



Università di Pavia
Master di II livello in Ingegneria Clinica
Dottorato di Bioingegneria, Bioinformatica e Tecnologie per la Salute

SEMINARIO

MedTech innovation in Low and Middle-income countries LMIC

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International health policy is based on standards and norms that pretend to be "universal". These standards and regulations are written by and in high-income countries and respond to a profit logic, protecting the interests of producers and markets. Evidently the latter are not always aligned with those of users. Europe, the United States and Japan represent less than 10% of the world's population, yet they absorb more than 80% of the global medical device market, creating de facto standards that respond to the particularism of their needs, being inadequate to meet the health and well-being needs of the population of the lower income countries or even dangerous to the safety and effectiveness of the devices in those contexts.

In this context, the Applied Biomedical Signal Processing Intelligent eHealth Lab (ABSPIE) has been working on several projects since 2016 using the jugaad - frugal innovation approach. Several field studies were run to assess the main challenges and conditions of local medical devices and location, in South Africa, Ethiopia, Uganda, and Benin. These studies informed the creation of a framework for assessing medical locations in low-resource settings, of a framework for designing medical devices resilient to low-resource settings, and several frugal designs of medical devices. In fact, the ABSPIE lab aims to leverage novel technologies such as 3D printing, AI and mHealth, to bypass some of the most recurrent challenges of these settings (e.g., lack of expertise, lack of spare parts, etc.), also fostering local communities through circular economy. Prior to the design of particular medical devices, a new framework for the contextualized design of medical devices resilient to low-resource settings was created.

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