

**Amendment no. 06 Dated 22.01.2019**

HSCC/PUR/CNCI/Kolkata/Medical Equipment/04/B dt. 05.11.2018

**Procurement of Medical Equipment CNCI 2nd Campus**

All bidders are requested to note the following:

**A. Item no 05 , ICU ventilator**

S.no	Specifications as per Tender	May please read as
	1. Should be USFDA Approved/European CE Certified with 4 digit certification	No Change as per office memorandum No. X.11035/379/2015-DFQC(Pt) of Ministry of Health & Family Welfare Dated 20 <sup>th</sup> February 2018
	2. All the equipment`s power input should be 220-240 v ac, 50 Hz fitted with Indian plug.	No Change
	General Requirements	
1	Should have built in touch colour screen TFT display for display of waveforms & monitored value.	No Change
2	Screen size should be minimum 12" or more.	No Change
3	Should have facility for invasive & non-invasive ventilation.	No Change
4	Microprocessor Control suitable for Paediatric and adult ventilation.	No Change
5	Rugged hinged arm holder to hold the circuit	Rugged, unbreakable stainless steel/durable plastic hinged arm holder to hold the circuit.  The arm should be from the same manufacturer and no local bought-out item will be accepted.
5a	To be added	Should supply corrosion free trolley from the same port of origin as that of the ventilator.
6	Should have inbuilt facility to upgrade with EtCO2 with CO2 waveform in the same display. Cost to be quoted optionally.	Should have inbuilt facility to measure EtCO2 with CO2 waveform in the same display in 03 ventilators out of total 12 ventilators.  Each CO2 module should be supplied with

		<ul style="list-style-type: none"> <li>• 2 CO2 sensors with 5 adult/pediatric adapters for mainstream</li> </ul> <p>Or</p> <ul style="list-style-type: none"> <li>• 50 sample lines with 20 water traps for side stream</li> </ul> <p>Unit cost of future up-gradation in the balance ventilators to be quoted separately.</p>
7	Compressed air / oxygen driven.	The ventilator should work on centralized compressed air and oxygen. Ventilator running on turbine, blower or any modification there-of will not be acceptable.
8	Facility to measure & display:-	
	a)Status indicator for ventilator mode	No Change
	b)Battery indication	No Change
	c)Pressure Vs time Vs volume Vs time, flow Vs time 3 curves/ waveforms.	No Change
	d)Alarm setting	No Change
9	Automatic compliance and leakage compensation for circuit & ET tube.	Automatic compliance and leakage compensation for circuit upto Y-piece.
10	Should have facility of log book, for events &alarms with date& time.	No Change
11	Should have the following modes.	No Change
	a)Volume and Pressure control modes	No Change
	b)SIMV(Pressure controlled and Volume controlled) with pressure support	No Change
	c)PEEP	No Change
	d)Inverse Ratio ventilation	No Change
	e)Advanced mode like Pressure Regulated volume control mode.	No Change
	f)Airway Pressure Release ventilation	No Change
	g)Non-invasive ventilation in all modes (BIPAP,CPAP)	g) Dedicated NIV Mode
	To be added	h) Volume support mode
12	Should have the facility for following settings:	

	a. Tidal Volume: Minimum 20ml and Maximum of 1500ml or more in Volume control mode	No Change
	b. PEEP up to 30cmH2O OR MORE	PEEP: 0 – 45 cmH2O or more
	c. Pressure support up to 35 cm H2O.	No Change
	d. Flow Pattern: Square, Decelerating, Sinusoidal	d. Flow Pattern: Square, Decelerating
	e. Respiratory Rate up to 80bpm or more	No Change
	f. Inspiratory Plateau up to 60% of inspiratory time	No Change
	g. SIMV rate upto 60 cycles/min	No Change
	h. Pressure Support Slope: upto 150cmH2O/sec or equivalent	No Change
	i. FIO2:21%-100%	No Change
	j. Inspiratory and Expiratory flow and pressure Trigger Sensitivity	Trigger Sensitivity – Pressure & flow
	k. Manual Cycle, Inspiratory Pause ,Expiratory Pause and prolonged Expiration	No Change
13 .	Should be able to monitor and measure the following parameters Tidal Volume, Plateau Pressure, Mean Airway Pressure, Peak Airway Pressure	No Change
14	Should have built-in nebuliser with particle size less than 3 micron and Nebuliser assembly should be compatible with ventilator and circuit	Should be supplied with ultrasonic / vibrating wire mesh nebulizer with particle size less than 3 micron and nebulizer assembly should be compatible with ventilator and circuit. To be supplied with  a) Reusable Nebulizer head – 2 Sets b) Adapter for adult & pediatric circuits -2 Sets
15	Ventilator should have facility to find lower inflection point & upper inflection point.	Ventilator should have facility to find lower inflection point & upper inflection point as an option.
16	Compiled trend analysis at least for 24 hrs for all measured parameters.	No Change
17	Should have facility to measure:	
	a. Pressure/Volume loops	No Change
	b. Flow/Volume loops	No Change

	c. Pressure/Flow loops	Deleted
18	Should display minimum four curves/graphs simultaneously on the screen.	Should display minimum three waveforms and at least 1 loop or more simultaneously on the screen.
19	Should have audio visual alarms for following parameters	No Change
	a.FIO2 peak inspiratory pressure –high and low	No Change
	b.FIO2-high and low	No Change
	c. Respiratory rate high& low	No Change
	d. Tidal Volume-High &low	No Change
	e. Minute volume-high &low	No Change
	f. Power failure	No Change
20	Should have inbuilt exhalation filter	Should be supplied disposable exhalation filter - 100 No.s
21	Should have compatibility with existing central pipeline.	No Change
22	Humidifier	
	i)Servo controlled heated Respiratory Humidifier	<p>A total 2 units of servo controlled heated Respiratory Humidifier from reputed manufacturer should be supplied with 12 ventilators.</p> <p>Each humidifier should be supplied with two sets of auto-clavable humidifier compatible adult circuits &amp; one set of humidifier compatible pediatric circuit with two auto-clavable humidifier chamber, water traps, heater wire, adaptors, temperature probe and other accessories from the same manufacturer as the humidifier.</p> <p>Unit cost of future upgradation of humidifier in the balance ventilators to be quoted separately.</p>
	ii)Temperature of delivered gas on LED display	No Change
	iii)Temperature should be adjustable	Deleted
	iv)Jar should be autoclavable	No Change
23.	Should have internal rechargeable battery backup with at least 30 min	No Change
24.	Should have non-depleting type O2 measurement for O2 analysis.	Should have non-depleting type/galvanic type O2 measurement for O2 analysis. However for galvanic type sensors, the sensors should be replaced free of cost during warranty period.

26	Should have interface facility.	No change
27	Flow sensor should have life more than one year and should be autoclavable.	Each ventilator should be supplied with auto-clavable flow sensors with expiratory valve / expiratory cassette having longer life. A minimum of 5 nos. flow sensors / 5 no.s of expiratory cassette should be supplied with each ventilator. Unit cost of flow sensors, expiratory valves, expiratory cassettes should be quoted separately.
28	Expiratory unit-life should be more than 3 yrs and it should be able to be autoclaved.	Deleted as the point no. 27 already includes this specification.
29	Should be supplied with compatible UPS.	Deleted.
30	Should have flow sensors having long life and the company shall specify the life span and the cost of the flow sensors at the time of quoting the tender.	Deleted as the point no. 27 already includes this specification.
31	Standard accessories along with:	
	a. patient breathing circuit of silicon for adult & paediatric (reusable).	12 sets of ventilator should be supplied with <ul style="list-style-type: none"> <li>• Patient breathing circuit of silicon with water traps for adult – 24 sets</li> <li>• Patient breathing circuit of silicon with water traps for Paediatric – 6 Sets</li> <li>• Hard sided Test lung – 12 Sets.</li> <li>• Disposable patient circuit Adult - 240 No.s</li> <li>• Disposable patient circuit Pediatric -20 No.s</li> </ul>
	b. Non invasive ventilator mask reusable for adult-(three sizes) and all paediatric sizes-2 set each.	No change
	c. ET tube cuff pressure monitor and HME filter-10.	HME filter- 100 no.s, Bacterial filter -100 no.s with every machine
32	Ventilator must be operational without the need of any specialised spirometry tubing or proprietary breathing circuit.	No change.
33	Should be USFDA Approved/European CE Certified with 4 digit certification	Deleted as the point no. 1 already includes this specification.
34	Respiratory Mechanics to be added with <ul style="list-style-type: none"> <li>• Auto-PEEP</li> <li>• Compliance(static &amp;dynamic)</li> <li>• P 0.1</li> </ul>	No change

	<ul style="list-style-type: none"> <li>• NIF</li> <li>• Resistance(Ri&amp;Re)</li> <li>• RSBI</li> <li>• <b>Vital Capacity/Work of Breathing</b></li> </ul>	
35	Ventilator should be upgradable to lung protective tool.	<p>Three ventilators out of total 12 ventilators should have a dedicated clinical decision support tool for lung protective ventilation – it should aid in recruitment, measure recruited volume, help in PEEP titration and calculate dead space.</p> <p>These tools should be demonstrated during evaluation and it should not be a shown as a part of any mode or routine lung mechanics like compliance &amp; resistance.</p> <p>Unit cost of this upgrade for the balance ventilators should be quoted separately in the tender.</p>
36	Technical evaluation will be finalised only after functional demonstration of the offer equipment. The functional demonstration will not be a substitute for technical evaluation of the document submitted along with the bid	No change
	To be added	No change
	To be added	The bidders should submit a separate list of spares, consumables & durables with cost.

## B. Item no 6 Multipara monitor

S.no.	Technical Specification	May Please read as
Pt. no. 19	<p>Monitors should have capable of future up-gradation through interchangeable modules to monitor and display.</p> <ul style="list-style-type: none"> <li>• 4 channel EEG</li> <li>• Cardiac output (both thermos-dilution, as well as minimally invasive)</li> <li>• Spirometry</li> <li>• SvO2</li> </ul> <p>ADD ON: Monitor should preferably have a facility for ICU electronic charting and integration with other ICU equipments like ventilator &amp; syringe pumps etc. Integration to be done considering one ventilator, one patient monitor, one rack of</p>	<p>1. As added on in the tender specification no. 19 it is clearly mentioned that the <b>connectivity of ICU charting solution is with one ventilator, one patient monitor, one rack of syringe pump at bedside.</b></p> <p>2. It is clearly mentioned in the tender that the total requirement of monitor is <b>50 with total 6 central nursing station</b> (as mentioned in specification no. 13). Hence it is evident that charting is required for all 50 beds.</p>

	syringe pump at bedside.	
Pt. no. 25	The manufacturer should preferably have the capability with proven track record to upgrade the monitoring system to integrated paperless e-charting to connect all ICU devices at one point.	

All other terms and conditions of the tender enquiry document shall remain unchanged. Prospective bidders are advised to regularly visit HSCC website/ CPP as corrigendum /amendments etc. if any, will be notified on this portal only, no separate advertisement will published in the news papers.

**Sr. CGM-I, HSCC (I) Ltd**  
**For & on behalf of Director CNCI, Kolkata**