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Integrated Delivery Networks: In Search of Benefits and Market Effects

Conducted for the Academy's Panel on Addressing Pricing Power
in Health Care Markets

by Jeff Goldsmith, Lawton R. Burns,
Aditi Sen and Trevor Goldsmith



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Study Panel on Addressing Pricing Power in Health Care Markets

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Executive Summary

In January 2014, the National Academy of Social Insurance commissioned a study of the performance of Integrated Delivery Networks (IDNs), incident to its Study Panel on Pricing Power in Health Care Markets. The premise of this analysis was that any examination of the role that hospitals play in health care cost growth is complicated by the fact that in most large markets, the significant hospitals are part of larger, multi-divisional health enterprises. In these markets, hospitals may be part of horizontally integrated hospital systems operating multiple hospitals; vertically integrated health services networks that include physicians, post-acute services and/or health plans; or fully integrated provider systems inside a health plan (e.g. with no other source of income than premiums) like Kaiser Permanente. The latter two models are collectively labeled IDNs.

IDNs have very different stated purposes than mere collections of hospitals: to coordinate care across the continuum of health services and to manage population health. IDN advocates claim that these complex enterprises yield both societal benefits and performance advantages over less integrated competitors. The purpose of this analysis is to evaluate the evidence to support these claims.

Methodology

Despite more than 30 years of IDN development, remarkably little is known about their performance. To fill this gap, the authors performed a comprehensive review of the academic literature on IDN performance, as well as the broader question of the benefits of diversification (i.e., the efficiency of offering diverse services under common sponsorship).

The authors also conducted an analysis of publicly available financial and qualitative performance data on nationally prominent IDNs and their subsidiary hospitals from their financial disclosures to bond holders, Medicare cost reports, Medicare quality reporting systems, the Leapfrog Group's Safety analyses, and the Dartmouth Atlas' reporting on care patterns at the end of life. Because quality and cost information is not aggregated at the IDN level, the authors compared the publicly available performance information on the IDNs' flagship hospital in its principal metropolitan or regional market with that flagship's most significant in-market competitor.

Claimed IDN Benefits

In the literature review, claimed benefits generally fall into two categories: benefits to society and benefits to the IDNs themselves. Under claimed societal benefits, the principal ones are providing better coordinated care leading to improved quality and lower cost. These improvements are said to derive from eliminating duplicative tests and reducing unnecessary care, as well as coordinating care

across the continuum (physician's office, hospital, and post-acute home care). Joining these activities with the assumption of insurance risk, IDNs are believed to be able to pare down the volume incentives inherent in fee-for-service medicine and allocate capital to areas of community need, including health promotion and prevention.

Under claimed provider rationales for IDN formation, the principal advantages are improved efficiency (presumably translating into better operating performance) as well as enhanced market competitiveness and bargaining power with employers and/or health plans. Vertical integration with physicians and health plans is also believed to reduce uncertainty due to technological or delivery system change and lower administrative expense and transaction costs.

What Does the Evidence Show?

There is scant evidence in the literature of either societal benefits or advantage accruing to providers from IDN formation. From the *societal* perspective, there is little evidence that integrating hospital and physician care has helped to promote quality or reduce costs. Indeed, there is growing evidence that hospital-physician integration has raised physician costs, hospital prices and per capita medical care spending. Similarly, hospital integration into health plan operations and capitated contracting was not associated either with clinical efficiency (e.g. shorter lengths of stay) or financial efficiency (e.g. lower charges per admission).

From the *provider* perspective, the available evidence suggests that the more providers invest in IDN development, the lower their operating margins and return on capital. Diversification into more businesses is associated with negative operating performance. This is consistent with the management literature, which shows that diversification increases a firm's size and complexity, in turn increasing its cost of coordination, information processing, and governance/monitoring.

Moreover, there are few or no scope economies *within* health plans, hospitals, or physician groups — let alone *between* these lines of business contained within IDNs. Provider-sponsored insurance plans face similar problems regardless of whether they were formed by hospitals or physician groups: poor capitalization, lack of actuarial and underwriting expertise, limited marketing capability both to employers and consumers, adverse selection risk, and an inability to reach minimum sufficient scale of enrollment.

Analyzing the Performance of 15 IDNs

As part of this report, the authors conducted a new analysis of 15 of the largest IDNs in the country. Publicly disclosed hospital performance information is not aggregated at the IDN level, so it was impossible to compare IDN performance with industry norms. However, we were able to evaluate the relationship of IDN system profitability as well as net collected revenues with hospital market concentration. We found no relationship between the degree of hospital market concentration and IDN operating profits, or between the size of the IDN's bed complement or its net collected revenues and operating profits.

Because there is extensive hospital-specific financial and quality reporting, the authors conducted a secondary analysis of the performance of the IDN's flagship hospital in its principal metropolitan or regional market and its most significant local competitor. We found no detectable quality or safety differences in a paired comparison between IDN flagship hospitals and their in-market competitors. However, in 10 of 14 cases where comparison was possible, the IDN flagship had higher Medicare cost per case, adjusted for case mix. Further, in 12 of the 15 cases where comparison was possible, the IDN flagship hospital had higher total medical spending in the last two years of the patient's life vs. its in-market competitor, according to the Dartmouth Atlas.

Regarding IDN sponsorship of insurance, there was no discernible relationship between the amount of "revenue at risk" (e.g. insurance premiums, capitated health plan revenue or two-sided risk by an accountable care organization) and the IDN's operating profit. However, IDN flagships in systems that had no "revenues at risk" had 8% lower Medicare per case cost than their in-market competitors, but flagship Medicare costs per case were 20% higher if the IDN had some "revenues at risk."

While there is IDN enterprise-level financial disclosure both to bond holders and to the federal government, gaps in these disclosures significantly hamper detailed analysis. In only five of the 15 IDNs studied was it possible to determine the percentage of IDN revenues generated by their hospitals; in none of the 15 was it possible to determine their hospitals' contribution to IDN operating profit. The same could be said of their physician groups: in only five of the 15 IDNs could it be determined how much revenue was generated by physician services, let alone the contribution, if any, to the IDN's profits.

Further, it was impossible to discern from their disclosures how ancillary income and overhead were allocated between physician practices and the rest of the IDN's businesses. The authors were also unable to access claims information (due to limited resources) to determine how IDN provider businesses are paid by health plans (e.g. is the insurance risk retained by the IDN health plan or passed on to providers through shared premium or capitated risk).

Conclusions

Despite more than 30 years of public policy advocacy on behalf of IDN formation, there is scant evidence in the literature either of measurable societal benefits from IDNs or of any comparative advantage accruing to providers themselves from forming IDNs. We have similarly found no such evidence in our analysis of 15 IDNs. Serious data limitations hamper anyone attempting to evaluate IDN performance based on publicly disclosed information. IDN financial disclosures obscure the operating performance of their hospitals and physician groups.

There does not appear to be a relationship between hospital market concentration and IDN operating profit. However, if the performance of the IDN's flagship hospital is any indicator of overall systemic efficiency, the IDNs' flagship hospital services appear to be more expensive, both on a cost-per-case and on a total-cost-of-care basis, than the services of its most significant in-market competitor. This runs counter to the theoretical claim of IDN operating efficiency. Further, the flagship facilities of IDNs operating health plans or having significant capitated revenues are more expensive per case (Medicare case-mix adjusted) than their in-market competitors.

The authors would have greater confidence in these findings if they covered not only multiple years of information but also multiple institutions in the IDN portfolio (e.g. its suburban or rural hospitals, etc.). Further, the central question of whether IDNs have abused their market power in metropolitan markets can only be answered by examining actual service-specific payments to their hospitals by local health plans and by determining the profits generated by their hospital portfolio.

Policy Recommendations

The public interest would be served if IDNs provided more detailed routine operating disclosures that would enable financial analysts, academic researchers, and the policy community to understand the performance of IDNs' subsidiary businesses and the overhead and revenue allocation strategies they pursue. Present disclosures are less illuminating than those of publicly traded hospital operators and are inadequate to answer definitively the question of whether there are measurable societal or institutional benefits from IDN formation.

The two crucial disclosures needed are the amount of hospital operating profit as a percentage of the IDN's total earnings and the IDN's physician and hospital compensation policies. How IDNs allocate overhead and ancillary services income between the three main lines of business should also be disclosed. It should also be possible to determine from an IDN disclosure if capitated risk is transmitted from the IDN's health plan or risk-accepting organization to its hospitals and physicians. Analysis of societal benefits would also be materially aided by a comprehensive, national all-payer claims database that would enable comparative analysis of what IDNs are paid for hospital and physician services compared to their competitors.

Introduction

In the summer of 2013, the National Academy of Social Insurance created a panel to study the effect of pricing power on health care markets. One concern of this panel is that the consolidation of hospitals might have led to hospital market concentration that enables dominant actors to demand and receive quasi-monopoly prices for their services from local and national insurers.

However, in most large metropolitan health care markets, the major hospitals are subsidiaries of larger enterprises. Hospitals may be part of horizontally integrated hospital systems operating multiple hospitals in the community, region, or nationally; vertically-integrated health services networks that include physicians and/or health plans operating in one or more communities; or fully integrated provider systems inside a health plan (e.g. with no other source of income than premiums) like Kaiser Permanente. The latter two models are collectively termed Integrated Delivery Networks (IDNs). The fact that these latter enterprises are arrayed across the continuum of care and assume premium risk significantly complicates the analytic task of understanding the influence of their hospital assets on health care prices or utilization.

The stated purposes of IDNs are very different from those of multi-hospital systems: to integrate care across a continuum of providers and to assume responsibility for the health of populations. Simply to assume that IDNs are mere collections of hospitals is to commit a category error. Many IDN CEOs argue that they created their systems to defend themselves against the pressures of highly concentrated health insurance markets or to anticipate public policy demands for accountable care and population health. IDN managements will further argue that the pricing power they exert in hospital markets is to serve larger social purposes: creating care management infrastructure, subsidizing services in the care continuum that are not adequately paid for directly (including, many would argue, physician services), caring for those without health insurance, supporting medical education and research, and providing community service.

For more than 30 years, health policy advocates have urged that hospital systems transform themselves into IDNs as the logical infrastructure for population health. Advocates believe that IDNs should be structured like large prepaid group practices such as Kaiser, whose sole source of revenues is health premiums. Those advocates believe that as IDNs assume more economic risk, either delegated risk through capitated payments from health plans or actual insurance risk through “captive” health plans, IDNs will evolve into Kaiser-like entities, with compelling incentives to control costs.

Many IDNs already sponsor their own health plans, contract on a capitated basis with health plans, or are active participants in accountable care organization (ACO) demonstrations where they assume

at least one-sided risk. The Patient Protection and Affordable Care Act (PPACA) prompted hospitals to engage in multiple strategies simultaneously: merging into larger hospital systems, acquiring physician practices and assembling them into groups, developing health plans, and entering risk contracts.

What is known about the economics of IDNs? Do IDNs return benefits to society commensurate with their stated purposes to “integrate care across the continuum and manage the health of populations?” Where do they generate their net income? How much of their revenue is “at risk” and how does it affect system performance? What is the relationship between their stream of earnings and the community benefits they provide?

To date, despite more than 30 years of policy advocacy on their behalf, very little is actually known about IDN performance. In a recent report, the Brookings Institution (2013) noted that the potential for cost and quality benefits flowing from current restructuring efforts by providers is unknown. This paper seeks to address the gap in our understanding of IDNs using a mixture of familiar and new methods.

We first review the academic research on the reality of IDNs’ claimed societal benefits. We then examine the performance of IDNs using data gathered in a new manner. We analyze a sample of 15 nationally prominent IDNs drawing data from their public financial disclosures. We seek to determine the degree to which these IDNs integrate their three principal missions (hospital and facilities, physician services, and health plans) and how to characterize their performance.

Using this sample, we also make head-to-head comparisons of the IDN’s flagship hospital and its principal competitor in their local market to determine if any systemic advantages accrue from membership in the dominant local health system. This exercise demonstrates the difficulties researchers face in evaluating IDN performance and suggests the types of data that may be needed to address the issue. At the end of the paper, we discuss the policy implications of our findings in an era of increasing “transparency.”

Literature Review

IDNs link together acute-care hospitals with ambulatory care services (e.g., physician offices, surgical and imaging facilities, etc.), post-acute services (e.g., home health, rehabilitation, skilled nursing), and, in many cases, insurance vehicles that cover geographic markets served by the provider businesses. The theoretical benefits of IDNs fall into two broad categories. First, there are potential societal benefits from integrated care: improvements in access to and quality of health care as well as reduced cost due to improved care coordination. Second, IDNs may yield potential provider benefits from integrated care: increased efficiency and ability to achieve economies of scale and scope as well as improved bargaining power with health insurers, enabling greater profitability and financial performance. These latter

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benefits may or may not be passed on to society in general, or to businesses, consumers and public payers, in the form of lower prices or improved service.

Following this summary, we briefly discuss the theorized dimensions of integration contained in IDNs; such forms of integration might influence the impact of integration efforts. We also discuss the results of integration observed to date, proposed barriers to integration, and lessons from previous experiences with integration. We conclude with a discussion of corporate diversification, the evidence from the provider and health plan industries on the benefits (if any) of diversification — including evidence on the Kaiser system, the widely cited IDN exemplar — and the empirical challenges of documenting such benefits.

“The Right Care at the Right Place at the Right Time”: Potential Societal Benefits of Integrated Delivery Networks

Advocates suggest that the central benefit of IDNs is to provide patients “seamless,” coordinated health services along the full “continuum of care” (Burns and Pauly, 2002; Coddington and Moore, 1994; Conrad and Shortell et al., 1993a; Shortell et al., 2000). Vertically integrated health systems are said to allow comprehensive “one-stop shopping” for care through improved coordination among providers (physicians, hospitals, post-acute providers), including sharing of information through medical records available at all points of care (Budetti et al., 2002; Conrad and Dowling, 1990; Peters, 1991).

The most commonly cited societal benefit of integrated delivery networks, however, is better coordinated care leading to improved quality and lowered costs.

Further, IDNs could address challenges that a more fragmented delivery system is ill equipped to handle, including chronic disease management, incorporating advances in technology, and new care settings (e.g. ambulatory surgery centers, urgent care centers), as well as dealing with potential provider shortages (Devers et al., 1994). The most commonly cited societal benefit of integrated delivery networks, however, is better coordinated care leading to improved quality and lower costs.

Two main types of quality improvements come up in the literature:

(1) Reduction of duplicative tests and procedures and elimination of unnecessary care, and (2) Assumption of the health of a local population by an integrated system, enabling coordinated health services across sites of care (e.g., between a hospitalization and post-acute care), as well as providing the social and financial support needed during an illness (Burns and Pauly, 2002; Robinson and Casalino, 1996; Shortell et al., 1993; Walston, Kimberly and Burns, 1996).

Enthoven (2009) cited competition between integrated delivery systems as a potential “cure for [the] fragmentation” that characterizes health services provision in the United States. He noted the

importance of eliminating waste from unnecessary and potentially unsafe care for improving quality and reducing costs. Similarly, Shortell, Gillies et al. (1993b) when reporting on their study of integrated health care systems noted,

Integration, of course, is not an end in itself but a means for promoting healthier patients and ultimately healthier communities. When integration is missing, patients are at greater risk for harmful practices and suboptimal service. Indeed, the ultimate payoff from organized delivery systems will not be in administrative or managerial economies of scale but in clinical integration – the ability to provide a coordinated continuum of services that meet patient needs and expectations in a cost-effective fashion.

IDNs with an in-house insurance vehicle that collects a premium for each patient may have a special advantage here. These IDNs can theoretically manage the patient’s care across the provider continuum, reducing or eliminating the volume incentives inherent in fee-for-service medicine and emphasizing instead the allocation of capital and personnel to areas of community need, health promotion, and prevention (Burns and Thorpe, 1993).

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Such models might also offer the necessary salaries and benefits to recruit and retain the appropriate types of physicians and other caregivers, as well as assume managed care functions at the system level (thereby lowering the administrative hassles of negotiation, billing, credentialing, etc., for individual physicians) (Peters, 1991). Finally, IDNs may foster greater alignment among hospitals, physicians, and health plans that, theoretically, result in comprehensive, community-based systems of care similar to Kaiser.

In terms of cost reduction, advocates suggest that vertically integrated care delivery would result in improved efficiency (e.g., through reductions in unnecessary and duplicative care) and lowered transaction and administrative costs that could, in turn, translate into patient savings (e.g. through use of internal hierarchies and controls rather than market transactions to coordinate activities) (Burns and Pauly, 2002; Burns, Goldsmith and Sen, 2013; Walston, Kimberly and Burns, 1996, Robinson and Casalino, 1996).

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Further, strengthened administrative controls may allow systems to “achieve better cost and quality control through strong group norms, peer pressure, and integrated finances” (Cuellar and Gertler, 2006). In addition, integrated systems may be able to better adapt to and succeed in new financing mechanisms such as pay-for-performance and bundled payments than individual providers (Crosson and Tollen, 2010).

These types of efficiency gains are typically considered a key rationale for vertical integration in any setting, resulting from increased centralized control and coordination across stages of production and economies of information and technology, as well as potentially reduced costs of monitoring and negotiation due to gains in mutual dependence and trust from integration (Gaynor and Haas-Wilson, 1999; Walston, Kimberly and Burns, 1996).

If IDNs centralize information systems and mechanisms for utilization review and quality assurance, these systems may also be able to “exploit opportunities to coordinate market exchanges internally, improve the exchange of information between adjacent stages in the vertical chain, and jointly optimize profits across these stages of production” (Burns and Thorpe, 2001).

In addition to improvements in efficiency, IDN advocates have pointed to enhanced market competitiveness and strengthened provider bargaining power as benefits of integration.

Provider-Centric Rationales for IDN Formation

The benefits of vertical integration that accrue to hospitals and physicians, rather than to society as a whole or to patients in particular, have been the main focus in the literature on IDNs. In addition to improvements in efficiency, IDN advocates have pointed to enhanced market competitiveness and strengthened provider bargaining power as benefits of integration, especially given an expected movement toward capitated payment (Walston, Kimberly and Burns, 1996).

A lot of this literature appeared during or after the Clinton-era drive toward health reform, which would have channeled provider payments through capitated payment to risk-managing IDNs. Also, as mentioned previously, some IDNs developed for market-specific defensive reasons. The rise of managed care, and the perceived threat posed by the rise of capitated contracting, created anxiety among providers that fueled their efforts to form IDNs (Dranove, Simon, and White, 2002; Town et al., 2007). Vertically integrated systems were seen as affording health care providers competitive leverage given possible movement toward closed-panel networks, global capitation, and consequent downsizing of provider capacity (Burns, Goldsmith and Muller, 2010; Shortell, Gillies and Anderson, 1994).

Putting aside the question of hospital mergers, it is debatable whether vertical integration between hospitals and physician has actually helped improve their market power and competitiveness (Gaynor, 2006). Some have argued that consolidating with upstream suppliers gains hospital-physician firms monopoly or quasi-monopoly power, in turn improving bargaining power for negotiations with managed care plans and other insurers and increasing price leverage (Walston, Kimberly and Burns, 1996).

There is an extensive literature on so-called vertical “foreclosure,” although it is somewhat contradictory. One argument here is that the formation of exclusive hospital-physician relationships is a means of product differentiation within the market as well as a hospital strategy to protect its key source of patients — physician referrals — while preventing competitors’ access to these inputs (Burns and Pauly, 2002). From the hospital perspective, these relationships both ensure that physicians themselves will not compete with hospitals (e.g., by encroaching on the hospital outpatient care market)

and augment the IDN's ability to compete with other entrants into outpatient and inpatient markets (e.g., ambulatory surgical center, imaging centers, etc).

However, there is scant empirical evidence on the anti-competitive effects of vertical integration by hospitals. Tellingly, the antitrust community has not embraced vertical foreclosure as a competitive problem. There is a strong sense among some researchers that the merger of two powerful actors in adjacent stages of the vertical chain (e.g., a powerful hospital and a powerful medical group) will increase provider market power, but, until recently, the regulatory agencies did not appear confident of this. This changed in 2014. In a case brought by the Federal Trade Commission and the Idaho Attorney General, a U.S. District Court ruled that the St. Lukes Health System in Boise violated antitrust laws by its acquisition of the large primary care-based Saltzer Medical Group. This is a rich area for investigation going forward given the pace of vertical consolidation in the industry.

Current advocates of vertical integration cite several drivers beyond increased market power. Cleveland Clinic CEO Toby Cosgrove recently suggested that vertical integration is being driven not only by the fact that acute-care hospitals are becoming less dominant in a health system where an increasing amount of care is occurring in hospital outpatient departments and physician offices but also in newer settings, such as retail clinics and drugstores. In addition, cost pressures are compelling providers to use new technologies, such as tele-health and remote patient monitoring, to improve efficiency and reduce duplication of care (Betzebe, 2013). This argument suggests that vertical integration may be motivated by provider uncertainty regarding their future role in health care delivery due to technological and delivery system innovation. However, reducing provider uncertainty is neither a compelling societal rationale nor a guarantor of increased efficiency savings.

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For physicians, integration with (e.g. employment by) hospitals can offer access to capital and technology, protection against a changing policy and payment landscape, more stable incomes, and better work-life balance, which is increasingly attractive to physicians (Burns and Pauly, 2002; Burns, Goldsmith and Muller, 2010; Burns and Muller, 2008).

Insurance offerings play a strategic role in many IDNs. Indeed, some argue that it is the insurance function that integrates the diverse service businesses owned by the IDN. Promoters of the IDN concept such as Alain Enthoven and Paul Ellwood advocated that communities should be served by multiple Kaiser-like entities that are more or less clinically self-sufficient and are paid through insurance premiums (per capita per year), rather than through fee for service. This transformation presumably turns hospitals and other facilities that are presently profit centers into cost centers consuming resources within a fixed budget (that is, yearly premium times membership), as well as fostering value-based competition at the level of IDNs, not individual hospitals or physician practices.

At some point in the risk assumption process, containing provider expense and rationalizing service use presumably becomes the key to profitability. There are two problems with this argument. First,

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achieving this fundamental reversal in incentives requires major cultural change on the part of providers — change that has proven highly challenging given the cultural legacy of a fee-for-service system. Second, this type of integration increases provider economic risk and thus uncertainty. The most significant risks for provider-sponsored insurance efforts are adverse selection within the community's risk pool and the difficulties in exerting economic discipline across a diffused and fragmented medical community. Risk assumption also increases uncertainty at the enterprise level because the enterprise is interacting with multiple markets with conflicting incentives at the same time.

There are numerous rationales for IDN sponsorship of insurance vehicles. Providers may develop insurance plans to jump-start population health management in the face of commercial insurers' reluctance to delegate risk to them. Captive insurance contracts might also result in replacement of revenues lost to provider payment cuts. Finally, captive insurance plans may expose plan subscribers to the provider system through the health benefit offering, helping increase hospital and physician market shares.

Of course, some of these aims could conceivably be accomplished with less enterprise risk by contracting with existing plans on a delegated-risk-basis. That depends crucially on the willingness of established health plans to delegate risk to providers. Insurers are aware that many providers embarked on this strategy (often unsuccessfully) in the 1990s as they developed physician-hospital organizations and salaried physician models to contract with health maintenance organizations (HMOs).

Health plan sponsorship by provider systems could help providers to compete with existing vertically integrated systems like Kaiser, limiting outflow of their patients to these closed models. Integration into insurance allows providers the flexibility to offer their own fully integrated insurance product (like Kaiser) and to contract with other health insurers on a delegated-risk basis (unlike Kaiser).

Vertical integration may also potentially increase bargaining power with other insurers in the local market. Offering employers a health plan endows the provider system with a Kaiser-like image (Burns and Thorpe, 1993). In addition, in-house insurance plans often promise but rarely deliver advantages to participating physicians of lessened intrusion of medical management activities and higher provider payment rates (Burns and Thorpe, 2001).

There has been a recent flurry of provider interest in either establishing health plans or assuming population health risk since the passage of the PPACA. One driver has been PPACA itself, which encouraged providers to establish ACOs to participate in the Medicare Shared Savings Program (MSSP) as well as to contract with insurers in the private sector. To date, there are well over 600 such ACOs in operation (Muhlestein, 2014).

The Evidence on Physician-Hospital Integration

The literature on physician-hospital integration is replete with prescriptive models on how to organize the relationships between hospitals and physicians to bridge these historically independent sectors. The early integration literature emphasized the need for a set of common structures to align the two parties. These structures included physician-hospital organizations (PHOs), management services organizations (MSOs), independent practice associations (IPAs), foundation-style medical group models, and integrated salary models (ISMs).

There is little evidence that these structures, by themselves, have helped promote quality or reduce costs (Cuellar and Gertler, 2006; Madison, 2004; Ciliberto and Dranove, 2006); in fact, some relationships might run in just the opposite direction. Indeed, there is recent evidence that the growing absorption of physician practices into hospitals has resulted in higher hospital prices and spending (Baker, Bundorf and Kessler, 2014). One recent study of physician organizations in California reported that groups owned by local hospitals spend 10 percent more per patient than physician-owned groups; groups owned by multihospital systems spend nearly 20 percent more per patient (Robinson and Miller, 2014). The higher spending by hospital-owned groups covered inpatient, outpatient, pharmaceutical, and diagnostic services — suggesting there may be little cost-reducing coordination of care across the continuum of services in integrated models and/or greater utilization across the continuum. Hospital employment of physicians also is associated with lower physician productivity and higher operating costs among the physician practices. (Gans, 2012, Gans and Wolper, 2013.) There is also little evidence that other vehicles to integrate physicians with hospitals — whether through economic ties or non-economic ties — produced the expected benefits (Burns and Muller, 2008).

There is little evidence that different hospital-physician structures have much advantage in fostering alignment between the two parties that might translate into improved quality and reduced costs (Burns, Goldsmith, and Sen, 2013). While it seems clear that integration *structures* and *vehicles* are not sufficient, following Donabedian (1988), we might inquire whether the presence of intervening *processes* makes a difference for achieving outcomes. Research suggests that simply creating integrated structures without the enabling care management and governance processes may not translate into performance improvement (Burns et al., 2001).

The Health Systems Integration Study (HSIS) posited three forms of integration that relied upon process indicators and that formed a causal model of performance in hospital systems (Devers et al., 1994). The three forms were (1) functional integration — standardization of administrative activities across hospitals within a system; (2) physician-system integration — efforts to organize physicians into groups, efforts to tie them to the system in economic and administrative relationships, and standardization of medical staff activities across hospitals within the system; and (3) clinical integration — standardization of clinical activities (e.g., protocols, medical records, clinical support services, etc.) across hospitals within the system. This typology has been widely adopted in academic research.

There is little evidence that different hospital-physician structures have much advantage in fostering alignment between the two parties that might translate into improved quality and reduced costs.

However, the HSIS found little evidence during the 1990s that hospital systems had moved beyond the first form of integration, that one form of integration (e.g., physician-system) correlated with subsequent forms of integration (e.g., clinical processes), or that these forms of integration were consistently linked with improved financial performance of systems (Devers, et al., 1994; Gillies et al., 1994).

Subsequent work conducted by the HSIS researchers has focused on key elements of infrastructure in these integrated systems, such as clinical information technology (e.g., electronic medical records) and care management practices (CMPs). There is little evidence to date across all of their studies that these elements impact quality and cost in any meaningful or consistent manner (Burns, Goldsmith, and Sen, 2013).

The evidence suggests that Donabedian's (1988) stages of structure, process, and outcome are only loosely coupled together and not highly correlated in health care settings. One explanation for these results is that such models are too simplistic for explaining performance differences among firms. The health care integration literature is replete with lists of barriers to integration that strategies and structures do not anticipate and cannot easily overcome (Shortell et al., 1993; Burns and Muller, 2008). Moreover, the literature on organizational change suggests that effective implementation (i.e., execution) is much more important than strategy for subsequent success. This important but usually neglected observation was noted long ago by the HSIS researchers themselves (Gillies, Shortell, Devers et al., 1994).

Provider-Insurance Integration

There is very little empirical research on the performance of provider integration with insurance

One study of 36 large IDNs that contained hospitals, physicians, and health plans found that the more providers invested in their IDNs, the lower their operating margins. Moreover, as hospitals diversified into these different businesses, the larger was the negative impact on their financial position.

vehicles. This may reflect the historically low and falling rate of provider sponsorship of health plans: since 2000, only 10-15 percent of hospitals participated in sponsoring an HMO and only 15-20 percent sponsored a preferred provider organization — both below the levels observed during the 1990s (data courtesy of Peter Kralovec, Health Forum, 2014). The lack of research may also reflect the paucity of data on both provider and health plan performance.

One study of 36 large IDNs that contained hospitals, physicians, and health plans found that the more providers invested in their IDNs, the lower their operating margins. Moreover, as hospitals diversified into these different businesses, the larger was the negative impact on their financial position (e.g. higher debt to capitalization ratio). (Burns, Gimm, and Nicholson, 2005). A more recent study has found that integration of health plans with providers (hospitals or physician groups) to serve the Medicare Advantage population is associated with higher plan premiums (Frakt, Pizer, and Feldman, 2013).

Provider-sponsored insurance plans have faced similar fates regardless of whether they were formed by hospitals or physician groups (Burns and Thorpe, 2001). Common problems included poor capi-

talization, lack of actuarial and underwriting expertise, lack of consumer and employer marketing capabilities, the inability to reach a minimum efficient scale (i.e., enough enrollees), the inability to compete with much larger commercial insurers in the local market, and the tendency to enroll current patients who were poor risks (the adverse selection risk discussed previously).

The issue of scale is especially important. Prior research from the 1990s showed that the minimum efficient scale for health maintenance organizations was 100,000 enrollees (Given, 1996; Wholey, Feldman, Christianson et al., 1996). More recent evidence from McKinsey, likewise, suggests that sales, general and administrative costs for payers flatten out after reaching 100,000 lives (Singhal, 2013).

By contrast, health plans operated by providers are typically smaller in size. Recent statistics indicate there were 606 ACOs with roughly 18 million lives at the end of the fourth quarter in 2013 (Muhlestein, 2014). This yields an average enrollment of only 30,000 lives — well below the scale required to perform health-plan-like functions efficiently.

A further issue hampering provider-sponsored health plans is their tendency to build enrollment on their current patient base, which leads to unfavorable risk selection and higher medical loss ratios. McKinsey concluded there is no guarantee for value creation by payer-provider integration, particularly in the commercial market, since the costs incurred may outweigh the cost savings (Singhal, 2014).

A field study of six IDNs in Illinois found a different set of challenges facing providers who set up insurance vehicles. Primary among these was the difficulty in balancing the interests of the three parties in the IDN: hospitals, physicians, and health plan managers. This difficulty manifested itself in several ways, including conflicts over capital allocation across the three business lines, coordinating decision-making among the three businesses, and subsidizing one business (e.g., employed physicians) with revenues from the other two businesses (Burns, 1999).

The Logic and Performance of Diversification

Diversification is defined as the expansion of the firm across product, geographic, and customer markets. Firms have traditionally relied on this strategy for one of three major goals: growth, risk reduction, and profitability. Commonly sought benefits include scope economies (via shared resources and capabilities across businesses), economies from internalized transactions, and improved access to market information (Grant, 2010). The benefits of scope economies are often referred to as synergies. Other rationales include the firm's effort to escape an increasingly unattractive market and to make effective use of surplus cash flows by investing them in more attractive products or services.

Despite decades of research, there is no solid evidence that either more diversified firms outperform less diversified firms or diversified firms outperform those that focus. One approach to resolve the conflicting findings suggested that diversification exhibited an inverse U-shaped relationship with performance, whereby firms with moderate levels of diversification outperformed those with much more or no diversification (Palich, Cardinal, and Miller, 2000). More recent evidence does not confirm this pattern, however (Besanko, Dranove, and Shanley, 2010).

A major contributor to the performance problem is that diversification increases the firm's size and complexity, which in turn increases the firm's cost of coordination, information processing, and governance and monitoring. Such costs likely increase with the unrelatedness of the new businesses

...diversification increases the firm's size and complexity, which in turn increases the firm's cost of coordination, information processing, and governance/monitoring.

operated by the firm. Corporate firms in the U.S. recognized this problem in the mid- to late-1980s when they unbundled themselves from prior conglomerate acquisitions and focused more on their core competence.

On the health plan side, Given (1996) and Wholey, et al. (1996) reported that HMOs suffered from scope diseconomies as they diversified from commercial to Medicare and Medicaid lines of business. On the hospital side, early evidence failed to show that diversification into alternate services improved operating performance (Clement, 1987) or that related diversification outperformed unrelated diversification (Clement, D'Aunno, and Poyzer, 1993). Evidence also showed few scope economies from hospitals operating both inpatient and outpatient lines of business (Cowing and

Holtman, 1983; Granneman, Brown, and Pauly, 1986).

More recent studies reported that hospital integration into health plans, capitated contracting, and non-hospital services were not associated with either clinical efficiency (shorter lengths of stay) or financial efficiency (lower charges per admission) (Lin and Wan, 1999). Conversely, evidence gathered during the debate over single-specialty hospitals failed to find greater efficiencies in focused factories compared to general medical-surgical hospitals (although the former did exhibit the same or higher level of patient satisfaction and quality of care) (Medicare Payment Advisory Commission, 2005; Centers for Medicare and Medicaid Services, 2005).

...hospital integration into health plans, capitated contracting, and non-hospital services was not associated with either clinical efficiency (shorter lengths of stay) or financial efficiency (lower charges per admission).

These results received additional confirmation in studies of hospitals with higher levels of specialization in cardiovascular care (Clark and Huckman, 2012). Finally, on the physician side, a recent review found few scope economies among group practices that take on a multispecialty mix of providers (Burns, Goldsmith, and Sen, 2013).

Taken together, these results suggest few or no scope economies within health plans, hospitals, and physician groups that diversify. It is therefore

difficult to see why there might be scope economies in health care organizations that link all of these components together. That is, can there really be synergies in linking together payers, hospitals, and physician groups when each has achieved no synergies in their own diversification efforts? Can the IDN whole really be greater than the sum of its constituent parts?

We conclude from this literature that hospital services, physician care, and health plan operations are very different business lines, with few assets and capabilities that can be shared across them to leverage savings and efficiencies. As a result, there may be little opportunity to reduce the average costs of each business as they become integrated with one another. Of course, it might be possible to achieve synergies by increasing the joint revenues of these different businesses (e.g., via coordinated branding and marketing strategies). However, with the exception of the Blue Cross plans, Kaiser, and a hand-

ful of prominent medical groups (Mayo, Cleveland Clinic), few payers or providers have achieved that type of brand image.

It is also possible to achieve synergies by sharing information and knowledge across the different business lines to achieve “spillovers” (e.g., improved ability to perform population health management). However, integration might just as easily lead to negative spillovers if the integration renders the different business lines more interdependent and thus more susceptible to negative shocks in any one line. Integration is also likely to consume excess capacity and other slack resources (e.g., as one line of business subsidizes another) that then make it difficult to take advantage of positive shocks and opportunities in the marketplace.

The Kaiser model includes all three lines of business (Kaiser Health Plan, Kaiser Hospitals, Permanente Medical Group). It is unique in that insurance premiums from its own “captive” product have been, until very recently, the sole source of income to the enterprise. Kaiser now charges copayments to individual patients through so-called consumer-directed products.

Because there are so few organizations like Kaiser, there is naturally little comparative data on its performance. There are occasional books and articles extolling the virtues of the Kaiser model, often written by Kaiser-affiliated researchers (Enthoven and Tollen, 2004; Crosson, 2005). There are also some consulting firm reports that suggest the superiority of the Kaiser model (Aon-Hewitt, 2011). Otherwise, there is no evidence that we know of that documents the competitive efficiency of the Kaiser model.

Indeed, during the 1980s and 1990s, Kaiser had difficulty exporting its own model to other parts of the U.S. beyond its native Pacific Coast market (Gitterman, Weiner, Domino et al., 2003). Ho (2008) analyzed some of the reasons for the limited market success (measured by growth and expansion) of vertically integrated health insurers such as Kaiser. She concluded that integrated plans like Kaiser need to reduce their per-member-per-month premiums to compensate enrollees for its limited network of hospitals and physicians. Such insurers are unlikely to have costs that are low enough to make such a strategy workable; instead, they must offer superior quality instead. The ability to attract enrollees based on superior quality is weakened, however, by the high quality offered by competitor plans as well as by information failures.

Robinson (2004) argued that such plans required four elements to succeed: multispecialty groups, capitated payment, exclusive payer-provider network linkages, and, crucially, a market framework that offered multiple choice of plans, defined contribution, and open enrollment. Many of these pieces are not prevalent across the U.S.; many are not found together in local markets; and some (multispecialty groups) are not increasing in prevalence.

Even if there were synergies between these three lines of business, researchers would be hard pressed to identify them. One major reason is what evaluation researchers call “multiple treatment interference.” This occurs when the same organization embarks on multiple strategies either at the same time (making it hard to disentangle their separate effects) or at different times (making it hard to control for the effects of the prior strategy (Campbell and Stanley, 1963). To disentangle these

effects and document them empirically, researchers will need data on the performance of all three business lines over time in a large sample of IDNs. Complicating the issue will be the tendency for IDNs to subsidize one business line with profits earned in others.

IDN Financial/Performance Analysis

To study IDN performance, we selected 15 nationally prominent IDNs that are dominant actors in their respective metropolitan and regional hospital markets. We attempted to cover all regions of the U.S. (though three of the sample are in Pennsylvania).

The sample:

- Advocate Health Care (suburban Chicago)
- Banner Health (principally Arizona)
- Henry Ford Health System (Detroit)
- North Shore–LIJ Health System (suburban New York)
- Aurora Health Care (Milwaukee/Wisconsin)
- Intermountain Health Care (Utah/Idaho)
- Penn Medicine (Philadelphia)
- Sanford Health (Dakotas)
- Sentara Healthcare (Virginia)
- BayCare Health System (Tampa/St. Petersburg)
- Sutter Health (Northern California)
- UPMC (Western Pennsylvania)
- Geisinger Health System (Central Pennsylvania)
- Johns Hopkins Medicine (Maryland)
- Presbyterian Healthcare Services (New Mexico)

Data Sources

When these IDNs, all of which are nonprofit, need to raise capital in public bond markets, they are required to make financial disclosures incident to the bond issuance, as well as continuing disclosures of their operating performance. These disclosures are archived online in EMMA (Electronic Municipal Market Archive) and maintained for the Municipal Securities Rulemaking Board. Those IDNs that operate health plans must disclose their operating performance to their state insurance commissions.

As nonprofit entities, IDNs are also required to disclose their income and expenditures to the U.S. Internal Revenue Service on Form 990. These forms detail charitable contributions, various forms of uncompensated care and community benefit, donations, certain operating expenditures by category, as well as executive and contractor compensation. These are lengthy filings, some over 200 pages, and depending on the IDN's corporate structure, multiple 990s are typically found. Like most tax returns, they provide an astonishing amount of information in great detail but of questionable usefulness for actually understanding the business.

These filings did not provide a complete picture of IDN finances. Only five of the sample’s disclosures were enterprise wide (e.g. IDN-wide) disclosures. Moreover, the 990s did not appear to tie in a consistent fashion to the IDN’s bond-related filings. Also, the latest available 990s were several years older than the latest available financial filings.

Characteristics of Sample IDNs

Collectively, the 15 sample IDNs generated almost \$73 billion in total revenues and are in all cases the market-leading provider of hospital services in their home markets (see Exhibit 1). They range in size from a little over \$2 billion to over \$10 billion in annual gross collected revenue. They operate roughly 40,000 acute-care beds. Eight of the 15 operate in metropolitan hospital markets with a Herfindal-Hirschman Index (HHI) score (a quantitative measure of market concentration) above 2,500, a level characterized by the U.S. Justice Department as highly concentrated. Four of the IDNs operate the principal teaching hospitals of major academic health centers. Collectively, they employ almost 17,000 physicians and operate nine of the largest physician groups in the United States.

Exhibit 1: IDN Resource Description

IDN	Licensed Beds	Market Conc. (HHI)	FTE Employed Physicians	Insured Lives
A	1,171	4,499	425	408,000
B	3,047	2,645	335	no health plan
C	2,231	5,669	1,369	81,000
D	1,638	n/a	1,055	429,135
E	1,712	600	1,598	no health plan
F	3,484	3,320	510	452,703
G	3,145	1,718	1,499	no health plan
H	2,784	3,399	1,153	529,000
I	1,897	1,279	n/a	342,264
J	4,831	3,849	794	47,000*
K	3,500	607	986	no health plan
L	2,657	1,209	n/a	no health plan
M	5,372	1,994	2,000	no health plan
N	5,397	3,118	1,631	n/a
O	5,086	3,027	3,400	2,223,869

*ACO lives

Exhibit 2, shows that 10 of the 15 IDNs generate net operating income (operating profit) in excess of \$100 million in the sample year. In eight out of the 13 cases that reported community benefit in the aggregate, IDN net income exceeded reported community benefit (in a challenging period for IDN finances). They are wealthy organizations, nine of which have more than \$3 billion in deployable financial assets. The non-operating income generated by these financial assets serve an

important function in insulating the IDN from fluctuations in operating profitability. In seven cases, the sample IDNs reported non-operating (e.g. investment) earnings exceeding their operating profits.

Exhibit 2: IDN Financials (Millions)

IDN	Net Revenue	Operating Income	Non-Operating Income	Net Income	Total Community Benefit	Financial Assets ^[1]	Long Term Debt	Reporting Year
A	\$2,051.9	\$63.2	\$135.7	\$198.9	\$76.6	\$1,721.4	\$583.9	2012
B	\$2,568.4	\$184.2	\$447.7	\$631.8	\$243.5	\$3,413.1	\$778.0	2013
C	\$3,105.9	\$30.8	-\$17.3	\$13.5	\$174.7	\$1,254.7	\$729.3	2013
D	\$3,355.1	\$163.3	\$13.8	\$177.2	\$215.6 ^[2]	\$2,576.6	\$909.2	2013
E	\$3,501.0	\$185.1	\$111.2	\$296.3	\$119.7 ^[2]	\$2,928.4	\$796.9	2013
F	\$4,068.2	\$263.8	\$167.6	\$431.4	\$282.2	\$3,247.8	\$960.2	2012
G	\$4,125.2	\$138.0	\$60.3	\$198.3	\$745.6 ^[2]	\$1,452.1	\$1,651.1	2012
H	\$4,251.6	\$364.6	\$347.6	\$712.2	\$188.2	\$5,117.8	\$1,184.9	2013
I	\$4,463.5	\$47.9	\$7.4	\$55.3	\$403.3	\$1,954.5	\$815.6	2012
J	\$4,878.2	\$289.5	\$311.1	\$600.6	\$432.9	\$4,364.0	\$2,359.4	2012
K	\$4,938.0	\$300.2	\$465.1	\$765.3	\$613.7 ^[3]	\$5,934.0	\$1,452.1	2013
L	\$4,959.8	\$175.8	\$174.5	\$350.3	n/a	\$3,156.3	\$1,488.3	2013
M	\$6,702.0	\$97.9	\$164.4	\$262.3	\$170.0	\$3,414.2	\$1,470.7	2013
N	\$9,649.0	-\$22.0	\$380.0	\$358.0	\$901.0	\$6,005.0	\$3,764.0	2013
O	\$10,188.4	\$143.3	\$219.1	\$362.4	n/a	\$5,038.8	\$3,096.0	2013

[1] Financial Assets comprise total assets less receivables, inventories and similar, and property, buildings, etc.

[2] Includes only charity care and the unpaid cost of Medicare and Medicaid

[3] Total Community Benefit for 2012

Eight of the 15 IDNs operate health plans, and two more either have significant capitated revenue from delegated-risk contracts with health plans and/or two-sided ACO arrangements (see Exhibit 3). Three of the sample IDNs that do not presently sponsor health plans are actively exploring establishing a health plan. Through these arrangements, the IDNs are presently at risk for the health costs of roughly 4.7 million covered lives. The percentage of the total IDN's revenues at risk range from zero for those IDNs with no health plans or capitation/ACO contracts, to as much as 62 percent. Four IDNs have at least one-third of their revenues at risk.

When one moves beyond the well-documented aggregate financial performance, however, large gaps in the publicly reported data on the various IDN businesses hamper further analysis. Unlike publicly traded hospital systems, it is almost impossible to determine from publicly available documents where in the IDNs' service portfolio their operating profits come from.

In particular, it is impossible to determine what profit contribution hospitals make to the IDN. In only five of the 15 IDNs is it possible to identify what percentage of their total system *revenues* come

from facilities, let alone from their hospitals. And in all cases, it is impossible to determine the contribution hospital operating profits make to overall IDN profits. In only five of the 15 is it possible to identify the physician group revenues, let alone their contribution to the IDN's profit.

How the IDNs' health plans compensate the IDNs' hospitals and physician groups is also impossible to determine from their filings. Footnotes to IDN financial filings do contain so-called eliminations that show the overlap between the IDN's insurance and provider businesses. When one subtracts documented health plan operating profits from the total IDN's operating profits, one is left with an aggregate profit figure for all the other businesses the IDN operates, some of which may, indeed, be subsidized by the rest. How system overhead is allocated among provider businesses is also impossible to determine from IDN filings.

Exhibit 3: IDN Revenues by Line of Business

IDN	Net Revenue	Facilities Revenue	Facilities as % of Total Revenue	MD Group Revenue	Insurance ^[1] (Revenue At Risk)	Insurance as % of Total Revenue
A	\$2,051.9	n/a	n/a	n/a	\$1,268.1	61.8%
B	\$2,568.4	n/a	n/a	n/a	no health plan	n/a
C	\$3,105.9	n/a	n/a	n/a	\$144.3	4.6%
D	\$3,355.1	n/a	n/a	\$731.6	\$1,512.0	45.1%
E	\$3,501.0	\$2,891.1	82.6%	\$632.3	no health plan	n/a
F	\$4,068.2	\$2,724.8	67.0%	n/a	\$1,354.5	33.3%
G	\$4,125.2	n/a	n/a	n/a	no health plan	n/a
H	\$4,251.6	n/a	n/a	n/a	\$1,211.8	28.5%
I	\$4,463.5	n/a	n/a	n/a	\$2,153.7	48.3%
J	\$4,878.2	n/a	n/a	n/a	\$108.0	2.2%
K	\$4,938.0	n/a	n/a	n/a	\$769.3	15.5%
L	\$4,959.8	n/a	n/a	n/a	no health plan	n/a
M	\$6,702.0	\$6,099.5	91.0%	\$758.4	no health plan	n/a
N	\$9,649.0	\$6,070.0	62.9%	\$2,497.0	\$939.0	9.7%
O	\$10,188.4	\$5,582.4	54.8%	\$617.8	\$4,257.2	41.8%

[1] Insurance revenue includes premiums, capitation paid by other health plans, and double-sided ACO revenues.

Beyond system-level financial performance, publicly available quality or efficiency metrics are not aggregated at the IDN level. Thus, the only way to evaluate an IDN's performance along these dimensions is to query performance data on the individual hospitals it operates. We did not have the resources in this study to aggregate the published performance information across all the hospitals in the IDN's portfolio, and thus measure overall IDN performance against industry norms.

However, we obtained extensive performance information on the flagship hospital in the IDN's portfolio (often the original hospital that created the system) from numerous public sources:

Medicare’s Hospital Compare website, Leapfrog Group’s Safety Reports, Dartmouth Atlas’ extensive examination of hospital Medicare spending trends at the end of life, and the American Hospital Directory’s analysis of Medicare cost reports that detail individual hospital’s cost information.

We then compared performance indicators to those of the flagship hospitals’ most direct local competitor operating in the same geographic market. (See Appendix for listing of the flagship and competitor hospitals for each IDN). In some cases, these competitors were free-standing hospitals of comparable complexity (operated by a neighboring large integrated group practice or a large academic health center). In others, these were significant hospitals owned by regional or national multi-market hospital systems, such as Ascension Health, HCA, or Dignity Health. These comparisons were a rough attempt to normalize for local wage costs and payor mix, both of which might affect financial and clinical performance.

A central concern of this panel is whether market concentration has enabled hospital systems to extract quasi-monopoly rents from local insurance plans. Because we did not have access to private insurer claims payments in this analysis, it was impossible for us to answer this question.

However, we were able to analyze the relationship between market concentration in the IDN’s main hospital market and the IDN’s profits. As we mentioned earlier, the sample IDNs are dominant actors in their respective hospital markets. But IDN financial disclosures did not report hospital profits separately, so we were unable to comment upon the role hospital profits play in the overall profitability of the IDN.

...we found no relationship between HHI and overall IDN profitability, measured either by gross operating profits or operating profits as a percentage of operating revenues.

...whatever pricing benefits IDNs might derive from their hospitals’ dominant market positions do not appear to drop through to the IDN’s bottom line.

However, we found no relationship between HHI and overall IDN profitability, measured either by gross operating profits or operating profits as a percentage of operating revenues (see Exhibits 4 and 5). It may be that some IDNs are investing their hospital profits in other businesses that either lose money (physician groups, e.g.) or that create community benefits (research, education, etc.). But these internal funds flows are impossible to determine from their public disclosures. Our analysis suggests that whatever pricing benefits IDNs might derive from their hospitals’ dominant market positions do not appear to drop through to the IDN’s bottom line. There was also no relationship between the size of the IDNs’ bed complement and profitability, suggesting that merely having a lot of hospital beds did not automatically confer operating profit advantages (as some advocates of health system mergers have argued).

Exhibit 4: Operating Income v. HHI (\$ in Millions)

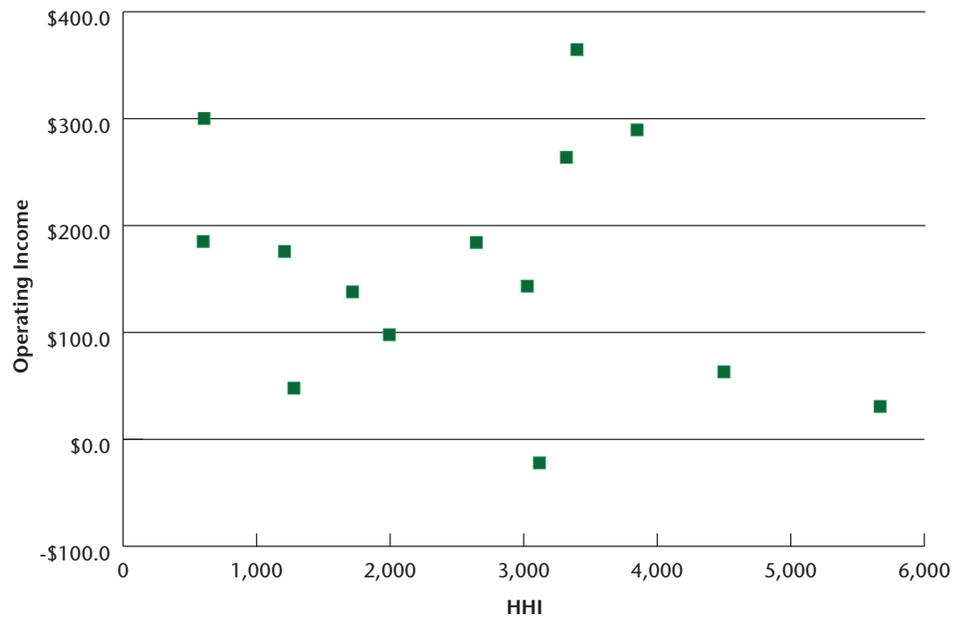
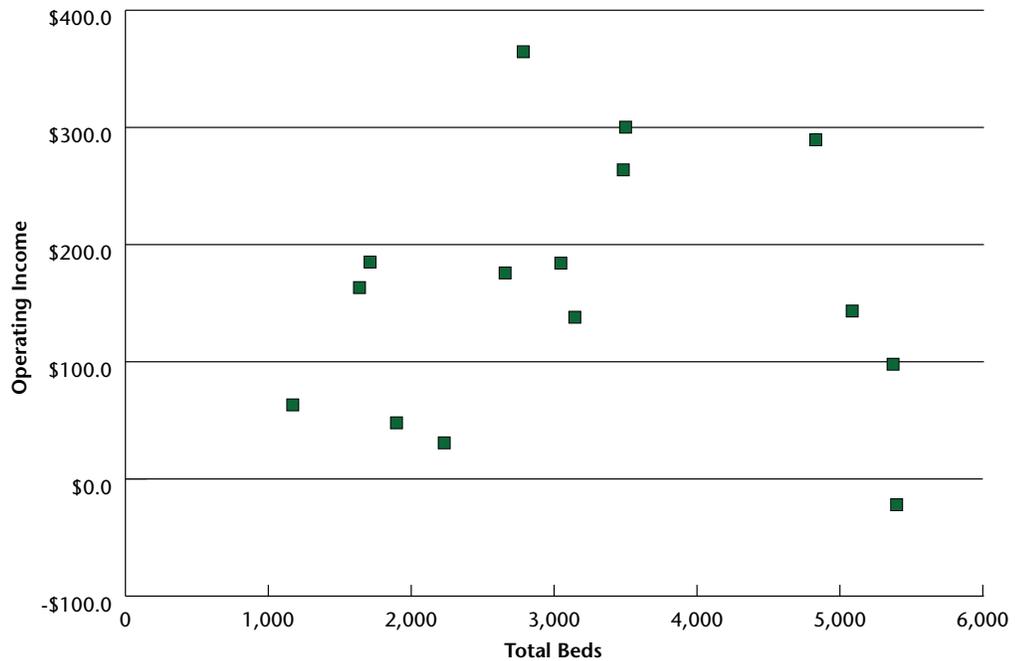


Exhibit 5: Operating Income v. Total Beds (\$ in Millions)



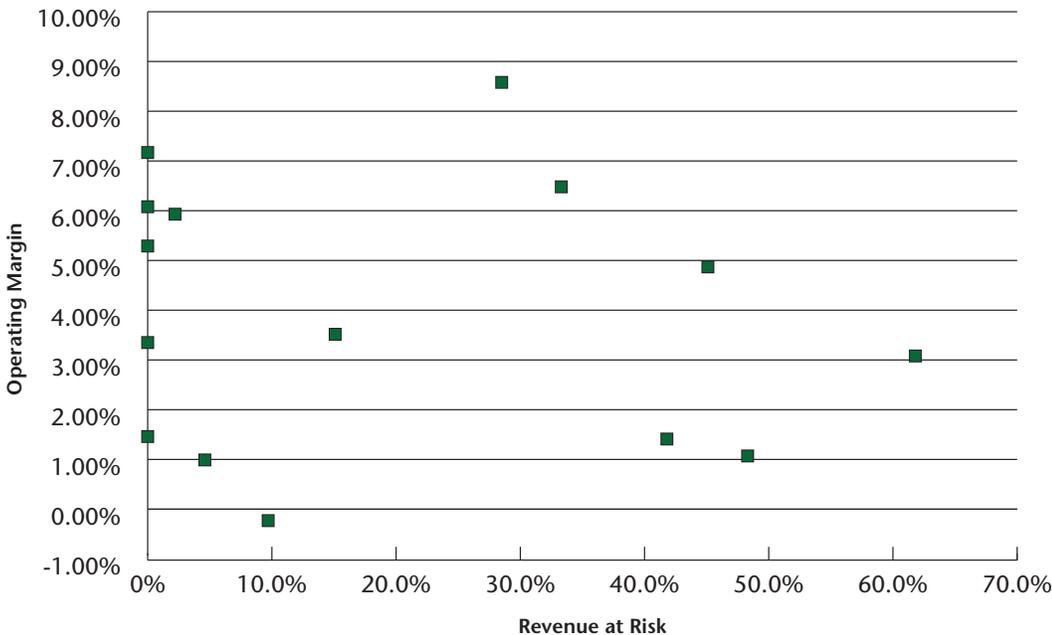
Issues Related to the IDN Insurance Function

The interaction of the three main IDN businesses is, as Graham Greene would say, the heart of the matter. Recall the theory of the IDN: In the case of the exemplar, Kaiser, facilities and physicians are cost inputs whose expenses, along with those of contracted services provided by non-IDN providers, are subtracted from Kaiser’s pool of premium revenue to determine total system profits. Kaiser thus has a powerful economic interest in rationalizing the spending on clinical services within a fixed budget. This is the main attraction of this model of integrated care.

One could reasonably expect that the more revenue an IDN has at risk, the more incentive it has to manage down its provider spending. In the case of the eight IDNs that operate health plans, clinical services provided to the captive plans’ patients are an operating cost to the plan. How IDNs price their services to their own health plan (that is, the transfer price of services to internal subsidiaries) is a matter of considerable accounting discretion. But there is an upward limit on how generous the health plan can be to the IDN’s own providers and still be price competitive with the non-integrated health plans in their regional markets.

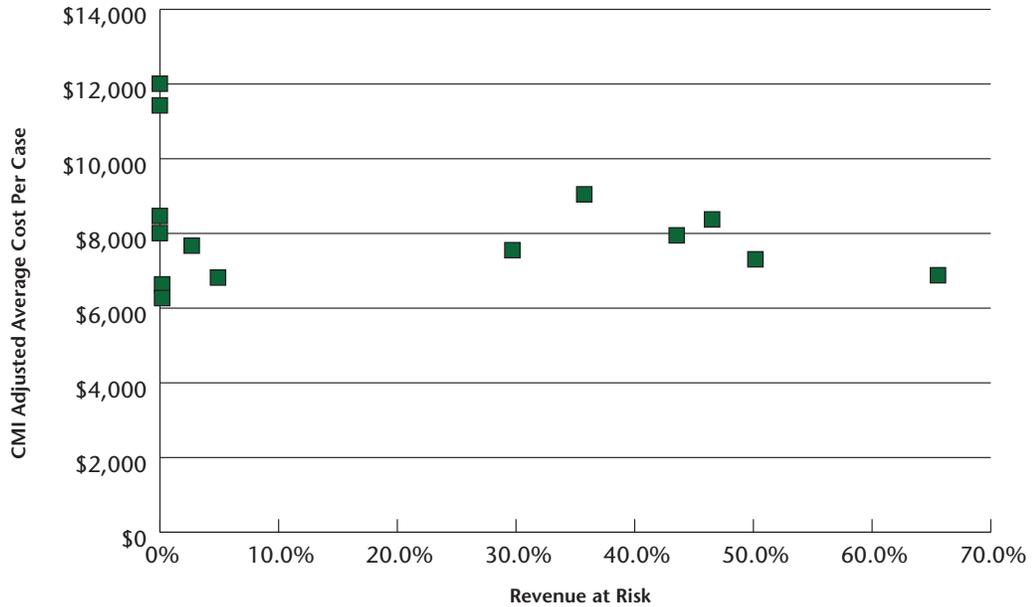
The strategic role the health plan plays in the IDN is complex and ambiguous. Does it function as a feeder to the IDN’s provider system or as a rationer of health services to the IDN’s insured lives, or, somehow, both? Is the IDN’s insurance risk held in the insurance captive or transmitted to the IDN’s provider units through population-based provider payment such as capitation? There is a powerful conflict between maximizing use of fixed provider capacity and being an effective risk-bearing clinical enterprise. How or even whether IDNs manage this conflict is the key to whether they save their customers, or the society, money. Because only a portion of these IDNs revenues are premium based, and the remainder of revenues come from open-ended forms of health care payment, there is no “fixed budget” to compel systemic savings.

Exhibit 6: Operating Margin v. Revenue at Risk



When we examined performance measures for IDNs, we found that the percentage of “revenue at risk” neither predicted overall IDN profitability (see Exhibit 6) nor the absolute Medicare Case Mix Index (CMI) adjusted cost of care at the IDN flagship institution (see Exhibit 7).

Exhibit 7: Case Mix Index Adjusted Average Cost per Case v. Revenue at Risk



We conducted a secondary analysis of the IDN’s “flagship” hospital Medicare cost per case (CMI adjusted) compared to its main in-market competitor and whether or not the IDN had *any* revenue at risk. What we found was that flagship hospitals within IDNs that have no revenue at risk are on average 10 percent less expensive than their in-market competitors, while flagships within IDNs that have some revenue at risk are on average 21 percent more expensive than their competitors. This finding is similar to one found in the literature review. If there is a cost of care advantage conferred on IDN hospitals by their owner operating a health plan, it was not apparent from this analysis.

...flagship hospitals within IDNs that have no revenue at risk are on average 10 percent less expensive than their in-market competitors, while flagships within IDNs that have some revenue at risk are on average 21 percent more expensive than their competitors.

It is worth noting here that we were unable to determine the role that a flagship hospital plays in the IDN, clinically or financially. In some cases, the flagship was the historic source of free cash flow and also debt used to build the rest of the IDN. In other cases, the flagship was the asset the system’s strategy and resource allocation was meant to protect, because it houses the majority of the IDNs research and education activities. How IDNs allocate system overhead among their hospitals or other IDN components is also not knowable based on public disclosures.

We found no meaningful differences in clinical quality or safety scores (readmissions, infection, or complication rates) or consumer satisfaction scores between the IDN flagships and their direct in-market competitors. In the Leapfrog Group’s recent hospital safety ratings, of the 12 pairs where comparative data were available, seven flagships got the same rating as their competitor, three were higher and two lower. There were six “A” rated flagships and three with a “C” safety rating.

However, IDN flagships have higher per-case costs and spend more at the end of life than their in-market competitors. The Dartmouth Atlas has studied extensively how individual hospitals treat patients in the last two years of life. Resources measured include all health spending for patients attributed to the hospital, not just the hospital’s own service spending. To us, total spending in the last two years of life is a measure of the degree of cultural restraint exerted by a medical community on resource consumption. In the last two years of life, patients often undergo significant health crises, and family members often exert pressure on the health system to do “whatever it takes” to help their relative in trouble.

...in 10 of 14 cases where comparative data were available, the IDN flagship had higher CMI adjusted Medicare cost per case than its in-market competitor.

In the Dartmouth analyses of total spending in the last two years of life, in 12 of the 15 comparisons available, the IDN flagship showed higher levels of health care spending (for services both inside and outside the system) than their in-market competitor.

Thus, variation in spending in the last two years of life provides an excellent window into the culture of the medical community that uses a hospital and how effectively the hospital is in coordinating that person’s care. In general, we believe that controlling the total cost of care, whether per episode or for specific populations of interest over a time period, is the best aggregate measure of IDN performance.

As can be seen from Exhibit 8, in 10 of 14 cases where comparative data were available, the IDN flagship had higher CMI-adjusted Medicare cost per case than its in-market competitor. This is despite the fact that in four of those cases, the competitor had a higher Medicare CMI, a rough measure of service intensity.

In the Dartmouth analyses of total spending in the last two years of life, in 12 of the 15 comparisons available, the IDN flagship showed higher levels of health care spending (for services both inside and outside the system) than its in-market competitor. This was despite the fact that in five of the 12 cases, the competitor hospital had a higher Medicare CMI. In 11 of the 15 paired comparisons, IDN flagships had higher imaging spending, while 12 had higher testing expenditures. These Dartmouth spending figures are not case-mix adjusted and do not reflect the socio-economic status or pre-existing health status of the patients cared for.

The higher flagship care costs were an unexpected finding given that one major presumed advantage of IDNs is their capability to coordinate care. Presumably, this would be reflected in lower levels of spending on care at

the end of life. We did not have the time or resources to perform other paired-comparison analyses. Several readers have suggested that comparing the IDNs’ *suburban* hospitals with their direct in-market competitors would have been useful and might have produced more pronounced cost differences than we found in analyzing their flagships. This analysis would provide valuable additional evidence on the question of IDN efficiency.

Exhibit 8: IDN Performance: Flagship Compared to Competitor

Medicare Spending per Decedent in Last Two Years of Life

Hospital	Case Mix Index (CMI)	CMI-Adjusted Avg. Cost per Case	Total	Imaging	Tests
A Flagship	1.62	\$7,109	\$66,009	\$1,157	\$801
A Competitor	1.94	\$6,926	\$62,216	\$961	\$756
B Flagship	1.57	\$6,448	\$92,733	\$1,642	\$1,214
B Competitor	2.13	\$9,160	\$92,208	\$1,613	\$1,174
C Flagship	1.81	\$6,902	\$64,618	\$743	\$1,064
C Competitor	1.76	\$6,877	\$48,870	\$572	\$483
D Flagship	1.73	\$8,501	\$68,185	\$748	\$511
D Competitor	1.73	\$5,713	\$62,912	\$759	\$795
E Flagship	2.32	\$11,110	\$101,616	\$1,636	\$1,048
E Competitor	1.80	\$10,241	\$99,024	\$2,095	\$980
F Flagship	2.02	\$9,069	\$69,121	\$944	\$810
F Competitor	1.67	\$5,455	\$64,231	\$789	\$924
G Flagship	1.79	\$6,809	\$89,378	\$1,088	\$1,205
G Competitor	2.02	\$9,069	\$76,146	\$780	\$760
H Flagship	1.74	\$7,267	\$64,854	\$838	\$758
H Competitor	1.83	\$5,737	\$69,968	\$1,027	\$734
I Flagship	1.73	\$7,236	\$93,928	\$991	\$687
I Competitor	1.63	\$6,128	\$92,667	\$1,242	\$1,018
J Flagship	1.97	\$7,659	\$94,221	\$1,708	\$1,129
J Competitor	2.25	\$8,343	\$96,122	\$1,705	\$1,017
K Flagship	1.63	\$8,269	\$102,392	\$1,652	\$1,178
K Competitor	1.58	\$7,703	\$87,546	\$1,216	\$1,137
L Flagship	1.88	\$12,110	\$136,069	\$1,416	\$810
L Competitor	2.27	\$11,309	\$120,501	\$1,377	\$799
M Flagship	1.69	\$8,770	\$105,042	\$2,293	\$2,102
M Competitor	1.75	\$9,654	\$103,254	\$2,176	\$1,787
N Flagship	n/a	n/a	\$83,948	\$1,693	\$1,169
N Competitor	2.22	\$9,041	\$80,524	\$1,264	\$786
O Flagship	2.13	\$8,140	\$86,281	\$1,180	\$891
O Competitor	2.21	\$6,509	\$87,059	\$1,134	\$630

Sources: American Hospital Directory, 2012, Dartmouth Atlas, 2010

Discussion

The 15 IDNs are formidable presences in their markets; frequently, they are the largest employer in their communities. They are highly complex operationally. Some of the finest medicine in the world is practiced in these IDN hospitals. They have capable managements, and many have produced important systemic innovations. Examples include “intelligent” computerized physician order entry and the clinical quality improvement methods developed at Intermountain Health Care, remote ICU monitoring systems developed at Johns Hopkins and beta tested at Sentara, and complex care management protocols developed at Geisinger.

However, IDNs are also inscrutable institutions. Though they make financial disclosures to their bondholders, in only about a third of them is it possible to determine what contribution their various provider services make to their operating revenues, let alone to their profitability. It is thus impossible to answer the question on the minds of this panel: whether these enterprises have used their market power in hospital or physician services to grow their hospital earnings. As we discussed, however, overall IDN profits were not higher in highly concentrated hospital markets. However, our single-year snapshot of performance indicators is no substitute for a multi-year analysis, as 2012 and 2013 were difficult years for many IDNs.

We were unable, given limited time and resources, to analyze comparative pricing information at any level (IDN or flagship) to give us a sense of how much these organizations are paid for their services versus their competitors. That is a task worthy of more detailed analysis. We would include a look at the IDNs’ smaller hospitals paired against their competitors to make broader generalizations possible.

The interpenetration of IDNs’ provider and insurance businesses add an additional layer of complexity. What strategic role does insurance play in the IDN portfolio? Is it a risk vehicle that protects consumers and employers from excessive health costs? Or is it a marketing vehicle to bolster the IDN’s provider market position and help fill its beds and clinic schedules? Or, somehow, both? And how price competitive are the IDNs health plan premiums compared to health plans that do not own provider capacity? This question was beyond the scope of our analysis.

And then there is the added layer of complexity introduced by how the IDN prices its provider services to its captive health plan? Does the IDN underprice internal provider services to grow market share in the insurance market and generate health insurer net income, or does it mark up the prices for internally provided services (as the insurance market allows) to increase provider incomes? Again, this is impossible to determine by analyzing IDN public filings.

There are complex societal efficiency questions. Are IDN-provided hospital, physician, and other services less costly or of demonstrably better quality because they come from an integrated entity rather than from a network of less integrated competitors? We could find no evidence from IDNs’ public disclosures or publicly available information to support these claims. IDN clinical quality performance measures are not aggregated at the enterprise level. What analyses we were able to conduct at the flagship-competitor level suggested that while there were no measureable qualitative differences,

IDN flagships were more expensive than their major competitors both on a Medicare cost-per-case and on a total-cost-of-care basis, at least for patients at the end of life.

Are the disclosures we analyzed adequate to understand fully the risks IDN's run in operating in multiple markets with conflicting incentives? We do not believe they are. The disclosures are notably less illuminating than the reporting required by publicly traded hospital operators, which contain such useful metrics as salary and benefits as a percentage of operating expenses, adjusted hospital admissions and outpatient volumes, and supplies as a percentage of operating costs, provided on a quarterly basis.

There has been a single, spectacular failure of an IDN in recent history — the 1998 bankruptcy of the Pennsylvania-based Allegheny Health Education and Research Foundation (AHERF). Despite ample warning signs of impending difficulty, and a catastrophic failure of accountability and oversight over billions of dollars in bonds, AHERF's collapse did not lead to meaningful tightening of IDN financial oversight by the investment community (Burns et al., 2000). The AHERF failure did, however, raise the issue of the quality and effectiveness of IDN governance to investor attention.

To reiterate a point made earlier, assumption of premium risk, as well as vertical integration by IDNs into very large, dispersed physician enterprises, both increase financial risks to IDN bondholders. Present levels of financial disclosure are, in our opinion, inadequate to fully evaluate these risks. IDN insurance performance is reported separately to state insurance commissions, but this performance is not meaningfully relatable to the performance of the IDN's other businesses.

What analyses we were able to conduct at the flagship-competitor level suggested that while there were no measureable qualitative differences, IDN flagships were more expensive than their major competitors both on a Medicare cost-per-case and on a "total-cost-of-care" basis, at least for patients at the end of life.

Policy Recommendations

We believe far more detailed and uniform voluntary financial and operating disclosures to bond holders would enable the analysts who follow these securities to understand the contribution to profit (if any) of all the major IDN businesses, as well as the transfer pricing strategies that affect inter-company sharing of revenues. Providing this more comprehensive information is in the interests of IDNs as well as financial markets, the health policy community, and society at large. Transparency and voluntary disclosure by the IDNs themselves is vastly preferable to disclosure required by regulatory mandates.

The two crucial disclosures, in our view, are the sources and amount of hospital operating profit and the IDN physician compensation policies. How IDNs allocate overhead and ancillary services income between the three main lines of business should also be disclosed, under standards voluntarily established by IDNs themselves. An IDN that generates 95 percent of its profits from its hospitals is probably not in the population health business. Neither is an organization that pays its physicians on

a relative value unit compensation model where they earn more by ordering more tests, or where they receive a share of the ancillary income they generate.

It should also be possible to determine from an IDN disclosure if capitated risk is transmitted from the IDN's health plan or risk-accepting organization to its hospitals, but particularly to its physicians. If the risk is retained in the health plan, and the hospitals and physicians continue being paid on a volume-enhancing compensation scheme (per diem, per case, per test, per visit), the IDN is not in the population health business.

Further, to address directly the issue of the effect of IDN market power on pricing, we believe a national all-payer claims data base, perhaps building on the work of the Health Care Cost Institute (HCCI), would be an invaluable resource in evaluating the market effects of IDNs. HCCI's database does not presently contain data from the nation's Blue Cross plans that, in many states, dominate health insurance markets. Bringing those data together with HCCI's data would provide far more illumination of the societal benefits that are created by IDNs and address the question of whether IDNs are exploiting their market power in hospital or physician markets to charge excessive prices for key services.

We believe the likelihood that IDNs are producing neither cost nor quality advantages over dispersed networks of caregivers assembled by health plans raises serious policy questions regarding the reliance upon ACOs as a contracting model by Medicare or private insurers. The latest growth spurt in IDN formation has been stimulated in major part by the quasi-risk contracting model embodied in ACOs.

If the intended end state for regular Medicare payment is full-risk contracting with IDNs, and present day IDNs do not display either increased operating efficiency or lower total cost of care compared to community-based alternatives, policymakers need to find another payment approach. What they may be stimulating instead of improved health and cost moderation is the locking down of hospital and physician markets that led to the creation of the NASI panel in the first place.

Conclusion

Integrated delivery networks contain some of the nation's leading hospitals and medical care professionals. They have produced systemically important clinical and management innovations and generate significant community benefits. This report is not intended to denigrate these fine institutions or their clinicians and managements but rather to raise questions about the mode of health care organization that they collectively represent. IDNs have also operated under a halo of presumed societal benefits (quality, efficiency, care integration, etc.) for the better part of four decades with remarkably little evidence that these benefits in fact exist.

It is still possible that these societal benefits of IDNs exist. But if they do, given the opacity of present IDN disclosure of key operating information, they eluded us in this preliminary investigation. If public policy is to continue fostering IDN growth and development, a more solid evidentiary foundation for this form of medical care organization seems essential. The mere presumption of societal benefits of IDN formation or operations is no longer tenable as a policy principle.

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Appendix: IDN Flagship Hospitals and their Competitors

TARGET INSTITUTIONS	FLAGSHIP HOSPITAL	COMPETITOR INSTITUTION
Advocate Health Care	Advocate Lutheran General Hospital	Northwest Community Hospital
Aurora Health Care	Aurora St. Luke's Medical Center	Froedtert Memorial Community Hospital
Banner Health Care	Banner Good Samaritan Medical Center	St. Joseph's Hospital and Medical Center
BayCare Health System	St. Joseph's Hospital	Tampa General Hospital
Geisinger Health System	Geisinger Medical Center	Robert Packer Hospital
Henry Ford Health System	Henry Ford Hospital – Detroit	St. John Hospital and Medical Center
Intermountain Healthcare	LDS Hospital	St. Mark's Hospital
Johns Hopkins Health System	Johns Hopkins Hospital	University of Maryland Medical Center
North Shore–LIJ Health System	North Shore University Hospital–Manhasset	Winthrop-University Hospital
Penn Medicine	Hospital of the University of Pennsylvania	Thomas Jefferson University Hospital
Presbyterian Healthcare Services	Presbyterian Hospital	Lovelace Medical Center – Downtown
Sanford Health	Sanford Medical Center Fargo	Essentia Health
Sentara Healthcare	Sentara Norfolk General Hospital	Riverside Regional Medical Center
Sutter Health	Sutter Medical Center, Sacramento	Mercy General Hospital
UPMC	UPMC Presbyterian	Allegheny General Hospital

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