



TENDER WATER TREATMENT MAINTENANCE

Water treatment systems used in dialysis are a critical factor in the overall care received by dialysis patients; they also provide one of the greatest hazards to the patients if they are not functioning properly. Monitoring of water treatment systems has been identified as a possible area of concern and an opportunity for quality improvement nationally.

National Renal Care is requesting tenders for provision of the service mentioned above. Tender submissions close 30 March 2010.

To offer equal opportunity, National Renal Care opened the tender per unit, regionally or nationally.

(See link for list of haemodialysis units in South Africa: www.nrc.co.za – clinic search)

REQUIREMENTS AND EXPERIENCE:

- Basic knowledge and understanding of dialysis and the dialysis machine.
- Knowledge and understanding of Reverse Osmosis System design for dialysis.
- Knowledge and understanding of the design and function of all components involved with water treatment for dialysis.
- Knowledge and understanding of AAMI standards for dialysis water including quality and quantity.
- Knowledge and understanding of possible patient adverse reactions due to chemical or microbiological contamination.
- Knowledge and understanding of possible patient adverse reactions due to residual chemicals after sanitation.
- Knowledge and understanding of chemical sterilisation regarding different chemicals, contact time, rinse time and residual testing.

PLEASE NOTE THAT ANY ROUTINE MAINTENANCE OR SANITATION HAS TO BE DONE OUTSIDE NATIONAL RENAL CARE OPERATING HOURS. PLEASE BE ADVISED THAT CERTAIN UNITS ARE RUNNING AT FULL CAPACITY AND WILL ONLY BE NON-OPERATIONAL ON SUNDAYS.

KEY PERFORMANCE AREAS:

1. Monthly sanitation of RO Systems including:

- Chemical sanitation of RO unit
- Sanitation of loop / pre tank with ozone or chemicals (as dictated by the bacterial quality of the system)
- Simultaneous sanitizing of inlet water pipes to the machines (no ozone)
- All consumables required with sanitation incl. ozone generator or venture / sterilants / residual sterilant test strips, kits.
- Monthly replacement of all pre- filters
- Quarterly replacement of bacterial or endotoxin filters (loop filters)
- Quarterly replacement of carbon block filters (where applicable)
- Monthly salt supply for softener
- Monthly back-wash of manual carbon filter (where applicable)

2. Monthly RO System monitoring including functionality of all components (where applicable)

- Booster pump:
 - ✓ water pressure
- Depth filtration:
 - ✓ pressure drop across the device
 - ✓ back flush timer set
- Softener performance:
 - ✓ Total hardness post softener
 - ✓ Pressure drop
 - ✓ Salt level in the brine tank
 - ✓ Regeneration Timer
- Carbon tanks:
 - ✓ Chlorine and chloramines levels
 - ✓ Pressure drop change of 10 PSI or greater
 - ✓ Back flush timer set
- Operation of RO System:
 - ✓ Incoming water pressure 30-40 PSI
 - ✓ Pre and post pressure on depth filter
 - ✓ Pump pressure
 - ✓ Reject water pressure
 - ✓ Pressure of product water
 - ✓ Product water flow
 - ✓ Waste water flow
 - ✓ Amount of dissolved solids in incoming and product water (TDS)
 - ✓ Conductivity of incoming and product water (Micro Siemens or PPM)
 - ✓ % rejection
- Product water flow rates:
 - ✓ Flow rate to maintain 3 feet per second flow velocity

3. Sanitising of the Drain System:

- ✓ Monthly sanitising of every drain point in the unit with sodium hypo chloride

4. Monthly testing of emergency generators:

- ✓ Testing (only) of generator for minimum of 20 minutes under full capacity
- ✓ Inspection of fuel conditions and storage
- ✓ Assisting staff in liaising with generator technicians regarding any reported faults

5. Monitoring of water quality:

- Chemical contamination
 - ✓ Bi-annual chemical analysis – sample to be taken in container provided, (as per NRC protocol), and arranged with the Unit Leader to send to accredited laboratory for analysis
 - ✓ Review and reporting of results, with immediate appropriate action (in consultation with unit leader and technical manager) with any levels that exceed AAMI standards.
- Microbiological contamination
 - ✓ Monthly total bacterial count – bacterial sample to be taken in container provider, (as per NRC protocol), and arranged with Unit Leader to send to accredited laboratory for analysis
 - ✓ Review and reporting of results, with immediate appropriate action (in consultation with unit leader and technical manager) with any levels that exceed AAMI standards.
- Endotoxin contamination
 - ✓ Monthly on-site endotoxin test to be perform by technician (test equipment provided)
 - ✓ Review and reporting of results, with immediate appropriate action (in consultation with unit leader and technical manager) with any levels that exceed AAMI standards.

6. Record keeping and documentation:

- To keep comprehensive records of all work done on every RO System – NRC log sheets to be provided.
- A copy of the job card to be filed by the service provider and the details entered onto a database.
- Database to be updated monthly and made available to NRC.
 - ✓ RO function monitoring log sheet
 - ✓ RO sanitation and filter change log sheet
 - ✓ Sanitation of the drains
 - ✓ Generator log sheet
 - ✓ Water quality database

Closing date: 30 March 2010

Any question can be directed to the Technical Manager.

Please e-mail the tender to the Technical Manager.

Elsabe Fourie

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