Introduction

It is a mild winter morning, August 2019, in the working-class neighborhood of Parque Patricios in Buenos Aires. Like any Monday, the Garrahan Hospital, the flagship pediatric hospital of Argentina’s public healthcare network, is bursting with activity. Parents and their children hurry through the sunny corridors on the lower level on their way to their medical appointments—the little ones in their parents’ arms, the older ones holding their hands or trotting along. On the second level, which is reserved for medical personnel, doctors, nurses and support personnel hurry in and out of the many offices that line up the corridors. One of these offices holds the Coordination Center for the Care of Congenital Heart Defects (Centro Coordinador de Derivaciones - CCC), the management center of Argentina’s Federal Network for the Care of Congenital Heart Defects (Red Federal de Cardiopatías Congénitas - FNCHD). Inside, the pediatric cardiologist on duty is in the middle of a telephone consultation with a colleague at the pediatric hospital of Chaco, a province located almost 1,000 kilometers from Buenos Aires. They are discussing the case of a newborn that is exhibiting symptoms of a congenital heart defect (CHD). The diagnosis, however, is inconclusive. Two sets of x-rays have failed to confirm the suspicion of pulmonary atresia, a malformation of the valve that controls the blood flow.
from the heart to the lungs; this CHD could explain the respiratory deficiency and bluish skin tone exhibited by the newborn.\footnote{2}

The CCC Coordinator joins in the consultation and, after evaluating the clinical evidence, makes the decision to formally diagnose the case as a CHD and sets to work identifying a hospital within the FNCHD network that can treat the newborn’s potential pulmonary atresia. The CCC information system reports that there is bed availability at the Garrahan Hospital itself. In Chaco, the newborn’s personal and clinical data are entered into the FNCHD information system. Within a few hours, the Garrahan accepts the request for the transfer of care, and arrangements are made to transfer the newborn and his family to Buenos Aires with the support of the Chaco provincial health ministry. The next day, at dawn, one of the Garrahan’s pediatric heart surgeons confirms the preliminary diagnosis of pulmonary atresia and successfully performs emergency cardiovascular surgery on the newborn, saving his life.

A decade earlier, before the implementation of the FNCHD, the outlook for this newborn would have been far less positive. Most likely, his heart defect would have gone undetected, as provincial hospitals and maternity facilities lacked both the training and equipment required for the timely diagnosis of CHDs. To discuss the case with colleagues in other provinces, the attending pediatric heart specialist would have had to rely on friendships and personal ties. If a transfer of care was deemed necessary, the attending heart specialist would have had to go to the hospital director’s office and carry out the tedious task of telephoning, one by one, other public pediatric hospitals in different parts of the country to see if they would accept the transfer or, at least, add the case to their already long waiting lists.\footnote{3} In many cases, the newborn would have died before the corrective surgery was performed.

The creation of the FNCHD transformed, in just a few years, the delivery of pediatric CHD care under Argentina’s public health system. This was achieved partly by expanding the system’s capacity through the allocation of additional budgetary resources, but mainly by improving the utilization of already existing capacity. Under the FNCHD, the different actors that make up the network—the national health ministry (MSN), provincial health ministries (MSPs) and participating public pediatric hospitals throughout the country—voluntarily agree to abide by the set of rules established under the FNCHD and to accept the CCC’s decisions to transfer CHD patients among hospitals within the network. This transformation was set in motion under \textit{Plan Nacer}/SUMAR, an innovative maternal and child health program for the uninsured that was implemented in Argentina with support from the World Bank.\footnote{4} The FNCHD succeeded not only in expanding and optimizing capacity for CHD care in the public health system, but also in ensuring equal access and quality of care for uninsured infants and children throughout the national territory.

This case study focuses on the development of a nationwide network for the diagnosis and treatment of CHDs for infants and children without access to private health coverage in the context of Argentina’s federal structure. It begins by describing the situation in terms of CHD diagnosis and care before the implementation of the FNCHD and the factors that prompted national and health authorities to make them a priority. It then describes the key elements of the overall design and the implementation strategy, as well as critical decisions that contributed to the FNCHD’s successful implementation. Particular attention is given to the adaptations made to \textit{Plan Nacer}, the umbrella maternal and child health care program under which the FNCHD was established, in order to respond to the specific characteristics of CHDs. The case study concludes by presenting the overall achievements associated with the FNCHD, and the lessons learned from Argentina’s experience that can be of use in the global discussion on how to make progress toward achieving universal and effective health coverage for all.\footnote{5} The main questions guiding the analysis are:

1. Why was the provision of equitable and adequate CHD care for uninsured infants and children prioritized under Argentina’s national healthcare agenda?

\begin{itemize}
\item \footnote{2} Dr. Eugenia Olivetti, CCC Coordinator; Personal interview, Aug. 2019.
\item \footnote{3} Cardiologist at the Hospital Pedro Moguillansky, Province of Rio Negro; as quoted in MSN, Plan Nacer and SUMAR (2013), Evaluación de la incorporación del Plan Nacer al Programa Nacional de Cardiopatías Congénitas; Document prepared for the dissemination of results. (https://www.argentina.gob.ar/sites/default/files/evaluacion_de_la_incorporacion_del_plan_nacer_al_programa_nacional_de_cardiopatias_congenitas.pdf).
\item \footnote{4} The FNCHD was first established under the second phase of the Plan Nacer (BIRF AR-7409), with coverage for uninsured infants and children under six. The SUMAR Program (BIRF AR-8062; BIRF AR-8853) continued to finance the FNCHD, while expanding its coverage to include all uninsured infants, children and adolescents 18 and under.
\end{itemize}
2. How are catastrophic illnesses associated with infant mortality, such as CHDs, different from routine preventive care? What were the implications for policy and program design?

3. How was a CHD care network for uninsured infants and children developed in a federal country with a fragmented, decentralized public health system such as Argentina?

4. How were the original financing, operational, and quality assurance mechanisms of Plan Nacer adapted to support the development of this network?

**Development Challenge**

The core development challenge was to reduce Argentina’s infant mortality rate (IMR). The IMR steadily declined during the 1990s, decreasing from 25.6 per thousand in 1990 to 16.3 per thousand in 2001. The downward trend, however, was reversed as a result of the economic crisis that shook Argentina’s economy in December 2001, with infant mortality increasing from 16.3 to 16.8 infant deaths per thousand live births between 2001 and 2002. The situation was far graver when disaggregated geographically, with infant mortality reaching almost 27 infant deaths per thousand in the poorest provinces of the country, and with a variation as high as three times between the provinces with the lowest and highest rates.

To address the deterioration of maternal and child health indicators as well as the surge in the number of people that lacked health insurance coverage, the government of Argentina began implementing Plan Nacer in 2004 with support from the World Bank. This innovative maternal and child basic health care program focused on reducing “easily reducible” or “soft” causes of infant mortality: those that could be avoided with relatively low-cost interventions, such as improved access and quality of pre- and postnatal care. Plan Nacer proved to be highly successful in improving the quality of preventive maternal and child health care and expanding access among the uninsured. Together with improved economic conditions, it helped reverse the surge in infant mortality and set the trend once again on a downward slope by the end of 2004. The next step was to focus on the so-called “difficult” or “hard” causes of infant mortality, CHDs in particular.

**Delivery Challenges**

Although access for medical care for CHDs is, in principle, universal under Argentina’s public healthcare system, actual access among uninsured infants and children was highly uneven, depending largely on the province of residence. The delivery challenges that prevented timely and equitable CHD diagnosis and treatment among those relying solely on the public health system were the following ones:

- **Insufficient service delivery capacity:** There was insufficient overall capacity of the public healthcare system (both infrastructure and human resources) to meet the existing need for diagnosis and surgical treatment of CHDs.

- **Fragmented service delivery:** High fragmentation of the public healthcare system at the provincial level resulting from Argentina’s federal structure generated, in turn, large disparities among provinces in their capacity to diagnosis and provide adequate treatment for CHDs. The system also lacked coordination mechanisms to transfer CHD cases across provinces. This led to inefficient utilization of existing capacity and uneven access and quality of care among residents of different provinces.

These barriers severely hindered the ability of Argentina’s public health system to adequately respond to the demand for medical services arising from CHDs. This gap between the demand for care and the system’s response capacity resulted in long waiting lists of infants requiring CHD surgery, many of whom died while waiting for their turn. Sadly, a large proportion of the 1,100 deaths of children under one that were caused by CHDs in 2006 could have been avoided with timely interventions.

**Context**

The IMR in Argentina exhibited a gradual but sustained decrease during the 1990s. This trend, however, reversed...
in 2002 as a consequence of the 2001-2002 economic crisis, which pushed over half the population into poverty and caused the deterioration of basic health indicators, including infant mortality. To address this situation and improve publicly provided maternal and child health services, Argentinean authorities launched Plan Nacer in 2004. Led by the MSN and financed by the World Bank, Plan Nacer had the dual objectives of increasing access to routine preventive health care for uninsured pregnant women and children under six, and improving the efficiency and quality of the country’s public health system.

The first phase of Plan Nacer was carried out in the provinces in the NOA and NEA regions, which exhibited the most unfavorable indicators of maternal and child morbidity and mortality. Plan Nacer proved to be highly successful in increasing both access and quality of health care for the target population. A rigorous impact evaluation of the first phase of Plan Nacer showed a statistically significant increase in the number of prenatal care visits and the likelihood of pregnant women receiving a tetanus vaccine. The impact evaluation also showed a positive impact on health outcomes, including a lower incidence of low weight at birth and lower neonatal mortality among in-hospital deliveries. Approximately half the reduction in neonatal deaths was attributed to better prenatal care, which was shown to reduce the incidence of low birth weight, while the other half was attributed to better postnatal care.

In November 2006, the MSN launched the second phase of Plan Nacer in the remaining provinces and the Autonomous City of Buenos Aires (CABA), thus expanding it to the entire country. MSN authorities also made the decision to move beyond preventive care and focus on infant mortality due to “hard” causes, which represented approximately 35 percent of all deaths of children under one. Within this group, CHDs were the primary cause, representing approximately one out of four deaths of children under one due to “hard” causes, many of which could be avoided through timely diagnosis and treatment.

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10 The nine provinces that participated in the first stage of Plan Nacer were located in Argentina’s northwest (NOA) and northeast (NEA) regions (Catamarca, Jujuy, Salta, Tucumán and Santiago del Estero in NOA; and Chaco, Corrientes, Formosa and Misiones in NEA).
12 FCEULP (2009).

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**The Implementation Process**

**First Steps: The National Congenital Heart Defect Program**

For years, pediatric heart specialists had called attention to the inability of Argentina’s public health system to satisfy the demand for CHD care. In 2003-2004, the MSN took the first step toward addressing this situation, instructing its Maternal and Child Health Directorate (Dirección Nacional de Maternidad e Infancia - DINAMI) to conduct a national survey to gather information on demand for CHD care and existing capacity. This survey provided, for the first time, an exhaustive list of all hospitals performing pediatric heart surgeries in the country (i.e., public, private and social-security hospitals), as well as reliable data on the total number of surgeries being performed each year, the level of care delivered by individual hospitals, their equipment needs, and their waiting lists. Based on this data, the MSN determined that the gap between demand for CHD care and existing capacity was approximately 1,000 to 1,200 cases per year, a deficit that led to a steady increase of the waiting lists year after year. Armed with the newly available information, in 2006 the MSN set up a CHD Working Group comprising DINAMI and heart specialists from the main pediatric hospitals in CABA, with the task of designing a national strategy to ensure timely diagnosis and treatment of CHDs.

The work of the CHD Working Group resulted in the creation of the National Congenital Heart Defects Program (Programa Nacional de Cardiopatías Congénitas - PNCC) in 2008. The main objectives of the PNCC were to eliminate the waiting list for pediatric CHD surgeries, to strengthen pediatric cardiovascular...
surgery centers, and to systematically monitor and evaluate their performance (see Table 1). The PNCC constituted Argentina’s first concerted efforts to meet demand for CHD care within the public healthcare system. It also introduced several innovative features, including the creation of an executive entity within the MSN—the CCC—to manage a consolidated CHD waiting list, creating a “nominalized” registry of CHD patients (i.e., with patients identified by name and last name, ID number, address, etc.), coordinating the transfer of care for CHD surgeries among hospitals, and making payments for such surgeries with a special MSN budget allocation. In a second stage, it was envisioned that the PNCC would also strengthen the capacity of surgical hospitals and set the foundations for the development of a network of CHD care, including the creation of a registry of pediatric CHD surgical hospitals, the certification of their level of care (i.e., their capacity to provide care for CHDs of different degrees of complexity), and the definition of standardized units of CHD care (“modules”) and their corresponding costs.

The first stage of the PNCC constituted an important step forward, as it brought visibility to CHDs as an important cause of infant mortality, and laid the conceptual foundation for a nationwide network of CHD care. It also had some tangible results in eliminating the existing CHD waiting list, as it coordinated and financed CHD surgeries for roughly 90 percent of the 1,083 children who were on the waiting list in 2008. The overall capacity for CHD care, however, remained unchanged and, as a result, a new waiting list was generated that same year. The initial experience of the PNCC proved that, to permanently eliminate CHD waiting lists, it was necessary to develop a comprehensive strategy to address the structural barriers that limited the capacity of the public health system to provide adequate CHD care.

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**BOX 1. NATIONAL CONGENITAL HEART DEFECT PROGRAM (PROGRAMA NACIONAL DE CARDIOPATÍAS CONGÉNITAS - PNCC)**

**First Stage: Elimination of the CHD waiting lists**
- Nominalized Registry of CHD Patients
- Categorization of CHD patients on the waiting list by type of CHD pathology and surgical urgency
- Initial list of hospitals with capacity to perform pediatric heart surgeries
- MSN budget allocation for the payment of CHD surgeries

**Second Stage: Strengthening capacity for CHD surgical treatment**
- Acquisition of equipment for hospitals performing CHD surgeries
- Ongoing updating of the waiting list; coordination of the transfer of care of CHD patients; coordination of post-surgery treatment; evaluation of results
- Development, monitoring and updating of a National Registry of Congenital Heart Defects (RNCC) for the registration of CHDs diagnosed in all patients under 15 years of age
- Development of a Registry of Pediatric Cardiovascular Surgical Centers (Registro de Centros de Cirugía Cardiovascular Pediátrica - RCCP), including their level of care category according to the criteria established by the MSN
- Invite other public and private hospitals to register in the RCCP, reaffirming the principle of free competition and equal opportunities for health care providers throughout the country
- MSN budget allocation for the implementation and support of the PNCC

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**The Incorporation of the PNCC into Plan Nacer**

In 2009, new authorities were appointed to the MSN, who, as a result of their previous experience at the MSP in the province of Tucumán, had a strong understanding of both the provincial perspective and the potential of Plan Nacer. In their view, the challenge for CHDs was to overcome the fragmentation of the health system. To achieve this, they turned to Plan Nacer, which they considered the natural vehicle to implement MSN policies...

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17 The Coordinating Center for Congenital Heart Diseases was created through Resolution No. 1/2008 of the DINAMI.
18 “The PNCC brought to the light the problem of congenital heart disease at the national level, pediatric CHD in particular. For the first time heart specialists were able to stand before the hospital authorities and say: This is the data; this is important and has ministerial support.” Dr. Cristian Kreutzer, Head of Cardiovascular Surgery at the Hospital Zonal General de Posadas; as quoted in MSN and SUMAR (2016).
19 “The 2008 PNCC achieved the elimination of the CHD waiting list for the first time.” Dr. Julio Vallejos, Executive Director of the Juan F. Cabral de Corrientes Cardiology Institute; as quoted in MSN and SUMAR (2016).
20 Dr. Juan Luis Manzur, Minister MSN (2009-2015); Dr. Máximo Diosque, Vice Minister, MSN (2009-2013).
at the provincial level. Thus, hoping to capitalize on its demonstrated effectiveness, the decision was made to incorporate CHD care into the package of health benefits provided under Plan Nacer to support the development of a comprehensive and sustainable service model to ensure equitable and adequate CHD diagnosis and care nationwide.

Plan Nacer

Plan Nacer had two objectives that went hand in hand: i) to increase access to medical care for uninsured pregnant women and children under six; and ii) to improve the efficiency and the quality of care under Argentina’s public health system by aligning the strategic priorities of the MSN with the actions of provincial governments and health providers.

To increase access to preventive maternal and child health care within the target population, Plan Nacer provided its beneficiaries with an explicit set of health care benefits, with the goal of stimulating demand for preventive care within the target population. These benefits, together with the corresponding clinical and data recording protocols, were applied uniformly throughout the country. In addition, Plan Nacer supported the identification of the target population at the individual level ("nominalización") and the systematic development of beneficiaries’ medical records ("historia clínica"), moving beyond aggregate measures of service provision to focus on individuals.

To improve efficiency and quality of care, Plan Nacer introduced innovative results-based financial incentives aimed at aligning the policy priorities of the MSN with the actions of both provincial governments and health care providers. At the provincial level, Plan Nacer supported the creation of public maternal and child health insurances (Seguros de Salud Provinciales - SSPs). The funds transferred from the MSN to each provincial insurance was based on two criteria: i) capitation payments based on the number of eligible beneficiaries enrolled in the program; and ii) the achievement of health outcomes measured according to a set of ten indicators established by the MSN ("trazadoras" or "tracers"). Thus, financial incentives received by each province depended not only on the size of the target population (i.e., the number of uninsured mothers and their children residing in each province), but also on the province’s performance in terms of program enrollment and health outcomes.

At the service provider level, Plan Nacer replaced traditional budget allocations with a financial mechanism that linked payments with the provision of services at specific standards of care and data recording. This encouraged service providers to improve both the number and quality of services being provided. Health providers were given autonomy over the use of funds, which proved to be a critical factor in ensuring the impact of these financial incentives.

By 2009, Plan Nacer was being implemented in all 24 provincial jurisdictions and exhibiting notable success in the achievement of its objectives. Plan Nacer was successful in expanding access to preventive maternal and child health care services, which improved health outcomes among its beneficiaries. In addition, the financial incentives were working as envisioned, inducing provincial governments and health care providers to implement the MSN’s policies. After five years of implementation, Plan Nacer exhibited significant strengths, including: i) strong management and technical capacity at the national and provincial levels; ii) considerable “capillarity” (extensive territorial presence) throughout Argentina, reaching not only provincial governments but also service providers; and iii) a reputation as a “reliable financier” and trusted partner. These would prove critical when tackling the CHD challenge.

The CHD challenge

Given the differences between CHDs and the preventive maternal and child health care supported under Plan Nacer; the incorporation of CHD coverage into Plan Nacer represented significant challenges (see Table 2). The first major challenge was posed by differences in the demand for services. While Plan Nacer was designed to support universal, low-cost, low-complexity preventive health care services, a large proportion of CHDs are considered to be “catastrophic diseases,” characterized by low prevalence but highly complex, costly treatments.

21 Dr. Máximo Diosque, Former Vice-Minister MSN; Personal interview, Aug. 2019.
22 Benefits for uninsured pregnant women under Plan Nacer included, among others, pre- and post-natal care, lab work and echography and deliveries, including induction and C-section. Benefits for children included, among others, incubators, regular vaccinations, nutrition and development, and treatment of respiratory diseases, diarrhea and local bacterial infections.
24 FCEULP (2009).
25 Gertler et al. (2014).
26 Gertler et al. (2014).
27 Dr. Máximo Diosque, Former Vice-Minister MSN; Personal interview, Aug. 2019.
The second challenge was that only a few provinces had the capacity necessary to treat CHDs. In 2008, only eight provinces and CABA had pediatric hospitals with a level of care adequate for the treatment of high-complexity CHDs.

### Understanding the CHD challenge

Both MSN authorities and the Plan Nacer management team were acutely aware of the importance of fully understanding the dynamics of CHD care before plunging into action. Thus, in 2009 they commissioned an in-depth diagnostic study to determine the existing capacity for CHD surgical treatment in public pediatric hospitals, its growth potential and the overall costs of including CHD care coverage under Plan Nacer’s package of benefits. The diagnostic study was conducted by the School of Economics at the University of La Plata.

This study, which involved eight months of intensive fieldwork, collected detailed information on individual pediatric heart hospitals throughout the country through field visits, personal interviews and focus groups. In addition, an in-depth cost assessment was conducted of the costs associated to CHD treatment by level of care (i.e., surgical complexity) and the age of the patients.

This diagnostic study yielded a crucially important understanding of the constraints limiting the expansion of CHD care, as well as the bottlenecks exacerbating the existing deficiencies in quality and access. The study also identified shortcomings in the mechanisms of the PNCC that hindered its effectiveness (Table 2). The main findings can be summarized as follows:

- **Capacity constraints:** The data collected under the diagnostic study confirmed that the aggregate capacity for pediatric heart surgeries was insufficient to meet the demand for CHD treatment at the national level. This lack of capacity, in turn, was partly the result of insufficient resources, including human resources, equipment and supplies. The study also identified the sequencing in the implementation of the PNCC as a key weakness, as it focused on the elimination of the waiting list without first providing surgical hospitals with the resources to adequately diagnose and treat CHDs.

- **Organizational constraints:** The diagnostic study made it apparent that much of the problem resulted from the lack of coordination between the different players, with the transfer of care being done in an ad hoc manner and without clear criteria. This, in turn, prevented the efficient utilization of the existing capacity. While some surgical hospitals had idle capacity (particularly provincial hospitals), others were overrun by the demand for care (particularly those located in CABA). Likewise, there was a generalized bias towards low- and medium-complexity surgeries, regardless of the hospital's level of care. The Garrahan Hospital, for example, performed a large volume of CHD surgeries of medium complexity despite having the highest level of care of all pediatric hospitals in the country. In addition, there were no clear criteria for the prioritization of CHD cases on the waiting lists within the various surgical hospitals.

- **Financial constraints:** A thorough study of the costs associated with CHD treatment, surgical procedures in particular, was conducted as part of the diagnostic study. The results indicated that the payments

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28 Buenos Aires, Córdoba, Corrientes, Neuquén, Mendoza, Santa Fe, Salta and Tucumán.

29 The diagnostic study was conducted by the School of Economics at the University of La Plata.

30 FCEULP (2009).

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### TABLE 1. MAIN DIFFERENCES BETWEEN PREVENTIVE MATERNAL AND CHILD HEALTH CARE AND CHD CARE

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Preventive Maternal and Child Health Care</th>
<th>High Complexity CHD Care</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Differences in the Demand for Care</strong></td>
<td>Universal demand associated with population growth</td>
<td>Low prevalence</td>
</tr>
<tr>
<td>Complexity of health care services</td>
<td>Low complexity</td>
<td>High complexity, with different gradients</td>
</tr>
<tr>
<td>Cost of health care services</td>
<td>Low cost</td>
<td>High cost, which in some cases can lead to financial imbalances in provincial health spending</td>
</tr>
<tr>
<td><strong>Country-Specific Differences in the Supply of Care</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geographical distribution</td>
<td>Highly decentralized and dispersed in the territory of the 24 provinces</td>
<td>Highly centralized, particularly surgical treatment</td>
</tr>
</tbody>
</table>
GLOBAL DELIVERY INITIATIVE

**TABLE 2. MAIN CONSTRAINTS IN ARGENTINA’S CHD CARE**

<table>
<thead>
<tr>
<th>Capacity Constraints</th>
<th>Organizational Constraints</th>
<th>Financial Constraints</th>
<th>Administrative Constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient aggregate service provision capacity</td>
<td>Insufficient service capacity to meet aggregate demand for CHD treatment</td>
<td>PNCC payments for CHD treatment insufficient to cover actual treatment costs (indirect costs of hospitalization and medication in particular)</td>
<td>Lack of supporting technological tools</td>
</tr>
<tr>
<td>Uneven service capacity at the provincial level</td>
<td>Only 9 of the 24 provincial jurisdictions with surgical capacity to treat CHDs, resulting in large differences in access to CHD care at the provincial level</td>
<td>PNCC payments for CHD treatment and purchases of equipment that had been approved under the PCNN had never been disbursed or completed due to the lack of adequate administrative mechanisms. In the case of high-complexity CHDs, the gap was even larger, with PNCC payments representing 55.7 percent of direct costs and as little as 7.8 percent of total costs for specific types of CHDs.</td>
<td>Lack of supporting administrative mechanisms</td>
</tr>
<tr>
<td>Lack of coordination mechanisms for transfer of care</td>
<td>Ad hoc transfer of care of CHD cases</td>
<td>Inefficient use of the existing capacity, with idle capacity in some hospitals (especially at the provincial level) and long waiting lists in other hospitals (particularly in CABA)</td>
<td>Lack of supporting administrative mechanisms for transferring payments and equipment from the MSN to surgical hospitals</td>
</tr>
<tr>
<td>Inefficient utilization of existing capacity</td>
<td>Lack of alignment between the complexity of CHD cases and the level of care of surgical hospitals to which they are assigned</td>
<td>Generalized bias towards low and medium complexity surgeries, regardless of the surgical hospital’s level of care</td>
<td>Lack of technological tools and trained staff to support the reporting and transfer of care of CHD cases</td>
</tr>
<tr>
<td>PNCC payments for CHD treatment</td>
<td>Lack of clear and objective criteria for the prioritization of CHD cases within surgical hospitals</td>
<td></td>
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<td></td>
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</table>

under the PNCC were well below actual treatment costs. In the case of low-complexity CHDs, PNCC payments represented only 75 percent of the actual direct costs and 66.2 percent of the total costs (i.e., including indirect costs, such as post-surgical care and medications). In the case of high-complexity CHDs, the gap was even larger, with PNCC payments representing 55.7 percent of direct costs and as little as 7.8 percent of total costs for specific types of CHDs.31

### Administrative limitations
The diagnostic study also showed that the payments for CHD treatment and purchases of equipment that had been approved under the PCNN had never been disbursed or completed due to the lack of adequate administrative mechanisms. Another administrative drawback was the lack of administrative staff and supporting technological tools to ensure the accurate and timely registration of CHD cases in the RNCC. This, in turn resulted in errors and delays in the PNCC consolidated CHD waiting list, hindering timely resolution of CHD emergencies.

### Target population
Analysis of the socio-economic characteristics of the patients on the PNCC waiting list indicated a significant overlap between CHD patients and the population covered under Plan Nacer. Roughly 70 percent of the infants and children on the PNCC waiting list in 2008 also met Plan Nacer’s eligibility criteria, providing further evidence to support the decision to incorporate CHDs into Plan Nacer.

Based on the diagnostic study, the MSN authorities concluded that the existing shortcomings in CHD care could not be addressed by simply allocating more resources to hospitals. Instead, the fragmentation of the CHD delivery system had to be overcome by integrating individual hospitals into a nationwide CHD network.32

### The creation of the FNCHD
In 2010, CHD care was formally included in the package of benefits provided under Plan Nacer. To continue to participate in Plan Nacer (and receive its funding), provincial jurisdictions were required to join a newly established FNCHD. Thus, under the umbrella of Plan Nacer...

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31 FCEULP (2009).

32 Dr. Máximo Diosque, Former Vice-Minister MSN; Personal interview, Aug. 2019.
The Establishment of Argentina’s Federal Network for the Care of Congenital Heart Defects

**The Establishment of Argentina’s Federal Network for the Care of Congenital Heart Defects**

**FIGURE 1. FUNCTIONAL STRUCTURE OF THE FNCHD**

Source: MSN and SUMAR (2016).

Nacer, the MSN also signed agreements with health authorities in all provincial jurisdictions (23 provinces and CABA) to formally join the FNCHD. The decision of the MSN authorities to utilize Plan Nacer as leverage was critical in ensuring broad participation in the FNCHD.

The underlying design of the FNCHD reflects the guiding principles of the PNCC as well as the main findings of the diagnostic study. Under the FNCHD framework, there are three main actors:

- **The CHD Care Coordination Center:** The CCC constitutes an important institutional innovation within Argentina’s public healthcare system, as it helps optimize the utilization of existing resources across provincial jurisdictions. The CCC is responsible for managing the registration and transfer of care of CHD patients and for auditing and overseeing the delivery and quality of CHD surgeries. Physically, the CCC is strategically located at the Hospital Garrahan, the most renowned pediatric hospital in the country and a central node of the FNCHD. Institutionally, the CCC is housed under the DINAMI within the MSN.

- **FNCHD hospitals:** Participating public provincial hospitals are the operational nodes within the FNCHD. Despite being under the jurisdiction of different provinces, they follow common rules that regulate the FNCHD’s operation. Prior to joining the FNCHD, provincial hospitals are evaluated by the MSN and classified into two large categories according to their capacity for CHD diagnosis and treatment. The first group comprises “treating hospitals,” which have surgical capacity for the treatment of CHDs of low, medium or high complexity. The second group comprises “referring hospitals,” which are responsible for diagnosing CHD cases and reporting them to the CCC, as well as for post-operative care and patient follow-up. When the FNCHD was first established, there were 16 treating hospitals located in eight provincial jurisdictions and CABA, and more than 50 referring hospitals distributed across all the provinces nationwide.

- **Provincial CHD networks:** Primary health care networks at the provincial level are the first point of contact between patients and their families and the public healthcare system, and play an important role in ensuring early CHD detection. Under the FNCHD, provincial governments are responsible for the establishment and functioning of their corresponding primary CHD networks. Referring hospitals, in turn, are responsible for interacting with primary health care facilities within the province to ensure the timely diagnosis and reporting of CHD cases.

**Adapting Plan Nacer to CHD characteristics**

The organization of a national network of CHD care, beyond the orbit of individual provinces, significantly altered the traditional division of labor between the

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33 The Plan Nacer Framework Agreement is formally established in MSN Resolution No. 327/2011 of March 2011.

34 An additional treating hospital in the province of Salta joined a year after the establishment of the the RFCC.
In the context of preventive maternal and child primary care, Plan Nacer assigned a central role to MSPs, with the MSN being responsible mainly for stewardship, financing and the assessment of provincial performance. In the CHD adaptation of Plan Nacer, the MSN takes on a much more prominent role, being also responsible for the selection of service providers, the purchase of services, the coordination of the FNCHD network and the administration of its financial resources. The main differences in the design of Plan Nacer for the two interventions are summarized below (Table 3).

### Table 3. Main Differences in Plan Nacer for Preventive Maternal and Child Health Care and CHD Treatment

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Preventive Maternal and Child Care</th>
<th>High Complexity CHD Care</th>
</tr>
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<tbody>
<tr>
<td>Selection of participating service providers</td>
<td>By MSPs</td>
<td>By the MSN, based on ex-ante accreditation of the hospital’s level of care and its incorporation into the National Registry of CHD Providers</td>
</tr>
<tr>
<td>Service agreements</td>
<td>Between MSPs and service providers within each province</td>
<td>Between MSPs and all FNCHD hospitals, both inside and outside the province</td>
</tr>
<tr>
<td>Selection of service providers responsible for care</td>
<td>Any participating service provider within a province</td>
<td>Treating hospital designated by the CCC</td>
</tr>
<tr>
<td>Price definition</td>
<td>By MSPs</td>
<td>By the MSN</td>
</tr>
<tr>
<td>Transfer of SSP funds</td>
<td>To the province</td>
<td>To the Solidarity Fund, which is administered by the MSN</td>
</tr>
<tr>
<td>Payment to service providers</td>
<td>By MSPs</td>
<td>By the MSN</td>
</tr>
<tr>
<td>Use of funds by service providers</td>
<td>At the discretion of individual service providers in accordance with provincial guidelines</td>
<td>Each treating hospital and the province propose an Investment Plan that must be accepted by the MSN</td>
</tr>
<tr>
<td>Performance assessment</td>
<td>At the province level (&quot;trazadoras&quot;)</td>
<td>At the hospital level (&quot;scoring&quot;)</td>
</tr>
</tbody>
</table>


MSN and the MSPs for CHD care. This required significant modifications in Plan Nacer’s original design. In the context of preventive maternal and child primary care, Plan Nacer assigned a central role to MSPs, with the MSN being responsible mainly for stewardship, financing and the assessment of provincial performance. In the CHD adaptation of Plan Nacer, the MSN takes on a much more prominent role, being also responsible for the selection of service providers, the purchase of services, the coordination of the FNCHD network and the administration of its financial resources. The main differences in the design of Plan Nacer for the two interventions are summarized below (Table 3).

### 1. Selection of participating service providers:

The selection of service providers for preventive maternal and child health care services under Plan Nacer is carried out at the provincial level. Alternatively, the participation of treating hospitals in the FNCHD network is defined at the national level. To join the FNCHD, treating hospitals are required to register with the National Registry of CHD Providers (Registro Nacional de Prestadores para la Atención de Cardiopatías Congénitas). In addition, they have to meet rigorous requirements (in terms of infrastructure, equipment, training and experience of the pediatric heart surgeons, as well as the number of annual surgeries) that determine their level of care within the FNCHD, thus enabling them to perform CHD surgeries of low, medium or high complexity.

### 2. Service agreements:

Under the original design, each MSP signs agreements with service providers within its own province. Conversely, in the case of CHDs, MSPs are required to sign service agreements with all treating hospitals in the FNCHD, both inside and outside the province. These inter-jurisdictional agreements are one of the cornerstones of the FNCHD, as they allow the referral of CHD patients to treating hospitals in other provinces based on bed availability, level of care or geographical proximity.

### 3. Selection of service providers responsible for care:

Under the original design, any public service provider

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35 The main responsibilities of the MSN under the FNCHD include: i) overall conceptual design and financing strategy; ii) definition of production targets at the national, provincial and hospital levels; iii) attain consensus and institutional arrangements; iv) operational design of the FNCHD strategy, v) creation and operation of the CCC; and vi) training and technical assistance for provincial jurisdictions during implementation.

36 Under the MSN’s National Directorate of Health Regulation and Quality Assurance.
the preventive maternal and child health care services covered by Plan Nacer. For CHDs, however, the CCC is responsible for designating the treating hospital based on the urgency and complexity of the CHD case, as well as bed availability and geographical location of treating hospitals with the required level of care. The CCC operates 24 hours a day, seven days a week, 365 days a year. A shared digital platform allows the CCC to have real-time information on new CHD cases being diagnosed nationwide as well as bed availability in all treating hospitals.

Both referring and treating hospitals are responsible for reporting all diagnosed CHD cases to the CCC and accept its decisions regarding transfers. This represents a drastic change in the modus operandi of treating hospitals, which previously had full discretion regarding the acceptance of CHD cases—particularly those being referred by other provincial jurisdictions—and the internal prioritization of CHD surgeries. Treating hospitals offering lower levels of care are particularly affected, as in the past they might have treated CHD cases in-house, regardless of their complexity.

4. **Price definition:** In the case of preventive maternal and child health care services, unitary prices are defined at the provincial level to allow for regional differences in service delivery costs. Conversely, prices for CHD surgeries are defined by the MSN, with the price for individual units of CHD care determined based on the cost analysis derived from the 2009 diagnostic study. To correct the disparities with the actual service costs and payments under the PNCC, unitary prices under Plan Nacer include not only direct costs but also indirect hospitalization costs and medications. The decision was made to adopt uniform prices throughout the country to avoid discrimination by treating hospitals when deciding whether to accept CHD cases referred by the CCC. Uniform prices defined at the national level (rather than unitary prices determined by each province) prevents treating hospitals from selectively accepting CHD referrals based on the prices paid by different provinces, thus protecting equity in access to CHD care.

5. **Transfer of SSP funds:** Under Plan Nacer’s original design, SSF funds are transferred to provincial jurisdictions based on enrollment and achievement of “trazadora” targets. Under the CHD version, the MSN created a special fund, the so-called Solidarity Co-insurance Fund (Fondo de Reaseguramiento Solidario), to finance CHD diagnosis and treatment for all uninsured infants and children, regardless of their place of resident. This fund, which is funded by the MSN through an additional capitation payment to provinces participating in Plan Nacer, provides a mechanism for the collective purchase of CHD care on behalf of provincial jurisdictions. This approach in the form of a national public insurance offers several advantages, including greater diversification of financial risk and lower costs than the previously decentralized scheme.

6. **Payments to service providers:** While payments to service providers for maternal and child health care services are made by each provincial jurisdiction, payments for CHD surgeries under Plan Nacer are made directly by the MSN, which is also responsible for administering the Solidarity Co-insurance Fund.

7. **Use of funds by the service providers:** Unlike the use of funds received for the provision of maternal and child care services, which is defined by individual service providers in accordance to the guidelines of each province, the use of FNCHD funds was expected to be result of ex-ante analysis and planning. Specifically, treating hospitals were initially required to prepare a “Plan for CHD Surgery Production and Use of Funds” (Plan de Producción y Aplicación de Fondos). The objective of this exercise was to promote a more efficient use of the funds transferred to treating hospitals to ultimately increase the supply and improve the quality of CHD care. As part of this planning exercise, treating hospital were expected to project the number of CHD surgeries to be performed in a given year and the corresponding FNCHD payments, and to prepare a budget discriminating by expenditure category. Treating hospitals were then required to submit their plans to the MSN, which would validate the proposed production projections and the prioritization of investments. In recent years, the MSN has no longer required the submission of these plans, which have been replaced by rather bureaucratic ex-post reports on the use of funds.

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37 Dr. Santiago Cirio, Former Head of the Sub-Area of Plan Nacer’s Special Plans Unit and current Department Head of the Garrahan Hospital’s General Secretariat; MSN and SUMAR (2016).

38 Initially, all CHD surgeries were financed through the Solidarity Co-Insurance Fund with MSN funding. From 2012 onward, under the SUMAR Program, Plan Nacer’s successor, surgeries of low and medium complexity (considered non-catastrophic) became part of the Program’s Basic Health Services Plan and began to be co-financed by the provinces (15 percent) like the rest of the benefits. Payments for catastrophic CHD surgical interventions continued to be fully financed by the MSN.

8. **Performance measurement**: Within the framework of preventive maternal and child health care, performance is measured at the provincial level based on the “trazadoras.” Within the framework of the FNCHD, performance is measured primarily at the hospital level using a system of “scoring” that evaluates performance based on several dimensions.

**Addressing Delivery Challenges**

Several factors in both design and implementation of the FNCHD contributed to its successful implementation (generally, these were the same strengths seen in *Plan Nacer*). Design factors included result-based financial incentives in combination with a strong culture of monitoring and evaluation. In implementation, the main strengths included strong leadership (political, clinical and managerial), an effective communication strategy and the development of supporting operational tools.

**Design strengths**

**Use of incentives**

Although the implementation of the FNCHD brought substantial benefits at the aggregate level, the adoption of its governance model required significant sacrifices from individual actors. Provincial governments had to forgo some of the powers conferred to them by the constitution (such as the regulation, organization and M&E of public health care services within the province) and accept additional duties and responsibilities under the FNCHD (such as the establishment and management of the CHD primary network). Treating hospitals had to renounce autonomy in admission and prioritization of CHD cases and accept the decisions and scrutiny of the CCC (Table 4).

To overcome potential resistance and encourage the participation of different actors, the design of the FNCHD incorporates a set of incentives, adopting a results-based payment scheme similar to the one under *Plan Nacer* and complementing it with additional investments in participating hospitals.

**Financial incentives**

At the provincial level, the main incentive for participation in the FNCHD is the Solidarity Co-Insurance Fund, which generates an insurance mechanism for CHD care for the provinces with MSN financing. For those provinces lacking CHD care capacity, the Solidarity Fund eliminates the possibility of financial imbalances that may result from the high costs associated with CHD treatment outside the province’s own public healthcare system. For provinces with in-house CHD care capacity, the Solidarity Fund provides additional income to provincial treating hospitals through payments for the surgeries they perform.

MSN authorities used *Plan Nacer* itself as another powerful financial incentive to prompt provincial participation in the FNCHD. When CHDs were first included under *Plan Nacer* in 2010, provinces were required to join the FNCHD as a condition for their continuous participation. FNCHD participation has continued to be a requirement of World Bank-financed operations following *Plan Nacer*, contributing to its sustainability (i.e., SUMAR Program 2011-2022).

At the hospital level, the main incentive for FNCHD participation is the fee-for-service payments for CHD diagnosis, surgical treatment and post-operative care. These payments, which are financed by the Solidarity Fund, are transferred directly to FNCHD hospitals according to the services they provide. Although CHD surgeries were already funded by provincial budgets before the establishment of the FNCHD, MSN authorities made the decision to finance 100 percent of CHD surgical costs, ensuring a strong injection of funds to strengthen and expand the CHD care capacity of participating hospitals.

**Investment incentives**

In addition to the fee-for-service payments, participating hospitals also receive additional equipment and training.

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40 The main responsibilities of MSPs under the FNCHD include: i) maintaining unchanged the provincial budget allocation for CHD care; ii) signing service agreements with all treating hospitals in the FNCHD; iii) creating the provincial primary CHD network and designate a referring hospital that meets MSN and CCC’s guidelines; iv) providing the social services needed to the CHD patient and its family; v) complying with, and enforcing among provincial health providers, the clinical and administrative rules and procedures of the FNCHD.

41 As an illustration of the impact of costs associated with CHDs, hospitalizations for pediatric CHDs in the US accounted for 15.1 percent of the costs of all pediatric hospitalizations in 2009 (CDC; https://www.cdc.gov/ncbddd/heartdefects/data.html).

42 Vanina Camporeale, Operations Specialist and co-TTL of SUMAR Project; Personal interview, August 2019.

43 Dr. Martín Sabignoso, Ex-Coordinator of the Plan Nacer and SUMAR Programs and current Secretary of Equitable Health, MSN; Personal interview, Aug. 2019.
under the FNCHD. These investments not only provide additional incentives for FNCHD hospitals but also contribute to the expansion of the existing capacity for CHD care. When the FNCHD was first established, Plan Nacer made substantial investments in high-complexity equipment, such as neonatal ambulances and surgical equipment. This equipment was distributed among treating hospitals according to the needs identified in the diagnostic study to maximize their capacity for treatment. Deliveries of equipment for treating and referring hospitals have continued during the implementation of SUMAR.

In addition, the MSN carried out an intensive training program through Plan Nacer to increase clinical capacity within the FNCHD. Particular emphasis was placed on enhancing the diagnostic capabilities of medical personal throughout the FNCHD, with training being provided not only for treating and referring hospitals, but also the main maternity clinics and primary health care facilities within provincial networks. Training workshops and seminars were also offered at professional meetings of obstetricians and neonatologists to improve prenatal and postnatal CHD diagnosis as well as intensive care of

### TABLE 4. MOTIVATIONS OF THE MAIN ACTORS FOR THEIR PARTICIPATION IN THE FNCHD

<table>
<thead>
<tr>
<th>Main Actors</th>
<th>Incentives to Maintain the “Status Quo”</th>
<th>Incentives for Change</th>
<th>Added FNCHD Incentives</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSN authorities</td>
<td>Reticence to take on executive functions that are beyond the MSN’s constitutional duties, powers and responsibilities</td>
<td>Political commitment to further reduce infant mortality</td>
<td>Ability to coordinate and monitor the use of CHD resources in provincial jurisdictions to ensure efficiency as well as adequate and equitable access to CHD care throughout the country</td>
</tr>
<tr>
<td></td>
<td>Reticence to increase public spending on health at the national level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSP authorities in provinces with in-house capacity for CHD care</td>
<td>Resistance to forgo the MSP’s constitutional powers over the provincial public health system</td>
<td>Political commitment to further reduce infant mortality</td>
<td>Access to the Solidarity Co-Insurance Fund</td>
</tr>
<tr>
<td></td>
<td>Capacity for CHD surgical treatment within the province</td>
<td>Hidden subsidies for CHD patients from other provinces</td>
<td>Access to the Plan Nacer funds and participation in subsequent World Bank programs</td>
</tr>
<tr>
<td>MSP authorities in provinces without in-house capacity for CHD care</td>
<td>Resistance to forgo the MSP’s constitutional powers over the provincial public health system</td>
<td>Political commitment to further reduce infant mortality</td>
<td>Access to the Co-Insurance Solidarity Fund</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inability to provide adequate CHD surgical treatment within the province</td>
<td>Access to the Plan Nacer funds and subsequent World Bank programs</td>
</tr>
<tr>
<td>Treating hospitals</td>
<td>Resistance to forgo autonomy in admission and prioritization of CHD cases</td>
<td>Moral burden of making life or death decisions among pediatric heart specialists</td>
<td>Proceeds from fee-for-service payments from CHD surgeries to be invested within the hospital</td>
</tr>
<tr>
<td></td>
<td>Resistance to transfer CHD cases that were previously treated in-house</td>
<td></td>
<td>Additional equipment</td>
</tr>
<tr>
<td></td>
<td>Resistance to external scrutiny and additional bureaucracy</td>
<td></td>
<td>Additional training of medical and healthcare personnel</td>
</tr>
<tr>
<td>Referring hospitals</td>
<td>Resistance to external scrutiny and additional bureaucracy</td>
<td>Lack of peer support for pediatric heart specialists</td>
<td>Proceeds from fee-for-service payments for CHD diagnosis and post-operative care to be invested within the hospital</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cumbersome process for the transfer of CHD cases outside the province</td>
<td>Additional equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Additional training of medical and healthcare personnel</td>
</tr>
</tbody>
</table>
neonatal CHD patients. Hundreds of scholarships were granted to medical personnel to attend national and international CHD conferences, and FNCHD treating hospitals substantially increased the number of university scholarships and residences in pediatric cardiology. These actions led to a significant increase in the quantity and capacity of healthcare professionals for the diagnosis and treatment of CHDs.44

Quality assurance mechanisms
While the incentives embedded in the design of the FNCHD are powerful tools for aligning the efforts of individual actors, they are not sufficient to ensure compliance with the operational rules and quality standards defined under the FNCHD. For this reason, they were complemented with a robust set of quality assurance and M&E mechanisms.

Accreditation of treating hospitals
Treating hospitals are required to undergo a rigorous quality-based accreditation process to certify their level of care. Specifically, cardiovascular surgery units within treating hospitals have to comply with the organizational and functional guidelines defined by the MSN and meet the minimum annual levels of production (i.e., annual number of CHD surgeries) defined by the CCC for low, medium and high complexity levels of care.45 Once these requirements are met, treating hospitals are added to the National Register of CHD Providers, which allows them to perform CHD surgeries within the FNCHD according to their level of care. The accreditation of treating hospitals under the FNCHD represents an important innovation within Argentina’s public health system, as for the first time that health care providers were subject to a quality evaluation as a precondition for the delivery of services.46

By the end of 2010, 17 treating hospitals were accredited under the FNCHD.47 In 2018, the MSN conducted the first re-accreditation review, which took into consideration the performance each treating hospital since its inception in the FNCHD and their continuous compliance with the requirements established by the MSN and the CCC. As a result of this process, three treating hospitals lost their accreditation, a decision that was upheld by MSN authorities despite significant pressure from some of the affected provincial jurisdictions.48 Now that the FNCHD is fully operational and treating hospitals have had the opportunity to adapt to its requirements, MSN authorities will carry out the re-accreditation processes every two years.49 More frequent re-accreditations will help ensure that treating hospitals maintain the required quality standards.

Performance evaluation of FNCHD hospitals
The Plan Nacer team, in conjunction with the CCC, designed a set of M&E tools to monitor the performance of FNCHD hospitals. The routine utilization of these tools has contributed to the development of a strong culture of performance evaluation within FNCHD.

Scoring - A set of performance indicators has been developed to measure the performance of FNCHD hospitals. For referring hospitals, performance is measured in terms of the timeliness and accuracy of CHD diagnosis as well as the quality of post-operative care of CHD patients. For treating hospitals, performance is measured by the compound scoring indicator, which combines four dimensions of performance: i) contribution to the FNCHD (i.e., timely and complete reporting of medical records; the acceptance rate of cases referred by the CCC); ii) quality of care; iii) patient satisfaction; and iv) surgical outcomes, such as surgical success rates by level of risk with respect to international standards.

Scoring results are analyzed jointly by the CCC and the Plan Nacer team and subsequently communicated individually to each treating hospital and the corresponding MSP authorities. Scoring results also provide the foundation for the design and implementation of Action Plans to address weaknesses identified as part of the scoring process of individual treating hospitals. Hospital performance is also discussed in the national and regional meetings organized by the MSN as a way

44 Dr. Beatriz Alejandra Villa, Former CCC Coordinator and current Executive Medical Director of the Garrahan Hospital; Personal interview, Aug. 2019.
45 Accreditation standards were defined jointly by the MSN’s National Directorate for Health Regulation and Quality and the DINAMI, and validated by the FNCHD Advisory Council.
46 The minimum production levels defined by the CCC reflect international standards, which indicate a minimum threshold of at least 100 and 200 medium- and high-complexity surgeries, respectively.
47 Dr. Beatriz Alejandra Villa, Former CCC Coordinator and current Executive Medical Director of the Garrahan Hospital; Personal interview, Aug. 2019.
48 An additional treating hospital located in the province of Salta that had initially decided not to participate, joined the FNCHD in late 2010.
49 During the tenure of Adolfo Rubinstein, Minister MSN (2017-2018), Health Secretary MSN (2018-2019).
50 Dr. Diana M. Fariña, Former Director, DINAMI, MSN; Personal interview, Aug. 2019.
to foster commitment toward continuous improvement within the FNCHD.

*Internal clinical* audits - To evaluate the quality of CHD surgeries, the CCC and the *Plan Nacer* team have developed a program of field quality audits. Top pediatric heart surgeons serve as auditors and, as part of the audit, often attend CHD surgeries at the treating hospitals being audited. These field audits have provided the CCC and the *Plan Nacer* team with first-hand knowledge of the challenges faced by individual hospitals. They have also been an important source of technical support for medical personnel, the majority of whom had never experienced a quality audit before.  

*External audits* - Replicating the *Plan Nacer* model, payments for CHD services are subject to *ex-post* review by an external auditing firm. External auditors conduct desk-reviews of the medical records of randomly selected cases to verify that CHD services are consistent with the clinical protocols and data reporting procedures established by the MSN under the FNCHD. If not, payments are reduced accordingly.

**Implementation strengths**

**Political, clinical and managerial leadership**

The FNCHD benefited from strong leadership, not just politically but also at the clinical and managerial levels. This leadership was one of the key factors driving the drastic reorganization of the supply of CHD care under the country’s public health system.

**Political leadership**

The MSN played a central leadership role in the development of the FNCHD. As noted earlier, the MSN’s main motivation was to continue to reduce infant mortality. In tackling the challenges posed by CHDs, the MSN exhibited what can be characterized as “informed leadership.” Two instances provide a clear illustration of the importance given by the MSN to developing a clear understanding of CHDs before taking any action. One is the initial survey conducted by DINAMI to quantify the challenges faced by individual hospitals. They have also been an important source of technical support for medical personnel, the majority of whom had never experienced a quality audit before.  

The continuity of national authorities during the first six years of implementation provided a stable environment for the initial stages of the FNCHD. National-level support continued after a transfer of power between political parties following the 2015 and 2019 presidential elections, and remained in place at the time of publication in mid-2020; this meant that the FNCHD has received continuous government support without interruption for almost a decade.

**Clinical leadership**

The top pediatric heart specialists in the country played a central role in the design and implementation of the FNCHD, providing both invaluable clinical leadership and legitimacy throughout the process. In 2006, the MSN invited some of the top pediatric heart specialists in the country to be part of the CHD Working Group. They later participated in defining the operational rules of the FNCHD, as well as the requirements that treating

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51 “One of the key things I have learned at the CCC is the importance of performance evaluation. It is paramount that we evaluate ourselves, not as people, but as a service provider in each province,” Dr. Eugenia Olivetti, Coordinator of the CCC; as quoted in MSN and SUMAR (2016).


53 Vanina Camporeale, Operations Specialist and co-TTL of the SUMAR Project; Personal interview, Aug. 2019.

54 Dr. Pedro De Sarasqueta, a leading pediatrician and neonatologist in the Neonatal Intensive Care Unit of the Hospital Garrahan collaborated with the first CHD survey conducted by DINAMI and other subsequent studies. Drs. Andrés Schilter, Horacio Capelli, Cintia Croxato and Ricardo Magliola constituted the first CHD Working Group convened by Dr. Ana Speranza of DINAMI. See MSN and SUMAR (2016).
hospitals have to meet in order to obtain and maintain their accreditation. During the implementation phase, renowned pediatric heart specialists continued to play an important role as members of the FNCHD Advisory Council, which is responsible for evaluating results and making recommendations. The MSN’s decision to provide clinical experts with meaningful opportunities for participation ensured that the FNCHD strategy reflected the know-how and experience of critical clinical actors, and to give it legitimacy with MSPs and hospital authorities.

The alliance between the CCC and Plan Nacer was another critical factor. Plan Nacer took on operational aspects while the CCC retained full clinical leadership. As originally conceived, the initial composition of the CCC had representation from various high-complexity treating hospitals within the FNCHD. This brought transparency to the allocation of CHD cases to avoid biases and facilitate consultation between top specialists on the most complex CHD cases.

Managerial leadership

Another key factor in the successful implementation of the FNCHD was the collaborative approach to leadership exercised by the Plan Nacer team. At the national level, Plan Nacer worked very closely with the DINAMI during the design stage, and later on with the CCC, its strategic partner during the implementation stage. Provincial teams also adopted the collaborative approach of the Plan Nacer team, working closely with MSPs’ maternal and child health units.

Plan Nacer also contributed strong management and solid technical expertise at the design stage, initial implementation and day-to-day operation of the FNCHD. A special unit was established within its organizational structure, with four full-time professionals that were exclusively dedicated to the FNCHD. This special unit also received technical support from Plan Nacer technical staff, giving it access to a wide array of multidisciplinary expertise (e.g., doctors, economists, accountants, computer systems experts, sociologists, communications professionals). This is uncommon in the traditional structure of the public sector and was critical in achieving the profound organizational changes that were required by the FNCHD. The Plan Nacer team also worked very closely with provincial teams, providing them with technical support at every step during the implementation process. Likewise, provincial teams actively provided technical support to provincial referring and treating hospitals and primary CHD networks.

The CCC and Plan Nacer forged a strong relationship with all FNCHD actors. Their transparent and collaborative leadership style helped build trust and foster commitment among all actors involved. This trust allowed open discussions on the performance of individual hospitals and the network as a whole to jointly identify problems and explore potential solutions.

Communication and training

To achieve the coordination of the large network of more than 60 hospitals in 24 provincial jurisdictions, all actors participated in a demanding process of change and intense organizational learning. The Plan Nacer team took on this challenge, developing and implementing a robust communication campaign and training program with the support of the CCC. The initial focus was on providing all actors with a general knowledge of the FNCHD, its main objectives, the organizational structure, the responsibilities of individual actors and the incentives for their participation in order to develop a common understanding and foster their commitment. This was done through a series of national and regional meetings that brought together directors and other key medical and administrative personnel from participating hospitals, provincial teams of Plan Nacer, and critical MSP areas (e.g., maternal and child health, hospital supervision units).

Once the FNCHD was under implementation, Plan Nacer and the CCC conducted regular joint supervision visits to the provinces, to get first-hand knowledge on the challenges being faced by provincial hospitals, provide support to provincial teams for the

55 Juan P. Garrahan Hospital, Dr. Posadas General Zonal Hospital, Sr. María Ludovica Hospital, Dr. Ricardo Gutiérrez Children’s Hospital and Pedro D. Elizalde General Children’s Hospital.
56 Dr. Beatriz Alejandra Villa, Former Coordinator of the CCC and current Executive Medical Director of Garrahan Hospital; Personal interview, Aug. 2019.
57 Dr. Martín Sabignoso, Ex-Coordinator of the Plan Nacer and SUMAR Programs and current Secretary of Equitable Health, MSN; Personal interview, Aug. 2019.
58 The so-called Special Plans Unit.
59 Dr. Martín Sabignoso, Ex-Coordinator of the Plan Nacer and SUMAR Programs and current Secretary of Equitable Health, MSN; Personal interview, Aug. 2019.
60 "They were not bosses but leaders. It was a pleasure to hear what the CCC had to say," Dr. Alberto Robredo, Referring Cardiologist of the Maternal and Child Public Hospital of the Province of Salta; as quoted in MSN and SUMAR (2016).
61 “The FNCHD offers a combination of respect and technical expertise”, Dr. Josefa Rodríguez, Former Executive Director of Garrahan Hospital; as quoted in MSN and SUMAR (2016).
62 Dr. Martín Sabignoso, Ex-Coordinator of the Plan Nacer and SUMAR Programs and current Secretary of Equitable Health, MSN; Personal interview, Aug. 2019.
development of the primary CHD network, and promote overall collaboration among provincial actors. Together with national and regional meetings, these field visits served to create professional and personal ties between individuals, gradually transforming the FNCHD into a “living network.”

Plan Nacer also developed a training program focusing specifically on administrative and financial procedures. These training activities were aimed at administrative and accounting personnel of participating hospitals, who play an important role in ensuring that hospitals received payments for the services provided under the FNCHD. Most participating hospitals lacked sufficient internal administrative coordination, which hindered timely compliance with the FNCHD requirements. While training helped improve specific activities, such as billing, participation in the FNCHD also forced hospitals to improve their internal operational and administrative procedures.

Supporting tools

Rules and procedures

One important step to overcome the fragmentation that characterized CHD care prior to the implementation of the FNCHD was the creation of a common set of clinical and administrative protocols and procedures for all participants. The application of the FNCHD clinical and data-recording protocols was subject to verification by external auditing and a condition for payment eligibility, and was therefore taken seriously by medical personnel. Similarly, compliance with the FNCHD administrative procedures was deemed important by administrative personnel, as it determined if and when hospitals would receive payments for services rendered.

Clinical rules and procedures - With the support of the Advisory Council, the MSN defined operational guidelines and clinical protocols for CHDs that, in turn, became the basis for the accreditation requirements for participating hospitals. Likewise, the MSN and the Advisory Council jointly defined the flow of CHD patients within the FNCHD and the criteria to be used by the CCC when transferring responsibility for care among participating treating hospitals. Once implemented, these rules and procedures resulted in standardized clinical and patient management procedures being applied in all FNCHD hospitals. In the context of Argentina’s federal, decentralized organization, this standardization across provincial jurisdictions constitutes a major achievement.

Parallel efforts were undertaken to achieve the standardization of medical records, with data recording following precise protocols for CHD diagnosis, case reporting to CCC and RNCC, transfer of care, surgical treatment, surgical discharge and post-operative care. The standardization of the medical records not only contributed toward enhancing the quality of CHD care but also enabled the automatic exchange of clinical information between FNCHD hospitals and the CCC.

Administrative rules and procedures - Implementing the FNCHD also required the development of a common set of rules and procedures to manage administrative interactions within the network. The Plan Nacer team developed billing and payment process flows that had to be adopted by all participating hospitals and MSPs. In turn, administrative and financial procedures were firmly grounded in clinical protocols to maximize the FNCHD’s internal consistency. These procedures, which continued to be improved over time, covered the reporting of services rendered, billing, and the preparation of Production and Use of Funds Plans. To facilitate compliance, their adoption and implementation was supported with training and operations manuals.

Computerized management tools

Another factor that facilitated the implementation of the FNCHD was the development of computerized management tools to support the network’s efficient and transparent functioning. On the clinical side, the development of supporting information systems was

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63 Dr. Beatriz Alejandra Villa, Former Coordinator of the CCC and current Executive Medical Director of Garrahan Hospital; Personal interview, Aug. 2019.
64 “Our patient records are a ‘before’ and ‘after.’ Before we just had a notebook that has nothing to do with what we have right now, so the [impact of the program] on the development of our internal organization has been very high.” Referring cardiologist, Hospital Interzonal Especializado de Agudos Especialista en Pediatría Sor María Ludovica, Province of Buenos Aires; as quoted in MSN and SUMAR (2016).
65 In the case of the Children’s Hospital in Tucumán province, one of the greatest benefits for us has been to work within the Program’s patient management procedures. This has allowed us to order ourselves ... Before, this circuit was very disorganized, as each specialists carried out his/her own version depending at the hospital where he/she had been trained.” Dr. Patricia Baselga, Head of the Cardiology Service of the Hospital del Niño Jesús of the Province of Tucumán; as quoted in MSN and SUMAR (2016).
66 Vanina Camporeale, Operations Specialist and co-TTL of the SUMAR Project; Personal interview, Aug. 2019.
67 During the first 5 years of implementation, billing and payment procedures were revised eight times. Each new version constituted an improvement on the previous one, as reflected by the increase in amounts billed and payments made for surgical and hemodynamic interventions performed under the FNCHD.
necessary to ensure the standardization and compatibility of medical records and their availability at different nodes within the network. On the administrative end, specially designed management tools served to shorten the administrative times for the approval and payment of the services rendered.68

Referring and treating hospitals are required to submit medical reports at different stages of care so that the CCC can effectively monitor the patient’s condition from the initial diagnosis to the final release one month after surgical discharge. Initially, these reports were sent to the CCC via fax or email, which, while rudimentary, allowed the FNCHD to launch.69 Later on, the decision was made to develop an online information system to share the medical records of CHD patients in real time among all FNCHD hospitals. This was achieved in 2012, when the complete flow of clinical reports was incorporated into the platform of the MSN’s Integrated Health Information System of Argentina (SIISA). The use of the SIISA platform represented a significant improvement in the management and coordination of the FNCHD. One benefit has been the simplification of previously cumbersome procedures, such as the reporting of CHD cases to the CCC, which now can be done in just a few minutes from a computer terminal located in the hospital’s cardiology unit.70 Another benefit has been the development of the RNCC, which automatically consolidates information on all CHD cases reported to the CCC, making it possible for the MSN to build the first national database for this pathology.71

The Plan Nacer team also developed an online billing and payment system that has drastically simplified and speeded up the FNCHD’s financial administration, including the full standardization of the administrative times for the approval and payment of services.72

Results from the Implementation of the FNCHD

The implementation of the FNCHD had a swift and dramatic impact, as reflected in the surge in the annual number of surgeries, the virtual elimination of CHD waiting lists and an increase in the timely diagnosis of CHD cases. In 2003, 930 CHD surgeries were performed, with 1,992 infants on the waiting list. By 2012, the number of surgeries had increased to 1,832 and only 324 pediatric CHD patients remained on the waiting list. Once the initial backlog was resolved, the annual number of surgeries flattened, averaging around 1,600 annual surgeries between 2013 and 2019.73 Not only were the waiting lists eliminated, but the time elapsing between the diagnosis and the actual surgery also decreased dramatically, from an average of 28 days in 2013 to 16 days in 2019.74 The CCC has been at the center of these improvements, with cardiologists at referring hospitals reporting that, in their experience, CHD cases reported to the CHDs are referred to treating hospitals according to the rule—within 48 hours, and in cases of extreme urgency, in less than 24 hours.75

Another noteworthy achievement was the 70 percent increase in the diagnosis of CHD cases. CHD diagnosis in neonates (infants during the first four weeks after birth) increased roughly 100 percent, between 2011 and 2017. This, in turn, contributed to a drastic reduction in the average age at the time of diagnosis, from 30 months in 2011 to 6 months in 2017, which in turn significantly improved the chances of the patient’s survival.76

According to the MSN’s vital statistics, there was also a decrease in the number of deaths due to CHDs. In 2008, 847 children reportedly died from this cause, compared to 678 deaths in 2017, equivalent to a reduction in the IMR from CHDs from 1.13 to 0.96 deaths per thousand live births between 2008 and 2017.77 Although this reduction

68 Dr. Santiago Cirio, Former Head of the Plan Nacer’s Special Plans Unit and currently Department Head of the General Secretariat of the Garrahan Hospital; MSN and SUMAR (2016).
69 This modality presented several limitations such as unidirectional flow of information, illegibility of the reported data in the case of faxes, lack of uniformity in the reporting, and the need to manually process the information.
70 “Before the Program, the hospital’s director learned that we had a CHD patient because we had to go to the office to use the phone to try to get him/her admitted for surgery at another hospital. Currently, this no longer happens, as we can take care of it within the cardiovascular unit through SIISA and the Program’s information system.” Dr. Héctor Trungellit, Head of Cardiology, Eva Perón Children’s Hospital, Province of Santiago del Estero; as quoted in MSN and SUMAR (2019).
71 Dr. Martin Sabignoso, Ex-Coordinator of the Plan Nacer and SUMAR Programs and current Secretary of Equitable Health, MSN; Personal interview, Aug. 2019.
72 Dr. Santiago Cirio, Former Head of Plan Nacer’s Special Plans Unit and currently Department Head of the General Secretariat of the Garrahan Hospital; MSN and SUMAR (2016).
73 SUMAR (2019), Data provided at the time of the project’s closing as input for the preparation of the Implementation Completion and Results Report (ICRR).
74 CHD cases for which the indicated treatment was surgical treatment within 30 days. It is important to note that often the infant has to reach a certain minimum weight before the surgery can take place, for which the minimum lapse time possible will never be zero.
75 Cardiologist at the Hospital Pablo Soria; as quoted in MSN, Plan Nacer and SUMAR (2013).
77 SUMAR (2019), Data provided at the time of the project’s closing as input for the preparation of the SUMAR Implementation Completion Report. The reported data does not distinguished between public and private hospitals.
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cannot be attributed solely to the FNCHD, the general interpretation among national and provincial authorities is that it was an important contributing factor.78

The implementation of the FNCHD also made it possible to regionalize the treatment of CHDs. In 2017, only 1 percent of patients were treated outside the intended regionalization scheme. Likewise, the new organizational model served to increase the efficiency in the utilization of available resources. As an illustration, the percentage of high complexity surgeries performed at the Garrahan Hospital increased from roughly 60 percent to more than 90 percent between 2008 and 2009, showing a marked improvement in the alignment between the hospital’s level of care and the complexity of the CHD surgeries being performed.79

CHD patients also reported highly positive feedback regarding their experience as FNCHD users. A satisfaction survey conducted by Plan Nacer in 2013 showed that more than 90 percent of respondents considered the services they received as being good or very good (98 percent of users for CHD diagnosis, 98 percent for referring hospitals, 99 percent for treating hospitals, and 91 percent for post-operative care).80

**Concluding Lessons and Reflections**

Important lessons emerge from the implementation of the FNCHD that can be of use for development practitioners around the world as they design health programs and try to anticipate potential delivery challenges.

**Understanding a problem was deemed a prerequisite for action.**

A recurrent theme in the implementation of the FNCHD is the importance given by national health authorities to fully understanding the challenges posed by CHDs in the specific context of Argentina as a pre-condition for action. For example, the national survey conducted by the DINAMI in 2003-2004 enabled the MSN to take the first steps toward eliminating CHD waiting lists under the PNCC.

Another example was the diagnostic study commissioned by Plan Nacer to explore the feasibility of including CHDs under its benefit package, and how to do it in an effective manner. The contribution of this diagnostic study to the design of the FNCHD strategy adopted under Plan Nacer was paramount, as it helped clearly identify the structural constraints on the supply of CHD care and fine-tune the results-based system of financial incentives adopted for CHDs. MSN authorities considered the contribution of the diagnostic study to be of such importance that they subsequently adopted the same approach to assess the aggregate capacity of the country’s public health system for the treatment of hearing loss, chronic non-communicable diseases and assisted fertilization.

A well-designed system of incentives fostered cooperation in a federal, decentralized health care system.

To overcome individual actors’ resistance, the system of incentives underlying the FNCHD was designed to ensure that all actors benefited from their participation, with potential benefits offsetting individual sacrifices. The design of the FNCHD was based on a “win/win” model, in which all actors—both at the aggregate and individual levels—could benefit from participation, effectively aligning their efforts to ultimately advance the public good.

Results-based incentives were effective in encouraging higher levels of performance.

In the case of participant hospitals, incentives are designed not just to promote their participation but also to induce higher levels of performance. By tying financial incentives to performance under a fee-for service model, participating hospitals are encouraged to do “more,” as the results-based financial incentives encourage referring hospitals to diagnose more CHD cases and provide post-operative care to CHD patients. They also encourage treating hospitals to accept and treat CHD cases referred to them by the CCC. These results-based incentives have proven to be very effective in motivating hospitals to achieve higher levels of production, as shown by the

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78 Dr. Martín Sabignoso, Ex-Coordinator of the Plan Nacer and SUMAR Programs and current Secretary of Equitable Health, MSN; Personal interview, Aug. 2019.
79 Sabignoso (October 2019).
increase in CHD diagnoses and treatment, as well as the elimination of the waiting lists.

It is also important to note that both referring and treating hospitals received a substantial inflow of medical equipment and supplies as well as training of medical personnel, thus providing them with the necessary inputs to increase their levels of production. Moreover, the revenues generated from the fee-for-services they receive for CHD care under the FNCHD are invested within the hospitals’ cardiology units, creating a virtuous cycle in which higher production generates additional resources that, in turn, allow for the further expansion of their production capacity.

Quality assurance and M&E mechanisms were necessary for ensuring compliance.

While the results-based incentives embedded in the design of the FNCHD were powerful tools for aligning the efforts of individual actors, they were not sufficient to ensure compliance with the quality standards defined under the FNCHD. In other words, while the results-based financial incentives were effective in encouraging hospitals to do “more,” they were not sufficient to ensure they also do “better”—or at least “well”—in terms of quality. To this effect, the design of the FNCHD also includes a robust set of quality assurance and M&E mechanisms to ensure the quality of the services being provided by participating hospitals.

The first instance of quality assurance is the accreditation of treating hospitals. As a pre-requisite for participation, treating hospitals have to undergo an accreditation process that determines their level of care based on the quality-based criteria defined by the MSN and the CCC. Once a hospital is part of the FNCHD, its performance with regard to quality is monitored through three complementary M&E mechanisms. First, the “scoring” system provides transparent, objective and quantifiable measures of performance for both treating and referring hospitals. These scores allow for the comparison across hospitals that can help identify potential factors affecting quality. They also allow for the comparison of an individual hospital’s performance over time, showing its evolution. Second, through field visits of pediatric heart specialists to treating hospitals, the clinical audits provide the opportunity for in-depth qualitative supervision of the quality of CHD services from a clinical perspective. These two M&E mechanisms do not directly impact the receipt of fee-for-service payment. Instead, they provided the CCC and the Plan Nacer team with an ongoing measure of the quality of the performance of individual hospitals, helping detect potential problems and provide the necessary technical assistance. They also provide important inputs at the time of re-accreditation. In addition, they provide hospitals with valuable feedback regarding their individual performance. Third, the external audits provide an ex-post assessment of compliance with the clinical and data reporting guidelines and protocols under the FNCHD. When failures in compliance are identified, fee-for-service payments are adjusted accordingly.

Some factors of success are harder to replicate than others.

In addition to effective incentives and accountability mechanisms, a multiplicity of additional elements is required to sustain the commitment of participating actors. These include, among others, transparent and fair rules, genuine opportunities for participation, technical and institutional support during implementation, supporting operational tools, as well as an effective governance body for overall coordination and compliance assurance. In the case of the FNCHD, the confluence of these elements was the result of the strategic alliance between Plan Nacer and the CCC. All stages in the development of the FNCHD, from its original conception and design, to the building of the network, to its ongoing operation have benefited from the symbiotic relationship between Plan Nacer and the CCC. Of all the factors that have contributed to the success of the FNCHD, the combination of managerial and operational strength with undisputed clinical leadership in an environment of cooperation and mutual respect might be the hardest to replicate.
The Establishment of Argentina’s Federal Network for the Care of Congenital Heart Defects

### IMPLEMENTATION TIMELINE

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<th>Timeline</th>
<th>2004</th>
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<tr>
<td><strong>Plan Nacer/ SUMAR</strong></td>
<td>Plan Nacer (APL 1) begins implementation in nine provinces in NOA and NEA, introducing a health insurance system at the provincial level and an innovative system of results-based payments to provincial governments for provision of maternal and child health care benefits to uninsured pregnant women and children under 6.</td>
<td>Plan Nacer (APL 2) is expanded to include all 24 provincial jurisdictions.</td>
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<td>Plan Nacer is firmly established in all 24 provincial jurisdictions, with robust operational capacity and a solid reputation as a financier.</td>
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<td><strong>Congenital Heart Defects (CHDs)</strong></td>
<td>Top pediatric cardiologists in the country call attention to structural failures in health care for CHDs among infants and children.</td>
<td>Increased conviction of MSN authorities of the need to tackle “hard causes” of infant mortality, such as CHDs, to obtain further reductions in infant mortality. MSN authorities set up CHD Working Group to study health care provision for CHDs under the leadership of the DINAMI and cardiologists from main pediatric hospitals in CABA.</td>
<td>The PNCC is established based on the recommendations from the CHD Working Group. It introduces a framework for a service delivery network for CHD care at the national level, including the creation of the CCC. Although the PNCC succeeds in eliminating the existing CHD waiting list, it lacks the institutional and operational tools to tackle structural constraints in CHD care. As a result, a new waiting list is generated the following year.</td>
<td>Newly appointed MSN authorities make the decision to incorporate CHD coverage to the package of benefits under Plan Nacer. Their proposal is presented at CO.FE. SA. and accepted by health authorities of all 24 provincial jurisdictions. Plan Nacer authorities commission an in-depth diagnostic study of CHD health care provision at the national level, which provides solid base for evidence-based program design, including an accurate diagnosis of structural barriers preventing timely and quality health care for CHDs, as well as a detailed analysis of the existing and potential service capacity, unitary costs, etc.</td>
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<td><strong>Plan Nacer/ SUMAR</strong></td>
<td>Plan Nacer continues under the SUMAR Program, with coverage expanded to uninsured adolescents and adult women.</td>
<td>The coverage of the SUMAR Program is expanded to include uninsured adult men.</td>
<td>The SUMAR Program continues with the support of a new lending operation.</td>
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<td><strong>Congenital Heart Defects (CHDs)</strong></td>
<td>CHD coverage for uninsured infants and children under six is formally incorporated under Plan Nacer.</td>
<td>CHD coverage is expanded to include uninsured adolescents under the SUMAR Program.</td>
<td>Second round of distribution of high-complexity equipment among participating hospitals takes place.</td>
<td>Neonatal ambulances are distributed among participating hospitals. Agreements are made to provide training for participating pediatric heart specialists from treating hospitals that provide high-complexity care. First round of re-accreditation of treating hospitals take place, with three hospitals losing their accreditation as treating hospitals under the FNCHD.</td>
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<td>The Solidarity Co-Insurance Fund is created and the CCC begins its operation.</td>
<td>High complexity CHD treatment continues to be fully financed by the Solidarity Fund, while low and medium complexity interventions are co-financed by provincial governments.</td>
<td>The FNCHD continues to receive financing and technical support under the SUMAR program.</td>
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<td>The FNCHD is formally established with more than 60 hospitals, including 16 accredited treating hospitals.</td>
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<td>Provincial health authorities sign agreements with all treating hospitals in the FNCHD, both inside and outside the province.</td>
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<td>First round of distribution of high-complexity equipment among participating hospitals takes place.</td>
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