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ARTICLE

The historical trajectory of the city of Rio de Janeiro's health system: 1916-2015. One hundred years of innovations and achievements

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Abstract *By rebuilding the history of the facilities that constituted the city of Rio de Janeiro's health system between 1916 and 2015, this article also pieces together one hundred years of the country's public health system. Due to its important role, first as the country's capital, then as a state, and later as the capital city of the State of Rio de Janeiro, this city had a major influence on the multiple events that led to the creation of Brazil's Unified Health System. Periodization was used as a methodological resource to explore how factors that influenced the aims of the technical powers and government were turned into health services stemming from the ideology that underpinned the history of the health system. It is also evident that, despite its constant growth up to the creation of the Unified Health System, the network has always operated in parallel to, and independently from, the hospital and ambulatory network of the social security system and private and philanthropic services. The public health system in Brazil has always been focused at addressing problems related to inequality and social exclusion. The city of Rio de Janeiro's primary care network has always played, and continues to play, an important role in disseminating a new organizational culture in Brazil's national health system.*
Key words *Primary Health Care, Health centers, History*

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Introduction

Various aspects of policymaking, knowledge construction and practices in the health care sector are mutually interactive. The product is the manner in which health care services are delivered in historical contexts. As it will be seen, the emergence and consolidation of a permanent network of health posts and centers in Brazil occurred before the field of Primary Health Care (PHC) took shape. This network and its role in the broader health system has gone through various changes. The history of the development of the health care network in the city of Rio de Janeiro can be divided into various phases, each influenced by different political, technical and administrative contexts. Thus, tracing its unique trajectory provides valuable insight into the general changes that took place throughout the history of public health in Brazil. This paper also explores the functions of the network by drawing on the paradigms that laid the foundations for the technical and methodological elements of health care, understood here as health knowledge, which determined the most appropriate way of organizing the health system during each historical phase. It was also necessary to explore the political objectives underlying the development of this network: in certain phases, it was promoted amid mounting pressure for change, while in others political pressure did not result in purposeful actions since the network was an apparently low priority for government.

The aim of dividing the process into historical phases is to outline predominant trends, both within the technical powers and government. This intermediation occurred between separate decision-making bodies and legitimized the role of the network in the broader health system. The periodization of this process was therefore used as a methodological resource to explore how the factors that influenced the aims of the technical powers and government were turned into concrete actions stemming from a specific ideology underpinning health policy.

A retrospective analysis of the concepts, values, attitudes, resolutions and practices adopted by the actors involved in the consolidation of, and/or changes to, the network was performed using primary data such as books, articles, documents, management reports, statistics, decrees, internal norms, organograms, and routines.

The Chart 1 provides a guide to the system of periodization adopted here. The choice of political and technical timeframes was based on evidence of shifts in health ideology during each historical phase and their respective influence on the technical elements and policy that shaped the network. This paper also seeks to highlight the technical developments during each phase that helped to shape the network. The exclusively public nature of the network throughout the entire process allows us to obtain an insight into the historical trajectory of health policy in Brazil from the perspective of the actors working in State organizations both before and after the creation of the country's Unified Health System.

1916-1927 The origins: Hygiene and Rural Prophylaxis Posts

Public health facilities did not exist in Brazil before the 1910s. Health actions comprised of environmental interventions, interventions against infectious agents, and actions targeted at specific groups, such as quarantines and vaccinations. Public health professionals at the time provided treatment in open-air tents, and often in hammocks, during health expeditions. It is important to highlight that the work – including sanitation inspections of establishments and homes, food and beverage control, vaccination campaigns, and laboratory support – was coordinated from a health station and was performed by various types of health professionals, including the so-called *guardas sanitários* (sanitation guards). Strategically located in central neighborhoods, these facilities provided logistical and administrative support to health teams. At the same time, charitable dispensaries began to appear. The first dispensaries were created in 1902 by the Brazilian League Against Tuberculosis – whose president was the Viscount of Ibituruna - which created the home care service in 1913, whose aim was to provide medical and social assistance to people with tuberculosis who did not have access to the dispensaries[1].

The first public disease control centers, the so-called Health and Rural Prophylaxis Posts (*Postos de Saneamento e Profilaxia Rural*), emerged in 1916 and were dedicated to providing permanent care to a specific population. One of the main reasons behind the creation of these centers was to expand the role and responsibilities of the public health system[2].

Advances in diagnosis, prophylaxis and immunization allowed for more direct actions in the fight against diseases. The premise behind this shift was the need to create a modern system of public administration and promote the effective combat of endemic and epidemic diseases.

Chart 1. The historical trajectory of the city of Rio de Janeiro's health system: 1916-2015.

Period	Ideology	Technical dimensions	Political dimensions
New Hygiene 1916-1926	Prophylaxis and hygiene. Combat of rural endemic diseases. Height of the influence of Carlos Chagas. Creation of sanitary codes.	New techniques (prophylaxis e control of rural endemic diseases). Needs of teams working in the field and based in health facilities.	Decentralization of health system. Debates regarding the need for presence of the State on rural regions. Influence of the Rockefeller Foundation on the health agenda.
New Hygiene 1927-1939	Health Education Public Health Units, household prevention and control. Health Districts, health system for urban areas. New Quarantine. No individual medical care.	Family health education. Infectious disease/ epidemiology. Public health actions. Sanitary doctors, nursing in public health and Guardas Sanitários. Intervention through household visits and to establishments.	Public sector: public health and emergencies. Private sector: liberal care practice. Social security system: beginning of the Retirement and Pension Funds (Caixas de Aposentadorias e Pensões) and Hospital Care Institutes (Institutos Assistência Hospitalar). Fragmented, in the beginning and ineffective.
Public Health 1940-1959	Campaigns and national services. Expansion of actions of the DNS to the states, Federal Health Stations in the states.	Verticalization and specialization of actions. Focus on inland areas, monitoring of the permanent primary care network in large and medium-sized cities. Expansion of training of sanitarians.	Public sector: public health. Social security system expanding. Municipalization of the capital's health system. National State.
Preventative Medicine 1960-1978	Health programs, limited medical care. Progress Alliance: health as a condition for economic development. Chronic degenerative diseases a public health concern.	Prevention through periodic examinations. Expansion of immunization programs. Predominance of infectious diseases. No break with the previous model. Use of outdated technology. Limited reforms and few care units.	Height of care provision under the social security system. Social security and National Social Security Institute (INPS). Clinical specialization and hospital care. Individual curative hospital care or specialized ambulatory care (meningitis epidemic). Privatization of the social security system.
Primary Health Care 1979-1987	Combat of self-inflicted risks/wide ranging campaigns. Care directed at the most common problems in the community. Preventative actions and simple medical care. Community participation. Social debt and poverty. Network parallel to CMSs in poor areas or areas void of access to care services (UACPS/UMAMPS).	Alma-Ata/primary health care. Collective actions directed at atomized individual consumers. Health package and high cost/benefit. Generally directed at socially excluded populations. Creation of the health team, emphasis on staff with secondary and primary school education. Epidemiological risk-focused approach. Community participation.	Social security system crisis. Health crisis. Collapse of the hospital-centered model. Increase in social exclusion and inequality. Redemocratization. Innovative local experiences. Greater emphasis on ambulatory care in primary care. Integrated health actions. Shift in public v private stance.

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Chart 1. continuation

Period	Ideology	Technical dimensions	Political dimensions
Collective Health (Public Health) 1988-1997	Unified Health System. Regionalization, hierarchization, and standardization of the primary care network. Comprehensiveness (tailored to needs and demands). Health teams reshaped (public health, other higher education professions).	Comprehensive health programs, greater integration of sanitary doctors (clinical and epidemiological). Multidisciplinary approach. Health team. Changes in morbidity: CDDs, aging. Greater technological complexity principally therapeutical (AIDS, diabetes, etc) Greater dependence, interaction with other levels of care. Social and macrostructural causes of disease.	Municipalization. Emphasis on primary care networks. Increased funding for primary care. Universalization exclusive. Growth of the private sector. Hospital system crisis. Primary care network as the technical and care backbone of the SUS v provider of “basic package” of services. Dual health system.
Family Health 1998-2008	Family Health Program and health surveillance gain growing importance in the SUS. Universalization of primary care. Family Health sustainability mechanisms.	Primary health care model reshaped. Incentives provided for the creation of Family Health Team Units in vulnerable areas/areas with low HDI. Increase in coverage in municipalities with up with up to 100,000 inhabitants. Difficulties faced with implementation in large municipalities and capitals. PROESF launched.	Consolidation of a care model for the SUS based on municipalization and primary care. Progressive legalization of the health system and underfunding. Major influence of the Health Ministry as promoter of primary health care practices. Staff shortages due to the lack of a human resources policy for the SUS. Creation of the Social Organizations to manage human resources.
Pivotal role of Primary Health Care in the organization of the health system 2009-2015	Strengthening of family and community medicine. More Doctors Program. Primary care models aligned to international standards. Family Health integrated with clinical service delivery, public health and health surveillance.	Health network structure defined. Primary health care as regulator of health care at all levels and locus of the system. Greater alignment with technical and scientific requirements and good practices in primary health care. Greater interaction and dialogue with other national health systems based on primary health care.	Strategies directed at expanding comprehensive health models. Attempts de repoliticize the debate regarding the underlying principles of the SUS and its main achievements. Search for alternatives to the lack of funding. Opposition from doctors’ groups to the universalization of care through primary health care.

Source: authors.

The need for technical staff to perform new functions was not neglected. Sanitary doctors and visiting nurses were considered strategic resources for this new policy. In 1916, with the arrival of the Rockefeller Foundation Medical Mission, the first Hygiene and Rural Prophylaxis Posts (*Postos de Higiene e Profilaxia Rural* - PHPR) were created in the city of Rio de Janeiro. This initiative was geared towards the combat of diseases such as malaria, hookworm infections and Chagas disease, and was expanded to various inland areas across the country[3,4].

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In 1923, the Carlos Chagas Reform led to the creation of the National Public Health Department (*Departamento Nacional de Saúde Pública* - DNSP), widening the federal government's responsibilities towards this sector. Functions included rural and urban sanitation, child, industrial and occupational health, port health supervision and enforcement, and the combat of rural endemic diseases. These actions gave rise to public health campaigns, which consisted of centralized and vertically integrated actions aimed at combating endemic diseases, such as malaria, yellow fever and tuberculosis[4].

1927-1939: The Creation and Consolidation of Health Centers

The work developed by the PHPRs, plus the training of human resources, particularly of visiting nurses and sanitary doctors, facilitated the implementation of a new proposal: Health Centers (*Centros de Saúde*). These centers were geared toward more complex care and became the backbone of the public health system[5].

Clementino Fraga, Carlos Chagas' successor, defended that the poor health status of the underprivileged sectors of society in large cities required other strategies beyond those adopted under the campaign-oriented approach. A group of young doctors linked to Fraga called the "Young Turks", alluding to the westernization of Turkey that ended the country's ancient traditions, wanted to modernize public health. It is important to highlight that, at the time, tuberculosis had developed into a major scourge of Brazilian society and maternal and child health was a major concern. Based on the success of the Red Cross in the United States at the beginning of the 1900s, various segments of the medical society and government began to defend the creation of health centers geared towards health education and prophylaxis. The strategy consisted of training sanitary doctors and visiting nurses to provide care for poor families. Previously confidential documents from 1925 disclosed by the Rockefeller Archive Center suggest that the health centers worked very well, in an integrated manner, without the old divisions (one for venereal disease, one for childcare etc.). Now, specialists worked at different times throughout the day dedicating themselves to their area of expertise without compromising the general nature of care. The thesis that there was no advantage in maintaining the PHPRs, created to control specific endemic diseases, was debated during the II Brazilian Health Congress held in 1924[6].

Health Centers were intended to be referral units developed in urban centers that performed modernizing reforms. In 1925, Paula Souza created the Brás, Bom Retiro and Instituto de Higiene Health Centers. Clementino Fraga became the head of the DNSP in 1926, leading to the creation of the first Health Center in the Federal District, the Pilares Health Center, which was inaugurated on 1 January 1927 by Barros Barreto and José Paranhos Fontenelle in the presence of the president of Brazil Washington Luís. The advantages of Health Centers extolled by Clementino Fraga were mainly of a managerial nature: instead of being organized according to function, where each department specialized in a particular disease, in large cities like Rio de Janeiro, it was vital to create a task-oriented system, centralized in the same health district and organized through health centers located in strategic areas throughout the city[7].

The health professionals received training at the Oswaldo Cruz Institute and Anna Nery Nursing School in Rio de Janeiro and 12 Health Centers had been created by 1930[6,8].

The Young Turks defended that the only answer to the country's health ills was a new health awareness among citizens. Ignorance, rather than poverty or poor living conditions, was understood to be the cause of the high prevalence of infectious and contagious diseases, and education was seen as the main tool for combating its dissemination. A decentralized system that could reach all neighborhoods, every household, and every family, and provide information and guidance on different health problems through a single integrated health service, was the basis of this new approach to health care. Cities would therefore be divided into districts and each district would have a Health Center with various dispensaries with alternate opening times, under the leadership of a sanitary doctor[9]. The training of visiting nurses was key to the success of this new approach. The DNSP invited the American nurse Ethel Parsons to train the first groups. A new quarantine system was created whereby patients were no longer quartered and the work of health professionals and disease control was circumscribed to the family and household. By 1939, the city of Rio de Janeiro had 120 visiting nurses working mainly with tuberculosis and maternal and child health. The success of this initiative can be measured by the development of Health Centers up to 1939. Following the success of Paula Souza in the State of São Paulo, all Health Stations and PHPRs were transformed into

Health Centers. Clementino Fraga completed the network in 1934. The inspectorates were merged into one office that would overlook all the Health Centers. The city was divided into 12 Health Districts, each with a population of between 110,000 and 150,000 people: 1st) Gávea, Copacabana and Lagoa; 2nd) Glória and Santa Teresa; 3rd) Santo Antonio, Sant'Anna and Espírito Santo; 4th) Gamboa, Santa Rita, Candelária, Sacramento and São José; 5th) São Christóvão and Engenho Velho; 6th) Andaray and Tijuca; 7th) Engenho Novo and Meyer; 8th) Inhaúma oeste; 9th) Jacarepaguá and Irajá sul; 10th) Inhaúma leste, Irajá, and Ilha do Governador; 11th) Madureira, Realengo and Anchieta; 12th) Realengo Oeste, Bangu, Guaratiba, Campo Grande and Santa Cruz[10,11].

1940-1961: the District Health Management System

The capital became a secondary objective given the need to consolidate a national-level system, integrate all parts of the country and increase the power of intervention of the states. The sanitarians from the DNSP who had received training in public health were recruited to head the Federal Health Stations in the states or worked in the recently-created national services. Technical staff became scarce in the capital. In 1939, the health center network was "municipalized" and the centers became known as Municipal Health Centers (*Centros Municipais de Saúde* – CMS)[11].

At the same time, the system became more vertical and campaign-oriented and, in 1940, the Yellow Fever, Leprosy, Tuberculosis, Malaria, Pestilence, Cancer, Mental Illness, Health Education, Medicine, Ports, Waters and Sewage and Biostatistics National Services were created[12].

The capital's health center network was the guiding model for the implementation of similar facilities in the states. This was Barros Barreto's intention when he retook his role at the DNSP in 1941 and the Municipal Health Centers remained the mainstay of the country's health care system[7].

The federal government began to play a more incisive regulatory role in 1941, mapping the health care network, dividing the system into districts, and monitoring its development across the country. The Health Organization Division (*Divisão de Organização Sanitária*) took charge of classifying the centers according to size and complexity and determined that state capitals and large cities should have at least one Health Center[13].

1962-1978 Medical Health Centers: revitalizing prevention and the Progress Alliance

It could be said that the public health system in the State of Guanabara, created after the national capital was moved, was in a precarious situation. There were only 20 visiting nurses and the health centers, created in old adapted town houses with poor installations, lacked human resources and equipment. The city's health situation was alarming. Reports produced by Fontenelle at the time, a critical moment in the organization of the network, showed that the prevalence of diseases such as tuberculosis was much greater than in São Paulo, where he was based. Changes were made to resolve this situation during the first term of the government of the State of Guanabara. The milestone of this reformulation was laid in 1962 with the creation of the Superintendency of Medical Services (*Superintendência de Serviços Médicos*), the Administrative Regions, and the transformation of the Public Health Department into the Superintendency of Public Health (*Superintendência de Saúde Pública*)[14]. The XV Brazilian Congress of Hygiene was held in the same year, which addressed the topic medical and sanitation problems in underdeveloped areas and the municipalization of health. The congress had a major influence on the conception of the model that would be adopted for the implementation of the network. The Progress Alliance, a financial assistance program for Latin American countries funded by the United States as an answer to the Cold War, provided funding to the government of the State of Guanabara, including funding for the construction of new Municipal Health Centers. Isolated changes were made to the network up to 1965. Six new units were built, which provided the same services (hygiene, tuberculosis, child and adolescent health, nursing and complementary activities). In 1965, 39 Health Centers were carrying out preventive measures against smallpox, typhoid fever, polio and tuberculosis. During its next term, between 1966 and 1971, the government began to reorganize the health center network. Although based on a broader conception, this reorganization ended up being limited to the creation of only a few units without any significant expansion of the network. New units were built to replace old health centers throughout the 1960s[14].

Despite efforts to reform the system between the 1960s and 1970s, few changes were made to

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health legislation. In 1974, Rio de Janeiro became the capital of the State of Rio de Janeiro and the Municipal Health Department was recreated maintaining basically the same set of principles and functions as before. The same trend was maintained in São Paulo by a Decree published on 30 July 1976 which failed to define new duties and integrate clinical and hospital care. The Municipal Health Department was comprised of two general departments: Hospital Care, and Public Health. There were at the time 23 Municipal Health Centers, 11 Satellite Units and one Institute[15,16].

Additional duties were added to the traditional tasks reserved for the Municipal Health Centers. Ministry of Health norms maintained a certain degree of fragmentation and specialization of activities, which were restricted to the tasks that were not covered by the social security system (*medicina previdenciária*), such as tuberculosis, leprosy, vaccination, health certificates, and school health. Certain medical procedures and diagnoses were also added, but timidly implemented. Despite this, the reforms promoted during this period laid the foundations for further changes. This set of actions revitalized and rejuvenated the network, placing it firmly within the health system and creating its own particular role and functions. One of the main achievements during this phase were infrastructure improvements and an architectural design that made new health centers easily identifiable.

The period that followed saw a major conceptual shift in the functions of the primary care network[17,18].

1979-1987: Alma-Ata and Primary Health Care

Between 1979 and 1985 the government reshaped the municipal primary care network. The Municipal Health Department began to implement a policy designed to expand health services inspired by the principals of the Alma-Ata Declaration of 1978, which endorsed primary health care as the key to the attainment of the goal of "health for all" by 2000[19].

In 1980, the Municipal Health Department launched the Integrated Action Plan, with the following sectoral guidelines: improve health services that meet the needs of the local population, particularly emergency services; consolidate medical care and primary care, especially for maternal, child and low-income groups[20-22].

In 1984, the Integrated Health Actions strategy encouraged local governments to resume their role as health service providers, seeking to fund broader actions ranging from health promotion to care delivery. The social security system began to fund primary health care through agreements with local governments, a measure aimed at reversing the policy that privileged the private sector and extending coverage to people not covered by the social security system[23].

The policy to extend coverage by incorporating the concept of primary health care into the health system was a response to growing pressure to improve the health service. Although Municipal Health Centers were well placed to provide this care, the expansion of services was hindered by excessive bureaucracy. There was one Municipal Health Center for each Administrative Region. These centers were geared towards providing health certificates and school health care, including registration, which accounted for 35.4% and 24.8% of appointments, respectively. This structure was difficult to change due to a culture of patronage politics.

New services were developed that incorporated community initiatives, such as Primary Health Care Auxiliary Units (*Unidades Auxiliares de Cuidados Primários à Saúde* - UACPS) and Municipal Primary Medical Care Units (*Unidades Municipais de Atendimento Médico Primário* - UMAMPS), which were linked to a Municipal Health Center in the region. The following UACPS were created: Rocinha, Vidigal, Alto da Boa Vista, Carlos Gentile de Mello, Vila S. Jorge, Fazenda da Bica, Padre Miguel, Cosmos, Mendanha, Fazenda Modelo, Barra de Guaratiba, Rio da Prata, Pedra de Guaratiba, Jardim Santa Margarida, Jardim Maravilha, Raul Barroso, Cesário de Melo, and Jardim 7 de Abril. The following UMAMPS were created: Cidade Alta, Fazenda Coqueiro Hamilton Land, and Sylvio Brauner[22].

One innovation of this period was the attempt to apply the principle of comprehensiveness, combining public health measures with curative care. Segments of society that had previously been excluded from the health system were targeted through new programs[23].

In 1986, two public selection processes were conducted to contract new staff. The arrival of a new generation of not only young sanitarians, but also doctors, nurses, social workers, pharmacists, speech therapists and nutritionists, facilitated deep and wide-ranging reforms[7].

The network was expanded with the construction of 27 Health Posts (*Postos de Saúde*), concentrated once again in the city's West Zone. More units were built in Santa Cruz: Palmares,

Santa Cruz, Santíssimo, Vila Kennedy, Cesarinho (Paciência), Cesário de Mello (Campo Grande), Senador Camará, São Fernando (Santa Cruz), Santa Inês (Campo Grande), Sulacap, Caju, Vila Aliança (Taquarau), Conjunto Liberdade, Sepetiba, Mangaratiba, Mendanha, Urucânia, Parque Anchieta, Pilares, Jardim América, Pavuna, Formiga, Jacaré, and Pedra de Guaratiba. In addition, two Municipal Health Centers were refurbished: Santo Cristo, and Cidade Nova, the latter of which was later transferred to the Carlos Chagas Pavilion [7].

The principles underlying this policy were similar to those underlying the creation of UACPS: the provision of medical treatment for people not covered under the social security system, focusing on primary health care. Each Health Post was controlled by the Municipal Health Center in the area where it was located. The policy aimed to promote the capillarization of health service delivery via epidemiological surveillance, public health programs and medical appointments (general medicine, pediatrics, obstetrics and gynecology)[7].

This was the third phase of expansion of the primary health care network and confirmed the importance of the provision of outpatient care, especially in the basic specialties. For the first time, the number of appointments performed began to rival that of the social security network.

1988-1999: the Unified Health System and the municipalization of the national public health network

This period was marked by the creation of Brazil's Unified Health System (*Sistema Único de Saúde* - SUS). Since it was the old capital, Rio de Janeiro had a number of federally-run units. The decentralization of the SUS, through municipalization and the application of the principle of comprehensiveness, placed even greater emphasis on health promotion and prevention through primary health care[24].

The creation of the Family Health Program (*Programa Saúde da Família* - PSF) in 1993 was a key initiative, given the successful experiences of various municipalities. Initially, the program was targeted at vulnerable segments of society, drawing on the experiences of the *Pastoral da Criança* and Community Health Agents. Another prominent initiative was the Family Doctor Program (*Programa Médico de Família* - PMF) in Niterói. The success of the PSF, initially implemented in small municipalities, was based on the assumption that it was a a restricted program, with a limited number of health actions. Successful experiences and the fact that it fell within the responsibilities and duties of local governments under the SUS led to an increase in local government adhesion to the program and popular support. The possibility of increasing access to health care for a significant portion of the population meant that many people began to defend the program as a substitutive model. The PSF began to receive specific funding, which enabled its expansion to areas with low levels of coverage and few resources[24].

In larger cities the program faced significant opposition of a corporate and ideological nature and due to the existing care networks[25]. The main obstacles faced by the program in Rio de Janeiro were related to the fact that a large number of different types of services already existed[26].

The inverse occurred with the Social Security Medical Care Posts (*Postos de Atendimento Médico da Previdência Social* - PAM), which were affected by an acute shortage of staff and severe deterioration of services. Since the PAM network was undergoing reforms, staff and managers no longer had the prestige they had enjoyed in the past and awaited the slow process of transfer of administration to the local government. The slowness of the municipalization of the PAM network was due both to conflict between federal and local government and the fact that the units were just too big to be absorbed by the Municipal Health Department, since the health budget of the Municipal Health Department was far lower than that of Rio de Janeiro's social security system. Another complicating factor was the fact that the role played by the network in the SUS had not been clearly defined. The transfer process in Rio de Janeiro was the slowest in the country. In addition, the local government was facing a severe fiscal crisis. The new government in 1991 concerned itself with reorganizing and reshaping the system and establishing basic principles. The old General Departments of Organization and Administration of Health Services and Public Health were replaced by three superintendencies and the administration of the health services provided by the primary care and hospital network became the responsibility of the Superintendency of Health Services. Thus, the health center network and hospital network was now administered by the same body. This role was decentralized to 10 Health Coordinating Bodies of the Program Areas (*Coordenações de Saúde das Áreas Programáticas* - CAP). The other superintenden-

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cies were: Zoonosis Control, Health Surveillance and Enforcement; and Public Health.

Technical teams were created and studies were carried out to assess the feasibility of transferring the administration of units from federal to local government. A new care model was developed changing the way in which primary care was organized and delivered. Efforts were made to integrate and unify the primary care network to create uniformity in the provision of health care and program implementation[26].

Fifteen PAMs were transferred to the Rio de Janeiro municipal government in 1995: Botafogo, Treze de Maio, da Henrique Valadares, Praça da Bandeira, Meier, Del Castilho, Ramos, Penha, Ilha do Governados, Irajá, Madureira, Bangu, Deodoro, Jacarepaguá, and Campo Grande[27].

The expansion of the primary care network reinforced the powers of the Municipal Health Department, and the absorption of the new units, with a large demand for care, enabled improvements in point of entry management and increased the coverage of health programs.

The first Family Health Team (*Equipe de Saúde da Família* – ESF) was created in Paquetá, a model unit, with a doctor and community health agent, similar to the model developed in Niterói. PSFs and PACS were gradually implemented during this period, targeting at-risk populations. There was continued resistance to the new model[28].

1999-2008. Family health becomes a strategy for reshaping the care model, but Rio de Janeiro resists change

The creation of Basic Operational Norm 96 provided for new fund to fund funding for municipal governments delivering primary health care services. The so-called *Piso da Atenção Básica variável,* a minimum funding threshold for primary health care, led to a major expansion of the PSF. The model, that became known as the Family Health Strategy (*Estratégia Saúde da Família* – ESF), represented a shift in approach to health care and led to the reorganization of the entire health system and a rise in the number of community health agent and family health teams across the country[28].

In 1999, the Municipal Health Department created the Community Health Unit (*Núcleo de Saúde da Comunidade* – NSC), connected to the Superintendency of Public Health, to increase the coverage of the ESF. The ESF Urban Center Expansion Program (*Programa de Expansão da ESF para os Grandes Centros Urbanos* – PROESF) encouraged the expansion of the ESF in other state capitals. A proposed expansion by the Rio de Janeiro Municipal Health Department, which involved the creation of an additional 600 family health teams in densely populated areas, was a turning point. Although this plan never got off the ground, a focused expansion of the system took place and by 2003 PACS had been created in 15 neighborhoods, including Maré, São Carlos, Turano, Mangueira, and Fazenda Botafogo, with a total of 426 community agents and 23 family health teams in 10 neighborhoods[28].

In 2001 the Municipal Health Department was administering 108 units, which were operated under a program-oriented approach, limiting coverage to service users that were benefitted from programs such as hypertension, tuberculosis, and women's health[29].

Between 2005 and 2008 efforts were made to expand the number of family health teams, but these did not represent much in terms of the proportion of the population covered by the ESF. By the end of 2008, the number of family health teams had more than doubled in comparison to 2005, from 57 to 124, but the population coverage rate remained low at 6.94%. Family health was still restricted to pockets of extreme poverty and areas with high rates of violence that were void of care[28].

The municipal budget was burdened by large hospitals, draining of resources through embezzlement, and human resources problems related to the fact that the majority of federal government staff transferred to the municipal government were close to retirement. This created an ironic contradiction. By not investing in ESF the municipal government was prevented from receiving extra federal government funding designed for the program, a vicious circle that was difficult to break[30,31].

2009-2015 - Family Clinics: primary health care empowered for a context of great complexity

In 2009, the municipal health department, now called the Department of Health and Civil Defense (*Secretaria Municipal de Saúde e Defesa Civil* - SMSDC), reported an ESF coverage rate of 7%. Once again, the health status of the population had worsened and prevalence rates of tuberculosis, congenital syphilis, and infant and maternal mortality were high.

A new health care model for the city was presented by the new government. Since the city

was going to host the Olympic Games, a number of technical visits were made to other host cities, including London, Montreal, Barcelona and Sydney. It was observed that a model of health systems based on primary health care and family and community medicine was common to all these cities. The path taken thereon was a model based on the reforms implemented in Portugal and England[32,33].

Family Clinics (*Clínicas da Família* - CF) were conceived and developed in 2009. This included their architectural design, management team composition and legal changes. One of the main measures taken was the creation of Social Organizations (*Organizações Sociais* - OS) to provide greater administrative and financial agility, and the restructuring and strengthening of the CAPs, which became responsible for municipal health care management. These two bodies defined coverage and health system performance goals in agreement with the municipal manager[33].

The expansion of the ESF in Rio de Janeiro began by widening coverage in APs 5.3 (Paciência, Santa Cruz and Sepetiba) and AP 3.2 (Abolição, Água Santa, Cachambi, Del Castilho, Encantado, Engenho da Rainha, Engenho de Dentro, Engenho Novo, Higienópolis, Inhaúma, Jacaré, Jacarezinho, Lins de Vasconcelos, Maria da Graça, Méier, Piedade, Pilares, Riachuelo, Rocha, Sampaio, São Francisco Xavier, Todos os Santos and Tomás Coelho). The goal was to attain 100% coverage, but this was only achieved in AP 5.3[32].

The units had separate rooms for ACSs and Health Surveillance Technicians and displayed maps of the area covered by the unit and health scores, showing demographic indicators. The units also had other facilities such as children's, women's, and elderly persons' rooms, and baby-mother reception rooms[32].

A significant change in public health management occurred in 2010, and coverage of the ESF reached 45% in 2014. The number of teams increased from 68 to 800, while 74 CFs were built as part of a goal to provide 140 centers (70% coverage) by 2016[30,32].

The CFs were conceived to meet the demands of a relatively large population. This required various family health teams and adequate facilities. Effectiveness was ensured by equipping the facilities with appropriate technology, provision of laboratory testing, x-rays, ultrasound, and other examinations and procedures[33].

Based on the primary health care reforms carried out between 2009-2015, the primary care network was classified into three categories:

a) Type A units: health centers where ESF teams provide coverage for the whole area;

b) Type B units: traditional health centers with one or more ESF teams who provide partial coverage to the area;

c) Type C units: traditional health centers without family health teams.

One of the important issues concerning the reform in Rio de Janeiro, and in the rest of Brazil, was the placement of medical professionals ensuring with full-time presence in the units. Given the significant expansion envisaged by the reforms, a specific strategy was required to meet the large-scale demand for medical staff. One of the measures adopted to address this challenge was to increase remuneration. Remuneration levels for family and community physicians were among the highest in the country and included a structured career plan, a contract enjoying the benefits of the Consolidated Labor Laws, and performance-based payments. Another strategy was the creation of a medicine residency program with 80 places and attractive scholarships.

Family and community physicians were required to be medical specialists in an attempt to meet the standards set for the reforms in Rio de Janeiro based on national health systems in European countries. These doctors were satisfied with the salary and terms and conditions of employment and did not complain of the lack of "stability" that they would have had if they were employed as career civil servants. Quite to the contrary, they suggested that the type contract they had meant that those professionals who are not competent and committed may be dismissed, showing they were intent on serving the population rather than their own interests[33].

Another important point was the promotion of continuing professional development through the *Telessaúde* program, participation in events held by professional bodies, and the development of Observatories of Information Technology and Communication in Health Systems and Services (*Observatórios de Tecnologia de Informação e Comunicação em Sistemas e Serviços de Saúde* – OTICS-RIO), and blogs. OTICS gather methodologies and information technology that is useful for management and decision making to promote joint knowledge building among health professionals, researchers, managers and civil society.

Another important change took place in the CAPs, which became Primary Health Care Coordinating Bodies (*Coordenação da APS* – CAPS) based on the fact that the procurement and management processes of primary health care

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and highly complex care are different. Thus, the OSs were assigned an administrative role, while management functions were carried out by the CAPS, along the lines of the NHS trusts in England[34].

Another important initiative, related to the conduct of health professionals working in the primary health care network in Rio de Janeiro, was the creation of Local Regulatory Committees (*Comissão de Regulação Local*), where one or more doctors, preferentially family and community physicians and/or tutors of the family and community medicine residency program, acted as regulators of the center together with the SISREG. These professionals acted as Technical Officers (*Responsáveis Técnicos* – RT) performing tasks such as the local review of referrals, making appointments and procedures waiting lists more efficient and equitable. The decisions made by the RTs were discussed with other professionals, adding an educational perspective. Norms and standards were also developed culminating in the "Regulator's Protocol" (*Protocolo para o Regulador*) that addressed referrals for specialist treatment and diagnoses[33]. This measure had a major impact and was a turning point for the country's primary health care network, since these professionals began to not only guide the health system, but also, and above all, to coordinate health care.

The main theoretical basis for this change to regulations was the "On Time Appointment" (*Consulta a tempo e horas*) system in Portugal. The aim of the Regulation of the Integrated Referral System and Management of Access to the First Specialist Hospital Appointment in the Institutions of the National Health Service (*O Regulamento do Sistema Integrado de Referência e de Gestão do Acesso à Primeira Consulta de Especialidade Hospitalar nas Instituições do Serviço Nacional de Saúde*) was to harmonize procedures related to the management of access to the first specialist hospital appointment, establishing a set of rules binding National Health Service institutions and health professionals involved in the process, and implementing them in a meticulous and transparent fashion[35,36]. It was also based on an OECD report addressing waiting times for appointments and procedures in Europe produced in 2013[37]. This regulation is an important tool for care coordination, since all patients should be seen by a family and community physician in a primary health care facility before accessing other levels of care.

Primary health care reform was possible thanks to the commitment of the municipal government, which increased the proportion of revenue allocation to health care from 15 to 20% and managed to widen access to financial incentives provided by the federal government.

The reform was widely accepted by political leaders, including the Mayor's Office, Chamber of Councilors and Municipal Health Council, resulting in parliamentary amendments to create Family Clinics[33].

The reform also sought to change the culture of evaluation of primary health care, creating a monthly or quarterly follow up and monitoring of work processes depending on the level of management (local or central). Monitoring was based on structure and process indicators, including the "*Carteirômetro*", that make up the management contracts with the OS and determine the performance-based payments to the units and family health teams.

An important innovation related to evaluation were Accountability Seminars, where the health teams of each unit presented the progress achieved during the year, obstacles faced and the plan for the next year. Information management was reshaped using electronic health records, aiding health center management and team interaction and thus leading to improvements in monitoring of service users registered in the CF[32].

Other important tools were the health service user card (*Carteira dos Usuários*), which defined clear rules to facilitate user understanding of the system, and the site "*Onde ser Atendido*" (where to seek care), advising the user where to seek care, promoting engagement between primary health care facilities and communities/primary health care service users. All these new experiences had strong resonance at the national and international level, attracting interest and leading to technical visits from the health departments of all the Brazil's state capitals, various municipal governments and even representatives from the health sectors of other countries such as Peru, Chile, Spain, Portugal, and Angola.

In 2013, the SMSDC joined the More Doctors Program (*Programa Mais Médicos*), receiving 150 family and community physicians from other countries. The aims of this initiative were to promote sharing of experiences between physicians from other countries and doctors from Rio de Janeiro and place doctors in socially vulnerable areas where family health teams had been lacking doctors for over a year. These efforts, combined with an increase in the number of places in the family and community medicine residency program (100 per year) led to a significant impro-

vement in coverage by family health teams, now with their full contingent of doctors.

Conclusion and Final Considerations

Given the limited scope of this paper, it is not possible to detail all elements of the history of the public health system in Rio de Janeiro. However, it is important to highlight certain aspects. One of the most striking characteristics of the system is its capacity to adapt to the changes described above without losing its main features, such as its territorial and community-based approach to public health. Another important point worth highlighting is that it incorporated, at a greater or lesser rate, the main innovations in health care technology. This is the reason for its survival as a public apparatus for providing community health services. With respect to reshaping the system, a number of approaches to health care design and delivery were tested, eventually returning to the municipalization of the health service. This system is increasingly acknowledged as the best public health model. Another aspect that should be highlighted is the fact that the system managed to overcome the duality that historically marked the performance of the public health system and health care organizations.

It is interesting to note that information regarding the historical trajectory of the primary care system has been largely ignored both by authors and researchers of public health both past and present. The present case, the city of Rio de Janeiro, proved to be an important testing ground, both for the implementation of the primary care network and Social Security hospitals in Brazil. It is possibly the country's most outstanding case, given its past as Brazil's former capital and the importance of its current role for the SUS due to the innovations developed here: Rio de Janeiro was a testing ground in the pre-SUS era and continues to play the same role in the SUS era. The primary care network has always been funded by general taxes, and its primary objective has always been to provide service coverage to the poor and unassisted segments of society, which constitutes the majority of this huge nation's population. It is important to highlight the inattention of the literature regarding public services provided outside the country's social security system and their impact on the population's health. This network currently plays a leading role in promoting a radical shift in the way of viewing the State's role in ensuring the health of its citizens; which should be the provision of universal and comprehensive care through the coordination of primary health care service delivery. This model has reached, as did the model adopted in 1927, over half the population of the city of Rio de Janeiro. This achievement is consistent with the history of SUS and the tendency toward the universalization of the right to health and a comprehensive, territorial and user-based approach to care.

Finally, it is fitting to recount the story of persistence of the idealists and selfless people that fought for the right to health of millions of citizens of this country. The current task of integrating health care and public health falls on the family health teams. Most of their members are young, just like the generations of the 1930s, the Young Turks, and the sanitarians of the 1970s and 1980s, who condemned the division between health care under the social security system provided for few and a precarious public health system for many.

Collaborations

CEA Campos participated in study conception and design, data analysis and interpretation, the drafting and critical revision of this article and approval of the version to be published. AL Brandão participated in the literature search, data collection, analysis and interpretation, and in drafting this article. A Cohn participated in study conception and design and in the critical revision of this article.

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