


SUBJECT: Intensive care unit equipments (each 15 beds)	
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	EFFECTIVE: OCTOBER 2007
APPROVED BY: P&P Committee	REVISED BY: LCol. Dr. Yasser Mandourah

1 TRANSPORT VENTILATOR


- 1.1 The ventilator shall be for adults and pediatrics
- 1.2 Pneumatic portable ventilator capable of working on portable high pressure oxygen and does not require electric power supply.
- 1.3 It shall be equipped with the full range of ventilation modes commonly in use for adult and paediatric patients for transport.
- 1.4 It shall have alarms for upper pressure, apnea alarm, gas supply alarm, and power failure.

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2 BI-LEVEL NON-INVASIVE VENTILATION FOR ICU PATIENTS

- 2.1 The ventilator shall be for adults and pediatrics (>30 kg) and should be blower based and capable of delivering the appropriate flow and pressure
- 2.2 It shall have an integrated display screen to display easy-to-read real time graphics in waveform or bar scale format, providing the following measured and calculated numerical values to assist with ventilator management:
 - 2.2.1 EPAP
 - 2.2.2 IPAP
 - 2.2.3 Total Breath Rate
 - 2.2.4 Exhaled Minute Ventilation
 - 2.2.5 % Patient Triggered Breaths
 - 2.2.6 Exhaled Tidal Volume
 - 2.2.7 Ti/Tot
 - 2.2.8 Peak Inspiratory Pressure
 - 2.2.9 Patient or Total Leak
 - 2.2.10 CPAP and S/T.

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- 2.2.11 PAV /T (Proportional Assist Ventilation/Timed mode)**
- 2.3** It should allow for blending oxygen within the unit in concentrations ranging between 21-100% without auxiliary oxygen tubing attached to the mask.
- 2.4** The Pressure regulation should be at the mask to allow for regulating pressure therapy to assure delivery and automatically adjust for variations.
- 2.5** The should be Digital Auto-Trak Sensitivity for automatically responding to changing breathing patterns and circuit leaks by identifying leaks and adjusting variable sensitivity thresholds for optimum response with every breath.
- 2.6** The unit should be equipped with patient alarm for :
 - 2.6.1** High Pressure
 - 2.6.2** Low Pressure
 - 2.6.3** Apnea
 - 2.6.4** Low Minute Ventilation
 - 2.6.5** High Rate
 - 2.6.6** Low Rate
- 2.7** Interface (hardware and software) with bedside monitor and database computer management system.

3 TRANSPORT CARDIAC MONITOR

- 3.1** The unit shall be compact and portable.
- 3.2** At least 3-channel color display
- 3.3** Physiological amplifier shall be of a preconfigured type and should include:
 - 3.3.1** ECG/Respiration 5 lead
 - 3.3.2** SPO2/Pleth pulse oximetry, preferably Nellcor technology
 - 3.3.3** NIBP
 - 3.3.4** Temperature
 - 3.3.5** End-Tidal CO2

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3.3.6 Thermal printer

3.4All sensors and operational accessories must be supplied including trolley.

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4 CPT PERCUSSORS

- 4.1 It shall provide massage/percussion for use in both physical and respiratory therapy applications.
- 4.2 Easy to use dial controls with visual displays of CPS, Time and Pulsation Range.
- 4.3 Speed feedback logic maintains CPS regardless of load.
- 4.4 Versatility: Pole, Table Top and Wall Mountable.
- 4.5 Digital solid-state electronic controls with a timer.
- 4.6 cycle per second range (10 - 60 CPS)

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5 CYLINDER TROLLEY

- 5.1 It shall safely secure and hold E oxygen cylinder.
- 5.2 It shall have easy to maneuver wheels.

6 ICP MONITOR

- 6.1 It shall provide Intracranial Pressure monitoring.
- 6.2 It shall provide Cerebral Perfusion Pressure.

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- 6.3** It shall incorporate parenchymal and ventricular monitoring through fiberoptic technology.
- 6.4** It shall provide continuous recording and display of ICP and CPP values over the most recent 12 or 24 hour period.
- 6.5** Quotation shall include all interphase kits.
- 6.6** Interface (hardware and software) with bedside monitor and database computer management system.


7 EKG

- 7.1** The EKG machine shall record, analyze, print, store and transmit ECGs.
- 7.2** It shall have a large, high-resolution touch display.
- 7.3** It shall provide ECG snapshots, and the complete print with interpretation.
- 7.4** Interface (hardware and software) with bedside monitor and database computer management system.
- 7.5** The cost of service training for an R.K.H. Programme employee with the manufacturer should be included in the quotation.

8 EXTRA WIDE SHOWER CHAIR

- 8.1** Must be both a shower chair and commode
- 8.2** Must be heavy duty
- 8.3** Must be light weight
- 8.4** PVC preferred to prevent rusting
- 8.5** Anti-slip hand grips
- 8.6** Removable mesh back with back pouch for soap and shampoo
- 8.7** 21 inch seat height
- 8.8** Must be extra wide

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8.9 26 inches between arms

8.10 350 lbs weight capacity

8.11 Dimensions: 30 inch W x 18 inch D x 40 inch H

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9 STANDARD CHAIR/COMMODE

9.1 Must be both a shower chair and commode

9.2 Must be heavy duty

9.3 Must be light weight

9.4 PVC preferred to prevent rusting

9.5 Anti-slip hand grips

9.6 Removable mesh back with back pouch for soap and shampoo

9.7 21 inch seat height

9.8 Must be 18 inches between arms

9.9 300 lbs weight capacity


9.10 Dimensions: 22 inch W x 18 inch D x 40 inch

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10 DEFIBRILLATOR WITH PACING

- AED and Manual operation (with manual mode password security, if desired)
- ECG monitoring through pads or separate monitoring electrodes

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- Alarms on HR limits and shockable rhythms
- Synchronized cardioversion
- Built-in 50 mm strip chart printer
- Bright,electroluminescent display for viewing waveforms and messages
- External paddles with paddle contact indicator
- Internally stored event summary which may be printed
- Voice prompts in AED mode
- Adjustable ECG size
- Adjustable volume
- Setup mode, automatic self-tests,and error handling
- Sealed lead acid battery
- Integrated AC power

11 MULTIFILTRATE MACHINE

11.1 It must incorporate wide range of renal replacement therapies such as.


11.1.1 CVVH/HV-CVVH

11.1.2 CVVHDF

11.1.3 CVVHD

11.1.4 SCUF

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11.1.5 MPS

11.1.6 HP

- 11.2** Have high resolution LCD colour screen.
- 11.3** Four roller pumps.
- 11.4** Four high precision scales
- 11.5** Individual bag heating system.
- 11.6** 4 Hour internal battery.
- 11.7** Mobility features.
- 11.8** Interface (hardware and software) with bedside monitor and database computer management system.


12 POINT OF CARE BLOOD GAS ANALYZER

- 12.1** Then analyzer shall use combination of advanced optical and electrode technology.
- 12.2** It shall measure standard blood gas profile of pH, PCO₂ and PO₂
- 12.3** It shall measure hematocrit, hemoglobin and oxygen saturation, platelets, WBC count.
- 12.4** It shall measure glucose, sodium, potassium, lactate and a choice of chloride or ionized calcium, anion gap, osmolality, PT & PTT.
- 12.5** It shall carry enough on-board reagents to perform 7500 tests and contain a full month's supply of controls.
- 12.6** Interface (hardware and software) database computer management system.
 - The cost of service training for an R.K.H. Programme employee with the manufacturer should be included in the quotation.

13 Emergency Resuscitation Trolley

- 13.1** Removable board compression
- 13.2** With front loading drawers

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- 13.3** Shelf for Sharp container
- 13.4** Moving Platform Shelf
- 13.5** The unit shall have 2 oxygen tank holder (D/E)
 - 13.5.1** Swivel castors (2 with breaks)
 - 13.5.2** Lockable storage unit with at least 3 drawers
 - 13.5.3** Stainless steel IV pole
 - 13.5.4** Suction bottle machine
 - 13.5.5** XL 100 Monitor / Defibrillator
- 13.6** The defibrillator must be able to deliver biphasic waveform and charge quickly to a maximum joules (typically in 6 seconds or less).
- 13.7** It must be able to run for at least 2 hours in monitoring mode from internal battery with 40 full energy discharges.
- 13.8** The defibrillator shall incorporate at least 5 lead ECG display, Full A.E.D., printing/recording facilities, heart rate alarms, built in paediatric paddles, paddle contact indicator, internal paddle configuration for infant and adult.
- 13.9** The unit shall be supplied with ECG cable, and all other necessary accessories. .
- 13.10** The unit shall also be supplied with transcutaneous pacing facility.
- 13.11** Also required is an intelligent battery charging system complete with spare batteries.
- 13.12** The unit must be lightweight.

14 SPECIFICATION FOR A BLOOD WARMER

- 14.1** The system shall control the static temperature of blood in the range of 35 0C to 37 0C at a flow rate of up to 150 ml/minute.
- 14.2** It shall include an audible over-temperature alarm.
- 14.3** The unit should be supplied with all necessary accessories.

15 MEDICATION REFRIDGERATOR X 6

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- 15.1** self defrosting
- 15.2** on wheels
- 15.3** lockable swivel casters
- 15.4** freezer and fridge section
- 15.5** 250 litre
- 15.6** Shelves

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