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# Financial Capital And Intellectual Capital In Physician Practice Management

PPM firms are growing faster than other forms of physician organization. Do they have a financial and competitive advantage?

by James C. Robinson

**PROLOGUE:** Managed care began as a reform in health care finance but is producing a revolution in health care organization, with ever new forms of ownership, governance, employment, contracting, and oversight. One newly emerging organizational entity is the physician practice management (PPM) firm. This for-profit organization links physician groups in multiple markets and provides physicians with needed capital and resources at a time of great change in the health care system. The questions that arise include: Will the creation of these new organizations consolidate the once fiercely independent cottage industry of physician practice? And are PPM firms the vehicle to put doctors back in the driver's seat of the health care delivery system?

In this paper Jamie Robinson undertakes the challenge of analyzing the role of this new economic entity in the rapidly evolving health care marketplace. Robinson, a professor of economics at the University of California, Berkeley, who received his doctorate from the same university, has devoted his research to the study of economic and market change in the organization of health care. This paper was supported by the California HealthCare Foundation and was presented at a 15 January 1998 roundtable cosponsored by the foundation and *Health Affairs*. It represents the first in a series of papers on organizational innovation in health care that will appear in future issues of *Health Affairs*, with support from the California HealthCare Foundation. Robinson last wrote in *Health Affairs* on the use and abuse of the medical loss ratio (July/August 1997).

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**ABSTRACT:** Medical groups need financial resources, yet most retain no earnings and have no reserves. Physician practice management (PPM) companies have recognized the need for investment and the scarcity of indigenous capital in the physician sector and are rushing to fill the void. Resources are being contributed by venture capitalists, bond underwriters, private investors, pharmaceutical manufacturers, health plans, hospital systems, and public equity markets. The potential contribution of PPM firms is to nurture the intellectual capital of leading physician organizations and diffuse it throughout the health care system. The risk is that short-term financial imperatives will impede necessary long-term investments.

**M**EDICAL GROUPS AND PHYSICIAN networks—the heart of the managed care system—are fragile and financially vulnerable. Practice revenues are declining as costs rise, despite determined efforts by medical groups to manage the use of resources. Many physician organizations are bleeding red ink at precisely the time when they face their greatest need for capital investments. Capital is needed to buy out senior partners, install clinical information systems, and reengineer organizational structure and governance. It is needed to consolidate practices and achieve scale economies in clinic administration, vendor contracting, and spreading of capitation risk. Most importantly, capital is needed to finance investments in the software of managed care—in the methods of utilization and quality management that allow medical groups to survive in an environment of constrained revenues and unconstrained consumer expectations.

One way physicians can respond to the changing market, with its increasing focus on the bottom line, is to form or join larger organizations, to take advantage of economies of scale and scope. Physician practice management (PPM) firms are an emerging organizational form that coordinates medical groups in multiple markets. PPMs differ from physician-hospital organizations (PHOs), which are formed by hospital systems to contract with payers on behalf of both physicians and hospitals, in several ways. First, PPMs are for-profit, not nonprofit, organizations. Second, PPMs obtain financial capital from private investors rather than from tax-exempt bonds. Third, PPMs contract with multiple hospitals rather than being committed to the inpatient and outpatient facilities of a single owner. PPM firms can use their competency in capitation finance and utilization management, which they acquired in highly competitive markets, to areas in which managed care is a newer arrival.<sup>1</sup>

The trillion-dollar U.S. health care system is awash with capital, but its investment funds are in all the wrong places. Health plans and hospitals have deep financial pockets, and some have invested billions in physician practice acquisition, but many have become

*“PPMs have the potential to nurture the intellectual capital of leading physician groups and diffuse it throughout the health care system.”*

disenchanted with the dream of integrated health care. Health maintenance organizations (HMOs) have found it difficult to market exclusive physician networks, and most have abandoned the strategy of vertical integration. Many hospitals remain committed but are struggling to achieve a return on their investments as capitation payment methods undermine the strategy of buying doctors in order to increase admissions.

Wall Street abhors a capital vacuum. Venture capitalists, investment bankers, and equity partners of every description have recognized the need for investment and the scarcity of indigenous capital in the physician sector and are rushing to fill the void. PPM firms are bringing financial resources and entrepreneurial zeal to an industry with high risks but potentially high rewards. They are purchasing prestigious medical groups, rolling up independent physician practices, and acquiring the staff clinics that the HMOs are divesting. They are diversifying into specialized market niches such as hospital emergency room staffing, prison medical services, and chronic disease management. PPMs are pursuing profits through the traditional strategy of enhancing revenues while reducing costs but are using methods adapted to the new managed care marketplace. Revenue growth under managed care requires more and better payer contracts that cover a more diversified portfolio of capitated and noncapitated services. Cost control requires expertise in utilization review, quality assurance and accreditation, network contracting, and financial risk management.

In seeking to understand the role of PPM firms in the evolving health care system, it is important to distinguish between organizations that coordinate the full spectrum of professional services and those that focus on a single specialty, disease category, or type of facility. The vast majority of privately held and publicly traded PPM firms fall into the second category. They offer potential improvements in the microeconomic efficiency and clinical quality of particular types of care but do not change the basic organizational structure of the industry. Single-specialty PPMs subcontract on a fee-for-service, episode-of-illness, or capitated basis with HMOs, preferred provider organizations (PPOs), and other health plans, with hospitals and integrated delivery systems, with multispecialty medical groups, and with self-insured employers. They do not aspire to the role of allocating the total health care budget among all of the

many providers and purposes. Multispecialty PPMs, however, do aspire to this role or to at least a major portion of it. For purposes of understanding the contours of the managed care system, therefore, multispecialty PPMs are of much greater importance than are their single-specialty counterparts.

In the short term, PPMs' key contribution is financial capital to fund the consolidation of a cottage industry. In the long term, they have the potential to nurture the intellectual capital of leading physician groups and diffuse it throughout the health care system. The turmoil of the contemporary medical market prevents a sanguine assessment of the future of physician organization and raises obvious questions as to whether short-run financial imperatives will impede long-run improvements. But for the moment it is difficult to argue with the logic of the PPM business strategy. The physician, not the insurer or the hospital, is the central figure in health care, and the creation of physician organizations requires capital. HMO and hospital capital comes with many strings tied to ancillary objectives, such as insurance market share and use of hospital beds. Public debt and equity markets are the most efficient source of capital. Capital markets finance HMOs, hospital systems, nursing home chains, pharmaceutical manufacturers, software startups, hotel networks, banks, steel mills, and fashion designers. Now they are interested in financing physicians.<sup>2</sup>

### The Need For Capital

Physician organizations need capital for three purposes. Many medical groups have unfunded liabilities to senior partners and local hospitals that must be redeemed; most also need improvements in information systems, clinic facilities, and administrative infrastructure. Second, physician systems seeking a regional or national presence require funds to acquire individual practices and merge in existing medical groups. Finally, all physician organizations require seed money to develop new revenue sources and to reduce costs through clinical and administrative efficiencies. These three capital needs may be conceptualized as bridge loans, growth funds, and operational investments.

■ **Unfunded liabilities.** The immediate financial needs of medical groups stem from the weak governance structure of the traditional physician organization. Most medical groups have been structured as partnerships or professional corporations that pay out all surplus funds to physician shareholders at the end of each year to avoid double (corporate and personal) taxation. Before managed care, physician organizations had only modest need for capital. Now they need professional management, cash reserves, information sys-

tems to monitor utilization patterns, and claims-processing capabilities. In the past banks made short-term loans to individual physicians, often on no more security than a medical license, but now they are cautious. Local hospitals were willing to make unsecured loans to medical groups, in exchange for patient admissions, but now they want tighter control. Multispecialty medical groups often were owned in unequal amounts by individual physicians. In some cases, these physicians were bought out when medical groups converted to a nonprofit medical foundation, but in most cases, they expect to get paid through buy-ins levied on new physician members. Many medical groups thus have entered the era of managed care with no retained earnings and with significant unfunded liabilities.

■ **Capital to finance growth.** Managed care offers unprecedented economics of scale and scope. But growth requires capital to purchase individual physician practices and physician organizations such as multispecialty clinics and independent practice associations (IPAs). Consolidation into larger systems can guarantee physicians' access to payer contracts, since plans cannot market insurance outside the consolidated physician system. Individual physicians are attracted to established groups and IPAs precisely to gain access to contracts. PPMs such as MedPartners and FPA have sought statewide and ultimately national contracts with major health plans, thereby ensuring contractual coverage for all affiliated physicians and physician organizations. FPA, for example, builds regional networks of primary care practices that remain owned by the physicians but relate with the health plans through national FPA contracts. It has multiyear national or regional contracts with Foundation Health Systems, PacifiCare, Aetna U.S. Healthcare, NYLCare, Oxford, WellPoint, Prudential, and other plans.<sup>3</sup>

As managed care penetration deepens and competition intensifies, however, access to HMO contracts becomes less important for physician organizations. Pressures from employers and consumers force health plans to broaden their networks to include most primary care physicians and medical groups. In this context, the consolidation of multiple medical groups and physician practices through PPMs enhances revenues through better, not more, health plan contracts. For PPMs and privately held physician systems, especially those with a strong base on the West Coast such as MedPartners, FPA, UniMed, and HealthCare Partners, this involves broadening the range of capitated services from primary care to specialty physician services, inpatient hospital services, outpatient hospital services, and ancillary services such as home health, subacute care, and pharmacy benefits.<sup>4</sup> Further revenue growth is to be



found in related but less traditional services. Some of these market niches are already being pursued by single-specialty PPM firms, which now are competing directly with multispecialty firms and in some cases are merging or being acquired. One major area of departure in physician-group activity is the contractual provision of physician services to hospitals, such as staffing emergency rooms, neonatology units, and radiology services. Several independent PPMs operate in this arena, and the multispecialty firms have entered through MedPartners' acquisition of PPSI Team Health and InPhyNet and through FPA's acquisition of Sterling Healthcare.

■ **Investing in future operations.** The third and most important use of capital is to improve the breadth of services that physician organizations provide and the efficiency and quality of the manner in which they are provided. Many discussions of capital investment in medical groups focus on computerized information systems, since these are discrete purchases of costly physical equipment. However, information systems are only the visible tip of an iceberg of investments needed. The invisible bulk of investments is devoted to buying or building competencies in financial risk assessment, network contracting, utilization monitoring, and quality accreditation. Rates of hospital utilization among medical groups with the greatest capitation experience are half those experienced in physician practices and multispecialty groups paid through fee-for-service.<sup>5</sup> Efficiencies in practice styles require an organizational infrastructure that bridges the traditional chasm between clinical and administrative services.<sup>6</sup> This infrastructure comprises medical directors, utilization management committees, utilization review nurses, and case managers for chronically ill patients.<sup>7</sup>

### Sources Of Capital

A variety of capital alternatives are available to physician organizations, of which the publicly traded PPM firm is just one. Each financial instrument has its own strings attached, since all capital partners expect to be repaid. Indeed, the expected rate of return must be the same for all financial instruments, after adjusting for the differing levels of risk, or investment funds will migrate to those with higher returns. To the extent that repayment schedules can be specified clearly and enforced through the courts, as in the case of bank loans and corporate bonds, lenders need not take a direct role in ownership and management of the firm. Where repayment is flexible and subject to managerial discretion, as in the case of direct private investment and publicly traded equity, lenders will require some degree of ownership and control. The mix of financial instruments thus has important implications for the ownership structure

and organizational culture of the physician system.<sup>8</sup>

■ **Retained earnings.** The traditional source of capital for expansion-oriented medical groups was retained earnings supplemented by bank loans. In the fee-for-service era few medical groups retained earnings; thus, few grew to any significant scale. Growth-oriented groups converted to nonprofit status to gain access to tax-exempt bond markets. Many of the most prestigious multispecialty clinics, such as Mayo, Palo Alto, and Scripps, have been structured in this manner. In the context of capitation payment, however, well-managed medical groups can retain significant earnings. Under capitation, reductions in costs by efficient medical practice do not flow directly back to the health plans but are retained by the medical group. The most prominent physician organizations in southern California, including HealthCare Partners Medical Group and Mullikin Medical Centers, grew rapidly during the 1980s using retained earnings, supplemented by personal investments from physicians and bridge loans from banks.<sup>9</sup>

Retained earnings as a capital source have obvious advantages and are a major source of investment capital in publicly traded corporations outside the health care sector. Indigenous capital can be patient, focusing on long-term investments without undue concern for quarterly profit-and-loss accounting. It also preserves ownership and control in the hands of the founders, which, for medical groups, means that senior physicians retain control. The disadvantage of retained earnings, from a governance perspective, is the lack of outside accountability for the manner in which they are invested. Management could readily squander its capital on pet projects that are too safe and yield low returns or too speculative and yield no returns. The abuse of retained earnings is particularly problematic in industries with declining consumer demand, such as railroads, tobacco, and hospital services. Firms in these industries often invest surplus earnings in unrelated activities in which they have little expertise and little hope of achieving competitive returns. Some observers view the unmonitored investment of these “free cash flows” as the source of conglomerate hypertrophy in American manufacturing during the 1960s and 1970s, which led to the leveraged buyouts and hostile takeover wave of the 1980s.<sup>10</sup> Analogously, the enthusiasm among hospital management to purchase medical groups and construct “integrated delivery systems” sometimes appears driven more by the need to park free cash flows than by a hardheaded analysis of potential operating synergies.

■ **Bank loans and corporate bonds.** Bank loans and corporate bonds are similar to retained earnings in leaving medical group ownership and management intact but overcome some of the account-

ability problems of retained earnings and are available in much greater quantity. Banks and corporate underwriters carefully monitor the borrower's demand for capital, project choice, and return on investment. Borrowers are subject to strict and inflexible repayment schedules that can be enforced to the lender's benefit through the courts. In the case of failure to repay or reschedule debt, the borrower can be forced into bankruptcy, with bondholders being first in line for liquidated assets. The inflexibility of debt limits managerial discretion in the use of funds and thereby impedes unremunerative investments of free cash flows. For this reason, debt (and the leveraged buyout) has been hailed by some observers as a positive mechanism for corporate governance. The use of bank loans and debt to finance organizational growth also has the advantage of leaving any above-market profit gains in the hands of the organization. The main limitation on debt financing for growth-oriented physician organizations stems from the asymmetrical nature of the risks: Extraordinary profits from investment success accrue to the borrower, but extraordinary losses from investment failure may be borne by the lender. In general, lenders impose higher interest rates on borrowers as the quantity of debt increases to compensate themselves for absorbing this incremental risk.

■ **Insurance entities.** The insufficiency of retained earnings and the inflexibility of debt financing have driven many medical groups to consider capital sources that offer flexibility in repayment schedules in exchange for partial or total ownership. One obvious possibility historically has been sale to an insurance entity. Many prominent carriers, including Prudential, CIGNA, Aetna, Foundation, Humana, and various Blue Cross plans, have actively pursued acquisitions of medical groups. Almost all of these efforts have failed, and most carriers have divested their staff-model products, leaving vertically integrated health care to the nonprofit systems, whose focus is on the delivery rather than the financing of care. Much of the growth in multispecialty PPMs has derived from the acquisition of divested physician groups. MedPartners, for example, embodies the former staff clinics of Maxicare, CIGNA (Los Angeles), FHP, Aetna U.S. Healthcare, Prudential (Memphis, Houston), and Blue Cross-Blue Shield of Massachusetts. FPA has acquired the clinics and IPA networks of Foundation Health, PCA, Prudential (Atlanta), and a joint venture of Oxford and WellPoint (New York).

■ **Hospitals.** The other obvious capital source and buyer for medical groups has been the hospital or hospital system.<sup>11</sup> Many nonprofit hospitals are using their retained earnings and tax-exempt debt to purchase medical groups and physician practices. These integrated systems seek to enhance revenues through bargaining leverage with

health plans and to control costs by coordinating inpatient and outpatient services. The best hospital systems offer strong market penetration and reputation, long-term commitment to health care as a mission, and a changing corporate culture that values physician- and patient-centered care rather than institution-centered services. Hospital systems face the challenge of imposing cost controls on their affiliated medical groups while retaining the loyalty and productivity of individual physicians in an environment of declining revenues. This same challenge faces PPMs and independent medical groups but is complicated by the cultural differences and, in some cases, animosities that divide doctors and hospitals.

■ **Public and private capital partners.** Faced with a pullback of staff-model HMOs and uncertainties concerning hospital ownership, growth-oriented medical groups can choose among private investors and public (stock market) ownership as their capital partners. The most prominent PPMs are publicly traded firms with diffused ownership and intense oversight by investment bankers, stockbrokers, and financial pundits of all types. The salient advantage of public equity markets is their willingness to invest large sums without guaranteed or scheduled repayment, in exchange for a share in ownership and hence in any upside gains in the value of the enterprise. Publicly traded PPMs can acquire new medical groups and physician practices in exchange for their own stock, which serves as a private form of currency. The typical medical group acquisition is financed through a mix of cash, promissory notes, and this stock. Mergers between and acquisitions of publicly traded PPMs can be achieved cash-free through the pooling of assets and conversion of the target's stock into shares in the larger entity.

The value of the PPM's equity, and hence the purchasing power of its currency, is determined by Wall Street's evaluation of future prospects. PPMs are considered growth firms and do not pay dividends to stockholders. Investors hence can recoup their investments and profits only when share values increase. Most PPM prices embody market expectations for growth in earnings per share, which result from increases in patient revenues and from mergers and acquisitions. If PPM earnings are below target, the expectations are revised and the prices immediately drop. Conversely, if earnings meet or exceed expectations, investor confidence is retained and prices hold stable or rise. The volatility of stock prices has introduced a volatility into the birth and death rates of publicly traded physician organizations. PPMs faced with a declining stock price enter a vicious cycle from which it is difficult to escape. Low stock prices make new acquisitions expensive, but new acquisitions are necessary to raise earnings per share and thereby restore stock

prices. The PPM industry has undergone extensive consolidation as firms with low prices are absorbed into their more successful competitors. MedPartners acquired several prominent competitors, including Pacific Physician Services, Caremark International, InPhyNet, and Talbert Medical Management. It came close to being acquired by PhyCor.<sup>12</sup>

■ **Direct investors.** The final financing option for physician organizations is direct investment by large outside entities, including venture capitalists, information technology firms, or pharmaceutical manufacturers. In principle, private direct investors are the most patient of capital partners, since they impose no fixed repayment schedules and cannot exit as easily as can shareholders of publicly traded firms. Therefore, they demand direct participation in governance, such as seats on the board of directors. Venture capitalists usually achieve their return on investment through an initial public offering (IPO) or through sale to an established PPM. Their strategy is to focus management's attention on developing a track record of earnings growth to support an IPO or attractive sale within a few years. They receive no returns from some of their projects, since all are speculative, and hence seek high returns from their successes.

Private investors from related industries, such as information technology or pharmaceutical manufacturing, may not be focused on the medical group as a profitable investment in the direct sense but rather on its potential as a site for developing and testing new products and processes. Medical groups have the physician membership, patient volume, and administrative infrastructure necessary for the development of electronic medical records and other information technologies, disease management protocols, clinical trials, and innovative uses of evolving clinical approaches. Cooperative initiatives between these entities and physician organizations may use partial ownership or purely contractual affiliations. Many industries outside of health care are characterized by overlapping networks of firms with partial ownership stakes, joint ventures, strategic alliances, and complex contractual relationships.<sup>13</sup> This "virtual integration" links suppliers, assemblers, and distributors along the vertical chain of production. It also links competitors into cooperative endeavors across the horizontal mix of products and services within an industry. The network form of organization has proven itself conducive to innovation and performance in high-technology industries, but its future in physician services and the larger health care industry is as yet unclear.<sup>14</sup>

### The Case Of PhyCor

The experience of PhyCor, the first and still the most prominent

among multispecialty PPM firms, highlights the potential and the challenges facing physician practice management.<sup>15</sup> PhyCor launched the PPM industry in 1988 with the acquisition of its first multispecialty medical group, followed by other affiliations and an initial public stock offering in 1992. In its first decade the company has pursued affiliation with locally dominant multispecialty clinics in midsize markets, growth through recruitment of new physicians and patients, and the formation of “wraparound” IPAs that link clinic and independent physicians for capitation contracting and utilization management. The pace of growth has picked up; as of January 1998 PhyCor was affiliated with fifty-five multispecialty medical groups that employed 3,860 physicians in 496 office sites and contracted with 19,000 physicians through IPAs in thirty-one markets. It held managed care contracts for 1.1 million patients under capitation and 1.5 million not under capitation, and offered services on a noncontracted basis for large numbers of Medicare and commercially insured fee-for-service patients. The company operated in sixty-eight markets and twenty-eight states with diverse demographics and rates of managed care penetration, with the largest numbers of clinics located in Florida, Virginia, and Texas.<sup>16</sup>

PhyCor's core strategy has been to purchase the tangible assets of multispecialty clinics, including facilities and equipment but excluding real estate, and then establish local subsidiaries to manage these in cooperation with the affiliated medical groups.<sup>17</sup> Each medical group remains owned by member physicians and retains its own board of directors and executive leadership. Each clinic is governed by a joint policy board made up of three PhyCor management staff and three physicians chosen by the medical group. PhyCor is responsible for establishing capital budgets, managing daily clinic operations, employing nonphysician staff, purchasing supplies and information systems, and generally overseeing the business aspects of the enterprise. The medical group is responsible for decisions concerning physician employment, performance, and payment; for quality and utilization management; and generally for the clinical aspects of the enterprise. The joint policy board is responsible for establishing growth objectives in patient services and revenues, prioritizing capital expenditures, contracting with health plans, and generally overseeing strategic aspects of the enterprise.

The key financial dimensions of the relation between the PPM and its affiliated physicians are the initial clinic acquisition and the subsequent management services agreement. Each clinic is valued based on five-year projections of revenues and expenses, adjusted for growth opportunities, discounted to the present, and net of outstanding liabilities. Physician shareholders are paid a combina-

tion of cash, PhyCor stock, and notes that have a face value in cash but can be converted to stock at specified dates and trigger prices. The physicians' choice of payment mix depends in large part on their personal tax considerations. PhyCor and the medical group sign an exclusive thirty-to-forty-year management services agreement that specifies the allocation of revenues after payment of clinic expenses. The distribution pool is defined as collected clinic revenues (fee-for-service, capitation, other) minus expenditures for clinic operations (excluding physician compensation); this pool typically is divided as 85 percent for the medical group and 15 percent for PhyCor. The higher the initial purchase price demanded by the medical group, the lower the subsequent split of the distribution pool it receives. The trade-off between initial purchase price and subsequent revenue split is determined by the internal politics of the medical group. Senior physicians with large ownership shares and a short time before retirement favor a higher price and lower revenue split. Conversely, junior physicians favor a lower price and higher revenue split. After acquisition, PhyCor continues to invest in upgrading facilities, clinical equipment, and information systems; the addition of satellite sites; physician recruitment; subsidies for new physicians until they fill their practices; and clinic expansion through IPA formation and acquisition of nearby practices.

■ **Nalle Clinic.** A prominent example among PhyCor-affiliated medical groups is the Nalle Clinic in Charlotte, North Carolina.<sup>18</sup> Founded in 1921, Nalle was for many years a successful fee-for-service clinic drawing referrals from physicians throughout the Charlotte area. As the supply of specialists grew, however, referrals declined, and the clinic was forced to begin recruiting its own primary care physicians. The specialists in the clinic balked at the heavy personal investments required and began to rely heavily on bank loans to finance primary care recruitment and satellite facilities. Clinic governance was on the traditional fraternity model, with every decision up for vote and revote by the entire partnership, each specialty looking to its clinical and economic interests rather than to the success of the larger enterprise.<sup>19</sup> Nalle was an early provider of managed care in the Charlotte area, having signed an exclusive contract with the Prudential HMO in 1985. The move into primary care recruitment and managed care contracting was both a cause and a consequence of the departure of some high-revenue specialists, who could earn more in single-specialty practice.

The Nalle Clinic affiliated with PhyCor in 1990 after major internal debates over the future of the medical group. The clinic was in serious need of capital to upgrade facilities and continue expansion but had reached the limit of its local bank credit line. It rejected

purchase offers from local hospital systems and Prudential. It began acquiring smaller clinics that held non-Prudential HMO contracts, which led Prudential to drop its contract and pull out 34,000 capitated patients in 1992. PhyCor capital helped Nalle to weather that storm and retrieve 30,000 of the patients by encouraging them to switch health plans. Nalle now serves 64,000 HMO patients from Blue Cross-Blue Shield, CIGNA, Kaiser, Maxicare, Principal, and Aetna but still has no contract with Prudential. These HMO patients account for approximately 23 percent of clinic revenues; the remainder come from PPOs and commercial insurance (54 percent), Medicare fee-for-service (16 percent), and small volumes of Medicaid and self-pay patients. After 1992 Prudential established a staff-model clinic, which steadily lost money and recently was divested to FPA.

The most obvious effects of the PhyCor affiliation have been on the scale and scope of physician services at Nalle. It has grown from fifty-six physicians (10 percent in primary care) to sixty primary care and seventy specialty physicians in a new central facility and nine satellite offices. More subtle but more important have been the resources made available to the administrative and clinical leadership through linkages with PhyCor clinics in other markets. Rather than relying on outside consultants unfamiliar with the medical group business and outside data from professional associations, most of which are collected using noncomparable methods, the local administration can benchmark itself against standards of staffing, supplies, equipment, and space for each specialty department and each satellite office derived from the universe of PhyCor clinics. The Nalle medical directors and specialty department chairs can work with physicians from other PhyCor clinics to compare practice patterns, evaluate them against standards and protocols generated by government and professional entities, and establish best practices as internal goals. Most elusive to quantify but most important in the long term are the changes in governance within the medical group. The clarification of roles between the PPM, the medical group, and the joint policy board has helped to create a culture in which the doctors begin to feel committed to an organization rather than simply sharing space and cross-referrals in a clinical condominium.

■ **Economies of scale.** A national corporation such as PhyCor potentially enjoys three important economies of scale, compared with small organizations of physicians. The most obvious advantage is in access to and cost of capital, when scale and risk diversification lower bank interest rates and create access to more flexible equity and debt financing. Centralized purchasing can reduce supply costs even when clinics are dispersed geographically and hence not subject to volume discounts for locally produced inputs. Large physician



organizations may enjoy greater bargaining leverage with large insurer organizations; this advantage is the most speculative, since managed care contracting dynamics vary widely across markets.

*Cost of capital.* A fundamental business principle at PhyCor is that the return on each clinic investment must exceed the cost of the capital used in the transaction. This produces a dual focus on increasing return on investments through improved clinic performance and on lowering the cost of capital through a portfolio of financial instruments. PhyCor has developed a \$400 million credit line through a consortium of twenty-five financial institutions at significantly lower interest rates than would be available to any of its clinics individually. Its most important source of long-term capital, however, is through the public equity markets, which have supported the growth of the firm with one of the highest price-to-earnings ratios in the industry. As a growth company, PhyCor pays no stock dividends and reinvests all earnings into expansion; investors gain a return on their investments when stock prices appreciate. The company issues no standard corporate debt, since leverage imposes fixed repayment schedules that impair the company's flexibility in the face of expansion opportunities. It does, however, issue debt that converts into equity at trigger dates and prices. The capital markets prefer convertible over standard bonds for a growth company such as PhyCor and hence are willing to support that debt at a low interest rate. The availability of bank credit and debt offerings permits PhyCor to time secondary stock offerings for periods when the share price is high.

The cost of capital is important not only to PhyCor as a corporate entity but also to individual clinics that need investment funds for replacement and expansion of facilities, clinical equipment, and further market penetration. PhyCor serves as an internal capital market for its affiliated clinics, reviewing and negotiating capital requests from each site and charging affiliates for capital invested at the rates achieved in the larger capital market. Cost of capital is considered as a clinic expense and hence is deducted from clinic revenues before the distribution pool is calculated.

*Purchasing.* Each medical group operates in its own geographic market and must pay local rates for labor and locally produced supplies. Affiliation with other medical groups and a national corporate entity brings significant volume discounts, however, for administrative and clinical supplies purchased through national contracts. The potentially most significant savings, as capitation contracting spreads, may be in the area of pharmaceutical supplies, which PhyCor now pursues through its preferred vendor relationship with the McKesson pharmacy benefits management (PBM) firm and through direct contracting with manufacturers.

*Bargaining leverage.* The third form of scale economy potentially available to large physician organizations stems from bargaining relationships with HMOs and other managed care plans. Some PPMs, such as MedPartners and FPA, have aggressively pursued multiyear, multimarket contracts with national plans. It is unclear, however, the extent to which a large presence by a PPM in one geographic market increases its bargaining power in a distinct market where it has only a small presence. Standard economic reasoning suggests that bargaining power cannot be leveraged across distinct markets and that any increase in rates achieved in the weakly penetrated market would be offset by commensurate decreases in rates in the highly penetrated market. However, multimarket contracts can reduce the transactions costs of contract drafting, negotiation, and enforcement, even when each agreement ultimately is priced for a distinct market. PhyCor does not sign national managed care contracts at this time; rather, it delegates contracting to joint policy boards and IPAs at the local market level. However, it is developing contract templates with national plans such as Humana and United that can be adapted to local circumstances.

■ **Economies of scope.** Health care is a local business. The geographic dispersion of medical clinics and IPAs limits the potential advantages of corporate affiliation from economies of scale but dramatically increases the potential advantages from economies of scope. The heterogeneity of physician practice styles, clinical cultures, governance styles, managed care penetration, and population demographics across states and localities hampers efforts at standardization but offers important possibilities for comparison, benchmarking, and organizational learning. Professional associations such as the American Medical Group Association (AMGA) offer analogous possibilities to medical groups but lack leverage over member organizations to ensure data quality, definitional consistency, and follow-up interpretation of observed discrepancies. Moreover, as the physician services market becomes increasingly competitive, medical groups and IPAs may become more reluctant to divulge their best practices. The greatest potential advantage of PPM firms that span multiple markets derives precisely from their ability to combine the advantages of diversity, which stem from operating in multiple local markets, with the advantages of consistency, which stem from integration into an organization with one mission, one information system, and one bottom line.

The scarcest resource in American health care is management and physician leadership that understand how to balance the competing needs of the patient, for the best care regardless of cost, and of society, for the best care at an affordable cost. Traditional health

care management has been insensitive to the professional goals and clinical culture of the physician community and has done a poor job of what it refers to as “herding cats.” Conversely, traditional physician leadership has been insensitive to the budgetary concerns of purchasers and has done a poor job of building solvent organizations with strong administrative structures. Regional and national physician organizations have the opportunity to scour their clinics for local leaders, promote them to larger spans of authority, and use them as a source of new ideas and methods applicable across the nation. The successful health care organizations of the future will be those that possess the data and capabilities to recognize innovations in administrative and clinical processes, analyze their components and causal mechanisms, and then diffuse them.

The practice of medicine no longer approximates the nostalgic imagery of the black bag-toting solo practitioner. Medical groups are labor- and capital-intensive organizations that require almost every conceivable form of facility, machine, and personnel. They require constant evaluation of performance against benchmarks and the ability to distinguish discrepancies that result from measurement errors from those that result from remediable performance deficiencies. PhyCor’s administrative benchmarking and support has permitted the company to achieve a 10 percent annual rate of same-store growth in revenues and earnings in addition to its 30 percent annual growth from acquisitions of new clinics and IPAs.

The greatest potential advantages of national scope lie in improved comparison, understanding, and control of variation in clinical practice styles. The geographic variations of modern medicine beget contemporary frustration but also future optimism, since they offer the potential for improvements in both quality and efficiency of care once data-based methods of analysis are set in place. Governmental and professional entities are pursuing condition- and procedure-specific protocols and guidelines yet often encounter difficulty in translating their recommendations into grass-roots practice. National physician organizations such as PhyCor can contribute to this larger effort by drawing on their diverse physician constituencies to form internal committees and collaborate with external organizations. PhyCor is developing care management committees for such conditions as lower back pain, diabetes, heart disease, and asthma. These committees of physicians review the available scientific literature, cooperate with outside panels, and adapt protocols and guidelines for local contexts. The company’s clinical intranet information system disseminates average and best-practice benchmarks for specific conditions throughout the clinic and IPA network. PhyCor has found that the difficult process of changing phy-

sician behavior requires valid data and a local champion who will defend the benchmarks and guidelines with physician colleagues.

■ **Challenges in a changing environment.** PhyCor's success to date has been due in no small part to the consistency of its focus on affiliation with large multispecialty clinics that can coordinate physicians and anchor IPAs in their local markets. Fewer and fewer clinics remain as potential affiliates, however, since most major groups by now have linked with a larger hospital or corporate entity. Further growth requires a shift in focus toward merger with other PPMs, creation of IPAs in markets without major clinics, and/or partnerships with hospital-based delivery systems.

In October 1997 PhyCor stunned the medical and investor communities by announcing that it was acquiring MedPartners, the nation's largest PPM and a company with three times PhyCor's annual revenues. MedPartners has a much stronger focus on managed care, with 2.1 million patients under capitation. MedPartners has focused its activities on the largest medical markets, including Los Angeles, Chicago, and Miami, using a combination of medical groups and IPAs. It also has pursued a much broader product mix, including pharmacy benefit management, specialty disease management, and hospital services contracting. The combined company would have grossed \$8.4 billion annually, employed 7,165 clinic physicians, contracted with 25,000 IPA physicians, and served 3.3 million capitated patients and a large number of fee-for-service patients in forty-four states.<sup>20</sup> Investors reacted to the announcement with skepticism, driving down PhyCor's stock price by 20 percent. MedPartners had acquired many of its clinics and IPAs from HMOs, a strategy that PhyCor had avoided under the principle that insurer-owned physician entities were mismanaged and difficult to turn around. The corporate cultures were quite different, with MedPartners pursuing an aggressive growth strategy focused on capitated contracts in large metropolitan markets and PhyCor focused on multispecialty clinics in midsize markets. In January 1998 PhyCor abandoned its acquisition offer. The withdrawal of PhyCor and MedPartners' subsequent release on information on earnings shortfalls caused MedPartners' stock price to plummet by more than 50 percent.

PhyCor is buying and building IPAs through its North American Medical Management (NAMM) subsidiary as a means of adding physicians and patient referrals to its core clinics and to extend its managed care contracting for independent physicians. Approximately half of the 1.1 million capitated patients served by PhyCor already come through its IPAs, and there is potential for continued strong growth as health plans outsource the development and management of physician networks. Only 15 percent of clinic revenues

but 100 percent of IPA revenues come from capitation; 38 percent of PhyCor's total (clinic and IPA) revenues are capitated. In areas where PhyCor maintains both a clinic and an IPA, the clinic typically is brought under the IPA umbrella for contracting and such managed care functions as utilization management. In Charlotte, for example, PhyCor's HMO contracts are held by the Piedmont Physicians Alliance IPA rather than directly by the Nalle Clinic. The IPAs focus exclusively on capitation contracting, in contrast to the dominant role of fee-for-service in the clinic. The other area of potentially significant growth lies in relationships with hospital systems that have acquired medical groups and IPAs but are losing money on their operations. PhyCor is exploring joint-venture possibilities under which the PPM and each hospital system would co-own a local subsidiary to manage the owned physician practices, establish and operate IPAs, and perform managed care functions such as HMO contracting and utilization management. A possible prototype is PhyCor's joint venture with the New York and Presbyterian Hospital Care Network (Columbia-Presbyterian), which is establishing IPAs at nineteen hospitals affiliated with the system in New York City, northern New Jersey, and southern Connecticut.

### Intellectual Capital

PPM firms are growing at a much faster rate than those of alternative forms of physician organization, because of their access to financial capital. Although an important short-term factor, access to financial capital is not a sustainable source of competitive advantage for any one PPM firm. In the contemporary economy, financial capital is the ultimate commodity, with its price determined by each borrower's risk profile. Capital markets are immense, well informed, and quick to exploit even the smallest difference in expected rates of return among potential investments. By definition, no asset that is available to all firms can be a source of competitive advantage for any one.<sup>21</sup> Rather, competitive advantage must be derived from assets that are unique and difficult to replicate. These may include choice business locations, patented formulas, complex production technologies, and established brand names. Health care offers few opportunities for unique physical assets. Long-term advantage will derive from difficult-to-replicate innovations in three areas: organizational culture and governance, clinical processes, and brand-name recognition. The key challenge for PPMs will be to translate their current financial assets into these future intellectual assets.

■ **Culture and governance.** Medical groups and individual physicians are turning to PPM firms because of their historically weak governance structures, which manifest themselves in unfunded li-

abilities, inadequate retained earnings, slow and unfocused decision making, and inability to adjust physician employment and earnings to market realities. PPMs now are investing heavily in acquisitions and infrastructure but ultimately have to increase clinic profitability to pay back their investors. Increased earnings require fundamental changes in governance and organizational culture, given the failure of many physician organizations to achieve adequate financial results under managed care. This restructuring is inherently a delicate and difficult task. On the one hand, it is important to centralize control to speed up decision making, introduce new information systems, monitor resource expenditures, manage utilization patterns, and document quality for purchasers and regulators. On the other hand, it is essential to maintain the commitment and enthusiasm of rank-and-file physicians, who value autonomy, personal income, and the pursuit of professional goals. PPMs must be able to attract, train, and promote a new generation of physician leaders who can help to reconcile the conflicting expectations of physicians, patients, purchasers, regulators, and investors. The principal risk is that corporate affiliation and consolidation might undermine physician productivity, entrepreneurship, and commitment, creating in its stead the civil-service culture that undermined performance in many government-owned, hospital-owned, and HMO-owned medical groups. Successful firms will be those that can balance individual autonomy and group coordination, participatory governance and efficient decision making, consumer service and professional standards, and cost efficiencies and clinical improvements.

■ **Clinical processes.** The term *physician practice management* may have fit the early phase of this industry, when it focused on improving the economic efficiency of fee-for-service clinics, but it no longer describes the activities of organizations seeking to consolidate groups and IPAs and to improve performance under managed care. There is no longer a clear distinction between the business and the clinical dimensions of medicine in an environment where physician systems receive fixed capitation revenues and are responsible for costs and quality within that budget. The industry has shifted from practice management to medical management. All physician organizations are under pressure from payers, purchasers, and regulators for continual analysis, innovation, and improvement in the process of care. PPMs that aggregate physicians into groups and consolidate groups into systems can serve as sources of innovation and diffusion in best clinical practices, comparing performance across geographic sites and organizational settings. The potential in physician organization for continuous quality improvement contrasts with the trickle-down approach to quality in the fee-for-service era, when

innovations were concentrated in academic medical centers with few links to community-based physicians.<sup>22</sup> The risk is that continued pressure from public and private purchasers to reduce costs, translated into low payment rates from health plans, will frustrate investors' expectations for short-term returns and thereby reduce PPMs' investments in clinical improvements. Some innovations that improve quality also reduce costs. Other innovations, however, improve quality while increasing costs. The latter will only be pursued to the extent that purchasers and consumers recognize their value and are willing to pay more to get them.<sup>23</sup>

■ **Consumer loyalty.** Aggregation of physicians into large medical groups potentially undermines the traditional source of consumer loyalty, based around the individual physician/patient relationship. In the future, consumers increasingly will choose first among competing medical groups and subsequently among individual practitioners. Reputations for quality and efficiency will adhere to physician organizations as well as to individual physicians. The current phase of consolidation makes brand-name recognition a problem. Medical groups sometimes change names with each new affiliation, with the greatest difficulties experienced in the most rapidly consolidating markets. Despite the inevitable difficulties, it will be important for leading physician systems to establish local brand names and consumer loyalty. Under pressure from purchasers and patients, health plans are moving rapidly from narrow to broad provider networks and from constraining to facilitating consumer choice among physicians. Physician organizations without a distinctive reputation must pursue a low-cost, low-price strategy. Firms able to achieve above-average revenues will be those that succeed at differentiating themselves on convenience, service, and the measurable aspects of quality. Financial capital can facilitate broad and deep market penetration. Ultimately, however, only the accumulation and investment of intellectual capital will improve physician performance, ensure payer contracts, and retain consumer loyalty in the competitive health care system.

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#### NOTES

1. J.C. Robinson, "Consolidation of Medical Groups into Physician Practice Management Organizations," *Journal of the American Medical Association* (14 January 1998): 144-149.
2. L.R. Burns and J.C. Robinson, "Physician Practice Management Companies: Implications for Hospital-Based Integrated Delivery Systems," *Frontiers of Health Services Management* 14, no. 2 (1997): 3-36; J.C. Robinson, "Physician-Hospital

- Integration and the Economic Theory of the Firm," *Medical Care Research and Review* 54, no. 1 (1997): 3–24; B.G. O'Neil and T.B. Manderfeld, *Physician Practice Management: Searching for Value* (Minneapolis: Piper Jaffray, August 1997); L.C. Marsh and A. Feinstein, *Of Minds and Men: Changing Behavior in the New Physician Enterprise* (New York: Salomon Brothers, March 1997); American Medical Association, *Physician Practice Management Companies: What You Need to Know* (Chicago: AMA, 1997); and T.E. Hodapp and J. Rex, *Physician Practice Management Outlook, 1998–2002* (San Francisco: BancAmerica Robertson Stephens, December 1997).
3. Press releases from FPA Medical Management: "FPA Medical Management and Foundation Health Systems Enter into Letter of Intent for National HMO Contract" (1 May 1997); "FPA Medical Management Signs Agreement for National Contracts with PacifiCare Health Systems" (21 May 1997); "Aetna U.S. Healthcare and FPA Medical Management Enter into a Long-Term Provider Relationship" (23 June 1997); "FPA Medical Management and Health Partners Announce Merger Agreement" (including contractual agreements with Oxford and WellPoint; 2 July 1997); "FPA Medical Management Signs New Agreements with Healthsource" (9 July 1997); "FPA Medical Management Announces Agreements with Prudential Healthcare and Carolina Health Care Group" (5 August 1997); and "FPA Medical Management Announces Agreement with NYLCare Plans of New Jersey" (29 September 1997).
  4. Robinson, "Consolidation of Medical Groups;" Marsh and Feinstein, *Of Minds and Men*; G. Moerschel and P. McGuinnis, *MedPartners* (Chicago: Chicago Dearborn Company, December 1996); MedPartners, Inc., *Prospectus for Common Stock* (Public Equity Offering, New York Stock Exchange, October 1996); E.E. Kroll and K.B. Murphy, *FPA Medical Management* (New York: Furman Selz, November 1996); G.I. Wilson and C.S. Russ, *FPA Medical Management* (New York: Lehman Brothers, November 1996); E. Wiberg and S. Ameer, *FPA Medical Management* (New York: UBS Securities, July 1996); B.S. Bader, "Case Study: HealthCare Partners Medical Group," *Health System Leader* 1, no. 6 (1994): 14–22; and J.C. Robinson and L.P. Casalino, "Growth of Medical Groups Paid through Capitation in California," *New England Journal of Medicine* (21 December 1995): 1684–1687.
  5. Robinson and Casalino, "Growth of Medical Groups;" and Hoechst Marion Roussel, *Managed Care Digest Series, 1997: HMO-PPO/Medicare-Medicaid Digest* (Kansas City: Hoechst Marion Roussel, 1997).
  6. D.M. Berwick, "Payment by Capitation and the Quality of Care," *New England Journal of Medicine* 335, no. 16 (1996): 1227–1231.
  7. E.A. Kerr et al., "Managed Care and Capitation in California: How Do Physicians at Financial Risk Control Their Own Utilization?" *Annals of Internal Medicine* (1 October 1995): 500–504.
  8. See, for example, O.E. Williamson, "Corporate Finance and Corporate Governance," *Journal of Finance* 43, no. 3 (1988): 567–591; M.C. Jensen, "Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers," *American Economic Review* 76, no. 2 (1986): 323–329; E.F. Fama, "Agency Problems and the Theory of the Firm," *Journal of Political Economy* 88, no. 2 (1980): 288–307; and B.R. Holmstrom and J. Tirole, "The Theory of the Firm," *Handbook of Industrial Organization*, vol. 1 (Amsterdam: Elsevier, 1989), 61–133.
  9. L.P. Casalino, "Medical Groups and the Transition to Managed Care in California" (Doctoral dissertation, University of California, Berkeley, 1997).
  10. Jensen, "Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers."
  11. S.M. Shortell, R.R. Gillies, and D.A. Anderson, "The New World of Managed Care: Creating Organized Delivery Systems," *Health Affairs* (Winter 1994): 46–64.
  12. PhyCor, "PhyCor Announces Agreement to Acquire MedPartners, Combining Nation's Leading Physician Management Organizations" (Press release, 29



- October 1997); and MedPartners, "MedPartners and PhyCor Announce Termination of Merger Plan" (Press release, 7 January 1998).
13. W.W. Powell, "Neither Market nor Hierarchy: Network Forms of Organization," *Research in Organizational Behavior* 12 (1990): 295-336; J.F. Hennart, "A Transactions Cost Theory of Equity Joint Ventures," *Strategic Management Journal* 9 (1988): 361-374; and R.G. Eccles, "The Quasifirm in the Construction Industry," *Journal of Economic Behavior and Organization* 2 (1981): 335-357.
  14. J.R. Lincoln, "Japanese Organization and Organization Theory," *Research in Organizational Behavior* 12 (1990): 255-294; M. Aoki, "Toward an Economic Model of the Japanese Firm," *Journal of Economic Literature* 28 (1990): 1-27; M.L. Gerlach, *Alliance Capitalism: The Social Organization of Japanese Business* (Berkeley, Calif.: University of California Press, 1992); and A. Saxenian, *Regional Advantage: Culture and Competition in Silicon Valley and Route 128* (Cambridge, Mass.: Harvard University Press, 1994).
  15. Information on PhyCor comes from the trade press and discussions with leaders at PhyCor, competitor PPMs, and industry observers. Sources at PhyCor included Joe Hutts (president and chief executive-officer), Derrill Reeves (executive vice-president), Fred Ewing (senior vice-president, operations), Ron Loepke (chief medical officer), Glen Marconcini (senior vice-president, managed care), Jess Judy (vice-president, development), Mike Hutchens (vice-president, development), and Carl Whitmer (vice-president, treasurer).
  16. See J.D. Ederer and J.M. Rosenbluth, *PhyCor, Inc.* (San Francisco: Volpe Brown Whelan and Co., June 1997); O'Neil and Manderfeld, *Physician Practice Management*; Marsh and Feinstein, *Of Minds and Men*; E.H. Kerns and N.T. Ockers, *PhyCor, Inc: Leading Physician Practice Management Company* (Baltimore: Alex. Brown, March 1997); J.D. France, R.M. Willoughby, and A.G. Ballou, *PhyCor Inc.* (New York: Credit Suisse First Boston Equity Research Americas, July 1997); and NASDAQ, *The Nasdaq Stock Market Corporate Record: PhyCor Inc.* (New York: NASDAQ, 1997).
  17. Real estate is a long-term, low-annual-rate-of-return investment and as such is not appropriate for a growth company focused on physician services.
  18. Information on the Nalle Clinic is from the trade press and discussions with Ray Fernandez (medical director, Nalle Clinic), Sue Savard (chief executive officer, PhyCor of Charlotte), Brad Prechtel (chief financial officer, Nalle Clinic), and Bill Lynagh (medical director, Piedmont Healthcare Alliance IPA).
  19. An analysis of leadership and governance changes at the Nalle Clinic can be found in I.M. Rubin and C.R. Fernandez, *My Pulse Is Not What It Used to Be: The Leadership Challenges in Health Care* (Honolulu: Temenos Foundation, 1991).
  20. C.A. Hewitt and K.S. Abramowitz, *PhyCor to Acquire MedPartners' Capitation Expertise and Market Position* (New York: Bernstein Research, 7 November 1997).
  21. J.B. Barney, "Strategic Factor Markets: Expectations, Luck, and Business Strategy," *Management Science* 32, no. 10 (1986): 1231-1241; and I. Dierickx and K. Cool, "Asset Stock Accumulation and Sustainability of Competitive Advantage," *Management Science* 35, no. 12 (1989): 1504-1511.
  22. D.M. Berwick, "Continuous Improvement as an Ideal in Health Care," *New England Journal of Medicine* 320, no. 1 (1989): 53-56.
  23. E.A. Kerr et al., "Quality Assurance in Capitated Physician Groups: Where Is the Emphasis?" *Journal of the American Medical Association* (16 October 1996): 1236-1239.