

TENDER

FOR

**PAEDIATRIC EMERGENCY CARE TRAINING TOOL FOR DEPARTMENT
OF BAL ROG**

AT

NATIONAL INSTITUTE OF AYURVEDA, JAIPUR

| | | |
|--------------------------------|----------|---|
| NIT ISSUE DATE | : | 10-02-2020 (17 PM) |
| NIT NO. | : | NIA/CS/BR/2020/015 |
| PRE-BID MEETING | : | 13TH February 2020 at 3.15 PM |
| LAST DATE OF SUBMISSION | : | 02-03-2020 (3.00 PM) |
| BID OPENING DATE | : | 03-03-2020 (3.15 PM) |
| TENDER COST | : | 1500/- |



NATIONAL INSTITUTE OF AYURVEDA

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

**PAEDIATRIC EMERGENCY CARE TRAINING TOOL FOR DEPARTMENT OF BAL ROG
NIA/CS/BR/2020/015**

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 **PAEDIATRIC EMERGENCY CARE TRAINING TOOL FOR DEPARTMENT OF BAL ROG**. Best offers are invited along with the complete details of specifications, terms & conditions.

| S.N. | ITEM DESCRIPTION | QTY | EMD (RS.) |
|-------------|--|------------|------------------|
| 1 | PAEDIATRIC EMERGENCY CARE TRAINING TOOL FOR DEPARTMENT OF BAL ROG | 1 | 160000/- |

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 13th February 2020 at from 3.15 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) 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 1,60,000/- (Rupees One Lac Sixty Thousand Only)** by way of demand drafts or Bank Guarantee only. The demand drafts of Bank Guarantee 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 Bank Guarantee/Security Deposit and for unsuccessful Bidder(s) it would be returned after award of the Contract. **The demand Drafts or Bank Guarantee 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 registration 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.

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- 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.
- 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.

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 (Government/ Private)
- 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 5 Cr During last 3 Years(2016-17,2017-18,2018-19)

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 3 similar contracts with Central Government/State Government/Public Sector Undertakings/ Universities/ Deemed to be universities/ Autonomous Bodies 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 30 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 S pares, 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, epidemics, quarantine restriction, strikers lockout or act of God (herein after referred to as

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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 | Full Particulars of the Bankers of the Company/Firm/Agency, with full Address/Tel. No. | : | |
| | • Name of the Bank | : | |
| | • Address of the Bank | : | |
| | • Telephone No. | : | |
| | • Fax No. | : | |
| | • E-mail address | : | |
| 5 | Registration Details: | : | |
| | • Copy of Firm/Agency's Registration No. | : | |
| | • PAN/GIR NO. | : | |
| | • GST Registration No | : | |
| | • Aadhar No. of Owner/Partners/Directors | : | |
| 6 | Details of Earnest Money Deposit | : | |
| | • Amounts (Rs.) | : | |
| | • DD/PO No. and Date | : | |
| | • Drawn on Bank | : | |
| | • Valid upto | : | |
| 7 | Details of Tender Fee | : | |
| | • 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 | | |
| | 2016-2017 | : | |
| | 2017-2018 | : | |
| | 2018-2019 | : | |
| 9 | The Firm who are registered with National small Industries Corporation (NSIC)/ or SmallScale Industry / or MSME are exempted to submit the Tender fee or EMD (copy of registration must be provide along with Udhaya Addhar) | | |
| 10 | Similar suplies in last 3 Years (with Proof) | | |
| | Experience in the field for the minimum 2 years | | Similar 3 Government Running Contract with central government/State Government/PSU/University/Deemed to be university/Autonomous bodies in last 2 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 | 2016-2017 | |
| 2 | 2017-2018 | |
| 3 | 2018-2019 | |
| | Total | Rs. _____ Lacks |

Average Turnover Per Annum: Rs. _____ Lacks.

Signature of Chartered Accountant/Auditor with Seal

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 manufacturer's) principal

Specifications

Paediatric Emergency Care Training Tool

GENERAL FEATURES:

1. Machine requires to be anatomically correct to replicate a real life sized paediatric patient with anatomical landmarks.
2. Must have functional pupils that blink and can be adjusted for pupil dilation and restriction.
3. Must have automatic physiology response models that can objectively confirm airway management without the need for visual observation by an instructor.
4. Must have a hematology model for hemorrhage control showing the impact of progressive blood loss and compensation to the patient in real time.
5. Must have the capability to integrate a blood / secretions flow model for representation of trauma conditions to the patient.
6. Must have automatic physiological and pharmacological response models with responses to reflect the actual effects of the drug or multiple sets of drugs.
7. Accompanying components must be portable and easily stored when necessary.
8. Must include a monitor which has the capability to display the parameters below in addition to custom configurations
 - ECG I, II, III and V and heart rate
 - Arterial Blood Pressure
 - Pulmonary Artery Pressure
 - Pulmonary Capillary Wedge Pressure
 - Central Venous Pressure
 - Mean Arterial Pressure
 - Non Invasive Blood pressure
 - CO2 Capnography
 - SPO2
 - Heart rate
 - Thermoludition cardiac output and continuous cardiac output
 - Blood temperature
 - Body temperature

AIRWAY

1. Must have a life like intubation head with a flexible tongue, epiglottis, aryepiglottic fold, cuneiform tubercle, corniculate tubercle, laryngeal inlet, vocal cords, esophagus and simulated lungs for spontaneous breathing and realistic chest movement and compressions.
2. Must have tracheal access through the neck for cricothyrotomy, tracheostomy

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3. Must have the following standard ALS airway skills:

- Bag/ valve/mask ventilation
- Oral intubation
- Nasal intubation

Esophageal intubation

- Combitube placement
- LMA Placement
- Retrograde intubation
- Fiber optic intubation
- Light wand intubation
- Cricothyrotomy
- Oropharyngeal and nasopharyngeal airway placement

4. Exhaled CO2 Flow to confirm placement of airway devices with in the trachea.

5. Signs of spontaneous respiration to include:

- Independent right and left chest movement
- Exhalation of air from mouth
- Exhaled CO2 Capability.

6. Must have a respiratory rate that is physiologically modeled or may be manually controlled by an instructor.

7. Must be able to accommodate the following airway features:

- Pharyngeal obstruction
- Multiple levels of swollen tongue
- Laryngospasm
- Left & right broncheal obstruction
- Stomach decompression
- Cannot intubate, can ventilate
- Cannot intubate, cannot ventilate

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CARDIOVASCULAR SYSTEM:

1. Should generate heart sounds including a range of pathological sounds which are synchronized to the QRS complex of the ECG and should be audible with a standard stethoscope over the left and right upper sternal border, left lower sternal border and apex.
2. Must have an integrated IV training arm with replaceable skin and veins, IV insertion into peripheral veins of forearm, antecubital fossa and the dorsum of the hand, virtual blood flash back on cannulation, IV Bolus or infusion.
3. A 5 Lead ECG capability emitted from the appropriate positions on the patient's chest for display on a standard monitor.
4. Palpable carotid, radial, brachial, femoral, popliteal and pedal pulses which are synchronous to the ECG.
5. Pulses must be dependent on BP of the patient and must be independently Controlled on left & right side of the body
6. A standard blood pressure cuff and sphygmomanometer can be used to assess systolic blood pressure by palpation or by auscultating Korotkoff sounds.
7. The invasive hemodynamic monitoring package should provide the capability to measure and monitor the following:
 - Arterial blood pressure
 - Left ventricular pressure
 - Central venous pressure
 - Right atrial pressure
 - Right ventricular pressure
 - Pulmonary artery pressure
 - Pulmonary artery occlusion (wedge) pressure
 - Thermodilution cardiac output

TRAUMA FEATURES:

Must have the ability to perform the following trauma functions:

- Bi-Lateral Pneumothorax needle decompression
- Bi-lateral chest tube placement
- Blinking eye with adjustable pupil size
- Bulging Fontanel

IV DRUG ADMINISTRATION:

1. Must have an intensive drug library that includes ACLS drugs.
2. Response to drugs administered must be automatically linked to physiology and will not rely on manual input.

CARDIAC FUNCTIONS:

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1. Package must include an ECG library that contains an extensive library of physiological modeled cardiac rhythm variations
2. Must be able to accommodate the following:
 - Live defibrillation from an AED and a manual defibrillator
 - Cardiac monitoring with blood pressures and cardiac output
 - 5 Lead ECG Monitoring
 - External pacing with various pacing threshold
 - Produce chest compression artifacts on ECG
 - Show a displayed heart rate and ECG on a compatible virtual monitor

BLOOD PRESSURE:

1. Must have a blood pressure that can be taken either automatically, by auscultation or palpated.
2. Must include a blood pressure arm that has Korotkoff sounds, which can be used for auscultation and palpation of the blood pressure.
The blood pressure must be able to be displayed on a compatible monitor.

GENITOURINARY

1. Must include both male and female genitalia which are interchangeable and anatomically correct.
2. The genitalia must have the ability to be catheterized with the ability to produce urinary output.

NEUROLOGIC SYSTEM

1. Should model Cardiovascular and respiratory responses to sympathetic and parasympathetic activities.

ADVANCED CARDIAC LIFE SUPPORT (ACLS) SYSTEM

1. **Airway Management and Ventilation** : Alveolar and arterial gas concentrations should appropriately reflect the efficacy of the employed ventilatory technique, such as mouth-to-mouth, bag-valve-mask, endotracheal intubation and transtracheal catheter ventilation. Administration of supplemental oxygen should extract automatic and appropriate patient clinical responses.
2. **Chest Compression**: Should allow chest compression In accordance with ACLS guidelines, effective chest compression of the patient's sternum should result in artificial circulation, cardiac output, central and peripheral blood pressures, palpable pulses and CO2 return and Pressure fluctuations should be visible on invasive catheter waveforms.
3. **Cardiac Arrhythmias** : The instructor should be able to select and maintain a desired arrhythmia and control the response to clinical interventions.
4. **Electrical Therapy** : Both conventional defibrillators and automatic external defibrillators (AEDs) can be applied to the simulator generating appropriate patient response in real-time. Capable of applying transcutaneous pacemakers.
5. **Pharmacological Therapy**: All IV drugs required by the ACLS algorithms should be supported.

SOUNDS AND PHONATION:

Must have the ability to produce the following sounds:

Speaking through the instructor microphone

- Heart sounds which are synchronized with the ECG
- Independent left and right sounds
- Bowel Sounds

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- Heart, lung and bowel sounds auscultated with a stethoscope.
- Independent volume adjustment

PATIENT & SCENARIOS

- Should be delivered with pre-programmed patients. System should have patient editor software to edit/ modify preconfigured patient profiles or to create new patient profile.
- Should be delivered with pre-programmed scenarios. System should have scenario editor software to edit/ modify preconfigured scenarios or to create new scenario.

At any point during a session it should be possible to capture the current state of a patient which can be used as a new patient.

- Should be capable of running multiple patients simultaneously to create multiple patient care scenarios

EVENT LOG:

1. Must include physiological, pharmacological event data that is logged and timed stamped.
2. The log must automatically calculate and log the following items:
 - Alveolar and blood gases
 - Cardiac Output
 - Heart rate
 - SPO2
 - Invasive blood pressure
 - Hematocrit and hemoglobin values
 - Temperatures
3. The event log must be able to be saved and printed.

Complete system must be supplied with following:

- Pediatric Mannequin with male and Female gentile.
- Laptop with validated physiology software.
- Virtual clinical Patient Monitor