DEVELOPMENT OF A MATERNAL CHILD HEALTH DEPARTMENT-WIDE NEONATAL RESUSCITATION CART EDUCATIONAL PROJECT

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The use of scene organization, including cognitive aids, has been shown to be a critical component that can facilitate or impede resuscitation workflow and teamwork. Elements include the layout of equipment, representing the anticipation and planning of resuscitation; room organization, including retrieval and placement of the code cart so the resuscitation team members can quickly access equipment; and role allocation, with role clarification contributing to better organization and physical workflows (McLanders, Sanderson & Liley, 2017).

Although the NRP has standardized the steps and identified the equipment needed during neonatal resuscitation, there have been no recommendations on the organization of equipment to minimize errors or improve ergonomics and performance. Human factors principles were used to redesign and optimize the neonatal resuscitation cart (Grundgeiger, et al, 2014). The number of neonatal resuscitation carts were increased, and their locations identified to ease staff access and acquisition of resuscitation equipment (Chitkara, et al, 2013). Storage of resuscitation equipment in the cart was standardized to optimize identification and retrieval times, increasing accuracy in the selection of life-sustaining supplies (Chitkara, et al, 2013; Law, et al, 2017). A resource binder containing the daily cart log, neonatal code sheet, debriefing form, NRP reference chart, “Code Preemie” emergency telephone numbers, resuscitation cart drawer content lists with pictorial illustrations of equipment, emergency drug medication dosage chart, and other NRP references were also provided with each neonatal resuscitation cart.

The educational course was provided as just-in-time training in order to meet the immediate needs of staff members, and was tailored to the learners’ characteristics. A conceptual approach was used, consisting of active learning strategies, i.e., problem-based learning (PBL), with concept integration of NRP woven throughout the course design. Curricular content, including objectives (Table 1), were drawn from major concepts from the NRP guidelines.

• Lecture included visual aids; handouts were distributed.

• Small group discussions were initiated after introduction of each topic to assist in the integration of new knowledge and facilitate staff member feedback.

• Group discussion of case problems during neonates’ resuscitation is a known effective method for directing clinical practices, peer sharing, and reflection of experiences. These techniques assisted in making the knowledge their own, into a knowledge base of which the MCH staff already possesses.

• Low fidelity simulation, via a “Scavenger Hunt” activity using the neonatal resuscitation cart, allowed realism by having the MCH staff demonstrate the correct location and selection of neonatal resuscitation supplies and treatments. This approach assisted in psychomotor skill development and acquisition, and provided MCH staff members with opportunities to integrate critical thinking, problem solving, and decision-making skills.

• A 5-item verbal quiz required staff to respond in order to demonstrate their knowledge, identify misconceptions, struggles, and learning gaps. It assisted in gathering objective data about staff learning, specifically in memory, recall, and comprehension.

This type of experiential learning also facilitated nursing communication and care practices, with the end goals of ultimately improving patient care, safety, and health outcomes. The design utilized for this educational course offered the advantage of an efficient use of resources, requiring less cost and minimal time commitment while providing the MCH staff with needed evidenced-based training that ultimately will improve neonatal patient population outcomes.

### COURSE DESIGN

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<tr>
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### REFERENCES