

# Drug repositioning in response to COVID-19 and other challenging diseases

Hyellavala Fomnya<sup>1</sup>, Saidu Ibrahim<sup>1</sup>, Sarah Malgwi<sup>1</sup>, Garley Bilbonga<sup>2</sup>, Kazabu Amshi<sup>3</sup>, Chahari Alfred<sup>1</sup>, and Kabiru Garba<sup>1</sup>

<sup>1</sup>University of Maiduguri Faculty of Veterinary Medicine

<sup>2</sup>Federal University Wukari

<sup>3</sup>Ahmadu Bello University Faculty of Veterinary Medicine

April 16, 2024

## Abstract

There are over 90 clinical trials including drug repositioning that have been initiated to get COVID-19 treatment/management. Antibiotic resistance, drug tolerance, mutation and adverse drug effects possess a great deal of setback during therapy especially with emerging infectious diseases and this necessitates the need for research into getting new drugs or repositioning the existing ones to meet up with the treatment of both infectious and non-infectious diseases affecting humanity. Drug repositioning is a stepwise process that aid in discovering new indications and therapeutic targets of drugs and it usually takes 3-12 years on the average to be completed whereas in drug discovery, an average of 10-17 years is needed for the whole process. This is because in repositioning, research process goes directly to preclinical testing and clinical trials since both the toxicological and pharmacological profile of the drug to be repositioned is known, thus reducing time, risk, and costs. Based on 2009 statistics, 30% of all drugs sold in that year are products of repositioning while only one out of one million potential drug candidates have the possibility of entry into clinical studies with a tendency of having a significant number of failures. Hence the urgent need to discover new uses of existing drugs especially with the emergence of human and animal diseases such as Covid-19 and the high incidence of drug tolerance and resistance. Drug repositioning is therefore considered as an alternative way as it entails the discovery of new therapeutic indications for already existing drugs.

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