Methodology to develop and evaluate a virtual reality-training course on medication error prevention and management in neonatal intensive care units (NICUs)


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What was done?

▶ A virtual reality-training course was developed and evaluated, regarding prevention and management of medication errors (ME) in NICUs

Why was it done?

▶ 360° virtual room of errors = innovative educational tool which can be included in strategies of ME risk management
▶ NICUs = high-risk areas → priority target

We developed and evaluated a virtual reality-training program based on medication error management in the NICU of a university hospital centre

How was it done?

A multidisciplinary working group
▶ 2 neonatologists
▶ 2 pharmacists
▶ 1 pharmacy resident
▶ 3 NICU nurses

Target audience

99 professionals involved in the medication circuit in the NICU:
▶ 9 physicians
▶ 8 residents
▶ 82 nurses

Training model

Although it was a digital-training, a pedagogical format with « classroom » training sessions has been chosen to promote interactivity between learners and trainers, particularly during debriefing

▶ Every session was run by 3 professionnals: physician, nurse, pharmacist

Training schedule

▶ Weekly sessions
▶ During 4 months

Pre- and post-training evaluations

Evaluate and enhance educational impact

Kirkpatrick’s 4 levels of training evaluation model:

Satisfaction questionnaires

Knowledge evaluation and skills self-assessment

Audits of practices

Monitoring of indicators (adverse events reports)

What next?

▶ This concept promotes the link between clinicians from the NICU and the multi-disciplinary approach concerning the risk management of ME
▶ By directly involving all the healthcare professionnals, this innovative training provides a patient-safety culture development and the implementation of safety measures
▶ The implementation of this training concept in a multi-centric assessment of professional practices should enable to confirm pedagogical interest of such innovative sessions and his deployment in other health facilities