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A System for Monitoring Hand Hygiene Compliance based-on Internet-of- Things

Studies show that the poor hand hygiene practices in public health institutions such as hospitals, clinics, schools and nursing homes is the most likely cause of the spread of various bacterial diseases. Proper hand hygiene is the single biggest defence against spread of diseases and therefore the caregivers' compliance with hand hygiene is one of the most effective tools in preventing Healthcare Associated Infections (HAIs) in such institutions. In this paper, we present a system prototype of interconnected hand-hygiene stations that use a combination Wireless Sensor Networks (WSN) and Internet-of-Things (IoT) technologies for monitoring the hand hygiene compliance rate. The cloud-connected hand hygiene stations can cooperate to detect hand hygiene events in real-time, and help measuring the hand hygiene compliance at large-scale health-care facilities where it is deployed. The presented work is an initial phase of an on-going research study on hand hygiene compliance. Further phases of the system are currently being developed. The proposed system is desired to be scalable, and easy to install so that it can overcome most of the problems of existing related systems.