

1. Introduction and Who Guideline applies to

This guidance is for any staff who are involved in procuring, storing, handling or prescribing dialysis concentrate (dialysate). The guidance covers safe storage and use of the dialysate.

2. Guideline Standards and Procedures

2.0 - Dialysate

The dialysis concentrate available in UHL is Renalyte. This is supplied by Fresenius and is delivered in 6 litre stackable containers or by bulk to the tanks of the central delivery system of units equipped with this mechanism. In its concentrated form the composition of 1000mls of A335 is:

Sodium Chloride	210.68g	Magnesium Chloride Hexhydrate (6H ₂ O)	3.56g
Potassium Chloride	5.22g	Acetic Acid	6.31g
Calcium Chloride dihydrate (2H ₂ O)	6.43g	Glucose Monohydrate	38.5g

This concentrate needs dilution of 1:34. Once in the dialysis machine it is combined with ultrapure water and bicarbonate. The standard dialysate is A335, in the dialysis machine the dialysate concentrate is mixed at a rate of 1 litre of dialysate to 32.775 litres of ultrapure water and 1.225 litres of Sodium bicarbonate 8.4% solution (NaHCO₃). The composition is then as follows;

Na+	138.0 mmols/l	Mg ⁺⁺	0.5 mmols/l	HCO ₃ ⁻	32mmol/l
K+	2.00 mmols/l	Cl ⁻	108.5 mmol/l	CH ₂ COO ⁻	3.0mmol/l
Ca ⁺⁺	1.25 mmols/l	Glucose	1.0g/l		

A335 is the standard dialysate and the only one available in bulk CDS systems. The following types are also available in 6 litre containers.

Dialysate	Potassium	Calcium
A335	2.0 mmol/l	1.25 mmol/l
A336	2.0 mmol/l	1.0 mmol/l
A325	1.0 mmol/l	1.25 mmol/l
A453	3.0 mmol/l	1.25 mmol/l
A333	2.0 mmol/l	1.75 mmol/l

The dialysate is mixed with ultrapure water otherwise there is a risk through endotoxin contamination. The same concentrate is used to make dialysate for haemodialysis and infusate for priming the machine and giving boluses during HD and for fluid substitution during haemodiafiltration.

2.1 - Safe storage

Dialysate is not considered a hazardous substance and its components are not considered toxic, however it has a pH of 1.8-3.0 and so can irritate the skin with prolonged contact and should be washed off immediately. Butyl rubber gloves should be used if prolonged contact is necessary but this is not anticipated within a hospital or unit environment. If splashed into eyes they should be rinsed copiously with water and if swallowed plenty of water should be given to drink. Medical advice should be sought if symptoms occur. However the product is not considered hazardous in normal use. Safety Data sheet is in Appendix 1

Dialysate is considered a medical device and so should not be left unattended in the unit or ward but kept in a locked room when not in use on a machine to reduce the risk of tampering.

The repetitive nature of undoing the dialysate canisters can result in musculoskeletal injuries for dialysis staff and so all units should stock sufficient numbers of spanners for undoing them and have them widely available and encourage their use.

Each canister weighs 6kg, for units without CDS this results in repetitive lifting throughout the day. As a result CDS is to be promoted and safe manual handling working practices on the unit regularly reviewed.

CDS deliveries – spillages have been noted when tanks have been filled which can cause anxiety and damage to plant life. Siting of the refilling point should take this into account and regular reviews of delivery practice should take place, drivers should be encouraged to use absorbant mats when decoupling hoses.

2.2 - Prescribing dialysate

2.3 – Disposing of dialysate

3. Education and Training

Are there any new skills required to implement the guideline? Is a training programme being provided to support implementation or is it more a case of 'awareness raising'?

If there are no education or training requirements please state 'None'.

4. Monitoring Compliance

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting arrangements

5. Supporting References (maximum of 3)

If None say NONE

6. Key Words

List of words, phrases that may be used by staff searching for the Guidelines on PAGL. If none – state none.

CONTACT AND REVIEW DETAILS	
Guideline Lead (Name and Title)	Executive Lead

Details of Changes made during review: