

Integrated Delivery Systems: The Cure for Fragmentation

Alain C. Enthoven, PhD

Abstract

Our healthcare system is fragmented, with a misalignment of incentives, or lack of coordination, that spawns inefficient allocation of resources. Fragmentation adversely impacts quality, cost, and outcomes. Eliminating waste from unnecessary, unsafe care is crucial for improving quality and reducing costs—and making the system financially sustainable. Many believe this can be achieved through greater integration of healthcare delivery, more specifically via integrated delivery systems (IDSs). An IDS is an organized, coordinated, and collaborative network that links various healthcare providers to provide a coordinated, vertical continuum of services to a particular patient population or community. It is also accountable, both clinically and fiscally, for the clinical outcomes and health status of the population or community served, and has systems in place to manage and improve them. The marketplace already contains numerous styles and degrees of integration, ranging from Kaiser Permanente-style full integration, to more loosely organized individual practice associations, to public-private partnerships. Evidence suggests that IDSs can improve healthcare quality, improve outcomes, and reduce costs—especially for patients with complex needs—if properly implemented and coordinated. No single approach or public policy will fix the fragmented healthcare system, but IDSs represent an important step in the right direction.

(*Am J Manag Care.* 2009;15:S284-S290)

For author information and disclosures, see end of text.

Introduction

It is no secret: our healthcare system is fragmented, suffering from what George Halvorson calls “clinical linkage deficiencies.”¹ These systemic deficiencies, evidenced by conflicting incentives and lack of coordination, cost lives and fuel the unsustainable spiral of US healthcare expenditures.^{2,3}

For example, the Dartmouth Institute for Health Policy & Clinical Practice estimated that 30% to 40% of all hospitalizations are avoidable and that among regions, Medicare costs can vary 2- or 3-fold higher to treat similarly ill patients, without better outcomes.⁴ As late as 2005, preventable medical errors⁵ caused more deaths than breast cancer, automobile accidents, or drowning.⁶ In January 2009, an article in *The New England Journal of Medicine* stated that using a simple surgical checklist could reduce the death rate from surgery by half, decrease complications by more than a third, and save US hospitals about \$15 billion per year.⁷

Eliminating waste from unnecessary, unsafe care is crucial for improving quality and reducing costs—and making the system financially sustainable. Many believe this can be achieved through greater integration of healthcare delivery,^{3,8,9} more specifically via integrated delivery systems (IDSs). Without greater integration, some predict a systemic “meltdown.”³ However, relatively few people, inside or outside healthcare, know about the benefits—or even the existence—of IDSs.¹⁰

The IDS concept is not new. It first appeared in the 1930s,^{8,11} and gained traction in the 1980s. In the 1990s, IDSs were confused with “managed care,” created by insurance companies, usually with little or no integration of providers. Given the accelerating costs of US healthcare, the recent economic downturn, and the outcry for reform, interest in IDSs has been rekindled. Even President Obama talks about Mayo, Intermountain, Geisinger, and Kaiser Permanente—all prominent IDSs.

IDS Defined

Integrated healthcare can be better understood by considering the opposite.

What Does “Fragmented” Mean and How Did We Get Here?

“Fragmentation” in healthcare delivery means the systemic misalignment of incentives, or lack of coordination, that spawns inefficient

allocation of resources or harm to patients. Fragmentation adversely impacts quality, cost, and outcomes.¹²

This systemic fragmentation is difficult to dislodge. Fragmentation is steeped in the history and culture of medicine and is embedded populationwide in the current system—operationally, financially, and in the clinic.

Charles D. Weller called the current fragmented system “guild-free choice,” suggesting that the traditional American model of medical care can be likened to guilds in medieval Europe.¹³⁻¹⁵ Organized medicine uses the term “free choice” fee-for-service (FFS); specifically, individuals should have freedom to choose physicians and hospitals anytime a la carte.¹⁶ They should not be allowed to choose an insurance plan that limits their choice of provider to those in an organized delivery system in exchange for what they judge to be superior value.

After World War II, health insurance became the province of employers. To give employees insurance without provoking the medical profession, employers and insurers followed the “free choice” FFS construct. For administrative simplicity, most employers adopted the single-carrier, single-plan design—a “one size fits all” approach.

The professional culture of medicine has contributed to fragmentation by revering physician autonomy and infallibility.^{14,15,17} Education and training emphasize individual rather than team performance; physicians tend to practice as individuals.¹⁸ Predictably, solo or small single-specialty group practices have dominated the landscape, with unfortunate fallout: wide variation in practices and costs and relatively low accountability—a dearth of guidelines, utilization and quality management, collaboration, and peer review.^{14,15}

Traditional guild-like control, coupled with insulation from accountability, has given physicians a de facto monopoly over major decisions, including admitting patients to the hospital and choosing interventions. As a result, physicians still control (directly or indirectly) most of personal health spending,¹⁹ notwithstanding extensive insurer-imposed limitations.

The accelerating advances and complexity of modern healthcare have driven greater specialization and a “silo approach” to healthcare consistent with the described isolationist history and professional culture.⁶ Yet, in recent years, increasingly prevalent chronic, often comorbid conditions (eg, diabetes, heart failure, depression) require that patients receive care from multiple providers in multiple settings. Although intensified specialization sought to generate greater interdependence among clinicians and the need for cross-silo coordination, greater specialization has exacerbated fragmentation by increasing the number of narrowly trained specialists.

Other observers assert that organized medicine has historically used its considerable clout to preserve the status quo,

resisting efforts to systemically improve the quality and safety of medical care²⁰ and to form multispecialty group practices (MSGPs) or prepaid group practices (PGPs).²¹

Throughout this evolution, FFS has been the primary payment model.¹⁰ However, the FFS model contributes to fragmentation. Under FFS, physicians earn more by providing more services, thereby interposing an inherent disconnect between physicians’ economic self-interest and the interests of their patients. In short, traditional FFS rewards production volume rather than value or outcomes.⁹

For patients, who simply want their doctors to help them stay healthy or get better, the fragmented system resembles, as George Bernard Shaw wrote in *The Doctor’s Dilemma*, arrayed “conspiracies against the laity.”²²

What Does “Integrated” Mean?

The opposite of a fragmented healthcare delivery system is a coordinated, integrated system—an IDS. The IDS model flows from the recognition that there is more to safe, appropriate, and affordable healthcare than the face-to-face encounter between doctor and patient: the care delivered is the output of a *system*. Therefore, healthcare reform must be based on redesigned *systems* of care.²

As for what constitutes an IDS, various definitions have emerged. Evashwick and Meadors produced a definition in 1994,²³ but lack of clarity remains about the meaning of the term—and the term itself. For example, IDSs are also called Integrated Health Services, Integrated Delivery Networks, and Integrated Health Care Delivery.

That said, a workable definition can be distilled from the research. An IDS is an organized, coordinated, and collaborative network that: (1) links various healthcare providers, via common ownership or contract, across 3 domains of integration—economic, noneconomic, and clinical²⁴—to provide a coordinated, vertical continuum of services to a particular patient population or community and (2) is accountable, both clinically and fiscally, for the clinical outcomes and health status of the population or community served, and has systems in place to manage and improve them.²⁵

The Successful IDS: Key Attributes and Principles in the Content of Competition Over Value for Money

Cultures, values, and leadership. High-performing, integrated healthcare begins with shared values and goals. All participants are committed to deliver high-quality, affordable care to patients.^{25,26} Committed executive leadership, and a coherent organizational structure, implant and consistently reinforce this mindset to maximize benefit to patients.^{12,25}

Reports

Physician leadership is equally essential.^{9,25} A successful IDS must win the loyalty, commitment, and responsible participation of physicians.

The IDS instills and reinforces a culture of safety and teamwork in the clinic among physicians, nurses, and technicians. Clinicians work collaboratively, in an atmosphere of mutual trust and respect, to continuously improve practice rules, processes, safety, and quality.^{14,27}

Although the team leader (usually a physician) has ultimate decision-making authority, all team members are accountable to each other, must review each others' work, and collaborate to deliver high-quality, high-value care. Activities are reported routinely and transparently.^{9,12,20,28}

Patient-centered and population health focus. Patients have multiple points of entry to appropriate care and information.^{9,25} Providers respect and respond to individual patient preferences, needs, and values—this includes cultural competence (ie, knowledge of the patient's language and culture as relevant to health)¹²—to inform all clinical decisions. Patients participate in those decisions.^{2,9,12,26} Resources and services are matched to the needs of, and are directed toward improving the overall somatic and mental health of, the population/community served, including prevention initiatives.^{10,25}

Coordination. Care is coordinated and information shared across all settings and providers—inpatient, outpatient, physician's office, and home—to provide a seamless continuum of services. Care is delivered at the least invasive and most cost-effective appropriate setting. All or most of a patient's care remains within the system, enabling maximum efficiency and coordination.¹⁰ Transitions and handoffs between settings are explicitly and effectively managed to reduce costs by avoiding rehospitalizations and other complications.

Financial incentives. Financial incentives are aligned with the interests of consumers/patients for high-quality, affordable care among providers, ideally based on (1) a shared revenue stream mediated at the enterprise level, and (2) risk-adjusted, capitated payments to provider organizations.²⁵ A common revenue stream and capitated payments create incentives to avoid duplication and facilitate efficient deployment of resources.²⁵ Thus, an IDS manifests attuned consciousness of cost versus benefit, echoing the Institute of Medicine's call for continuous decreases in waste.^{2,8}

Evidence-based medicine. All providers employ the same current concepts of best practice and the same evidence-based practice guidelines to minimize quality shortfalls and variations in care.¹⁰ The IDS dedicates sufficient financial

and logistic resources to promote evidence-based medicine, including health information technology (HIT).²⁹

Comprehensive records. The IDS has, through its HIT, longitudinal records (electronic medical records [EMRs]/electronic health records [EHRs]) that are accessible and shared by all providers and track the following: (1) each patient's path through the healthcare continuum, so that each provider treating the patient can access all relevant information at the point of care,¹² appropriate information accompanies all patient transfers,¹² (2) all patient encounters, aggregating data to enable systemwide evaluation, benchmarking, and improvement, and (3) status of health problems such as chronic conditions across a primary care physician's panel.

Ability to "right size" capacity. IDSs should (1) retain the needed number and types of physician specialties for the enrolled population; (2) have enough primary care physicians so that everyone has good access to a primary care physician, and few enough surgeons so that each one is fully busy, proficient, and able to make a good living at a low cost per case; and (3) adjust the facilities and equipment to the needs of the enrolled population.

Continuous innovation and learning to improve value. The IDS seeks new ways to improve quality, value, and patient experiences with healthcare delivery with an emphasis on primary care as the coordinating agent.^{9,12}

IDS Prevalence and Permutations

Forms of IDSs

Although the marketplace embraces multiple customized variations, the Commonwealth Fund has identified 4 basic integration models.¹²

Model 1: IDS or MSGP with a health plan—a single-entity delivery system (hospitals, physicians, and other providers) that includes a health plan. This model, which is both provider and payer, involves physicians in strategic planning. Other advantages include enhanced collection and integration of data, utilization review, and cost-control capacity. Duplication of services is greatly minimized.²⁵ Kaiser Permanente follows this model, but only serves members of its health plan. Geisinger Health System is similarly structured, but serves patients outside its health plans.¹⁰

Model 2: IDS or MSGP without a health plan—a single-entity delivery system without a health plan. Examples of

this model include the Mayo Clinic and HealthCare Partners Medical Group.

Model 3: Private networks of independent providers—an organization composed of multiple independent providers that share and coordinate services. Similar to models 1 and 2, model 3 may include infrastructure services (eg, performance improvement and care management). The Hill Physicians Medical Group is an example of model 3. The Washington State Hospital Association has identified other integration formats that fit under model 3, including physician–hospital organizations, management service organizations, group practices without walls, individual practice associations (IPAs), and California “delegated model” health maintenance organizations (HMOs).²⁵

Model 4: Government-facilitated networks of independent providers. In this model, government takes an active role in organizing independent providers, usually to create a delivery system for Medicaid beneficiaries. Community Care of North Carolina, a public–private partnership, is an example of this model.

IDS Reach

Although definitions vary and definitive statistics are elusive, there are more than 100 IDSs in operation in the United States.^{8,30,31} They are especially common in the West and upper Midwest.⁸ An estimated 40 million persons are enrolled in integrated care (Table).¹⁰

Other well-known IDS entities (with varying degrees and styles of integration) include large multispecialty group practices such as Dean Health System, Geisinger Health System, Harvard Pilgrim Health Care, Health Partners of Minnesota, Hill Physicians Medical Group, Marshfield Clinic, Mayo Clinic, Scott & White Healthcare (Texas), and the Veterans Administration. Group Healthcare Cooperatives (Puget Sound; Eau Claire, Wisconsin; South Central Wisconsin) are prepaid group practices.

Health Maintenance Organizations

Some HMOs are considered integrated because they deliver and finance comprehensive health services to a voluntary enrolled population for a fixed, prepaid fee. The HMO population can be divided into (1) “delivery system HMOs” based on IDSs, and (2) “carrier HMOs,” whose chassis is an insurance company that mainly contracts with nonintegrated traditional providers. It has been a great disservice to confuse

■ **Table. Integrated Delivery Systems and Enrollment in the United States¹⁰**

Common Revenue Streams	Enrollment (millions)
Kaiser Permanente	8.6
Veterans Administration	7.9
Other prepaid group practices	1.5
Multiple Revenue Streams	
Intermountain Healthcare	1.0
“California Delegated” HMOs ^a	9.0
Other large multispecialty group practices	10.0

HMO indicates health maintenance organization.
^a“California Delegated” HMOs are medical groups paid per capita for professional services by insurance companies. Although nominally classified as integrated, these HMOs have poor incentives alignment. Medical groups, hospitals, and insurance companies have conflicting objectives and interests.

the two. Paul Ellwood, who coined the term “HMO,” was thinking of IDSs and regrets the political necessity that led to the inclusion of uncoordinated traditional providers. The carrier HMOs offered members HMO plan designs that left them unconscious of cost at the point of service. The carriers contracted with FFS doctors with incentives to do more services, whether or not they were necessary or beneficial to the patient. Also, insurance carriers put themselves in the middle as traffic cops—inevitably, a losing proposition.

Evidence That IDSs Work

Evidence suggests that integrated systems can improve healthcare quality, improve outcomes, and reduce costs—especially for patients with complex needs—if properly implemented and coordinated.^{10,12}

Specific Examples

Health Insurance Experiment. In the landmark Health Insurance Experiment (HIE), RAND conducted a randomized controlled trial comparing “free-choice FFS” in Seattle to Group Healthcare Cooperative-Puget Sound, a fully integrated PGP. HIE determined that resource use, specifically relative value schedule units of physician visits and hospital stays, for the PGP group was 28% less than the FFS group, with the same outcomes.³²

Intermountain Healthcare. Intermountain’s Clinical Integration program, which was designed to improve value systemwide, focused on integrating HIT, clinical and operations management, and incentives. Eleven clinical improvement projects yielded \$20 million in savings.¹²

Kaiser Permanente. Sir Richard Feachem and associates did a systematic comparison of the adjusted costs per patient

Reports

at Kaiser Permanente in California and the British National Health Service (NHS).³³ The results surprised and shook up the British. As the title of the article implied, Californians got more for their dollar. Kaiser in California was a little more expensive, but gave patients far more convenient access to more advanced medical technologies than are generally available in the NHS.

Medicare. A 2007 study reported that chronically ill Medicare patients in IDSs used significantly fewer resources in the last 24 months of life compared with the national average. Total physician and hospital spending for patients in organized systems were 24% and 2% less, respectively.³⁴

General Examples

Growing evidence, including peer-reviewed studies, reflects that greater organization and integration are associated with higher quality and efficiency, and that large group practices perform better than solo practitioners or small groups.^{9,35} For example, group practices have achieved better health outcomes, such as reduced mortality in heart attacks.¹² Physicians in large group practices are more than twice as likely to use organized care management processes as physicians in small groups or those not in a group.³⁶ IPAs are twice as likely to use effective care management processes as small groups with no IPA affiliation.¹²

Full integration is associated with even higher performance. Compared with IPAs, integrated medical groups in California achieve a higher level of clinical quality, and are more likely to use EMRs, follow quality improvement strategies, collect patient satisfaction data, and offer health promotion programs. HMOs with physician employees or those that partner with physicians tend to score higher on clinical measures than HMOs with independent physician networks.¹²

Finally, from an overall business perspective, IDSs are potentially formidable economic units. Coordinated organizations functioning under a cohesive strategy can achieve economies of scale and make efficient use of both capital and operating resources, enabling them to meet the same level of demand with less capacity than stand-alone facilities. Larger scale also promotes increased productivity, lower staffing requirements, and reduced operating and unit costs that can be passed on to consumers.²⁵

Key Lessons on Integrated Delivery—How Do We Get There From Here?

Provider/Delivery Side

The above analysis and available research send multiple, yet discernible signals. The history and culture surrounding both the practice and profession of medicine created a “guild-free choice,” silo mentality.⁹ This, coupled with how

the business of healthcare has been conducted, has resulted in a fragmented, dysfunctional system saddled with misaligned incentives. It is now recognized that this scenario is outdated. Increasingly prevalent chronic, comorbid conditions and spiraling costs, coupled with poor outcomes, demonstrate the need to better coordinate healthcare—and transform US healthcare delivery systems into IDSs.

Research linking integration and teamwork with better results indicates that healthcare should be delivered by more formally organized, coordinated teams—physicians, nurses, and other healthcare professionals—through practice configurations that more closely resemble PGPs.^{9,35}

Current education and training, which often inadequately prepare physicians and other health professionals to practice in an IDS or as part of a team, should encourage systems thinking and shift emphasis from treating disease to preventing disease and promoting population health.^{9,12}

The transformation to IDSs requires an altered mindset for physicians and their educators, but cannot succeed without physician leadership and participation.⁹ Although the “guild-free choice” stance has recently softened, it remains the default setting.

Another key to successful integration is widespread adoption and deployment of interoperable HIT/EMR/EHR, including (1) access to all relevant information by providers at the point of care, (2) access by patients,¹² and (3) use of HIT, not just internally, locally, and regionally, but nationally to transparently report, measure, and improve performance.¹²

Payment reform is essential to better align financial incentives and reward high-quality, patient-centered care. This would entail broader consumer choice beyond the traditional FFS model and market-based competition among providers. Pay-for-performance would be part of the equation, as would patient cost-sharing^{9,12} in order to discourage overuse of unnecessary, low-value interventions³⁷ and motivate participation in prevention and disease management programs.

Employer/Consumer Side: Market-Free Choice Leans to IDS

Conceptually, the cure for fragmentation is simple and reprises Weller: “guild-free choice” yields to “market-free choice.”¹³ But practical implementation can be complex, and appreciable obstacles remain. Following are some real-life, illuminating examples of employers offering employees several health plan options with employee cost responsibility.

Stanford University (Stanford) employees can choose from 5 health plans: 3 HMOs and 2 preferred provider organizations (PPOs). The PPOs are self-insured, uncoordinated FFS options. The HMOs include Kaiser Permanente and 2 “California

Delegated” HMOs serviced mainly by the Palo Alto Medical Foundation (PAMF), a large MSGP with salaried doctors. For employees who choose the lowest-priced plan (usually Kaiser), Stanford pays 100% of individual coverage and 82% to 100% (depending on income) of dependent coverage. Employees who choose a higher-priced plan must pay the premium differences. (They can, however, shelter their contributions through “salary reduction” under Section 125 of the Internal Revenue Code, which dilutes the incentive to choose wisely.)

Reflecting the cost-conscious climate, about 80% of Stanford employees choose “delivery system HMOs” because per family per year, the HMOs cost less than FFS PPOs. Between the 2 HMO providers, market competition has yielded visible advances; both improved service and adopted HIT. Like Kaiser, PAMF has EMRs and secure physician–patient e-mail. On the other hand, because few employers offer employees a cost-conscious choice of plans, and because Medicare and the employer community have locked in cost-unconscious FFS, only attenuated price competition has occurred—and even that is being undermined by large-scale employer preferences for self-insurance and therefore FFS payment. Large medical groups have both HMO and PPO/FFS patients. If a preponderance of employers offer to pay FFS, the incentive for medical groups to reduce the cost of their HMO plans is attenuated, if not destroyed.

The scenario is similar at the University of California and with the state employees of California and Wisconsin. The employees of each have a range of choices, and the employer contributes fixed amounts. In Madison, Wisconsin, state employees have a large market share, the value for money competition is strong, and family annual premiums are thousands of dollars less than elsewhere in the state.

These examples make a notable point. In this era of rising concerns over costs, people who were given a range of alternatives that included FFS and IDS, and could decide what is the best value for their money, overwhelmingly chose IDSs.^{38,39} This supports the long-held belief that the key to US health-care reform is “open the markets and level the playing field.”

Political and Practical Obstacles to IDS

Despite the documented success of and progress toward IDSs, formidable practical and political obstacles constrict more universal adoption. For example, large employers generally resist offering employees more plan choices. Even if offered, employers tend to contribute more toward costlier models (ie, large employers pay 80%-100% of the premium of the plan of the employee’s choice). If one plan costs more than another, these employers pay 80% to 100% of the differ-

ence, thus destroying any marketplace reward to the less costly plan for being less expensive. For emphasis, let me reiterate, these employers destroy the incentives of delivery systems to be less costly.

Some consumers value the right to obtain the services from any doctor, anywhere, in case the “best doctor” for their condition is not in an IDS. Their preferences, of course, should be respected, but they should be expected to pay out of pocket for any extra costs associated with their choice.

Small employers generally believe that offering more choices is too costly or impractical, although some manage to do so.

Insurance companies oppose “sliced business”—that is, offering side-by-side choices. They want to be the sole source of health insurance, indeed the “single payer” for each employment group. The insurance industry thus opposes creating exchanges to cover employee groups. They do not want that kind of competition.

Labor and management oppose capping the open-ended exclusion of employer contributions, and even employee contributions, from the taxable incomes of employees, which is necessary to give consumer incentives for cost-conscious choice.

Device manufacturers and providers generally prefer the fragmented traditional system because their customers are cost-unconscious. Thus, they oppose public policies that would lead to the proliferation of competing IDSs.

These large components of the medical industrial complex spend enormous amounts of money employing lobbyists and supporting or attacking congressional candidates who do or do not support the policies they prefer.

Conclusion

The vastness and complexity of healthcare in the United States, accompanied by regional differences, indicate that no single approach or public policy will fix the fragmented healthcare system.¹² Even if that were so, the marketplace already contains numerous styles and degrees of integration, ranging from Kaiser Permanente-style full integration, to more loosely organized IPAs, to public–private partnerships. Moreover, notwithstanding the potential role for government in promoting IDS, many in the healthcare realm will resist universal change imposed by government fiat.

In response to these genuine concerns, the available evidence provides 2 valuable lessons. First, for the extent to which positive IDS hallmarks (as described above) are met, each IDS configuration and approach can yield more efficient, higher-value performance, thereby reducing waste, improving quality, and lowering costs.^{9,12} Second, substantial positive change can

be achieved through private, value-based, market competition—as ever, the catalyst for American innovation. Such innovation is needed to cure the present fragmentation.⁹

Acknowledgments

The author gratefully acknowledges Gary W. Levi, JD, for his extensive assistance in the preparation of this article, and Nancy Taylor and Laura Tollen for reviewing drafts and making valuable criticisms and suggestions.

Author Affiliations: From the Graduate School of Business, Stanford University, Stanford, CA.

Funding Source: Financial support for this work was provided by GlaxoSmithKline.

Author Disclosure: The author reports paid consultancy to Kaiser Permanente Institute for Health Policy.

Authorship Information: Concept and design; analysis and interpretation of data; and critical revision of the manuscript for important intellectual content.

Address correspondence to: Alain C. Enthoven, Graduate School of Business, Stanford University, 518 Memorial Way, Stanford, CA 94305-5015. E-mail: enthoven_alain@GSB.Stanford.Edu.

REFERENCES

1. Halvorson GC. *Health Care Reform Now!: A Prescription for Change*. San Francisco, CA: Jossey-Bass; 2007.
2. Institute of Medicine of the National Academy of Sciences. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academy Press; 2001.
3. Health Industry Forum. Healthcare Payment Reform: Creating Conditions for More Efficient Health Delivery. Policy Brief, April 10, 2008. http://healthforum.brandeis.edu/meetings/materials/2008%20-%2010%20-%20April/Payment%20Brief%204-10-08_final.pdf. Accessed October 12, 2009.
4. Associated Press. Better care, pay less: some communities find a way. September 7, 2009. <http://abcnews.go.com/Health/WireStory?id=8508105&page=2>. Accessed November 8, 2009.
5. Hoyert DL, Kung HC, Smith BL. Deaths: preliminary data for 2003. *National Vital Statistics Reports*. 2005;53(15).
6. Mann S, Marcus R, Sachs B. Lessons from the cockpit: how team training can reduce errors on L&D. *Contemporary OB/GYN*. January 1, 2006. <http://contemporaryobgyn.modernmedicine.com/obgyn/content/printContentPopup.jsp?id=28348>. Accessed October 21, 2009.
7. Haynes AB, Weiser TG, Berry WR, et al. A surgical safety checklist to reduce morbidity and mortality in a global population. *N Engl J Med*. 2009;360:491-499.
8. Crosson FJ. 21st-century health care—the case for integrated delivery systems. *N Engl J Med*. 2009;361(14):1324-1325.
9. Intermountain Healthcare, Kaiser Permanente, and Mayo Clinic. Delivery System Reform: Action Steps and Pay-for-Value Approaches. November 4, 2008.
10. Enthoven AC. Curing fragmentation with integrated delivery systems: what they do, what has blocked them, why we need them, and how to get there from here. Presentation at the Harvard Law School Conference: “Our Fragmented Health Care System: Causes and Solutions.” June 13-14, 2008.
11. Falk IS, Rorem CR, Ring MD. *The Costs of Medical Care: A Summary of Investigations on the Economic Aspects of the Prevention and Care of Illness*. Chicago, IL: University of Chicago Press; 1933:515-593.
12. Shih A, Davis K, Schoenbaum S, Gauthier A, et al. Organizing the U.S. Health Care Delivery System for High Performance. The Commission on a High Performance Health System. Commonwealth Fund, August 2008.
13. Weller CD. “Free choice” as a restraint of trade in American health care delivery and insurance. *Iowa Law Review*. 1984;69(5):1351-1392.
14. Stevens R. *American Medicine and the Public Interest*. New Haven, CT: Yale University Press; 1972.

15. Starr P. *The Social Transformation of American Medicine: The Rise of a Sovereign Profession and the Making of a Vast Industry*. New York, NY: Perseus Books Group; 1982.
16. AMA Code of Medical Ethics. Opinion 9.06. “Free Choice.”
17. Mechanic D. *The Truth About Health Care: Why Reform Is Not Working in America*. New Brunswick, NJ: Rutgers University Press; 2006.
18. Powell SM, Hill RK. My copilot is a nurse—using crew resource management in the OR. *AORN J*. 2006;83(1):178-204.
19. Sager A, Socolar D. *Health Costs Absorb One-Quarter of Economic Growth, 2000-2005*. Boston, MA: Boston University School of Public Health; 2005.
20. Singer S, Tucker A. Creating a culture of safety in hospitals. AcademyHealth: Annual Research Meeting 2005. Boston, MA: June 26-28, 2005. Abstract 4197.
21. Goldberg LG, Greenberg W. The emergence of physician-sponsored health insurance: a historical perspective. Greenberg W, ed. *Competition in the Health Care Sector, Past, Present, and Future*. Germantown, MD: Aspen Systems Corporation; 1978.
22. George Bernard Shaw. *The Doctor’s Dilemma*. 1911, Act 1.
23. Evashwick C, Meadors A. Defining integrated delivery systems. *AHSR FHSR Annu Meet Abstr Book*. 1994;11:31-32.
24. Burns LR, Muller RW. Hospital-physician collaboration: landscape of economic integration and impact on clinical integration. *Milbank Q*. 2008;86(3):375-434.
25. Washington State Hospital Association. *Governing Board Orientation Manual*. 2006;3-4. http://www.wsha.org/files/62/Gov_Bd_Manual_INTEGRATED.doc. Accessed October 12, 2009.
26. Dearing JW. Abstract PS1-11: patient-centered communication research in integrated delivery systems. *Clin Med Res*. 2008;6(3-4):132.
27. Helmreich RL. Culture, threat, and error: lessons from aviation. *Canadian J Anesthesia*. 2004;51:R1-R4.
28. Joint Commission. *Health Care at the Crossroads: Strategies for Improving the Medical Liability System and Preventing Patient Injury*. Joint Commission on Accreditation of Healthcare Organizations; 2005.
29. Enthoven AC, Tollen LA. Competition in health care: it takes systems to pursue quality and efficiency. *Health Affairs*. Web Exclusive. 2005;W5:420-433.
30. Wan TT, Lin BY, Ma A. Integration mechanisms and hospital efficiency in integrated health care delivery systems. *J Med Syst*. 2002;26(2):127-143.
31. Knowledge Source On-Line. Integrated Healthcare Networks Market Overview. June 22, 2009.
32. Newhouse JP; Insurance Experiment Group. *Free for All? Lessons from the RAND Health Insurance Experiment*. Cambridge, MA: Harvard University Press; 1993.
33. Feachem RG, Sekhri NK, White KL. Getting more for their dollar: a comparison of the NHS with California’s Kaiser Permanente. *BMJ*. 2002;324(7330):135-141.
34. Tollen L. Physician Organization In Relation To Quality And Efficiency Of Care: A Synthesis Of Recent Literature. Commonwealth Fund. April 2008.
35. Grumbach K, Bodenheimer T. Can health care teams improve primary care practice? *JAMA*. 2004;291(10):1246-1251.
36. Shortell S, Schmittiel J. Prepaid groups and organized delivery systems: promise, performance, and potential. *Toward a 21st Century Health System: The Contributions and Promise of Prepaid Group Practice*. Enthoven AC, Tollen LA, eds. San Francisco, CA: Jossey-Bass; 2004.
37. Chernew ME, Newhouse JP. What does the RAND health insurance experiment tell us about the impact of patient cost sharing on health outcomes? *Am J Manag Care*. 2008;14(4):412-414.
38. Enthoven AC. Open the markets and level the playing field. *Toward a 21st Century Health System: The Contributions and Promise of Prepaid Group Practice*. Enthoven AC, Tollen LA, eds. San Francisco, CA: Jossey-Bass; 2004:227-245.
39. Enthoven AC. Market forces and efficient health care systems. *Health Affairs*. 2004;23(2):25-27.