Local manufacturing of open-source devices for medical labs in Africa: prototyping stage in Cameroon.

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Abstract

The lack of accessible quality healthcare is one of the biggest problems in Africa and other developing countries. This is not only due to the unavailability of resources, but also to the absence of a structured formative process for the design and management of healthcare facilities. This situation strongly contributes to deepening inequalities in access to quality healthcare. Appropriate, affordable and good quality medical devices are indispensable in healthcare services. They serve for the prevention, diagnosis and treatment of diseases. In 2014, one of WHO's six strategic objectives was to "increase access to safe, quality medical products". Trying to remedy this problem as part of the MboaLab mission to catalyze sustainable local development through Open Science and contribute to the Common good, we would like to build Open-Source devices for medical labs. Local manufacturing addresses the infrastructural barriers that prevent imported or donated equipment from being properly used, and can facilitate the diffusion of innovation into healthcare practice. Open science is the best and fair approach to support local manufacturing. That is why the crux of our approach is the use of "open source hardware", where designs for easily replicated, high quality diagnostic tools are shared with the potential to transform medical devices through the use of digital fabrication and inexpensive, well-engineered parts from mass-produced consumer goods. We will release a set of prototypes of high quality and inexpensive open-source devices enabling medical labs in Cameroon to perform some important medical analysis and tests. Moreover, through its capacity and capability building dimension, the project will strongly empower young cameroonians involved in STEM empowered with the paradigms of crowdsourcing and rapid prototyping. Expectations are accessible designs of open-source medical devices using local resources (in English and French) ; Proof-of-concept for a local manufacturing of open-source devices for medical labs ; book reporting stakeholder engagement, detailing capacity/capability building and pathways to impact for local manufacturing of open source hardware in Cameroon and in Africa.

Biography: JAFSIA Elisee is the head of the Electromechanical department at MboaLab.

JAFSIA is holder of a Msc in Material sciences from the University of Yaounde I as well as a Med in Physics from the Higher teacher's training college of Yaounde. He is currently member of the DIDA (Digital diagnostics for better healthcare in Africa) network and the technical lead for the OpenFlexure Microscope project in the MbaoLab.