



Department of Health and Wellness (DOHW)

HEALTH SYSTEM STRENGTHENING PROJECT (HSSP)

PROJECT IMPLEMENTATION UNIT

TERMS OF REFERENCE THE:

DESIGN AND DEVELOPMENT OF AN ACTUARIAL MODEL AND ACTUARIAL ANALYSIS FOR THE ENVISAGED NATIONAL HEALTH INSURANCE IN SAINT LUCIA

I. Introduction

Saint Lucia is an upper-middle income country in the Caribbean with a population of 180,000, nearly 30 percent of which reside in Castries Quarter, where the capital (also called Castries) is located. The country is a mountainous island with a tropical, humid climate and ranks high on the United Nations Development Program's (UNDP) Human Development Index (HDI). Gross National Income (GNI) per capita is US\$7,350, life expectancy at birth is 75 years, and the Under-Five Mortality Rate is 14 per 1,000 live births; health outcomes are slightly better than the Caribbean small states average.

Non-Communicable diseases (NCDs) continue to be responsible for a growing burden of disease. The population is equally distributed by gender and relatively young, with roughly 77 percent under 50 years of age and youth comprising 26.2 percent of the population (2012). Life expectancy has continued to increase in recent years, and reached 75 years in 2015, but has been coupled with an increase in NCDs.

The prevalence of NCDs such as diabetes and heart disease have been increasing for several years and remain a top priority for the government. Saint Lucia's mortality rate from diabetes, for example, is approximately 60 percent higher than the regional average (Figure 1). Most deaths (80 percent) are due to NCDs, which accounted for almost three quarters of the years of life lost (YLL) in Saint Lucia in 2012. In 2013, ischemic heart disease, cerebrovascular disease, and diabetes were the leading causes of mortality, resulting in 6.3 percent, 5.8 percent, and 7.15 percent of total disability-adjusted life years (DALYs), together accounting for almost 20 percent of total DALYs

(Global Burden of Disease study 2013). These conditions result in major productivity losses, while consuming a substantial share of the health budget. For example, the annual per capita cost of treatment for diabetes in 2011 was US\$794, nearly 50 percent more than per capita health spending of that year. Analysis of claims data from the National Insurance Corporation (NIC), of which 70 percent of the employed are active members, shows that since 2009, the share of claimants paid for sickness benefits has increased, as has the average amount of sickness benefits paid. This implies a substantial productivity loss in the economy due to illness.

To address the NCD burden, the Government of Saint Lucia, through the Health System Strengthening Project (HSSP) financed by the World Bank, is supporting interventions on the demand and supply side to incentivize the delivery and uptake of health services and induce demand at primary health care level with an NCD focus.

This includes the design and costing of an essential package of health services to incentivize the population to demand health services from an attractive package that addresses the population needs. The project will also roll-out a performance-based financing (PBF) scheme to incentivize the health facilities to reach out and register their catchment population and deliver quality services to address NCDs additionally the DoHW has started the necessary studies in order to obtain important data and information as the necessary evidences for the analysis of the feasibility and sustainability of a potential implementation of an initiative oriented to Universal Health Coverage. Those studies include the study on Public Health Expenditures, the study and implementation of National Health Accounts, and the design and implementation of a new National Health Financing Policy and its Implementation Strategy.

II. Background and Conceptual Framework

Like many middle-income countries, Saint Lucia relies heavily on government budget from general taxes and also on out-of-pocket health care expenditure. The challenge for the countries is how to modify its health financing system in order to achieve universal coverage through an envisioned National Health Insurance (NHI). The Government of Saint Lucia (GOSL) has initiated a systematic review of its current health financing system and its performance. Consequently, an analysis of all the factors, variables and values that can influence the financial decisions to be taken in the creation of a National Health Insurance System (NHI) is needed.

The NHI will be the financing and institutional arrangement and institutional model to deliver the Essential Health Services Package (EHSP), designed by the Department of Health and Wellness (DoHW), the package is conceived using the criteria of including high impact interventions with the most rational cost. Beyond cost-effectiveness analysis, the process to define the EHSP embraces considerations on quality and equity, factors that are typically omitted from benefit package design but are vital for universal health coverage. The EHSP will contain several health interventions to be provided throughout the three levels of care of the health system, oriented to ensure the continuum of care and to contribute to the reduction of the burden of disease in the country as well as to produce measurable and positive impact in the health status of the population. Nevertheless, there are important aspects which need to be analyzed and considered in order to

ensure that the NHI system is feasible and sustainable, without negative impact on the financial stability of the country.

It is also understood that there are other critical aspects regarding the feasibility and sustainability of the proposed system, which requires a scientific approach in order to be able to determine the feasibility and sustainability of the proposed model for the NHI in several potential scenarios.

Those aspects include, but are not limited to, the current fiscal and economic scenario and their potential projections (growth), the cost of the product to be offered (the essential health care services package), the socio-economic characteristics of the different population groups to be covered, the demographic scenario and its projections, and other risks and adjusting factors to be considered including climate risks due to the geographic location of the country, which makes Saint Lucia a very vulnerable country to hurricanes, and tropical storms every year, creating disaster situations disrupting water supply, and food supply and resurgence or outbreaks of endemic infectious diseases, as well as disrupting the normal functioning of the economy of the country.

Based on that context it becomes extremely important to have the required tools to perform the actuarial analysis which will provide the necessary information for the financial decision-making process.

According to William Cember and Jeffrey Yoon (the Journal of the Society of Actuaries in 2017) an Actuarial Model –in order to be reliable, must follow the set of criteria considered as key:

1. Accuracy (values, variables and factors should represent the reality)
2. Controls (the actuarial model must be controlled to the extent required by the intended model's purpose)
3. Flexibility (the degree to which the actuarial model users can easily achieve their goal with their model).
4. Testability (does the actuarial model show the underlying calculations for each step in a reserve calculation or only the final number?).
5. Efficiency (the degree to which the actuarial model can quickly perform the calculations it needs to perform using the minimum resources -computer and human-).
6. Transparency (the degree to which the underlying calculations of the model are viewable by the model user).
7. User- Friendliness (the amount of training and documentation required for a new model user to run or view the model)
8. Standardization (the degree to which conceptually similar pieces of the model are designed in similar ways).

The Cabinet would like to (i) inform its decision making on the fee schedule¹, taking into account the simulated impact on workers and employers; and (ii) understand the extent to which any fee system proposed sufficiently covers the referenced health services package.

Nevertheless, it is understood that the actuarial analysis is not meant to recommend a fee, but instead, to inform about the feasibility and sustainability of a proposed coverage scheme, in this case the Essential Health Services Package (EHSP) coverage. It is also important to mention that the existence of several fee schedules can be financially sustainable yet have different implications for the regressiveness/progressiveness of the proposed scheme. The final choice on any contribution scheme, will be a decision to be made by the government, which should be informed by the actuarial analysis and model.

III. Objectives

General

The main objective of the consultancy is to obtain an Actuarial Analysis and an Actuarial Model capable of estimating the most adequate structure and coverage, as well as the expected premiums and governmental subsidy for the National Health Insurance System through the definition and implementation of an Essential Health Services Package, which will be provided to the population of Saint Lucia. The analysis and model must consider the different types of population groups based in their socioeconomic condition as well as on their situation in the economic scenario of the country (such as the employers & employees from the formal sector public and private, the non-poor informal sector and the poor population which will need to be subsidized by the government).

Specific

1. The Actuarial Analysis and Model must consider the costing of health services (represented by the EHSP) at the Primary, Secondary and Tertiary Level and consider public and private providers, as well as the participation of private insurers on the revenue side, and, utilizing an approved methodology with assumptions and parameters clearly outlined. This should include per unit costing of health services at all levels which will be factored in the financial model, as well as a proposed revised/updated/adjusted fee schedule for the new Owen King EU Hospital.
2. The Actuarial Analysis and Actuarial Model should incorporate several scenario analysis on the projected revenues and outgoing health care payments and fees as a result of varying premium schedules, varying utilization rates, administrative expenses, risk factors, adjustment factors (utilization rates and economic factors such as gross domestic product,

¹ It is important to mention that in previous years, the Cabinet of Ministers of The Government of Saint Lucia has indicated a preference for a fixed fee for the National Health Insurance (NHI) payment system. This recommended fixed fee scheme can vary based on occupational classifications and/or other factors. **However, this does not mean that other financing options should not be considered.**

economic growth rates, employment/unemployment, prices (inflation), age, gender, burden of disease, epidemiological profile etc.

3. The actuarial model must also consider the potential structure of a financial model (health financing model) which should include other variables like: contributors/taxpayers, insurable/taxable earnings, dependency rates, cost per unit of services, economic growth, demographic and labor force factors such as developments in the total population, population structure and economically active population.

IV. Activities

1. The consultant will perform a thorough literature review about the best international and regional practices and experiences regarding the modelling of a National Health Insurance System, and the tools and instruments used for that purpose, especially as related to feasibility analysis, actuarial calculation models and actuarial analysis methodologies, as well as to review the outputs of the core consultancies currently in implementation (Essential Package of Health Services, National Health Accounts and Public Health Expenditures Review).
2. The consultant will have to gather the required and available data from the different stakeholders including but not limited to: Department of Health and Wellness, Ministry of Finance (including Customs, Inland Revenue and VAT office), Ministry of Economic Development, Ministry of Labor, Central Statistics Office, National Insurance Corporation, etc. for the design and development of the actuarial analysis and model.

The government of Saint Lucia will ensure that all the information available and necessary for the purpose of the actuarial analysis will be provided to the consultant, upon his/her request in an opportune and timely manner, in a period of not more than 10 working days.

Description of the required information for the analysis is included in Annex 1 attached.

3. The consultant will design and develop an actuarial model as a calculation tool for different scenarios to estimate the sustainability/affordability of the given insurance scheme/benefit package, which in this case is the Essential Health Services Package. once defined the equity preferences by the government, the consultant will perform scenarios estimations. The different scenarios must have the main variables included including but not limited to: disaggregation by population group according to their location within the labor market (formal or informal), their socioeconomic level (poor, non-poor), and adjusted by burden of disease, epidemiological profiles, age, sex, environmental risks, and considering the economic scenarios (current and projected in 15 years, including economic growth, fiscal space and constraints), and other significant variables, ***described in Annex 1 attached.***
4. The consultant, using the Actuarial Model and calculations tools will conduct an Actuarial Analysis which can be updated according to the changing situation of the country as well as of the variables and factors influencing the results factor in the need for a per capita premium and governmental subsidy consideration. It is also important that the consultant

takes into consideration the high share of the informal sector which will impact the analysis.

5. The Consultant will have to execute the building process of the actuarial model in a participatory way working closely with the relevant officials designated for that purpose by the NHI Steering Committee.
6. The consultant will have to prepare and submit the proposed methodology for the training of the key officials (to be designated by the NHI Steering Committee) to be trained in the usage and update of the actuarial model and the analytical process.
7. The consultant will be required to prepare power point presentations for each activity: the literature review, the proposed methodology and work plan, the conceptual framework for the actuarial model the database defined for the model, the actuarial analysis and its results as well as the recommendations, the Training methodology and contents, and the training results including all the evidences for the trainings.
8. The consultant is required to submit a copy of the model for reproduction of data/results by the client along with a user-friendly operational manual for the Actuarial Model including all the key assumptions used in the actuarial model clearly stated.

Additional information and specific issues related to the consultancy are included in Annex 1, attached

V. Deliverables

Deliverable A: Report No.1: Literature review about the best international and regional practices and experiences regarding the modelling of a National Health Insurance Systems or schemes, and the actuarial tools and instruments used for that purpose, especially as related to feasibility and sustainability analysis, actuarial calculation models and actuarial analysis methodologies.

Deliverable B: Report No.2: Conceptual framework and proposed methodology for the design and development of the actuarial model and the analytical structure to be applied for the actuarial analysis. This should be summarized in the form of an inception report together with proposed scenarios.

Deliverable C: Report No. 3: Actuarial model description with key assumptions, parameters, data dictionary, as well as the calculation tool/tools designed and developed (electronic version of the model either in excel or any other similar format) for the purpose of the definition of the contributions required to obtain a functional and sustainable coverage for the National Health Insurance (which can be updated according to the changing situation of the country) through the implementation of the essential health services package, disaggregated by population group according to their location within the labor market (formal or informal), their socioeconomic level (poor, non-poor), and adjusted by burden of disease, epidemiological profiles, age, sex,

environmental risks, and considering the economic scenarios (current and projected in 15 years, including economic growth, fiscal space and constraints), and other significant variables.

The report will include a baseline projection of the status quo ensuring the consideration and costing of the free of charge services that will continue to be provided in the same manner (free).

The Model must be shared with the relevant stakeholders for discussions during a presentation prepared by the consultant, this presentation must include the actual model in a soft operational form.

Deliverable D: Report No. 4: Actuarial analysis including all the variables and factors influencing the results factor as well as the definition (according to the proposed disaggregation and the proposed and accepted scenarios) of the per capita premium and governmental subsidy considering the high informal sector which will impact the analysis. The document must also include the evidence of the participatory building process of the actuarial model and analysis. This should be the final report for this task.

Deliverable E: Document containing: a) User-friendly operational manual for the Actuarial Model including all the key assumptions used in the actuarial model clearly stated. b) The methodology and materials for the training of the Government Officials (to be defined by the National Health Insurance Steering Committee) for the usage of the proposed and accepted Actuarial Model and the evidences of the trainings held. And c) all the presentations prepared by the consultant for each report. A final review of the actuarial model will be performed during the training sessions.

VI. Duration and Other Conditions of the Consultancy.

The consultancy is an Individual Consultancy and the selection process will follow the World Bank Procurement Regulations.

The consultancy will have a duration of 18 weeks within a period of 6 month. The consultant will work closely with the Corporate Planning Unit of the Department of Health and Wellness as well as with the Chief Economist from the Ministry of Finance, and, under the supervision of the National Health Insurance Steering Committee.

The work will be done both with presence in Saint Lucia (for the presentations and the trainings) if the current restrictions on travelling due the COVID 19 Pandemic allows it, and / or through electronic means including email and virtual communication. The Payment schedule will be discussed during the negotiations with the selected consultant.

Deliverables Schedule

Deliverable	Period	Acceptance by
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Deliverable A: Report No.1	4 weeks after the contract signature	The NHI Steering Committee, the Permanent Secretary of the DoHW and the Project Manager
Deliverable B: Report No.2	6 weeks after contract signature	The NHI Steering Committee, the Permanent Secretary of the DoHW and the Project Manager
Deliverable C: Report No.3	12 weeks after the contract signature	The NHI Steering Committee, the Permanent Secretary of the DoHW and the Project Manager
Deliverable D: Report No.4	16 weeks after the contract signature	The NHI Steering Committee, the Permanent Secretary of the DoHW and the Project Manager
Deliverable E	18 weeks after the contract Signature	The NHI Steering Committee, the Permanent Secretary of the DoHW and the Project Manager

VII. Qualifications Required for the Consultant.

1. Professional with a Bachelor of Sciences Degree in Economics or Mathematics, Finance, Administration, Engineering or similar, with a Master's Degree in Actuarial Sciences with not less than five (5) years of experience in actuarial works **or** a Professional with a Bachelor of Sciences Degree in Economics or Mathematics, Finance, Administration, Engineering or similar with a formal training in actuarial sciences with not less than 10 years of experience in actuarial works and calculations.
2. Proven experience in the design of actuarial modelling and actuarial analysis specifically in social or national health insurance schemes in developing countries.

Experience in actuarial modelling and analysis in the Latin America and The Caribbean Regions will be an asset.