



**CLASSIC TECNOLOGISTICS AND TRADE PVT. LTD.**

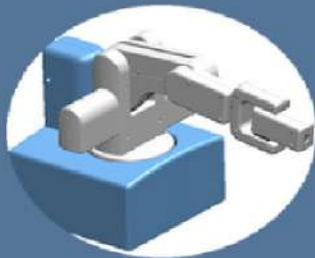
**AV/VR SOLUTIONS**



# CLASSIC TECHNOLOGISTICS AND TRADE PVT. LTD.

*Design and development of hardware and software for training simulators  
- Immersive VR simulators with haptic feedback*

*Indigenous custom haptic device*



*Supplement or replace plastic manikins*



*Cutaneous interface*



AI  
ML  
AR/VR



Psychophysics

*Partially immersed VR training*



*Fully immersed VR training*



*Kinesthetic interface*

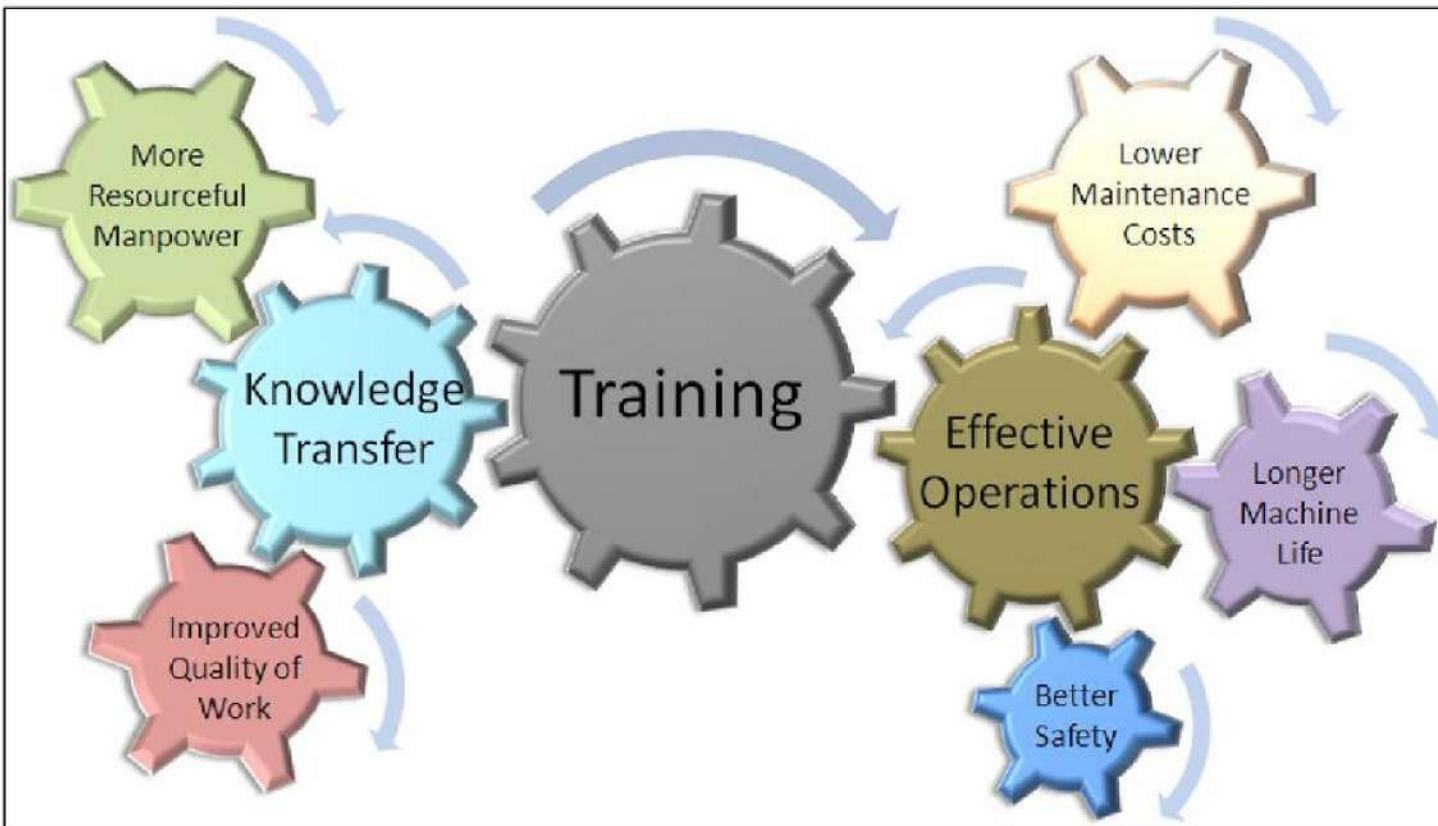




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## Pain Point Addressed

Acquiring high quality Medical Skills Training



**Medical Error  
Reduction  
and  
Prevention  
leading to  
better  
Patient Safety  
Outcomes**



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# Conventional Solutions Medical Simulation Training

## 1950s – Present Manikins



### Disadvantages

Extremely expensive

Undergo wear and tear

Not Portable

Different mannequin for different medical scenarios

Training – Subjective

No indigenous technology available, always imported

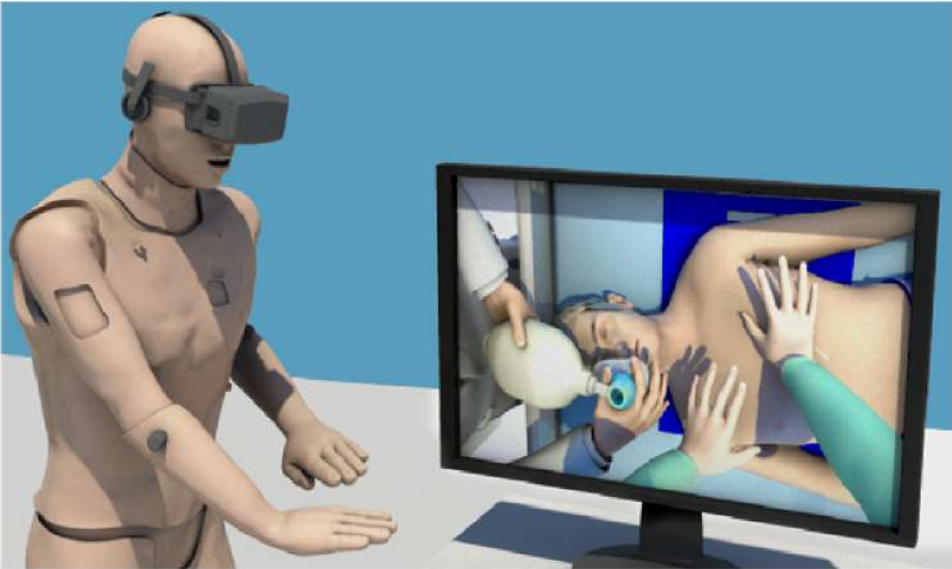




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## Recent Solutions

### Recent - VR based simulators



## VR based Simulation Training

### Advantages

Affordable and portable.

Fully immersive environment can be created.

Rare and difficult cases can be simulated.

Monitoring progress is very easy. Instructor free self learning can be built in

Additional modules can be easily added to existing ones

### Disadvantage:

Good only for Protocol Learning not skill learning (No Haptic Feedback)



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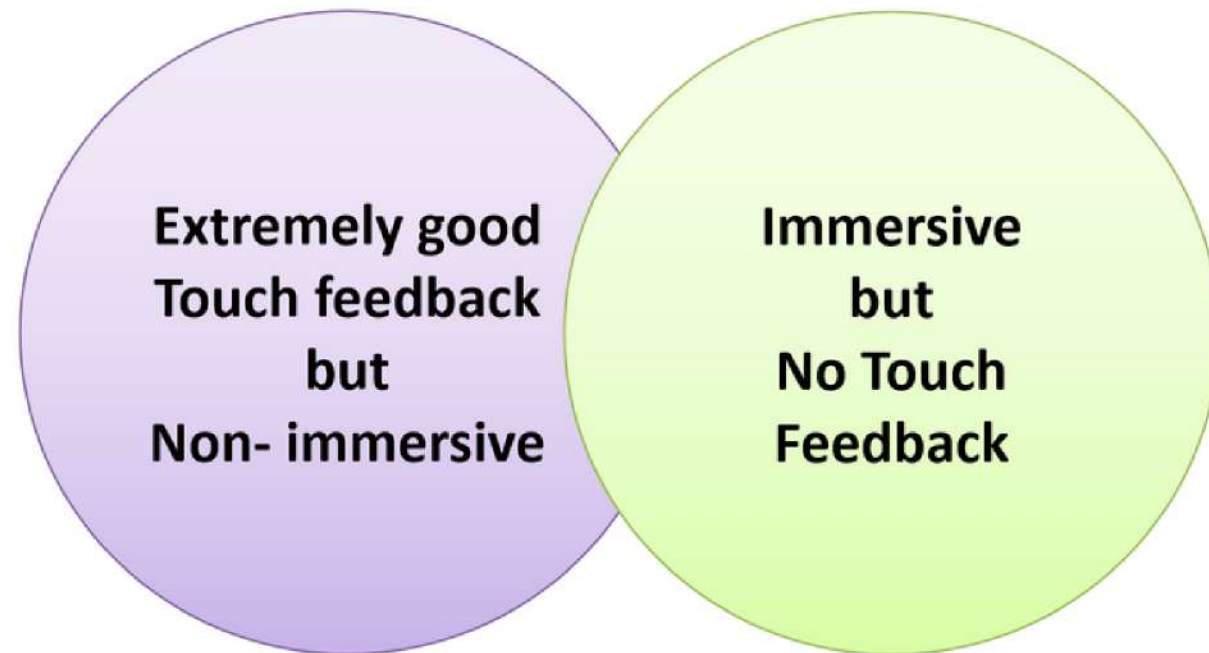
# Value Proposition

Experiential learning with touch feedback is extremely crucial for Doctors

**Virtual Reality  
with  
Haptics Feedback  
for  
Procedural  
as well as  
Experiential  
learning**

**Manikin**

**VR**



Adding Touch feedback to a VR environment brings in the experiential learning



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## Differentiator – Building Custom Haptics

- Haptics feedback in VR is the grand challenge.
- First of its kind company in India and the southeast Asian region
- Have developed our own Haptic device for various applications

Providing customized haptics in VR is our competitive advantage.

Spin-off from Haptics Lab/Touch Lab IIT Madras





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## TECHNOLOGY ENABLED SKILLS TRAINING

CUSTOM  
HAPTICS  
SIMULATORS

VR Only  
SIMULATORS

6-DOF



1. PALPATION



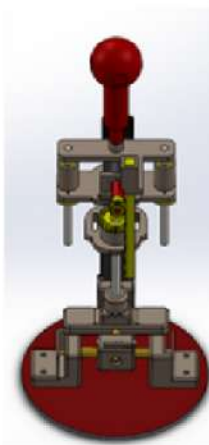
2. IVF SIMULATOR

10-DOF



3. LAPSIM

TORQUE



4. PEDICLESIM

HAPTIC  
enabled  
INSTRUMENTS



5. FIRESIM

UNTHETERED  
HAPTIC



ALL NEEDLE  
PROCEDURES  
AND KEY HOLE  
SURGERIES

6. NRP



7. CPR and AED



8. ACLS







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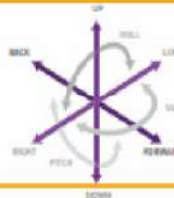
# IVF TRAINING SIMULATOR



**Haptic Device IP -retained**



**Immersive  
Experiential  
Learning**



**High-fidelity  
Training with  
6-DoF Haptics**



**AI powered  
Virtual CoP**

**A completely MADE IN INDIA product**

## **Medical Procedures Supported in Fertilator V1.**

- Transvaginal Oocyte / Egg Retrieval (TVOR)
- Embryo Transfer (ET)

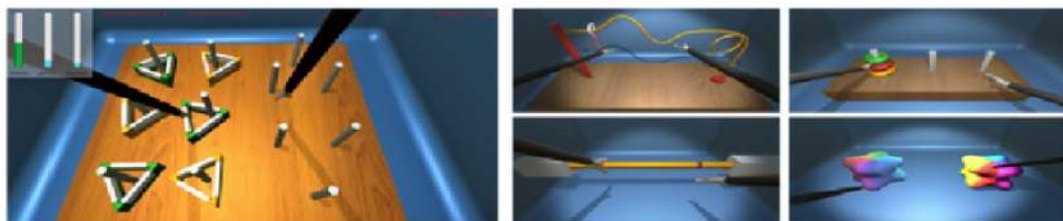
## **Compliance with Standards & Guidelines**

- ESHRE's 'Recommendations for good practice in Ultrasound: Oocyte retrieval'



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## Laparoscopy Training Simulator



**Supported by Industry  
Innovation Programme on  
Medical Electronics - BIRAC  
Clinical Collaborators: CMC  
VELLORE**

### **Features:**

1. FLS based part task training (Hand-eye coordination training)
2. Haptic feedback for Laparoscopic instruments
3. Training on the actual surgical procedures with high fidelity
4. Real-time Assessment and scoring report



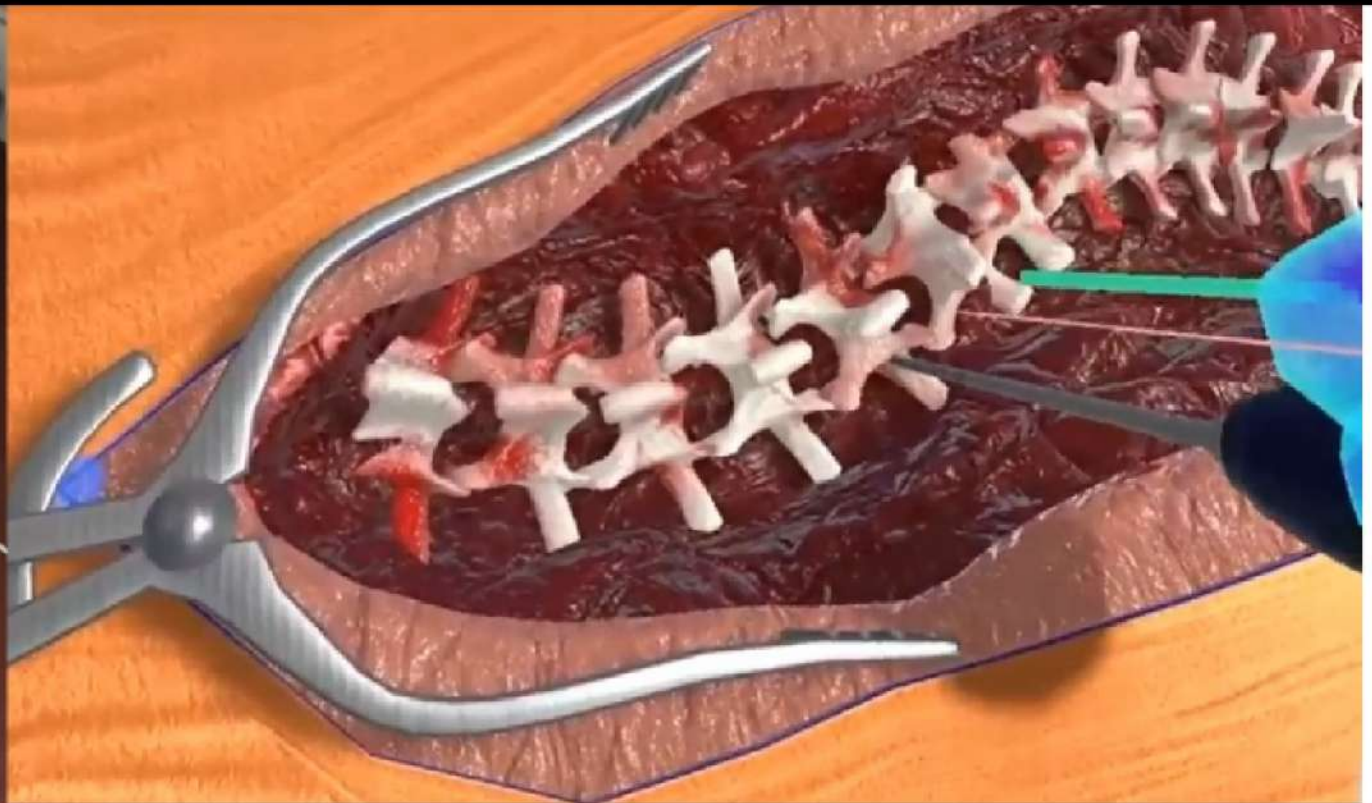
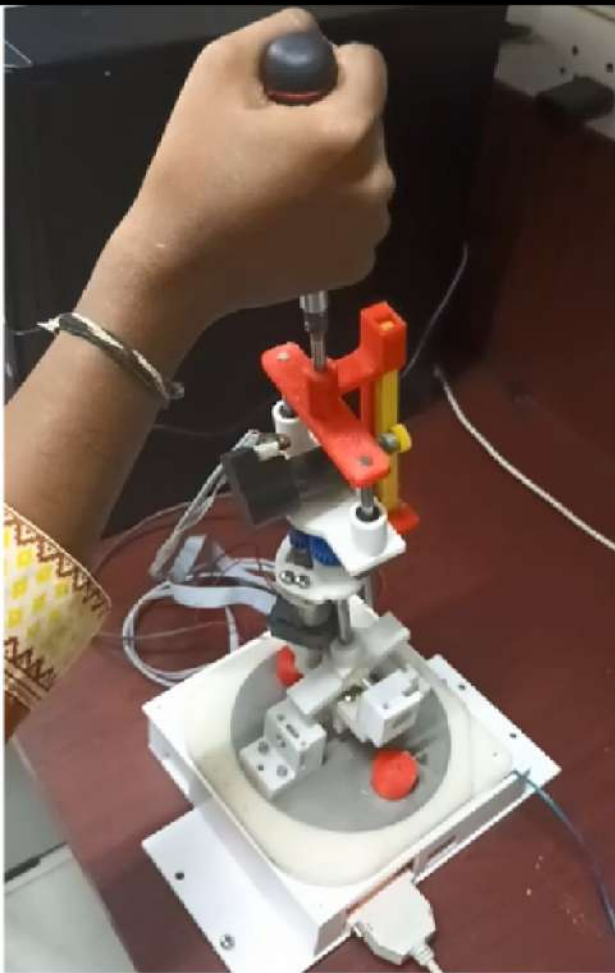
Current stage : Custom Haptics with 10-DOF and FLS based part task training is ready.  
Surgical procedures are being added.





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# **PEDICLE SCREE PLACEMENT SIMULATOR**

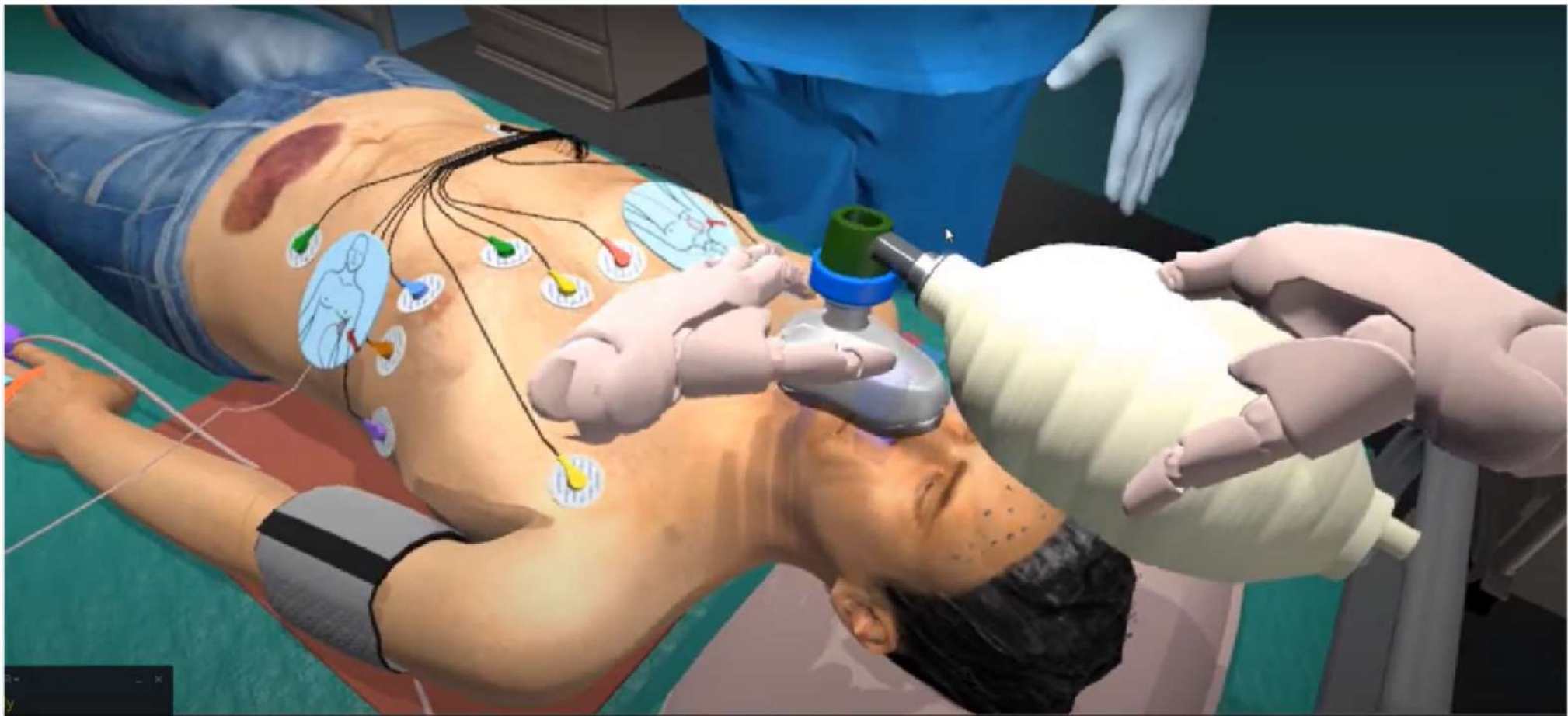


**Pedicle Probe to extend hole  
-feel force and torque feedback**



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# **ADVANCED CARDIAC LIFE SUPPORT**

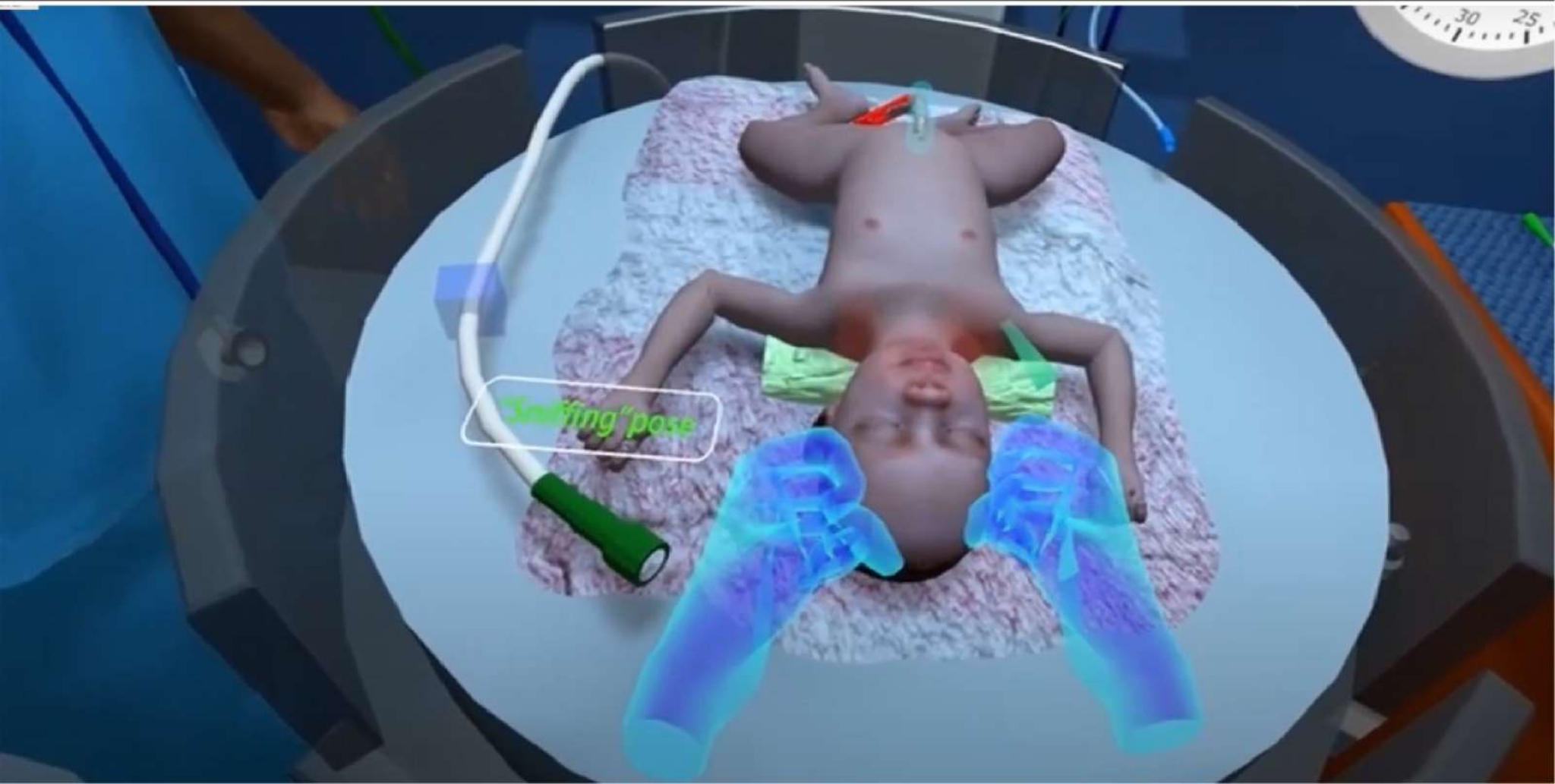






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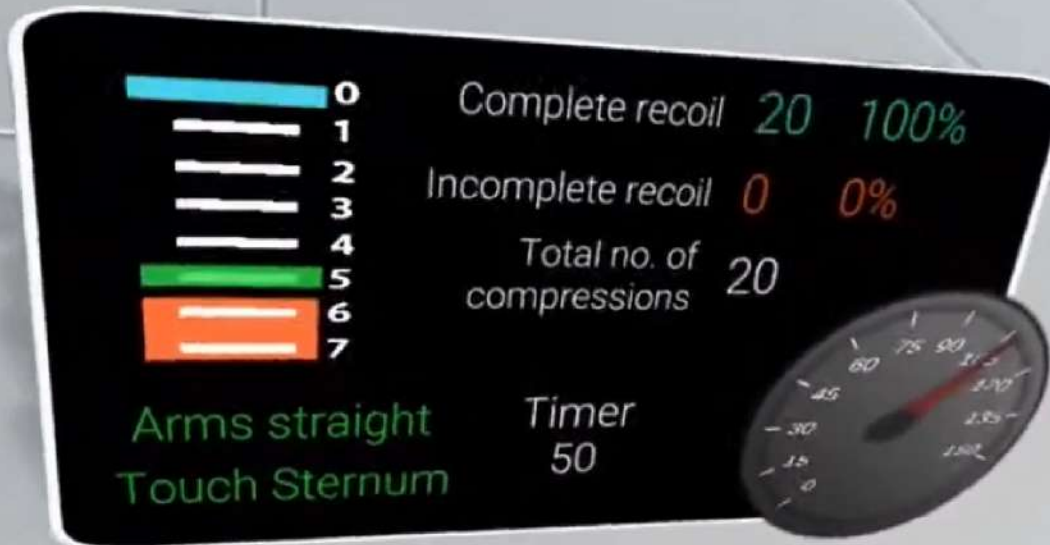
# NEONATAL RESUCITATION PROTOCOL





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# CPR and AED TRAINING SIMULATOR



“Arms straight” and “Touch Sternum” indicators guide the trainees to give a proper CPR



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# EPIDURAL INJECTION SIMULATOR



Epidural Simulator

Feel varying resistance of the different layers traversed by the needle and the loss of resistance when entering the epidural space

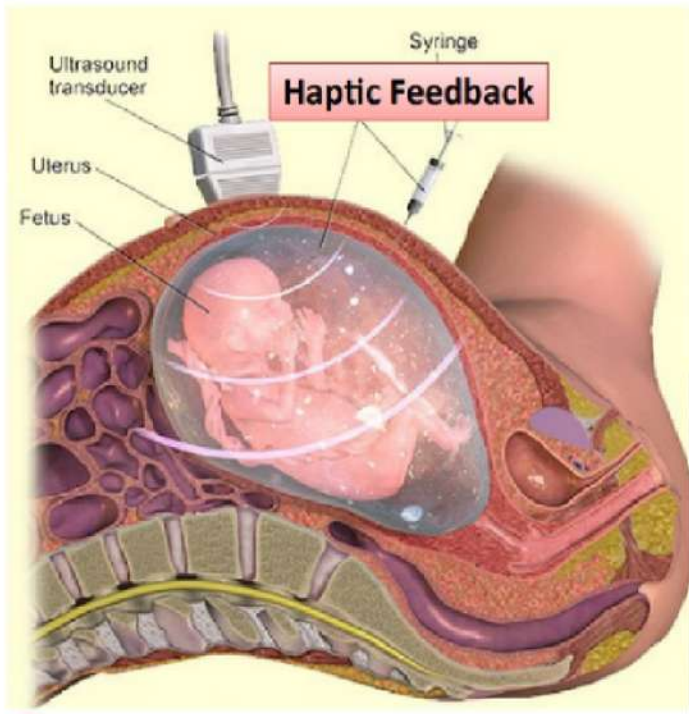






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# PRENATAL INVASIVE DIAGNOSTIC PROCEDURES



Amniocentesis and CVS







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## **Fire Training Simulators**



**INDEGENOUS DESIGN DEVELOPMENT AND MANUFACTURING**

**A versatile VR and Haptic based portable platform to train in fire safety.**



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## Features

- Practice PASS method of fire extinguishing.
- Gamification of appropriate extinguisher selection based on fire type
- Final Score is calculated based on metrics collected from the haptic actions of the user.
- METRICS MEASURED:
  - Distance between the trainee and the fire
  - Angle of the hose to the fire
  - Average Time taken to quench fire
  - Amount of extinguishing material used
  - Sweep rate



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## **Advantages**

- Visual Feedback – Immersive environment
- Haptic Feedback (Nozzle effect)
- Force Feedback (Feel of using real fire extinguisher to quench a virtual fire)
- Sound Effects (3D sound of fire)



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## **Advantages**

- Practice with out exhausting costly consumables
- Training in a realistic virtual environment
- Completely safe with no risk of fires
- Life threatening scenarios to train in can be easily created in the immersive VR environment
- A better perception and understanding of the mistakes made thanks to the decision-making process and evaluation.





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## Advantages



Simulator to train the **masses**  
in important life saving skill.  
Our Simulator at test with Public  
as a part of Tamilnadu Fire and Rescue Pavilion



Highly Portable system.  
Oculus Quest All-in-One  
VR Gaming System



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