Governance and Collaboration: An Evolutionary Study of Two Mental Health Networks

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Abstract

As examples of a state of agents, this paper will present a comparative analysis of the evolution of two community mental health networks that both have similar contracts from the State of Arizona and operate under the same set of rules. One of these is governed by a for-profit firm that both produces services directly and buys them from a network of nonprofit agencies. The other is governed by a community based nonprofit that contracts with four separate nonprofit networks to offer services. These networks are analyzed, using social network analysis, at the beginning of the system and four years later. The mature network is compared to the new network. The for-profit governed system is compared to the nonprofit governed system. The paper discusses the evolution of structure over time and a limited comparison of the networks in terms of which produced higher quality outcomes.
From the Hollow State to a State of Agents

The frame for this paper is the work that we have done on the implications of what we have called “the hollow state.” Much of this work utilized mental health systems where government health agencies contracted with networks of organizations to deliver services to the mentally ill. This paper continues in that tradition by attempting to compare the governance and performance of the mental health systems in Arizona’s two largest cities – Tucson and Phoenix – from the time they were created until they had been in operation for 4 years.

In the course of this study, it became clear that the focus was no longer on the hollowing out of the state, but rather now, the focus was on the state that had been created by the agents. Arizona had created a monopsony where a firm or nonprofit was given the authority under contract to act in the name of the state, and where there was very little evidence of government in the mix until a funding crisis occurred or a mentally ill client murdered his parents. In this paper government rarely appears other than as the funder of these services. Politics, policy, and implementation all revolve around the delegated governance that created Regional Behavioral Health Authorities to act in the name of the state in the field of mental health. Money flows from federal, state and county sources into these systems which are governed by a firm in Maricopa County (Phoenix) and a community-based nonprofit in Pima County (Tucson). From the perspective of clients of these systems, the state does not exist after eligibility has been determined.
The Setting

The nature of serious mental illness (SMI) is unique both in form and in treatment methods. It is recognized that the seriously mentally ill need a wide range of services which psychopharmacology and counseling alone are unable to address. A continuum of care is considered the best way to treat individuals with SMI, meaning that patients are best served in various domains, from medication and therapy to vocational rehabilitation and housing, for example. As such, it is commonly accepted that the continuum of care for individuals with SMI should be provided through a wide variety of agencies that collaborate through an integrated network of care providers (Provan, Isett, & Milward, 2006). Many individuals with SMI qualify for government assistance, through programs such as Medicaid and Medicare. Medicaid is a joint federal/state program. Other funds for SMI flow from the federal government to the states in a block grant thus the state and federal government are both involved in the provision of services to this particularly vulnerable and costly population.

As more emphasis has been placed on efficiency and cost reduction in health care, there has been a strong movement toward contracting out of services to private companies and toward managed healthcare. Behavioral health agencies have been particularly involved in the move toward the contracting out of services as they have continually faced seriously constrained budgets, rising health care costs, and a responsibility for the provision of care for those who are indigent, uninsured or underinsured (Anderson, 2003; Essock & Goldman, 1995). As early as 1991, states such as Arizona, Utah, and Massachusetts initiated mental health carve-outs (Croze, 2000). Under this arrangement, the state separates insurance benefits for individuals with mental illness from the rest of health benefits and contracts separately for the management of mental healthcare. A carve-out allows managed care techniques to be applied to this subset of
particularly costly and vulnerable clients. By 2003 half of the states were using a managed care approach to providing behavioral health services.

In Arizona, the Department of Health Services’ (DHS) Division of Behavioral Health Services (DBHS) contracts with entities which are either community based organizations or private firms, to govern the system of mental health services. Known as Regional Behavioral Health Authorities (RBHAs), they administer behavioral health services throughout the State. RBHAs function in a fashion similar to a health maintenance organization. Contracts for RBHAs are rebid every 3-5 years. The RBHAs then contract with a network of service providers to deliver a full range of behavioral health care services, including prevention programs, services for adults with substance abuse and general mental health disorders, adults with serious mental illness, and children with serious emotional disturbances. The State of Arizona’s Division of Behavioral Health Services oversees four RBHAs and five tribal RBHAs/contractors.

The two largest RBHAs in the state are those that cover Pima and Maricopa counties. They provide health care services through networks of service providers to approximately 80 percent of individuals with serious mental illness in the state. The Pima County RBHA (metropolitan Tucson) is a community based nonprofit agency, set up specifically to manage the network of mental health services. In Maricopa County (metropolitan Phoenix) the network is governed by a private firm. Both control and distribute contracts to a variety of types of service providers. Research has been conducted in both networks since the contracts were originally awarded. Data were collected for the Pima County network at two points in time: 1995 and 1999. Data were collected for the Maricopa County network at two points in time as well: 2000 and 2004. Attributes of these networks have been explored previously (see Isett, 2001; Isett & Provan, 2005; Provan, Isett, & Milward, 2004; Provan, Milward, & Roussin, 1998; Huang, 2005;
Huang & Provan, 2007a; Huang & Provan, 2007b). We would like to compare these networks in two different ways. First, we would like to compare the networks in terms of network structure and evolution, sector mix (public, nonprofit, for-profit), relationships, trust, and reputation. Additionally, we would like to tentatively compare the two networks in terms of patient outcomes.

**Comparing Networks**

While our longitudinal data were collected over different periods of time, the networks can be compared on several dimensions.

*Structure and Evolution of Network Integration*

CPSA is a community-based nonprofit that governs the network of service providers in all of southern Arizona which has successfully retained the contract from the state on every successive rebid. CPSA first won the contract in 1995 from another nonprofit that had won the original bid to be the RBHA in 1992 but which lost the bid when it couldn’t control its costs or limit services (Provan et al., 2006).

To win the contract in 1995, CPSA contracted with and received support from three large and one smaller service provider agencies that would share the financial risk and be equal partners in the arrangement (Provan, et al., 2002). These ‘at-risk providers’ (ARPs) were each directly responsible for treating a proportion of the seriously mentally ill (SMI) clients randomly assigned to each agency (Provan, et al., 2006). Once clients were assigned, each ARP was required to contract for its own network of agencies that could provide the services the ARP was unable to provide, either because they did not provide a certain type of service or because they could not provide the services in the quantity needed (Provan, et al., 2002).
Under its contract with the state, CPSA was mandated to stay within stipulated spending limits and assure that adequate services would continue to be provided. In addition, the State developed specific guidelines for each RBHA that were tailored to the needs of the local population, such as document translation into Spanish and Native American languages and the provision of culturally specific services. CPSA thus had to assure that both broader needs and more specific local needs were being addressed. The ARPs worked closely with CPSA to ensure that each of these service requirements and guidelines for care were being met. As a result, the primary purpose of CPSA was to act as a conduit for federal and state mental health funds and to monitor and evaluate the provider agencies to assure adequate and cost effective services are being provided (Provan, et al., 2002).

Most of the ARPs were equity partners in creating CPSA as the RBHA. This willingness on the part of the ARPs to contribute equity funds reveals a willingness to make the system work and resulted in a diffusion of control over resources. From the perspective of principle-agent theory, the fact that the ARPs were equity partners decreased the likelihood that one of them would defect and bid against CPSA in the next round of bidding. Creating equity partners was a way of tying the hands of agencies that had often fought over control of the system in the past (Milward and Provan, 1998: 219).

Each ARP was responsible for initiating its own network within the system and thus had more control over tangible resources (how money and contracts were allocated) and intangible resources (how information was shared). From the perspective of principal-agent theory, all but one of the ARPs had an incentive to make the system work as they were both agents and principals. (Milward and Provan, 1998)
Like Pima County, there had been instability in the RBHA that governed Maricopa County. The original RBHA, ComCare, after a major dispute with the state, declared bankruptcy and was taken over by the state. In 1998, ValueOptions, a national, for-profit managed care provider, took over the contract.\(^1\) In this arrangement, ValueOptions was in charge of coordinating service delivery, allocating and monitoring funding and taking responsibility for outcomes and costs for the 12,000 patients with SMI in Maricopa County. Unlike CPSA, ValueOptions had no previous ties to either Phoenix or the service provider community. It simply assumed the network from ComCare. As such, it held the contract with the State and exercised complete control over contracts and the allocation of funds. While it retained many of the agencies who had provided services under the previous system, it awarded contracts for case management, information technology, supplies, and pharmaceuticals to sister companies that were part of the ValueOption’s family of companies. The researchers were told by ValueOptions staff that 70 percent of every mental health dollar spent by the company went to pay its staff or the contracts it held with these companies.

At the initial awarding of the contract, ValueOptions utilized its wholly owned case management subsidiary, Alternative Behavioral Services (ABS), to provide “clinical team and care management services” over the contracts that ValueOptions held and dispensed (Huang & Provan, 2007). By the time the contract was rebid in 2004, ValueOptions discontinued use of ABS, and absorbed case management within the organization.

It is often asserted that to best meet the needs of vulnerable populations, such as those with SMI, health care systems should create integrated and collaborative networks of service providers. (Milward, 1995: 641). Since networks are the professionally agreed upon method of

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\(^1\) For a description of how the actions of the nonprofit providers helped to bring about the outcome that they least wanted – a private firm governing the system – see Milward and Provan, 1998: 218-219.
best distributing care (Milward and Provan, 2006), it is in the interest of the State of Arizona and the RBHAs to encourage further development of the network. However, the degree to which network development takes place can be variable, as it is dependent on resource availability, number of clients and the willingness of service providers to work together. The degree to which development occurs can vary across networks.

Mixed Sector Networks

Both the CPSA and ValueOptions networks are made up of a mix of private (both for-profit and nonprofit) and public organizations. While there is a mix, for both networks the majority of service providers have nonprofit status. Governance, contracting and monitoring by the State of Arizona affect both networks in the same fashion. The fundamental difference in relationship between the RBHAs is that the Pima network is governed by a nonprofit RBHA, whereas the Maricopa network is governed by a for-profit RBHA. This allows us to raise questions about how sector affects performance of these two mental health networks. Are all organizations essentially the same or does whether a network is governed by a for-profit entity or a not for profit impact decision-making in the provision of social services?

Nonprofit organizations have played a significant role in service provision throughout the history of the United States. Arguably, there is an interdependence of government and nonprofit organizations. As Salamon noted,

“For better or worse, cooperation between government and the voluntary sector is the approach this nation has chosen to deal with many of its human service problems…This pattern of cooperation has grown into a massive system of action that accounts for at least as large a share of government-funded human services as that delivered by government agencies themselves, and that constitutes the largest single source of nonprofit-sector income…” (Salamon, 1995, 114)

Nonprofits actually deliver a larger share of the health and human services financed by government than do public agencies themselves (Rudney, 1987: 6). In 1960, virtually no federal
social service expenditures went to nonprofit organizations; by 1989, it was over 50 percent. The name alone provokes images of community, civic dependability, and voluntarism (Bellah, et al., 1985). Although this idealistic view is not completely off base, it reveals little of the realities of being nonprofit.

There is often an assumption that for-profits and nonprofits have different professional norms and interests, particularly in the provision of social services. It is often assumed that since nonprofits are not allowed to distribute any profits to outside parties (nondistribution constraint), profits are retained to improve the provision of services. Arrow (1963) suggested that non-profit organizations exist in healthcare markets to provide a signal of quality to uninformed consumers. By retaining residuals, nonprofit organizations can reassure clients and donors that the mission of the organization takes precedence over any financial gain that might be had (Frumkin, 2002).

This hypothesis relies on the idea that when the quality of output is difficult to observe (as it often is in healthcare), a for-profit healthcare provider faces the dueling objectives of providing high quality care and making profit for shareholders. In other words, for-profits in health care may pressure providers to lower their rates in order to enhance the earnings of the company, at the expense of quality services which could potentially alienate providers whose professional norms are in disagreement with the idea of enhancing profits at the expense of services. Similarly, as a nonprofit, CPSA might be expected to focus on the outcomes of the system as a whole and not their own profits, which could limit the degree of alienation of principal from the agent. Consequently, while CPSA was operating under the same pressure from the state to control costs, theoretically, it had less incentive to use its savings to enhance its well-being. This assumption suggests that organizations that are not beholden to shareholders
might provide better care with a larger range of services because they are not under pressure to supply a return on investment.

The nondistribution constraint has been questioned in recent years as increased scrutiny of the high salary levels of many nonprofit executives has led some to ask if “profits” are not being put back into the system, but rather are being distributed to staff in the form of generous compensation and benefit packages (Frumkin, 2002; Frumkin, 2001; Frumkin & Andre-Clark, 1999).

If the assertion that nonprofits reinvest excess funds into service delivery and private firms treat this as profits holds true, one would expect there to be a difference in quality of service provision between a nonprofit governed network and a for-profit led network. There is some evidence that nonprofit organizations do provide higher quality service; however, research in health services has revealed very mixed results (e.g., Gertler, 1992; Holtmann and Idson, 1993; Cohen and Spector, 1996). Himmelstein et al. (1999) found that for-profit/investor owned health maintenance organizations (HMOs) had lower rates of compliance with standards of care on fourteen quality of care indicators. Similarly, Hawes and Phillips (1986) found higher quality outcomes in non-profit nursing homes. Rosenau and Linder (2003) found that nonprofits in the health services industry were generally superior in overall performance to for-profits. This was particularly true among psychiatric inpatient care providers. However, Sloan et al. (2001) found no differences in outcome quality between for-profit and not-for-profit hospitals and O’Brien et al. (1983) suggested that quality is virtually identical across nursing homes, regardless of sector.

Studies looking at the relationship between sector and quality have generally focused specifically on a direct relationship between nonprofit status and outcome quality (for example, the percent of patients in nursing homes with bedsores). Resource expenditures (cost per resident
or nurses per resident) have often been used as a proxy for quality, with the assumption being that patient outcomes automatically improve with every dollar spent. Recent research has analyzed the relationship between nonprofit status and outcome quality through intermediary factors of the quality of process of care and the degree of patient disability/case mix (quality of inputs). In their study of nursing homes, Chesteen et al. (2005) found that when looking at the broad outcome quality measures, there is no direct association between nonprofit status and outcome quality; however, they found that non-profit nursing homes have higher quality processes, particularly in areas of patient focus and responsiveness, which are generally accepted to indicate a greater likelihood for positive patient outcomes. Case mix did not have a significant impact on outcome quality.

The literature suggests that nonprofit and for-profit service organizations may indeed have different quality outcomes, though the direct impact is unclear. It is also unclear whether the sector of an organization that governs a network directly impacts the quality of service provision in that network. If the Arrow hypothesis holds, one would expect to find a distinct difference between the two networks in terms of quality outcomes, since each is governed by an organization from a different sector.2

Relationships, Trust and Reputation

Both networks have a variety of formal and informal relationships in place that they utilize in their provision of services to individuals with SMI. The nature of the relationships between organizations and between organizations and the RBHA vary; however, the origin of the

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2 Even though the provision of services in both networks is primarily conducted by nonprofit organizations, the influence of the RBHA controls how much money flows to service providers. As stated earlier, ValueOptions is believed to have spent 70 cents of every mental health dollar on paying for the cost of its operation or the services provided by its sister companies, few of whom provide services directly to clients.
network does appear to shape the types of ties used. While the contract from the state was competitive, the efforts to win the contract revolved around collaboration between CPSA and the ARPs. In fact, 3 of the ARPs were part of the coalition that produced the proposal to create CPSA as the RBHA. Relationships between the RBHA and these ARPs were thus more relational, meaning that they were built on trust as a more effective means of providing services (Provan, Isett, & Milward, 2006). The Maricopa network, on the other hand, was ruled, at least in the beginning, by more formal mechanisms. Since ValueOptions was new to the area, there had been very little time to build trust prior to the inception of service delivery. Other organizations in the network had already been interacting in the provision of services in prior networks and had either positive or negative opinions about each other. ValueOptions, on the other hand, would have been seen as an “outsider.” both in terms of the lack of community ties and as a for profit firm in a largely not-for-profit industry.

Why is trust an important concept in understanding how organizations within a network form relationships? Generally, trust can be defined as the “willingness to accept vulnerability based on positive expectations about another’s intention or behaviors (Mayer et al., 1995; Rousseau et al., 1998; McEvily et al., 2003). Trust is thus conceptualized as an expectation of behavior and a willingness to be vulnerable (Zaheer et al., 1998). Deutsch (1958) found that trust is evident only in situations in which the potential damage from unfulfilled trust is greater than the possible gain if trust is fulfilled. Additionally, he identified two core themes for the study of trust: trust entails the assumptions of risk and some form of trust is inherent in all relationships (Sheppard & Sherman, 1998).

Since many definitions of trust assume some sort of vulnerability, risk plays a major role. Trust becomes a way of complementing or even substituting for governance mechanisms, as in
relational contracting which occurs when an agency tries to decrease the high transactions costs associated with competitive contracting by developing a long term, trust-based relationship with a contractor (Sclar, 2000). One of the primary reasons for adopting relational contracting is that trust and mutual benefit allow both parties to share the risks that come from the uncertainty of unexpected occurrences that affect them both, however, without a degree of preexisting trust, relational contracting is unlikely to emerge.\(^3\) A recent study found that “some of the strongest determinants of contracting performance are factors that facilitate adaptive decision making, problem solving and learning, a willingness to work together to identify and solve problems, and reliance on negotiations and other alternative means for resolving disputes” (Fernandez, 2005:23)

Risk and trust are two distinct concepts, particularly when contemplating the ways in which decisions are made about collaboration and in ways that they might play a role in governing inter-organizational relationships (Ring and Van de Ven, 1992). Similarly, other social outcomes, like reputation and influence, also act as complimentary or substitute governance mechanisms (Huang & Provan, 2006; Powell, 1990; Jones et al., 1997; Podolny and Page, 1998).

The very nature of trust suggests that it is relational, requiring at least two people (or organizations), the trustor and the trustee, as well as two distinct behaviors/attributes: trust and trustworthiness. Trust is partially a product of one’s capacity to assess the trustworthiness of one’s potential partner (Zucker, 1998). Trustworthiness is simply being worthy of having trust placed in one (Barney & Hansen, 1994), as evidenced by past behaviors or the existence of social ties that indicate others find you trustworthy. Thus, direct experience is really the foundation for determining trustworthiness.

\(^3\) We certainly realize that there can be a fine line between relational contracting and collusion. Monitoring and alignment of incentives by the agency letting the contract must do the job that an arms length contractual relationship might have done.
Expectations associated with trust in organizations include competent performance (Butler, 1991; Cook & Wall, 1980; Gabarro, 1978; Giffin, 1967; Good, 1988; Kee & Knox, 1970; Lieberman, 1981; Mishra, 1996; Rosen & Jerdee, 1977; Siking & Roth, 1993), behavioral integrity and discretion (Butler, 1991), and promise fulfillment (Butler, 1991; Dasgupta, 1988; McFall, 1987; Mishra, 1996). However, we must also note that, in individuals, trust is highly subjective and subject to “leaps of faith,” which reflect its uncertain and perhaps even irrational nature. For example, an individual may choose to trust a stranger based on past experiences with interactions with strangers or just a “gut feeling” that this particular individual is a “good person”. The individual stranger may have given little, if any, social cues of trustworthiness, yet trust is still placed in that individual. Similarly, at the organizational level, trustworthiness may be determined by the sector with which the organization is identified (nonprofit vs. for-profit) rather than on a pattern of trustworthy behavior. The decision to trust may be made based on a perceived existence of a shared belief, rather than on any solid proof of that shared belief. Trust, then, is something that can be based on prior behaviors and “evidence,” but also may be entirely based on subjective perceptions of trustworthiness, at least until proved otherwise. As such, trust has often been portrayed as an unsustainable and irrational risk in agency theory, transaction cost economics, and game theory. Yet, it is an existing and often undeniable force in all relationships and the basis for the evolution of cooperation as individuals reciprocate or defect in a series of repeated games. Knowing that you will have to repeatedly deal with agencies in an area like mental health in a community, increases the probability that they will choose to cooperate (Axelrod, 1984)

In previous work, we have defined trust and trustworthiness based on the reported quality of relationships. This has been generally accepted as an indicator of trust (see McEvily, et al., ).
It is understood that if an agency states that the quality of its relationship with another agency is moderate to high, then they would trust that organization. If an agency gives high quality scores to many agencies, it could be considered a “trusting” agency. Similarly, if an agency receives consistently high relationship quality scores, that agency would be considered “trustworthy.”

The basis for this belief, as stated earlier is that since agencies in a domain like mental health all know one another and have to interact with one another repeatedly, the quality of the relationship with another agency is based on past experience.

**Discussion**

*Structure and Evolution of Network Integration*

As noted previously, the two service provider networks studied are fairly similar. Both are made up of a wide variety of organizations that had collaborated to provide services to clients with serious mental illness (SMI) under the two original RBHAs. A primary difference in this comparison is that the Pima County RBHA is governed by a non-profit organization, as it always had been whereas in Maricopa County, a private for profit firm, with no ties to Phoenix, won the contract to govern the system after the original RBHA, a community based nonprofit, had declared bankruptcy.

Another distinction can be made between the networks when one considers the difference in size, both of the whole networks and of the average agency within the network. The Maricopa County network serves a much larger population than does the Pima County network.

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4 When we use the term “whole networks” we are referring to the summation of relationships among all of the organizations in a network. We recognize that multiple types of relationships exist between organizations. The whole network is thus the collectivity of all exchange relationships in the network. For a discussion of the importance of considering a whole network for understanding the evolution, governance and collective outcomes of a network, see Provan, Fish & Sydow, 2007.
The number of providers in each network (as bounded for this research) is somewhat larger in the Pima County network, though the number of agencies in the network is not static over time. Additionally, the size of agencies varies widely. In Table 1 below, it becomes apparent that the average size of agencies four years after each network was created differs greatly for the Pima and Maricopa networks.

Table 1. Comparing Mature Networks- Characteristics of the Average Agency

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Total # of FTEs</td>
<td>Mean</td>
<td>s.d.</td>
</tr>
<tr>
<td></td>
<td>97</td>
<td>158</td>
</tr>
<tr>
<td># of Employees treating SMI (&gt;half time)</td>
<td>22</td>
<td>43</td>
</tr>
<tr>
<td># of SMI clients per day</td>
<td>50</td>
<td>63</td>
</tr>
<tr>
<td>% of total budget devoted to SMI</td>
<td>31</td>
<td>34</td>
</tr>
<tr>
<td>Importance of SMI to agency</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

The Maricopa network’s average agency has more than five times the number of employees treating SMI clients at least half time than does the Pima network’s, while it only serves three times the number of SMI clients.

The Pima network is far more decentralized in its formal relationships than the Maricopa network is, while slightly more centralized in its informal relationships (see Table 2, below).

The Pima network had fairly low levels of centralization in both the contract and referral sub-networks in the period right after CPSA won the contract with the State. On the other hand, the

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5 The potential limits of a network are boundless. As such, researchers must determine where to place the boundaries on the network for data collection. Laumann, et al. (1982) presented a discussion on this, suggesting that one must use realist and nominalist perspectives to determine the boundary. (Also, see Knoke and Kuklinski, 1982). In a realist perspective, the network analyst uses the perceived boundaries of the actors within the network themselves. The nominalist perspective relies on the imposition of a boundary based on the analyst’s conceptual framework. In both networks, a mix of these approaches was used. The network was bounded by a combination of information from organizations within the network on who was involved and also by the requirement that each organization in this network provide services to the seriously mentally ill.

6 Sub-networks are networks within the whole network that are distinguished by type of relationship. So, for both the Pima and Maricopa networks we have identified at least three types of ties: contractual, referral and information
Maricopa network was highly centralized in both contract and referral sub-networks after the contract was won. Both networks saw a decrease in the centralization of the contract sub-network after maturation of the network. One remarkable difference is apparent in the referral networks. The Pima referral sub-network experienced an 82 percent increase in network centralization over the period, while the Maricopa network experienced a 57 percent decrease in centralization.

<table>
<thead>
<tr>
<th></th>
<th>Pima</th>
<th>Maricopa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1996</td>
<td>1999</td>
</tr>
<tr>
<td>Contract</td>
<td>0.28</td>
<td>0.26</td>
</tr>
<tr>
<td>Referral</td>
<td>0.29</td>
<td>0.53</td>
</tr>
<tr>
<td>Information sharing</td>
<td>n/a</td>
<td>0.5</td>
</tr>
</tbody>
</table>

In the Pima network (see Figures 1a and 1b below), one might notice that the number of ties increased, with the ARPs remaining fairly central in the network, but no single dominant agency exists.
Figure 1a. Pima County Network 1996 Contracting

The RBHA is in black, the four ARPs are in grey, all other organizations are white.

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7 The RBHA is in black, the four ARPs are in grey, all other organizations are white.
In contrast to the Pima networks, the Maricopa network (see Figures 2a and 2b below), exhibits the hub and spoke pattern of a very centralized network.
In 2000, ValueOptions and ABS were separate entities, yet for purposes of analysis they were combined into a single entity. As a sister company, ABS was simply absorbed into ValueOptions by the time we conducted our 2004 survey. ValueOptions is the black node, all other providers are white.
Figure 2b. Maricopa County Network 2004 Contracts
Both the Pima and Maricopa networks have a similar contract with the State for the provision of mental health services for the seriously mentally ill, but formal contract behavior within the networks appears to differ considerably. While other organizations within the Maricopa network do engage in formal contracting behavior with each other, most contracts are with the RBHA, ValueOptions. The difference in contracting behaviors may reflect the differences in origin of the network. Since the Pima network originated in the service provider community and the ARPs are equity partners with CPSA, it seems that the dispersion of formal contracting behavior among the ARPs and CPSA would naturally follow. In the Maricopa network, ValueOptions took over the already existing ComCare network and needed to establish relationships with each agency. It follows then that ValueOptions would have more centralized control over formal relationships, thereby restricting its funding streams to those organizations with which it has formal relationships.

While there was a distinct difference in contracting behavior between the two networks, the informal relationships in each resembled each other. Both networks experienced changes in level of network integration over time as indicated by an increase in network density (see Table 3). Network density reveals to what extent organizations are linked within the network. In other words, it reveals how many ties exist between organizations. Density can range from 0, where no connections between organizations exist, to 1, where all organizations within the network are connected. Network density thus reveals the levels of interaction between organizations and therefore, how integrated the network is. It should be noted, however, that higher levels of density are not necessarily a good thing, as with increasing ties come increasing coordination.
costs of managing those ties. However, as seen below, both networks have low to moderate densities across all sub-networks, suggesting integration without an oversaturation of ties.

<table>
<thead>
<tr>
<th></th>
<th>Pima</th>
<th>Maricopa</th>
</tr>
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<tbody>
<tr>
<td>1996 Contract</td>
<td>0.049</td>
<td>0.050</td>
</tr>
<tr>
<td>1999 Contract</td>
<td>0.062</td>
<td>0.090</td>
</tr>
<tr>
<td>% Change</td>
<td>27</td>
<td>80</td>
</tr>
<tr>
<td>2000 Contract</td>
<td>0.05</td>
<td>0.14</td>
</tr>
<tr>
<td>2004 Contract</td>
<td>0.09</td>
<td>0.14</td>
</tr>
<tr>
<td>% Change</td>
<td>80</td>
<td>0</td>
</tr>
<tr>
<td>Referral</td>
<td>0.086</td>
<td>0.14</td>
</tr>
<tr>
<td>1996 Referral</td>
<td>0.133</td>
<td>0.14</td>
</tr>
<tr>
<td>% Change</td>
<td>55</td>
<td>0</td>
</tr>
<tr>
<td>2000 Referral</td>
<td>0.14</td>
<td>0.27</td>
</tr>
<tr>
<td>2004 Referral</td>
<td>0.14</td>
<td>0.27</td>
</tr>
<tr>
<td>% Change</td>
<td>0</td>
<td>69</td>
</tr>
<tr>
<td>Information sharing</td>
<td>n/a</td>
<td>0.16</td>
</tr>
<tr>
<td>1996 Information sharing</td>
<td>0.257</td>
<td>n/a</td>
</tr>
<tr>
<td>% Change</td>
<td>n/a</td>
<td>69</td>
</tr>
<tr>
<td>2000 Information sharing</td>
<td>0.16</td>
<td>0.27</td>
</tr>
<tr>
<td>2004 Information sharing</td>
<td>0.27</td>
<td>0.27</td>
</tr>
<tr>
<td>% Change</td>
<td>69</td>
<td>0</td>
</tr>
</tbody>
</table>

In the Pima network, there was a substantial increase in network integration between 1996 and 1999, as indicated by the increase in network density. Contract density increased by 26.5 percent and referral density increased by 54.7 percent (Provan, Milward & Isett, 2002). The increase in referral ties indicates that agencies may have been more willing to engage in relational contracting based on trust and reciprocity. It may also indicate that agencies were taking client needs into their decisions about client referrals, rather than trying to provide all services under the terms of their formal contractual ties alone. The evolution of referral ties in the Pima network can be seen below in Figures 3a and 3b. The ARPs remain fairly central in the network, but the number of referral ties increased substantially from 1996 to 1999.
Figure 3a. Pima County Network 1996 Referrals
Figure 3b. Pima County Network 1999 Referrals
The Maricopa network experienced a slightly different pattern of network integration. Contract density increased 80 percent in the Maricopa network between 2000 and 2004, but referral density stayed the same. In other words, the number of formal (contracting relationships) increased, but the less formal referral relationships stayed the same. It should be noted that this indicates that few, if any, new referral relationships were formed but it does not reveal if the volume of the use of referrals increased. However, when the data is examined, subtle shifts in the referral ties have occurred (see Figures 4a and 4b, below). In 2000, ValueOptions was central in the network, and only a few agencies had multiple ties. By 2004, ValueOptions was still fairly central in the network, but more agencies had several referral ties. For example, in 2000 TERROS had few ties, but had become a major player in referrals by 2004. This suggests that other organizations are actively participating in the referral process, and indeed may be moving to a more influential or important position in the network.
Figure 4a. Maricopa County Network 2000 Referrals
Information sharing data was not collected in the Pima network in the first phase of data collection in 1996, but in 1999, it had by far the densest sub-network of ties in the network. The
Maricopa network experienced a dramatic increase in information sharing ties (density), which increased 69 percent between 2000 and 2004. As seen in the comparison below (Figures 5a and 5b), both networks have extensive information sharing ties.

**Figure 5a. Mature Pima Network (1999) Information Sharing**
The increase in the density of ties suggests a growth in the number of organizations cooperating, at least in terms of information sharing. In other words, for both networks, informal ties increased at a much higher rate than formal contracting ties. As both networks have
matured over time, the number of ties, both formal and informal, have increased. The agencies are working together more regularly to provide services to clients with SMI.

**Sector**

The literature provides some support for the assertion that networks governed by a nonprofit agency produce better quality outcomes than networks governed by for-profit agencies. There is little support for this assertion, however, in the two networks under review. Our surveys did not collect outcome data on clients, but did capture the RBHA’s perceived influence on the quality of services provided from the perspective of the other agencies in the network. In both networks, the RBHA’s estimated impact on agency quality of service provision was estimated to be neutral. While the RBHA controls the flow of funding in the network, service provision in both networks is primarily conducted by nonprofit organizations. The organization that governs the network may have little impact on the overall quality outcomes for the networks, since the provision of services was done by a larger body of mostly nonprofit organizations.9

The finding of no difference between the nonprofit Pima network and the for-profit Maricopa networks may have several reasons. First, as discussed by DiMaggio and Anheier (1990), not all nonprofits are the same. While all the organizations we surveyed provide services to individuals with SMI, they are by and large not their only clientele. Each network as a whole provides a wide range of services along the continuum of care for the SMI, including housing, employment services, transportation and treatment. While most of the organizations in each network are nonprofit and provide services to the seriously mentally ill, it is unclear if they differ from for-profit organizations in the network and even if they did, how those differences might

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9 One of the great problems with measuring outcomes of networks is that it is agencies, not the network, that deliver services. You might have a very collaborative network delivering well integrated, poor quality services. The one off nature of network outcomes leads researchers to fall back on outputs like “collaborative capacity.”
influence the quality of the services they provided. Research on hospitals has revealed that nonprofits tend to have lower prices and offer more unprofitable services and care to nonpaying patients than do for-profits, but care quality is not influenced by form (DiMaggio and Anheier, 1990; Gray, 1990; Marmor et al, 1987). Weisbrod suggests that for-profits generally focus on those aspects of quality that are easily observable, but tend to economize on those less visible aspects; for example, for-profit nursing homes have fewer code violations but more customer complaints than nonprofits (Weisbrod and Schlesinger, 1986).

Additionally, each organization (regardless of sector) may provide different services and rely on a different mix of funding streams. Those agencies that draw more money from donations or other funding streams (such as federal block grants) may be fundamentally different than those who rely more heavily on the contracted dollars from the RBHA (see Kramer, 1981 and Salamon, 1987). This may be supportive of Weisbrod’s (1998) findings that nonprofit and for-profit child daycare centers and nursing homes were virtually indistinguishable from each other in quality (as defined by customer satisfaction), with the exception of nonprofits with religious affiliation, which outperformed the others across the board. Weisbrod suggested that nonprofits (particularly in the nursing home industry) are often forced to compete with for-profits and thus may give in to isomorphic pressures to behave similarly to for-profit organizations. Nonprofits with religious affiliation may be less influenced or less responsive to those isomorphic pressures because they often serve very particular populations. In other words, religiously affiliated nonprofits may be able to “rise above” isomorphic pressures and stay true to their mission.
Relationships, Trust and Reputation

Our comparison of relationship quality in the two networks is limited by the data collected from the CPSA network, as we did not collect reputation data. However, we did collect data on average relationship quality and influence. We thus have several ways of conceptualizing reputation as related to trust and influence. CPSA maintained a fairly high average relationship quality score (3.52 on a five-point Likert scale) and was listed as the most influential organization in the 1999 survey. ValueOptions received lower scores in the initial wave of data collection, but by 2004, its average relationship quality had risen. In addition, it was listed more often as being influential to the other organization’s ability to operate.

### Table 5: Relationship Quality

<table>
<thead>
<tr>
<th></th>
<th>CPSA</th>
<th>ValueOptions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1996</td>
<td>1999</td>
</tr>
<tr>
<td>Relationship Quality*</td>
<td>n/a</td>
<td>3.52</td>
</tr>
</tbody>
</table>

*Value expressed is on a 4-point Likert Scale, where 1=poor relationship and 4=excellent relationship

In the Maricopa network, we have examined the relationship between an agency’s trustworthiness score and the level of embeddedness in the network (Huang, 2005; Provan et al, 2007). In his 1985 piece on economic sociology, Granovetter suggests that embedded economic action in networks rests on a preference for resorting to trusted informants who have experience in dealing with a potential partner and have found the partner trustworthy. Direct experience is thus the foundation for determining trustworthiness. Similarly, Gulati (1995) argues that interaction-based trust building processes unfold in the process of the formation of strategic
alliances. Subsequent work posited that organizations rely on information from the network of prior alliances to determine with whom to cooperate/trust (Gulati & Gargiulo, 1999).

Just as in interpersonal relationships, organizations are impacted by gossip and the informal sharing of information. Buskens et al. (2000) found that network embeddedness may increase levels of trust, though it is directly related to the level of behavioral control through contracts and organizational learning. McEvily et al. (2003) argue that the reorganization of a social system in which ties are abandoned or new ties are created may occur based on the formalization of once informal ties based on trustworthy behavior or perceived breaches in trust. As these ties are reorganized, actors that were once central to the network may be pushed to the periphery and vice versa. It can thus be argued that organizations that have many links to other organizations will have higher levels of trustworthiness among their partners in the network. While our previous research on the relationship between embeddedness and trust, along with other social outcomes, has as yet failed to reveal any strong relationships between them, it has indicated that a relationship does exist. For example, Huang and Provan (2007a) found that embeddedness in a network improved social outcomes, like trust and reputation.

It is unclear from the data we have collected how trust might differ between a contract relationship and a less formal information sharing or referral relationship. One could argue that each type of relationship reflects a different level of interdependency and therefore requires a different form for each type of relationship. Similarly, it is unclear whether influence is based simply on the financial dependence each organization has on the RBHA, however, the increasing value of the average relationship quality suggests that relationships had improved over time.
Limitations of the Study

This comparison of two mental health services networks is not without its limitations. The difficult and time-consuming nature of network data collection, particularly longitudinal collection, limited our ability to collect more comprehensive data. Since we only collected data at two points in time for each network, we may have inadvertently missed subtleties in the evolution of each network. Additionally, the way in which the networks were bounded may have caused some actors to have been unintentionally excluded from study.

Additionally, as time elapsed between the initial data collection in 1996 and the final collection in 2004, our survey instrument changed to better capture certain aspects of the networks. In 1996, the survey only asked for network linkage questions on contracts and referrals. In 1999, the questionnaire was expanded to include four broad categories of questions: general information (descriptive statistics for each agency), types of service provided, network linkages (including the addition of information sharing), and additional involvement (reasons for collaboration, etc.). When the survey was constructed for the Maricopa network, questions about the at-risk providers (ARPs) were removed and questions regarding the expected influence of the new RBHA were added. Finally, in 2004, questions were reworded to capture past behaviors of the agencies and the RBHA. While the survey in 2004 was able to provide us with much more information than the original survey from 1996, it makes comparison over time, particularly across networks that much more difficult.

Comparing Network Outcomes

While it was hoped that we would be given access to client satisfaction data collected by the state during the periods 1996-1999 for Pima County and for 2000-2004 for Maricopa County,
we were not able to access any data before 2001. In what may be a telling comment on how hollow the State of Arizona has become, because of high turnover in the department, particularly among the evaluation staff, the Division of Behavioral Health Services has no idea what became of the results. While a distinctly second best option, we have chosen to look at both networks within the context of the larger behavioral health services system in the State of Arizona from fiscal years 2001-2005, which in the case of Pima County is after all our network data were collected. Thus we use them advisedly but with the knowledge that both the Pima County network and the Maricopa network made no major changes to the way they operated and likewise, the State of Arizona maintained the overall RBHA system as they had in the time period when we collected the Pima County data. As we will see, the enrollment of clients increased as did the amount of funding but this should have affected both systems equally and other than that, the organization of the system remained stable.

The enrollment of individuals designated with serious mental illness (SMI) enrolled for services increased as much as 50 percent in some areas of the state, with the overall state SMI population growing by about 16 percent between 2001 and 2005 (State of Arizona Office of the Auditor General, 2006). Those individuals designated as SMI qualify for a wide range of services paid for by the State using state and federal monies. After being one of the states spending the least on mental health in the early 1990s (Provan and Milward, 1995), the State of Arizona has developed a fairly well-funded behavioral health system. Between 2001 and 2005, the amount of funding the State dedicated to funding the system more than doubled in part due to lowered Medicaid income eligibility requirements and an expansion of the type of behavioral health services covered by Medicaid. These changes in eligibility and enrollment were the

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10 In Arizona, adults with SMI generally qualify for funding under Title XIX, the state’s Medicaid program, AHCCCS. Additionally, some adults qualify for the Title XXI. While Title XXI is the State Children’s Insurance
direct result of the passage of Proposition 204 in 2000. Proposition 204 allocated monies from

tobacco companies as part of a lawsuit settlement to expand eligibility for the state Medicaid

program, the Arizona Health Care Cost Containment System (AHCCS). By 2005, Arizona

ranked tenth in the United States in overall and seventh in per capital behavioral health spending

(State of Arizona Office of the Auditor General, 2006).

As seen in Figure 6 below, the Pima and Maricopa networks provide behavioral health

services for a majority of the seriously mentally ill in Arizona (nearly 80 percent). The RBHAs

were created to improve access and quality of services while reducing costs. In order to identify

how the needs of clients were being met by the two largest RBHAs in the state, we chose to

compare them over the only period for which there was any comparable data.

Program (SCHIP) that generally only covers children, Arizona has had a Health Insurance Flexibility and

Accountability (HIFA) waiver since 2001. HIFA waivers use Title XXI to serve two populations: adults over the

age of 18 without dependent children with an adjusted net family income at or below 100 percent of the federal

poverty level and adults with an adjusted net family income above 100 percent and at or below 200 percent of the

federal poverty level, if they are parents of children who are already enrolled in either Medicaid or SCHIP. The

money for this coverage comes from money left over from the SCHIP program allotments and special funding,

including payments from the Arizona Tobacco Tax settlement. In Arizona, roughly one-third of adults with SMI do

not receive either Title XIX or Title XXI coverage, though these levels have changed as Medicaid eligibility has

changed over time.
Some statewide survey data was collected between 1995 and 1999, but it was limited, inconsistent, and the Division of Behavioral Health Services cannot find the data that they collected. Since 2001 the State of Arizona has collected consumer satisfaction surveys using the Substance Abuse and Mental Health Services Administration’s Mental Health Statistics Improvement Program (MHSIP) consumer survey. MHSIP was created in 1989 as part of a national initiative to improve data collection and to create dependable sources of information about behavioral health services. Arizona was one of 16 states in the MHSIP State Indicator pilot program in 2001. Since that initial data collection effort, the survey instrument has been slightly modified and administered every two years.

The data collection effort was divided into two main surveys: one for adults and one for children/families of children receiving services. The surveys solicited independent feedback
from adults and families of youth receiving services through Arizona’s publicly funded behavioral health services. They provided information regarding consumer perceptions of services across several domains such as service satisfaction, access to services, treatment plan participation, quality and appropriateness of treatment, and outcomes. (For further detail about the sampling design utilized by the State of Arizona, please see the Appendix.)

The Consumer Satisfaction Surveys reveal several things about the system as a whole. The overall pattern of positive responses from 2001 to 2005 was one of stability, if not improvement (See Table 5, below). The domain in which scores were consistently high was quality/appropriateness of treatment. While scores on all dimensions improved almost dramatically in 2003, there was a decline in 2005 to previous levels or only slightly higher than the 2001 levels. Outcomes were consistently the lowest scoring domain.

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>2001</th>
<th>2003</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Satisfaction</td>
<td>80%</td>
<td>88%</td>
<td>80%</td>
</tr>
<tr>
<td>Access</td>
<td>71%</td>
<td>77%</td>
<td>75%</td>
</tr>
<tr>
<td>Quality/Appropriateness</td>
<td>79%</td>
<td>88%</td>
<td>84%</td>
</tr>
<tr>
<td>Treatment Planning*</td>
<td>NA</td>
<td>75%</td>
<td>71%</td>
</tr>
<tr>
<td>Outcome</td>
<td>58%</td>
<td>66%</td>
<td>63%</td>
</tr>
</tbody>
</table>

*A questions about Treatment Planning were not included in the 2001 survey.
Source: ADHS Client Satisfaction Survey Reports 2003, 2005

A slightly different pattern emerges when the seriously mentally ill (SMI) are separated from other survey respondents. Slight increases are actually seen between 2003 and 2005 in access and the quality/appropriateness of treatment. Declines between the two periods in other domains are not as large (see table 6).
Table 6: SMI Domain Score Comparison

_Fiscal Year_

<table>
<thead>
<tr>
<th>Outcome</th>
<th>2003</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Satisfaction</td>
<td>83%</td>
<td>79%</td>
</tr>
<tr>
<td>Access</td>
<td>72%</td>
<td>73%</td>
</tr>
<tr>
<td>Quality/Appropriateness</td>
<td>84%</td>
<td>86%</td>
</tr>
<tr>
<td>Treatment Planning</td>
<td>72%</td>
<td>68%</td>
</tr>
<tr>
<td>Outcome</td>
<td>61%</td>
<td>59%</td>
</tr>
</tbody>
</table>


As evident in Figure 7, a similar pattern to that seen in the system wide general satisfaction domain is seen in the individual RBHA scores over the same period.

Figure 7: RBHA General Satisfaction Domain Scores: 2001, 2003, and 2005

Since RBHA level data is unavailable for the other domains in 2001, we can only compare the other domains across two years: 2003 and 2005. The data across these two years reflects the
same general pattern noticed in the statewide data. Table 7 reveals that across all domains, Value Options had a larger percentage of respondents responding positively.

Table 7: RBHA Domain Score Comparison*

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>2003</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPSA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Satisfaction</td>
<td>85%</td>
<td>74%</td>
</tr>
<tr>
<td>Access</td>
<td>67%</td>
<td>66%</td>
</tr>
<tr>
<td>Quality/Appropriateness</td>
<td>85%</td>
<td>76%</td>
</tr>
<tr>
<td>Treatment Planning</td>
<td>71%</td>
<td>65%</td>
</tr>
<tr>
<td>Outcome</td>
<td>58%</td>
<td>53%</td>
</tr>
<tr>
<td>VO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Satisfaction</td>
<td>88%</td>
<td>82%</td>
</tr>
<tr>
<td>Access</td>
<td>79%</td>
<td>78%</td>
</tr>
<tr>
<td>Quality/Appropriateness</td>
<td>89%</td>
<td>85%</td>
</tr>
<tr>
<td>Treatment Planning</td>
<td>76%</td>
<td>72%</td>
</tr>
<tr>
<td>Outcome</td>
<td>68%</td>
<td>65%</td>
</tr>
</tbody>
</table>

*Percentages reported= Percent Responding Positively (greater than 3.5 on 5 point Likert Scale)
Source: ADHS Client Satisfaction Survey Reports 2003, 2005

The largest differences appear to occur in the access domain across both years. For both years, CPSA has significantly lower access scores than both ValueOptions and even the overall State totals. It is unclear why this difference exists. However, it is useful to note that the ValueOptions network has been under closer State scrutiny for meeting access requirements under the settlement of the *Arnold v. Sarn* lawsuit. Access had already been increased by the expansion of Medicaid funding and eligibility, ValueOptions was expected to ensure that simple enrollment actually resulted in services provided for clients with SMI.

When one considers the qualitative data across the service areas for these two years, CPSA actually reports higher levels of positive comments than ValueOptions. For example, in 2005, CPSA reports higher levels of consumers stating that the counseling, staff, psychiatrists and treatment were most helpful. Eight percent of those responding to the open-ended questions stated that they were generally satisfied with the services they received in the CPSA network compared to only six percent of those responding in the ValueOptions network.
Conclusion

The results of this comparative study of two networks provide some insight into how different networks within the same mental healthcare service provision system have evolved over time. We have compared these networks over multiple dimensions including structure and evolution, sector, relationships, reputation, and trust. Unlike much of the research on public networks, this study examined two separate networks, each at two distinct points in time. Additionally, we were able to compare the two networks across two points in time in regard to client outcomes, although we were unable to get outcome data for the two networks at exactly the same point in their evolution.

In general, it appears that these two networks share a number of similarities. Both networks are operating within an increasingly well funded public mental health system that has remained stable over time in terms of its governance and basic structure. Each network is made up of a variety of organizations from different sectors (for-profit, nonprofit, and public) and offers a variety of services along the continuum of care for clients with serious mental illness. The fundamental difference, however, is that the Pima network is governed by a nonprofit organization and the Maricopa network is governed by a for-profit organization.

As both networks have matured over time, the numbers of ties, both formal and informal, have increased. The agencies are working together more regularly to provide services to clients with SMI. We discovered that the evolution of relationships differed between the two networks when the nature of the relationship (formal vs. informal) was considered. Formal contract behavior within the networks appears to differ considerably as well, suggesting that the origins
of the relationships between the governing organization and other organizations within the network play a potentially important role.

While there was a distinct difference in contracting behavior between the two networks, the informal relationships in each resembled each other. Both networks have low to moderate densities across all sub-networks, suggesting an increasing level of network integration with network maturation. However, one strong difference between the two networks was apparent among the informal relationships. Specifically, network centralization in the referral network increased by 80 percent in the Pima network, while it decreased by 57 percent in the Maricopa network. It is unclear if this increase in Pima and the decrease in Maricopa is indicative of the path of network evolution in each network or a function of collecting data at two points in time so far apart that it masks changes in the nature of the two networks that we were unable to capture.

One somewhat surprising discovery in this comparison was that there was no apparent difference by sector between these two networks. This may support Weisbrod’s (1998) assertion that a non-sectarian nonprofit organization operating in a market economy, in competition with for-profit organizations, will yield to isomorphic pressures to behave like a for-profit.\footnote{While CPSA did not have to compete directly with a for-profit organization, it knew that it was entirely possible that it would face a for-profit challenger in one of its bidding cycles.} It also may simply be a product of the fact that both networks are made up of a similar mix of organizations from each sector, and that the sector of the governing organization plays an insignificant role in the provision of quality services.

The comparison across relationships regarding reputation and trust were limited due to the lack of longitudinal data about reputation in the Pima network. However, it became clear through our comparison that quality of relationship, one measure of trust, varied across the
networks. The RBHA of the mature Pima network experienced a high average relationship quality. The RBHA of the Maricopa network realized an appreciable difference between network emergence and network maturation. Given that ValueOptions had no previous ties to the service providers in this network before winning the contract, this increase, while small, may be indicative of its improved social standing in the network.

The comparison of client outcomes for each network over time revealed that the Maricopa network received, on average, higher quality scores across all domains from its clientele. While data was not available across all survey years, available data did provide a snapshot of how the networks compare in terms of providing quality services. As pointed out earlier, networks can be collaborative and well-integrated while still providing poor quality services, these client outcomes suggested that while the two networks do not provide stellar client outcomes, they do perform fairly well in the eyes of the clients who responded to the survey.

Of course, this comparison is not without limitations. Comparison was limited by the data available, both in what we collected and what the State of Arizona collected. Since this work has been the product of a long research program, multiple changes have occurred over time as we have learned from each iteration of our data collection efforts. When working with secondary data, as we did in the client outcome data, one can expect limitations in ability to capture subtle nuances of the data and this was certainly no exception. In addition, while our research was longitudinal, the gap between our first and second wave of data collection was at over three years for both networks. Ideally, researchers might study network evolution in smaller increments of time, to capture the smaller changes in the network and identify more succinct patterns of behavior. However, the time- and resource-consuming nature of network research makes this a
difficult ideal to meet with current tools of social network analysis. The specific nature of these mental health service providing networks may limit our ability to generalize our findings to networks in other policy areas or to networks that do not provide services. However given the paucity of comparative network research, the findings reveal something about how networks operating within the same public service system compare as they evolve over time.
Appendix 1

The Consumer Satisfaction Surveys utilize the same sampling design and methodology in each of their iterations. “Adults” were defined as Title XIX/XXI behavioral health recipients who are 18 years of age or older, who are also enrolled in any of the adult programs, i.e. Serious Mental Illness (SMI) and Drug/Alcohol or General Mental Health (Non-SMI). The sample frames are composed of all consumers enrolled as of January 1\textsuperscript{st} of the calendar year in which the survey was administered who met two primary eligibility criteria. First, consumers must have received a community-based, mental health service other than transportation, laboratory and/or radiology services, or crisis services within the last six months. Consumers must also not have received services in an inpatient setting at the time the sample frame was developed.

For the adult survey population, the Arizona Department of Health Services’ Division of Behavioral Health Services (ADHS/DBHS) determined the state sample size stratified at the RBHA level utilizing a “statistically valid process with a 90 percent confidence level and a 5 percent margin of error” (ADHS, 2003: 20). Each RBHA was provided with a calculated sample size. Each RBHA then conducted a stratified random sample of consumers using the SPSS random sampling program and advised each provider of its sample population. Consumers were linked to the provider where their clinical liaison was affiliated. Providers reviewed their sample list to determine that at least 85 percent of the selected consumers had scheduled appointments during the survey period. The random selection was repeated until this criterion was satisfied.

The surveys were administered primarily at the provider service sites as consumers checked in for appointments. The providers used the control file to determine if the consumer had been preselected for the survey. If a consumer name appeared on the control file, the consumer was selected for the survey and was asked to complete it prior to leaving the provider
office and to leave it in a specified drop-box. If the randomly selected consumer had a scheduled home appointment, provider staff brought the survey to the consumer. If the consumer agreed to participate, the consumer was advised to complete the survey after the staff had left and to mail the completed questionnaire using the pre-addressed, stamped envelope provided with the survey. Surveys were collected from May 1 to July 31 for each of the survey years (2001, 2003, 2005).

Staff from ADHS/DBHS provided statewide oversight of the survey process through periodic monitoring and consultation with the RBHAs. The RBHAs provided training, direct oversight and technical assistance to their providers, and were primarily responsible for ensuring consistent implementation of the survey administration protocol. ADHS/DBHS oversight of the survey administration involved providing technical assistance in a number of areas, e.g. the training of RBHA staff on survey protocol and the development of a survey administration flow chart and timeliness,

The 2001 survey consisted of the 26-item MHSIP Adult Consumer Survey, demographic questions, state-specific questions and open-ended qualitative questions. The 2003 and 2005 consumer surveys included the same basic elements. However, for these two years the MHSIP survey included two additional questions on treatment planning and decisions. The state-specific questions varied across all three years. In 2001, the state did not collect state-specific questions. In 2003, the State added two questions: one on consumer consent to receive medication and the other on the receipt of non-emergency medical care in the last year. In 2005, the State added five questions: three questions focused on medication decisions, education, and communication, one question on the member advocacy available, and a question about the inclusion of cultural
preferences in treatment planning. The qualitative questions were the same across the three survey years, with the exception of the addition of a question in 2005.
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