

## **Activity Title: Laparoscopic Surgery Simulation**

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### **Overview**

Participants will engage in a laparoscopic surgery simulation activity that introduces the fundamentals of minimally invasive surgical techniques. Using surgical simulation equipment and instruments, participants will develop fine motor skills, hand-eye coordination, spatial awareness, and problem-solving abilities while completing simulated surgical tasks. The activity will provide participants with an opportunity to explore surgical technology, apply concepts related to healthcare, and gain insight into careers in medicine and biomedical sciences.

**Careers Associated:** Surgical Technology, Nursing (RN)

### **Supplies Required**

- Table for Laparoscopic Trainer
- Laparoscopic Trainer
  - o Maryland Forceps
  - o Fenestrated Forceps
  - o One of the activities that come with the trainer
  - o Camera
- Tablet or monitor to connect to the camera
- Optional: An outlet to plug in the additional light on the trainer. Not necessary in most rooms.

### **Time Required**

- Setting up: Approximately 10 minutes.
- Instruction: Approximately 5 minutes.
- Activity: Approximately 20 minutes.
- Clean up: Approximately 10 minutes.
- **Total Time: Approximately 45 Minutes**

## Learning Outcomes

By the end of this activity, participants will be able to:

- Classify what kind of procedures would utilize Laparoscopic techniques.
- Describe the advantages and challenges of laparoscopic surgery compared to traditional open surgery.
- Demonstrate hand-eye coordination, precision, and spatial awareness while completing simulated laparoscopic tasks.

## Activity

Prior to the session:

1. On a table, set up the Laparoscopic Trainer.
2. Select one of the activities and put it in the trainer.
3. Insert the forceps into the holes on the trainer.
4. Set up the tablet or monitor beside the trainer.
5. Set up the camera on the trainer, plug it into the tablet or monitor, and focus it on the activity.
6. Optional, plug in the additional light on the trainer.

## Introduction

Engagement Question: "Has anyone in here had their Gallbladder or Appendix removed, or known someone who has had them removed?"

Today, you will participate in a laparoscopic surgery simulation designed to introduce you to the techniques and technology used in minimally invasive surgery. Laparoscopic procedures are performed using specialized instruments and a camera inserted through small incisions, allowing surgeons to operate with greater precision while reducing recovery time for patients. During this activity, you will complete a series of simulated tasks that require focus, hand-eye coordination, and problem-solving skills. As you work through the simulation, consider the challenges surgeons face and how technology plays an important role in modern healthcare.

## Steps to the Activity

1. Show the participants the trainer. Explain how the white surface is meant to simulate a patient's abdomen. The holes are supposed to be different incisions that might be used. The activity inside is meant to replicate different skills that a surgeon would use. A Surgical Technologist would be critical in making sure that the surgeon had all the tools they need.

2. Have participants take turns practicing on the Laparoscopic trainer. If multiple are being used, then a larger group will be able to go. Alternatively, multiple trainers could be set up with different activities.

## Conclusion & Assessment

**Assessment of Success:** Participants will be assessed through observation of their engagement in the simulation activity and their ability to apply the concepts discussed. Successful participation may include proper use of simulation equipment, demonstration of hand-eye coordination and precision during tasks, completion of assigned challenges, and active involvement in discussions.

**Closing Discussion:** Conclude the activity with a brief discussion that encourages participants to reflect on their experience. Ask participants what aspects of the simulation they found most challenging and what strategies helped them successfully complete the tasks. Facilitate a conversation about the skills required for laparoscopic surgery, such as precision, hand-eye coordination, communication, and critical thinking. Encourage participants to consider how advances in technology have impacted patient care and surgical outcomes. End the discussion by exploring healthcare and surgical career pathways, inviting participants to share any new insights or interests they developed through the activity.

## Clean Up

1. Unplug the camera from the tablet and the optional light, if in use.
2. Take the activity out of the trainer. Restock the supplies for the activity if necessary.
3. Take down the Laparoscopic Trainer.
4. Shut down the monitor or tablet. Charge tablet if necessary.
5. Put away all supplies until next time.

## Images

