

# Cultivating a CRRT Education Program to Meet the Demands of an Everchanging Workforce

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## Abstract

Over the past several years, there has been a noticeable increase in the need for Continuous Renal Replacement Therapy (CRRT). Critical care patients are presenting with a higher acuity than we have ever seen before. Factors such as complex Acute Kidney Injury (AKI), multiple comorbidities, and complications of COVID-19 have contributed to the increase in patient acuity and the growing need for CRRT. The nurses caring for these critical patients need to be highly skilled and experienced. Due to burnout and nursing turnover, there is a large gap in the number of experienced nurses trained to perform CRRT. Training a multi-experienced workforce to perform CRRT requires a concise, standardized education program to equip the ICU Registered Nurse (RN) with the necessary skills to provide safe, quality care.

## Background

- AdventHealth
  - Central Florida Division includes the following hospitals and ICUs
    - Orlando (6 Intensive Care Units / 190 ICU bed capacity)
    - Altamonte Springs (1 ICU / 28 beds)
    - Apopka (1 ICU / 19 beds)
    - Celebration (1 ICU / 36 beds)
    - East Orlando (1 ICU / 24 beds)
    - Kissimmee (1 ICU / 29 beds)
    - Winter Park (1 ICU / 20 beds)
  - Multidisciplinary Team identified the growing gap between the number of CRRT trained RNs and the increased need for RRT in our ECMO, COVID-19, and multiorgan failure patient population in our facilities.

## Methods and Materials

- To meet the demand for more CRRT trained nurses, we
  - Collaborated with the Nursing Leadership Team and the ICU Education Team to identify high performing RNs:
    - Graduate Nurses during Orientation
    - Experienced ICU RNs
    - Experienced CRRT trained travel RNs
  - Increased number of classes offered
  - Increased the number of participants per class by converting to virtual platform
  - 1:1 skill check off for all newly trained CRRT RNs
  - Created Advanced User CRRT classes to reinforce key concepts and standardize practices

## Program & Education

- Program Design
  - Pre-requisite web-based training modules
  - Interactive case scenario led presentation
  - Hands on experience with machine management
  - Hemodialysis catheter access and deaccess
- Real time education opportunities
  - Daily rounding on all CRRT patients
  - RN support with set up, maintenance, and troubleshooting
  - Discussion of CRRT utilization during multidisciplinary rounds
- Education program modifications during the pandemic
  - Converted to a virtual platform
  - Temporary workforce added to CRRT training
  - Identified wins and opportunities



Figure 1. Educator teaching documentation in real time



Figure 2. Educator with RN at bedside



Figure 3. Virtual CRRT course in progress

## Results

|                                      | 2020  | 2021  |
|--------------------------------------|-------|-------|
| # of patients per day receiving RRT  | 7-20  | 15-30 |
| Treatment Volume                     | 1,905 | 3,406 |
| Number of RNs trained to perform RRT | 132   | 280   |
| Advanced User Trained                | N/A   | 85    |
| Number of CRRT machines              | 45    | 65    |

## Future State

- Develop a hybrid classroom model
- Revamp the hands-on CRRT skills checkoff
- Establish an annual competency validation

## Conclusions

As our patient conditions continue to become more advanced as it relates to kidney injury, the skill and knowledge level of our ICU nurses must advance as well. Burnout and turnover are a common thread also plaguing our nursing teams. Training a multi-experienced workforce to perform CRRT requires a concise, standardized education program to equip the ICU Registered (RN) with the necessary skills to provide safe, quality care.

