JBHI Special Issue on "Mobile Health (mHealth): Two Decades of Unprecedented Growth and Contributions to Global Health - 20th Anniversary Special Issue"

This special is dedicated to two esteemed past Editors-in-Chief of the IEEE Transactions on Information Technology in Biomedicine (TITB), now IEEE J-BHI, the late Professors Swamy Laxminarayan, the Founding Editor of the Transactions, and Niilo Saranummi. Their unwavering dedication and visionary support laid the groundwork for the progress and development witnessed in this field. Commemorating their legacy within this issue acknowledges their efforts and the pivotal role they played in fostering the growth and evolution of mobile health and the journal.

Two decades ago, the IEEE TITB (predecessor of IEEE J-BHI) featured a groundbreaking special issue on mobile health (m-Health) entitled "M-Health: Beyond Seamless Mobility and Global Wireless Health-Care Connectivity". The editorial paper by Istepanian, Jovanov, and Zhang (2004) became the seminal reference, defining first the concept and the scientific framework of m-Health. Recognized by over 1000 citations, this paper laid the foundation for the transformative field of mobile health.

Since then, m-Health has undergone significant evolution, becoming a cornerstone in the developments of global IT for healthcare disciplines. Recognized by the WHO in 2011 as a vital area for global health improvement and transformation. This important area has also gained worldwide traction across various sectors including IT, telecommunications, and healthcare conglomerates among others. Technological strides in communications, sensing, and computing, from 4G to 5G and now 6G, low power cellular and wide area network connectivity, such as NB-IoT, LTE-M, and LoRaWAN, alongside with advancements in smartphone applications (mHealth Apps), IoT, cloud, edge computing, and AI, have revolutionized m-Health.

Moreover, advances in wearable sensors linked to mobile computing have enabled the collection of health data beyond traditional settings, empowering the monitoring and management of challenging diseases like diabetes, cardiovascular and many other chronic conditions. Furthermore, mHealth systems and applications have been developed and deployed in the above vital healthcare areas in the developed and Low and Middle-Income countries (LMIC).

Advances in other relevant areas such as in medical imaging, robotics, and wearables were among some of the areas and disciplines that were enabled by mHealth technologies to develop and advance the integration process of health and wellbeing sensor and environmental data into combined and large data sets. These advances are now driving the development of the next generation of machine learning and artificial intelligence applications of smart mHealth systems.

To reflect these remarkable advancements and their impact, we invite contributions for a special issue of the Journal focusing on the latest developments in mobile health. This issue aims to showcase the enduring significance of mHealth in healthcare improvement globally over the next two decades.

Topics of interest include, but are not limited to, the following ones:
- Advancements in communication technologies for mHealth (6G, IoT, LPWAN, etc.)
- Evolution of mHealth applications for health and wellness monitoring and management
- Novel wearable sensors and their impact on healthcare outside traditional settings
- Use of mHealth in managing chronic diseases (diabetes, cardiovascular, obesity etc.)
- Pre-emptive mHealth systems for future pandemics
- Integration of mHealth into healthcare systems for improved outcomes
- Cybersecurity and Privacy challenges for future mHealth systems
- Interoperability for future mHealth eHealth systems
- Role of AI, cloud, and edge computing in advancing mHealth systems
- Big Data and mHealth

- mHealth in LMIC and low income and conflict settings (Frugal mHealth 2.0) systems
- Future social networking systems and mHealth
- Ethical considerations and regulatory frameworks in mHealth applications

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Key Dates

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