

# Single Center US Experience Using a Dedicated Pediatric Sized Filter Set for Children on Continuous Kidney Support Therapy

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## Background

- During the Covid19 pandemic, the United States Food and Drug Administration [FDA] issued an emergency use authorization for the use of Prismaflex HF20 for children between 8-20 kg needing Continuous Kidney Support Therapy [CKST].
- HF20 is a smaller filter with a priming volume of 58 ml.
- We report our experience of this hemofilter for CKST at a quaternary care freestanding hospital.

## Methods

- Prospective CKST related Data collection via our institutional automated dashboard between June 1<sup>st</sup> and November 30<sup>th</sup>, 2021.
- Additional variables including patient demographics, underlying diagnoses, lab values and parameters for dialytic therapy were collected thorough manual chart review.
- Our program uses Continuous Venovenous Hemodiafiltration [CVVHDF] with pre-filter dilution as the standard modality. The clearance is split evenly between dialysis and convective modes
- Our standard dosing is 2000 ml/min/1.73M<sup>2</sup>

## Results

**Table 1. Patient characteristics [ n=9]**

Median Age [years]	1.2 [range:0.8-9]
Gender	67% male
Median weight at admit [kg]	8.1 [range 3.9-17.3]
% Fluid overload at CKST start	14.4 [IQR 10.9-29.7]
Primary Diagnosis	
• Complex Congenital Heart Disease	33%
• Bone Marrow Transplant	22%
• Liver Failure	33%
• Sepsis	11%
Comorbidities:	
• Genetic	22%
• Immunologic	33%
• Heart	33%
• CKD	11%
• Lung disease	22%
Median Vasoactive Infusion Score [ at start]	3.3 [range: 0-21.4]
Median Mechanical ventilation days	36 [IQR 11.5-101.25]
Hospital survival	33.3%

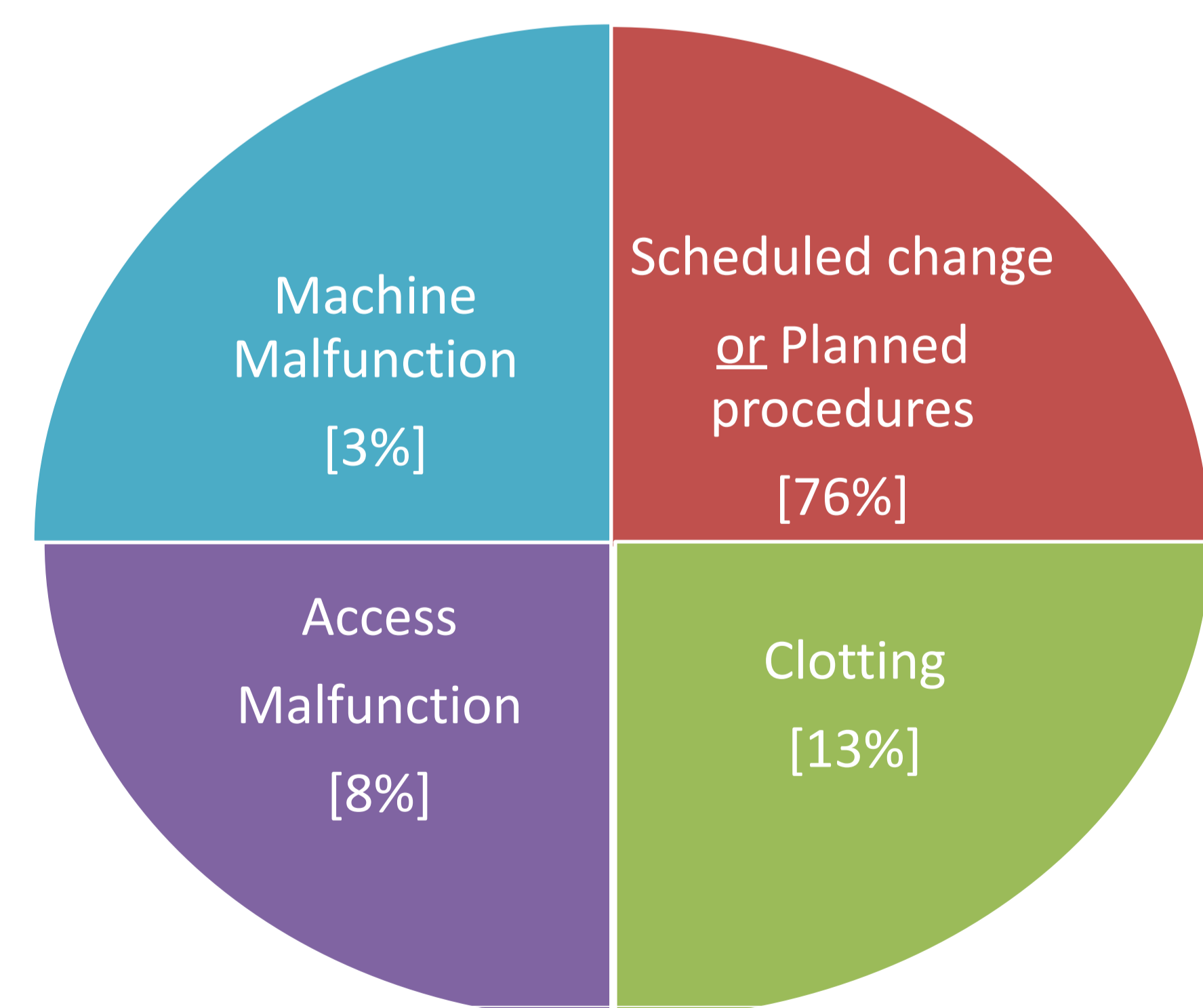
**Table 3. CKST characteristics**

Mode: CVVHDF	100%
Indication for CKST:	
• Fluid overload	100%
Prime	
• Blood	n=3
• Normal Saline	n=6
Anticoagulation with regional citrate	100%
Median prescribed blood flow (ml/min)	40 [IQR: 30-70]
Mean dose prescribed (ml/kg/h)	102 [SD ±16]
Mean dose delivered (ml/kg/h)	68.4 [SD ±8]
Median time on CKST (days)	36 [range: 5-92]
Average circuit life (h)	54.64 h [range: 16-88 h]

**Table 2.. Vascular access**

Median size of catheter	8Fr [range:7-10Fr]
Median number of catheters	1 [ range :1-6]
Initial catheter location	RIJ [n=7] Femoral [n=2]

**Fig 2. Reasons for circuit discontinuation [n=75]**



## Conclusions

- HF20 filter delivers efficacious CKST to younger children with AKI
- The smaller priming volume and safety profile make it a valuable addition to available therapies for kidney support
- Monitoring delivered dose may be an important consideration to optimize metabolic control.