

Special Issue on
**Internet of Things Applications in Healthcare: A Focus on
Improving Patient Safety**

CALL FOR PAPERS

Internet of Things (IoT) communication devices, particularly those which utilize radio-frequency identification (RFID) and near field communication (NFC), have been hailed as next generation technologies that have the power to transform patient safety in the healthcare domain. Patient safety can be improved through technologies that enable patient identification, tracking, and monitoring, alongside platforms that increase privacy, security, and drug compliance. For example, IoT sensors can assist in monitoring patients at healthcare facilities or in their own homes. In addition, Internet of Humans (IoH) solutions, like IoT device implants and ingestible sensors, have the potential to drive accurate and timely patient identification and monitoring and to facilitate interactions between humans and other devices (e.g., robots). Considering the high volume of data that IoT-based systems typically produce, it is imperative to also investigate advances in human-computer interaction models that allow a greater efficiency in interactions between IoT systems and infrastructures.

While there has been a pervasive advancement in IoT technologies in healthcare worldwide, the healthcare sector also faces serious obstacles. Besides trust, privacy, and security challenges, there are also a lack of established standards, protocols and interoperability among eHealth IoT devices. In addition, there is a scarcity of feasible, accurate, and cost-effective smart medical sensors, and the effect of IoT devices on medical equipment needs further investigation. Moreover, compliance with laws and regulations (e.g., the General Data Protection Regulation (GDPR)) might hinder innovation and pose significant obstacles for healthcare institutions.

This special issue seeks to attract original research articles that discuss emerging IoT technologies with regard to their impact on patient safety in healthcare. This special issue especially welcomes analytical, computational, experimental, and clinical research, state-of-the-art reviews, and conceptual and theoretical developments and designs.

Potential topics include but are not limited to the following:

- ▶ IoT services, applications, and technologies for patient safety, identification, monitoring, and drug compliance:
 - ▶ Models and technologies (e.g., blockchain) to secure communications within IoT healthcare infrastructures
 - ▶ Data integration models among diverse healthcare systems
 - ▶ Device/sensor software and physical security techniques
 - ▶ Advancements and applications of ingestible sensors
 - ▶ Advancements and applications of sensor implants
 - ▶ Advancements in connected biometric technologies
 - ▶ Patient IoT-based self-service applications
 - ▶ Advancements in IoT-based drug/medication monitoring and dispensing
- ▶ Patient-related IoT privacy, legal, and security issues in healthcare
- ▶ Social, economic, and technical challenges and opportunities of IoT technologies for patient safety
- ▶ Human-computer interaction interfaces for IoT services in healthcare environments

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/jhe/ahfip/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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