

Letter of Understanding (LOU)
Between
Center for Disease Analysis Foundation (CDAF)
And
**Pakistan Ministry of National Health Services, Regulations and
Coordination (NHSRC)**

This Letter of Understanding (LOU) is entered into on the 20th day of May 2020 by **Center for Disease Analysis Foundation (CDAF)** of 1120 W. South Boulder Road, Suite 102, Lafayette, CO 80026, USA and the **Pakistan Ministry of National Health Services, Regulations and Coordination (NHSRC)** of Government of Pakistan, Kohsar Complex, Constitution Avenue, Islamabad, Pakistan (hereafter referred to as the parties). This LOU sets forth the terms and understanding between CDAF and NHSRC as it relates to CDAF's support of NHSRC in their effort to analyze the burden of Hepatitis C, develop strategies for elimination and estimate the cost of an elimination program under different strategies.

WHEREAS, in connection with the establishment of a business relationship between the parties whereby CDAF's Polaris Observatory was founded to provide epidemiological data, modeling tools, training and decision analytics to support eliminating Hepatitis globally by 2030, and whereby NHSRC's mission is helping the people of Pakistan to maintain and improve their health and to make the population among the healthier in the region, which includes elimination of hepatitis in Pakistan by 2030, the parties wish to set forth their current understanding and certain agreements made to date with respect to such relationship.

The parties acknowledge and agree to work together to ensure that there is a productive and meaningful collaboration, and to demonstrate financial, administrative and managerial commitment to the collaboration.

BACKGROUND

NHSRC is charged with the social welfare of citizens of Pakistan. Its vision is to provide efficient, equitable, accessible & affordable health services with the objective to support people and communities to improve their health status. As part of its mission and with the financial support of CDAF, NHSRC launched Pakistan's first National Hepatitis Strategic Framework (NHSF) 2017-2021 on October 08, 2017 in Islamabad. NHSRC is currently launching a project to update the NHSF. Additionally, NHSRC desires to develop regional Hepatitis C (HCV) models for the Punjab and Sindh regions.

The Center for Disease Analysis Foundation (CDAF) is a non-profit public health research organization specializing in epidemiology and disease modeling. CDAF's mission is to eliminate Hepatitis B and C globally by 2030. It provides countries across the world with verified epidemiological data, disease burden and economic impact modeling, smart intervention strategies, access to affordable diagnostics and treatments, innovative financing models and

knowledge-sharing partnerships to eliminate this deadly disease. Two foundation initiatives are: Polaris Observatory and the Global Procurement Fund (GPRO).

Article -2

ROLES & RESPONSIBILITIES

NHSRC is seeking collaboration with CDAF wherein CDAF will assist NHSRC in the following initiatives:

1. Update the National Hepatitis Strategic Framework (NHSF) including:
 - a. Modeling of future HCV disease burden nationwide [including 4 provinces Punjab, Sindh, Khyber Pakhtun Khwa (KPK) and Baluchistan]
 - b. Model economic impact of HCV disease burden
 - c. Develop hepatitis elimination strategies including setting of yearly screening, testing and treatment targets to meet WHO 2030 targets.
 - d. Estimate costs of an elimination program based on different scenarios.
2. Develop regional HCV models for the country (Punjab, Sindh, KPK and Baluchistan) to include:
 - a. Modeling of future HCV disease burden
 - b. Model economic impact of HCV disease burden
 - c. Develop hepatitis elimination strategies including setting of yearly screening, testing and treatment targets to meet WHO 2030 targets.
 - d. Estimate costs of an elimination program based on different scenarios.

In order to complete the above activities, CDAF and NHSRC agree to the following responsibilities:

1. For updating the NHSF:
 - a. Upon request, NHSRC will share recent HCV epidemiological data with CDAF.
 - i. CDAF will update its existing disease burden models.
 - b. Upon request, NHSRC will share relevant cost and economic data with CDAF.
 - i. CDAF will develop/update economic analyses for NHSRC.
 - c. Using details from the current NHSF, CDAF will update and summarize elimination strategies and cost estimates under different scenarios.
 - d. CDAF will utilize cost data for diagnostics and medicines available through its Global Procurement Fund (GPRO) in order to identify means of lowering the overall cost of an elimination program.
2. For developing regional models for Punjab, Sindh, KPK and Baluchistan:
 - a. Upon request, NHSRC will coordinate with data holders in each region to collect most recent HCV epidemiological data and share it with CDAF.
 - b. Upon request, NHSRC will coordinate with data holders in each region to collect relevant cost and economic data and share it with CDAF.
 - c. CDAF will utilize the data to develop HCV disease burden models for each region, perform economic analyses and develop elimination strategies under different scenarios.
 - d. CDAF will summarize all results and recommendation in a written report or PowerPoint presentation.
3. Additional responsibilities:

- a. NHSRC agrees to acknowledge the support of CDAF in the above activities in any written reports, presentations and/or publications.
- b. NHSRC agrees to share with CDAF any non-confidential written reports containing CDAF analyses.

Article-3

FUNDING

Neither CDAF nor NHSRC is providing funding to the other party, and each party is responsible for funding their own activities associated with this MOU. CDAF's funding for this project is provided through two grants: the national analysis and analyses for Punjab and Sindh provinces are funded by a grant from the Zeshan Foundation; analyses for KPK and Baluchistan are funded by a grant by the John C. Martin Foundation.

Article-4

MARKETING and PUBLICITY

CDAF and NHSRC may promote their collaboration to relevant sectors of the healthcare community, through regular and other communications, and through their respective websites, social media, and annual reports. Both CDAF and NHSRC will be bound by the rules for promotion of the other partner, including maintaining the quality of any logo.

Article-5

DURATION

This LOU will take effect upon mutual signing of the LOU document and will extend for a period of one year from signing. The LOU may be extended by mutual consent of both parties.

Article-6

Amendments or Modification

This LOU may be amended or modified at any time through mutual written consent of the Parties.

Article -7

Settlement of Disputes

All differences or disputes arising from or concerning with the application or the interpretation of this LOU shall be amicably settled through mutual consultations and negotiations between the parties.

CONTACT INFORMATION

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Signature

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Date