

# Navigating Uncharted Waters: Initiating Aquadex with Continuous Veno-Venous Hemofiltration Therapy in a Pediatric Cardiac Intensive Care Patient AKI & CRRT Conference

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## Abstract

**PURPOSE**  
In October 2022, a patient's urgent medical need necessitated the initiation of Aquadex renal replacement therapy (RRT) for the first time within the pediatric cardiovascular intensive care unit (CICU). The patient's renal failure due to complications from hypoplastic left heart syndrome was no longer manageable with peritoneal dialysis and prior attempts at Prismaflex RRT had failed. Previously, Aquadex therapy had only been utilized in the neonatal/intensive care unit (N/IICU), and RN experience and competency was confined to the N/IICU alone. Therefore, our goal was to develop a sound Aquadex educational plan that would ensure proficiency and begin training the multidisciplinary CICU team as quickly as possible.

**METHODS**  
A team comprising N/IICU and CICU Clinical Nurse Specialists and Educational Nurse Specialists and a Dialysis Nursing Leader partnered to plan nursing education. In November 2022, instructors offered 11 90-minute training sessions over a 3-day period for 42 CICU and 9 Dialysis RNs with previous RRT knowledge. Each session included 30 minutes of didactic learning to discuss care principles and 60 minutes of situational learning to troubleshoot alarms, augment settings, baseline hematocrit, trend pressures, obtain labs, and review history. Class sizes were limited to 2 learners per Aquadex console to ensure a tactile and engaged learning environment. Each participant received an anonymous online post-training survey consisting of demographics, three Likert-type evaluation questions, and one open-ended question. Following training, CICU RNs worked with Aquadex-experienced N/IICU or CICU RNs for 3 shifts to support clinical experience development.

**RESULTS**  
Preliminary responses (n=16) from post-education evaluations show that the education met objectives (100%), was engaging (94%), and can be applied to the clinical environment (100%). Evaluations are continuing, and learners will self-assess sustained knowledge and comfort in providing clinical care with Aquadex at 60-90 days post-initial training. In October 2022, N/IICU RNs supported all Aquadex therapy needs for CICU patients. By December 2022, CICU RNs provided 85% of all RN staffing needs required for any patient receiving Aquadex in the CICU.

**CONCLUSION**  
Rapid attainment of knowledge related to a new RRT is possible through interdisciplinary collaboration and institutional support for swift staff education.

## Introduction

### Patient

- Renal failure developed due to complications from hypoplastic left heart syndrome
- Peritoneal dialysis (PD) was discontinued due to recurrent necrotizing enterocolitis (NEC)
- Attempts to replace PD with continuous renal replacement therapy (CRRT) via Prismaflex failed

### Aquadex Indication

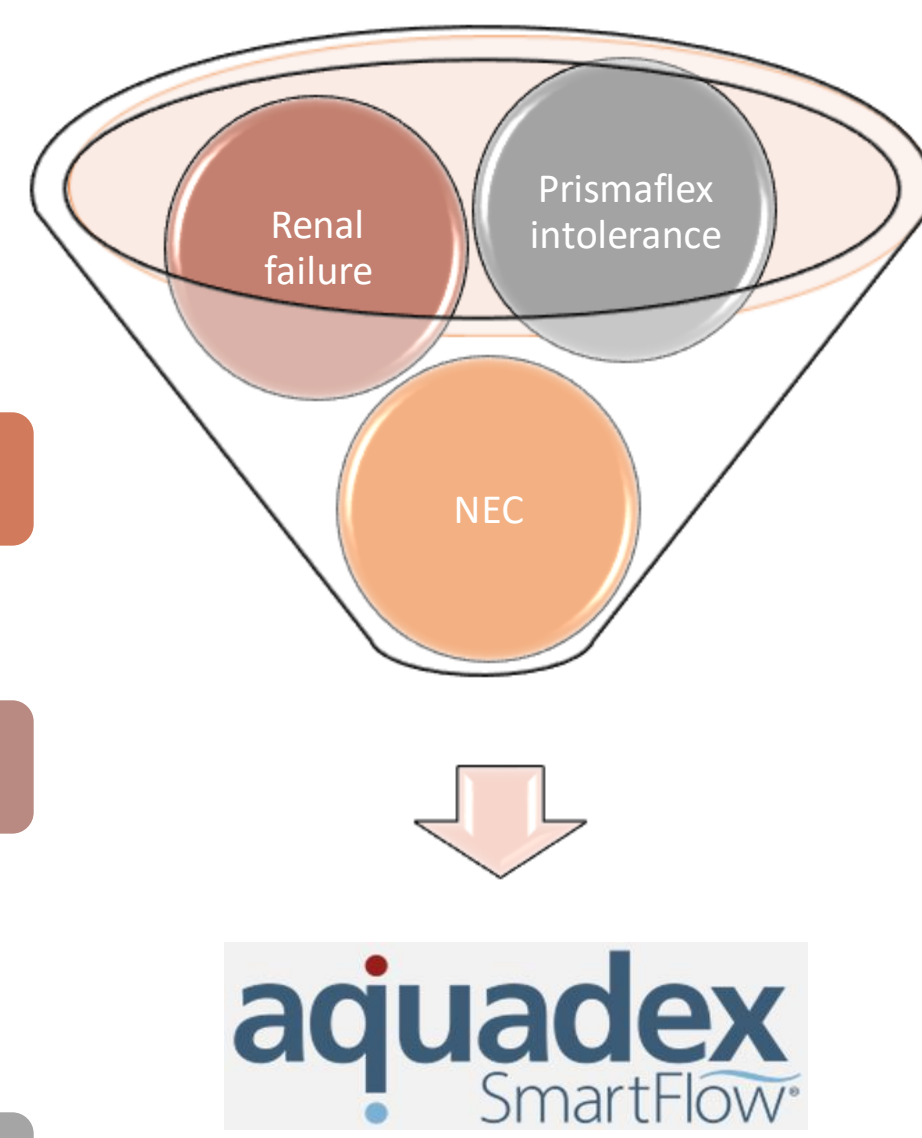
- NEC prompted the urgent need to transition from PD
- Prismaflex was no longer an option for this patient

### Problem

- Aquadex therapy had only been utilized in the neonatal/intensive care unit (N/IICU) – no prior use in the pediatric cardiac intensive care unit (CICU)
- Gap in CICU nursing experience and competency with Aquadex

### Purpose

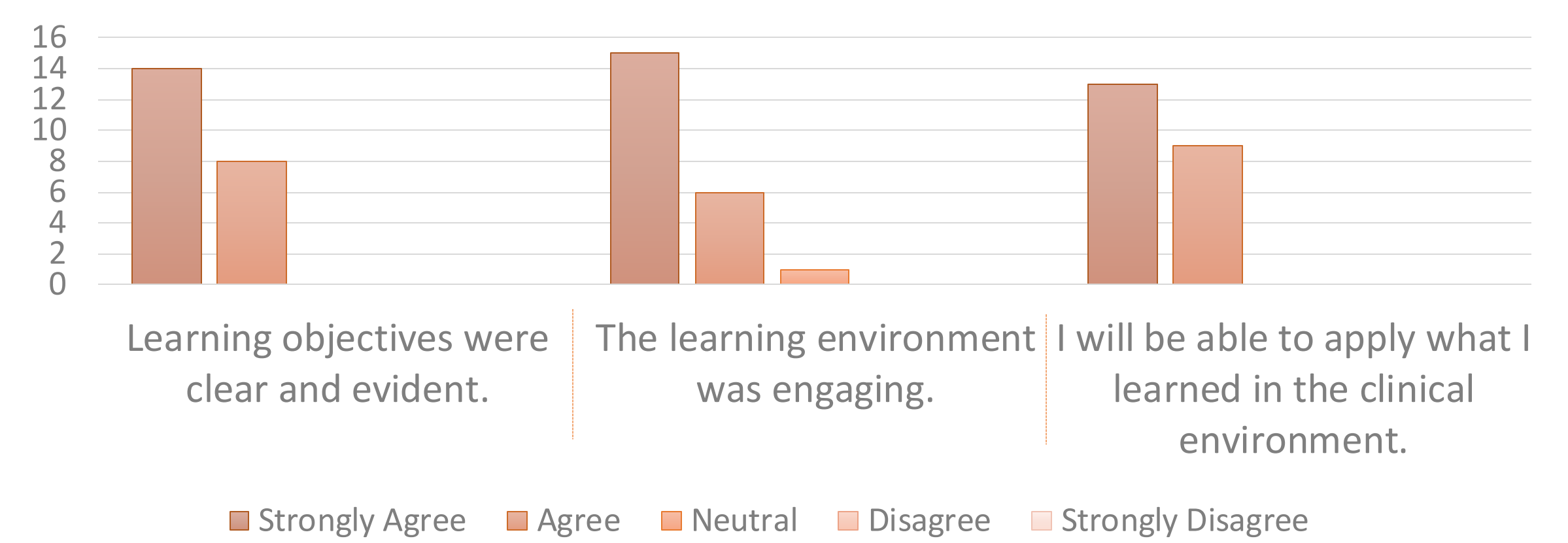
- Develop a sound Aquadex educational plan that would ensure proficiency and begin training the multidisciplinary CICU team as quickly as possible



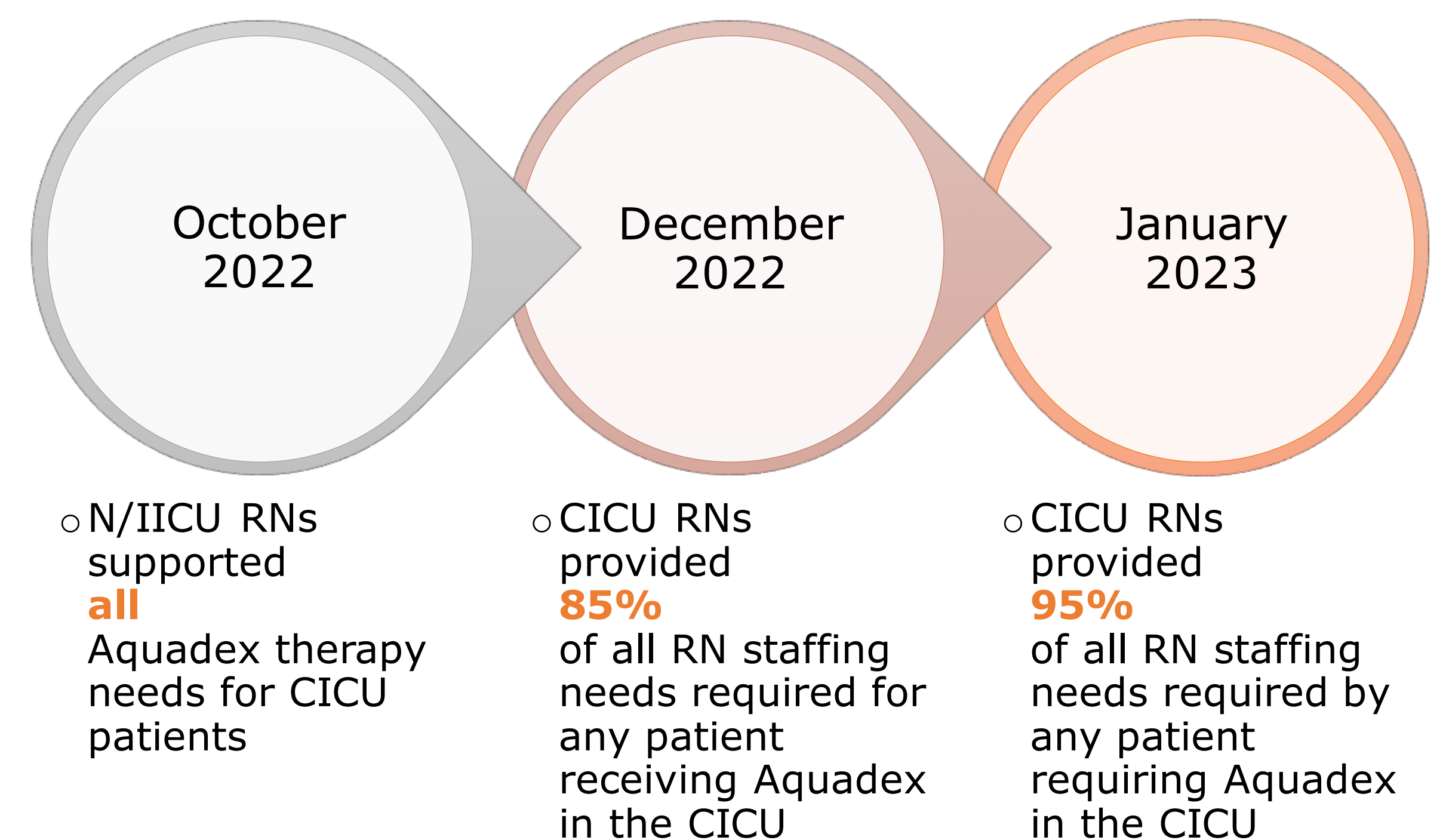
## Results

Post-education evaluations demonstrate that education met objectives, was engaging, and is clinically-relevant

Aquadex Training Learning Objectives



Rapid education plan successfully increased CICU capability to care for patients receiving Aquadex



## Methods and Materials



- Instructors offered 11 90-minute training sessions over a 3-day period
- Each session included 30 minutes of didactic learning to discuss care principles and 60 minutes of interactive experience with the Aquadex console
- Each participant received an anonymous online post-training survey consisting of demographics, 3 Likert evaluation questions, and 1 open-ended question; in the immediate post-training period, CICU RNs worked with Aquadex-experienced N/IICU or CICU RNs for 3 shifts to support clinical experience development

## Discussion

- Our collaborative approach to the Aquadex launch ensured nursing competency to support safety and optimal patient outcomes
- Treatment for acute renal failure was delivered without interruption during the transition from PD to Aquadex
- Due to successful circuit-to-circuit priming, Aquadex therapy was delivered with minimal allogenic blood product exposure, negligible therapy interruptions, and no circuit failures



## Conclusion

Rapid attainment of knowledge related to a new renal replacement therapy is possible through interdisciplinary collaboration and institutional support for swift staff education.



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