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Financing Primary Health Care in Chile: An Assessment of the Capitation Mechanism for Primary Health Care

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Financing Primary Health Care in Chile: An Assessment of the Capitation Mechanism for Primary Health Care

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Lancet Global Health Commission on Financing Primary Health Care

The Lancet Global Health Commission on Financing Primary Health Care (2020 – 2022) is committed to drawing on robust, evidence-based knowledge to generate useful findings and actionable recommendations to inform decisions made by governments and partners that shape the effective financing of primary health care. Our work is focused on enhancing, protecting and enabling the appropriate resourcing of primary health care as a critical engine for the achievement of universal health coverage.

Country case studies

The Commission organised 10 case studies. Each country lead consultant and team undertook a scoping review to identify ‘hot topics’ in the financing of PHC in the respective countries. The teams then chose a ‘deep dive’ topic on which to undertake primary research. The 10 case studies were undertaken in: Brazil, Chile, China, Estonia, Ethiopia, Finland, Ghana, India, New Zealand and the Philippines.

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Acronyms

AUGE	Universal Access to Explicit Guarantees (<i>Acceso Universal de Garantías Explícitas</i>)
CESFAM	Family Care Centres (<i>Centros de Salud Familiar</i>)
FAPEM	Billing for Service Provided in Municipalities (<i>Facturaciones por Atención Prestada en Municipalidades</i>)
FFS	Fee-for-Service
FONASA	National Health Fund (<i>Fondo Nacional de Salud</i>)
GES	Explicit Guarantees in Health (<i>Garantías Explícitas en Salud</i>)
IAAPS	PHC activity index (<i>Índice de Actividad de la Atención Primaria de Salud</i>)
ISAPRE	Private health insurance companies (<i>Instituciones de Salud Previsional</i>)
MAIS	Family and community health integral model of care (<i>Modelo de Atención Integral en Salud Familiar y Comunitaria</i>)
MOH	Ministry of Health
NHSS	National Health Services System
PHC	Primary Health Care
PRAPS	Programa de Reforzamientos de APS
SAPU	Primary Care Urgent Services (<i>Servicios de Atención Primaria en Urgencias</i>)
SINIM	Sistema Nacional de Información Municipal

Executive summary

This report provides an assessment of the role of financing to realise Chile's Primary Health Care (PHC) ambitions. It was undertaken for the Lancet Commission on Financing Primary Health Care, which aims to generate evidence-based, actionable policy recommendations on how countries can use health financing tools to improve efficiency and equity of PHC. The report is part of a set of country case studies that present empirical evidence on arrangements for financing PHC, drawing on published and unpublished literature, policy documents, surveys and census data. The other study countries are Brazil, China, Ethiopia, India, and the Philippines.

Chile is a high-income country within the emerging economies. Its health system has evolved in recent decades and been shaped by various reforms. The foundation of the National Health Services in 1953, which aimed to universalize access to health services with a strong focus on primary care, is one of its landmark reforms. Under the Pinochet dictatorship in the 1980s, several neoliberal reforms were implemented to establish new markets and decentralize healthcare. Within this period PHC was transferred to local governments (municipalities) with fee-for-services as the main mechanism to allocate resources to the newly established municipal health managers. During the return to democracy with the *Concertación* governments there was renewed focus on primary health. PHC financing reforms included the implementation of a capitation scheme and significant growth in funding for primary care.

In this context, this case study aims to understand key aspects of the development, design, implementation and impact of the capitation scheme for PHC in Chile and identifies lessons for policy makers and managers in other settings who might be considering the use of capitation as a payment mechanism for primary health. We use evidence from interviews with policy makers, different documentary sources and administrative data to describe the historical development of the capitation for PHC and its impact on the health system. Additionally, we explore the strengths and weaknesses of the design and implementation of the capitation system in Chile, including its interactions (and interferences) with other payment mechanisms.

Some of the theoretical characteristics of a capitation payment mechanism are not present in Chile, such as the ability to retain surpluses by the providers. Capitation in Chile is used as a resource allocation mechanism from the central to local government, not to give incentives for efficiency at the provider level. Additionally, capitation covers PHC but not specialty services or in-patient care. This is recognised as a chief disadvantage, giving negative incentives to transfer patients from PHC to specialty services and vice versa. While the capitation rate is calculated through a common scheme and equal for all publicly funded PHC centres, it is not universal, since resources are allocated based on a registered and verified population, not by census. This goes against the aspiration of universal services and community involvement in PHC.

On the bright side, capitation in the context of Chilean PHC contains many of the features associated with a successful capitation reform such as an open enrolment policy and some degree of provider autonomy. It is supported by strong administrative information systems to ensure the credibility of the number of people enrolled in each centre and

consequently, the final amount paid to municipalities. Another strength is the early adoption of risk-adjusters to adapt funding flows to municipalities based on characteristics of the population served and providers' settings. Even with its limitations, this mechanism has reduced inequalities in the provision of PHC and resources across the country. Moreover, the capitation scheme is a better and more equitable payment mechanism compared with other competing alternatives, with important gains to the health system by transitioning from a FFS payment mechanism (FAPEM) to capitation.

When we analyse the Chilean reform, there are some findings that might be relevant to other settings embarking in capitation reform. Policymakers should analyse the existing health system and payment mechanisms and evaluate whether inserting a capitation payment mechanism in relation to other payment mechanisms could generate distortions or nullify the positive effects associated with per capita. This is exemplary with the case of vertical funding to PHC or the divorce between payments mechanisms for PHC, specialist and hospital care in Chile. They also need to consider allocating sufficient funds to cover the cost of a health plan or portfolio of benefits plus a multidisciplinary team to deliver it. Underfunding represents a serious threat to PHC provision as shown by the Chilean case.

We expect this case study would contribute to a better understanding of the Chilean PHC organization and financing. Policy makers in different contexts face potential reforms to complex institutional arrangements, such as health systems, with high levels of uncertainty. Learning from experiences of success and failure in other countries could help to envision in advance the main challenges and opportunities that reforms on payments mechanisms to PHC could entail.

1. Introduction

Many low- and middle-income countries depend on international funding to provide PHC services. In these countries, PHC usually aims to solve specific problems with a vertical orientation, which translates into a fragmented service delivery (Basilico et al, 2013; Fryatt, 2016). In other countries, governments are unable to fund PHC adequately, compromising the quality of services provided to their population (Langlois et al, 2020). In crises such as the current coronavirus pandemic, the disinvestment in essential PHC services could negatively impact the epidemic response, affecting timely access to medical care, traceability, quick isolation of contacts, and immunization. Therefore, providing sufficient funds with adequate incentives for PHC is key to addressing health system challenges with the aim of providing high quality and timely care to the population.

In this research we focus on PHC financing in Chile. Chile was a poor country with a high infant mortality rate at the beginning of the twentieth century. From 1950 onwards, there was a rapid decline in infant mortality rate explained, at least partially, by the establishment of the National Health Service in 1952 (Sistema Nacional de Salud, SNS). The SNS provided health services to most of the Chilean population offering universal coverage for child and maternal programs based on primary health care (Illanes, 1993; Jimenez de la Jara, Romero, 2007). Since then, the public health system has been pivotal in the social and economic development of the country.

Despite progress, Chile is also a highly unequal country with reforms in recent decades pointing the system in opposite directions. During the 1980s, a neoliberal reform decentralized PHC to municipalities and changed financing mechanisms to a fee-for-service (FFS) scheme. This reform incentivized the provision of heterogeneous services, dependent on the financial resources of each municipality and the tariffs of each service (Tetelboin, 2003). A decade later, these inequalities sought to be corrected through a change in financing mechanism: a capitation payment that incorporated criteria to allocate more resources to the poorest municipalities was implemented. These different reforms configured a distinctive PHC characterized by a national coverage, decentralized provision, and a mixture of payment mechanisms.

Different PHC financing models (e.g., payment for performance, capitation, among others) give different incentives to users and providers. These incentives shape roles, norms, and values that diversify PHC organizations between countries. The trajectory of the PHC financing in Chile could shed light to other countries on the necessary conditions, potential impacts and the political economy behind different reforms in the particular context of an emerging economy transitioning from a LMIC to a HIC.

2. Background

PHC system in Chile

Chile has an established public PHC system that aims to provide patient-centred care, coordinated with different health system tiers, and working collaboratively with families, the community, and intersectoral actors. Alongside the public system, a highly heterogeneous private sector composed of many autonomous, small providers co-exist, delivering a range of PHC services and secondary and tertiary care.

While the Ministry of Health is responsible for identifying health priorities and financing for PHC services, management of facilities has been transferred to the municipalities (counties) since 1981, when PHC centres were decentralised to local government entities. To date, 92.6% of all public PHC centres are managed by municipalities (Ministry of Health, 2019). Health districts ("*Servicios de Salud*") operate between the national and municipal levels – monitoring programmes and implementation, approving municipality plans and organising staffing and resources within geographical areas.

There are several types of PHC facilities in the country providing coverage to urban and rural populations, including Family Care Centres, General Urban/Rural Centres, Primary Care Urgent Services, and community hospitals. In dispersed rural municipalities, healthcare is provided at Health Posts (*Postas Rurales*) handled by a paramedic. Specific strategies have been set up to further improve PHC provision in rural areas, such as the Rural Health Practitioner programme, which provides financial incentives for graduate general physicians to work in PHC in rural and underserved areas (Peña, 2010).

Public PHC services are guaranteed to all Chilean inhabitants enrolled in the public health insurer (FONASA), covering nearly 77% of the population (CASEN, 2017). This includes migrants temporarily away from their home and people without previous registration for health insurance. To be granted access to PHC services, people can enroll in any PHC facility located in either the municipality they live in or the one in which they work presenting an ID document and any document that provides their address, such as rental contract, bills, etc. Nearly 78% of the FONASA population is enrolled in the public PHC (FONASA, 2020). Therefore, while nominally is universal, the effective coverage for publicly funded PHC in the country is close to 60%. It is important to notice that public PHC services can be utilized immediately after registration and are free at the point of care. Some universal services provided at PHC facilities, such as vaccinations, are available even for people who are not enrolled in the public insurance or a particular PHC centre.

Capitation payment for PHC in Chile

In 1994, a new capitated payment mechanism for primary healthcare facilities was implemented. Payments were transferred to local governments according to the size of the population they were responsible for, allowing them to allocate resources as they saw fit, as long as they delivered the "Family Health Plan" designed by the central government.

This financing mechanism replaced a fee-for-service mechanism known as FAPEM (*Facturaciones por Atención Prestada en Municipalidades*). Its objective was to “obtain greater equity in the allocation of resources, generate incentives for efficiency associated with cost-containment and provision of cost-effective services, ensuring quality of services” (Subsecretaria de Redes Asistenciales 2011). It was also supposed to encourage health promotion and preventive services.

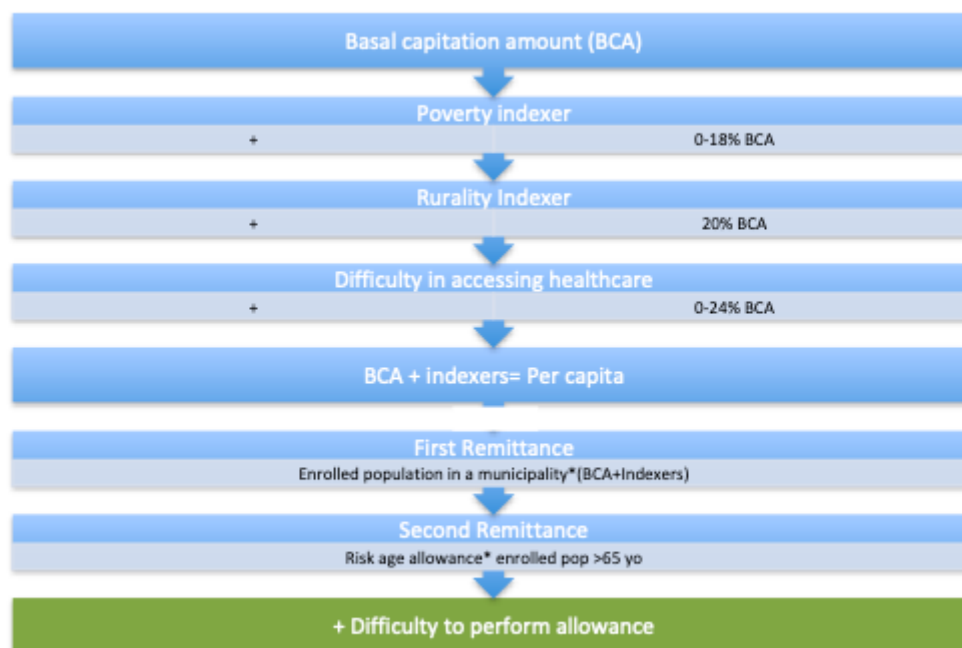
The capitation basal rate (per enrolled person) is calculated in reference to a benefit package, called the Family Health Plan. Increments to this basal rate are adjusted through the use of the so-called “indexers” (*indexadores*), a mechanism for risk-adjustment for the capitation allocation.

The criteria for increasing the capitation basal rate includes:

1. Socioeconomic level of the population: poverty and age
 - a. Poverty Indexer: This indexer does not refer to the poverty rate in the population but rather to the economic capacity of the municipality and it is measured by the Municipal Average Deprivation Index (MADI), which represents how dependent the municipality is from the Common Municipal Fund, a redistribution mechanism that attenuates budget inequalities between more affluent and more deprived municipalities. Higher dependence means a higher increase percentage. There are 4 dependence brackets. It is important to note that some municipalities with sizable vulnerable populations are not dependent on the municipal fund since they collect substantial local taxes from different sources (e.g., industrial permits).
 - b. Risk Age Allowance: Due to the higher relative cost of health care for the elderly, the capitation rate incorporates an additional allowance for each person over 65, as a fixed rate per person equal for all municipalities.
2. Rurality and difficulty in providing health care
 - a. Rurality Indexer: Municipalities are dichotomously classified as rural or urban, on the basis of the percentage of the population living in rural areas (over 30% is considered a rural municipality), or their respective health entity administers rural establishments, such as rural clinics or outposts. The increase due to rurality is equivalent to a fixed 20% of the monthly per capita amount.
 - b. Difficult performance allowance: This allocation increases according to the degree of difficulty to provide health benefits to the communities. This is measured as social vulnerability of the beneficiary population or the insecurity and risk for the personnel. This is an allowance given directly to a portion or all healthcare workers in a given municipality and cannot be used for other purposes beside a salary incentive.
 - c. Difficult accessibility: measured by the Zone Assignment Reference Indexer which represents different degrees of difficulty in accessing healthcare due to isolation or cost of life. Higher difficulty in accessing healthcare means a higher increase percentage.

The actual steps to calculate and transfer the final allocated remittance from the central government to each municipality is described in figure 1.

Figure 1: Capitation scheme and risk-adjusters for resource allocation for PHC in Chile



Source: Translated from Subsecretaria de Redes Asistenciales, 2011.

The methodology described for calculating the basal capitation amount and its eventual increases applies to most municipalities, however, for local governments with less than 3,500 inhabitants, a fixed amount of money is transferred since “it is assumed that the cost of providing health services is not directly consistent with the number of enrollees (due to scale problems)” (Subsecretaria de Redes Asistenciales, 2011)

It is important to note that the capitation is transferred to local governments (municipalities) that act as local managers and not directly to health providers. While the capitation brings some incentives for cost-containment, it is unclear if it has any effect on incentivizing efficiency or quality of care. More concretely, capitation is used to allocate resources to PHC, rather than as a tool to bring incentives to providers through payment mechanisms.

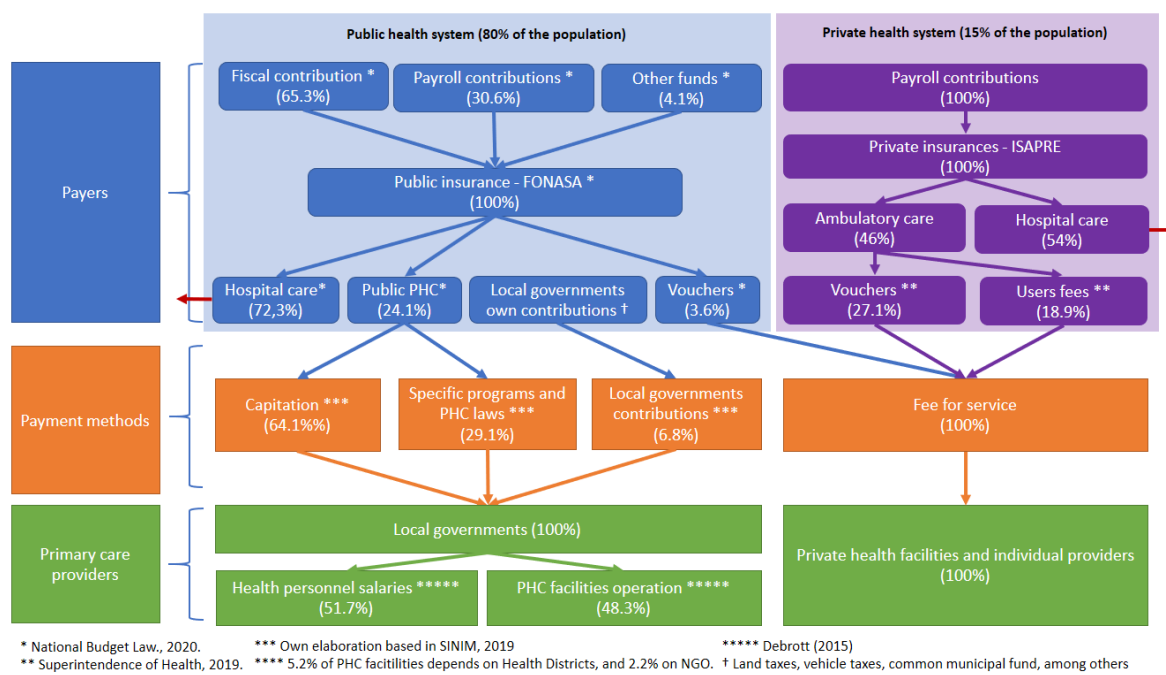
Funding flows for PHC in Chile

Sources of revenue for the public PHC system can be divided as follows: (a) Capitation, (b) Local governments own revenues (from land, commercial vehicle taxes and others), and (c) Other revenues, which are transferred from the Ministry of health to finance specific programs (e.g., urgent care centers) and specific PHC laws (e.g., pay for performance). Within this last group of transfers one of the most relevant is a form of block-payments assigned to comply with specific service provision denominated *Programa de Reforzamientos de APS* (PRAPS).

From these types of revenues, capitation represents nearly 65% of the overall financing transfers to PHC (figure 1). This prospective payment, allocated by the Ministry of Health

(through Health Districts), for each registered FONASA beneficiary, aims to cover the cost of health workers and the management and operation of facilities.

Figure 2: Funding flows for PHC in Chile



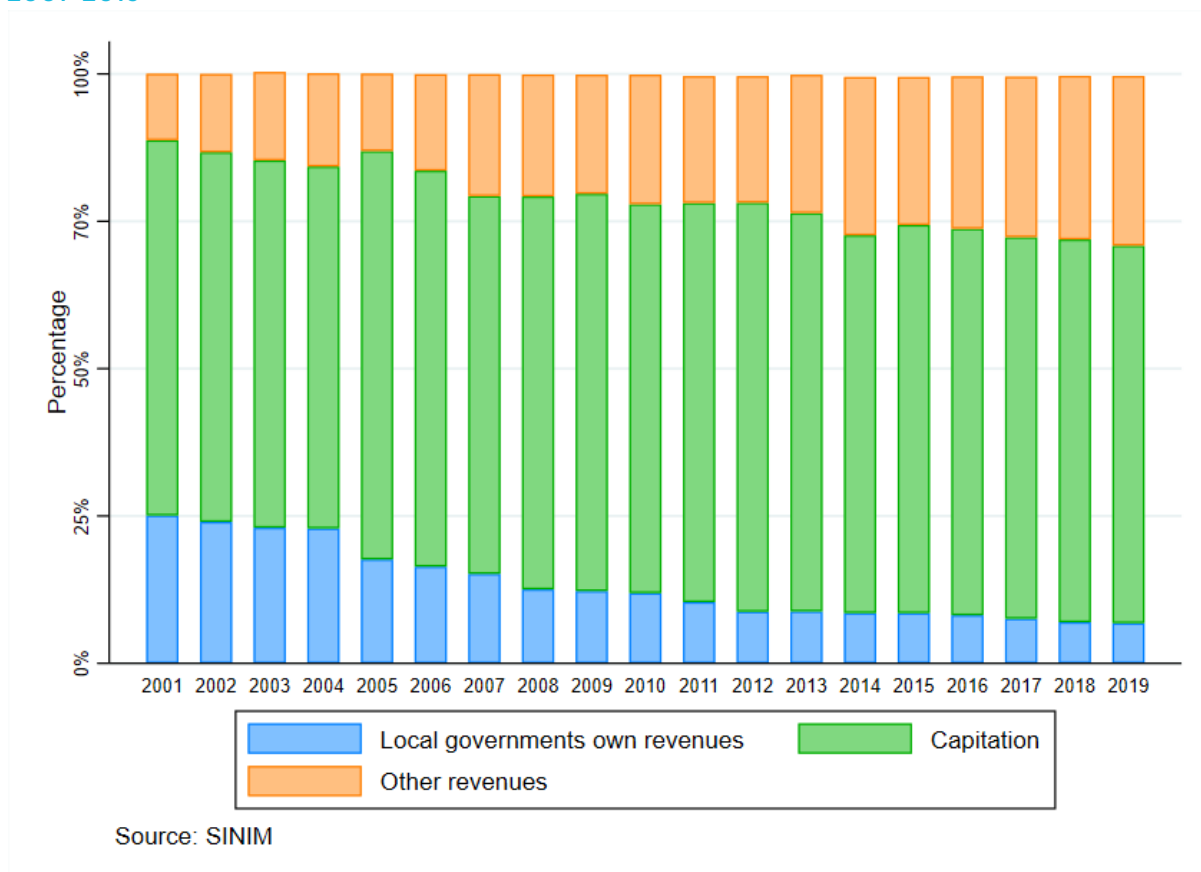
Source: Own elaboration based on Debrott (2015), Superintendencia de Salud (2019), SINIM (2019), and National Budget Law (2020).

In 2001, local governments' own revenues represented 25.1% of total revenue of PHC, but its contribution decreased to less than 10% in 2019 (figure 2). By contrast, other revenues increased from 11.3% to more than 25% during the same period (figure 2).

Alongside the coverage of the public PHC, some common primary health services, such as cancer screening or health check-ups, are delivered by private providers to a portion of the population, including those privately insured and some top-tier publicly insured groups (ISAPRE). Payment to these providers rely on fee-for-services as the main mechanism.

A relevant characteristic of the funding flows and capitation scheme in Chile is that the PHC centres does not administer the capitation transfers. Instead, the budget is administered by the municipality who is responsible for purchasing goods and services, including payment of salaries, required for the operation of the PHC facilities. Therefore, PHC centre Directors do not have attributions on the financial management of the centres. Such implementation of the capitation scheme can limit some of the theoretical effects to increase efficiency over providers.

Figure 3: Sources of revenue as a share of total revenue for the PHC system in Chile, 2001-2019



Aim and research questions

In this context, this study aims to understand key aspects of the development, design, implementation and impact of the capitation scheme for PHC in Chile and to identify lessons that could be useful for policy makers and managers in other settings considering the use of capitation as a payment mechanism for primary health.

Therefore, the research questions for this case study are:

1. How has the capitation system, including the fund pooling at the municipal level, enabled or constrained the development of integrated, people centred PHC delivery based on multidisciplinary teams?
 - a. *How did it develop historically?*
 - b. *What is the evidence of impact (on quality, efficiency, equity)?*

2. What are the strengths and weaknesses of the design and implementation of the capitation system to provide incentives for high quality and efficient person-centred PHC delivery in Chile?
 - a. *How does it interact with other key parts of the system (e.g., for capitation: other forms of provider payment for PHC / payment for other levels of care / payment in other parts of the health system (e.g., other arrangements for paying private providers))?*
 - b. *What changes / adaptations are needed to meet current / future challenges?*

- c. *What are the lessons for other countries considering a capitation payment system for PHC?*

Methods

Study design

Case study combining the use of quantitative and qualitative methods.

Data sources

Three main data sources were used to inform the case study. First, publicly available data including funding flows, PHC budgets and capita assigned, were used to conduct exploratory analysis to inform long-term trends and potential temporal variation based on different policy periods of the implementation of the capitation payment mechanism for PHC in Chile. The information about the health system budget was obtained from the National budget law (*Ley de presupuestos*), which was available from 1982 to 2020, and the information about different sources of revenue for PHC was obtained from the National System of Municipal Information (*Sistema Nacional de Información Municipal*, SINIM) database with data available for the 2001–2019 period. Second, published literature identified on the scoping review (phase 1 of this study) was used to inform relevant empirical data and contextual factors. Third, primary data was collected using qualitative methods, contacting key-informants from the Chilean health system to inform a critical assessment and contextual factors relevant to understand the design, implementation, impact and challenges of PHC capitation and its influence in integrated care delivery in Chile.

Participants and sample

A short-list of key-informants with relevant experience in PHC financing in Chile within different categories were identified for each of the following key informants' profiles: PHC practitioners and managers, policy makers, health financing experts and PHC policy experts. Whenever an informant was unavailable or did not agree to participate in the study, a replacement with a similar profile was sought. A total of 16 semi-structured interviews were conducted during January 2021. A full list of key-informants can be found in Annex 1.

Instruments and procedures

For the qualitative inquiry, semi-structured interviews were conducted using Zoom video conferencing, video recorded, and transcribed verbatim (in Spanish). The average (range) length of interviews was 76.9 (49 – 110) minutes. The interviewer had extensive experience on PHC in Chile and the questions were organised over four domains: organization of PHC in Chile, incentives, resource allocation, socio-political factors and lessons. Guiding questions in English and Spanish can be found in the Annex 2. Additional questions were incorporated on case-by-case basis to delve into relevant topics according to informant experience and expertise. Participants were contacted through email to request consent to participate and arrange an interview at their convenience. A

content analysis was performed by two researchers over the transcribed interviews, incorporating field notes, coding and categorizing pre-existing and emergent topics.

For the quantitative inquiry, we registered from the National Budget Law the yearly amount of money transferred to PHC (Law 18.378 and DFL 36s), the private sector (vouchers and public-private agreements), and hospitals obtained. We adjusted for inflation and used constant dollars (Jan/2020) to allow comparison across time and international reference. From the National System of Municipal Information (SINIM) we obtained information for 345 municipalities from 2001 to 2019. We excluded municipalities that provided incomplete information for at least 10 years (83 municipalities, 24.1%). Most excluded municipalities (64 municipalities; 77.1%) were classified as “costo fijo” (“fixed cost”); all these municipalities are rural and have less than 3,500 inhabitants.

Only six urban municipalities were excluded (Maipú, Cerrillos, Estación Central, Quinteros, Coyhaique y Natales). In total, the excluded municipalities in 2019 covered 2.3% of insured Chileans. To identify outliers, we performed four mixed effects model regressions (population, capitation, local governments own contribution, total revenues) for the complete period (2001-2019) allowing a random constant and a random slope for each municipality. We excluded every municipality-year observation with residuals more than 5 standard deviations from the mean (195 from 4.987 observations, 3.9%). Our final database had 262 municipalities with 4,801 observations for capitation (96.4%), 4,861 observations for local governments' own contribution (97.6%), and 4,125 observations for other revenues (82.9%).

Ethics approval

The research plan was conducted under the supervision of the local ethical review board of the Faculty of Medicine of the University of Chile. It was approved under the name “Estudio de caso sobre financiamiento de la Atención Primaria en Chile” on November 17th, 2020 with the project number 233-2020.

3. Findings

The main findings from the qualitative and quantitative data analysis of the case study are organized according to the following structure. First, we present results for development of the capitation system for PHC in Chile and evidence of its impact. Second, we identify the strengths and weaknesses of the capitation system, analysing challenges and lessons for other countries.

Development of the capitation system in Chile

The vast majority of experts consider that socio-political and socio-sanitary events have decisively influenced how the health system has been organised and financed over the years. A minority, on the other hand, believe that these economic decisions have been drawn by the paradigms of disease that have prevailed in different historical moments, displacing decisions related to maintaining a certain standard of health.

However, the influence of these events has not always positively impacted decisions on financing PHC and resource allocation. Some experts believe that they have also led to some precariousness due to the imbalance generated by insufficient resources, calculated using the per capita formulae, and the increase in the demand for primary care from the population. Examples of this are the COVID-19 pandemic, in which primary care was formally involved in the health system response only at a late stage, with all priority put on the hospital response. A similar situation occurs every year with the waiting list in hospitals, which focuses the discussion around increasing funding for hospitals instead of primary health: *“Yes, because the truth is that nobody listens to allegations for capita increments. It is marginal, while the surgical waiting list is the star, and that means more money for hospital care. No one wonders why that waiting list was created, or how that waiting list could have been avoided. Then it is enough that people leave the waiting list and with that the capitation discussion is over”* (PM-3, L634-639).

This opinion is confirmed by observed trends in public health expenditure in recent decades. In particular, between the 1980s and 1990s, the growth of funds targeted to hospital care was substantially higher than the resources for PHC (Figure 3). This led to a dominant share of hospital care representing up to 72% of public health expenditure in 1993. This trend started to change, particularly during the 2000s when the higher investment in PHC is observed (Figure 4). We analyse major events and the political contexts where these allocation decisions were taken in the following subsections.

Figure 4: Public health expenditure transferred to PHC, Hospital and Private providers. Chile, 1982-2020.

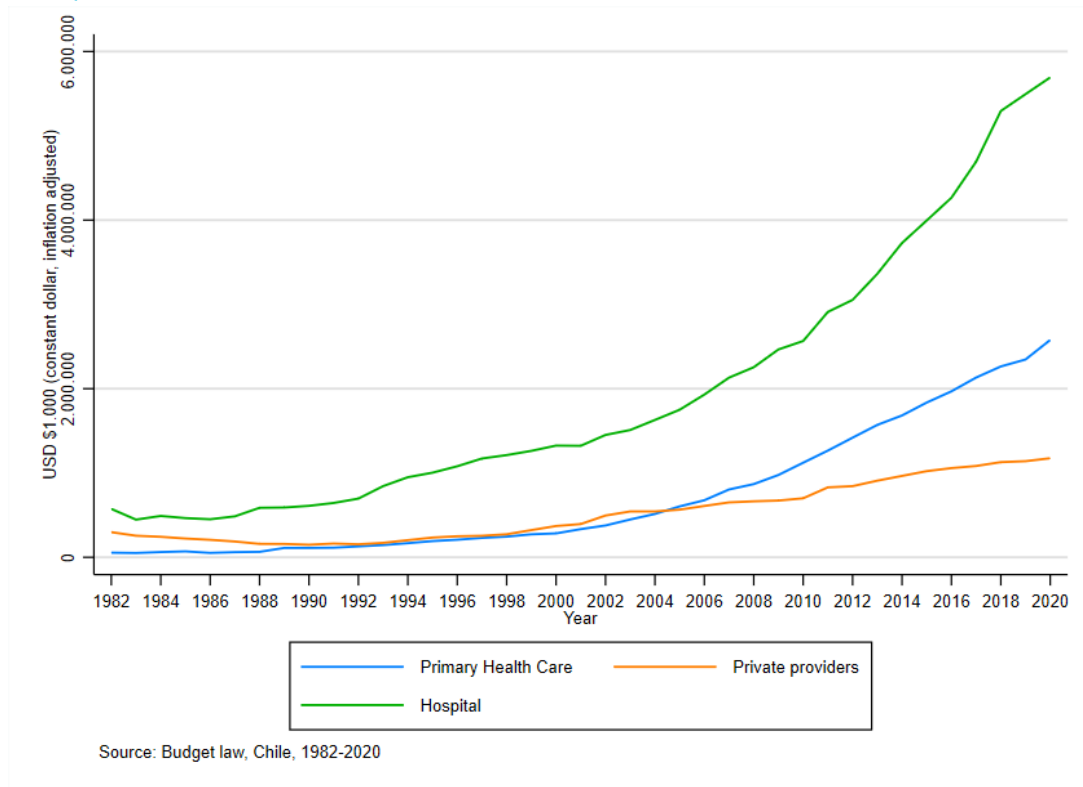
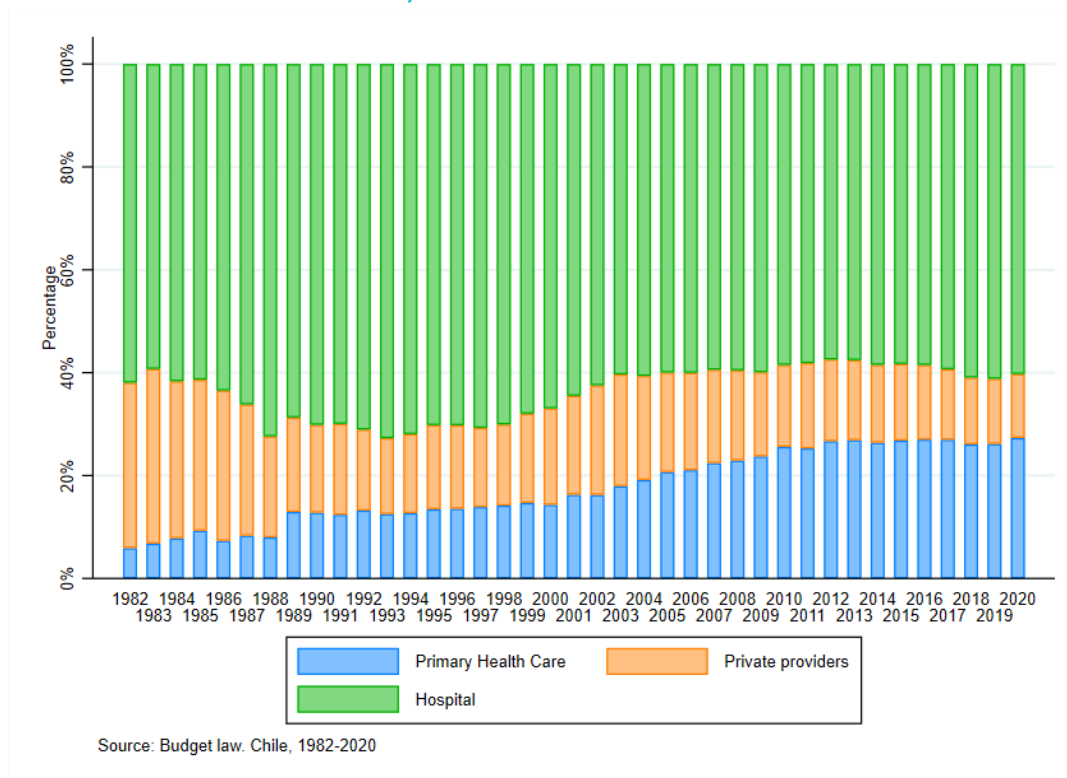


Figure 5: PHC, hospitals, and private providers as a share of public health expenditure destined to clinical care. Chile, 1982-2020.

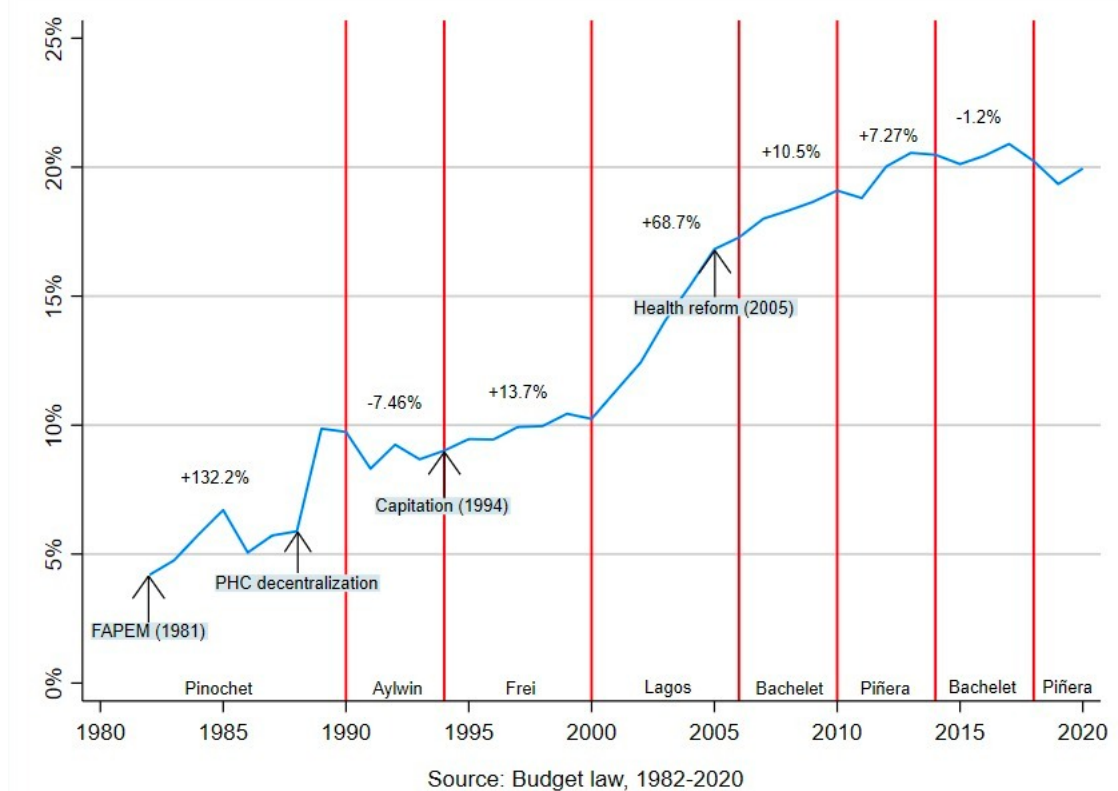


In the following subsections we present the relevant periods of the Chilean health system during the last decades that can explain current institutional and financial organization for primary care.

The foundations: National Health Service

The structure of the public healthcare system was laid out with the creation of the National Health Service in 1952 which was modelled after a pilot program deployed as a medical response to a socio-natural disaster, the 1939 earthquake. The 1940-1950 decade was tumultuous outside and inside Chile. Before the NHS, Chile had a mandatory Social Insurance scheme which was having financial and legitimacy problems (Molina 2007). In the late 1950s the government was controlled by the *Frente Popular*, a center-left coalition formed by radicals, socialists, communists and democrats. At the same time, inequalities were growing, and blue-collar and labour workers staged many protests and strikes (Molina 2007). In 1952, the NHS bill passed with ample support even though the *Frente Popular* had serious internal disputes. Although the NHS expanded coverage to workers and their families, white collar workers were excluded from this scheme and developed their own solutions for their health insurance needs. Another factor in the design and development of the NHS was the emergence of a new illustrated group: young physicians who advocated for a new kind of medicine focused on the social determinants of health, especially those associated with education, income and work conditions (Illanes 2010). In this context, the healthcare system was designed from a social and public perspective, with an important territorial presence (Illanes, 2010). This milestone is one of the most valued in the historical evolution of public health in Chile and put the country in an advantageous position within the Latin-American region. The NHS provided PHC along the national territory until 1980 when the military dictatorship of Augusto Pinochet decentralized the primary care system to local government entities called municipalities.

Figure 6: Primary Health Care as a share of public health expenditure. Chile, 1982-2020



The 1980s: deconcentration of primary health and fee-for-service incentives

Primary care has evolved positively throughout history. Despite controversies at the time, the municipalization process developed under the civic-military dictatorship: *"little by little, slowly, perhaps slower than one has wanted, it is giving primary care more presence and strength. I believe that it is a fundamental direction of the health system, which starts very hospital centric with the community receiving care from hospitals (...). That vision has gradually been left behind, and a primary care with greater presence and strength appeared, and the milestone of the transfer of administration to the municipalities, which is (...) controversial (...), but it has exactly this as positive: it positions primary care within a local management, integrates it with other elements of the social benefits, within a territory, and allows - or should allow - an integrated, intersectoral, interdisciplinary local-social management that takes into account the complexity of the social problems, among which is the health of the population"* (PE-1, L455-481).

The municipalization of primary care was controversial mainly because of two arguments: first, the political context in which it was installed, a Dictatorship without any democratic debate or legitimacy; and second, the failure to take into account the heterogeneity of the municipalities and differences in their level of technical competency. The municipalization of primary health care obeyed one of the ideological principles of the political economy of the Civic-Military regime: decentralization. Neoliberal reforms were implemented by the so-called "Chicago Boys", a group of right-wing economists trained in the Department of Economics at the University of Chicago who were very influential inside the regime. They *"understood decentralization as the institutional framework of an economic system based on the market and on a set free of prices that, in relative terms, would configure the*

parameters for the optimal allocation of resources. There was no reference, near or far, to the territorial dimension of decentralization" (Boisier, 2000). The main idea behind PHC municipalization was to improve the control and regulation of local-level facilities and to ensure that local health needs were reflected in health provision, as well as including municipal rather than national funds to improve local facilities and infrastructure. Also, they indicated that municipalization would improve local participation and inter-sectoral integration (Gideon, 2001). Additionally, this could be a step towards establishing new markets for the provision of primary care in the future.

However, they failed to take into account or plan to address the problems faced by municipalities without sufficient technical capacities for running local health services: *"The municipalization process was widely opposed and critics argued that the municipalities did not have the capacity, in both financial and human resource terms, to deal with the administration of health service delivery. When the process was first initiated the municipalities were neither prepared for their new responsibilities nor willing to take on such complex issues as health delivery. Many health professionals opposed the process because they felt that it was inappropriate to separate the administration of the primary-level from that of secondary-and tertiary-level care" (Gideon, 2001). In the words of some experts: "when the reform was made, the first reform in '79 there the Health Districts were deconcentrated, but it occurs from the point of Primary Care, a separation in which Primary Care becomes dependent on the municipalities... With the idea, on the one hand of decentralizing and organizing management at the local level, but that produced some problems that persist until now" (PM-2, L35-47).*

Additionally, the civic-military dictatorship of Pinochet encouraged the municipalization process through an increased fee-for-service (FFS) payment mechanism denominated FAPEM (*Facturación por Prestaciones en el Municipio*). Price incentives followed from the idea of market allocation mechanisms. In the opinion of policy makers, FAPEM induced demand, at least for some services: *"Municipal Primary Care was paid about three times what it was paid to Health Districts because it sought to encourage municipalization at that time of the dictatorship. There was Büchi, who was later Minister of Finance, (...), he was the Undersecretary of Health, and established what are called FAP and FAPEM: Billing for Benefits and Billing for Benefits in the Municipality. So, for many years we lived a reality in which municipal primary care was overpaid, because, in reality, it was sought to encourage the municipal part, for each benefit it made, and the incentives to provide more services to the same person were absolutely terrible" (PM-1, L124-133).*

It is important to note that the transfer of the administration of PHC to municipalities was completed in 1988, when most of the remaining PHC centres were deconcentrated to local governments. This was linked to an important increase on the share of public health expenditure channelled to PHC (see Figure 5).

The 1990s: Introduction of the capitation system

When democracy was recovered at the beginning of the 1990s, a new period of evolution of primary care began thanks to the emphasis given by the Ministers of Health of the period: first, Dr. Jorge Jiménez de la Jara with President Aylwin and later, Carlos Massad with President Frei Ruiz Tagle. In the period of the later (1994-1996), the change from FAPEM to per capita was implemented. *"I believe that with the recovery of democracy, a*

strengthening of primary care begins as a driver that I believe has not yielded up to now. The 1990s was a marker year, in that sense. I think it was a decisive decade in laying the foundations of a health structure that recovers much of what the dictatorship lost. So, I think that decade was crucial" (PE-1, L500-505). "I think it had to do with the urge to regain control of the system after the dictatorship itself. Then the first years were more potent in the sense of restructuring and, along with key issues, such as levelling wages, investing in new hospitals, and making a better resource allocation. So, that was done for, I would say, the first 5 or 6 years of democracy. That coincides with that renewed impulse, let's put it like this, and the needs of that period" (HFE-2, P20).

A relevant aspect of the political economy of this renewed impulse for primary care is linked to the macroeconomic conditions. This was possible thanks to the high economic growth that the country exhibited during the first decades of the return of democracy: *"We know that health is not only the effect, because it helps a lot that Chile also had a period of very high economic development. It grew at 7% during... you know. There was a jump in per capita income. All this of course helps health itself, regardless of the health system" (HFE-2, P23).*

In this period, during the first years of the return to democracy, FAPEM experienced serious financial difficulties related to covering the real cost of health services provided. Moreover, important problems with the incentives of the FFS mechanism were identified by the decision makers of the period. *"The disadvantages, however, turned out to be several in the case of the payment made to the municipalities. In the first place, as mentioned above, at the beginning of the municipalization process, there was no limit to invoicing, which led to increasing expenditure, since once the municipalities adapted to the system, they understood that greater production meant greater resources. At the same time, they were preferentially oriented towards the execution of those activities that appeared with higher monetary values in the list of services, which resulted in a disincentive to lower-priced activities. The latter were especially preventive activities, which gave the payment system a new defect, i.e., it became an incentive for curative actions, to the detriment of prevention and promotion, which is contradictory to all the statements on the need and convenience of favouring a preventive approach to health" (Duarte, 1994). This scenario revealed the need for change in order to assign resources efficiently based on municipal population (Gideon, 2001).*

As a response to these problems, a capitation system was introduced in 1994. The interviewees evaluated that change as positive for primary healthcare since FAPEM incentivized the curative and more expensive health actions... *"that do not necessarily have an impact on population health. Therefore, the introduction of per capita discourages the perverse effects of FAPEM" (HP-1). In contrast, the capitation allowed PHC providers to have a more stable and secure funding, enabling them to engage more intensively on preventive and health promotion activities "On the other hand, the per capita gives us a floor, as it has obviously increased much more, at this moment, we have much more resources than before. Obviously, we have the programs and all that, and everything related to family health. Trying to provide a more personalized attention, sectorized in the population and all that allows us the per capita, because "the per capita gives us a floor". (HP-4)*

It is important to point out that the change from FAPEM into capitation was made during the Frei Ruiz-Tagle government, which had an emphasis for modernizing public management and an explicit commitment to deliver health care closer to the communities. In words of the President: *"The next Concertación coalition government will address with strength the duty of modernizing public health management in order to raise capability to solve health problems significantly at lower levels of health complexity. (...) Develop management abilities and surpass the dismantling of municipal management"* (Frei Ruiz-Tagle, 2000). This is another important element for the political economy of the PHC financing strengthening in Chile, a high-level political commitment among the first priorities of the government coalition. Such priority continued during the next government of the *Concertación* during the early 2000s.

The 2000s: health reform and greater priority for PHC financing

The last system-wide health reform in Chile was implemented between 2003 and 2005 under the President Lagos administration. Its main initiatives were two: first, the General Guarantees in Health (AUGE) that created a "system of explicit guarantees in predefined health conditions for access, opportunity, quality of services and financial protection" for the whole population (Letelier and Bedregal 2006) and second, the development of a new comprehensive care family health model adopted by primary care.

The creation of AUGE required greater participation of primary care in the general health budget given that a significant proportion of its benefits were required to be provided at primary care facilities. The introduction of AUGE implied a de facto increase in per capita financing; however, in practice, this was not easily distinguishable from previous funding flows in a context of insufficient per capita financing. Interestingly, when new services were required to be delivered at PHC, the capitation resource allocation local managers faced problems distinguishing new resources from previous funding flows and the expected costs of providing those new services. In the words of a Policy maker expert: *"...it is also very difficult for any of us, to recognize these different resources that come for services in a per capita context. Then you get into a mess, definitely. And it is a mess, nowadays, how do you put these resources that are associated with P for Q, in a per capita model?"* (PM-4).

This reform also involved a step towards a new comprehensive care family health model adopted by primary care, called *Modelo de Atención Integral en Salud Familiar y Comunitaria* (MAIS), defined as *"the set of actions that promote and facilitate efficient, effective and timely care, addressing more than the patient or the disease as isolated events, to people considered in their physical and mental integrity, as social beings belonging to different families and communities, who are in a permanent process of integration and adaptation to their physical, social and cultural environment"* (Ministry of Health Chile, 2013). The model is explicitly based on three principles: longitudinality, comprehensiveness, and continuity of care (including accessibility and coordination) (Ministerio de Salud de Chile, 2013). The family/community orientation and a focus on prevention and health promotion as "ethical aspects of the primary care practice" are principles on which the model is based as well. Additionally, being the first contact with the health system and responsibility for a well-identified population are identified as key primary care practice elements.

Although there is a perception that the MAIS has not been implemented comprehensively, the interviewees agreed that the decision to implement MAIS was correct in the context of the Health Reform of President Ricardo Lagos. The MAIS contributed to shape the direction in which health care was expected to be delivered by primary health care: *"in this system, what we are looking for is that the services we offer to the population should be population-centred, have continuity of care and be comprehensive. So, we are clear, I would say quite clear, and we have disseminated it and socialized it and I believe that the teams have incorporated it"* (PM-2). In this sense, the introduction of MAIS has made it possible to recognize the idea of a population in charge of local health authorities and the primary care centres (*"what the per capita incentive to do is that we should go out to look for these people, that we know what our population is"* (HP-3), and facilitate its healthcare delivery through sectorization. At the same time, its introduction has reinforced multidisciplinary in the primary health care team. The team is able to recognize the socio-health characteristics of its population, based on knowledge of its social determinants of health and identification of its protective factors. This healthcare is delivered through a broad and standardized portfolio of benefits, accounting for the provision of comprehensive, continuous, person-centered and life-course services.

Interestingly, the close implementation of the AUGE and MAIS influenced the system in seemingly contradictory directions. It is believed by key informants that AUGE, concerned mainly with providing curative services for sick people, could lead to distortions in the way in which the per capita funding influenced the implementation of the MAIS, which encouraged keeping the population healthy through more primary prevention and health promotion actions. The general impression is that the inclusion of the AUGE worked against the move to strengthen primary care exhibited in the return to democracy: *"The origin of GES is to care for the sick. This is very distorting for primary care, regardless of allocated resources (...) it was definitely a figure that distorted the entire model, because it imposed a different model of care"* (PM-4). Despite this, alternative scenarios were not considered, and no formal evaluations were conducted at the time, or later on, evaluating what could have happened if resources were invested directly in primary care instead of creating the AUGE.

PHC multidisciplinary teams were a crucial part of the development of a new comprehensive care family health model. In the early 1990s, the *Concertación* coalition governments intended to reformulate the organization of care delivery from one based on health programs to one based on a biopsychosocial model, oriented towards health prevention and promotion and people-centred care (Gideon, 2001). They wanted to follow the *Alma Ata* Declaration as a set of principles for health services management and a range of criteria for addressing priority health needs and underlying determinants of health (Lopez, 2018). In order to generate this change and improve PHC responsiveness (Lopez, 2018), in 1993, the Ministry of Health started to work on technical guidelines to assist PHC teams in becoming multidisciplinary teams for this new model of care (Ministerio de Salud, 1993). The approach taken was to hire psychologists, physiotherapists and psychosocial teams to more comprehensively address the complex health problems of the population: *"The strength and potential of teamwork lies in the heterogeneity of its members. The sum of the disciplines and experiences of each member allows for a comprehensive approach to problems (...) The health team is made up of all the individuals working in the health center, regardless of their area of origin (biological, social sciences, administration). Its configuration should be flexible according to local needs and*

resources, without prejudice to the ministerial authority setting minimum staffing levels necessary to carry out basic health activities in conditions of quality and suitability” (Ministerio de Salud, 1993)

However, the government focused its efforts on trying to reclaim the social position of Chilean PHC through financing, salaries, infrastructure and a new way of planning health actions for the population. In order to prioritize other areas rather than the new model, it suggested this new comprehensive model as a complement to the existing biomedical model: *“The new demographic, epidemiological and social scenario gives rise to a different profile of challenges than the organizational and health care model that prevails today. This new bio-psycho-social conception of health, as well as the integral model of intervention, are characterized more by trying to complement or enrich what already exists, than by seeking its radical replacement”* (Ministerio de Salud, 1993).

It was not until the Health Reform became a reality that the new comprehensive model took center stage and, then, PHC multidisciplinary teams: *“To this end, a highly responsive primary health care will be promoted, with the capacity to solve most emergencies, where there will be family and community health teams “at the bedside”, with a defined number of families in charge, equipped with the necessary technology and equipment and working in coordination with specialty care”* (Congreso Nacional, 2002).

At the beginning of the return to democracy in the 1990s, the creation of multidisciplinary teams was not a strong idea, but rather was proposed as a complement to the biomedical model and it was not until the arrival of the Health Reform that it materialized. Even with the installation of per capita funding and a basket of benefits that included a biopsychosocial and multidisciplinary approach, it is only since 2002 that multidisciplinary teams made their way to PHCs. Thus, the per capita is designed to provide financing for a portfolio of benefits that can only feasibly be delivered by a multidisciplinary team. In this way, the capitation payment mechanism, in conjunction with a well-defined model of care and package of benefits, required a new way of organising human resources at PHC, incentivizing the uptake of multidisciplinary teams.

However, there are policy experts, policy makers and health practitioners who point out that Chilean primary care has yet to make substantial progress in focusing its comprehensive care on the needs of people and to move its work from episodic care to effective care that provides long-term care for people with chronic conditions: *“(PHC is) prepared for the acute episodic phenomenon, but not to accompany a new type of health problem, a new type of person, and therefore that translates into why our percentage of controlled diabetics and controlled hypertensive patients is insufficient”* (PM3). To achieve this, it is necessary to involve more social science professionals in multidisciplinary teams and a shift in professional training towards a less hospital-centric profile: *“Medicine training, as it happens in other countries, let's say, is very hospital-centred, very hospital-centric and, therefore, the availability, the competencies that doctors have and, therefore, the taste that have to work in First Care is clearly a true problem”* (HP-1)

Impact of capitation implementation

Empirical evidence on the impact of the implementation of capitation for PHC in Chile is scarce. Among key-informants, there is a general opinion that the change from fee-for-service (FAPEM) to a capitation payment mechanism favoured Chilean primary care in general terms, since it corrected pernicious incentives to provide costly, but not necessarily high value, services (see above). Additionally, it has allowed the management and planning of health actions with a stable financing base. However, it is important to highlight that capitation, per se, does not generate improvements in service quality. Here a paramount factor is the technical capacity of the municipalities and how they manage the per capita contribution effectively and efficiently to provide high quality care for their population in charge.

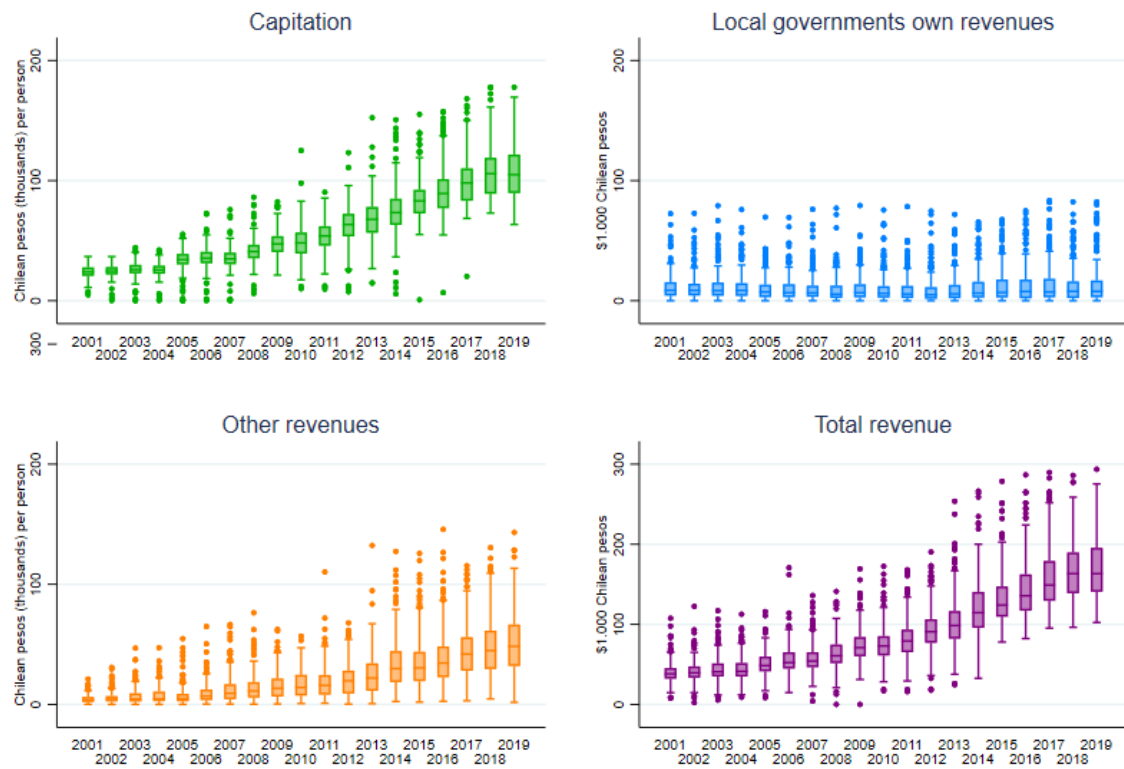
However, in terms of the impact of per capita on the quality of care, experts generally comment that they do not have strong evidence to build an informed opinion: *"The issue is versus what, because what happens is that you would have to compare it with something. (...) I believe that it has been positive to move from a system of fee-for-service in Primary Care to a capitated system. Now, how positive has it been? I believe that it is one of the studies that is pending by the DIPRES eternally"* (HFE-1). In other words, in order to establish that the per capita has improved the delivery of services in terms of quality, efficiency or equity, comparisons are required and that has yet to be studied in Chile.

Notwithstanding the foregoing, the experts consider that the installation of the per capita has favoured the development of a model of people-centred care. This translates into a more coordinated and integrated healthcare network, the maintenance of adequate equipment and infrastructure for operation due to stable funding, and an expansion of services provided through primary care providers. Nevertheless, the above is not necessarily reflected in better health outcomes of people with chronic conditions or in the older population.

Likewise, experts evaluated positively that the per capita allows the association and execution of a specific and varied portfolio of services for the population in charge, associated with a team of family health professionals that seeks to be the regular provider for that population to provide a continuous and integrated care along the life cycle. *"The offer (of services) is varied; it is a wide offer that can allow the population access to a number of services that are not necessarily known ... I think we have a communication gap ..., there are many people who do not know, they make a low level of use of services that are installed for a long time in the (PHC) system"* (HP-2).

Due to the scarcity of empirical evidence on the impact of capitation on relevant health system performance indicators, we conducted some exploratory analysis based on the available financing data. From 2001 to 2019, an increasing trend was observed in the per capita amount for capitation and other revenues (figure 7). In contrast, local governments' own revenues remained stable during the same period. From the above it is concluded that the increase in total revenue per capita is mainly due to capitation increase, making local government revenues less important for PHC financing over time.

Figure 7: Capitation, municipalities contribution, other funds, and total budget by year



Source: SINIM

To analyze inequality in resource allocation we used the Gini index for each source of revenue (figure 8). The Gini index for capitation and total revenue remained stable during the study period, with values close to 0.11–0.16 for capitation and 0.13–0.18 for total revenue. The Gini index increased for local governments' own revenues (from 0.46 in 2001 to 0.57 in 2019) and decreased for other revenues (from 0.39 in 2001 to 0.28 in 2019). During this period, the most unequal financing source were the local governments own revenues, and the most egalitarian financing source was capitation. Similar findings can also be observed in the Lorenz curves for each type of revenue for the year 2018 (figure 9).

Figure 8: Gini coefficient for capitation, local government own revenue, other revenues, and total revenue. Chile, 2001-2019.

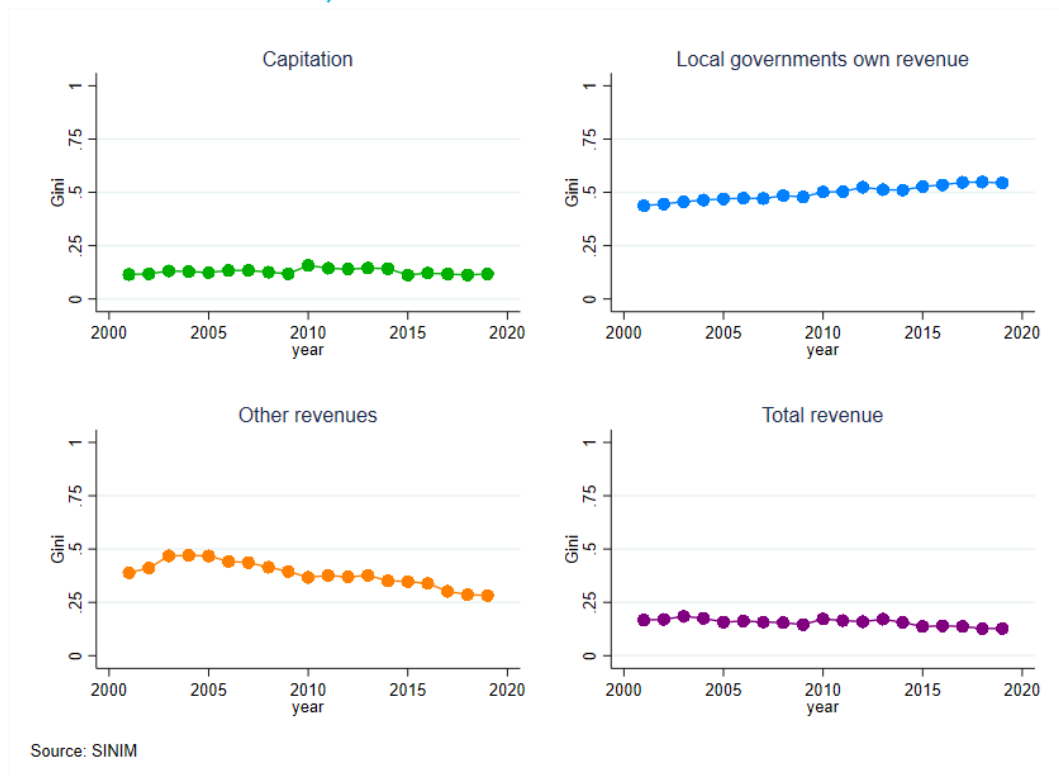
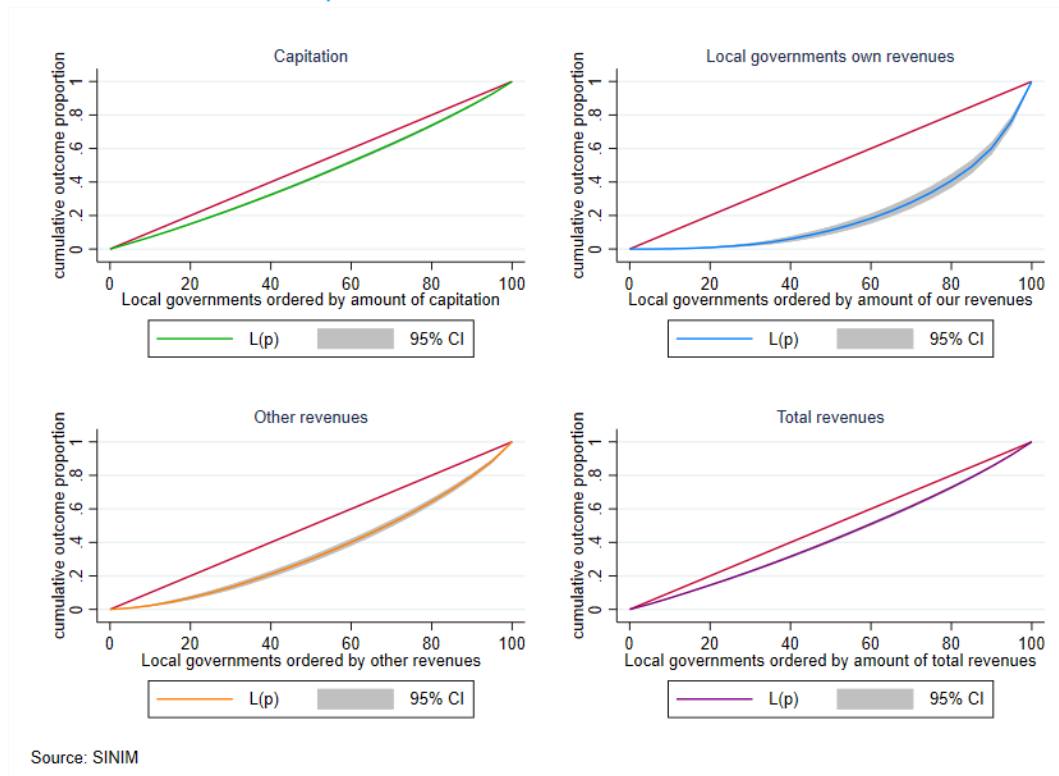
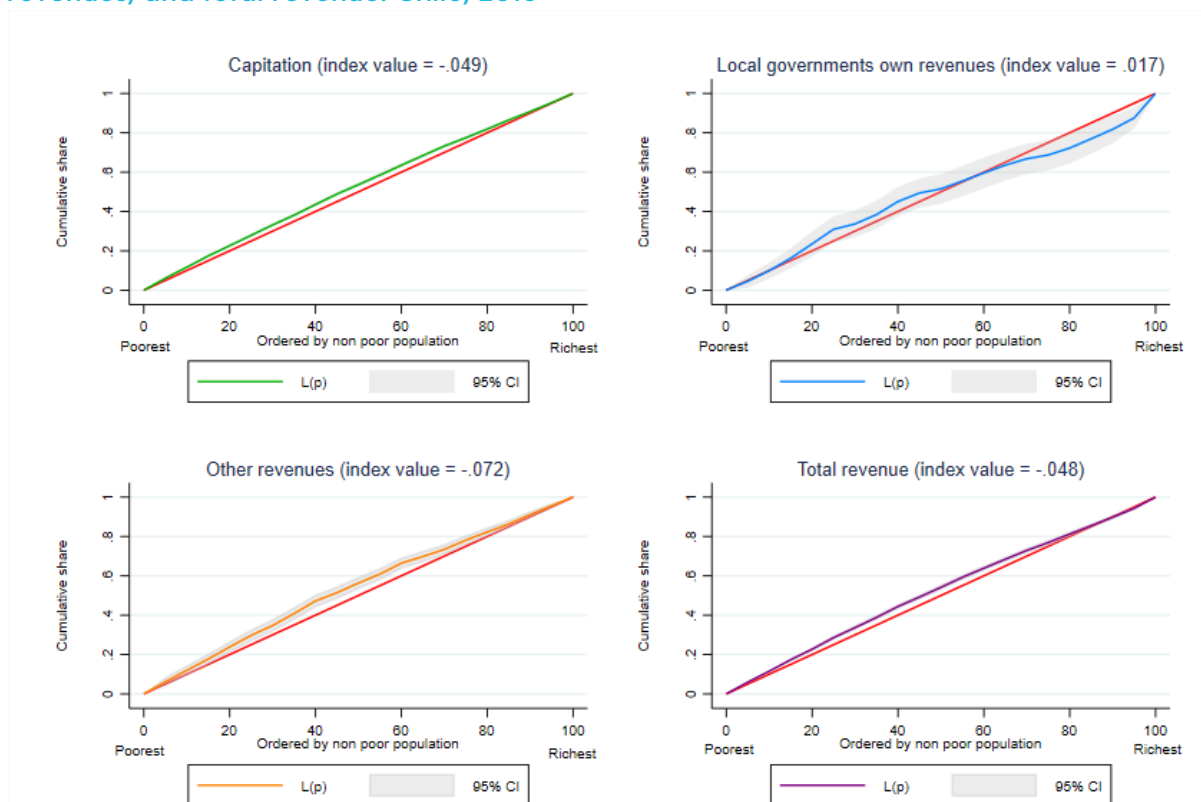


Figure 9: Lorenz curve for capitation, local government own revenues, other revenues, and total revenue. Chile, 2018.



To explore inequity in resource allocation we estimate the concentration index and concentration curves by each type of revenue using the non-poor population in each local government as a socioeconomic indicator at the municipal level. Capitation, other revenues, and total revenue have negative concentration index values which indicates a greater transfer to local governments with the poorest populations. By contrast, local government own revenues have a positive concentration index value which indicates a greater resource availability on richest populations through this funding flow. This is consistent with what could be expected: richer municipalities have greater capacities for generating revenues producing a bigger budgetary space, while capitation and other transfers by the central government operate as equalizers mechanisms.

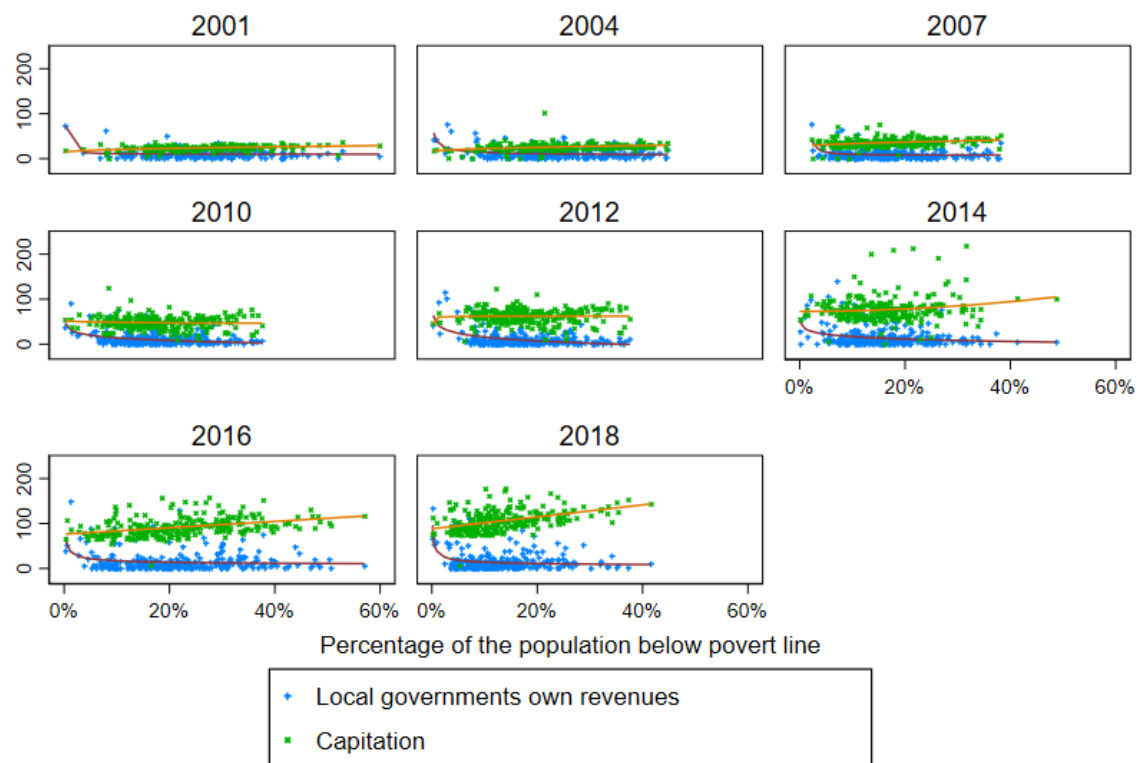
Figure 10: Concentration curves for capitation, local governments own revenue, other revenues, and total revenue. Chile, 2018



Source: SINIM

To delve into the equity of resource allocation by socioeconomic position across time, we graph the relationship between the percentage of the population below the poverty line and the per capita amount received by the capitation mechanism and local governments own revenues in different years (Figure 11). From 2014 and onwards, a clear positive association between poverty and capitation can be observed. Conversely, a negative association between poverty and local governments' own revenues can be noted, which is especially marked among the richest municipalities.

Figure 11: Capitation and local governments own revenues by percentage of the population below poverty line by year*



Source: SINIM

* Only years with poverty data available from national representative surveys (CASEN) are presented

As a conclusion, we can state that capitation had a positive impact on the equity of resource allocation among local governments. Also, this allocation mechanism is increasingly efficient in the provision of greater resources to poorer municipalities. Additionally, it is evident that using local governments' own revenues increases financing inequalities and is therefore an unfair PHC financing mechanism yielding greater transfers concentrated in the richest municipalities. The expansion of capitation during the last two decades increased the total revenue and made the Chilean PHC financing more egalitarian.

Strengths, weaknesses, challenges and future adaptations of the capitation system in Chile

The interviewees agreed that the capitation is a good form of financing for the system. However, it is recognized that there are several weaknesses that have affected its implementation at different levels of the health system, as well as problems with the design of the mechanism for population risk adjustment (*indexadores*). Thus, there is broad consensus that modifications are required at different levels to allow an implementation that could generate incentives for a people centred PHC.

Coordination and fragmentation

The most notable weakness identified by the interviewees is the fragmentation and lack of financial integration of the health care networks in which PHC operates. The absence of any interaction between the capitation for PHC and the payments based on Diagnosis-related Groups (DRG) for hospital care makes the clinical coordination and integration of care difficult. The financial mechanisms of both levels of care are not well aligned under a common objective.

As an example, the informants from different specialist groups agree that the type of interaction between the capitation and the DRG, makes it difficult to deliver high-quality and efficient people centred PHC. *"(...) you have different payment mechanisms for different levels, and those payment mechanisms generate incentives that are contradictory between each other and cancel out the positive effects that something like per capita can have. I believe that particularly the existence of these payment mechanisms, which are particular for each level (PHC and hospital), what it does is that they do not favour the continuity of care, nor does it favour the articulation of the (health provider) network"* (HFE-1).

According to a policy maker, when per capita was introduced to the system in 1994, it was neither designed nor implemented from a global and comprehensive health system perspective, something that can be observed in the lack of alignment between the payment mechanisms for PHC and speciality care. *"Although the mechanism was changed to capitation, however, the payment mechanisms of the health system were not globally considered. Therefore, what happened is that by maintaining the historical fee per service mechanism for the secondary level (specialist care), and (capitation at) the primary level with the idea that it could promote and prevent to keep the population healthy... In practice this can be achieved in two ways with the same resources, 1) putting barriers to access, and; 2) transferring patients to secondary level. Both things happened and the result was basically queuing at the secondary level, which in practice greatly reflected the problem at the primary level"* (PM-2).

Consequently, the implementation of the capitation only for PHC provided undesirable incentives in its relationship with the secondary care. The most efficient and high-quality care based on people's needs are not necessarily being incentivized. For example, a practitioner points out: *"I think there is an issue in the payment mechanisms since they do not communicate. I think they do not necessarily encourage greater efficiency and the best response based on people's needs. (...). So, when one says, we did this cost-effectiveness analysis and the whole question, (...) where do I see the savings of what I do well in Primary Care? It may be that I do not see it here, if I look only at primary care I say well this is much more expensive. But I am saving an emergency consultation or saving hospitalizations. Therefore, as Primary Care, there is no benefit of saving (cost for) the rest of the system, by the contrary"* (HP-1).

The interviewees recognize Health Care Network Authority (HCNA, *Servicio de Salud* in Spanish), the institution that coordinates care within a Health District, as a structure that has a key role in addressing current and future challenges to improve people-centred care. The objective of the HCNA, and of its director, is precisely to command and coordinate the delivery of the health services for the population from primary care to

hospital care within a Health District. Experts identified changes needed in the way in which these networks are governed and financed, since this is directly and indirectly related to compliance with the care model. *"I believe that the HCNA has a tremendous role and that it has not been properly done recently. The HCNA is the coordinator of the network, and it has to do it... today it is much more a hospital administrator than a network coordinator. And I believe that there is a very important point that must be developed in our country. There must be a network manager. If it is not the HCNA, another, but there must be an entity that seeks, not only by locality, but also in larger areas, to move towards better health of these populations, with what must be done both in Primary Care and Secondary Care. So, I see that the role of network manager is essential, and that today it is not being fulfilled"* (PM-1).

While widely present in the discourse of the consulted experts, the discussion about reforming the financing mechanism to the entire network of a Health District is not yet prominent in Chile. Experts do, however, identify that the form of financing individual providers and networks of providers is a key instrument that enables the organization and implementation of an integrated model based on people's needs. *"Chile also has to advance in the implementation of a payment to the HCNA, because Chile organizes its system, despite the problems of institutional fracture that I was commenting on, through networks, right? Integrated Health District networks. And first of all, you have to define how the network is paid, because it is the main command for the performance of services and how they are delivered (...). It is discussed how parts of the system are paid: Primary Care, doctors, hospitals; but it is not disputed how the network as a whole has to be paid. And I think that Chile has been close on several occasions"* (HFE-2).

The policy financing experts who were interviewed suggested that the network could be financed through a global per capita to the entity that acts as head of the network, the HCNA, similar to Nordic countries or in some autonomous communities in Spain: *"one then finds that he is the head of the service, that is, the director of the HCNA, the one who receives the resources and then he is going to make the DRG payments for the hospital, per capita for Primary Care, etc. But those resources were initially capitated for that network. He has no more resources than that. Therefore, the initial resource is a set, and there they are distributed in different ways, such as DRG, as capitation, emergencies are paid in another way as well, and Free for Service is paid as well, that is, payment per act. All these are also combined... but within this set determined by the capita, territorial, to the Health District as a whole"* (HFE-2).

Experts agree that a global capitation for the network should be based on the population in charge according to an assigned territory rather than on a registered population such as the requirement of an enrolment process, as is currently the norm in Chile. This implies that PHC is universalized and that everybody has a mandate to contribute to financing the scheme and have coverage by the PHC of the HCNA of the Health District. If this change were made under the same type of current multi-insurance scheme of Chile, it is then necessary to generate some level of financial compensation mechanism among payers. *"You cannot walk down the street chasing (referring to providing population based-services such preventive care) only those who are registered and validated (public insured population enrolled on PHC providers) and exclude the rest. In all municipalities you have a certain percentage of the population who are from ISAPRE, who are from the armed forces. So, what, are you going to leave them out? It's something that is not working well."*

So, given that the private system of ISAPRE does not have a primary health care, one should probably think about universalizing that service, forget about this issue of the registered (enrolled) population and work with populations in charge, which is the total population (of a certain territory). Finally, afterwards one will generate some level of internal compensation among insurers, but for the population it should be something that is universal'. (HFE-1).

The fact that currently capitation is not for the entire population in a territory but only for those enrolled in the public health insurance who then actively register in a primary health care centre, is posed as a great barrier to effectiveness of the primary health strategy in the country: *"(...) it seems like a great barrier to me the fact that it is not for the entire population, but rather that they are FONASA beneficiaries. Not even all the FONASA, but the registered ones. It seems to me that this makes any health planning difficult. There is no possible planning by portions of the population, let's say, as we have sadly seen in the pandemic, where Primary Care did not have the information of the ISAPRE population who are in the same territory and that therefore prevents adequate monitoring of what is happening in the different territories". (PM-1).*

Resource allocation and risk-adjustments

A second area where experts identified weakness and potential spaces for improvement relates to the available financial resources, the risk-adjustment formula and extreme centralism in regard to health normatives. In the words of a policy financing expert, the capitation scheme *"should be sufficiently financed, transparent and evaluated".* The capitation requires a correction to allocate resources, taking into account structural inequalities and differences in the health needs across territories. This should include an accurate costing process of the resources required to provide the plan of benefits at PHC (base value) to ensure a minimum standard across the country: *"(...) a minimum necessary financing should be established to be able to exercise primary care of the quality and standard that we are capable of giving as country, and no municipal government or any primary care provider should be below that minimum". (PE-1).*

The current capitation scheme currently faces problems in the methodology of capita calculation, particularly on the cost of paying salaries of human resources of PHC teams: *"when you calculate the human resources involved in (providing) these benefits, (...) there are a lot of human resources that did not exist before in primary care and that today are part of the team. That is not considered in the (cost) calculation. On the other hand, you cost human resources at a value that is not the value paid by the municipalities. You pay it at the value established by a referential salary structure, which basically is a cost containment mechanism from the Treasury" (HFE-1).* This is one of the main causes that lead to underfunding of PHC identified by the experts.

Another problem identified is the capacity of per capita to adjust for the epidemiological reality of the territories, that is to say, adapt the type or intensity of PHC services provided to communities with different disease burdens. A Policy Health Financing expert points out that there are already techniques that go further and make it possible to incorporate morbidity itself as a predictor of the future health events *"(...) some health services have been tested together with the municipalities, the Adjusted Clinical Groups (ACGs), which are ambulatory costing groups. (...) Look, I think there are about 30 different adjusters at*

the international level, but I think that the advantage is that when there are powerful information systems, not only the demographic characteristics of people can be used, but also the past disease itself, which is a good tracer for the disease, that is, morbidity, for future expenditure" (HFE-2).

There is consensus that it is necessary to improve the risk-adjusters for the capitation (*indexadores*), which currently include poverty, rurality and percentage of older population in the territory (see above). Several interviewees questioned the way that the poverty indexer is calculated since it is based on communal poverty, measured as the municipal dependence on transfers from other municipalities, and not on the population's poverty (family or individual poverty). *"I understand that this is surely the best proxy they have managed to have, but there is not necessarily a good correlation between them, because the poverty of the population may be even worse than the municipal poverty, and in this way we do not correct this aspect well enough" (PE-1).* Moreover, the current poverty indicator is based on average values of the commune, not incorporating distribution values which itself does not allow a good-enough correction for equity. As a result, *"I can have the same average with an extraordinarily unequal population or have the same average with a population homogeneously in the same conditions and in this case, I would say that there is a correction that is not made" (PM-2).*

Current adjustment methodology, according to the interviewees, is insufficient to correct for territorial inequalities that are frequent and important in Chile: *"unfortunately, here it is handled at the central level, I believe, and although it is true, there are risk-adjusters that favour or that complement the per capita, they do not always go hand in hand with the local reality" (HP-5).* Some practitioners emphasize the need to incorporate socio-cultural contextual factors such as serving first nation communities or diverse migrant populations *"...special considerations must be taken into account with many people of different ethnicities, because they have different beliefs, because they have different customs, the culture itself is different and therefore I think that many times there is an effort and resources spent to better serve that population..." (HP-5).*

Lastly, municipalities resent the highly centralised nature of public policy decision making, which prevents local decision making and adjustments for the epidemiological and health realities, or prevents the materialization of health prevention and promotion. As a consequence, this narrows the decision-making field of municipalities: *"Chile is a country with a very vertical health system, where centralism, in addition, aggravates this situation, so if we add to that a financing system that confirms it, it generates a structure that leaves primary care very packed and with little capacity for movement, especially to implement the model of integral and family and community health that is promoted, which I believe is the right model" (PE-1).*

Interactions (and tensions) between payment mechanisms within PHC

Financing through block-payments to fund specific programs (PRAPS) is considered by most experts as a threat to capitation. In its origin, PRAPS were intended as a mechanism for innovation - to introduce and evaluate new technologies in primary healthcare, as well as to provide targeted support to populations and local government administrations that were bearing specific and insurmountable difficulties with regular contributions. However,

the widespread use of vertical programs to address people's pathologies in a fragmented way, has generated consequences for the system.

For health financing experts, one consequence is the weakening of the incentives associated with capitation, since each program has different objectives and incentives. In the opinion of several interviewers, the resources allocated through PRAPS should, instead, be integrated within the per capita from the central government to the municipality: *"It has had some variability in terms of the policies in relation to the percentage of financing that has been incorporated in the capitation versus all this strategy of specific financing. Indeed, with specific programs, we have periods that distorted the financing, reducing the raising of per capita and increasing the proportion of specific financing. In other periods this was corrected. I think this is going to be like a pendulum, where things are going to move from one place to another and this has the problem that can significantly affect the benefits of the per capita mechanism"* (HP-1).

On the other hand, the interaction of capitation with other payment modalities for the public health insurance, e.g., the FONASA¹ free-choice modality, produces tensions. In a context of underfunded public PHC, the existence of a modality of access to ambulatory services via private providers, dependent on out-of-pocket expenditures, can be seen as a rationing strategy. People that have unmet needs from public PHC seek care from private providers at the expense of OOPE. Further, the option for the free-choice modality (for the most affluent people in FONASA) comes at the expense of the institutional modality because both are financed from the same shared budget. The institutional modality is the exclusive way to provide primary health care in Chile. In the words of a policy maker *"...the insurance mechanism that we have, in the end, leaves a door open, a door for the wealthiest among the FONASA insured, which is the door of free choice. In fact, it is used quite a lot by the most affluent groups of FONASA to pay mainly for laboratory tests and outpatient care. Hospitalizations are not covered and I believe that this is correct, in the sense that otherwise all the money would go there. But the basic point is different, the point is that the funds that go to free choice are the same as the overall budget of FONASA and, therefore, if the demand for free choice grows in a year, it is at the expense of the budget that remains for the rest of the actions. It is a mechanism that has no ceiling. The ceiling is set by demand. So, if in a year, for example, everybody decides, all those who are in FONASA and, for that reason, the restriction of group A has been placed a little bit, that they all decide that they are not going to be attended in clinics, but that they are all going to be attended by the free choice modality, that is all that, that they are all going to be attended by the free choice modality, that they are all going to be attended by the free choice modality"* (PM-2).

¹ FONASA beneficiaries have access to two modalities of care: institutional care (MAI) and free choice (MLE). The former comprises care provided by public health institutions with some limitation on the choice of provider. At the time of receiving care, users must make co-payments ranging from 10-20% of the price of the service set by FONASA according to their income level, except for the poorest, those over 60 years of age and carriers of some specific pathologies. The institutional modality usually affiliates low-income citizens and all those who are covered by the benefits plan of the Universal Access Plan with Explicit Guarantees (AUGE), described below. For further information, please refer to Becerril-Montekio, Reyes & Manuel, 2011. The free choice (MLE) modality involves higher co-payments to access care through private providers outside the public health networks.

Nevertheless, some practitioners suggested that the free-choice modality provides an opportunity to receive timely primary care services to those FONASA C or D beneficiaries because the public health network does not have the capacity to attend to the entire enrolled population. In the words of a health practitioner *“so, if there were no free-choice modality, and only the public network existed for the beneficiaries of FONASA, I think we would be in trouble. Because an important part of our population is treated in the modality of free choice, especially outpatient”* (HP-2). In addition, other respondents highlighted the possibility of accessing some health services that they would be unable to receive without this free choice modality, especially hospital services: *“Now, with regard to the FONASA model, with free choice and that type of cost, to call it in some way that one can assume to be able to be attended, I believe that it is much more accessible than if a person were to do it privately. In other words, I know of a case of people who have had access to secondary level health care more quickly with this modality and have not had to be on a waiting list. I think it is favourable, to a certain extent, for some people, but even if we continue to be a little bit like making a lot of difference, because unfortunately, the people who need it most, who do not have the resources and who are classified in category A do not have access to this modality”* (HP-5).

4. Lessons for other countries

Strengths & opportunities

Among the main strengths and opportunities that can be attributed to capitation is its simplicity to implement, at least in its more basic forms, and it brings advantages over other payment mechanisms such as FFS or block payments in terms of cost-containment. Additionally, capitation can incentivize a focus in health promotion instead of a narrow focus on disease management. The implementation in Chile allows some degree of autonomy at the local level, something desirable to allow PHC to respond effectively to local needs, changing environments and emerging health risks. COVID-19 pandemic has been a clear example of that.

What is required for a well-functioning capitation scheme?

Some conditions are considered as pre-requisite or enabling conditions for the successful implementation of a capitation payment to PHC. These can be categorised as follows: political context, health system preparedness, technical & informational capacities, monitoring & evaluation capacities and incentives.

In terms of political context, political will to prioritize PHC and provide sufficient resources to guarantee the benefit package are important conditions and facilitators for designing and implementing a capitation scheme. From the perspective of the preparedness of the health system, we identified several elements such as universal PHC coverage, a common funding scheme for all PHC providers, strong governance that avoids or overcomes system segmentation, and established mechanisms for funding flows between payers for compensation in multi-payer systems. One factor that has been mentioned as relevant for the success of reforms is community support (Langerbrunner et al, 2009); however, we did not find that it was necessary in Chile's case, although we have to note that capitation was

implemented shortly after a military dictatorship, so we cannot say it would be irrelevant in other settings.

Technical & informational capacities are required at the provider level and at the central level to define the benefit package and capitation mechanism. Similarly, the capacity to implement risk-adjustment mechanisms and account for different risk populations when allocating resources requires sufficient data and specialized human resources. Finally, capacity is needed to conduct cost analysis for providing the benefit package, taking into account the variability in cost structures among local settings.

Related to the previous points, there are several capacities related to monitoring, evaluation and accountability that can act as enablers for a well-functioning capitation scheme. Quality indicators and information systems can help to inform these indicators, including electronic medical records and other administrative data sources that allow monitoring of providers without dependence on self-reporting of indicators. Moreover, administrators of the capitation should be accountable for the continuity of care, with transparent evaluation schemes, indicators for monitoring their progress and evaluation linked to incentives, incentivizing collaborative and integrated work among different providers involved in patient care.

Even with these elements covering a wide range of dimensions, there are some conditions that were identified by Chilean key-informants as the most relevant:

The first is to have a well-structured PHC with multi-disciplinary teams within organized health care networks. *"(...) in order for us as a country to have per capita financing, there is a whole story behind a (health system) network structure that accounts for who to finance by capitation model"* (PM-4).

Second, an explicit model of care is considered as a necessity to adequately orientate the actions of providers towards common health systems goals. Therefore, the payment mechanism needs to be inserted within an institutional and organizational framework which ensures that systems goals are pursued. *"That has to be explicit, that is, it has to be disseminated, known, the country has to know the attention model, this is my management model and here this particular financing mechanism is inserted"* (PE-2).

Third, problems that arise from a capitation scheme that involves only PHC, as in Chile, should be taken into account and as a relevant lesson for other countries, since it violates the notion that capitation should incentivize comprehensive services across a continuum of care. Providing this type of care entails PHC services, but also specialist and hospital care in an integrated network in charge of a geographically assigned population. *"I believe that per capita systems that work, because they are good, work better when comprehensive institutions are being paid (...) the entire risk of managing a population in a territory is transferred to it"* (PM-3).

Fourth, the resources allocated through capitation need to be in accordance with the real cost of providing care to the population. This should involve the market cost of human resources and other relevant productive factors and must be aligned with the benefit plan guaranteed at PHC. *"That the value (transferred) represents real market values of what is the cost to provide a health service, so that it is 100% financed. Health care can be very*

good on paper, in theory, in planning, but if it does not have sufficient financial resources and competent teams and the desire to do it well, it doesn't work" (HP-5).

Fifth, local experts consider it highly relevant that the implementation of capitation payment requires a form of risk-adjustment to ensure that the allocation of resources includes an equity perspective. This can be done even in simpler forms in contexts where population level data at the local level could be scarce. "(...) using simple elements, you can make some adjustments, such as what we just talked to these three (the indexers) (...), that are three things that in general most countries will have that information. To say: "Well, I can know the age of my population, I can establish a criterion of poverty and geographic dispersion." Easy, simple, I think, if you think in Latin-America it is not a super elaborate thing, do you notice?" (HP-1).

Finally, the implementation of the capitation payment for PHC in Chile is considered a good example for other settings, since it has shown that it provides flexibility to local governments and providers to act according to what is needed in the local context, the current circumstances and the general guidelines of the health system as a whole. "There it is firmly demonstrated the importance of a financing system that allows one to have that agility, that reaction, that proactivity to act when it corresponds, as it corresponds, where it corresponds and with the corresponding priorities. This financing system has that value, and in Chile I believe that this has been exercised, and it will be possible to exercise much more to the extent that we unblock the obstacles that we have today implemented in our structure" (PE-1). The positive experience with the capitation in Chile is seen as a source of inspiration for other countries looking ahead to implement a capitation-based financing scheme for their PHC. "...Very few countries have implemented a system that has any rationale, and even less so using capitation. So, to show that there is a country, a health system, that can manage population health with levels above, let's say, above average or outstanding, but that one could demand more of it, because that is true, it is very important for countries. Let's say, and for them to build their own capitation scheme to use for resource allocation, that would be ideal" (HFE-2).

5. Discussion

This case study describes the main characteristics, challenges and opportunities of the capitation scheme for PHC in Chile. Some of the more salient elements of the design of the capitation scheme are summarised. First, capitation only incorporates PHC, not specialty services or in-patient care. Since there are no co-payments for PHC services, the system does not rely on prices for rationing care but rather on waiting lists, forgone care and care in the private sector. Second, the capitation of PHC is administered at the county-level. This feature does not incentivize efficiency and integration across the continuum of care which would require addressing all levels of care. Third, PHC is underfunded, that is, capita (and other concurrent payment mechanisms in place) are perceived as insufficient to cover the cost of the benefit package across different settings. Fourth, while the capitation rate is calculated through a common scheme and equal for all publicly funded PHC centres (see Background), it is not universal, since resources are allocated based on the "validated" population (registered and verified), not by census.

Fifth, multiple other funding flows, regulations and payment mechanisms interact (and eventually interfere) with capitation such as block payments (PRAPS), salaries of health personnel mandated by a national law, local resource generation by municipal taxes and a municipal redistribution pool. Sixth, risk-adjustment mechanisms (*indexadores*) exist to adjust for heterogeneity in needs and costs across territories, but they are insufficient to adequately address health inequalities. Seventh, the capitation scheme in Chile is based on an explicit benefit package ("*Plan de Salud Familiar*"), which has built-in incentive problems for coordination and comprehensiveness of care due to its focus on specific services.

Eighth, PHC managers and administrators of the capita (municipalities) are constrained in several ways. Although decentralization has allowed local authorities to set priorities according to their population's needs, centres have achieved limited autonomy because most financing schemes and regulations remain centralized. Rural centres are even less autonomous due to their financial constraints. At the local level, a substantial share of the capitation payment is used to pay salaries that are regulated by a national law. Additionally, no surplus is available as an incentive to provide high quality care at a low cost, mainly due to the insufficient amount transfer through capita that barely covers the real cost of providing the Family Health Plan.

Even with its limitations and challenges, capitation is considered a far better and more equitable payment mechanism compared with other competing alternatives such as FFS. Transition from a previous FFS payment mechanism (FAPEM) to capitation was positively valued by different actors. Additionally, Chilean capitation has had a positive impact on the equity of resource allocation among local governments, being increasingly efficient in the provision of greater resources to poorer municipalities.

These results indicate that capitation in the context of Chilean PHC shows many of the features associated with a successful capitation reform, such as an open enrolment policy and some degree of provider autonomy (Langenbrunner et al., 2009). Not only is there open enrolment, but also there are strong administrative information systems in place to ensure the credibility of the number of people enrolled in each centre and consequently, the final amount paid to municipalities (Langenbrunner et al., 2009).

One of the features that has been identified as problematic in Chile is the amount of the capitation rate and risk adjustment, which has been identified as a common problem in low-income countries such as Kenya (Obadha et al., 2018) and Burkina Faso (Robyn et al., 2014). Even for a high-income country from an emergent economy with substantial investment on health over the last decades, ensuring adequate public funding to PHC is still a challenge. We also found that public financial management regulations were put in place, especially regarding salaries of PHC workers which significantly constrained local governments, thus limiting the extent in which incentives would improve PHC (Langenbrunner et al., 2009). Regulations at the national level constrained local governments' financial autonomy and made it impossible for them to generate any surplus that could be reinvested. Some countries implement capitation in order to enhance quality of care through competition (Mills et al., 2000). However, this is not the case in Chile since people are allowed to enrol only in public PHC centres located in the county they live or work in, which greatly reduces their options.

In terms of the concept of capitation, we found that some of its classic features are not present in Chile, such as the aforementioned ability to retain surpluses or capitation of hospital services, which waters down the expected incentives associated with this payment mechanism. Moreover, our results indicate that there is an expert consensus about maintaining and expanding capitation to other levels of care, or at least introducing integration mechanisms throughout the public healthcare network. Finally, the implementation of capitation was, as seen in many other countries, just one part of a bigger reform that includes not only financial modifications but also changes in the model of care.

When we analyse the Chilean reform there are some findings that are relevant to other settings when embarking in capitation reform. First, policymakers should analyse the existing health system and payment mechanisms already in place to evaluate whether inserting a capitation payment mechanism in relation to other payment mechanisms could generate distortions or nullify the positive effects associated with per capita. They also need to consider the need to allocate sufficient funds to cover the cost of a health plan or portfolio of benefits plus a multidisciplinary team to deliver it. Unlike Chile, costs should be up to date and include administrative costs.

If primary care is decentralized or deconcentrated at the territorial level, policymakers will have to reflect on whether to transfer funds to the municipal level (or the corresponding local government unit), directly to individual providers or clinical centres. If the local level (municipality) is highly integrated into the health system and aligned with its objectives, it is likely the positive effects of capitation can be deployed without problems. In the Chilean case, the positive effects of capitation are hampered by the fact that funds are transferred to the municipality which pays the healthcare workers on a salaried basis with significant constraint due to national regulations. Moreover, health care providers at specialist and hospital level are not under the direction of a single administrative unit.

To implement capitation systems, it is crucial to consider the different technical capacities installed in the deconcentrated or decentralized units to which per capita transfers are to be made. Whether at the municipal or district level, an evaluation of the units in terms of management skills and abilities is needed to intervene if necessary. Theoretically, decentralized units with better management capacities could make better use of the transferred resources.

Finally, the limitations of the case study are presented. Since the analysis included only one case (Chile) the study findings have limited generalizability. Furthermore, the data collection technique used did not allow the generation of consensus and divergences within each cluster during that phase. Common and divergent themes and opinions were systematized at the time of the analysis of the individual interviews. The sample consisted mainly of technical experts and did not include community members or representatives. In the final sample experts working in the healthcare system, especially directors of primary care facilities and experts from outside the capital were underrepresented. Data available for the quantitative part: SINIM since 2001, the PRAPS contributions did not obtain specific information, years without data.

References

- Basilico, M., Weigel, J., Motgi, A., Bor, J., Keshavjee, S., 2013. Health for all? Competing theories and geopolitics. In Farmer, P., Kim, J.Y., Kleinmann, A., Basilico, M., Eds. Reimagining global health: an introduction. Los Angeles: University of California Press, pp 74-110.
- Becerril-Montekio V, Reyes JD, Manuel A. Sistema de salud de Chile. *Salud Pública Mex* 2011;53 supl 2:S132-S143.
- Boisier, Sergio. (2000). Chile: la vocación regionalista del gobierno militar. *EURE (Santiago)*, 26(77), 81-107. <https://dx.doi.org/10.4067/S0250-71612000007700004>
- Bustos, C. Una mirada historiográfica acerca del desarrollo de la institucionalidad sanitaria chilena::1889-1989, 2007. <http://repositorio.uchile.cl/handle/2250/108965>
- Congreso Nacional. Historia de la Ley 19.966 Mensaje del S.E. el Presidente de la República con el que se inicia un proyecto de ley que establece un régimen de garantías en salud. Chile, 2002. <https://www.bcn.cl/historiadelailey/nc/historia-de-la-ley/5682/>
- Debrott David (2015). Financiamiento de la atención primaria de salud municipal. Congreso de Salud Primaria Municipal, Viña del Mar.
- Frei Ruiz Tagle, Eduardo (2000) Bases programáticas del segundo gobierno de la concertación [en línea]. Disponible en: <http://repositorio.cultura.gob.cl/handle/123456789/4402> (Consultado: 23 abril 2021).
- Fryatt, R., 2016. Primary healthcare and international development assistance. In Goodyear-Smith, F., Mash, B. International perspectives on primary care research. Boca Raton, Florida: CRC Press, pp 109-111.
- FONASA Fondo Nacional de Salud. Informe CDD: Caracterización sociodemográfica y socioeconómica en la población asegurada inscrita. 2020. En: <https://www.fonasa.cl/sites/fonasa/documentos>
- Gideon, Jasmine. The Decentralization of Primary Health Care Delivery in Chile. *Public Administration and Development* 21, 223-231. 2001. DOI: 10.1002/pad.175
- Illanes, M.A. 2010. "En el nombre del pueblo, del Estado y de la ciencia..." Historia social de la salud pública en Chile 1880/1973. (Hacia una historia social del siglo XX). Santiago: Ministerio de Salud.
- Jimenez de la Jara, J., Romero, M.I. 2007. Reducing Infant Mortality In Chile: Success In Two Phases. *Health Affairs*, 26, no.2 (2007):458-465. doi: 10.1377/hlthaff.26.2.458
- Langlois, E. V., McKenzie, A., Schneider, H., & Mecaskey, J. W., 2020. Measures to strengthen primary health-care systems in low- and middle-income countries. *Bulletin of the World Health Organization*, 98(11), pp 781–791. <https://doi.org/10.2471/BLT.20.252742>
- Langenbrunner, J. C., Cashin, C., & Dougherty, S. O. (2009). *Designing and Implementing Health Care Provider Payment Systems*.
- Letelier, Luz M, and Paula Bedregal. 2006. "Health Reform in Chile." *Lancet* 368(9554): 2197–98.

López Campillay, Marcelo. ¿Salud para Todos? La atención primaria de salud en Chile y los 40 años de Alma Ata, 1978-2018. Santiago, Chile: Ministerio de Salud, 2018. 134 páginas (Nº4 Hitos de la Salud Pública en Chile)

Ministerio de Salud. Gobierno de Chile (1993). De consultorio a centro de salud: marco conceptual.

Ministerio de Salud de Chile. Gobierno de Chile (2011). Financiamiento de la Atención Primaria de Salud Municipal Evaluación de indexadores del per cápita basal. Subsecretaría de Redes Asistenciales.

Ministerio de Salud,. Gobierno de Chile (2013). 'Orientaciones para la implementación del modelo de atención integral de Salud Familiar y comunitaria dirigido a equipos de salud'. Subsecretaría de Redes Asistenciales, División de Atención Primaria. <https://www.minsal.cl/portal/url/item/e7b24eef3e5cb5d1e0400101650128e9.pdf> Accessed: 27/11/20

Ministerio de Salud. Gobierno de Chile (2019). Departamento de Estadísticas e Información en Salud (DEIS)

Ministerio de Salud. Gobierno de Chile (2019). Base de datos de establecimientos de la red asistencial. Departamento de Estadísticas e Información en Salud (DEIS).

Mills, A., Bennett, S., & Siriwanarangsun, P. (2000). The response of providers to capitation payment : a case-study from Thailand. *Health Policy*, 51, 163–180.

Obadha, M., Barasa, E., Chuma, J., & Kazungu, J. (2018). Health care purchasing in Kenya : Experiences of health care providers with capitation and fee - for - service provider payment mechanisms. *The International Journal of Health Planning and Management*, (October 2018), 917–933. <https://doi.org/10.1002/hpm.2707>

Peña, S., Ramirez, J., Becerra, C., Carabantes, J., & Arteaga, O. (2010). The Chilean Rural Practitioner Programme: a multidimensional strategy to attract and retain doctors in rural areas. *Bulletin of the World Health Organization*, 88(5), 371–378. <https://doi.org/10.2471/BLT.09.072769>

Robyn, P. J., Bärnighausen, T., Soares, A., Traoré, A., Bicaba, B., Sié, A., & Sauerborn, R. (2014). Provider payment methods and health worker motivation in community-based health insurance : A mixed-methods study. *Social Science & Medicine*, 108, 223–236. <https://doi.org/10.1016/j.socscimed.2014.01.034>

Sistema Nacional de Información Municipal (SINIM). <http://www.sinim.gov.cl>

Tetelboin, C. 2003. La transformación neoliberal del sistema de salud. Chile: 1973-1990. Reformas de primera generación. México DF: Universidad Autónoma Metropolitana.

Annexes

Annex 1: Summary of key-informants

Key-informants' main characteristics (n = 16)	PHC practitioners and managers	Policy makers	PHC policy expert	Health financing experts
Workplaces or relevant responsibilities	Family Medicine Specialist Directors of PHC local government (at municipality level) Director of a PHC facility	Former Ministers of Health Former directors of the Division of PHC (DIVAP División de Atención Primaria) at the Ministry of Health (MoH) Former Undersecretary of Health and Director of the National Health Fund (FONASA). Technical advisor of a Health District	Technical advisor of the MoH Director of Innovation and Integrated Healthcare Network Hub of The Pontificia Universidad Católica de Chile Former director of the Division of PHC at the MoH and Director of PHC local government (at municipality level)	Former director at the Health Superintendence Senior Health Economist, HSS, PAHO/WHO. Former advisor on health financing reform MoH Former director at PHC Finance Department of the Division of PHC (MoH)

Annex 2: Semi-structured interview guide (EN/SPA)

Introduction

• What is your work and academic experience on issues related to primary health care in Chile?
¿Cuál es su trayectoria laboral/académica en atención primaria de salud?

• How do you evaluate the organization of PHC in Chile to provide integrated services based on people?

¿Cómo evalúa la organización de la APS en Chile para proveer servicios integrados basados en las personas?

PHC financing and provision of integrated care

• What is your opinion on the contribution of the financing models used in Chile (incentives, PRAPS, capitation) in generating incentives for the provision of integrated people centred PHC services? Probe if they know evidence of impact in case of referring.

¿Cuál es su opinión sobre la contribución de los modelos de financiamiento usados en Chile (incentivos, PRAPS, capitación) en generar incentivos a la provisión de servicios APS integrados basados en las personas? Sondar si conocen evidencia de impacto en caso de hacer referencia.

From your point of view, what are the main facilitators and barriers in the way which PHC is organized and financed in Chile to deliver integrated care based on people?

A su juicio, ¿Cuáles son los principales facilitadores de la manera en que se organiza y financia la APS para entregar una atención integrada basada en las personas? Y ¿las principales barreras?

Capitation in Chile

• From your point of view, what are the most relevant characteristics of the capitation model for primary care implemented in Chile to date?

A su juicio, ¿cuáles son las características más relevantes del modelo de capitación para la atención primaria, que ha sido implementado en Chile hasta la fecha?

Implementation of capitation in Chile

• How does capitation payment interact with other incentives part of the system such as payments for hospital care, private providers and other funding flows to PHC?

¿Cómo la capitación se relaciona con otros incentivos que son parte del sistema, como los pagos a hospitales, prestadores privados u otros flujos financieros para la APS?

• What conditions and capacities are required to implement an effective capitation model in our country? Look into aspects in regards of technology, local capabilities, technical and methodological capabilities, regulations, etc.

¿Qué condiciones y capacidades son necesarias para implementar un modelo de capitación efectivo en el país? Sondar aspectos tecnológicos, capacidades locales, capacidad técnica / metodológica, elementos jurídicos o normativos, etc.

Barriers and facilitators at different health systems levels

- What have been the main facilitators for the effective implementation of capitation in PHC in Chile? Probe for facilitators to local (municipal and health centres), meso (healthcare networks, National System of Health Districts) and macro (Ministry of Health, health system)

A su juicio, ¿cuáles han sido los principales facilitadores para la implementación efectiva de la capitación en la APS en Chile? Sondar por facilitadores a nivel local (municipal y centros de salud), nivel meso (redes, SNSS) y macro (MINSAL, sistema de salud).

- And, what have been the main barriers to the effective implementation of capitation in PHC in Chile? Look into aspects in regards of local barriers (municipalities or PHC facilities), meso level (health care networks) and macro level (MoH and health system)

¿Cuáles han sido las principales barreras para la implementación efectiva de la capitación en la APS en Chile? Sondar por barreras a nivel local (municipal y centros de salud), nivel meso (redes, SNSS) y macro (MINSAL, sistema de salud).

Impact on integration (and other outcomes)

- Has the capitation model implemented in Chile impacted on the quality of PHC care in Chile?
¿Cuál ha sido el impacto del modelo de capacitación implementado en Chile en la calidad de la atención?

- What has been this impact of the capitation model implemented in Chile on the integration of care?

¿Cuál ha sido el impacto del modelo de capacitación implementado en Chile en la integración de los cuidados?

- How has the resource allocation formulae contributed to increasing allocations to PHC / increasing the geographic equity of these allocations?

¿Cómo evalúa la contribución de las fórmulas de distribución de recursos para incrementar el pago a los establecimientos de APS y la equidad geográfica de estos?

Social-political factors for PHC financing and capitation

- How do social context and political economy influence financing of PHC in Chile?

¿Cómo el contexto social y la economía política han influido en el financiamiento de la APS en Chile?

- How can some of these forces be leveraged to generate additional resources for PHC?

¿Cómo se pueden aprovechar algunas de estas fuerzas para generar recursos adicionales para la APS?

- What socio-political and historically contingent factors have helped the design and implementation of capitation payment mechanisms for PHC in Chile?

¿Cuáles factores sociopolíticos e históricamente contingentes, desde su perspectiva, han ayudado tanto al diseño como a la implementación de mecanismos de pago basados en la capitación para la APS en Chile?

- What socio-political and historically contingent factors have hindered the design and implementation of capitation payment mechanisms for PHC in Chile?

¿Qué factores sociopolíticos o históricamente contingentes han obstaculizado el diseño e implementación de mecanismos de pago basados en capitación para la APS en Chile?

- Are there any country-specific characteristics or circumstances that may have critically influenced the development of capitation payment systems? Probe slow changing: e.g., socio-demographic, population density, ethnic diversity, culture situational (irregular events/ crises/ natural disasters/ windows of opportunity) + 'external factors' (presence of donors, influence of donors)

¿Cree Ud. que existen otras características o circunstancias específicas de nuestro país que puedan haber influido de manera crítica en el desarrollo de los pagos capitados? Sondar por factores sociodemográficos, densidad de población, diversidad étnica, eventos irregulares (desastres, pandemia, etc) o factores externos (presencia de donantes, influencia de los donantes).

Main lessons

- What changes/adaptations on the capitation payment system for PHC in Chile are needed to meet current / future challenges of the health system?

¿Qué cambios o adaptaciones en el sistema de pago por capitación para la APS en Chile, cree Ud son necesarios para enfrentar los desafíos actuales y futuros del sistema de salud?

- What are the lessons for other countries that can be taken from Chile considering a capitation payment system for PHC?

¿Cuáles son las lecciones que se pueden extraer para otros países, del sistema de pago por capitación existente en la APS chilena?