

**TENDER**

**FOR**

**Adult Patient Training Tool**

**AT**

**NATIONAL INSTITUTE OF AYURVEDA, JAIPUR**

<b>NIT ISSUE DATE</b>	<b>:</b>	<b>23-10-2020 (17.00 PM)</b>
<b>NIT NO.</b>	<b>:</b>	<b>NIA/CS/ST/2020/009</b>
<b>PRE-BID MEETING</b>	<b>:</b>	<b>26-10-2020 at 3:00 PM</b>
<b>LAST DATE OF SUBMISSION</b>	<b>:</b>	<b>09-11-2020 (2.15 PM)</b>
<b>BID OPENING DATE</b>	<b>:</b>	<b>10-11-2020 (2.15 PM)</b>
<b>TENDER COST</b>	<b>:</b>	<b>2500/-</b>



**NATIONAL INSTITUTE OF AYURVEDA**

MINISTRY OF AYUSH GOVT. OF INDIA  
JORAWAR SINGH GATE AMER ROAD, JAIPUR

**Adult Patient Training Tool**  
**NIA/CS/S.T/2020/009**

National Institute of Ayurveda, Jaipur an autonomous body under the Ministry of AYUSH, Government of India invites **Online bids in two bid system** for tenders for supply & installation **for Adult Patient Training Tool**. Best offers are invited along with the complete details of specifications, terms & conditions.

<b>S.N.</b>	<b>ITEM DESCRIPTION</b>	<b>QTY</b>	<b>EMD (RS.)</b>
<b>1</b>	<b>Adult Patient Training Tool</b>	<b>01</b>	1,70,000/-

**INSTRUCTIONS:**

1. Bids shall be submitted online at CPPP website: <https://eprocure.gov.in/eprocure/app>.
2. The complete bidding process is online Bidders should be in possession of valid digital Signature Certificate (DSC) of class II or III for online submission of Bids, Prior to bidding DSC need to be registered on the website mentioned above.
3. Tenderer/Contractor/Bidders are advised to follow the instructions provided in the instructions to the contractors/Tenderer/Bidders for the e-submission of the bids online through the Central Public Procurement Portal for e-Procurement at <https://eprocure.gov.in/eprocure/app>.
4. Bid documents may be scanned with 100 dpi in black and white option which helps in reducing size of the scanned document.
5. **Pre Bid Meeting:**  
Pre Bid meeting with the intending bidders shall be held on **26-10-2020 at 3:00 PM onwards at NIA, Jaipur**. All the prospective bidders are requested to send comments/respresentations on or before pre-bid meeting. Intending bidder will be allowed to seek clarification of specifications, conditions of contract etc. in writing to NIA, Jaipur (E-Mail: [store-nia-rj@gov.in](mailto:store-nia-rj@gov.in) or [nia-rj@nic.in](mailto:nia-rj@nic.in) ) within 24 hours after the pre bid meeting.
6. **EMD Payment:**  
The Bidder shall be required to submit the Earnest Money Deposit (EMD) for an amount of **Rs. 1,70,000 (Rupees One Lakhs Seventy Thousand Only)** by way of demand drafts only. The demand drafts shall be drawn in favour of "**Director, NIA, Jaipur**" Payable at Jaipur. The EMD of the Successful Bidder shall be returned after the successful submission of Security Deposit and for unsuccessful Bidder(s) it would be returned after award of the Contract. **The demand Drafts for EMD must deliver to Director, NIA, Jaipur on or before last date /time of Bid Submission.**
  - a) Tenderer shall not be permitted to withdraw his offer or modify the terms and conditions thereof. In case the tenderer fails to observe and comply with stipulation made herein or back out after quoting the rates, the aforesaid amount of earnest money will be forfeited.
  - b) The firm who are registered with National Small industries corporation (NSIC) or Small Scale Industries (SSI) are exempted to submit the EMD (Copy of Valid MSME registration Certificate must be provided along with Technical Bid). Registration proof and Udyog Aadhar Certificate should be enclosed with Technical Bid.
  - c) Bidders are not allowed to submit more than one bid anytime during the tendering process for the same/similar tendered item else all his bids shall be cancelled thereby making him disqualified in addition to the forfeiture of the EMD.
  - d) The EMD, in case of unsuccessful Bidders shall be retained by NIA, Jaipur till the finalization of the Tender. No Interest will be payable by NIA, Jaipur on EMD.

## **Adult Patient Training Tool**

**NIA/CS/S.T/2020/009**

- e) EMD is required to protect the purchaser against the risk of Bidders conduct. The EMD will be forfeited if the bidder withdraws or amends its tender or impairs or derogates from the tender in any respect within the period of validity of its tender or if it comes to the notice that the information/ documents furnished in its tender is incorrect or false.
- f) The EMD/PBG shall be forfeited if successful bidder fails to supply the goods/equipment in stipulated time or fails to comply with any of the terms & conditions of the contract or fail to sign the contract.

### **7. Submission of Tender:**

The tender shall be submitted online in two part, viz., Technical Bid and Financial Bid (BOQ). All the pages of bid being submitted must be signed and sequentially numbered by the bidder irrespective of nature of content of the documents before uploading. all documents should be in readable format.

The Bidder shall quote the Technical and Financial Bids as per the format enclosed with tender document. ***The Bidders should submit their all relevant documents (Technical bid document and EMD proof etc) before last date and time of bid submission.***

***The offers submitted by Telegram/Fax/email shall not be considered. No correspondence will be entertained in this matter.***

### **8. Technicl Bid:**

**All pages of the Tender should be numbered and indexed.**

The bidder shall provide in its tender the required as well as the relevant documents like technical data, literature, drawings etc. to establish that the goods and services offered in the tender fully confirm to the goods and services specified by the purchaser in the tender documents. For this purpose, the bidder shall also provide a clause-by-clause commentary on the technical specifications and other technical details incorporated by the purchaser in the tender documents to establish technical responsiveness of the goods and services offered in its tender duly indicating relevant page numbers in the product literature.

The following documents are to be furnished by the contractor/Bidder along with Technical Bid as per the Tender Document:

- a) Signed and scanned copy of appropriate value of valid registration certificate (if any), experience certificate as per the tender notice, PAN, GST registration certificate and Tender Acceptance Letter.
- b) Signed and Scanned Copy of make and model of all systems, sub systems and additional items should be mentioned in the technical bid and complete technical details should be provided in the form of Brochures and write-ups.
- c) The bidders are required to submit user certificate for the relevant equipment on the letter head of the institution.
- d) Signed & stamped compliance sheet of the technical specification of the goods with technical printed literature must be enclosed with the bid
- e) **Manufacturer Authorization:**  
The bidder (if not original equipment manufacturer) must submit Original Equipment Manufacturer authorization certificate that the tenderer is authorized for selling and maintain the equipment quoted for.

### **9. Financial Bid:**

## **Adult Patient Training Tool**

**NIA/CS/S.T/2020/009**

Price Schedule(s) as per BoQ format filled up with all the details including Make, Model etc. of the goods offered to be uploaded.

While filling up the columns of the Financial Bid, the following aspects should be noted for compliance:

**Price should include:**

- a) Duties and fees, if any
- b) Charges towards Packing & Forwarding, Inland Transportation, Insurance, Loading/Unloading and other local costs incidental to delivery of the goods to their final destination as specified in the List of Requirements and Financial Bid
- c) The price of annual CMC, as mentioned in List of Requirements, Technical Specification and Financial Bid
- d) GST will be payable separately as per applicable rate.

**Schedule of price bid in the form of BOQ\_XXXX .xls**

The below mentioned price bid format is provided as BoQ\_XXXX.xls along with this Tender Enquiry Document at <https://eprocure.gov.in/eprocure/app> . Bidders are advised to download this BoQ\_XXXX.xls as it is and quote their offer/rates in the permitted column and upload the same in the commercial bid. Bidder shall not tamper/modify downloaded price bid template in any manner. In case if the same is found to be tempered /modified in any manner, tender will be completely rejected and tenderer is liable to be banned from doing business with NIA, Jaipur.

10. The authorized signatory of the bidder must digitally sign the bid. Individuals digitally signing the bid or other documents connected with a contract must specify whether he signs as:
  - a) A 'Sole Proprietor' of the firm or constituted attorney of such Sole Proprietor
  - b) In case of partnership firm he must have authority to quote & to refer to arbitration dispute concerning the business of the partnership either by virtue of the partnership agreement or a power of attorney
  - c) Constituted attorney of the firm if it is a company.

**11. Turnover**

The Firm/Agency should have an annual total minimum turnover of Rs 2 Cr during the Last 3 Years (2017-18, 2018- 19, 2019-2020) to be eligible for consideration.

**12. Validity:**

The quoted rates must be valid for a period for 180 days from the date of closing of the tender. The overall offer for the assignment and bidder(s) quoted price shall remain unchanged during the period of validity. If the bidder quoted the validity shorter than the required period, the same will be treated as unresponsive and it may be rejected.

13. The Bidding firm should be continuously engaged (with valid license/ Registration) in the same business at least last 3 Years the bidding firm should have at least 1 similar contracts with Central Government/State Government/PSU's/ Universities/Deemed to be Universities/autonomous bodies/**Reputed Medical Institute or Organisations** in last 3 Years.

14. **The bidder firm should not have been blacklisted by any Ministry/Department of Govt. of India/State Government/any PSU's etc. The Performance Security Deposit will be forfeited after awarding the Bid, in case the bidding firms found black listed by Central Government/State Government/PSU's/Universities/Deemed to be Universities/Autonomous Bodies at any point of time.**

## **Adult Patient Training Tool**

**NIA/CS/S.T/2020/009**

**15. The Director, National Institute of Ayurveda reserve the right to accept or reject any/all tenders without assigning any reason thereof.**

**16. Availability of Funds:**

Expenditure to be incurred for the proposed purchase will be met from the funds available with the purchaser/consignee

**17. Delivery and Installation:**

**For goods supplied from India:**

- a) All the goods ordered shall be delivered and Installed at NIA, JAIPUR within **30 days** from the date of issue of supply order. All the aspects of safe delivery, installation and commissioning shall be the exclusive responsibility of the supplier. If the supplier fails to deliver, install and commission the goods on or before the stipulated date, then a penalty at the rate of 0.5% per week or a part thereof of the total order value shall be levied subject to maximum of 10% of the total order value. The successful tenderer will also provide required training for supplied items at NIA.JAIPUR. The goods should be manufactured after adoption of latest technology. If at any time during the currency of the contract, the supplier encounters conditions hindering timely supply of the goods and performance of services, the supplier shall promptly inform the NIA, JAIPUR for extension of the delivery schedule accordingly.
- b) On receiving the supplier's communication, NIA, JAIPUR shall examine the situation as soon as possible and, at its discretion, may agree to extend the delivery schedule, with or without liquidated damages for completion of supplier's contractual obligations by issuing an amendment to the contract. In the case of package supply where the delayed portion of supply materially hampers installation and commissioning of the systems, liquidated damages charges shall be levied as above on the total value of the concerned package of the purchase order. Quantum of liquidated damages assessed and levied by the purchaser shall be final and not challengeable by the supplier.

**18. Signing the Contract:**

The successful bidder shall be required to execute the Contract Agreement accepting all terms and conditions stipulated herein on a non-judicial stamp paper of Rs. 500/- (Rs. Five Hundred only) along with performance security within fifteen days of the issue of the Letter of notification of a ward. In the event of failure on the part of the successful bidder to sign the Contract within the period stipulated above, the EMD shall be forfeited and the acceptance of BID shall be considered as cancelled

**19. Performance Security:**

As a guarantee towards due performance and compliance of the contract work, the successful bidder (contractor) will deposit an amount equal to 5% of order value and should be kept valid for a period of 60 day beyond completion of all the contractual obligation, including CMC period towards security deposit by way of demand draft/ bank Guarantee in favour of "**DIRECTOR NIA,JAIPUR**" **payable at JAIPUR** drawn on any Nationalized Bank/Scheduled Bank and payable at JAIPUR within fifteen days of the issue of the Letter of notification of award along with non-judicial stamp paper of Rs. 500/- (Contract agreement).

**20. Incidental Services:**

The supplier shall be required to perform the following services: -

- a) Installation & Commissioning, Supervision and Demonstration of the goods.
- b) Providing required jigs and tools for assembly, minor civil works required for the completion of the installation.
- c) On Site Training to Doctors/ Technicians/ Staff is to be provided by Supplier for operation and maintenance of the equipment for a period of 30 working days after successful installation of the machine, as per direction of user department.

## **Adult Patient Training Tool**

**NIA/CS/S.T/2020/009**

- d) Supplying required number of operation & maintenance manual for the goods.
- e) To provide non-locked open software and standard interface inter-operability conditions for networked equipment's in hospital management information system, wherever applicable.

### **21. After Sales Service:**

After sales service centre should be available on 24 (hrs.) X 7 (days) X 365 (days) basis. Complaints should be attended properly, maximum within 24 hrs to ensure an uptime of minimum 95%, wherever applicable, failing which the necessary penalty measures shall be enforced.

### **22. Inspections:**

- a) NIA, Jaipur shall have the right to inspect and/or to test the goods to confirm their conformity to the NIT Specifications at no extra cost to the Purchaser.
- b) NIA, Jaipur right to inspect, test and, where necessary, reject the Goods after the goods arrival at the final destination shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by NIA,JAIPUR prior to the goods shipment.
- c) The Director, NIA,JAIPUR shall be the final authority to reject full or any part of the supply which is not confirming to the specification and other terms and conditions
- d) No payment shall be made for rejected items and those must be removed by the Bidders within two weeks of the date of rejection at their own cost and replaced immediately. In case these are not removed, these will be auctioned at the risk and responsibility of the suppliers without any further notice.

### **23. Payment Terms:**

Payment of the total order value shall be released after the successful installation/ commissioning and tanning of the ordered goods against the submission of the inspection report.

### **24. Guarantee / Warrantee Period:**

The Tenderers must quote for 5 year comprehensive warranty (including all Spares, Accessories and Labour) from the date of completion for satisfactory installation. The Warranty Charges shall not be quoted separately otherwise the offer shall be summarily rejected.

### **25. Breach of Terms and Conditions:**

In case of breach of any terms and conditions as mentioned above, the Competent Authority, will have the right to cancel the work order/ job without assigning any reason thereof and nothing will be payable by NIA, Jaipur in that event the security deposit shall also stands forfeited

### **26. Insolvency etc.:**

In the event of the firm being adjudged insolvent or having a receiver appointed for it by a court or any other order under the Insolvency Act made against them or in the case of a company the passing any resolution or making of any order for winding up, whether voluntary or otherwise, or in the event of the firm failing to comply with any of the conditions herein specified NIA, Jaipur shall have the power to terminate the contract without any prior notice

### **27. Force Majeure:**

If, at any time during the subsistence of this contract, the performance in whole or in part by either party of any obligation under this contract is prevented or delayed by reasons of any war or hostility, act of public enemy, civil commotion, sabotage, fire, floods, explosion, epidemics, quarantine restriction, strikers lockout or act of God (herein after referred to as events) provided notice of happening of any such eventuality is given by part to other within 21 days from the date of occurrence thereof, neither party shall by reason of such event be entitled to terminate this

## **Adult Patient Training Tool**

**NIA/CS/S.T/2020/009**

contract nor shall either party have any claim for damages against other in respect of such non-performance or delay in performance, and deliveries have been so resumed or not shall be final and conclusive. Further, that if the performance in whole or in part of any obligation under this contract is prevented or delayed by reason of any such event for a period exceeding 60 days, either party may, at least option to terminate the contract.

28. Bidder shall submit a copy of the tender document and addenda thereto, if any, with each page of this document should be signed and stamped to confirm the acceptance of the entire terms & conditions as mentioned in the tender enquiry document.
29. After due evaluation of the bid(s) Institute will award the contract to the lowest evaluated responsive tenderer.
30. Conditional bid will be treated as unresponsive and it may be rejected.

**31. Demonstration:**

NIA, Jaipur reserves the right to ask the tenderers for arranging demonstration of their equipment for which rates have been quoted, to the concerned committee, if required.

32. The Institute reserves the right to accept in part or in full or reject any or more tender(s) without assigning any reasons or cancel the tendering process and reject all tender(s) at any time prior to award of contract, without incurring any liability, whatsoever to the affected bidder or bidder(s)

**33. Applicable Law:**

The contract shall be governed by the laws and procedures established by Govt. of India, within the framework of applicable legislation and enactment made from time to time concerning such Commercial dealings / processing

Any disputes are subject to exclusive jurisdiction of Competent Court and Forum in Jaipur, Rajasthan, India only

The Arbitration shall be held in accordance with the provisions of the Arbitration and Conciliation Act, 1996 and the venue of arbitration shall be at Jaipur. The decision of the Arbitrator shall be final and binding on both the parties

Force Majeure: Any delay due to Force Majeure will not be attributable to the supplier.

## Adult Patient Training Tool

NIA/CS/S.T/2020/009

### Technical Bid

1.	Name of Tendering Company/Firm/Agency	:	
2.	Name of Owner/Partners/Directors	:	
3	Full Particulars of the Head Office	:	
	• Address	:	
	• Telephone No.	:	
	• Fax No.	:	
	• E-mail address	:	
4	<b>Full Particulars of the Bankers of the Company/Firm/Agency, with full Address/Tel. No.</b>	:	
	• Name of the Bank	:	
	• Address of the Bank	:	
	• Telephone No.	:	
	• Fax No.	:	
	• E-mail address	:	
5	<b>Registration Details:</b>	:	
	• Copy of Firm/Agency's Registration No.	:	
	• PAN/GIR NO.	:	
	• GST Registration No	:	
	• Aadhar No. of Owner/Partners/Directors	:	
6	<b>Details of Earnest Money Deposit</b>	:	
	• Amounts (Rs.)	:	
	• DD/PO No. and Date	:	
	• Drawn on Bank	:	
	• Valid upto	:	
7	<b>Details of Tender Fee</b>	:	
	• Amount	:	
	• DD/PO No.	:	
	• Drawn on Bank	:	
	• Valid upto	:	
8	Annual Turnover of the Company/Firm/Agency for the last 3 years (With Proof duly certified by Chartered Accountant/Auditor) Last 03 Years balance sheet and copies of Income tax returns for 3 Years as stated in Terms & Conditions		
	<b>2017-2018</b>	:	
	<b>2018-2019</b>	:	
	<b>2019-2020</b>	:	
9	The Firm who are registered with NSIC or Small Scale Industry/Or MSME are exempted to submit the tender fee or EMD (Copy of Registration Valid MSME Certificate must be provided along with Udyog Aadhar)		
10	<b>Similar supplies in last 3 Years (with Proof)</b>		
	<b>Experience in the field for the minimum 3 years</b>		Similar 1 Government Running Contract with central government / State Government / PSU / University / Deemed to be university/Autonomous bodies/ <b>Reputed Medical Institute or Organisations</b> in last 3 years.



**Adult Patient Training Tool**  
**NIA/CS/S.T/2020/009**

**Certificate**  
**(To be submitted with the Technical Bid)**

The Annual Turnover of M/s. \_\_\_\_\_ for the last 3 Years are given below and it is certified that the Statement is true and correct:

S.N.	Year	Turnover Rs. In Lacks
1	2017-2018	
2	2018-2019	
3	2019-2020	
	Total	Rs _____ Lacks

Average Turnover Per Annum: Rs. \_\_\_\_\_ Lacks.

*Signature of Chartered Accountant/Auditor with Seal*

**Adult Patient Training Tool**  
**NIA/CS/S.T/2020/009**

**MANUFACTURER'S/PRINCIPAL'S AUTHORIZATION FORM**

TO,  
Director  
National Institute of Ayurveda  
Jaipur  
Sir,

Tender:-----.

We ----- who are established and reputable manufacturer of having factories at ----- and -----, hereby authorize Messrs.------(name and address of agent(s)to bid, negotiate and conclude the contract with you against Tender.

No----- for the above goods manufactured by us. No company or firm or individual other than Messrs. ----- are authorized to bid, negotiate and conclude the contract in regards to this business against this specific tender.

We hereby extend our full guarantee and warranty as per the conditions of tender for the goods offered for supply against this tender by the above firm.

The authorization is valid upto -----

Yours faithfully,

For and on behalf of messrs.-----  
(Name of manufacutrers) principal

## **Adult Patient Training Tool**

### **NIA/CS/S.T/2020/009**

#### **Specifications**

The System comprising life adult male//female manikin integrated with CPR analysis compliant with the latest American Heart Association's guidelines with following facilities : -.

1. Facility to exhibit validated human physiology including cardiovascular system, pulmonary system, neuromuscular system, and central nervous system.
2. Facility to exhibit clinical signs (e.g., spontaneous breathing, eyelid blinking) independent blinking eyes and reactive pupils. dependent on the underlying patient physiology (i.e., level-of-consciousness, level of neuromuscular blockade). with facility to set the pupils to different settings (i.e., pinpoint, reactive, non reactive, blown) and monitored parameters (e.g., electrocardiogram, blood pressure) automatically responding to therapeutic intervention without any/ minimal input from the instructor .
3. Facility to exhibit realistic skeletal structure, providing true-to-life articulated motion.
4. Facilities to exhibit the following skills :
  - a. Intravenous cannulation
  - b. Head tilt-chin lift, Jaw thrust methods
  - c. Airway Simulation skills including controllable open / closed airway, automatically or manually controlled, Suctioning (Oral and Nasopharyngeal), bag-valve mask ventilation, orotracheal intubation, nasotracheal intubation, combitube placement, LMA placement, endotracheal tube intubation, retrograde intubation, first grade fiber-optic intubation, light wand intubation, needle cricothyrotomy, surgical cricothyrotomy, facility to monitor, actual blood gases be including pH, PCO<sub>2</sub>, PO<sub>2</sub> accurately corresponding to alveolar concentration of CO<sub>2</sub> & O<sub>2</sub>, adjust ABG pH level to analyse metabolic acidosis and alkalosis
5. Facilities to exhibit cardiovascular system that automatically calculates dependent variables (e.g., blood pressure, heart rate) in response to changing Cardiovascular system status (e.g., bleeding, intravenous fluid administration), including the facilities to exhibit following :

Baroreceptor reflex that compensates both centrally (e.g., heart rate, cardiac contractility) and peripherally (e.g. systemic vascular resistance, venous capacitance) to maintain circulation and perfusion.

  - a. Baroreceptor reflex that compensates both centrally (e.g., heart rate, cardiac contractility) and peripherally (e.g. systemic vascular resistance, venous capacitance) to maintain circulation and perfusion.
  - b. Myocardial oxygen supply (e.g., diastolic blood pressure, arterial oxygen partial pressure) and demand (e.g., cardiac contractility, heart rate) that yields appropriate cardiac response (e.g., cardiac rhythm, cardiac contractility) to myocardial ischemia. Untreated myocardial ischemia should automatically result in cardiovascular decompensation with accompanying cardiac rhythms (e.g., ST-segment depression, ventricular tachycardia, ventricular fibrillation, a systole) and ultimately, cardiovascular collapse.
  - c. Arterial blood gases (e.g., PaO<sub>2</sub>, PaCO<sub>2</sub>, and pH) and mixed venous gases (e.g., PvO<sub>2</sub>, PvCO<sub>2</sub>) that realistically change.
  - d. Hematocrit should be automatically calculated to reflect oxy-hemoglobin saturation and administration of a variety of intravenous fluids, such as whole blood, packed red cells, colloids, and crystalloids.
  - e. A complete hemodynamic monitoring package that includes the capability to measure and Monitor Left ventricular blood pressure, CVP, Right atrial pressure,

## **Adult Patient Training Tool**

**NIA/CS/S.T/2020/009**

Pulmonary artery pressure, Pulmonary artery occlusion (wedge) pressure, cardiac output.

6. Facilities to exhibit pulmonary system that automatically calculates alveolar and arterial gas partial pressures in response to ventilation, fraction of inspired oxygen, intrapulmonary shunt fraction, and metabolic gas exchange with following characters ;
  - a. During spontaneous ventilation, it should breathe with a spontaneously controlled respiratory rate and tidal volume to maintain normo-carbia and adequate oxygenation
  - b. Facilities to exhibit response of Positive pressure ventilation or return of spontaneous ventilation automatically reversing apnea with the response appropriate to the rate and tidal volume or ventilation.
  - c. Facilities to exhibit response to the fraction of inspired oxygen present, such as with smoke inhalation or supplemental oxygen.
  - d. Facilities of pre-cut for Bilateral chest tube insertion for saving skin replacement.
  - e. Facilities of exhibit hest tube insertion with fluid output and automatic resolution of physiology .
7. Facilities to exhibit pharmacology system model with automatic calculation of pharmacokinetics and pharmacodynamics for all commonly used intravenous and inhaled medications, yielding appropriate changes in patient clinical signs and monitored parameters. Along with facilities to exhibit all patient responses to drug administration automatic, dose dependent, and follow an appropriate time course even in case of students errors.
8. Facilities to exhibit patient outcome based on patient physiology and the treatment administered (e.g., ventilation, oxygen therapy, drug therapy) and should not be influenced by subjective assessment of the operator thus providing objective evaluation of clinical performance and reducing risk of negative training transfer.
9. The model should be equipped with a simulated monitor capable of displaying all of the following parameters:
  - a. ECG, Invasive Blood Pressures (ABP, CVP, PAP, WedgePressure), Cardiac Output, SpO<sub>2</sub>, PR/HR, ETCO<sub>2</sub>, Body and Blood Temperature, NIBP
  - b. The monitor should have configurable alarm limits with accompanying sounds for each parameter.
  - c. The frequency of the pulse tone should be synchronized with the cardiac cycle and the pitch should correlate with the SpO<sub>2</sub> value.
10. The apparatus must be equipped with facilities to exhibit realistic airway (mouth, oropharynx, larynx, esophagus, trachea, carina) resembling to that of an actual human patient.
  - a. Depending on head positioning, choice of clinical tools, and other maneuvers, it must have facility to achieve anywhere from a Cormack Class I (e.g., easy intubation) to a Cormack Class IV (e.g., difficult intubation) airway.
  - b. The airway must allow use of airway adjuncts (e.g., combitube, laryngeal mask airway) as they are used in real patients, without any special adjustments by the instructor (e.g., activation of posterior swelling to seat the LMA).
  - c. The success or failure of airway management should be automatically reflected in the resulting ventilation, oxyhemoglobin saturation, and overall cardiopulmonary stability.
11. Should have trauma scenario capabilities, such as:
  - a. Surgical cricothyroidotomy
  - b. Articulated mandible
  - c. Articulation in elbow, wrist, knees and elbows
  - d. Simultaneous bleeding at different sites linked to physiology

**Adult Patient Training Tool**  
**NIA/CS/S.T/2020/009**

- e. Secretions from eyes, ears, mouth.
- f. Bi-lateral pneumothorax needle decompression at the clinically appropriate location
- g. Bi-lateral chest tube insertion (with fluid return) at the clinically correct location.

Each trauma capability should require minimal instructor input and physiological consequences (e.g., improvement in blood pressure, ventilation, and oxyhemoglobin saturation) should be automatic.

12. Should have fully to exhibit simulation as per independent left and right lungs with following characters :.
  - a. One-sided pneumothorax result in chest distention on one side, with the other side rising and falling with spontaneous breathing.
  - b. Should have independent breath sounds linked to ventilation of each lung for both spontaneous and mechanical ventilation.
  - c. One-lung ventilation should automatically result in appropriate breath sounds, chest excursion, and pulmonary gas exchange.
  - d. Independent bilateral trauma feature (needle decompression / chest tube)
13. Should have independent blinking eyes and reactive pupils. Eye blinking should be automatic and dependent on the underlying patient physiology (i.e., level-of- consciousness, level of ADULT PATIENT TRAINING TOOL NIA/CS/ST/2020/009 NIA, JAIPUR Page 14 neuromuscular blockade). It should be possible to easily set the pupils to different settings (i.e., pinpoint, reactive, non reactive, blown).
14. Should be capable of physically shaking, giving a visible clue of convulsions, tremors, or other similar conditions.
15. Should have touch activated, bi-lateral palpable pulses in the following locations: Carotid, Brachial, Radial, Femoral, Popliteal, Pedal (dorsalis and tibialis)
16. Should have an advanced cardiac life support system in which:
  - a. Effective chest compressions automatically yield artificial circulation, cardiac output, central and peripheral blood pressures, palpable pulses, and exhaled CO<sub>2</sub>.
  - b. Ineffective chest compressions yield inadequate cardiac output and circulation and an absence of exhaled CO<sub>2</sub>.
  - c. Defibrillation energy is automatically identified, quantified, and logged
  - d. Pacing current is automatically identified, quantified, and logged, with appropriate physiological response.
17. Should include independent scenarios of patients (e.g., young healthymale, pregnant female, elderly patient with coronary artery disease) and injury/disease scenarios (e.g., anaphylactic shock, ruptured spleen, subdural hematoma.)
  - a. It should be possible to combine any patient with any scenario, creating a wide variety of clinical carecases.
  - b. It should be possible to run multiple conditions simultaneously to create multitrauma care cases.
  - c. It should be possible to run multiple injury/disease scenarios simultaneously on a particular patient to create multi-trauma cases
18. Must have the fin build learning Module Scenarios with above details as per Advanced Cardiac Life Support (ACLS) in accordance with latest AHA / ACLS guidelines.

Complete system must be supplied with following:

- i. Wireless System

## ***Adult Patient Training Tool***

***NIA/CS/S.T/2020/009***

- ii. Laptop with validated physiology software.
- iii. Virtual clinical Patient Monitor
- iv. Tablet with instructor control software
- v. Trauma kit which includes : One Abdominal Evisceration, One Calf Avulsion, One Open Head Wound, One Lacerated Thigh, One Compound Fracture (Arm), Three Bruising Patches, Six Bullet Holes, Three Lacerations, Two Fire Burns, Three Electrical Burns, One Spider Bite/Decubitus Ulcer, One Blood Pumping System, Simulated Blood and One Set of Wound/Treatment Cards.

Faculty Training concerning working on these models has to be provided by the supplier.