

## ANNEX 3

**Specifications:** Dialysis Machine

**Qty:** 10 units

**Description:**

1. The structure of the machine should be of modular design and brand new.
2. It should have Control & Monitoring Screen with colored TFT/LCD Display (Screen).
3. Display should have screen with high clarity & easily readable.
4. It should have Bicarbonate dialysis facility.
5. It should have Sequential Ultra filtration facility.
6. It should have Arterial Venous & Transmembrane pressure monitoring facility.
7. Blood pump flow rate should be from 30-50ml/min to 600-800 ml/min.
8. It should have Single & Double Needle dialysis facility.
9. It should have Volumetric Ultrafiltration System.
10. In-line Bicarbonate mixing and solution preparation facility during dialysis.
11. It should have Air bubble detector with Optical Sensor (to check the presence of blood in extracorporeal blood circuit) at Venous clamp.
12. It should have Heparin Infusion Pump with rate 1 to 10ml/min and Bolus Infusion up to 5ml/min.
13. It should have Blood leak Sensor which can differentiate between impurities and real blood.
14. Should accept different concentrate formulation, different Dialyzers, and blood tubing sets.
15. It should have Dialysate flow rate range from 300ml/min. to 800ml/min. It should have self-test facility during treatment.
16. Ultra-filtration rate should be from 0 to 4.00L/Hr.
17. In house potable water supply is available & minimum 10micro/m size water filter assembly with cartridge shall be supplied with necessary attachments to make a functional unit. Auto priming and rinsing of dialyzer and blood lines.
18. A portable RO unit shall be supplied with each dialysis machine with UPS backup.
19. It should have both automated chemical and heat disinfection process.
20. Facility for disinfection History/Log.



21. It should have Ultrafiltration, Bicarbonate and Sodium Profiling facility.
22. It should have in-built Battery backup of 60 minutes for complete Extracorporeal blood system during power failure.
23. Non-Invasive patient blood pressure monitoring.
24. Treatment parameter should be displayed by both graph and digitally
25. Should have drain facility
26. Should have accurate feedback control conductivity mixing technique.
27. Dialysate temperatures selectable between 35 degrees C to 39 deg. C
28. Variable conductivity setting between 12 to 15
29. Should have accurate UF control by flow measurement technique.
30. Easy to service, trouble shoot and calibrate
31. Alarm for reverse Ultrafiltration.
32. Power supply- 220VAC + 15%, 50Hz
33. Should work on AC mains without batteries.
34. Operating & Service manual with detail circuit diagram should be provided.
35. Online clearance monitoring & Kt/V to assess adequacy of dialysis.
36. Should provide Training to End Users.
37. Demonstration compulsory.

**Required accessories and consumables for each unit:**

- Should provide Online UPS- one hour battery backup.
- Dialysis chair
- RO Unit with battery or UPS
- Dialyzers of different sizes.
- AV Tubing set (universal)
- AV Needles
- Disinfectant solution and any other consumable to run the machine. ***(Surface disinfectant and such consumables not directly related to run the machine should not be quoted).***



#### Standards and Requirements:

- USFDA, CE and/or ISO certifications or relevant standards certification.
- Power requirement: 250V, 50Hz.

#### Warranty & Service:

- The supplier should have service engineers who should be available 24/7 on phone & at site within 48 hours of reporting an error.
- Operator's manual and Service manual should be provided.
- Manufacturer's standard warranty with documents should be available.
- Certificate of calibration and inspection.

#### Demonstration:

- All prospective bidders shall demonstrate the unit at site or online before technical evaluation.

#### Samples:

- At the time of bid opening all bidders shall provide with samples of dialyzers, bloodlines, needles and catheters.

#### Additional Remarks or Requirements:

- Complete product details to be enclosed with the original brochure or catalogue (Soft or hard copy).
- Details of the standard accessories, additional accessories, optional items, consumables and minimum supplies to be stated clearly.
- Quotation with Details of all equipment price should be given.
- A letter from company on its letterhead stating that the equipment's stated on quotation could be offered to KRH **Free of cost**.