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Augmented reality and hospitalized newborn safety

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At the hospital care of a newborn, the iatrogenic risk may be related to the specific side effects of drugs but also to errors during preparation (dilution error, calculation error, error due to combination of two incompatible products from a physicochemical point of view) and or during the administration of products (dose error, administration of a non-prescription medication) committed by the nursing staff. These errors are common and constitute a real concern of medical teams. The steps of preparation and drug administration are particularly at risk. The majority of administration errors are related to the human factor. They are associated with increased stress among nurses. These errors can have consequences for the patient, professionals, health institutions and health insurance. Many studies have proposed and evaluated measures to limit the occurrence of these errors. The research is now shifting focus towards multimodal approaches integrating traceability of operations. However, these measures are struggling to be integrated in daily clinical practice. Hence, the introduction of new technologies in health care system must be considered. To avoid these errors, we propose to design and develop an innovative decision support system based on the technology of Augmented Reality built into intelligent glasses freeing user hands. This system ensures traceability, usability, dynamism, security and transparency for better management of patient medicinal care. The application implemented on the augmented reality glasses have been tested by 7 nurses.Most of them estimate that the glasses enable them to gain time and to reduce the mistakes while preparing drugs.

Biography

Sarah Ben Othman is a PhD student within CRIStAL laboratory in the Ecole Centrale de Lille (Ec-Lille) in France. Her current work handles: control flow in Emergency Department (ED), assess and anticipate ED crowding mainly in pediatric ED. She developed skills in: modeling and optimization, Supply Chain issues and Decision Support Systems.She is an automation engineer graduated from the National Engineering School of Gabès (ENIG) in Tunisia, in June 2012 and she obtained her master degree in Supply Chain Management in November 2013 from Ec-Lille in France.

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