

Creating Gold Standard Videos to Teach NRP Skills Stations

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Abstract

Context: The Neonatal Resuscitation Program (NRP) teaches the concepts of neonatal resuscitation without necessarily training for competency. The newest 7th edition of NRP required changes to our curriculum to update to the current guidelines. We took the opportunity to examine closely our goals for each skill station and how it might be better taught. Skills were taught by NRP instructors to each class one at a time. Learners would wander around the center and look for "open" stations. Multi-disciplinary teams were not formed until later for simulations, and the teaching from instructors was quite variable in content and scope they taught at each station.

Description: We set out to standardize the teaching portion of the skills by creating videos that taught and demonstrated the skills. Skills videos cover 1) Preparation, initial steps and PPV, 2) Alternate Airway and chest compressions, and 3) Emergency UVC placement and IV epinephrine. This decreased our number of skills stations from 4 to 3 since the skills were re-organized to more realistically reflect the flow and order a neonatal resuscitation should take. Learners will be divided into multi-disciplinary groups before technical skills training to better promote behavioral skills training within teams.

Evaluation: Scripts and story boards were created for each video. Volunteer NRP instructors and simulationists from our institution who demonstrate expert level of NRP knowledge were used to act roles of a neonatal response team. All three videos have been created, each about 6 minutes long. Our NRP instructors have extensively reviewed the videos and we made many edits based on their feedback. Our instructors are very positive about the videos and are excited to see them in use starting soon.

Discussion: The videos have been created. We desire to use them at our institution and make them available to other NRP instructors to teach the skills needed for neonatal resuscitation. We believe standardized teaching will improve learner competency, and reduce confounding factors in subsequent research.

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Context

- The Neonatal Resuscitation Program (NRP) teaches all levels and disciplines of providers that might be called upon to help resuscitate a newborn.
- The concepts of neonatal resuscitation are taught, but competency is not necessarily assessed.
- Technical skills are primarily taught in individual skill stations.
- The amount and content of information shared at each skill station is variable and dependent on the NRP instructor.
- Behavioral and team skills practice does not occur until the simulation teams are formed *after* the technical skill stations.

Description

Objective:
To standardize the teaching content at each technical skill station of the NRP course.

Specific Aims:

- Create "gold standard" videos that teach and demonstrate the skills for each station
- Reorganize the skill stations to enhance technical skills *and* team behavioral training.

Reorganized Skill Stations for NRP Training

	Old	New
Skill Station 1	Initial Steps	Preparation, Initial Steps, & PPV
Skill Station 2	PPV & Chest Compressions	Alternate Airway & Chest Compressions
Skill Station 3	Intubation	UVC & Epinephrine
Skill Station 4	UVC & Epinephrine	
Order of Skills	Random	In Order
Time per Station	Variable	20 Minutes
Team Formation	After Skills	Before Skills

Planned number of skill stations will decrease from 4 to 3. PPV=Positive Pressure Ventilation, UVC=Umbilical Venous Catheter

Evaluation

Preparation, Initial Steps, and Positive Pressure Ventilation

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Videos Created

- Preparation, Initial Steps & Positive Pressure Ventilation
- Alternate Airway & Chest Compressions

Video Modified (with permission)

- Emergency Umbilical Venous Catheter & Epinephrine (<https://www.youtube.com/watch?v=jBJONanCYU>)

Pilot Study of NRP Videos Outside of NRP Course

Overall Satisfaction with Course

Box and Whisker Plot of overall rating of course taught before and after use of NRP videos: A course was developed in 2016 to teach emergency medicine residents the core basics of NRP. The course at its inception in July 2016 (Before Videos) consisted of lectures describing the basic physiology of neonatal resuscitation and the steps of NRP. After several steps were described the lecture paused for low fidelity simulations of the skills described. In April 2017 (After Videos), the course was given again to a similar audience with nearly the same lecture material, but the NRP videos were used to introduce the low fidelity simulations. The blue line represents the median score and the upper and lower dimension of the box plot represent the 75th and 25th percentile respectively. Before videos median 6, n=16. After videos median 7, n=21, p=0.03 by Mann-Whitney Rank-Sum test

Name the best thing from the course:

- "Text-video-practice model"
- "Immediately useful and absorbable information"
- "Hands on experience alternating with video/lecture"
- "Very interactive - kept my attention; ideas reinforced through videos and slides"
- "I loved getting practical experience with guidance and very repetitive video instructions"

Discussion

Videos will be used in our NRP course

Desire to make videos available to other institutions

Standardized teaching may help NRP education

Videos may enhance learner experience

Videos help enforce the education when added to lecture instruction and simulation

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