



# Implementation of Medical and Scientific Cooperation in the Caribbean Using Blockchain Technology in Coronavirus (Covid-19) Pandemics

Dabor Resiere<sup>1</sup> · Dajour Resiere<sup>2</sup> · Hatem Kallel<sup>3</sup>

Received: 6 May 2020 / Accepted: 13 May 2020 / Published online: 26 May 2020  
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To the editors:

The first case of COVID-19 in the Caribbean was confirmed at the beginning of March 2020. Since then, the virus has spread throughout the Caribbean. As of April 30, 2020, the Caribbean region has already registered more than 18, 000 confirmed cases and a growing number of fatalities [1].

As covid-19 spreads rapidly across the Caribbean and the World, at-risk countries need to prepare for adequate intensive care beds capacity, infection control and prevention, equipment for health care workers, social distancing and testing, to manage patients with Covid-19. Many countries across the region are scrambling to take measures such as border closures to contain the virus while considering steps to mitigate the already deep economic impacts.

A new approach to international medical and scientific cooperation should emerge to share knowledge, capacity building and resources. An ambitious set of coordinated actions focused on tackling the immediate needs of developing countries, but also on thinking long-term and globally [2]. COVID-19 has demonstrated both the value that multilateralism offers at a time of crisis and the extent to which global cooperation has eroded. Fighting a pandemic requires the sharing of reliable information on the nature of the disease.

For more than a decade, the University Hospital of Martinique developed a new concept of international medical

cooperation to reach all the Caribbean countries and to help those without access to first-class medicine. The concept of medical cooperation is based on the following items: healthcare, teaching, training, and human resources [4]. Medical cooperation can therefore be the only effective way for those without access to first class medicine to be on board [3]. The Caribbean countries share common health issues such as; severe cardiovascular diseases (CVD), tropical infectious diseases (dengue, leptospirosis, chikungunya, Zika), envenomation (snakebite), stroke, cancer HTLV-1, HIV disease, sickle cell diseases, diabetes, hypertensive and diabetic diseases (Fig. 1).

In this paper, we describe the implementation of medical cooperation using blockchain technology in the Caribbean to combat Covid-19, to improve global health by enabling universal access to financing mechanisms and smart contracts, protecting the patient's privacy, ensuring new facilities for patient's referrals through the region, and new standards for payments and reimbursement. However, the term blockchain first appeared in the healthcare system around the year 2011. The blockchain technology is a software platform that digitally records transactions in a systematic and chronological format that cannot be manipulated [5, 6]. It also describes a common database of health information for doctors, nurses, and other providers, at the same time. Blockchain is also considered a veritable exchange between colleagues (prescriptions, drugs, and patient data) and healthcare providers. Doctors will be able to share research results to facilitate new drug and treatment therapies for the disease [4]. Blockchain also provides higher security and privacy and it has already made its ways to the healthcare systems of several countries in the world. When a unique event or change of information occurs, every party authorized to manage the patient gets simultaneous access to the new information. The patients will have complete ownership and access to their medical records. Blockchain would allow for a true exchange. Doctors or health providers will be able to instantly retrieve information from a medical office or a

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This article is part of the Topical Collection on *Mobile & Wireless Health*

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✉ Dabor Resiere  
dabor.resiere@chu-martinique.fr

<sup>1</sup> Department of Intensive Care Unit, University Hospital of Martinique, CS 90632, 97261 Fort-de-France, Martinique

<sup>2</sup> Morehouse College, Atlanta, GA, USA

<sup>3</sup> Department of Intensive Care Unit, Cayenne General Hospital, Av des flamboyant, Cayenne, French Guiana

**Fig. 1** . University Hospital of Martinique. Working together through medical cooperation to coordinate medical activities including training, teaching and transport (TTT), support in human resources, and efficient relationship between different facilities in the Caribbean.



hospital, with the consent of the patient. All doctors involved are partners, exchangers. Together, they form a network built around the patient's consent. Blockchain will allow biologists, emergency physicians, intensivists, radiologists, pharmacists, and other providers along the healthcare spectrum to operate more efficiently. Blockchain would allow safe and secure interoperability between partners in the healthcare system, which is necessary when dealing with sensitive health information. Blockchain, through smart contracts, will allow doctors to have access to laboratory results and to perform medical research more efficiently. Blockchain will also allow for payments to be transmitted within minutes with little to no fees due to its unique ability to facilitate transactions within a trustless, secure, and borderless global environment. Additionally, next-generation artificial intelligence and blockchain technologies may be used to accelerate biomedical and clinical research even further and enable patients to control and profit from their personal data [7]. There is a need to establish such a system in the Caribbean, particularly. Inter-regional medical cooperation between Caribbean countries is essential for the implementation and improvement of healthcare and also for the management of patients. Blockchain represents an important alternative to support, common solid relationships in training, a true exchange between doctors for a better management of patients, collective scientific research and continuous medical education among the Caribbean professionals and it represents also the key success to revitalize health systems in the region [8]. The Covid-19 crisis is an opportunity to reconfigure multilateral cooperation, to rebuild our health care systems and engage governments on an equal footing to create durable joint solutions. International cooperation systems must draw on lessons that are already emerging and prepare not for the next crisis but for one that is already under way, and whose consequences will be many times larger: the climate emergency.

In conclusion, medical cooperation between the French Territories of the Americas and all other Caribbean countries is essential for the implementation and improvement of health care in the region. Caribbean professionals must discuss the

possibilities of developing common solid relationships in training, collective scientific research, and continuous medical education. There is a real need for collaboration and cooperation among regional cardiologists, surgeons, infectious disease specialists, intensivists through a veritable Caribbean network and today we strongly believe that blockchain through medical cooperation will be the key answer to these questions.

### Compliance with Ethical Standards

**Conflict of Interest** This article does not contain any studies with human participants performed by any of the authors.

We declare no competing interests.

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