

# Integrated Delivery Systems (IDSs) as a Means of Reducing Costs and Improving Healthcare Delivery

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## Abstract

Integrated Delivery System (IDS) is a network of healthcare facilities under a parent holding company. The term is used broadly to define an organization that provides a continuum of healthcare services. IDSs align incentives and resources better than most healthcare delivery systems, leading to improved medical care quality while controlling costs.

In the Government's efforts to improve the quality of care and reduce the cost of healthcare delivery, this system can be implemented and utilized during the time of increased healthcare cost and reduced government's budget. It is a system that allows utilization of the available resources without the excess expenditure of care.

Currently, most of the Middle East countries are faced with a lot of financial constraints, a matter that forced several governments to take certain actions to reduce its expenditure and look for means of maintaining the level of Healthcare, as well as reduce its cost. In Saudi Arabia, privatization of healthcare is an approach which the government is utilizing to ease the pressure of increasing healthcare cost. Yet this is not the only solution that the government can take. In this paper, I will present the IDS system as an alternative to reduce cost while maintaining the quality of care desired.

I will discuss the approach to implementing the IDS system, outline the pros and cons of the system. I will discuss the different types of Integration and the approach to its development. Also, I will present the infrastructure needed to develop the system and the obstacles to its implementation. I will share some of the experience in developing the system in other countries and the result they have achieved.

**Keywords:** Integrated delivery system (IDS); Healthcare; Managed organizations

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## Introduction

At the time of financial constraints, we tend to look for means and systems to decrease our expenditure. Healthcare is no exception. Currently, the Middle East is suffering from significant financial constraints. Many governments are developing systems by which the cost of all services provided is decreased, including the healthcare. Over the years economists have talked about the continuing increase in healthcare cost. New technologies were

developed, more expensive medications are on the market, as well as more advanced surgical techniques were developed. The increase in healthcare cost was and will be a great concern for many years to come. What makes healthcare cost alarming to all the governments is that it is linked to the population well-being. A healthy society will be more productive, at the same time, the elderly population has the right to better healthcare. The dilemma comes from the need to provide quality care at reasonable cost.

In 2015, U.S. health care spending increased to 17.5 percent of the GNP to reach \$3.2 trillion, or \$9,990 per person [1]. In the Middle East, Saudi Arabia 6.6 percent, UAE 3.6 percent, Bahrain 5 percent, Egypt 5.6 percent, Jordan 7.5 percent, Lebanon 12.6 percent and Bahrain 5 percent [2]. This demonstrates that the healthcare increase is a serious problem that needs to be addressed and should be given utmost attention.

To date, different approaches have been tried to control healthcare costs yet the healthcare cost still increasing. Some of these approaches are Fee for Service, Bundle Payment, limiting formulary drugs, group purchasing and several others. But because of the diversity in delivery systems, it is unlikely that a single effective national approach can be implemented. The only effective way to reduce healthcare cost and maintain the best quality is to restructure healthcare delivery and to engage the key stakeholders.

Saudi Arabia is going for privatization of healthcare system as a means to reduce the cost and improve the quality of healthcare services. However, based on the international experience, this approach was proven in different setup not to be very effective. Creating a national insurance may not be the answer to the question. It was proven by experience that many insurance companies are manipulating any efforts that the government set for health insurance especially if the government is using a unified premium system as in Germany.

Integrated Delivery System (IDS), is an organized, coordinated and collaborative network that links various healthcare providers, via common ownership [3]. We will discuss the different definitions of the IDS, types of the IDS, the value of IDS on healthcare cost and quality.

## Definitions of IDS

There is no single definition of IDS. Many authors have developed several definitions. We will review the most common ones. According to Enthoven [3] IDS is An organized, coordinated and collaborative network that: (1) links various health care providers, via common ownership or contract, across three domains of integration – economic, noneconomic, and clinical – 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. And according to Lega [4], it's a delivery system which "provides or aims to provide a coordinated continuum of services to a defined population and are willing to be held clinically and fiscally accountable for the outcomes and the health status of the population served. And finally the definition of Pan American Health Organizations [5,6]. However, there are other definitions but we will use only these definitions which outline the layout of the IDS and defines the responsible authority as a collaborative network which links various provider with the aim of being responsible for the clinical outcome and health status of the population. This integration will provide an umbrella which covers all the necessary care under one authority. The authority can set the standard of care desired

and also monitor the clinical outcome of the care provided and the financial expenditure. It will also prevent the unnecessary duplication of the services provided and the full utilization of the resources available in the network.

One of the main reasons for the increase of healthcare besides the expensive technologies is the absence of optimal utilization of the resources. This is true especially if the healthcare is provided by the government and mostly provided for free to all patients as in Saudi Arabia and some other countries in the Middle East. All hospitals are interested in acquiring the most modern technology, yet they don't have the population to fully utilize the services they are acquiring. Generally, the utilization of new technology e.g. MRI has increased significantly lately. In US, the cost of MRI increased between 2000 and 2005 from 6.6 Billion to 13.7 Billion a matter that was not justifiable by the healthcare agency [7]. This just one example which leads to increase the cost of healthcare that is the use of unnecessary tests that can be achieved with a cheaper technology. Medication prescribing is another example, where more expensive medications are prescribed where cheaper older medications can do the work, but due to the pharmaceutical companies and their influence on the physicians to use more expensive medications. This also applied to other medical disposables and other services that the healthcare facility provide.

## Types of IDS

There are two main types of integration used in integrated delivery systems (IDS). Those are horizontal and vertical.

Horizontal integration is defined by the Pan American Health Organization as "the coordination of activities across operating units that are at the same stage in the process of delivering services" [5]. In Horizontal integration grouping organizations that provide a similar level of care under one management umbrella. This will lead to consolidation of the organizations' resources to increase efficiency and save cost. Examples of horizontal integration include multihospital systems, mergers and strategic alliances with neighboring hospitals to form local networks [8].

Vertical integration is defined by the Pan American Health Organization as "the coordination of services among operating units that are at different stages of the process of delivering patient services" [5]. This will lead to increase efficiency and manage global capitation, form large patient and provider pools to diversify risk, reduce the cost of payer contracting, improve quality of care and provide a seamless continuum of care.

Unlike horizontal integration, which integrates organizations providing similar levels of care under one management umbrella, vertical integration involves grouping organizations that provide different levels of care under one management umbrella [6]. This type of integration can include acquisitions/alliances with Physicians (primary care providers, physician-hospital organizations, management service organizations, etc.), health plans or health maintenance organizations (e.g. Academic medical centers, Long-term care facilities and Home care facilities).

## Models of Integration

### Model 1

An IDS or multispecialty group practice (MSGP) with a health plan, which is both provider and payer. This model involves physicians in strategic planning. Its advantages include enhanced collection and integration of data, utilization review, and cost-control capacity. Duplication of services is greatly minimized. Kaiser Permanente follows this model by serving only members in its health plan [8].

### Model 2

An IDS or MSGP single-entity delivery system that does not own a health plan. The Mayo Clinic is the world's oldest and largest integrated MSGP, and HealthCare Partners Medical Group is a nonprofit organized delivery system [8].

### Model 3

Involves private networks of independent providers that share and coordinate services. Similar to the first two models, these networks include infrastructure services (e.g. performance improvement and care management). Other integration structures under Model 3 include the following [8]:

- physician-hospital organizations
- management service organizations
- group practices without walls
- individual practice associations

### Model 4

Includes government-facilitated networks of independent providers on both the region and local levels. Governments take an active role in organizing independent providers, usually to create a delivery system for the beneficiaries. Community Care of North Carolina, a public-private partnership, is an example of this model [8].

## Benefits of Integration

Based on the IDS application, ten benefits can be achieved [9], these are:

1. Increased Collaboration, IDS implementation requires a teamwork. It will assure the care continuum and reduce unneeded duplicated processes. The efforts of the IDS members will be integrated towards the development of effective and continuous care. It will ensure patient's safety and better patient's and family satisfaction.
2. Improved Efficiency – IDS eliminates healthcare waste and redundancy, allowing for better cost containment and enhance the quality of care.
3. Integrated Systems –programs provide hospital systems with many more monitoring and enforcement tools. Since the management authority will set the standards of care and monitor the progress of the program.

4. Payer Partnerships – As IDS improves the quality of patient care and clinical processes and reduces costs, hospitals are able to achieve better reputation and it will work as marketing tools for them.
5. Improved Care Management – Organizations that are successfully clinically-integrated will be able to provide improved care management. Patients who see multiple doctors are subjected to duplication of work and diagnostic procedures. Case management serves as the foundation to accomplish coordination of care across traditional health settings. Its goal is to achieve the best clinical and cost outcomes for both patient and provider.
6. Integrated Continuum of Care – IDS is teamwork among healthcare providers working to ensure patients get the right care at the right time in the right setting.
7. Clinical Data Systems – The availability of Electronic Medical Records (EMR) is essential for the availability of patient's data to all healthcare givers. It enables access to the patient's medical history, Medications, investigations and the overall patient's condition progress. Information that measures service, performance, quality, and outcomes on an individual provider and network-wide basis.
8. Patient-centered Communication – communication is an essential factor in patient-centered care, the availability of good communication among the caregivers and the patient as well as the family is the cornerstone in patient's experience. This will be achieved by implementing IDS. The IDS emphasis on timely and clear communication is key to influencing patient behavior, resulting in cost/quality benefits.
9. Improved Pharmaceutical Management – with the availability of the integrated system, medications errors will decrease significantly as well as having unified formulary will reduce the cost of the Pharmaceuticals. Meanwhile, it will assure the removal of duplication and over-prescribing as well as poly Pharmacy. This will reflect positively on the patient's safety as well as on the overall cost of the treatment.
10. Improved Health of the Community – IDS will result in great improvement in the community health and will generate more confidence in the healthcare system and the providers.

## Discussion

In many health systems, integrated care is seen as a possible solution to the growing demand for improved patient experience and health outcomes of multimorbid and long-term care patients. This system allows the delivery of care to patients in an integrated manner, it will minimize shopping for the best care with multiple provider without clear understanding of what other providers are doing. Based on the literature review it is quite clear that healthcare integration has several views and definitions, yet the complete integration need to stem from the actual application of the system and the evaluation of the outcome of its implementation. The main objective of the IDS is to provide continuum of care, better patient's engagement,

optimization of resources utilization and assure patient's safety as well as creating patient's centered care. Irrespective of the type of integration, either horizontal or vertical there should be clear objectives listed as well as full continuous monitoring of the patient's needs progress and provision. We have outlined several Models for the IDS yet the main cornerstone in the application of the system is the full understanding of the program objectives, integrating with the patient in the center as the sole beneficiary of the services. Setting up the standards of care needed, the potential cost of care, application of clinical path for the management of diseases as well as preventing the duplication of services and the investigations.

This system will serve as a model for continuous patient's care and not just healthcare organizations integration for financial purposes. It should take priority in optimizing the utilization of the resources, having a unified formulary and of most importance is the existence of electronic Medical Record for the patient which is accessible by all integrated facilities.

In order to succeed, integrated care models should rely on a set of components and delivery strategies [10,11]. The components associated with successful integrated care models include enabling patient engagement and self-management support, developing multi-professional working culture, adopting evidence-based clinical pathways and protocols, aligning incentives, effectively managing resource, continuously monitoring and improving performance, and investing in supporting information technologies. In general, multicomponent approaches can be characterized as the optimization and innovation of service delivery processes [12,13].

## Conclusion

Integrated delivery of healthcare are currently at the forefront of healthcare policy. The hope for the IDS is that it will reduce healthcare costs and improve the quality of care. There is great similarity between IDS and Accountable care Organizations (ACO), integrated healthcare delivery systems share with ACOs many of

the same organizational features, foremost among them being high levels of organizational and clinical service integration. For this reason, the performance of existing IDSs with respect to quality and cost of care are being assessed to predict how well ACOs will perform in the future of the healthcare delivery system. It is expected that IDS will strengthen the delivery of care as well as it will contribute to better outcome and will reduce cost significantly.

The vast majority of studies we reviewed showed that IDSs have positive effects on quality of care. A few studies we reviewed also linked IDSs to lower health service utilization. However, each study had a different way of describing and defining IDSs. In order to compare IDSs with respect to their effectiveness in controlling costs and improving quality of care, consistent definitions should be used and components of integration need to be well defined. Due to limited information provided in the literature, we were unable to identify specific features in each health system. Nor were we able to meaningfully group the health systems based on their commonalities into various types of IDSs. As a result, it was difficult to draw definitive conclusions. Moreover, to accurately capture the performance of a health system, established methods that consistently measure cost and quality of care across health systems are needed. As integrated systems become more common, it also is becoming more apparent that despite certain commonalities, these systems vary tremendously in how they operate. The emergence of a growing number of IDSs should allow for more data-driven studies comparing organizational performance on quality, safety, access, and cost metrics, thereby adding more insight into exactly what characteristics of IDSs lead to improvements in each of these areas. The question, perhaps, is not so much whether IDSs are better than other models of delivery, but rather, how to identify specific system features that most effectively improve quality of care while controlling costs. This system of delivering healthcare, can be utilized in the Middle East at the time of financial constrains for the purpose of optimally utilizing the resources, enhance quality of care and improve patient's experience.

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