HSCC/SJH/Med.Eqpt./2016 Date: 09.5.2016

Amendment-III

Ref.: 1) Tender No. HSCC/SJH/Med.Eqpt./2015/15 dt. 08.4.2016.

Sub.: Procurement of Medical Equipment for New Emergency Block & Super-Specialty Block at Safderjung Hospital, New Delhi.

The amendment of tender specifications are enclosed. The bid submission date is extended from 09.5.2016 to 23.5.2016. Pre bid meeting on 16.05.2016 at 2:30 pm at Safderjung Hospital

All other tender terms and conditions remain unchanged.

Amendment to be issued will be uploaded on websites www.tenderwizard.com/HSCC & www.hsccltd.com.

Medical Superintendent
Safderjung Hospital & VMMC,
New Delhi.

S. No.	Item	Qty./Requirements	EMD (INR)
1	Patient Warming System	6 no. In OT/Aneas. + 3 no. for in Urology for Super-Specialty Block = 9 no.	90,000.00
2	Blood Donation Camp Vehicle	1 no. for Emergency Block + 1 no. for Super-Specialty Block = 2 no.	84,000.00
3	Precision Spirometer	4 nos. for Pulmonary Medicine Deptt. of Super-Specialty Block	32,000.00
4	Flexible Video Thoracoscope Set	1 no. for Pulmonary Medicine Deptt. of Super-Specialty Block	40,000.00
5	Rigid Bronchoscope Set	2 no. for Pulmonary Medicine + 2 no. For Cardiac Surgery Deptt. of Super-Specialty Block	1,20,000.00
6	Pulse Oximeter cum Capnograph	10 no. for Pulmonary Medicine Deptt. of Super-Specialty Block	40,000.00
7	Endo-Bronchial System (EBUS)	1 no. for Pulmonary Medicine Deptt. of Super-Specialty Block	2,00,000.00
8	Ultrasound cum Echo Colour Doppler	5 no. For ICU + 1 no. For Pulmonary Medicine Deptt. of Super-Specialty Block = 6no.	4,80,000.00
9	Portable Sleep Lab.	1 no. for Pulmonary Medicine Deptt. of Super-Specialty Block	24,000.00
10	Actigraph	2 no. for Pulmonary Medicine Deptt. of Super-Specialty Block	20,000.00
11	Sleep Lab.	1 no. for Pulmonary Medicine Deptt. of Super-Specialty Block	70,000.00
12	Haemodialysis Machine (Regular Type) (8 no.) with Reverse Osmosis Water Treatment Plant (1 no.) for Dialysis	For Nephrology Deptt. of Super-Specialty Block	2,20,000.00
13	Uretero-renoscope	1 no. for Urology Deptt. of Super-Specialty Block	30,000.00
14	Continuous Glucose Monitoring System with Insulin Pump (Proprietary Item)	2 no. for Endocrinology Deptt. of Super-Specialty Block	32,000.00

PATIENT WARMING SYSTEM

Technical Specifications

Control panel should display intended and actual temperatures. Should have precise digital temperature control with selectable range of 37 degree Celsius to 42 degree Celsius and should have both warming and true pressure relief to combat hypothermia and pressure related tissue trauma.

It should be commonly used in long term patient care into the OR to offer the immobile patient the same standard of care used for prevention and treatment of decubitus ulcers. A dynamic peristaltic air pressure cycle Quattro Therapy is utilized to provide true pressure relief to assist in the prevention of the onset of pressure damage.
System should have the peristaltic air pressure cycle to prevent damage. It should feature specially designed air cells as optimized to provide pressure relief and patient stability.
Row of cells Rows of cells deflate in a Pressure Relief one-in-four cycle that maintains a constant pressure relieving peristaltic wave.
Patient Warming.
It should able control the temperature of the patient warmer to overcome hypothermia during the operation.

Control unit should regulate warmth to every area of Mattress by use of Polyurethance base, polyurethane coated Nylon twill air cells, Waterproof 4-way stretch nylon cover.
Configurations: Can be supplied for any surgical table.

Mattress cover should have non antibacterial, coating, blood and fluid resistant covers which is washable, autoclavable and replaceable.
Should have safety features such as precise temperature control, automatic check and auto stop on detecting any problems.
Control unit should be light weight and small in size.
Should have noiseless operation.
Should operate on 220-240 volts AC.
Should have standard accessories.

Standards, Safety and Training:

Manufacturer should have ISO certification for quality standards and copy of the certificate should be submitted along with the technical bid.
Comprehensive training should be given for staffs and engineers till familiar with the system.

Blood Donation Camps Vehicle

1 The chassis should be of from a reputed standard manufacturer of vehicles have after sales service network on all India basis.
2 The engine should be commensurate with the requirements that should run on diesel and air-conditioning on Generator
3 The engine should compliant with the latest pollution norms as directed by the Government of India and appropriate agencies.
4 The vehicle should be fully air-conditioned so that the ambient temperature is between 20 deg C to 22 deg C while the vehicle is stationary as well as running. It should be ensured that the engine power is not reduce drastically while the air-conditioner is on so that it does not hamper normal driving speed within the city as well as on the highway.
5 Genset (Eco-friendly) with 05 KV A capacities for air-conditioning and other equipments should be installed ..
6 Dual electricity systems with facility for change over and cable for external power source having length of minimum of 50 meters.
7 Adequate lighting of CFL or fluorescent type.
8 The interior should be aesthetic with combination of fiber/superior and comfortable upholstery for better insulation and finish.
9 Flooring should be vinyl 2mm of pleasing shade and easily cleaned and disinfected following blood-spill.
10 Windows should wide and easily opened.
11 All necessary emergency systems including exits should be provided
12 Adequate fire-fighting accessories must be installed.
13 Storage area should be provided in the Wldercarriage.
14 The exterior of the vehicle should be of fine finish and colored, appropriately incorporating logos of the institution with other indicationsas desired by the Purchaser.
15 The seating for driver and cleaner should be appropriate and comfortable with clear vision of the road.
16 Adequate sized door for easy entry and exit.
17 The blood collection area should consist of:
a) One berths (Donor couch) of length each around 5-6ft.
b) Two plug point of 5 amps capacity with each Donor couch for biomixer and Sealer.
c) Storage space/ cupboards for keeping records, registers, chemicals, bags, medicine etc
d) Folding and detachable stairs.
18 Side awning on left side.
19 Blinkers and Siren roof mounted after due permission from department.
20 Broad specifications of Vehicle :
1 Engine Horse Power: Should be minimum 75 BHP@3200rpm, BS-IV
2 Wheel Base : Minimum 3200mm.
3 Transmission: Manual or Automatic
5 Alternator Minimum 90amp @ 13.5V7
6 Air Conditioning: Should work when even the engine is off.
7 Power Steering: Should be there in the vehicle.
8 Hatrack Console: With study light and AC Louvers.
9 Luggage space: Below the floor
10 Minimum Length: Donor Cabin 3100mm Minimum.

Scrub: Sink:
a) Stainless steel sink integrated with waste basin with water tap installed inside the sink .
b) Appropriate Dimension (400 X 450 mm)

c) Mirror over the sink
Internal design: The vehicle should have following divisions with appropriate accessories (equipment, partitions for demarcating areas and modular furniture) Donor area:
Medical Modular furniture for medical examination of a donor in privacy by
Examination area: Medical Officer.Bleeding area:

There should be provision for 01 donor couches with accessories required for bleeding. Storage Cabinet and audio-visual system, should be provided. Refreshment with arrangement for the donor with refreshment facilitiesLaboratory storage area:andBlood Bank refrigerators as per specification along with an appropriate laboratory table for blood grouping facilities. Modular furniture and storage cabinets should be provided with antiskid Flooring

The entire vehicle should follow bio-safety norms and flooring should be anti bacterial & antiskid properties.

Additional requirements:
Additional Requirements, Technical Specifications:

A. Donor Couch - 01
1. Comfortable chair type with soft padding for cushioning and rexin cover.
2. Seat, back rest and leg rest size designed for donor comfort. Seat height approximately 58- 60 em.
3. Adjustable arm rest for donor's comfort and phlebotomist friendly.
4. Easily tilted to head low position, electrically operated.
5. To be operational on 220 to 240 V at 50 Hz.

B. Blood Transportation Boxes - 01
1. Fixed two temperatures setting adjustable to +4°C and +22°C.
2. Capacity to accommodate minimum 24 blood bags of 450 ml.
3. External dimension of each transportation box should be within 1000 "1500mm (L)X800-1000 mm (W)X 600- 700 mm (H)
4. Chest / Vertical Cabinet with built in handles and hinged door.
5. Body material should be Polyethylene (corrosion free)
6. Smooth castors with stabilizers for flexibility and movement.
7. Ambient working temperature -2°C to +43°C.
8. Main power switch.
9. Microprocessor based temperature controller with integrated audio visual temperature alarm function on digital monitoring display.
10. Separate selector switch for + 4°C and +22°C temperature settings.
11. Nominal DC power 12 /24 volt and Nominal AC power 100 - 240 volt, SO/60Hz.
12. Automatic AC / DC power supply selection.
13. Automatic Cooling / heating operation.
14. Air cooled hermetically sealed DC compressor.
15. Vehicle fixation kit.
16. Controlled fan cooling system for constant air/temperature distribution.
17. For storage of Blood bags, minimum two (2) wire basket should be provided in each box.
18. Power alarm audio and visual by LED. Audio alarm can be switched off. Temperature audio and visual high and low alarm by LED.
19. Minimum Polyurethane insulation CFC free for the cabinet and the door.

C. Di-Electric Tube Sealer - 01
1. Should be a heavy duty tube-sealer.

2. Should be for bench-top use.
3. The sealing time should not be more than 2 seconds.
4. Sealing triggering should be automatic.
5. Should also have extended portable hand unit.
6. Should have indication lamps.
7. No warm-up time should be required.
8. Should ensure easy separation of tube segments after the sealing.
9. Should be simple to handle.
10. To be Operational on 220 to 240 V at 50 Hz.

D. Blood Mixer and Collector- 01
11. Power Supply ~30 V ± 10; 50Hz.
12. Volume setting: Pre-selection of volume to be collected. Tarring of bag volume beforeI collection, Tarring range: 0 - 600 g. Automatic storage and recall ofIset volume. Measure volume with best accuracy <1%.
13. Indications &
(i) LED indication on commencement of collection. alarms:
(ii) LED indication and audible alarm at the end of collection.
(iii) Indication of time taken for collection.
(iv) Indication of blood flow with audio alarm when blood flow is higher or lower than desired.
(v) Continuous display of collected volume, flow and time during collection.
14. Automatic clamping at termination of preset volume collection.
15.Automatic release of bag when lifted.
16. Continuous agitation of blood bags during collection: 12 - 16 rpm.
17 Easy provision to change preset volume.
18. . Should be suitable for all types of bags.

Additional Requirements
All Suppliers should indicate previous experience regarding fabrication of similar vehicles or mobile clinics or Ambulances.
The Supplier must include a provisional drawing of the design in the commercial bid of the tender.
The drawing should incorporate the basic spirit envisaged in this vehicle: for collecting blood from camps, educating the public regarding blood donation and safely transporting the collected blood to the institution. Some minor modifications in the design and layout may be required by the Purchaser should be incorporated in the final fabrication at no extra cost.
In case the Supplier is not the manufacturer of the chassis, the Supplier must include an authorization certificate from the manufacturer of the chassis.
The selected Supplier shall be responsible for complete fabrication and delivery of the vehicle as required by the department.
The Supplier shall provide at the necessary service, maintenance of the vehicle engine as per OEM warranty requirements & fabrication of chassis body, air-conditioning, electrical fittings and all accessories as per the warranty terms.

SPECIFICATIONS FOR PRECISION SPIROMETER

For the measurement, Computation and Printout of Data/Graphics in Full For:

Spirometry &Flow Volume Parameters and all sub-divisions,

Maximum Ventilation Volume(MVV),

Pre & Post Bronchodilator Comparison.

System should incorporate Precision Bi-directional Re-usable Heated
Pneumotach for Highest accuracy & Reproducibility.

Flow Range : 0 – 20 L/s
Accuracy : 0.2 – 1.2 L/s, +/- 2%
Resolution : 10 ml/s
Resistance : < 0.05 kPa/(L/s)(0.5 cmH2O/(L/s)) at 10 L/s

Volume Range : +/- 20L
Accuracy : +/- 3%, +/-.05 L (whichever is greater)
Resolution : 1mL

Should meet all international standards, ERS/ATS guidelines, ISO and US FDA etc.

Additional Accessories
Pneumotach Screens 5 Nos
Pulmonary Filter (100 Nos)
Nose Clip (10 Nos.)

Laptop Computer with i3 Processor, 2 GB RAM,
18.5" TFT Colour Monitor, Keyboard,
Serial, USB Ports, Mouse, Windows XP,
DVD R/W, Hard Disc Drive (1x500GByte),
HP Laser Printer, UPS

SPECIFICATIONS OF FLEXI-RIGID VIDEO THORACOSCOPE

SYSTEM INCLUDES :

Video Thoracoscope (with deflectable tip)
Universal Video Processor
Xenon Light Source
High Resolution LCD Monitor

VIDEO THORACOSCOPE (with deflectable tip):

Light weight & fully immersible in disinfectant solution.
Provision for Autoclvability(Preferably for all detachable components)
3 or 4 Nos.of remote switches for user's convenience to control operationalfunctions.
Compatible with semi automatic leakage tester with airflow regulation from attached light source airpump.
Compatible with electrosurgical and laser treatments.
Insulation (ceramic or better material) tip for provision while doing electosurgical procedures.

Field of view : 120 degree or more
Depth of field : 3mm to 100 mm or better
Direction of view : Forward viewing
Distal End Dia. : 7.0 mm or less
Insertion Tube Dia. : 7.0 mm or less
Working length : 270 mm or more
Min. Visible Distance : 3mm from distal end
Instrument Channel Dia. : 2.8 mm or more
Flexible Tip Bending : UP – 160 deg. DOWN – 130 deg.

Standard Set Should include Following Items otherwise to be quoted separately:

Swing Jaws – Biopsy Forceps (with needle) 10 pieces
Cytology Brushes (1 set of minimum 10 pieces)
Cleaning and maintenance kit,
Semi disposable leakage tester with its air flow & pressure regulation through air pump in compatible light source.
Spray Catheter (10 nos.).
Electrosurgical Coagulator.
Flexible Trocar set for safety of bending tube of Thoracoscope. (50 fifty)

UNIVERSAL VIDEOPROCESSOR :

Independent & Compact unit with high resolution & HD imaging Capacity
Preferable provision of Narrow Band Image Processing Capacity.
Picture in Picture display Possibility.
Compatible with all types of Videobrochoscopes, Thoraco (Pleura) videoscopes and should be compatible for EBUS (Ultrasound System) also.

HDTV & SDTV Signal output : RGB or YbpPr output
High Definition / SDI Output : For Long distance transmission of video signals.
Should have automation Gain Control and Contrast Control Functions.

Edge Enhancement	: 3 to 8 levels of switchable settings
Structure Enhancement	: Dual Mode upto 7-8 levels of switchable settings
Image display size	: 3 or 4 different sizes of image display on monitor

XENON LIGHT SOURCE (300 watts)

Separate and independent unit with high intensity Xenon Lamp (300 watt) & Provision of special NBI filters will be preferred.
Emergency Halogen light and forced air cooling.

Main Lamp mechanism	: Xenon Short Arc lamp (300 watts) with switching regulator
Main Lamp life	: Appx. 500 hrs on continuous use.
Emergency Lamp	: Halogen 12Volt 100 watts.
Power Supply	: 220 – 240 V AC, Frequency 50/60 Hz, Input Current 3 A

LED MONITOR :

21” High Resolution LED Colour Monitor

COMPUTER :

Computer with windows 8 or windows 7 with 32” monitor, CD-DVD R/W, 8 GB RAM, 1 TB Storage, ^ USB Ports, Webcam, Optical Mouse, and Keyboard, Bluetooth, WIFI connectivity, Colour LaserJet Printer, NORTON Antivirus, Double battery UPS (with at least half hour backup)

RIGID BRONCHOSCOPE SET

WL (Working Length)

Bronchoscope Tube
1) 4mm WL.215mm.
2) 5mm WL245mm
3) 5.5mm Wl.265mm
4) 6.0mm WL265mm
5) 7.0mm WL365mm

Forceps:--
WL.350mm
1) Alligator FB forceps (1)
2) Universal forceps (1)
3) Fenestrated forceps for soft FB (1)
4) Peanut forceps (1)
5) Magnetic Extractor (1)

WL.450mm
1) FB forceps alligator
2) Universal forceps
3) Grasping forceps for soft FB
4) Peanut forceps

ACCESSORIES
1. Adaptor with sliding glass window plug, Sealing cap, notched lens and key hole opening, movable.
2. Plug for ventilation Attachment of Bronchoscopes.
3. Adaptor from Bronchoscope to any type of pediatric respiration equipment .
4. Atomizer with bulb working length 50 cm,(2)
5. Laryngeal Atomizer with bulb (2)

Suction tube , length 50 cm, diameter2.2.5 & 3cm(2 each)

SPECIFICATIONS OF PULSE OXIMETER CUM CAPNOGRAPH

Capnograph:

Solid state mainstream sensor. Single beam, non-dispersive infrared absorption, ratiometric measurement.
INITIALIZATION TIME: Capnogram within 15 sec, full specifications within 60 sec.
CALIBRATION:15 sec adapter zero performed when changing to different style of adapter.
ACCURACY VERIFICATION: Accuracy verifier provided on sensor cable.
CAPNOSTAT MAINSTREM CO2 SENSOR:
Size: compact light weight
Shock Resistance: Withstand repeated 6 foot drops.
AIRWAY ADAPTERS: Adult/paediatric reusable or single patient use(added dead space< 5cc), neonatal reusable(added dead space< 5cc), and sampling adapter for non- intubated patients.
SAMPLING FLOW RATE: 180 ml/min(for non-intubated patients)
CO2(CARBON DIOXIDE) :
Compensations: N20 & O2 (selectable), BP(automatic)
Capnogram: Selectable sweep speed(12.5 or 25 mm/sec) Range: 0-100 mmHg
Accuracy: 2mm Hg(for 0-40 mmHg) 5% of reading(for 41-70 mm Hg) 8% of reading (for 71-100mm Hg)
Resolution: n1mm Hg Response Time: 60 ms
RESPIRATORY RATE:
Accuracy: 1 br/min
Range: 0-150 br/min
Resolution: 1 br/min

Pulse Oximeter

Red/Infrared absorption
SpO2(OXYGEN SATURATION)
Range:0-100%
Accuracy: 2% SpO2(for80-100% SpO2) (1 SD, or 68% of readings within claim)
Unspecified for 0-79%
SpO2
Resolution: 1% Averaging: Menu Selectable, 2 or 8 sec.
Audio: Pitch of pulse tone varies with SpO2 value.
PULSE RATE:
Range: 30-250 bpm
Accuracy: 1% of full scale
Resolution: 1 bpm
Averaging: 8 sec.
SENSORS: Reusable Y-Sensor (can be sterilized and used with all patient populations); reusable adult finger sensor.
PLETHYSMOGRAM: Pulsatile waveform with autogain on /off selection.

General
ALERTS:
Limits: Adjustable limits for ETCO2, SpO2, Resp. And Pulse Rates.
Audio: Adjustable volume, 2 min. Silence or 0FF(LED indicators)
Visual: On-screen & red “Alert Bar”
DISPLAY
Type: Dot Matrix, Cold Cathode Dispaly(CCD)
Size: Compact
GRAPHIC TREND/HISTOGRAM
Memory: 24 hr., battery backup
Format: On-Screen or printed, in 30 min.,2,8, or 12 hr. Segments
COMMUNICATION OUTPUT
Digital and Analog
ELECTRICAL
Power Requirements: 100-120/200-240 VAC, 50-60 Hz, 30 VA, compatible with Indian Standards
Battery: Sealed lead acid gel cell, long life, 12 hr. Recharge

Endo-Bronchial Ultrasound System (EBUS)

System Includes:
I. Ultrasonic Broncho fiber videoscope (for EBUS-TBNA)
II. Ultrasound Processor with Colour Dopper function
III. . Video Processor & Light source ·
IV. High resolution Monitor

Specifications:

Ultrasonic Brocho fiber videoscope (for EBUS-TBNA)

- Special Ultrasonic Scope with detachable ultrasound cable
- Thin dia-transducer for ease of insertion
- Fully immersible in disinfection solution
- Electronic curved linear array scanning

1.1 Field of view	At least 100º (at least 45º forward oblique)
1.2 Depth of field	Approximately 2-50 mm or better
1.3 Distal End dia	6.9mm or less
1.4 Rigid distal width	Probe not more than 6.5 x 7.0 mm Optic not more than 7.5 mm
1.5 Insertion tube diameter	6.5 mm or less
1.6 Instrument channel width	At least 2 mm
1.7 Working length	At least 600 mm
1.8 Total length	Not more than 900 mm
1.9 Acoustic frequency	5-10 MHz switchable
1.10 Tip bending Range	Up to 120 Down 90 degree or more
1.11 Scan Direction	Longitudinal
1.12 Scan System	Convex
1.13 Scan Angle	75º

2. Digital Color Video Processor
2.1 Single CCD color, high resolution HDTV & narrow board imaging compatibility
2.2 xenon lamp/LED with a spare bulb
2.3 Video output – 2 RGBs connectors, 2 Y/Connectors, 1 composite video connector at least
2.4 printer control connector, 2 external device control connectors
2.5 serial connector
2.6 Power consumption 230V
2.7 Weight – preferably less than 20 kg.
2.8 Should be controlled from the front, keyboard or endoscopy remote switches
2.9 Should be capable of white balance & adjustment, have provision for standard color change, adjustment automatic gain control (AGC), image enhancement, selection etc.

3. Monitor
3.1 19" High resolution LCD or higher (LED) color monitor compatible with processor with full range of colors & inputs including viewing angle as needed for proper functioning
3.2 Power consumption 230V

4. Digital Ultrasound Scanner
4.1 Compatible with the above EBUS puncture scope & radial Probes
4.2 Real time 3D image
4.3 Omni directional M-mode, B-mode and Doppler mode
4.4 Hi support-automatically optimize the B-mode and Doppler image parameters (gain, baseline, PRF etc.)
4.5 Picture in picture for both ultrasound and endoscopic image simultaneously
4.6 High definition dynamic tissue harmonic imaging
4.7 High resolution imaging
4.8 Ergonomic operation keyboard
4.9 User programmable calculation package
4.10 Annotation, arrow mark and point display
4.11 Water proof remote control
The whole system should function on 50Hz / 220VAC

5. Essential Accessories
5.1 UPS for backup of the whole system including ultrasound generator
5.2 Mobile trolley to mount the EBUS system and ultrasound
5.3 All other essentials / accessories required to make the machine function optimally
5.4 Recording System for review & publication

Specification for POTABLE ULTRASOUND CUM ECHO (COLOUR DOPPLER SYSTEM) FOR USE IN ICU

A compact portable colour doppler machine is required with the following technical features

1. It should be suitable for vascular access (CVC placement, PICC, DVT), Nerve blocks, E-FAST examination, AAA Exam, small parts, applications in adults and pediatric patients and also suitable for echocardiography, interventions. Multiple preloaded application presets should be available.
2. The unit must have real time compound imaging for improved contrast resolution and eliminating ultrasound artifacts to achieve optimum image quality & better needle visualisation.
3. System should be able to support speckle reduction imaging for better tissue differentiation and edge enhancement.
4. System should have both online (Read) as well as offline(Write) zoom facility
5. System must have frequency range from 1 – 14 MHz ($\pm$1 MHz)
6. Imaging modes of Real time 2D, Colour Doppler, Pulsed wave Doppler, Continuous wave Doppler, Power Doppler must be available.
7. System must have fast start up to scanning in less than 30 seconds from off condition, for use in critical and emergency situation in ICU and Emergency.
8. System should support transducer technologies like, phased array, convex, linear TEE etc.
9. Cine memory on all modes.
10. The unit must be compact, portable and lightweight, weighing less then 5 kg to use in ICU.
11. Unit must be sturdy, resistant to breakage & damage on fall/ hit against the wall or hard surface.
12. Flat LCD/ TFT monitor of at least 10 inches with flicker free image.
13. Alphanumeric soft keys keyboard with easy access scans controls, facility to sanitize the system keyboard to avoid cross contamination in ICU.
14. Onboard storage of images & loops, USB port for connectivity to computer.

15. The system shall support the all DICOM functionality, Storage, Print, and Work List, also ready to connect to PACS.
16. Must be able to operate both on AC and inbuilt battery. Inbuilt battery pack should be self-recharging and should last at least for 1 hour when fully charged.
17. **Transducers to be supplied as standard**
    a. Phased Array Probe 2-5MHz for abdominal, cardiac, FAST applications.
    b. High Frequency Linear transducer 6-13 MHz (±1 MHz) with less then 40 mm size for vascular access & vascular, small parts Imaging.
    c. Convex probe 2-5 for abdominal & ob/gyn applications.
    d. Needle guide must be supplied with convex and linear probes.
    e. B/W thermal printer – (25 extra rolls of thermal paper)
    f. Carry bag, Trolley, with a provision of locking the main system.

Optional probes to be quoted

- Phased array 4-8 MHz for paediatric cardiac Applications with PW & CW facility.
- High Frequency Linear transducer 6-13 MHz (+/- 1MHz) or more with less then 26 mm footprint size for nerve blocks, vascular access, Vascular Imaging in Peadiatric patients. Higher frequency will be preferred.

ESSENTIAL REQUIREMENT: The firm must have minimum number of 50 installations of the same model in India, attach list of installations, and also provide performance certificates.

Portable Sleep Lab.

Should be light weight (less than 100gms) that can be easily worn on the patient.
Should have ten channels in the main screen with four channel display simultaneously on the screen.
Should have integrated Flow and Nasal sensors, thoracic and abdomen efforts, Spo2, Body Position and moment.
Should have capability to have four EEG Channels , 2 EOG and 1 EMG channels for Sleep Staging
Should have automatic event detection, automatic detection of artefacts.
Should have facility of standard and configurable report formats. Should give the comprehensive report with automatic calculation of AHI and RDI.
Should have LCD Display with a battery backup of minimum 12Hours.
The system should have the ability to work on battery so that there is no electrical interference to the machine.
Should have automatic analysis,detection of Apneas/Hypopneas, Bradycardia/Tachycardias.
Should have ability for re-referencing, re-montaging and re-filtering at any time or even after the study has been recorded.
The system should have capabilityto record Systolic and Diastolic BP either from PTT signal or from 3rd party standalone system offering NIBP measurement from non-inflating soft finger cuffs that can directly be interfaced with the machine.
Should have capability to export and import the complete study in EDF Format, exe format, and reports can be exported to Excel and PDF format.
The unit should have capability of doing wireless data transfer / online signal check facility with the transfer of data to Tablet Pc through Bluetooth.
The unit should be warranted for minimum two years.

Actigraph

Should have moisture protection and increased resistance to environment challenges.
Watch should be water proof, battery operated and light weight (less than 40gm)
Should run on chargeable batteries, which should have sufficiently long life to run and interrupted for at least 7 consecutive days.
Should have capability of recording 24-hr sleep-wake activity
Should have capability of recording sleep variability, quality and quantity of sleep
Should have capability day time activity pattern
Should have capability of simultaneously monitoring, analyzing and storing data of sleep wake activity for > 24 hrs continuously.
Should have capability of monitoring luminous flux and irradiance
Should have provision for interface with PC for data download, post processing and print out.
Memory 1 M bit non-volatile or better
Chargeable Li ion/Li polymer battery for Dock and watch both
Data communication rate 56 kbps or better
The epoch length, filter setting and sensitivity should be programmable.

Sleep Lab.

Hard ware Specifications for PSG machine
1. Should have following Channels on each bed:-
* EEG * EMG *EOG * ECG * Nasal pressure transducer
* Thermistor *Respiratory Effort (to be measured with respiratory inductance Plethysmography)
* Snoring * Body Position, * CPAP Pressure * Limb Movement, * SaO2 * Pulse Rate,

2. For each bed (system):
a. amplifier must be compact, body wearable and light weight – Approximately
b. Referential Channels - at least 24 (Possible to configure all Referential Channels for EOG, EEG & EMG, as per requirement)
c. Bipolar Channels - at least 6
d. Additional DC Channels - at least 8(for External Peripherals like Capnography,Ph,Esophageaprmonitoring,etc)
e. Should be able to record systolic BP either from Pulse transit time signal or from 3 rd party stand alone device (non invasive blood pressure measurement from non inflating finger cuffs)

3. For each bed there should be Two integrated Pressure Transducers:
a. To measure direct CPAP Pressure (Facility to Interface any make of CPAP with the System)
b. To measure Nasal Pressure to assess Nasal Airflow without Nasal thermistor.

4. Should have Integrated Pulse Oximeter, body position sensor, light sensor and movement detection sensor.
5. Should have Integrated Bed side and on screen impedance check & self-calibration.
6. Should have adjustable gain and notch filters.
7. Should have fully compressed raw data stored on all channels.
8. Easy interface with CPAP machines of various makes should be possible, with ease in PAP titration. There should be provision for automatic calculation and display of apnea-hypopnea index as well as other parameters like desaturation index, live during recording of titration studies.
9. Should have Synchronized Digital video with Camera and Infrared source. Video camera should be with high audio quality without external microphone (Best available commercially), with provision for extraneous noise rejection/filtering capability. It should fulfill the following specifications:

High Resolution Camera Mounted on the system trolley with flexible stand to set the camera on any direction and angle. (Same or better than below)
*fully Remote / LAN Controllable, color, Auto Focus, Auto ICR
*1/4 type interline transfer CCD *752(H)
*582 (V) Pixels with 3.6mm (V) Scanning area
* High zoom ratio AF lens: 30
* Optical + 10* Digital.
*Wide Range Pan/Tilt: 360 endless pan/185 degree Tilt
*No/Low Light Sensitivity: 0.5 Lux in color and 0.04 in black and white
*PAL / CCIR Signal *Desktop and ceiling Mount Installation

10. Should have provision for power backup for at least 12 hrs and UPS for camera & computer.
11. Ability for wireless transmission of PSG data

Software Specifications

1. Should have ability for Re-referencing, Re-montaging and re-filtering at any time during a study or after the study has been recorded.
2. Should have provision for Real Time Access to studies for analysis of data currently being recorded from the review/recording station.
3. Should be interfaced to PC via LAN interface for data acquisition.
4. The System should be compact & modular in design and should have facility to hook-up directly to any LAN Port on the network and the data should acquire on sleep station (Sleep Lab PC).
5. Should have user definable Montages & Montage changes.
6. Should have independent, Selectable time basis for Upper & Lower portions of the Screen enabling review of fast moving traces like EEG in one half and slower Respiratory Waveforms on the other half, simultaneously.
7. Should have Sleep Staging options for Adult and Pediatric populations, configured according to latest AASM 2013 criteria
8. Should have scoring comparison (quality control) feature which will allow comparison between scoring by different users, including sleep stages, respiratory events and AHI, arousals and limb movements, with provision for calculation of percentage agreement between different reviewers / scorers.
9. Software should have the capability to display and analyze respiratory events linking with arousals, periodic limb movements and desaturations.
10. Should have the capability for periodic limb movement display and analysis with linking of individual limb movements with apnea / hypopnea and with arousals.
11. Software for cyclic alternating pattern analysis should be made available and it should be compatible with the operating software of the system.
12. It should display the detailed sleep apnea treatment steps for all modalities (CPAP, bi-level PAP [different modes], Adaptive servo ventilation and oxygen supplementation)
13. Antivirus security till the AMC or CMC (not free or trial version) - upgradable every year; should be made available with each system.

Review Station
1. Highest configuration Mac / Windows based ‘all-in-one’ desktop computers with at least 3rd Generation Intel CoreTM i7 Processor, 8 GB RAM or highest available, 21” LED color monitor, DVD R/W, Mouse.
2. Online PSG viewing software (2 nos.)
3. Licenses for review and analysis software for PSG equipment (4 nos.)
4. Software for networking all operating PSG systems with the review room.
5. Cable + Wireless Networking – (All PSG machines, Review station with 2 review workstations, Main review station (for Clinical Neurophysiology Lab, epilepsy monitoring unit)and Faculty office Wireless access points Access switches – 5 Server: External, with 10 TB capacity (and upgradable Cabling)
6. Archiving facilities: 2 high capacity servers each with 10 TB capacity each
7. High speed wireless internet connectivity with advanced security – for all PSG computers
8. 26” LED monitor – 2
9. Wall to wall stainless storage panels for secure storage of accessories, lab stationary and portable equipment.

Treatment facilities to be supplied with system:
1. Multimodality titration equipment (enabled to titrate CPAP, Bi-level and ASV)
2. Capability to remotely control PAP treatment parameters live, from the review station, without entering patients’ cubicles.
3. Multiple types of masks of different sizes (at least including pediatric and adult in small, medium and large sizes; full face, nasal mask and nasal pillow types)
-2 Duplicate sets of accessories should be supplied, along with price list of all accessories

Hemodialysis Machine (Regular)

Technical specifications
Capable of providing conventional hemodialysis and high flux dialysis
Facility for Acetate, Bicarbonate, dry powder & Sequential dialysis (Isolated UF)
Should have appropriate filters for preparation of ultra-pure dialysate, with endotoxin retention capacity of at least 10^6 IU
Built in NIBP
Na and Ultra filtration profiling
Audio visual alarms :
Conductivity and automatic bypass
Air detection and automatic clamp
Temperature and automatic bypass
Water and dialysate flow alarm
Arterial and venous pressure alarms
Optical/photo blood leak detector and ultrasonic air detector
Wide range dialysate temperatures selectivity (34 to 39 deg. C)
Variable conductivity setting (13 to 15.7 mS/cm)
Wide dialysate flow rates options (300-700 ml/min with increments of 100 ml/mt)
Wide range blood pump flow option (50-500 ml/min with increment of 10 ml) adaptable to standard, A-V bloodlines
Facility to show treatment parameter trends
Heparin pump with variable syringe size with wide infusion rate (in 0.1 ml/hr increments)
Wide ultra filtration range (0.1 to 3.5 kg/h) with volumetric control
Integrated heat and chemical disinfection facility
Online measurement of effective urea clearance (kt/V)
All important data be pre-settled so that machine can be used without feeding data every time
Automatic self test facility
LCD Display with touch pad or touch screen as UI
Appropriate Operating voltage for Indian conditions, with battery backup of at least 30 mins

Accessories
COMPULSORY accessories, which are must for smooth and safe running of machine must be quoted along with machine including Data Processing computer and printer if required.

Environmental factors and power supply
Shall meet General Requirements of Safety for Electromagnetic Compatibility.
The machine shall be capable of being stored continuously in wide range of temperature (0-50 deg C) and relative humidity (15-90%)
Capable of operating in wide ambient temperature (20-30 deg C) and wide relative humidity
Power input : 220-240V/ 50 Hz AC Single phase or Three phase fitted with appropriate Indian plugs and sockets.
Suitable Servo controlled Stabilizer/CVT/UPS should be supplied, if required

Standard, safety, demonstration, training, warranty and maintenance
Electrical safety conforms to standards for electrical safety
Should be FDA/European-CE/IVD certified
The bidders must quote for *FIVE years* Comprehensive Warranty for complete equipment (Including all spares and labour)

Undertaking by the Principals that the spares for the equipment shall be available for at least 10 years from the date of supply of equipment.
Company should be in market for at least five years
Machine should have been supplied in atleast 3 major government institutions
Machine demonstration has to be done in the Safdarjung Hospital, New Delhi. Time and date of demonstration will be as per department decision
Training of the hospital staff if required should be done by the manufactures
All spare parts (Electronic, Mechanical, plastic etc) required as such or due to wear and tear should be included in warranty period and in Comprehensive AMC period. Also all parts/components provided locally should also have to be maintained by company
Sole responsibility of warranty and CMC will be of the parent company
Elective visit once a week day as decided by the department
Preventive machine maintenance regularly as per machine requirement in Safdarjung Hospital, Delhi.
Response time for acknowledgment of complaint 30 minutes
Response time for physical presence within one working day

Documentations
ORIGINAL user and service manual in English to be provided
Certificate of calibration and inspection to be provided, if required
Attach ORIGINAL manufacturer's product catalogue and specification sheet
Compliance Report to be submitted in a tabulated and point wise manner clearly mentioning the page/para number of original catalogue/data sheet. Any point , if not substantiated with authenticated catalogue/manual, will not be considered.
A complete list of the government institution, where machine has been supplied along with the name, designation, mobile and office contact details of the person handling the machine should be provided
Machines details and brochure should also be available on company website
List of important spare parts and accessories with their part number and cost should be provided
List of Equipment available for providing calibration and routine Preventive Maintenance Support, as per manufacturer documentation in service/technical manual should be provided.
Log book with instructions for daily, weekly, monthly and quarterly maintenance checklist should be provided.
The job description of the hospital technician and company service engineer for maintenance of machine should be clearly spelt out.
If some component/part of machine or its accessories are to be provided by Indian counterpart/agent, that should be very clearly defined in the bid and its cost should be clearly separated out.

Reverse Osmosis Water Treatment Plant for Dialysis (To be supplied along with Haemodialysis Machine)

Description of Function
Supply, erection, commission, testing, operation and maintenance of water treatment plant suitable for supplying water for 20 hemodialysis machines and two dialyser reprocessing machine with necessary supportive arrangement like pre-treatment, RO Unit, Post treatment unit, electrical panel, RO panel, measuring devices etc for the proper functioning of the plant in the hemodialysis unit with the quality of treated water as per AAMI standard.

General Conditions :
Installation should be on Turnkey basis
The RO System should be quoted with *Five years warranty* followed by five years CMC charges.

All maintenance including spare parts (Electronic, Mechanical, plastic etc), software updates and all consumables (i.e. All types of Filters, Membranes, disinfectants and salt consumption) should be included in warranty period and in CMC Charges.
RO Unit should be maintained by Manufacturer, supplier or authorized dealer through skilled staff.
Water testing (chemical and bacterial) should be included in maintenance and should be done once every six months.
Only those vendors will be considered having in-house service facility in India.
ALL piping (of PEX material) and plumbing work related to unit as per design of unit should be provided by supplier at its cost.
Manufacturing company should have an installation base of more than 10 RO System in India in which at least 25%of them should be of 1000 liter capacity or more.
The bidder must submit at least three performance certificates from government hospitals/institutions where a similar RO plant has been installed.
Tenders should be quoted with full quality assurance certificate (EC Certificates)
Company should provide onsite demonstration if deemed necessary.
Service engineer for repair and maintenance should be provided by manufacturer certified local representative or parent company
Quotations should also include appropriate environmental preparation of the area housing the plant.
Bidder may inspect the proposed dialysis unit / building plan of dialysis unit before preparing the final quote to assess the amount of work.
After sales service centre should be available at the city of Institution on 24 (hrs) X 7 (days) X 365 (days) basis. Complaints should be attended properly, maximum within 8 hrs.
The service should be provided directly by Bidder/Indian Agent. Undertaking by the Principals that the spares for the equipment shall be available for at least 10 years from the date of supply of equipment.

Pre-treatment
Pre-treatment should have a Mesh Filter of 50 microns.
There should be an automatically controlled Solenoid Valve to fill the Raw Water Tank.
Raw Water Tank having food grade quality for at least 750 Liters capacity to store Raw Water.
Sand Filter with sand particles of different grade should have fully automatic backwash & rinse cycles every day.
Particle filter, cartridge filter type of 50 microns to 10 microns.
Should have build in dual column softener with fully automated digital display, brine fill and clean cycles. It should also have a brine tank incorporated in the system.
Carbon filter with fine carbon granules should have fully automatic backwash cycle & rinse cycle every day.
Should have fine filter, cartridge type of 5 micron & 1 micron.

RO Unit
Should be Microprocessor based fully automatic RO System which should produce water as per AAMI Standard
The complete system should be fully programmable.
Should have inbuilt ability to show conductivity of permeate produced, temperature, yield, permeate output supply.
Should supply 1500 Liter /hour of permeate.
Should have dynamic Water-Saving Technology and rinsing system available.
There should be facility to upgrade system by adding additional membrane to increase capacity.
Yield setting should be between 50% - 70%.
Would operate on 3-phase supply.
Appropriate Online UPS required for RO Plant should be included in the total cost
Should have automatic volume controlled disinfection cycle

In built capabilities to show on display for Permeate (Supply in liter/min, Temperature) & for Raw Water (Consumption in Liters/min & Pressure)
Should have programmable fully automated rinse cycle for membranes wash.
There should be a provision of OFF line mode and ONLINE mode of Permeate Supply.
It should be possible to use permeate supply to run the dialysis machines directly without collecting permeate to tank.
Should have facility for automated heat disinfection of the distribution loop

Post Treatment System
Should have appropriate material and shape Permeate Storage Tank of at least 750 Liters capacity with level control system.
Should have sub-micron bacterial filter of 0.2 microns manually back washable.
Should have Flow Indicator of Wall mounting type showing Litres / Min Supply and to build back pressure.
One additional booster pump should be supplied with the system.
Should have Stainless Steel, 316 grade Push-Pull type Stainless Steel Connectors for Water outlet at Dialysis machine connecting points for 25 points.

Uretero-Renoscope 4.5/6.5Fr	
1	Compact operating fibre Uretero-Renoscope 4.5/6.5Fr, working length 430mm, angle of view 5 degree, distal tip of sheath 4.5Fr, instrument channel of 3Fr for accessory instruments of max.4Fr., auctoclavable
2	Compact operating fibre Uretero-Renoscope 6/7.5Fr, working length 430mm, angle of view 5 degree, distal tip of sheath 6Fr, instrument channel of 5Fr for accessory instruments of max.6Fr., autoclavable
3	WARRANTY
a	5 years warranty on all supplied items
b	5 years comprehensive maintenance charge (CMC) of all items.