

# Optimization of Electronic Continuous Renal Replacement Therapy Documentation to Reduce Time Spent in the Electronic Health Record

Kathrine Winnie, RN, DNP<sup>1</sup>; Susonna Guimond, RN, MSN<sup>1</sup>; Kimberly Sanchez, RN, PhD<sup>1</sup>; Isata Kanu, RN, BSN<sup>1</sup>; Veronica Ufano, RN, BSN<sup>1</sup>  
<sup>1</sup>Keck Medical Center of USC



## Background

- Accurate nursing documentation has been associated with improved nursing outcomes
- Up to 35% of nursing work time is spent documenting care provided
- Precision Continuous Renal Replacement Therapy (CRRT) calculations are required to ensure optimal fluid balance for each patient
- CRRT calculations and documentation are noted to be one of the most time-intensive activities nurses perform in Critical Care Units
- The primary barrier to efficient documentation includes limitations in software functionality

## Purpose

To optimize Electronic Health Record (EHR) to decrease time spent performing calculations and completing documentation for CRRT

## Methods

Nurses on the CRRT Quality Council

- Viewed electronic CRRT documentation solutions from other hospitals
- Drafted organization specific solutions as solutions from other hospitals did not meet program needs

Category	Value	Unit
Total Intake (non-Prisma)		mL
Total Output (non-Prisma)		mL
Actual Fluid Removed (screen)		mL
Actual Fluid Balance		mL
Continuous Balance from Last Hour		mL
Continuous Fluid Balance		mL
Ordered Fluid Removal Rate		mL
Ordered Fluid Removal Balance		mL
Target Removal Rate		mL
Programmed Pump Removal Rate		mL
Boluses (Not Removed)		mL
Output-Not Included in Balance		mL
12 Hour Subtotal		mL
24 Hour Subtotal		mL
12 Hour Total Fluid Boluses		mL
12 Hour Total (incl. boluses)		mL
24 Hour Total Fluid Boluses		mL
24 Hour Total (incl. boluses)		mL
Cumulative CRRT Balance		mL

Category	Value	Unit
Hourly Fluid Balance		
Volume not included in Calculation		
Adjusted Hourly Balance		
Continuous Balance from Last Hour		
Continuous Fluid Balance		
Ordered Fluid Removal Rate		mL
Ordered Fluid Removal Balance		mL
Target Removal Rate		mL
Programmed Pump Removal Rate		mL

Transcribed Values from Chart  
Automatic Cumulative Calculations

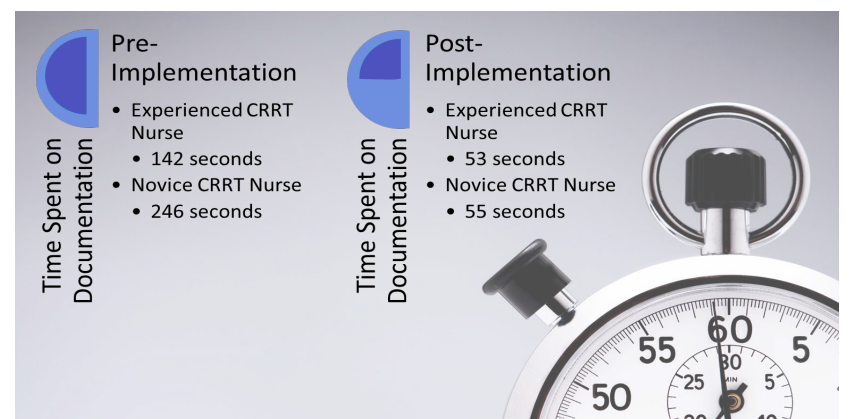
## Description

In this organization, CRRT calculations are performed hourly, utilizing cumulative balances that are re-set every 24 hours and required nurses to perform calculations manually.

The approved solution required no manual calculation

- Added documentation fields to facilitate cumulative calculations
- Removed and the

## Outcomes



## Evaluation

- Time saved per day
  - Experienced CRRT nurses: 35.6 min
  - Less experienced CRRT nurses: 83.6 min
- Increased satisfaction and ease of use when ensuring accuracy of documentation.

## Implications

- Organizations should explore documentation options and evaluate software limitations prior to optimizing the EHR
- Automatic CRRT calculations, limiting manual calculations by the nurse, promotes accurate determination of a patient's fluid balance and may improve patient outcomes



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