

A Sustainable Health Technologies Innovation Model To Improve Low Resource Settings (LRS) Clinical Outcomes

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Introduction

- Access to innovations in health technologies and the capacity to implement them locally is a pillar identified by the World Health Organization's (WHO) healthcare delivery strategy.
- Health innovation aims to develop and deliver new/enhanced policies, systems, products, technologies, services, and delivery methods to improve health and clinical outcomes.
 - Medical devices, oxygen sources, digital health tools, and personal protective equipment are defined as health technologies (HT)** that have the potential to improve quality of life and health outcomes and improve efficacy.
- However, access to high quality, safe, appropriate, and affordable HT is not equitable, most severely in low resource settings (LRS).

Method

- The authors participated in two rapid WHO evidence-based assessments for innovations with a team that addressed the following assessment dimensions
 - clinical
 - specification comparison
 - regulatory compliance
 - technology evidence; health technologies and engineering management (authors')
 - and intellectual property and potential of local production.
- resulting in two WHO Innovation Compendia published in 2021 and 2022.

- Our global professional organization GCEA contracted with WHO's Medical Device Unit for these assessments and voluntarily engaged 100 reviewers from fifty LRS countries to collect on-the-ground evaluation of the various products for these two Compendia.**

Results

- The 2022 Compendium presents manufacturer/developer-reported information and multidisciplinary assessment results of 15 Health Technologies. HT were classified as either commercially available (7), or prototypes (8).
 - The Compendium sheds light on advantages and challenges associated with implementing innovative HT in LRS and can be used by governments, NGOs and other stakeholders to support adoption decisions.
 - It also aims to foster greater collaboration between Ministries of Health, procurement officers, donors, technology developers, manufacturers, clinicians, academics, and the public to ensure increased investment in appropriate HT and a connected move toward access to essential HT.

Health technology and engineering management

Domains	Appropriateness
 Durability	A measure of expected ability to withstand environmental and use conditions at the target location
 Ease of Use	A concept that describes how easily users can deploy a product safely and effectively
 Positive impact on clinical outcomes	A measure of the extent of expected change in clinical outcomes when a specific brand of technology is deployed in comparison with another brand of the same technology
 Affordability	It is the extent to which the intended recipients of a service can pay for it be it a public, governmental, or private service
 Engineering resources minimization	Indicator of the ratio between increased operational benefits and demands for additional operational resources such as logistics, technical management, risk prevention, spare parts or test tools, and dependency on technical Labor competency or support
 Cultural and social acceptability	A measure of suitability of a product to operate as intended in the designated locality
 Environmental conditions	The ability of specific technology to fulfill its intended use extreme conditions present in the surroundings where it is expected to be used, such as power variability, temperature, humidity, or blowing particles and sand
 Aesthetics	A feature of the external presentation and appearance of a product
 Ease of cleaning	A measure reflecting lack of difficulty and/or unique burden to accomplish proper cleaning of product
 Ease of maintenance	The intensity of lack of difficulty or required technical effort in sustaining product intended use at the level when acquired
 Infrastructure requirements	The extent of additional functional demands presented when the product introduces to the local location of use, such as space, utilities, communication, system integration, and staff technical competency
 Local access to sales support	Measure of availability of sales or marketing personnel associated with the evaluated product as resources to support the intended deployment of their product and its continuous level of deployment at patient readiness level
 Local access to technical support	Measure of availability of technical resources associated with the evaluated product at the intended deployment of their product to warrant its continuous level of deployment at patient readiness level
 Local access to training	In clinical engineering, availability at the target deployment of a product of educational program that aims to promote safe, optimal, and compliant maintenance and repair services of medical devices.