

grams and policies do not provide the necessary incentives or penalties to encourage change. Neither carrots nor sticks are present. It is unrealistic to expect most urban areas to allocate scarce resources for new service concepts. The use of Urban Mass Transportation Administration section 5 funds is a case in point. Although the program was intended to support both capital and operating costs, most funds have been expended for operating costs. New service concepts cannot compete in such an arena.

What, therefore, should be done? Several approaches seem appropriate. First is the issue of awareness. The federal government has stated that the determination of the appropriate service mixture is a local decision. That philosophy is sound and argues against any mandated program for a particular service concept. However, the federal government must ensure that local decision makers without professional transportation background are aware of the possible options and the implications of those options. How is awareness increased? More than better information dissemination is required. Existing planning procedures and requirements should be modified to better reflect changing needs and approaches. Less emphasis should be placed on traditional planning issues, and more emphasis should be directed toward operational planning, regulatory reform, resource allocation, implementation issues, institutional roles, service delivery, and service coordination. In how many urban areas are policy makers even aware of the inventory of existing service options and providers available to them? Very, very few.

A different emphasis on the planning process and increased information dissemination emphasizing new approaches should help. However, these alone are not sufficient. Additional earmarked funding will be appropriate to encourage urban areas to try new approaches. The most notable successes of new concepts have come from federal and state demonstration programs where additional funds were available to test new concepts. These programs have highlighted a few model approaches. They have not, however, served the role of diffusing a successful innovation on a broad scale. Such a program is needed to ensure that wide-scale implementation of well-tested successful concepts occurs.

Two fundamental, related problems exist at the federal level. First, because many innovative concepts involve numerous federal agencies, inconsistencies and conflicts have resulted. For example, there has been a proliferation of fragmented specialized services for the elderly and handicapped, but no federal agency has assumed an aggressive lead-agency role in ride sharing. Second, much of the enabling legislation and related programs were developed without consideration of various innovative services. Thus, existing legislation is being used in a far broader context than was originally intended. It is not surprising that numerous inconsistencies have developed. A challenge at the federal level will be to develop new legislative programs that reflect the broader view of urban transportation options, providers, and service delivery systems and ensure that the proper federal agencies can implement necessary programs in a consistent manner.

Social Service Transportation

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The nature and scope of social service transportation systems are summarized, and the benefits and limitations of coordination among such services are explored. The potential for improvements in coordination and a series of considerations for future improvements are identified. The increased interest in coordinating social service transportation is explained by the increasing funding constraints of the late 1960s and the 1970s as projects became more concerned about using their resources as effectively as possible. The nature of coordination is examined and the findings of a national survey of state agencies on aging are presented. The barriers to coordination are identified and classified into two broad categories: statutory and legal and administrative, institutional, and perceptual. The statutory and legal barriers include eligibility and user restrictions and franchise and labor problems; the administrative, institutional, and perceptual barriers include regulatory and administrative constraints, accountability requirements, insufficient information on transportation costs, turf protection, preferential treatment of clients, discontinuity of funding, and public transit. The benefits of coordination include (a) reduced overlap and duplication, (b) increased service capacity, (c) improved vehicle productivity, and (d) cost reductions in purchases. Directions for improved coordination—in the areas of policy, planning, operations, and research—in the future among transportation services provided by social service agencies are identified.

The provision of transportation services to their clients by social service agencies has long been an integral part of their programs. Recently, these agencies have become more concerned and involved with the issue of coordinating their transportation services because of

the number of projects providing such services (due to the inadequacy of public transportation and the lack of private transportation among certain social groups),

2. The scarcity of funds for social service programs in the 1960s and 1970s, and

3. The concomitant recognition of the importance of coordination in the face of the need for and scarcity of funds.

This paper reviews the background of social-service transportation projects; describes the nature of coordination and the barriers and limitations to coordination efforts; and presents an overview of some of the solutions and possibilities for improving transportation coordination among social service agencies and between social service agencies and public transportation (1, 2).

PROJECT GROWTH AND FUNDING

Project Growth

The Institute of Public Administration's (IPA's) state-of-the-art report on the transportation problems of the elderly, which was based on a survey of projects throughout the country, estimated that in 1974 there were between 1000 and 1500 projects providing transportation services to the elderly and other disadvantaged groups (1, pp. 71 ff). Most of these projects were of comparatively recent

1. The substantial and relatively sudden increase in

vintage—few of them predated the late 1960s. Based on more recent data collected from state agencies on aging for FY 1975, approximately 2000 transportation projects were being funded under titles III and VII of the Older Americans Act of 1965. If projects funded under sections 16b2 of the Urban Mass Transportation Assistance Act of 1974 and 147 of the Federal-Aid Highway Act of 1973 are included, there were an estimated 2500 transportation projects providing services to the elderly alone (2, pp. 6 ff).

Although the available data do not permit an accurate estimate of the number of transportation projects being funded by other programs such as those under the social security, vocational rehabilitation, and public health services acts, the community action program, private agencies, and other programs, a conservative estimate indicates that, if the projects funded by these programs were added to the total, the number of transportation projects serving the elderly and handicapped in FY 1975 would be more than 3000—well above the 1974 estimate of about 1000. These estimates are summarized below (2).

Item	Number of Projects	Estimated Number Serving the Elderly
Projects under titles III and VII of the Older Americans Act	2000	2000
Projects under section 16b2 of the Urban Mass Transportation Act	1031	520
Projects under section 147 of the Federal-Aid Highway Act	45	25
Total	2076	2545

(Because projects under sections 16b2 and 147 may be funded by other sources including one another and titles III and VII, these numbers do not represent unduplicated totals. It is assumed here that at least half of the projects shown for sections 16b2 and 147 were for the elderly and did not duplicate projects under titles III and VII.)

Many of these projects are not for the elderly only and include a variety of other service recipients. There are also other social service programs that provide transportation services to the nonelderly population, although there are no data available at present that permit estimation of the extent of these services. However, given the scope of the programs sponsoring these services, it would not be surprising to find that the number of transportation projects operated by social service agency programs was three to five times the 3000 estimated above.

Project Funding

The maze of federal, state, and local programs has made it difficult to estimate the scope of funding for transportation services by social service agencies. The IPA study attempted to survey programs through state agencies on aging, but for a variety of reasons, these agencies were unable to provide all the information necessary for a detailed view of the pooling and use of transportation funds. The agencies frequently found that they simply did not have the information available or could not make it available in time to be of value to the study. Many state agencies reported that they were not required to keep detailed information, especially on matching sources of funds.

With these limitations in mind, an attempt was made to provide a best estimate of the pooling and use of transportation funds under the major programs of titles III and VII, sections 16b2 and 147, and titles XIX and XX of the Social Security Act of 1974 (there were no data available that would permit estimates of title XIX of the Social Security Act, and no data were developed on title XVIII).

Despite problems with the data provided by the state agencies on aging, estimates of the total funding from major federal sources for the provision of transportation to the elderly were developed for FY 1975; these estimates are summarized in Table 1 (2).

As can be seen in Table 1, total expenditures on transportation for the elderly in FY 1975 from major federal sources (titles III, VII, and XX and sections 16b2 and 147) were probably in the range of \$60 to 70 million. This is exclusive of a wide variety of other major programs, public and private, that offer transportation services to older Americans (e.g., the public health services act, section 5 of the Urban Mass Transportation Act of 1974, and ACTION).

Funding for mobility of the elderly under sections 16b2 and 147 for FY 1975 was estimated at about \$20 million (the midpoint of items 3 and 4 of Table 1). In addition, an estimated \$25 million was spent on transportation services for the elderly under title XX of the Social Security Act. [If it is assumed that an estimated 2 percent of the title XX program of \$2.5 billion was allocated to transportation, approximately \$50 million appears to have been used for this purpose in FY 1975. Although the share of the elderly in the use of these transportation services is not known, it has been assumed that their share is approximately proportional to their share of the number of persons receiving supplemental security income payments (i.e., about half of the \$50 million).] Unfortunately, data were not available to permit even rough estimates of the funding share for transportation services under the \$12.1 billion spent in FY 1975 for the title XX program.

Finally, state agencies on aging were asked to identify the funding sources that contributed to titles III and VII and sections 16b2 and 147 programs. Although the data would not allow quantified estimates of the scope of these contributions, there was considerable evidence of pooling of funds among various programs. Transportation programs were being supported not only through shared funding arrangements drawing on the federal programs listed in Table 1, but also with funds from such sources as vocational rehabilitation resources, the economic opportunity act, public transit, local and state allocations, and private contributions.

Similar estimates for other social service programs covering the nonelderly population are not available. Some estimates have indicated that over \$1 billion is being spent on special transportation services by the Department of Health, Education, and Welfare (HEW) alone. The validity of such an estimate largely depends on the definition used for transportation and by and large is not well documented. However, there can be little doubt that substantial funds are being expended for such services by social service agencies and that the increases in these efforts are relatively recent—probably within the last 5 years.

Coordination Funding

At the same time that the recognition of the need for transportation was expanding, there was a general decline in the availability of funds for social service and human development programs. This was especially true during the latter part of the 1960s and into the 1970s when agencies became more and more concerned about using their resources as effectively as possible. That concern reflected itself in a growing desire to pool resources with other agencies.

By 1973, the problem had become sufficiently acute that the Administration on Aging (AoA) commissioned IPA to undertake a state-of-the-art study of transportation problems; the 1975 report of this study identified

Table 1. Funding for transportation services to the elderly: fiscal year 1975.

Act and Title or Section	Program Amount (\$ millions)	Estimated Transportation Share (percentage)	Estimated Funding for Transportation (\$ millions)	Estimated Transportation Funding for Older Americans (\$ millions)
Older Americans Act: title III	97.0 ^a	15.0	15.0	15.0
Older Americans Act: title VII	124.5	6.0	8.0	8.0
Urban Mass Transportation Act: section 16b2	20.8	100.0	20.8	12.5 to 16.6 ^b
Federal-Aid Highway Act: section 147	9.4	100.0	9.4	4.7 to 6.1 ^b
Subtotal	251.7	—	52.3	39.3 to 44.8
Social Security Act: title XX	2506.0	2.0 ^c	50.0	25.0 ^d
Total	—	—	—	64.3 to 69.8

^a Excludes Model Projects funds.

^b Program is not exclusively for the elderly, but the elderly represent a substantial share: the lower limit assumes that 60 and 50 percent of sections 16b2 and 147 respectively are serving the elderly; the upper limit assumes these shares to be 80 and 65 percent respectively.

^c Detailed transportation data were not available.

^d This percentage is based on 1.7 percent for transportation as reported by the Subcommittee on Federal, State, and Community Services of the Select Committee on Aging of the House of Representatives in its report (3).

^e Assumes the share of the elderly to be proportional to their share of the number of persons receiving supplemental security income (about 50 percent) (4).

four factors that tended to inhibit coordination:

1. User restrictions,
2. Franchise conflicts and other institutional restrictions,
3. The lack of participation by social service agencies in the public transit planning and operating process, and
4. Institutional mismatches.

Since the publication of that report and with growing recognition of the savings possible from coordinated efforts, the interest in and involvement with coordination has increased at an incredible pace. Although the barriers remain, other inhibiting factors have been identified, as well as some potential directions for improving the levels of coordination. Perspectives have changed. For example, until very recently, conflicting federal requirements were considered to be a major barrier to the development of coordinated transportation systems; this was the underlying theme of almost every study and report on the issue. However, one view suggests that federal constraints may not be as great a barrier as was originally thought. One observer has noted that a review of the statutory authorities and regulations concerned with the Office of Human Development in HEW found that although each of the respective programs had statutory eligibility requirements based on age, health, income, and geographic location, none of these requirements, in and of themselves, constituted an unbreakable barrier to the pooling of resources toward the development of a coordinated transportation system that would serve all groups (rather than discrete, categorical services to meet the needs of each group separately) (5).

This does not mean that conflicting statutory and regulatory requirements do not act as inhibitions to coordinating transportation resources. Unquestionably, these conflicting requirements make the job of coordination much more difficult than it need be. However, these barriers can be and have been overcome. In a study of 20 special service transportation projects by IPA, a wide range of coordinating efforts were identified, confirming the real possibilities of achieving coordination. However, it was not an easy task (2).

WHY COORDINATION?

Before proceeding to a discussion of the barriers to coordination and how they might be eliminated, it might be

useful to explore the meaning and value of coordination. Before project operators or agencies can be persuaded to participate in a coordinated transportation effort, they must feel that there is some real benefit in it. A better understanding of what coordination means and what it can and cannot do will, by itself, help encourage coordination.

Meaning of Coordination

The term coordination from a project-operation viewpoint has often been used interchangeably with the concepts of cooperation and consolidation when, in fact, they have different meanings and imply different levels of working together. If the three concepts are related to differences in freedom of action with respect to providing transportation, then consolidation implies the greatest degree of joint action and cooperation the least. These differences are reflected in the definitions that follow:

1. Cooperation: The active working together in some loose association or cooperative way, with the individuals or the individual agencies retaining their separate identification.
2. Coordination: The bringing together of individuals or individual agencies for common action, or to act together in a concerted way, to provide for a smooth interaction of separate units of a program or system. In coordination, the primary concern is in expanding the benefits of the entire system through joint action as a group. Coordination may come in the form of common funds, equipment, facilities, or operations, but the members or agencies preserve their identity.
3. Consolidation: The joining together or merging for mutual advantage. In the case of transportation services and in the context of this report, we will use consolidation when referring to a fully integrated transportation system in which all individual units or individuals have been combined or consolidated into one system and individual agency identity for the purpose of transportation is no longer maintained.

Confusion in the use of these terms is widespread and often obscures important policy and operating issues. At the present level of the state of the art, the term coordination is most frequently used in this paper because it best covers the range of current activity. However, the extent to which any of these three levels of joint effort is successfully achieved will depend to a considerable extent on a variety of statutory, regulatory, and adminis-

trative practices and on the perceptions of participants at all levels of government and in the private sector. The difficulties are further compounded by the fact that coordination can (and must) occur at a number of different levels.

The matrix of potential levels of joint action to provide transportation services shown below illustrates the complexity of achieving coordinated transportation.

Agency or Group	Federal	State	Local	Private
Federal	Intralevel	Level 1: federal and state	Level 2: local and federal	Level 3: private and federal
State	Level 1: federal and state	Intralevel	Level 4: local and state	Level 5: private and state
Local	Level 2: local and federal	Level 4: local and state	Intralevel	Level 6: private and local
Private	Level 3: private and federal	Level 5: private and state	Level 6: local and private	Intralevel

As can be seen, joint action to provide transportation services is possible at many different points ranging from intragovernmental levels (within federal, state, and local levels and the private sector) to joint efforts between levels of government and the private sector (levels 1 through 6 above). This obviously does not include the potential need for joint action within a single agency or group or among three levels: federal, state, and local. Furthermore, the concept of coordination is by no means new. In terms of transportation and social services, the present federal statutes and regulations underlying programs all generally contain specific requirements for coordination, and these requirements have recently been summarized for major federal programs providing transportation or social services or both (6). A review of that summary clearly illustrates the range and variation of these coordinating requirements and, in itself, identifies the nature of the difficulty in providing for more effective coordination among federal agencies. The multitude of requirements among federal agencies illustrates the complexity of coordinating the various statutory requirements, not to mention regulations and administrative practices.

Interagency coordination and cooperation has usually been required by most federal agencies, and informal cooperation at the staff level has always existed—typically by sharing information. Interagency task forces and work groups are used to encourage information exchange and consideration of joint policy implementation, and recent efforts along these lines among AoA, the Office of Human Development (both HEW agencies) and the U.S. Department of Transportation (DOT) reflect the growing concern among federal agencies about the issue of coordination of transportation for the disadvantaged.

Value of Coordination

In the face of the many problems and complexities, the value of coordination would have to be substantial to be justified. Experience with the AoA and Urban Mass Transportation Administration (UMTA) studies as well as the results of the state-of-the-art study in 1975 indicated that most transportation services were operating side by side with little attempt among the providers to avoid duplication or fragmentation of service potential and resources. Each agency typically designed its own project to serve its own clients—with separate vehicles, staffs, facilities, and budgets. In an inventory of trans-

portation services in Pinellas County, Florida, for example, it was found that there were 26 different projects, using over 40 vehicles, and 26 separate staffs, budgets, and operating requirements. In the case of Pinellas County, the potential for savings through some form of coordinated effort hardly needs much substantiation. There were 26 project directors (26 assistant project directors?); 26 office staffs; 26 different garages; and repairmen, supply sources, an unknown number of drivers, dispatchers, and other support staff that could easily be combined and simplified. One project operating in a consolidated manner might not have been possible (or even sensible), but fewer than 26 was clearly possible.

The advantages of cooperative transportation projects can be identified (and measured) in terms of (a) more or better quality transportation for the same costs, (b) the same transportation at lower costs, or (c) more and better transportation at lower costs. If one or more of the latter does not result from coordination, no one is going to be persuaded to coordinate. Furthermore, the extent to which cost reductions or service improvements occur as a result of coordination will depend on a variety of factors reflected in the costs of operation (although non-cost factors can also play an important part—e.g., work practices and agency policy on social service objectives). In this context, it might be helpful to discuss the nature of transportation costs and illustrate some of the targets of opportunity for potential savings through coordination.

Data from the IPA state-of-the-art study summarized below show the relative distribution between operating and fixed costs for nine transportation programs serving the elderly and other transportation-disadvantaged persons (1, technical annex B).

Project	Category of Expense (percentage)		Total
	Operating Costs (labor, fuel, oil, tires, maintenance, insurance, and depreciation)	Fixed Costs (supervision, contract and administration, rent, and taxes)	
Senior Citizens Transport, Rhode Island	86	14	100
Human Services Transport, Chattanooga, Tennessee	89	11	100
Lift Line, Palm Beach County, Florida	87	13	100
YMCA Seniors on the Move, Chicago	52	48	100
Valley Transit District, Naugatuck Valley, Connecticut	66	34	100
Supplemental Transport, San Diego	81	19	100
Whistlestop Wheels, Marin County, California	70	30	100
Older Adults Transportation, Missouri	65	35	100
Rural Transportation Project, Pennsylvania	76	24	100

To the extent that the data permitted, differences in operating characteristics and cost definitions among projects were reconciled in the table. As can be seen, transportation costs can be segregated into two broad categories: (a) operating (variable) costs that change with the level of operations (e.g., number of passengers, vehicle distances traveled, or vehicle hours) and (b) fixed costs that are (relatively) insensitive to variations in operating level.

Operating costs include cost elements such as fuel, oil, drivers' wages, tires and maintenance, insurance, and depreciation. In the nine projects listed, operating

costs ranged from 52 to almost 90 percent of total costs, and efficiencies in operation through the elimination of duplication and overlapping services, centralized dispatching, and more effective use of capacity could be significant. Some of the possible operating cost reductions (such as quantity purchases and discounts) are relatively easy to achieve. More efficient use of capacity through centralized dispatching may be somewhat more difficult, especially if the systems attempting to coordinate have similar periods of peak demand. However, even where peak demands are similar, there are typical gains to be realized through centralized dispatching. Coordinated transportation projects can also result in cost savings associated with more efficient purchasing of parts and supplies through quantity discounts or centralized maintenance.

Fixed costs include administration, garages and other facilities, rent, telephone, and similar overhead items. The potential for reduction of fixed costs through coordination is associated with the elimination of duplicated physical facilities (such as garages and dispatching sites) and equipment and reduced management and administrative costs. From the table above, we can see that fixed costs ranged from 11 to 48 percent of total costs in the nine projects, which indicates that elimination of duplication and greater rationalization of the fixed-cost factors through coordination could result in substantial savings.

As to the specific magnitudes of potential economies,

unfortunately, no projects have developed hard analytical data. It is hoped that the five demonstration projects sponsored by the Office of Human Development and recent social-service transportation-coordination efforts in Portland, Oregon, and other locations sponsored by the Urban Mass Transportation Administration (UMTA) will yield more data. There is considerable need for such data and, undoubtedly, it will be necessary to evaluate a number of projects before real information is developed on this issue. However, on an a priori basis and given that cooperative efforts may be easier with regard to such items as administration, joint maintenance, purchasing, garaging, and perhaps even fuel, the potentials for savings are likely to be significant.

Coordination Experience

Project operators surveyed by IPA did perceive coordination as desirable, and identified reduced overlap and duplication, more service capacity, greater productivity and operating efficiency, and reduction in cost of supplies and materials as some of the major benefits to be derived, corresponding to the cost benefits described above. Table 2 (2, appendix B) summarizes the specific coordination experiences of 20 projects. The findings of a detailed review of these projects and a survey of the experiences of state agencies on aging with transportation services for the elderly are reflected in the following discussion of coordination barriers and benefits.

Table 2. Coordination activities of 20 social-service transportation projects.

Name of Project	Coordination Activities		
	Public Transit	Other Special Transportation Projects	Social Service Agencies
Appalachian Ohio Region Transit Association (Ohio counties)	None	Backup vehicles for a few projects	Shared office and garage, information sharing
Belknap-Merrimack Community Action (New Hampshire counties)	None	Backup vehicle	Coordinated planning
Broward County Social Service (Florida)	Transit authority on advisory board	None	Vehicle maintenance, office space, information exchange
Cape May County Free-Fare System (New Jersey)	None	Incorporated into Cape May system	Office space in county offices
City Wide Senior Transportation Service (Chicago)	Transit authority estimated costs, did financial analysis, and selected equipment	None formally	garage facilities Planning survey participation
Community Action Transportation (Akron and Summit counties, Ohio)	None	Backup emergency vehicle	Preliminary coordination planning
Consolidated Agencies Transportation System (Brevard County, Florida)	Route planning, vehicle maintenance, emergency service, taxi, and garage	Backup emergency service	Liaison
Cranston Transvan (Rhode Island)	Rhode Island transit authority provides driver and maintenance at cost	None	Information sharing, client referral, participation on steering committee
Easter Seal Service (37 counties in Tennessee)	None	Information exchange, client referral, share maintenance and garage	None
Help on Wheels (El Paso and 5 counties in western Texas)	Assistance with 16b2 grant	Passenger referral	Advisory committee, routing and scheduling, project promotion
Human Services Transportation (Chattanooga)	None	Fully integrated	Fully integrated
Lift Line (Palm Beach County, Florida)	Fully integrated	None	Participation in planning
Maricopa County Motor Service (Phoenix and Maricopa counties, Arizona)	Limited	Scattered service supplied	None
Older Adults Transportation Service (Missouri)	Taxi service, contract with transit company	Joint use of equipment, information exchange	Information sharing, planning, shared office space, equipment leasing
Roanoke Agency Dial-a-Ride (RADAR) (Roanoke Valley, Virginia)	City sponsors both transit and RADAR	Limited, shared office space	Participation in planning, client referral
Senior Citizens Transportation, Inc. (Rhode Island)	Limited planning coordination	None	Client referral
Senior Handi-bus (Lincoln and Lancaster counties, Nebraska)	Transit authority operates project	Tries to avoid duplication	Client referral
Ten-County Rural Transportation (Southern Iowa)	Very little transit available	Unknown	Planning, information sharing
Valley Transit District (four cities in Connecticut)	Little to poor public transit	None	Planning and public relations
Whistlestop Wheels (Marin County, California)	Transit provides funding, evaluation, accounting, and taxi discounts	None	Information sharing, client referral, some sharing of drivers and vehicles

As can be seen in Table 2, there is a wide range of activities, ranging from fully integrated activities (Chattanooga) and transit funding (Marin County, California), to client referral and equipment and office sharing.

The experiences of the state agencies on aging are also relevant. Successful efforts of 41 agencies in 25 jurisdictions in FY 1975 in coordinating transportation funds under titles III and VII and the types of agencies participating are summarized below (2).

Type of Agency	Number of Times Identified	Percentage of Times Identified
Local social service	31	35.6
State, metropolitan, or local unit of government	21	24.1
State department of transportation	12	13.8
Nonprofit private	8	9.2
Area agency on aging	6	6.9
Regional or local transit	5	5.8
Private transportation	4	4.6
Total	87	100.0

(Because area agencies on aging are not generally permitted to directly operate transportation projects, they were only infrequently listed as coordinating transportation.) The types of activity by which coordination was achieved are summarized below.

Type of Coordination Activity	Number of Times Reported	Percentage of Times Reported
Improved working relations or communication (cooperation)	19	46.3
Improved communications	6	—
Improved working relations	4	—
Use of task force committees	5	—
Interagency agreements	3	—
Designation of a coordinator	1	—
Joint funding or use of equipment	11	26.8
Coordination of transportation services	9	22.0
Coordination of routes or schedules or both	5	—
Subcontract purchase of services	2	—
Joint promotion of program	2	—
Other	2	4.9
Total	41	100.0

The reasons why coordination efforts were successful are given below.

Reason for Success	Number of Times Given	Percentage of Times Given
Strengthened interagency relations made coordination possible	23	57.5
Expectation of reductions in duplication or fragmentation of transportation services	8	20.0
Expectation of improvement in mobility for the elderly and handicapped	4	10.0
Expectation of reduced overhead costs	3	7.5
Quality of coordination leadership	2	5.0
Total	40	100.0

In terms of types of agencies, the private and public local social service agencies were most frequently cited as successfully coordinating transportation services under titles III and VII (35 percent of the time). State, metropolitan, and local governmental units (other than social service agencies) were also important, but less so, being cited only 24 percent of the time. State departments of transportation were reported as participants in coordination activities 14 percent of the time and other agencies much less frequently.

In terms of types of coordination activities, greater levels of cooperation (improved working relations or communications) accounted for 46 percent of the coordination activity reported. Joint funding or equipment or both accounted for 27 percent and coordination of services for an additional 22 percent. Taken together, the latter two activities accounted for more than half of the coordination activity reported, suggesting that coordination in many cases had moved beyond improved working relationships.

Finally, strengthened interagency relations were most frequently cited as the reason for successful coordination (57.5 percent of the responses). The remaining responses attributed successful coordination to both the recognition of the desire to obtain the benefits associated with coordination—reduced duplication and overlap of projects, lower overhead costs, and more transportation services available for the elderly and handicapped.

Benefits

The specific benefits from coordination identified bear repetition.

Reduced Duplication and Overlap

Reduced duplication of management and administrative tasks is one of the potential benefits of transportation project coordination most often emphasized by the operations surveyed. Anywhere from 10 to 50 percent of total project expenditures are spent for the fixed-cost items of general supervision, administration, and overhead. Much of this must be expended to a fixed minimum level for even the smallest uncoordinated project for such items as grant application and monitoring, public relations, clerical record keeping, bookkeeping, payroll and cost accounting, and renewal of licenses and contracts. The marginal cost of these items for project expansion is small, and the potential savings by eliminating duplication through coordination is considerable.

Increased Service Capacity

Increased service capacity was identified as another benefit of coordination. The transportation providers surveyed defined coordination as expansion of service to more clients, agencies, trip purposes, and larger areas of operation, and expansion of capacity was seen as a prerequisite for rather than a result of coordination; i.e., many believed that additional available capacity must be already in operation to draw in other agencies and sponsors.

Improved Vehicle Productivity and Operating Efficiency

Increased operating efficiency in terms of vehicle use in scheduling is another potential benefit of coordination that was generally identified by project operators and state agencies on aging. Project operators were aware of many small and uncoordinated transportation projects in their areas that used their vehicles for only a few hours per day or week and that coordination could improve the level of vehicle use by distributing the use of a vehicle over many programs.

Of interest, in this context, is that almost all the projects surveyed noted that they had empty seats on demand-responsive trips—especially medical trips. However, they also observed that this unused capacity did not necessarily constitute potential excess capacity for project expansion. It was their view that unused ca-

Table 3. Barriers to coordination of social-service transportation projects.

Type of Barrier	Number of Times Reported	Percentage of Times Reported ^a
Funding and associated problems		
Lack of continuity	10	12.4
Restrictions on use	7	8.6
Insufficient available (federal and state) funds	6	7.4
Lack of matching funds	4	4.9
Subtotal	27	33.3
System-operation problems		
Conflicting schedule or route requirements	6	7.4
Conflicts with franchised transportation operations (e.g., taxis and handi-cabs)	5	6.2
Difficulty in obtaining insurance coverage	3	3.7
Conflicting vehicle requirements	2	2.5
Conflicts in funding cycles or accounting requirements and phasing	2	2.5
Subtotal	18	22.3
User or client restrictions		
User eligibility restrictions	11	13.6
Incompatibility of clients	3	3.7
Difficulty of mixing subsidized and nonsubsidized riders by public transit	1	1.2
Subtotal	15	18.5
Planning and organizational problems		
Lack of third-party coordinating structures or operators	6	7.4
Lack of technical information and expertise	4	4.9
Problems of turf	3	3.7
No program to coordinate	1	1.2
Subtotal	14	17.3
Conflicting state or federal interpretations and guidelines	7	8.6
Total	81	100.0

^aMay not add due to rounding.

capacity is a natural consequence of the inherent inefficiency of demand-responsive transportation. However, whether increased vehicle use can be translated into increased load factors (average vehicle occupancy) depends to a considerable extent on the pattern of peak loads, the time distribution of trip demands, and the trip purposes allowed by the project. In general, coordination usually permits a broader market of trip demands and provides for greater vehicle use and higher vehicle occupancies. Where projects have the same peak demands and similar trip ends, major increases in vehicle use and occupancy levels may not be possible, but if only one or a few vehicles can be used to serve the combined clients of a number of projects in a single area, wasteful overlap may be avoided.

Insofar as productivity, in terms of ridership, is concerned (i.e., riders per vehicle hour), recent data on on-call or real-time dial-a-ride systems suggest a range of 5 to 10 riders/vehicle·h (7,8). The overall average ridership productivity for all the projects surveyed was about 3 to 5 riders/vehicle·h (i.e., generally lower than on-call dial-a-ride service). Since most of the projects surveyed used some form of advance reservation and scheduling system, they should have been more productive than on-call dial-a-ride systems, which further suggests that the potential for improved productivity and more efficient vehicle use through coordination is probably substantial. However, it should be kept in mind that many of the projects were probably operating at close to capacity during peak periods and that the overall average is for all the systems and therefore should be interpreted with considerable caution.

Cost Reductions in Purchases

Finally, cost reductions in the purchases of supplies,

materials, or equipment is another potential benefit of coordinated transportation services. Cost reductions in the purchase of supplies and materials result from discounted prices for large-quantity purchases of gasoline, oil, and tires; centralized maintenance, repairs, and purchase of replacement parts are particularly susceptible to this cost-saving advantage. Many projects achieve this benefit at present by combining their demands for supplies and materials (typically gasoline and mechanical maintenance) and purchasing them from a central supplier (often a municipal or county garage or a commercial service station). Insurance discounts were identified as available for large-volume coverage, but some project operators express doubt of this benefit. Insurance rate setting for social-service transportation projects is not universally established at this time, and some operators report insurance increases for combinations of clients with multiple disabilities. Projects that transport elderly, handicapped, and exceptional clients (mentally retarded and epileptic persons, for example), sometimes have excessive insurance premiums.

The capital cost of vehicles can also be reduced by consolidated purchases of equipment, particularly from commercial dealers of vehicles.

BARRIERS TO COORDINATION

Although the benefits of coordinated transportation services are substantial, there are a number of important barriers. These have been identified and cited above. Again, experience is invaluable as a source of documentation of the problems actually encountered at the project planning, implementation, and operating levels. Some of the barriers reported are summarized in Table 3.

Of 32 state agencies on aging responding to the question of whether they had encountered any stumbling blocks to the coordination of transportation services, 28 (80 percent) reported experiencing a variety of problems. There is little reason to doubt that the difficulties reported by the 28 reflect the experience of all.

The 81 answers identified problems experienced or anticipated in five major categories: funding, system-operation problems, client restrictions, organizational problems, and conflicting state and federal interpretations and guidelines.

According to the reports, funding is the primary barrier to coordination; indeed, one-third of all barriers were related to funding. Of particular importance within that category are the lack of funding continuity and restrictions on the use of funds.

A second major category of barriers was related to system operations. Twenty-two percent of all the responses were in this category. Specifically identified were conflicting schedule and route requirements (the need for service at similar peak periods) and conflicting vehicle requirements (special equipment). Other constraints (immediate or potential) are those caused by conflicts with existing franchised operators (such as taxi services) and difficulty in obtaining insurance coverage.

User or client restrictions were perceived as barriers by almost 20 percent of the state agencies responding. Specifically, eligibility restrictions were identified as a primary problem, but the difficulties of mixing the clients of different agencies (incompatibility) and subsidized and nonsubsidized riders were also perceived as impediments to coordinating services.

Planning and organizational problems were cited in 17 percent of the responses as barriers to coordination. The most significant finding in this category was that coordination was impeded by the absence of a third-party or neutral organization (outside the social service agency structure) that could serve as a project developer or op-

erator. (If a third-party role could be developed for public transit, it could be expected to serve as an important mechanism for coordinating special transportation service operations. Taxis, for example, represent an important potential with considerable experience in operating special services on a demand-responsive and door-to-door basis.) This response suggests a need for organizational mechanisms to help bring together the present range of social service agencies.

Finally, conflicting state and federal interpretations of regulations and guidelines were reported as barriers in 9 percent of the responses. This suggests that perceptions of the regulations and guidelines may be more of a barrier to coordination than are the regulations themselves.

The most striking observation to be made about the barriers to coordination identified is that so few are directly linked to some type of statutory or legal inhibition (user eligibility and franchise conflicts). The remaining barriers (almost 80 percent) are primarily associated with regulations, rules, administration, funding, operating problems, and the perceptions of coordination. Most of these barriers are susceptible to change providing there is appropriate leadership and assistance—especially at the federal level.

Forty-seven agencies or individuals were interviewed by telephone and their comments recorded. These witnesses were project operators; representatives of public transit systems, private social-service transportation agencies, and state-level transportation and human resources departments; area agencies on aging; advisory groups on aging; owners of charter bus operations; and specialists in the aging and transportation fields. By and large, their comments corroborated the findings from the state agencies on aging.

Thus in reviewing the barriers identified by project operators, state agencies on aging, and witnesses, it becomes apparent that these barriers fall into two broad categories:

1. Statutory and regulatory barriers and
2. Administrative, institutional, and perceptual barriers.

Statutory and Legal Barriers

The category of statutory and regulatory barriers includes the inhibiting effects of user or eligibility restrictions and of franchise and labor problems.

User or Eligibility Restrictions

Efforts to combine social programs or pool transportation facilities are frequently frustrated by user or eligibility restrictions. Many social agency programs cannot serve all groups and legislation is frequently designed to serve only special groups, so that merging the transportation demands of a number of agencies and programs is difficult. Differences in age, income, or location requirements may make agencies resistant to any combination of effort with other agencies because of the difficulty of allocating costs and designing an operational system. Although no statutory prohibitions may exist, the categorical nature of the programs, coupled with the regulations, certainly inhibits coordination.

There have been a number of complaints about the paperwork (and the eligibility) requirements of title XX. The new rules on group eligibility probably will help, but unfortunately, it appears that the Joint Simplification Act does not apply to direct payments and may, therefore, not be significant for the paperwork requirements of title XX nor to titles III and VII of the Older Americans Act.

Franchise and Labor Problems

If transportation projects are run by public transit companies, their costs will be higher than if they are run by social service agencies independently—primarily because of wage-level differences. In addition, in many cases, operation of a transportation service for older Americans or other transportation-disadvantaged persons by using public transit facilities and networks may require franchise modifications or face legal conflicts with taxi operators—especially if demand-responsive services are included. These difficulties become more important when fares are being considered, because fare approval and franchise authority for specific services and routes may be required from a public utility commission or equivalent body.

For social service agencies (who are mainly concerned with providing the social services themselves), the roadblocks may seem insurmountable and not worth the effort. The difficulties include obtaining a new franchise and negotiating a labor agreement (perhaps for changes in wages, or even more critically, operating practices that would permit hands-on personalized service).

Administrative, Institutional, and Perceptual Barriers

In addition to the statutory and legal barriers, a number of administrative, institutional, and perceptual barriers were identified. These are discussed below.

Regulations (Administrative and Otherwise)

Federal and state grant restrictions and regulations were targeted as additional barriers to coordination by project operators and others. However, administrative rulings appear to have had more actual impact on potential coordination than the federal statutes or regulations—especially when the rulings were restrictive or inconsistent. In general, the major complaints about regulations were that they were being interpreted in a variety of ways, especially by the states. More specifically, comments on the regulations included the following: (a) the regulations were being interpreted narrowly, thereby providing a limited scope for coordination activity; (b) there was fear of bending the rules, especially at the local level, which also tended to inhibit coordination activity; and (c) state and federal interpretations were often inconsistent.

Perceptions of program eligibility restrictions seem to inhibit coordination primarily at the development stage; problems of conflicting restrictions seem to be reconciled or outmaneuvered after a system has begun and there is a commitment to its survival and success.

Accountability

One of the most frequently identified problems in coordination—sometimes experienced as a barrier to initiating a coordinated system and sometimes to extending coordination—is the accounting problem of servicing programs with differing eligibility restrictions. All sorts of complex juggling maneuvers are used—separate books, separate bank accounts, and daily posting of charges on estimated ridership under different programs. (For example, one Louisiana system had eight different funds in eight banks.)

Concern was expressed about the problems of varying auditing interpretations and the need to keep elaborate records for accountability requirements. In fact, two programs that had coordinated funding were in the courts

settling differing auditing interpretations from the two different agencies.

Lack of Knowledge of Transportation Costs

Many social service agencies have little idea of their total costs for transportation, so that there is little impetus to participate in a coordinated system where the charges are enumerated and may seem higher than independent provision of service. There are two elements to this barrier: (a) agencies underestimate the real cost of transportation—if they understood what those costs were, they would be more willing to cooperate to lower them or buy taxi or public transit services and (b) in most agencies the costs of transportation are merged with those of other activities, making it difficult to develop cost-sharing agreements or arrangements with other groups.

Turf Protection

Concern about the protection of turf was frequently identified as a barrier to coordination. Most persons are concerned with the preservation of their agency's identity and do not like losing control over their vehicles. Private agencies are particularly reluctant to pool because of concern about loss of their identity.

One of the more relevant comments on turfism was the observation that, in some respects, it is a good thing. It is appropriate that agencies be concerned about their clients and that they receive adequate transportation services. Agencies should be concerned about giving over the transportation responsibilities to someone else who might not provide service in a form appropriate to their client needs, and this is even more true if the third party is new and untried.

Preferential Treatment to Clients

Many project operators were not enthusiastic about coordination. However, their support for the concept seemed to be related to their size. Small social service agencies were often willing and enthusiastic to coordinate—especially if they had little or no service of their own. Large operators, on the other hand, expressed fear that they would lose control of their project or that service would be unreliable.

There was considerable concern that the prime or lead coordinating agency might give preferential transportation treatment to its own clients. Thus, the social service agencies themselves may not be the best institutions to assume the lead-agency role in providing coordinated transportation. Operators and state agencies felt that third-party providers would be more impartial in operation and thus were less skeptical about possible lost prerogatives with such arrangements. The survey responses suggest, therefore, that coordinated-transportation project operators should not be directly involved with the delivery of social services also, but rather that independent authorities—particularly city, county, or council-of-government organizations—function as the third-party operators. Although public transit was mentioned, operators and agencies had a number of concerns about this.

Public Transit

There was general concern that public transit is not terribly interested in serving as a third party for either planning or operation. There was also opposition to public transit serving as the third-party provider of

service because of the perceived problems of reduction in the social service nature of special transportation and increased costs for service. Small cities often do not want to absorb the subsidy costs that such projects entail. The survey respondents also noted that sometimes transit authorities are confined to specific city boundaries and, therefore, cannot serve many clients who live beyond the authorized operating boundaries. In addition, many agencies felt that if transit became an operator or a participant in such projects, they would be subject to section 13c (the labor clause) of the Urban Mass Transportation Act. That would sharply increase the project costs. Concern was also expressed that public transit operators cannot take advantage of section 16b2 funds because these funds are restricted to private, nonprofit agencies.

Mixing Clients

Some concern was expressed about mixing clients. Coordination was not considered to be universally applicable. A number of programs have clients that cannot readily be mixed. There are also programs in which transportation plays a special role in the primary service (e.g., employment training in drug rehabilitation programs) and other significant reasons for projects to remain exclusive. It was observed that the elderly are unwilling to mix, but it was not possible from the comments to determine whether it is the elderly or the elderly's advocates who are concerned. There was a consensus that, though sensitivity training might ease the problem, a barrier would remain.

Discontinuity of Funding

Through all of the work, there were repetitive complaints about the amount of available funds and the lack of continuity of funding. Of particular importance to the question of continuity of funding is the problem that, in coordinating, a whole system could be jeopardized by the loss of a single funding source. The question of project funding continuity often expresses itself as a need for either more operating or capital funds. In fact, both are needed.

SOME DIRECTIONS FOR IMPROVED COORDINATION

Within the framework of this paper, it is not possible to explore in any detail the solutions and approaches being used or that might be used to increase transportation coordination efforts throughout the country. However, I would be remiss if I did not at least mention a few. In that spirit, and without trying to inventory every possible alternative, some of the major solutions that have been used or could be experimented with—particularly at the project level—are described.

Policy and Planning

Legislative Review

1. Congress could set aside transportation funds for major categorical social programs that could be offered as an incentive available only to local communities and regions showing coordination of transportation services among agencies.

2. In view of the recognized importance of volunteers in providing transportation services to the elderly, there is a distinct need for noncash incentives to reward and encourage volunteer participation. Specifically, these should include (a) revisions in the U.S. tax codes to permit travel deductions for volunteer activities corresponding to those permitted for business travel and (b) state

and local legislation to make available tax-free fuel and low-cost automobile parts and services to volunteers.

3. Because state agencies on aging and other agencies concerned with coordinating transportation have indicated that actual or potential franchise conflicts frequently limit coordination, state legislatures might review the statutes and regulations of their utility commissions to eliminate or reduce conflicts between social service transportation and franchised operators.

Organizational Needs

1. Social service agencies have expressed the need for a neutral third party to plan and operate coordinated transportation services, and despite the expressed apprehension of some agencies, public transit has the skills and neutral status to fill this role. DOT and HEW should jointly explore ways in which public transit can be encouraged to serve as such a third party.

2. Many agencies need guidance in organizing and planning coordinated transportation services. HEW and DOT could jointly develop organizational models for use by local service providers.

Strengthened Interagency Relations

Improved interagency working relations and communications were frequently cited by state agencies on aging and witnesses as one of the most important factors leading to successful coordination of transportation services. To further improve both relations and communications, it is suggested that

1. Interagency coordination be accelerated by encouraging more federal and state interagency working agreements;

2. A more intensive program of information sharing that includes transportation planners and operators as well as social service agencies be undertaken at the state and local levels with federal support and participation; and

3. States must make fuller use of interagency coordinating committees or task forces to provide better policy direction and review of transportation needs, and greater use should be made of federal executive boards and regional councils.

Improved Regulations and Administrative Procedures

1. In view of the many complaints about administrative and accounting problems (e.g., mismatches in budget phasing, billing cycles, and cost definitions), a study should be made of the basis for rationalizing such matters. For example, there should be agreement on a set of auditing rules to be used by all federal and state agencies.

2. The use of waivers and integrated grants for coordinating funds for the delivery of transportation services should be extended and made easier.

3. The problems associated with funding transportation projects that were reported to be inhibiting coordination (e.g., treatment of depreciation and disposal of vehicles that makes coordinated vehicle use difficult, the use of multiple sources of funding that may mean multiple justifications each year for renewed funding, the 1-year life span of agency agreements and funding cycles that adds uncertainty to operations, and that reduction or cuts in the funds of one coordinating agency may jeopardize the entire project) should be reviewed and a program undertaken to eliminate or reduce their impact on coordination.

Long-Range Planning Improvements

1. In the long run, effective coordination requires that social-service transportation needs be integrated into the transportation planning process. Examples of such integration are (a) a sign-off role for social service agencies in transportation planning grants; (b) requiring that the transportation needs of the elderly be considered in the location decisions for social services, housing, and other aspects of urban planning; (c) a more formalized role for area agencies on aging in regional transportation planning activities; and (d) the location of multipurpose social service centers near good shopping centers and other services. These can provide a number of economies and improve the potential for coordinating the operations of transportation services (it is recommended that the use and development of such centers be encouraged by HEW and HUD).

2. Coordination should be pursued more actively at the local level. Given that some of the administrative and regulatory blocks are largely perceptual, strong local efforts and support could help change these perceptions. The commitment and leadership of local government is essential to coordination.

3. The greater use of multipurpose social service agency centers located near activity centers such as shopping and offices would help in planning and operating coordination services—especially in rural areas.

Operational Alternatives

1. Because there is at present no vehicle that can be used interchangeably for a wide range of transportation needs (e.g., for work trips, for the elderly, the disabled, and the young), the coordination of transportation services among agencies and with public transit is made more difficult. DOT, jointly with the states, should develop specifications for equipment that is better suited to special transportation needs, particularly vehicles for fewer than 15 passengers.

2. Because difficulty in obtaining insurance coverage for coordinated transportation is a frequent problem, state departments of human resources in cooperation with state insurance commissions should explore the feasibility of state-guaranteed insurance programs for coordinated transportation projects.

3. Because many agencies find that variations in the definitions used for transportation costs make coordination difficult, DOT should prepare a reasonably simple set of common cost definitions that could be used by social service agencies attempting to pool transportation funds.

4. The expansion of paratransit options—including more use of taxis and shared rides, userside payments, and broader based transit agencies—should be explored.

5. Sensitivity training of drivers, agency staff, and clients could reduce the problem of mixing clients on transportation systems.

6. Transportation clearinghouses where trip needs and vehicle capacity (seats) might be available to all agencies so that they could exchange capacity without being formally integrated should be established.

Research

Better data on the cost advantages of coordination should be developed.

ACKNOWLEDGMENT

The information given in this paper comes from four basic studies in which IPA has been involved:

1. A recent updating of the AoA state-of-the-art report;
2. A transportation coordination study for the Urban Mass Transportation Administration;
3. A special study of the transportation problems of the disabled for the Office of the Assistant Secretary of Planning and Evaluation of HEW; and
4. A series of three workshops on service and funding coordination sponsored by HEW and DOT.

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Coordination of Human Service Agency Transportation: Evaluation Method

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The topic of the coordination of transportation services among human service agencies has become very popular in the past few years. The involvement of these agencies, whose initial mandates probably did not include transportation, creates the potential for such problems as duplication of services, higher than necessary costs, and equipment maintenance difficulties. While transportation service coordination is desirable, it is a difficult task. One of the major problems is the lack of experience in analyzing agency transportation programs. This paper presents an analytical methodology that should assist in service evaluation and, therefore, the development of coordination plans. Two fundamental questions that must be considered before any coordination plan is developed are addressed. First, how much coordination is good for any particular agency? Criteria were developed to assist in the determination of which agencies would benefit from service coordination and which would not. Agencies were found to vary greatly in the degree of coordination that is useful to them. Second, just what is meant by service coordination? Is it a motor pool of vehicles? Is it a centralized maintenance facility? Or is it a coordinated transportation service with especially designed vehicles and professional drivers? A method is presented for matching the needs of the agencies with the services provided through the concept of a transportation support center that can be developed in phases and offer a range of services to be purchased by agencies according to their need.

If Mr. Smith were to open a rail line between Chicago and Detroit and a month later Mr. Jones were to open a parallel line, most people would probably agree that the resulting competition would be a good thing. But what if Mr. Smith and Mr. Jones had both used federal funds to build their rail lines? Instead of the praise for competition, there might be an outcry against the duplication of services and the waste of taxpayers' dollars. To some extent, such an outcry is now being heard with respect to social service transportation programs. But are such programs really duplicating services and wasting taxpayers' dollars?

BACKGROUND

In recent years, most major cities have invested signif-

icant resources in the provision of public transportation services. These investments have largely emphasized programs useful for the average citizen, that is, for the greatest number of people.

However, because the specific needs of individuals can be so varied, this approach does not fulfill all transportation needs. In response to this situation, agencies such as those associated with human services have also entered the transportation service field. Moreover, this response has been partly stimulated by the availability of funds through state and federal programs that allow these agencies to purchase vehicles and provide services.

The result is that many of these agencies are now in the transportation business to serve persons who, because of physical and mental conditions, cannot make use of general public transportation. The involvement of these agencies, whose initial mandate probably did not include transportation, creates the potential for such problems as higher than necessary service costs and duplication of services.

Because of these potential problems, many funding agencies are now asking, "How well are you spending our money?" and "Are you duplicating your neighbors' transportation programs?" and as a result, many regions are beginning to undertake the coordination of transportation services offered by human service agencies. This was the case in Rochester, New York, where the Rochester-Genesee Regional Transportation Authority and the United Community Chest of Greater Rochester jointly commissioned a study to formulate a plan for service coordination.

HISTORY OF ROCHESTER STUDY

While the initial emphasis of the Rochester study was to develop a program for coordinating the transportation services of the many human service agencies, it soon