Chapter 9

Adoption of Blockchain to Support the National Health Insurance Implementation in South Africa:
An Integrative Review

Shaivar Girdhari
University of Johannesburg, South Africa

Patrick Ndayizigamiye
https://orcid.org/0000-0001-5721-6070
University of Johannesburg, South Africa

ABSTRACT

The National Department of Health aims to provide good quality healthcare to all citizens and especially those who cannot afford proper healthcare through the implementation of the National Health Insurance (NHI). This will be done by pooling funds to establish a social solidarity fund for all citizens in need of healthcare regardless of their socio-economic status. The South African healthcare sector currently makes use of skewed healthcare financing systems, which makes it difficult to have a convergent healthcare scheme such as the NHI. Therefore, it is proposed that for the implementation of the NHI in South Africa, a new healthcare financing system, is developed based on artificial intelligence (AI) and blockchain algorithms with embedded deep learning capabilities. It is anticipated that the proposed healthcare financing system will help build resilience in South Africa's healthcare financing system.

INTRODUCTION

South Africa's National Health Insurance (NHI) is a health insurance program that aims to provide good quality healthcare to all citizens, especially those who cannot afford. The South Africa's NHI is expected to be implemented by pooling funds together to establish a social solidarity fund for citizens in need of healthcare regardless of their socio-economic status (The Centre for Health Policy, 2019). However, South Africa's healthcare sector currently makes use of skewed healthcare financing systems which makes it difficult to have a convergent healthcare scheme such as the NHI. Skewed healthcare financing systems lead to inaccurate financial data being gathered, processed, and produced, which in turn directly inhibits the attainment of the NHI goals as it seeks to unify the healthcare sector.

The South African government plans to achieve the goals of the NHI by acquiring healthcare services from both the public and private sectors to enhance equity in the current distribution of health services. There are four primary goals/objectives of the NHI which are: a) to provide enhanced access to good quality healthcare for all South Africans regardless of social or employment status, b) to pool funds to establish an equitable social solidarity fund through the creation of a single national healthcare fund, c) to procure resources and services on behalf of the entire population and efficiently manage and control financial resources allocated to public healthcare, and d) aims to strengthen the strained and under-resourced public healthcare sector to improve health and healthcare systems performance (Department of Health, 2017).

In recent years, blockchain technology has been proposed as an alternative solution to deficiencies within financial information systems. The characteristics of blockchain are resilient by nature due to it being a decentralized peer-to-peer node network in the way it handles and processes transactions. In the healthcare financing context, the adoption of blockchain can result in a resilient - adaptive healthcare financing system, that would directly impact the health system as a whole. However, currently, there is a paucity of literature on the applications of blockchain within the context of healthcare financing. This chapter investigates the potential adoption of blockchain to support the NHI implementation in South Africa. Specifically, this chapter identifies the challenges faced by current South Africa's healthcare financing systems that may impede the implementation of the NHI. Then the chapter determines the role of blockchain in addressing the challenges. It finally provides a framework for the implementation of blockchain to support the NHI implementation in South Africa.

Related Content

Intensive Care Unit Operational Modeling and Analysis
Yue Dong, Huitian Lu, Ognjen Gajicand Brian Pickering (2012). *Management Engineering for Effective Healthcare Delivery: Principles and Applications (pp. 132-147).*
www.irma-international.org/chapter/intensive-care-unit-operational-modeling/56251

COVID-19 Diagnosis by Stationary Wavelet Entropy and Extreme Learning Machine
Xue Han, Zuojin Hu, William Wangand Dimas Lima (2022). *International Journal of Patient-Centered Healthcare (pp. 1-13).*
www.irma-international.org/article/covid-19-diagnosis-by-stationary-wavelet-entropy-and-extreme-learning-machine/309952

Fully Automatic Detection and Segmentation Approach for Juxta-Pleural Nodules From CT Images
Vijayalaxmi Mekaliand Girijamma H. A. (2021). *International Journal of Healthcare Information Systems and Informatics (pp. 87-104).*
www.irma-international.org/article/fully-automatic-detection-and-segmentation-approach-for-juxta-pleural-nodules-from-ct-images/269407

Medical Robotics: State-of-the-Art Applications and Research Challenges
Alireza Mirbagheri, Mina Arab Baniasad, Farzam Farahmand, Saeed Behzadipourand Alireza Ahmadian (2013). *International Journal of Healthcare Information Systems and Informatics (pp. 1-14).*
www.irma-international.org/article/medical-robotics/78927

Integration of Blockchain and Supply Chain Management
Manish Verma (2022). *Prospects of Blockchain Technology for Accelerating Scientific Advancement in Healthcare (pp. 100-118).*
www.irma-international.org/chapter/integration-of-blockchain-and-supply-chain-management/298567