

Video Microlearning and Gamification to Streamline Unit-based Nurse Training with a New Device

Besen B, RN
Canty B, RN
Konstantin A, RN
BCHO PICU

BACKGROUND

Delay in Device Delivery Highlighted Training Flaws

BCHO invested in 20 new external ventricular drains (EVDs) for the PICU, scheduled to be rolled out on the PICU floor in July 2017.

The EVD is a **high-risk, low-frequency** device. It was important that everyone using these machines be familiar with the equipment **prior** to introduction in the PICU. Initial training for the equipment change was a series of traditional in-service trainings. However, the EVDs were delivered **60 days later than expected**, and nurses had not retained earlier training.

Looking for a more effective alternative, PICU management piloted a cloud-based **just-in-time training solution** (Elemeno Health, Oakland; a UCSF-backed innovation) to help frontline healthcare teams deliver best practice at the point of care.

The training solution applied gamification (the use of gaming mechanics in non-game contexts) to engage users in a specific activity as directed by clinical leadership. Participation was voluntary.

Project Goals

Examples of Traditional Training Methods:

- Infrequent staff meetings (one trainer: large group; not in clinical context)
- 1:1 in-person in-servicing (resource- and time-consuming)
- vendor-based collateral (generic; one-off websites; paper handouts)
- email explanations
- locally made breakroom posters
- hurried small group training during shift hand-off.

As a result ...

Tracking training viewing/participation is **difficult**, generally relying on paper documentation. Processes are **disconnected** from actual practice. Potential for large **gaps** of time between training and actual practice **negatively** affects retention.

Challenging to sustain the effect of the initial training over the long term.

Objectives:

Ensure all ICU nurses (n=100) across three shifts:

- are aware of the switch
- understand differences between old and new EVDs **to prevent operational errors**
- can refresh their training, on-demand, for low frequency usage

Target State for Training:

Use a **context-driven, microlearning solution** to help frontline nurses adhere to the consistent delivery of best practices at the point of care.

Project Plan and Interventions

The Plan

Given the delayed delivery of the EVD devices, the PICU needed a way for nurses to have knowledge at their disposal, so that they did not rely solely on recall from one-time trainings. **Video-based microlearning** could capture both verbal and tacit **knowledge** and provide a way for our nurses to have concise refresher training available **on-demand** to help ensure correct practice.

Interventions

Capture training in microlearning video



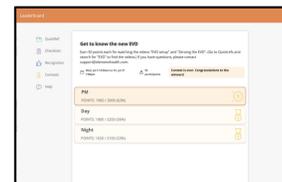
PICU recorded two under 3 minute refresher videos walking through the different elements and operational steps of the new machines.

Curate and host approved video on accessible unit and institution-specific site



Final versions approved by BCHO PICU leadership, hosted on BCHO Elemeno site and accessible on any web-enabled device.

Disseminate practice across nursing staff



To leverage the competitive spirit among shifts, we set up a two-week contest, with approximately 30 nurses per shift/team. Nurses earned points for their teams by viewing each video once.

Tracking engagement and drive peer-accountability

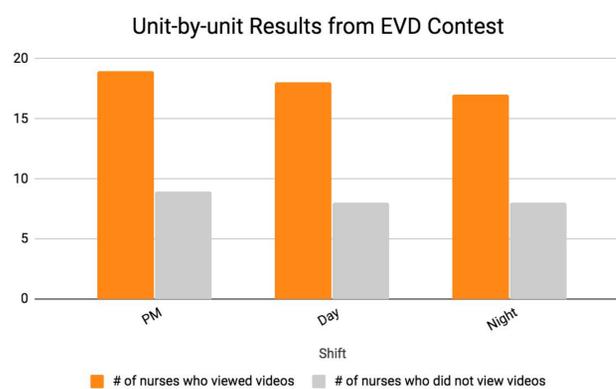


Set up a **dynamic contest leaderboard** with each team member's name and points visible to the entire team. This allowed team members to use **peer accountability**.

Project Evaluation and Impact

Instead of having restricted opportunities to learn about the new EVDs, our nurses were able to access the critical information **when they needed it, right on their own personal devices**.

Out of the 79 nurses who registered, **nearly 70%** of the nurses watched both videos.



In addition to the contest videos, our nurses also took the opportunity to view Level 1 Rapid Infuser, Codman DirectLink, Manual ICP, and Defibrillator videos (along with other resources) **at their own convenience**, educating themselves during shift change, on breaks, on the floor, or from home.

Next Steps, Dissemination & Lessons Learned

Next Steps:

Since completion of the pilot, we have created over ten microlearning videos, including Level 1 Rapid Infuser, Codman DirectLink, Manual ICP, and Defibrillator. Our staff nurses have since viewed videos (along with other resources) on-demand **at their own convenience**, educating themselves on the floor, during shift change, on breaks, or from home.

Dissemination:

The just-in-time training has been formally adopted in the ICU and is scaling to additional units/specialties in BCHO. Another site for the training solution is live at BCSHF PCICU, and specific video microlearning content is being shared between institutions.

Lessons Learned:

High-quality videos can be created with personal mobile devices. Audio availability may be limited at the bedside; adding subtitles to videos can allow for an effective visual learning experience without sound. Workstation access was facilitated by addition of a shortcut icon. While nurses found desktop access doable, expansion to mobile access increased accessibility; even at the bedside, nurses access content without interrupting EHR workflows.