Portable Simulation Trainer to Enhance Surgical Skill Acquisitions for Avoiding Bile Duct Injury in Laparoscopic Cholecystectomy

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SimCVS

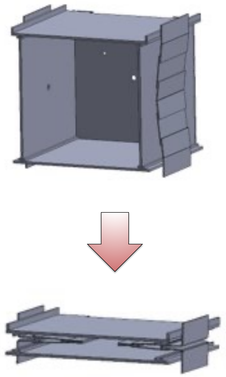
Simulator for the Critical View of Safety (CVS) Training

University of Nebraska Medical Center

Objective

Portable **C**amera **A**ided **S**imulator (**PortCAS**)

- **Development** of portable instrument-tracking hardware coupled with VR module enables **LOW-COST/ANYTIME/ANYWHERE** training for **CVS**
- **PortCAS** is designed to **fold flat** for **easy transportation**

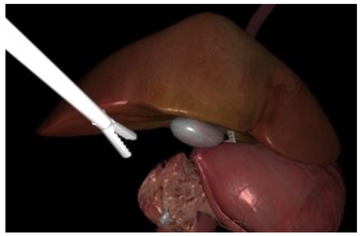


Current Prototype

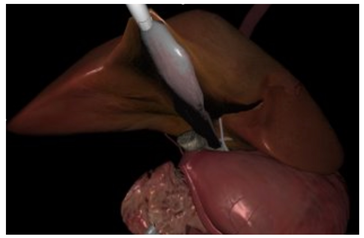


- Multiple cameras are housed in the box for instrument marker triangulation
- Made with acrylic with silicone hinges, and removable stiffener panels to hold the system in the deployed configuration during use
- An integrated single-board computer is dedicated to image processing and triangulation calculations

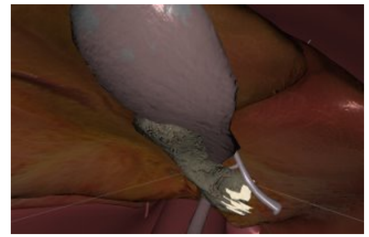
Hepatobiliary anatomy models in simulation environment



Gallbladder grasped and reflected towards the patients' shoulder



Gallbladder neck and cystic duct covered under fatty layers



Dissection to achieve the **CVS** to prevent bile duct injuries



Take a picture to **sign up.**

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