### Appendix 1

**PAEDIATRIC NEPHROTIC SYNDROME NURSING CARE-PLAN**

<table>
<thead>
<tr>
<th>Surname</th>
<th>Forename</th>
<th>PROBLEM</th>
<th>REASON</th>
<th>INTERVENTIONS</th>
<th>SIGNATURE/DATE</th>
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</table>
|         |          | 1. Has proteinuria of more than trace | Nephrotic syndrome causes the filtering system in the kidney to leak out protein molecules into the urine; this gives the urine a frothy appearance. | - Daily morning urinalysis recorded when the urine is at its most concentrated to determine level of proteinuria. Ensure renal nurse is contacted to initiate discharge planning and request for G.P to prescribe Albustix®.  
- Keep the morning sample in a universal container in case the doctor asks for a protein creatinine ratio (PCR) or urinary sodium (Na).  
- A relapse is determined as $\geq 2^+$ for 5 days or $\geq 3^+$ for 3 days, and remission is determined as negative or trace for three consecutive days. |   |
|         |          | 2. Is prone to weight gain | Low serum albumin levels caused by loss of protein in the urine cause fluid to be retained by the kidneys. | - Daily morning weight recorded with minimal clothing and empty bladder to determine real weight gain/loss (1litre fluid is equal to 1kg of weight). |   |
|         |          | 3. Has oedema | Low serum albumin levels caused by loss of protein in the urine cause fluid to shift from the intravascular compartment to the tissues causing oedema. | - Requires a no added salt diet (contact renal/paediatric dietician for advice) whilst oedematous.  
- Needs to be fluid restricted whilst oedematous (contact renal/paediatric dietician for advice).  
- Needs to have their lower limbs elevated when sitting to encourage vascular return. |   |
|         |          | 4. Is at risk of hypovolaemia | Low serum albumin levels caused by loss of protein in the urine causes fluid to shift from the | - 4 hourly (increase if concerned) blood pressure monitoring using appropriate cuff size (2/3rds of upper arm). |   |
intravascular compartment to the tissues causing oedema.

- 4 hourly (increase if concerned) heart rate,
- Strict fluid balance input versus output.
- Contact medical staff if signs of hypovolaemia (tachycardia, cool peripheries, capillary refill time > 2 seconds). Hypotension is a late sign of hypovolaemia. A urinary sodium < 10mmol/l can confirm hypovolaemia. An infusion of 4.5% human albumin 10mls/kg over 30 - 60 minutes can be given if clinically shocked. An infusion of 20% human albumin 5mls/kg over 4-6 hours along with 1-2mg/kg IV furosemide mid infusion can be given if evidence of hypovolaemia without shock (see 20% Albumin careplan).

5. Is at risk of thrombosis
   Loss of anti-thrombin III in the urine along with the risk of hypovolaemia can make the patient prone to thrombosis.
   - If clinical hypovolaemia is suspected the child may be nursed with anti-embolism stockings.

6. Is at risk of infection
   Loss of immunoglobulin's in the urine, along with immunosuppressant treatment, increase the risk of infection. Grossly oedematous children are at risk of cellulitis.
   - Avoid infectious disease contacts. Nurse in a cubicle if immuno-compromised.
   - Inform doctor if contact is made with any infectious patients e.g. chicken pox, as VZIg may be indicated.
   - Prophylactic antibiotics (Penicillin V 125mg if <5yrs old or 250mg >5yrs old, twice daily) should be considered whilst significant proteinuria persists. This can be discontinued once in remission.
   - Ensure skin condition is monitored daily if skin becomes red/warm/painful contact medical staff.

7. Is at risk pulmonary oedema.
   Fluid can sometimes move into the pulmonary spaces causing breathing difficulties.
   - 4 hourly (increase if concerned) spot O2 saturation levels and respiratory rate. Refer to 20% Albumin careplan for post infusion obs.
   - Nurse in semi-recumbent position whilst sleeping to relieve respiratory distress and prevent fluid shifting to the lungs if grossly oedematous.

8. Is on steroids.
   Steroids are usually given to treat nephrotic syndrome which
   - Ensure steroids are given with breakfast in the morning.
   - Ensure ranitidine (2mg/kg twice a day) or omeprazole (10
| reduces the inflammation in the kidneys. Steroids can cause gut irritation, mood swings and increased appetite. | or 20mg daily) is prescribed with the steroids to prevent gastric irritation.  
- Support parents/child/carers when mood swings are present.  
- Contact renal dietician for support and education with increased appetite. |