

# Electronic CRRT Flow Sheet: Decreasing Errors and Increasing Nurse Recruitment

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## History

- The CRRT certified RN manages all aspects of nursing care for CRRT patients including frequent volume calculations.
- Calculations may be required as frequently as 100 to 160 times in a 24 hour period.
- Historically, nurses perform these calculations by hand using a paper flow sheet.
- This process creates a large probability of calculation errors, incorrect volume/fluid management, and a decrease in nurse desire to be CRRT certified due to anxiety and fear of making calculation errors.

## Objectives

- To design and test an electronic flow sheet that performs the calculations.
- To increase patient safety by decreasing calculation and fluid/volume management errors.
- To improve patient care by increasing RN and patient interaction and decreasing time required to perform volume calculations.
- To increase the number of CRRT certified RNs by eliminating the confusion and fear of making calculations errors.

## CRRT Flow Sheet

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## Methods

- Chart reviews were performed to investigate the rate of calculation errors for fluid removal & volume replacement.
- Chart reviews revealed 92% calculation error including 17% that resulted in patient volume variation error of >500 ml in a 12hr period.
- A survey was conducted to assess nurses aversion to becoming CRRT certified. The survey revealed fear and anxiety of making potential calculation errors as the main barrier.
- An electronic flowsheet that performs calculation was created and tested for accuracy with precise results.

## Results

- Calculation errors decreased to 3%; < 1% resulted in patient volume variation of > 500 ml in a 12hr period.
- The electronic flow sheet is incorporated in the hospital's computerized documentation system to streamline the forms and sources documentation.
- The number of CRRT certified nurses increased by 15%.
- Survey showed that 70% of the RNs decision to become CRRT certified is related to the new CRRT electronic flow sheet.

## Conclusions

- The electronic flow sheet increased volume calculation accuracy significantly.
- It became an effective recruitment tool to increase CRRT certified RNs.

