



Central Venous Catheter Care Training: Shifting the Focus to Ambulatory Care



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Background

- In the **INPATIENT** setting, educational interventions have been shown to improve central venous catheter (CVC) care and decrease rates of central line-associated bloodstream infections (CLABSIs).
- Similar interventions have not been done in the **AMBULATORY** setting.
- Based on the results of a prior multi-site survey of home health nurse we designed and implemented a **simulation based educational class** for home health nurses.



Tunneled catheters



Implanted ports

Methods

- Home health nurses were invited to attend a voluntary and complimentary 2 hour educational session.
- Curriculum included both didactic and simulation components.
- Class Objectives:**
 - Define CLABSI and recognize why surveillance is important in the home health setting.
 - Understand key components of CVC care including hand hygiene, accessing CVCs, assessment of CVCs and recognizing potential complications.
 - Recognize when CVC dressings should be changed and demonstrate appropriate techniques for changing CVC dressings.
- Nurses completed pre- and post- class assessments and a class evaluation.
- Pre- and post- test analysis was performed using a linear mixed effects model of the scores with a fixed time effect (before and after intervention) and a random nurse effect.

Results

- We held 4 classes for a total of 59 home health nurses.
- 2 classes at Ronald Reagan UCLA Medical Center and 2 classes at Cedars-Sinai Medical Center.
- Nurses came from 11 home health agencies throughout Los Angeles.

Knowledge Assessment

- At UCLA, 21 nurses completed the pre-test and 23 nurses completed the post-test.
- At Cedars-Sinai, 26 nurses completed the pre-test and 30 completed the post-test.
- Using a linear mixed effects model, the mean post-test score was 13.6 (SE 1.9) percentage points higher than the pre-test score ($p < 0.001$).

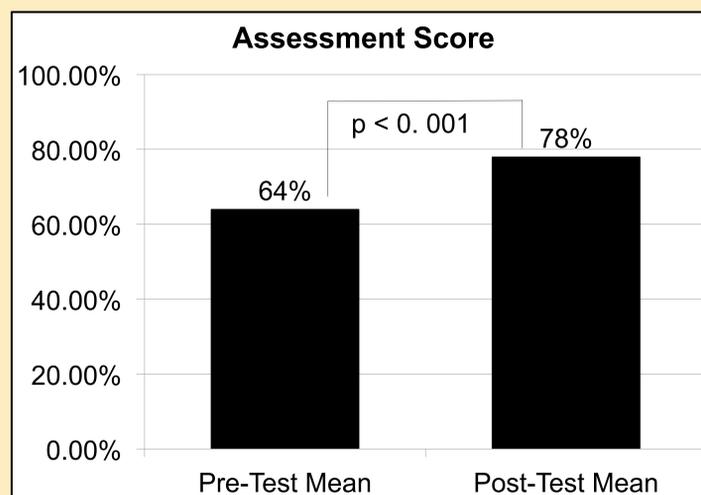


Figure 1: Pre and Post-Test Scores

Class Evaluation

- 51 (86%) nurses completed the class evaluation.
- 98%** "agreed" or "strongly agreed" that the class helped **improve their care of patients with CVCs**.
- 98%** "agreed" or "strongly agreed" the class was **worth their time** as a home health nurse.
- 98%** "agreed" or "strongly agreed" that they **learned new skills** during the class.
- 100%** "agreed" or "strongly agreed" that they would **recommend the class to another home health nurse**.
- 63% of the participants commented that the simulation portion of the class was the best part.

Results

Table 1: Mean Pre- and Post-Test Scores by Question at UCLA

	PRE-TEST MEAN	POST-TEST MEAN	Question Topic
Q1	95%	96%	Hand hygiene
Q2	81%	100%	Ideal antiseptic agent
Q3	95%	87%	Dressing change procedure
Q4	10%	39%	Ideal dressing type
Q5	100%	100%	Infection prevention
Q6	10%	17%	When to change dressings
Q7	86%	100%	Dressing change procedure
Q8	5%	43%	When to replace administration sets
Q9	95%	100%	Infection prevention
TOTAL	64%	76%	

Table 2: Mean Pre- and Post-Test Scores by Question at Cedars

	PRE-TEST MEAN	POST-TEST MEAN	Question Topic
Q1	90%	95%	Hand hygiene
Q2	90%	100%	Ideal antiseptic agent
Q3	95%	95%	Dressing change procedure
Q4	10%	10%	Ideal dressing type
Q5	100%	100%	Infection prevention
Q6	10%	55%	When to change dressings
Q7	95%	100%	Dressing change procedure
Q8	12%	80%	When to replace administration sets
Q9	94%	100%	Infection prevention
TOTAL	66%	82%	

Conclusions/Future Directions

- As increasing numbers of patients are discharged from the hospital with CVCs we need to shift the focus of education from inpatient to the ambulatory setting.
- Simulation based classes on CVC care can be effective at increasing education and are well received by home health nurses.
- Future plans include ensuring this class is available to all home health nurses partnering with our organization and extending this to ambulatory nurses.