether they had received a visit from any of the agencies that fell into the four categories just described. Table IV.2 presents the percent of the control group reporting such a visit during the first six months after

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[†]In a sixth site, implementation of a statewide home care program in the channeling catchment area was delayed until after completion of the demonstration.

TABLE IV.2

CONTROL GROUP RECEIPT OF VISIT FROM COMPREHENSIVE CASE MANAGEMENT AGENCY DURING MONTHS 1-6
(percent)

	Basic Case Management Model	Financial Control Model
Mental Health/Counseling Agency	.3	1.5
Integrated Social Service Agency	6.0	0.0
State Home Care Programs	7.7	14.9
Special Programs	0.0	2.1
Total	14.0	18.5

SOURCE: Carcagno, et al. The Evaluation of the National Long Term Care Demonstration: The Planning and Operational Experience of the Channeling Projects. Table XV.3.

SAMPLE SIZES: Basic model 834; financial model 757.

randomization. In basic sites 14 percent and in financial sites 18.5 percent of the control group received a visit from such an agency. Thus, the demonstration tested the addition of channeling to a long term care system that already contained some comprehensive case management.

Some model differences are noteworthy. Overall the financial model control group had somewhat greater reported receipt of comprehensive case management than the basic model. Importantly, almost all of it fell in the most comprehensive categories--state home care programs and special programs. Indeed, every site in which the financial model was tested already had either a state home care program or a special program. Nearly half the receipt of case management reported in basic sites, by contrast, was in the less comprehensive category of integrated social service agencies. Thus, not only did the financial sites have a higher reported receipt of comprehensive case management, but it was also from agencies closer to channeling in comprehensiveness than those of the basic sites.

The greater prevalence of comprehensive case management in the financial control sites is a direct consequence of an early demonstration decision to assign models to sites explicitly on the basis of the relative richness of their service environments (see Chapter I). It was recognized that such assignment would weaken the demonstration's ability to test the effects of the financial control model as applied to a system without comprehensive case management and to compare the effects of the two models. But the risks that the basic model would not show effects if implemented in a service-rich environment and that the financial model could not function effectively in a service-poor environment were considered even greater concerns.

C. CONCLUSIONS AND IMPLICATIONS FOR OTHER EFFECTS

The most important conclusion is that both models of channeling substantially increased the receipt of comprehensive case management. Channeling's comprehensive case management was implemented largely according to plan and uniformly across sites, and a substantial proportion (two-thirds to three-quarters) of noninstitutionalized surviving clients remained in channeling for 12 months or longer. Although control group receipt of service-centered case management (for example, from hospital discharge planners and home health agencies) was substantial, receipt of comprehensive case management similar to channeling was well below channeling participation rates. Under the basic model, according to project records, 78 percent of initial enrollees completed the care planning and service initiation process compared to 14 percent of the control group who reported a visit from a comprehensive case management agency; the corresponding figures for the financial model were 82 percent and 19 percent.[†] Furthermore, a separate analysis indicated that large treatment/control differences in receipt of case management existed for all subgroups and all sites.

The second conclusion is that, despite this large increase in receipt of comprehensive case management by treatment group members as a consequence of channeling, some of the control group received case management approaching or equalling that of channeling in its comprehensiveness. Thus, the demonstration was not a pure test of the addition of channeling to a system with only service-centered case management.

[†]Although the data sources for these estimates are not strictly comparable, they indicate the extent of the intervention.

Third, the incremental increase in comprehensive case management provided by channeling over the existing system was somewhat greater under the basic case management than under the financial control model. The proportions of the treatment group receiving channeling case management were similar under the two models, but a higher proportion of controls in financial than basic sites received case management from state home care programs or special programs that were closest to channeling in their comprehensiveness.

Although the evidence is far from conclusive, it suggests that the greater availability of comprehensive case management in financial sites may have made the financial model, in the context of this demonstration, a somewhat weaker test of channeling's case management effect--though not of channeling's direct service augmentation effect. In this connection, it should also be remembered that some limited evidence suggests that basic model case managers may have had more direct client contact and taken a broader approach to meeting a wide spectrum of client and informal caregiver service, support, and counseling needs than did financial model case managers.

We now turn, in Chapter V, to a discussion of the effect of the second major component of the intervention, expanded financing of formal community services.

NOTES TO CHAPTER IV

[1]This chapter is based primarily upon Carcagno et al. 1986, Chapters VIII and XV.

[2]See Glennan 1983, pp. 18-20.

[3]See Schneider et al. 1985.

CHAPTER V

FORMAL COMMUNITY SERVICES

Channeling was designed to increase the use of formal community services, both through the arranging efforts of case managers and through direct service purchasing power. Because of the expanded service coverage under the financial control model, increased service use was expected to be greater under that model than under the basic model.

Effects on formal community service use were generally consistent with these expectations. A majority of control group members received formal services--6 out of 10 in the basic sites, 7 out of 10 in the financial sites. Even so, channeling achieved increases in in-home care, most provided by visiting service providers. These effects were substantially stronger under the financial model. There were also increases in home-delivered meals, transportation, and day care services under the financial model but not under the basic model. Both models increased the use of special equipment.

A. IMPLEMENTATION OF DIRECT SERVICE PROVISION BY CHANNELING

Like case management, direct service provision was implemented largely according to plan.[1] The funds pool waivers were negotiated successfully by all the financial control projects, and case managers were able to authorize service expenditures from the funds pool from the start of project operations. Because of delays in obtaining authorization, the basic case management projects were somewhat slower in implementing the gap-filling funds component, operating without it for from 2 to 11 months, depending on the site. Irrespective of model, case managers,

administrative staff, and providers reported that the availability of additional service dollars was a key component of the channeling approach.

1. Amounts and Types of Services Purchased

As intended, there was a major difference in the amount of direct services (i.e., exclusive of case management) the two models purchased with channeling funds. The basic case management model spent an average of $38 per month after service initiation (varying from $17 to $60 across the five projects). The financial control model spent $471 (varying from $398 to $612 across projects), reflecting the service authorization and funds pool provision of the financial model.† This comparison is limited to service expenditures directly authorized by channeling case managers; under the financial model they included expenditures from the funds pool which intentionally included services covered in the existing system by Medicare, Medicaid, and other government programs. In Chapter VIII total costs for all funding sources are compared.

Although the financial control model spent more channeling funds on most types of direct services than did the basic model, the relative expenditures were generally similar (as shown in Table V.1). Both models spent almost three-quarters of their direct service dollars on home health aide and homemaker/personal care services. This is consistent with the view of practitioners that help with personal care and housekeeping are the biggest service needs not covered by the existing community care system. The next largest category for the financial model was skilled nursing,

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†Authorization power applied to the community services as long as the individual remained a client. It did not apply to hospital, nursing home, and physician care.

TABLE V.1

CHANNELING'S DIRECT SERVICE EXPENDITURES,
BY TYPE OF SERVICE
(percent)

	Basic Case Management Model	Financial Control Model
Home Health Aide, Homemaker/Personal Care		
Home Health Aide	35.2	10.0
Homemaker/Personal Care	33.6	59.6
Housekeeper	1.0	1.1
Companion	7.6	2.2
Chore	0.8	0.8
Total	78.2	73.7
Nursing, Therapies, Mental Health		
Skilled Nursing	0.2	10.9
Therapy	0.0	3.6
Mental Health Counseling	0.0	0.5
Total	0.2	15.0
Home-Delivered Meals	4.5	5.3
Transportation	4.5	2.0
Adult Day Care	0.5	2.0
Adult Foster Care	1.0	0.0
Respite Care[a]	3.7	0.2
Noncare Items		
Consumable Medical Equipment	1.6	1.6
Adaptive and Assistive Equipment	2.9	0.2
Housing and Emergency Assistance	0.5	0.0
Other	2.4	0.0
Total	7.4	1.8
Total	100.0	100.0

SOURCE: Thornton, Will, and Davies. The Evaluation of the National Long Term Care Demonstration: Analysis of Channeling Project Costs. Calculated from Table III.6.

NOTE: These estimates exclude months prior to completion of care plan. They include sample members who signed a care plan but did not receive services.

[a]The proportion spent on respite care as shown here is an underestimate because much of the care that was in fact provided to enable a caregiver to take some time off was recorded by the type of service (e.g., homemaker).

therapies, and mental health counseling, at least some of which would be covered by Medicare and Medicaid under the existing system but were paid for from channeling's pooled funds by design; the basic model spent virtually nothing on this category, relying on existing funding sources (primarily Medicare and Medicaid). Home-delivered meals, transportation, adult day care, and consumable medical equipment were the categories that accounted for the next largest expenditures by the financial model, with other services quite small in comparison.

There were a few categories where basic model expenditures exceeded those of the financial model not only in relative but also in absolute terms. These are noteworthy because they reflect the greater emphasis of the basic model on respite care, adult foster care, adaptive and assistive equipment, housing and emergency assistance, and other expenditures. These differences reflect the fact that gap-filling funds generally were not sufficient to purchase routine services needed in large volume, and that case managers under the basic model were not restricted to an authorized list of services so they had greater flexibility to purchase nontraditional services. Examples of specific purchases that illustrate this point are roofing materials for home repairs, the building of wheelchair ramps, and the purchase of a talking clock for a visually impaired client. Under the financial control model, case managers had to purchase services within well-defined service categories, and purchases of equipment and materials such as those listed in our examples were not authorized.

2. Cost Control Elements

The financial control model, as noted earlier in the report, included three formal cost control elements in its design: (1) an annual

average care plan limit of 60 percent of the Medicaid nursing home reimbursement rate, (2) an individual care plan limit of 85 percent of that rate, and (3) client cost sharing.[†]

Care Plan Cost Limits. To help them stay within the two care plan limits, case managers completed a set of cost calculation worksheets that estimated the average cost of services in the care plan over the next year. These were reviewed by the case manager's supervisor, and any that exceeded the average limit were also reviewed by the director of the channeling project. These limits turned out to be set very high in relation to typical care plan needs. Care plans in all financial control projects averaged substantially below the limit on average expenditures (the highest average was 47 percent, the lowest 30 percent of the nursing home rate--well below the 60 percent limit). The requirement of calculating costs and comparing them to the limit, and the ability to trade off expenditures among clients, reportedly did increase cost-consciousness among case managers. Case managers under the basic model did not have a formal care plan expenditure limit or compulsory cost calculation worksheets. However, they did use the worksheets for unusually high cost care plans.

Cost Sharing. The cost-sharing feature of the financial control model was implemented with a set of guidelines establishing a protected

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[†]The average of the intermediate care facility (ICF) and skilled nursing facility (SNF) rates in each area was used. These limits were binding except that exceptions to the 85 percent limit could be made with state-level approval on a case-by-case basis.

level of income below which no client payment was required.† The required payment towards the cost of the care plan was either the difference between the client's monthly income and the protected income, or the actual costs of services, whichever was less. The level of protected income was intentionally set relatively high in order to encourage participation of those with incomes above Medicaid eligibility levels but who would, if institutionalized, soon become Medicaid eligible by spending down their assets. Services in the care plan that would otherwise be available in the area at no cost to the client were exempt from the cost-sharing provision. The extensive list of exempt services in all five sites, combined with the low income of the typical channeling client, meant that only 5 percent of clients under the financial model shared in the costs of care.

Although the basic case management model had no formal cost-sharing requirement, all basic case management projects in fact instituted a cost-sharing component for clients receiving services funded through gap-filling dollars. The actual criteria for contributions varied both within and across projects. Case managers liked the flexibility of this approach, feeling that they could balance client expenses and needs better than under a rigid system.

Case managers under both models felt that cost-sharing contributions increased both client and family interest in the care and

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†For single individuals it was generally set at 200 percent of the Supplemental Security Income benefit plus state supplement and food stamp allotment; for couples it was set at 175 percent of that amount. For single individuals the protected income ranged from $651 to $858 per month across the five financial control sites.

their willingness to notify the case managers in instances of inadequate care. Indeed, a majority of case managers and supervisory staff under the financial control model reported that a cost-sharing system should be designed to cover more clients.

3. Expected Effects

Channeling was expected to affect receipt of formal community care through two mechanisms. The first was by affecting the decision to live in the community rather than a nursing home. The second was by altering the demand for formal services by clients who would in any case have been in the community. Because a substitution of community for institutional residence would automatically increase community service use, the decision to live in the community is discussed first. Then we turn to the effects on use, which we measure in a number of ways.

B. THE DECISION TO LIVE IN THE COMMUNITY

Figure V.1 shows the proportions of surviving sample members who were living in the community after 6, 12, and 18 months.[†,2] Over time the proportion of surviving control group members who were in the community gradually decreased from about 82-84 percent to about 77 percent. This was due primarily to rising nursing home placements over time (see Chapter VII) and is not surprising for a sample that was initially quite frail.

Most sample members living in the community (over three-quarters) lived in a private residence (their own or that of a family member or

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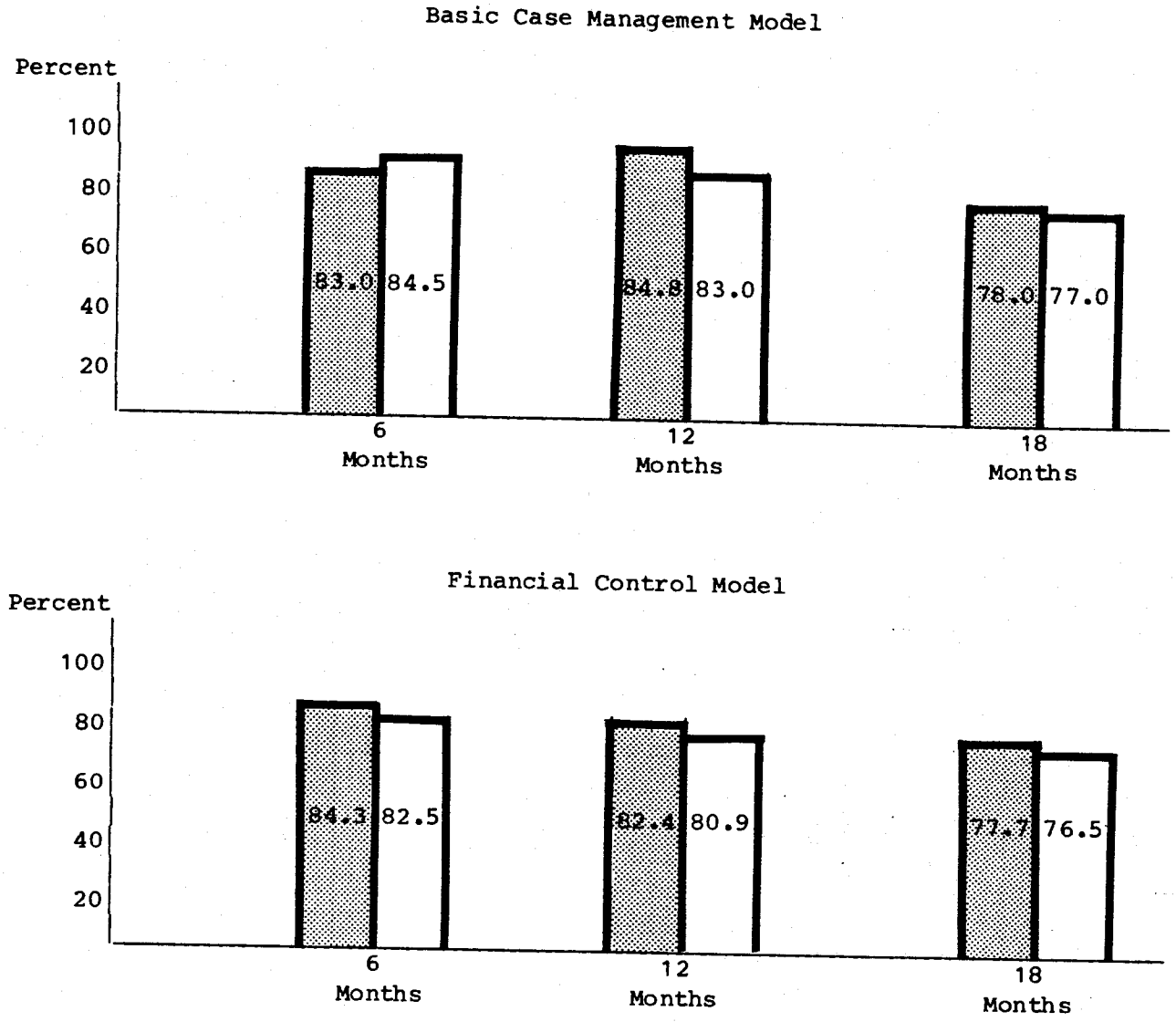
[†]Those in the community include all survivors who were not in a hospital or nursing home. It is important to note that, as is discussed in Chapter IX, there were no channeling effects on mortality. If there had been, the base for the percent shown in Figure V.1 would have had to include sample members who had died.

FIGURE V.1

PERCENT OF SURVIVORS IN THE COMMUNITY OVER TIME



SOURCE: Wooldridge and Schore. Channeling Effects on Hospital, Nursing Home, and Other Medical Services. Table C.1.

NOTE: None of the treatment/control differences is statistically significant.

KEY: = Treatment group. = Control group.

friend) throughout the demonstration. Another 10-17 percent lived in public housing: Only a small percentage of control group members lived in supportive housing or personal care homes.

Channeling did not have a significant effect on the proportion of persons living in the community.[†] Nor did it have a major effect on the type of community residence.

C. FORMAL IN-HOME SERVICES

Formal in-home services are defined as services provided by a profit or nonprofit agency (using employees or volunteers) or a paid helper; they exclude care provided by family and friends. Effects on formal in-home service use can come about through changes along two dimensions: the proportions receiving the services and the amount of services received. Each dimension is discussed in turn.

Receipt of Formal In-Home Services. Table V.2 presents the findings with respect to in-home services. The control group means provide a measure of the proportions of channeling clients who would have received formal in-home services in the absence of channeling. As can be seen, formal in-home services were received by a majority of control group members in the community[††] in both groups of sites: 6 out of 10 control

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[†]Channeling did not affect the number of weeks in the community, a measure that encompasses the full 6-month periods, either.

[††]Because channeling had no effect on the proportion of the treatment group living in the community, our discussion in the next three sections will focus on estimates for the sample members living in the community at each observation point. Had there been an effect on living in the community, of course, such a focus would be inappropriate.

TABLE V.2

RECEIPT OF FORMAL IN-HOME SERVICES
(percent of those in community)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
6 months	71.1	59.7	11.4**
12 months	69.4	58.3	11.1**
18 months	71.7	65.1	6.6
Financial Control Model			
6 months	90.9	69.1	21.8**
12 months	89.6	71.5	18.1**
18 months	90.2	75.8	14.4**

SOURCE: Corson, et al. Channeling Effects on Formal Community Based Services and Housing. Table III.4.

SAMPLE SIZES: Basic model 1,630, 1,362, 518 at 6, 12, and 18 months, respectively; financial model 1,785, 1,466, 545.

**Statistically significant at the 1 percent level.

group members received the services in basic sites, and 7 out of 10 in the financial sites--a reflection of the richer service environment in the financial sites. These proportions indicate that a relatively high proportion of channeling clients would have received in-home services from the existing service environments without channeling. They also indicate that many did not get formal in-home care in the absence of channeling despite their frailty.

Visiting providers were by far the dominant type of formal service deliverers in the absence of channeling (not shown). In the basic case management sites at 6 months, over 57 percent of the control group received formal care from visiting service providers compared to 67 percent in the financial control sites. Services provided by staff in personal care homes and live-in employees were received by very small proportions of control group members in both groups of sites.

Clearly, channeling had its expected effects on formal in-home services. The estimates indicate statistically significant channeling-induced increases in the percent receiving services under the basic model--of 11.4 and 11.1 percentage points at 6 and 12 months, respectively--and a smaller positive treatment/control difference, though not a statistically significant one, at 18 months.[†] Under the financial control model the effect was, as expected, substantially larger--even though the base level

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[†]It should be kept in mind that only the first half of the sample to enroll was included in the 18-month followup. The smaller sample size reduces the likelihood that a real impact of a given size will be detected as statistically significant in the samples. In addition, there was some indication that for this early cohort, channeling had smaller impacts on in-home care under the basic model because the control group means were higher than for the later cohort.

of in-home care to which channeling was added was higher than in the basic case management sites. Estimates indicate statistically significant channeling-induced increases about twice as large as the increases under the basic case management model. Under both models the increase was among visiting service providers, not paid live-in caregivers or personal care home staff (not shown).

Types of In-Home Services Received. Channeling's effect on types of in-home care received at 6 months is shown in Table V.3. The patterns are similar for 12 and 18 months after assignment (not shown). The two most prevalent types of in-home care received in the absence of channeling were personal care and housework/laundry/shopping--each received by just over 40 percent of control group members in the basic sites and over 50 percent in the financial control sites. Meal preparation was next most common, received by about one-quarter of the control group members in both groups of sites. General supervision (staying nearby in case the sample member needed help) was next most prevalent, received by about one-fifth of the control group members.

The basic case management model significantly increased the proportions receiving the four most frequent types of care. The largest effect was on housework/laundry/shopping (11.5 percentage points); increases in the proportions receiving personal care and meal preparation were almost as large (8-10 percentage points). The financial control model had significant effects on more types of service and they invariably were larger. The largest increases were for the same types of services as under the basic case management model--housework/laundry/shopping, personal care, meal preparation, and general supervision--but the magnitudes of the

TABLE V.3

TYPE OF FORMAL HELP RECEIVED AT 6 MONTHS
(percent of those in community)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
Therapy	7.2	5.8	1.4
Other Medical Treatments	17.6	15.2	2.4
Help Taking Medicine	13.2	13.2	0.0
Personal Care	49.5	41.6	7.9**
Meal Preparation	34.1	24.1	10.0**
Housework, Laundry, or Shopping	52.7	41.2	11.5**
General Supervision	27.0	22.2	4.8*
Chores	13.3	11.8	1.5
Managing Money	2.2	1.8	0.4
Other	1.0	0.4	0.6
Financial Control Model			
Therapy	11.0	6.0	5.0**
Other Medical Treatments	27.0	20.5	6.5**
Help Taking Medicine	17.9	10.6	7.3**
Personal Care	76.3	51.0	25.3**
Meal Preparation	47.4	25.9	21.5**
Housework, Laundry, or Shopping	77.6	53.3	24.3**
General Supervision	30.3	17.3	13.0**
Chores	13.3	9.3	4.0*
Managing Money	2.0	1.3	0.7
Other	0.7	0.5	0.2

SOURCE: Corson, et al. Channeling Effects on Formal Community Based Services and Housing. Tables III.5 and III.6.

SAMPLE SIZES: Basic model 1,630; financial model 1,785.

*Statistically significant at the 5 percent level.
**Statistically significant at the 1 percent level.

increases were two to three times as large. There also were significant increases under the financial control model in the proportion receiving therapy, other medical (nontherapy) treatments, help taking medicine, and help with chores.

Amount of Services. Channeling's effects on the number of visits provided by visiting service providers is shown in Table V.4. In the absence of channeling, visiting providers averaged between two and two and a half visits a week at the basic case management sites, and between two and three-quarters and somewhat over three visits at the financial control sites. Channeling significantly increased the frequency of such visits under both models--by about half a visit under the basic model at 6 and 12 months (a 25 percent increase), and by more than two visits under the financial control model at 6 and 12 months (an 80 percent increase). The large increase in the average number of visits under the financial model arose not only because the proportion receiving any visits was increased but also because the average number of visits among those receiving them (not shown) was increased from about 4 to about 5.5 per week. In the basic sites the average number of visits per recipient was very similar for the treatment and control groups (3.9); channeling's effect on visits under the basic model was thus due solely to the increased proportion receiving services reported in Table V.2.

Analysis of hours of in-home care provided by visiting formal providers (not shown) tells a similar story of substantial increases in the amount of care received. For the basic model at 6 months, there is some doubt about the extent of the increase in hours because there were more heavy users of in-home care (three 8-hour shifts, seven days a week) among the control group than among the treatment group, which leads to an

TABLE V.4

NUMBER OF VISITS PER WEEK BY VISITING FORMAL PROVIDERS
(to those in community)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
6 months	2.73	2.24	0.49**
12 months	2.73	2.17	0.56**
18 months	2.77	2.53	0.24
Financial Control Model			
6 months	4.85	2.70	2.15**
12 months	4.93	2.75	2.18**
18 months	5.26	3.15	2.11**

SOURCE: Corson, et al. Channeling Effects on Formal Community Based Services and Housing. Tables III.7 and III.8.

SAMPLE SIZES: Basic model 1,630, 1,362, 518 at 6, 12, and 18 months, respectively; financial model 1,785, 1,466, 545.

**Statistically significant at the 1 percent level.

estimated treatment/control difference in hours which is not statistically significant. If this difference signified that the basic model was able to reduce the amount of care among the heavy users for that period, it would be an important finding. However, the small number of heavy users on which the result is based (seven control group members and two treatment group members), together with the absence of a similar phenomenon in other time periods or under the financial model, suggests a chance occurrence rather than a real effect. If they are included, it reduces but does not eliminate the estimated positive treatment/control difference in amount of care received. For the other two time periods under the basic model and for all three periods under the financial model, the hours and visits estimates tell a similar story of increases in hours of formal care received.

The visit estimates thus provide a good indication of both the differences in the service environment in which the two models were tested and the greater strength of the financial control model. Despite the greater proportion of controls receiving services in the financial sites,† the effects on both the percent receiving services and the number of visits they got was much greater for the financial control model than for the basic model in all time periods. Channeling's effect in the basic case

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†The difference between models in service environments is not reflected in the hours estimates. Because the estimated hours per visit was higher in basic sites than in financial sites, the average hours of care received by controls is about equal for the two models if heavy care users are excluded. (If they are included, control group hours are actually higher in the basic sites.) Because the site visit interviews indicated that more services were available in financial sites, the hours estimates based on interview data appear to be inconsistent with other evidence on the availability of services in the two groups of sites.

management sites brought the number of visits received by the treatment group just about up to the control group level in the financial sites at 6 and 12 months, although somewhat below it at 18 months.

Implications for Other Effects. It is clear from the control group means that channeling was tested in environments in which there was already substantial service availability. The estimates suggest that 6 out of 10 control group members in the basic sites and 7 out of 10 in the financial sites were receiving some form of formal in-home care without channeling. That channeling was added to an environment already characterized by substantial formal community service use may have reduced channeling's potential to have a major effect. As with the case management discussed in the previous chapter, this was true to a greater extent under the financial model than under the basic model. Thus, even though the financial model had considerably greater power than the basic model to increase service use and did so, the effects of these added services may not have been greater, because sample members who would benefit most from community care may have been able to obtain that assistance even without channeling.

D. OTHER FORMAL COMMUNITY SERVICES

Channeling effects on meals, transportation, and day care are shown in Table V.5. The service environments of the two groups of sites were relatively similar with respect to these services, and the proportion receiving such services was much lower than for in-home care. About 20 percent of control group members received home-delivered meals in a week, for example, 7-10 percent transportation services, and 2-4 percent adult day care. The pattern of treatment/control differences suggests that the basic model may have increased use of such services; but since only one of nine differences is statistically significant the pattern cannot be

TABLE V.5

RECEIPT OF HOME-DELIVERED MEALS, TRANSPORTATION, AND DAY CARE
(percent of those in community)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Home-Delivered Meals			
Basic Case Management Model			
6 months	22.3	18.4	3.9
12 months	25.2	21.8	3.4
18 months	25.4	24.2	1.2
Financial Control Model			
6 months	30.7	18.8	11.9**
12 months	31.3	21.0	10.3**
18 months	33.1	19.2	13.9**
Transportation			
Basic Case Management Model			
6 months	6.1	6.7	-0.6
12 months	9.5	7.9	1.6
18 months	11.5	8.8	2.7
Financial Control Model			
6 months	15.5	8.9	6.6**
12 months	15.9	10.7	5.2**
18 months	13.9	10.4	3.5
Adult Day Care			
Basic Case Management Model			
6 months	2.5	1.9	0.6
12 months	4.0	1.8	2.2*
18 months	6.2	3.3	2.9
Financial Control Model			
6 months	5.0	2.6	2.4**
12 months	4.8	2.7	2.1*
18 months	3.2	4.1	-0.9

SOURCE: Corson, et al. Channeling Effects on Formal Community Based Services and Housing. Tables III.12 and III.13.

SAMPLE SIZES: Basic model 1,647, 1,377, 520 at 6, 12, and 18 months, respectively; financial model 1,803, 1,475, 546.

*Statistically significant at the 5 percent level.
**Statistically significant at the 1 percent level.

confidently interpreted as indicating an effect; nor was the effect very large if it did exist. The financial model significantly increased the proportions receiving all three types of care, with some increases well over 60 percent for home-delivered meals.[†]

Respite care and special equipment assistance are of interest because they are not widely available under existing programs but could be purchased using channeling funds. The proportion of the control group under both models who received any type of respite care was quite low, under 5 percent at all time periods (see Table V.6). This low use is consistent with the view that funding for respite care as defined here is generally unavailable under the existing system.[††] Channeling's effect on receipt of respite care was significant under the basic case management model at 6 months, concentrated in the personal care and housekeeping services. There were no other significant effects on respite care under either model.[†††]

[†]It should be noted that these increases did not represent substitution for congregate meals, the incidence of which was unaffected by either channeling model. (From 6 to 10 percent of the control group received congregate meals.)

[††]Respite care was estimated on the basis of responses to interview questions asking about availability of formal services when informal caregivers were temporarily unavailable (for example, because of illness or vacation). This is a very restrictive definition of respite care because it does not cover regularly scheduled services (like a homemaker who comes in one afternoon a week to allow a caregiver to go out) that are also intended to provide respite.

[†††]Caregiver responses to a somewhat different respite care question were consistent with those of the sample members receiving care. Under the basic model at six months more caregivers of treatment group members reported that if they were unable to help the sample member for a limited time there would be someone to provide the care they normally provided, but this diminished at 12 months and did not occur under the financial model.

TABLE V.6

RECEIPT OF RESPITE CARE AND SPECIAL EQUIPMENT
(percent of those in community)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Respite Care			
Basic Case Management Model			
Months 1-6	4.9	2.8	2.1*
Months 7-12	3.1	2.4	0.7
Months 13-18	3.0	3.7	-0.7
Financial Control Model			
Months 1-6	4.1	3.2	0.9
Months 7-12	3.3	4.2	-0.9
Months 13-18	3.8	2.1	1.7
Special Equipment			
Basic Case Management Model			
Months 1-6	16.8	6.6	10.2**
Months 7-12	10.3	3.3	7.0**
Months 13-18	6.4	1.4	5.0*
Financial Control Model			
Months 1-6	18.6	10.6	8.0**
Months 7-12	8.5	5.2	3.3*
Months 13-18	8.3	5.2	3.1

SOURCE: Corson, et al. Channeling Effects on Formal Community Based Services and Housing. Tables III.14 and III.15.

SAMPLE SIZES: Basic model 1,647, 1,377, 520 at 6, 12, and 18 months, respectively; financial model 1,803, 1,475, 546.

*Statistically significant at the 5 percent level.
**Statistically significant at the 1 percent level.

The proportion of sample members receiving special equipment (generally for use in bathing or toileting) was more than doubled under the basic model in all time periods, and significantly increased under the financial model during months 1-6 and 7-12. The larger effects on respite care and special equipment under the basic model are consistent with the difference in emphasis in allocation of direct services expenditures discussed earlier in the chapter (see Table V.1 above).

E. COMPARISONS TO PRIOR DEMONSTRATIONS

Of the 14 other community care demonstrations we reviewed, all expanded to some degree the amount of community services available to clients, although the type of services varied. One early demonstration under one of its three models only paid for medical day care and services associated with its receipt (the other two models paid for homemakers and both homemakers and medical day care, respectively). Another demonstration covered a wide range of community care and also included hospital and nursing home care. These were exceptions, however; the majority, like the financial control model of channeling, covered a range of expanded community services generally including homemaker/personal care, home health aides, skilled nursing, transportation, and home delivered meals.[3]

The dominant types of services actually received by clients in the previous demonstrations were homemaker and personal care. Home delivered meals and transportation were also frequently provided. Although the previous demonstrations received waivers to expand service coverage, most were expected also to use services within the existing system. In contrast, under the channeling financial control model--in order to establish power to authorize the full range of community services and a

single point of accountability for them--all covered community services were to be funded through the demonstration, including the traditionally funded Medicaid and Medicare services.

Although the other demonstrations were similar in their reliance on personal care and homemaker services, they differed with respect to cost controls.[4] Only two required cost sharing. Six had maximum limits on the cost of a care plan, defined as a percent of the Medicaid cost of nursing home care, like the financial control model. All six specified an individual care plan maximum, ranging from 60 to 85 percent of average Medicaid nursing home costs. But none included the financial control model's average cost limit under which the cost of every care plan affected whether the project as a whole exceeded the cap. The basic model of channeling also differed from most prior demonstrations in that it had very limited funds to pay for community services.

How much receipt of community services actually increased is generally not known for other demonstrations. Of the 14 demonstrations reviewed only four analyzed effects on any formal service use measures, and these were for selected services and funding sources. Where the data were available they did indicate, as expected, that more demonstration clients received formal services than control or comparison group members.

NOTES TO CHAPTER V

[1]For full detail on the material covered in this section see Carcagno et al. 1986, Chapter VIII.

[2]For full detail on the rest of this chapter see Corson et al. 1986.

[3]See Applebaum, Harrigan, and Kemper 1986, Table 6.

[4]See Applebaum, Harrigan, and Kemper 1986, Table 3.

CHAPTER VI

INFORMAL CAREGIVING

Much of the care for the functionally impaired elderly is provided on an informal basis by family or friends. As noted in Chapter I, one of the objectives of channeling was to maintain the level of informal care given to clients. In principle, informal care could increase or decrease under channeling. To the extent that channeling's additional services and case manager support enabled caregivers to continue giving care longer--thereby allowing clients to postpone institutionalization--informal caregiving would increase in the aggregate. But to the extent that channeling's services simply substituted for informal care provided to persons who would have been in the community even without channeling, informal care would be reduced. This chapter addresses channeling effects on receipt and provision of informal care.[1] Chapter IX addresses the effects on caregiver well-being.

The basic case management model led to no substitution of formal for informal care. The financial control model led to small reductions on some measures, but did not have a major effect on informal caregiving.

As noted in Chapter V, channeling had no significant effect on the proportion in the community. Thus, we concentrate here on direct effects on informal care for that group, addressing in-home care first, followed by other informal care.

A. IN-HOME INFORMAL CARE

Previous research on informal care has documented the prevalence of family and friends as a source of long term care for the elderly.

Channeling data confirm the importance of informal care both overall and in terms of type and intensity of care.[2] As with our discussion of formal services in Chapter V, we proceed from measures of prevalence (percentage receiving), to frequency (number of visits) and intensity (hours).

1. In-Home Care from the Informal Caregiving Network

Channeling data on informal caregiving are shown in Table VI.1. At least 85 percent of control group members in the community had at least one caregiver in their informal caregiving network providing care at 6, 12, and 18 months.

The basic case management model had no significant effect on the proportion of the elderly receiving informal care. The financial control model had a small effect. At 6 months, for example, the financial control model reduced the proportion receiving informal in-home care by 4.2 percentage points. At 12 months, the proportion receiving such care was reduced by 6.5 percentage points from 85.5 percent to 79 percent. At 18 months the treatment/control difference was about the same as at 6 months, but not statistically significant because of the smaller sample size.

Table VI.2 presents the relationships of informal caregivers to their recipient at 6 months. As the control group means indicate, almost half the elderly had a child included in their informal caregiving network. About one-quarter had a spouse included. Slightly lower proportions had some other relative and/or a friend or neighbor included.

The basic case management model had no effect on the proportions receiving care from any of these sources. The financial control model's effect occurred through some withdrawal of friends or neighbors--a 4.9 percentage point reduction at 6 months. A significant reduction of

TABLE VI.1

RECEIPT OF IN-HOME CARE FROM INFORMAL CAREGIVERS
(percent of those in community)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
6 months	83.9	86.4	-2.5
12 months	84.1	84.9	-0.8
18 months	85.7	87.2	-1.5
Financial Control Model			
6 months	82.8	87.0	-4.2**
12 months	79.0	85.5	-6.5**
18 months	80.9	84.9	-4.0

SOURCE: Christianson. Channeling Effects on Informal Care. Table IV.2.

SAMPLE SIZES: Basic model 1,605, 1,345, 510 at 6, 12, and 18 months, respectively; financial model 1,767, 1,456, 534.

**Statistically significant at the 1 percent level.

TABLE VI.2

RELATIONSHIP OF INFORMAL CAREGIVERS AT 6 MONTHS
(percent of those in community)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
Spouse	24.7	24.1	0.6
Child	46.3	47.7	-1.4
Sibling	8.3	7.3	1.0
Other Relative	23.0	24.3	-1.3
Friend or Neighbor	15.6	18.8	-3.2
Financial Control Model			
Spouse	25.0	27.0	-2.0
Child	43.5	43.4	0.1
Sibling	7.3	7.9	-0.6
Other Relative	21.5	21.9	-0.4
Friend or Neighbor	19.4	24.3	-4.9*

SOURCE: Christianson. Channeling Effects on Informal Care. Table IV.4.

NOTE: Percentages do not sum to 100 because some sample members received care from more than one type of caregiver.

SAMPLE SIZES: Basic model 1,605; financial model 1,767.

*Statistically significant at the 5 percent level.

similar magnitude also occurred at 12 months among friends and neighbors, and also among other relatives (not shown). No other treatment/control differences were statistically significant at any observation point.

To examine the source of this reduction further we estimated the proportions of the sample with caregivers who lived in the same household with caregivers and who visited to give care. Results at 6 months are shown in Table VI.3. More than half the channeling eligibles in the control group had a caregiver who lived with the sample member in their network; about half had a visiting caregiver. The financial control model's effect was concentrated among visiting caregivers--a reduction of 5.1 percentage points at 6 months. (The reduction was smaller at 12 and 18 months, 3.9 and 3.8 percentage points, and not statistically significant.) This is consistent with the evidence that the reduction in care occurred among friends and neighbors.

Additional insight into the relative importance of the care provided by the visiting caregivers whose effort was reduced by channeling is given in Table VI.4, which shows the number of visits per week from visiting informal caregivers at 6, 12, and 18 months. The control group received about three visits a week from visiting informal caregivers amounting to about nine hours of care per week (not shown). These measures of intensity indicate that visiting caregivers on average provided substantial amounts of care.

The treatment/control differences in visits per week show no evidence of reductions under the basic model; under the financial model, although the differences were negative at each observation point, none was statistically significant. Treatment/control differences in hours of care

TABLE VI.3

LIVING ARRANGEMENT OF INFORMAL CAREGIVERS AT 6 MONTHS
(percent of those in community)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
Lives with Sample Member	59.6	59.6	0.0
Visits to Give Care	46.6	48.9	-2.3
Financial Control Model			
Lives with Sample Member	57.6	58.4	-0.8
Visits to Give Care	48.0	53.1	-5.1*

SOURCE: Christianson. Channeling Effects on Informal Care. Table IV.2.

SAMPLE SIZES: Basic model 1,605; financial model 1,767.

*Statistically significant at the 5 percent level.

TABLE VI.4

NUMBER OF VISITS PER WEEK FROM INFORMAL CAREGIVERS
(to those in community)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
6 months	2.9	3.1	-0.2
12 months	3.0	2.9	0.1
18 months	3.2	2.4	0.8
Financial Control Model			
6 months	3.2	3.4	-0.2
12 months	2.6	3.1	-0.5
18 months	2.5	3.2	-0.7

SOURCE: Christianson. Channeling Effects on Informal Care. Tables IV.11 and IV.12.

NOTE: None of the treatment/control differences is statistically significant.

SAMPLE SIZES: Basic model 1,605, 1,345, 510 at 6, 12, and 18 months, respectively; financial model 1,767, 1,456, 534.

provided by visiting caregivers (not shown) also were not significant. Thus, the amount of informal care from visiting caregivers does not appear to have been substantially affected by channeling. This is consistent with the finding above that the modest withdrawal of informal caregivers was among those least closely associated with the sample member.

Table VI.5 shows types of in-home informal care received at six months. The control group means indicate that the overall pattern of care is somewhat similar to the pattern for formal services. Help was received with housework/laundry/shopping by about 80 percent of sample members; meal preparation by about 70 percent; and personal care by 56 percent. Managing money and helping with chores, not surprisingly, were much more frequent for informal caregivers than for formal service providers, as was providing help taking medicine.

Under both models treatment/control differences were generally negative. Under the basic model, none was large or significant. Under the financial control model, however, there were statistically significant reductions in the two most prevalent types of care. Again, these effects were relatively small. The only area of informal care which channeling appeared to increase was other (i.e., nontherapy) medical treatments. Both models exhibited positive treatment/control differences in the small proportions receiving such care at 6 months of over 2 percentage points, but this difference was significant only under the financial control model, had virtually disappeared by 12 months, and did not reappear at 18 months.

2. In-Home Care from the Primary Caregivers

The conclusions above concerning the caregiving network as a whole are that (1) the financial control model reduced by a small amount the

TABLE VI.5

TYPES OF INFORMAL HELP RECEIVED AT 6 MONTHS
(percent of those in community)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
Therapy	5.2	4.6	0.6
Other Medical Treatments	7.6	5.3	2.3
Help Taking Medicine	44.4	46.2	-1.8
Personal Care	54.0	56.1	-2.1
Meal Preparation	67.5	70.5	-3.0
Housework, Laundry, and/or Shopping	76.5	78.2	-1.7
General Supervision	52.0	56.4	-4.4
Chores	44.8	46.8	-2.0
Managing Money	53.3	54.5	-1.2
Other	1.8	2.4	-0.6
Financial Control Model			
Therapy	5.2	5.3	-0.1
Other Medical Treatments	7.3	4.8	2.5*
Help Taking Medicine	45.2	45.7	-0.5
Personal Care	53.3	56.2	-2.9
Meal Preparation	64.4	69.7	-5.3**
Housework, Laundry, and/or Shopping	74.6	80.8	-6.2**
General Supervision	53.5	56.2	-2.7
Chores	32.6	34.2	-1.6
Managing Money	54.6	57.2	-2.6
Other	0.8	0.8	0.0

SOURCE: Christianson. Channeling Effects on Informal Care. Tables IV.7 and IV.8.

SAMPLE SIZES: Basic model 1,605; financial model 1,767.

*Statistically significant at the 5 percent level.
**Statistically significant at the 1 percent level.

proportion receiving some care from caregivers not living with the elderly person, and (2) channeling did not affect the proportion receiving some care from family and friends living with them. They do not speak to how much care was given by the primary caregiver, defined as the caregiver who provided the majority of care. This section addresses the caregiving patterns of the primary caregivers.† As noted in Chapter II, the channeling evaluation used a baseline and two followup interviews at 6 month intervals with primary caregivers of a subsample of elderly sample members to gather additional detail on patterns of informal care.†† Primary caregivers were the persons named by a subsample of elderly sample members as helping the most to take care of them. A little over half the primary caregivers lived with the elderly sample member. Table VI.6 shows estimates of hours of care per day reported by primary informal caregivers.

The primary caregivers of control group members provided more than two hours of care a day (excluding socializing) in the basic case management sites in the absence of channeling, and nearly three hours of care a day in the financial control sites. Neither the basic case management nor the financial control model affected these amounts of care at 6 or at 12 months. Thus, primary caregivers maintained their caregiving even in the presence of substantially expanded formal services under the financial control model.

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†The only group on which we have no data concerning the amount of services are secondary caregivers who live with the frail elderly person, a relatively small group which accounted for less than 12 percent of all hours of in-home care given at baseline.

††There was no primary caregiver survey at 18 months.

TABLE VI.6

HOURS OF CARE PER DAY FROM PRIMARY INFORMAL CAREGIVER
(to those in community)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
6 months	2.4	2.5	-0.1
12 months	1.9	2.2	-0.3
Financial Control Model			
6 months	3.2	3.0	0.2
12 months	3.1	2.7	0.4

SOURCE: Christianson. Channeling Effects on Informal Care. Table V.8.

NOTE: None of the treatment/control differences is statistically significant.

SAMPLE SIZES: Basic model 427, 353, for 6 and 12 months, respectively; financial model 514, 409.

There is some suggestion that the primary caregivers may have concentrated on certain types of care as a result of channeling. First, channeling under the basic model increased the proportion of caregivers helping to arrange services or benefits. Second, the financial model increased the proportion reporting that they helped with cleaning up after bowel or bladder accidents and with feeding. But in the vast majority of areas, treatment/control differences were not significant.

B. OTHER INFORMAL CARE

Delivery of prepared meals and transportation were the major types of informal care other than in-home care received by elderly sample members. The control group means in Table VI.7 indicate that in the absence of channeling 10 to 16 percent of channeling eligibles received prepared meals from family and friends during the one-week period asked about in the interview. Seventeen to 24 percent received transportation help from family and friends during a week.

The basic case management model once again had no effect on either type of care at any observation point, but the financial control model significantly reduced the proportion receiving prepared meals at both 6 and 12 months by about a quarter (4 percentage points). The financial control model also reduced informal help with transportation at 6 months, though not thereafter. These effects are consistent with the slight withdrawal of care by visiting caregivers noted earlier.

C. IMPLICATIONS FOR THE SUBSTITUTION ISSUE AND COMPARISON WITH OTHER FINDINGS

Channeling's effects on informal care (for the caregiver network as a whole) are compared with its effects on formal care at six months in

TABLE VI.7

RECEIPT OF INFORMALLY PROVIDED PREPARED MEALS AND TRANSPORTATION
(percent of those in community)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Prepared Meals			
Basic Case Management Model			
6 months	12.2	13.9	-1.7
12 months	12.1	12.5	-0.4
18 months	12.2	9.5	2.7
Financial Control Model			
6 months	12.0	15.8	-3.8*
12 months	10.3	14.3	-4.0*
18 months	9.4	13.4	-4.0
Transportation			
Basic Case Management Model			
6 months	23.2	20.7	2.5
12 months	23.2	23.7	-0.5
18 months	19.9	22.3	-2.4
Financial Control Model			
6 months	18.8	24.0	-5.2*
12 months	17.5	18.5	-1.0
18 months	18.7	16.7	2.0

SOURCE: Christianson. Channeling Effects on Informal Care. Table IV.15.

SAMPLE SIZES: Basic model 1,605, 1,345, 510 at 6, 12, and 18 months, respectively; financial model 1,767, 1,456, 534.

*Statistically significant at the 5 percent level.

Table VI.8. The extent to which the effects are significant and in opposite directions gives us an indication of whether substitution occurred. The relative magnitudes of any opposing effects give us some indication of how great any substitution effects were.

As evident earlier in the chapter, the basic model had no significant impacts on informal care, even in the areas where increases in formal services were substantial (meal preparation and housework/laundry/-shopping).

The financial control model apparently led to some minor substitution. For example, the financial control model increased the proportion receiving any formal in-home care by 21.8 percentage points. But the corresponding reduction in the proportion receiving any informal in-home care was only 4.2 percentage points. This relatively aggregate measure suggests that a 5 percentage point increase in percent receiving in-home formal services was associated with a 1 percentage point decrease in the percent receiving informal care. Examination of the services where the other effects were concentrated indicates similar orders of magnitude. The financial control model's 24.3 percentage point increase in the proportion receiving formal housework/laundry/shopping services at six months, for instance, was associated with a 6.2 percentage point reduction in informal care of the same type. The meal preparation effects were an increase of 21.5 percentage points associated with a decrease of 5.3 percentage points. The substitution rate for personal care was lower, a 25.3 percentage point increase in formal services associated with a 2.9 percentage point decrease (not significant) in informal care.

TABLE VI.8

COMPARISON OF TREATMENT/CONTROL DIFFERENCES IN RECEIPT OF INFORMAL AND FORMAL CARE AT 6 MONTHS
(percent of those in community)

	Informal Care	Formal Care
Basic Case Management Model		
In-Home Care		
Therapy	0.6	1.4
Other medical treatments	2.3	2.4
Help taking medicine	-1.8	0.0
Personal care	-2.1	7.9**
Meal preparation	-3.0	10.0**
Housework, laundry, and/or shopping	-1.7	11.5**
General supervision	-4.4	4.8*
Chores	-2.0	1.5
Managing money	-1.2	0.4
Other	-0.6	0.6
Any in-home care	-2.5	11.4**
Delivery of Prepared Meals	-1.7	3.9
Transportation	2.5	-0.6
Financial Control Model		
In-Home Care		
Therapy	-0.1	5.0**
Other medical treatments	2.5*	6.5**
Help taking medicine	-0.5	7.3**
Personal care	-2.9	25.3**
Meal preparation	-5.3**	21.5**
Housework, laundry, and/or shopping	-6.2**	24.3**
General supervision	-2.7	13.0**
Chores	-1.6	4.0*
Managing money	-2.6	0.7
Other	0.0	0.2
Any in-home care	-4.2**	21.8**
Delivery of Prepared Meals	-3.8*	11.9**
Transportation	-5.2*	6.6**

SOURCE: Tables V.2, V.3, V.5, VI.1, VI.5, and VI.7 of this report.

SAMPLE SIZES: Basic model 1,605 and 1,630 for informal and formal care, respectively; financial model 1,767 and 1,785.

*Statistically significant at the 5 percent level.
**Statistically significant at the 1 percent level.

The substitution effect for delivered meals and transportation under the financial control model was stronger. The ratio of increases in formal services to decreases in informal care ranged from somewhat over 1:1 to about 3:1, rather than the 4:1 or 5:1 ratio observed for other services and overall.

As noted earlier in the chapter, these reductions in informal caregiving under the financial control model were not due to withdrawal of primary caregivers (the persons designated by the client as providing most of their informal care, whether living with client or not). They apparently occurred mainly through withdrawal of some of those who visited to provide care, most likely friends and neighbors. Moreover, the treatment/control differences in both the number of visits and hours of informal care given by visiting caregivers were small and not statistically significant.

These results also imply that the total amount of community care from formal providers and informal caregivers combined went up as a result of channeling. The reductions in informal care under the financial model were far too small to offset the increase in formally provided care.

How do these results compare with other evidence regarding the substitution issue? No other evidence is directly comparable because the other demonstrations we reviewed did not collect such comprehensive data on informal caregiving. Only five measured effects on informal caregiving, and the measures used were limited. For example, one used interviewer judgment concerning whether the informal support system could continue to provide help; another used the number of days on which some informal in-home care was provided. Using randomized designs but relatively small

samples, three found no effects on informal caregiving; one found significant reductions in informal help with IADL. The fifth demonstration reported a significant increase in informal help with ADL but, in the subgroup with low impairment, decreases in informal help with IADL. It relied, however, on a matched comparison group rather than a randomized design.[3]

Other recent studies have addressed the substitution issue outside a demonstration context, using methodologies with some important limitations.[4] These studies suggest that substitution of formal for informal care may take place for certain services on a limited basis, but that informal caregivers may also shift their focus rather than withdraw from caregiving activities entirely. The only study finding substantial substitution suffered not only from small samples but also from restrictive measures of caregiving. The rest of the evidence is consistent with the findings of channeling.

NOTES TO CHAPTER VI

[1]For full detail on the material covered in this chapter see Christianson 1986.

[2]For a full description of baseline characteristics, see Christianson and Stephens 1984.

[3]See Applebaum, Harrigan, and Kemper 1986, Table 8.

[4]See Lewis et al. 1980, Greene 1983.

CHAPTER VII

USE OF NURSING HOMES, HOSPITALS, AND OTHER MEDICAL SERVICES

Channeling was intended to reduce the use of nursing homes (1) through case management (by defining client service needs, informing clients about community services, and helping to arrange for them), and (2) particularly under the financial control model, through payment for community services.[1] A net reduction in nursing home use was expected, comprising a reduction in the proportion of clients entering a nursing home as a permanent place of residence and substitution of in-home care for convalescent care in nursing homes. The reductions could have been offset to some degree by increases in the number of short-term convalescent stays (for those clients who would otherwise have been permanently institutionalized) and perhaps by the long-term institutionalization of a few sample members whom case managers deemed more appropriately served in nursing homes but who would not otherwise have entered them.

A similar substitution of community care for hospital care, although not a primary objective of channeling, was also a possible outcome of rationalization of care under channeling. If, because of the availability of services, people in hospitals were to be released sooner or others in hospitals waiting for a nursing home bed to become available were to decide instead to return to the community, hospital stays would be reduced. In addition, hospital use would be reduced if case manager monitoring were to enable problems to be treated at an earlier stage--before hospitalization became necessary. These reductions could, however, be partially offset by increases in use by persons who would have been in

nursing homes without channeling (and who would have had some ailments treated by the nursing home) and by persons with previously neglected conditions identified through case manager monitoring.

Finally, the substitution of community care for nursing home and hospital care was expected to increase the use of physician services and other medical services delivered while the patient was not in a nursing home or hospital.

In fact, channeling did not substantially affect nursing home use, although treatment group use was generally slightly lower than that of the control group. It had no effects on hospital or physician use or use of other medical services delivered outside the nursing home or hospital.

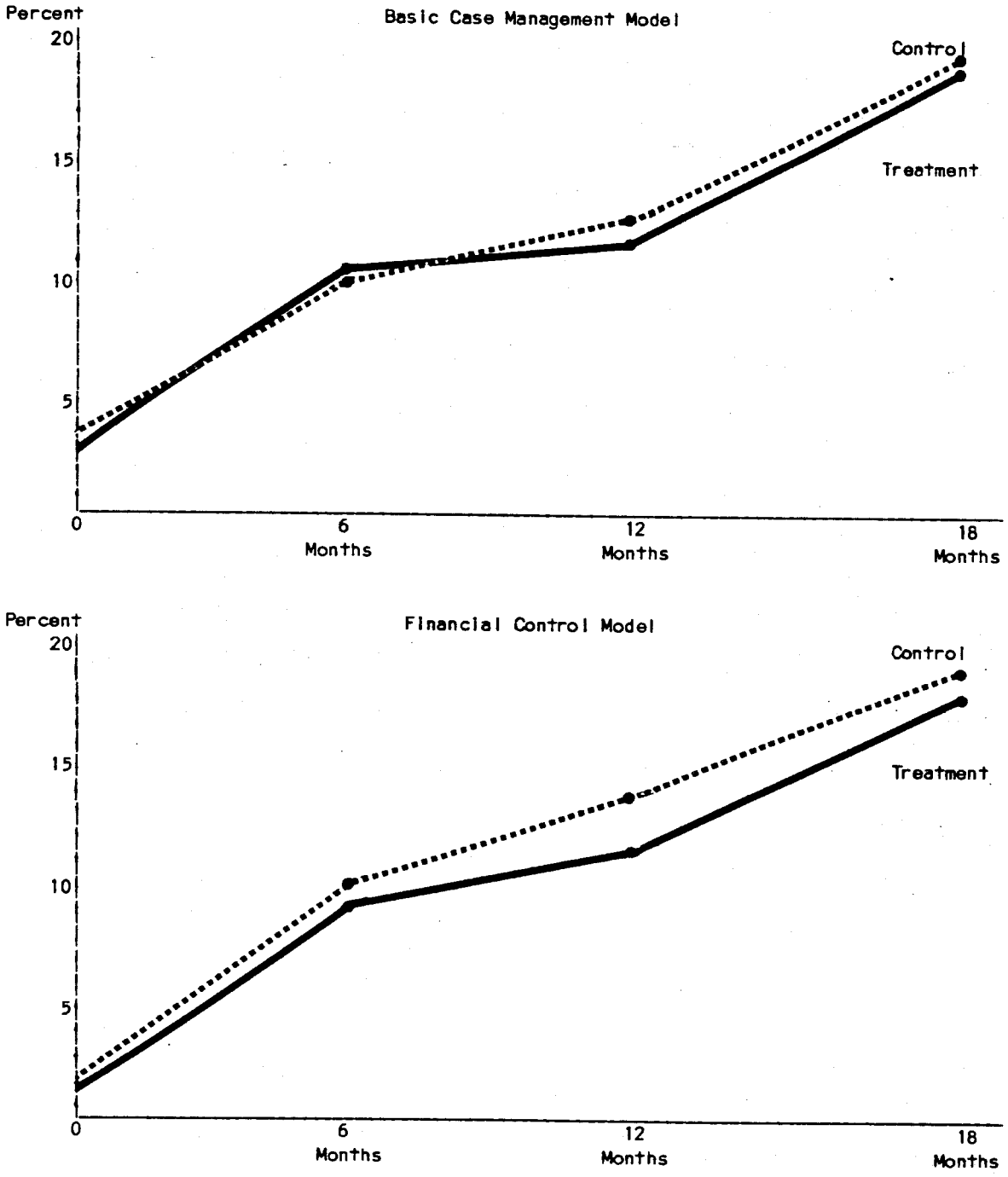
A. NURSING HOME USE

Trends in nursing home use over time are shown in Figure VII.1, which presents the percent of survivors in a nursing home 6, 12, and 18 months after eligibility screening. Control group means rise gradually over time from 3 percent in basic sites and 2 percent in financial sites at enrollment to 19 percent after 18 months. These rates of nursing home use are somewhat higher than those found for the general population aged 75 to 84. (The average age of the channeling sample at enrollment was 80 years.) In 1977, of the U.S. population aged 75 to 84, 6.8 percent were in a nursing home; of those 85 and over 21.6 percent were in a nursing home.[2]

Even so, the channeling control group's institutionalization rates indicate that the risk of institutionalization for the population served by channeling turned out to be lower than had been expected. Despite channeling's concerted effort to identify a population with a high risk of institutionalization and its success in serving very frail clients, in the

FIGURE VII.1

PERCENT OF SURVIVORS IN A NURSING HOME OVER TIME



SOURCE: Wooldridge and Schore. Channeling Effects on Hospital, Nursing Home, and Other Medical Services. Table C.1.

NOTE: None of the treatment/control differences is statistically significant.

absence of channeling only one out of eight channeling treatment group members who were still alive would have been in a nursing home one year after they were initially determined eligible for channeling.

Under channeling, as indicated by Figure VII.1, observed treatment group institutionalization rates were generally lower than control group rates after initial eligibility determination. The only exception was at six months under the basic model where they are essentially equal. At the end of the first year under the basic model, 13 percent of the control group was institutionalized compared with 11.6 percent of the treatment group. Under the financial control model the corresponding estimates were 14 percent for the control group and 11.3 percent for the treatment group. Neither difference is statistically significant.†

Admission rates and number of days spent in nursing homes provide more precise measures of the magnitude of the treatment/control differences. Table VII.1 shows both for the three 6-month periods of the demonstration for those alive at the beginning of each period. Control group admission rates indicate that about 13 percent were admitted in the first 6-month period, about 11 percent in the second 6-month period, and 12-16 percent in the last 6-month period. There were no effects on percent admitted for any time period under either model.

The number of days spent in nursing homes was lower for the treatment group than for the control group under both models for all three time periods but the differences were small and none was statistically

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†Reductions in institutionalization rates at the end of the first and second months (not shown) under the basic model, however, were statistically significant.

TABLE VII.1

NURSING HOME USE
(by those alive at beginning of each period)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Percent Admitted			
Basic Case Management Model			
Months 1-6	12.5	13.0	-0.5
Months 7-12	8.5	11.2	-2.7
Months 13-18	11.6	11.6	0.0
Financial Control Model			
Months 1-6	12.1	12.5	-0.4
Months 7-12	11.0	10.8	0.2
Months 13-18	12.2	15.6	-3.4
Number of Days			
Basic Case Management Model			
Months 1-6	9.8	12.2	-2.4
Months 7-12	18.7	19.9	-1.2
Months 13-18	29.9	32.0	-2.1
Financial Control Model			
Months 1-6	8.5	9.6	-1.1
Months 7-12	17.0	20.2	-3.2
Months 13-18	27.2	28.2	-1.0

SOURCE: Wooldridge and Schore. Evaluation of the National Long Term Care Demonstration: Channeling Effects on Hospital, Nursing Home and Other Medical Services. Table IV.3.

NOTE: None of the treatment/control differences is statistically significant.

SAMPLE SIZES: Basic model 2,184, 1,876, 741 for months 1-6, 7-12, 13-18, respectively; financial model 2,409, 2,023, 774.

significant.[†] For example, the basic model's treatment group used 20 percent fewer nursing home days than the control group during months 1-6, but this amounted to only 2.4 days. The largest difference under the financial model (during months 7-12) was 16 percent, but this amounted to only 3.2 days. Thus, even if the treatment/control differences could be attributed to the effects of channeling, their magnitude is small both because the percentage reductions in nursing home use were small and because the number of days spent in nursing homes by the control group (which determine the maximum possible reduction) was low.

It is of course possible that channeling had a delayed effect long after enrollment. There is, however, no evidence that would suggest important effects of this kind. Treatment/control differences did not appear to grow over time. Under the basic model during months 13-18 the treatment group used only 2.1 fewer days than the control group, and under the financial model there was a difference of only one day--despite the continuing gradual growth in nursing home use by the control group.

We explored treatment/control differences for various subgroups of the sample to determine whether there were some types of clients for which channeling reduced nursing home use. Although there is some evidence that channeling reduced nursing home use for those with above average risk of institutionalization (as predicted by baseline variables), firm evidence of reductions for both models exists for only one group: those in a nursing home at the eligibility screen. For this small group (2-3 percent of the

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[†]The 6-month difference under the basic model would be statistically significant if a one-tail statistical test were used (that is, not allowing for the possibility of an unexpected increase in nursing home use).

sample) both models reduced nursing home days substantially. Those in a nursing home at the screen had very high nursing home use by the control group (117-119 days over the first year, depending on the model), and for this subgroup channeling reduced nursing home use by 29-35 days (24-30 percent) depending on the model. This suggests that channeling may have enabled clients who were in a nursing home at the screen to return to the community earlier than controls.†

B. HOSPITAL USE

As seen in Chapter III, many channeling referrals came from hospitals. Indeed, 13.9 percent of the control group in basic sites and 24.6 percent in financial sites were in a hospital when eligibility screening and randomization took place (not shown). Subsequent hospital use was high, particularly in the financial control sites. As the control group means in Table VII.2 illustrate, in the basic case management sites, 46.1 percent of the control group was admitted to a hospital at some time during the first six months, declining to 27.8 percent during the final six months. The similar pattern in the financial control sites was a drop from 45 percent during months 1-6 to 34.7 percent during months 13-18. The same trend appears in hospital days, which declined over time from 11.5 days during months 1-6 to 6.0 days during months 13-18 in basic sites. The consistently higher use in financial sites also declined--from 16.2 days to

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†This is consistent with data on how many of those in a nursing home during a particular month were still in one three months later. For the early months under the basic model and all months under the financial model, a lower proportion remained institutionalized in the treatment group than in the control group (although these differences were not statistically significant).

TABLE VII.2

HOSPITAL USE
(by those alive at beginning of each period)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Percent Admitted			
Basic Case Management Model			
Months 1-6	43.3	46.1	-2.8
Months 7-12	36.1	36.5	-0.4
Months 13-18	30.9	27.8	3.1
Financial Control Model			
Months 1-6	47.0	45.0	2.0
Months 7-12	38.5	37.6	0.9
Months 13-18	34.5	34.7	-0.2
Number of Days			
Basic Case Management Model			
Months 1-6	11.1	11.5	-0.4
Months 7-12	8.1	8.3	-0.2
Months 13-18	7.0	6.0	1.0
Financial Control Model			
Months 1-6	15.5	16.2	-0.7
Months 7-12	10.1	10.6	-0.5
Months 13-18	9.6	8.8	0.8

SOURCE: Wooldridge and Schore. The Evaluation of the National Long Term Care Demonstration: Channeling Effects on Hospital, Nursing Home and Other Medical Services. Table V.1.

NOTE: None of the treatment/control differences is statistically significant.

SAMPLE SIZES: Basic model 2,712, 2,291, 1,037 for months 1-6, 7-12, and 13-18 respectively; financial model 2,842, 2,406, 1,017.

8.8 days. The decline in hospital use over time appears to have been due largely to the diminishing effect of an acute episode that precipitated application to channeling for some individuals. Some of the decline may also have been due to the death of sicker sample members over time, leaving a group requiring less hospital care.

Channeling did not affect hospital use under either model for any time period. As can be seen from Table VII.2, the treatment/control differences were small and not statistically significant whether the measure is the percent admitted or the number of days hospitalized.

C. PHYSICIANS AND OTHER MEDICAL SERVICES

Use of physician services (not shown) was similar to the patterns of hospital use both with respect to time trends and model differences. Under the basic model 76 percent of the control group used such services in the first six months, dropping to 71 percent in months 7-12 and 13-18. Use was higher in the financial control sites--86 percent during the first six months--dropping to 81 percent and then to 80 percent. Use of nonphysician medical services (e.g., outpatient services, x-rays, laboratory services) was somewhat lower but more stable over time. In the basic case management sites, the numbers were roughly constant at 60-65 percent. Use was again higher in the financial control sites, with 73-77 percent of the control group using such services.

Channeling did not affect use of physicians and other medical services. The treatment/control differences (not shown) were all less than 4 percentage points, not statistically significant, and inconsistent in direction.

D. COMPARISON WITH OTHER DEMONSTRATIONS

There was a wide range of nursing home use among control and comparison groups of other community care demonstrations, from less than a day to 130 days over a 12-month period.[3] Channeling at 32 and 30 days under the basic and financial models, respectively, was in the middle of the distribution of the other demonstrations.

Only 3 of the 13 demonstrations that used individual-level data reported statistically significant effects on days of use. These were the three with the extremely high nursing home use levels among their control groups. The results for two of them must be interpreted cautiously, however, because both comparison groups turned out not to be comparable to the treatment group on several important measured characteristics. The comparison group for one differed from the treatment group in race, sex, and the proportion in a nursing home at enrollment (in addition to catchment area). The comparison group for the other differed from the treatment group in age (in addition to catchment area), and was selected in a very different way.

The third demonstration, the South Carolina Long Term Care Project, did use an experimental design with random assignment to treatment and control groups. It also had very high rates of nursing home use by its control group, almost certainly because it received clients exclusively through the state's nursing home preadmission screen. Thus, applicants had expressed at least a willingness to consider nursing home placement. Over the year after enrollment, nursing home use was reduced 40 days--a 31 percent reduction from a control group mean of 130 days. We will return to this result in Chapter X where we discuss our overall conclusions.

Hospital use among control/comparison group members in the other demonstrations was the same or lower than among the channeling control group. Channeling controls averaged 20 hospital days in the basic sites and 27 days in the financial sites over the first 12 months. The three highest of the other demonstrations averaged 16 to 20 days during the year after enrollment. This suggests that channeling enrolled one of the sickest groups among the demonstrations.

One of the prior demonstrations showed a significant effect on hospital use--a decrease in number of hospital days. Its only data source was Medicaid records, however, which could be quite misleading if the treatment and control groups differed in their non-Medicaid hospital stays. The other demonstrations, like channeling, found no significant differences between treatment and control group hospital use.

NOTES TO CHAPTER VII

[1]For full detail on the material covered in this chapter, see Wooldridge and Schore 1986.

[2]Nursing home use rates are taken from U.S. Public Health Service 1980, Table 43.

[3]See Applebaum, Harrigan, and Kemper 1986, Table 9.

CHAPTER VIII

COSTS

As indicated in Chapter I, channeling was intended to reduce costs by substituting community for institutional care wherever appropriate. The central cost issue is whether the increased costs due to the provision of comprehensive case management and expanded community services were offset by a reduction in costs due to reduced nursing home use. As the results on service use reported in previous chapters foreshadowed, channeling did not achieve its objective of reducing costs. Both models increased costs. The financial control model, with its greater capacity to pay for community services, increased costs more than the basic model.[1]

We begin by discussing channeling's effects on total costs, irrespective of whether the government or the sample members and their families paid the bill. We then look at how much of the bill was paid by the government (i.e., the public cost burden).

A. COSTS BY TYPE OF SERVICE

The costs of services received by persons as frail as those in the channeling sample are considerable, even in the absence of channeling. Table VIII.1 shows the costs incurred for persons in the channeling treatment and control groups during the 18-month period covered by the evaluation, averaged over the months they were alive. The total costs of services and room and board of control group members averaged $1,330 per month alive over the 18-month period in basic sites and $1,592 in financial sites (see Table VIII.1). This is two to three times the $570 per month average income at baseline for clients and their spouses.

TABLE VIII.1

TOTAL COST PER MONTH ALIVE DURING MONTHS 1-18,
BY TYPE OF SERVICE
(dollars)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
Case Management	85	15[a]	70
Formal Community Services	245	234	11
Community Room and Board	319	314	5
Nursing Homes	123	145	-22
Hospitals	487	477	10
Physicians and Other Medical[b]	154	145	9
Total	1,413	1,330	83
Financial Control Model			
Case Management	85	17[a]	68
Formal Community Services	450	259	191
Community Room and Board	328	324	4
Nursing Homes	132	141	-9
Hospitals	676	650	26
Physicians and Other Medical[b]	208	201	7
Total	1,879	1,592	287

SOURCE: Thornton and Dunstan. The Evaluation of the National Long Term Care Demonstration: Analysis of the Benefits and Costs of Channeling. Constructed from Tables D.5-D.6.

NOTE: These means include the costs for those initially determined eligible who later left channeling. Sample sizes vary depending on the cost category. Statistical significance was not calculated because cost estimates were constructed as sums (and in some cases products) of separately estimated components.

[a]Does not include case management provided in conjunction with direct services and billed as part of the charge for those services.

[b]Does not include services paid for by individuals, private insurance, or public programs other than Medicare or Medicaid.

These costs can also be calculated per person initially determined eligible for channeling. So calculated, they indicate the costs that can be expected to be incurred on average over the 18 months after enrollment for each eligible applicant offered channeling (including those who subsequently died or left channeling). Expressed in these terms (not shown), the costs of the services and room and board received by control group members over the 18-month period amounted to $18,453 per eligible applicant in the basic sites and $22,749 in the financial sites.[†]

Both models of channeling increased overall costs. The basic model increased costs by 6 percent ($83 per month) and the financial model by 18 percent ($287 per month).[††] Expressed as dollars per eligible applicant, the analogous estimated increases are $1,328 and $3,363 per eligible applicant, respectively, under the basic and financial models. The overall increases are not surprising given the increases in receipt of case management and formal community services and the absence of substantial reductions in nursing home or hospital use documented in previous chapters. Results for the separate cost categories reflect these overall increases.

[†]A third cost calculation is cost per month per active case for an ongoing program. This differs from cost per month alive over the 18 months after enrollment because of different bases (all those initially determined eligible including those who left channeling versus only active cases) and different case mixes (an ongoing program would have a higher proportion of clients who had been in channeling longer). Whichever units are used, the conclusions about costs are essentially the same. See Thornton and Dunstan 1986, Chapter V and Appendix D, for full discussion.

[††]Cost estimates were based on different data sources, samples, and methodologies depending on the cost category. In addition, costs have been aggregated over time. Consequently, the statistical significance of treatment/control differences cannot be calculated. The statistical significance of the components of total costs is reported in Thornton and Dunstan 1986, Appendix E.

Case Management. As shown in Table VIII.1 the total costs of channeling's comprehensive case management were the same under the two models ($85 per month alive).† The costs of case management received by the control group were much lower than those incurred by channeling, reflecting the much smaller proportion of the control group receiving comprehensive case management from other agencies and also a lower unit cost per recipient of case management. The control group received separate comprehensive case management costing an estimated $15 per month in the basic sites and $17 in the financial control sites.†† The $70 per month increase in case management cost was by far the most important component under the basic model, accounting for over four-fifths of the increase. The almost identical $68 increase under the financial control model was a much smaller factor, accounting for only a quarter of that model's larger increase.

Formal Community Services. Formal community services accounted for only 16-18 percent of total costs incurred by controls. The absolute amount was slightly higher in the financial sites than in the basic sites ($259 versus $234 per month). The basic model increased formal community service costs by $11 per month; the financial model, as expected, increased these costs much more, by $191 per month. These represent increases of 5

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†These costs per month alive differ from costs per month per active case as seen by program operators. For detailed analysis of channeling project costs, including estimates without allocations of administrative costs and with different units (e.g., assessment costs per assessment completed), see Thornton, Will, and Davies 1986.

††Service-centered case management provided to the control group in conjunction with direct services is included with formal community services because it could not be separated from the cost of those direct services.

percent and 74 percent, respectively, over the control group mean.† (Because formal community services represent such a large part of the financial model's cost increase, a further breakdown of formal community costs by type of service is presented in Section B of this chapter.)

Room and Board in the Community. Those living in the community incurred considerable expense for housing (including care provided in personal care homes and supportive housing), food, and other living expenses. These expenses amounted to somewhat over $300 per month, 24 percent of control group costs in basic sites and 20 percent in financial sites. Consistent with the findings on community residence reported in Chapter V, channeling had no effect on community room and board costs.

Informal Care. As was apparent in Chapter VI, family and friends provided much of the care received by the population served by channeling. Although this care is unarguably of great value to the recipients, there is no generally agreed-upon way of measuring its cost, because it has no monetary price associated with it. One extreme is to value it at the cost of replacing such care with purchased formal services--a very high valuation, certainly in excess of families' willingness to pay for formal services. The other extreme is to value it at zero--on the argument either that channeling did not replace labor market work of the caregivers (true)[2] or that care is willingly given and has personal

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†As with the community service use estimates discussed in Chapter V, a small number of users of heavy amounts of in-home care appeared disproportionately in the basic case management control group. As in Chapter V, these cases are excluded because they appear to us to be a chance occurrence rather than an effect of channeling. If they are included, basic model community service costs (specifically those paid for privately) decline; government costs are unaffected.

benefits that offset its burdens (arguable). The relevant factor for the estimates of channeling's effects on costs, however, is channeling's effect on informal caregiving rather than the actual levels of informal caregiving. Because channeling led to only minor reductions in caregiving, and then only under the financial model, alternative valuations of informal care do not affect our basic conclusions. Total community care (formal and informal combined) was increased under both models and its cost was increased accordingly.

Nursing Homes. Control group nursing home costs were about $140 per month--11 percent of total costs in the basic sites, 9 percent in the financial control sites. These costs are lower than formal community service costs and much lower than hospital costs. Consistent with the small negative differences in nursing home use, treatment group nursing home costs were slightly lower than control group costs under channeling--15 percent lower ($22 per month) under the basic model and 6 percent lower ($9 per month) under the financial model.

Hospitals. Reflecting both the high cost per day and high use by this population, hospital costs were the largest single component of total costs for control group members: 36 percent of total costs in basic sites ($477 per month) and 41 percent of total costs in financial sites ($650 per month). Consistent with the use estimates, channeling did not affect hospital costs.

Physicians and Other Medical Services. The costs of physicians and other medical services covered by Medicare and Medicaid incurred for the control group were 11-13 percent of total costs ($145 per month in basic sites and $201 in financial sites). These services are as great as or

greater than nursing home costs in relative importance for the channeling population.[†] Consistent with the findings above on receipt of physicians and other medical services, channeling did not affect these costs.

B. COST BREAKDOWN OF FORMAL COMMUNITY SERVICES BY TYPE OF SERVICE

Community service costs are made up of a number of different types of costs. Table VIII.2 presents a cost breakdown by type of formal community service for those in the community during the one-week period 6 months after enrollment.[††] The largest component of formal community service cost was in-home care, accounting for four-fifths of control group costs in basic sites and seven-tenths in financial sites. The next largest category was medical supplies and equipment, accounting for 10 and 18 percent of control group costs of formal community services in basic and financial sites, respectively. Other categories accounted for relatively small proportions of the total.

As can be seen, virtually all categories of formal community service costs were higher for the treatment group than for the control group. Increases in in-home care dominated by far--accounting for 79 percent of the increase in the cost of formal community services under the basic model and 88 percent under the financial model. Within the in-home

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[†]Our estimates underestimate physician and other medical service costs because many of them are not paid for by Medicare and Medicaid. Other data suggest that total expenditures for this category may be 50 percent higher than estimated here. See Wooldridge and Schore 1986, Chapter VI.

[††]Because these disaggregated estimates of formal community service costs are based on different samples, time periods, and data than the cost estimates for the full 18 months in Table VIII.1, they are not directly comparable.

TABLE VIII.2

FORMAL COMMUNITY SERVICE COST PER WEEK IN THE COMMUNITY AT 6 MONTHS
(dollars)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
In-home Care[a]	75.35	67.15	8.20
Home-delivered Meals	2.63	2.14	.49
Transportation	.87	.80	.07
Adult Day Care	1.57	1.12	.45
Emergency Transportation[b]	2.53	2.31	.22
Medical Supplies/Equipment[b]	9.52	8.39	1.13
Other[b,c]	1.33	1.52	-.19
Total	93.80	83.43	10.37
Financial Control Model			
In-home Care[a]	107.38	60.25	47.13
Home-delivered Meals	3.79	2.14	1.65
Transportation	2.40	1.09	1.31
Adult Day Care	3.59	1.57	2.02
Emergency Transportation[b]	4.75	4.60	.15
Medical Supplies/Equipment[b]	16.52	15.17	1.35
Other[b,c]	.90	.81	.09
Total	139.33	85.63	53.70

SOURCE: Corson, et al. Channeling Effects on Formal Community Based Services and Housing. Tables IV.5 and IV.6.

NOTE: These means include the costs for those initially determined eligible who later left channeling. Sample sizes vary depending on the cost category. Statistical significance was not calculated because cost estimates were constructed as sums (and in some cases products) of separately estimated components.

[a]In-home care includes only visiting providers; live-in caregivers, which account for less than 2 percent of all providers of in-home care, are not included.

[b]These cost categories were estimated over six months and converted to weekly units by dividing by the mean number of weeks in the community for treatment and control group members.

[c]The "other" category includes medical social services, mental health services, respite care, housing and emergency lodging, foster care, and miscellaneous expenditures reimbursed by Medicare and Medicaid.

category, the data on formal community service use presented in Chapter V indicate that the largest increases were for personal care and homemaker services rather than the home health care traditionally covered under Medicare and Medicaid (nursing, therapies, and home health aide services). Indeed, additional analysis of costs by type of in-home care indicated that the financial control model may have reduced the cost of the traditionally-covered home health aide services at six months. The financial model may thus have substituted lower-price services (i.e., personal care aides and homemakers) for those Medicare-covered service categories heavily used in the absence of channeling. The substitution was far from one-for-one, however. More personal care and homemaker services were used, resulting in a substantial overall increase in the cost of in-home care.[3]

There is also some evidence that the financial model paid prices for nursing, therapies, and home health aides that were 5 to 13 percent lower than those paid by the control group.[†] Project staff and providers in the channeling sites felt that some prices were reduced through competitive bidding or price negotiations because of channeling's market power as a quantity buyer of services.[4] Again, despite these modest reductions in price, total community service costs were increased because of large increases in the total amount of in-home services provided.

C. DISTRIBUTION OF COSTS AMONG PAYORS

So far, the discussion has considered costs to society as a whole regardless of who pays them. Table VIII.3 shows who bears the costs.

[†]There was also some very limited evidence of a reduction in prices for home health aides under the basic model.

TABLE VIII.3

TOTAL COST PER MONTH ALIVE DURING MONTHS 1-18, BY PAYOR
(dollars)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
Government			
Channeling	108	0	108
Medicare	695	661	34
Medicaid	125	131	-6
Other government	61	79	-18
Total	989	871	118
Clients and Families	424	459	-35
Total	1,413	1,330	83
Financial Control Model			
Government			
Channeling	408	0	--[a]
Medicare	877	928	--[a]
Medicaid	125	140	--[a]
Other government	46	68	--[a]
Total	1,456	1,136	320
Clients and Families	423	456	-33
Total	1,879	1,592	287

SOURCE: Thornton and Dunstan. The Evaluation of the National Long Term Care Demonstration: Analysis of the Benefits and Costs of Channeling. Constructed from Tables D.5-D.6.

NOTE: See footnote, p. 139 for social security and veterans pensions, supplemental security income, food stamps, and other welfare payments which are not included here. These means include the costs for those initially determined eligible who later left channeling. Sample sizes vary depending on the cost category. Statistical significance was not calculated because cost estimates were constructed as sums (and in some cases products) of separately estimated components. Detail may not sum to total due to rounding.

[a]These differences are not meaningful because they simply reflect cost shifting resulting from pooling of funds under channeling. Medicare/Medicaid/other government funds transferred to channeling's funds pool show up as reductions.

The government paid roughly two-thirds of total control group costs (not counting transfer income) in both basic and financial sites. Within government, Medicare was the biggest payor. This is not surprising given that Medicare paid much of the hospital, home health, and physician and other covered medical service costs documented above. Medicaid, the next largest public payor, paid between 10 and 15 percent of total government costs for the control group. These costs were incurred by only part of the control group, of course, those who were Medicaid eligible. As indicated in Chapter III, at baseline 20 percent were covered by Medicaid in basic sites and 24 percent in financial sites. About half of the Medicaid costs were for nursing homes, with the remainder distributed among hospitals, formal community services, and physicians and other covered medical services. Finally, other public costs--including community services funded under the Older Americans Act, Social Services Block Grants, and special state and local programs as well as subsidies under government housing programs--accounted for a relatively small part (between 5 and 10 percent) of total government costs incurred for the control group.[†]

Private costs--those of clients, their families, and the private insurance they purchased--account for the remainder of total control group costs. Private costs were just over $450 per month in both basic and financial sites. Further breakdown of these costs (not shown) indicates

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[†]Two additional government costs, as noted, are not included--government pensions and welfare income. The control group received social security and veterans pensions of $435 per month in basic sites and $450 in financial sites. Supplemental Security Income and food stamp costs amounted to $43 per month in both basic and financial sites. Together these constituted most of the income of sample members and a substantial additional government cost, albeit not directly for services. Channeling had no effect on this transfer income.

that most--almost two-thirds--were housing costs and living expenses in the community. Nursing home costs were the next most important category (about one-sixth of private costs). The remainder of private expenditures were on hospitals, formal community services, and physicians and other covered medical services.

Channeling's effects on the distribution of costs among payors are also shown in Table VIII.3. The overall increase for all payors[†] is made up of a small decrease in private expenditures of $35 and $33 per month under the basic and financial models (about a 7 percent decrease), combined with an increase in public costs of $118 per month (a 14 percent increase) under the basic model and $320 (a 28 percent increase) under the financial model. Under the basic model, the public cost increase was primarily for case management paid for by channeling, with smaller increases for channeling gap-filling services and Medicare home health care (the latter suggesting that channeling case managers may have assisted clients in obtaining benefits under Medicare). These cost increases were accompanied by small decreases in Medicaid and other public program costs.

The distribution of the public cost increase among categories is not meaningful under the financial control model. This is because the pooling of Medicare, Medicaid, and other public funds to pay for formal community services under channeling shows up by definition as reduced expenditures labeled as Medicare, Medicaid, or other public, and increased expenditures labeled as channeling. In a permanent channeling-like program, decisions concerning its funding sources would be important. The

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[†]This is by definition the same total increase as that broken down by type of service in Table VIII.1.

actual breakdown by funding source of financial model costs for this demonstration is meaningful only in that it documents what actually happened and provides the basis for estimating costs under various funding rules.

D. COSTS OVER TIME

The pattern of costs over time during the 18-month period is presented in Table VIII.4, which shows total costs per month alive for each of the three 6-month followup periods. Costs incurred by the control group declined after the first six months in both basic and financial sites, reflecting the declines in service use observed in previous chapters. Costs then remained relatively stable in the second and third 6-month periods, reflecting the continuing care needs of the frail population served.

Treatment group costs were higher than control group costs during all three time periods. There is no evidence of decline over time in the magnitude of cost increases.

Data on channeling's effects on costs after 18 months is, of course, unavailable. Although it is possible that channeling reduced costs after our 18-month observation period, we believe it is extremely unlikely. Although there is no followup information after 18 months, it is possible to construct order-of-magnitude estimates under reasonable assumptions about the future based on what was observed during months 1-18.

Control group costs after 18 months are determined by the rate at which sample members enter nursing homes and hospitals and the unit costs of nursing homes, hospitals, and community residence, as well as by death rates. Based on the experience of the channeling sample during the 18

TABLE VIII.4

TOTAL COST PER MONTH ALIVE, BY 6-MONTH PERIOD
(dollars)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
Months 1-6	1,538	1,485	53
Months 7-12	1,392	1,284	108
Months 13-18	1,429	1,337	92
Financial Control Model			
Months 1-6	2,115	1,875	240
Months 7-12	1,761	1,496	265
Months 13-18	1,860	1,477	383

SOURCE: Thornton and Dunstan. The Evaluation of the National Long Term Care Demonstration: Analysis of the Benefits and Costs of Channeling. Table D.7.

NOTE: These means include the costs for those initially determined eligible who later left channeling. Sample sizes vary depending on the cost category. Statistical significance was not calculated because cost estimates were constructed as sums (and in some cases products) of separately estimated components.

months of the demonstration followup, it is reasonable to assume that institutionalization rates continue to rise, although at a slower rate than during the first 18 months, and that hospitalization rates continue unchanged after the third 6-month period. Death rates are assumed to continue at the average rate of the national population aged 85 to 95. This implies that virtually all the sample will have died within 10 more years. If the costs per day in nursing homes, hospitals, and the community estimated during the 18-month evaluation period are applied to the rising trends in mortality and institutionalization of survivors and the steady rate of hospitalization of survivors, the estimates of costs for control group care over the next 10-year period are $26,000 per person initially determined eligible for channeling in basic sites and $34,000 in financial sites.

The effect of channeling on those costs depends, of course, on whether channeling has delayed effects on mortality, institutionalization, and hospitalization rates and on the use of formal community services. If there continues to be no channeling effect on mortality, nursing home use, and hospital use, the observed treatment/control differences in costs in the community during months 13-18 will lead to increases in cost over the 10 years after the 18-month followup period of an estimated $1,000 per eligible applicant under the basic model and $4,800 under the financial model. When these numbers are added to the increased costs of channeling in the first 18 months, we get an estimate of the long-run cost increases due to channeling of about $2,300 per eligible applicant under the basic model and $8,200 under the financial model.

Different assumptions about delayed effects would, of course, lead to different numbers. Altering the assumption about institutionalization shows how sensitive the numbers are to possible delayed effects. If nursing home use were reduced 25 percent after 18 months, for example, the total cost effect of channeling over the 18-month followup period plus 10 more years would be reduced, but not by much. Costs would still increase--under the basic model by about $2,100 per eligible applicant and under the financial model by $8,000. This alternative estimate indicates that any delayed reductions in nursing home use induced by channeling would have to be enormous to reduce costs overall.

E. COMPARISON WITH OTHER COMMUNITY CARE DEMONSTRATIONS

The evaluations of other community care demonstrations were generally more limited than channeling in the cost data they were able to collect. Given multiple service providers and multiple reimbursement sources, cost data are not readily available. The absence of a single place where all cost data can be obtained has meant that the evaluations of other community care demonstrations have typically obtained data from three central sources: the projects themselves (for demonstration-funded costs), Medicare claims files, and Medicaid claims files.† Limitation to these data sources implies lack of information on private and other public costs. Thus, it is difficult to make direct comparisons with other demonstrations.[5]

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†Two did not have Medicaid data, one did not have Medicare data, one had neither, and two used diaries to collect information, regardless of funding sources.

In general, the channeling results are consistent with those of other community care demonstrations. Twelve of the 14 demonstrations collected individual-level cost data encompassing more than funds spent by the project itself. Of these, eight reported higher costs. Of the four remaining projects, two essentially broke even, one reported an increase in one site and a decrease in the other, and only one reported a substantial reduction--but it used a comparison group methodology which had documented noncomparabilities between the treatment and comparison group.

It is noteworthy that one of the two projects which broke even was the South Carolina project discussed in Chapter VII. Although it substantially reduced nursing home use, the resulting reduction in nursing home costs about equaled the additional costs of case management and expanded community services. Thus, by targeting a group at high risk of nursing home placement and reducing nursing home use, the South Carolina project was able to break even on costs but not reduce them.

One category where apparently comparable cost estimates are available for five other demonstrations is case management (and associated administrative costs). Channeling's cost equalled almost exactly the average for these five demonstrations. Within this average, estimates range from about half channeling's case management costs to almost half again as much.[6]

NOTES TO CHAPTER VIII

[1]This chapter is based primarily on the benefit/cost analysis by Thornton and Dunstan 1986; more detailed information on costs is contained in other technical reports on channeling project costs, Thornton, Will, and Davies, 1986; formal community services, Corson et al. 1986; and hospitals, nursing homes, physicians, and other medical services, Wooldridge and Schore 1986.

[2]See Christianson 1986, Chapter VI for the analysis of impacts on informal caregivers' employment and earnings.

[3]For further detail concerning the substitution of personal care and homemaker services for home health aide services see Corson et al. 1986, Chapter V.

[4]For further detail on channeling's effect on prices, see Corson et al. 1986, Chapter IV.

[5]See Applebaum, Harrigan, and Kemper 1986, Table 16.

[6]See Thornton, Will, and Davies 1986, Table V.1.

CHAPTER IX

MORTALITY, FUNCTIONING, AND WELL-BEING

Channeling was expected to lead to possible benefits for two different groups of people in society. One group was the nation's taxpayers, who would benefit financially if channeling reduced the cost of long term care of the elderly through reduced institutionalization and more effective use of community service dollars. Channeling effects on costs were discussed in Chapter VIII. The other group was channeling's clients and the informal caregivers who help them. The benefits to the latter group are discussed in this chapter.[1]

The benefits expected to accrue to clients from channeling were: increased longevity, slowed deterioration in functioning, reduced unmet needs, increased confidence in receipt of needed service and satisfaction with service arrangements, and increased social/psychological well-being. Effects in these areas were expected to result from (1) increased receipt of community services and (2) reduced nursing home placements. The effects on unmet needs and confidence and satisfaction with service arrangements was expected to come about primarily by providing needed services to those who would have been in the community even without channeling, but with inadequate help. The effect on functioning was expected to occur primarily through reducing institutional placements, which are believed to increase functional dependence because nursing homes do not permit patients to perform some activities of daily living.[2]

Effects on longevity and social/psychological well-being were expected through both mechanisms. Channeling was expected to affect

longevity through reduced nursing home placement (because forced relocation to institutions had been associated with increased mortality)[3] and through greater access to medical services and equipment, therapies, rehabilitation services, and other community services. Channeling was expected to improve social/psychological well-being through reduced nursing home placement because of the well documented widespread preference to live independently in one's own home.[4] In addition, channeling was expected to increase social/psychological well-being through case manager support and more satisfactory service arrangement for those in the community.

To the extent that the effects on any of these measures come about through increased service availability, they were expected to be greater under the financial control model because of its substantially greater direct purchasing power. To the extent that they come about through case manager support and monitoring, they were expected to be the same under the two models.

As it turned out, channeling did not have its intended effect on nursing home use. Consequently, no major effect should be expected on functioning, and effects on longevity and social/psychological well-being can only be expected as a result of expanded services in the community.

Channeling had no effects on mortality. There also were no effects on functioning, with the exception of a possible increase in disability in activities of daily living (ADL) under the financial control model (discussed in detail below). Channeling reduced unmet need, and had favorable effects on sample member confidence and satisfaction with service arrangements and psychological well-being more generally.

Informal caregivers were expected to benefit from channeling in two ways. First, to the extent that caregivers were overburdened, channeling-induced reductions in informal caregiving were expected to reduce personal and employment limitations imposed by caregiving.† Since only minor reductions in caregiving were found (and only under the financial model), however, these effects are unlikely. In fact, analysis of primary informal caregivers did not find effects on perceived employment limitations or actual caregiver employment or earnings under either model, or perceived limitations on personal activities under the financial model. There were reductions in perceived limitations on privacy and on social lives under the basic model.

Second, channeling case management support and monitoring activities (particularly under the basic model) combined with expanded service coverage (particularly under the financial model) were expected to increase informal caregiver satisfaction with arrangements for services, and reduce concern about the condition and behavior of the elderly care recipient and about the availability of care. Finally, both the reduced limitations and the reduced concern effects were expected to increase the social/psychological well-being of the informal caregivers. Channeling did have favorable effects on caregiver satisfaction with service arrangements and on their social/psychological well-being.

A. MORTALITY

The cumulative mortality rates of the treatment and control groups members under each of the channeling models over the 18 months of the

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†If channeling had increased the proportion of sample members in the community, thereby increasing caregiver burden, limitations imposed by caregiving would have been expected to increase.

demonstration are shown in Figure IX.1. As can be seen, mortality rates rose fastest during the first six months after enrollment, the mortality rate by six months being 17 percent. This is probably due to the phenomenon noted in earlier chapters of a precipitating event just prior to enrollment (e.g., hospitalization or the onset of illness) which led sample members to seek or be referred to channeling. Over months 7-12 and 13-18, mortality rates continued to increase (although more slowly) until, by 18 months, 39 percent of the control group had died in basic sites and 32.6 percent in financial sites. Under the basic case management model, the treatment group mortality rate was below the control group rate; under the financial control model, the rates were about equal at 6 and 12 months, and higher for the treatment group at 18 months. At the end of the first year, for example, in the basic sites 29.7 percent of the control group had died compared to 27.2 percent of the treatment group. In the financial sites 27.4 percent of the control group had died compared to 27.5 percent for the treatment group. None of the differences was statistically significant, leading to the conclusion already noted that channeling had no impact on mortality.

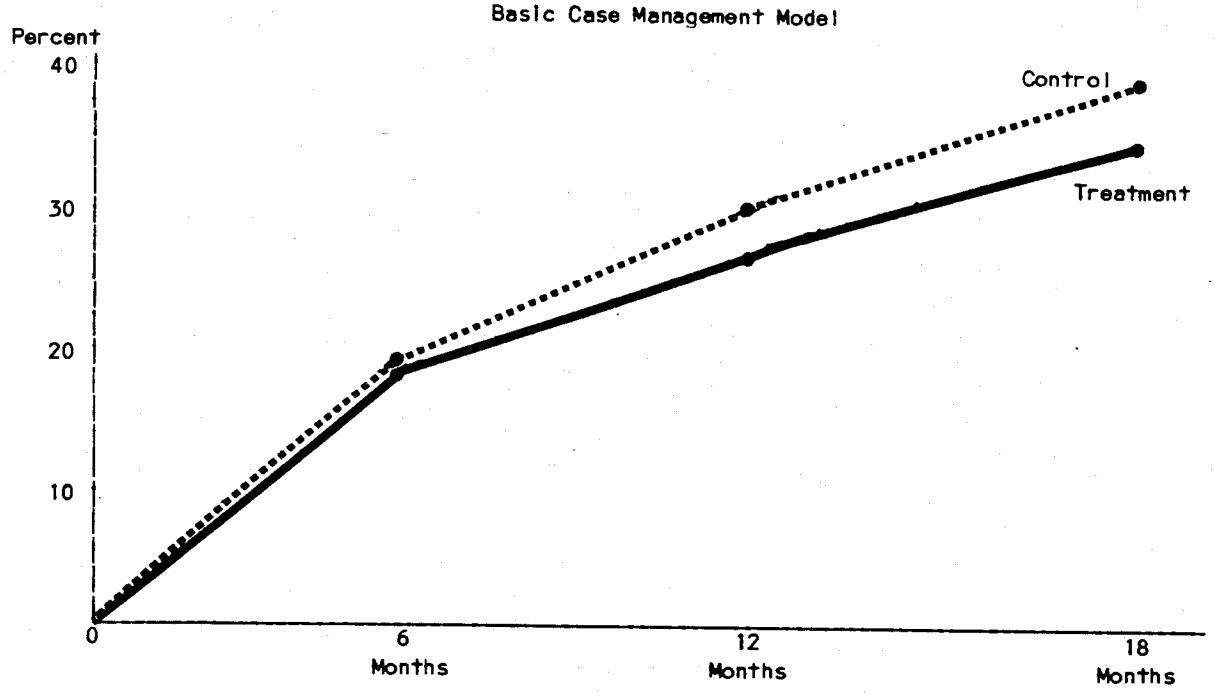
B. FUNCTIONING

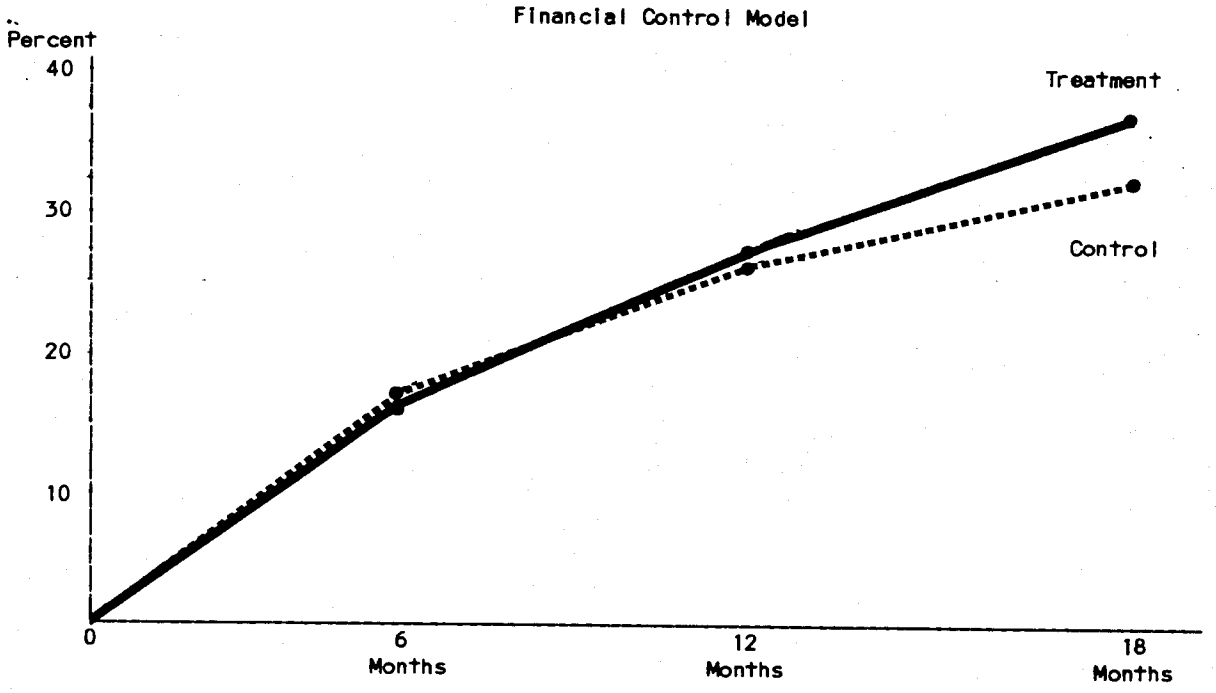
Three major measures of functioning were used in the channeling demonstration: an activities of daily living (ADL) five-item scale, an instrumental activities of daily living (IADL) seven-item scale, and the number of days restricted to bed.[†] With one exception, channeling had essentially no effect on client functioning. The exception was ADL under the financial control model, to which we now turn.

[†]See Chapter III for an explanation of the ADL and IADL measures.

FIGURE IX.1

PERCENT DECEASED OVER TIME





SOURCE: Wooldridge and Schore. Channeling Effects on Hospital, Nursing Home, and Other Medical Services. Table G.2.

NOTE: None of the treatment/control differences is statistically significant.

ADL. Consistent with channeling's eligibility criteria, the disability level of the channeling sample members was high. At 6 and 12 months, the average number of ADL disabilities on the five-item scale was about 2.3 for the control group. By 18 months it had risen to 2.5 and 2.7 in the basic case management and financial control sites, respectively.

The channeling results for the ADL and incontinence measures at 6 months are shown in Table IX.1. As expected, the responses on the ADL scale followed the hierarchical pattern reported in previous studies, with disability on eating the least common and disability on bathing the most common. For both models at 6 months, about one-fifth of the control group members were disabled in eating and about three-quarters in bathing.

Under the basic model there were no effects on total number of ADL disabilities at any of the followup time periods (not shown). At the end of the first year, for example, the control group members averaged 2.2 disabilities in ADL and the treatment group members averaged 2.3, not a significant difference. At 6 months for one of the ADL items, bathing, significantly more treatment group members reported that they were disabled than did control group members. Because there were no effects on the other ADL tasks or on the total score, we would not attach much importance to this result in isolation; however, it becomes more noteworthy in light of the results for the financial control model.

Under the financial control model, a higher proportion of treatment group members reported being disabled on each of the ADL tasks at 6 months and for three of the five (eating, dressing, and bathing) differences were statistically significant. The individual item differences were 4.7, 7.5, and 6.5 percentage points (representing differences of about 22, 14, and 9 percent), respectively. The effect on the number of ADL disabilities was

TABLE IX.1

DISABILITY IN ACTIVITIES OF DAILY LIVING (ADL) AT 6 MONTHS
(percent)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
Eating	20.6	21.7	-1.1
Transfer	40.0	38.2	1.8
Toileting	47.4	48.1	-0.7
Dressing	49.8	49.2	0.6
Bathing	74.8	71.1	3.7*
Continence	43.7	44.4	-0.7
Financial Control Model			
Eating	26.1	21.4	4.7**
Transfer	44.9	41.8	3.1
Toileting	49.6	48.9	0.7
Dressing	59.6	52.1	7.5**
Bathing	82.1	75.6	6.5**
Continence	48.3	45.2	3.1

SOURCE: Applebaum and Harrigan. Channeling Effects on the Quality of Clients' Lives. Table V.1.

SAMPLE SIZES: Basic model 1,861; financial model 2,013.

*Statistically significant at the 5 percent level.
**Statistically significant at the 1 percent level.

an increase from 2.4 to 2.6 disabilities, a relatively small (0.2 of an ADL) but significant difference which represents about an 8 percent increase (not shown). Differences that were similar in size and statistical significance appeared at 12 months also, 2.3 disabilities for the control group versus 2.5 for the treatment group (also not shown).†

Although these differences are not large, the pattern of significant findings is contrary to expectations. There are two possible explanations, both related to the increased receipt of services by the channeling treatment group but with very different substantive implications. The first is that because the treatment group is more likely to receive help with ADL tasks under both models, there is a relative overreporting of treatment group disability. The wording used for the question ("During the past week, did someone usually help you" perform the task?) is a performance measure and may measure individuals who receive more help as more disabled, even if they are not. On this logic, an approach that sought to measure capacity to perform the tasks ("Can you" perform the task?) would not be subject to this measurement problem, although it would be subject to other problems.†† The IADL results

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†Differences were much smaller and not significant at 18 months, but this must be interpreted with caution because there is some evidence that the ADL results are different for the early and late cohorts.

††For example, it would be subject to overestimation through wishful thinking, particularly by persons whose capacity had changed recently. Limitations on the length of the interview prevented us asking the questions both ways for both measures. We chose the performance measure for ADL on the assumption that persons will do personal care for themselves if they possibly can. For IADL tasks (such as cooking) the assumption that persons will perform tasks if they possibly can was less reasonable so we chose the capacity measure. The unexpected ADL result calls the assumption into question for personal care tasks as well.

(presented subsequently) use the "Can you", or capacity approach and no significant differences were reported for this measure (see below).

The second explanation is that the treatment group members were in fact less able to perform these tasks as a result of receiving services--suggesting that when individuals do less for themselves either psychological dependence may develop or skills may atrophy. As indicated, this phenomenon has been suggested in connection with institutionalization; it is possible, at least in principle, for community services as well.

Our data do not allow us to determine which of these two interpretations is correct. It should also be noted that, although unexpected, this result is not unprecedented. As we shall discuss in the last section of this chapter, of the four previous demonstrations that found a significant effect on ADL functioning, two found effects on measured disability similar to that observed under the financial control model of channeling.

IADL. IADL functioning of channeling clients was substantially impaired, which was also to be expected given the eligibility criteria. At all three time periods, sample members were impaired in slightly more than five of the seven IADL tasks on average (not shown). The control group means in Table IX.2 are typical of all three observation points. More than 95 percent of the control group were impaired in performing housekeeping tasks, more than 90 percent in shopping, and about 85 percent in transportation. They were least impaired on taking medicine and telephone use, but even in those areas about half required help.

TABLE IX.2

IMPAIRMENT IN INSTRUMENTAL ACTIVITIES
OF DAILY LIVING (IADL) AT 6 MONTHS
(percent)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
Housekeeping	97.0	96.4	0.6
Meal Preparation	76.6	74.8	1.8
Shopping	92.6	91.6	1.0
Transportation	84.3	85.9	-1.6
Taking Medicine	53.4	53.8	-0.4
Financial Management	70.2	69.3	0.9
Telephone Use	53.9	53.5	0.4
Financial Control Model			
Housekeeping	97.4	96.8	0.6
Meal Preparation	80.9	77.6	3.3
Shopping	94.2	92.4	1.8
Transportation	83.5	82.8	0.7
Taking Medicine	54.0	55.9	-1.9
Financial Management	69.5	69.2	0.3
Telephone Use	53.2	49.9	3.3

SOURCE: Applebaum and Harrigan. Channeling Effects on the Quality of Clients' Lives. Table V.2.

NOTE: None of the treatment/control differences is statistically significant.

SAMPLE SIZES: Basic model 1,861; financial model 2,013.

The treatment/control differences at 6 months were small and uniformly not statistically significant under either model. The results at 12 and 18 months (not shown) were similar.

Restricted days. The number of days restricted to bed (not shown) was also generally unaffected by channeling. Control group members averaged 6-8 days restricted to bed during the month before each followup. With one exception (a negative 1.1 day difference under the basic model at 6 months), all the treatment/control differences were less than one day and not significant.

C. UNMET NEEDS

At the start of the demonstration perceived unmet service needs were high, averaging 1.6 (out of a maximum of 4.0)[†] for treatment and control groups in the basic case management sites and 1.8 in the financial control sites (see Figure IX.2). The three unmet needs most commonly reported were personal care, meal preparation, and housekeeping. This high need is probably related to the precipitating events that led to many client referrals. By the 6-month followup unmet needs had dropped substantially for all sample members.

Channeling did have the expected effect on unmet needs, as can be seen in the figure. Under both models at all three followups the treatment group reported fewer unmet needs than the controls, and the differences

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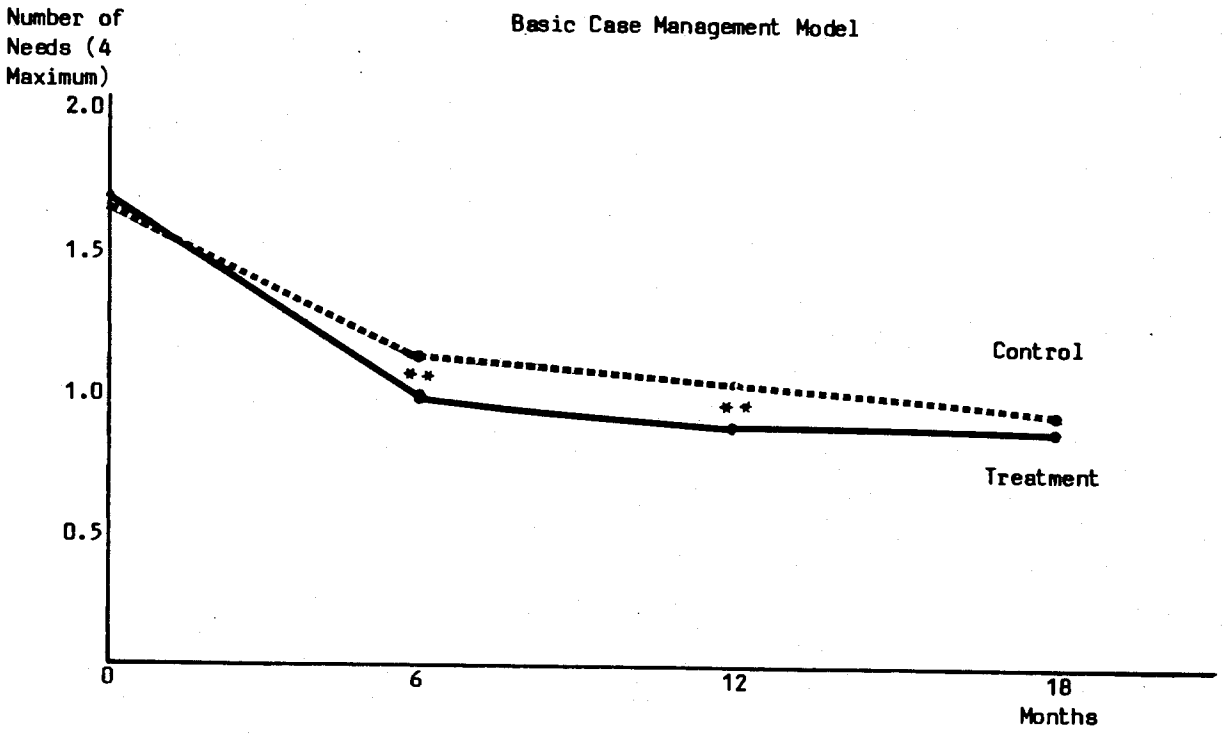
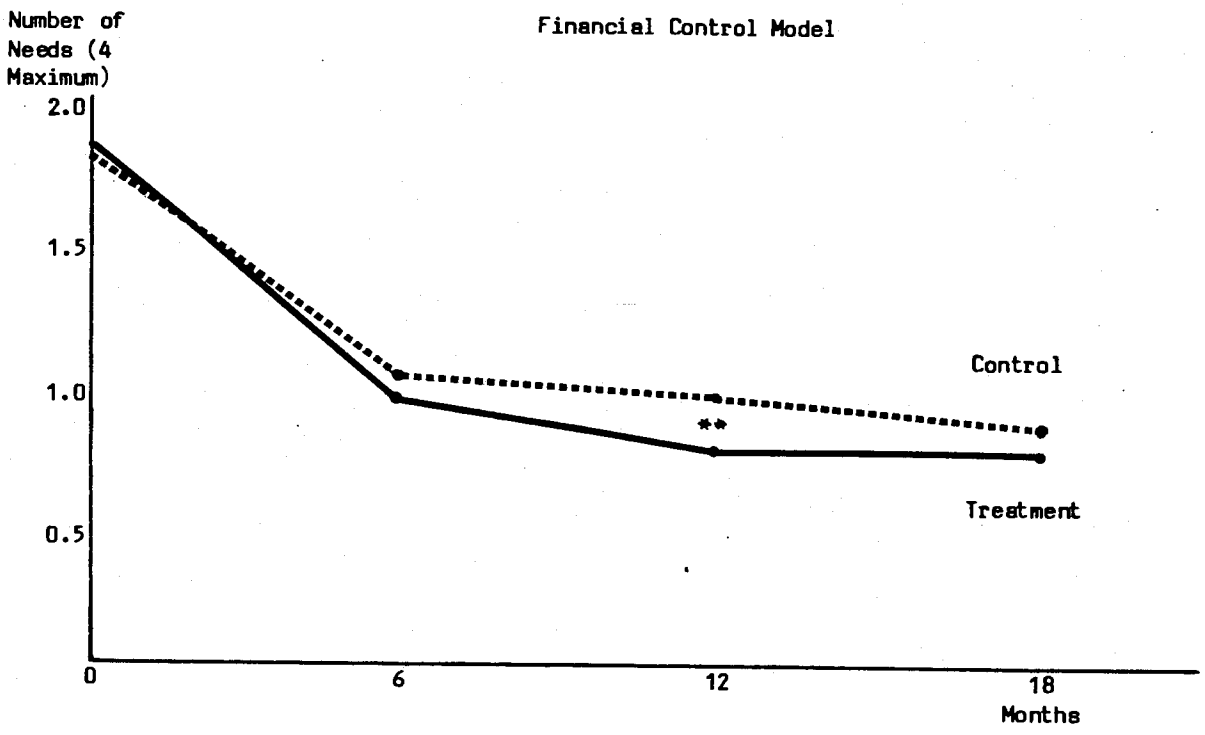
[†]To permit comparison over time starting at the baseline, it was necessary to restrict the analysis to the four categories of need common to the screen and followup interviews. Of the eight items in Chapter III, the transportation measure was excluded, and dressing, transfer, toileting, and bathing were consolidated into one category for a maximum of four unmet needs. Results for the eight-item measure show similar consistent but small reductions in unmet needs.

FIGURE IX.2

UNMET NEEDS OVER TIME





SOURCE: Applebaum and Harrigan. Channeling Effects on the Quality of Clients' Lives. Table C.9.

**Statistically significant at the 1 percent level.

were statistically significant at 6 and 12 months under the basic model and at 12 months under the financial model. At the end of the first year under both models, for example, the control group averaged 1.0 unmet need and the treatment group averaged 0.8, a statistically significant difference equivalent to one need for one out of every five sample members. For individual unmet need items, treatment group members also had consistently lower unmet need than controls, and several of the differences were statistically significant under both models (bathing, meal preparation, housekeeping) at one or both of the 6- and 12-month followups (not shown). However, even the substantial increases in services provided by the financial model brought about only small reductions in reported unmet needs and did not come close to eliminating them for the treatment group.

In interpreting the results for unmet needs, as well as other well-being measures discussed below, it is important to recall that proxy respondents assisted in one-fifth of the interviews and completed approximately two-fifths entirely. However, proxy use was virtually the same for the treatment and control groups. Moreover, examination of selected outcome measures generally did not show differences between estimates of channeling effects for the group responding themselves and those relying on proxy respondents.

D. CONFIDENCE AND SATISFACTION WITH SERVICE ARRANGEMENTS

Client confidence about receiving care is shown in Table IX.3. About 7 out of 10 control group members indicated that they were sure or fairly sure about receiving needed care, even in the presence of perceived unmet needs. Under both channeling models at both 6 and 12 months more of the treatment group reported being confident about receiving care than did

TABLE IX.3

SAMPLE MEMBER CONFIDENCE ABOUT RECEIVING CARE
(percent)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
6 months	75.1	66.9	8.2**
12 months	80.0	72.2	7.8**
18 months	80.5	76.8	3.7
Financial Control Model			
6 months	78.9	74.0	4.9*
12 months	80.0	71.0	9.0**
18 months	80.9	75.2	5.7

SOURCE: Applebaum and Harrigan. Channeling Effects on the Quality of Clients' Lives. Table III.4.

NOTE: These are the sample members who answered "very sure" or "somewhat sure" to the question: "How sure are you of getting help with things like that (transportation, taking care of themselves, or things around the house)?"

SAMPLE SIZES: Basic model 1,565, 1,242, 476 at 6, 12, and 18 months, respectively; financial model 1,589, 1,263, 467.

*Statistically significant at the 5 percent level.
**Statistically significant at the 1 percent level.

the control group. The differences at 12 months, for example, were 7.8 and 9.0 percentage points, respectively, under the basic and financial models. Both models of channeling also increased the percent of elderly care recipients who were satisfied with their arrangements for housecleaning, meals, laundry, and shopping (similar magnitudes, not shown). That these findings do not differ by model suggests that the psychological support and continued monitoring of case managers can affect confidence about receipt of care and perceived satisfaction with service arrangements, even without the larger increase in the amount of direct services provided by the financial model.

Informal caregiver satisfaction with present care arrangements is shown in Table IX.4 for primary caregivers of sample members in the community. A large majority of primary informal caregivers of this population expressed satisfaction with care arrangements. About 7 out of 10 informal caregivers of control group members in both groups of sites said they were very satisfied or somewhat satisfied with the present care arrangements for the recipient at 6 and 12 months after assignment.[†]

Caregivers of treatment group members consistently reported greater satisfaction with arrangements for care than those of control group members. Under the financial control model these differences were large (19 to 23 percentage points) and statistically significant. They were much smaller and not significant under the basic model. This suggests that the primary caregivers were more aware of and/or placed greater value on direct services, as distinct from case manager support and monitoring, than did

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[†]An 18-month followup caregiver interview was not administered.

TABLE IX.4

PRIMARY INFORMAL CAREGIVER SATISFACTION
WITH PRESENT CARE ARRANGEMENTS
(percent of those in community)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
6 months	75.6	68.6	7.0
12 months	83.2	76.8	6.4
Financial Control Model			
6 months	91.5	68.2	23.3**
12 months	91.1	71.8	19.3**

SOURCE: Christianson. Channeling Effects on Informal Care. Calculated from Table VI.11.

NOTE: These are the primary caregivers who answered "very satisfied" or "somewhat satisfied" to the question: "In general, how satisfied are you with service arrangements (for meals and other formal and informal care)?"

SAMPLE SIZES: Basic model 515, 401 at 6 and 12 months, respectively; financial model 611, 467.

**Statistically significant at the 1 percent level.

the care recipients themselves. Consistently fewer caregivers of treatment group members reported that they worried quite a lot about obtaining sufficient help for care recipients, but the treatment/control difference was significant only under the financial model at six months (not shown).

E. SOCIAL/PSYCHOLOGICAL WELL-BEING

The evaluation used several measures to assess channeling's effect on the social/psychological well-being of clients and their primary informal caregivers.

For clients, measures included overall life satisfaction, morale, attitude toward aging, social interactions, self-perceived health, and an overall contentment index. With respect to the overall life satisfaction measures, about 60 percent of the control groups for the two models said they were completely satisfied or pretty satisfied with their lives (see Table IX.5). At six months under both models treatment group members reported significantly higher life satisfaction, although in no case is the difference large in magnitude (approximately 6 percentage points). The difference declined over time but continued to be significant under the financial control model at 12 months. It should be noted here that interpretation of this result is complicated by the fact that life satisfaction effects under the financial model were concentrated in the group that relied on proxy respondents. This could be because channeling affected proxy respondents rather than clients. But it could also be because channeling had a larger impact on those who needed proxy assistance (i.e., the more seriously disabled).

Channeling does not appear to have affected the other measures of clients' social/psychological well-being. Although the results showed a

TABLE IX.5

SAMPLE MEMBER SATISFACTION WITH THEIR LIVES
(percent)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
6 months	64.2	58.6	5.6*
12 months	65.0	62.8	2.2
18 months	63.4	62.4	1.0
Financial Control Model			
6 months	60.8	54.9	5.9**
12 months	61.8	56.3	5.5*
18 months	61.8	59.0	2.8

SOURCE: Applebaum and Harrigan. Impacts on the Quality of Clients' Lives. Calculated from Table IV.1.

NOTE: These are the sample members who answered "completely satisfied" or "pretty satisfied" to the question: "In general, how satisfying do you find the way you're spending your life these days?"

SAMPLE SIZES: Basic model 1,937, 1,671, 647 at 6, 12, and 18 months, respectively; financial model 2,061, 1,745, 668.

*Statistically significant at the 5 percent level.
**Statistically significant at the 1 percent level.

pattern of favorable results for the basic model, few differences were statistically significant. Under the financial model, the pattern of results was not consistent and only one was statistically significant.

With respect to informal caregivers, channeling did not affect how well primary caregivers thought they got along with their care recipients, their perceived emotional, physical, and financial strain due to caregiving, or the number of stressful behavior problems. The treatment/control differences were uniformly small, not statistically significant, and not consistent in direction.

Channeling does, however, seem to have increased primary caregiver satisfaction with life (see Table IX.6). Primary caregivers were like their care recipients in that the majority were at least pretty satisfied with their lives--70-75 percent in the basic case management sites, 60-65 percent in the financial control sites. Channeling resulted in increases at 6 months under both models (8 or 9 percentage points in the proportion of primary caregivers feeling at least pretty satisfied with life) and at 12 months under the financial control model (9 percentage points).

F. COMPARISON WITH PREVIOUS DEMONSTRATIONS

Effects on mortality were examined in each of the other demonstrations that collected individual level data. Mortality rates ranged widely, from 7 to 35 percent after one year. The channeling mortality rate was at the high end of the range (30 percent in basic sites and 27 percent in financial sites); only two of the other projects had rates as high.[6] The high mortality rate is consistent with the frailty of channeling's clients compared to other demonstrations. Only two studies reported statistically significant differences in mortality rates--both

TABLE IX.6

PRIMARY INFORMAL CAREGIVER SATISFACTION WITH THEIR LIVES
(percent of those in community)

	Treatment Group Mean	Control Group Mean	Treatment/ Control Difference
Basic Case Management Model			
6 months	79.0	70.1	8.9*
12 months	79.2	75.3	3.9
Financial Control Model			
6 months	72.3	64.4	7.9*
12 months	67.8	59.0	8.8*

SOURCE: Christianson. Channeling Effects on Informal Care. Calculated from Table VI.13.

NOTE: These are the primary caregivers who answered "completely satisfying" or "pretty satisfying" to the question: "In general, how satisfying do you find the way you're spending your life these days?"

SAMPLE SIZES: Basic model 503, 390 at 6 and 12 months, respectively; financial model 589 and 466.

*Statistically significant at the 5 percent level.

reductions. One of these used a comparison group which exhibited some differences from the treatment group at baseline.

Perceived unmet needs were analyzed by two other demonstrations, one of which found that the treatment group had significantly fewer unmet needs than the controls. One other demonstration analyzed client satisfaction with service arrangements and found that the treatment group was significantly more satisfied with the services they received than were controls.[7]

Social/psychological well-being of sample members was assessed by some measure in nine of the other community care demonstrations.[8] One evaluation measured overall contentment and found a significant positive effect. The others measured social interaction (seven demonstrations) and/or client morale (four demonstrations). The treatment group reported significantly more social interaction than controls in five of the demonstrations that measured it, and significantly higher morale in two of the four that measured it. None of the other demonstrations measured informal caregiver well-being.

Some measure of physical functioning was examined in the 13 other demonstrations that collected individual level data.[9] All analyzed disabilities in ADL, eight studies measured impairment in IADL, and one analyzed days restricted to bed.

Four of the 13 found a significant effect on ADL functioning. Two found effects in the expected direction, with the treatment group less disabled on ADL than the control group and significantly so for at least some time periods. These are the only 2 of the 13 demonstrations using individual level data to have reported significant reductions in

institutionalization, consistent with the original hypothesis about the effect of institutionalization on functioning. The other two found the treatment group to be more disabled on ADL than the control group--the channeling result under the financial control model.†

Two additional studies, which differed from the community care demonstrations in that they were hospital-based home care studies, are also noteworthy because of their functioning results.[10] In these studies treatment group members also reported having higher levels of ADL disability. As in the case of channeling, analysts were unable to determine whether this was a result of increased psychological dependence, client atrophy, or measurement error.

In an effort to shed light on whether performance measure/capacity measure differences had an effect on the results, we compared the wording of the ADL questions for the various demonstrations; we found no systematic relationship between the type of measure used and results.

Among the demonstrations analyzing impairment on IADL four found, consistent with channeling, no IADL effect. Two studies found treatment group members to be significantly less impaired, and two found them significantly more impaired on this measure.

The single demonstration that measured restricted days found that treatment group members had fewer restricted days than controls, a result that was significant at six months. This is in contrast to that project's ADL result at six months, which showed deterioration in ADL relative to controls.

†One of these results needs to be qualified somewhat, because at 18 months the result had reversed, with the treatment group significantly less disabled than controls.

NOTES TO CHAPTER IX

[1]See Applebaum and Harrigan 1986 for full detail on the effects on the quality of clients' lives; Christianson 1986 on the quality of caregivers' lives; and Wooldridge and Schore 1986 on mortality.

[2]See, for example, Lawton and Bader 1970, Tobin and Lieberman 1976.

[3]See Blenkner et al. 1974 and Tobin and Lieberman 1976.

[4]See General Accounting Office 1977, and Hanley 1985.

[5]See Brown 1986 for full discussion of proxy use.

[6]See Applebaum, Harrigan, and Kemper 1986, Table 11.

[7]See Applebaum, Harrigan, and Kemper 1986, Table 12.

[8]See Applebaum, Harrigan, and Kemper 1986, Table 13.

[9]See Applebaum, Harrigan, and Kemper 1986, Table 14.

[10]The studies of additional interest were Katz et al. 1972 and Hughes 1981.

CHAPTER X

CONCLUSIONS

Preceding chapters have described the channeling demonstration and its evaluation design, documented the characteristics of the clients and the strength of the intervention, and presented the results concerning channeling's effects on formal community service use, informal caregiving, nursing home and hospital use, costs, and the quality of clients' and caregivers' lives. This chapter summarizes the basic findings of the evaluation and discusses their interpretation.

A. FINDINGS

Several basic findings from the evaluation can, in our judgment, be asserted with confidence:

The program elements of the channeling demonstration were implemented largely as designed. The population served by the 10 demonstration projects satisfied the established criteria at the initial eligibility screen. At baseline 20 percent were found ineligible--5 percent were terminated and the remaining 15 percent stayed in channeling based on case manager judgments that continued participation would help them avoid institutionalization. As intended, clients were extremely frail and reported many unmet needs.

Case managers coordinated a broad range of services needed to live in the community--with intensive assessment of needs, care planning, and continuing involvement with clients through periodic reassessment and monitoring. There was some suggestive evidence that basic model case managers may have considered a broader range of client needs than financial model case managers, who may have focused greater attention on the formal community services they were authorized to pay for.

The primary intended model difference--rationalization of formal community services with case managers acting as brokers between clients and service providers under the basic case management model, and expanded power to authorize payment (without regard to funding source) for a wide range of personal care and other services under the financial control model--was also implemented according to plan. Case managers in the basic model projects also had a limited amount of discretionary funds to fill gaps in the existing system. Direct expenditures per client for expanded services by the financial model were substantially greater than under the basic model, due to the major difference between the models in the extent to which they could pay for services.

The care plan cost limits that were part of the design of the financial control model were also implemented according to plan, although care plan costs turned out to be below the limits set. Care plan costs estimated by case managers in the five financial control projects ranged from 30 to 47 percent of the cost of a nursing home in the site--well below the demonstration's average expenditure cap of 60 percent. Although the limit turned out not to be a constraint, the requirement that case managers estimate care plan costs and compare them with the limit reportedly did increase cost-consciousness among case managers.

Cost-sharing was also implemented as designed, with formal procedures under the financial model and case manager discretion within broad guidelines established by each project under the basic model. Under the financial control model, because the incomes of the vast majority of clients fell below the cost-sharing level (which was intentionally high) and because some services were exempt from cost sharing, only about 5

percent of clients shared in the costs of care. Case managers under both models felt that cost sharing contributions increased both client and family interest in the care and their willingness to notify the case managers in instances of inadequate care. Indeed, a majority of financial model case managers and supervisory staff reported that a cost-sharing system should be designed to cover more clients.

Implementation differed from plan in only a few respects. The time from initial screening to completion of the care plan and initiation of services was, at about a month, longer than originally expected. Case manager reassessments of client needs, scheduled every six months, were not always done on schedule. A service audit and program review function envisioned in the design as a mechanism to monitor the quality of case management was generally not implemented and was later made optional. Finally, implementation of the gap-filling services under the basic model was delayed from 2-11 months because of delays in obtaining contractual authorization to expend the funds. In all, these exceptions were not central to the intervention.

The technical evaluation design was implemented successfully. The demonstration included a rigorous evaluation design with several components: replications of each model in five sites to limit the likelihood that the results were due to an unusual project or service environment; a randomized design to provide an accurate measure of what would have happened without channeling; samples large enough to make it unlikely that channeling effects either went undetected or were seriously overestimated; data adequate to measure the central outcomes of interest; and methodological research to identify any uncertainties in the results

due to sample attrition, estimation methodology, data noncomparability, and other technical matters. In any evaluation, and certainly one of the scale and complexity of this one, qualifications and uncertainties surrounding some of the results are inevitable. The extensive methodological research conducted, however, in our judgment substantially reduces uncertainty due to methodological limitations. Where appropriate we have noted qualifications. The reader interested in the technical details and the full results can consult the series of detailed technical reports that stand behind this summary.

Despite the frailty of the population, it turned out not to be at high risk of nursing home placement. Channeling clients were old (80 years), frail (84 percent needed help with personal care), poor (income of clients and spouses averaged $570 per month), and in unmet need of care (in almost four of eight activities on average). Needs following acute care episodes may have precipitated many clients' application to channeling. Over 70 percent reported experiencing the onset or worsening of a serious health condition in the year prior to channeling, and almost half had been hospitalized in the two months before application to channeling. About three-fifths already were receiving some in-home care.

Despite their frailty, however, channeling sample members' risk of institutionalization was much lower than envisioned at the start. At 12 months, 13 percent of control group members in basic sites and 14 percent in financial sites were in a nursing home. Even by 18 months only 19 percent of the surviving control group members were in a nursing home. They were, however, at high risk of hospitalization (37 percent of the control group were admitted to a hospital during months 7-12) and at high

risk of dying (by 12 months, 30 percent of the control group in basic sites and 27 percent in financial sites had died).

Channeling did not substantially reduce nursing home use. The use of nursing homes was lower among the treatment than the control group under both models, but the difference was small--about four days per sample member during the year after enrollment--and not statistically significant. This difference was small in relative terms as well: 11-14 percent of control group use.

Channeling increased formal community service use. Community service use increased, not because of widespread substitution of community care for nursing home care, but because of increased use among those in the community. Personal care and homemaker services--reported by practitioners to be the most difficult types of services to obtain in sufficient quantity under the existing system--were increased the most. Community service increases were modest under the basic case management model but were substantial under the financial control model--consistent with the different capacities of the two models to pay for community services. The basic model increased the proportion receiving services but not the average amount provided to those receiving them; the financial model increased both the proportion of sample members receiving community care and the average amount of care provided to recipients.

Neither model had a major effect on informal caregiving, although the financial control model led to small reductions in some areas. The basic case management model did not affect any measure of caregiving by family and friends. The financial control model led to small reductions in some measures of informal caregiving. Specifically, the financial control

model significantly reduced the receipt of a few types of informal care by small percentages--help with housework/laundry/shopping, help with meal preparation, delivery of prepared meals, and transportation--but not personal care, medical treatments, and other tasks. Similarly small reductions were observed for receipt of care from informal caregivers who visited to provide care, particularly friends and neighbors--but not from spouses and children who provided the bulk of care. There were no significant differences in the number of visits made by caregivers not living with the sample member, or in the hours of care provided by primary caregivers.

Channeling did not affect longevity, hospital use, or use of physicians and other medical services. Although mortality rates were high among the population served, channeling had no discernible effect on longevity. Nor was there any evidence that channeling affected hospital use, or the use of physicians or other medical services (such as outpatient services, x-rays, laboratory, etc).

Channeling increased total costs. The increased costs of case management and expanded community services were not offset by reduced nursing home costs, resulting in increased costs overall. The cost increases were considerably less under the basic than under the financial model. During the evaluation period as a whole, total costs under the basic model increased by about 6 percent ($83 per month alive over control group costs of $1,330). Total costs under the financial model increased by about 18 percent ($287 per month alive over control group costs of $1,592). Government costs increased by somewhat more than total costs--14 percent under the basic model, 28 percent under the financial model. Costs to clients and their families were reduced by 7 percent under both models.

Channeling reduced unmet needs, increased clients' confidence in receipt of care, and increased their satisfaction with life. Associated with the increase in formal community services, reported unmet needs for services were reduced by statistically significant but small amounts. Channeling increased reported confidence in receipt of needed care and satisfaction with arrangements for housecleaning, meals, laundry, and shopping. Finally, the treatment group reported significantly greater satisfaction with their lives than did control group members. Channeling did not affect other measures of quality of life for clients including morale, social interactions, self-perceived health, and contentment.

Channeling increased informal caregivers' satisfaction with service arrangements and satisfaction with life. The financial control model increased the proportion of informal caregivers' reporting satisfaction with arrangements for care by 27-34 percent. (The smaller increases under the basic model were not statistically significant.) The financial control model also increased caregivers' confidence in receipt of needed care at 6 months. Both models increased caregivers' satisfaction with life at 6 months, and the financial model continued to do so at 12 months. Neither model affected other measures of quality of life for informal caregivers (including emotional, physical, and financial strain due to caregiving, limitations on employment or personal activities, and the number of potentially stressful behavior problems of care recipients).

Channeling did not affect measures of client functioning, with the possible exception of physical functioning (ADL) under the financial model. The basic model does not appear to have affected functioning. The financial model did not affect the number of days restricted to bed or the

ability to perform instrumental activities of daily living (IADL). However, significantly fewer members of the treatment group reported performing personal care (ADL) tasks without assistance. This may represent a real deterioration in functioning. But it may be an artifact of measurement which merely reflects the higher level of assistance provided under this model. Which explanation is correct cannot be determined from the data.

Channeling's effects were generally similar across sites and subgroups of the population. There was little evidence that any one site or group of sites was markedly more (or less) successful than the other sites. Nor did channeling effects differ across subgroups defined by characteristics such as disability, living arrangement, Medicaid eligibility, etc. The one noteworthy exception was the small group in a nursing home at enrollment for which nursing home use appears to have been reduced. Not surprisingly, nursing home use was much higher among this group (117-119 days during the first year depending on the model) than the full sample, and the relative reduction was higher (24-30 percent) resulting in a substantially larger reduction in nursing home use (29-35 days).

B. CONCLUSIONS ABOUT THE DEMONSTRATION AS FIELDED

The service environments in which channeling was tested already provided some case management and a substantial amount of formal services under Medicare, Medicaid, and community care programs. Addition of case management and community services to such a service environment benefited clients and the family and friends who cared for them in several ways: increased services (substantial under the financial model), reduced unmet

needs, increased confidence in receipt of care and satisfaction with arrangements for it, and more satisfaction with life. The costs of the additional case management and community services--provided in most cases to clients who would not have entered nursing homes even without channeling--were not offset by reductions in the cost of nursing home use; hence total costs increased.

The results suggest that both models achieved similar benefits, but that the basic case management model did so at lower cost than the financial control model. There are two possible qualifications to our conclusion of similar benefits. First, some of the benefits are inherently difficult to measure, so there may have been undetectable differences in benefits between the two models. Second, and more importantly, the sites in which the financial control model was tested appear to have had more comprehensive case management and formal community services already available than the sites in which the basic case management model was tested. This may have led to an underestimate of the differences in effects between the two models.

These qualifications about model differences notwithstanding, there is, in our judgment, little doubt about the basic conclusions concerning the channeling demonstration as fielded. Three pieces of evidence increase our confidence in the results.

First, the results were generally consistent across the sites in which each model was tested, making it unlikely that effects in one or two sites dominated the results, or that there were significant offsetting results in different sites.

Second, changes of any plausible magnitude in the channeling results would not alter the basic conclusion about costs, because reducing costs by substituting community care for nursing home care is extremely difficult for a group with low risk of nursing home placement. A rough comparison of the costs of community and institutional care illustrates the difficulty.[1] For example, in basic sites the average total cost to live in the community, without channeling, was approximately $27 per day compared to $51 per day in a nursing home. The difference in these average costs suggests that it would be possible to save $24 for every day a person was kept in the community rather than in a nursing home, if no extra community services were needed to do so. Under the basic model, it cost an additional $3 per day to provide extra services to those in the community. Because the channeling population's risk of nursing home placement was so low, this trade-off indicates that the basic model would have had to reduce average nursing home use to less than half actual control group use, just to break even. A similar comparison for the financial control model indicates that given its larger increase in the cost of community care ($11 per day in the community), it could not have broken even at all, because the required reduction in nursing home use would have exceeded total control group use. Any delayed effects of channeling on nursing home use would be unlikely to reverse this basic conclusion. Under a range of assumptions about the effects of channeling after the 18-month observation period, there would have been no cost savings.

Third, the channeling results are consistent with those of other community care demonstrations, which generally found (with one important

exception discussed below) relatively low risk of nursing home use among the populations served, and insufficient nursing home cost savings to offset the increased costs of expanded case management and community services.

C. APPLICATION OF THE DEMONSTRATION RESULTS IN OTHER CONTEXTS

The findings and conclusions reported here are, of course, for channeling as fielded in the 10 demonstration sites in 1982-1984. Determining whether the results are generalizable to other interventions, populations, or environments, is difficult for any demonstration, and channeling is no exception. Assessment of these issues to the extent possible will, however, assist users of the research in making judgments about its applicability to their particular situation.

The intervention. The channeling intervention itself could be successfully replicated in other settings as a permanent program. The demonstration had some advantages over an ongoing program (commitment of staff to national demonstration goals; special technical assistance, training, and state and federal management oversight) but it also bore some special costs (pressure to recruit and screen clients and controls quickly for the research sample; the necessity to develop new procedures, management structure, and provider relationships; requirements to maintain and report program data for the research). On balance, although an ongoing program would encounter different problems, we do not believe the special nature of the demonstration implies that channeling cannot be replicated elsewhere. Indeed, the demonstration's documented experience in case management, provider relations, and cost controls is a useful guide to practice in any case management programs.

The demonstration tested two variants of a particular approach to long term care--case management combined with expanded community services and cost controls. Channeling case management did not encompass acute medical or institutional care (as, for example, a social/health maintenance organization does). Application to channeling was voluntary, in contrast to programs that restrict applicants to those who have passed nursing home preadmission screens. And, of course, channeling did not include vouchers, which allow clients to make their own choices about long term care services. Thus, channeling is only one of many approaches that incorporate assessment, case management, and some form of financing of community care; the demonstration cannot speak to the effectiveness of case management within other approaches.

The population served. Channeling was tested with the particular population who applied voluntarily to channeling and may have been a selected subset of the total eligible population. The channeling projects did not serve all the eligible population in the sites. Project caseloads were less than 0.5 percent of the elderly population in the sites with the largest populations, and 1.1 to 1.6 percent in the three sites with the smallest populations--compared to a total eligible population estimated to be 4.9 percent of the noninstitutionalized elderly population. Compared to the national eligible population, the channeling sample at time of application was more than twice as likely to have had a hospital stay in the last two months and almost twice as likely already to be receiving formal in-home care. This suggests that channeling may have served a selected group within the eligible population who had more needs related to an acute care episode and were more likely to be connected with the existing community care system.

The channeling results focus attention on the importance of enrolling the target population--those at high risk of institutionalization--without also enrolling a large population who would remain in the community even without the intervention of a program like channeling. The channeling population turned out to have relatively low risk despite state of the art screening criteria and assessment techniques. Since channeling was designed there has been no new research suggesting alternative screening instruments for community care populations that appear any better able to separate those who will go into nursing homes from those who will stay in the community.

The one evaluation that used a randomized design and came to a different conclusion about the substitution of community for institutional care is of special interest in this regard. The South Carolina Long Term Care project served a slightly more disabled population than channeling. Nursing home use among the control group was high (48 percent of controls were institutionalized after 12 months), and the demonstration-induced reduction in use substantial (40 days during the first year after enrollment). The South Carolina project differed from channeling and most of the other community care demonstrations in that it was integrated with the state's nursing home preadmission screen from which it received all its clients. Whether because of this approach to enrolling clients or for some other reason, the South Carolina project appears to have been able to enroll a population at high risk of institutionalization. It was able to reduce nursing home use enough so that providing case management and expanded community services did not increase costs (costs were essentially equal for the treatment and control groups).

The environment. Whether the demonstration sites are similar to the nation in availability of nursing homes and community services is particularly important to interpreting the results. In recent years many states have sought to control nursing home costs by reimbursing nursing homes at low rates under Medicaid and by disapproving requests for certificates of need for construction of additional nursing home facilities. Both policies have had the effect of restricting supply, making it more difficult to gain admission to a nursing home. The greater the difficulty of nursing home admission, the greater the difficulty of substituting community care for nursing home care--because use of nursing homes will already have been reduced by the restriction of the bed supply.

We asked hospital discharge planners and other knowledgeable providers how long applicants had to wait for admission to a nursing home. According to this evidence, waiting times for skilled beds were short on average for private pay patients (three weeks in basic sites and less than a week in financial sites) but longer for Medicaid patients (18 weeks in basic sites and 24 weeks in financial sites). National data on waiting times were not available for comparison. Although not a perfect indicator of availability, nursing home bed supply data, available for the channeling sites and the nation, provide some insight. Basic sites had slightly fewer beds per thousand persons over 65 than the nation (50 versus 57); financial control sites had fewer still (43), although if Miami is excluded the average is about that of the basic sites. These data suggest that nursing home beds were probably somewhat less available than in the nation as a whole, but that severe shortages were probably not a major factor affecting channeling outcomes for a majority of clients (who, though poor, generally were not on Medicaid).

Data on the availability of community care are even more limited. Home health expenditures under Medicare and Medicaid and the proportion of states covering optional services under Medicaid were similar in the demonstration sites and the nation. No data on community care under other programs, such as state home care programs, are available. We do know that case management approaching channeling in its comprehensiveness was already available on a limited basis in the demonstration sites. Ten to twenty percent of the control group received such comprehensive case management (more in financial than in basic sites). Receipt of direct community services was substantial also, with 60-69 percent of controls receiving in-home care. Given that the demonstration projects applied to participate in the demonstration through a competitive process, the case management and community care systems in the selected sites may have been more developed than in sites that did not apply. The more case management and community services are already available, the smaller channeling effects are likely to be.

Conclusions. The channeling demonstration tested two variants of a particular intervention, each in five service environments, serving a particular population. Both variants were successfully implemented. Their operational experience indicates that either could be replicated in other settings.

The service environments in which channeling was tested had slightly lower nursing home bed supplies and may have had more case management and community services already available than the nation as a whole. Whether channeling's effects would differ in communities with greater nursing home bed supply and less well-developed community care

systems cannot be determined from the demonstration. It is important to emphasize, however, that channeling tested the effect of adding comprehensive case management and expanded community care to service systems that already provided such services to some of the frail elderly. It was not an evaluation of community care per se--i.e., community care compared to its total absence. The channeling results did not address whether programs providing case management and formal community care should be initiated in areas without any such programs, or whether communities that, like the channeling sites, already have community care programs should reduce their scale or the scope of services offered.[2]

The population which voluntarily applied to the demonstration was exceedingly frail and had unmet service needs but was not at high risk of nursing home placement. Substantial reductions in nursing home use were not possible given that only a relatively small portion of the population would have used nursing homes even without channeling. Although analysis of channeling's effects by subgroup has not so far suggested alternative eligibility criteria that appear likely to be radically more effective in reducing nursing home use, the South Carolina Long Term Care demonstration did identify such a group. Using a mandatory nursing home preadmission screen to successfully identify a population at high risk of institutionalization, the South Carolina demonstration was able to break even on costs--but not to reduce them. This suggests that even a more successful targeting approach than those of channeling and nearly all other community care demonstrations is not likely to effect substantial cost savings.

Expansion of case management and community services beyond what already exists, then, must be justified on the basis not of cost savings but of its benefits--increased in-home care, reduced unmet needs, and improved satisfaction with life among clients and the informal caregivers who bear most of the care burden.

NOTES TO CHAPTER X

[1]See Thornton and Dunstan 1986, Chapter V, for the assumptions behind these illustrative calculations.

[2]Brown and Phillips 1986 used the channeling data to investigate the likely effect of case management and formal services compared to their total absence, but the analysis was inconclusive because of data limitations and the difficulty of distinguishing between the actual effects of case management or services and the inherent differences between those who receive such services and those who do not.

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SUPPLEMENTARY REPORTS

86-02 The Evaluation of the National Long Term Care Demonstration: Tables Comparing Channeling to Other Community Care Demonstrations. Robert A. Applebaum, Margaret Harrigan, and Peter Kemper. 1986, 41 pages, $2.90.

86-04 Differential Impacts Among Subgroups of Channeling Enrollees. Thomas W. Grannemann, Jean Baldwin Grossman, and Shari Miller Dunstan. May 1986, 139 pages, $9.75.

86-05 The Evaluation of the National Long Term Care Demonstration: An Analysis of Site-Specific Results. Robert A. Applebaum, Randall S. Brown, and Peter Kemper. May 1986, 66 pages, $4.65.

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83-15 The Planning and Implementation of Channeling: Early Experiences of the National Long Term Care Demonstration. Raymond J. Baxter et al. April 15, 1983, 259 pages.[a]

83-21 Implementation of Early Operation of the National Long Term Care Demonstration: Overview. Raymond J. Baxter et al. December 1983, 36 pages, $2.55

85-01 Channeling Effects for an Early Sample at 6-Month Followup. Peter Kemper et al. May 1985, 184 pages, $13.50.

85-05 Channeling Effects for an Early Sample at 6-Month Followup: Executive Summary. Peter Kemper et al. May 1985, 12 pages, no charge.

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82-08 National Long Term Care Demonstration Applicant Screen. March 1982, 20 pages, $2.00.

82-09 National Long Term Care Demonstration Clinical Assessment and Research Baseline Instrument: Community Version.[b] March 1982, 108 pages, $6.30.

82-10 National Long Term Care Demonstration Clinical Assessment and Research Baseline Instrument: Institutional Version.[b] March 1982, 112 pages, $7.85.

82-11 National Long Term Care Demonstration Followup Instrument. November 1982, 78 pages, $5.45.

82-12 National Long Term Care Demonstration Client Tracking/Status Change Form. March 1982, 3 pages, no charge.

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82-13 National Long Term Care Channeling Evaluation: Channeling Demonstration Project Instructions Manual for Reporting Financial Status, September 1982, 79 pages, $5.55.

83-22 National Long Term Care Demonstration Informal Caregiver Survey Baseline. January 1983, 44 pages, $3.10.

83-23 National Long Term Care Demonstration Informal Caregiver Followup Instrument. August 1983, 102 pages, $7.15.

84-13 National Long Term Care Demonstration Institutional Provider Discussion Guide. January 1984, 22 pages, $2.00.

84-14 National Long Term Care Demonstration Community-Based Provider Discussion Guide. February 1984, 68 pages, $4.75.

84-15 National Long Term Care Demonstration Provider Characteristics Instrument. January 1984, 26 pages, $2.00.

[a]This report is available free of charge from from the Office of the Assistant Secretary for Planning and Evaluation, Division of Disability Aging and Long Term Care Policy, Department of Health and Human Services, HHH Building, 200 Independence Avenue, S.W., Washington, D.C. 20201.

[b]These instruments were used for both research and clinical purposes. After the research sample intake was completed, a clinical version of the instrument was subsequently developed by Temple University's Institute on Aging and is available from it.

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CHANNELING TECHNICAL ASSISTANCE REPORTS

A Guide to Memorandum of Understanding Negotiation and Development - M. Johnson and L. Sterthous, October 1981

Liability: Issues of Negligence and Liability, prepared for the National Channeling Demonstration Projects - E. Cohen and L. Staroscik, October 1982

Channeling Case Management Manual - B. Schneider, L. Gottesman, P. Kohn, B. Morrell, L. Staroscik, L. Sterthous, January 1983

Care Plan Study Final Report (1986)

Trainer's Manual for Client Assessment Training (1986)

Trainer's Manual for Screening Training (1986)

Trainer's Manual for Case Management Training (1986)

Program Product: Clinical Baseline Assessment Instrument and Instruction Manual (1986)

Program Product: Care Plan Forms and Instructions (1986)

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