

SUMMARY OF THE PROJECT IN DESIGN * (*)

Reduction of the maternal mortality ratio in Bolivia

PITCH ELIGIBILITY DATE		COUNTRY(IES)
09/16/2022		Bolivia
ALIGNED WITH COUNTRY STRATEGY?		
Yes		
PARTNER(S)		
CIES Salud Sexual - Salud Reproductiva		
PRELIMINARY CLASSIFICATION ENVIRONMENTAL AND SOCIAL IMPACT		
C (**)		
TOTAL BUDGET	IDB Lab	LOCAL COUNTERPART AND COFINANCING
US 412,500	US 330,000	US 82,500
DESCRIPTION		

The problem In Latin American and Caribbean (LAC) countries, the maternal mortality rate is at least 3 times higher per 100,000 live births, compared to industrialized countries such as the US, European countries, and Japan, among others. Specifically, in Bolivia, the maternal mortality rate is 155 per 100,000 live births, which is one of the highest in the LAC region. According to UNICEF, 80% of maternal mortality could be prevented with an adequate detection and diagnosis of severe complications. The most common causes of maternal morbidity and mortality— hemorrhage, hypertensive disorders, infection, and sepsis—are often preceded by predictable vital signs perturbations that can be detected by pregnancy monitoring systems, and by doing so, health personnel may be able to intervene earlier and improve outcomes. Hence, monitoring the vital signs of laboring women and their fetuses is foundational to the delivery of obstetrical care. However, monitoring platforms for pregnancy have undergone little innovation over the last several decades, with many low-income settings such as Bolivia, lacking basic access to essential health services able to monitor properly the maternal-child binomial. For example, World Health Organization (WHO) recommends at least 8 contacts with health services for pregnant women before their delivery date, to detect early potential anomalies that may risk their lives. In contrast, in Bolivia, on average, pregnant women have 4.5 contacts before delivery.

One of the challenges that countries like Bolivia confront is that many women, especially in poor and vulnerable conditions, live in rural and remote areas where they have very limited access to general health services and almost no access to specialty care. Even women living in urban centers struggle to access a complete health insurance scheme, capable of following their pregnancy progress adequately. Hence, pregnant women of all classes and backgrounds tend to go to see the doctor only when suffering a severe complication, or when the pain from the contractions starts, during the delivery phase. Even in an ideal scenario where all pregnant women should decide to comply with prenatal care, Bolivia lacks enough health professionals and infrastructure to follow up on all pregnancies according to clinical recommendations.

*The information mentioned in this document is indicative and may be altered throughout the project cycle prior to approval. This document does not guarantee approval of the project.

**The IDB categorizes all projects into one of six E/S impact categories. Category A projects are those with the most significant and mostly permanent E/S impacts, category B those that cause mostly local and short-term impacts, and category C those with minimal or no negative impacts. A fourth category, FI-1 (high risk) Financial Intermediary (FI)'s portfolio includes exposure to business activities with potential significant adverse environmental or social risks or impacts that are diverse, mostly irreversible or unprecedented, FI-2 (medium risk) FI's portfolio consists of business activities that have potential limited adverse environmental or social risks or impacts, FI-3 (low risk) FI's portfolio consists of financial exposure to business activities that predominantly have minimal or no adverse environmental and social impacts.

The solution The objective of this proposal is to pilot an innovative monitoring system for pregnant women's health to prevent serious complications during the entire continuum of pregnancy (prepartum, delivery, and postpartum). The project will prioritize women living in altitude areas, rural areas, city periphery, and living in vulnerable conditions in Bolivia. The effects of this project should have a long-term and lasting impact on the maternal mortality rate, compared to other regions in the country without the informatic scheme. Some relevant indicators toward this long-term objective will be set for this project, such as the reduction of the incident rate of serious complications.

It is planned to test in the field a new time-synchronized, flexible, and wireless sensor system applicable across the entire continuum of antepartum and postpartum care that provides continuous,

comprehensive, and noninvasive monitoring of key parameters such as blood pressure, heart rate, respiratory rate, temperature, and pulse oxygenation. The idea is to demonstrate the performance of this new monitoring system (smart wearable devices plus artificial intelligence capabilities) among pregnant women living in altitude settings (higher than 3000 meters above the sea), compared to pregnant women living around sea-level altitudes (below 1000 meters), and ultimately calibrate the system to identify high-risk pregnant women and contribute on the prevention of any possible

complications for the mother-child binomial. The solution will allow more frequent monitoring of vital signs using wearables that transmit the data to a command center. A previously calibrated

algorithm enhanced by artificial intelligence (AI) will summarize large quantities of data, detect early worrying signs trends, trigger an alarm, and prevent high-risk pregnant women to end up in the hospital unnecessarily. Consequently, this scheme should offer clinicians practical information to activate preventive interventions at the individual level.

The beneficiaries The project will primarily benefit 300-500 (preliminary) pregnant women living in altitude areas (by a profound understanding of their physiological standing and ways of preventing complications), between 18 to 45 years of age, characterized by their low or medium socioeconomic status.

The partner The Executing agency of this project is CIES-Sexual and Reproductive Health, Bolivia, a Non-Profit Bolivian organization devoted to promoting social development, working for 34 years now to enhance health among Bolivian children, youth, women, and men. CIES is recognized at the international level as a reference for its social efforts and struggles to defend sexual and reproductive rights and improve the quality of life of society, by guaranteeing access to essential and quality health services. CIES implements holistic health assistance at the national level as a National Health Services Network. It has health centers available in 7 out of 9 states of the country. In total, 16 Health Centers offer reproductive and sexual services and a variety of medical specialties. Seven of these health centers can resolve moderate and high complexity health needs. It is important to mention that CIES also has Mobile Health Units offering health services to rural communities that lack access to conventional health services. CIES typically delivers about 500,000 health consults every year. With this information in mind, it is feasible for them to recruit 300-500 women in different regions of the country.

*The information mentioned in this document is indicative and may be altered throughout the project cycle prior to approval. This document does not guarantee approval of the project.

**The IDB categorizes all projects into one of six E/S impact categories. Category A projects are those with the most significant and mostly permanent E/S impacts, category B those that cause mostly local and short-term impacts, and category C those with minimal or no negative impacts. A fourth category, FI-1 (high risk) Financial Intermediary (FI)'s portfolio includes exposure to business activities with potential significant adverse environmental or social risks or impacts that are diverse, mostly irreversible or unprecedented, FI-2 (medium risk) FI's portfolio consists of business activities that have potential limited adverse environmental or social risks or impacts, FI-3 (low risk) FI's portfolio consists of financial exposure to business activities that predominantly have minimal or no adverse environmental and social impacts.

Ad-Dice is a Japanese startup, that specializes in the development of tracking devices. For the project, they built the “ResQ Band”, a wearable device to be used on your wrist, able to monitor 5 vital signs that matter for healthcare monitoring purposes. The company claim that the accuracy of its device is equivalent to other health products. For the pilot phase, the company will deploy 300-500 wearable devices, to be used on pregnant women in Bolivia. Ad-Dice was selected through JICA-IDB Lab open innovation challenge TSUBASA (Transformational Start Ups’ Business Acceleration for the SDGs) organized in 2021.

The IDB Lab’s contribution IDB Lab’s financial contribution will be \$330,000 of non-reimbursable technical cooperation to be financed by Japan’s trust fund of the IDB.

*The information mentioned in this document is indicative and may be altered throughout the project cycle prior to approval. This document does not guarantee approval of the project.

**The IDB categorizes all projects into one of six E/S impact categories. Category A projects are those with the most significant and mostly permanent E/S impacts, category B those that cause mostly local and short-term impacts, and category C those with minimal or no negative impacts. A fourth category, FI-1 (high risk) Financial Intermediary (FI)’s portfolio includes exposure to business activities with potential significant adverse environmental or social risks or impacts that are diverse, mostly irreversible or unprecedented, FI-2 (medium risk) FI’s portfolio consists of business activities that have potential limited adverse environmental or social risks or impacts, FI-3 (low risk) FI’s portfolio consists of financial exposure to business activities that predominantly have minimal or no adverse environmental and social impacts.