

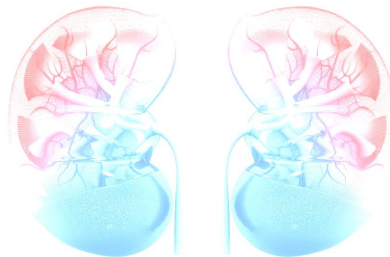
# Introducing Sustained Low Efficiency Dialysis (SLED) in Critical Care



**Angela Evans (ICU Sister), Dr. Craig Morris (ICU Consultant), Andy Muggleton (Chief Renal Technician), Irene Opena (Renal Educator), Prof. Nick Selby (Professor for Nephrology & Renal Consultant) and Lovely Ann Sorianosos (ICU Educator)**

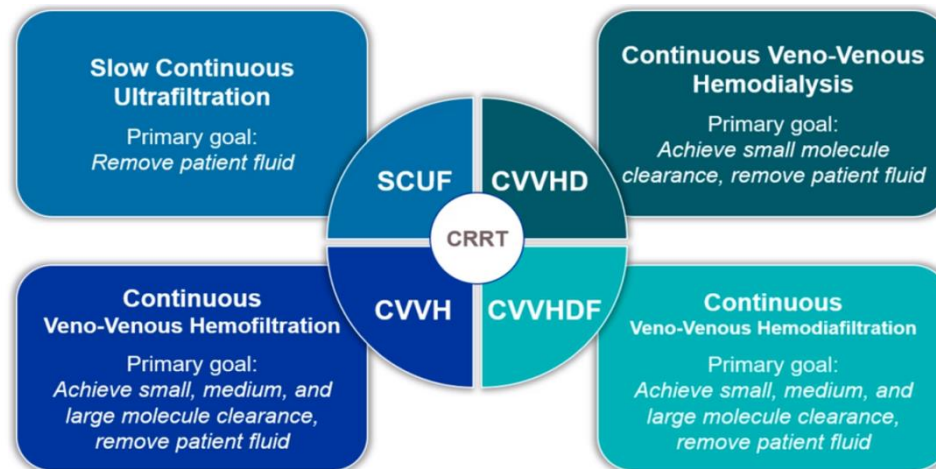
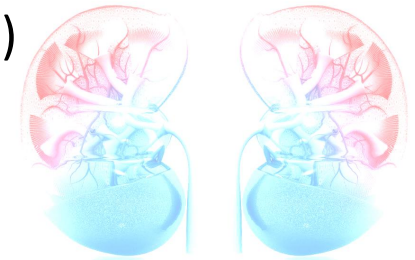
# Overview

- **Types of RRT in our unit**
- **Advantages & Disadvantages (CRRT & IHD)**
- **Definition of SLED**
- **Background**
- **Method**
- **Learning Resources**
- **Results**
- **Conclusion**
- **Future Plans**



# Types of RRT in our unit

- **Continuous Renal Replacement Therapy (CRRT)**
  - Continuous Veno-Venous Hemofiltration (CVVH) and
  - Continuous Veno-Venous HemoDiaFiltration (CVVHDF)
- **Intermittent Hemodialysis (IHD)** – CKD patients
- **Hybrid Therapy**
  - Sustained Low Efficiency **Daily** Dialysis



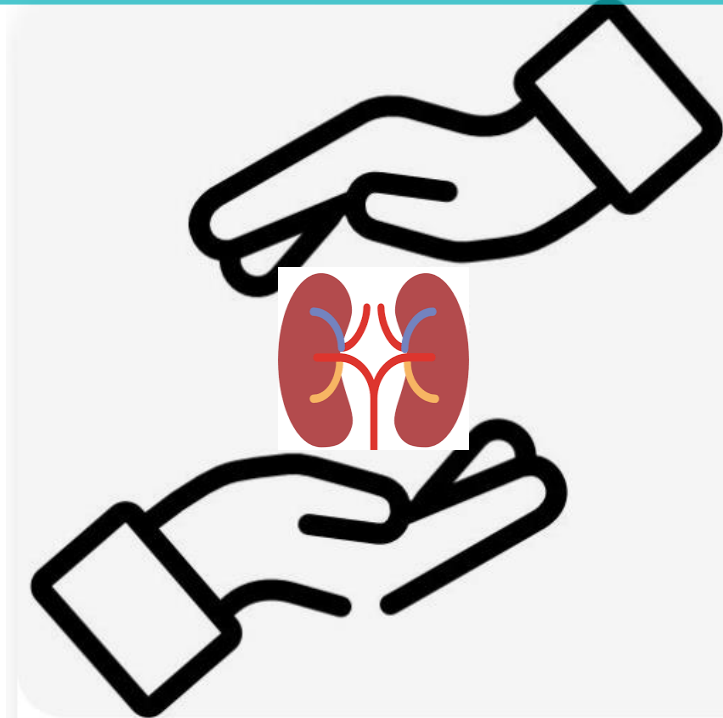
# Advantages & Disadvantages

## CRRT & IHD

**CRRT**



**IHD**



**SLED**

**Hybrid Mode**

# What is SLED?

## Sustained Low Efficiency Dialysis

SLED is a hybrid mode of RRT

- sits on the spectrum between intermittent haemodialysis (IHD) and continuous renal replacement therapy (CRRT = CVVH/CVVHDF).



# Background



## Challenges from COVID-19:

- lack of CVVH machine – limiting the hours of CRRT for patients
- national shortage of consumables for Prismaflex
- prolonged prone positioning
- the need to postpone renal replacement therapy for early tracheostomies and scans
- CRRT set cost (CRRT £150 & £5/bag vs SLED £10)
- constant need to change fluid bags
- clinical incidents related to Heparin

These logistical and clinical challenges demanded alternative modalities.



# Method



- Renal core group
- Theory and practical sessions for staff
- Multidisciplinary input
- Renal technician
- Competency Document
- Audit
- Learning resources

**Machine Training**



# Learning Resources

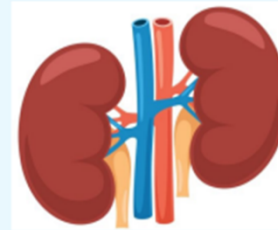


## ICU SLED Resources

### SLED Quick Guide



Scan the QR Code and click on the icons to read useful resources and videos for ICU SLED Therapy.



#### ICU Sustained Low Efficiency Dialysis (SLED) Guidelines

**Doctor's Inpatient Dialysis Prescription**

**SLED Nursing Chart**

**SLED Update Video by Dr. Craig Morris**

**SLED Update pdf version by Dr. Craig Morris**

**SLED Set-Up Step by Step document guide**

*Additional resources can be accessed at:*

*Onedrive.com*

*Username: icurenalteam@googlemail.com*

*Password: Renal1234*

#### SLED GUIDANCE VIDEOS:



1. Introduction: Artis Machine, Water & Waste Pipes
2. Connection Part 1/3: Machine Set-up
3. Connection Part 2/3: SLED Prescription
4. Connection Part 3/3: Patient Connection
5. Disconnection Part 1 of 2
6. Disconnection Part 2 of 2



# Results



1<sup>st</sup> in UK!



- Benefits to patients: easier, more time for rehab/physiotherapy, imaging, surgery, procedures
- Faster toxin clearance / electrolyte imbalances / acidosis efficiency
- Ease of use – easier set up, no 5L bags, piped water for waste
- Flexible if haemodynamically unstable (slow speed or increase)
- Improve options for anticoagulation
- Cheaper!
- Standardisation with renal ward

First successful independent SLED treatment in ICU

# Conclusion



SLED in RDH ICU is now the preferred renal replacement modality used in critically ill patients with AKI even with haemodynamic instability.

- nurse led
- clinician prescribed
- technician reliant



In ICU RDH SLED has proven to be cost effective and less labour intensive than CVVH.

# Future plans:



- Train new starters
- Maintain staff competencies
- Weekly MDT meetings
- Audit feedback
- Research (MOSAICC)

**SLED Updates** January 2023  
Sustained Low-Efficiency Dialysis

**SLED Updates** July 2023  
Sustained Low-Efficiency Dialysis

**AUDIT FEEDBACKS:**

- Before the end of your treatment ensure you complete this section.

Before wash back or during wash back please obtain the data below:

RDU#	Acc. UF Volume:	Accumulated blood volume:

- Before commencing SLED treatment – please check for line resistance/patency.
  1. Ensure Heplock is removed first
  2. Then, withdraw 20 ml of blood over 6 seconds and return back assessing for line resistance.
- When commencing SLED please document a full set of obs specifying EXACT start time, and then subsequently every hour after.

**1 Hour Observations:**

Time	Blood flow rate (litres/hour)	Arterial Pressure	Ultra Filtration Rate	Acc. UF volume	Acc. UF volume
08:00	200	120	0.00	0.00	0.00
09:00	200	120	0.00	0.00	0.00
10:00	200	120	0.00	0.00	0.00

- UF volume (a.k.a. fluid removal) – if patient need + 500mls washback, remove 500mls of washback.

*Just a friendly reminder...*

If you think the SLED treatment is going to run **from midnight till 06.00am** and on **Sundays** then the water stream panel button needs to be activated on Ward 407 Blue Nurses Station (a **single** press of the F1 key on the panel) OR call RDU nurse in charge to press it for you.

**Ext 89362 or 89361** and if RDU is closed call **407 Ext 88407 or 87407** and ask the

Thank you

Any questions?



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