

## **TENDER FOR**

**Advanced Multipurpose Human Patient Training Tool for Anaesthesia Training**

**AT**

**NATIONAL INSTITUTE OF AYURVEDA, JAIPUR**

<b>NIT ISSUE DATE</b>	:	<b>20-10-2020 (17.00 PM)</b>
<b>NIT NO.</b>	:	<b>NIA/CS/SH.T/2020/016</b>
<b>PRE-BID MEETING</b>	:	<b>26-10-2020 at 3.00 PM</b>
<b>LAST DATE OF SUBMISSION</b>	:	<b>05-11-2020 (2.15 PM)</b>
<b>BID OPENING DATE</b>	:	<b>06-11-2020 (2.15 PM)</b>
<b>TENDER COST</b>	:	<b>2500/-</b>



**NATIONAL INSTITUTE OF AYURVEDA**

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

## Advance Multipurpose Human Patient Training Tool for Anaesthesia Training NIA/CS/SH.T/2020/016

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 of the **Advanced Multipurpose Human Patient Training Tool for Anaesthesia Training**. Best offers are invited along with the complete details of specifications, terms & conditions.

S.N.	ITEM DESCRIPTION	QTY	EMD (RS.)
1	<b>Advanced Multipurpose Human Patient Training Tool for Anaesthesia Training</b>	01	1070000/-

### 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 from 3.00 PM onwards at NIA, Jaipur.** All the prospective bidders are requested to send comments/representations 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 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\_1070000/- (Rupees Ten Lakhs Saventy 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)
  - 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.

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- 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 parts, 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.

The Bidder shall quote the Technical and Financial Bids as per the format enclosed with tender document.

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

## **8. Technical 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:**

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

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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/Company/Bidder/Agency should have an annual total minimum turnover of Rs 6 cr during last 3 Years (2017-18, 2018-19, 2019-20)**

**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 for last 3 Years. The bidding firm should have at least 1 similar contracts with Central Government/State Government/Public Sector Undertakings/ Universities/ Deemed to be universities/ Autonomous Bodies/**Reputed Medical Institute or Organations** 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.**

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:**

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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).

## 7. 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 5 working days after successful installation of the machine, as per direction of user department.
- d) Supplying required number of operation & maintenance manual for the goods.

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- e) To provide non-locked open software and standard interface inter-operability conditions for networked equipment's in hospital management information system, wherever applicable.

### **20. 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.

### **21. 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.

### **22. 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.

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

The Tenderers must quote for **05 years comprehensive warranty (Including all Spares, Accessories and Labour)** from the date of completion of the satisfactory installation. The warranty charges shall not be quoted separately otherwise the offer shall be summarily rejected.

### **24. 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

### **25. 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

### **26. 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,

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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 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.

**27.** 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.

**28.** After due evaluation of the bid(s) Institute will award the contract to the lowest evaluated responsive tenderer.

**29.** Conditional bid will be treated as unresponsive and it may be rejected.

**30. 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.

**31.** 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)

**32. 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.

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### 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 National small Industries Corporation (NSIC)/ or Small Scale Industry / or MSME are exempted to submit the Tender fee or EMD (copy of Valid MSME registration Certificate must be provide along with <b>Udhyog Addhar</b> )		
10	<b>Similar supplies in last 3 Years (with Proof)</b>		
	<b>Experience in the field for the minimum last 3 years</b>		Similar 1 Running Contract with central government/State Government/PSU/University/Deemed to be university/Autonomous bodies/ Reputed Medical Institue in last 3 years



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**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. \_\_\_\_\_ Lakhs.

*Signature of Chartered Accountant/Auditor with Seal*

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**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 manufacturers) principal

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## **Specification**

Human Patient lab complete for Training & Education of undergraduates, Post graduate students & Health professionals in routine and special clinical situations adult Mannequins. It should offer sophisticated Validated mathematical models of human physiology and pharmacology and capable of determining automatically the patient's response to user actions and interventions

- Mannequin with Physical characteristic of an adult male female patient with interchangeable genitalia.
- Responding to intravenous drugs, CPR, defibrillation, intubations ventilation, catheterizations & other procedures.
- Suitable to demonstrate of various clinical signs (i.e. heart / breath sounds, palpable pulses, chest excursion, airway patency etc.) dynamically coupled with the mathematical models of human physiology and pharmacology.
- Computerised System Controller/**Control Unit**
- Supplied with complete with PC console / hand held Laptop for with instructor control.
- With Utility Software for:
  - Modification of preconfigured scenarios & patient profiles or creating new scenarios & profiles
  - Recording of patients physiology and intervention by student ,instructor or central software
  - modification of pharmacokinetics & pharmaco-dynamics parameters of selected drugs
- Patient Monitor Having facility to be connected to a real patient monitor for monitoring following parameters:
  - **4 or** More Lead ECG
  - NIBP
  - IBP (at least 2 ch)
  - SPO2
  - Cardiac Output
  - ST. Segment & Arrhythmia Analysis
  - ETCO2
  - Anesthetic agents
- Facility of :
  - Coupling with Anaesthesia Machine/Simulating use of Anesthesia Machine
  - Administration of Anaesthesia to the Simulator resulting in automatic appropriate patient response as per underlying physiology/condition
  - Coupling with ICU Ventilator
  - Facility to connect with real Defibrillator with ECG Monitoring

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## **MANNIQUIN MUST HAVE FOLLOWING FEATURES: -**

1. Airway System
  - With automatically realistic oropharynx , naso -pharynx and larynx representing adult patient
  - Facility of direct laryngoscopy, oral and nasal tracheal intubation.
  - Facility of mainstream end bronchial intubation, oesophageal intubation.
  - Facility of laryngospasm activator & airway occluder to create "unable to ventilate/ intubate" crisis scenario.
  - Facility to activate tongue swelling.
  - Facility of Combitubes, lighted stylets and fiber optic intubation tubes.
2. Pulmonary System
  - Facility to demonstrate spontaneous breathing with a self-regulated rate and tidal volume sufficient to maintain a target arterial carbon dioxide adjustable by the instructor.
  - Facility to demonstrate analysing events such as atelectasis, pneumothorax, asthma, COPD etc.
  - Facility of physically consuming O<sub>2</sub>, produce CO<sub>2</sub> and uptake or excrete N<sub>2</sub>O, sevfluorane, isofluorane, enflurane, and halothane.
  - Facility of Independent control of left & right lung to model airway resistance, lung compliance and control of chest wall compliance.
  - Facility of realistically modelled lungs with respect to the range of tidal volumes & functional residual capacity.
  - Facility to superimpose modes of ventilation (spontaneous, assisted & mechanical) one on another and respiratory system should be capable of triggering a ventilator.
  - Facility of Ventilation resulting in appropriate production of expired CO<sub>2</sub> that registers correctly on external/**simulated** capnograph.
  - Facility of appropriate & dose dependent pulmonary response to intravenously injected drugs.
  - Facility of continuously Calculation of arterial blood gas & PH
3. Cardio Vascular System Demonstration including:
  - Facility to analyse heart sound synchronized to QRS complex of ECG, generate **4 or More** lead ECG from appropriate positions on the patient's chest and should be able to analyse associated abnormalities such as myocardial ischemia, sinus tachycardia & bradycardia, ventricular fibrillation & a systole.
  - **Facility of palpable carotid/femoral/ radial/ brachial/dorsalis pedis/ popliteal and posterior tibialis pulses synchronised with ECG.**
  - **Facility to control Pulses.**
  - **Facility to analyse/ simulate hypovolemia/hypervolemia and right and / left heart failure.**
  - Facility to analyse patients' blood pressure that can be measured with cuff of NIBP Monitor, and provide monitoring of hemodynamic parameters.
4. Metabolic System Demonstration including:

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- Facility of measuring Actual physiological 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>.
  - Facility to adjust ABG pH level to analyse Metabolic Acidosis and alkalosis
5. Genito Urinary System Demonstration including:
- Facility to allow insertion of urinary catheters, & offer instructor controlled or automatic scenario-controlled excretion of urine and its flow rate.
6. Neurologic System Demonstration including:
- Facility of model cardio vascular & respiratory responses to sympathetic & para sympathetic activities.
  - Facility of electrode attachment for peripheral nerve stimulator.
  - Facility to detect PNS automatically stimulus pattern and generate appropriate thumb twitch response.
7. Advanced Cardiac Life Support System Demonstration including:
- Facility to display alveolar & arterial gas concentrations appropriately reflecting efficacy of ventilatory technique employed.
  - Facility to display artificial circulation, cardiac O/P, Central & peripheral blood pressure palpable pulses & CO<sub>2</sub> return as a result of effective chest compression.
  - Facility to select & maintain desired cardiac Arrhythmia and central patient's response to clinical intervention.
  - Facility to apply conventional & automatic external defibrillators to the patient and should trigger appropriate patient response.
  - Facility of prevision to apply transcutaneous pacemakers.
  - Facility to support all drug required by ACLS algorithm.
8. Trauma Features Demonstration including:
- Facility to analyse constriction & dilation of pupils of each eye in response to changing light stimuli.
  - Facility to perform needle decompression of Tension pneumothorax, & chest tube placement and management.
  - Facility to perform sobxyphoid needle peri-cardiocentesis to resolve acute cardiac temponade.
9. Pharmacology & Drug Recognition System Demonstration including:
- Facility of pre-programmed pharmacokinetic and pharmacodynamics parameter for over **40 or More** intravenous medication.
  - Facility to incorporate various intravenous access points such as antecubital, right internal jugular and femoral veins in the mannequin.
  - Facility to administer injection & intravenous infusions from main PC console or instructors hand held remote control **maniquine/simulator**
  - Facility of appropriate / automatic respond to incorrect medications.
  - Facility of drug recognition system to identify drug, its concentration & quantity of dosage given.

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- Facility to modify pharmacodynamics & pharmacokinetic models of existing drugs & to add new drugs.
10. Anaesthesia and Scavenging System Demonstration including:
- Facility to administer anaesthetic agents and medical gases
  - Facility to uptake and distribute nitrous oxide and volatile anaesthetics
  - Provision of direct gas exchange within the lungs
  - Provision of true respiratory gas exchange, interfaces with real clinical monitors, responds to oxygen therapy
  - Facility of mechanical ventilation fully supported with automatic responses to CPAP, PSV, PEEP, SIMV, assist control modes and weaning protocols
  - Provision of being configured with ventilator.
  - **Facility should have IV cannulation.**
  - **Facility of Right deltoid intramuscular/intra osseous injection site .**
  - **Should have facility for IV infusions support**
  - **Facility of Drug recognition system with barcode technology, identification of the drug, concentration, and volume/automatic drug recognition technology.**
  - Facility to analyse automatically and to respond to the medication (correct or incorrect) with no interaction from the instructor
  - Pharmacology system ensures patient responses are automatic, dose dependent and follow the appropriate time course
11. Pre-loaded Patient Profiles & Scenarios System Demonstration including:
- At least 5 pre-configured profiles of patients of various ages, medical history, gender & physiological parameter.
  - Facility to change existing patient profiles and to create new patient profiles.
  - Facility to capture the current state of patient at any part of session & to use it as new patient.
  - Facility of at least 50 pre-configured scenarios of events & crises.
  - Facility to change existing scenarios and to create new scenarios of events & crises.
12. Must be having facility of following preconfigured Scenarios concerning Anaesthesia:
- Aortic Cross Clamping
  - Anaphylaxis in Awake Patient.
  - Difficult to Intubate/ Ventilate.
  - Cardiac Tamponade
  - Emergence Apnea
  - Emergence Hypertension
  - Emergence with Laryngospasm
  - Emergence with Negative Pressure Pulmonary Edema
  - Total Spinal Anaesthesia
  - Local Anesthetic Toxicity During IV Epidural Injection
  - Sympathectomy due to Epidural Anaesthesia
  - Hypoxia due to Bronchospasm During Induction of Anaesthesia
  - Hypoxia due to Atelectasis in the Obese Patient During Laparoscopy

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- Malignant Hyperthermia Under General Anaesthesia
- Tension Pneumothorax
- Peripheral Nerve Block Complications
- Anaesthesia Machine Failure
- Anaphylaxis Under General Anaesthesia
- Awareness During Caesarean Section
- Perioperative Anterior Myocardial Infarction

**Obstetric**

- Amniotic Fluid Embolism
- Epidural Analgesia
- Pulmonary Aspiration
- Supine Hypotension Syndrome
- Obstetrics Venous Air Embolism
- Pre-Eclampsia

**Allied Health**

- Angina with Cardiac Arrest
- Asthmatic with Pneumothorax
- Chronic Obstructive Pulmonary Disease (COPD) with Respiratory Failure
- Heart Failure with Pulmonary Edema
- Inferior Myocardial Infarction
- Organophosphate Exposure
- Pneumonia with Septic Shock
- Severe Young Asthmatic
- Splenic Rupture with Pneumothorax
- Stab Wound to the Chest
- Subdural Hematoma
- Anaphylaxis
- Anterior Myocardial Infarction
- Tension Pneumothorax

**Advanced Cardiac Life Support (ACLS)**

- ACLS Acute Coronary Syndrome
- ACLS Acute Stroke
- ACLS Asystole
- ACLS Bradycardia and Heart Blocks
- ACLS Pulseless Electrical Activity
- ACLS Pulseless Ventricular Tachycardia and Ventricular Fibrillation
- ACLS Respiratory Arrest
- ACLS Supraventricular Tachycardia
- ACLS Ventricular Fibrillation AED
- ACLS Ventricular Tachycardia

**Advanced Life Support (ALS)**

- ALS Acute Coronary Syndrome

**Advance Multipurpose Human Patient Training Tool for Anaesthesia Training  
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- ALS Acute Stroke
- ALS Asystole
- ALS Bradycardia and Heart Blocks
- ALS Pulseless Electrical Activity
- ALS Pulseless Ventricular Tachycardia and Ventricular Fibrillation
- ALS Respiratory Arrest
- ALS Supraventricular Tachycardia
- ALS Ventricular Fibrillation
- ALS Ventricular Tachycardia

**An anaesthesia Simulation mannequin compatible with the anesthesia delivery system and gas accessory kit equipped with below/ or equipment to comply with below mentioned features and specifications.**

- Appropriate software Physiological user)software
- **Computer/Control rack/ Compatible control unit**
- Full function monitor interface
- Hands free cable kit
- Moulage (pre made rubber latex wounds or other elements of realism such as blood , vomitus or open fractures)kit
- Simulated Clinical Patient Monitor
- Enhanced drug recognition system
- Facility of simulating nursing, respiratory therapy and emergency medicine.,Pericardiocentesis & Diagnostic Peritoneal Lavage
- Instructor's laptop/desktop
- Patients Simulated Clinical Experiences
- Pharmacology Editor
- Pharmacology Library
- Onsite Installation Electronic user guide
- Free Training Module

**Training tool should be supplied complete with Web-based Digital Video & Audio Management System for Recording, Debriefing, Assessment and Evaluation.**

Web based digital video and audio management system for integration and synchronization of simulation exercise including physiological data logs, event logs, pharmacology data logs and patient monitoring data from multi simulators providing complete record for debriefing assessment and evaluation.

Should provide observation of simulation exercise and Ability to visualize and control the system from a central location.

The system should provide X-Rays to be inserted into simulations via stimulated patient monitor.



## ***Advance Multipurpose Human Patient Training Tool for Anaesthesia Training NIA/CS/SH.T/2020/016***

Should provide of capturing and control of simulation sessions and monitor and control playback in sync with any simulation event, data point or instructor's annotation during debriefing session or when a simulation is taking place

The system should include:

Support for real-time video and audio streams.

Record and replay the entire simulation for facilitated debriefing and after-action review. Broadcast simulation to internal and external locations.

Place-shift and time-shift the simulation recording.

Room-centric recording to follow action in a specific location.

Observe and switch between multiple camera views (real-time, time-shifted) with zoom in/out capability.

Supplied complete with control console, camera, Ethernet network cables, digital audio video recording system.

### **Software Specifications:**

1. It should have the facility for live broadcasts in any browser with as little as half a second of latency.
2. Should have Upto 4 concurrently displayed and synchronized camera streams 3 cameras and 1 training device in room.
3. Should simultaneously view upto 25 live streams (one from each room) on a center overview screen.
4. Should have facility for Widescreen HD Video broadcast and recording full screen mode.
5. On-screen PTZ controls: click on image to pan and tilt, drag image to zoom in/out: from multi or single room views. It should be able to connect any simulated or real patient monitor for capturing and broadcasting HD screen image.
6. Optical character recognition to turn the video signal from monitor into real-time data streams for visual trend charts and searchable physiological data.
7. Use predefined layouts or define your own identifying key captured values on the connected screen supports remote site configuration.
8. Define pre-set camera angles, which can be jumped to instantly during live action Pause live or recorded view and continue where you stopped (" time shifted live view ")
9. Manually start/ stop recording or set recording to occur based on a schedule or on user actions.
10. Access and control all recorded videos on one page (debriefing, deleting, downloading, renaming or reassigning videos).
11. Generate and export custom reports covering both group and individual performance, or use one of the many predefined report options.
12. Give learners access to their reports at home or on campus.
13. Export data from Learning space to work with outside of system.
14. Review faculty and standardized patient performance reports for quality assurance and consistency.
15. Track the use of simulation center resources (Rooms, Simulators, Personnel, etc.) by client.
16. Generate reports quarterly/ by semester/ yearly.