

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

BRAZIL

**PROGRAM FOR THE EXPANSION AND IMPROVEMENT OF SPECIALIZED
HEALTH CARE IN THE STATE OF CEARÁ II (PROEXMAES II)**

(BR-L1408)

LOAN PROPOSAL

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ABBREVIATIONS

AWP	Annual work plan
CNCDs	Chronic noncommunicable diseases
DATASUS	Unified Public Health System databank
ESMP	Environmental and Social Management Plan
GDP	Gross domestic product
HDI	Human Development Index
IBGE	Brazilian Institute of Geography and Statistics
IPECE	Instituto de Pesquisa e Estratégia Econômica do Ceará [Economic Strategy and Research Institute of Ceará]
OEL	Optional electronic link
OSS	Organização Social de Saúde [health care social organization]
PAHO	Pan American Health Organization
PGE/CE	Procuradoria-Geral do Estado do Ceará [State of Ceará's Inspector-General's Office]
PHC	Primary health care
PMU	Program management unit
PPP	Public-private partnership
PROEXMAES	Program for the Expansion and Improvement of Specialized Health Care in the State of Ceará
PSF	Programa de Saúde Familiar [Family Health Program]
RAS	Redes de Atenção à Saúde [Health Care Networks]
SESA	Secretaria de Estado da Saúde [State Department of Health]
SUS	Sistema Único de Saúde [Unified Public Health System]
TCE/CE	Tribunal de Contas do Estado do Ceará [Audit Office of the State of Ceará]
UNDP	United Nations Development Programme
WHO	World Health Organization

PROJECT SUMMARY

BRAZIL

PROGRAM FOR THE EXPANSION AND IMPROVEMENT OF SPECIALIZED HEALTH CARE IN THE STATE OF CEARÁ II (PROEXMAES II) (BR-L1408)

Financial Terms and Conditions				
Borrower: State of Ceará			Flexible Financing Facility ^(a)	
			Amortization period:	25 years
Guarantor: Federative Republic of Brazil			Original WAL:	15.25 years ^(b)
Executing agency: State of Ceará, through its Department of Health (SESA)			Disbursement period:	5 years
			Grace period:	5.5 years
Source	Amount	%	Inspection and supervision fee:	^(c)
IDB (Ordinary Capital)	US\$123,000,000	68.9	Interest rate:	Based on LIBOR
Local	US\$ 55,500,000	31.1	Credit fee:	^(c)
Total	US\$178,500,000	100.0	Approval currency:	U.S. dollars from the Ordinary Capital
Project at a Glance				
Project objective/description: The objective of the program is to help improve the health status of the population of Ceará by increasing service accessibility and quality and improving the performance of the Unified Public Health System by consolidating the health care network approach in the state.				
Special contractual conditions precedent to the first disbursement of the financing: (i) publication in the Official Gazette of the State of Ceará of the decree creating the program management unit and appointing its coordinators and managers; (ii) evidence that the program's Operating Regulations have entered into force under the terms agreed upon with the Bank; and (iii) approval by the Bank of the terms of reference for contracting the project management and works supervision support firm (paragraph 3.4).				
Special contractual conditions of execution: (i) evidence that an integrated computerized system for the project's financial management is up and running, within eight months after the loan contract signature date; (ii) prior to the start of the works involving the hospitals included in the program, presentation of the hospital management model as well as the respective draft model contract to be signed, for the Bank's no objection; (iii) prior to the startup of hospital operations, presentation of the respective signed management contract; (iv) evidence that the project management and works supervision support firm has been contracted, within six months after the loan contract signature date; and (v) prior to the start of bidding for works on the project's polyclinic, evidence that the appropriate legal management instrument has been signed between the borrower and the Município of Fortaleza, under terms approved by the Bank (paragraph 3.5).				
Special environmental and social conditions of execution: (a) presentation to the Bank, prior to the startup of works for each type of health unit, and in accordance with terms agreed upon with the Bank, of: (i) the detailed designs; (ii) the environmental and social management plan (ESMP); (iii) the required legal licenses; and (iv) evidence that public consultations have been held in accordance with Bank policies; (b) during the project disbursement period, compliance with the programs, requirements, and guidelines established in the program's Operating Regulations and the ESMP; and (c) presentation of the environmental and social management system for implementation of the ESMP, within 90 days after the loan contract signature date (paragraph 3.6).				
Exceptions to Bank policies: None.				
Strategic Alignment				
Challenges: ^(d)	SI <input checked="" type="checkbox"/>	PI <input type="checkbox"/>	EI <input type="checkbox"/>	
Crosscutting themes: ^(e)	GD <input checked="" type="checkbox"/>	CC <input type="checkbox"/>	IC <input type="checkbox"/>	

^(a) Under the terms of the Flexible Financing Facility (document FN-655-1), the borrower has the option of requesting changes to the amortization schedule, as well as currency and interest rate conversions, subject in all cases to the final amortization date and the original weighted average life. The Bank will take market conditions as well as operational and risk management considerations into account when reviewing such requests.

^(b) This period may be shorter, depending on the date the loan contract is signed.

^(c) The credit fee and inspection and supervision fee will be established periodically by the Board of Executive Directors as part of its review of the Bank's lending charges, in accordance with Bank policies.

^(d) SI (Social Inclusion and Equality); PI (Productivity and Innovation); and EI (Economic Integration)

^(e) GD (Gender Equality and Diversity); CC (Climate Change and Environmental Sustainability); and IC (Institutional Capacity and Rule of Law).

I. PROJECT DESCRIPTION AND RESULTS MONITORING

A. Background, problem, and rationale

- 1.1 **Socioeconomic context.** The state of Ceará has 8,842,791 inhabitants, 75% of whom live in urban areas, including 30% in the capital city, Fortaleza. Since 2002, the economic growth rate of Ceará has exceeded that of Brazil as a whole, reaching 4.36% in 2014 when Brazil's GDP grew by 0.1%. This solid economic performance has been accompanied by progress on social indicators. Thus, poverty declined from 48% in 2002 to 21.3% in 2012, and life expectancy at birth rose from 67.8 years to 72.3 years between 2000 and 2013. With these results, Ceará has the second-highest Human Development Index (HDI)¹ among the states of the Northeast, and it has the highest quality of life in the North-Northeast.² Yet despite this progress,³ significant social inequality and regional inequity persist in Ceará. Close to 8.5% of its total population and 18% of the rural population are living in extreme poverty (versus 3.9% for Brazil).⁴ Adequate access to basic sanitation is lacking in 61% of households (national average 38%), and 16.3% of the population is illiterate (8.7% for Brazil as a whole).⁵ Moreover, nearly a third of the state's municípios have a low HDI,⁶ and there is significant heterogeneity in terms of municipal per capita GDP and the concentration of wealth.⁷
- 1.2 **Epidemiological profile and public health challenges.** In line with national and regional trends, Ceará is experiencing a demographic and epidemiological transition. Between 2000 and 2012, the proportion of deaths from circulatory diseases (the primary cause of death) rose from 23.3% to 26.5%. Over that same time, the relative importance of cancer increased and deaths from neoplasia went up from 11.6% to 15% of total mortality. The increase in premature mortality (people under age 60) from chronic noncommunicable diseases (CNCDs) highlights the importance of addressing the related risk factors. There is ample evidence that obesity, smoking, excessive consumption of alcohol, and physical inactivity bring with them physiological and metabolic changes that contribute significantly to the incidence and impact of CNCDs. The Ministry of Health has taken cost-effective measures to prevent and control CNCDs and their risk factors, through the 2011-2022 Strategic Actions Plan to Address CNCDs in Brazil, which includes regulatory measures and support for the implementation of health promotion programs. Nevertheless, the obesity rate in Fortaleza rose by

¹ United Nations Development Programme (UNDP), 2010.

² Federation of Industries of Rio De Janeiro (FIRJAN), 2010.

³ Ceará's HDI is below the national HDI (0.699), and ranks 17th among the 27 states.

⁴ Source: Economic Strategy and Research Institute of Ceará (IPECE).

⁵ People over age 15. Source: IPECE, using data from the National Household Sampling Survey (PNAD) and the Brazilian Institute of Geography and Statistics (IBGE), 2012.

⁶ UNDP, 2010. These municípios are scattered across the state, but tend to be concentrated in the Sertão Central, Fortaleza, and Norte regions.

⁷ The difference between the lowest and the highest municipal per capita GDP is over 1000% (R\$3,169 and R\$39,997). Moreover, 30% of the municípios in Ceará have a Gini index of between 0.56 and 0.65, higher than the average for Ceará overall (0.53) and for Brazil (0.52) (Institute for Applied Economic Research, IPEA, 2010).

60% between 2006 and 2013: 67% for women versus 12% for men.⁸ The prevalence of excessive alcohol consumption and smoking also remains high, particularly among men (27% versus 7% for women, and 19.5% versus 10%, respectively).⁹ This indicates the need for a gender approach in services to promote health and prevent CNCDs.

- 1.3 International evidence shows that, in order to address the risk factors that cause CNCDs and to treat patients who already suffer from a chronic condition, the best option is to provide care through sound, integrated networks (with a consolidated, effective first level, and other, more complex levels of service that ensure continuous and timely care).¹⁰ Importantly, biological differences and culturally-determined gender roles can result in different access to and use of health services by men and women,¹¹ and can also affect how health care plans are followed. Determining effective treatments for CNCDs requires health care systems to have the capacity to analyze gender determinants and the different risk factors associated with them.¹²
- 1.4 In terms of maternal and child health, Ceará has achieved a significant reduction (80%) in the infant mortality rate, which fell from 66.8 to 13.8 per 1,000 live births between 1991 and 2013. Nevertheless, neonatal mortality (up to 28 days) has not declined by the same proportion as post-neonatal mortality.¹³ Neonatal mortality is related to preventable causes, such as low weight, septicemias, shortcomings in the care provided during the prenatal stage, childbirth, postpartum, and neonatal care, as well as septic shock.
- 1.5 Thus, Ceará continues to face significant challenges in maternal health. While the percentage of mothers with seven or more prenatal checkups rose between 2008 and 2014 (from 50.1% to 63.4%), maternal mortality rates are still high. In 2013, the maternal mortality rate in Ceará was 81.6 per 100,000 live births (well above the rate of 69 for Brazil as a whole). Around 70% of these deaths were due to direct obstetrical causes,¹⁴ resulting from complications during pregnancy, childbirth, or puerperium due to errors in interventions, incorrect treatment, omissions, or other associated factors. Gaps in the quality of care are evident from the prenatal stage, when risks should be detected and classified early in order to prevent complications and provide timely treatment. One example of

⁸ A study of young adults in Ceará also found an association between overweight/obesity and the nonwhite population (Santiago et al., 2015).

⁹ National Risk Factors Survey, Vigitel, Ministry of Health, and National Health Survey 2013 (IBGE).

¹⁰ Pan-American Health Organization (2012), "Improving chronic illness care through integrated health service delivery networks".
http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&gid=21400&Itemid,OEL #11.

¹¹ According to the National Health Survey— Ceará—2013, 28% of men and 14% of women had never been screened for glycemia, while 34% of men and 20.7% of women had never been screened for cholesterol. This suggests that men make less use of health services.

¹² World Health Organization (WHO), 2009; Schramm, J. et al.; Stevens, A. et al., 2012; Barker, G., C. Ricardo, and M. Nascimento, 2007; WHO, 2007; Pathania, V.S., 2011; DeVon, H. A. et al., 2008.

¹³ Between 2001 and 2013, the post-neonatal mortality rate (after 28 days of life) fell by more than 50%, but the neonatal mortality rate (up to 28 days of life) declined by only 24%.

¹⁴ In 2010, hypertension and hemorrhagic shock accounted for 19.7% and 10.9%, respectively, of total maternal deaths, followed by postpartum infection (6.5%) and miscarriage (4.6%).

these shortcomings is the high incidence of congenital syphilis, which in 2011 was 7.1 per 1,000 live births, more than double the national rate of 3.3.

- 1.6 **Organization of the Unified Public Health System (SUS)¹⁵ in Ceará and promotion of health care networks (RASs).**¹⁶ Ceará's model stands out as the forerunner of the Family Health Program (PSF) in Brazil¹⁷ and as having high levels of primary health care (PHC) coverage.¹⁸ The RAS model in Brazil, which has had positive results in the PSF,¹⁹ defines PHC, where the patient's care is organized, as the gateway to the system. With the first level in place, Ceará has been making progress since the late 1990s in organizing health care through the RASs, structured into macro-regions and micro-regions, in order to rationalize access to medium and high complexity care and create regional points of referral and counter-referral.²⁰
- 1.7 Since 2008, the Government of Ceará has invested in expanding the supply and quality of RAS services in order to narrow the gap in access to more complex services, balance the distribution of resources among the regions, and guarantee comprehensive care. In this context, the Bank provided key support through the Program for the Expansion and Strengthening of Specialized Health Care in the State of Ceará, PROEXMAES (2137-OC-BR),²¹ which cofinanced the construction and equipping of 20 polyclinics,²² 16 dental clinics, and two regional hospitals,²³ in addition to management and clinical training activities, and support for handling the implementation of the networks model. The State also expanded access to services and has been making more efficient use of installed capacity by strengthening the referral system.²⁴
- 1.8 PROEXMAES produced some significant results for Ceará:²⁵ (i) the availability of specialized care increased: between 2011 and 2014 polyclinics handled 2.3 million specialized consultations and examinations, representing a 60%

¹⁵ The SUS, created in 1988, is based on the principle of universal and equitable access to health promotion, protection, and recovery services, integrated within a regionally-based, hierarchical network for service delivery. Responsibility for the network and its financing is shared among the federal, state, and municipal levels of government, and supplemented by private sector involvement.

¹⁶ The RASs are organizational arrangements for health care actions and services of varying complexity, linked via technical and logistical support systems designed to improve spending efficiency and ensure comprehensive health care (MS, 2010).

¹⁷ Ceará played a key role in modeling the National Family Health Strategy (Tendler et al., 1998).

¹⁸ PSF coverage in Ceará was 80% (Unified Public Health System's Information Technology Office - DATASUS, 2014).

¹⁹ The PSF model focuses on primary health care and gives priority to facilitating access to the system. It is a starting point for the consolidation of networks. For information regarding the results of the PSF, see Macinko et al., 2006.

²⁰ Ceará was recognized as the first state to experiment with regionalization, based on the RAS concept (Mendes, EV, 2007).

²¹ The program achieved eligibility in December 2010 and will conclude in December 2016: it is already 95% implemented.

²² See [OEL #9](#).

²³ See [OEL #8](#).

²⁴ The Central Referral Unit, comprised of a medical team, organizes the allocation of services of greater complexity, in accordance with risks and protocols. See [OEL #2](#), page 199.

²⁵ Source: IPECE. See [OEL #4](#).

increase with respect to 2008, while hospitals provided care for nearly 1.5 million patients; (ii) access was expanded: waiting times for visiting a specialist were reduced from 90 days to 30 days, the proportion of women over 40 years of age receiving an annual mammogram rose by 5%, and travel time to access specialized services (polyclinics, dental clinics, and hospitals) was cut by 75%; and (iii) treatment effectiveness in the regional networks improved: neonatal transfers were eliminated, as were 96% of obstetrical transfers from the Sobral macroregion to Fortaleza. Health outcomes were also positive, with a decline of 21% in the neonatal mortality rate in Sobral (versus 14% across the state) between 2013 and 2014, thanks in part to the intensive neonatal care and treatment units operating in the Zona Norte Regional Hospital in Sobral since 2013.

- 1.9 **Strategies for managing the new units, innovative models, and coordination with the private sector.** The challenge inherent in financing and managing the new services has been addressed through innovative strategies in the context of the SUS. For managing regional hospitals, the State has formed partnerships with the private sector, through the health care social organization (OSS) model,²⁶ using results-based management contracts. In addition, to manage the polyclinics and dental clinic, with support from operation 2137/OC-BR, Ceará promoted an innovative model of consortia involving different levels of government,²⁷ in which the state participates in governance with the municípios and cofinances the operation of services.
- 1.10 Despite these good results, there is room for improvement in the network's efficiency, in terms of both health expenditure and quality of service delivery. The high rate of avoidable hospitalizations coupled with the rates of underuse of the polyclinics²⁸ generate high costs and poor health outcomes. Moreover, in the absence of clear clinical protocols and an optimal referral system, some of the medium and high complexity services that are currently provided may be unnecessary. Some studies in the SUS context suggest that around 60% of diagnostic services should never have been requested, as they produced no benefit for the patient.²⁹
- 1.11 **The pending agenda for RAS consolidation in Ceará: access, quality and efficiency.** In recent years, Ceará has made significant progress in implementing the RAS model, with results that have been recognized at the national level.³⁰ Three main challenges need to be addressed in order to consolidate a new stage for the RASs: (i) close the access gaps in specific regions and services; (ii) increase service quality, by promoting integration among the levels of care; and (iii) improve the efficiency and enhance the quality of health spending.

²⁶ Rules were issued governing the OSS model in Ceará under law 1271/97. OSSs are nonprofit, private-sector institutions whose actions complement the State's. The latter provides the infrastructure, while the OSSs take responsibility for managing the services.

²⁷ Created by State Law 14,457 of 2009, pursuant to Federal Law 11,107 of 2005.

²⁸ According to data from the State Department of Health (SESA) (2014), polyclinics in Ceará have an average utilization rate of 63%.

²⁹ World Bank, 2013.

³⁰ The new "More Specialties" Program of the Ministry of Health took the polyclinics of Ceará as its point of reference (National Council of State Health Departments, CONASS, 2014).

- 1.12 Although Ceará has expanded the medium- and high-complexity network, there are still some significant shortfalls on the supply side. In expanding the availability of specialized services, priority was given to the interior of the state, while the macroregion of Fortaleza (with 52% of the state population) still has some major gaps. According to Ministry of Health parameters, the Município of Fortaleza, the biggest service provider in its region, faces a shortfall of around 50% in terms of the need for specialized medical consultations.³¹ To help reduce some of these gaps, the Bank is supporting the Município of Fortaleza through the Program to Strengthen Social Inclusion and Health Care Networks – Proredes Fortaleza (BR-L1414), in the construction of five polyclinics. Nevertheless, to meet the needs of its macroregion, these investments will not be enough for the Município of Fortaleza to fulfill its role as the metropolitan referral município. The macroregion of Fortaleza also has a shortage of 2,776 hospital beds, leading to a situation of saturation and overuse of current services and long waiting times for surgery and hospital admission, in particular for conditions resulting from external causes and complications due to CNCs.³²
- 1.13 Similar hospital access problems are found in the recently created region of Litoral-Jaguaribe,³³ where there is a shortage of 371 beds. There is growing pressure on emergency services in the Fortaleza and Litoral-Jaguaribe regions, given the significant increase in mortality from external causes and from circulatory diseases.³⁴ People who cannot obtain services in the macroregion of Litoral-Jaguaribe must travel to other regions, such as Fortaleza,³⁵ a trip that can take up to five hours by road. According to the principles of organization and autonomy of the macroregions, their referral population is supposed to be guaranteed access to a regional network of medium- and high-complexity services. The availability of services at the tertiary level will have to be expanded to overcome the critical shortages and ensure comprehensive care.
- 1.14 Beyond these shortfalls in the availability of hospital services, Ceará faces challenges in the restructuring of the maternal-infant network, identified in paragraph 1.5, related primarily to the insufficiency or inadequacy of childbirth care. This is clear from the high percentage of maternal deaths from hemorrhaging, complications of hypertension and postpartum infections (60%), and neonatal deaths caused by respiratory problems, asphyxia, and infections (50%). The recent diagnostic assessment of the “Stork Network” identified gaps

³¹ Waiting times for neurological consultations in Fortaleza are 24 months, and 35 months for an ergonomic test.

³² In the macroregion of Fortaleza, according to SESA data, as of January 2009 there were 4,516 patients waiting for orthopedic surgery, and 30% of the patients admitted to the emergency care unit with a hospital admissions protocol could not obtain referral to a hospital.

³³ Prior to 2010, Ceará had three macroregions: Fortaleza, Sobral, and Cariri. The macroregions of Sertão Central and Litoral-Jaguaribe were added in 2010 and 2014, respectively.

³⁴ Jaguaribe and Fortaleza have the highest rates of mortality from external causes (117.9 and 122 per 100,000 inhabitants, respectively) and deaths from circulatory diseases, which rose 60% and 80%, respectively, between 2009 and 2014.

³⁵ According to SESA data in 2013, 18.8% of hospital admissions were residents of the macroregion of Litoral-Jaguaribe.

in these services in various regions of the state, especially for high-risk childbirth care.³⁶

- 1.15 In terms of the quality of services, in recent years Ceará has invested in the process of certifying high- and medium-complexity units, especially in connection with operation 2137/OC-BR.³⁷ Nevertheless, some health outcomes reveal shortcomings in the quality of care—for example, the rates of hospitalization for PHC-sensitive conditions,³⁸ the incidence of congenital syphilis, and maternal deaths from avoidable causes are high. To increase quality throughout the network and standardize practices will require: (i) establishing and implementing clinical protocols for the main health issues and organizing services so as to guarantee a continuous flow of care among the levels;³⁹ and (ii) expanding the accreditation of all specialized care units (dental clinics and polyclinics) and the direct public hospital network⁴⁰ to ensure best practices in each service, thereby continuing the efforts initiated by operation 2137/OC-BR.
- 1.16 **The key challenge: boosting management efficiency.** Ceará has established a robust and complex regionalized health care network that requires strong managerial and organizational capacities to achieve the expected health outcomes. Between 2007 and 2014, the State increased its current spending on health by nearly 150%, and health expenditure rose from 1.7% of GDP to 2.4%. Ceará is among the states with the highest public spending on health, above the minimum required by the federal Constitution.⁴¹ Moreover, as a result of epidemiological changes, there is an upward trend in this spending, as demonstrated by domestic and international evidence.⁴² Studies have confirmed the margins of inefficiency in the health sector in the region and in Brazil.⁴³ Given the projected rise in demand for health services and the current and future fiscal constraints on governments in supporting a universal and comprehensive public system, it is essential to make more efficient use of resources. To this end,

³⁶ The *Rede Cegonha* (“Stork Network”) is a strategy of the federal government for guaranteeing maternal-infant care. Its 2012-2014 action plan in Ceará called for adding 263 hospital beds in high-risk obstetrics, 70 beds in the adult intensive care unit, 176 beds in the neonatal intensive care unit, 321 beds in neonatal intermediate care, and 135 “kangaroo” beds, in addition to the construction of 27 normal childbirth centers and 22 homes for pregnant women.

³⁷ The Cariri Hospital was accredited at level II in 2014, and the Sobral Hospital will obtain its accreditation in 2015. By 2016, nine units (polyclinics and dental clinics) will be accredited.

³⁸ At Cariri Regional Hospital, 33% of admissions were for PHC-sensitive conditions (DATASUS, 2014).

³⁹ The quality of care rises with the continuity of care (see [OEL #11](#)).

⁴⁰ Recent studies have revealed the low quality of public hospitals under direct administration in Brazil. See World Bank, 1994, *Programa Nacional de Avaliação dos Serviços de Saúde* [National Health Services Evaluation Program] (PNASS), 2004-2005. Gondin, S., 2008, shows efficiency gaps in Ceará’s public network hospitals.

⁴¹ Constitutional Amendment 29 sets a floor for health spending by the States, at 12% of revenue from taxes and specific levies. According to IBGE, Ceará spent around 16% in 2013, Rio de Janeiro 7.2%, and Paraná 9% (below the minimum).

⁴² It is estimated that Brazil will face a growing burden from CNCDs, which will generate costs of around 0.5% of GDP per year in the coming decades (Bloom D. E., et al., 2011). Other estimates place the annual cost incurred through treatment and productivity losses in Brazil due to the five main CNCDs at US\$72 billion (Fuster, V., & Kelly, B.B., Eds., 2010).

⁴³ For the region, see Chisholm and Evans, 2010; for Brazil, <http://www.bloomberg.com/visual-data/best-and-worst/most-efficient-health-care-countries>.

- processes will have to be reorganized and management mechanisms and tools improved, in order to continue enhancing service access and quality, without generating fiscal imbalances. These aspects are expected to be improved by taking into account the lessons learned in other operations, mentioned in paragraph 1.25.
- 1.17 In addition to the weaknesses indicated in paragraph 1.10, other inefficiencies have been identified in the logistics support systems for the RASs in Ceará, such as laboratory services, pharmaceuticals storage and distribution, and sterilization. The current fragmented, scaled-down organization leads to waste and cost overruns. The evidence shows that centralizing logistics support services in the health sector can improve performance and efficiency while reducing costs.⁴⁴ In fact, over the past decade various health systems have centralized functions related to the purchase and distribution of drugs and other inputs in order to optimize results.⁴⁵
- 1.18 **Proposals for further consolidation of the regional health care networks in Ceará.** In the context of the 2012-2015 State Health Plan, the Government of Ceará requested Bank support for strengthening the process of health regionalization that began in 2008. To address the challenges presented, the evidence calls for continued support for the model based on integrated services networks. The latter consolidate access to services for health promotion, prevention, and care through the RASs, which are structured on the basis of PHC and backed by medium- and high-complexity services that will guarantee comprehensive and quality care. The health care systems that achieve lower premature mortality rates and a better state of health, with slower growth in expenditures, are those that have an integrated service network focused on primary care.⁴⁶
- 1.19 To consolidate access in the regions, it will be necessary to expand high complexity services, which represent critical points of the RASs. In order to ensure proper structuring of the regional networks, as called for in the directives for health regionalization,⁴⁷ the Litoral-Jaguaribe Regional Hospital⁴⁸ will have to be built with a profile focused on maternal-child care, emergencies, and traumas. The new hospital will ensure people's right of access to tertiary services in their referral macroregion, thereby avoiding the need to travel to Fortaleza, while improving the response time of interventions and the timeliness of care.
- 1.20 In the context of strengthening maternal-child care, which represents an unfinished agenda in Ceará and coexists with emerging health problems, it will be necessary to support reforms, expansion, and the procurement of equipment

⁴⁴ For example, the establishment of a central laboratory in North Shore-Long Island reduced costs and response times in the hospital network (Seaberg, R., R. O. Stallone, and B. E. Statland, 2000). In London, the review of cancer examinations at the central level boosted the accuracy of diagnoses and improved the response time (Proctor, I. E., et al., 2011). In Quebec, the procurement and distribution of drugs has been centralized since the 1990s, in the wake of studies that showed a potential reduction of 65% in order processing times (Laurin, C.S., 2011).

⁴⁵ Rahman et al., 2010; Mears et al., 2007; Iannone et al., 2014.

⁴⁶ Pan American Health Organization (PAHO), 2012, see [OEL #11](#).

⁴⁷ Master Regionalization Plan, 2014.

⁴⁸ See [OEL #10](#).

for assisted childbirth services, at both the normal and high risk levels. These include adult and neonatal intensive care units and homes for women experiencing a risky pregnancy. Such investments will serve to reduce the availability gaps for this critical component of the Stork Network, expanding the State's capacity to handle clinical and intensive obstetric and neonatal hospitalizations.

- 1.21 The challenges inherent in this new stage will require significant efforts to promote the needed changes in clinical and operational management. Consolidation of the RAS model will require the development of new capacities in Ceará's State Department of Health (SESA) to reinforce its leadership and coordination role while strengthening the Regional Health Coordination Offices so that they can perform the health authority's role of coordination, dialogue, and representation in the regions. It is also crucial to boost the capacities of professionals at all levels of care, through ongoing education and training, gearing their performance to a new care model backed by the implementation of lines of care. Evidence in the context of the SUS shows that health services are more efficient when they are coordinated among the various levels and bound by clinical protocols and directives that comprise the lines of care,⁴⁹ which are comprehensive strategies focused on broad health themes, ranging from health promotion and prevention activities (reducing risk factors) to treatment with the most cost-effective interventions. Ceará already has some interesting pilot experiments under way for reorganizing care, based on validating and implementing lines of care for certain priority conditions (CNCDs and maternal-infant),⁵⁰ What is needed, then, is to expand these experiments, by implementing lines of care throughout the state. In addition, the process of accrediting units (polyclinics and dental clinics) and the hospital network must continue.
- 1.22 **Public-private partnerships (PPPs), a strategy for improving the performance and quality of expenditure through new models and solutions.** The first stage of health care regionalization in Ceará was marked by innovative strategies (some never tried before) for the delivery of services, which have had proven success.⁵¹ While the literature recognizes the challenges inherent in implementing PPPs in the region,⁵² Ceará has been noteworthy in its capacity to create and experiment with new forms of coordination with the private sector, seeking to overcome the limitations of direct administration and thereby generate greater benefits for the health sector. In 2011, the State launched a technical and legal modeling process⁵³ for the PPP, pursuant to National Law 11,079 and State

⁴⁹ Magalhães, J. R., M. Gariglio, and Teixeira et al., 2002.

⁵⁰ Since 2013, the Município of Fortaleza has been implementing a pilot project to reorganize care for chronic conditions, based on PHC. The microregion of Tauá (Sertão Central region) is involved in a similar project, with support from PAHO and the National Council of State Health Departments (CONASS).

⁵¹ For example, the annual cost of a hospital managed by an OSS is 30% lower than of one of similar scope and profile under direct administration. Moreover, a comparison of selected clinical indicators shows, for example, that the prevalence of hospital infections in intensive care units is 29% lower in hospitals managed by an OSS.

⁵² See [OEL #11](#) and Alonso Cuesta, 2013.

⁵³ In the technical and legal modeling process for the PPP, an independent entity is also envisaged that will monitor and verify the anticipated results set out in the contract.

- Law 14,391, for the construction and concession of administrative services for operation of the Metropolitan Hospital⁵⁴ (“grey coat”).⁵⁵ The Metropolitan Hospital will address the needs of the macroregion of Fortaleza,⁵⁶ mentioned in paragraph 1.12. Given that this also represents an important innovation in health management models, it is of strategic importance for the Bank to support this initiative.
- 1.23 Moreover, SESA also needs support in other PPP strategies. To address organizational problems in logistics support services for the RASs, the evidence examined in paragraph 1.17 supports their centralization and the use of an external supplier to generate the transfer of experience and know-how, savings in terms of money and time, and improved quality.⁵⁷ It would be advisable to design and implement a SESA logistics center in order to concentrate the currently scattered functions of: (i) sterilization; (ii) storage and distribution of pharmaceuticals; (iii) issuance of medical reports on examinations conducted in the polyclinics; and (iv) laboratory services. The operation of the services should be concessioned to a private provider, through results-based contracts.
- 1.24 When it comes to the quality of hospital management, private-sector know-how and technology should be used to strengthen the public network. SESA entered into an agreement with the existing OSS,⁵⁸ which manages two regional hospitals (Cariri and Sobral), to support implementation of the hospital management system with a view to improving operational and clinical performance and standardizing good practices in hospital management throughout the state’s network.
- 1.25 **Lessons learned and related operations.** This program complements operation 2137/OC-BR, from which some important lessons can be drawn: (i) it is essential to emphasize and strengthen management of the networks and services in order to ensure that the new infrastructure is functioning optimally; (ii) the introduction of medium- and high-complexity services should be accompanied by access protocols, thereby avoiding inefficient allocations; (iii) it is essential to strengthen the institutional capacity of the Regional Health Coordination Offices to guarantee the operation of the networks; and (iv) flows and processes must be (re)organized prior to modeling the information systems that support the networks, so as to allow needs and capacities to be properly assessed. In addition, this operation is related to others in the country’s sector portfolio, particularly in the following knowledge areas: (i) structuring of network governance and implementation of lines of care under the Program for Strengthening State Health Care Management (3051/OC-BR) and the Program for Strengthening Social Inclusion and Health Care Networks - PROREDES

⁵⁴ The feasibility study and bidding stages have been completed and the winning consortium has been selected. See [OEL #5](#).

⁵⁵ For health care units, the service concession models within the context of PPPs distinguish between the concessioning of administrative (operational) management, also known as “grey coat” services, and clinical management, called “white coat” services. See Astorga, I. et al., 2015.

⁵⁶ See [OEL #6](#).

⁵⁷ Azzi et al., 2013 and Nikolic and Maikisch, 2006.

⁵⁸ Instituto de Saúde e Gestão Hospitalar [Institute for Health and Hospital Management] (ISGH). www.isgh.org.br.

(3246/OC-BR); and (ii) management of health care PPPs and RASs in metropolitan regions under the Program to Strengthen the Unified Health System in the Metropolitan Region of Salvador - PROSUS (3262/OC-BR).

- 1.26 **Strategic alignment of the program.** The program is consistent with document AB-3008, “Update to the Institutional Strategy 2010-2020: Partnering with Latin America and the Caribbean to Improve Lives,” and is aligned with the development challenge of social inclusion and equality, through its contribution to improving the social progress index, reducing maternal mortality, and increasing the number of people receiving health care services, and by benefiting government agencies through projects to strengthen technology and management tools, thereby improving public service delivery. The program is also aligned with the cross-cutting area of gender equality and diversity in that it increases the number of women receiving specialized health care services. In addition, the program will contribute to the Corporate Results Framework 2016-2019 (document GN-2727-4) through the aforementioned indicators. The program is aligned with the priority of the Strategy on Social Policy for Equity and Productivity (document GN-2588-4) for strengthening national health care systems and addressing the double burden of the health transition, and with the Health and Nutrition Sector Framework Document (document GN-2735-3) with respect to strengthening the management of services and improving their quality, by moving forward with consolidation of the RASs. It will also contribute to the strategic area of the 2016-2018 Country Strategy with Brazil (document GN-2850) related to reducing inequity and improving public services and with the objective of expanding and improving the PHC network.

B. Objectives, components and cost

- 1.27 The objective of the program is to help improve the health status of the population of Ceará by increasing service accessibility and quality and improving the performance of the Unified Public Health System (SUS) by consolidating the health care network (RAS) approach in the state. The operation is structured in three components:
- 1.28 **Component 1. Strengthening of management and improvement of service quality (IDB: US\$27.3 million).** The objective of this component is to boost the efficiency of the regionalized health care networks and the quality of their services, by improving logistics and clinical and operational performance. The set of activities to be supported under this component will benefit the state’s entire population.⁵⁹ It will finance, *inter alia*: (i) consulting services to plan processes, systems, and resources for network management;⁶⁰ (ii) overhaul and expansion of SESA facilities and regional coordination offices; (iii) design and infrastructure of the health care logistics center; (iv) restructuring of processes and computerization of management for the hospital network itself; (v) strengthening of the access referral systems; (vi) preparation and implementation of clinical

⁵⁹ The state of Ceará has 8.8 million residents.

⁶⁰ This includes studies and consulting services to restructure SESA processes and workflows as well as those of its regional units, and to improve management aspects of the networks, such as performance of the units, cost effectiveness, and efficiency.

protocols and gender- and race-sensitive priority lines of care;⁶¹ (vii) accreditation of approximately 30 medium-complexity health care units (polyclinics and dental clinics) and medium- and large-scale state hospitals;⁶² and (viii) human resource training and education.

- 1.29 **Component 2. Expansion of access and consolidation of the RASs (IDB: US\$85.8 million; local: US\$55.5 million).** The component's objective is to expand access to medium- and high-complexity services in priority regions, ensure their integration with PHC, and guarantee comprehensive care. The investments under this component will benefit the residents of the macroregions of Fortaleza, Cariri, Sobral, and Litoral-Jaguaribe.⁶³ It will finance, *inter alia*: (i) design, construction, and equipment of the Litoral-Jaguaribe Regional Hospital; (ii) construction and equipment of the Metropolitan Hospital – PPP;⁶⁴ (iii) design, construction, and equipment of a polyclinic in Fortaleza; and (iv) physical improvements and equipment for childbirth-related services in the macroregions of Fortaleza, Cariri, Sobral, and Litoral-Jaguaribe.⁶⁵
- 1.30 **Component 3. Administration, evaluation, and audit (IDB: US\$9.9 million).** This component will support SESA in implementing the program and monitoring the expected outcomes. It will finance: (i) specialized technical and consulting services for program management; (ii) auditing services; (iii) supervision and quality control services for the works; (iv) studies to evaluate the program's implementation and impact; and (v) support for events and strengthening of the project management unit (PMU).

Table 1.1. Costs of the operation (U.S. dollars)

Components	IDB	Local	Total
Component 1. Strengthening of management and improvement of service quality	27,338,203	0	27,338,203
Component 2. Expansion of access and consolidation of the RASs	85,761,797	55,500,000	141,261,797
Component 3. Administration, evaluation, and audit	9,900,000	0	9,900,000
TOTAL	123,000,000	55,500,000	178,500,000

C. Key results indicators

- 1.31 The impact indicators for this operation involve CNCD-related morbidity and mortality, specifically the premature death rate (under age 60) from complications due to diabetes mellitus and strokes. To measure the impact on maternal-child health, indicators for the proportion of low birth weight births and avoidable

⁶¹ The priority lines of care are: arterial hypertension, diabetes mellitus, and maternal-child care, which includes the principles and practices of humane childbirth in accordance with Ministry of Health standards.

⁶² The Albert Sabin Hospital, the Psychiatric Hospital, and the São José Hospital will be accredited.

⁶³ The populations of the macroregions are: Fortaleza, 4.6 million; Sobral, 1.6 million; Cariri, 1.5 million; and Litoral-Jaguaribe, 0.5 million.

⁶⁴ Clinical management of the Metropolitan Hospital and the Litoral-Jaguaribe Hospital will be handled through an OSS selected in accordance with local legislation (Law 12,781 of 30 December 1997).

⁶⁵ In accordance with the needs assessment of the "Stork Network," with Ministry of Health support.

hospitalizations were included, to reflect the RAS model strengthening outcomes. Intermediate outcome indicators will include the average length of stay for patients admitted to the network's hospitals. Final outcome indicators will include the annual rate of hospitalizations due to diabetes mellitus and its complications in the population aged 30 to 59 living in Ceará.⁶⁶ In addition, the framework of corporate outcomes includes the sector indicator for the "number of people receiving health care services".

- 1.32 **Cost-benefit analysis.** The strategies promoted in this operation are based on evidence of the effectiveness of the integrated health care networks' care models. On the basis of specific evidence for Brazil, the [economic analysis](#) quantified the incremental benefits flowing from project investments, including: (i) savings in hospital spending through a reduction in avoidable admissions; (ii) productivity gains through the reduction in morbidity and mortality associated with the care model adopted; and (iii) gains from implementation of the lines of care. In the base scenario, with conservative assumptions in terms of the effectiveness of interventions, over a horizon of five years and using a discount rate of 3%,⁶⁷ the benefit-cost ratio ranges between 1.14 and 1.92. The sensitivity analyses also show that the cost-benefit ratio is greater than 1 in most of the less favorable scenarios.

II. FINANCING STRUCTURE AND MAIN RISKS

A. Financing instruments

- 2.1 The Bank's financing for this operation will be provided through an investment loan from the Ordinary Capital (OC) resources of the Bank, under the Flexible Financing Facility (document FN-655-1). The planned disbursement period is five years.

Table II.1. Projected disbursements (U.S. dollars)

Financing	Year 1	Year 2	Year 3	Year 4	Year 5	Total
IDB (OC)	20,125,766	18,057,448	45,967,501	28,860,460	9,988,825	123,000,000
SESA (local)	9,881,174	30,589,822	15,029,004			55,500,000
Total	30,006,940	48,647,270	60,996,505	28,860,460	9,988,825	178,500,000

B. Environmental and social risks

- 2.2 Pursuant to the Bank's Environment and Safeguards Compliance Policy (OP-703)—Directive B.03. Screening and classification—this program is classified as a category B operation, considering that the possible adverse impacts and social and environmental risks are localized and of short duration,

⁶⁶ These indicators will be monitored using the various data sources contained in DATASUS, the official health data system in Brazil managed by the Ministry of Health. DATASUS combines national data broken down by state and município and by public health unit, thus representing the principal source of public health data.

⁶⁷ As discussed in [OEL #1](#), the 3% discount rate for health care projects is the one recommended by the World Health Organization.

and that the mitigation measures are known and can be readily implemented. The most significant social and environmental risks have to do with the operational phase of the two hospitals and the polyclinic, and relate in particular to the greater demand for energy and water; the quality of the water; discharges of hospital effluents; generation of hazardous solid waste (needles and other medical sharps, bio-infectious materials, pharmaceuticals, and chemicals); and occupational health and safety for hospital employees, patients, and visitors. The respective Environmental and Social Analysis has been prepared, the results of which are contained in the Environmental and Social Management Report (ESMR). The Environmental and Social Management Plan (ESMP) for each of the program's infrastructure works will include specific measures and procedures for mitigation and control of potential risks and adverse impacts, which must be considered in the construction and operation phases. The loan contract will include the requirements mentioned in section VI of the ESMR (see paragraph 3.6). Lastly, no resettlement of people is provided for or anticipated in connection with program works construction.

C. Fiduciary risks

- 2.3 An institutional capacity analysis of SESA classified the level of risk as medium, recognizing that this operation represents the second stage of a consolidated program (2137/OC-BR), but that there have been some delays in its execution. The analysis identified the following risks: (i) weakness in the operational efficiency of processes; (ii) data quality problems in the documentation relating to land tenure, designs, and studies for carrying out the works; (iii) weaknesses in the financial management module that is part of the State's systems, concerning the capacity to generate disbursement processes and financial statements for the program; and (iv) lack of familiarity with the Bank's policies and procedures relating to procurement and to accounting and financial management.
- 2.4 To mitigate these risks, the following measures are proposed: (i) conduct a diagnostic assessment/survey/mapping of the financial management and procurement processes to make them more efficient, and to exercise close sector and fiduciary supervision on the basis of the multiyear execution plan and the procurement plan; (ii) initiate works contracting processes only when they have the required detailed designs and licenses, and studies validated by the Bank; (iii) ensure that the State Department of Finance makes its financial management system, which will be adapted to meet Bank requirements, available to SESA; and (iv) prepare and implement a fiduciary training plan.

D. Other risks

- 2.5 The following additional risks were identified: (i) the structure of the project management unit (PMU) is inadequate, given the volume of investments under the new operation; (ii) the potential for conflict with respect to the Metropolitan Regional Hospital PPP, between "grey coat" management (special purpose company—the winning corporate consortium) and "white coat" services (under SESA responsibility); (iii) the change of government that is to take place in January 2019, the beginning of the second-to-last year of program execution,

which could affect the pace of the program's implementation and its completion;⁶⁸ and (iv) exchange rate fluctuations. To mitigate these risks: (i) the appointment of suitable personnel will be formalized; the establishment and activation of the PMU will be a condition precedent; and specialized support will be contracted for managing the program and supervising works; (ii) an auditor independent of the PPP will be contracted and the operation's contracts will include interdependent results for "white coat" and "grey coat" services in order to ensure that the two operations are aligned and that the hospital is well run; (iii) the planning of execution will be adjusted to take these limitations into account; and (iv) the budget and management instruments will be closely monitored.

III. IMPLEMENTATION AND MANAGEMENT PLAN

A. Summary of implementation arrangements

- 3.1 **Executing agency.** The borrower will be the State of Ceará and the Federative Republic of Brazil will be guarantor of the borrower's financial obligations arising from the loan contract. The executing agency will be the State of Ceará, through SESA, which will establish the PMU through the appropriate legal means.
- 3.2 The PMU, which reports directly to the Office of the Secretary of Health, will be responsible for: (i) planning and administrative and fiduciary execution; and (ii) program monitoring and evaluation. This unit will include at least: a general coordination office; two technical sections;⁶⁹ a management and strengthening section to deal with quality and certification matters; a procurement section; and an administrative and financial section. The PMU will be supported by the Special Bidding Committee of the State Inspector-General's Office (created by Supplementary Law 65 of 3 January 2008), in which State procurement transactions financed with resources from international institutions are centralized. A firm is expected to be hired to support management of the program's activities and supervision of the works.
- 3.3 Program execution will be governed by the program's Operating Regulations, the terms of which will be negotiated and approved by the Bank. These will include environmental considerations and will comprise rules and procedures to be followed by the executing agency in the areas of programming, accounting and financial management, procurement, audits, and monitoring and evaluation. In addition, the program's Operating Regulations will provide details on the execution arrangements, spelling out the PMU's functions and the responsibilities of each actor along with the respective flows.

⁶⁸ To ensure fiscal sustainability, the decision on the capacity of subnational governments to borrow from external financing agencies is the responsibility of the federal government, which has established a methodology and specific parameters to this end. In addition, the federal government will guarantee the loans contracted. According to analyses performed by the federal government, the State of Ceará is in a position to contract this loan with the Bank and complies with the indexes established in the Fiscal Responsibility Act. As to the sustainability of activities promoted by the project, in the financing framework of the SUS, budget categories are allocated in each sphere of government, in accordance with the percentages established in the federal Constitution, thereby guaranteeing the continuity of health care services.

⁶⁹ One of which will have an environmental specialist.

- 3.4 **The following will be special contractual conditions precedent to the first disbursement of the loan: (i) publication in the Official Gazette of the State of Ceará of the decree creating the PMU and appointing its coordinators and managers; (ii) evidence that the program's Operating Regulations have entered into force under the terms agreed upon with the Bank; and (iii) approval by the Bank of the terms of reference for contracting the project management and works supervision support firm.**
- 3.5 The following will be special contractual conditions of execution: (i) evidence that an integrated computerized system for the project's financial management is up and running, within eight months after the loan contract signature date; (ii) prior to the start of the works involving the hospitals included in the program, presentation of the hospital management model as well as the respective draft model contract to be signed, for the Bank's no objection; (iii) prior to the startup of hospital operations, presentation of the respective signed management contract; (iv) evidence that the project management and works supervision support firm has been contracted, within six months after the loan contract signature date; and (v) prior to the start of bidding for works on the project's polyclinic, evidence that the appropriate legal instrument has been signed between the borrower and the Município of Fortaleza, under terms approved by the Bank.
- 3.6 **Special environmental and social conditions of execution:** (a) presentation to the Bank, prior to the startup of works on each type of health unit, and in accordance with terms agreed with the Bank, of: (i) the detailed designs; (ii) the ESMP; (iii) the required legal licenses;⁷⁰ and (iv) evidence that public consultations have been held in accordance with Bank policies; (b) during the project disbursement period, compliance with the programs, requirements, and guidelines established in the program's Operating Regulations and the ESMP; and (c) presentation of the environmental and social management system for implementation of the ESMP, within 90 days after the loan contract signature date.
- 3.7 **Procurement.** The procurement of goods, works, and consulting services will be conducted in accordance with the Bank's policies (documents GN-2349-9, Policies for the procurement of works and goods financed by the IDB and GN-2350-9, Policies for the selection and contracting of consultants financed by the IDB). Based on the institutional capacity analysis of the executing agency, the procurement processes indicated in the procurement plan to be financed in whole or in part by the Bank and all processes with an estimated cost above the threshold for international competitive bidding will be subject to ex ante review.
- 3.8 **Disbursements.** Disbursements will be made under the advance of funds modality, based on the program's actual liquidity needs for a maximum period of six months. Disbursements will be made into a special bank account opened in the name of the project exclusively for the loan proceeds, as established in document OP-273-6, "Financial management guidelines for IDB-financed projects."
- 3.9 **Audit.** The program's financial statements will be audited annually by the State of Ceará's Audit Office or, if it is not available, by an independent external

⁷⁰ These licenses include land tenure information.

auditing firm acceptable to the Bank, to be engaged by the executing agency. The audited financial statements will be delivered to the Bank no later than 120 days after the close of each fiscal year of the entity, in accordance with the procedures and terms of reference previously agreed upon with the Bank. The audit will include an ex post review of disbursement and procurement processes, in addition to the Bank's own actions and reviews.

- 3.10 **Retroactive recognition of expenditures and advance procurement under the loan.** The Bank may finance retroactively, as a charge against the loan proceeds, up to US\$24.6 million (20% of the amount of the loan), and it may recognize, as a charge against the local contribution, up to US\$11.1 million (20% of the estimated amount of the local contribution) in eligible expenditures incurred by the borrower before the loan approval date. These outlays refer to advance procurement, primarily for consultants' studies, preparation of designs, and works execution. To be eligible for recognition, the procurement processes must be substantially similar to those conducted under Bank rules and consistent with the Bank policy on recognition of expenditures, retroactive financing, and advance procurement (OP-507, document GN-2259-1). Expenditures that meet the following requirements will be recognized: (i) all expenditures and payments related to program activities incurred during the 18 months prior to the date of loan approval by the Bank's Board of Executive Directors, but subsequent to the project profile approval date (18 May 2015); (ii) procurement processes conducted under local legislation (Law 8666/93 and, in this case, Law 11,079/2004 on PPPs in Brazil) and consistent with the terms of OP-507; (iii) the purposes, processes, and amounts to be recognized are identified and reported in the program documents (annual work plan (AWP) and procurement plan); (iv) payments were sourced from the State treasury.

B. Summary of results monitoring arrangements

- 3.11 The PMU will deliver semiannual reports regarding: (i) performance in achieving the objectives and outcomes agreed upon in each AWP and in the program monitoring report (PMR), including analysis and monitoring of risks and mitigation measures; (ii) execution and procurement plan status; (iii) fulfillment of contractual conditions; and (iv) the status of financial execution. In addition, the report for the second half of each calendar year will include: (i) the AWP for the following year; (ii) the updated procurement plan; and, where necessary, (iii) the actions planned for implementing the audit recommendations. The PMU will also be supported by advisory services to implement the monitoring and evaluation plan. The indicators included in the Results Matrix will be monitored using the information generated by SESA and reported in DATASUS.
- 3.12 The project impact evaluation uses the synthetic controls methodology and will compare the final outcome and impact indicators of the results matrix in the beneficiary regions with those from other similar regions beyond the scope of the project. For each indicator, e.g. the premature death rate from strokes, a synthetic control will be constructed from a combination of municípios in other states of the Brazilian Northeast. By construction, that synthetic control will present the same trends as Ceará in the years prior to the intervention, and consequently its future behavior will serve as a counterfactual for what would happen in the absence of the program. The data needed to prepare the

evaluation come from DATASUS and, more specifically, from the Mortality Data Reporting System and the Hospital Data Reporting System of the SUS, which compile such information on a routine basis.

C. Design activities post approval

- 3.13 Work with the SESA team is expected to continue in the period between loan approval and contract signature, to follow up on: (i) the preparation of terms of reference for the PMU consultants and the strategic consulting services; and (ii) support for the preparation of studies and detailed designs for the two hospitals. In addition, during this time SESA will receive consulting services to support the redesign of processes and workflows. This activity is the result of cooperation from the country's fiduciary sector, with the objective of improving the performance of health sector operations in Brazil.

Development Effectiveness Matrix				
Summary				
I. Strategic Alignment				
1. IDB Strategic Development Objectives		Aligned		
Development Challenges & Cross-cutting Themes		-Social Inclusion and Equality -Gender Equality and Diversity		
Regional Context Indicators		-Social Progress Index		
Country Development Results Indicators		-Maternal mortality ratio (number of maternal deaths per 100,000 live births) -Beneficiaries receiving health services (#)* -Government agencies benefited by projects that strengthen technological and managerial tools to improve public service delivery (#)		
2. Country Strategy Development Objectives		Aligned		
Country Strategy Results Matrix		GN-2850	Expand and improve the primary health care network.	
Country Program Results Matrix		GN-2805	The intervention is included in the 2016 Operational Program.	
Relevance of this project to country development challenges (If not aligned to country strategy or country program)				
II. Development Outcomes - Evaluability		Highly Evaluable	Weight	Maximum Score
		9.7		10
3. Evidence-based Assessment & Solution		10.0	33.33%	10
3.1 Program Diagnosis		3.0		
3.2 Proposed Interventions or Solutions		4.0		
3.3 Results Matrix Quality		3.0		
4. Ex ante Economic Analysis		10.0	33.33%	10
4.1 The program has an ERR/NPV, a Cost-Effectiveness Analysis or a General Economic Analysis		4.0		
4.2 Identified and Quantified Benefits		1.5		
4.3 Identified and Quantified Costs		1.5		
4.4 Reasonable Assumptions		1.5		
4.5 Sensitivity Analysis		1.5		
5. Monitoring and Evaluation		9.1	33.33%	10
5.1 Monitoring Mechanisms		2.5		
5.2 Evaluation Plan		6.6		
III. Risks & Mitigation Monitoring Matrix				
Overall risks rate = magnitude of risks*likelihood		Medium		
Identified risks have been rated for magnitude and likelihood		Yes		
Mitigation measures have been identified for major risks		Yes		
Mitigation measures have indicators for tracking their implementation		Yes		
Environmental & social risk classification		B		
IV. IDB's Role - Additionality				
The project relies on the use of country systems				
Fiduciary (VPC/FMP Criteria)	Yes	Financial Management: Budget, Treasury, Accounting and Reporting, External control, Internal Audit. Procurement: Information System, Shopping Method, Contracting individual consultant, National Public Bidding.		
Non-Fiduciary	Yes	Strategic Planning National System.		
The IDB's involvement promotes additional improvements of the intended beneficiaries and/or public sector entity in the following dimensions:				
Gender Equality				
Labor				
Environment				
Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project				
The ex-post impact evaluation of the project will produce evidence to close knowledge gaps in the sector that were identified in the project document and/or in the evaluation plan		Yes	La evaluación de impacto estará basada en la metodología de control sintético y contribuye a generar evidencia sobre la efectividad del enfoque de redes integradas de servicios de salud.	

Note: (*) Indicates contribution to the corresponding CRF's Country Development Results Indicator.

The program aims to contribute to the improvement of health conditions of the population of the state of Ceara by increasing access and quality of services, as well as improving the performance of the Unified Health System, strengthening the healthcare networks in that state.

The project document and its annexes present an informed diagnosis about the current situation to justify the implementation of the program. Evidence on the effectiveness of the proposed solutions is referenced, including experiences related to the context of Ceará. The results matrix includes SMART indicators suitable for measuring results and products.

The project has a cost-benefit analysis supporting the economic viability of the proposed activities.

The monitoring and evaluation activities are planned and budgeted, though the specific timing of activities requires further definition. The impact evaluation, though not clearly defining ex ante the key questions that it is aiming to answer, proposes a synthetic control analysis in order to compare municipalities outside the metropolitan region of Fortaleza with the synthetic control formed with non-metropolitan municipalities in the neighbor states. In the monitoring and evaluation plan, the data and information to be used for the analysis are clearly detailed.

RESULTS MATRIX

Project Objective	The objective of the program is to help improve the health status of the population of Ceará by increasing the accessibility and quality of services and improving the performance of the Unified Public Health System by consolidating the health care network approach in the state.			
Impact indicators	Baseline	Target (2020)	Source	Calculation Method
Early mortality rate due to diabetes mellitus (DM)	Total: 9.49 (2013) Men: 9.75 (2013) Women: 9.25 (2013)	Total: 8.87 Men: 8.87% Women: 8.87%	DATASUS	Number of premature deaths (30-59 years) due to DM among resident population/resident population x 100,000 Diabetes: categories E10-E14 of ICD-10.
Early mortality rate due to cerebrovascular accidents (CVA)	Total: 7.33 (2013) Men: 8.79 (2013) Women: 6.00 (2013)	Total: 6.85 Men: 8.13 Women: 5.58	DATASUS	Number of premature deaths (30-59 years) due to CVA among resident population/resident population x 100,000 CVA: category I-64 of ICD-10.
Percentage of low-birth weight births (<2,500 g)	8% (2014)	6%	DATASUS	Number of low-weight (< 2,500 g) live births in Ceará/ total number of live births in Ceará
Final Outcome Indicators	Baseline	Target	Source	Calculation Method
Percentage of hospital admissions for primary health care (PHC) sensitive conditions	Total: 20.13% (2013) Men: 24.1 (2013) Women: 17.88 (2013)	Total: 18.72% Men: 22.29% Women: 16.71	DATASUS	Number of hospital admissions for PHC-sensitive conditions in Ceará/total admissions in Ceará

Final outcome indicators	Baseline	Target	Source	Calculation Method
Annual rate of hospital admissions due to DM and its complications among the population aged 30 to 59 living in Ceará.	4.82 (2013)	4.50	DATASUS SUS Hospital Information System Brazilian Institute of Geography and Statistics (IBGE)	Number of hospital admissions due to DM and its complications among the resident population aged 30-59 /resident population aged 30-59 x 10,000
Percentage of specialized prenatal consultations for high-risk pregnancies performed versus programmed	45% (2014)	70%	Superintendency of Networks and Units (SRU/SESA)	Percentage of specialized prenatal consultations for pregnancies classified as high risk (performed/programmed) X 100
Percentage of pregnant women diagnosed with syphilis during the first trimester of pregnancy	22%	75%	DATASUS	Number of pregnant women diagnosed with syphilis during the first trimester/total number of pregnant women diagnosed with syphilis during pregnancy
Intermediate outcome indicators	Baseline	Target	Source	Calculation Method
Recipients of health care services	7,012,000	7,713,200	DATASUS	Number of people registered in the Basic Health Units (UBS) of the State of Ceará
Average hospital stay (days) of patients admitted in the public network of Ceará	9.5 (2014)	7	SRU/SESA	Number of patient-days in the unit in the period of analysis/total discharges from the unit in the period of analysis
Number of days taken to issue a tomographic medical report.	15 (2014)	4	SRU/SESA	Number of days between the tomography date and availability of the results
Response time (days) for laboratory tests in the Ceará public network ¹	7 (2014)	3	SRU/SESA	Number of days between the laboratory test date and availability of the results

¹ For this outcome, the tests considered are for urea, creatinine, T4, TSH, and glycosylated hemoglobin.

OUTPUTS

Output	Unit of measure	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Target	Comments
Component 1. Strengthening of management and improvement of service quality									
Consulting assignment to study improvements in SESA's process planning and management	# (study)	0			1			1	Means of verification: SESA monitoring systems (budgets and fiscal targets)
Referral and audit systems reinforced with updated processes and information technology	# (system)	0	1	1				2	Idem
Clinical protocols and lines of care developed ² (gender/race sensitive) and approved by the competent authority	# (protocol/line)	0	1	2				3	Idem
Lines of care implemented ³	# (lines)	0	1	2				3	Idem Refers to training of personnel and protocols printed and distributed
New SESA facilities (headquarters) built and equipped	# (Headquarters)	0				1		1	Idem
Logistics center built and equipped	# (center)	0				1		1	Idem
Hospitals of the public network have computerized management systems	# (systems implemented)	0	7					7	Idem Modules for main processes (schedule, emergency, outpatient, examinations, etc.) in operation
Health institutions (medium complexity and hospitals) accredited in terms of quality	# (institutions accredited)	0		7	9	9	7	32	Idem Accreditation by an independent entity
Professionals trained	# (professionals)	0	150	320	450	450	450	1.820	Means of verification: certificates issued by the training institutions

² Lines of care: Maternal-Infant, DM, and Systemic Arterial Hypertension.

Output	Unit of measure	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Target	Comments
Component 2. Expansion of access and consolidation of the RASs									
Litoral-Jaguaribe Regional Hospital built	# (hospital)	0					1	1	Idem
Equipment for the Litoral-Jaguaribe hospital acquired	# (equipment lots)	0			3	6	2	11	Idem
Fortaleza polyclinic built	# (Polyclinic)	0			1			1	Idem
Equipment for the Fortaleza polyclinic acquired	# (Equipment lots)	0			3	1		4	Idem
Hospital Metropolitano built	# (hospital)	0			1			1	Idem
Equipment for the Hospital Metropolitano acquired	# (Equipment lots)	0		1	3			4	Idem
Attended childbirth units upgraded	# (Birthing units)	0			9	5		14	Idem
Equipment for the birthing units acquired	# (Equipment lots)	0			6	4		10	Idem
Component 3: Administration, evaluation, and audit									
Program management team established	# (persons contracted)	0	12		3			15	Idem
Midterm evaluations performed	# (eval. report)	0			1		1	2	Idem
Final evaluation performed	# (eval. report)								Idem
Impact evaluation performed	# (eval. report)						1	1	Idem

FIDUCIARY AGREEMENTS AND REQUIREMENTS

Country: Brazil

Project number: BR-L1408

Name: Program for the Expansion and Improvement of Specialized Health Care in the State of Ceará II (PROEXMAES II)

Executing agency: State of Ceará, through the State Department of Health (SESA)

Prepared by: Leise Estevanato (Financial Management Specialist) and Marília Santos (Procurement Specialist)

I. EXECUTIVE SUMMARY

- 1.1 The agreements concerning the program's fiduciary management were based on: (i) an analysis of the current fiduciary context of the country and of the State of Ceará; (ii) an evaluation of the main fiduciary risks; (iii) the ICAS institutional capacity assessment; and (iv) the Bank's experience with PROEXMAES I.

II. FIDUCIARY CONTEXT OF THE COUNTRY AND THE EXECUTING AGENCY

- 2.1 The Bank's fiduciary strategy with Brazil is aimed at reinforcing the use of country fiduciary systems, with a view to strengthening institutions and reducing transaction costs. Public entities in the State of Ceará use the SIAP/MAPP Priority Action and Project Monitoring System, which records, controls, and monitors the planning of government activities and expenditures. In the context of PROEXMAES II, it will be possible to use the Project Management Information System developed by the Ministry of Finance (SEFAZ) for the Program in Support of Public Financial Management Brazil (PROFISCO), once it is duly adapted to the Bank's requirements. Another option would be to develop a financial management module within the Government Management by Results System (S2GPR).
- 2.2 Procurement and contracting processes are centralized in the State Inspector-General's Office (PGE/CE), which follows national legislation (Law 8,666/93, Law 11,079/2004 on Public-Private Partnerships, and other legislation). For off-the-shelf goods and services, the COMPRASNET online reverse auction system operated by the federal government is used. For the loan contracts that the State enters into with multilateral financing agencies, the PGE has set up a Special Bidding Committee (CEL IV), which follows the policies of those organizations.
- 2.3 External control of the actions of state agencies is exercised by the Ceará's Audit Office (TCE/CE).
- 2.4 The borrower will be the State of Ceará and the Federative Republic of Brazil will be guarantor of the borrower's financial obligations arising from the loan contract.

The executing agency will be the State of Ceará, through SESA, which will establish the project management unit (PMU) through the appropriate legal means. As in the case of PROEXMAES I, the PMU will be responsible for coordinating, planning, monitoring, and executing activities financed with the Bank's resources. It will also serve as the interlocutor with the other government departments and agencies (Planning, Finance and Infrastructure Departments, PGE, etc.) that are involved in executing the program.

III. FIDUCIARY RISK ASSESSMENT AND MITIGATION MEASURES

- 3.1 During the risk assessment, the following fiduciary risks were identified: (i) inadequate structure of the project management unit (PMU); (i) weak operational efficiency; (iii) problems in the quality of information regarding land, projects, and studies for the works; (iv) the potential for conflict with respect to the Regional Metropolitan Hospital PPP, between the management of "grey coat" services (the winning corporate consortium) and "white coat" services (under SESA responsibility); and (v) weaknesses in the financial management module that is part of the state's systems, concerning the capacity to generate disbursement processes and financial statements for the project.
- 3.2 Mitigation measures. (i) The PMU will be restructured, to include at least: a general coordination office; two technical engineering sections; a management and institutional strengthening section to deal with quality and certification issues; a procurement section; and an administrative and financial section; and a project management and works supervision support firm will be contracted; (ii) a diagnostic assessment/survey/mapping of financial management and procurement processes will be conducted to make them more efficient, and close sector and fiduciary supervision will be exercised on the basis of the multiyear execution plan and the procurement plan; (iii) contracting processes for works will be initiated only when the Bank has validated the final and supplementary designs and the necessary licenses and studies; agreements will be established with the state infrastructure department (SEINFRA); and consultants will be hired for the preparation of designs and studies and for works supervision; (iv) an auditor independent of the PPP will be contracted, and the operation's performance-based contracts will include interdependent results for the "white coat" and the "grey coat" services in order to ensure alignment in the two operations and that the hospital well run; and (v) arrangements will be made to ensure that the Department of Finance makes its financial management system, which will be adapted to meet Bank requirements, available to SESA.

IV. CONSIDERATIONS FOR THE SPECIAL PROVISIONS OF THE CONTRACT

- 4.1 **Special contractual conditions precedent to the first disbursement under the loan:** (i) publication in the Official Gazette of the State of Ceará of the decree creating the PMU and appointing its coordinators and managers; (ii) evidence of the entry into force of the Program's Operating Regulations pursuant to the terms agreed upon with the Bank; and (iii) approval by the Bank of the terms of reference for contracting the project management and works supervision support firm.

- 4.2 **Audited financial statements.** The program's financial statements will be audited annually by the TCE/CE and, if that agency is not available, by an independent external audit firm acceptable to the Bank, to be engaged by the executing agency.
- 4.3 **Other financial management requirements.** Supporting documentation for expenses incurred will be subject to ex post review by the TCE/CE and/or by a consultant appointed by the Bank.
- 4.4 **Exchange rate to be used.** As reported by the executing agency, for purposes of loan and local contribution accounting purposes, the amounts paid in local currency will be converted to the currency of the operation in accordance with the executing agency's decision as to the possible conversion rules.

V. AGREEMENTS AND REQUIREMENTS FOR PROCUREMENT EXECUTION

- 5.1 **Procurement execution.** Procurement processes will be conducted through the PMU and the PGE/CE using the Policies for the procurement of goods and works (and nonconsulting services) set out in document GN-2349-9 and the Policies for the selection and contracting of consultants set out in document GN-2350-9, both of March 2011. Procurement processes will be reviewed by the Bank as indicated in the [Procurement Plan](#).
- 5.2 **Procurement of works, goods and nonconsulting services.** Contracts for works, goods, and nonconsulting services¹ generated under the project and subject to international competitive bidding (ICB) will be executed using the standard bidding documents (SBDs) issued by the Bank. Procurement subject to national competitive bidding (NCB) will be executed using the national bidding documents agreed upon with the Bank (or satisfactory to the Bank if not yet agreed upon). For the purchase of off-the-shelf goods or services, the Bank will accept the use of the COMPRASNET system for amounts up to the ICB threshold.
- 5.3 **Selection and contracting of consultants.** Consulting service contracts generated under the project will be executed using the standard request for proposals (SRP) issued by the Bank. The project's sector specialist will be responsible for reviewing the terms of reference for the contracting of consulting services.
- 5.4 **Selection of individual consultants.** Individual consultants will be selected according to their qualifications to do the work, based on a comparison of at least three candidates. Notices may be published in the local or international press inviting qualified consultants to submit résumés.
- 5.5 **Retroactive recognition of expenditures and advance procurement under the loan.** The Bank may finance retroactively, as a charge against the loan proceeds, up to US\$24.6 million (20% of the amount of the loan), and it may recognize, as a charge against the local contribution, up to US\$11.1 million (20% of the estimated amount of the local contribution) in eligible expenditures incurred by the borrower before the date of loan approval. These outlays refer to advance procurement, primarily for consultants' studies, preparation of designs, and works execution. To be eligible for recognition, the procurement processes must be substantially similar

¹ The Bank's procurement policies treat nonconsulting services as goods.

to those conducted under Bank rules and consistent with the Bank policy on recognition of expenditures, retroactive financing, and advance procurement (OP-507, document GN-2259-1). Expenditures that meet the following requirements will be recognized: (i) all expenditures and payments related to program activities incurred during the 18 months prior to the date of loan approval by the Bank's Board of Executive Directors, but subsequent to the project profile approval date (18 May 2015); (ii) procurement processes conducted under local legislation (Law 8666/93 and, in this case, Law 11,079/2004 on PPPs in Brazil) and consistent with the terms of OP-507; (iii) the purposes, processes, and amounts to be recognized are identified and reported in the program documents (annual work plan and procurement plan); (iv) payments were sourced from the state treasury.

- 5.6 **Direct contracting.** Not anticipated.
- 5.7 **Domestic preference.** Not anticipated.
- 5.8 **Other provisions.** Recognition of the contracting process conducted pursuant to Law 11,079/2004 is planned, which establishes general rules for PPP bidding and contracting in the context of the Brazilian public administration, involving administrative concession services for construction, supply of equipment, maintenance, and management of administrative services in the Metropolitan Hospital. See [OEL #5](#) for further details.
- 5.9 **Procurement thresholds.** The threshold for the use of ICB will be made available to the borrower or executing agency, as applicable, online at www.iadb.org/procurement. Below this threshold, the selection method will be determined according to the complexity and characteristics of the procurement, to be reflected in the approved procurement plan.
- 5.10 **Initial procurement plan.** The current proposal is attached. The version agreed upon may be updated during program execution, according to circumstances (see [Procurement Plan](#)).

Main Procurement Items

Activity	Selection Method	Estimated date of tender/invitation	Estimated amount
Goods			
Equipment for new SESA facilities and upgrade of the Regional Health Care Coordination Offices	PE	2016	1,800,000
Equipment for the Logistics Center	PE	2016	2,500,000
Works			
New facilities for SESA and upgrade of the Regional Health Coordination Offices	NCB	2016	7,000,000
Physical upgrade of pharmaceutical facilities, laboratory, clinical engineering, sterilization, and medical records center	NCB	2016	2,500,000
Consulting services			
Planning of SESA processes.	QCBS	2016	2,800,000
Implementation of lines of care in the Health Care Networks	QCBS	2017	3,000,000
Accreditation of 32 health units	QCBS	2016	1,500,000
Support for program management and works supervision	QCBS	2016	8,500,000

- 5.11 **Procurement supervision.** All ICB, direct contracting, and consulting service selections for amounts estimated to exceed US\$1 million will be subject to ex ante review. Given the characteristics of the project and the PMU's operating capacity, the remaining processes will be subject to annual ex post review. The Bank may alter the review modality indicated in the procurement plan on the basis of the annual audit reviews.
- 5.12 **Records and files.** The program's files will be kept at the PMU office under appropriate security conditions.

VI. FINANCIAL MANAGEMENT AGREEMENTS AND REQUIREMENTS

- 6.1 **Programming and budget.** SESA, acting through the PMU, will be responsible for planning the execution of activities as set out in the program execution plan, the multiyear work plan, and the annual budget law, which will incorporate the program's activities and resources (IDB and local contribution). The Bank will recognize the project's expenses according to the items established and executed, and considered eligible under Operational Policy OP-311.
- 6.2 **Treasury.** The State of Ceará uses the following information and management systems: (i) the Integrated Accounting System (SIC); (ii) the Accounts Management System (SGC)—both of which are now being restructured through the S2GPR; (iii) the SIOF, for budgetary updates; and (iv) the SIAP, for project monitoring.
- 6.3 **Accounting and information system.** SESA does not have an accounting and financial information system that is automated and integrated with the State's general accounting system, for use in generating the basic reports requested by the Bank. Consequently, the system used by the SEFAZ in PROFISCO will have to be adjusted to this program, or a financial management module will have to be developed and integrated into the S2GPR, with the capacity to generate project disbursement processes and financial statements. SESA will have to demonstrate that this financial management mechanism has been implemented and is in operation for the project, in accordance with IDB requirements.
- 6.4 **Disbursements and cash flow.** The program will operate with funds advanced by the Bank to meet the project's actual liquidity needs for a period of six months. The documentation supporting expenses incurred will be subject to ex post review by the TCE/CE and/or by a consultant appointed by the Bank. For purposes of accounting for the loan proceeds and the local counterpart, the executing agency will use: (i) the effective exchange rate used to convert the funds denominated in the operation's currency to the local currency, for IDB resources; and (ii) the effective exchange rate of the payment date, for reimbursement of expenditures and recognition of expenditures charged to the local contribution. Expenditures deemed ineligible by the Bank will be repaid from the local contribution or other resources, as the borrower sees fit and with the Bank's approval, depending on the nature of the ineligibility.
- 6.5 **External control and reports.** External control will be exercised by the TCE/CE or, if it is not available, by an independent audit firm acceptable to the Bank. In this connection, SESA will present the duly audited financial statements no later than 120 days after the end of the fiscal year. The content of the reports and the opinions to be issued will abide by the terms of reference prepared by the

executing agency and accepted by the Bank, in line with current international auditing standards and other standards and procedures observed by the Bank.

- 6.6 **Financial supervision plan.** The supervision plan may be modified during project execution, according to observed risk circumstances or to satisfy additional controls as determined by the Bank.

Supervision activity	Supervision Plan			
	Nature-scope	Frequency	Responsible Entity	
			Bank	Executing agency
Procurement	Review of processes for the procurement of works and consulting services	As per procurement plan	Sector and procurement specialist	PMU
	Review of processes above the thresholds for ICB and direct contracting	Throughout execution period	Sector and procurement specialist	PMU
	Supervision visit	Annual	Sector specialist and fiduciary team	
Financial	Ex post review of disbursements and procurement	Annual	Fiduciary team	PMU – TCE or external audit firm
	Annual audit	Annual	Fiduciary team	PMU – TCE or external audit firm
	Review of disbursement requests	Periodic	Fiduciary team	
	Supervision visit	Annual	Sector specialist and fiduciary team	

- 6.7 **Execution arrangements.** The borrower will be the State of Ceará and the Federative Republic of Brazil will be guarantor of the borrower's financial obligations arising from the loan contract. The executing agency will be the State Department of Health (SESA), which will establish the PMU (see POD paragraph 3.2), reporting directly to the Office of the Secretary of Health. The PMU will be supported by the PGE's Special Bidding Committee, in which procurement transactions involving loan proceeds are centralized. A firm to support management of program actions and works supervision is also expected to be contracted.