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ARTICLE

Network integration and care coordination: the case of Chile's health system

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Abstract *The article analyzes the implementation of integrated healthcare networks (RISS) and the strategies for care coordination by PHC in the Chilean public health system. Semi-structured interviews were conducted with policymakers from the public health system and academics, complemented by documentary analysis and bibliographic review. The country stands out for the institutionalization of care coordination instruments widely recognized, such as referral maps, demand manager physician, electronic records and, mainly, definition of protocols, under the strong leadership of the Ministry of Health and conduction by the Servicios de Salud managers, regional space for the construction of RISS. However, segmentation and fragmentation's degrees within the public subsystem were identified, with the maintenance of free-choice for specialized medical appointment and double waiting lists - one for procedures with explicit access guarantees and another for others cases. The Chilean experience demonstrates the need for a greater role for PHC so it will be able to take on the leadership of RISS. In the country, the network seems to orbit around large and powerful hospitals. Elements of a broader context of the health system also condition advances and impasses in the development of the analyzed strategies.*
Key words *Systems integration, Primary health care, Chile*

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Introduction

Health care fragmentation is one of the main obstacles to achieving better results in access, quality, rational and efficient use of resources and user satisfaction, among other aspects[1]. The search for integrated care is a central component for coping with the increased burden of chronic diseases in the context of public investment constraints[2]. In addition to its relevance, there is a certain consensus about the relative insufficiency of tools, methodologies and indicators and recognition of the complex transition from "fragmented care" to "integrated care" in all its components: design, implementation and evaluation[2].

In line with the concept of regionalized networks of public systems, the Pan American Health Organization[1] developed a conceptual framework for the operationalization of Integrated Health Services Delivery Networks (IHSDNs) in Latin American countries led by Primary Health Care (PHC). No less relevant is how integrated care is designed and implemented to fit local contexts and needs[2].

Evidence on the results of organizational and structural reforms for better performance of the IHSDNs is scarce and still poorly explored in health systems of the Region, as well as their impact on the coordination between care levels[3,4]. Thus, the unequivocal relationship between integrated network design and care coordination is reaffirmed – which can be taken as one of the intermediate results for the analysis of IHSDNs performance[3].

Coordination of care can be defined as the articulation between several services, actions and professionals in health care, so that, regardless of the place of provision, it is synchronized, aimed at achieving a common objective and without conflicts[5,6]. It is supported by the existence of integrated actions between networked providers and professionals, led by PHC[7]. Integrated care is a principle and a means to achieve user-centered, more efficient and safe care[2].

In Latin America, with few exceptions such as Cuba and Costa Rica, health care networks have been set up in parallel for segregated population groups[8]. The high segmentation levels in Latin American health systems complicate the conception and scope of coordination between care levels, given the need to incorporate the coordination among different subsystems[9].

The Chilean health system's experience is paradigmatic and complex in that it appears as the first in the Region to follow the recipe proposed by multilateral organizations (IMF and World Bank) for developing countries and later systematized in the Consensus of Washington, establishing itself as a field of experimentation of the most orthodox neoliberal policies[10].

While in the 1950s, the National Health Service (NHS) based on the English model was the second world experience of this type[11], radical change was produced with the military dictatorship in the 1980s, with privatization of insurance and promotion of private medical care[12]. Labra[11] highlight that even the most austere neoliberal reforms of the 1980s failed to extinguish the institutional legacy established in the face of right expansion in the 1950s, a legacy that is expressed in the permanence of a powerful network of public hospitals to this day (2016): 68% of Chilean hospital beds are public[13].

After the end of the military regime in the 1990s, the center-left coalition initially did not implement a significant reform in the health system, although it has promoted a significant increase in public funding, especially for hospitals[14]. Subsequently, during the Lagos government (2000-2006), the sectoral reform strengthened the public system. However, the dual configuration of the system was maintained with the public insurance component – National Health Fund (Fonasa) and the private sector – consisting of Social Security Health Institutions (ISAPRE), profit-making private companies intermediating the purchase and sale of health plans[15], in general for the lower-risk-high-income groups, thus decapitalizing the public sector[16].

The search for greater integration and articulation of the network was one of the main pillars of the Chilean health system reform, with the definition of the Explicit Health Guarantees (GES) for the entire population as the main flag[8]. Among the key elements that enabled the GES Reform was the definition of clinical prioritization strategies, linkage with specialty societies, securing funding and coordination within the health care network[17].

In addition to the guarantees of access, the country promoted an intense reform in the PHC model. With a prominent centrality in the political agenda, the Comprehensive Family and Community Health Care Model explicitly incorporated elements of Alma Ata's expanded approach, which is the basis for the establishment of a health system focused on people, families and communities, as well as on comprehensive and continued care[18].

Taking the scope of integrated care as a component of the reform processes and the primary

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objective of health systems, this paper analyzes aspects of the implementation of integrated networks and strategies and tools for the coordination of PHC care in the framework of a segmented and dual system such as the Chilean Model. It is hoped that this study, from a specific case, will contribute to apprehend lessons that can be debated and analyzed in similar contexts.

Methods

This is an exploratory, descriptive-interpretative and qualitative study whose information sources are semi-structured interviews with key informants, complemented by thematic documentary analysis and bibliographic review. Conill et al.[19] emphasize the importance of analyzing coherence among actions at macro levels, which include political decisions about rights, funding and macro-regulation; at meso or management level, with the implementation of operational mechanisms that support practices; and at micro-social level, in which care is implemented to comprehend the overall dynamics of health systems. Thus, interviews were conducted with policymakers at the macro (MC) (6), meso (M) (4), micro (MI) (5) levels, and four academy representatives (Chart 1). The 19 interviews were held at the respective work places – lasting approximately one hour – recorded and transcribed.

For the documentary analysis, the main laws and regulatory frameworks of the Chilean health system reform process from 2003 to 2017, summarized in Chart 2 were selected.

For the production of results, the thematic content of all the material was analyzed with its respective stages of categorization, description and interpretation. Although the analytical framework of the IHSDNs developed by PAHO[1] and studies that design a certain logical model for the attribute of care coordination[20] were used in an inductive perspective, there was an attempt to capture categories that emerged from the experience of the subjects involved. We sought to guarantee the quality and validity of findings by triangulating the information from the documentary and bibliographic analysis with the perception of the different groups of informants from the three levels of the health system.

The presentation of results begins with a brief characterization of the Chilean health system and the Comprehensive Family and Community Health Care Model, further analyzed in other publications[21,22], highlighting stakeholders' perception on subjects directly affecting the discussion about the IHSDNs and coordination. Next, network integration initiatives and the main tools and strategies of coordination of care developed within the scope of the public subsystem are analyzed.

Context – The Chilean health system

The Chilean health system is characterized by duality in the form of affiliation to protec-

Chart 1. Key informants interviewed - Chile, 2017.

Level	Position	N
Macro - Ministry of Health – MINSAL	PHC Division	1 E1
	Healthcare Networks Secretariat	1 E2
	Specialized Care Secretariat	2 E3, E4
	PHC Directorate	1 E5
	Urgency Network Manager	1 E6
Meso – Health Services	Health Services Directorate	1 E7
	Networks Management	1 E8
	CIRA Representative	1 E9
	PHC and Hospitals Management	1 E10
Micro Municipalities / PHC Services	Health Directorate	1 E11
	Health Sub-Directorate	1 E12
	CESFAM Directorate	1 E13
	CECOSF Directorate	1 E14
	CESFAM Professional	1 E15
University	Universities Representatives	4 E16, E17, E18, E19
Total		**19**

Chart 2. Documents analyzed: laws and regulatory framework of the Chilean health system - 2003 to 2017.

Document/Norm/Law	Subject	Year and responsible
Financing Law Nº 19.888	Establishes an increased Value Added Tax (VAT) for the financing of priority social policies such as Health Reform.	2003, Ministry of Finance
Health Authority and ManagementLaw Nº 19.937	Reorganizes the functions of the Ministry of Health, establishes the Health Services, the National Health Fund, the National Institute of Public Health of Chile and the National Health Service System. It distributes regulatory (SEREMI) and provision (Health Services) functions.	2004, Ministry of Health
Regime of Explicit Health Guarantees (GES) Law Nº 19.996	Guarantee of access, quality, financial protection and opportunity with determination of maximum term for the granting of certain health benefits.	2004, Ministry of Health
Social Security Health Institutions(ISAPRE) Law Nº 20.015	Regulates the freedom of Isapres to determine the price increase of plans and establishes the security of rights, costs and benefits in case of closure; introduces the Solidarity Compensation Fund among Isapres institutions; includes the Universal Plan of Access to Explicit Health Guarantees (AUGE) in private plans; avoids discrimination between beneficiaries of the same plan; expands the performance of the Superintendence of Health in overseeing compliance with standards.	2005, Ministry of Health
Health Rights and Duties Law Nº 20.584	Regulates people's rights and duties related to health care actions, in public or private providers. Among the main rights are the provision of promotion, protection, recovery and rehabilitation actions, right to information and participation. Defines as duties that the users should be informed about the operation and provision of health services and channels of institutionalized claims.	2012, Public Health Sub-Secretariat; Ministry of Health
Primary Health Care		
Statute of Primary Health Care Law Nº 19.378	Regulates the administration, financing and coordination of the PHC concerning establishments under the responsibility of municipalities, professional practice, functional career and duties and rights of PHC workers.	1995, Ministry of Health
Guidelines for Network Planning and Programming	Guides the network planning and programming of municipalities and the several health programs that underpin the country's health network and contributes to integration between the different levels of care based on the Integrated Health Services Networks (RISS) logic.	2017, Health Care Networks Sub-Secretariat/Ministry of Health
Primary Health Care as a gateway to the health system; possibilities and limits - the case of Chile	Document carried out in Latin American countries to describe and analyze the main characteristics of PHC as well as the strengths and weaknesses to consolidate the gateway and structuring axis of the two health systems.	2008, *EuroSocial Salud*; FIOCRUZ; Government of Chile
Primary Health Care in Chile	Describes and analyzes the comprehensive, family and community healthcare developed in the country.	2014, ISAGS

Source: Own elaboration based on the information extracted from the website of the Chilean National Congress Library, 2017[23]; MINSAL, 2017; EuroSocial Salud/Fiocruz, 2008[24]; ISAGS, 2014[25].

tion, with formal workers given the possibility of choosing to contribute to private insurance (Isapres) or to public insurance (Fonasa) through compulsory social contributions of 7% of their salary. However, most of the population is affiliated with Fonasa and access the public services network (Chart 3).

According to Chart 3, the public health subsystem is composed of the National Health Services System. The Ministry of Health is responsible for formulating and implementing health policies, which within the Sub-Healthcare Networks Secretariat establishes guidelines for municipalities and Health Services (HS)[26]. The pub-

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Chart 3. Characteristics of the health system and selected sociodemographic and health indicators - Chile, 2018.

Characteristics/Indicators	Description
Total population (2017)	18,055,000
Political and Administrative Organization	Unitary State; 15 regions; 53 provinces and 346 communes
Health system structure	- **Public subsystem -** National Health Services System, which includes the Ministry of Health (MINSAL) and its Sub-Secretariats of Public Health and Sub-Secretariat of Healthcare Networks; or National Health Fund (Fonasa); the Regional Ministerial Health Secretariats (SEREMI) responsible for public health actions; and Health Services (SS); - **Private subsystem** consisting of Isapres. - **Armed Forces Subsystem,** regulated by the Ministry of Defense – residual
Primary responsible for formulating health policy	Ministry of Health
Primary responsible for financing the health system	Ministry of Health (Fonasa)
Primary responsible for providing health services	Health Servicesand municipalities
Population coverage by health subsystem (2015)	78.6% Fonasa. By groups: A – 24.7; B – 26.5; C – 12.9; D – 9.9; No defined group: 4.6; 15.1% Isapres; 2.9 % Armed Forces 3.1% No coverage
Levels of care	Primary Healthcare and hospital care
PHC Teams structure	Doctors, nurses, midwives, paramedical technicians - responsible for up to 5,000 inhabitants.
Cross-sectional teams	Psychologists, nutritionists, social workers, physiotherapists, occupational therapists and dentists.
GDP per capita US$ (PPP value)	22,727 (2016)
Health expenditure as % ofGDP	3.9 (2014)
Private health expenditure as % ofGDP	3.9 (2014)
Out-of-pocket expenditure as % oftotal health expenditure	31.5(2014)
% of the population aged 65+years	11 (2017)
Overall fertility rate	1.8 (2017)
Life expectancy at birth	79.7 (2017)
Men Women	77.2 82.1
Child Mortality rate per 1,000 live births	6.9 (2015)
Mortality of children aged under 5 years per 1,000 live births	7.9 (2015)
Maternal Mortality Ratio per 100 thousand live births	15.5 (2015)
Threemain causes of death (2014)	Circulatory system Diseases (29%) Cancer (25%) Respiratory system diseases (11%)
Hospital deliveries	99.7 (2015)
Hospital beds (1,000 inhabitants)	2.1(2015)
Human Resources in Health (1,000/inhabitants) (2014)	
Doctors	2,2
Nurses	2,2
Dentists	1,0

Source: Indicadores Básicos, Situación de Salud en las Américas OPS/OMS, 2017[29]; OECD, 2017[30]; Encuesta Casen, 2015[31].

lic system is unitary, centralized and organized in 29 HS, with own budget and responsible for the provision and management of specialized and hospital services, as well as network integration strategies. They are regional territories where hospitals and health centers managed by municipalities are articulated. The country has established six macro networks, consisting of more than one HS, which provide for a comprehensive resolution of health problems. The respective HS directors are the local authority for the provision of care services, but SEREMI is the health authority.

The main post-dictatorship sector reform was the definition in 2004 of the Explicit Guarantees Scheme that provided timely access and financial protection to a list of specific problems (Chart 2). Before its establishment, access was conditioned to hospital proximity or the health professional's judgment to define priorities (E6). Protocols were set incrementally and times for timely care defined through GES. Explicit guarantees are well evaluated by users, especially due to the legal guarantee of access and care follow-up, with specific channels in health services to "claim" the benefits (E6, E10). Nevertheless, it was pointed out that, from the model viewpoint, the GES rationale reinforces fragmentation and targets the resolution of a pathology, without a broader approach to its determinants (E6).

Public system beneficiaries affiliated to Fonasa can choose two types of service: Institutional, provided by public establishments; and Free Choice, with direct access to private establishments contracted to Fonasa, with co-payment. In this case, there is no PHC gatekeeper mechanism. With the possibility of free choice, many users use direct access to experts as a first contact, which strengthens the maintenance of competing models. Illustrative statements of contradictions in the use of free choice services are shown in Chart 4.

PHC reform in the country began in 2005 with the implementation of the Comprehensive Family and Community Health Care Model, which is characterized by three principles: people-centered, providing comprehensive care and ensuring continuity[27]. The operation of the model has undergone transformation of clinics and traditional health centers into Family Health Centers (CESFAM) and Community Health Centers (CECOSF), smaller structures and with greater territorial proximity; strengthening of basic teams; networking and intersectoral work; local management; and social participation[26], valuing "family" and "community" components in the system design (E5).

The Ministry of Health is responsible for formulating and implementing PHC policies. Municipalities are autonomous in management and provision, in accordance with the legal framework[28]. Central financing, passed on to the HS and from these to municipalities represents almost all PHC funding and provides the national manager great inductive power in the conduction of networks and PHC (E2). National law regulates the PHC service portfolio and there are no co-payments.

Two strategies are in place for urgent care in PHC, namely, the Primary Care Urgent Services (SAPU) and, as of 2014, the High Resolution Emergency Primary Care Services (SARS), with greater problem-solving capacity, expertise and diagnostic support. While both are within the scope of PHC, poor integration of urgent services and health centers was mentioned, as well as integration initiatives by monitoring user entry in urgent services to prevent them from becoming a regular search for care option.

Efforts are made to strengthen the PHC team (head teams) as responsible for the health of the population, although there is high medical rotation. CESFAM also have "cross-sectional" teams at work, strengthening health promotion and prevention actions (Chart 3). In addition to supporting teams, some centers have ophthalmology services, which serve as a reference for others, a strategy positively evaluated in relation to improved access and increased interprofessional communication.

In some health centers, members or community leaders with a role similar to a "community health worker" act voluntarily. There is no consensus regarding the maintenance of the voluntary nature of these workers (E10) (Chart 4). Historically, the country has traditionally had voluntary workers, an experience interrupted during dictatorship and reactivated more recently with the CESCOF.

The country faces difficulties for the provision of doctors (Chart 3), operating with about 50% of foreign doctors in some health centers, according to MINSAL informants. In 2016, the country had 41,623 doctors enrolled in the Superintendence of Health, of which 15% were foreigners, a proportion that has increased in recent years, especially with the arrival of professionals from Venezuela, Colombia, Ecuador, Bolivia and Cuba. About 45% of all doctors work in the public system[13]. The staging of the National Medical

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Chart 4. Key informants' illustrative statements, Chile, 2017.

GES
(...) there are two perspectives: one from the viewpoint of what is financed, and the other, a more comprehensive and social view of illness and individuals within a social context. Then, there are frictions between the system view and the GES (E6).
Free choice
If it is a disease with many costs, they use the public system. Because the private sector is very expensive. When it is a simpler problem, a headache, for example, they prefer to use the free choice, otherwise they have to go to a general practitioner, do an inter-consultation at the hospital, which can take a long time ... The payment of the consultation is financially affordable under free choice, but hospitalization cost is very high (E1).
(...) for various reasons, some ideological, it is better not to have any communication between public and private sectors, or that public sector does not feel threatened, since it could encourage a greater use of the private and less public investment... it is a complex system. .. Another issue is that public and private network's doctor is often the same. So if you can provide all medicines in the private network, why stay in the public network? For this reason, there are no such cross-incentives... (E1). (...)
The private outpatient and hospital services continue to grow. Many private clinics live on Fonasa's free choice. That is, it is a transfer of resources from public insurance to private clinics. Furthermore, public hospitals lacking critical bed capacity purchase them from private ones. The very characteristic of the Chilean system, a mixed system, provides for a complementary private system use (E10).
Proposed health system reform
The Isapres use public security, but set conditions, that is, they select clientele. This has not changed. The Bachelet's Government (2014-2018) invested heavily in health centers and in hospitals. A reform that blocks the outflow of public resources is fundamental. The country is in a difficult time for reforms (E10).
Comprehensive Family and Community Health Care Model
(...) one is the theme of family and the other is community. From 2005 onwards, the Ministry strongly shaped this vision. We have seen that this comprehensive health model with emphasis on family and community in networks was set as the PHC model (E5).
Definition of PHC's role
(...) In our country, primary care country is municipalized, but administratively relies on the Ministry. They do not apply anything, nor invent any standard. They apply the standards set by the Ministry of Health (E2).
Voluntary Community Health Workers
(...) paying for someone who does this work would generate issues in the relationship with the community itself. We are reluctant to this issue (E10).
Competition of models in PHC
What happens is that the family health model is counter-cultural. There is a design competition. Despite efforts, people prefer a model that is not networked and of access to specialists. When they can, they buy a care bonus in the free choice system (E10).
Many people die in primary care because they have spent all the money to pay for a cancer or any other thing and come to primary care because they can no longer afford to pay for their illness. Chile's problem is that many people do not know the benefits of primary care (...) It is the very Fonasa that promotes segmentation (E16).
Hospitals' leading role in the RISS
The network is set around hospitals; the territory itself was not structured based on characteristics of health centers, but by the reference of hospitals. Hospitals are there to establish networks and received the flow, rather than other characteristics of the territory. This also assigns a curative perspective to the model. This is a team's reflection. (E10)
The hospital is in charge of resolving all incoming PHC requests. Some Health Services are concerned that hospitals work closer to clinics (health centers), hence send specialists, along with physicians to review cases, but are one-off experiences (E1).
When we set a GES guarantee or an explicit health guarantee on the system, we are already passing on the responsibility to the hospital (E11).
Care Networks Integration Councils **- CIRA**
Thus, you have to have a good leadership, a good manager to have the ability to make these changes, and they are often anti-cultural and have to break with what I am already accustomed to do (E6).

it continues

Chart 4. Key informants' illustrative statements, Chile, 2017.

Regarding waiting lists and lack of experts, we do not have the power to solve, but we can say why these themes emerge. As the Services, in some cases, we can be more organized and define strategies through a better diagnosis. This is why it is important to incorporate the community: when it begins to realize that the lack of an expert does not depend only on the will, then those who have greater voicing power begin to press to secure resources (E9).
PHC centrality in networks
This country has a segmented public and private system. These systems do not communicate with each other, only through the patient. In the health system, primary care remains as the poor relative. (...) The big issue is how much more hospitals we are going to build in Chile, when it is already known worldwide that they are no longer what we need (E16).
Health work in networks is still understood as quite a vertical thing. Hospital is here and PHC there. Discourse says that PHC is the most important, but what really happens is that most of the resources and themes are in hospitals. This also includes social valuation (E9).
Health Care Protocols
Thus, when they created this program, they made a very well established protocol, and patients who had chronic problems then and were practically living in the hospital began their rehabilitation in primary care (E8).
Therefore, everything is subject to a protocol. We review the waiting list, define pathologies that have more demands that are not AUGE, who does not have a protocol and define the protocol for each pathology (E8).
Shared care
They do not know each other. When they go from the hospital to the primary care to know their reality and the primary care to the hospital, to know the reality of the hospital that leads then to think that the expert, for example, does not want to see the patients, they recognize the problems of each level. Thus, this makes the process much easier (E8).
Leadership for Coordination Goals
A director of a health service who says 'I have nothing to do with PHC' is not acceptable today. Five years ago, one would hear that, nowadays it is not acceptable. Thus, your entire team. This is a first line of strategy that is key (E2).
Referral and counter-referral
(...) counter-referral is not done when the patient is discharged, even with protocolled flows. Specialized care doctor does not counter-refer. We have less than 30% of the patients with a counter-referral. The system does not support counter-referrals. Inpatient follow-up is irregular (E10).

Source: Own elaboration based on interviews.

Examination has been mandatory since 2008 and is required in order to work in the public system.

Health professionals are civil servants, with career plans defined in the PHC Statute[28]. There are initiatives for the training of specialists in family and community medicine, mainly from the Ministry of Health. One of them is the Allocation and Training Stage for the deployment of doctors in remote areas with assured additional points in residences (E16). For the fixation and attraction of professionals, the national manager performed a risk classification for the areas of the country, which implies better wages and adjustments per capita.

An active user registration is required in order to receive care in a PHC service, which determines the transfer of resources and goals' monitoring. Respondents evaluated that active and voluntary enrollment generates lack of care for the small percentage of the most vulnerable population (living in the streets, cultural and educational barriers).

PHC's clientele continues to be the poorest, the lowest income strata groups A and B of Fonasa and the elderly. Groups C and D (somewhat higher income strata) that include workers often opt for free choice services. In addition to competing for resources, free choice establishes a care model competition (E10), either with prescriptions, not subject to standards and protocols of the public system; or the worsening of some cases, the follow-up of which becomes impracticable through free choice due to co-payment and impossibility of remaining in the public network (E16). Illustrative statements are shown in Chart 4.

There are two major tool for PHC assessment: health goals and the Primary Care Activity Index (PCAI), which generates the outlay

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of resources to municipalities. Health goals are agreed with professional corporations and generate pay-for-performance to professionals when they achieve 90%. There is also an associated pay-for-performance mechanism related to the user's evaluation. Incentives are defined according to established priorities, but they can lead to targeted actions and work process to achieve goals and not model principles and objectives.

Health system reforms in recent years have been generally evaluated positively. In relation to PHC, noteworthy are the implementation of the people oriented Comprehensive Family and Community Health Care Model stands out; improved health centers' infrastructure; achievement of satisfactory results in relation to health indicators; quality of guides and protocols. Nonetheless, it was reported that a "reform of the reform" is desired, a discussion that is increasingly present in the agenda of the different stakeholders, creating several spaces of participation and mobilization in order to promote "social value" around PHC.

Integrated Health Services Networks

PHC reform followed *pari passu* measures to build integrated health care networks operated by Health Services. Since the Primary Care Statute[28], the national manager is expected to prepare a normative framework for network programming and planning. Among management commitments signed between MINSAL and HS in the period 2014-2017, the highlighted objective is integrating health services network in healthcare, governance, finance and human resources. The most recent proposals are strongly influenced by PAHO's proposed Integrated Health Services Delivery Networks[32].

The network's territory are the Health Services, through the figure of the network manager, who is responsible for defining referrals and counter-referrals to ensure continuity of care, monitoring of goals and promotion of coordination between PHC and specialized care, where the latter is the more challenging (E10).

Depending on the assigned population, the HS can be divided into micro-networks, which are organized around their respective reference hospitals, most of which are public. MINSAL also has a national bed center, with national high-complexity reference services (Institutes).

Hospital centrality is found in the design of networks and micro-networks, which seem to be organized around these institutions, which also lead the proposal of strategies for network integration, more developed depending on the size of the hospital institution (E1; E10, E11, Chart 4). This arrangement ratifies a health care model with a strong curative character, from a symbolic and financial viewpoint (E10). The hospital receives all PHC referrals, labeled as "inter-consultations", and is responsible for resolving them and handling waiting lists (E1).

As of 2002, the Care Networks Integration Councils (CIRA) (Chart 5) were established with the role of contributing to the articulation of the stakeholders, diagnosis and work proposals for network integration. Some HS directors have increased participation and integrated representatives of civil society and community leaders in this council. However, there is no participation of SEREMI, health authority of the territory.

CIRA's design is strategic. Nevertheless, some councils would have assumed a bureaucratic paper, becoming an informative space. Greater council empowerment is dependent on the leadership of the network manager (E6) and search for greater legitimacy by drawing up work plans with concrete proposals (E9). Although it has no decision-making and executive power, CIRA has been an important mechanism to strengthen social participation (Chart 4).

It was categorically stated that waiting lists were the most discussed topic by the CIRA, as well as the referral and counter-referral process. Advances were identified in the integration of the two worlds – PHC and hospitals – but the waiting list theme prevails, with little room for discussion of the care model. Integration is harder in areas where references are large hospitals (with more than 400 beds), since these services would show a more autonomous dynamic, which does not allow us to visualize the importance of PHC. The tension for meeting hospital waiting times also facilitates their self-centered functioning, with little capacity for systemic performance.

Regarding the centrality of PHC in networks, it was emphasized that it is part of the ministerial rhetoric, but it is not based on reality, although the strengthening of the family health model has contributed to the paradigm shift of the care model. Statements in Chart 4 strongly confirm this assertion.

Strategies and tools for the coordination of care

Health Services establish "derivative maps" (Chart 5). Patient is referred through a comput-

Table 5. Network integration and strategies and tools for the coordination of care, Chile, 2017.

Strategy/Tool	Function	Evaluation of stakeholders
Care Networks Integration Councils (CIRA)	Advising and advisory body for interagency coordination of care networks with representatives from the public and private sectors and managers at all levels of the health system.	Strategic space, which has to advance in the most propositive character and in the discussions about the care model. It must not only be guided by the topic of waiting lists.
Derivative map	Scheme with the definition of flows and references according to the pathology and geographic location defined by the SS.	Positive, because they establish the flows and architecture of networks and are widely known by the teams. Rotation of PHC professionals requires constant updating of maps.
Monitoring waiting lists for specialized care and hospital care (Non-GES)	Establishment of a national repository of waiting lists fed by municipalities and monitored by the SS and MINSAL.	It promoted a movement throughout the health system for the analysis of lists and motivated the implementation of criteria for setting clinical priorities also for non-GES users.
Monitoring referrals	Monitoring of referrals percentages between PHC and specialized care.	Recommendation below 10%, with an average of 7 to 8%, which is satisfactory.
Demand managing doctor	Management of clinical priorities by doctors of PHC teams based on protocols, flows and derivative maps.	Satisfactory to qualify PHC referrals and strengthen regulatory activities at the micro level.
Healthcare protocols	Adaptations of recommendations and guidance of clinical guidelines with definition of care flows and recommendations according to the epidemiological profile of the population and available resources.	Valued as the most robust MINSAL initiative to guarantee care and define care trajectories. It can generate certain degrees of demotivation by the excessive PHC work normalization.
Telemedicine	Strategies of teledermatology, teleradiology, tele-electrocardiography, tele-ophthalmology and more recent experiences in hospital emergency care.	More incipient experiences of using telemedicine for second opinion or consulting for PHC. More restricted to hospitals.
Sharing care and training between PHC and hospital	Sharing the care of children with chronic problems between hospitals and CESFAM with rehabilitation teams. Training for small emergencies promoted by hospital professionals for PHC.	They are the most powerful actions to improve the coordination of care. Led by some hospitals, it was assessed that these experiences are not generalized and work best in midsized hospitals.
Leadership of managers	Leadership and involvement of SS directorate and some hospitals to define coordination goals	Strategic element to trigger processes for better network integration and coordination of care. Currently indispensable in the agenda of any SS manager.
Referral and Counter-Referral Guides	Manual reference guide for sharing clinical information between PHC and hospitals	Little effective, because the exchange of clinical information is under the responsibility of the user. Counter-referral is irregular and unusual.
Computerized referral and counter-referral systems	Computerized system for sharing clinical information between PHC and hospitals	Still incipient experience, implemented in some areas and hospitals.

Source: Own elaboration, built from interviews and documentary analysis.

erized system that enables to locate, from the very health center, supply at the hospital of reference, although coordination and follow-up of users by the PHC does not happen on a regular basis.

The turnover of professionals, especially physicians in PHC, implies constant training efforts on network operation, derivative map, flows and clinical protocols. Information and Communica-

tion Technologies seek to minimize problems related to turnover, with the availability of clinical practice guides and derivative maps in the office computers, as well as provide information coordination.

Non-GES waiting lists began to be monitored more systematically through the creation of a national repository, with information on waiting times, fed and monitored by the HS. Waiting lists for specialties are identified throughout the territory, which makes it necessary to define clinical priorities, generally performed by hospitals.

There are differentiated teams and times (larger non-GES) for the management of the two lists (GES and non-GES), which impairs the overall care view. Over time and with political pressures, non-priority pathologies and benefits without scientific evidence were incorporated into the GES coverage in the different governments. In addition, the GES patient accounts for the highest percentage of hospital funding.

MINSAL and HS monitor PHC referrals percentage, which are satisfactory (Chart 5). In someworse performing places, it would reach 15%. The "demand medical manager" in PHC was an initiative of the national manager to qualify referrals. They are doctors who were already in the teams and who receive additional compensation to evaluate team's referrals.

Health care protocols were evaluated as the main tool to ensure coordination of care, mainly by establishing the referral and counter-referral flows to ensure access and coordination of non-GES pathologies (E8) and define the functions of each system level. An adverse effect of the high degree of normatization would be a certain "routine" or repetition, which would characterize PHC work, making it unattractive.

Telemedicine initiatives are also adopted in the country by MINSAL (Chart 5), for example in urgent neurological care. National and local initiatives, promoted by reference hospitals, the hub of development and incorporation of technologies for the health system are also found. Other initiatives led by some hospitals are cared shared with CESFAM with rehabilitation, for example, of children with chronic problems and training for minor emergencies. This type of action is institutionalized and included in the agreed training plan (E8) (Chart 5).

The leadership of managers to define coordination goals, especially the management of HS and some hospitals, was mentioned as a key element for coordination (E2).

Referral and counter-referral guides are fragile tools, mainly because they are not computerized, in the majority of the cases. Few places provide shared records. The common situation is information return by the very user. Respondents recognize insufficient counter-referral as an obstacle to the coordination of care (E10). Progress has been reported in the standardization of a single medical record communicated through computerized systems.

Final considerations

This study sought to analyze aspects of the experience of implementation of integrated networks and tools of the coordination of care in the Chilean health system, highlighting reform and strengthening of PHC, which is one of the most powerful strategies to achieve a continuum of care[33].

Initially, we intended to resume the setting of the Chilean system, not to discuss the already known segmentation, recognized cause of fragmentation[1], but to highlight two aspects. Attempts to establish some regulation of the private sector under the principles of social security in the last presidential term, which ended in March 2018, were unsuccessful. The government's own political crisis (2014/2015) has created a scenario that is even more hostile to more structural changes in the configuration of the health system[34]. Thus, the discussion of integrated networks and coordination is limited to the public health system, but does not face the lack of integration and coordination between subsystems[9].

A second aspect refers to the layers of fragmentation within the public subsystem. The possibility of a free choice for Fonasa users was highlighted, which dialogues with both the maintenance of some degree of freedom of choice and a certain accommodation of the demand for specialized consultations. Thus, inadequacy of this mechanism is discussed, by the drainage of public resources to the private network and by the introduction of yet another degree of fragmentation that is also symbolic. Users make a care mix for outpatient consultations, in a model that departs from the perspective of a renewed PHC. Not least, it is the postponement of care in the early stages of illness by attempting to resolve within the free choice up to exhaustion of own financial resources.

In this same perspective, another degree of fragmentation covers the main reformist action – explicit guarantees. Analysis of GES results can be performed from various aspects[35,36]. From the

viewpoint of network integration, it weakens the system's organization by the establishment and management of two waiting lists, with differentiated attributes. While it also ensures timely access to serious pathologies, it does not address the determinants of the disease process.

Regarding the care model, results were synergistic towards the leading role of hospitals in the structuring of networks. While in the official discourse the direction of the system must take place from the Comprehensive Family and Community Health Care Model, networks orbit around large and powerful public hospitals, from where the main initiatives of integration and coordination with the PHC emerge, which, while promising, ratify the hegemonic hospital-centric paradigm.

The analysis of the Chilean experience shows the need for advances in the leading role of PHC, however, the growing public sector in the country stands out positively. Experiences with potential to qualify primary care as support, the availability of high-demand specialized services in health centers and the structured system of performance evaluation were mentioned strategies. Urgent services in PHC have the potential for increased resolution and access, depending on the level of horizontal integration. As highlighted by Vergara[37], PHC resolution only operates comprehensively if connected to the network.

In the analysis of the strategies for the establishment of the IHSDNs, the national manager is the main actor, based on PAHO's proposal[1], while Health Services are responsible for the organization and implementation. In the HS, the authority responsible for the architecture and leadership of networks is identified, elements that literature points out as necessary for the coordination of care[1]. It is not incumbent upon PHC teams or local managers to design users' path and to agree on the service provided, as observed in other contexts[38], although high waiting times and coordination problems of care are still a reality.

The lack of integration between care and public health, under the responsibility of SEREMI is another obstacle to effective networks[1,39]. CIRAs were evaluated as potentially innovative spaces for networking, strengthening social participation in health and creating an organizational culture favorable to integration, particularly important in a context where the system's guidelines are highly centralized, as in the case of Chile.

Given the systematic presence in the stakeholders' discourse and relevance in the process of the Chilean system reform, the issue of magnitude of waiting times, a frequent problem in public and private health systems stands out[19]. The GES faces this challenge, in line with the concept of timely access for specific pathologies. It is equally important to underline the economic, political and corporate disputes and interests around this issue due to the electoral appeal[19], as was observed in the pressure for an expanded GES list. The management of non-GES lists has been improved in a more recent period.

The implementation of new coordination strategies was not observed, but rather the institutionalization of tools widely recognized as capable of optimizing this attribute[20,40]. Protocols seem to be the most consolidated strategy, which along with the strict evaluation systems can minimize the creative potential of PHC teams or even generate selectivity effects, leaving regional and territorial diversities in the background.

Finally, it is necessary to emphasize that strategies to cope with the fragmentation of care are carried out in specific contexts[2], and the decision on which tools to adopt depend on the problems identified and the degree of development of initiatives underway. This study sought to

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contribute from this perspective. From a unique experience, we sought to analyze elements of the broader context of the health system and PHC in Chile that condition somehow the progress and impasses in the development of network integration strategies and coordination of care in the difficult transition from "fragmented care" to "integrated care".

Collaborators

PF Almeida was responsible for conducting fieldwork and designing, drafting, interpreting data and approving the paper's final version. SC Oliveira participated in fieldwork and paper's drafting. L Giovanella participated in the conception, critical review and paper's final approval.

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