

# Local Mental Health Authorities and Service System Change: Evidence from the Robert Wood Johnson Program on Chronic Mental Illness

JOSEPH P. MORRISSEY,  
MICHAEL CALLOWAY, et al.\*

*University of North Carolina, Chapel Hill*

**T**ODAY THE U.S. MENTAL HEALTH SYSTEM IS IN A period of transition as policy makers, payors, and providers search for alternative models of short- and long-term care for people with acute and chronic mental illnesses. The past century has witnessed the rise and fall of several systems of care that held promise for varying periods of time and then fell out of favor (Morrissey and Goldman 1984). The most ambitious effort to coordinate the delivery of mental health services on a national scale was the Community Mental Health Centers (CMHC) program initiated by the National Institute of Mental Health (NIMH) in the mid-1960s. The CMHC program mandated comprehensive services, affiliation agreements between component organizations, catchmented responsibilities, and citizens boards. Such an arrangement would seem to be ideally suited to the multiple needs of persons with a chronic mental illness (CMI). Ironically, however, during the formative years of the CMHC movement, these centers were never fully intended for nor utilized by these persons.

At the outset, CMHCs were guided by a prevention and early treatment orientation, which called for services to be concentrated largely on heretofore unserved populations and those persons with acute, episodic,

---

\*Coauthors are listed at the end of the article.

and/or less severe psychiatric conditions. People with chronic or long-term conditions were served mainly by state and county mental hospitals. The mental hospital deinstitutionalization movement in the 1970s proceeded largely uncoordinated with the CMHCs (Chu and Trotter 1974; Windle and Scully 1974; Morrissey 1982). In the 1980s, the growing ranks of people who were homeless and mentally ill and the plight of persons with CMI in obtaining community-based services underscored the failings of the community mental health services system (Goldman and Morrissey 1985; Mechanic and Rochefort 1990).

With the advent of the health and human services block grant to the states in 1980 at the outset of the Reagan administration, CMHC funding shifted from the NIMH to state governments, which began to contract with CMHCs for services to persons with CMI. Yet, the CMHCs in many of our largest cities are often seen as impediments to, rather than vehicles for, alleviating these problems. The catchmenting of CMHC services along geographic lines, once advanced as a way of enhancing the availability and accessibility of mental health services, was now seen as a barrier to serving the CMI population. Catchmenting often encouraged buck passing or the denial of responsibility for problems seen as "out-of-area" or citywide in scope, such as those presented by persons who were both homeless and mentally ill. In addition, the plurality of providers in the larger mental health services field and their specialization by client, modality of treatment, and payor raise myriad continuity-of-care and coordination problems.

Perhaps the most challenging aspect of serving persons with CMI, however, is that their needs are much broader than the traditional array of CMHC services can meet. In addition to medical-psychiatric care, these needs are for housing, income, job training, psychosocial rehabilitation, and advocacy, among others (Bachrach 1980; Talbott 1980). Here, the problems are twofold. On the one hand, it is unlikely that every CMHC could or would develop this full array of staff and program expertise given variations in their resources, locations, and commitments to public sector work. As a result specialized services vary widely in their availability from one catchment area to another in the same city. On the other hand, these social welfare services are organized as separate domains, each with its own special goals, source of categorical funding, eligibility requirements, geographic span, and individual mode of operation. Additional disjunctures are occasioned by gaps in the range of services available in many communities and the multiplicity of public, voluntary, and private agencies that provide one or another of these services.

Rather than continuous and comprehensive care, the result is system *fragmentation*—a situation where responsibility is divided “among multiple, separate individuals and agencies each with a categorical purpose, and the whole lacking a coherent policy, an integrated direction, and coordinated relationships” (Roemer, Kramer, and Frink 1975, 3).

Over the years, there have been a number of efforts to develop administrative arrangements to overcome fragmentation in the way mental health services are financed and delivered. In the 1960s and 1970s, California led the nation in transferring budgetary control over both outpatient and inpatient care to county mental health departments. In the 1970s, Wisconsin also evolved a system where both fiscal and programmatic responsibility for mental health services was fixed at the county level. During the same time period, Georgia and New York attempted to integrate state and community mental health services at the local level as a “balanced service system.” However, as of the early 1980s, all of these efforts were characterized as “utopias unrealized” (Talbot 1983) because of incomplete implementation, the perpetuation of state-operated services, and the lack of clear roles and administrative boundaries between governmental and private sectors.

The most recent and in many respects the most ambitious effort to create a truly comprehensive system of care for persons with CMI was launched by the Robert Wood Johnson Foundation (RWJF) on a pilot demonstration basis. The Program on Chronic Mental Illness (Aiken, Somers, and Shore 1986) was a unique public-private partnership between the foundation and the U.S. Department of Housing and Urban Development (HUD). Nine cities from among the nation’s largest were selected on a competitive basis in 1986 to receive support in the form of grants, low-interest loans, and federal rent subsidies (Section 8 certificates). The mandate was to develop communitywide systems of care, offering a broad range of health, mental health, social services, and housing options to help persons with CMI function more effectively in their everyday lives and avoid inappropriate institutionalization (Shore and Cohen 1990). Each city was expected to create a local mental health authority, an entity that would assume central responsibility (fiscally, administratively, and clinically) for developing and coordinating these services in the public sector (Goldman, Morrissey, and Ridgely 1990). In addition, the local mental health authorities were expected to do the following:

1. ensure *continuity of care* by designating a caregiver (case manager or team) responsible for coordinating services to meet client needs

2. create a flexible *financing* system where funds can be moved to meet client needs
3. develop a range of *housing* options for CMI persons
4. enhance the range of psychosocial and vocational *rehabilitation* programs to support clients in the community

The demonstration covered a five-year period from January 1987 through December 1991, consisting of a two-year planning phase (1987–88) and a three-year operational phase (1989–91).

What distinguished the demonstration from earlier efforts was its focus on the problems of chronic (i.e., serious and persistent) mental illness in large urban areas, its emphasis on coordinating social welfare and rehabilitation services as well as mental health treatment, and its stress on the development of housing for this client population as a major responsibility for mental health system managers. The demonstration was essentially a service system intervention rather than a treatment intervention. No new or enhanced medical–psychiatric treatment was introduced in a consistent or controlled fashion, and none of the case management programs that were introduced rigorously followed the “assertive community-treatment” model developed in Madison, Wisconsin (Stein and Test 1980), the only model that has been shown to be effective in improving clinical outcomes and quality of life (Taube et al. 1990). Rather, as Rosenberger has noted, the RWJ/PCMI “was designed to address the fragmentation that the program’s developers considered the major impediment to the delivery of adequate services for chronic mentally ill persons: fragmentation evidenced in the dissociation between funding authority and service responsibility; in the gaps and discontinuities of care as patients move between hospital, outpatient treatment, and rehabilitation programs; and in the inability of any one agency to ensure continuity of care across catchment areas” (Rosenberger 1990, 1171).

To overcome these problems, a two-level reorganization and expansion of the service system for persons with CMI was planned. At the client level, the goal was to achieve continuity of care across diverse agencies by developing case management programs so that clients with multiple needs could be assisted in obtaining services, entitlements, and housing. Virtually all of these case management programs relied upon a “broker” model (Robinson and Toff-Bergman 1992) whereby case managers, working alone or as a member of a team with a shared caseload, assist clients in receiving services and entitlements. At the systems level, the local

mental health authority was to take responsibility for developing clinical, fiscal, and administrative arrangements whereby this array of community agencies could be brought into a more stable and supportive role for persons with CMI in the local area. The local authority was to serve in the role of "systems case manager," seeking to achieve coordination not only among agencies in the traditional mental health system (state and general hospitals, CMHCs, other clinics, day programs, and so forth) where coordination problems are legend (Dill and Rochefort 1989; Greenley 1992), but also to draw in a much wider set of health and human service organizations (each organized loosely into separate sectors or domains) that heretofore had few connections or interdependencies with the traditional mental health service system. This broader set of agencies included social welfare, vocational and employment, housing, law enforcement and corrections, income maintenance, health care, and advocacy domains.

The publicity surrounding the RWJ/PCMI led to the concept of a local mental health authority (LMHA) being touted as the systems development model for the 1990s. As a result, the LMHA concept is coming under a lot of scrutiny, and not all of the commentary to date has been favorable. Rosenberger has criticized LMHAs as politically flawed because—like the CMHCs—they are an organizational solution imposed upon communities from above rather than a negotiated agreement between agencies and government units, which then voluntarily give up some of their authority and power so that systemwide needs can be accomplished (Rosenberger 1990). Dill and Rochefort (1989) make a related point in arguing that the most serious obstacle to services integration and consolidation of funding streams under a local mental health authority is "geopolitical"—the operation of federal, state, county, and municipal public and private providers under many separate local jurisdictions. They note that rarely have the prerequisites been present for such integration to occur. These include not only a special will and energy for system transformation on the part of service workers, recipients, and citizens, but also mechanisms to organize and channel these feelings. As a result, Dill and Rochefort believe that the promise of local or substate mental health authorities still exceeds their performance.

Greenley has questioned whether LMHAs will fulfill their promise because neglected in their design are a number of organization and management issues (Greenley 1992). Reflecting on the experience with LMHAs in Wisconsin (Stein and Ganser 1983), he points out that services are

highly variable across the state even though county-level LMHAs control and are responsible for service delivery. In his view, LMHAs will not succeed unless managers and others in these systems go beyond administrative structures and "pay attention to issues of setting goals, monitoring care, giving feedback, and promoting desirable interorganizational cultures" (Greenley 1992, 382).

Currently, there is a paucity of published data that can be used to assess the validity of these concerns. Most of these reservations rest on conceptual and theoretical grounds, rather than on quantitative assessments of the structure and performance of LMHAs. As a result, policy makers and program managers have little solid evidence on which to base decisions about adoption of the LMHA approach to services integration and system development or to evaluate the efficacy of such arrangements where they exist.

For this reason, a lot of interest has been focused on the national evaluation of the RWJ/PCMI demonstration (Goldman et al. 1990). As part of this evaluation, we have been conducting an assessment of the structure and functioning of LMHAs in nine demonstration sites, the performance of the associated community support systems (CSSs), and the changes that occurred during the demonstration period. One of the novel features of this research is its incorporation of interorganizational and social network analysis techniques to measure service system structure and change. This work builds upon theoretical and methodological advances during the past 15 years, which allow for the empirical study of service delivery systems as *systems* (Knoke and Rogers 1979; Burt 1982; Knoke and Kuklinski 1982; Lincoln and McBride 1985; Morrissey, Tausig, and Lindsey 1985; Doreian, Woodard, and Musa 1994). These methods allow us to characterize the overall structure and functioning of LMHAs and CSSs for persons with CMI at each site, and the patterns of resource flows and services coordination in the systems of care. Comparative analyses of these data enable us to document the interorganizational variability of CSSs across sites and, by linking to other data collected as part of the RWJF evaluation (Goldman et al. 1990), to determine whether service system improvements lead to positive client outcomes.

This article focuses on a subset of these issues. We present findings from a key informant survey of LMHA performance and the extent of CSS change in the nine demonstration cities (Austin, Baltimore, Charlotte, Cincinnati, Columbus, Denver, Honolulu, Philadelphia, and Toledo) and one comparison site (Colorado Springs). For six of these cities

(five demonstration sites and the comparison community) we also present data from an interorganizational network study that assesses changes in the local CSSs vis-à-vis the goals of the RWJ/PCMI. These five demonstration sites (Baltimore, Cincinnati, Columbus, Denver, and Toledo) were selected early in the evaluation from the nine participating cities as the sites that showed the most promise for implementing the demonstration and as the ones that could best teach us general lessons about LMHA and CSS development for other cities throughout the country. For the same reasons, four of these cities were also selected as sites for the client outcome study sponsored by the National Evaluation of the RWJ/PCMI (see the article by Lehman et al. in this issue). Colorado Springs served as a comparison site for a separately funded client outcome evaluation in Denver (see the article by Shern et al. in this issue). A collaboration agreement between the National Evaluation of the RWJ/PCMI and the Colorado study team was negotiated for sharing client outcome data. As part of this agreement, we included Colorado Springs as a comparison site for our service system change analyses.

We draw upon both qualitative and quantitative data collected at two points in time to assess the performance of the LMHAs and their associated CSSs in the two sets of cities. These analyses and results have both substantive and methodological value. Substantively, they provide a way of assessing the impact of the RWJ/PCMI and its uniformity across sites. Methodologically, we believe they illustrate a general strategy for analyzing changes in the structure and performance of CSSs and other such interorganizational service delivery arrangements.

## Methods

### *Data Collection*

Multiple sources of qualitative and quantitative data were used to measure the extent to which the LMHA and the CSS at each site changed in ways intended by the demonstration. Much of our contextual understanding of the sites came from information generated by the local RWJF programs and from site visits that we conducted over the course of the demonstration (Goldman, Morrissey, and Ridgely 1990). The program-generated information consisted of the original application submitted to the foundation by each site; administrative reports and memoranda generated by

the LMHA, other agencies, and their consultants over the five-year period of the demonstration (and earlier, in many instances); quarterly reports submitted by each LMHA to the foundation identifying accomplishments relative to program goals, obstacles encountered, and proposed solutions; and management information system data dealing with expenditures, client enrollment, and patterns of service utilization.

We made at least three site visits to each city during the demonstration, about once every 18 months. For the first visits, three of us worked as a team to interview the staff of the LMHAs and a cross-section of people from the community support system, including agency directors, board members, government officials, consumers, case managers, advocates, clinicians, program administrators, news media representatives, and family members. On subsequent occasions, we paired up to conduct the site visits on a rotation schedule. To gather qualitative information during these visits, we used rigorous procedures such as reinterviewing informants, debriefing site visitors in the field, verifying factual material, and sharing observations with external observers (Silverman, Ricci, and Gunter 1990). The purpose of these visits was to obtain an understanding of the local systems of care through the eyes of stakeholders and to learn about the specific administrative and service system changes that the local RWJF program staff was trying to achieve during the demonstration. Over time, we were also able to identify a number of similarities and differences between the sites in their history of mental health programming, the organizational ecology of the local mental health system, and the distinctive strategies that the authorities adopted to achieve the RWJ/PCMI goals (Goldman, Morrissey, and Ridgely 1990). These qualitative observations helped us design two quantitative data-collection efforts at each site—a “key informant” survey (Morrissey et al. 1994; Ridgely, Goldman, and Morrissey 1992) and an interorganizational network survey of relationships among CSS agencies (Morrissey 1992).

*Key Informant Survey.* The idea of expert opinion polling has a long tradition in the mental health needs assessment literature (Attkisson et al. 1978). We adopted this strategy to obtain a set of performance ratings on how well the LMHAs were meeting the needs of CMI persons living in the demonstration sites and on the changes in the overall CSS that occurred during the operational phase of the demonstration. A “key informant survey” involving a mailed questionnaire was conducted at each site at two points in time (T1 and T2): mid-1989 (just prior to the operational phase of the demonstration) and again in mid-1991 (toward



the end of the demonstration). Although not a true pre-post comparison, these data points allowed for an "early" versus a "late" performance rating for the LMHA and for the CSS at each site.

The key informants included many of the people we interviewed during site visits plus a deeper sampling of stakeholders within sectors of the CSS. The sampling frame we used was designed to include persons with varying *roles* (board member, executive director, program director, clinical/direct service staff, other) and *affiliations* (the mental health sector as well as other CSS domains such as social welfare, housing, rehabilitation, law enforcement/corrections, and so forth). About two-thirds of the respondents across sites consisted of persons occupying roles as agency program directors or clinical/direct service staff. The other respondents covered a diverse array of people such as government officials, advocates, consumers, family members, and local media representatives. With regard to respondents' affiliations, about 60 percent of the sample across sites was drawn from the mental health sector (CMHCs, state and local hospitals, the LMHA, other mental health programs) and 40 percent were from other CSS sectors. The number and distribution of respondents by role and affiliation categories varied somewhat across sites depending upon response rates and the local constellation of services. The trend was for board members and elected officials to be underrepresented among respondents in each city. Otherwise, our analyses indicate that respondents were broadly representative of the target samples at both time periods.

We applied the same selection criteria and sampling strategy for key informants in each city (regardless of the boundaries of the system as viewed by local participants) so that cross-city and cross-time comparisons would be meaningful. We sought to create a panel design whereby respondents to the T1 and T2 surveys would be based on the same people or those occupying the same roles in the local system. Prior to the T2 survey, we updated our mailing lists and replaced persons who were no longer available with substitutes who held similar positions. For several reasons (nonresponse, personnel turnover, new organizations being created between surveys, and other organizations becoming defunct), the percentage of T2 respondents who had responded at T1 varied from 46 to 65 percent across cities. However, respondents were similar at both time periods based upon their roles (agency/program director, clinician/direct service provider, other) and affiliations (local mental health authority board/staff, other mental health agency, other CSS). Response

rates ranged from 59 to 73 percent across the 10 cities for the two surveys and, at both time periods, the returns were found to be representative of the survey universe.

The key informant survey obtained respondent ratings on how well the LMHA and the local CSS were meeting the service needs of persons with CMI. Four scales were developed from these ratings: *adequacy*, *quality*, *availability*, and *coordination*. The adequacy and quality scales are based on ratings of each of the eleven CSS services—outreach, emergency, mental health treatment, psychosocial rehabilitation, case management, basic needs, vocational, housing, medical, substance abuse, and supportive services (Stroul 1982). The availability and coordination scales, however, are based on more global judgments about the performance of the overall CSS.

*Adequacy* is an 11-item index measuring each respondent's answers, rated from (1) "all" to (5) "none," to the question, "How many persons who need <each CSS service> actually receive them?" *Quality* is an 11-item index measuring answers to the question, "How would you rate the quality of care provided to CMI persons in <city name> with regard to <each CSS service>?"; response options ranged from (1) "very good" to (5) "very poor." The respondent was asked to rate "quality" in terms of the extent to which each of the CSS services met current professional standards on interpersonal, technical, and physical location considerations.

Both *availability* and *coordination* are 10-item scales measuring responses to the question, "How well does the current service system for CMI persons <in city> perform on these activities?"; response categories ranged from (1) "very well" to (5) "very poorly." The availability scale includes items such as "avoiding waiting lists," "keeping red tape to a minimum," "providing transportation," and "making patients feel welcome and at ease." Items in the coordination scale measure the extent to which agencies work concertedly to collaborate in "creating opportunities for joint planning," "ensuring timely access to client records," "minimizing or eliminating conflicting rules and requirements," and "developing agreements to avoid needless duplication of effort."

Three additional four-item scales measuring the performance of the local mental health authorities in three key areas were constructed from responses to the question, "To what extent do you agree with the following statements about the <name of LMHA>?"; response options ranged from (1) "strongly agree" to (5) "strongly disagree." *Administrative authority* includes "doing a good job in identifying the needs of CMI

persons," "sorting out LMHA and provider agency powers and responsibilities," "improving the ways local agencies work together," and "the LMHA only adds another layer of bureaucracy" to the local system. *Clinical authority* includes "ensuring 24-hour coverage for all CMI clients," "expanding centralized case management to all CMI persons who need it," "enhancing interagency discharge planning for clients and agencies," and "having little impact on provision of basic housing, rehabilitation, and medical care for CMI persons." *Fiscal authority* includes "securing funds from multiple sources for CMI services," "enforcing a more efficient use of current resources," "encouraging system-wide fiscal planning," and "assuring public providers about stable and predictable levels of funding for CMI services."

Simple additive scales were constructed for each measure. All composite indexes were rescaled to the original five-point Likert scoring with individual items reflected and transposed so that (1) indicates the lowest performance and (5) indicates the highest or most positive performance. The internal consistency coefficients for the four CSS scales ranged from .65 to .95 across the ten cities at each time period, and the coefficients for the three LMHA scales ranged from .52 to .89 (Morrissey et al. 1994).

*Interorganizational Network Survey.* In addition to key informant ratings, we wanted to obtain measures of the extent to which interagency relations were becoming more coordinated and centralized under the influence of the LMHA as the demonstration was carried out. We gathered data on the working relations between and among the LMHA and all of the agencies in the CSS in six of the ten cities.

Data about the formal network of care at each site were gathered from a knowledgeable staff person (or "boundary spanner") at each agency. Boundary-spanning roles (Aldrich and Herker 1977; Tushman and Scanlan 1981) are those occupied by persons who serve as liaisons with other organizations or who are particularly knowledgeable about such relationships (e.g., agency, unit, or program directors). These respondents were identified from interviews conducted with representatives of the major agencies, recommendations made by project staff of the local RWJF demonstration, or direct inquiries with agency directors.

A research team consisting of a coordinator/supervisor and two or three part-time interviewers was hired on site and trained to collect the network data in each city. An in-person interview was conducted with each respondent. The semistructured interview lasted approximately 45 minutes and collected data on the respondent's agency (e.g., mission,

number of employees, sources of funding, services provided to persons with CMI, size of client caseloads, the extent of involvement by the agency in the RWJF demonstration project). The interviewer then oriented the respondent to the matrix format and content of an interagency network questionnaire. The respondent was asked to complete the questionnaire within two weeks, and the interviewers scheduled a time to pick up the completed questionnaire. In many instances, owing to vacations, scheduling problems, and tardiness, it took longer to obtain completed questionnaires. When 1989 respondents were not available for interviewing in 1991, their role successors within the same agency/subunit were substituted or another knowledgeable respondent was selected. In some instances, such as the city police department, responses were completed with input from several respondents. Ultimately, a response rate of 100 percent for each city was obtained at both time periods.

We developed measures of LMHA and CSS performance from the network data to parallel the two measures from the key informant survey. The LMHA measures are based on the agency respondents' answers to three questions: (1) "How much influence does <the authority> have over mental health policies in this county?"; (2) "How helpful has <the authority> been in allowing your organization to attain its goals?"; and (3) "How well-coordinated is your agency with <the authority>?" The ratings were averaged across agency respondents in each city to get a summary score for influence, helpfulness, and coordination that ranged from (1) "low" to (5) "high." These three summary scores were again averaged to obtain a composite measure of LMHA performance for 1989 and 1991.

The measures of CSS performance are derived from an interorganizational network analysis of the interagency relations among CSS agencies in each city. These analyses are based on data obtained in the network questionnaire relating to three sets of relations among CSS agencies: client referrals, shared information, and funds exchanges (Morrissey, Tausig, and Lindsey 1985). Client referrals are measured by responses to the question, "To what extent does your agency receive *client referrals* from this other agency?" Information flows are measured by responses to the question, "To what extent does your agency receive *information* for coordination, control, planning, or evaluation purposes from this other agency?" Funding exchanges are measured by the question, "To what extent does your agency *receive funds* (grants/contracts) from this agency?" Responses on these three questions are recorded on a five-point Likert-type scale ranging from (1) "not at all" to (5) "a lot."

Each exchange relation (clients, funds, information) defines a separate network that comprises all local organizations serving persons with CMI. Client referral alone may not be a meaningful interagency relationship—it could even be a sign of agency dumping or uncoordinated care. By coupling referral data with information and funding relations, however, we end up focusing on multiplex or multibonded ties among the agencies in each network. For each site, therefore, six networks are analyzed consisting of the three exchange relations at two time points. The size of these networks is the same within each site, based on the number of CSS organizations surveyed.

The responses to the network questions are arrayed into agency-by-agency matrices for clients, funds, and information exchanges, which are then stacked and submitted to a hierarchical clustering analysis (Schott 1991; Calloway 1993). The clustering process groups agencies into “structurally equivalent positions” (Burt 1982) to the extent that within-position agencies have similar patterns of relations with all other CSS agencies in their client, fund, and information exchanges. A separate “blockmodel” is produced to represent the relations between and among these positions in each of the individual networks. The blockmodel represents a structural simplification of the original agency-by-agency matrix; it preserves the underlying pattern of relations while reducing the number of “nodes” in the network. Although the number and (agency) composition of the positions remain the same in each blockmodel, the relations between positions may vary as a function of the specific roles the incumbent agencies play in each network. Blockmodels provide a convenient way of comparing networks both within and across cities.

Based on information derived from these blockmodels, three indices are constructed to measure the structure of relations in each network:

- *Density*: The extent of linkage or connectivity within the network among the structurally equivalent positions (Knoke and Kuklinski 1982). This is measured as the proportion of the actual number of links compared with the total possible number of links in each network. The greater the number of links between positions, the higher the density.
- *Centralization*: The extent to which a hierarchy of dependence exists among the structural positions. It is interpreted as the extent to which one position, or set of positions, is the beneficiary or broker of all the relations in the system (Borgatti, Everett, and Freeman 1992). It is measured as the number of times an agency lies on a

path between two other organizations in an exchange relation (for all dyadic pairs). The index varies from 0 (low centralization) to 1 (high centralization).

- *Fragmentation*: The extent to which positions within the system are isolated from each other rather than forming cohesive, “clique-like” groupings. Cliques are determined based on the proportion of exchanges that occur within the position compared with those that occur with other positions (Bolland and Wilson 1991). The index varies from 0 to 1 such that the higher the fragmentation index, the more “cliqueness” within the network.

These indices correspond to three of the RWJ/PCMI goals and they are used here to capture the extent of system change during the demonstration. The *density* index is a general measure of the extent of connections or links among agencies in a network, something that the RWJ/PCMI wanted to promote. The underlying assumptions are that the greater the density among CSS agencies, the more likely that persons with CMI will have access to services and that their multiple needs will be met. Another goal of the RWJF demonstration was for mental health authorities to centralize authority over the administrative, clinical, and financial aspects of the local CSSs. The *centralization* index provides a way of assessing the extent to which this goal has been accomplished. A third major goal was to overcome the fragmentation of providers and services within and between the mental health sector and other sectors of the CSS. The *fragmentation* index provides a summary measure of the tendency for relations in a network to be concentrated *within* positions with no *between*-position linkages. The smaller the ratio of between- to within-position linkages, the greater the network fragmentation.

These three structural indices were computed separately for three networks of relations—client referrals, fund exchanges, and information flows. A composite measure based on the three indices was constructed by determining the extent to which each city had changed and whether this change was in the desired direction vis-à-vis the RWJ/PCMI goals. Consistent with the RWJ goals, the desired change from T1 to T2 was for density and centralization to *increase* and for fragmentation to *decrease* in each network. To develop an appropriate composite measure, each of the three indices was first averaged across the client, funds, and information networks to obtain overall density, fragmentation, and centralization scores. Second, these three summary scores were again averaged to

obtain a composite measure for 1989 and for 1991. (Prior to this step, the fragmentation scores were adjusted to reflect positive gains.) The individual scales vary from 0 to 1 so the composite can be thought of as a proportion—in this case, the proportion or extent to which each city approximated the RWJF ideal at each time period. (To facilitate comparisons, the composite scores are multiplied by 100 to convert decimals to whole numbers.) Movement toward the RWJ/PCMI ideal for each city is indicated by the difference between the 1989 and 1991 means for this composite measure. The more the structure of CSS agency relations had changed toward that ideal, the larger the resulting difference score.

### *Analyses*

Analyses focus on the measures of LMHA and CSS performance based on key informant and interorganizational network data at two points in time. Key informant measures are based on ten sites, whereas the network measures are based on a subset of six sites. Difference-of-means tests are used to determine whether there are statistically significant differences between sites on each measure at T1 (1989) and whether T2–T1 (1991–89) improvements occur for individual sites. As our respondent samples depart from a strict panel or repeated-measures design, we were concerned that observed differences between site measures and across time might be due to sampling artifacts rather than real effects. To assess this likelihood, we compared the ratings for respondents who participated in the key informant survey in 1989 and 1991 with those who responded only in 1989 and only in 1991. We found no significant differences between these subgroups across 60 comparisons (10 cities  $\times$  2 measures  $\times$  2 time periods + 20 over-time differences). Consequently, we use all respondents for the analyses reported, thereby basing inferences on larger numbers and more stable estimates of differences across comparisons. The comparisons are based on the Kruskal–Wallis nonparametric means test, which provides a chi-square statistic and associated probability level. Given the sampling design followed in the study and because the data being compared in this article comprise scale scores with varying numbers of items and responses, we adopted a conservative approach to statistical testing and used nonparametric procedures.

The city is the unit of analysis for the network index that reflects movement toward the RWJ/PCMI ideal. With only six composite scores

available for analysis, no statistical testing can be performed. Here, the percent change will be calculated to compare the movement of the CSS in each city toward the RWJ/PCMI deal and to compare the magnitude of change on this composite with the changes observed on other indices. For purposes of these comparisons, the mean values in table 4, which are based on a scale of 100 percent, have been converted into a 1-5 scale in figure 4 by dividing each mean by 20.

## Results

### *Key Informant Ratings*

Table 1 presents the average performance of the LMHAs in the ten cities as rated by the key informants (also see figure 1). The performance ratings are averaged across the clinical, fiscal, and administrative subscales for 1989 and 1991. Inspection of the performance means for 1989 indicates that some significant differences existed between cities. Toledo (3.78) and Philadelphia (2.50) are outliers as they have the highest and the lowest scores, respectively. The other cities cluster into two groups—one with relatively *high* performing LMHAs (Colorado Springs, Columbus, Charlotte, Cincinnati, and Austin) and the other with relatively *low* performing LMHAs (Honolulu, Baltimore, Denver). These are homogeneous clusters in the sense that pairwise performance scores are significantly different *between* clusters and outliers, but not *within* clusters, as indicated by the shaded bands in table 1.

The comparatively high scores for the three Ohio sites are consistent with their head start on the demonstration. County "648" boards had been created in the mid-1960s by Ohio's community mental health legislation and they had been channeling state mental health funding to local programs for 20 years. For two or three years prior to the demonstration, senior staff of the Ohio Department of Mental Health had been working closely with the county mental health boards to get them to assume a much more active management role in the delivery of services to seriously mentally ill persons and to expand the array of community services for this population (Hogan 1992; Robinson 1991). These state-county activities intensified during the RWJ/PCMI application process, and they continued after the start of the demonstration. Four cities in Ohio responded to the program announcement from the foundation.



TABLE 1  
Performance of the LMHA at RWJ/PCMI Demonstration Cities  
as Viewed by Key Informants, 1989-91

City	LMHA performance <sup>a</sup>								Difference of means
	1989				1991				
	N	Mean	(s.e.)	Rank	N	Mean	(s.e.)	Rank	
Toledo	57	3.78	(.098)	1	63	3.87	(.092)	1	+ .09
Colorado Springs	73	3.51	(.087)	2	56	3.48	(.098)	5	-.03
Columbus	81	3.44	(.083)	3	82	3.54	(.081)	3	+ .10
Charlotte	52	3.41	(.103)	4	59	3.64	(.095)	2	+ .23
Cincinnati	89	3.31	(.079)	5	94	3.11	(.076)	8	-.20
Austin	55	3.30	(.100)	6	58	3.25	(.096)	6.5	-.05
Denver	71	2.99	(.088)	7	81	2.73	(.081)	9	-.26*
Baltimore	89	2.98	(.079)	8	107	3.53	(.071)	4	+ .55**
Honolulu	60	2.89	(.096)	9	61	2.69	(.094)	10	-.20
Philadelphia	82	2.50	(.082)	10	80	3.25	(.082)	6.5	+ .75**

<sup>a</sup> Comparisons: between sites (1989): chi-square = 137.5, 9 df,  $P < .0001$ ; between sites (1991): chi-square = 131.9, 9 df,  $P < .0001$ ; over time: \*  $P < .05$ , \*\*  $P < .01$ .

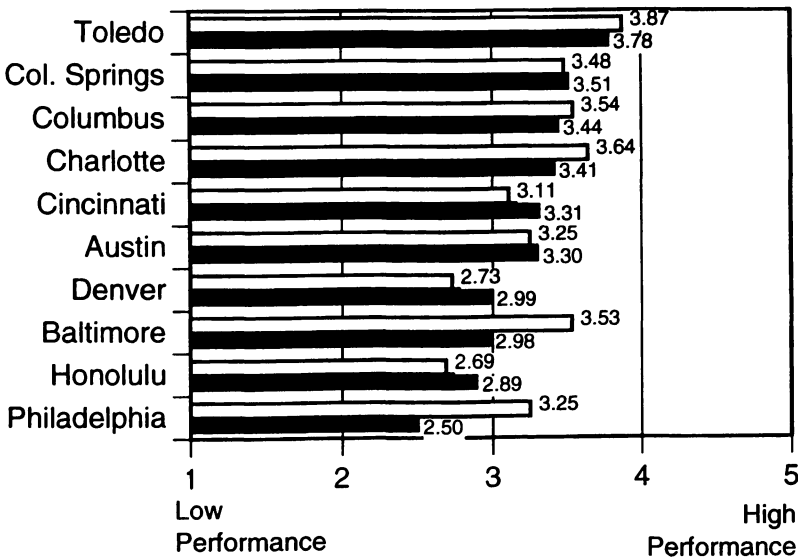


FIG. 1. LMHA performance in 1989 versus 1991: key informant ratings. □, T2 (1991); ■, T1 (1989).

Three of the applications were rated highly by the PCMI advisory board, but only two were initially selected for funding. The director and executive staff of the Ohio Department of Mental Health (ODMH) saw this demonstration program as providing important leverage for their plans to transfer responsibility for state-operated mental hospitals to local communities (Robinson 1991). An agreement was reached with the foundation whereby the ODMH fully funded the third Ohio site with state resources.

Denver, Baltimore, and Philadelphia were three sites that lagged behind the others in 1989. Two of these cities (Denver and Baltimore) had no true LMHA, and all three required considerable organizational change to achieve RWJ/PCMI goals for centralization of authority. As a result, much of the first two years of the RWJF planning grant at these two sites was devoted to sorting out governance issues and a variety of intergovernmental and interagency disputes surrounding the creation of a local public mental health authority. It is not surprising, then, that the performance of the LMHAs in these sites was rated lower than the Ohio sites in 1989.

The LMHA performance rating for Colorado Springs is not for a RWJF-designated authority, but for the local CMHC, which is responsible for public health services in that city and surrounding county. This CMHC enjoys a national reputation for its management and service innovations. As table 1 illustrates, its LMHA performance rating was close to the demonstration site with the highest ratings (Toledo).

The level of performance in the 1991 follow-up survey shows significant improvements as well as some slippage. The two largest mean differences—both increases—occurred for Philadelphia (+0.75) and Baltimore (+0.55), and the largest decrease occurred for Denver (-.26). LMHAs in Honolulu (-.20) and Cincinnati (-.20) also had lower ratings in 1991, but the reduction was not statistically significant. Otherwise, the cities experienced some small fluctuations in LMHA performance, but basically remained at their 1989 level. The overall pattern suggests that the sites lagging behind in 1989 caught up with the others by 1991, but those out front in 1989 didn't experience significant improvements in LMHA performance over the two-year interval.

These results are consistent with what we had learned from site visiting each city. Philadelphia had not made much progress during the first three years of the demonstration because of jurisdictional and resource disputes with the state mental health authority, turnover in key state and local mental health authority leadership positions, and a lot of pub-

lic controversy surrounding the closing of Philadelphia State Hospital. Then, with the closure of the hospital and the transfer of some \$40 million to the LMHA, the authority and local "base service units" (formerly CMHCs) began to make major strides toward the RWJ/PCMI goals. After a delayed start and the hiring of a new director, Baltimore Mental Health Systems, Inc. (the local mental health authority) began to gain the confidence of CSS agencies and the state department of mental health. In Denver, a fiscal crisis precipitated by mid-year revenue forecasts that could not sustain the increased units of service being delivered by the Mental Health Corporation of Denver, Inc. (the mental health authority) led to staff layoffs, plans for trimming the client rolls, and a reorganization of case management and clinic services. This resulted in a lot of negative media attention and public outcries about mismanagement.

The Honolulu site experienced the most delays in implementing the demonstration, including a switch of the designated grantee organization and successive turnover in several of the key project leadership positions. Honolulu was unique among the RWJF sites in that all public mental health services in Hawaii (CMHCs as well as the one state mental hospital) were operated by the Division of Mental Health, a subunit of the State Health Department (Goldman, Morrissey, and Ridgely 1990). Most of the population in Hawaii is located in Honolulu, the state capitol on the island of Oahu. The role of the "local" mental health authority—initially assigned to the department of psychiatry at the University of Hawaii—was eventually assumed by the governor's office and reassigned to a subcommittee responsible for coordinating state health, welfare, and related departments. No permanent appointment to the top job in the Division of Mental Health was made for nearly three years following the start of the demonstration, in large part because of recruitment difficulties and a low salary scale. The directorship of the RWJF demonstration project that was located within the division also changed hands several times during the demonstration. It is not surprising, then, that the Denver and Honolulu key informant ratings declined in 1991. The ratings for the LMHA in Colorado Springs—the comparison site—remained relatively constant at both time periods, but at a high level.

Table 2 and figure 2 present a summary of the key informant ratings for the performance of the overall community support system (CSS). The entries reflect the average ratings across the adequacy, quality, availability, and coordination scales for 1989 and 1991. The overall pattern is

TABLE 2  
Performance of the CSS at RWJ/PCMI Demonstration Cities  
as Viewed by Key Informants, 1989-91

City	CSS performance <sup>a</sup>								Difference of means
	1989				1991				
	N	Mean	(s.e.)	Rank	N	Mean	(s.e.)	Rank	
Toledo	51	3.21	.079	1	56	3.38	.077	1	+ .17
Charlotte	53	3.02	.078	2	49	3.17	.082	2	+ .15
Colorado Springs	63	3.00	.072	3	47	2.97	.084	4	-.03
Columbus	74	2.94	.066	4	73	3.11	.067	3	+ .17*
Cincinnati	81	2.82	.063	5	85	2.87	.062	5	+ .05
Austin	53	2.82	.078	6	54	2.82	.078	6	0
Denver	75	2.67	.066	7	71	2.77	.068	8	+ .10
Honolulu	58	2.64	.075	8	57	2.64	.076	10	0
Baltimore	87	2.62	.061	9	107	2.80	.055	7	+ .18*
Philadelphia	75	2.44	.066	10	79	2.75	.065	9	+ .31**

<sup>a</sup> Comparisons: between sites (1989): chi-square = 89.3, 9 *df*,  $P < .0001$ ; between sites (1991): chi-square = 77.9, 9 *df*,  $P < .0001$ ; over time: \*  $P < .05$ , \*\*  $P < .01$ .

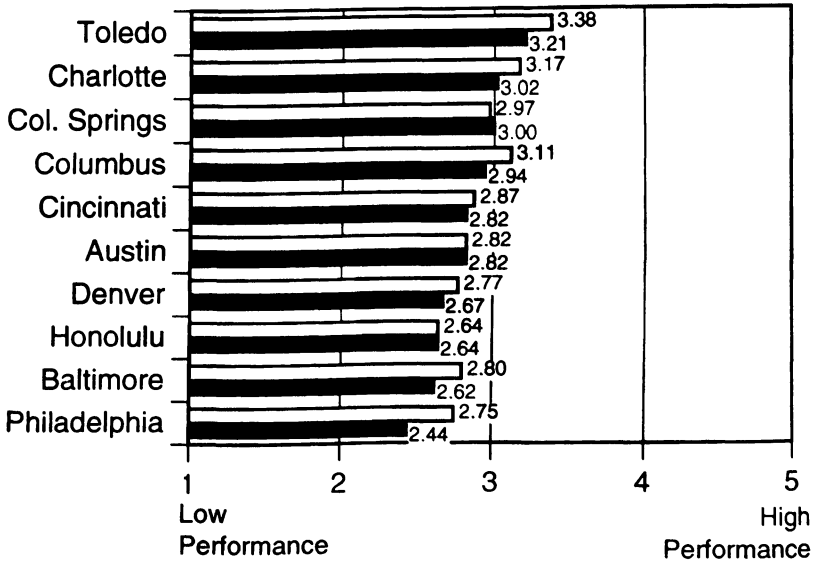


FIG. 2. CSS performance in 1989 versus 1991: key informant ratings. □, T2 (1991); ■, T1 (1989).

nearly identical to the LMHA profile in table 1—the CSS performance ratings fall into the same four clusters, the CSSs in Philadelphia (+.31) and Baltimore (+.18) make over-time improvements (as does the CSS in Columbus at +.17), but the means for CSS performance in most of the other cities are not significantly different from their 1989 levels. The main difference is that the CSS ratings in each city tend to be *lower* than the corresponding ratings for the LMHAs in table 1, with six of the nine demonstration cities still below the 3.0 midpoint of the scale at T2 (1991). Clearly, the perception of key informants was that there was much more success in creating and empowering the LMHAs in this two-year period than in significantly improving the overall CSSs.

### *Interorganizational Network Ratings*

Table 3 presents ratings of LMHA performance based on interorganizational network data for the subset of six cities in 1989 and 1991 (also see figure 3). Like the key informant data, there are significant differences revealing three groups of cities, distinguished by the shaded areas of the table, performing at different levels in 1989. The LMHA ratings in 1989 were variable—Cincinnati and Columbus had the highest ratings and Colorado Springs the lowest rating, with Toledo, Baltimore, and Denver at an intermediate level. Here, the LMHAs in three of the five demonstration cities show sizable improvements by 1991—Toledo (+.61), Baltimore (+.57), Denver (+.56)—while those in Cincinnati and Columbus remain the same. These results repeat the pattern found in the key informant data, that is, the sites lagging behind in 1989 caught up with the others by 1991, but the early leaders did not improve their performance significantly. This finding is confirmed by the over-time analysis, which shows that the three lowest-rated demonstration sites (Toledo, Baltimore, and Denver) in 1989 made statistically significant improvements over time. By 1991, the ratings for the five demonstration cities merge into a single homogeneous grouping such that the only statistically significant differences in LMHA performance are between Colorado Springs and these cities.

However, this pattern masks some interesting differences between the two data sources. First, in contrast to the key informant data, the network ratings for the LMHA in Denver are much higher both in 1989 and 1991, and they show a significant improvement over time. Second, the LMHA in Toledo shows a significant improvement on network, but not

TABLE 3  
LMHA Performance, 1989-91: Network Ratings

City	LMHA performance <sup>a</sup>								Difference of means	Percent change
	1989				1991					
	N	Mean	(s.e.)	Rank	N	Mean	(s.e.)	Rank		
Cincinnati	58	3.85	(.142)	1	59	3.86	(.160)	2.5	+ .01	.002
Columbus	55	3.73	(.143)	2	58	3.74	(.161)	4	+ .01	.001
Toledo	36	3.36	(.172)	3	40	3.97	(.203)	1	+0.61	18.2*
Baltimore	61	3.29	(.138)	4	62	3.86	(.155)	2.5	+0.57	17.3*
Denver	56	3.17	(.149)	5	53	3.73	(.162)	5	+0.56	17.7**
Colorado Springs	34	2.86	(.181)	6	36	3.20	(.209)	6	+0.34	11.9

<sup>a</sup> Comparisons: between sites (1989): chi square = 23.59, 5 *df*, *P* = .02; between sites (1991): chi square = 20.58, 5 *df*, *P* = .01; over time: \* *P* < .05, \*\* *P* < .01.

on key informant, data. And third, for all cities, the network ratings tend to be *higher* than the key informant ratings (especially in 1991).

Table 4 presents the composite index for movement of the CSSs in the six cities toward the RWJ/PCMI goals of high density and centralization

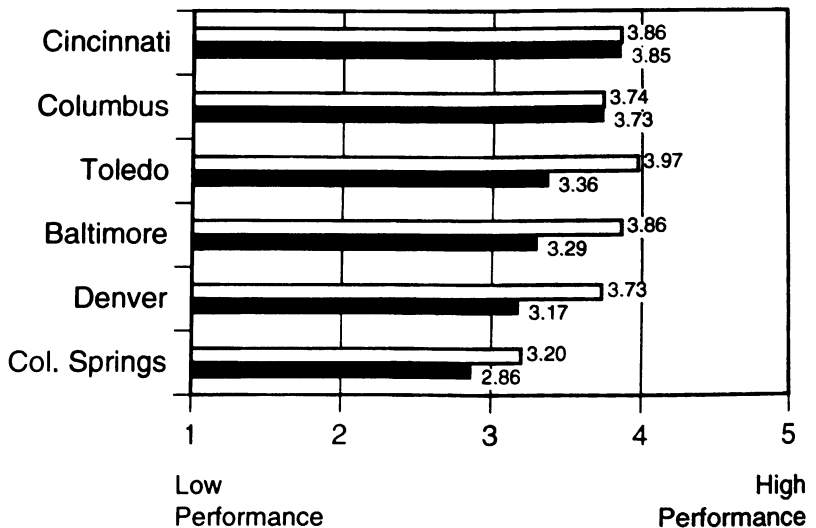


FIG. 3. LMHA performance in 1989 versus 1991: network ratings. □, T2 (1991); ■, T1 (1989).

TABLE 4  
 CSS Change toward RWJF Goals,  
 1989-91: Network Ratings

City	CSS change				Difference of means	Percent change
	1989		1991			
	Mean	Rank	Mean	Rank		
Baltimore	47.78	1	57.78	1	+10.00	20.9
Columbus	47.56	2	46.78	4	-0.78	-1.6
Cincinnati	45.00	3	52.44	3	+ 7.44	16.5
Denver	42.11	4	55.00	2	+12.89	30.6
Toledo	37.67	5	42.56	5	+4.89	12.9
Colorado Springs	26.45	6	26.78	6	+0.33	1.3

and low fragmentation (also see figure 4). At T1, the average of the composite scores for the five demonstration cities was 44.2 out of 100 possible points. Toledo and Colorado Springs had the lowest composite scores in 1989, largely because the structure of the CSS networks in these two cities was much more *decentralized* than the other sites. CSSs in

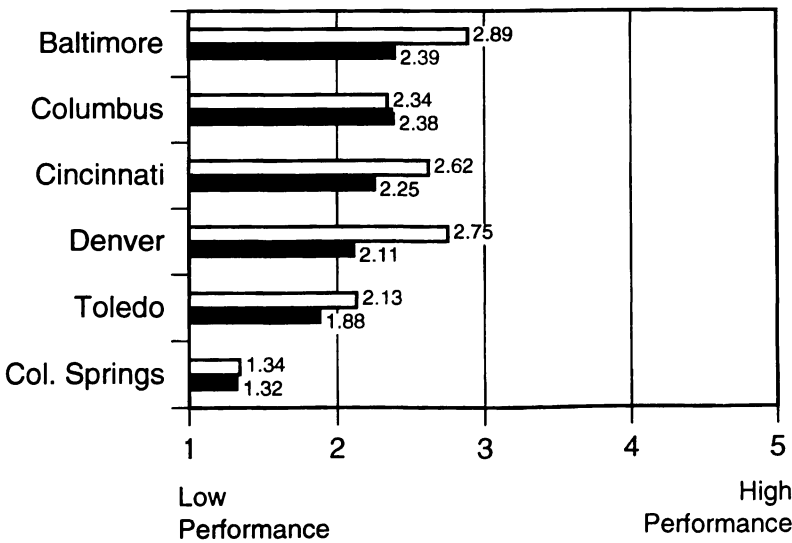


FIG. 4. System change toward RWJF goals from 1989 to 1991: network ratings. □, T2 (1991); ■, T1 (1989).

Denver (+12.89) and Baltimore (+10.0) experienced the most change, followed by Cincinnati (+7.44) and Toledo (+4.89). Colorado Springs, the comparison site, and Columbus remained essentially unchanged. When expressed as percent change scores, the CSS improvements in Denver (31 percent) and Baltimore (21 percent) are particularly impressive, and they equal or exceed the magnitude of any of the changes reported in other tables. It is interesting to note that neither city had a local mental health authority prior to the RWJF demonstration, whereas the other three demonstration cities had preexisting agencies that served as incipient authorities (Goldman, Morrissey, and Ridgely 1990). This suggests that the introduction of an authority may have its greatest structural impact in settings where there has *not* been an overarching mental health planning or administrative unit responsible for services coordination.

It can also be seen from table 4 that the five demonstration cities—both in 1989 and 1991—had *higher* composite scores than the comparison community (Colorado Springs). This means that the *structure* of the client referral, information, and funding networks in these five demonstrations were much closer to the RWJ/PCMI system ideal of high centralization, low fragmentation, and high density. And, with the exception of Columbus, the CSSs in the demonstration sites had at least a noticeable movement toward this ideal during the two-year interval.

There are a number of other interesting trends that can be observed across the six cities that have both key informant and network data available (see tables and figures 1–4). First, the most consistent finding is that, regardless of time period (1989 or 1991) or sources of data (key informant or network), the ratings for the LMHAs are *higher* (and in many instances much higher) than the ratings for the CSSs in 23 of the 24 possible comparisons (6 cities  $\times$  2 times  $\times$  2 measures). This is an important finding given the concerns that have been expressed in the literature about mental health authorities having trouble establishing themselves in their local service context and political environment (Dill and Rochefort 1989; Rosenberger 1990; Shore and Cohen 1990). Second, in 9 of 12 possible cross-sectional comparisons involving CSS performance in these six cities, the key informant ratings are higher than the network ratings, whereas in 9 of 12 cross-sectional comparisons involving MHA performance in the same cities, the network ratings are higher than the key informant ratings. However, the T2–T1 *change* in MHA performance (5 of 6 comparisons) and in CSS performance (4 of 6 comparisons) tended to be greater when estimated from the interorganizational



network data. Both data sources concur that the CSSs within the six sites were performing at a lower level than the MHAs. Stated differently, respondents were more likely to say that their MHAs were performing at a *higher* level than the overall service system for persons with CMI.

## Discussion

The findings of this study provide clear and convincing evidence that most of the RWJ/PCMI demonstration sites were successful in creating local mental health authorities. The Honolulu site and, in some measure, the Denver site were exceptions, but the LMHAs at the other seven sites were rated highly on clinical, fiscal, and administrative authority by the key informants, and were characterized as influential, helpful, and well coordinated with CSS agencies by agency directors and other "boundary spanner" personnel. In this sense, the findings challenge some of the more skeptical claims advanced in the literature about the flaws of LMHAs and their inability to gain wide support from stakeholders and service providers.

Less positive evidence was found for the development of the CSSs during the evaluation. In most cities, the performance of the overall CSS was not rated as highly as the performance of the LMHA. This suggests that the creation of a LMHA as a discrete organization (or the assignment of the functions of a LMHA to an existing organization) is much easier to accomplish than is the reorganization of the entire CSS along the lines envisioned in the RWJ/PCMI. Denver offers a contrasting case where the performance of the LMHA at T2 was downrated by key informants for fiscal and management issues even though the network measures indicate that the CSS experienced the most structural change of any city toward RWJ/PCMI goals.

The absence of a true predemonstration baseline complicates the interpretation of the T2-T1 changes in LMHA and CSS performance, however. Two interpretations of the findings are possible. One is that the T1 (1989) survey occurred too late to capture the full impact of the demonstration. That is, the big jump in LMHA/CSS performance may have occurred in the first year or two of the demonstration and we simply missed it. If so, the 1989-91 performance changes reported here would underestimate the true impact of the demonstration. The other interpretation is based on the notion of selection artifacts or preexisting charac-

teristics. That is, the high levels of LMHA/CSS performance observed across cities (especially for the Ohio sites) existed prior to the demonstration, so that these performance levels cannot be logically attributed to the demonstration. In this view, the findings reported here overestimate the full impact of the demonstration.

The absence of knowledge about potential upper bounds of LMHA and CSS change also complicates the interpretations and poses a variant of the "half-full/half-empty" argument. That is, if the expectation was that cities could traverse the full range of values on our measures within the demonstration period, then the amounts of change reported here would have to be considered modest in many instances. On the other hand, the possible existence of ceiling effects for planned changes in such large and complex city/county environments means that the RWJ/PCMI sites actually achieved much of what was possible under the time and resource constraints of this demonstration. We suggested in earlier reports that five years was much too short a time period for the largest cities to accomplish the same results as the smaller ones (Goldman et al. 1992; Goldman, Morrissey, and Ridgely 1990). The possibility of ceiling effects in the key informant findings is suggested by the tendency of the Ohio sites to remain high on LMHA/CSS performance at both time points, thereby showing very little change. Here again, most of the realizable gain may have occurred within the first two years of the demonstration, so the lack of large improvements in the two-year period examined in this study cannot be seen as evidence of ineffectiveness. This consideration also suggests that the *level* of performance attained rather than the T2-T1 change in performance may be a more realistic criterion for assessing the success of the demonstration.

Another possibility is that the LMHA organizational form may only have dramatic effects in those settings where there is no prior history of local management of the mental health system/CSS. This observation certainly fits with the data profile for Baltimore and Denver, the two sites that had little or no prior experience with MHA-like arrangements. These two cities made the most dramatic gains in moving the structure of the local CSS toward RWJ/PCMI goals. Also, the LMHAs cannot be seen simply as a "top down" system change strategy. Local agencies embraced the opportunities presented by the foundation, mobilized a community-wide response to win a five-year grant and related benefits, and organized a core set of agencies to implement planned changes. The result in most communities was the playing out of exogenous incentives

coupled with endogenous leadership and agency receptivity to develop a more systematic approach to caring for persons with CMI.

Another interesting finding is that estimates of change based on network data do not yield identical results to the estimates based on key informant data. For LMHA performance, the T2-T1 differences for four of the cities—Columbus, Toledo, Denver, and Colorado Springs—are larger (i.e., more positive change) when estimated from the network ratings versus the key informant ratings (tables/figures 1 and 3). For CSS performance, the network ratings for each city tend to be much lower than the key informant ratings, but for four of the cities—Denver, Baltimore, Cincinnati, and Toledo—the amount of positive change is much larger when estimated from the network versus the key informant data (tables/figures 2 and 4).

These disparities may be partially explained by differences both in respondents and in the underlying constructs being measured. The network data are obtained from a spokesperson representing each CSS agency, whereas the key informant data also include responses from a much broader set of stakeholders in each city. In many instances, agency directors may be in a better position to know about the day-to-day working relations between the LMHA and CSS agencies and thereby have a better basis than the other key informants for rating LMHA performance higher. As to the underlying constructs, the network measure of CSS performance is based on the structure of interagency relations, and it reflects movement toward the RWJF ideal, whereas the key informant ratings reflect perception about the overall adequacy, quality, and accessibility of the service system. The former is a structural measure based on the day-to-day working relations and division of labor among agencies, whereas the latter is more of a global impression of system performances. The perceptions of a diverse group of stakeholders may be affected by a host of factors, only some of which may be related to actual system change. These might include the regard in which administrators are held, the quality of clinical services, and events occurring in the service delivery environment that are unrelated to the RWJ/PCMI. As such, the key informant and network measures are actually tapping distinct aspects of service systems, and they may not yield identical results.

One of the core assumptions of the RWJ/PCMI demonstration is that centralized authority is the most effective way to organize services for CMI persons. This assumption was based on the idea that just as the unitary command structure associated with a well-functioning hospital can

integrate diverse services, disciplines, and levels of patient care, so too can it be applied to the need for integration of diverse services on a communitywide basis. However, the issue of whether centralization ("tight coupling") or decentralization ("loose coupling") is the most effective way of organizing human service delivery systems is much debated among organizational theorists (Aldrich 1978). Most empirical service delivery systems are mixtures of the two organizational forms, and convincing research evidence for the superiority of one form over another is not readily available. Toledo and Colorado Springs were two of the sites in this study that were much more decentralized at the outset of the demonstration and did not change as much as other sites toward RWJ/PCMI ideals. When centralization is paired with other goals, like those articulated by the RWJ/PCMI of decreasing fragmentation and increasing density among agencies, trade-offs must be faced. Our quantitative network approach has sensitized us to the fact that density and centralization in service delivery systems cannot both be maximized at the same time; as density increases centralization decreases and vice versa. The same is true for fragmentation and centralization. These trade-offs were not recognized by the architects of the RWJ/PCMI, who saw these goals as compatible and simultaneously attainable. However, how to balance these competing directives in practice became a major challenge for the LMHAs in this demonstration as they would for any similar organizational entities seeking to manage the entire mental health and community support service system in large population areas. Clearly, program managers and researchers must give further thought to specifying realistic goals and appropriate performance criteria for assessing the effectiveness of LMHAs.

Discussion of relations between system structure, system change, and system effectiveness brings us to a central issue in the RWJ/PCMI demonstration. One of the main goals of the national evaluation of the RWJ/PCMI was to assess whether service system changes actually lead to enhanced client outcomes such as quality of life and psychosocial functioning (see articles by Lehman et al. and Shern et al. in this issue). Implicit in the RWJ/PCMI is the assumption that system change toward demonstration goals will lead to improved client outcomes (Goldman, Morrissey, and Ridgely 1990). The logic model for the RWJ/PCMI actually involves two steps that assume: (1) system change toward the RWJ/PCMI ideal will enhance continuity of care for persons with CMI, and (2) improvements in continuity of care will lead to enhanced client

outcomes. The findings that LMHA performance and change generally exceed CSS performance and change suggest that the intervening systems changes were incomplete and that the impact on clients will be attenuated (see the articles by Lehman et al. and Shern et al. in this issue). Building multivariate models to test these hypotheses and alternative measures is now in process, and the results will be presented in a future paper.

Several analyses trying to explicate the multiple impacts of the RWJ/PCMI are currently under way, so answers to many other questions of interest about local mental health authorities and service system change cannot be answered at this time. Nonetheless, it is clear from the data we have presented that most of the local mental health authorities created under the RWJ/PCMI attained high levels of performance within the five-year demonstration period. This evidence challenges the skepticism that has surfaced in several quarters. What is yet unclear is whether local mental health authorities will be any more effective or have any greater staying power as a way of promoting service-system improvements for persons with CMI than did the systems of care championed in earlier generations.

## References

- Aiken, L., S. Somers, and M. Shore. 1986. Private Foundations in Health Affairs: A Case Study of a National Initiative for the Chronically Mentally Ill. *American Psychologist* 41:1290-5.
- Aldrich, H. 1978. Centralization versus Decentralization in the Design of Human Service Delivery Systems: A Response to Gouldner's Lament. In *The Management of Human Services*, eds. R. Sarri and Y. Hassenfeld. New York: Columbia University Press.
- Aldrich, H., and D. Herker. 1977. Boundary Spanning Roles and Organization Structure. *Academy of Management Review* (April):217-30.
- Attkisson, C., W. Hargreaves, M. Horowitz, and J. Sorensen. Eds. 1978. *Evaluation of Human Service Programs*. San Francisco: Academic Press.
- Bachrach, L. 1980. Overview: Model Programs for Chronic Mental Patients. *American Journal of Psychiatry* 137:1023-30.
- Bolland, J., and J. Wilson. 1991. A Network Approach to the Assessment and Development of Comprehensive Coordination in the Elderly of Community-Based Services to the Elderly. University of Alabama, Institute for Social Science Research. (Unpublished paper)

- Borgatti, S., M. Everett, and L. Freeman. 1992. *UCINET IV*. Columbus, Oh.: Analytic Technologies.
- Burt, R. 1982. *Toward a Structural Theory of Action*. New York: Academic Press.
- Calloway, M. 1993. A Method and Measure for Assessing Structural Change in Interorganizational Networks. PhD dissertation, Department of Sociology, North Carolina State University.
- Calloway, M., J. Morrissey, and R. Paulson. 1993. Accuracy and Reliability of Self-reported Data in Interorganizational Networks. *Social Networks* (December).
- Chu, F., and S. Trotter. 1974. *The Madness Establishment*. New York: Grossman.
- Dill, A., and D. Rochefort. 1989. Coordination, Continuity, and Centralized Control: A Policy Perspective on Service Strategies for the Chronically Mentally Ill. *Journal of Social Issues* 45(3):145-59.
- Doreian, P., K. Woodard, and D. Musa. 1994. Mapping Cores and Boundaries of Social Networks. *Social Networks* (in press).
- Goldman, H., A. Lehman, J. Morrissey, S. Newman, R. Frank, and D. Steinwachs. 1990. Design for the National Evaluation of the Robert Wood Johnson Foundation Program on Chronic Mental Illness. *Hospital and Community Psychiatry* 41:1217-30.
- Goldman, H., and J. Morrissey. 1985. The Alchemy of Mental Health Policy: Homelessness and the Fourth Cycle of Reform. *American Journal of Public Health* 75:727-31.
- Goldman, H., J. Morrissey, M.S. Ridgely, R. Frank, S. Newman, and C. Kennedy. 1992. Lessons from the Program on Chronic Mental Illness. *Health Affairs* 11(3):51-68.
- Goldman, H., J. Morrissey, and S. Ridgely. 1990. Form and Function of Mental Health Authorities at RWJ Foundation Program Sites: Preliminary Observations. *Hospital and Community Psychiatry* 41: 1222-30.
- Greenley, J.R. 1992. Neglected Organization and Management Issues in Mental Health Systems Development. *Community Mental Health Journal* 28:371-84.
- Hogan, M.F. 1992. New Futures for Mental Health Care: The Case of Ohio. *Health Affairs* 11(3):69-83.
- Knoke, D., and J. Kuklinski. 1982. *Network Analysis*. Beverly Hills: Sage.
- Knoke, D., and D. Rogers. 1979. A Blockmodel Analysis of Interorganizational Networks. *Sociology and Social Research* 64:28-52.
- Lincoln, J., and K. McBride. 1985. Resources, Homophily, and Dependence: Organizational Attributes and Asymmetric Ties in Human Service Networks. *Social Science Research* 14:1-30.

- Mechanic, D., and D. Rochefort. 1990. Deinstitutionalization: An Appraisal of Reform. *Annual Review of Sociology* 16:301-27.
- Morrissey, J. 1982. Assessing Interorganizational Linkages: Towards a Systems Analysis of Community Support Programs at the Local Level. In *The Chronically Mentally Ill: Assessing Community Support Programs*, eds. R. Tessler and H. Goldman. Cambridge, Mass.: Ballinger.
- . 1992. An Interorganizational Network Approach to Evaluating Children's Mental Health Service Systems. In *Evaluating Mental Health Services for Children*, eds. L. Bickman and D. Rog. San Francisco: Jossey-Bass.
- Morrissey, J., and H. Goldman. 1984. Cycles of Reform in the Care of the Chronically Mentally Ill. *Hospital and Community Psychiatry* 35:785-93.
- Morrissey, J., S. Ridgely, H. Goldman, and T. Bartko. 1994. Assessments of Community Mental Health Support Systems: A Key Informant Approach. *Community Mental Health Journal*. (Forthcoming)
- Morrissey, J., M. Tausig, and M. Lindsey. 1985. *Network Analysis Methods for Mental Health Service System Research: A Comparison of Two Community Support Systems*. BN no. 6: DHHS pub. no. (ADM)85-1383. Washington: National Institute of Mental Health.
- Ridgely, S., H. Goldman, and J. Morrissey. 1992. Assessing Systems of Care for the Long-term Mentally Ill in Urban Settings. In *Measuring Mental Health Needs*, eds. G. Thornicroft, C. Brewin, and J. Wing, 192-206. London: Gaskell and Royal College of Psychiatrists.
- Robinson, G. 1991. *Journey to Passage: The Ohio Mental Health Act*. Washington: Mental Health Policy Resource Center.
- Robinson, G., and G. Toff-Bergman. 1992. *Choices in Case Management: Current Knowledge and Practices for Mental Health Programs*. Washington: Mental Health Policy Resource Center.
- Roemer, R., C. Kramer, and J. Frink. 1975. *Planning Urban Health Services: From Jungle to System*. New York: Springer.
- Rosenberger, J. 1990. Central Mental Health Authorities: Politically Flawed? *Hospital and Community Psychiatry* 41:1171.
- Schott, T. 1991. Network Models. In *STRUCTURE*, ed. R. Burt. New York: Columbia University Center for Social Sciences.
- Shore, M., and M. Cohen. 1990. The Robert Wood Johnson Foundation Program on Chronic Mental Illness: An Overview. *Hospital and Community Psychiatry* 41:1212-16.
- Silverman, M., E. Ricci, and M. Gunter. 1990. Strategies for Increasing the Rigor of Qualitative Methods in Evaluation of Health Care Programs. *Evaluation Review* 14:57-74.
- Stein, L., and L. Ganser. 1983. Wisconsin's System for Funding Mental

- Health Services. In *Unified Mental Health Systems: Utopia Unrealized*, ed. J. Talbott. San Francisco: Jossey-Bass.
- Stein, L., and M. Test. 1980. *Alternatives to Mental Hospital Treatment*. New York: Plenum Press.
- Stroul, B. 1982. *Community Support Programs: Analysis of State Strategies*. Boston: Boston University Center for Rehabilitation Research and Training in Mental Health.
- Talbott, J. Ed. 1980. *The Chronic Mental Patient*. New York: Human Sciences Press.
- . 1983. *Unified Mental Health Systems: Utopia Unrealized*. San Francisco, Jossey-Bass.
- Taube, C., L. Morlock, B. Burns, and A. Santos. 1990. New Directions in Research on Assertive Community Treatment. *Hospital & Community Psychiatry* 41:401-5.
- Tushman, M., and T. Scanlan. 1981. Boundary Spanning Individuals: Their Role in Information Transfer and their Antecedents. *Academy of Management Journal* 24:289-305.
- Windle, C., and D. Scully. 1974. Community Mental Health Centers and the Decreasing Use of State Mental Hospitals. *Community Mental Health Journal* 12:239-43.

---

*Coauthors of the article are:* W. TODD BARTKO, University of Michigan; M. SUSAN RIDGELY, University of Maryland at Baltimore; HOWARD H. GOLDMAN, University of Maryland at Baltimore; and ROBERT I. PAULSON, Portland State University.

*Acknowledgments:* The work on which this paper is based was supported in part by research grants from the National Institute of Mental Health (MH44839) and from the Robert Wood Johnson Foundation (12558). An earlier version of this paper was presented at the American Public Health Association annual meeting in Washington, DC, on November 9, 1992. The social network research strategy presented owes much to the helpful consultations of Thomas Schott and John Bolland. Also, the comments and advice of two anonymous reviewers on an earlier draft of this paper are gratefully acknowledged.

*Address correspondence to:* Joseph P. Morrissey, PhD, Sheps Center for Health Services Research, University of North Carolina, Campus Box 7590, 725 Airport Road, Chapel Hill, NC 27599-7590.