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Understanding Integrated Rural Health Networks

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A NEW ORGANIZATIONAL FORM IS BEGINNING TO emerge in rural areas that has been variously referred to as an "integrative alliance" (Zuckerman, Kaluzny, and Ricketts 1995), an "organized delivery system" (Shortell, Gillies, and Anderson 1994), an "integrated health care delivery system" (Pointer, Alexander, and Zuckerman 1994), an "integrated delivery system" (Dowling 1995; Hurley 1993), an "integrated service network" (Shortell, Gillies, and Anderson 1994), an "integrated delivery network" (Shortell, Gillies, and Anderson 1994), and a "community care network" (American Hospital Association 1992). We will focus on a particular variant of this new organizational form, "integrated rural health networks."

The word "network" was selected over "system" and "alliance" to depict these interorganizational arrangements. Although definitions for any of these terms are far from precise, to us "system" implies a formal, permanent interorganizational arrangement, in which there is common ownership of all or most of the components, whereas "alliance" implies a voluntary, loosely coupled arrangement of autonomous partners who

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come together to solve problems on an ad hoc basis. A network falls between these two organizational forms. It is a voluntary, relatively permanent arrangement based on a range of organizational structures that may become increasingly formal over time, depending on the success of the network. So conceived, networks are known by various other names, such as "cooperatives," "consortia," and, less often, "coalitions" (Size 1993).

Understanding how integrated rural health networks develop and function is important because many people regard these networks as a powerful new tool for overcoming the fragmentation of health services delivery in rural areas. In theory, such a network can establish new structures within which providers and communities can plan, coordinate, and possibly deliver and finance health care services. To date, however, little is known about the structure of integrated rural health networks or the possible effects that structure might have on performance.

Definition of Integrated Rural Health Networks

We define an integrated rural health network as "a formal organizational arrangement among rural health care providers (and possibly insurers and social service providers) that uses the resources of more than one existing organization and specifies the objectives and methods by which various collaborative functions will be achieved." This definition is composed of four attributes that distinguish integrated rural health networks from other interorganizational arrangements:

Formal Organizational Arrangement

"Formal" in this case means explicit and legal. Examples include memoranda of understanding, contracts, incorporation of a network in which the individual members are shareholders (if for profit) or board members (if not for profit), and consolidation of functions by acquisition or merger up to consolidation into a single entity.

Varied Membership

Integrated rural health networks are composed of a variety of health care providers (i.e., they are not composed of only one type of provider, such as only hospitals or only community health centers). They may also

include insurers and social service providers. Urban members may participate as network members as long as at least two rural providers also participate as members.

Member Commitment of Resources

Members contribute resources (e.g., money and time) to the network, although all members do not necessarily contribute in the same proportion. The network is composed of already existing organizations. New organizations created by the network (e.g., a mobile imaging service or a health maintenance organization) are not considered members of the network; rather, they are activities of the network.

Purposefulness

A network is more than a mission statement: It must be productive. Networks perform functions and activities according to an explicit plan of action. Examples of collaborative functions range from sharing services to coordinating and integrating services provided by member organizations to the direct provision and financing of care. This definition is broad enough to cover a wide variety of rural health networks, but, at the same time, it is narrow enough to exclude a number of interorganizational arrangements. Table 1 depicts a spectrum of integrated interorganizational arrangements. Integrated rural health networks occupy one band in this spectrum. At one end of the spectrum, rural providers join together voluntarily to achieve one or a limited number of objec-

TABLE 1
Spectrum of Integrated Interorganizational Arrangements

	Type of arangement		
	Informal network	Formal network	System
Attributes	Joint action No written agreement Individual autonomy	Joint action Written agreement Individual autonomy	Joint action Written agreement Common ownership
Exchange linkages	Market	Hybrid	Hierarchy

tives. Each participant retains its autonomy, and the roles and responsibilities of members and the purposes of the network are not set forth in a written agreement. This is an informal network.

At the other end of the spectrum, multiple provider types work together, cooperatively integrating a variety of functions and patient services. The participants are not autonomous; all of the functions and services are owned by a single corporate entity. The roles, responsibilities, and relationship of participants to one another are outlined in corporate documents like articles of incorporation, bylaws, and policies and procedures. A mission statement delineates primary objectives. This arrangement is known as an integrated system.

As hybrids, integrated rural health networks occupy the middle ground between informal networks and integrated systems. Integrated rural health networks are formal networks composed of autonomous members who coordinate and provide functions and services under the terms of written agreements that specify the roles and responsibilities of members and the purposes of their joint action.

Rural providers participate in rural health networks for a variety of reasons: material inducements (like those produced by economies of scale and access to sources of capital); opportunities to increase prestige or personal power (for example, by association with leading regional urban and rural providers); or a belief that participation in cooperative ventures is the "right thing to do." Integrated rural health network participation is voluntary. Therefore, the factors that initially induced participation must be maintained over time to preserve the ties that participants have to the network. The dual problems of inducing membership and rewarding participation may present special challenges to rural networks.

Motivations for Forming Networks: Theoretical Perspectives

Several rationales have been suggested to explain the motivation of network participants to cooperate. The most common of these theoretical perspectives are (1) resource dependence, (2) transaction costs, and (3) organization–environment relations (D'Aunno and Zuckerman 1987).

Resource Dependence

The resource dependence model assumes that, in a turbulent environment, organizations will develop strategies and structures to reduce

uncertainty and dependence on powerful and potentially controlling elements in the environment (Thompson 1967; Pfeffer and Salancik 1978; Kimberly, Leatt, and Shortell 1983; Zuckerman and D'Aunno 1990). In other words, administrators of organizations "manage their environments as well as their organizations" (Aldrich and Pfeffer 1976). Because organizations frequently cannot produce or control all essential resources internally, they must necessarily enter into exchange relations with external parties either to acquire resources or, at the very least, to reduce dependence on them. These exchange relations form the basis of interorganizational collaboration. Dependence-reducing strategies include contractual arrangements, joint ventures, mergers, and interlocking directorates (D'Aunno and Zuckerman 1987). Integrated rural health networks may be built upon the foundation of similar linking mechanisms.

Transaction Costs

This theory holds that health care providers participate in interorganizational combinations in an effort to reduce their transaction costs. Transaction costs are defined as "the costs of running the economic system" (Arrow 1983). Distinct from the costs of product or service production, transaction costs represent the expenses incurred for the transfer and use of information, coordination of activities, and monitoring of output both inside a single organization and between two organizations. Examples of transaction costs include preparing and maintaining patient records (information), patient and staff scheduling (coordination), and quality assurance (monitoring), as well as a host of other functions like continuing education and materials management.

Transaction cost is an increasingly popular explanation in the health care literature for the decision of hospitals to integrate vertically (Mick and Conrad 1988; Conrad and Dowling 1990). Markets, the theory suggests, are the most common way to establish links between organizations, wherein one organization serves as a "buyer" and the other as a "seller" within a single exchange. High transaction costs, however, limit the utility of some interorganizational exchanges. In these cases, transactions are moved out of markets and into hierarchies (i.e., firms) to achieve greater efficiency (Williamson 1975). Moving their transactions into hierarchies allows hospitals to decrease uncertainty, both by reducing the number of competitive exchanges and by institutionalizing decision rules.

Various linkages that fall between the extremes of a market and a hierarchy may help organizations moderate their transaction costs. Such linkages include long-term contracts and interorganizational structures that incorporate suppliers into the buyer's organization. Integrated rural health networks constitute one form of these "hybrid" arrangements (Borys and Jemison 1989).

Organization–Environment Relations

Institutional theory holds that whereas organizations depend on their environments for resources, these environments will only support organizations they deem legitimate. To increase legitimacy, and thereby improve their chances for survival, organizations behave in ways that reflect their expectations of the environment. For example, health care providers choose to seek external accreditation in part because accreditation is a powerful sign and symbol of organizational competence (Joint Commission on Accreditation of Healthcare Organizations 1994).

Some environmental expectations, like a belief in the effectiveness of medicine, are pervasive and have become incorporated into the social belief system (Meyer and Rowan 1977). These beliefs and the social "rules" they spawn may be taken for granted, bolstered by public opinion, or incorporated into laws and regulations. Certain of these environmental beliefs have been characterized as "rationalized myths" (Meyer and Rowan 1977). "Rationalized myths" are beliefs that are "rational" inasmuch as they are elaborated statements of rules and procedures to be followed in achieving a given end. They are "myths" because (a) they cannot be empirically verified, and yet (b) they are widely believed (Scott 1981).

Belief in the efficacy of networks is an example of a rationalized myth. There is widespread belief in the ability of networks to improve access to and quality of health care and to control health care costs, yet virtually no empirical evidence exists to support these conclusions. Thus, rural health care providers may elect collaborative strategies primarily in an attempt to mirror the expectations of the environment.

Each of these rationales—resource dependence, transaction costs, and institutional theory—may explain the motivation for the recent formation of integrated rural health networks. Other, less theoretical, reasons may also help explain why integrated rural health networks form. For example, the aging of the population and the increased prevalence of

chronic disease have increased the need to enhance continuity between different levels of care; in some cases, this need may serve as an important motivator for the formation of integrative arrangements, especially in rural areas where the elderly make up a disproportionately high segment of the population (Mick and Conrad 1988; Conrad and Dowling 1990). No single reason is likely to explain fully why integrated rural health networks form. Rather, they are likely to form for theoretical and practical reasons that vary across networks, regions, and time.

Choosing Network Partners: The Role of Diversity

Zuckerman, Kaluzny, and Ricketts (1995) divide alliances in health care into two general types. Their categorization of alliances could as easily apply to networks. The first type, a "lateral" or "service alliance" (Kanter 1989), is composed of similar types of organizations serving different geographic markets with similar products. Moscovice and his colleagues studied one type of lateral or service alliance, the rural hospital network (Moscovice et al. 1995). They found that rural hospital networks are a popular, low-cost strategy for dealing with an uncertain environment. Network survival is enhanced by the mutual resource dependence of members and the presence of a formalized management structure. However, this type of network, on average, fails to produce short-term economic benefits for its members.

The second type is characterized as an "integrative alliance." These alliances, or networks, are composed of organizations that come together "for purposes largely related to market and strategic position and securing competitive advantage" (Zuckerman, Kaluzny, and Ricketts 1995). The integrated rural health network, as the name implies, exemplifies this second type of collaborative strategy. Organizations that join integrative networks may be pursuing either horizontal or vertical integration strategies, or both. Integrated rural health networks are formed by multiple types of health care providers. They may be composed of several members of the same type (e.g., multiple clinics or hospitals and others), but, unlike lateral combinations, they are not composed exclusively of the same type of members.

Horizontal and vertical integration are corporate strategies that single firms adopt. Thus, the terms "horizontal" and "vertical" incorrectly describe networks. Individual firms may pursue strategies of horizontal

or vertical integration in joining a network, but only under certain specific circumstances do networks themselves engage in horizontal or vertical integration strategies. Vertical networks are more than simply networks composed of different types of participants. A vertical network is defined properly by the relation of the participants' inputs and outputs, not simply by the diversity of membership. Although it is theoretically possible for mature rural health networks to be vertically integrated, many other types of integrative linkages among rural providers are more likely to occur. Because vertically integrated rural health networks comprise only a narrow subset of the structural possibilities of the form, we prefer to use the more inclusive term, "integrated rural health network," rather than "vertically integrated rural health network."

Pointer, Begun, and Luke (1988) describe yet another type of interorganizational relation that is more applicable to the notion of integrated networks. Organizations in symbiotic combinations support each other in the provision of their services and help each other to achieve joint competitive advantage. These combinations frequently occur between organizations operating in different segments of the same industry. Participating organizations have no significant exchange of inputs and outputs, and competition between participants is limited or nonexistent (Pointer, Begun, and Luke 1988). In the health care industry, for example, participants in a symbiotic combination might include physician clinics (primary and specialty medical care), hospitals (acute care), and nursing homes (long-term care). At the margins, these providers may compete for some services (e.g., a physician-sponsored laboratory may compete with a hospital-based laboratory, or hospital swing beds may compete with a nursing home). However, in the provision of their core services these organizations typically do not compete. As the etymology of the word "symbiosis" suggests, the participants in symbiotic combinations live together in close proximity. Symbiotic combinations therefore may rely on local organizations for membership to a greater extent than horizontal or vertical integration strategies.

Typically, the members of integrated rural health networks pursue symbiotic combinations (rather than horizontal or vertical strategies) to accomplish activities that (a) they cannot accomplish by themselves and (b) they regard as of strategic importance to their continued viability. The goal of these combinations is to integrate functions and activities in order to provide, or arrange to provide, a coordinated continuum of services to a defined population (Shortell et al. 1993).

The Concept of Integration

The word "integration" means bringing together previously separate and independent functions, resources, and organizations into a new, unified structure (Morris and Lescohier 1978). Integration can be achieved either by consolidating disparate functions, resources, and organizations under single corporate ownership or by coordinating the functions and resources of independent organizations through governance structures that are more flexible than ownership (Zuckerman and Kaluzny 1991; Mahoney 1992). Network integration has two distinct dimensions: the type of integration employed and the degree to which the members are integrated.

Shortell and his colleagues (1993) suggest that members of networks manage three different types of integration: clinical, functional, and physician–system. Within each of these types, network participants must determine the degree to which functions and resources should be combined (Shortell, Gillies, and Anderson 1994; Devers et al. 1994). "Clinical integration" means the coordination or combination of patient care services across various units; "functional integration" means the coordination or combination of critical support and administrative functions and activities; and "physician–system integration" means the identification of physicians with the system as shown by their active participation in planning, management, and governance (Shortell, Gillies, and Anderson 1994). These three types of integration are interrelated. For example, clinical integration may be promoted by certain kinds of functional integration and by the active participation of physicians in system decision making (Shortell, Gillies, and Anderson 1994).

Integrated rural health networks may engage in any combination of clinical, functional, and physician–system integration. No apparent hierarchy exists among the types of integration. Similarly, no one critical path must be followed to assure success. Some networks may participate in only one type of integration, whereas others may employ all three. The degree to which participants are integrated may vary among the types.

To these three types of integration, a fourth must be added: financial integration. As defined above, functional integration includes the combination or coordination of financial management activities, but it does not include true financial integration. "Financial integration" means

sharing the risk of losses and profits across the various parts of the network. Distinctive characteristics of financial integration will include all or some of the following:

1. an economic investment by participants
2. acceptance by participants of operating risk (i.e., the possibility that costs may exceed revenues for joint activities)
3. acceptance by participants of business failure risk (i.e., the possibility that creditors will be owed money when joint activities cease) (Ronai and Hudner 1992)

A variety of network joint ventures and partnerships may result in financial integration. Integrated rural health networks with a managed care component almost certainly feature some degree of financial integration. Financial integration in the context of managed care may provide the impetus for greater levels of clinical, functional, and physician–system integration.

The impact on autonomy is also central to the idea of integration. Pfeffer and Salancik (1978) observe: "The price for inclusion in any collective structure is the loss of discretion and control over one's activities." When an organization links up cooperatively with another organization or organizations, it limits its autonomy by reducing the freedom to make its own decisions about the use and allocation of its internal resources. The organization that joins a cooperative effort commits time, personnel, capital, and other resources to the venture; those resources then cannot be used for other purposes. The organization may also relinquish some amount of decision-making authority to an external source. For example, participants in an integrated rural health network may agree to abide by planning decisions made jointly or to perform according to externally imposed clinical guidelines.

The amount of participant autonomy an organization forgoes in joining an interorganizational network ranges along a continuum from a very small amount to a nearly complete abdication of organizational discretion. According to Oliver (1991), "The degree to which interorganizational relations reduce an organization's autonomy is a function of the type of relationship that an organization establishes." Higher degrees of integration typically reflect greater contributions of autonomy to the network.

Key Dimensions of Integrated Rural Health Networks

Even though our proposed definition limits the number of interorganizational arrangements that may be considered integrated rural health networks, the form still exhibits considerable diversity. Integrated rural health networks feature a variety of participants, funding sources, activities, and governance and management structures. Three key dimensions allow us to distinguish among integrated rural health networks: (1) integration, (2) complexity, and (3) assumption of risk.

"Integration" refers to the degree to which transactions that were formally conducted through market exchanges are now internalized (Williamson 1975). Higher levels of integration restrict participant autonomy. Autonomy, in this context, may be defined as the discretion of a participant to make choices in allocating its internal resources and the freedom to invest its resources in activities unrelated to network obligations or expectations (Oliver 1991). The nature of the interorganizational links that bind the participants together reflects a network's degree of integration. This dimension distinguishes networks that rely primarily on coordination to achieve integration from those that employ a strategy of functional and structural coalescence. Networks with higher degrees of integration behave more like a single firm than networks with lower degrees of integration.

"Complexity" refers to variation in the characteristics of participants and the types of health care services offered (Harrigan 1984). The dimension of "complexity" relates to the number of participants, the technology or type of work they carry out, and how they are combined in a network. Extending interorganizational links beyond simple dyadic relations alters the nature of an integrated rural health network. Multiple partners increase the need for network coordination and control. Increasing the number of partners or the scope of services and products may expand the output of the network, change its combined productive capacity, and/or alter its market position. Complexity can be described in terms of the variety of services offered by or through the network, and by the number of different organizational types that participate in the network (Harrigan 1984, 1985).

"Assumption of risk" indicates whether or not a network shares financial risk for the services it provides. Networks that combine the delivery and financing of services exhibit a unique kind of complexity.

They combine the frameworks of two functionally different industries: health care and insurance. In addition to providing health care services, these networks accept financial risk for the health services they offer. The methods employed to coordinate the activities of these two functions add a new dimension of complexity to integrated rural health networks.

Within a single network, the degrees of integration and complexity may vary over time as environmental and intraorganizational characteristics change. Similarly, the decision to assume risk can also change. Consequently, a network may evolve as its governance, activities, or membership changes. Less formal and complex types of networks may provide a foundation for the eventual development of more permanent and sophisticated network forms. Across networks, both the degrees of integration and complexity and the assumption of risk may vary by geographic area as well as by the characteristics of the networks' members.

Lessons Learned from Case Studies of Rural Multiprovider Arrangements

The observations in the previous sections on what integrated rural health networks are and what they are not rely heavily on case studies of the following six rural multiprovider arrangements:

- Adirondack Rural Health Network in upstate New York
- West River Health System in southwest North Dakota and northwest South Dakota
- Itasca Medical Care in Itasca County, Minnesota
- Marshfield Clinic–Ministry Corporation in north central Wisconsin
- Laurel Health System in north central Pennsylvania
- AvMed–Santa Fe in north central Florida

The variety of arrangements studied suggests both the richness of organizational opportunities available to rural providers and the variable nature of interorganizational linkages. The major organizational and structural features of the cases are described in tables 2 and 3. It is important to note that the case studies are not intended to serve as models of integrated rural health networks. In fact, three of the six

arrangements are systems rather than integrated rural health networks. We particularly were interested in examining the developmental stages involving prior network relations of the systems. We selected a variety of arrangements as a means to help generate ideas and hypotheses for future research about integrated rural health networks.

The sites selected for the case studies reflected our interest in studying arrangements in which multiple types of rural providers come together to integrate functions and patient care services. Our selection process favored sites in which integrated relations were established, rather than sites where such arrangements were just emerging, because we wanted to see how integrated relations actually work. With the assistance of rural health services research colleagues throughout the country and a focus group of eight rural health networking experts, we compiled a list of approximately 20 potential sites.

We evaluated potential sites and selected six that had an operational history and some degree of functional, clinical, physician–system, or financial integration. Sites were selected in December 1993 and January 1994. They agreed to participate in this study, and, with their cooperation, we conducted site visits between February and September of 1994 and completed the case studies in 1995.

Before developing the interview protocols used to guide the site visits, we convened a focus group of eight rural health network experts. These experts responded to a list of prepared questions about network formation, structure, governance, management, functions, and assessment criteria. The responses of the focus group provided valuable guidance as we shaped interview protocols for each type of person interviewed: for example, chief executive officer, network member, and community representative. Nine different protocols were prepared.

Our research team conducted intensive, two-day visits to each site. Two investigators visited each site and interviewed between 14 and 20 people during each visit. In addition, we collected written materials pertinent to each site before, during, and after the interviews. The investigators transcribed the interviews, reviewed the secondary data, and prepared draft case studies. Each draft case study was reviewed for accuracy by personnel from that site and revised accordingly.

We then collectively analyzed the case studies to ascertain cross-cutting patterns and themes. This "interpretive" style of analysis was selected to assist us in generating new insights about integrated rural health networks. Such interpretative analysis also helps create hypoth-

TABLE 2
Formal Organization and Activities of Case Study Sites, 1995

Site	Governance and management	Services and functions	Sources of financing
Adirondack Rural Health Network (ARHN)	Network is not incorporated as an independent organization. It is governed by a steering committee composed of one seat per organizational member and five subcommittees. Staff is "loaned" by Upper Hudson Primary Care Consortium, one of the members. All network decisions are made by consensus.	Has developed or is in the process of developing, agreements to coordinate services among members; regional health plans; recruitment, training, QI, and case management programs.	State grants, contributions from Glens Falls Hospital (a member), and in-kind contributions from members are the sole sources of funds. No mechanism exists to finance ongoing activities.
West River Health System (WRHS)	Parent corporation oversees operations of three subsidiaries: hospital, satellite clinic network, and foundation. Physician group is a separate corporation that provides services on a contractual basis. Parent board is elected and appoints other boards; membership overlaps between boards; one seat on each board is reserved for a physician member.	Range of primary, preventive, acute care, and emergency services. Network also provides administrative functions including QA, UR, billing, purchasing, medical records, recruitment, and human resources. It arranges a regular schedule of consulting specialists. Medical technology is both on site and mobile. Home health care is provided for a large service area.	Parent board is responsible for overall financial management. Each subsidiary submits a budget for approval.
Itasca Medical Care (IMCare)	Subunit of Itasca County Human Service (ICHS) Board, which has ultimate governing authority. Senior management group consists of director, medical director, QI nurse. There is an IMCare task force advisory body, but recommendations are usually accepted by the ICHS board.	Providers deliver a range of services authorized under Minnesota's Medicaid program: primary, acute care, dental, mental health, eye care. IMCare conducts QI/UR through a committee staffed by a county employee nurse, contracts with a medical director who reviews referrals and addresses QI/UR issues, contracts for billing and data analysis services, and has a salaried employee who works on membership enrollment and provider contracting.	Receives capitated payments from the state, based on average Medicaid payments of nonmetro counties: 95% for aged and 90% for AFDC beneficiaries. Administrative costs are 9.3%: state pays 5% and county pays the balance.

Marshfield Clinic–Ministry Corporation	Marshfield Clinic is a not-for-profit corporation owned by a charitable trust and affiliated with corporations, Security Health Plan and Medical Research Foundation. Each physician purchases one share in the clinic and has voting privileges. There is a nine-member executive board. Its relation with Ministry is a "strategic alliance," not a formal linkage. Top managers of the Clinic and Ministry Corporation meet monthly to coordinate strategic planning.	Marshfield Clinic provides administrative functions for regional clinics: billing, payroll, accounting, physician recruitment, facility management.	Marshfield Clinic is funded by patient revenues and sale of clinical services through an outreach network. Medical Research Foundation is funded by grants and gifts. Security Health Plan is funded by HMO premiums.
Laurel Health System (LHS)	Umbrella corporation, with six components: SSMH, NPCHS, hospital volunteer groups, real estate holding company, management services, SNF. There is a corporate board of 48 members and 9 directors. Governance and management overlap within the system.	Primary care; acute care; senior homemaker, nutrition, respite care services; home health; diagnostic, residential, foster care for adjudicated youth; outpatient mental health; Head Start; information and referral; congregate living; long-term care (SNF). Shared services: laundry and laboratory.	Each unit within the system is assessed a management fee; overhead lines appear in revenue and expense reports of each cost center.
AvMed–SantaFe	Parent organization is a not-for-profit corporation that owns 18 affiliates. An elected board of directors has at least 6 members; members of boards of each affiliate serve on standing committees of the AvMed–SantaFe board. A consolidated medical center board combines the governing board and medical staff functions of all four acute care hospitals.	AvMed–SantaFe provides services to affiliates, including physician recruitment, planning, risk management, legal services, marketing, reimbursement assistance, financial services, human resource management.	Affiliates are charged for services through intracompany billing. AvMed–Santa Fe also participates in Health Partnership of North Central Florida, a network that receives some grant funds from the state.

Abbreviations: AFDC, Aid to Families with Dependent Children; NPCHS, North Penn Comprehensive Health Services; SNF, skilled nursing facility; SSMH, Soldiers and Sailors Memorial Hospital; QA, quality assurance; QI, quality improvement; UR, utilization review.

TABLE 3
Key Structural Dimensions of Case Study Sites, 1995

Site	Level of integration	Complexity	Assumption of risk
Adirondack Rural Health Network (ARHN)	Integrated regional health care planning and provider recruitment are the only integrated functions to date.	Membership is large and diverse; members offer a large array of primary, secondary, tertiary, and long-term-care services.	Offers no managed care product, and its members are not risk-bearing entities through their network affiliations.
West River Health System (WRHS)	Financial planning, control mechanisms, and MIS are integrated; there is a formal, systemwide strategic planning process and human resource planning and QA; the paper medical record is unified and there are plans for an electronic record as part of patient-care-focused MIS development.	A wide variety of services is provided; the relation between major organizations is ownership.	Does not currently bear risk. WRHS owned and operated an HMO from 1978 to 1989.
Itasca Medical Care (IMCare)	There is substantial financial integration but limited practice integration. There is no oversight of practice patterns or resource utilization except for referrals to out-of-county facilities and specialists.	Services are provided for a limited, well-defined group: MA and GAMC patients are in one county.	Physicians, hospitals, and mental health are risk-sharing providers. It has as an escrow stop-loss account for payments exceeding $15,000 for any one patient in a single year.
Marshfield Clinic–Ministry Corporation	Regional clinics use many of the main clinic's systems: QA, UR, credentialing, patient billing, personnel, CME. Clinics have a unified paper medical record and are beginning to automate it. Integration of clinic and hospital services is mixed. Medical records are combined, there are some shared services,	There is a large number of partners in a horizontal physician network. Complexity is relatively low, as there is a solid core of primary care physicians. Clinic–hospital and clinic–HMO are basically dyadic linkages.	Marshfield Clinic as a whole is capitated by Security Health Plan (SHP). The clinic contracts with affiliated physicians and pays them from its capitated rate. Affiliated physicians are not at risk and are paid on a discounted FFS basis. Clinic physicians are salaried. SHP pays hospitals on a discounted FFS basis.

	QA is highly integrated, and there is an attempt to coordinate strategic planning and regional joint ventures. There is neither financial integration nor sharing of human resource administration.		
Laurel Health System (LHS)	Success in integrating components has been mixed. Management team meetings involve managers from several service units. CQI program brings together staff from various units to work on specific problems. There is a plan to expand MIS to include more clinical data. Integration at the governance level occurs through an overlapping board structure.	The variety of services offered is quite complex, but the total number of corporate entities in the system is small.	LHS does not currently bear risk, but the management team sees assumption of risk as the next logical step in network development.
AvMed–SantaFe	There is a high degree of integration relative to financial planning and control, strategic planning, human resource planning. AVMed–SantaFe is in the intermediate stage of developing a QA system. Hospitals only have MIS links for patient accounting. Primary care practices and home care are highly integrated. Complexity and change in mission have impeded higher levels of integration.	There is a large number of different services and different types of organizations.	It is risk-bearing; owns a not-for-profit HMO. It has IPA contracts with about 1,500 physicians and about 100 hospitals. Primary care physician case managers share no risk. Employed physicians and network-owned hospitals receive capitated payments.

Abbreviations: CME, continuing medical education; CQI, continuous quality improvement; FFS, fee-for-service; IPA, independent practice association; GAMC, general assistance medical care; MA, medical assistance; MIS, management information system; QA, quality assurance; UR, utilization review.

eses about these networks that can then be tested in future empirical research.

Neither the case studies in this volume nor the published literature suggests a critical path that must be followed to assure success for an integrated rural health network. However, the case studies do yield some important insights into network development and operations. The lessons presented here struck us with particular force after we analyzed the case studies as a group.

1. The formation and operation of integrated rural health networks is the result of a political and economic process that is incremental in nature and requires a substantial amount of time.

Integrated rural health networks cannot be developed quickly and may require up to a decade to mature. All of the sites described in the case studies benefited from a history of informal collaboration among their members. In many ways, this informal collaboration can be considered the initial period of joint activity of network members.

Because the participation of network members is influenced by economic and political considerations, they may join networks to reduce uncertainty and dependence on environmental forces, to streamline transaction costs, and/or to increase legitimacy. Institutions assess the costs and benefits of network participation as they determine whether it makes sense to sacrifice some of their autonomy, contribute resources, and actively participate in shared decision making with other network members. Networks that can provide direct financial benefits for their members should be able to attract and retain participants. In the current environment, there is considerable interest in risk-sharing activities within a managed care framework as a means of securing financial resources to be shared by network members. However, risk-sharing arrangements are rarely, if ever, the first initiatives of a network. They are more likely to become part of the network agenda after less intrusive activities have been successfully completed and trust has developed among network members.

The sheer dynamism of one visionary often provides a catalyst for network formation. However, as important as a key individual may be, the formation of integrated rural health networks implies the uniting of multiple entities to work together on joint activities. Issues of power and control eventually arise as plans are translated into actions. Network members may struggle for control of the network (e.g., Are physicians

or hospitals in charge?) and, within organizations, network participation may produce conflict over leadership (e.g., Is the hospital administrator or the hospital board leading the change strategy?). The long-term stability of network leadership is an important issue because networks are dependent on the personal relationships among key actors. The introduction of new players inevitably slows or redirects the process of network development.

The time frame for network development can be lengthened when institutional mimicry provides the main motivation for institutions to join the network. The "Everybody else is doing it, it must be right for us" mentality can play a strong role in legitimizing the initial decision to join a network. However, if that is the primary motivation, active member participation in the network may be delayed—or may never happen at all. All network members need to go through the calculus of weighing the pros and cons of network membership and active participation. The longer this process is delayed, the longer it takes a network to become fully operational.

Network development also can be stifled by perceived legal disincentives to collaboration among rural providers, which can have a chilling effect on provider interest in network participation. Antitrust lawyers suggest that a blanket exemption from federal antitrust laws is not the solution for the problems of rural health care. What is needed, instead, is a clear articulation of the circumstances under which the collaboration of rural providers in a defined geographic area does, or does not, violate antitrust law. Addressing legal issues has consumed the resources of financially vulnerable rural providers, forcing them to hire legal counsel to craft creative options for collaborative activities that satisfy existing antitrust statutes.

In sum, there are several reasons why networks develop and mature over extended periods of time. Rural health professionals, institutions, and policy makers need a long-term commitment to, and an investment strategy for, networks if they want those networks to generate benefits for the rural populace.

2. Integrated rural health networks need product lines that provide ongoing sources of revenue.

The desire to be a member of a rural health network may diminish rather quickly if the network does not develop activities that provide benefits to its members and to the communities it serves. This is not a

trivial point, as indicated by the difficulty that many networks have experienced in their search for a network mission that yields financial advantages for all members. Networks need to be able to differentiate their product lines from those of individual network members and also from those of other groups in which network members participate. Equally important, networks need to be able to develop new products that are clearly understood by providers, managers, and local communities.

At present, networks are more likely to be involved in the coordination of administrative functions (e.g., marketing, management information systems) and sharing of services provided by their members (e.g., health promotion) than in the direct provision and financing of health services. This may lead to identity problems for networks and confusion surrounding the issue of what the network does. Because of this confusion, third-party payers fail to recognize networks as provider entities. The recent passage of the Balanced Budget Act of 1997 permits provider-sponsored networks to receive Medicare managed care contracts. The recognition of networks as a provider type by Medicare is an important step in the transition of rural providers from a fee-for-service environment to one in which there is greater acceptance of financial risk through collaborative arrangements.

3. Rural health networks are not well integrated, from either a clinical or a financial perspective. The rural physician group practice, rather than the rural hospital, may be the more appropriate foundation for network integration.

Although one of the criteria for case study site selection was involvement in collaborative activities with some degree of clinical, financial, and/or administrative integration, the case study networks proved to be still in the initial stages of becoming integrated. Most of the sites had integrated some administrative functions (e.g., strategic planning, human resource administration), but few sites had made major strides toward integrating their members from either a financial or a clinical perspective. The reasons for the lack of progress along these dimensions include diverse network membership with different levels of stability and commitment, lack of organization of the primary care medical community, organizational complexity and changing missions, inability to create a stable funding base for the network, and the nascent stage of information system development.

As networks develop and mature, an important issue will be what organization, or which individual, will provide the leadership for integration among network members. Historically, the local hospital has been viewed as the hub of health care activities in rural communities. It has, in many cases, provided the leadership, management, and resources necessary to initiate new health care endeavors. In the past decade, the central role of the local hospital has been questioned as the financial strength of these institutions has been threatened.

It is no coincidence that fewer rural hospitals are being purchased at the same time that purchases of rural medical group practices by nonlocal entities are increasing. Implicit control of the local hospital can be accomplished through explicit control of the majority of the local physicians. The importance of the medical group practice also has been enhanced by the newly emerging trend of direct contracting between physicians and employers. Although direct contracting may strain the management, information systems, and financial capabilities of some medical group practices (particularly smaller rural groups), it does highlight the potential for physicians, as organizational entities, to play an increasingly important role in rural health care systems.

If the major purpose of network activity is service integration, the rural physician group practice, rather than the hospital, may be the main coordinating element. Networks need physician involvement to accomplish either clinical or financial integration. Physicians are essential to network efforts to improve quality and control costs. Organization of the primary care medical community into a single group, independent practice association (IPA), or horizontal network can expedite integrated networking. Group practice is the predominant organizational form for rural physicians. In rural environments, group practices are usually small and are likely to be run as democracies. Typically less bureaucratic than hospitals, they have more flexible decision-making styles. However, most rural group practices do not yet have the sophisticated information systems now possessed by many rural hospitals. Rural physicians will need the support of hospitals, or they may require more time, to develop collaborative ventures through physician–hospital organizations or other arrangements that lead to increased financial and clinical integration among rural health network members.

4. Organizational structure varies substantially among integrated rural health networks. Developing an appropriate organizational structure

is a major concern to network members; however, there is no unique approach to formalizing relations among relatively independent rural entities.

Organizational structure varied considerably among the sites in the case studies. Collaborations ranged from loosely structured alliances to a web of contractual relations between public and private organizations to ownership of subsidiary corporations by a not-for-profit parent corporation.

The case studies illustrate the difficulties of developing appropriate organizational structures that formalize voluntary relations among rural health providers that wish to protect their independence and yet have a history of considerable collaboration with local and distant entities. The diverse membership of integrated rural health networks, and changes in network mission over time, suggest the need for flexible organizational structures that can accommodate the evolution of networks from one form to another.

Hospitals tend to view network organization from the perspective of their own hierarchical organizational structure. As a result, networks with hospitals as dominant participants may err on the side of using hierarchical models of control when less bureaucratic approaches might achieve the same goals and might be more useful in securing the allegiance of a diverse membership.

On the other hand, physician groups in rural locales have limited experience with alternative organizational structures. The real or potential expansion of managed care into rural environments has fostered a new wave of organizational structures—IPAs, physician–hospital organizations (PHOs), management service organizations (MSOs), and medical foundations—to promote joint activities involving physicians and other entities. Rural physician involvement in these relations can be used as a basis for network organizational structures that are less hierarchical in nature and less centralized in control.

If a primary goal of rural health networks is to promote clinical, financial, and administrative integration through joint member activities, a central issue is whether rural health providers can voluntarily integrate a set of functions and activities in response to a relevant set of incentives and/or fear of environmental turbulence. Alternately, is complete ownership of all participating entities necessary to truly integrate the activities of rural health providers? Most of the six sites had made

progress with the integration of some administrative functions (e.g., strategic planning, personnel administration). The networks that evolved into systems were more likely to have implemented financial planning and control mechanisms than to have integrated either their clinical activities or their information systems. The more evolved networks were not different from the less hierarchically structured ones in the level of clinical and administrative integration of activities. At all sites there was room for improving integrative activity in this respect.

5. External catalysts can stimulate or retard the development and growth of integrated rural health networks. The value of participation of external catalysts should be measured by their effect on network accomplishments.

The appropriate role and value of external catalysts, like state government or dominant regional providers, in network development is not entirely clear. On the one hand, external entities can expedite network development through underwriting initial capital expenses and stimulating preliminary interest in network participation. Such forces can also provide ongoing support via technical assistance and enhanced reimbursement for institutions that are network members. However, there are potential drawbacks to the use of external catalysts in motivating network development. External support for network development allows its members to avoid making difficult choices between operating joint programs or maintaining autonomy. This may impede network maturation by delaying the development of strong bonds of commitment between network members.

The use of external catalysts to help initiate and structure network development could be characterized as a top-down approach to network development, in which local entities invite external entities into the community and then abide by the rules they establish for network formation. However, the dichotomy between top-down and bottom-up approaches may be more apparent than real. There are likely to be top-down and bottom-up activities initiated at each stage in the evolution of networks. Of most relevance is not the top-down versus bottom-up issue, but rather the issue of whether the benefits of network development and operations remain in rural communities. Do community residents benefit from increased access to services, reduced costs, and enhanced quality of care? And do local health providers benefit

from the stability created by increased use of their services and/or an enhanced ability to offer services relevant to the needs of community residents? The use of external catalysts may lead to a scenario in which the amount of resources allocated to network members expands because of the cooperative efforts of a nonlocal entity.

In summary, as policy makers address issues related to rural health network development, they should bear in mind not only the costs of developing networks but also the potential and the limitations of these entities. Rural health networks are not a panacea for all of the challenges health professionals and policy makers face in assuring the accessibility and affordability of health care services in rural America. However, networks hold the potential for improving the delivery and financing of rural health care by maintaining local access to care and supporting the implementation of managed care in rural areas.

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