# Notice Inviting e-Tender


## West Bengal Medical Services Corporation Limited
## Swasthya Sathi
## GN-29, Salt Lake, Sector-V
## Kolkata-700091

Phone No (033) 40340307/320
E mail: procurement@wbmsc.gov.in


**Supply and Commissioning of Medical Equipment for Physical Medicine & Occupational Therapy Equipment at IPGME&R and SSKM Hospital (Discipline-Physical Medicine & Occupational Therapy Equipment)**

(Submission of Bid through *online*)

| Bid Reference No.: WBMSCL/NIT-478/2023 | Dated-14.08.2023 |
|---|---|

## Amendment-IV

# TECHNICAL SPECIFICATION

### 1. ELECTRIC TILT TABLE

1. The unit should have electric height and tilting operation with hand switch control.
2. The unit should have safe working load and lifting capacity upto 225 kg.
3. The unit should have height adjustment from 47 to 100 cm.
4. The unit should have adjustable angle dual foot boards with positive and negative (+ 15˚ to -30˚).
5. The unit should have adjustable angle backrest facility with anti trap design (0 to +75˚).
6. The unit should have tilting upto 90˚ from horizontal.
7. The unit should have 195 cm – 200 cm X 68 cm – 70 cm (Length x Width)
8. The unit should have electric height and tilting operation with hand switch control.
9. The unit should have large wheel design, with central locking & steering facility.
10. The unit should have fitted Tilt angle inclinometer as standard.
11. The unit should have lowers to wheelchair height for ease of patient transfer.
12. The unit should have split leg divided into 2 parts with locking facility.

13. The unit should be supplied with patient worktable, handgrips, Set of3 nos. Harnesses, battery backup, hip-leg stabilizers, and head support cushions of same manufacturer.
14. The unit should have European CE / TUV certification according to MDD/93/42/EEC
15. It works on 220-230V AC/50 Hz.

## 2. CONTINUOUS PASSIVE MOTION FOR LOWER LIMBS

**The unit should have the following features:**

1. Knee and Hip mobilization
2. Ankle Mobilisation is must in the same unit.
3. Digital operating panel with LCD display.
4. Should have Memory Card for storing the personalised patient programs for repeated use.
5. Should have speed control during Flexion /Extension.
6. Should have Force control.
7. Should have Work time control.
8. Facility to adjust automatic increase in Extension range.
9. Facility to adjust automatic increase in Flexion range.
10. Pause during flexion/ Extension.
11. Warm Up Cycles.
12. The unit should have got functional panel on the unit only and not on the patient stop switch or remote control for patient safety.
13. Knee range of movement: 0°- 135°
14. Ankle range of movement in passive: 20° - 0° - 40°
15. Hip range of movement (mid limb): 7° -135°
16. The unit should have international quality standard like US FDA / European CE Certification
17. Should be supplied with voltage stabiliser of required rating.

## 3. Peripheral Nerve Stimulator

The nerve stimulator should be a compact device allowing nerve localisation by the emission of a low intensity electric current.

The device should have the following characteristics

1. Easy identification of the intensity of the electrics stimulus with tile help of a

clear digital display with a large screen for easy reading and an audio indicator with several tones to allow audio detection of the intensity delivered via the needle.

2. Easy programming or the various options to deliver electric current through needle
3. Predefined settings or pulse duration
4. Prgonomic shape allows easy handling
5. Display should be easy to read even in poor light conditions
6. Multiple choices through which the intensity of electric current to be delivered is set
   a. Rotating button allowing rapid adjustment.
   b. Lateral button for sterile use
7. Device should be safe to use with
   a. Continuous control of the electric current which is being delivered with screen indicator to show if there is any mismatch between the current settings and the current being actually delivered
   b. Alarm should be there to indicate low battery or a break in the circuit
8. There should be a button to reset the current to zero while preserving the parameters selected
9. The display system should show increments of 0.02 mA when the current goes below 0.5 mA
10. Technical specifications

a) Dimension :

(i) Length- 190-220 mm

(ii) Width –At its maximum 90-100 mm, at its minimum 55-60 mm

(iii)Height- at its maximum 35-40mm , at its minimum 20-25mm

b) Pulse frequency selections : 1 Hz , 2 Hz ,4Hz

c) Pulse width selections: 50 microseconds, 100 microseconds, 300 microseconds

d) Increments : 0.1 mA if current delivered is above 0.5 mA and 0.02 mA if current delivered is below 0.5 mA

e) Maximum intensity or charge: at 50 microseconds upto 6 mA

: at 100 microseconds upto 5 mA

: at 300 microseconds upto 4 mA

f) Preferably 9 V detachable / AAA battery

## 4. Robotic Hand Trainer

- This should be complete Robotic Device for functional rehabilitation of both hands and fingers,
- Must be suitable for both adults and children.
- One device should include the main unit, 1 Sensor gloves KIT, storing
- Space for sensor gloves, electronic wiring kit, silicone brace and at least six gloves set of different sizess, height adjustable ergonomic table with computer system and dynamic arm supports (DAS), with splints for wrist, kit of objects with accessories, a colour printer and related software license.
- The unit should be height adjustable and armrest should be adjustable to partially or totally compensate the weight of the arm in order to allow it to float freely.
- Dimensions of table should be approximately 160 cm X 90 cm.
- Power input should be 220V, 50-60 Hz AC.

- The system should have integrated software and exercise program and protocol to mobilize passively the finger joints (all the combination of flexion-extension and all pinches) as well as allow and encourage patient's active movement.
- It should help the patients to perform functional exercises like grasping, picking, reaching etc and interact with real objects. It should offer neuro cognitive exercises to train selective attention, divided attention, problem solving, memory, and shifting and visuo-sapatial schemes.
- The system should be able to show the patient how to do a functional work through video preview and help to perform the same task. This must be able to stimulate neural plasticity through 3D/2D animation and audio effects linked to the movement.
- The robotic gloves should be able to provide assistance if the patient is unable to do the exercise.
- The Glove should be able to move the impaired hand when the patient moves the healthy hand to act as a similar movement. The mirror motor mechanism should offer two moving 3D/2D hands and the execution of bilateral functional tasks with real objects to amplify the stimulation of the cortical areas of the brain
- The device should allow performing therapy to different type of patients in different positions like sitting and standing.
- The system should have International Safety standards CE/US FDA/BIS Certificate
- Warranty should be of live (02) years

## 5. NCV EMG with VEP

This EMG-NCV machine for Neuro-rehabilitation with following technical specifications:

1. No. of channel: 4 or more
2. Sensitivity range in µV/div : 1-2 µV or more
3. Sensitivity range in mV/div: 1-5 mV or more
4. Sweep speed ms/div in steps: (1 - 750) or more
5. Input impendence in M ohms: 100 or more
6. Noise in µV RMS: 0.75 or less
7. Average (BAER) Per channel: 2500 or more
8. Electrical range: 0 -100 mA or more
9. Duration of electrical stimulation: 0.05 - 1.0 ms or more
10. Repetition rate of electrical stimulation: 0.5 - 30 per second or more
11. Auditory Frequency: 250 - 8000 Hz or more
12. White noise Contra lateral masking in dB normal hearing level 0 - 50 or more
13. intensity of click stimulation in normal hearing level 0 -110 dB or more and Standard Pressure Level 30 -140 dB or more
15. A/D Converter in bits 16 or more
16. MUST HAVE OS Platform (windows 7 / WINDOWS 8 I XP), High cut and low cut filter, Impendence check, Simultaneous acquisition in all 4 channels during EMG test, Sweep speed and sensitivity can be changed after acquisition, Screen separator for viewing M and For H waves side by side

17. User programmable rates for all stimulator

18. Speaker sound can be stored and can be played on a multimedia

19. Split screen facility, reviewing EMG data with raster, F wave separator, Pediatric shock stimulator, LED GOGGLES & FLASH
20. EMG trigger, Electrical Stimulator, Adult and pediatric Headphone, Auditory stimulus
21. Video monitor facility for changing checker board size
22. Facility of flash mode, setting, averaging, latency intensity graph
23. List of muscles for easy selection

24. Facility of online guide to locate various muscles and nerves
25. Click duration in 100 µs square wave
26. Square size of 4 to 30 or more
27. 13 or more difference check sizes to be viewed in 9 or more difference field
28. H Reflex, Blink Reflex Facility, Repetitive Stimulation, Necessary trolley
29. Online UPS (30 minutes backup) of appropriate capacity for the entire system
30. Surface electrode - 10 pair
31. Stimulating bar electrode and felt stimulation pads - 1 no.
32. Ring electrode - 2 pair
33. Ground electrode with cable (paediatric) - 1 nos.
34. Ground electrode with cable (adult) - 1 nos
35. Disposable concentric needle electrode - 25 pcs
36. Adapter for needle electrode connection - 1 no.
37. Adapter for disposable electrodes connection should be provided (20cm) - 2 pcs
38. Jumper Electrode - 4 pcs
39. Skin Preparation gel - 10 nos.
40. Conductive paste - 10 nos.
41. Selected bidder should construct necessary proper earthing at the space identified by the authority
42. Should supply colour printer for printing of graphics and
43. reports in A4 size paper facility
44. Quality Standard and safety Certification
45. US FDA/ European /CDSCOS

## 6.BWST

This Body Weight Supported Treadmill instrument for Neuro-rehabilitation with following technical specifications:

1. The treadmill should be useful for adult and pediatric patients.
2. Windows CE operating system for enhanced software graphics audio and connectivity capabilities.
3. Instrumented Walking Surface for biofeedback
4. Treadmill should always stand at 0 mph with 0.1 mph speed increments.
5. Should have speed range of: Forward: 0 -15 km/h.

i) Reverse: 0-2 mph in 0.1 mph increments.

ii) Gait training mode speed limited to 5 km/h

6. Should have elevation range of 0 -10% grade and have exact-Track Belt to eliminate belt shift and tracking problems and a minimum of 2 HP modulation control power motor.
7. Walking Area should not be less than 150 x 45 cm.
8. Should have visual prompts to provide corrective action and positive reinforcement.
9. Footfall Targets should be normalised to limb length for accurate step cycle sequencing.
10. Should have Equate Belt Speed to match a patient's individual step cycle and display Total Time, Average Walking Speed, Total Distance and Steps, Average Step Length, Step Length Variability, Time of each foot.
11. Providing normative data for comparison to healthy population on the basis of age and gender.
12. Should have facility for heart rate monitoring through contact hand grips and wide colour touch screen display of size minimum 8 inch and facility to store and print the test & training data with Printer and Printer Stand.
13. The unit should have dynamic suspension system to maintain consistent unweighing during walking or running with unique integral lift mechanism to assist patients from the seated position.
14. The unit should have an open frame design to accommodate all type of patients and to have an unobstructed forward view for the patients.
15. The unit should have display the readout quantifies unloaded weight and hand held remote for height and Unweighing load adjustment with open unobstructed frame to allow clinician easy access to manually assist placement and timing of the lower extremities.
16. The unit should have large, easy roll locking casters removable arm supports. One system that can accommodate children to adults and provide approx, 60-65 kg unweighing capacity.
17. The unit should have a user capacity up to 150-160 kg and a vertical adjustment of 50 inch.
18. The unit should have auto unload feature to compensate for movement due to slippage or posture changes.
19. The unit should have choice of support vests accommodates all size patients and have universal support vest that accommodates chest sizes of 65 to 140 cm.
20. Vender should be supplied with Pediatric belt
21. The unit should have international safety standards IEC60601-1; EMC to 60601-1-2.
22. Should have international safety standards USFDA/European CE

## 7. ADULT POWERED WHEELCHAIR

To improve mobility of cervical spinal cord injury, multiple sclerosis, severe motor neuron disease patients etc. The powered wheelchair as per following specification should be provided:-

1. Electric Wheelchair should be lightweight.
2. Should have sturdy frame.
3. Should have removable and ergonomically designed arm rest for easy transfer and maneuverability.
4. Should have built-in self-diagnostics check basic functions every time you power up with malfunction trigger that automatically triggers alarm in case of any malfunction.
5. Should have padded, breathable ballistic nylon backrest.
6. Should have two high-torque motors.
7. Should have brake release levers.
8. Should have double bearing caster wheels.
9. Should have steel forks.
10. Should have fibre glass reinforced nylon leg-rests.
11. Should have connectionless battery boxes.
12. Should have super responsive digital joystick controller.
13. Weight carrying capacity should be at least 130kg (+/-10 Kg)
14. Dimension should be as below

a. Width of Seat: 460 mm (+/- 5 mm)
b. Depth of Seat: 395 mm (+/- 5 mm)
c. Seat to floor height 460 mm (+/- 5mm)
d. Turning radius: <40 inch
e. Maximum speed: 5 mph

15. Should have Lithium ion Battery with warranty.

## 8. STANDING WHEELCHAIR:

1. User Weight Capacity Up to 110 kg
2. Operating System Smooth hydraulic
3. A one-time fitting ensures optimal operation and a comfortable user experience Main Feature
4. Adjustable rear wheel position for smoother propulsion Main Feature
5. Gas spring, adjustable to user's weight, enables smooth transition from sitting position to standing position Main Feature
6. Standing angle of 75° Main Feature
7. Longer wheel base ensures stability in standing position Main Feature

8. Easy and smooth to manoeuvre Main Feature
9. Portable. Can be transported in an auto, bus or train, if necessary Main Feature
10. Safety features to avoid accidental standing Main Feature
11. Rugged suitable for outdoor use Operating Display HMI touch screen display
12. Noise Level Up to 80 dbA IP
13. Protection Class IP54
14. Working Hours 24 hours per day

## OCCUPATIONAL THERAPY EQUIPMENT PMR DEPARTMENT

### SL No. 01: ARM ERGOMETER

1. Electrically powered device used to develop upper limb movements can also run without electric source.
2. Electrical power source 220 V
3. Two hand held pedals with adjustable straps.
4. High Definition Oversized LCD Display Easy to Read.
5. Display Data Including Peaks & Average Speed, Time, Distance, Calories, & Pulse should be mentioned.
6. Various programs modes with resistance, assistance should be present.

### SL No .02: HORIZONTAL SANDING UNIT

1. A wooden sanding top based activity used for functional development of upper limb.
2. Dimensions Minimum L 46" x B 30" x H 30".
3. A Wooden Sanding Top is fitted on a tubular frame,
4. Should have two cut for two patients.
5. Consists of two sanding blocks and four elastic straps.
6. One side fitted with bar to attach elastic straps for resistive exercises.

### SL No. 03. : STEEL PEG BOARD ACTIVITY/MAGNETIC PEG BOARD

1. A therapeutic table top based activity for functional development of hands.
2. Dimension Minimum: 7" X s" board
3. Magnetic Slots for insertion of the square/round pegs.
4. All magnetic slots should have different resistive values.
5. All Stainless Steel pegs are with magnetic base and numbered on the top.
6. Stainless steel pegs are of different shapes

### SL NO. 04 : SUPINATOR PRONATOR UNIT

1. A table top based unit used to development and maintain movements of wrist and

superior radio-ulnar joints.

2. Aluminum made Holler mounted on the laminated board.
3. Roller must have minimum diameter ranging between 30mm - 50mm
4. Fitted with Adjustable Resistance Control mechanism from Zero to Maximum.
5. Two hand grips on both ends of tube should be present with non-slippery grip.

## SL NO. 05 : MULTI -SHAPED PEG BOARDS.(VARIOUS SHAPE/SIZE WOODEN PEGS)

### A. Square Peg Board (20pegs)

1. Used for Hand Function development activity.
2. Square pegs are easier for the patient to handle but are slightly more difficult to place.
3. The laminated board having 25 holes of 30 mm square size.
4. Twenty, 150mm high square pegs to fit in.
5. Wooden pegs are painted in four different colours.

### B. Round peg board:

1. It consists of a 10 X 12 inch board with round slots for peg insertion.
2. The pages are minimum 2.4cm diameter and 9 cm in length.
3. All pegs are painted in 5 different colours.
4. The pegs should be such that it can be used easily by all age groups.
5. All pegs are wooden finished in different colours.

### C. Graded Square peg board (25 pegs) :

1. Used for stimulating size and depth perception on advanced level.
2. The laminated board is of dimension length 18"X breath 12".
3. Board should having 25 square pegs.
4. Five each graded in 5 heights.
5. Five rows of each size.
6. Each size painted in a different colour.

### D. Cylindrical peg board:

1. This activity helps in hand function development and colour perception training.
2. 24 cylindrical pegs are painted in multiples of four so that each colour can be matched several times.
3. Laminated Board is 9 X 15" in dimensions.
4. Cylindrical peg height minimum 3-4 inchs.

### E. Pegs 8 Shapes:

1. Used for development of eye hand co-ordination and basic sorting skill.
2. Laminated board of 35cm X 15cm size
3. The board is fitted with 4 inserts on which to fit 4 sets of laminated and smoothly painted geometrical shapes.

4. Geometrical shapes of minimum 20 mm thickness.
5. Comes with 4 sets each of circle, square, rectangular and triangle shapes.

## SL NO.06: ADL TRAINING BOARD:

### A. Door latch frame set

1. This frame set to helps to develop dexterity and ADL skills.
2. Should have minimum six laminated doors, opening in different direction.
3. Each door to open into a shelf where a reward or toy can be kept.
4. Common hardware of different designs, used to familiarise patient.
5. Size of laminated unit approximately L26"x B18"x H5".

### B. Electro-equipment frame set

1. The frame set is used to familiarise and improve I-ADL.
2. There should be different types of switches - Toggle, Piano and turn button to be wired to three coloured pilot bulbs.
3. A push button switch wired to a call bell.
4. All the Switches operate on 220 V.A.C current sources.
5. The unit is finished in a laminated box of size 15"x 10"x5 approx.

## SL NO 07 : MINNESOTA MANUAL DEXTERITY TEST.

1. Minnesota manual dexterity test is a standardised test measuring capability for simple eye-hand-finger movement, speed and dexterity.
2. Five sub-tests include: placing, turning, displacing, one-hand turning, and two hand turning and placing can be done.
3. Flexible metal frame with 60 inserts.
4. Should have 60 same sized standardized cylindrical pegs.
5. A plastic carrying case for smooth transportation.
6. Standardized test battery booklet should be present along with the kit.

## SL No. 08 : RODS AND BEADS ACTIVITY

1. A table top based activity used for hand function retraining and eye- hand co-ordination improvement.
2. Laminated rectangular wooden box consisting of 10 rod inserts.
3. Should have minimum 10 stainless steel rods.
4. Minimum 100 multi-coloured beads should be given.
5. All the beads are cylindrical in shape.

## SL NO. 09: WRIST ROLLATOR

1. This unit is designed to maintain and develop wrist supination and pronation.
2. Cast iron wheel of 12" diameter.

3. The wheel ismounted on a Laminated wooden base 24" X g",
4. It should have a small adjustable handle fitted to the wheel.
5. A knob provided at the back of the wheel to control resistance from zero to maximum.
6. Hollowed foam padded platform size 9" X 5" X 6" high fitted with two straps to hold arm
7. A small platform is fitted over the base in front of the wheel for wrist circumduction.
8. Metal parts are oven baked finish.

## SL NO - 10: LINEAR MOTION TESTER WITH AUDIO FEED (LOOP AND WIRE ACTIVITY WITH AUDIO FEED)

1. This instrument is mainly used to measure and retrain control movements of hand along with eye-hand co-ordination.
2. A rugged build body with wooden body structure.
3. A rod like structure is attached to the body.
4. A ring stylus attached to rod like structure.
5. The ring stylus Gives feedback in buzzer when comes in contact with the rod.
6. Performance, distance, time taken can be measured.

## SL NO. 11 : BOLSTER.

1. Single colour heavy duty vinyl structure.
2. Minimum LENGTH 2-3feet
3. Minimum DIAMETER 8-10inch.
4. Maximum Weight capacity 100 kgs

## SL No 12: GYM BAll

1. Single colour heavy duty inflatable heavy duty vinyl structure.
2. Minimum Diameter 85 cm.
3. Maximum weight bearing capacity 100 kgs.
4. Must have anti burst technology.

## SL NO 13 : HAND EVALUATION KIT(HAND DYNAMOMETER,PINCHOMETER , FINGER GONIOMETER)

1. Kit used for evaluation various mechanical parameters of hand consisting of

A. Hydraulic hand dynamometer: High quality cast aluminum model has an adjustable handle that can be placed in FIVE grip positions comfortably fits for all.

A sealed hydraulic system registers force from a to 90 kgs.

B. Pinch gauge: Measure the tip to tip finger pinch force. Can measure upto 20 kgs of force.

C. Finger goniometer: Stainless Steel made around 6" diameter.

D. 3 point discriminator: A plastic body structure with stainless steel pins to measure 3 point discrimination.

E. Pin wheel: For Sensory examinations.

## SL NO 14: FINGER DEXTERITY TEST BOARD

1. It is used for testing and training of finger dexterity.
2. 2. Laminated board has 100 holes to place the pins.
3. Two sets of Stainless Steel Tweezers.
4. A Covered area on one side to keep the tweezers and pins.
5. Should have 100 stainless steel pins.

## SL NO 15: BALANCE BOARD

1. This board is used to develop static and dynamic standing balance.
2. The balance board should be minimum l6inch X 16 inch.
3. Anti - slippery matt pasted top wooden board.
4. Two cylindrical curves attached to base of the wooden board.
5. Minimum thickness should be 1-11/2 inch.
6. Minimum weighing capacity: 100 kgs.

## SL NO 16: INCLINED BILATERAL SANDING UNIT/ RECIPROCAL EXCERCISER.

1. It used to develop and maintain reciprocal upper extremity movements as a whole.
2. Should have two wooden hinged planks.
3. Upper plank's (30 cm minimum wide) angle of inclination can be adjusted from horizontal to vertical.
4. Two pulleys are fitted at the top of upper plank for reciprocal movements.
5. Three sets of sanding hand blocks of different grasp holds should be there.
6. Sanding blocks must create resistance for exercises.
7. Unit is finished in natural wood polish.

## SL NO 17: PHYACTIC BALANCE BOARD

1. Electronic balance board for proprioceptive and balance training with feedback.
2. Minimum dimensions 6x6 inches.
3. Supplied with software to assess and train proprioception and balance.
4. Electronic based sensors attached to the base of the board.
5. Industrial grade plastic build with anti-skid surface.
6. A carrying case/bag for safe transportation.

## SL NO 18 : Dynamic Stair Case/Trainer

1. This device is mainly used for stair case training of individuals.
2. Stair width: Minimum 30 inch
3. Stair height adjustable from 0-6.5 inch( approx)
4. Remote operated with on-board computer attached for feedback and control. S. Minimum Weight Capacity: 300 kgs.
5. Height Adjustable Hand rail.
6. Slope / inclination (adjustable) on one side.
7. Electrical Requirements: 100-240V, 50 / 60Hz,
8. The whole unit is made up of heavy duty stainless steel material.

## SL NO 19: Standing Frame

1. Unit used for developing standing balance and supported standing.
2. Partial metal Steel powder coated adjustable frame with nickel plated pillars.
3. Height of frame can be adjusted according to the patient.
4. Pelvis, knee, ankle straps/locks should be present.
5. Should be balanced with counter-weights to prevent fall.
6. Activity tray is provided with the unit.
7. Supports provided to hold the body properly.

## SL NO 20: Mirror Box Therapy Unit.

1. Unit used for feedback and hand function development of hand.
2. Rectangular box should be minimum 9/lx6/1approximately.
3. Clear Mirror fixed on one side.
4. An aperture or opening of diameter of minimum 6 inch to insert hand must be present.
5. A shutter like mechanism may be present on another site for visible access for therapist.
6. The whole unit is polished wood made.

## SL NO 21: Fluidotherapy Unit.

1. A therapeutic device which uses dry heat and massaging effect of fluidized particles to provide relief from pain and stiffness.
2. The device consists of a cabinet that contains finely ground cellulose particles made from corn cob.
3. The device circulates heated air through the particles, causing them to .move like a liquid.
4. The device utilises a electric fan located inside a lid-covered steel cabinet to circulate the hot air.
5. Should have microprocessor based control to control

a. Temperature control ranging between

b. Air speed control

c. Timer/Pre heat set up.
d. Modes of action.
6. The cabinet should have lid opening for access limbs.
7. Velcro strapped sleeves attached to lid openings.
8. Powers source 100-240 V.

## SL No 22: C P CHAIR ADJUSTABLE.

1. This chair helps in maintaining sitting position of Cerebral Palsy children.
2. A tubular metal frame powder coated construction.
3. Foam padded back surface and seat with adjusting belts to secure the child in place.
4. Should have adjustable arm support.
5. Should have Adjustable foot rest
6. Should have adjustable and removable activity tay.
7. Should have adjustable neck support
8. Mounted on heavy duty castors with brakes helps to provide mobility as well as maintaining positions.
9. The chair can be converted into a standing frame by removing the seat and the Foot rest.