

# St George Hospital Renal Department INTERNAL ONLY

## GUIDELINES FOR PERFORMING BLOOD VOLUME SENSOR (BVS) MONITORING:

### AIM:

- a) To assist with identifying a patient's IBW
- b) To identify how much fluid can safely be removed without causing adverse effects
- c) To help determine a patient's individual refill rate
- d) To avoid episodes of hypotension leading to dizziness, nausea, vomiting, etc
- e) To identify how a patient's medical history can affect fluid removal

### PROCEDURE:

#### SET-UP:

1. Turn dialysis machine on and allow for 'FCH' to be completed
2. Line machine with BVS lines – do not have the BVS curvette in the sensor during FCH  
(If machine already lined, remove curvette and blood pump segment until FCH complete, re-insert)
3. Press BVS and choose 'on'
4. Prime machine

#### SET BVS PARAMETERS:

1. Press BVS and choose type of graph – 'BVS only'
2. Set alarm limit for patient – choose 8 to 10% for initial BVS session – this can be increased or decreased each session depending on patient outcomes
3. At the start of the session the **patient's blood viscosity = 0%**
4. **Patient's individual REFILL RATE should be GREATER THAN or EQUAL TO UF rate** to prevent adverse effects
5. Therefore, when blood viscosity is approximately 8 to 10% thicker, due to fluid removal, the machine will alarm
6. **Individual's refill rate** = how quickly fluid removed from vascular system is replaced by fluid in tissues

#### SET UP DOCUMENTATION:

1. Fill out the BVS record sheet with patient's identification, IBW and UF

#### BEGIN DIALYSIS SESSION:

1. At the commencement of dialysis **patient's blood viscosity = 0%**
2. Record hourly BVS reading and BP on the record sheet
3. At the same time, note down how the patient is feeling and what the patient is doing, e.g. lying back, sitting upright, legs elevated, legs down, eating, drinking, etc – i.e. any change which may affect the patient's BP and refill rate

#### WHILE BVS IS IN PROGRESS:

1. **Should adverse effects begin before alarm limit is reached, e.g. dizziness, nausea, vomiting**
  - Manage adverse effects
  - Note BVS reading and BP
  - On next session, set an alarm limit at a lower % to prevent adverse effects
  - Review patient's IBW
2. **Should alarm limit be reached without any adverse effects:**
  - Check patient for any adverse symptoms and note BP
  - On next session, set alarm limit at a slightly higher % and trial a small increase in UF corresponding with an actual decrease in IBW