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Revised Draft Amendment 1 (---/)
To
AIS-125 (Part 2): Medical Equipment for Road Ambulances

1.0	Add following Tables 12 and 13 after Table 11
	Table 12
	List of medical equipment's for Neonatal Ambulance.

Sr.No.	Category	Equipment	Qty
1.	**Medical Equipment**	Neonatal Transport Incubator with Accessories	1
2.		Transport Ventilators with Accessories	1
3.		Portable Infant Resuscitator - T- Piece with Accessories	1
4.		Defibrillator Pediatric with Accessories	1
5.		Suction Device Electrical with Accessories	1
6.		Self-Inflating Neonatal Resuscitation Kit with Bag Valve Mask with Accessories & Disposables	1
7.		Cardiac Monitor with Accessories	1
8.		Pulse Oximeter - Line Powered	1
9.		Non-Invasive Blood Pressure (NIBP) Monitors	1
10.		Infusion Pumps with Accessories	2
11.		Syringe Pumps with Accessories	2
12.		Portable Warmer with Accessories	1
13.		Blood Glucometer with Disposables	1
14.		Bilirubinometer with Accessories	1

15.		Neonatal Stethoscope	1
16.		Direct Ophthalmoscope	1
17.		Thermometer Digital	1
18.		Neonatal Weighing Scale	1
19.	**Other Essentials (Accessories, Disposables, Kits)**	Thermal Mattress / Gel Pads	1
20.		Medical Grade Refrigerator / Vaccine Cold Storage Box Temperature 2-8 Degrees C controlled, 50ml CDSCO Approved	1
21.		Umbilical Catheterization Kit	2
22.		Infant Intraosseous (IO) access complete kits	1
23.		Oxygen Hood	1
24.		Sterile Gloves & Gowns	6 + 6
25.		Oxygen Supply System	1
26.		Feeding Tubes	10
27.		Chest Drainage Kits	24, 30 & 32, 1 each
28.		Hand Sanitizers & Antiseptic Solutions	1 Each
29.		Documentation & Medical Charts	1 Set
30.		Endotracheal Tubes (ETTs)	2 each of 8.5, 8, 7.5, 7, 6.5, 6, 5.5, 5, 4, 3 sizes
31.		Neonatal catheters	2
32.		Umbilical vein catheters	2
33.		Child Spine Board	1
34.		Emergency Child Restraint System	1
35.		Vein Finder	1
36.		Emergency response Drugs & Food Supplements as directed	Set
33.	**Oxygen Supply Cylinders**	Portable lightweight aluminium cylinder with pin index mechanism 4.5 litres water capacity	1

NEONATAL TRANSPORT INCUBATOR WITH ACCESSORIES		
1.0	**USE**	
1.1	Clinical purpose	Designed to provide an enclosed controlled environment to maintain appropriate temperature and humidity levels mainly for premature infants and other newborns who cannot effectively regulate their body temperature.
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	1. Visual and audible alarms for: (i) Patient and air high/low temperature alarm. (ii) Air circulation / probe / system / power failure larm. 2. Heater power indicator 3. Air velocity: minimum 0.30m/sec 4. Oxygen input flow rate 5 to15 liters/min or oxygen concentration range 25 to 70%. 5. Maximum CO2 concentration inside incubator 0.2%. 6. Internal noise level < 60 dB. 7. Mode of operation should be properly displayed. 8. Green indicator light should be provided for its ready to be in normal use. 9. Infants straps should be provided to restrict the baby movement. 10. Skin temperature probe should be small in size not more than 10mm diameter and 4mm in height to fix the probe firmly on the infant. Baby contact material should be biocompatible as per ISO 10993 standard requirement. 11. Infant bed should be drawable. Mattress foam density should be minimum 25kg. /cm3 and infant bed mattress cover should be biocompatible material. 12. Examination light should be provided for inspection. 13. Should have heater power indicator. 14. Warmup time 30-40 minutes and shall not differ by more than 20%. 15. Shall be equipped with a thermal cut-out. It shall be so arranged that the heater is disconnected and an auditory and visual warning is given at an incubator temperature which does not exceed 40 deg. C. 16. Should have elbow operate-able ports and head access door. 17. It should not topple over at 10 deg. inclined plane. 18. Patient skin temperature range: 35 deg. C to 37.5 deg. C. over ride up-to 38 deg. C.

		19. Air temperature range: 30 deg. C to 39 deg. C; Temperature resolution ±0.1 deg. C; Temperature accuracy ± 0.2 deg. C.
2.2	**Settings**	Patient skin temperature range: 35 deg. C to 37.5 deg. C. over ride up to 38 deg. C. Air temperature range: 30 deg. C to 39 deg. C.
2.3	**User's interface**	Display allows easy viewing in all ambient light levels
2.4	**Software and/or standard of communication**	In built
2.5	**Others**	1. Temperature on the baby mattress should not exceed 40 deg. C and 43 deg. for other materials 2. Uniformity of temperature on the horizontal mattress shall not exceed1.5 deg. C and in tilted mattress not exceed 2 deg. C. 3. The overshoot temperature shall not exceed 2 deg. C. 4. The stability of temperature during steady temperature shall not differ from the average temperature by more than 1 deg. C.
3. PHYSICAL CHARACTERISTICS		
3.1	**Dimensions (metric)**	Baby bed should be at-least 60X30cm and the canopy should be at-least 80X40 cm.
3.2	**Weight (lbs, kg)**	not exceeding 40kg. (without cylinders).
3.3	**Configuration**	Oxygen port with tubing, also mount for oxygen cylinder of 5 litters size. Accommodates shelves, suction unit and I/V poles. Double-walled cabinet with at least two hand ports. Should have collapsible trolley with lockable castors. Mounted on mobile base, lowest height setting of which is at least 80 cm high. Minimum castor diameter 12cm. At least two castors must be fitted with brake facility. Castors must be made of conductive material such as Static dissipative Polyurethane and rotate (swivel) freely around the vertical axis. The canopy and infant bed should be crevice free for

		ease of cleaning.
3.4	**Noise (in dBA)**	<60dBA; Alarm Audible sound level should be at-least 65dBA at 3meter distance from the device.
3.5	**heat dissipation**	Should maintain up-to 37 deg. temp.
3.6	**Mobility, portability**	Yes, on castors
4.0	**ENERGY SOURCE (Electricity, UPS, Solar, Gas, Water, CO_2)**	
4.1	Voltage (value, AC or DC, mono-phase or tri-phase)	220VAC ± 10% , 50 Hz
4.2	Battery operated	Battery charger to be integral to mains power supply, and to charge battery during mains power operation of unit. Electrical protection by resettable over-current breakers or replaceable fuses, fitted in both live and neutral lines. Battery backup of 2 hours for equipment operation. The battery should be protected from overcharging.
4.3	Tolerance (to variations, shutdowns)	Voltage corrector / stabilizer to allow operation at ± 10% of rated voltage.
4.4	Protection	Internal, replaceable, rechargeable battery allows operation for at least two hours in the event of power failure
4.5	Power consumption	
4.6	Other energy supplies	Mains cable to be at least 3m length
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	

5.1	Accessories (Mandatory)	With washable and removable straps and binders Light Weight Collapsible Aluminium Stretcher - 1 No Oxygen Cylinder Compatible - 1 Small + 1 Large along with pressure Valves Air Cylinder Compatible - 1 No IV Pole Compatible - 1No Foam Bed with Straps - 1 No Air Filters - 1 Set Flexible Examination LED Lamp - 1 No Power Cord: 1 No Cylinder Star Knobs: 1 Each
5.2	Spare parts (main ones)	Two extra sets of all sensors
5.3	Consumables / reagents (open, closed system)	Two extra sets of filters, two extra set of fuses (if replaceable fuses used)
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	Operating condition: – Capable of operating continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90% in ideal circumstances. – an ambient air velocity is less than 0.3 m/s.
6.2	User's care, Cleaning, Disinfection & Sterility issues	Unit layout to enable easy cleaning and sterilization of all surfaces, with no unreachable fluid traps.The case is to be cleanable with alcohol or chlorine wipes
6.3	Others	
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type); Local and/or international	1) Product should be FDA (US) /CE (EU) from authorized third party/ BIS approved and CDSCO & ISO 13485 2) Relevant IEC-60601-Part 1 & 2, certificates by a notified agency
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Supplier to perform installation, safety and operation checks before handover.
8.2	Requirements for sign-off	Certificate of Calibration and inspection from the factory.

8.3	Training of staff (medical, paramedical, technicians)	Training of users in operation and basic maintenance shall be provided
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	3 years excluding battery and consumables
9.2	Maintenance tasks	Advanced maintenance tasks required shall be documented
9.3	Service contract clauses, including prices	Local clinical staff to affirm completion of installation
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	User, technical and maintenance manuals to be supplied in English language. Certificate of calibration and inspection to be provided. List to be provided of equipment and procedures required for local calibration and routine maintenance List to be provided of important spares and accessories, with their part numbers and cost.
10.0	Other accompanying documents	User/Technical/Maintenance manuals to be supplied in English
TRANSPORT VENTILATOR		
1.0	**USE**	
1.1	Clinical purpose	To provide automated, alveolar ventilatory support for patients during interhospital or intrahospital transport, and in emergency situations.
1.2	Used by clinical department/ ward	Emergency /Critical Care
2.0	**TECHNICAL CHARACTERISTICS**	

2.1	Technical characteristics (specific to this type of device)	1. Mountable transport ventilator (Neonate/Paediatric). 2. Invasive Modes (CMV and SIMV) and Non-invasive Mode (CPAP). 3. Pressure controlled - Pressure up to 15mmHg. 4. Respiration Rate up to 40. 5. There should be two FiO2 setting range between 21% and 100%. Setting 100% FiO2 should be mandatory. 6. PEEP 0-20 cm of water. 7. Trigger sensitivity - Pressure. 8. The associated cylinder (to be supplied along with the machines) should be such that it could be locally filled. 9. Oxygen Cylinder connector (to be supplied along with the machines) should be compatible with ventilator. 10. Audio and visual alarm for disconnection and high pressure. 11. The device should be capable of operation in various environments such as Emergency, Ambulance, Aircraft, Hospital and MRI. 12. The device should be MRI conditioned up to 3 Tesla, 430 G/cm.
2.3	User's interface	Automatic
2.4	Software and/or standard of communication(where ever required)	inbuilt
3.0	**PHYSICAL CHARACTERISTICS**	

3.1	Dimensions (metric)	NA
3.2	Weight (lbs, kg)	<8kgs
3.3	Configuration	NA
3.4	Noise (in dBA), heat dissipation	Should have audio visual alarm for disconnection and high pressure.
3.5	Mobility, portability	Yes
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO_2)**	
4.1	Power Requirements	220 to 240V, 50 Hz; electricity and battery driven; should be compatible with ambulance power supply system with other life saving equipments running parallel in the ambulance.
4.2	Battery operated	with atleast 6 hours battery backup
4.3	Tolerance (to variations, shutdowns)	± 10% of input
4.4	Protection	OVP, earth leakage protection.
4.5	Power consumption	<140Watt
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories & Spares	full face mask - 1 No 3 Sets of reusable breathing circuit of silicone material(2 for pediatiric and 2 for neonates) with exhalation valves carry bag - 1 No ventilator connecting tubes Test Lung - 1 No Clamp for fixing ventilator in Trolley - 1No
5.3	Consumables / reagents (open, closed system)	Battery, Leakage adapter.
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg

		C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	The unit should be cleanable with alcohol and/or other chemical agents.
7.0	**STANDARDS AND SAFETY**	
7.1	Certifications	1) Product should be FDA (US) /CE (EU) from autorized third party/ BIS approved and CDSCO & ISO 13485 2) Relevant IEC-60601-Part 1 & 2, certificates by a notified agency IEC-60601-1-2; ISO 15001-2010 (Anestheric & respiratory equipment- compatibility with oxygen). Certificate of approval for transport ventilator.
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	electrical sockets; Oxygen supply.
8.2	Requirements for sign-off	Supplier to perform installation, safety and operation checks before handover. Local clinical staff to affirm completion of installation.
8.3	Training of staff (medical, paramedical, technicians)	Training of users in operation and basic maintenance shall be provided. Advanced maintenance tasks required shall be documented.
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	3 years
9.2	Maintenance tasks	maintenance manual detailing complete maintaining schedule.
9.3	Service contract clauses, including prices	warranty of three year with free servicing (min. 3) during warranty.

9.4	**Others**	The spare price list of all spares and accessories (including minor) required for maintenance and repairs in future after guarantee / warranty period should be attached.
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	User and maintenance manuals to be supplied in English language. Certificate of calibration and inspection to be provided. List to be provided of equipment and procedures required for local calibration and routine maintenance.
		List to be provided of important spares and accessories, with their part numbers and cost. Contact details of manufacturer, supplier and local service agent to be provided.
10.2	Other accompanying documents	User/Technical/Maintenance manuals to be supplied in English.

INFANT RESUSCITATOR – T PIECE		
1.0	**USE**	
1.1	Clinical purpose	The infant resuscitator is a manually operated, gas powered device intended for controlled and accurate resuscitation of neonates and infants in the clinical environment.
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Manometer	-20 to 80 cm H_2O (mbar)
2.2	Inlet	
2.3	1. Inlet flow range	0 to 15 LPM
2.4	2. Inlet pressure range	3 to 6 bar
2.5	Maximum Pressure Relief.	Factory setting is 40 cm H_2O
2.6	Peak Inspiratory Pressure (PIP)	2 – 40 cm H_2O at 8 L/min
2.7	Positive End Expiratory Pressure (PEEP)	At 6 L/min PEEP = 2 to 5 cm H_2O
		At 8 L/min PEEP = 2 to 6 cm H_2O
		At 10 L/min PEEP = 2 to 8 cm H_2O
2.8	Mounting	Free standing with handle for transport or IV pole mounting
2.9	Dimension (L x W x H)	170 x 110 x 180 mm (approx)
2.10	Weight	2.5 Kg
2.11	Operating Temperature	10 to 40 degree C
2.12	Operating Humidity	up to 90% RH non-condensing
2.13	Storage /Transportation Temperature	10 to 60 degree C
2.14	Storage Humidity	up to 90% RH non-condensing
	The equipment should have dual air supply provision in such a way that it can be connected to centralized gas supply and flow meter as well.	

2.15	There should be a provision to measure the pressure at the Patient end.	
2.16	Should be easy to mount anywhere.	
2.17	Accessories	Disposable T-piece resuscitation circuit: 5 Nos. Reusable T-Piece Resusitation Circuit - 3 Nos 0 Size Mask - 2 No 1 Size Mask - 2 No Oxygen Tube - 1 No
2.18	Certifications	1) Product should be FDA (US) /CE (EU) from autorized third party/ BIS approved and CDSCO & ISO 13485 2) Relevant IEC-60601-Part 1 & 2, certificates by a notified agency IEC-60601-1-2
2.19	Training of staff (medical, paramedical, technicians)	Training of users in operation and basic maintenance shall be provided. Advanced maintenance tasks required shall be documented.
2.0	**WARRANTY AND MAINTENANCE**	
2.1	Warranty	3 years
2.1	Maintenance tasks	maintenance manual detailing complete maintaining schedule.
2.1	Service contract clauses, including prices	warranty of three year with free servicing (min. 3) during warranty.
2.1	Others	The spare price list of all spares and accessories (including minor) required for maintenance and repairs in future after guarantee / warranty period should be attached.
3.0	**DOCUMENTATION**	

3.1	Operating manuals, service manuals, other manuals	User and maintenance manuals to be supplied in English language. Certificate of calibration and inspection to be provided. List to be provided of equipment and procedures required for local calibration and routine maintenance.
3.2		List to be provided of important spares and accessories, with their part numbers and cost. Contact details of manufacturer, supplier and local service agent to be provided.
3.3	Other accompanying documents	User/Technical/Maintenance manuals to be supplied in English.

DEFIBRILLATOR		
1.0	**USE**	
1.1	Clinical purpose	Defibrillation is a common treatment for life-threatening cardiac dysrhythmias, ventricular fibrillation and pulseless ventricular tachycardia. Defibrillation consists of delivering a therapeutic dose of electrical energy to the heart with a device.
1.2	**Used by clinical department/ ward**	NICU and PICU
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	1) The Defibrillator should have biphasic technology having energy selection of 1-200 Joules. 2) The machine should have facility for ECG monitoring, defibrillation, transcutaneous pacing, defibrillation and synchronized cardioversion with CPR feedback to measure chest compression rate and depth in real time and visual on screen feedback. 3) Machine must be with sweep rate 25mm/sec, 50mm/sec. 4) It should be capable of monitoring ECG though ECG cables, electrodes & paddles. 5) Machine should have 24 hour trend storage facility. 6) The machine should have defibrillator facility for neonatal and pediatric patients. 7) The machine should have ECG waveform display with provision for synchronization. 8) The machine should be compact, portable with built in rechargeable

		battery & light weight. 9) The machine should have inbuilt auto & manual recorder for printing ECG trace & stored information. 10) The machine should have user selectable alarms setting. 11) The machine should work on mains (without battery) and on battery as well. 12) The machine should have AED feature as inbuilt with manual override for manual operations.
2.2	User's interface	Manual/Automatic
2.3	Software and/or standard of communication(where ever required)	1)Inbuilt software. 2)Convenient and quick USB interface.
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	NA
3.2	Weight (lbs, kg)	Max 10kg
3.3	Configuration	Should have audio visual alarm for battery low.
3.4	Noise (in dBA)	<60db
3.5	Heat dissipation	1) Should maintain nominal Temp of the control unit and the heat should be disbursed through an cooling mechanism.
3.6	Mobility, portability	Portable
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO_2)**	
4.1	Power Requirements	Input voltage 220 VAC +_10%, 50Hz;
4.2	Battery operated	1) Battery powered, silenceable alarm for power failure. 2) Battery charger to be integral to mains power supply, and to charge battery during mains power

		operation of unit. 3) Internal, replaceable, rechargeable battery allows operation for a minimum of two hour in the event of power failure.
4.3	Tolerance (to variations, shutdowns)	Voltage corrector / stabilizer to allow operation at ± 15% of local rated voltage. Use of SMPS to correct voltage.
4.4	Protection	1) Electrical protection, resettable over current breakers or replaceable fuses (fitted in both live and neutral lines). 2) Leakage
4.5	Power consumption	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories (mandatory, standard, optional); Spare parts (main ones); Consumables / reagents (open, closed system)	1) Machine must be supplied with ECG cable, Battery, Paddle (Adult integrated with paediatric). 2) 3 No. Reusable CPR feedback sensor. 3) 300 gel sheet or pads for monitoring and defibrillation.
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	1) Operating condition: Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90% in ideal circumstances. 2) Storage condition: Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	1) Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover.
7.0	**STANDARDS AND SAFETY**	

7.1	Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type); Local and/or international	1) Product should be FDA (US) /CE (EU) from authorized third party or BIS and manufacturer to be CDSO & ISO 13485 certified 2) Relevant IEC-60601-Part 1 & 2, certificates by a notified agency.
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	1) Availability of 5 amp/15amp socket. 2) Safety and operation check before handover.
8.2	Requirements for sign-off	1) Supplier to perform installation, safety and operation checks before handover. 2) Local clinical staff to affirm completion of installation.
8.3	Training of staff (medical, paramedical, technicians)	1) Training of users on operation and basic maintenance. 2) Advanced maintenance tasks required shall be documented.
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	3 years
9.2	Maintenance tasks	1) Maintenance manual detailing. 2) Complete maintenance schedule.
9.3	Service contract clauses, including prices	1) The spare, accessories & consumables price list required for maintenance and repairs in future after guarantee / warranty period should be attached. 2) Free servicing during warranty period.
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	Should provide 2 sets(hardcopy) of:- 1) User, technical, maintenance and service manuals to be supplied along with machine diagrams. 2) List of equipment and procedures required for local calibration and routine maintenance.

		3) Certificate of calibration from the manufacturer.
10.2	**Recommendations for maintenance**	List of important spares and accessories, with their part numbers and cost.

SUCTION MACHINE		
1.0	**USE**	
1.1	Clinical purpose	To aspirate fluids, secretions, or other foreign materials from a patient's airway by means of suction.
1.2	Used by clinical department/ ward	NICU & PICU
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	0 to - 760 mm Hg ± 10 regulable, 1/2 HP; single phase 1440 RPM motor; flutter free vacuum control knob, ; Wide mouthed 2 x 2 LITRE (light weight, unbreakable and clear) with self sealing bungs and mechanical over flow safety device.
2.2	Settings	Manual
2.3	User's interface	Manual
2.4	Software and/or standard of communication (where ever required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	Max: 43 x 30 x 68 cms
3.2	Weight (lbs, kg)	Max: 27Kg
3.3	Configuration	NA
3.4	Noise (in dBA)	50 dB A ± 3
3.5	heat dissipation	Should maintain upto 36.5 deg temp and the heat disbursed through a exhaust fan
3.6	Mobility, portability	Yes
4.0	**ENERGY SOURCE (Electricity, UPS, solar, gas, water, CO_2)**	
4.1	Power Requirements	220 V, 50 Hz, 2 ± 0.5 Amps, 370 watts for AC
4.2	Battery operated	NA

4.3	Tolerance (to variations, shutdowns)	Voltage corrector/stabilizer to allow operation at ± 30% of local rated voltage. Use of SMPS to correct voltage.
4.4	Protection	Electrical protection by resettable overcurrent breakers or replaceable fuses, fitted in both live and neutral lines.
4.5	Power consumption	should run with other lifesaving equipment's running parallelly.
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories & Spares	Suction Jar & its cap - 600ml - 1 No suctions tube tips a vacuum gauge two sets of moisture & microbial filters and control knob. Neonatal Suction Catheters - 2 No
5.2	Consumables/reagents (open, closed system)	Suction Silicone Tubing:8 mm ID x 2 mtr. (PVC) - 2 Nos 2x2 lt. jar (one set extra)
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere/Ambiance (air conditioning, humidity, dust...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	Complete unit to be easily washable and sterilizable using alcohol and other chemical agents.
7.0	**STANDARDS AND SAFETY**	
7.1	Certifications	FDA/CE and BIS/ISO 13485:2003; IEC 60601-1-8; IEC 60601-1-SER-Ed 1.0-2011; IEC/TRF 60601-1-8-Ed 4.0-2010
8.0	**TRAINING AND INSTALLATION**	

8.1	Pre-installation requirements: nature, values, quality, tolerance	Availability of 15 amp socket, safety and operation checks before handover.
8.2	Requirements for sign-off	Certificate of Calibration and inspection from the factory.
8.3	Training of staff (medical, paramedical, technicians) OPTIONAL (Depending upon scope of work order)	Training of users in operation and basic maintenance shall be provided.
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	3 years
9.2	Maintenance tasks	Maintenance manual detailing complete maintaining schedule.
9.3	Service contract clauses, including prices	Local clinical staff/authorized officer on behalf of purchaser to affirm completion of installation.
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	Advanced maintenance tasks required shall be documented. User, technical and maintenance manuals to be supplied in English/Hindi language along with machine diagrams. List to be provided of equipment and procedures required for local calibration and routine maintenance.
10.2	Other accompanying documents	List to be provided of important spares and accessories, with their part numbers and cost. Certificate of calibration and inspection to be provided.

SELF-INFLATING NEONATAL RESUSCITATION KIT WITH BAG VALVE MASK		
1.0	**USE**	
1.1	Clinical purpose	To provide or assist ventilation in a patient who is apnoeic or exhibits inadequate respiration through manual pulmonar-driven pressure cycle functions.
1.2	Used by clinical department/ ward	It is used in ambulances, intensive care units (ICU), during internal patient transfer, accident and emergency (A&E), and mass casualty incidents (MCI).
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics	1. Manual resuscitator with transparent face-mask. 2. Child models (750ml, 500ml and 280ml bag capacity). 3. Standard 15/22 mm Swivel connector allows connections to all common masks Endotracheal Tubes both for adults and infants. 4. Provision to give supplemented oxygen-by-oxygen reservoir providing 100% oxygen. 5. Non-re breathing valve enabling the patient to inspire oxygen from the reservoir bag. 6. Should be suitable for single hand operate. 7. Should be easy to dissemble for cleaning and disinfection. 8. Should have pressure release valve at 40cm H_2O. 9. Should have silicone oxygen tube 2m length. 10 It should be up-to 40 times autoclavable including bag and washers. 11. The bag should be of silicone material. 12. Self Inflating Resuscitator bag should be of medical grade silicone rubber. 13. The reservoir should be a PVC bag

		of 600ml capacity for 260ml & 500ml bag capacity and 1000ml for 750ml bag capacity.
2.2	Settings	NA
2.3	User's interface	manual
2.4	Software and/or standard of communication(where ever required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	handheld
3.2	Weight (lbs, kg)	light enough to be operated by hand/palm for long duration.
3.3	Configuration	NA
3.4	Noise (in dBA), heat dissipation	NA
3.5	Mobility, portability	handheld
3.6	Others	
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO_2)**	
4.1	Power Requirements	NA
4.2	Battery operated	NA
4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
4.6	Other energy supplies	NA

5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories (mandatory, standard, optional)	Silicon bellow Non Rebreathing Valve 2 meter oxygen tube, Guedel Airway Warm Towel - 2 No Sterile Gloves - 6 No Suction Bulb - 1 No Resuscitation Mask - 2 No
5.2	Spare parts (main ones)	Oxygen Reservoir bag
5.3	Consumables / reagents (open, closed system)	Neonatal Mask of 3 sizes viz 0, 1 and 2 - 1 No each
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	Operating condition: – Capable of operating continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90% in ideal circumstances. – an ambient air velocity is less than 0.3 m/s.
6.2	User's care, Cleaning, Disinfection & Sterility issues	Complete unit to be easily washable and sterilizable using both alcohol and chlorine agents.
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type); Local and/or international	ISO 13485;Manufacturer / supplier should have ISO certificate for quality standard. Should be FDA (US) / CE (EU) approved product or BIS certified Should meet ISO 10651-4 standard requirement
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Supplier to perform installation, safety and operation checks before handover.
8.2	Requirements for sign-off	Certificate of Calibration and inspection from the factory.
8.3	Training of staff (medical, paramedical,	Training of users in operation and

	technicians)	basic maintenance shall be provided
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	1 year.
9.2	Maintenance tasks	maintenance manual detailing complete maintaining schedule
9.3	Service contract clauses, including prices	

CARDIAC MONITOR		
1.0	**USE**	
1.1	Clinical purpose	Designed to continuously measure and display multiple vital physiological parameters of newborn and premature infants, especially those under critical care.
1.2	Used by clinical department/ ward	NICU and PICU
1.3	Overview of functional requirements	Operates from mains voltage or from internal rechargeable battery. Operator can set audio visual alarm levels for low or high levels of each parameter independently. Allows display of single, 3 lead ECG or simultaneous display of at least 5 waves ECG selected from up to 12 points. Display to be digital of all active parameters and trace display for at least three selectable parameters. Continuous display on screen of neonatal or infant ECG, respiration and heart rates, invasive/non-invasive blood pressure, body temperature and SpO2.
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	1. Should have facility for printing ECG at 25mm/sec and 50mm/sec speed. 2. Should have facility for charging from both 12V DC & 220V AC. 3a. Should be supplied with. i. Pulse oximeter probe. ii. ECG cable -12 lead. iii. Temperature probe. iv. NIBP (non-invasive blood pressure) probe All probes should be supplied in 2 pairs, should be re-usable and should include adult, pediatric & neonatal size cuff/leads. The material of the probe should be such that it is non-breakable. 3. Capable of saving data for min 24

		hrs. 4. Rates for consumables should be offered in price bid. 5. Optional item to be quoted : invasive blood pressure-monitoring module complete with reusable transducer.
2.2	Settings	User operated 1mV ECG test marker function required.
2.3	User's interface	Manual (touch screen or remote operated not mandatory).
2.4	Software and/or standard of communication	Audio Visual alarms required: high and low levels for each parameter (operator variable settings), sensor/wire/probe disconnected, low battery.
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	Screen size minimum: 10".
3.2	Weight (lbs, kg)	<6kg.
3.3	Configuration	Case is to be hard and splash proof. Display must allow easy viewing in all ambient light levels. Cable connectors to be designed so as fit correct socket only.
3.4	Noise (in dBA)	<50 dB; Lead disconnection Alarm > 65 dB.
3.5	heat dissipation	Should maitain nominal Temp and the heat should be disbursed through a exhaust cooling fan.
3.6	Mobility, portability	Supplied in protective case for clean storage and safe transport.
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO_2)**	
4.1	Voltage (value, AC or DC, monophase or triphase)	220 to 240V, 50 Hz.

4.2	Battery operated	Battery charger to be integral to mains power supply, and to charge battery during mains power operation of unit.Battery powered, silenceable alarm for power failure.Internal, replaceable, rechargeable battery allows operation for at least one hour in the event of power failure. Battery backup of minimum 100 minutes.
4.3	Tolerance (to variations, shutdowns)	Voltage corrector/stabilizer to allow operation at ± 30% of local rated voltage.
4.4	Protection	Electrical protection provided by fuses in both live and neutral supply lines.
4.5	Power consumption	<120Watt.
4.6	Other energy supplies	Mains cable.
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories & Spares	2 pairs, 12 lead ECG cable. 2 packs of 100 disposable ECG connection electrodes pediatric / Neonatal. Two sets of reusable SpO2 probes ncluding adult, pediatric & neonatal probes. Two sets of NIBP cuffs of each size. Two external skin temperature probes.
5.2	Consumables/reagents (open, closed system)	
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere/Ambiance (air conditioning, humidity, dust ...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	Complete unit to be easily washable and sterilizable using alcohol and other chemical agents.
7.0	**STANDARDS AND SAFETY**	

7.1	Certifications	FDA/CE and BIS/ISO 13485:2003; ; IEC-60601-1-2:2007; IEC 60601-1-8-2006; IEC 60601-1-SER-Ed 1.0-2011; IEC/TRF 60601-1-8 Ed4.0-2010; ISO 13485; ISO 80601-2-56-2009 (Thermometer); ISO 80601-2-61-2011 (SpO2)
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Supplier to perform installation, safety and operation checks before handover.
8.2	Requirements for sign-off	Supplier to perform installation, safety and operation checks before handover Local clinical staff to affirm completion of installation.
8.3	Training of staff (medical, paramedical, technicians)	Training of users in operation and basic maintenance shall be provided.
8.4	Others	
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	3 years
9.2	Maintenance tasks	Maintenance manual detailing complete maintaining schedule
9.3	Service contract clauses, including prices	Warranty of 3 years with free servicing (min. 3/year) during warranty
9.4	Others	The spare price list of all spares and accessories (including minor) required for maintenance and repairs in future after guarantee/warranty period should be attached
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	Advanced maintenance tasks required shall be documented User, technical and maintenance manuals to be supplied in English language. List to be provided of equipment and procedures required for local calibration and routine maintenance

10.2	Other accompanying documents	List to be provided of important spares and accessories, with their part numbers and cost. Certificate of calibration and inspection to be provided.

PULSE OXIMETER – LINE POWERED		
1.0	**USE**	
1.1	**Clinical purpose**	Measurement and display of haemoglobin oxygen saturation (SpO2).
1.2	**Used by clinical department/ ward**	All
1.3	**Overview of functional requirements**	Continuously displays patient oxygen saturation in real time using an external probe on the skin. Contains adjustable alarms to alert when either saturation or heart rate is low. Reusable, sterilisable probes are robust and easily connected and disconnected. Operates from mains voltage or from internal rechargeable battery.
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	a) SpO2 measurement range at least 40-70 and 70 to 99 %, minimum gradation 1%. b) Accuracy of SpO2 better than ± 1% for range 40-70 and better than ± 3% for range 70-99. c) Pulse rate range at least 30 to 240 bpm, minimum gradation 1 bpm. d) Accuracy of pulse rate better than ± 5 bpm. e) Signal strength or quality to be visually displayed. f) Audiovisual alarms required: high and low SpO2 and pulse rate (operator variable settings), sensor disconnected, sensor failure, low battery. g) TFT Screen. h) Plethysmograph (may be in form of bar) display is mandatory.
2.2	Settings	Should have minimum 24 hrs trend memory for SpO2 & PR.
2.3	User's interface	Easily accessible touch button to operate the machine.

2.4	Software and/or standard of communication	in built.
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	NA
3.2	Weight (lbs, kg)	should be less than 5kg
3.3	Configuration	Case is to be hard and splashproof. Display must allow easy viewing in all ambient light levels. Supplied in protective case for clean storage and safe transport.
3.4	Noise (in dBA)	<50dBA
3.5	heat dissipation	Dispersed through exhaust.
3.6	Mobility, portability	Mobile
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO_2)**	
4.1	Voltage (value, AC or DC, monophase or triphase)	220 to 240V, 50 Hz
4.2	Battery operated	Internal, replaceable, rechargeable battery allows operation for at least four hours in the event of power failure. Battery charger to be integral to mains power supply, and to charge battery during mains power operation of unit.
4.3	Tolerance (to variations, shutdowns)	Voltage corrector/stabilizer/UPS to allow operation at ± 30% of local rated voltage.
4.4	Protection	Electrical protection by resettable circuit breakers in both live and neutral supply lines, Alarms should include Power failure.
4.5	Power consumption	50-100 W.
4.6	Other energy supplies	Mains supply cable to be at least 3m in length.
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	

5.1	Accessories (mandatory, standard, optional)	Two reusable probes each for adult, paediatric and infant use, Y Probes with clips for infant use and Forehead SpO2 sensors for detection of low saturation levels (less than 70%)/flex probe with provision of fixation.
5.2	Spare parts (main ones)	Two sets of spare fuses (if non-resettable fuses used).
5.3	Consumables/reagents (open, closed system)	NA
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere/Ambiance (air conditioning, humidity, dust ...)	Operating condition: – Capable of operating continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90% in ideal circumstances.
6.2	User's care, Cleaning, Disinfection & Sterility issues	Cleanable with alcohol or chlorine wipes
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..), Performance and safety standards (specific to the device type);Local and/or international	Should be FDA/CE approved product ISO 80601-2-61-2011: Medical Electrical equipment- part 2-61: Particular requirements for the basic safety snd essential performance of pulse oxymeter. Electrical safety conforms to standards for electrical safety IEC-60601-1, EMC safety confirms to IEC 60601-1-2 standard requirement. Manufacturer/supplier should have ISO 13485 certificate for quality standard.
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Electrical sockets
8.2	Requirements for sign-off	Supplier to perform installation, safety and operation checks before handover. Local clinical staff to affirm completion of installation.

8.3	Training of staff (medical, paramedical, technicians)	Training of users in operation and basic maintenance shall be provided Advanced maintenance tasks required shall be documented.
8.4	Others	
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	3 years
9.2	Maintenance tasks	Maintenance manual detailing complete maintaining schedule.
9.3	Service contract clauses, including prices	Warranty of three year with free servicing (min. 3) during warranty.
9.4	Others	The spare price list of all spares and accessories (including minor) required for maintenance and repairs in future after guarantee/warranty period should be attached.
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	User and maintenance manuals to be supplied in English language. Certificate of calibration and inspection to be provided. List to be provided of equipment and procedures required for local calibration and routine maintenance List to be provided of important spares and accessories, with their part numbers and cost. Contact details of manufacturer, supplier and local service agent to be provided.
10.2	Other accompanying documents	User/Technical/Maintenance manuals to be supplied in English.

NON-INVASIVE BLOOD PRESSURE MONITOR		
1.0	**USE**	
1.1	Clinical purpose	To measure non-invasive blood pressure.
1.2	Used by clinical department/ ward	All
1.4	Overview of functional requirements	
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	Corrosion resistant shock proof body, chrome plated metal/stainless steel pressure control valve, scale 0-300 mm hg. Air release at closed lap with maximum 4mmHg/Minute. Manual setting of deflation possible upto 2/3mm Hg/sec. From 260mmHg. To 15mm Hg in a maxium deflation time of 10 seconds. Gauge's background in white colour. Graduated scale for ever/2mmhg, every 10 units and every 20 units. Nylon straps cuff with pouch, latex bulb with completely chromium plated valve with regulation of vent-hole air by screw valve.
2.2	Settings	The cuff is inflated just to fit in the limb for which an inflation bulb is used to control the air pressure within the cuff.
2.3	User's interface	Manual
2.4	Software and/or standard of communication(where ever required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	The rubber tubes used should have an internal diameter of 3 ± 0.5mm and the external diameter should not be less than 8mm; The dial mano meter with minimum diameter of 160 mm.

3.2	Weight (lbs, kg)	NA
3.3	Configuration	NA
3.4	Noise (in dBA), heat dissipation	NA
3.5	Mobility, portability	Yes
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO_2)**	
4.1	Power Requirements	NA
4.2	Battery operated	NA
4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories (mandatory, standard, optional)	Adult arm cuffs of size medium & large and paediatric & Neonatal size 1 each inflation bulb Tubing
5.2	Spare parts (main ones)	Dial mano meter
5.3	Consumables/reagents (open, closed system)	NA
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere/Ambiance (air conditioning, humidity, dust ...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	NA
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type); Local and/or international	ISO 13485;

8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Supplier to perform safety and operation checks before handover.
8.2	Requirements for sign-off	Certificate of inspection from the factory.
8.3	Training of staff (medical, paramedical, technicians)	Training of users in operation and basic maintenance shall be provided.
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	1 years
9.2	Maintenance tasks	Maintenance manual detailing complete maintaining schedule.
9.3	Service contract clauses, including prices	
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	Should be supplied in English.

INFUSION PUMP		
1.0	**USE**	
1.1	Clinical purpose	An infusion pump infuses fluids, medication or nutrients into a patient's circulatory system. It is generally used intravenously, although subcutaneous, arterial and epidural infusions are occasionally used.
1.2	Used by clinical department/ ward	NICU and PICU
1.3	Overview of functional requirements	Alarms indicate if any error situations occur. The drive arm infuses the medication at a steady, programmed rate.
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Clinical performances	Should accept all internationally produced/marketed bottle and should be able to detect it automatically, Should support the Bolus supply of drug on press of single button, as per need and should be able to preset different range of Bolus supply. Preferably the unit should be of Bottom/side loaded to avoid accidental spilling of drugs and damage to the machine.
2.2	Technical characteristics (specific to this type of device)	1. Flow rate programmable range at least from 0.1 to 200 ml/hr, in steps of 0.1 ml/hr; and at least from 100 to 1200 ml/hr in steps of 1 ml/hr. 2. Saves last infusion rate even when the AC power is switched off. 3. Bolus rate should be programmable to approx. 500 ml, with infused volume display. 4. Selectable occlusion pressure trigger levels selectable from 300, 500 and 900 mmHg. 5. Accuracy of ±2% or better for set parameters. 6. Maximum pressure generated 20 psi. 7. Pause infusion facility required. 8. Self-check carried out on powering

		on. 9. Comprehensive alarm package required including: occlusion alarm, near end of infusion pre-alarm and alarm, volume limit pre-alarm and alarm, low battery pre-alarm and alarm, AC power failure, drive disengaged. 10. It should be open system .
2.3	Settings	Single loadable
2.4	User's interface	Automatic
2.5	Software and/or standard of communication	Inbuilt
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Configuration	Tamper-resistant case made of impact resistant material. Securely mountable on tabletop, IV stand or bed fitting.
3.4	Noise (in dBA)	Noise free
3.5	heat dissipation	
3.6	Mobility, portability	Yes
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO_2)**	
4.1	Voltage (value, AC or DC, monophase or triphase)	220V ± 10%, 50 Hz
4.2	Battery operated	Internal rechargeable battery having a minimum of 2 hours backup
4.3	Tolerance (to variations, shutdowns)	± 10%
4.4	Protection	Battery powered alarm for power failure or disconnection
4.5	Power consumption	NA
4.6	Other energy supplies	NA

5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories (mandatory, standard, optional)	Clamp for mounting pump on IV stand IV Set - 3 Nos
5.2	Spare parts (main ones)	NA
5.3	Consumables/reagents (open, closed system)	NA
5.4	Others	
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere/Ambiance (air conditioning, humidity, dust...)	Operating condition: – Capable of operating continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90% in ideal circumstances.
6.2	User's care, Cleaning, Disinfection & Sterility issues	Capable of cleaning with alcohol or chlorine wipes
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type)	1) FDA (US)/CE (EU) from autorized third party and BIS/ISO 13485. 2) Relevant IEC-60601-Part 1 & 2, certificates by a notified agency.
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Supplier to perform installation, safety and operation checks before handover.
8.2	Requirements for sign-off	As per requirement
8.3	Training of staff (medical, paramedical, technicians)	Training of users in operation and basic maintenance shall be provided.
8.4	Others	
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	3 years
9.2	Maintenance tasks	Advanced maintenance and calibration tasks required shall be documented

9.3	**Service contract clauses, including prices**	1) The spare, accessories & consulables price list required for maintenance and repairs in future after guarantee/warranty period should be attached; 2) Free servicing during warranty period;
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	Should provide 2 sets (hardcopy) of:- 1) User, technical, maintenance and service manuals to be supplied along with machine diagrams; 2) List of equipment and procedures required for local calibration and routine maintenance; 3) Certificate of calibration to be provided by the manufacture;
10.2	Other accompanying documents	List of important spares and accessories, with their part numbers and cost;

SYRINGE PUMP		
1.0	**USE**	
1.1	Clinical purpose	designed to precisely drive the plunger of a syringe down its barrel to infuse a solution when it must be administered with a high degree of volume accuracy and rate consistency.
1.2	Used by clinical department/ ward	NICU/PICU
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Clinical performances	Should accept all internationally produced/marketed syringes and should be able to detect it automatically, Should support the Bolus supply of drug on press of single button, as per need and should be able to preset different range of Bolus supply. Preferably the unit should be of Bottom / side loaded to avoid accidental spilling of drugs and damage to the machine.
2.2	Technical characteristics (specific to this type of device)	1. Flow rate programmable range at least from 0.1 to 200 ml/hr, in steps of 0.1 ml/hr; and at least from 100 to 1200 ml/hr in steps of 1 ml/hr. 2. Saves last infusion rate even when the AC power is switched off. 3. Bolus rate should be programmable to approx.. 500 ml, with infused volume display. 4. Selectable occlusion pressure trigger levels selectable from 300, 500 and 900 mmHg. 5. Must work on commonly available 20, 30 and 50 ml syringes 6. Accuracy of ±2% or better. 7. Maximum pressure generated ≤ 20 psi. 8. Automatic detection of syringe size and proper fixing. 9. Anti-bolus system to reduce pressure on sudden release of occlusion. 10. Pause infusion facility required. 11. Self-check carried out on powering on.

		12. Comprehensive alarm package required including: occlusion alarm, near end of infusion pre-alarm and alarm, volume limit pre-alarm and alarm, low battery pre-alarm and alarm, AC power failure, drive disengaged, syringe loading error, maintenance required. 13. Should include KVO (Keep vein open) enabling feature. 14. It should be an open system compliant.
2.3	Settings	Single loadable with one syringe of minimum 20ml.
2.4	User's interface	Automatic
2.5	Software and/or standard of communication	Inbuilt
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Configuration	Tamper-resistant case made of impact resistant material. Securely mountable on tabletop, IV stand or bed fitting.
3.4	Noise (in dBA)	Noise free
3.5	heat dissipation	
3.6	Mobility, portability	Yes
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO_2)**	
4.1	Voltage (value, AC or DC, monophase or triphase)	220 to 240V, 50 Hz
4.2	Battery operated	Internal rechargeable battery having at 4 to 6 hours backup for 10ml/hr flow rate with 50ml syringe.
4.3	Tolerance (to variations, shutdowns)	10%
4.4	Protection	Battery powered alarm for power failure or disconnection.

4.5	Power consumption	25W
4.6	Other energy supplies	Na
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories (mandatory, standard, optional)	Clamp for mounting pump on IV stand PMO Line - 4 Nos
5.2	Spare parts (main ones)	-
5.3	Consumables / reagents (open, closed system)	Battery, syringe holder
5.4	Others	
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	Operating condition: – Capable of operating continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90% in ideal circumstances.
6.2	User's care, Cleaning, Disinfection & Sterility issues	Capable of cleaning with alcohol or chlorine wipes.
7.0	**STANDARDS AND SAFETY**	
7.1	**Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type)**	CE or FDA certified. Manufacturer / supplier should have ISO 13485 certificate for quality standard. Electrical safety conforms to standards for electrical safety IEC-60601-1, class II. Shall meet IEC 60601-1-2 EMC standard requirements. Certified to IEC-60601-2-24: Particular requirements for the safety of infusion pumps and controllers.
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Supplier to perform installation, safety and operation checks before handover.
8.2	Requirements for sign-off	As per requirement
8.3	Training of staff (medical, paramedical, technicians)	Training of users in operation and basic maintenance shall be provided.

8.4	Others	
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	3 year
9.2	Maintenance tasks	Advanced maintenance and calibration tasks required shall be documented.
9.3	Service contract clauses, including prices	Local clinical staff to affirm completion of installation.
9.4	Others	
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	User, technical and maintenance manuals to be supplied in english language. List to be provided of equipment and procedures required for local calibration and routine maintenance.
10.2	Other accompanying documents	List to be provided of important spares and accessories, with their part numbers and cost. Certificate of calibration and inspection to be provided.

PORTABLE WARMER	
1.0	**USE**
1.1	Specially designed to support/reinforce the new-born during transport, which is bacteria resistant, skin safe, and easy to clean. (Preferably size should be between 520mm x 250mm to 600mm x 300mm)
2.0	**TECHNICAL CHARACTERISTICS**
2.1	Baby should be comfortable and safe away from electricity, hard surfaces or projections.
2.2	Baby wrap should be reusable and easy to sanitize using disinfectants or soap wash.
2.3	Weight of all components should be less than 5kg. Weight of baby-carrying and warming components should be less than 2 kg to allow transport and usage.
2.4	Should consist of Phase Change Material that maintain temperature at 37degC for atleast 4 hours. Size should be between 380mm x 220mm to 400mm x 250mm. (PCM should be certified nontoxic and non-hazardous. Also should ensure safety even in case of accidental damage to product)
2.5	There should be a precision heating mechanism to prevent overheating of warm pack.
2.6	Operating Conditions: Power consumption should be max 15 Watts in ready mode
3.0	**ACCESSORIES**
3.1	Accu Temp heater - 1 No
3.2	Warm pack - 2 No
3.3	Baby wrap - 2
3.4	Power cord

BLOOD GLUCOSE MONITOR		
1.0	**USE**	
1.1	**Clinical purpose**	It intended to be used together for testing, either at the point-of-care or in self-testing by a layperson, for the quantitative measurement of glucose and/ or ketones in a whole blood clinical specimen.
1.2	**Used by clinical department/ ward**	All
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	Should have reading range/linearity from 30 to 600 mg/dl; Should have a maximum reading time of less than 10 seconds; Should use a minimum blood sample less than 1.5µl; Should have a minimum memory of 50 tests; accuracy +/-10% and reproducibility +/-5%; Packing of strips should be such that there are not more than 50 strips/pack. The strips should be readily avalibale throughout the country;
2.2	Settings	Should have automatic code detection facility , display of sugar in Mg/dl and NOT in mili moles.
2.3	User's interface	LCD display
2.4	Software and/or standard of communication (where ever required)	inbulit; .Should have facility to ensure accuracy of measurements.
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	Handheld device
3.2	Weight (lbs, kg)	Handheld device
3.3	Configuration	Electrochemical/colorimetric/color sensing technology.
3.4	Noise (in dBA), heat dissipation	NA
3.5	Mobility, portability	Handheld
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO_2)**	
4.1	Power Requirements	Battery powered
4.2	Battery operated	3-volt lithium coin cell battery or 2 x (AAA) Alkaline Batteries.

4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories & Spare parts	NA
5.2	Consumables/reagents (open, closed system)	Glucose strips(able to use capillary blood samples) with availabilty in local market, shelf life of strips should be 12 months, the cost of strips for the next five years should be declared (for cost comparison)- with use of two strips/ day.
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere/Ambiance (air conditioning, humidity, dust...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	The unit should be cleanable with alcohol.
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type); Local and/or international	Product should be US FDA or CE (EU) or BIS certified and manufacturer should be CDSO & ISO 13485 certified.
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	NA
8.2	Requirements for sign-off	NA
8.3	Training of staff (medical, paramedical, technicians)	Required
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	2 years; shelf life of minimum 12 months for strips from the date of manufacture; strips should work minimum 3 months from opening of pack.
9.2	Maintenance tasks	Should require no routine maintenance.

9.3	Service contract clauses, including prices	Should have life time replacement offer.
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	Required
10.3	Recommendations for maintenance	To Be provided during installation

BILIRUBINOMETER		
1.0	**USE**	
1.1	Clinical purpose	Determining the concentration of bilirubin in the blood or other clinical specimen, most commonly to rapidly assess hyperbilirubinemia in neonates.
1.2	Used by clinical department/ ward	NICU/PICU
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	1) Sample volume of < 100 µL required, automatic calibration facility. 2) Total bilirubin concentration measurable (at least) in range of 0 to 30 mg/dl. 3) Time for total concentration measurement: ≤ 5 seconds. 4) Should have filters: 455 and 575 nm (± 2%). 5) Should have error rate less than 5%. 6) Should have resolution- 0.1 mg/dl. 7) Automatic correction for Hemoglobin. 8) Measuring cell: Direct Hematocrit capillary readings. 9) heparinized hematocrit glass capillary.
2.2	Settings	Method to recalibrate / save current calibration, set sample size.
2.3	User's interface	Manual interface. Backlit display with easy viewing in all ambient light levels.
2.4	Software and/or standard of communication(where ever required)	Inbuilt software. Convenient and quick USB interface.
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	Approx. 110 x 150 x 200 mm.
3.2	Weight (lbs, kg)	5 kg - 15 kgs
3.3	Configuration	(Ex : Compact, modular, to be fixed to walls, ceiling, etc).
3.4	Noise (in dBA)	<60dB

3.5	Heat dissipation	Heat Dissipation: Should maintain nominal temp and the heat should be disbursed through an cooling mechanism.
3.6	Mobility, portability	Easy and safe transport to be possible by hand, stable when tabletop mounted;
4.0	**ENERGY SOURCE (Electricity, Ups, Solar, Gas, Water, CO_2)**	
4.1	Power Requirements	220VAC ± 10%, 50 Hz;
4.2	Battery operated	Yes (optional)
4.3	Tolerance (to variations, shutdowns)	Voltage corrector / stabilizer to allow operation at ± 10% of local rated voltage.
4.4	Protection	NA
4.5	Power consumption	NA
4.6	Other energy supplies	Length of mains power cable should be at least 3 meters.
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories (mandatory, standard, optional)	Hard and splash-proof case to be supplied.
5.2	Spare parts (main ones)	1) Spare/replaceable fuses - 2 sets. 2) Reagents and capillary tubes sufficient for minimum 100 tests. 3) Reagents and consumables per test should be declared.
5.3	Consumables / reagents (open, closed system)	1) Capillary tubes, haemofluorometric reagents (e.g., aqueous cyanide salt with stabilizers, if applicable). 2) Price of all Consumables to be mentioned.
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	1) Operating condition: Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90% in ideal circumstances. 2) Storage condition: Capable of being stored continuously in ambient temperature of 0 to 50 deg C and

		relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover.
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type);Local and/or international	1) Should be CE (EU)/FDA (US) / BIS approved product. 2) Manufacturer / supplier should have ISO 13485 certificate for quality standard and CDSCO approved 3) Should have IEC 61010 certificate.
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Availability of 5Amps electrical socket.
8.2	Requirements for sign-off	1) Supplier to perform installation, safety and operation checks before handover. 2) Local clinical staff to affirm completion of installation.
8.3	Training of staff (medical, paramedical, technicians)	1) Training of users on operation and basic maintenance. 2) Advanced maintenance tasks required shall be documented.
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	3 years
9.2	Maintenance tasks	1) Maintenance manual detailing. 2) Complete maintenance schedule.
9.3	Service contract clauses, including prices	1) The spare price list of all spares and accessories (including minor) required for maintenance and repairs in future after guarantee / warranty period should be attached. 2) Free servicing (min. 2/year) during

		warranty period.

NEONATAL STETHOSCOPE	
1.0	**USE**
1.1	A mechanical listening device designed for listening to sounds from the heart, lungs, and/or gastrointestinal tract. It typically comprises a membrane at the listening head connected by a split "Y" tube to the headgear with ear olives that are placed into the users' ears. Designed specifically to detect higher frequencies which are produced by newborns and infants.
2.0	**TECHNICAL SPECIFICATIONS**
2.1	Double cup chest piece with one diaphragm and one bell cup in zinc alloy.
2.2	Diaphragm Ø: 23 mm; bell Ø: 18 mm.
2.3	Tube treated rubber, PVC, crack resistant.
2.4	Tube impervious to outside noises, guaranteeing full transmission of sound, good auditive quality.
2.5	Tube diameter: outer Ø: 8-10mm, inner Ø: 4.2mm. Tube maximum length 60cm.
2.6	Sensitivity from 3.2dB to 26dB in a range from 50 to 1000Hz for cardiology.
2.7	Sensitivity 8.1dB in a range from 600 Hz to 1,500Hz for pneumology.
2.8	Arms: stainless steel with flexible spring.
2.9	Removable plastic earpieces.
3.0	Latex-free.
3.1	Designed for frequent and easy disassembly and disinfection with hospital-grade products.
4.0	**SUPPLIED WITH**
4.1	Instructions for assembly, use and maintenance in English.
4.2	1 x spare diaphragm.
4.3	1 x set spare earpieces.

5.0	**ESTIMATED LIFE SPAN**
	Five years.
6.0	**WARRANTY**
	Two years.
7.0	**ENVIRONMENTAL CONDITIONS**
	Storage conditions: 0 - 50°C / 85% RH.
	Operating conditions: 10 - 40°C / 85% RH.
8.0	**STANDARDS**
	Product should be US FDA or CE (EU) or BIS certified and manufacturer should be CDSO & ISO 13485 certified.

DIRECT OPHTHALMOSCOPE		
1.0	**USE**	
1.1	**Clinical purpose**	Direct ophthalmoscope is a hand-held and battery powered device containing illumination and viewing optics to examine the cornea, aqueous, lens, vitreous, and the retina of the eye.
1.2	**Used by clinical department/ ward**	NICU & PICU
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	1) Should have on/off button for illumination and battery operated; 2) Should have rotating knob to control the intensity of the ophthalmoscope and should be used with filters that eliminate UV radiation (<400nm) and, whenever possible, filters that eliminate short-wavelength blue light (<420nm); 3) Should have the range of +20 to -20 in single dioptre steps to ensure easy examination of all ocular structures; 4) Should have apertures shape: Large spot, small spot, slit, central net, and red free;
2.2	User's interface	Manual
2.3	Software and/or standard of communication (where ever required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	Max: 50mm x 50mm x 250mm.
3.2	Weight (lbs, kg)	NA
3.3	Configuration	NA
3.4	Noise (in dBA)	NA
3.5	Heat dissipation	NA
3.6	Mobility, portability	Handheld device
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO_2)**	

4.1	Power Requirements	NA
4.2	Battery operated	Yes
4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories (mandatory, standard, optional); Spare parts (main ones); Consumables/reagents (open, closed system)	1) Replacement bulb/illumination source -2 Nos. 2) Storage case (rigid and steady).
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS**	
6.1	Atmosphere/Ambiance (air conditioning, humidity, dust...)	1) Operating condition: Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90% in ideal circumstances. 2) Storage condition: Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover.
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type); Local and/or international	1) Should have IEC 60601-1/IEC 60601-1-2/CE (EU) certificate; 2) Optical radiation hazards with ophthalmoscopes: ISO 10942 or ISO 15004; 3) Manufacturer/supplier should have ISO 13485 certificate for quality standard;
8.0	**TRAINING AND INSTALLATION**	

8.1	Pre-installation requirements: nature, values, quality, tolerance	NA
8.2	Requirements for sign-off	Certificate of calibration and inspection from the manufacturer.
8.3	Training of staff (medical, paramedical, technicians)	1) Training of users on operation and basic maintenance; 2) Advanced maintenance tasks required shall be documented.
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	3 years including bulb.
9.2	Maintenance tasks	1) Maintenance manual detailing; 2) Complete maintenance schedule;
9.3	Service contract clauses, including prices	1) The spare price list of all spares and accessories (including minor) required for maintenance and repairs in future after guarantee/warranty period should be attached; 2) Free servicing (min. 2/year) during warranty period;
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	Should provide 2 sets (hardcopy) of: 1) User, technical, maintenance and service manuals to be supplied along with machine diagrams; 2) List of equipment and procedures required for local calibration and routine maintenance; 3) Certificate of calibration and inspection;
10.2	Other accompanying documents	List of important spares and accessories, with their part numbers and cost;
11.0	**NOTES**	
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided; Any Contract (AMC/CMC/add-hoc) to be declared by the manufacturer;
11.2	Recommendations or warnings	Any warning signs would be adequately

		displayed .

DIGITAL THERMOMETER		
1.0	**USE**	
1.1	Clinical purpose	To measure body temperature
1.2	Used by clinical department/ ward	All
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	1. Range of temperature measurement 32 deg C- 42 deg C (89.60F-109.40F). 2. Can be calibrated in both centigrade and Fahrenheit, but if only one option is available, then Fahrenheit is preferable. 3. Buzzer signal function. 4. Takes 60-90 seconds to measure temperature. 5. Can be used in the armpit/axilla, orally and rectally. 6. Accuracy of temperature ± 0.1deg C and ± 0.2 F.
2.2	User's interface	LCD display
2.3	Software and/or standard of communication (wherever required)	inbuilt
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	NA
3.2	Weight (lbs, kg)	NA
3.3	Configuration	NA
3.4	Noise (in dBA)	NA
3.5	Heat dissipation	NA
3.6	Mobility, portability	Portable

4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO_2)**	
4.1	Power Requirements	As per device
4.2	Battery operated	yes
4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	As per device
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories (mandatory, standard, optional)	NA
5.2	Spare parts (main ones)	NA
5.3	Consumables / reagents (open, closed system)	Batteries
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%.Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	Complete unit to be easily washable and sterilizable using both alcohol and chlorine agents.
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type); Local and/or international	ISO:13485 Manufacturer
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Supplier to perform operation checks before handover.
8.2	Requirements for sign-off	Certificate of inspection from the factory.
8.3	Training of staff (medical, paramedical, technicians)	NA

9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	One yaer
9.2	Maintenance tasks	NA
9.3	Service contract clauses, including prices	NA
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	Required

BABY WEIGHING SCALE		
1.0	**USE**	
1.1	Clinical purpose	To measure body mass of the neonate
1.2	Used by clinical department/ ward	NICU/SNCU
1.3	Overview of functional requirements	
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	1. Tabletop, light and portable. 2. Built in rechargeable battery. 3. Easy to clean baby tray (acrylic). 4. Zero weight adjustment facility. 5. Quick, clear digital read outs. 6. Measurement does not change with position of baby on the pan. 7. Provision to measure the height of the baby in its laying position. 8. Accuracy: 5g, resolution: 1g, limit: 10gm to 15kg.
2.2	Settings	Auto setting to 0.00 once a the machine is switched on or when no external weight has been put on.
2.3	User's interface	LCD/LED display
2.4	Software and/or standard of communication(where ever required)	In built
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	Base: 300mm x 265mm x 85mm ± 20%, Pan: 510mm x 300mm x 85mm (minimum).
3.2	Weight (lbs, kg)	NA
3.3	Configuration	N.A.
3.4	Noise (in dBA)	N.A.
3.5	heat dissipation	NA
3.6	Mobility, portability	portable

4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO_2)**	
4.1	Power Requirements	230 V AC,
4.2	Battery operated	4XAA battery(rechargable) or equivalent; one hour backup.
4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories (mandatory, standard, optional)	NA
5.2	Spare parts (main ones)	NA
5.3	Consumables / reagents (open, closed system)	NA
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	Operating condition: – Capable of operating continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90% in ideal circumstances. – An ambient air velocity less than 0.3 m/s.
6.2	User's care, Cleaning, Disinfection & Sterility issues	Complete unit to be easily washed and disinfected using both alcohol and chlorine agents.
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type); Local and/or international	The Scale should be as per BIS specifications. The scale should have ISI mark ie IS: 2489 Or CE/FDA certified. Should have model approval from Legal Metrology Dept., Govt. of India.
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values,	NA

	quality, tolerance	
8.2	Requirements for sign-off	NA
8.3	Training of staff (medical, paramedical, technicians)	NA
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	one year
9.2	Maintenance tasks	Calibration schedule to be provided.
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	NA
10.2	Other accompanying documents	NA
10.3	Recommendations for maintenance	Cautionary Note: Do not press the weighing pan with your hand. It could damage the load cell system in the weighing machine
	Other Essentials (Accessories, Disposables, Kits) to be quoted from genuine standard manufacturer with relevant ISO 13485 & CDSCO approvals and with standard one-year warranty. The products supplied are mandatory to be compatible with neonatal and child use.	
	The specifications must be furnished along with brochure marked with model number for technical evaluation and approval.	
	At any given point of time the buyer will request for demo of the equipment.	

	Table 13
	List of medical equipment's for Multi stretcher Ambulance.

S. No.		Equipments	Quantity
1	**Medical Equipment**	Defibrillator with AED Pacing	1
2		ECG Machine	1
3		Transport Ventilator Universal (Adult, Pediatric & Neonatal)	1
4		Syringe Pump	1
5		Infusion Pump	1
6		Suction Machine Electrical, Foot Operated & hand operated	1 Each
7		Cardiac Monitor	1
8		Laryngoscope	1
9		BP Instrument Aneroid	1
10		Stethoscope	1
11		Portable handheld Glucometer	1
12		Foetal Doppler	1
13		Nebulizer (Electric)	1
14		Double Head Immobilizers	1
15		Spine Board & Immobilization Devices.	3
16		Cervical collar	3
17		Pneumatic Splints	1
18		Scoop Stretcher	2
19		Resuscitation Kit with Bag Valve Mask - Neonatal & Child	3

20		Resuscitation Kit with Bag Valve Mask - Adult	3
21		Oxygen Cylinders (B & D Type) and Regulator	3 Each
22		Autoloader Stretchers on Trolley	3
23		Canvas Foldable Stretcher	2
24		Flowmeter with Humidifier bottle	3
25	**Other Essentials (Accessories, Disposables, Kits)**	IV Stand Detachable	3
26		Intraosseous (IO) Infusion System	2
27		Foldable wheelchairs with hand break	2
28		(A) Intra Venous Cut Down Set and (C) Suture Kit	1
29		Biohazard Disposal Kits	1
30		Body Bags (for disaster response)	1
31		Extra PPE Kits (for paramedics)	1
32		Basic First Aid Kit – Bandages, antiseptics, gauze, tape	1
33		Safety Restraints	3
34		Supraglottic device (LMA) all sizes	
35		Burn Treatment Kit – Cooling dressings & ointments	1
36	**Fabrication Requirements**	Patient Lifting Devices – Hydraulic stretcher loading	1
37		Blankets and Sheets	2 each
38		Multiple Stretcher Mounts	3 Sets
39		Medical Cabinet	2
40		Oxygen Cylinder Holder	1
41		Mounts for all medical equipment based on design	1

42		IV Hanger	3
43		Suction Canister Holder	1
44		Patient Seat	1
45		Communication Devices	1
46		Navigation and Lighting Equipment	1
47		Electronic Patient Care Record (ePCR) System	1
48		Global Positioning System (GPS) and Navigation System	1
49		Ambulance Power Lift or Winch System	1
50		Patient Identification Tags	Set
51		Storage Compartments	At least 4

Automated External Defibrillator		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	To detect cardiac arrhythmias in a sudden cardiac arrest patient, and then audibly/visually instructs an operator to enable it to activate defibrillation of the heart through application of electrical shocks to the chest surface.
1.2	Used by clinical department/ward	Emergency/ICU/Cardiac care
TECHNICAL		

2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	1. Defibrillator should be bi-phasic and with AED Pacing 2. Should work on Automated external defibrillation mode. Manual selection maximum up to 150J to 200J 3. Should be capable of doing synchronized cardioversion 4. Can be operated from mains as well as battery 5. Should defibrillate through pads 6. Should have charging time of less than 10 seconds for maximum energy with charging indicator 7. Should have two inbuilt batteries capable of usage for at least 120 minutes and/or 30 discharge 8. Detailed audio-visual message guide responder through use of the defibrillator 9. Color Coding for different buttons
2.2	Settings	Automatic
2.3	User's interface	Should have display- LCD
2.4	Software and/or standard of communication (wherever required)	Inbuilt
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	Compact
3.2	Weight (lbs, kg)	<5kg
3.3	Configuration	
3.4	Noise (in dBA), heat dissipation	Audio Visual message in case pads not applied properly
3.5	Mobility, portability	Yes
4.0	**ENERGY SOURCE**	
4.1	Power Requirements	220 to 240V, 50 Hz

4.2	Battery operated	Should have a battery capable of usage for at least 120 minutes and/or 30 discharge
4.3	Tolerance (to variations, shutdowns)	± 10% of input AC
4.4	Protection	Electrical protection by resettable overcurrent breakers or replaceable fuses, fitted in both live and neutral lines
4.5	Power consumption	-
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories & Spares	2 nos of patient cable, 2 sets each adult and pediatric pads
5.3	Consumables / reagents (open, closed system)	-
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	The unit should be cleanable with alcohol
7.0	**STANDARDS AND SAFETY**	
7.1	Certifications	FDA (US) /CE (EU) and BIS/ISO 13485:2003; IEC-60601-1-2
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Supplier to perform installation, safety and operation checks before handover.
8.2	Requirements for sign-off	Certificate of Calibration and inspection from the factory.
8.3	Training of staff (medical, paramedical,	NA

	technicians)	
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	3 years
9.2	Maintenance tasks	Maintenance manual detailing complete maintaining schedule
9.3	Service contract clauses, including prices	Local clinical staff to affirm completion of installation
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	Advanced maintenance tasks required shall be documented User, technical and maintenance manuals to be supplied in english language. List to be provided of equipment and procedures required for local calibration and routine maintenance
10.2	Other accompanying documents	List to be provided of important spares and accessories, with their part numbers and cost. Certificate of calibration and inspection to be provided.
11.0	**NOTES**	
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided
11.2	Recommendations or warnings	List to be provided of important spares and accessories, with their part numbers and cost. Certificate of calibration and inspection to be provided.
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

ECG Machine -12 Channel		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	Continuously detect, measure, and display a patient's electrocardiogram (ECG) through leads and sensors attached to

		the patient.
1.2	Used by clinical department/ward	ALL
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	1. Simultaneous 12 Channel ECG recording with 12 lead simultaneous acquisition 2. Should have a digital display of 12 channel ECG and should have three modes(Automatic, Manual and rhythm). 3. Heart rate measurement range to be at least 30 to 250 bpm, with accuracy better than ± 5 bpm. Heart rate trend display of at least previous 24 hours. 4. Arrhythmia detection facility required; minimum gradation of 1 bpm.
2.2	User's interface	Manual
2.3	Settings	Audiovisual alarms required: high and low heart rate (operator variable settings), cardiac arrhythmia, sensor/wire disconnected, low battery.
2.4	Software and/ or standard of communication(where ver required	In built
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions(metric)	NA
3.2	Weight (lbs, kg)	less than 5 kgs
3.3	Configuration	Case is to be hard and splashproof.
3.4	Noise (in dBA)	<50 dB
3.5	Heat dissipation	Heat Dissipation: Should maintain nominal Temp and the heat should be
3.6	Mobility, portability	Supplied in protective case for clean storage and safe transport.
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 ….)**	

4.1	Power requirements	220 to 240V, 50 Hz
4.2	Battery operated	Battery powered, silenceable alarm for power failure.
4.3	Protection	Voltage corrector/stabilizer to allow operation at ±30% of local rated
4.4	Power consumption	To be specified by vendor.
4.5	Other energy supplies	Mains cable to be at least 3m length.
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories, (mandatory, standard,	12 lead ECG cable.
5.2	Spare parts(main ones)	Two sets of spare fuses (if non-resettable fuses used)
5.3	Consumables/reagents(open, closed	5 tubes electrode gel (if required)
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATIONS**	
6.1	Atmosphere/Ambience (air conditioning, humidity, dust …)	1. Operating Condition: Capable of operating continuously in ambient temperature of 5 to 50 deg C and relative humidity of 15 to 90% in ideal circumstances.
6.2	User's care, Cleaning, Disinfection & Sterility issues	1. Disinfection: Parts of the Device that are designed to come into contact with the patient or the operator should either be capable of easy disinfection or be protected by a single use/disposable cover. 2. Sterilization not required.
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary ...); Performance and safety standards (specific to the device type); Local and/or international	1. Should be FDA/European CE/BIS approved product. 2. Manufacturer should have ISO 13485 certification for quality standards. 3. Electrical safety conforms to the standards for electrical safety IEC 60601-1-General requirements (or equivalent BIS Standard) 4. History of adverse events and actions (Recall/Filed safety correction etc) taken by manufacturer on the product should be made available to procurer. Such information (as and when happen) after commission of product should be continued to be provided to purchaser till manufacturing of same type product is

		curtailed.
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre- installation requirements:	Availability of 5 Amp/15 Amp. Electrical Socket.
8.2	Requirements for sign-off	Supplier to perform installation, safety and operation checks before handover.
8.3	Training of staff (medical, paramedical,	Training of users in operation and basic maintenance shall be provided.
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	3 years, including all spares and calibration.
10.0	**DOCUMENTATION**	
10.1	Operating manuals, set manuals, other manuals	Should provide 2 sets(hard copy and soft copy) of: 1. User, technical and maintenance manuals should be supplied in English/Hindi/Regional language along with machine diagrams. 2. List of equipment and procedures required for local calibration and routine maintenance. 3. Service and operation manuals (original and copy) to be provided. 4. Advanced maintenance tasks documentation. 5. Certificate of calibration and inspection. 6. Satisfactory certificate for any existing installation from government hospital.
10.2	Other accompanying documents	List of essential spares and accessories, with their part number and cost;

Date:		2016
Done by : (name / institution)		Dte. GHS
NAME AND CODING		
GMDN name		Transport pneumatic high-frequency ventilator
GMDN code(s)		CT2175
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	To provide automated, alveolar ventilatory support for patients during inter - hospital or intra - hospital transport, and in emergency situations.
1.2	Used by clinical department/ward	Emergency /Critical Care
TECHNICAL		
2.0	TECHNICAL CHARACTERISTICS	
2.1	Technical characteristics (specific to this type of device)	1. Mountable transport Ventilator (Adult & Pediatrics) 2. Invasive Modes (CMV and SIMV) and Non-Invasive Mode (CPAP) 3. Tidal Volume: 50 - 1500 ml 4. Respiration Rate upto 30 bpm 5. Apnoeic Ventilation: 10 - 60 seconds with alarm 6. There should be two FiO2 settings ranging from 21% to 100%. Setting of 100% FiO2 is mandatory. 7. PEEP 0 - 20 cm of water 8. Trigger Sensitivity – Pressure 9. Flow Range: 1 - 120 Lts/min 10. The associated cylinder(to be supplied along with the machines) should be such that it could be locally filled. 11. Oxygen Cylinder connector (to be supplied along with the machines) should be compatible with ventilator

		12. Audio visual alarm for disconnection and high pressure
2.2	User's interface	Automatic
2.3	Software and/or standard of communication (where ever required)	inbuilt
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	NA
3.2	Weight (lbs, kg)	<8kgs
3.3	Configuration	NA
3.4	Noise (in dBA), heat dissipation	<60dB; Alarm > 65dB
3.5	Mobility, portability	Yes
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2)**	
4.1	Power Requirements	220 to 240V, 50 Hz; electricity and battery driven
4.2	Battery operated	Atleast 6 hours battery backup
4.3	Tolerance (to variations, shutdowns)	± 10% of input
4.4	Protection	OVP, earth leakage protection
4.5	Power consumption	<140Watt
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories & Spares	Full face mask, 4 reusable breathing circuit of silicone material (2 for adults and 2 for pediatrics), carry bag, filters
5.2	Consumables / reagents (open, closed system)	battery, leakage adapter
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	

6.1	Atmosphere / Ambiance (air conditioning, humidity, dust...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	The unit should be cleanable with alcohol
7.0	**STANDARDS AND SAFETY**	
7.1	Certifications	FDA (US) /CE (EU) and BIS/ISO 13485:2003; IEC-60601-1-2; ISO 15001-2010 (Anesthetic & respiratory equipment- compatibility with oxygen) Certificate of approval for transport ventilator
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	electrical sockets; Oxygen supply
8.2	Requirements for sign-off	Supplier to perform installation, safety and operation checks before handover Local clinical staff to affirm completion of installation
8.3	Training of staff (medical, paramedical, technicians)	Training of users in operation and basic maintenance shall be provided Advanced maintenance tasks required shall be documented
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	3 years
9.2	Maintenance tasks	Maintenance manual detailing complete maintaining schedule
9.3	Service contract clauses, including prices	warranty of three year with free servicing (min. 3) during warranty
9.4	Others	The spare price list of all spares and accessories (including minor) required for maintenance and repairs in future after guarantee / warranty period should be attached
10.0	**DOCUMENTATION**	

10.1	Operating manuals, service manuals, other manuals	User and maintenance manuals to be supplied in English language. Certificate of calibration and inspection to be provided. List to be provided of equipment and procedures required for local calibration and routine maintenance List to be provided of important spares and accessories, with their part numbers and cost. Contact details of manufacturer, supplier and local service agent to be provided
10.2	Other accompanying documents	User/Technical/Maintenance manuals to be supplied in English
11.0	**NOTES**	
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided
11.2	Recommendations or warnings	Any warning signs would be adequately displayed
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Transport Ventilator (neonatal & Pediatrics)		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	To provide automated, alveolar ventilatory support for patients during inter - hospital or intra - hospital transport, and in emergency

		situations.
1.2	Used by clinical department/ward	Emergency /Critical Care
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	1. Mountable transport ventilator (Neonate/Pediatric) 2. Invasive Modes (CMV and SIMV) and Non-invasive Mode (CPAP) 3. Pressure controlled - Pressure upto 15mmHg 4. Respiration Rate upto 40/ mins 5. There should be two FiO2 setting range between 21% and 100%. Setting 100% FiO2 should be mandatory 6. PEEP 0-20 cm of water 7. Trigger sensitivity - Pressure 8. The associated cylinder(to be supplied along with the machines) should be such that it could be locally filled 9. Oxygen Cylinder connector(to be supplied along with the machines) should be compatible with ventilator. 10. Audio and visual alarm for disconnection and high pressure
2.2	User's interface	Automatic
2.3	Software and/or standard of communication (where ever required)	inbuilt
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	NA
3.2	Weight (lbs, kg)	<8kgs
3.3	Configuration	NA
3.4	Noise (in dBA), heat dissipation	Should have audio visual alarm for disconnection and high pressure

3.5	Mobility, portability	Yes
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2)**	
4.1	Power Requirements	220 to 240V, 50 Hz; electricity and battery driven
4.2	Battery operated	with at least 6 hours battery backup
4.3	Tolerance (to variations, shutdowns)	± 10% of input
4.4	Protection	OVP, earth leakage protection
4.5	Power consumption	<140Watt
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories & Spares	full face mask, 4 reusable breathing circuit of silicone material(2 for pediatiric and 2 for neonates), carry bag, ventilator connecting tubes
5.2	Consumables / reagents (open, closed system)	battery, leakage adapter
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	The unit should be cleanable with alcohol
7.0	**STANDARDS AND SAFETY**	
7.1	Certifications	FDA (US) /CE (EU) and BIS/ISO 13485:2003; IEC-60601-1-2; ISO 15001-2010 (Anesthetic & respiratory equipment- compatibility with oxygen) Certificate of approval for transport ventilator
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	electrical sockets; Oxygen supply
8.2	Requirements for sign-off	Supplier to perform installation, safety and operation checks before

		handover Local clinical staff to affirm completion of installation
8.3	Training of staff (medical, paramedical, technicians)	Training of users in operation and basic maintenance shall be provided Advanced maintenance tasks required shall be documented
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	3 years
9.2	Maintenance tasks	Maintenance manual detailing complete maintaining schedule
9.3	Service contract clauses, including prices	warranty of three year with free servicing (min. 3) during warranty
9.4	Others	The spare price list of all spares and accessories (including minor) required for maintenance and repairs in future after guarantee / warranty period should be attached
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	User and maintenance manuals to be supplied in English language. Certificate of calibration and inspection to be provided. List to be provided of equipment and procedures required for local calibration and routine maintenance List to be provided of important spares and accessories, with their part numbers and cost. Contact details of manufacturer, supplier and local service agent to be provided
10.2	Other accompanying documents	User/Technical/Maintenance manuals to be supplied in English
11.0	**NOTES**	
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided
11.2	Recommendations or warnings	Any warning signs would be adequately displayed
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Syringe Pump		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	designed to precisely drive the plunger of a syringe down its barrel to infuse a solution when it must be administered with a high degree of volume accuracy and rate consistency
1.2	Used by clinical	Intensive care unit (ICU), radiology department, orthopaedics,

	department/ward	emergencies, ...)
1.3	Overview of functional requirements	A syringe containing medication is securely mounted on the drive arm. Alarms indicate if any error situations occur. The drive arm infuses the medication at a steady, programmed rate.
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	1. Flow rate programmable range at least from 1 to 100 ml/hr, in steps of 0.1 ml/hr; with bolus rate from 200 to 999 ml/hr in steps of 1 ml/hr 2. Saves last infusion rate even when the AC power is switched off 3. Bolus rate should be programmable, with infused volume display. 4. Must work on commonly available 5, 10, 20 and 50 ml syringes 5. Accuracy of ±2% or better. 6. Maximum pressure generated $\leq$ 20 psi 7. Automatic detection of syringe size and proper fixing. Must provide alarm for wrong loading of syringe viii. Anti-bolus system to reduce pressure on sudden release of occlusion. 8. Pause infusion facility required 9. Self-check carried out on powering on 10. Comprehensive alarm package required including: occlusion alarm, near end of infusion pre-alarm and alarm, volume limit pre-alarm and alarm, low battery pre-alarm and alarm, AC power failure alarm, drive disengaged alarm, syringe loading error alarm 11. Should be front loading with wall mounting facility 12. waterproof surface
2.2	Settings	NA
2.3	User's interface	Automatic
2.4	Software and/or standard	Inbuilt

	of communication	
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	max spec: 120 x 100 x 40mm
3.2	Weight (lbs, kg)	<500gm
3.3	Configuration	Tamper-resistant case made of impact resistant material Securely mountable on tabletop, IV stand or bed fitting proof water
3.4	Noise (in dBA)	<50 dB
3.5	heat dissipation	NA
3.6	Mobility, portability	Yes
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2)**	
4.1	Voltage (value, AC or DC, monophase or triphase)	220 to 240V, 50 Hz
4.2	Battery operated	Internal rechargeable battery having at least 5 hours backup for 10ml/hr flow rate with 50ml syringe
4.3	Tolerance (to variations, shutdowns)	Voltage corrector / stabilizer to allow operation at ± 30% of local rated voltage.
4.4	Protection	Battery powered alarm for power failure or disconnection; Electrical protection provided by fuses in both live and neutral supply lines;
4.5	Power consumption	Should easily run in an ambulance with other life saving equipments
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories & Spares	Clamp for mounting pump on IV stand
5.2	Consumables / reagents (open, closed system)	Battery, syringe holder
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ..)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.

		Enclosure to protect against water ingress;
6.2	User's care, Cleaning, Disinfection & Sterility issues	The unit should be cleanable with alcohol
7.0	**STANDARDS AND SAFETY**	
7.1	Certifications	FDA (US) /CE (EU) and BIS/ISO 13485:2003; IEC-60601-1 including particular requirements for the safety of infusion pumps and controllers;
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Supplier to perform installation, safety and operation checks before handover.
8.2	Requirements for sign-off	As per requirement
8.3	Training of staff (medical, paramedical, technicians)	Training of users in operation and basic maintenance shall be provided
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	3 years
9.2	Maintenance tasks	Advanced maintenance and calibration tasks required shall be documented
9.3	Service contract clauses, including prices	Local clinical staff to affirm completion of installation
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	User, technical and maintenance manuals to be supplied in english language. List to be provided of equipment and procedures required for local calibration and routine maintenance
10.2	Other accompanying documents	List to be provided of important spares and accessories, with their part numbers and cost. Certificate of calibration and inspection to be provided.
11.0	**NOTES**	
11.1	Other information	Contact details of manufacturer, supplier and local service agent to be provided

11.2	Recommendations or warnings	NA
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Suction pump portable electric		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	To aspirate fluids, secretions, or other foreign materials from

		a patient's airway by means of suction.
1.2	Used by clinical department/ward	All
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	0 to - 760 mm Hg ± 10 regulable, 1/2 HP; single phase 1440 RPM motor; flutter free vacuum control knob,; Wide mouthed 2 x 2 LITRE (light weight, unbreakable and clear) with self sealing bungs and mechanical over flow safety device.
2.2	Settings	Manual
2.3	User's interface	Manual
2.4	Software and/or standard of communication (where ever required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	Max: 43 x 30 x 68 cms
3.2	Weight (lbs, kg)	Max: 2.7Kg (with jar)
3.3	Configuration	NA
3.4	Noise (in dBA)	50 dB A ± 3
3.5	heat dissipation	Should maintain upto 36.5 deg temp and the heat disbursed through an exhaust fan
3.6	Mobility, portability	Yes
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2)**	
4.1	Power Requirements	220 V, 50 Hz, 2 ± 0.5 Amps, 370 watts for AC and DC compatible with ambulance power supply with other life saving equipments running
4.2	Battery operated	NA

4.3	Tolerance (to variations, shutdowns)	Voltage corrector / stabilizer to allow operation at ± 30% of local rated voltage. Use of SMPS to correct voltage
4.4	Protection	Electrical protection by resettable over current breakers or replaceable fuses, fitted in both live and neutral lines
4.5	Power consumption	should run with other life saving equipments running parallelly in the vehicle
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories & Spares	collection container & its cap, suctions tube tips, a vacuum gauge, two sets of moisture & microbial filters and control knob
5.2	Consumables / reagents (open, closed system)	SiliconeTubing:8 mm ID x 2 mtr (PVC), 2x2 lt jar (one set extra)
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	Complete unit to be easily washable and sterilizable using alcohol and chemical agents.
7.0	**STANDARDS AND SAFETY**	
7.1	Certifications	FDA(US) /CE(EU) and BIS/ISO 13485:2003; IEC 60601-1
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Availability of 15-amp socket, safety and operation checks before handover. Compatible with ambulance electrical systems
8.2	Requirements for sign-off	Certificate of Calibration and inspection from the factory.
8.3	Training of staff (medical, paramedical, technicians) OPTIONAL (Depending upon scope	Training of users in operation and basic maintenance shall be provided

	of work order)	
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	3 years
9.2	Maintenance tasks	Maintenance manual detailing complete maintaining schedule
9.3	Service contract clauses, including prices	Local clinical staff / authorized officer on behalf of purchaser to affirm completion of installation
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	Advanced maintenance tasks required shall be documented in English and/or Hindi User, technical and maintenance manuals to be supplied in English/Hindi language along with machine diagrams. List to be provided of equipment and procedures required for local calibration and routine maintenance
10.2	Other accompanying documents	List to be provided of important spares and accessories, with their part numbers and cost. Certificate of calibration and inspection to be provided.
11.0	**NOTES**	
11.1	Service Support Contact details (Hierchy Wise; including a toll free/landline number)	Any Contract (AMC/MC/ad-hoc) to be declared by the manufacturer
11.2	Recommendations or warnings	Any recommendations for best use and supplementary warning for safety should be declared
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Suction Pump, foot operated

GENERAL		
USE		
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	**Technical characteristics** **(specific to this type of device)**	0 to - 600 mmHg +-10mm regulable, flutter free, vacuum control knob
2.2	**Settings**	Manual
2.3	**User's interface**	Manual
2.4	**Software and/or standard of communication (where ever required)**	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	**Dimensions (metric)**	NA
3.2	**Weight (lbs, kg)**	2.5kg max
3.3	**Configuration**	NA
3.4	**Noise (in dBA)**	NA
3.5	**heat dissipation**	NA
3.6	**Mobility, portability**	Yes
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 .....)**	
4.1	**Power Requirements**	NA
4.2	**Battery operated**	NA
4.3	**Tolerance (to variations, shutdowns)**	NA
4.4	**Protection**	NA
4.5	**Power consumption**	NA
4.6	**Other energy supplies**	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	

5.1	**Accessories & spare parts**	collection bottles, clear unbreakable jar (one set extra)
5.2	**Consumables / reagents (open, closed** **system)**	silicon tubing - two sets
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	**Atmosphere / Ambiance (air conditioning, humidity, dust ...)**	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	**User's care, Cleaning,** **Disinfection & Sterility issues**	Complete unit to be easily washable and sterilizable using both alcohol and chemical agents.
7.0	**STANDARDS AND SAFETY**	
7.1	**Certifications**	FDA(US)/CE (EU) and BIS/ISO 13485:2003; ISO 10079-2-2014
8.0	**TRAINING AND INSTALLATION**	
8.1	**Pre-installation requirements: nature,**	NA
	values, quality, tolerance	
8.2	**Requirements for sign-off**	NA
8.3	**Training of staff (medical, paramedical, technicians)** **OPTIONAL (Depending upon scope of work order)**	Training of users in operation and basic maintenance shall be provided
9.0	**WARRANTY AND MAINTENANCE**	
9.1	**Warranty**	3 years
9.2	**Maintenance tasks**	Maintenance manual detailing complete maintaining schedule
9.3	**Service contract clauses, including prices**	Local clinical staff / authorized officer on behalf of purchaser to affirm completion of installation
10.0	**DOCUMENTATION**	

10.1	**Operating manuals, service manuals, other manuals**	Advanced maintenance tasks required shall be documented User, technical and maintenance manuals to be supplied in English/Hindi language along with machine diagrams. List to be provided of equipment and procedures required for local calibration and routine maintenance
10.2	**Other accompanying documents**	List to be provided of important spares and accessories, with their part numbers and cost. Certificate of calibration and inspection to be provided.
11.0	**NOTES**	
11.1	**Service Support Contact details (Hierarchy Wise; including a toll free/landline number)**	NA
11.2	**Recommendations or warnings**	Any recommendations for best use and supplementary warning for safety should be declared
11.3	**Temperature Range**	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Suction Pump, hand operated	
GENERAL	
1.0	**USE**

1.1	**Clinical purpose**	to aspirate fluids, secretions, or other foreign materials from a patient's airway by means of suction.
		TECHNICAL
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	**Technical characteristics (specific to this type of device)**	0 to - 600 mmHg +-10mm regulable, flutter free, vacuum control knob
2.2	**Settings**	Manual
2.3	**User's interface**	Manual
2.4	**Software and/or standard of communication (where ever required)**	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	**Dimensions (metric)**	NA
3.2	**Weight (lbs, kg)**	2.5kg max
3.3	**Configuration**	NA
3.4	**Noise (in dBA)**	NA
3.5	**heat dissipation**	NA
3.6	**Mobility, portability**	Yes
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2)**	
4.1	**Power Requirements**	NA
4.2	**Battery operated**	NA
4.3	**Tolerance (to variations, shutdowns)**	NA
4.4	**Protection**	NA

4.5	**Power consumption**	NA
4.6	**Other energy supplies**	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	**Accessories & spare parts**	collection bottles, clear unbreakable jar (one set extra)
5.2	**Consumables / reagents** **(open, closed system)**	silicon tubing- two sets
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	**Atmosphere / Ambiance (air conditioning, humidity, dust** **...)**	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	**User's care, Cleaning, Disinfection & Sterility issues**	Complete unit to be easily washable and sterilizable using both alcohol and chemical agents.
7.0	**STANDARDS AND SAFETY**	
7.1	**Certifications**	FDA(US)/CE(EU) and BIS/ISO 13485:2003; ISO 10079-2-2014
8.0	**TRAINING AND INSTALLATION**	
8.1	**Pre-installation requirements: nature, values, quality, tolerance**	NA
8.2	**Requirements for sign-off**	NA
8.3	**Training of staff (medical, paramedical, technicians) OPTIONAL (Depending upon** **scope of work order)**	Training of users in operation and basic maintenance shall be provided
9.0	**WARRANTY AND MAINTENANCE**	

9.1	**Warranty**	3 years
9.2	**Maintenance tasks**	maintenance manual detailing complete maintaining schedule
9.3	**Service contract clauses, including prices**	Local clinical staff / authorized officer on behalf of purchaser to affirm completion of installation
10.0	**DOCUMENTATION**	
10.1	**Operating manuals, service manuals, other manuals**	Advanced maintenance tasks required shall be documented User, technical and maintenance manuals to be supplied in English/ Hindi language along with machine diagrams. List to be provided of equipment and procedures required for local calibration and routine maintenance
10.2	**Other accompanying documents**	List to be provided of important spares and accessories, with their part numbers and cost. Certificate of calibration and inspection to be provided.
11.0	**NOTES**	
11.1	**Service Support Contact details (Hierchy Wise; including a toll free/landline number)**	NA
11.2	**Recommendations or warnings**	Any recommendations for best use and supplementary warning for safety should be declared
11.3	**Temperature Range**	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Monitor
GENERAL

1.0	**USE**	
1.1	**Clinical purpose**	Designed to continuously measure and display multiple vital physiological parameters
1.2	**Used by clinical department/ward**	All
	TECHNICAL	
2.0	TECHNICAL CHARACTERISTICS	
2.1	**Technical characteristics (specific to this type of device)**	Should have facility for printing ECG at 25mm/sec and 50mm/sec speed. 1. Should have facility for charging from both 12V DC & 220V AC. 2. Should be supplied with a. Pulse oximeter probe (adult and paediatric) b. ECG cable -12 lead c. Temperature probe d. NIBP (non-invasive blood pressure) cuffs 3. All probes should be supplied in 2 pairs, should be re-usable and should include adult, pediatric & neonatal size cuff/leads. The material of the probe should be such that it is non-breakable 4. Capable of saving data for minimum of 24 hrs 5. Prices for consumables should be offered in financial bid 6. The monitor should have facility for transmission of data from ambulance to a receiving station (desirable and NOT Mandatory, to be quoted separately) 7. Material of probe should be non-biodegradable 8. Should also have wall mounting facility available
2.2	**Settings**	User operated 1mV ECG test marker function required
2.3	**User's interface**	Manual
2.4	**Software and/or standard of**	Audio Visual alarms required: high and low levels for each parameter (operator variable settings), sensor / wire / probe disconnected, low

	communication	battery
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	**Dimensions (metric)**	Screen size minimum: 10" or more
3.2	**Weight (lbs, kg)**	<6kg.
3.3	**Configuration**	Case is to be hard and splash proof. Display must allow easy viewing in all ambient light levels.Cable connectors to be designed so as fit correct socket only
3.4	**Noise (in dBA)**	<50 dB; Lead disconnection Alarm > 65 dB
3.5	**heat dissipation**	Should maitain nominal Temp and the heat should be disbursed through a exhaust cooling fan
3.6	**Mobility, portability**	Supplied in protective case for clean storage and safe transport
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2.....)**	
4.1	**Voltage (value, AC or DC, monophase or triphase)**	220 to 240V, 50 Hz
4.2	**Battery operated**	Battery charger to be integral to mains power supply, and to charge battery during mains power operation of unit. Battery powered, silenceable alarm for power failure. Internal, replaceable, rechargeable battery allows operation for at least one hour in the event of power failure.
4.3	**Tolerance (to variations, shutdowns)**	Voltage corrector / stabilizer to allow operation at ± 30% of local rated voltage.
4.4	**Protection**	Electrical protection provided by fuses in both live and neutral supply lines
4.5	**Power consumption**	<120Watt Compatible with electrical system of the ambulance; should be able to perform with other life saving equipments running
4.6	**Other energy supplies**	Mains cable
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	

5.1	**Accessories & Spares**	2 pairs, 12 lead ECG cable. 2 packs of 100 disposable ECG connection electrodes. Two sets of reusable SpO2 probes including adult, paediatric & neonatal probes. two sets of NIBP cuffs of each size(adult, paediatric and neonatal).Two external skin temperature probes
5.2	**Consumables / reagents** **(open, closed system)**	
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	**Atmosphere / Ambiance (air conditioning, humidity, dust ...)**	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	**User's care, Cleaning, Disinfection & Sterility issues**	The unit should be cleanable with alcohol
7.0	**STANDARDS AND SAFETY**	
7.1	**Certifications** FDA (US) /CE	(EU) and BIS/ISO 13485:2003; IEC-60601-1-2; ISO 80601-2-56-2009 (Thermometer); ISO 80601-2-61-2011 (SpO2)
8.0	**TRAINING AND INSTALLATION**	
8.1	**Pre-installation requirements: nature, values, quality, tolerance**	Supplier to perform installation, safety and operation checks before handover.
8.2	**Requirements for sign-off**	Supplier to perform installation, safety and operation checks before handover Local clinical staff to affirm completion of installation
8.3	**Training of staff (medical, paramedical, technicians)**	Training of users in operation and basic maintenance shall be provided.
8.4	**Others**	
9.0	**WARRANTY AND MAINTENANCE**	

9.1	**Warranty**	3 years
9.2	**Maintenance tasks**	Maintenance manual detailing complete maintaining schedule
9.3	**Service contract clauses, including prices**	warranty of 3 years with free servicing (min. 3/year) during warranty
9.4	**Others**	The spare price list of all spares and accessories (including minor) required for maintenance and repairs in future after guarantee / warranty period should be attached
10.0	**DOCUMENTATION**	
10.1	**Operating manuals, service manuals, other manuals**	Advanced maintenance tasks required shall be documented User, technical and maintenance manuals to be supplied in English language. List to be provided of equipment and procedures required for local calibration and routine maintenance
10.2	**Other accompanying** **documents**	List to be provided of important spares and accessories, with their part numbers and cost. Certificate of calibration and inspection to be provided.
11.0	**NOTES**	
11.1	**Other information**	Contact details of manufacturer, supplier and local service agent to be provided
11.2	**Recommendations or warnings**	Any warning signs would be adequately displayed
11.3	**Temperature Range**	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Laryngoscope
GENERAL

1.0	**USE**	
1.1	**Clinical purpose**	For viewing vocal folds and glottis. Surgical and mechanical ventilation/intubation
1.2	**Used by clinical department/ward**	O.T/ ICU / NICU/ Casualty
1.3	**Overview of functional requirements**	A light source on or via the blade illuminates the larynx to allow viewing and tube passage. The unit is handheld with internal batteries and has interchangeable, rigid blades of different sizes.
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	**Technical characteristics (specific to this type of device)**	Laryngoscope should be reusable using the latest LED technology. The main body of the handle should incorporate an excellent grip even wearing a glove. The unit should allow the blade (macintosh) to be inserted easily & should provide a positive locking mechanism when moved in to the closed position.
2.2	**Settings**	NA
2.3	**User's interface**	Manual
2.4	**Software and/or standard of communication (wherever required)**	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	**Dimensions (metric)**	NA
3.2	**Weight (lbs, kg)**	Light weight (upto 500 gms including blade, handle and battery)
3.3	**Configuration**	Handheld unit, single piece when in use; External material to be of rust proof metal, On/off switch to be robust and easy to use; macintosh blades to be surgical grade stainless steel; Supplied in protective, enclosable case;
3.4	**Noise (in dBA), heat dissipation**	NA
3.5	**Mobility, portability**	Yes

3.6	**Others**	storage box should be provided
4.0	ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 .....)	
4.1	**Power Requirements**	Battery
4.2	**Battery operated**	Internal batteries rechargeable Battery charger , Battery compartment (if reusable's) to be sealed against liquid ingress, yet easily opened.
4.3	**Tolerance (to variations, shutdowns)**	NA
4.4	**Protection**	NA
4.5	**Power consumption**	3V lithium battery; 2nos.
4.6	**Other energy supplies**	
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	**Accessories (mandatory, standard, optional)**	Batteries, blades of all sizes 0,1,2,3,4,5
5.2	**Spare parts (main ones)**	Handle
5.3	**Consumables / reagents (open, closed system)**	3LED should be given as spare
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	**Atmosphere / Ambiance (air conditioning, humidity, dust ...)**	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%. Liquid splash resistant Blades should be autoclavable
6.2	**User's care, Cleaning, Disinfection &**	Complete unit to be easily washable and sterilizable using both alcohol and chemical agents.

	Sterility issues	
7.0	**STANDARDS AND SAFETY**	
7.1	**Certificates**	US FDA/European CE and BIS/ISO 13485
7.2	**Local and/or international**	Manufacturer / supplier should have ISO certificate for quality standard.
8.0	**TRAINING AND INSTALLATION**	
8.1	**Pre-installation requirements: nature, values, quality, tolerance**	NA
8.2	**Requirements for sign-off**	NA
8.3	**Training of staff (medical, paramedical, technicians)**	NA
9.0	**WARRANTY AND MAINTENANCE**	
9.1	**Warranty**	3 years ; LED upto 6 months
9.2	**Maintenance tasks**	NA
9.3	**Service contract clauses, including prices**	NA
10.0	**DOCUMENTATION**	
10.1	**Operating manuals, service manuals, other manuals**	User, technical and maintenance manuals to be supplied in English language along with machine diagrams. List to be provided for procedures required for routine maintenance
10.2	**Other accompanying documents**	NA
11.0	**NOTES**	
11.1	**Service Support Contact details**	NA

	(Hierchy Wise; including a toll free/landline number)	
11.2	**Recommendations or warnings**	Any recommendations for best use and supplementary warning for safety should be declared
11.3	**Temperature Range**	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

BP Instrument Aneroid
GENERAL

1.0	**USE**	
1.1	**Clinical purpose**	to measure noninvasive blood pressure
1.2	**Used by clinical department/ward**	All
1.3	**Overview of functional requirements**	
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	**Technical characteristics (specific to this type of device)**	Scale 0-300 mm hg. Air release at closed lap with maximum 4mmHg/Minute. Manual setting of deflation possible upto 2/3mm Hg/sec. From 260mmHg. To 15mm Hg in a maximum deflation time of 10 seconds. Gauge's background in white colour. Graduated scale for ever/ 2mmhg, every 10 units and every 20 units. Nylon straps cuff with pouch, latex bulb with completely chromium plated valve with regulation of vent-hole air by screw valve. Additional provision of panel dial with standard size (diameter) of the dial
2.2	**Settings**	The cuff is inflated just to fit in the limb for which an inflation bulb is used to control the air pressure within the cuff.
2.3	**User's interface**	manual
2.4	**Software and/or standard of communication(where ever required)**	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	**Dimensions (metric)**	The rubber tubes used should have an internal diameter of 3 ± 0.5mm and the external diameter should not be less than 8mm; The dial mano meter with minimum diameter of 160 mm
3.2	**Weight (lbs, kg)**	NA

3.3	**Configuration**	NA
3.4	**Noise (in dBA), heat dissipation**	NA
3.5	**Mobility, portability**	Yes
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2)**	
4.1	**Power Requirements**	NA
4.2	**Battery operated**	NA
4.3	**Tolerance (to variations, shutdowns)**	NA
4.4	**Protection**	NA
4.5	**Power consumption**	NA
4.6	**Other energy supplies**	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	**Accessories (mandatory, standard, optional)**	one extra pair of adult(both medium & large size of adult) and paediatric arm cuffs size, inflation bulb and tubing(one extra pair)
5.2	**Spare parts (main ones)**	dial manometer
		NA
5.3	**Consumables / reagents (open, closed system)**	
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	**Atmosphere / Ambiance (air conditioning, humidity, dust ...)**	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.

6.2	**User's care, Cleaning, Disinfection & Sterility issues**	The unit should be cleanable with alcohol
7.0	**STANDARDS AND SAFETY**	
7.1	**Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type); Local and/or international**	ISO 13485 certified company and the instrument should have ISI mark. The parts shall be made of natural or artificial rubber.
8.0	**TRAINING AND INSTALLATION**	
8.1	**Pre-installation requirements: nature, values, quality, tolerance**	Supplier to perform safety and operation checks before handover.
8.2	**Requirements for sign-off**	Certificate of inspection from the factory.
8.3	**Training of staff (medical, paramedical, technicians)**	Training of users in operation and basic maintenance shall be provided
9.0	**WARRANTY AND MAINTENANCE**	
9.1	**Warranty**	1 years
9.2	**Maintenance tasks**	Maintenance manual detailing complete maintaining schedule
9.3	**Service contract clauses, including prices**	
10.0	**DOCUMENTATION**	
10.1	**Operating manuals, service manuals, other manuals**	User, technical and maintenance manuals to be supplied in english language along with machine diagrams. List to be provided for procedures required for routine maintenance
10.2	**Other accompanying documents**	

11.0	**NOTES**	
11.1	**Service Support Contact details (Hierarchy Wise; including a toll free/landline number)**	NA
11.2	**Recommendations or warnings**	Any recommendations for best use and supplementary warning for safety should be declared
11.3	**Temperature Range**	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Stethoscope	
GENERAL	
1.0	**USE**

1.1	**Clinical purpose**	listening to sounds from the heart, lungs, and/or gastrointestinal tract
1.2	**Used by clinical department/ward**	All
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	**Technical characteristics (specific to this type of device)**	1. Stethoscope should amplify sounds below 100Hz and attenuate sounds above 200Hz. 2. Designed to transmit low frequency sounds in the range of 30-1000Hz. 3. Provide amplifications of between 10 to 15 dB, with the best performance in the frequency range of human auscultation sounds (30 Hz) 4. Ear pieces made of soft gel or rubber. High quality flexible diaphragm made of plastic or epoxy fibreglass compound, capable of good contact with skin. Tube made of thick PVC or latex rubber. Dual head (with bell) made of stainless steel (aluminium not acceptable). No air leakage between examiner's air and diaphragm of the stethoscope. 5. Good performance and characteristics in the following areas: a. Loudness- the perceived amplitude of the sound b. clarity- the ability to distinguish diagnostic cardiac sounds such as vulvular clicks c. Ergonomics- the ease of use. 6. Elimination of noise artifacts or external noise interference.
2.2	**Settings**	NA
2.3	**User's interface**	manual
2.4	**Software and/or standard of communication (where ever required)**	NA
2.5	**Others**	NA

3.0	**PHYSICAL CHARACTERISTICS**	
3.1	**Dimensions (metric)**	Diaphragm approx: 20 mm, length between 54.1cm to 78.7 cm.
3.2	**Weight (lbs, kg)**	70gm to 240gm
3.3	**Configuration**	NA
3.4	**Noise (in dBA)**	NA
3.5	**heat dissipation**	NA
3.6	**Mobility, portability**	Portable
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2)**	
4.1	**Power Requirements**	NA
4.2	**Battery operated**	NA
4.3	**Tolerance (to variations,** **shutdowns)**	NA
4.4	**Protection**	NA
4.5	**Power consumption**	NA
4.6	**Other energy supplies**	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	**Accessories& Spares**	1 x spare set of earpiece, 1 x spare diaphram,
5.2	**Consumables / reagents** **(open, closed system)**	NA
5.3	**Others**	NA
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	**Atmosphere / Ambiance (air conditioning, humidity, dust ...)**	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative

		humidity of 15 to 90%.
6.2	**User's care, Cleaning, Disinfection & Sterility issues**	The unit should be cleanable with alcohol
6.3	**Others**	NA
7.0	**STANDARDS AND SAFETY**	
7.1	**Certifications**	by ISO 9001 certified manufacturer and the device should comply to IS 3391 standards
8.0	**TRAINING AND INSTALLATION**	
8.1	**Pre-installation requirements: nature, values, quality, tolerance**	NA
8.2	**Requirements for sign-off**	NA
8.3	**Training of staff (medical, paramedical, technicians)**	NA
8.4	**Others**	NA
9.0	**WARRANTY AND MAINTENANCE**	
9.1	**Warranty**	1 year
9.2	**Maintenance tasks**	NA
9.3	**Service contract clauses, including prices**	NA
9.4	**Others**	NA
10.0	**DOCUMENTATION**	
10.1	**Operating manuals, service manuals, other manuals**	NA
10.2	**Other accompanying**	NA

	documents	
10.3	**Recommendations for maintenance**	NA
10.4	**Others**	NA
11.0	**NOTES**	
11.1	**Service Support Contact details (Hierarchy Wise; including a toll free/landline number)**	NA
11.2	**Recommendations or warnings**	NA
11.3	**Temperature Range**	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Portable hand-held Glucometer
GENERAL

1.0	**USE**	
1.1	**Clinical purpose**	It intended to be used together for testing, either at the point-of-care or in self-testing by a layperson, for the quantitative measurement of glucose and/or ketones in a whole blood clinical specimen.
1.2	**Used by clinical department/ward**	All
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	**Technical characteristics (specific to this type of device)**	Should have reading range/linearity from 30 to 600 mg/dl; Should have a maximum reading time of less than 10 seconds; Should use a minimum blood sample less than 1.5µl; Should have a minimum memory of 50 tests; accuracy +/- 10% and reproducibility +/-5%; Packing of strips should be such that there are not more than 50 strips/pack. The strips should be readily available throughout the country
2.2	**Settings**	Should have automatic code detection facility , display of sugar in Mg/dl and NOT in millimoles.
2.3	**User's interface**	LCD display
2.4	**Software and/or standard of communication(where ever required)**	inbuilt; .Should have facility to ensure accuracy of measurements
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	**Dimensions (metric)**	handheld device
3.2	**Weight (lbs, kg)**	handheld device
3.3	**Configuration**	Should use electrochemical technology
3.4	**Noise (in dBA), heat dissipation**	NA

3.5	Mobility, portability	handheld

4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2.....)**	
4.1	Power Requirements	Battery powered
4.2	Battery operated	3-volt lithium coin cell battery or 2 x (AAA) Alkaline Batteries
4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories & Spare parts	NA
5.2	Consumables / reagents (open, closed system)	glucose strips(able to use capillary blood samples) with availability in local market, shelf life of strips should be 12 months, the cost of strips for the next five years should be declared (for cost comparison)
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	The unit should be cleanable with alcohol
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type); Local and/or international	FDA US) /CE(EU) and BIS/ISO 13485:2003; ISO 15197: 2013 compliant
8.0	**TRAINING AND INSTALLATION**	

8.1	Pre-installation requirements: nature, values, quality, tolerance	NA
8.2	**Requirements for sign-off**	NA
8.3	Training of staff (medical, paramedical, technicians)	required
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	2 years; shelf life of minimum 12 months for strips from the date of manufacture; strips should work minimum 3 months from opening of pack
9.2	Maintenance tasks	Should require no routine maintenance
9.3	Service contract clauses, including prices	Should have life time replacement offer
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	Required
10.2	Recommendations for maintenance	To be provided during installation
11.0	**NOTES**	
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Should provide complete contact details of sales and service departments.
11.2	Recommendations or warnings	NA
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Fetal doppler		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	to non-invasively detect foetal heart beats from the surface of the pregnant women's abdomen.
1.2	Used by clinical department/ward	Emergency/Gynae deptt.
1.3	Overview of functional requirements	
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	Water proof probes of 2MHz, 3MHz and 5 MHz frequency, Ultra sound Intensity ‹10mw/cm2, Auto Shut Off Facility to save Battery Power, Built-in Speaker, Volume Control Facility and Audio Output for Ear Phone, Heart Rate Range should be from 50 to 210 bpm with accuracy of + /-2%, Should be Water Proof Body
2.2	Settings	setting of ultrasound intensity
2.3	User's interface	LCD/LED display
2.4	Software and/or standard of communication(where ever required)	inbuilt
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	handheld
3.2	Weight (lbs, kg)	500 gm
3.3	Configuration	

3.4	Noise (in dBA),	Noise: <60dBA
3.5	heat dissipation	
3.6	Mobility, portability	Yes
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2.....)**	
4.1	Power Requirements	Rechargeable battery
4.2	Battery operated	Rechargeable battery
4.3	Tolerance (to variations, shutdowns)	± 10% of input AC
4.4	Protection	Electrical protection by resettable overcurrent breakers or replaceable fuses, fitted in both live and neutral lines
4.5	Power consumption	
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories (mandatory, standard, optional)	Doppler probe, rechargeable battery, battery charger
5.2	Spare parts (main ones)	
5.3	Consumables / reagents (open, closed system)	Rechargeable battery
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	The unit should be cleanable with alcohol
7.0	**STANDARDS AND SAFETY**	

7.1	Certificates (pre-market, sanitary, ..)	US FDA/European CE and BIS/ISO 13485
7.2	Performance and safety standards (specific to the device type)	Shall meet IEC-60601- part 1 and 2
7.3	Local and/or international	NA
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Supplier to perform installation, safety and operation checks before handover.
8.2	Requirements for sign-off	Certificate of Calibration and inspection from the factory.
8.3	Training of staff (medical, paramedical, technicians)	Training of users in operation and basic maintenance shall be provided
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	three years (including probe and battery)
9.2	Maintenance tasks	maintenance manual detailing complete maintaining schedule
9.3	Service contract clauses, including prices	Local clinical staff to affirm completion of installation
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	Advanced maintenance tasks required shall be documented User, technical and maintenance manuals to be supplied in english language. List to be provided of equipment and procedures required for local calibration and routine maintenance
10.2	Other accompanying documents	List to be provided of important spares and accessories, with their part numbers and cost. Certificate of calibration and inspection to be provided.
11.0	**NOTES**	

11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	AMC/CAMC Details to be provided
11.2	Recommendations or warnings	List to be provided of important spares and accessories, with their part numbers and cost. Certificate of calibration and inspection to be provided.
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Nebulizer (Electric)		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	Designed to generate aerosolized medication/fluids (finely dispersed airborne droplets in a liquid phase) intended to be inhaled by a patient with a respiratory disorder.
1.2	Used by clinical department/ward	All
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	medicine cup capacity of minimum 5 ml
2.2	Settings	manual
2.3	User's interface	manual
2.4	Software and/or standard of communication (where ever required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	should be compact
3.2	Weight (lbs, kg)	<2kg.
3.3	Configuration	
3.4	Noise (in dBA), heat dissipation	<60dBA
3.5	Mobility, portability	Yes
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2)**	

4.1	Power Requirements	220 V AC + 10%, 50Hz power supply; 5A plug
4.2	Battery operated	NA
4.3	Tolerance (to variations, shutdowns)	± 10% of input AC
4.4	Protection	Electrical protection by resettable overcurrent breakers or replaceable fuses, fitted in both live and neutral lines
4.5	Power consumption	Should be compatible with ambulances power sources with other equipment's running
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories & Spares	With necessary accessories- nebulisation mask(both adult and paediatric size), PVC tubing for nebulizer (two pair extra); cable cord
5.2	Consumables / reagents (open, closed system)	Aerosol/medicinal solutions
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	The unit should be cleanable with alcohol
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..)	FDA (US)/CE (EU) and BIS/ISO 13485:2003; ISO 27427-2013; IEC-60601-1
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Supplier to perform installation, safety and operation checks before handover.

8.2	Requirements for sign-off	Certificate of Calibration and inspection from the factory.
8.3	Training of staff (medical, paramedical, technicians)	Training of users in operation and basic maintenance shall be provided
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	3 Years
9.2	Maintenance tasks	Maintenance manual detailing complete maintaining schedule
9.3	Service contract clauses, including prices	Local clinical staff to affirm completion of installation
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	Advanced maintenance tasks required shall be documented User, technical and maintenance manuals to be supplied in english language. List to be provided of equipment and procedures required for local calibration and routine maintenance
10.2	Other accompanying documents	List to be provided of important spares and accessories, with their part numbers and cost. Certificate of calibration and inspection to be provided.
11.0	**NOTES**	
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	Contact details of manufacturer, supplier and local service agent to be provided
11.2	Recommendations or warnings	List to be provided of important spares and accessories, with their part numbers and cost. Certificate of calibration and inspection to be provided.
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Double Head Immobilizers		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	used to temporarily render the head/neck of a patient immovable to ensure immobilization when a head and/or spinal injury is suspected.
1.2	Used by clinical department/ward	Emergency
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	1. Should be of two adult sizes (large and medium) and one paediatric size. 2. Should be with padded belts for the fixing. 3. It should be covered by a liquid proof material. 4. Should be high density plastic material
2.2	Settings	NA
2.3	User's interface	Manual
2.4	Software and/or standard of communication(where ever required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	standard
3.2	Weight (lbs, kg)	standard
3.3	Configuration	NA
3.4	Noise (in dBA), heat dissipation	NA
3.5	Mobility, portability	Yes

4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2)**	
4.1	Power Requirements	NA
4.2	Battery operated	NA
4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories (mandatory, standard, optional)	NA
5.2	Spare parts (main ones)	NA
5.3	Consumables / reagents (open, closed system)	NA
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	NA
6.2	User's care, Cleaning, Disinfection & Sterility issues	NA
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type); Local and/or international	ISO 9001 manufacturer
8.0	**TRAINING AND INSTALLATION**	

8.1	Pre-installation requirements: nature, values, quality, tolerance	Supplier to perform safety and operation checks before handover.
8.2	Requirements for sign-off	
8.3	Training of staff (medical, paramedical, technicians)	
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	1 year
9.2	Maintenance tasks	NA
9.3	Service contract clauses, including prices	NA
9.4	Others	
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	NA
10.2	Other accompanying documents	NA
10.3	Recommendations for maintenance	NA
10.4	Others	
11.0	**NOTES**	
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	NA
11.2	Recommendations or warnings	NA
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Spinal Board		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	It is placed under a patient to ensure spinal immobilization when a spinal injury is suspected.
1.2	Used by clinical department/ward	Emergency/Trauma Care
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	Should be in plastic material of high strength and waterproof. It should be supplied with 3 belts with rapid unhooking buckle in all three belts. Should have radio transparency to make radiologic examinations/x-rays without removing the patient from the board.
2.3	Settings	NA
2.4	User's interface	Manual
2.5	Software and/or standard of communication (wherever required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	Length: 180 - 190cm; Breadth: 40 - 48cm ; Height: 5 to 7cm
3.2	Weight (lbs, kg)	Weight: <8 kg; load: upto 120kgs.
3.3	Configuration	NA
3.4	Noise (in dBA), heat dissipation	NA
3.5	Mobility, portability	Yes

4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2)**	
4.1	Power Requirements	NA
4.2	Battery operated	NA
4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories (mandatory, standard, optional)	NA
5.2	Spare parts (main ones)	NA
5.3	Consumables / reagents (open, closed system)	NA
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	NA
6.2	User's care, Cleaning, Disinfection & Sterility issues	NA
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type); Local and/or international	ISO 9001; FDA/CE
8.0	**TRAINING AND INSTALLATION**	

8.1	Pre-installation requirements: nature, values, quality, tolerance	Supplier to perform safety and operation checks before handover.
8.2	Requirements for sign-off	
8.3	Training of staff (medical, paramedical, technicians)	
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	1 year
9.2	Maintenance tasks	NA
9.3	Service contract clauses, including prices	NA
9.4	Others	
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	NA
10.2	Other accompanying documents	NA
10.3	Recommendations for maintenance	NA
10.4	Others	
11.0	**NOTES**	
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	NA
11.2	Recommendations or	NA

	warnings	
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Cervical Collar		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	used to support or immobilize the cervical spine to treat deformities, fractures, sprains, or strains
1.2	Used by clinical department/ward	Trauma care; musculo-skeletal support
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	Should be adjustable to 4 different sizes. Should be pre-moulded chin support, locking dips and rear ventilation panel, enlarged trachea opening Should be high-density polyethylene and foam padding with one piece design enables efficient storage where space is limited. Should be X-ray lucent and easy to clean and disinfect.
2.2	Settings	Size adjustment
2.3	User's interface	Manual
2.4	Software and/or standard of communication (where ever required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	NA
3.2	Weight (lbs, kg)	As light as possible
3.3	Configuration	NA
3.4	Noise (in dBA), heat dissipation	NA
3.5	Mobility, portability	NA

4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2)**	
4.1	Power Requirements	NA
4.2	Battery operated	NA
4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories (mandatory, standard, optional)	NA
5.2	Spare parts (main ones)	NA
5.3	Consumables / reagents (open, closed system)	NA
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	NA
6.2	User's care, Cleaning, Disinfection & Sterility issues	NA
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type); Local and/or international	ISO 9001
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature,	Supplier to perform safety and operation checks before

	values, quality, tolerance	handover.
8.2	Requirements for sign-off	
8.3	Training of staff (medical, paramedical, technicians)	
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	1 years
9.2	Maintenance tasks	NA
9.3	Service contract clauses, including prices	NA
9.4	Others	
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	NA
10.2	Other accompanying documents	NA
10.3	Recommendations for maintenance	NA
10.4	Others	
11.0	**NOTES**	
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	NA
11.2	Recommendations or warnings	NA
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Pneumatic Splints		
GENERAL		
1.0	**USE**	
1.1	**Clinical purpose**	To immobilize the limb for transport to a hospital
1.2	**Used by clinical department/ward**	Emergency Services
1.3	**Overview of functional requirements**	
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	1. 1.X-ray should be possible through the splints (Radio-transparency); 2. Inflatory tubes' extension with dosing damp makes dosing easy and quick after inflation; 3. Fixing of splint is by zipper or belt; 4. Distal end left open to expose toes; 5. Should be washable and reusable 6. Weather Proof 7. Material: Neoprene rubber
2.2	Settings	Fixing of splint is by zipper or belt
2.3	User's interface	Manual
2.4	Software and/or standard of communication(where ver required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	

3.1	Dimensions (metric)	set of 6 adult sizes with carrying case:1.Hand & Wrist 2.Half arm 3.Full arm 4. Foot and ankle 5. Half leg 6. Full leg
3.2	Weight (lbs, kg)	Light
3.3	Configuration	NA
3.4	Noise (in dBA), heat dissipation	NA
3.5	Mobility, portability	Yes
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2.....)**	
4.1	Power Requirements	NA
4.2	Battery operated	NA
4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories (mandatory, standard, optional) Inflatory tubes' extension	
5.2	Spare parts (main ones)	NA
5.3	Consumables / reagents (open, closed system)	NA
5.4	Others	NA
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	Should be washable and reusable

6.3	**Others**	Should be washable and reusable
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type); Local and/or international	ISO 9001 certified manufacturer
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	NA
8.2	Requirements for sign-off	NA
8.3	Training of staff (medical, paramedical, technicians)	NA
8.4	**Others**	NA
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	1 year
9.2	Maintenance tasks	NA
9.3	Service contract clauses, including prices	NA
9.4	Others	NA
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	NA
10.2	Other accompanying	NA

	documents	
10.3	Recommendations for maintenance	NA
10.4	**Others**	NA
11.0	**NOTES**	
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	NA
11.2	Recommendations or warnings	NA
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Stretcher Scoop		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	It is most frequently used to lift supine patients from the ground, either due to unconsciousness or in order to maintain stability in the case of trauma, especially spinal injury, where it is used as an intermediate step between the ground and a restraining device such as a long spine board or vacuum mattress.
1.2	Used by clinical department/ward	Emergency
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	1. The equipment shall be lightweight aluminium stretcher, which folds into two and separates for application and removal, locking adjustable length with latches - with nylon - straps 2. Narrow foot end frame for handling in confined areas
2.3	Settings	NA
2.4	User's interface	manual
2.5	Software and/or standard of communication (where ever required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	Length: 160 to 200 cms; Width: 42 cm (Minimum);
3.2	Weight (lbs, kg)	Weight: < 10 kg; Load capacity -120 kg (Min)
3.3	Configuration	NA
3.4	Noise (in dBA), heat dissipation	NA
3.5	Mobility, portability	Yes

4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 .....)**	
4.1	Power Requirements	NA
4.2	Battery operated	NA
4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories (mandatory, standard, optional)	NA
5.2	Spare parts (main ones)	NA
5.3	Consumables / reagents (open, closed system)	NA
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	NA
6.2	User's care, Cleaning, Disinfection & Sterility issues	NA
7.0	**STANDARDS AND SAFETY**	
7.1	Certifications	ISO 13485/BIS and European CE/US FDA
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Supplier to perform safety and operation checks before handover.
8.2	Requirements for sign-off	Certificate of inspection from the factory.

8.3	Training of staff (medical, paramedical, technicians)	Training of users in operation and basic maintenance shall be provided
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	5 years
9.2	Maintenance tasks	maintenance manual detailing complete maintaining schedule
9.3	Service contract clauses, including prices	
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	Advanced maintenance tasks required shall be documented User, technical and maintenance manuals to be supplied in english language along with machine diagrams. List to be provided for procedures required for routine maintenance
10.2	Other accompanying documents	List to be provided of important spares and accessories, with their part numbers and cost.
11.0	**NOTES**	
11.1	Service Support Contact details (Hierchy Wise; including a toll free/landline number)	NA
11.2	Recommendations or warnings	Any recommendations for best use and supplimentary warning for safety should be declared
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Bag and Mask Ventilation device (Child & Neonatal)		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	to provide or assist ventilation in a patient who is apnoeic or exhibits inadequate respiration through manual pulmonary-driven pressure cycle functions.
1.2	Used by clinical department/ward	It is used in ambulances, intensive care units (ICU), during internal patient transfer, accident and emergency (A&E), and mass casualty incidents (MCI).
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics	1. Easy Grip manual resuscitator with transparent face-mask; 2. Child models (500 to 250ml bag capacity); 3. Standard 15-22 mm Swivel connector allows connections to all common masks Endotracheal Tubes; 4. Provision to give supplemented oxygen-by-oxygen reservoir providing 100% oxygen; 5. Non-re breathing valve enabling the patient to inspire oxygen from the reservoir bag. 6. 6. Device should be made of silicon except reservoir
2.2	Settings	Manual
2.3	User's interface	Manual
2.4	Software and/or standard of communication(where ever required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	handheld
3.2	Weight (lbs, kg)	light enough to be operated by hand/palm for long duration

3.3	Configuration	NA
3.4	Noise (in dBA), heat dissipation	NA
3.5	Mobility, portability	handheld
3.6	Others	
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 .....)**	
4.1	Power Requirements	NA
4.2	Battery operated	NA
4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories & Spares	silicon bellow, Non Re - breathing Valve
5.2	Consumables / reagents (open, closed system)	Mask (0,1,2 sizes; 3 sets), Oxygen Reservoir bag, 1 meter oxygen tube, Guedel Airway(0,1,2 sizes; 3 sets)
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%.Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	Complete unit to be easily washable and sterilizable using both alcohol and other chemical agents.
7.0	**STANDARDS AND SAFETY**	
7.1	Certifications	FDA(US)/CE(EU) and BIS/ISO 13485:2003

8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Bag for storage should be supplied
8.2	Requirements for sign-off	Certificate of Calibration and inspection from the factory.
8.3	Training of staff (medical, paramedical, technicians)	NA
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	1 Year
9.2	Maintenance tasks	NA
9.3	Service contract clauses, including prices	NA
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	NA
10.2	Other accompanying documents	NA
10.3	Recommendations for maintenance	NA
11.0	**NOTES**	
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	NA
11.2	Recommendatios or warnings	NA
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Bag and Mask Ventilation Device (Adult)		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	to provide or assist ventilation in a patient who is apnoeic or exhibits inadequate respiration through manual pulmonary-driven pressure cycle functions.
1.2	Used by clinical department/ward	It is used in ambulances, intensive care units (ICU), during internal patient transfer, accident and emergency (A&E), and mass casualty incidents (MCI).
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics	1. Easy Grip manual resuscitator with transparent face-mask; 2. Adult models (1500 to 2000ml bag capacity); 3. Standard 15-22 mm Swivel connector allows connections to all common masks & Endotracheal Tubes; 4. Provision to give supplemented oxygen-by-oxygen reservoir providing 100% oxygen; 5. Non-re breathing valve enabling the patient to inspire oxygen from the reservoir bag; 6. Unit should be of medical grade silicon material (mask) excluding reservoir
2.2	Settings	manual
2.3	User's interface	manual
2.4	Software and/or standard of communication (where ever required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	Handheld

3.2	Weight (lbs, kg)	light enough to be operated by hand/palm for long duration
3.3	Configuration	NA
3.4	Noise (in dBA), heat dissipation	NA
3.5	Mobility, portability	handheld
3.6	Others	
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2.....)**	
4.1	Power Requirements	NA
4.2	Battery operated	NA
4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories & Spares	Silicon bellow, Non-Re-breathing Valve,
5.2	Consumables / reagents (open, closed system)	Adult Mask - 3,4,5 size (3 nos. of each size), 1-meter oxygen tube, Guedel Airway- 3,4,5 size (3nos. each), Oxygen Reservoir bag
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%.Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	Complete unit to be easily washable and sterilizable using both alcohol and any other chemical agents.

7.0	**STANDARDS AND SAFETY**	
7.1	Certifications	FDA(US)/CE(EU) and BIS/ISO 13485:2003
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Bag for storage
8.2	Requirements for sign-off	NA
8.3	Training of staff (medical, paramedical, technicians)	NA
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	1 Year
9.2	Maintenance tasks	NA
9.3	Service contract clauses, including prices	NA
10.0	**DOCUMENTATION**	
10.1	**Operating manuals, service manuals, other manuals**	NA
10.2	**Other accompanying documents**	NA
10.3	**Recommendations for maintenance**	NA
11.0	**NOTES**	
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	NA

11.2	Recommendations or warnings	NA
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Oxygen cylinder "B" Type		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	A container designed as a refillable cylinder used to hold compressed medical oxygen (O2) under safe conditions at high pressure; O2 is used as an essential life support gas, for anaesthesia, and for therapeutic purposes.
1.2	Used by clinical department/ward	All
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	1. Colour coded, light weight molybdenum steel oxygen cylinder for providing oxygen therapy of total capacity of 4 cu M. 2. Mounted with pressure reducer and flow-meter provision of capacity upto 15 Litres per minutes and outlet for secretion aspiration. 3. Should have membrane pressure regulator with manometer complete with flow meter (0-15 litres /minute) and 4. Humidifier bottle. 5. The cylinder should be seamless
2.2	Settings	flowmeter as specified earlier
2.3	User's interface	manual
2.4	Software and/or standard of communication(where ever required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	to contain capacity of 4 cu M

3.2	Weight (lbs, kg)	NA
3.3	Configuration	NA
3.4	Noise (in dBA), heat dissipation	NA
3.5	Mobility, portability	Yes; for Ambulances - to be supplied bare without trolley
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2.....)**	
4.1	Power Requirements	NA
4.2	Battery operated	NA
4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories & Spares	humidifier, key and flow meter
5.3	Consumables / reagents (open, closed system)	NA
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%.Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	NA
7.0	**Certificates (pre-market, sanitary, ..)**	
7.1	Certifications	Cylinder should have ISI mark and ISO certificate for quality standard or BIS equivalent; IS 3224. Cylinder should have explosive safety certificate and should be provided along with each cylinder

		during installation
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	NA
8.2	Requirements for sign-off	Certificate of Calibration, NFPA Certificate and inspection from the factory.
8.3	Training of staff (medical, paramedical, technicians)	Training of users in operation
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	10 years
9.2	Maintenance tasks	NA
9.3	Service contract clauses, including prices	NA
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	NA
10.2	Other accompanying documents	NA
10.3	Recommendations for maintenance	NA
11.0	**NOTES**	
11.1	Service Support Contact details (Hierchy Wise; including a toll free/landline number)	NA

11.2	Recommendations or warnings	Colour Codes to be displayed on the cylinders
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Oxygen cylinder “D” Type		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	A container designed as a refillable cylinder used to hold compressed medical oxygen (O2) under safe conditions at high pressure; O2 is used as an essential life support gas, for anesthesia, and for therapeutic purposes.
1.2	Used by clinical department/ward	All
TECHNICAL		
2.0	TECHNICAL CHARACTERISTICS	
2.1	Technical characteristics (specific to this type of device)	1. It should be a standard „D' type molybdenum steel cylinder. 2. The capacity should be of approx 7 cu mt. at pressure of 1800 – 2000lbs/square inch. 3. A pressure regulator/flow meter capable of reducing the pressure to appropriate level to run either a ventilator or provide oxygen therapy. 4. Should be seamless
2.2	Settings	NA
2.3	User's interface	manual
2.4	Software and/or standard of communication(where ever required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	The capacity should be of 5000 to 6000 Liters at pressure of 1800 – 2000 lbs/square inch
3.2	Weight (lbs, kg)	NA
3.3	Configuration	NA
3.4	Noise (in dBA), heat dissipation	NA
3.5	Mobility, portability	NA
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2 .....)**	

4.1	Power Requirements	NA
4.2	Battery operated	NA
4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories & Spares	Cylinder key
5.3	Consumables / reagents (open, closed system)	NA
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%.Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	NA
7.0	Certificates (pre-market, sanitary, ..)	
7.1	Certifications	Cylinder should have ISI mark and ISO certificate for quality standard or BIS equivalent; IS 3224, and NFPA certificate. Cylinder should have explosive safety certificate and should be provided along with each cylinder during installation
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	NA
8.2	Requirements for sign-off	Certificate of Calibration, NFPA certificate and inspection from the factory.
8.3	Training of staff (medical, paramedical, technicians)	Training of users in operation
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	10 years

9.2	Maintenance tasks	NA
9.3	Service contract clauses, including prices	NA
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	NA
10.2	Other accompanying documents	NA
10.3	Recommendations for maintenance	NA
11.0	**NOTES**	
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	NA
11.2	Recommendations or warnings	Colour Codes to be displayed on the cylinders
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Trolley Stretcher- with back tilt facility and collapsible wheels (Autoloader)		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	It is designed for use by emergency medical services (EMS) primarily to facilitate easy transport of a recumbent patient to and from ambulance vehicles
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	1. Automatic loading stretcher cum trolley. 2. Built with anodized aluminum lightweight / stainless steel. 3. Adjustable back rest 0 dg -90 dg which allows to fix the back rest safety in any position. 4. Side protections completely overturn able with easy locking safety belts flap type. 5. Safety lever for the legs positioned near the unlocking device allowing thus the release operation for the loading, keeping the hands on the stretcher. 6. Vertical legs protected by nylon wedges. 6. Automatic centering device mounted on rotating wheels. This system automatically blocks the back wheels in the central position during the loading of the stretcher on the ambulance without having turn the wheels manually. 7. Stand for automatic loading stretcher with locking facility for quick fixing system with handle to mount the stand in very position on the stretcher. 8. One number of IV pole of adjustable height should be provided. 9. Head end of the trolley should be easily identifiable
2.2	Settings	NA
2.3	User's interface	NA
2.4	Software and/or standard of communication (where ever required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	Length; 190-210 cm; Width: 50-60cm; Height: 80-85cm;

		wheel/bearing size: 6 to 8 inch
3.2	Weight (lbs, kg)	Weight 35-45 kg; Loading Capacity: up to 180 kgs
3.3	Configuration	NA
3.4	Noise (in dBA), heat dissipation	NA
3.5	Mobility, portability	yes on castors(functional for minimum of 3 years; suitable for rough use) compatible with rails of the ambulance
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2)**	
4.1	Power Requirements	NA
4.2	Battery operated	NA
4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories (mandatory, standard, optional)	Stand for loading stretcher- removable
5.2	Spare parts (main ones)	Castors, Safety lever; anti static mattress (at least 2.5" thick, stain proof, suitable for rough use, tear resistant, high density material) with 3 years warranty
5.3	Consumables / reagents (open, closed system)	NA
5.4	Others	
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%.Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.

6.2	User's care, Cleaning, Disinfection & Sterility issues	NA
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..)Performance and safety standards (specific to the device type);Local and/or international	FDA(US)/CE(EU) and BIS/ISO 13485:2003
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Supplier to perform safety and operation checks before handover.
8.2	Requirements for sign-off	Certificate of inspection from the factory.
8.3	Training of staff (medical, paramedical, technicians)	Training of users in operation and basic maintenance shall be provided
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	3 years
9.2	Maintenance tasks	maintenance manual detailing complete maintaining schedule
9.3	Service contract clauses, including prices	
10.0	**DOCUMENTATION**	
	Required- along with diagrammatic maintenance manual	
10.1	Operating manuals, service manuals, other manuals	
11.0	**NOTES**	

11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	should provide complete contact details of sales and service departments.
11.2	Recommendations or warnings	Any warning should be displayed
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Canvas Stretcher folding		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	It is designed for use by emergency medical services (EMS) primarily to facilitate easy transport of a recumbent patient to and from ambulance vehicles
1.2	Used by clinical department/ward	ALL
1.4	Overview of functional requirements	
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	1. Should be lightweight stretcher frame 2. Should be easy to carry. 3. Should be rugged. 4. Should be compact & foldable. 5. Should have automatic locking, which does not fold in automatically. 6. Canvas used should be High strength light weight material.
2.2	Settings	NA
2.3	User's interface	NA
2.4	Software and/or standard of communication(where ever required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	Length: 200-210 cm; Width: 50-60cm; Height: 15-20cm from the base level
3.2	Weight (lbs, kg)	less than 6 kg
3.3	Configuration	NA
3.4	Noise (in dBA), heat dissipation	NA
3.5	Mobility, portability	Yes

4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2)**	
4.1	Power Requirements	NA
4.2	Battery operated	NA
4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories (mandatory, standard, optional)	None
5.2	Spare parts (main ones)	None
5.3	Consumables / reagents (open, closed system)	None
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust...)	Capable of being stored continuously in ambient temperature of 0 to 50 deg C and relative humidity of 15 to 90%. Capable of operating continuously in ambient temperature of 10 to 40 deg C and relative humidity of 15 to 90%.
6.2	User's care, Cleaning, Disinfection & Sterility issues	NA
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type); Local and/or international	ISO 13485
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Supplier to perform safety and operation checks before handover.
8.2	Requirements for sign-off	Certificate of inspection from the factory.

8.3	Training of staff (medical, paramedical, technicians)	Training of users in operation and basic maintenance shall be provided
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	1 years
9.2	Maintenance tasks	Maintenance manual detailing complete maintaining schedule
9.3	Service contract clauses, including prices	
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	Advanced maintenance tasks required shall be documented User, technical and maintenance manuals to be supplied in English language along with machine diagrams. List to be provided for procedures required for routine maintenance
10.2	Other accompanying documents	
11.0	**NOTES**	
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	NA
11.2	Recommendations or warnings	Any recommendations for best use and supplementary warning for safety should be declared
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Flowmeter with Humidifier bottle		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	flow meter unit is used for regulation and accurate measuring of flow of gasses
1.2	Used by clinical department/ward	All
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	Flowmeter: chromium plated brass body, metering tube and cover made of polycarbonate body, flow adjustment by needle valve equipped with inlet filter - 100 um, flow rate 0-15 litres per minute, flush flow 60 litres per minute, flow read by the centre of the ball, inlet pressure 60psi; Humidifier bottle: lid made of ABS plastic, Jar made of unbreakable Poly carbonate, valve pressure brass chromium plated, it should be steam autoclaved/gas sterilized. Inlet probe compatible with Oxygen system of the ambulance
2.3	Settings	to manage flow of oxygen through the knob from 0 to 15 LPM
2.4	User's interface	Manual
2.5	Software and/or standard of communication (wherever required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	for 200ml
3.2	Weight (lbs, kg)	as per standard
3.3	Configuration	NA
3.4	Noise (in dBA), heat dissipation	NA
3.5	Mobility, portability	Yes
4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2)**	
4.1	Power Requirements	NA
4.2	Battery operated	NA

4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories & Spares	Stainless steel or brass chromium needle valve and outlet flow control valve
5.3	Consumables / reagents (open, closed system)	Crack resistant transparent tube of 1.5 MT. length
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	NA
6.2	User's care, Cleaning, Disinfection & Sterility issues	Complete unit to be easily washable and sterilizable using alcohol and other chemical agents
7.0	**STANDARDS AND SAFETY**	
7.1	Certifications	complies with NFPA standard ;
8.0	TRAINING AND INSTALLATION	
8.1	Pre-installation requirements: nature, values, quality, tolerance	availability of oxygen outlet points
8.2	Requirements for sign-off	NA
8.3	Training of staff (medical, paramedical, technicians)	NA
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	One year
9.2	Maintenance tasks	Complete unit to be easily washable and sterilizable using both alcohol and chemical agents.
9.3	Service contract clauses, including prices	NA

10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	NA
10.2	Other accompanying documents	NA
10.3	Recommendations for maintenance	NA
11.0	**NOTES**	
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	NA
11.2	Recommendations or warnings	NA
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

(A) Intra Venous Cut Down Set

S.No	Description of items	Qty	Technical Specifications
1	Forceps, Artery, curved, 145mm	3	Material: Stainless Steel Rusting Prevention Procedure: Passivated Ultrasonic Cleaned: Yes Dull Polished: Yes Tests Performed: Boil test, performance test, shape test Packing: Individually packed QC Passed: Yes
2	Forceps, Artery, straight, 145mm	3	
3	Forceps, dissecting, straight, ½ teeth 145mm	1	
4	Forceps, dissecting, straight, Plain 180mm	1	
5	Hook, skin, Gilles, 180mm	1	
6	Handle for surgical blade No. 3	2	
7	Needle Holder, mayo, 150mm	1	
8	Scissors, ligature, Spenser, 115mm	1	
9	Instruments Container, S.S. with cover	1	
10	Bowl	1	
11	Sponge holding instrument	1	
12	Suture, Nylon 3-0	2	

13	Suture, Nylon 5-0	2	

(B) Dressing Kit

S.No	Description of items	Qty	Technical Specifications
1	Mayo Scissors 14cm Straight TC	1	Material: Stainless Steel Rusting Prevention Procedure: Passivated Ultrasonic Cleaned: Yes Dull Polished: Yes Tests Performed: Boil test, performance test, shape test Packing: Individually packed QC Passed: Yes
2	Dissecting Scissors 14cm Sharp/blunt	1	
3	Lister Bandage Scissors 15cm	1	
4	Spenser Stitch Scissors 11cm	1	
5	Forester sponge forceps 25.5cm	1	
6	Dressing forceps 16cm	2	
7	Dressing Forceps 1:2 16cm	2	
8	Kelly Forceps 14cm Straight	1	
9	Adson forceps 12cm	1	
10	Lotion Bowl 04 Oz	1	
11	Kidney dish 08”	1	

(C) Suture Kit

S.No	Description of items	Qty	Technical Specifications
1	Container for storage and sterilization of suturing set	1	Material: Stainless Steel Rusting Prevention Procedure: Passivated Ultrasonic Cleaned: Yes Dull Polished: Yes Tests Performed: Boil test, performance test, shape test Packing: Individually packed QC Passed: Yes
2	Lancet Handle	1	
3	Scissors straight Standard 13-15cm	1	
4	Scissors Curved (Baby Metzenbaum)13-15cm	1	
5	Forceps Straight	1	
6	Needle holder small stout	1	
7	Forceps Hem. Curved 14cm	2	
8	Dressing, Gauge, sterile, 2”X2” Pkg./2	1	
9	Dressing, Gauge, sterile, 4”X4” Pkg./2	1	
10	Antiseptic Wipe	10	
11	Suture, Nylon 3-0	1	

12	Suture, Nylon 5-0	2	
13	Povidone Iodine, ¾ oz	2	

First Aid Box		
GENERAL		
1.0	**USE**	
1.1	Clinical purpose	Transport of medical equipment, devices and supplies to places where vehicles cannot get sufficiently close to the patient.
1.2	Used by clinical department/ward	Trauma care; musculo-skeletal support
TECHNICAL		
2.0	**TECHNICAL CHARACTERISTICS**	
2.1	Technical characteristics (specific to this type of device)	The bag should be possible to carry via a shoulder strap and also by handles and as a back pack to suit the convenience of the user. It should be resistant to wear and tear. It should be waterproof. There should be space for multiple colour coded pouches which should be possible to arrange as relevant to Airway, Breathing, Circulation, Disability management and carrying essential Injectable medicine vials or fluid. It should not have less than 4 external pockets and not less than 5 detachable colour coded compartments / pouches with transparent windows to enable user to see the contents without opening them. The bags should also have space to safely store used needles, blades etc.
2.3	Settings	NA
2.4	User's interface	NA
2.5	Software and/or standard of communication(where ever required)	NA
3.0	**PHYSICAL CHARACTERISTICS**	
3.1	Dimensions (metric)	Pre-packed kits as convenient as long as it contains the specified first aid items.
3.2	Weight (lbs, kg)	Less than 3kg, should sustain minimum 10kg. wt. equipment, medicines and accessories
3.3	Configuration	NA
3.4	Noise (in dBA), heat dissipation	NA
3.5	Mobility, portability	Yes

4.0	**ENERGY SOURCE (electricity, UPS, solar, gas, water, CO2)**	
4.1	Power Requirements	NA
4.2	Battery operated	NA
4.3	Tolerance (to variations, shutdowns)	NA
4.4	Protection	NA
4.5	Power consumption	NA
4.6	Other energy supplies	NA
5.0	**ACCESSORIES, SPARE PARTS, CONSUMABLES**	
5.1	Accessories (mandatory, standard, optional)	NA
5.2	Spare parts (main ones)	NA
5.3	Consumables / reagents (open, closed system)	NA
6.0	**ENVIRONMENTAL AND DEPARTMENTAL CONSIDERATONS**	
6.1	Atmosphere / Ambiance (air conditioning, humidity, dust ...)	NA
6.2	User's care, Cleaning, Disinfection & Sterility issues	NA
7.0	**STANDARDS AND SAFETY**	
7.1	Certificates (pre-market, sanitary, ..); Performance and safety standards (specific to the device type); Local and/or international	ISO 9001 supplier
8.0	**TRAINING AND INSTALLATION**	
8.1	Pre-installation requirements: nature, values, quality, tolerance	Supplier to perform safety and operation checks before handover.

8.2	Requirements for sign- off	
8.3	Training of staff (medical, paramedical, technicians)	
9.0	**WARRANTY AND MAINTENANCE**	
9.1	Warranty	NA
9.2	Maintenance tasks	NA
9.3	Service contract clauses, including prices	NA
9.4	Others	
10.0	**DOCUMENTATION**	
10.1	Operating manuals, service manuals, other manuals	NA
10.2	Other accompanying documents	NA
10.3	Recommendations for maintenance	NA
11.0	**NOTES**	
11.1	Service Support Contact details (Hierarchy Wise; including a toll free/landline number)	NA
11.2	Recommendations or warnings	NA
11.3	Temperature Range	Should be able to operate between – 32 degrees Centigrade to + 52 degrees Centigrade

Other Essentials (Accessories, Disposables, Kits) to be quoted from genuine standard manufacturers with relevant ISO 13485 & CDSCO approvals and with standard one-year warranty. The products supplied are mandatory to be compatible with emergency adult, pediatric /neonatal use as applicable.

The specifications must be furnished along with a brochure marked with model number for technical evaluation and approval.

At any given point of time the buyer will request for demo of the equipment.