SERIES

Renewing Primary Health Care in the Americas

Integrated Delivery Networks

Concepts, Policy Options, and Road Map for Implementation in the Americas

Pan American Health Organization

Regional Office of the
World Health Organization

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ACKNOWLEDGEMENTS

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INTRODUCTION

The pressing need for integrating health services

The PAHO/WHO initiative on Integrated Delivery Networks (IDNs) comes at a time of renewed global and regional interest in the need for strengthening health systems and moving toward the delivery of more comprehensive health services for all the world's people. As WHO Director-General Dr. Margaret Chan has said:

> *"The world has never possessed such a sophisticated arsenal of interventions and technologies for curing disease and prolonging life. Yet the gaps in health outcomes continue to widen. Much of the ill health, disease, premature death, and suffering we see on such a large scale are needless, as effective and affordable interventions are available for prevention and treatment. The reality is straightforward. The power of existing interventions is not matched by the power of health systems to deliver them to those in greatest need, in an integral manner, and on an adequate scale."* 1

Achieving national and international goals, including the Millennium Development Goals (MDGs), will require greater, more effective investment in health systems and services. While more health resources are necessary, governments are also looking for new ways of doing more with existing resources.[2] In a world where poor performance of health systems is increasingly being questioned, addressing the problem of fragmentation of health services is becoming an increasingly urgent need. Experience has shown that excessive fragmentation of health services leads to difficulties in access to services, the delivery of services of poor technical quality, the irrational and inefficient use of available resources, unnecessary increases in production costs, and low public satisfaction with the services received. Furthermore, an aging population, the emergence of chronic diseases, the challenge of dealing with co-morbidity, and the increasing expectations of users demand more systemic, comprehensive solutions to better serve peoples' needs.

The search for more accessible and comprehensive healthcare models is not new. Many of the countries of the Region have spent years designing and implementing models of care for these purposes. In many cases, the Alma-Ata Declaration on Primary Health Care, adopted in 1978, has inspired this search. Article VII of the Alma-Ata Declaration holds that Primary Health Care (PHC) *"should be sustained by integrated, functional, and mutually supportive referral systems, leading to the progressive improvement of comprehensive health care for all, and giving priority to those most in need."[3]* The PAHO Member States again ratified this objective in 2005, as a part of the process of the renewal of PHC in the Americas. Article III of the Declaration of Montevideo states that *"Health care models should ... work for the establishment of health care networks and social coordination that ensures adequate continuity of care."[4]* More recently, in June 2007, the Health Agenda for the Americas 2008-2017, in paragraph 49, pointed out that *"Strengthening referral and cross-referral systems and improving health information systems at the national and local levels will facilitate the delivery of services in a comprehensive and timely manner."[5]* In July 2007, the Consensus of Iquique, reached at the XVII Ibero-American Summit of Ministers of Health, stated in paragraph 6 *"the need for developing health services networks based on primary care, with public financing and universal coverage, given its capacity to lessen the effects of segmentation and fragmentation, linking in with all other social networks."[6]*

Notwithstanding the efforts made by the countries of the Region, and as the previous declarations show, the challenge of delivering more accessible and comprehensive health services continues being an aspiration and an imperative for most of the countries of the Americas.

The aim of the PAHO/WHO initiative on Integrated Delivery Networks

The aim of the PAHO/WHO initiative on Integrated of Delivery Networks (IDNs) is to contribute to the development of PHC-Based Health Systems, and thus, to the delivery of health services that are more accessible, equitable, efficient, of better technical quality, and that better meet people's expectations.

According to PAHO,[7] a PHC-based health system involves *"an overarching approach to the organization and operation of health systems that makes the right to the highest attainable level of health its main goal while maximizing equity and solidarity. ... A PHC-based health system is composed of a core set of functional and structural elements that guarantee universal coverage and access to services that are acceptable to the population and that are equity-enhancing. It provides comprehensive, integrated, and appropriate care over time, emphasizes health promotion and prevention, and assures first contact care. Families and communities are its basis for planning and action. A PHC-based health system requires a sound legal, institutional, and organizational foundation as well as adequate and sustainable human, financial, and technological resources. It employs optimal organization and management practices at all levels to achieve quality, efficiency, and effectiveness and develops active mechanisms to maximize individual and collective participation in health. A PHC-based health system develops intersectorial actions to address determinants of health and equity."*

PAHO/WHO considers that IDNs are one of the principal operational manifestations of the PHC approach at the level of health services, helping to bring to life several of its most essential elements, such as universal coverage and access; first contact; comprehensive, integrated, continuous care; appropriate care; optimal organization and management; and intersectoral action, among others.

Scope of this document

This document proposes a conceptual and operational framework for understanding IDNs, points out their benefits in terms of the overall performance of the health system, points out policy options and institutional mechanisms for the implementation of IDNs, and proposes a "road map" for their implementation in the countries of the Americas. The bulk of the document focuses on integration in the health service delivery function, and as a result it does not delve into integration mechanisms for the health system financing and insurance function. Integration strategies for health systems financing and insurance will be discussed in future PAHO/WHO documents. Likewise, specific mechanisms for the integration of programs targeted to specific diseases, risks, and population groups (vertical programs) will be addressed in a separate document.

The current version of this document (November 2008) is a consultation draft. It will be reviewed and improved following the Regional Consultation on IDN in Belo Horizonte, Brazil on 17-19 November 2008. Subsequently, the contents and recommendations will be submitted to the PAHO/WHO Governing Bodies for their consideration (in 2009).

CHAPTER 1: The Challenge of Fragmentation of Health Services in the Americas

The macro-context of health services: health systems

The macro-context of health services basically refers to the characteristics of the health systems of which they are a part. Health systems have been characterized in different ways. WHO defines health systems as "all the organizations, individuals, and activities whose primary purpose is to promote, restore, or maintain health."[8] Although it is essential to define the limits of health systems, we must remember that these systems act as mediators and articulators, within a political, economic, and technical framework, and at a given point in time. Accordingly, the definition, limits, and objectives of a health system are specific to each country in accordance with its own values and principles. Health systems have three main functions: the steering role, financing, and service delivery.

The steering role function

The steering role in the health system refers to the exercise of responsibilities by the health authority with regard to: i) sectoral leadership (e.g. health situation analysis, policy-making, evaluating the system's performance, etc.); ii) regulation; iii) orientation of financing; iv) guarantee of insurance; v) execution of the essential public health functions; and vi) harmonization of service provision. Depending on the sector's extent of decentralization and the country's political and administrative characteristics (federal or unitary system), as well as how and to what extent the institutions in each country incorporate the separation of functions into their organizational design, these responsibilities will be located in one level or another of the health authority (national, intermediate, or local), with responsibilities sometimes being shared between two or more levels.[9] In this regard, the health authority plays a key role in opportunities for modifying the variables of the context around health services (e.g. regulation of private providers or social security) and changing their internal conditions in some cases (e.g. health services that depend on the Ministry of Health), in order to be able to adequately coordinate public and private providers so that their capacities can be taken advantage of in a more rational, complementary manner.[10]

The financing function

A good health financing system raises adequate funds for health, in ways that ensure people can use needed services and are protected from financial catastrophe or impoverishment associated with having to pay for them. Three interrelated functions are involved in financing in order to achieve this: collecting revenue, pooling risks, and purchasing services.[11] The general quantity of national resources spent on health goods as a percentage of the domestic economy varies, and varies widely, among the different countries of the Americas. This wide variation in the health expenditure as a proportion of the GDP suggests that, even though per capita income plays a role in explaining the portion of the GDP allocated to the national health expenditure, other factors may be playing a more important role in determining the level and make-up of the national health expenditure. The fact that countries spend relatively more or less of their GDP on health depends more on policy decisions, and reflects the way that health systems are organized and funded. Public spending and tax revenues are the most important tools that a government can use to achieve more equitable financing and access to health services.[12] The funding level, the ways in which resources are allocated, and provider payment mechanisms strongly influence the availability and performance level of health services.

The health service delivery function

Providing efficient, equitable, and good quality services, and enabling the population to access them, is one of the principal functions of health systems, and is the one that is the most visible to the public. Health care services include both personal services and public health services; that is, they respond to individual and population needs. They cover all levels of care and encompass all levels of prevention, including promotion and prevention, diagnosis and timely treatment, rehabilitation, and palliative care. They also include acute care and long-term care.[13]

Health workers, medical supplies and technologies, medical equipment, and health facilities can also be included in the service delivery function. Health workers are all people engaged in actions whose primary intent is to protect and improve health. The health workforce consists of health service providers, managers/administrators, and support personnel. This includes private and public sector health workers, paid and unpaid workers, and lay and professional staff. Countries have enormous variation in the level, skill, and gender mix in their workforces. Overall, there is a positive correlation between health workforce density and service coverage and health outcomes.[14] A "well-performing" health workforce is one that is available, competent, responsive, and productive. To achieve this, actions are needed to dynamically manage the "entry" and "exit" points of the labor market, and improve the distribution and performance of existing health workers.[15] Furthermore, a "well-functioning" health system ensures adequate, equitable access to essential medical products, vaccines, and other technologies of demonstrated efficacy and cost-effectiveness.[16] The quantity, quality and distribution of human, physical, and technological health resources also determine the availability and level of performance of health services.

Historical conditioning factors of health systems

Finally, the specific characteristics of each health system depend on the history and political and socioeconomic conditions of each country, as well as on the degree of influence that the various interest groups exercise and the play of political forces. The history of the creation and development of the health systems in the Region is closely linked to the development of social protection systems in the context of the welfare state, which emerged in the Western world in the early 20th century. But unlike the models instituted in most of the European countries, the Latin American subsystems were oriented toward specific population strata, grouped by social class, income, occupation, integration into the formal labor market, ethnic origin, or urban or rural residence, which produced the phenomenon of population segregation consisting of stratification of the exercise of the right to health. Due to this, the traditional organizational structure of health systems in Latin America and the Caribbean consisted of an unintegrated arrangement of subsystems oriented to specific population strata, which led to their greater segmentation and fragmentation and profoundly affected their performance.[17]

The challenge of fragmentation of health services

Fragmentation[i] of health services is a major cause of poor performance by health services, and thus of general poor performance by health systems. Fragmentation can cause on its own, or in conjunction with other factors, difficulties in access to services, delivery of services of poor technical quality, irrational and inefficient use of available resources, an unnecessary increase in production costs, and low user satisfaction with services received[18, 19] (see Figure 1). Furthermore, fragmentation can be the result of other factors that cause it (e.g. insufficient financing that impedes the delivery of integrated services), or it can be a factor that affects other causal factors, which in turn have a negative impact on the system's overall performance (e.g. duplication of laboratory tests that brings with it an unnecessary increase in costs, which in turn decrease the level of financing in the system).

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[i] PAHO defines fragmentation of health services as the "coexistence of various units or facilities that are not integrated into the health care network" (Health in the Americas 2007, Washington DC: PAHO/WHO).

Figure 1. The Relationship between Fragmentation and Health Services Performance
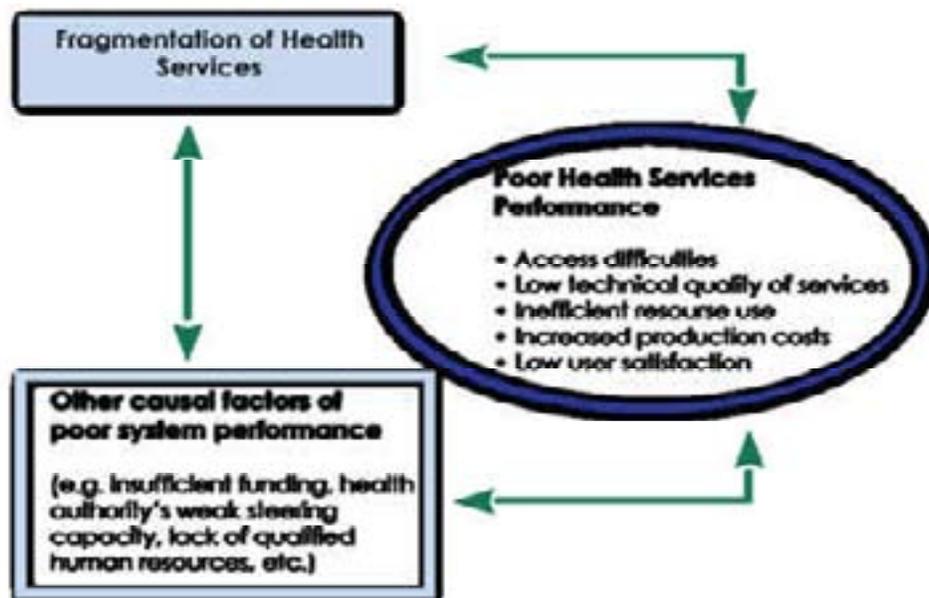
Fragmentation of health services can manifest itself in many ways and can appear at different levels in the system. At the level of people's experience with the system, fragmentation is basically manifested as a lack of access to services and/or timeliness of care, a loss of continuity of care, and services that do not conform to users' needs and expectations. Lack of access is manifested by a backlog of demand for services or by delays in service delivery. Lack of timeliness is commonly seen in waiting lists, delayed referrals, or service delivery with a limited program scope (e.g. vertical programs). A lack of continuity of care is manifested, for example, by the need to visit multiple healthcare settings and various providers to resolve a single episode of illness. It can also be manifested by the lack of a regular source of care (e.g. the lack of a health team at the first level of care), by the misplacement of clinical information between medical visits, or by the lack of care over time in the management of chronic conditions. In a survey of managers and providers at the first level of care, only 45% of respondents stated that patients are seen by the same doctor/health team.[20] Other manifestations include having to repeat one's clinical history unnecessarily, duplication of diagnostic tests, and having to fill out multiple administrative forms at every healthcare site. Services that do not fit users' needs may emphasize treatment to the detriment of promotion and prevention; they may emphasize individuals to the detriment of population-based, public health activities; health workers may be pushy and callous; or interventions may be prescribed that are not based on scientific criteria and knowledge and that are not adapted to people's cultural preferences and/or gender.

Graphic 1: Perception survey on continuity of health care in 16 countries of Latin America and the Caribbean, 2002

Measuring Continuity of Care

Model of Care: Continuity of Care

Section I.3 : PHC Model of Care: Continuity of Care

3.1 Respondents Responses, in Percent

Legend: Never | Almost never | Sometimes | Usually | Always

Categories: 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5
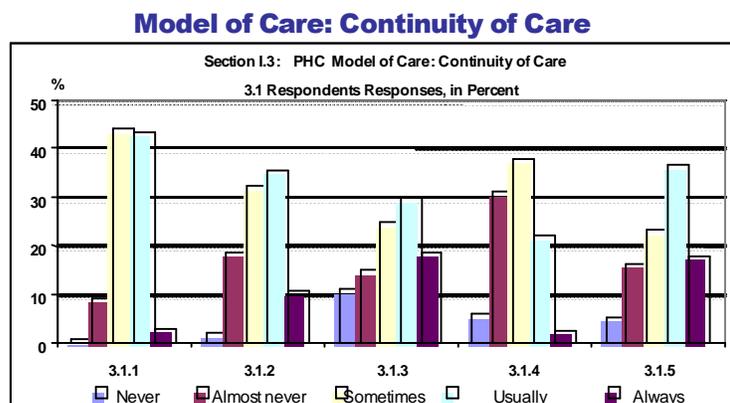
3.1.1 Are patients seen by the same provider (doctor/health team) whenever they consult?

3.1.2 Is there an appointment and follow -up system, including arranging home visits by the health team?

3.1.3 Is assigning people from a geographical area to lists or registries with a specific PHC provider or provider group encouraged?

3.1.4 Does a good referral and counter -referral system based on case complexity normally function for patients?

3.1.5 Is there a policy that enables ensuring that PHC facilities are regularly covered by physicians or nurses?

Source: PAHO/WHO (2004). Revisión de las políticas de atención primaria de salud en América Latina y el Caribe. Volúmenes I y II. Technology and Health Services Delivery Area/Health Services Organization Unit.

At the level of the system's overall performance, fragmentation basically manifests itself as a lack of coordination and communication among the different health care levels and settings; the duplication of services and infrastructure; underutilized facilities in some cases or overutilized resources in others; health care provided in the least appropriate place, particularly at the hospital level; and an inequitable distribution of health care centers that does not consider population distribution (urban/rural, urban center/periphery, rich/poor areas). In surveys conducted by PAHO/WHO (see Graphic 1), the lack of coordination among levels of care is seen as a serious problem both by managers at the first level of care and by managers of hospital and high-complexity care. At the first level of care, only 22% of respondents said that the referral and counter-referral systems worked adequately.[21] Furthermore, only 35% of hospital and high-complexity managers/providers said that those systems function adequately.[22] With regard to the most appropriate site for care, managers of hospital and high-complexity services said that 52% of hospitalized patients could have been treated at the first level of care.[23] These findings are consistent with studies conducted in Costa Rica that show that 52% of the surgeries done at national hospitals could have been done in lower-complexity hospitals, without adversely affecting the quality of care.[24]

Other manifestations of the fragmentation of services include the low response capacity of the first level of care, the "capture" of the patient by the specialist (the patient who does not return to the first level after the specialist consultation); and the use of emergency services for specialized care, bypassing outpatient care. At the level of individual health facilities, a manifestation of fragmentation is clinical services that function as hermetic departments within their organization, each competing with the other for resources and duplicating existing facilities. Other manifestations include admitting patients to the hospital who could have been treated as outpatients, admitting surgical patients without having completed preoperative testing, and extending the length of hospital stays because of discharge difficulties (e.g. patients with social problems).

Box 1. Principal problems of delivery networks according to health service managers

At a meeting of health service managers from Central American countries, the managers mentioned the following as the principal problems affecting them:
- Lack of coordination between levels of care (problems with referrals, more so with counter-referral of patients).

- "Real" response capacity of the levels of care is not equal to the assigned response capacity. Furthermore, low peripheral response capacity (at the first level).

- Lack of coordination of services within public institutions, between the public and private sector, and between countries.

- Long waiting lists.

- Lack of quality control.

- Limited resources, exacerbated by problems of inefficiency and under disbursement of funds.

- Excessively centralized administrative systems.

- Deficiencies in the managerial capacity of the network's managers and providers.

- Lack of motivation and commitment of the system's staff (organizational environment and culture).

- Understaffing and noncompliance with contracted schedules.

- Existence of "political patronage"; that is, responding to requests from pressure groups.

PAHO/WHO (1999). Reunión centroamericana de redes de servicios de salud: informe final: San José, Costa Rica, 20-22 August 1997. Division of Health Systems and Services Development.

The causes of fragmentation of health services

As we have already mentioned, fragmentation can be caused by a diversity of factors, some of which are external to the system, while others are internal. Below we point out some of the most important factors:

Segmentation of the health system

Segmentation[ii] of health systems is a major determinant of the fragmentation of health services in the Region. In segmented systems, the coexistence of subsystems with distinct financing, affiliation, and provision arrangements "specialized" for different segments of the population from the outset, structurally conditions the existence of subsystems that function independently of one another, causing serious problems with overall integration of the system's operation. This phenomenon, with historical roots, means that many Latin American health and social protection systems "specialize" in specific population strata, grouped by social class, income, occupation, participation in the formal labor market, ethnic origin, or settlement patterns (urban/rural), producing *population segregation* and creating a stratification that is inconsistent with the exercise of the right to health. As a result, service delivery networks were created to fit each subsystem. There is limited integration and communication among the health care units that comprise them, both within a single subsystem and among the subsystems and the different levels of care. Frequently, service delivery is concentrated

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[ii] Segmented systems are characterized by the coexistence of a public subsystem directed to the poor and indigent; a social security subsystem, specialized in formal workers and their dependents; and a private subsector, which in turn, is divided into two, a for-profit subsector, concentrated on the wealthiest segments of the population, and a nonprofit subsector (NGOs, charities), aimed at meeting the needs of the poor who lack protection from the public system (Pan-America Health Organization. Exclusion in Health in Latin America and the Caribbean. Series No. 1: Extension of Social Protection in Health, Washington, 2003).

in the wealthiest urban areas and in the employed population, leading to the inefficient use of sector resources and leaving the poorest, the informal sector of the economy, and in many countries, indigenous, Afro-descendent, rural, and urban fringe populations unprotected. Furthermore, segmentation also spurs an increase in health service providers outside the public arena, and as a result, a greater need for the health authority to have the capacity to fulfill its regulatory role over health services. As will be seen below, weakness in the health authority's steering capacity in contexts where there are segmented systems can further exacerbate the fragmentation of health services.

Decentralization of health services that fragments the levels of care

Depending of the type of decentralization, at times its benefits can be diminished due to problems in its design and implementation. Problems that affect the capacity for the integration of health services include the following: i) weaknesses in the technical, administrative, and financial capability for managing decentralized services; ii) unnecessary increases in transaction costs in the system; iii) loss of economies of scale for the purchase and distribution of goods and supplies that are indispensable for service delivery; and iv) fragmentation of the levels of care by transferring management of the different levels of care to different administrative entities in the government (e.g. transferring the first level of care to the municipal administration, while at the same time transferring management of specialties to the provincial or regional administration).

A predominance of programs targeting specific diseases, risks, and populations

The predominance of vertical programs is associated with a number of limitations and undesirable effects:[25, 26, 27] i) the failure to address the underlying causes of the disease; ii) duplication of efforts and squandering of resources; iii) the neglect of important population groups and/or health problems; iv) missed opportunities to address co-morbidities; and v) competition with other services/programs or siphoning-off of their resources. However, there are exceptional situations in which vertical programs would indeed be specifically indicated. These situations occur, for example, in "fragile" states (as a short-term measure), when there is a need to control epidemics or to manage certain health emergencies, or when there is a need to provide services to special population groups (e.g. prisoners, drug addicts, sex workers).[28] The predominance of vertical programs in some of the countries of the Region is explained, at least in part, by the preference of some international donors to fund health programs with a limited program scope.

The separation of public health services from personal health services

In some situations, the separation of the financial, institutional, and service delivery arrangements for public health[iii] from personal health services is another major cause of the fragmentation of health services. Although many public health actions do not necessarily involve health services provided to individuals, families, and/or communities, there are many public health services that should be integrated into and complement personal health care, particularly those related to the first level of care.[29] Disregard for the importance of public health in the organization and operation of health care systems and of health services is, perhaps, the leading cause of the low social effectiveness of health systems, of people's low level of satisfaction with the care received, and of the failures of some of the sector reforms carried out in the last two decades.[30]

Models of care centered on disease, acute care, and hospital care

The predominance of a model of care centered on disease, acute care, and hospital care is another important cause of the fragmentation of health services. Health care focused on disease ignores the importance of health promotion and disease prevention, and also ignores the broader needs of the "person as a whole" (e.g. the need for social, mental, and/or emotional support in managing chronic diseases and/or terminally ill patients). The same can be said regarding services focused on acute care, which fail to provide the care over time that chronic diseases need.[31] The predominance of hospital care also contributes to the fragmentation of services since, in most cases; hospital services are more difficult

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[iii] According to PAHO, "Public health is an organized effort by society, primarily through its public institutions, to improve, promote, protect, and restore the health of the population through collective action." Pan American Health Organization. *Public Health in the Americas: Conceptual Renewal, Performance Assessment, and Bases for Action*. Washington, DC: Pan American Health Organization; 2002. PAHO Scientific and Technical Publication No. 589, p. 46.

to access than non-hospital services. In addition, it promotes health care in the least appropriate place, causing, on the one hand, unnecessary risks to people's health (e.g. nosocomial infections), and, on the other hand, an unnecessary increase in the cost of care, since there are more efficient ways to use the health budget.

Weakness of the health authority's steering capacity

The health authority plays a key, non-delegable role in the attainment of governments' economic and social policy objectives, which include, among other things, progress on equity and social justice, social cohesion, public health and safety, economic efficiency, and social participation.[32] Within this framework, health authorities should prioritize and address the problem of the fragmentation of health services through their functions of sectoral leadership and regulation, orientation of financing, guarantee of insurance, harmonization of service provision, and execution of the essential public health functions.[iv, 33] However, in situations where the steering capacity of the health authorities is weak, health service delivery tends to be more disorganized and chaotic, causing problems from its fragmentation. This situation tends to worsen even more in contexts of highly segmented health systems that are highly dependent on external financing.

Problems with resource quantity, quality, and allocation

Problems with the quantity, quality, and allocation of resources may be expressed in various ways. From the standpoint of quantity, in many situations the problem is a lack of infrastructure, personnel, inputs, and budget to operate the services. In these cases, fragmentation is manifested in problems with access to comprehensive services, services of very poor technical quality, and lack of continuity of services over time. But the problem of resources can also be manifested as an excess of hospital beds, an excess of high-cost technologies, and an excess of specialists. In these cases, the problem is the "relative" lack of ambulatory care, appropriate technology, and generalists for resolving the most prevalent health problems in the population. The lack of quality in resources is especially important, particularly at the first level of health care. In these cases, the problem may be, for example, health workers lacking adequate competencies along with inefficient clinical support systems.

Organizational culture adverse to integration

Traditionally, organizations have been designed around functional structures, that is, on a foundation of disciplines, health facilities, or of product/service lines. The assumption of this type of organization is that it is easier to manage specialists when they are grouped into a single department, under the direction of a chief who has training and experience in the particular discipline. On the one hand, this type of organizational design promotes the specialization of abilities and knowledge, facilitates the standardization of service delivery processes, and facilitates the decision-making and communication process because managers share the expertise and culture of their subordinates. Notwithstanding, functional structures tend to emphasize routine in tasks, lead to a short-term outlook, promote a narrow perspective in managers' intentions, reduce communication and cooperation among different units, and hinder accountability for broader outcomes, particularly when clinical outcomes depend on multidisciplinary actions.[34]

Profound changes in the environment and task of health services

Health services systems are subject to constant "pressures" for change that forces them to adapt to new conditions in their environment. The trends leading to these changes are many and can be grouped into changes stemming from the demand for services, changes stemming from the supply of services, and changes in the broader context.

[iv] The essential public health functions are: i) monitoring, evaluation, and analysis of health status; ii) surveillance, research, and control of the risks and threats to public health; iii) health promotion; iv) social participation in health; v) development of policies and institutional capacity for public health planning and management; vi) strengthening of public health regulation and enforcement capacity; vii) evaluation and promotion of equitable access to necessary health services; viii) human resources development and training in public health; ix) quality assurance in personal and population-based health services; x) research in public health; and xi) reduction of the impact of emergencies and disasters on health.

Changes stemming from the demand for services

Falling fertility rates, increasing life expectancy, and an aging population are important demographic changes that strongly affect the epidemiological profile of the population, and thereby the demand for health services. The aging of the population is accompanied by an increase in chronic disease and in co-morbidity that current systems are not in a position to address. The increasing prevalence of chronic diseases requires not only greater collaboration between providers, but in addition, greater integration between first level and specialty health care, and the development of integrated clinical networks. In addition, many systems are facing the co-existence of problems associated with poverty and social exclusion (e.g. contagious diseases and malnutrition), while at the same time facing new challenges such as HIV/AIDS, unhealthy lifestyles, increasing violence and accidents, and increasing mental health problems.

Furthermore, users are demanding higher-quality services that are better adapted to their individual and group preferences. Most people today have greater access to health information and are more aware of their health rights. Users are becoming more attentive to their personal health care needs and are demanding more comprehensive health coverage, provided in settings closer to home and available around the clock.[35] This situation has led service provider organizations to change their traditionally closed, self-referencing attitude, and have become more open to citizen participation on key issues such as the governance, management, and delivery of health services.

Changes stemming from the supply of services

In this area, there have been great strides in technology that increase life expectancy and that provide new kinds of health care, but which may also increase the costs of care. Examples of this progress are new screening methods, new drug technologies, genetic therapy, laparoscopic and minimally invasive surgical techniques, organ transplant technology, new imaging and interventional radiology technologies, and telemedicine.

From the financial standpoint, increases in the cost of care and the use of new payment mechanisms to contain costs can be seen in almost all the countries of the Region. Unfortunately, these increases in the cost of care occur in a context where the sector is having financing difficulties. Furthermore, many countries in the Region are still highly dependent on external financing. This situation involves two important problems with regard to the integration of services. In the first place, this external dependency leads to shortsightedness with regard to the organization and management of services, since funds are not necessarily guaranteed in the medium and long term. Furthermore, many donors tend to give special importance to vertical programs, which, as we have previously seen, are an important cause of the fragmentation of services.

Another important challenge is the deficit of skilled health workers. Many countries are experiencing emigration of skilled personnel, especially doctors and nurses, after years of investment in their training. Furthermore, problems exist because the professional and occupational profiles of health workers are not keeping pace with changes in the epidemiological profile, technological advances, and new models of care introduced in recent years. Even more importantly, there are serious inequities in the geographical distribution of health workers, particularly in the rural, more isolated areas of the countries.

Another change occurring at the level of the supply of services is efforts to change the model of care from a disease-based model to a health-based model. This new model of care works to preserve the health of the population and prevent disease. Its action strategies are based on health promotion and disease prevention, public health actions, and intersectoral interventions. Services seek to provide comprehensive health care and ensure continuity of care through the development of networks of services.[v] From the organizational standpoint, greater emphasis is placed on the formation of multidisciplinary health teams and on promoting the training and employment of generalist or "holistic" health workers. Health service delivery systems and networks tend to be designed around improving continuity of care and maximizing the efficiency of the system. Service managers are more concerned with making conditions conducive to improving the quality of care and with evaluating the performance and health outcomes of the system. The favorite setting for care is no

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[v] The concept of service "network" relates to: i) functional linkages of different kinds of provider units; ii) a hierarchical organization according to levels of complexity; iii) a common catchment area; iv) run by a sole operator; v) shared operating standards, information systems, and other logistical resources; and vi) a common purpose.

longer the hospital, but rather the most appropriate setting for providing this care. Finally, responsibility for health is taking on a multisectoral dimension and requires greater individual and community participation (see Table 1).

Table 1. The Transformation of Health Care

The "past" of health services	The "future" of health services
▪ Emphasis on disease treatment	➢ Emphasis on health promotion and maintenance
▪ Responsible for individual patients	➢ Responsible for the health of defined populations
▪ Emphasis on acute care	➢ Emphasis on the health care continuum
▪ Attention to specific problems	➢ Comprehensive care
▪ The goal is filling beds	➢ The goal is to provide care in the most appropriate setting
▪ Health workers, hospitals, and health insurers work separately	➢ Health services work in an "integrated manner"
▪ Predominance of hospitals	
▪ Predominance of specialists	➢ Predominance of ambulatory care
▪ Predominance of physicians	➢ Predominance of generalists
▪ Individual practice	➢ Inclusion of other types of health workers
▪ Managers coordinate services	➢ Multidisciplinary teamwork
	➢ Managers actively seek quality assurance and continuous quality improvement
▪ Professional dominance	
▪ People are passive recipients of services	➢ Community participation
▪ Exclusive responsibility of the health sector	➢ Self-care and self-management of health/disease
	➢ Shared responsibility with other sectors of the economy

Sources: Modified from Shortell S, Kaluzny A (1997). Organization theory and health services management. In: Shortell S, Kaluzny A, and Associates. Essentials of health care management. Delmar Publishers; and Filerman G (1994). Health: the emerging context of management. In: Taylor R, Taylor S, editors. The AUPHA manual of health services management. Gaithersburg, Maryland: Aspen Publishers, Inc.

Changes in the broader context

Different changes of a wider nature are also exerting pressure on services, which is pushing them to be more anticipatory, flexible, and adaptable. Globalization, for example, brings with it greater opportunities for the exchange of health information and knowledge, but it also increases the risk of contagious disease transmission around the world. Globalization is also facilitating the movement of people who seek services in other countries (transnational service provision). This phenomenon is taking on increasing importance as several of the countries in the Region are becoming providers of this type of services, which is usually called "health tourism." Other, more extensive problems involve humanitarian crises provoked by disputes of differing intensity, global warming, severe environmental deterioration, and "fragile" states, all of which have the potential for generating new and abrupt demands that could easily cause the existing supply of health services to collapse.

Furthermore, governments, society in general, and users in particular are questioning the low level of performance by public services, difficulties with access, and the high cost of private services. This questioning has led to broader government efforts toward modernization and decentralization that seek, among other things, more efficient and rational use of public resources, government accountability, and better regulation of the public and private sectors.

Within the framework of the macroeconomic reforms of the 1980s and 1990s, the countries of the Region implemented a number of reforms in their health systems that strongly emphasized measures to increase cost-effectiveness, achieve financial sustainability, promote decentralization, and grant a more important role to the private sector. The reforms were linked to macroeconomic adjustment processes, reduction in the size and role of government, and market deregulation. These health reform processes yielded mixed results, and today it can be seen how some of the reforms that were implemented during those decades exacerbated the segmentation, fragmentation, and population segregation discussed above (see Table 2).

Table 2. Principal Outcomes and Problems of Health Sector Reform in the 1980s and 1990s in the Countries of LAC

Outcomes	Problems
▪ The different functions performed by health systems were identified and in many countries they were separated. ▪ The private sector became more important in insurance and the provision of health care services.	▪ The creation, promotion, and deregulation of the markets for insurance and the provision of health care services led to the proliferation of competing middlemen. ▪ This intensified the segmentation of the system, increased transaction costs, and weakened the steering role of the ministries of health.
▪ The idea of fiscal discipline was introduced in the public health sector, with emphasis on financial sustainability. ▪ New sources of financing for health care were sought.	▪ Public investment in health has not increased, even in the context of a modest increase in the social expenditure. ▪ Public spending was cut drastically in most of the countries. The application of strict cost control led to losses in public health infrastructure and human resources. ▪ The introduction of user quotas and other payment mechanisms at the point of care increased out-of-pocket expenditure in most of the countries.
▪ Service management improved, in some cases through the establishment of management agreements. ▪ The use of efficiency and effectiveness criteria in the provision of health services was introduced.	▪ The introduction of a quasi-market logic in the public health sector adversely affected essential public health functions. ▪ Promotion of competition between insurers and/or providers in order to attract clients with the ability to pay deepened segmentation. ▪ The incorporation of financial incentives for the provision of individual health services led to stressing curative actions over preventive ones. ▪ Little progress has been made in improving the performance and general effectiveness of health care systems and in quality of care aspects, or in preventing fragmentation and the lack of rationality in the availability of infrastructure.
▪ Targeting mechanisms were applied to extend coverage and reach marginalized groups. ▪ Many countries adopted the idea of creating "basic health packages" for the poor or for specific population groups.	▪ The introduction of "basic packages" for the poor, with the appearance of plans with different quality and quantities of benefits for different population strata according to their economic status, deepened the segmentation of health systems. ▪ The creation of separate funds for the population with the ability to contribute and for those without that ability led to a loss of solidarity in the system and worsened inequity in access to health care and health outcomes. ▪ Coverage did not increase as expected, and in many cases, the rise in demand for health services could not be met owing to the scant resources allocated to improving the supply of health care services.
▪ In most countries efforts were made to increase local participation in the administration of services through decentralization.	▪ Incomplete decentralization intensified the lack of leadership and geographic inequity in the provision of health services. ▪ Fragmentation of the service delivery network deepened and today it is one of the most characteristic features of health systems in the region, where multiple agents operate without coordination and often in competition with one another.

Sources: Fleury S. 2001; Levcovitz E, Acuña C. 2003; Mesa-Lago, C. 2005; World Bank, 2006; ECLAC, 2006; and the Country Health System Profiles–Editions 2000-2002, available at **www.lachealthsys.org**.

As can be seen in the preceding table, sectoral reforms placed more emphasis on developing competition among service providers through policies such as freedom of choice, payment for results, and an increase in the pluralism of services

provision. Without proper management, these policies run the risk of increasing the fragmentation of health services.[36] In recent years, there has been a trend to abandon competition and introduce policies that favor collaboration among health service providers as a way of improving the efficiency of the system and continuity of health care.

Different countries have implemented the integration of providers in order to provide their beneficiary population with a continuum of care. Thus, the integration of care has become a priority in many countries, especially for resolving chronic health problems that require the care of multiple professionals and services. Following is a list of some of these initiatives in the countries of Latin America and the Caribbean.

Table 3. Selected health services integration initiatives in Latin America and Caribbean countries

Country/ Territory	Initiative	Objective
Argentina (a)	Law to Create an Integrated Federal Health System	The harmonious integration of the parts comprising the health system, under appropriate coordination, in a network resulting from a national plan that responds rationally and effectively to the population's needs, measured on the basis of a sanitary map.
Bolivia (b)	Public, decentralized community health networks	Change in the organization and administration of a health services network, with separation of purchaser and provider roles, combined with results-based management and community participation in the process.
Brazil (c)	More Health: The Right of Everyone 2008-2011	Integrate promotion, prevention, and treatment activities, taking a broad view of health care, recovering the catalyst role of the Federal level, in order to coordinate the organization of health networks using the perspective of a development model aimed at equity in its human and territorial dimensions.
Chile (d)	Primary-care-based healthcare networks	Develop health networks by designing policies for their coordination and articulation, which enable meeting the health needs of the user population, within the framework of health objectives, with equity, and with respect for people's rights and dignity.
Peru (e)	Guidelines for network formation	Foster the formation of plural networks made up of providers, reformed public entities, and private entities with accredited, classified services, promoting competence, effectiveness, efficiency, and quality care for the entire population, to the exclusion of none.
Dominican Republic (f)	Regional health services network model	Develop organizational and operational designs for a model of care that is geared to providing services in a more rational, integrated manner, based on the family and its relationship to social processes.
Uruguay (g)	Integrated National Health System	Implement a model of comprehensive care based on a common health strategy, related health policies, comprehensive programs, and actions aimed at promotion, protection, early diagnosis, timely treatment, and recovery and rehabilitation of users' health, including palliative care.
Venezuela (h)	Caracas Metropolitan District health network	Reorient the model of care based on people's quality of life and their health needs, aimed at constructing integrated health networks with regular, sufficient, timely, and equitable responses to these needs, ensuring universal coverage and

Country/ Territory	Initiative	Objective
		equity.
Argentina-Brazil and Paraguay (i)	Health services network in the border region	Develop a tri-national proposal to solve principal problems of mutual interest, based on a "border network," and emphasizing maternal and childcare.

Sources: (a) Ministerio de Salud (2008). Borrador para el debate: ley de creación del sistema federal integrado de salud: proyecto de creación del sistema federal integrado de salud: convocatoria a un debate amplio y fecundo. (b) Ministerio de Salud y Previsión Social (2002). Nº2 Redes públicas descentralizadas y comunitarias de salud en Bolivia: una experiencia de transferencia de poder, complementareidad, desarrollo integral de servicios y gestión por resultados. (c) Ministério da Saúde (2008). Mais Saúde: Direito de todos 2008-2011. (d) Ministerio de Salud (2008). Misión Institucional de la Subsecretaría de Redes Asistenciales. http://www.minsal.gob.cl/. (e) Ministerio de Salud. Lineamientos para la conformación de redes. (f) Secretaria de Estado de Salud Pública y Asistencia Social (2005). Modelo de red de los servicios regionales de salud: una guía para el desarrollo de los servicios de salud para la atención a las personas. (g) República Oriental del Uruguay, Cámara de Senadores (2007). Sistema Nacional Integrado de Salud: creación. XLVIa. Legislatura. (h) Distrito Metropolitano de Caracas, Ministerio de Salud y Desarrollo Social (2005). Taller de definición de redes de servicios de salud del Distrito Metropolitano de Caracas. (i) PAHO, Ministries of Health of Argentina, Brazil, and Paraguay (2004). Estudio de la red de servicios de salud en la región de la frontera: Argentina, Brasil, y Paraguay 2001-2002.

Despite the abovementioned initiatives, the mechanisms and incentives to promote clinical integration and the development of integrated networks are still poorly developed and need to be considered in the future development of health systems.[37, 38]

CHAPTER 2: Integrated Delivery Networks

Integrated health services: concept and modalities

Integrated health services is not a new concept, however it can be interpreted and used in many ways.[39, 40] This range of interpretations partly explains the difficulties in understanding its meaning, sharing experiences, preparing action proposals, and evaluating advances on the subject. In response to this situation, WHO has proposed the following working definition of *integrated health services*:

> *"The management and delivery of health services so that clients receive a continuum of preventive and curative services, according to their needs over time and across different levels of the health system."*[41]

As can be seen, this definition is quite broad and enables encompassing many integration "modalities." The same WHO brief mentions six main modalities for the integration of services. Integration can mean the following: i) a broad package of preventive and curative interventions for a specific population group (e.g. the Integrated Management of Childhood Illness—IMCI—strategy); ii) multipurpose service delivery points (e.g. multipurpose clinics); iii) health care provided over time (e.g. care for chronic conditions); iv) vertical integration of the different levels of service (e.g. a district health services network); v) integrated policymaking and service management (e.g. managers responsible for the health of a population who at the same time contract services from various entities); and vi) working across sectors (e.g. coordination with social services). In addition, other variants of integration can be considered, such as integration between health care providers and insurers (e.g. health maintenance organizations—HMOs—in the USA), between the Ministry of Health and Social Security, between public and private sectors, between personal and public health services, and between health services of different countries (e.g. border services).

From a conceptual standpoint, integration is best seen as a continuum, rather than as the two extremes of integrated/ not integrated.[42] This means that there is a continuum of integration between total fragmentation and total integration. Furthermore, not all elements of a system should necessarily be integrated. Experience demonstrates that some of the parts making up a system are more important than others in achieving effective integration. It should also be recalled that integration is not an end in itself but a means to improving the performance of the system.[43] Thus, integration efforts will only be justified to the extent that they lead to more accessible, higher-quality services that have a better cost-benefit ratio and meet users' needs.

Following is a list of some additional terms related to the concept of integration in health services and to the concept of IDSs in particular.[44]

Table 4. Terms Related to the Concept of Integrated Health Services

Concept	Definition	Observations
*Horizontal integration**	The coordination of activities across operating units that are at the same stage in the process of delivering services, such as acute hospital care.	Examples of this type of integration are consolidations, mergers, and shared services.
*Vertical integration**	The coordination of services among operating units that are at different stages of the process of delivering patient services.	Examples of this type of integration are ties that hospitals have with medical groups, ambulatory surgery centers, and home health agencies. There is *forward* vertical integration, that is, toward the patient or user, and *backward* vertical integration, that is, toward provisions such as medical equipment and supply companies. Another possibility is vertical integration *with the health insurer*.
*Breadth of integration**	The number of different functions and services provided along the continuum of care from	

Concept	Definition	Observations
	prevention to primary care to acute care to restorative care and maintenance.	
*Depth of integration**	The number of different operating units within a system that provide a given function or service.	
*Geographic concentration**	The extent to which operating units of a system are located in proximity to each other relative to the population served.	
*Clinical integration**	The extent to which patient care is coordinated across the functions and operating units of an organized delivery system.	The extent to which health care is coordinated basically depends on the patient's condition and on the decisions made by his health care team. Clinical integration includes horizontal and vertical integration.
*Health worker— system integration (modified)**	The extent to which health workers are committed to the system, use its facilities and services, work cooperatively to promote the continuity of patient care, and are involved in all levels of system management and governance.	
*Functional integration**	The extent to which key support functions and activities such as finance, human resources, strategic planning, information management, marketing, and quality assurance/improvement are coordinated across units.	Functional integration does not imply that all activities should be centralized and/or standardized. Neither does functional integration mean that all functions and activities should be reorganized at the same time; however, some should start as soon as possible (e.g. strategic planning).
*Real integration***	Integration through the control and direct ownership of all parts of the system (joint ownership of assets).	
*Virtual integration***	Integration through relationships, not through ownership of assets, as a means for collaborating within the components of a system.	This modality uses contracts, agreements, strategic partnerships, affiliations, or privileges, which "simulate" the profits from ownership of assets. This type of integration can coexist with ownership of assets.
*Continuity of care****	The degree to which a series of discrete healthcare events is experienced as coherent and connected and consistent with the patient's medical needs and personal context.	This corresponds to the experience of the coordination of care from the patient's perspective. There are three types of continuity: i) in the relationship between patient and provider, ii) in information, and iii) in the management of the health problem.

Sources: * Shortell SM, Anderson DA, Gillies RR, Mitchell JB, Morgan KL (1993). Building integrated systems: the holographic organization. Healthcare Forum Journal 1993; 36(2):20-6. ** Satinsky MA (1998). The foundations of integrated care: facing the challenges of change. American Hospital Publishing, Inc. *** Haggerty JL, Reid RJ, Freeman GK, Starfield B, Adair CE, McKendry R (2003). Continuity of care: a multidisciplinary review. BMJ; 327(7425):1219-1221.

In the different articles and books reviewed during the preparation of this paper, the terms coordination, continuity, and integration of care tend to be used indistinctly to refer to a single idea. However, important nuances differentiate these terms. The term continuity of care focuses more on the relationship between people and providers. For there to be continuity, the person/patient should "experience" the coordination of care. Furthermore, coordination and integration of

care represent stages along the integration continuum, where integration is the most advanced level of coordination. The following table explains the concepts of autonomy, coordination, and integration, based on certain key characteristics of health services (see Table 4). In any case, this table does not describe the concept of "unification" of health services, which can be achieved through the takeover, merger, and/or consolidation of health services from different organizational entities.

Table 5. Concepts of Autonomy, Coordination, and Integration in Health Services

	Autonomy	**Coordination**	**Integration**
Health information	Circulates mainly within a group of the same partners.	Circulates actively among groups of different partners.	Orients different partners' work to meet agreed-upon needs.
Vision of the system	Influenced by each partner's perception and possibly self-interest.	Based on a shared commitment to improve the overall performance of the system.	A common reference value, making every partner feels more socially accountable.
Use of resources	Essentially to meet self-determined objectives.	Often to ensure complementary and mutual reinforcement.	Used according to a common framework for planning, organization, and assessment activities.
Decision making	Independent coexistence of decision-making modes.	Consultative process in decision-making.	Partners delegate some authority to a unique decision mode.
Nature of partnership	Each group has its rules and may occasionally seek partnership.	Cooperative ventures exist for time-limited projects.	Institutionalized partnership is supported by mission statements and/or legislation.

Source: World Health Organization (2000). Towards unity for health: challenges and opportunities for partnership in health development: a working paper. Geneva: WHO.

Integrated delivery networks

The most widely used definition of IDSs was developed by Dr. Shortell, a professor at Northwestern University, USA, who defines them as:

> *"A network of organizations that provides, or arranges to provide, a coordinated continuum of services to a defined population and is willing to be held clinically and fiscally accountable for the health status of the population served."*[45]

These systems are also called "organized delivery systems,"[46] "integrated health organizations,"[47] or "clinically integrated systems."[48] As was previously mentioned, IDSs do not require that all services comprising them have a sole owner. On the contrary, some of their services may be provided through a variety of contractual arrangements and/or strategic partnerships.

At present, there is a wide range of IDS models. However, most of the existing systems fall into three general categories: i) systems involving only physicians; ii) systems involving physicians and health facilities; and iii) systems involving physicians, health facilities, and health insurers.[49]

Benefits of integrated delivery networks

Investigation and research on health services integration is still limited, particularly in low and middle income countries.[50] Notwithstanding, various studies suggest that IDSs improve access to the system, reduce inappropriate care, reduce fragmentation of health care, prevent duplication of infrastructure and services, reduce production and transaction costs, and respond better to community health needs.[51, 52, 53, 54, 55] Reduction in production costs could be obtained through

improvements in the cost-effectiveness of services, reductions in unnecessary hospitalizations, reductions in excessive utilization of services and diagnostic testing, reductions in the length of hospital stays, improvements in economies of scale[vi] and of scope[vii], increased production volumes, and increases in system productivity. Increases in production volumes have been associated, in turn, with improvements in the quality of care.[56, 57] Furthermore, IDSs would tend to improve the fit between the system's resources and people's health needs through a better balance between specialists and generalists.[58] In financial terms, integrated systems perform better with regard to total operating margins, cash flows, and total net income.[59]

From a clinical standpoint, continuity of care has been associated with improvements in clinical effectiveness, in the response capacity of services, in the acceptability of services, and in the efficiency of the health system.[60, 61, 62, 63, 64] These findings are consistent with probes into the perceptions of managers and service providers that suggest a positive relationship between integration level and system effectiveness.[65] From the user's perspective, IDSs facilitate timely access to services at the first level of care; they improve access to other levels of care when needed; they prevent unnecessary duplication/repetition of clinical histories, diagnostic procedures, and paperwork; they improve shared decision-making processes between provider and patient; and they facilitate the implementation of self-care strategies and chronic disease monitoring.[66] Independent of these findings, there is broad agreement among those who research this issue that more studies should be conducted in order to demonstrate the relationship between the level of integration and clinical outcomes, population health, and user satisfaction.[67]

Kaiser Permanente (KP) provides a clear example of good results from integrated delivery networks (see Box 2). In January 2002, the British Medical Journal published a comparison of KP in California and the British National Health Service (NHS). Among the striking results of the study, the comparison demonstrated the following: i) KP members experience more convenient and comprehensive services at the first level of care and more rapid access to specialist services and hospital admissions than the British NHS; ii) Age-adjusted acute hospitalization rates in KP are a third of those in the NHS for conditions such as chronic obstructive pulmonary disease, hip surgery, and stroke, while overall performance of the system is better; and iii) KP achieves these results through more efficient use of hospitals, integration of its health services, and use of information systems. Furthermore, evaluations done by KP of its integrated information system revealed the following benefits: i) increased patient satisfaction due to the online features (especially viewing laboratory results and refilling prescriptions) as well as an After Visit Summary generated by the system to summarize what a physician has told a patient during a visit; ii) a decrease in the number of physician office visits and telephone calls; iii) a reduction in redundant testing and imaging since tests are never lost once they are entered into the system; iv) increased adherence to guidelines based on best practices; and v) improved patient health outcomes.[68]

Box 2. Kaiser Permanente's Integrated Health Care

Kaiser Permanente (KP) is the largest nonprofit, nongovernmental, integrated health care delivery system in the United States. It operates in nine states and the District of Columbia and has 8.7 million members, 14,000 doctors, and 160,000 employees. It owns and runs 421 medical office buildings (for ambulatory care) and 32 medical centers (hospitals with ambulatory care). In California, the medical centers offer "one-stop shopping" for most services: hospital, outpatient offices, pharmacy, radiology, laboratory, surgery and other procedures, and health education centers. This co-location is a straightforward mechanism for integration. It encourages patient compliance and enhances opportunities for physicians at the first level of care to communicate and consult with specialists, hospital personnel, pharmacists, etc.

KP is not an actual legal entity but is rather an umbrella name for three entities that operate in an integrated fashion: Kaiser Foundation Health Plan (KFHP), Permanente Medical Groups (PMG), and Kaiser Foundation Hospitals (KFH). Mutual exclusivity is a key feature underpinning these relations. This means that the PMG do not practice medicine outside of KP. Similarly, KFHP does not directly contract with other medical groups. Contracting

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[vi] Economies of scale refer to situations where average long-term costs fall with a growth in scale or volume of activities, to the extent that the time period is sufficiently long for all inputs to be variables. Economies of scale occur in production processes where fixed costs are high relative to variable costs.

[vii] Economies of scope refer to the increase in economy produced by the variety of services supplied by the same production unit.

for needed medical services is done by the medical groups. KFHP and PMG share incentives to keep the members healthy and the costs of care in line.

Since 2003, KP has embarked on a journey to become the worldwide leader in information technology by fully integrating its systems and giving members access to many online features. It has implemented KP HealthConnect, a secure nationwide electronic data system that links all aspects of care. For providers, the system: i) becomes the communication and messaging tool among those taking care of patients, ordering tests or drugs, and receiving results; ii) it incorporates decision-support tools, such as clinical practice guides, recommended drugs, and alerts for overdue tests or preventive screenings; iii) it offers population management tools such as registries for people with diabetes, asthma, and heart disease; and iv) it provides sophisticated information for research and performance evaluation, including feedback to individual practitioners and teams. Meanwhile, KP HealthConnect offers members and patients: i) online access to their medical records and test results, health education information, appointments, prescription refills, and even eligibility and benefit information; ii) the opportunity to e-mail their physician; and iii) online health assessments and personalized health information tailored to their individual health status.

In 1997, KP created the Care Management Institute (CMI). CMI's mission is to improve health outcomes through the identification, implementation, and evaluation of nationally consistent, population-oriented, cost-effective healthcare programs based on scientific criteria and knowledge. CMI produces the guidelines that feed into KP HealthConnect prompts and other material that physicians can access at any time.

Since the late 1980s, KP has been investing in the infrastructure and programs for managing populations with chronic conditions, particular those impacting Emergency Department and hospital utilization. Physicians at the first level of care manage their patients, but with the support of proactive teams for chronically ill patients. Depending on the chronic problem, such teams may include nurses, medical assistants, health educators, pharmacists, social workers, psychologists, and specialists.

Today, KP offers hundreds of health education classes at each of its medical centers, on topics ranging from stress management to diabetes care to quitting smoking. Health educators may be nurses, pharmacists, doctors, or professional teachers with master's degrees in public health. In addition, KP sends all of its members a copy of The Healthwise Handbook. This guide to hundreds of medical conditions includes home care tips as well as advice about when to call your doctors or go to an emergency room.

Source: Porter M, Kellogg M. Kaiser Permanente: an integrated health care experience: case study. Revista de Innovación Sanitaria y Atención Integrada 2008, Vol. 1, No. 1. www.risai.org

CHAPTER 3: Essential Attributes of Integrated delivery networks

Given the wide range of external contexts and internal factors, it is not possible to prescribe a single organizational model for IDSs; in fact there are many possible models. The public policy objective then is to find a design that meets the specific organizational needs of each system.[69] Despite the variety of external contexts discussed in Chapter 2, the experience gained in recent years has shown us that IDSs require several essential attributes to operate well. The attributes that are presented below have been extracted from an extensive literature review,[70, 71] from discussions in the IDS working group, and from the expert consultation carried out by PAHO/WHO in Santiago, Chile, in October 2007.

Essential Attributes of IDSs

1. The covered population/territory is defined and there is broad knowledge of its health needs and preferences, which determine the services provided by the system.
2. An extensive offer of health facilities and services, which include public health services, health promotion, disease prevention, timely diagnosis and treatment, rehabilitation, and palliative care, all under a single organizational umbrella.
3. A first level of care that acts as the de facto gateway to the system, integrates and coordinates health care, and meets most of the population's health needs.
4. Specialist services delivered in the most appropriate place, preferably non-hospital settings.
5. Coordination of care mechanisms exists throughout the entire continuum of services.
6. Health care centered on the person, the family, and the community/territory.
7. A single, participatory governance system for the entire IDS.
8. Integrated management of administrative and clinical support systems.
9. Sufficient, competent human resources, committed to the system.
10. An integrated information system that links all members of the IDS.
11. Adequate financing and financial incentives aligned with the goals of the system.
12. Broad intersectoral action.

Essential attributes of integrated delivery networks

The covered population/territory is defined and there is broad knowledge of its health needs and preferences, which determine the services provided by the system

The principal function of IDSs is to coordinate the continuum of health services for the purpose of preserving, restoring, and/or improving the health of individuals and/or the community. In order to achieve this, IDSs should be capable of clearly identifying the populations and/or geographical areas under their responsibility. Clearly, IDSs that are organized around defined geographical areas have a greater comparative advantage over systems that are not organized on a territorial basis, particularly with respect to opportunities for implementing public health actions,[72] promoting intersectoral action, and intervening in the social determinants of health. Knowledge of the covered population/territory enables developing health profiles of the individuals and groups therein, and in particular, of the most vulnerable population groups.[viii] This knowledge of the health needs and demands of each population group permits in turn the design of differentiated services that better respond to their specific needs. For data collection, IDSs coordinate information-gathering efforts with the community and with other relevant public and private agencies, including other sectors of the economy. The goal is to create a database on the community that can be periodically updated, facilitating in this way the current and future planning of public health services and personal health care services. The foregoing also involves the capacity to prepare projections and estimates of future health needs and demands. Identifying the population's needs then enables estimating the number and composition of personal, the capital resources, and health programs and services needed in order to meet the specific health needs of the population covered. The following figure illustrates the sequence of events that guarantees the community orientation of health services in IDSs:[73]

[viii] The most vulnerable people are those who are socially excluded, the poor, minorities, indigenous peoples, Afro-descendents, the sick, the disabled, women, children, and the elderly.

Figure 3. Community Orientation of Health Services

An extensive offer of health facilities and services, which include public health services, health promotion, disease prevention, timely diagnosis and treatment, rehabilitation, and palliative care, all under a single organizational umbrella

IDSs have an extensive network of facilities and services for personal health and for public health,[ix] all under a single organizational umbrella. To this end, they have a broad range of health facilities, including ambulatory centers for the first level of care, nursing facilities, hospices, home care, specialized ambulatory centers, rehabilitation centers, and hospitals (only for the management of complicated, acute and subacute cases). IDSs have all levels of care, both ambulatory and hospital, and are capable of providing care for acute cases, long-term cases, elective cases, and emergencies. They also integrate personal care and public health services. Since their principal focus is on keeping people healthy, IDSs emphasize public health services and health promotion and/or disease prevention services. IDSs also stress the geographical proximity of their operating units so that their services are provided as near as possible to where people live. IDSs can also adapt to different local conditions, by adjusting the supply of health services and developing subregions within the system. Finally, IDSs make sure they maintain reasonable population sizes, in order to: i) facilitate access to health services; ii) guarantee standardization and quality of specialized services, particularly volume-dependent services; and iii) make appropriate use of economies of scale. In this regard, the study by Kronick et al. (1993) suggests that a reasonable population size is approximately 450,000 people, so that a system can offer referral to hospital services.[74]

A first level of care that acts as the de facto gateway to the system, integrates and coordinates health care, and meets most of the population's health needs

In an IDS, the first level of care[x] plays a key, non-delegable role in the adequate operation of the system as a whole. In this system, the first level of care acts as the gateway to the system and guarantees equitable access to essential services for the entire population. This level provides comprehensive care capable of respond to most of people's health needs and demands over time and throughout the life cycle. This is the component of the system that develops the deepest ties with individuals, families, and the community, and with the rest of the sectors of society, facilitating in this way social participation and intersectoral action. The first level of care also plays a very important role in coordinating the

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[ix] Public health services include health status assessment, health surveillance, health promotion, prevention services, infectious disease control, environmental protection and sanitation, disaster and emergency preparedness and response, and occupational health, among others.

[x] In this document we have chosen to use the term first level of care instead of the term "primary care" in order to avoid confusion with the concept of Primary Health Care (PHC), which for PAHO is a broad approach (or strategy) for the organization and operation of the health system as a whole, and not only the delivery of health services at the first level of care. In any case, the term primary care, as the first level of care, has been defined by the Institute of Medicine in the United States as "the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health needs, developing a sustained partnership with patients, and practicing in the context of family and community" (Institute of Medicine. Primary care: America's health in a new era. Washington, D.C.: National Academy Press, 1996).

continuum of services and flow of information throughout the service system, regardless of the health care site. It is also the level that integrates personal care, public health, and programs targeted to certain diseases and/or specific health risks. In an IDS, the first level is not confined to service delivery in health centers. Health workers can move around the entire network of services in the system and provide care in different settings, such as homes, schools, workplaces, and the greater community. In the same way, different kinds of specialists can provide services at the first level of care. Nevertheless, the first level of care cannot resolve all the health problems of the population by itself. For this reason, services at the first level of care are supported and complemented by other specialized levels in the system, including social protection services.

Specialist services delivered in the most appropriate place, preferably non-hospital settings

IDSs are continually seeking to deliver health services in the most appropriate place for care. Independent of the type of integration to be implemented, developing IDSs will always require considerable adjustments to be made in the supply of services. As was previously mentioned, services should be adjusted to serve the health needs of the population and should include substitution processes[xi] that attempt to offer health care in the most appropriate setting along the continuum of health services. In most cases, the most appropriate settings for care are non-hospital settings. Only acute and subacute intensive care should be delivered in hospitals or other specialized inpatient-care centers (e.g. specialized nursing facilities). Substitution processes could lead some hospitals to face the possibility of surplus hospital beds, which in turn would result in the need for reducing hospital beds and reassigning the corresponding personnel. In other cases, hospitals are undergoing re-engineering, involving the adoption of schemes for ambulatory surgery, day hospitals, progressive patient care, home care, hospices, and nursing homes. Notwithstanding, there are still situations in the Region where the supply of hospital services is limited, and as a result, creating and/or expanding the supply of hospital beds could be justified by supply and demand studies, provided that this increase takes place within the previously mentioned substitution framework. In order to attain efficient resource allocation in the system, the network should provide financial and non-financial incentives for treating health problems in the most appropriate setting in the continuum of care, considering demographic and epidemiological, equity, efficiency, and cost-effectiveness criteria. Efficiency will only be achieved if the incentives for the different operating units are fully aligned with the overall goals of the system.

Coordination of care mechanisms exist throughout the entire continuum of services

One of the biggest challenges of IDSs is managing many chronic and complex diseases that "cross" the continuum of services and require different treatment and rehabilitation settings. In this regard, there is no ideal combination of coordination mechanisms; instead, these will depend on each situation in particular and, specifically, on the degree of uncertainty, specialization, and interdependence in the tasks. In general, three models of coordination among different levels of care can be distinguished: *parallel delivery*, which occurs when the division of labor among professionals is clear and the health problem can be addressed without significant collaboration; *management-consultation* with one level of care acting as case manager for the patient and the rest of the levels intervening to advise or to carry out concrete interventions; and finally, *co-delivery of services*, which involves shared responsibility for addressing the problem. The adoption of the appropriate model depends on the complexity of the patient's needs and of the model of care, in addition to the factors described above. Co-delivery models are more effective for complicated processes that require intensive collaboration between professionals in different settings.[75]

The coordination instruments or mechanisms traditionally used by health organizations are based on regulation of skills, standardization of processes/outcomes, and mutual adaptation. *Regulation of professional skills* is done through a global plan for personalized continuing education, based on individual learning needs, and with the clinician's active participation. In recent years, in order to reduce costs and emphasize quality, health providers have begun to *standardize health care processes and outcomes*. Clinical Practice Guidelines[xii] and Care Maps, Clinical Pathways, or Protocols[xiii] are

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[xi] Process of continual regrouping of resources across care settings to exploit the best available solutions (WHO, Regional Office for Europe. European health care reform: analysis of current strategies. Copenhagen: WHO; 1996).

[xii] These are systematic recommendations, based on the best available scientific knowledge, that guide professionals' and patients' decision-making about the most appropriate and efficient health interventions for addressing a specific health problem under concrete

examples of coordination instruments based on the standardization of processes. These types of mechanisms can be used effectively when interdependence among professionals is not high, variability in response to medical treatments among patients is minimal, and scheduling care is easy. However, these instruments are rather ineffective for coordinating care for complex health problems that entail a high level of interdependence and uncertainty. In these circumstances, mechanisms based on *mutual adaptation* are more appropriate; that is, coordinating work through organizational coordination mechanisms that are conducive to communication between professionals that are involved in the same care process. Examples of this last type of mechanism are vertical information systems, interdisciplinary working groups, and matrix designs for the organization that combine the structures for level of care and process of care.[76] Other examples include disease management[xiv] and case management[xv] (see Table 6).

Table 6: Models for Organizing Care and Instruments for Coordination of Care

Organizing care between levels of care	Parallel provision	Clear division among professionals without significant collaboration
	Management-consultation	One level acts as the patient's case manager and the rest advise or carry out concrete interventions
	Co-delivery	Shared responsibility in addressing the problem
Coordination of care instruments	Regulation activities	Training programs
	Standardization of processes and outcomes	Clinical Practice Guidelines Care maps, clinical pathways, or protocols
	Mutual adaptation	Vertical information systems Interdisciplinary groups Matrix structures

Source: Vázquez Navarrete ML, Vargas Lorenzo I, Farré Calpe J, Terraza Núñez R. Organizaciones sanitarias integradas: una guía para el análisis. Rev. Esp. Salud Pública, Nov.-Dec. 2005. Vol.79, No. 6, pp.633-643.

Health care centered on the person, the family, and the community/territory

IDSs are characterized by providing health care centered on the person, the family, and the community/territory. Person-centered care means that care is centered on the "person as a whole"; that is, the care takes into account the person's physical, mental, emotional, and social dimensions. It also means the degree of knowledge that health workers have about the person; that care is adapted to the person's specific needs; that there is empathy, respect, and trust; and that clinical decision-making is shared between the provider and the person.[77] Person-centered care is also linked to the patient rights-based approach (and at times responsibility-based) to health care, which in some countries has been embodied in "Charters of Patients' Rights" (see Box 2).

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circumstances (Grifell E, Carbonell JM, Infiesta F. Mejorando la gestión clínica: desarrollo e implantación de guías de práctica clínica. Barcelona: CHC Consultoria i Gestió, 2002).

[xiii] These are patient care management plans that set objectives for patients and provide the sequence of interventions that physicians, nurses, and other professionals should carry out to reach the desired objectives in a set time (Longest BB, Young GJ. Coordination and communication. In: Shortell SM, Kaluzny AD, ed. Health Care Management. New York: Delmar, 2000:210-43).

[xiv] These are coordinated health information and intervention systems for populations with diseases for which self-care is important to their treatment and control. They focus on patients with specific diagnoses and on high-prevalence diseases that require intensive or high-cost care, that involve high drug expenditures, have measurable outcomes, and for which there are significant variations in clinical practice (Pilnick A, Dingwall R, Starkey K. Disease management: definitions, difficulties and future directions. Bull World Health Organ 2001;79(8):755-63).

[xv] Delivery of continuous care across different services through the integration and coordination of needs and resources around the patient. Basically, this differs from disease management in that it centers more on individual patients and subfamilies than on the population of patients with a specific disease. It is aimed at people with a high level of risk because they need high-cost care, are vulnerable, or have complex health needs. A case manager coordinates patient care across the continuum of care (Smith JE. Case management: a literature review. Can J Nur. Adm. 1998; May-June:93-109).

Box 3. Most Common Rights/Responsibilities of People/Patients in "Charters of Patients' Rights"

The most common rights of people/patients in Charters of Patients' Rights:
- *Preventive measures* (services to prevent illness, including health education)
- *A healthy and safe environment* (that ensures physical and mental health and/or well-being)
- *Access to health care* (to the entire spectrum of health services, and equal access for all without discrimination of any kind)
- *Humane treatment* (treatment with respect, dignity, and consideration)
- *Access to information* (regarding state of health, services provided, research, and technological innovation)
- *Participation and informed consent* (active participation in decisions on one's own health, including diagnostic and therapeutic procedures and scientific research)
- *Refusal of treatment* (provided that the refusal does not endanger the health of others)
- *Ability to choose between different diagnostic/therapeutic procedures* (on the basis of adequate information and a second opinion when required)
- *Privacy and confidentiality* (confidentiality of personal information, including information on health status, diagnostic and therapeutic procedures, and privacy during the performance of diagnostic exams, visits, and medical/surgical treatments)
- *Observance of quality standards* (access to high quality health services on the basis of the specification and observation of precise standards)
- *Safety* (care free from harm to health)
- *Avoid unnecessary suffering and pain* (in every phase of the illness)
- *Personalized treatment* (diagnostic and therapeutic procedures tailored as much as possible to personal needs)
- *Culturally sensitive services* (care that respects cultures and beliefs, as well as gender preferences)
- *Complaint* (the right to complain when one has suffered harm and to receive an appropriate response)
- *Compensation* (the right to receive sufficient compensation when one suffers physical, moral and psychological harm caused by services)

The most common responsibilities of people/patients in Charters of Patients' Rights:
- *Responsibilities to oneself*, that is, responsibility for maintaining and promoting one's own health (self-care and healthy lifestyle), as well as responsibility for restoring health in case of illness (active participation during treatment and rehabilitation)
- *Responsibilities to others* (e.g. to not harm the health of other people; to prevent harm to health workers and/or other patients through excessive, disrespectful, or violent treatment and/or racial, sexual, or any other type of harassment)
- *Responsibilities to the health system* (e.g. contribute to the just and efficient use of the system's resources)

Sources: The European Charter of Patient's Rights (www.activecitizenship.net/health/european_charter.pdf); The Malaysian Medical Association (http://www.mma.org.my/resources/charters); The South African Department of Health (http://www.legacy.hst.org.za/doh/rights); and The Department of Human Services of Victoria, Australia (http://www.health.vic.gov.au/patientcharter).

Furthermore, a family and community focus means that care is not based exclusively on an individual or clinical perspective. On the contrary, it means that care addresses the problems of the individual in the context of his or her family circumstances, social and cultural networks, and the circumstances in which people live and work. Furthermore, community-based care also means:[78] i) community participation in identifying health needs, and in the planning and delivery of services; ii) community governance on issues of management, expenditures, allocation of resources, and performance evaluation of the system; iii) community-based initiatives where the community is the unit of analysis and the intervention unit at the same time; and iv) community participation in the development of culturally appropriate models.

A single, participatory governance system for the entire IDS

The dimensions of governance[xvi] are control, structure, composition, and operation. Control refers to the degree of government centralization, which can range from a single governmental body (corporate government) up to multiple decentralized bodies with different duties and responsibilities. Although there is no empirical evidence on which model enables attaining a greater degree of integration in the network, three desirable attributes for good governance of the system have been defined: responsibility of the government to the entire network, this is, a systems perspective when making strategic decisions; responsibility to the population it serves; and, finally, coordination among the different governing bodies in the system's entities to ensure consistency in vision, objectives, and strategies throughout the network. The advantages of centralization are clarity of objectives, uniformity/consistency in leadership, and commitment to the entire system that it governs, while a decentralized government brings decision-making closer to local circumstances and the process is faster and more expeditious. The members selected for the board of directors define the composition of the government, which may include representatives of communities and of the operating units that are part of the IDSs.[79] The complexity of the IDS's government will require highly-dedicated members with specific qualifications. It is considered to be crucial for integrated care to have objectives and strategies in the strategic dimension that are shared by all the services and that provide a common tie for the activities implemented by the network. Thus, the responsibilities of the IDS government are the following: i) to develop the purposes of the organization; that is, the mission and vision of the system; ii) to ensure that management reaches a high level of performance; that is, carrying out the function of monitoring and evaluation of the system; iii) to formalize the clinical and administrative functions of the system; iv) to ensure adequate financing for the organization; and v) to ensure its own performance is effective, as a governing body.[80]

Integrated management of administrative and clinical support systems

The management arrangements for the system will depend on its size (population covered, geographical area covered, workforce used, etc.) and level of complexity (type of health facilities, existence of national or regional referral centers, existence of teaching or research functions, etc.). Larger, more complex IDSs require more refined organizational designs that can delegate decision-making power and coordination. This means giving intermediate hierarchical levels coordination roles and a multilevel budgeting system.[81] Changes at the second and third managerial levels involve shifting from the management of individual departments to multidisciplinary teams responsible for managing specific services within the continuum of care for the population covered. To this end, IDSs have begun to seek new organizational designs, moving along a continuum from traditional organization by health facility to more innovative forms based on "clinical service lines."[xvii] IDSs also develop systems for the continuous assurance/improvement of quality of care for the entire IDS, since these systems help promote a system culture emphasizing ties beyond bureaucratic limits. Furthermore, these systems try to centralize clinical support functions (e.g. laboratory and radiology) and the provision medicines and other medical supplies, to promote the overall efficiency of the IDS and to set up management mechanisms and technology assessment processes to guide decisions about accepting new technologies.

Sufficient, competent human resources, committed to the system

Human resources are the most important asset that an IDS has; their presence in number and appropriate competencies translates directly into the availability of care and services appropriate to the needs of the population. In this regard,

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[xvi] Governance, above all, has to do with "the process of creating a vision and mission for the organization—what it is going to be and what it will do—in addition to defining the goals and objectives it must reach to attain the vision and the mission. Governance includes the ties between the organization and its owners and the policies that stem from these values—policies about the choices that its members must make to attain the desired outcomes. It also includes putting into effect the management necessary for attaining those outcomes and evaluating the performance of management and of the organization" (Sinclair D, Rochon M, Leatt P. 2005. Riding the third rail: The story of Ontario's health services restructuring commission. 1996-2000. The Institute for Research on Public Policy, Montreal.65-6).

[xvii] These are organizational arrangements based more on "outputs" than on "inputs." An organization based on outputs leads to a service line structure that consists of people from different disciplines and professions who have a common purpose to produce a broad package of clinical services (Charn M, Tewksbury L. Collaborative management in health care: implementing the integrative organization. San Francisco: Jossey-Bass; 1993).

determining the composition of the basic health teams (which professionals are part of that team) in relation to the assigned geographical coverage area is indispensable and is the basic reference point for planning and staffing human resources in the health system. From the standpoint of personnel management, IDSs examine the role of health workers from a public health and clinical response perspective as well as from a structural and organizational management perspective. IDSs require abilities and lines of responsibilities that are different from traditional systems. New positions are needed (e.g. directors of clinical integration, planning, and network development), in addition to new competencies (e.g. a systems approach, negotiation, conflict management, change management, continuous quality improvement methods, teambuilding, network management). These changes require the preparation of an organizational development plan to handle the transition from the current situation to the desired situation. They also require system-wide in-service continuing education to adapt the competencies of the working teams. In an IDS, the important mix of competencies can be obtained by using different types of professionals to work on a single task (multifunctional and/or multidisciplinary team), or by assigning multiple tasks to a specific person (multipurpose worker). Distributing tasks on the basis of the health team and not only the physician is one aspect that defines the new organizational model of IDSs. Nurses and other types of health workers have to be in a position where they feel that their knowledge, abilities, and expectations are valued by the system and where they can assume managerial positions that are influential in the system.[82] *Culture* is another of the basic factors that influence coordination within the organization. Culture contributes to the coordination of care because it is a factor providing cohesion and identification among the members of the organization's workforce, especially if the culture promotes the values and attitudes of collaboration, teamwork, and a results-based orientation.

An integrated information system that links all members of the IDS

An IDS's information system should provide a wide range of data to meet the information needs of all the system's members. All the operating units affiliated with the system should be linked into the information system, even when each operating unit uses different parts of the system's database. The information system should be consistent with the IDS's mission and strategic plan and provide information on the following: i) the health status of the population served (including information on the social determinants of health), demand, and service utilization; ii) operational information on the patient's pathway, independent of the care setting (admission, discharge, referral); iii) clinical information; iv) information on user satisfaction with services; and v) financial information (billing, affiliation, costs, etc.). The information system should have the following basic elements at a minimum:[83]

- *An application integration system* that links different systems inside the entire IDS. The operating system, applications, software, and data are stored in several servers but are accessible to the entire network.
- *Common, unique patient ID*. Each patient is assigned a unique access code. Clinical, administrative, and financial information from multiple sources is entered into a single system through the use of a unique code.
- *Common definition of terms*. It is important to have agreements on a common language and definitions of standards, which should be updated continually.
- *Data repository accessible to all members of the system*, though care needs to be taken with confidentiality of the information.

Adequate financing and financial incentives aligned with the goals of the system

An IDS sets up a system of incentives and accountability that seeks to promote the following: i) the integration of the system as a whole more than the individual performance of the operating units; ii) the treatment of health problems in the most appropriate place along the continuum of care; and iii) the preservation of people's health. To this end, the allocation system should enable each unit—hospitals, first level of care teams, etc.—to assume responsibility for both direct expenses and those it causes to the rest of the network. Integration of the budget and its preparation based on overall objectives, flexibility in the mobility of economic and human resources within the network, and the transfer of purchasing authority to the operating units are some of the most effective measures for achieving overall efficiency in the system. Traditional payment systems that are applied independently at each level of care (e.g. fee-for-service, fee per episode, or budgeted payment) discourage coordination between levels of care.[84] In response to this, system-wide capitation funding has started to be introduced as an instrument for promoting cooperation among providers. Per capita payment encourages the provider network to find methods for aligning their interests with the network's overall objectives and

attempt to treat health problems at the most appropriate site along the continuum of care. Thus, for example, the hospital shifts from being a revenue-producing center to being a cost center, as does the rest of the service network. A study by Shortell et al. (1994) suggests that the greatest potential for cost savings under a capitation system occurs in the areas of hospital care and specialist care (35% and 16% cost reduction, respectively).[85]

Broad intersectoral action

IDSs develop ties with other sectors in order to address the more "distal" determinants that condition the health status of the population. Intersectoral action can include collaboration with the public sector, with the private sector, or with civil society. It can include collaboration with the education, labor, housing, food, environment, water and sanitation, and social protection sectors, among others. Several levels of integration exist within intersectoral actions: going from those that simply share information and avoid programming that conflicts with other sectors, to coordination, and finally, up to the integration of public policies to achieve higher levels of harmonization and synergies among the different sectors of the economy. In order to be successful, these levels of intersectoral coordination require increasing levels of technical competence, managerial ability, and shared values among the sectors that are being integrated. Coordination with other services can occur through participation in advisory committees, standing committees, and intersectoral working groups.

The following diagram is an attempt to illustrate the relationships between the essential attributes of IDSs.

Figure 3. **Diagram of the Essential Attributes of IDSs**
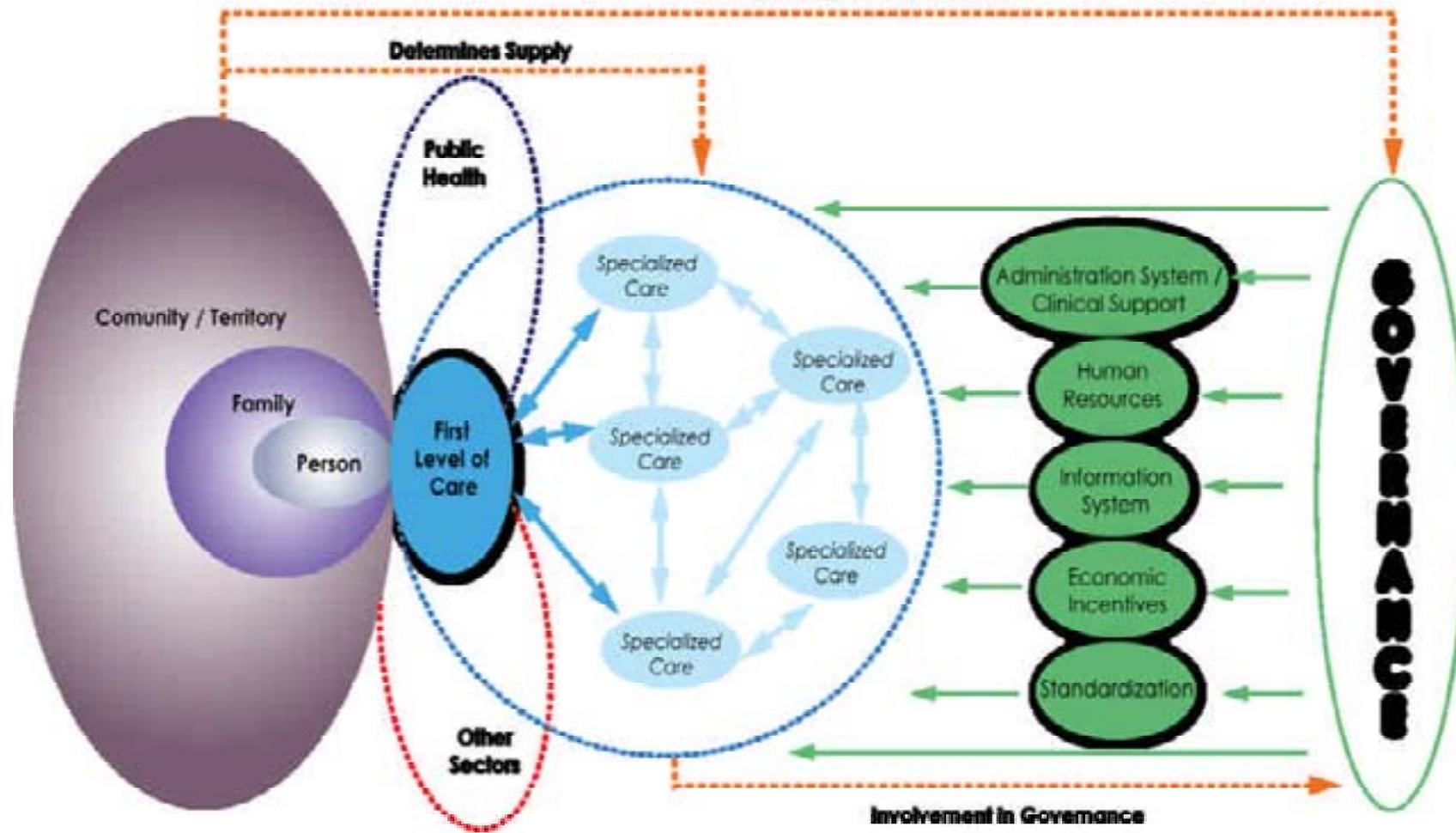
Context: type of health system, funding level, legal and regulatory framework, health authority's steering capacity, availability of human, physical and technological resources, etc.

The following case study of the Badalona Serveis Assistenciales S.A. integrated network in Catalonia, Spain, shows a system where several of the previously mentioned attributes of IDNs have been put into place (see Box 4).

Box 4. Case: Badalona Serveis Assistenciales S.A. Integrated Network in Catalonia, Spain

Badalona Serveis Assistenciales (BSA) is currently a wholly-own municipal corporation; it was created in the early 1990s from the merger of a hospital management entity (Hospital Municipal de Badalona S.A.), a manager of centers providing first-level care (Badalona Gestió Assistencial SL), and a municipal nursing home (Centre El Carme S.A.). Following its reorganization and reincorporation in 2005, it was the scene of one of the most successful experiences in the group of integrated networks in Catalonia associated with the Catalonia Hospital Consortium. The different managed first-level care centers joined the organization between 1994 and 2003, meaning that BSA's progressive growth has been accompanied by greater opportunities for integrating services. BSA has a single governing structure for its entire network, which is a municipal agency that performs its oversight function by approving the strategic plan, monitoring the operating account, approving the organizational structure, and ensuring the institution's social commitment. It has contracted out the entity's management to the "CHC-Consultoria i Gestió" group through a management contract, and it is this group that is responsible for the entity's overall management.

BSA provides health coverage to 230,000 inhabitants of the Barcelonés Norte region, an urban area close to Barcelona. It has one acute care hospital with 121 beds, 7 basic health areas (providing first-level care at 8 centers), a 210-bed nursing home, and a comprehensive home health care service. The population is assigned geographically (in Catalonia, the public purchaser–CatSalut—finances universal access for the entire Catalonian population). In the same region, they have the support of a 640-bed high-complexity hospital (the referral hospital for the entire northern region of Barcelona province --800,000 people), and another four centers providing first-level care, which are all managed by another public entity (Instituto Catalán de la Salud).

The BSA organization's strategic plan, approved in 2008, is their third four-year plan, and is the result of the consolidation of the integrated network model. The plan contains a large component on social commitment, including a code of ethics and an explicit policy of corporate social responsibility. The plan consists of five strategic lines: Commitment to users; Attractive organization for professionals; Adaptation to the new challenges in the sector; Efficient use of the comprehensive organization model; and Community involvement. The plans of action for each strategic line are transmitted to each unit or service through Management Contracts, which include objectives aligned with the agency's Strategic Plan and Quality Plan. The professionals in each unit or service use an individually-tailored Management by Objectives system, which is evaluated to determine the awarding of variable incentives.

Its healthcare organization is based on a network of services that offers coordinated care along a continuum of services provided by some 1,200 employees. We define it as a network with true integration and total production—it encompasses the first level of care (FC), specialist care (SC), nursing care (NC), and home health care (HC) and social assistance—which is designed along a model of co-provision (mutual responsibility among professionals at different levels). In 2004, the organizational chart, initially designed by each center, became a single, integrated, function-based organizational chart run by management and with all the management areas coordinated by the position of associate manager. The healthcare area has two directors: A medical director of the clinical area for all the services in the hospital, first level of care, clinical support units, and public health; and a nursing home agency medical director. There is common nursing management for the entire organization, and there are common management support departments for all the centers.

BSA uses various coordination instruments and strategies. It standardizes processes by using common clinical practice guidelines; it has established referral and counter-referral criteria and pathways at all its levels and for all specialties; it holds joint meetings with FC and SC; and SC personnel visit FC centers. They also have mechanisms for mutual development through E-mail (with individual addresses for all professionals) and a director of integration position (associate manager). But, without a doubt, the greatest facilitator of continuity in the organization is its vertical information system. BSA has a 10-year-old Intranet that addresses the issue of the aggregation of clinical and administrative data

through the use of a shared clinical record, which brings together the electronic clinical records from FC, SC, NC, and home health care. It is accessible from all points in the network as well as from patients' homes, and is shared by the services for radio diagnosis by digital imaging and laboratory. The corporate Intranet is also an aid to decision-making (availability of protocols and clinical guidelines), knowledge management (shared knowledge), and the translation of the strategic objectives into good patient flows (from the viewpoint of the referral pathways closest to the patient's home).

Having all clinical and administrative data available in the information system permits the use of balanced scorecards, which are accessible to all professionals and are updated daily. All the services have access to information on healthcare activity, resource use, economic and human resource information, and qualitative data (clinical excellence indicators) in real time.

BSA has added an innovation office to the organization, which has developed several management strategies for healthcare processes. Examples of this are disease management programs such as the cognitive impairment and dementia team, and case management programs such as the palliative care unit, the comprehensive home health care service (meeting healthcare and social needs), and the public outreach unit.

Source: Cunillera R. Caso de Red Integrada, Badalona Serveis Assistencials S.A. (BSA), Badalona. Catalonia. Spain. Barcelona, 20 October 2008.

Monitoring and evaluation of IDNs

Performance measurement offers policymakers a major opportunity to secure health system improvements and accountability. The role of monitoring and evaluation is to improve the quality of decisions made by all actors within the health system, including patients, practitioners, managers, governments at all levels, insurers and other payers, politicians, and citizens.[86] Monitoring and performance evaluation of IDNs presents major technical challenges such as the need for a system-wide approach to evaluation, methodological difficulties inherent in a system-wide approach, and lack of data availability and comparability. PAHO/WHO does not currently have methodologies for evaluating IDNs and intends to develop them as part of the IDN initiative. Notwithstanding, PAHO/WHO considers that monitoring and evaluation of IDNs should include measurements that address, at a minimum, health resources/inputs, processes, and outcomes. In addition, the development of the methodologies should be based on developments already made in this field.

Independent of the methodological difficulties for measuring integration, it is worth emphasizing that the act of measuring performance and collecting data is an important learning process in itself, for both managers and the operating units that make up the network. The process of performance measurement can lead, among other things, to rethinking the relationships among the parts, to creating synergies among the parts, and to discovering gaps in information in the system.

Assessing progression toward integrated delivery networks: from absolute fragmentation to integrated systems

Integration of health services should be seen as an evolutionary, continuous process over time. Each health services reality presents its own problems with integration in light of the attributes presented above. In the same way, and as was discussed in Chapter 1, the reasons for fragmentation are many and vary from one reality to other.

Following is a proposed progression over time, from a hypothetical situation of absolute fragmentation of services, to a hypothetical situation of absolute integration, based on the attributes mentioned previously (see Table 7). As can be seen, no real-life system completely matches a particular system type (I, II, or III). Most likely, the health system in each country will be located at different levels of integration, depending on the progress for each attribute in particular, with the possibility that in a single system different attributes coexist at different levels of progression (e.g. level I for the attribute for ties with other sectors, level II for the attribute on specialized care, and level III for the attribute on population assigned). The usefulness of this progression matrix is to be able to identify, in the context of all the attributes of an IDS, which attributes should be given a higher intervention priority.

Table 7. Assessing Progression toward Integrated delivery networks: From absolute fragmentation to integrated systems

Attributes	Integrated Delivery System Attributes: Progression Levels		
	I	II	III
	Fragmented system	**Partially integrated system**	**Integrated system**
Population/ territory	No covered population/territory	Covered population/territory is defined, but knowledge of its health needs and preferences is limited	Covered population/territory is defined and there is broad knowledge of its health needs and preferences, which determine the services provided by the system
Health services supply	Very limited and restricted to the first level of care	Broad supply of facilities and services, but under various organizational units that function independently of each other	An extensive offer of health facilities and services, all under a single organizational umbrella
First level of care	Predominance of vertical programs working in a non-integrated manner	Acts as the gateway to the system, in theory, but with very low response capacity and integration of services	Acts as the de facto gateway to the system, integrates and coordinates health care, and meets most of the population's health needs
Specialized care	Unregulated access to specialists and predominance of specialized care in a hospital setting	Regulated access to specialized care, but with a predominance of hospital care	Specialist services delivered in the most appropriate place, preferably in non-hospital settings
Coordination of care mechanisms	No coordination of care	Coordination of care mechanisms exist, but do not cover the entire spectrum of services	Coordination of care mechanisms exist throughout the entire health care continuum
Type of care	Disease-centered	Individual-centered	Centered on the person, the family, and the community/territory
System governance	No clear governance function	Multiple governing bodies that function independently of each other; limited venues for participation	A single, participatory governance system for the entire IDS
System management	Weak administrative management	Integrated administrative management, but without integration of clinical support systems	Integrated management of administrative and clinical support systems
Human resources	Insufficient for the needs of the system	Sufficient human resources, but with deficiencies in technical competencies and commitment to the system	Sufficient, competent human resources, committed to the system
Information system	No information system	Multiple systems that do not communicate among themselves	An integrated information system that links all members of the IDS
Financing	Insufficient and irregular	Adequate financing, but economic incentives are unaligned	Adequate financing and financial incentives aligned with the goals of the system as a whole
Ties with other sectors	No ties with other sectors	Ties with other social sectors	Broad intersectoral action, beyond social sectors

CHAPTER 4: Public Policy Instruments and Institutional Mechanisms for Developing Integrated delivery networks

Public policy instruments and institutional mechanisms for developing integrated delivery networks

A number of instruments and mechanisms are available to policymakers, managers, and health service providers that can assist in the formation of IDSs. The importance and relevance of these instruments and mechanisms will depend on each specific situation, an issue that will be discussed in the following section of this chapter. The list of options presented in Annex II is based on a literature review and on discussions in the IDS working group. The objective of this paper is not to provide a detailed explanation of each option, but instead to make a broad spectrum of possible options available as an aid to identifying choices, which would have to be subsequently expanded upon.

The availability of research results, accounts of experiences, lessons learned, and systematized scientific knowledge supporting the proposed options is very variable. In some cases the empirical evidence is very strong, in others it is weak, and in others it is nonexistent. In any case, the list presented mentions all the possibilities that can be found in the literature. The inclusion of an item on the list should be seen in terms of possibilities, and not necessarily in terms of evidence-based recommendations.

Notwithstanding, the literature review points to the following instruments/mechanisms as being highly effective [87] [88]:

- system members identifying with the organization's mission and values;
- a strategic planning process that promotes input from all the components in the system;
- budgeting policies and practices that promote coordination through service lines;
- continuous quality assurance/improvement processes that are shared through the operating units;
- integration of health workers into the system;
- case management and disease management;
- integrated, computerized clinical information; and
- a per capita payment system for the entire IDN.

For the purposes of this paper, we have grouped the instruments and mechanisms into two main groups: one on policy instruments, and the other on institutional mechanisms. The first group is aimed at policymakers, whether at the national, regional, or subregional level (depending on the degree of decentralization of the system). The second group is aimed at health service managers and providers. This grouping is artificial and its only purpose is to facilitate the presentation of the options in the text. In reality, the division between policymakers and service managers/providers is not sharp, particularly in situations where there is no separation of functions in the system. This means that the policy instrument and institutional mechanism options can be used together by different public and private institutional actors.

Public policy instruments

Policy instruments are the means by which public policy objectives are pursued.[89] The public policy instruments most frequently used by governments are legal ones. However, from the standpoint of the impact on public policies, it is important to complement legal instruments with other types of instruments.[90] The following public policy instruments are available:

1. *Legal*, meaning the employment of legal requirements/mandates that take the form of a law (legislative branch), decree (executive branch), or judicial order (judicial branch).
2. *Direct service delivery*, that is, direct provision through government services, or intervention in other institutional processes in various ways to achieve outcomes.
3. *Capacity-building in others*, that is, the transfer of financial, informational, and organizational resources to third parties in order to build their capacity to achieve objectives that are both in their interests and in policymakers'

interests. Actions are aimed at facilitating the development of norms and processes in society with other social actors.

4. *Taxes and fees*, which consist of increasing the cost of certain behaviors. These focus on behavior change and on altering "market" processes to change the calculus of costs and benefits.

5. *Expenditure and subsidies*, that is, the use of monies in the form of grants, subsidies, transfers and/or vouchers that lower the cost of some desired behavior or outcome. These also focus on behavior change and on altering "market" processes to change the calculus of costs and benefits.

6. *Information and exhortation*, which consist of using information to change behaviors and/or normative views. This type of instrument assumes that people have incentives to change their behavior based on information. Unlike legal instruments, the use of information is based on voluntary response.

Public policy instrument options have been grouped into two sub-groups for purposes of presenting them: legal instruments and non-legal instruments. Non-legal instruments include all of the previous options that do not fall into the legal category.

Institutional mechanisms

Institutional mechanisms are those that can be applied at the level of health service management and/or provider institutions. Institutional mechanisms have been grouped into two sub-groups for purposes of this document:

1. *Clinical means*, meaning mechanisms that are more directly related to the health care process as such.
2. *Non-clinical means*, meaning mechanisms that are more directly related to systems' organization and management models, in support of the health care process.

As in the previous case, the separation between clinical and non-clinical means is artificial and has been done solely for the purpose of facilitating the presentation of the options in the text.

Following is a case study of the Integrated Delivery System in the Municipio of Curitiba, Brazil, demonstrating some of the policy instruments and institutional mechanisms mentioned in Annex II (see Box 5).

Box 5. The Integrated Delivery Network in the Municipio of Curitiba, Brazil

The discrepancy between the epidemiological situation in the city at the time and the model of health care in the Unified Health System (UHS) led the Municipal Health Secretariat of Curitiba to the express solution of setting up an Integrated Delivery System. The proposal was presented, discussed, and adopted at the VI Municipal Health Conference in 2001, and implementation began in 2002.

Curitiba is the capital of the State of Paraná, located in southern Brazil. The city has 1.8 million inhabitants. Its annual growth rate is 2.1%. The health infrastructure includes 96 basic health posts, of which 48 are operated by family health teams; 1,140 community health workers (CHW) and 2,947 professionals linked to the basic care posts; 8 municipal urgent care centers; 8 ambulatory specialty units; 1 clinical laboratory; and 24 hospitals under contract.

The development of the Integrated Delivery System included the following components:
Definition of the different catchments areas for the healthcare network. The following catchments areas were defined: the domicile, corresponding to each family's home; the micro-area, sphere of action of the CHWs, covering 100 families on average; the service area, which is the area of responsibility of each basic health clinic and where the first level of care should be self-sufficient; the health district, an area covering more or less 200,000 to 300,000 people, where secondary care should be provided; and the municipio, which should be self-sufficient for tertiary care. The municipio is divided into 9 health districts, each of which has a district authority providing the link among the first-level care posts within it.
Strengthening the first level of care. In 1995, a jump in quality occurred when the Family Health Program (FHP) began, which is based on the following principles: a broader perspective on the community; comprehensive, continuous, humanized care; an intersectoral approach; the family at the core of the approach to caring for the population; and clinical competence. With support from the University of Toronto, FHP started using family-oriented

instruments, such as the genogram and life cycle, in its practice. In 2000, the "Bairro Novo" health district became the first family health district organized into a network, which included the FHP team, a 24-hour ambulatory urgent care center, the ambulatory medical specialties center, and the maternal and child care hospital.

Horizontal integration of clinical support systems. Prior to the reform, the diagnostic support system was scattered across different facilities. In 1992, the Diagnostic Support Center was created. Several clinical pathology laboratories were replaced by a single processing plant, which enabled increasing the scale of tests being done, automating procedures, running them on-line, and setting up internal and external quality control systems. Another important arrangement was to decentralize the collection of tests for all the health posts in the municipal system and introduce a logistics system for sample collection.

Reengineering health care delivery sites. The Municipal Secretariat is promoting an initiative that attempts to provide the right care at the right site. To this end, it has been developing its home health care, 24- hour urgent care centers, and ambulatory medical specialty centers.

Backward-forward integration of health care delivery sites and support systems. The Municipal Secretariat has instituted the "quality-health card," the unified electronic clinical record, a central switchboard for specialist consultations, and a metropolitan clearinghouse for hospital beds.

Strengthening governance of the healthcare network. The healthcare network is governed by the Municipal Secretariat of Health, which has been strengthening its internal capacity to manage the municipal health system. In 1998, the Secretariat took on the "full management" of the municipal system. This level of management required improving oversight, evaluation, and auditing mechanisms, for both its own providers and for the contracts with private providers. Another key element in governance is social participation, through "Health Councils" and the "Municipal Conferences on Health." Furthermore, mechanisms for listening to and empowering health service users are being developed. In 1993, the User Service Clearinghouse was created, for channeling claims and complaints, providing information and guidance, and receiving suggestions to improve services. In 2004, a periodic user satisfaction telephone survey was introduced, which is done twice a year. The results of this survey form part of the evaluation of providers, and are linked to the payment of performance incentives.

Source: Vilaça Mendes E. Redes de atenção à saúde no sistema único de saúde do brasil: estudo de caso apresentado à OPS. June 2007.

The relevance of available public policy instruments and institutional mechanisms, based on the different conditions in the Region's health systems

Although fragmentation of health services is a common challenge facing most of the countries of the region, the extent of the fragmentation and its primary causes differ depending on each particular situation. Likewise, the policy options and strategies for overcoming this fragmentation will depend in turn on technical, viability political, economic, and social feasibility in each context. Each country/local situation should develop its own strategy for instituting IDSs, in accordance with its economic resources, political circumstances, administrative capabilities, and the historical development of its services. It is expected then that the framework of essential IDS attributes and the proposed policy instrument and institutional mechanism options will aid this process. However, from analyzing the regional situation, it is possible to recognize several "prevailing" situations that will require, in one way or another, certain types of priorities related to the attributes that will need to be developed, as well as to the type of instrument or mechanism to use. Some of these situations are discussed below.

Highly segmented health systems

These systems characteristically have serious problems with duplication of services and resources among the subsystems comprising them, as well as high levels of inequity in access to their services. Problems can occur, for example, between the Ministry of Health and Social Security, or between the public subsector (Ministry of Health and Social Security) and the private sector, or between different financing/insurance schemes within the public sector, including public corporations, armed forces, professional groups, etc. In these types of systems, inefficiency from excessive segmentation of health financing/insurance can be partially offset by different "integration" schemes at the service delivery level, which can help to decrease the levels of duplication of services and facilities between subsystems,

particularly in urban areas. Furthermore, schemes of this type could be the first steps in a process that could also finally lead to integration of health financing/insurance, gradually eliminating segmentation in the system. In the case where there has been a political decision to advance toward virtual integration of services (without changes in asset ownership), these systems should concentrate on developing shared governance, management, information, and coordination of care systems among the subsystems. At the corporate level, the different subsystems can establish virtual relationships through strategic partnerships, agreements, and/or contracts among the parties. At the operations level, integration schemes among different public subsystems can generally be implemented by using both clinical and non-clinical institutional mechanisms. In the case of integration among public and private subsystems, the tool of choice will be the use of contracts among the parties.

Systems lacking universal coverage

In this type of system, the fundamental problem is the lack of access to health services, goods, and opportunities by segment or group of beneficiary population and the predominance of vertical health service delivery programs. In these types of systems, the integration priority is to define the covered population/territory, know its health needs and preferences, and develop a first level of care that provides comprehensive services to the entire population. Mechanisms should also be developed for referrals to specialist care when needed. In terms of which public policy instruments to use, a combination of legal and non-legal instruments can be used to guarantee access to health services by the entire population. In cases where there are no private providers, the government should guarantee coverage for the entire population through direct service delivery. In cases where there are private providers (for-profit or nonprofit), possibilities for purchasing services from the private sector can be explored. In these types of situations, intercultural models of care, supported by community health workers, will probably be needed, to adapt services to the cultural preferences of the population served.

Systems where decentralization fragments service delivery

In this type of system, the fundamental problem is the lack of coordination of care between levels of care with different administrations, along with the lack of economies of scale for the provision of specialized services in cases of decentralization with small beneficiary populations. In these systems, the fundamental priority is to improve the mechanisms for coordination of care among the levels of care. As this type of situation usually occurs among systems in the public sphere, systems should give special importance to institutional mechanisms for coordinating the continuum of care, making use of clinical and non-clinical means. Where there is a lack of economies of scale, the different local administrative entities (municipalities, districts, jurisdictions) can associate themselves through virtual integration schemes (partnerships, consortia, agreements, and/or contracts) to improve economies of scale, particularly for optimizing clinical support systems, such as the provision of drugs, supplies, and medical equipment, among others.

Systems with separation of functions and a great diversity of service providers

In these types of systems, the fundamental problem for integration is the duplication of services and resources at the provider level. In this case, the health insurance/financing entity has multiple care provider options, including its own providers who have greater levels of administrative autonomy, and providers compete with each other for service delivery and access to financing. The service purchasing entity should evaluate the pros and cons of purchasing services from third parties or developing its own infrastructure for service delivery. In these systems, the attribute that should be developed is the capacity for integrated system management and, in particular, the system's purchasing function. Furthermore, providers should move toward consolidating and merging their structures, especially if service purchasers modify the payment mechanism from a payment-for-service system to a capitation payment system. Accordingly, policy instruments based on financial incentives are preferred for promoting service integration.

CHAPTER 5: Road Map to Developing Integrated delivery networks in the Region of the Americas

Lessons learned

Previous implementation of integrated networks/systems has left valuable lessons that are helpful for formulating a successful implementation strategy. Following are the most important lessons learned:[91, 92, 93, 94]

1. Integration processes are difficult, complex, and long-term. Integration should be thought of in terms of evolution over time.
2. Integration processes require broad systemic changes; isolated, one-time interventions are not enough.
3. There are more examples of policies in favor of integrated services than examples of actual implementation. Managing change will require actions at several levels, including the commitment of health workers, managers, and policymakers.
4. Integration of services does not necessarily mean that everything should be integrated into a single package. In reality, many types and levels of integration can take place within a system.
5. Various studies suggest that managers and providers feel that integration of health workers into the system, integration of information systems, and clinical integration are the most difficult to achieve;
6. The system's clinical, managerial, and governance structures should be aligned and be mutually supportive.
7. Alignment of financial incentives is fundamental. To the extent that hospitals and the first level of care use different payment/compensation mechanisms, problems and tensions will arise and the incentives for integration will be weakened.
8. Integration is not a cure for inadequate resources.

Furthermore, from the literature review, we have identified a number of *barriers to and facilitating factors for integration*, which are summarized in the following table:[95, 96, 97, 98]

Table 8. Barriers to and Facilitators for Developing IDSs

Barriers to IDSs	Facilitators for IDSs
1. The predominance of a model centered on acute care and hospital care.	1. Philosophic commitment to creating and implementing IDSs.
2. Unaligned financial incentives.	2. Clarity of purpose and vision.
3. Systems with service providers that are too spread out geographically, or that overlap different political and administrative territories.	3. Participation of health workers in key leadership roles.
4. Gaps in the information chain, including clinical, administrative, and financial information.	4. Alignment of financial incentives and stimuli that recognize the performance of the system as a whole.
5. Roles and responsibilities not clearly understood or explicit between system managers and operating units.	5. Focus on the person/system user.
6. Lack of personnel trained in the system's new competencies.	6. Information systems and technologies that support the system's goals and operation.
7. Resistance to yielding autonomy and control.	7. Constant attention to quality improvement.

As was pointed out previously, developing IDNs is not easy, since most systems cannot totally dismantle their existing structures and immediately replace them with new structures compatible with the new system. As a result, restructuring efforts should begin with existing structures.[99] Existing organizational structures tend to create or perpetuate barriers to the development of IDNs. Many actors try to cling to the old management and governance structures, rooted in institutional autonomy, which stress management of individual departments, protecting territories, and filling hospital beds. Many members of the system may perceive integration efforts as corporate schemes to usurp the power of operating units, rather than as a way to improve the care of individuals and/or the community. The implementation of IDNs will

provoke resistance to change, which can be individual or organizational. At the individual level, resistance arises from changes in work habits, in job security, in economic factors (changes in income), or simply from fear of the unknown. At the organizational level, resistance arises from structural inertia, threats to expertise, threats to power relations, or threats to the allocation of resources.

Despite the great variety of things to be implemented, and based on the lessons learned in the past, several general strategies/guidelines can be recommended to facilitate implementation of IDNs:

Develop a strategic plan for the IDN

Traditionally, decisions relating to the development, procurement, and merger of operating units, services, and other components have been based on specific efforts and without the necessary ties to national health strategies/plans. This lack of an appropriate strategy has produced systems that either do not have the necessary components for the system, or have components that conflict with the attributes of an IDN. The plan should detail the ties to the national health strategy, the priorities of the network, the allocation of resources, the corresponding operating plan, and who is responsible for making sure it all happens. Since the principal focus of the system is integrating the care of people, the plan should include specific objectives on clinical integration. The implementation of the plan should be incremental and prioritize certain key areas, which should be the focus of the initial efforts. This concentration of efforts enables experimenting and learning from mistakes without affecting the entire system.

Communicate the commitment of the leadership

The concepts of IDNs and integration are little known to many of the people who work in health services. The role of leadership is therefore vital to making these concepts more understandable and more acceptable to health workers. The leadership needs to communicate the vision, mission, and integration strategy to the entire organization.

Earn the acceptance of the operating units

The acceptance of the operating units can be obtained through the following: i) clearly communicating the strategic role of each operating unit within the system; ii) developing the system's strategic plan together with the operating units; iii) assigning managers managerial responsibilities that cut across all the operating units in the system; iv) promoting the participation of health workers in governing bodies and management; v) training personnel in the new competencies that the system requires; and vi) effectively handling internal communications.

Develop a strong system culture

A strong system culture can be developed by communicating the system's goals, values, and strategy; by recognizing the successes of the system as a whole; by developing multidisciplinary teams and multipurpose personnel; and by aligning incentives, rewards, and performance evaluation with a system-wide perspective. Furthermore, the training of integration "champions" can be encouraged; that is, opinion leaders who support the transformation of the system's culture throughout the entire organization.

Explore options for real or virtual integration

The IDN should decide if it would put more emphasis on real vertical integration or virtual vertical integration. In this regard, the literature review did not find empirical evidence that favored one alternative over another.[100] The choice of alternative will depend on the particular features of the external environment and on the internal capabilities of the organizations involved. This means that an analysis is required of: i) transaction costs (costs of information, contracting, supervising contracts); ii) ease of access to information; and iii) the stability of contractual relationships. Nevertheless, the review of the available literature revealed that some authors see a greater risk of shrinking incentives and losing adaptability to change in "real" vertical integration. In comparison, other authors see a greater risk of instability in the provider network in "virtual" integration, which in turn threatens continuity of care and freedom of choice.

PAHO/WHO technical cooperation road map for advancing in the development of integrated delivery networks

The PAHO initiative for developing IDSs is framed within Strategic Objective 10 of the Organization's Strategic Plan 2008-2012,[101] which seeks "to improve the organization, management, and delivery of health services" through the development of policy and strategy options for integrating health service networks/systems. In the same way, the IDS initiative seeks to fulfill the regional mandates contained in the Declaration of Montevideo on the renewal of PHC; the Health Agenda for the Americas 2008-2017; and the Consensus of Iquique from the XVII Ibero-American Summit of Ministers of Health (mentioned in Chapter 1 of this paper).

As stated earlier, the wide range of external contexts and internal realities in health care delivery systems keep us from making rigid, overly specific recommendations for developing and/or consolidating IDSs in the Region. In this regard, each country/local reality should develop its own strategy for the implementation of IDSs, in accordance with its economic resources, political circumstances, administrative capabilities, and the historical development of its services. Nevertheless, the initiative for developing IDSs does require a "road map" that, without ignoring different country conditions, enables establishing certain priority areas of action, defining strategic lines of action, delimiting responsibilities of the different levels of the Organization, and having a general timetable for implementation.

In general, the first phase of the initiative (2008-2009) is the phase for the identification of the principal problems with fragmentation of health services and the preparation of national plans for the development and/or consolidation of IDSs. The second phase (beginning in 2009) will entail the implementation of the national plans and their continuous evaluation. For the foregoing, the Regional Bureau of PAHO/WHO will prioritize those countries that have programmed the development of integrated health service networks/systems in their respective work plans for the 2008-2009 biennium. As of late April 2008, these countries are the following: Bolivia, Belize, Chile, Colombia, the Dominican Republic, Mexico, Panama, Paraguay, Trinidad and Tobago, Uruguay, Venezuela, El Salvador, Ecuador, and Guatemala. Furthermore, PAHO will work closely with Cuba, Brazil, and Costa Rica, countries that have already made significant strides in the area, and that are part of the initiative's baseline for the 2008-2009 period.

The national and regional technical consultations on IDNs named the following attributes of IDNs as technical cooperation priorities: information systems, governance, integrated management, financing and incentives, first level of care, and human resources.

Following are the principal strategic lines of action for the development and/or consolidation of IDSs, following the Organization's technical cooperation levels:

At the country level

The Member States, with the support of PAHO/WHO Representations, should:

1. Become aware of the problem of fragmentation of health services within the health system, and if applicable, within the subsystems composing the system.
2. Prioritize the implementation of IDSs on the sector's political agenda, providing the necessary resources for their development and/or consolidation.
3. Making use of the inputs in this paper (essential attributes, progression matrix, policy instrument and institutional mechanism options, and policymaking circle), prepare a national plan of action for the medium term (3 to 5 years) that seeks the development and/or consolidation of IDSs as the preferred health services delivery modality in the country.
4. Facilitate dialogue with all relevant actors, in particular with health service providers and the community in general, on the problem of the fragmentation of services, on the concept and benefits of IDSs, on the priorities for action on IDSs, and on the available options and strategies for advancing toward their development.
5. Implement the recommendations of the national action plan.
6. Evaluate the results of the action plan.

At the subregional level

The subregional entities, with the support of PAHO, should:

1. Evaluate the possibility of joint activities and/or collaboration between countries, particularly in situations where there are common borders and/or health service purchasing between countries.

At the regional level

The Regional Bureau of PAHO/WHO, in coordination with the Country Offices, should:

1. Advocate for the development of IDSs in the countries of the Region.
2. Support the countries of the Region in the preparation of their national action plans for the development and/or consolidation of IDSs.
3. Provide direct technical cooperation to the countries to support the development and/or consolidation of IDSs.
4. Develop tools, methodologies, and guidelines for the development of IDNs.
5. Monitor and evaluate the progress of IDNs in the countries of the Region.
6. Facilitate the sharing of successful experiences with IDSs among the countries of the Region, and at times with countries from other regions of the world.
7. Mobilize resources to support the development of IDSs in the Region.
8. Develop interprogrammatic work in PAHO to incorporate the concept of IDSs into the Organization's technical cooperation, particularly in the area of noncommunicable chronic diseases and/or other health conditions that require great coordination of health care.
9. Promote dialogue with the international community of development institutions, financial agencies, and/or donors for the purpose of raising awareness of the problem of fragmentation of health services and of seeking their support for the development of IDSs.

ANNEX I

National and Subregional Consultations on IDNs

From May 2008 to October 2008, PAHO/WHO carried out a series of technical consultations on the position paper on IDNs with its Member States. Depending on the case, some of these were national and others were subregional. The consultations followed a previously established format and questionnaire. In general, the objectives of the consultations were the following: i) To discuss the country's situation with regard to the fragmentation of health services and the national efforts/initiatives to surmount it and to promote comprehensive, integrated care for all citizens of the country; and ii) To validate the PAHO/WHO document entitled: *Integrated delivery networks: Concepts, Policy Options, and Road Map for Implementation in the Americas*" (8 May 2008 Version).

The method used was a one- or two-day workshop. Differing numbers of national experts on the issue (usually from 15 to 30) participated in the workshops. The experts who were convened generally included representatives of the Ministry of Health, Social Security, and/or other public and/or private insurers (depending on the situation), health services managers, health service providers, universities, civil society, professional societies, and other relevant actors.

The following is a list of the consultations held during this period:

Place of Meeting	Date of Meeting	Participating Countries
Quito, Ecuador	1 May 2008	Ecuador
Santiago, Chile	14 May 2008	Chile
Guatemala City, Guatemala	18-19 June 2008	Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, and Dominican Republic
Brasilia, Brazil	5 August 2008	Brazil
Asunción, Paraguay	8 August 2008	Paraguay
Buenos Aires, Argentina	9 September 2008	Argentina
Belize	14 October 2008	Belize
Montevideo, Uruguay	16-17 October 2008	Uruguay
Bridgetown, Barbados	23-24 October 2008	Anguilla, Antigua and Barbuda, Barbados, British Virgin Islands, Dominica, Grenada, Montserrat, St. Kitts and Nevis, St. Lucia, and St. Vincent
Havana, Cuba	23 October 2008	Cuba
Mexico	3 November 2008	Mexico

ANNEX II

Matrix of Policy Options and Institutional Mechanisms for Developing IDNs

The following matrix presents the options for policy instruments and institutional mechanisms that are available for forming IDNs. They have been organized according to the essential attributes of IDNs. In this regard, and to make it easier to read, the table has been organized as follows:

- In order to avoid unnecessary repetitions, each possible instrument, and/or mechanism is mentioned only once, even though the instrument and/or mechanism could be listed in more than one category (e.g. some options that can be regarded as policy instruments for "capacity-building of others," grouped into the category of non-legal instruments, can also be considered as options under the category of non-clinical institutional mechanisms).
- In this same way, each instrument/mechanism has been listed in the cell in the table that best represents it, even though it could be listed in different policy instrument and/or institutional mechanism categories, or under different IDN attributes.

Matrix of Public Policy Instruments and Institutional Mechanisms for Developing Integrated Delivery Systems

IDS Attribute	Public Policy Instruments		Institutional Mechanisms	
	Legal	**Non-legal**	**Clinical means**	**Non-clinical means**
The covered population/territory is defined and there is broad knowledge of its health needs and preferences, which determine the services provided by the system	▪ Assign population to be served on a territorial basis ▪ Require disaggregation of health information at the subpopulation level	▪ Provide health status assessment tools (vital statistics registries, surveillance, epidemiological studies, comparative evaluations, corporate evaluations, qualitative research, rapid assessment techniques, etc.) ▪ Conduct joint health situation analyses with other sectors of the economy ▪ Provide health service planning tools based on people's health needs		
An extensive offer of health facilities and services, which include public health services, health promotion, disease prevention, timely diagnosis and treatment, rehabilitation, and palliative care, all under a single organizational umbrella	▪ Determine the broadest possible package of benefits/services or program the service supply, including quality of care parameters ▪ Set the minimum population size for operating the health service system or networks in accordance with criteria for efficiency and economies of scale ▪ Accredit service networks / integrated systems (as opposed to accreditation of individual facilities) ▪ Establish a legal framework that facilitates consolidations, mergers, formation of partnerships, and formation	▪ Encourage integration of providers through financial and non-financial incentives to form integrated systems ▪ Develop infrastructure investment plans consonant with IDSs, in accordance with studies of supply (optimized) and demand (planned) ▪ Provide tools for analyzing service delivery alternatives, including purchase of services or development of the services' own infrastructure ▪ Create clinical practice groups with multiple specialties, including family practice physicians or		

IDS Attribute	Public Policy Instruments		Institutional Mechanisms	
	Legal	**Non-legal**	**Clinical means**	**Non-clinical means**
	of clinical practice groups	generalists, all practicing in the same facility and jointly sharing responsibility for the entire system		
A first level of care that acts as the de facto gateway to the system, integrates and coordinates health care, and meets most of the population's health needs	▪ Formalize the first level of care as the gateway to the system ▪ Formalize joint provision of personal health care services and public health services	▪ Encourage training of first level personnel through educational subsidies and/or direct educational opportunities ▪ Even-out wages of first level personnel and specialist personnel ▪ Discourage vertical programs ▪ Merge financing schemes for personal services and public health services, in pertinent cases ▪ Educate the population on the benefits of using the first level of care as opposed to seeing specialists ▪ End cost-recovery and direct out-of-pocket payment schemes for first level of care services	▪ Give the first level team responsibility for a defined population/community group ▪ "Specialize" the first level of care by employing generalist, holistic, or family physicians and nurses ▪ Set up multidisciplinary teams ▪ Add specialists to the first level team according to health needs (nutritionists, physical therapists, social workers, dentists, pediatricians, obstetricians, internists, etc.) ▪ Increase diagnostic and therapeutic capacity of the first level through basic laboratory services, radiology, mammography, spirometry, ECG, and minor ambulatory surgery ▪ Extend hours to facilitate access to care ▪ Provide emergency services at the first level of care	
Specialist services delivered in the most appropriate place, preferably non-hospital	▪ Require the formation of region-based health services networks (as opposed to hospital-based networks) ▪ Require levels of care based	▪ Construct ambulatory specialty facilities outside the hospital setting ▪ Facilitate hospital reengineering through		

IDS Attribute	Public Policy Instruments		Institutional Mechanisms	
	Legal	**Non-legal**	**Clinical means**	**Non-clinical means**
settings	on demographic-epidemiological, equity, efficiency, and resource availability criteria ▪ Regulate access to specialists ▪ Regulate access to hospital care	schemes for ambulatory surgery, day hospital, progressive patient care, home care, hospices, and nursing homes ▪ Restructure the supply of hospital services through hospital closures, mergers, consolidations, and partial hospital bed closures, when an oversupply occurs ▪ In situations where the supply of hospital services is limited, create and/or expand the supply of hospital beds based on supply and demand studies, provided this occurs in the framework of health services substitution ▪ Encourage training of generalists and discourage training of specialists, depending on the population's health needs ▪ Conduct hospital discharge audits to determine if care was provided in the most appropriate setting		
Coordination of care mechanisms exist throughout the entire continuum of services	▪ Formalize Clinical Practice Guidelines (CPG) for the entire system ▪ Require the first level of care to be the coordinator of health care		▪ Single clinical record ▪ Care maps, clinical pathways, and protocols ▪ Referral and counter-referral guidelines at the interinstitutional level ▪ Interconsultation/referral form	

IDS Attribute	Public Policy Instruments		Institutional Mechanisms	
	Legal	**Non-legal**	**Clinical means**	**Non-clinical means**
			▪ Physician's/ hospital discharge report ▪ Clinical sessions integrated among levels of care ▪ Staff rotation among levels of care ▪ Case management ▪ Disease management ▪ Clinical service lines ▪ Telemedicine	
Health care centered on the person, the family, and the community/territory	▪ Formalize people's/patients' health rights charters ▪ Establish legal mechanisms for people to enforce their right to care ▪ Formalize models of health care centered on the person, the family, and the community/territory ▪ Formalize models of care with intercultural and gender perspectives	▪ Educate people on their health rights ▪ Provide people with information on health and health services	▪ Use community health workers ▪ Use traditional/non-allopathic medicine ▪ Use home and/or community-based models of care ▪ Use schemes for self-care and for self/management of disease ▪ Use schemes for people's participation in clinical decisions that involve them	▪ Train health workers on people's/patients' rights to health care and on new models of care
A single, participatory governance system for the entire IDS	▪ Create a governing body for the system at the regional or subregional level, depending on the case (region, province, state, district, municipio) ▪ Form a board of directors of relevant actors, including representatives of providers and the community ▪ Require single corporate governing structures for the entire system (executive director and/or corporate	▪ Train executive director / board of directors in systems management ▪ Rotate government members through the system's different operating units ▪ Educate the public and health providers on the benefits of integrated systems		▪ Develop the mission, vision, values, and objectives for the system as a whole in a participatory manner ▪ Carry out shared strategic planning, allocation of resources, and performance evaluation for the entire system ▪ Reach consensus on a system for monitoring and evaluation of system performance, with goals for

IDS Attribute	Public Policy Instruments		Institutional Mechanisms	
	Legal	**Non-legal**	**Clinical means**	**Non-clinical means**
	board of directors)			the entire system, and with individual goals for the different operating units
Integrated management of administrative and clinical support systems	▪ Create a management entity for the system at the regional or subregional level, depending on the case (region, province, state, district, municipio)			▪ Facilitate performance and results-based management of the system as a whole ▪ Facilitate an organizational culture for the system as a whole ▪ Implement matrix designs for the organization (between productive lines based on products/services and lines based on geographical and/or market responsibility) ▪ Ensure managerial aspects of the structure, planning, and coordination of quality improvement efforts ▪ Develop contracts, program-contracts, and/or management agreements with clinical/administrative integration goals within the system ▪ Establish central patient appointment desks ▪ Improve communication systems within the system (E-mail, telephones) ▪ Share clinical support systems within the system (clinical laboratory, radiology, blood bank, pathological anatomy, etc.)

IDS Attribute	Public Policy Instruments		Institutional Mechanisms	
	Legal	**Non-legal**	**Clinical means**	**Non-clinical means**
				▪ Share drug and medical supply distribution systems within the system
Sufficient, competent human resources, committed to the system	▪ Make health-worker certification and re-certification requirements flexible as a way to facilitate transfers within the system	▪ Develop civil-service career schemes for personnel in the system ▪ Work together with human resources training centers with the objective of producing personnel that fit the needs of the new system (teamwork, systems approach, continuous quality improvement, use of guidelines and protocols, cost-effectiveness and cost-benefit analysis, epidemiology, population-based health status assessment, etc.)		▪ Facilitate training of multidisciplinary working teams and multipurpose workers ▪ Train and re-train personnel to create a flexible workforce that can be used in all care settings ▪ Implement integrated staff training programs ▪ Implement mixed research projects within the system
An integrated information system that links all members of the IDS	▪ Formalize population-based information systems ▪ Formalize information systems that disaggregate information by population sub-groups	▪ Disseminate information on the IDS's performance to all members of the system, including the community ▪ Train policymakers, managers, and providers in data analysis, to produce action-oriented information and knowledge ▪ Monitor IDS performance using a scorecard that includes variables on financing, access, quality, and outcomes	▪ Computerized single clinical record ▪ Common, unique ID (code) for the whole system (for clinical and administrative data) ▪ Computerize all user clinical information ▪ Set up clinical decision support systems ▪ Conduct user satisfaction surveys ▪ Provide on-line user consultation systems	▪ Single, automated patient appointment desk ▪ Implement use of smart health card ▪ Computerize administrative, budget, financing, accounting, and cost management systems, etc.
Adequate		▪ Develop financial incentives		▪ Develop financial incentives

IDS Attribute	Public Policy Instruments		Institutional Mechanisms	
	Legal	**Non-legal**	**Clinical means**	**Non-clinical means**
financing and financial incentives aligned with the goals of the system		for system integration (e.g. risk-adjusted per capita payment for the entire network) ▪ Special financial incentives to encourage promotion and prevention services ▪ Greater relative allocation of financial resources (operating and capital) for the first level of care and other non-hospital ambulatory services ▪ Institute remuneration mechanisms for physicians to share the financial risk related to system performance		for reaching health goals, integration of the system as a whole, and service delivery in the most cost-effective setting ▪ Integrate the entire system's budgeting system ▪ Institute the use of cost centers
Broad intersectoral action		▪ Implement joint intersectoral action programs ▪ Finance schemes for integrated provision of health/social services	▪ Implement health actions in homes, community, schools, and workplaces	▪ Create social services teams

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