INTRODUCTION TO ROBOTIC SURGERY: ALL YOU NEED TO KNOW, BUT WERE AFRAID TO ASK !!

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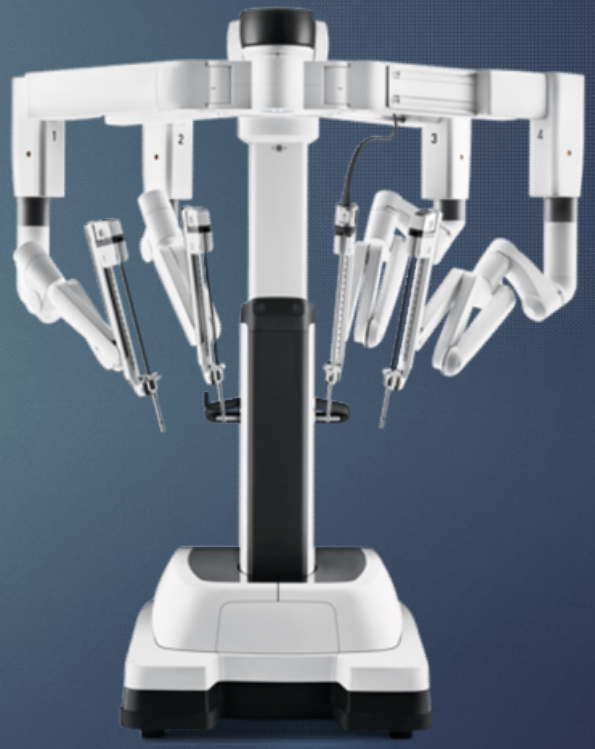

Disclosure:

I do not represent The Johns Hopkins Hospital or Johns Hopkins Medical Institutions.

I have previously spoken for Intuitive surgical

I am on the Advisory Board at Xodus Medical

About Me

- RN since 1994
- Became the 1st Full time Robotic Coordinator: May 2019
- Masters in Health Administration in January, 2021
- Lean Six Sigma: Yellow Belt: 2022
- Accomplishments
  - Department of Surgery, Johns Hopkins Hospital, Perioperative Safety and Quality (2020, 2021, 2022).
  - Department of Surgery, Johns Hopkins Hospital, Surgical Grand Rounds. (2021)
  - Department of Nursing Perioperative Grand Rounds (2020, 2023).
  - Perioperative AJ Salley Award winner: Johns Hopkins Hospital: 2020
  - Johns Hopkins Hospital Safety Star Award: 2022

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Robotic Timeline: 2000 – Present

2000

Beginning

1 Robot (S)

2 Specialties

43 Cases

2005

2 Robots

2 Robots (S)

5 Specialties

110 Cases/year

531 Total Cases

2010

Upgraded

2 Robots (Si)

6 Specialties

600 Cases/year

2,976 Total

2017

AMP Era

9 Robots (Si, X, Xi)

3 Dual Consoles

6 Specialties

1256 Cases/year

10,372 Total

2023

Still Growing

9 Robots (SP, X, Xi)

5 Dual Consoles

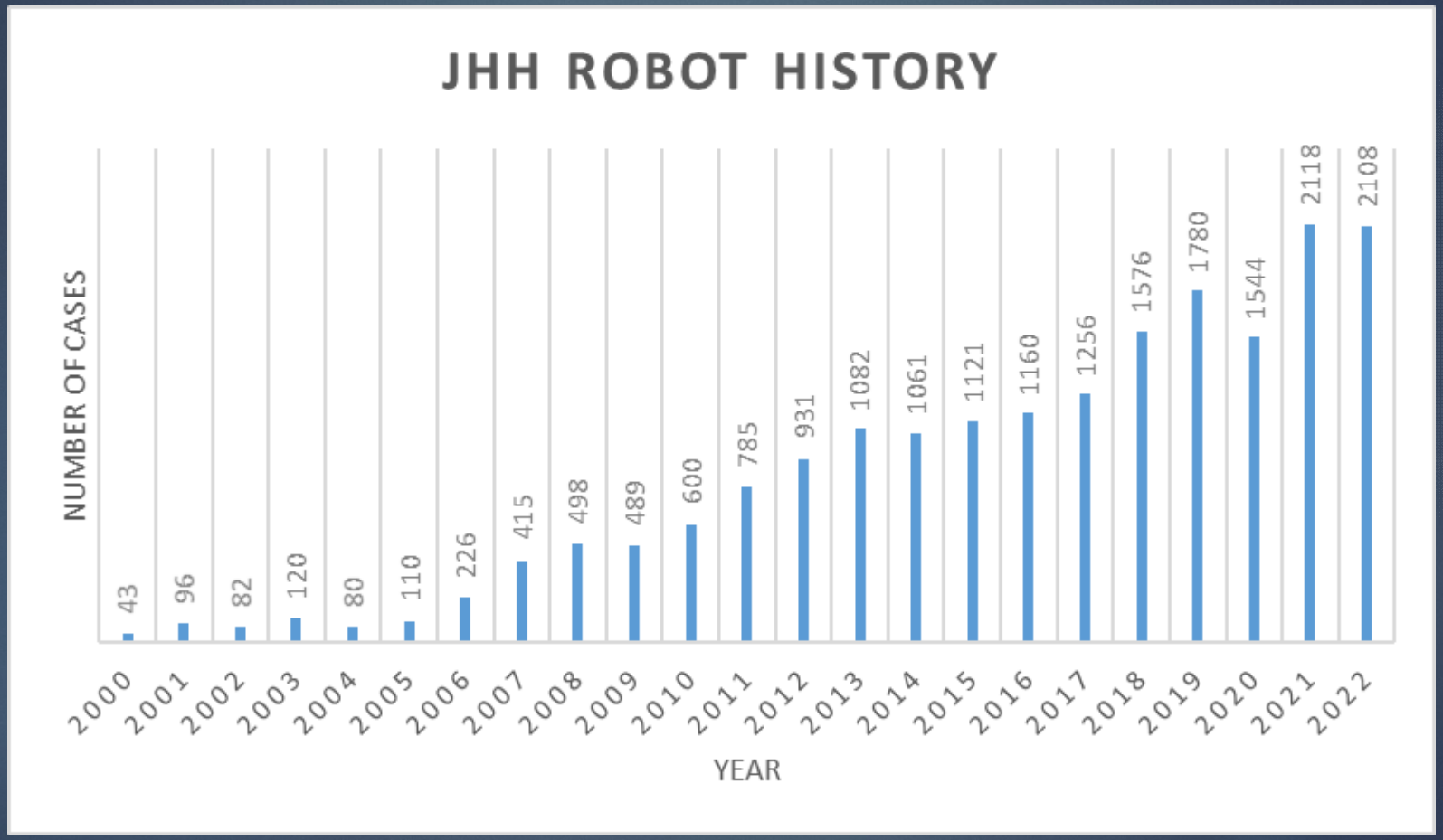
8 Specialties

2,000 + Cases/year

21,000 Total cases

Source: Intuitive Surgical, Inc.

Year over Year Growth



Source: Intuitive Surgical, Inc.

Robot Components

Patient Cart

Vision Cart

Surgeon Console

Learning Objective:

- Summarize the top 3 features and benefits of each system component

Patient Cart

- Boom
- Universal Arms
- Helm Touchpad

Vision Cart

- Touchscreen Monitor
- ERBE dV Generator
- Endoscope Controller

Surgeon Console

- 3D Viewer
- Hand Controls
- Ergonomic design

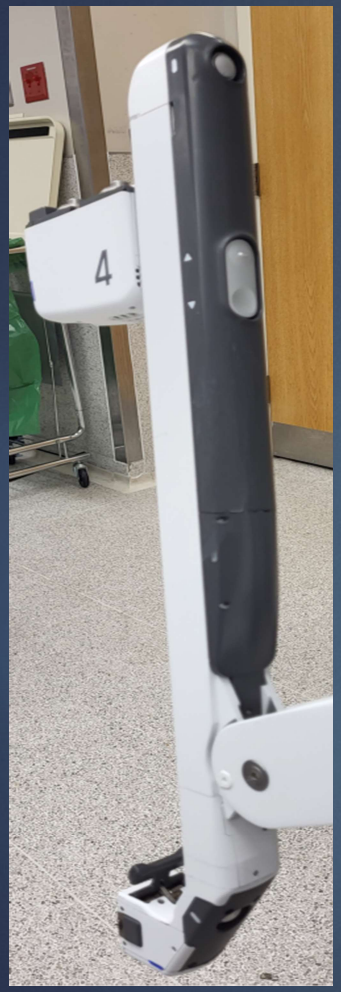
Patient Cart Overview

- *Learning Objectives:*
  - Identify Patient Cart components
  - Identify Patient Cart helm components
  - Identify Guided Setup procedure selections

Patient Cart: Components

- Cart Base
- Column
- Boom
- Microphone
- Arms
- Instrument Carriage
- Cannula mount

Patient Cart: Components



Clutch one arm – press and hold or quick click

Raise and lower the patient clearance joints on an arm using the patient clearance buttons

Grab and move arms individually

Raise and lower boom using extended port clutch

Port clutch one arm

Patient Cart: Components

Patient Cart: Guided Set up

Draping the Robot

https://web.microsoftstream.com/video/ec7f0eb9-87b8-4c97-a447-5e925f2e9553

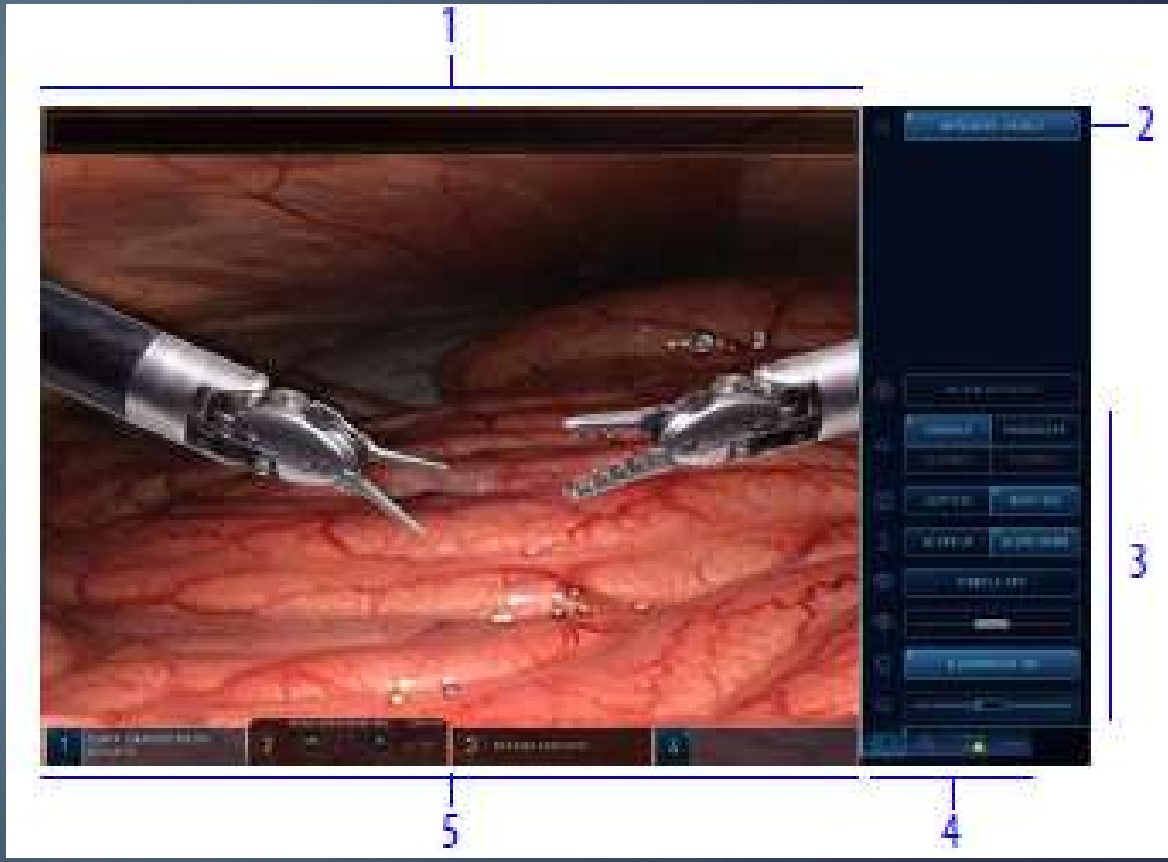
Patient Cart: Docking, Targeting & Alignment

Vision Cart Overview

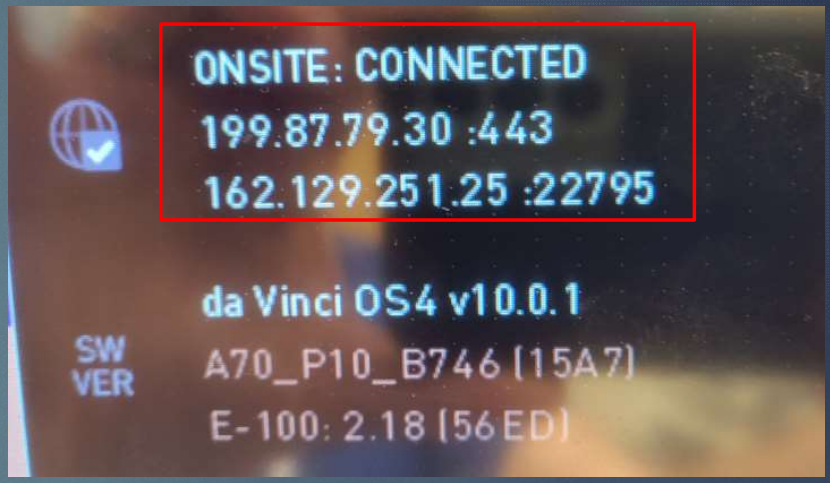
- *Learning Objective:*
  - Interpret touchscreen interface and use it to complete typical OR Setup and settings adjustment tasks
  - Identify da Vinci and handheld monopolar and bipolar instruments for use with the ERBE VIO dV generator
  - Identify the endoscope components

Vision Cart: Touchscreen

1. System status message area
2. Messages (visible/hidden)
3. Options
4. Menu tabs (Display tab selected)
5. Arm, instrument, and endoscope status area



Vision Cart: On Site Connection



Vision Cart: ERBE

ERBE VIO dV 1.0

ERBE VIO dV 2.0

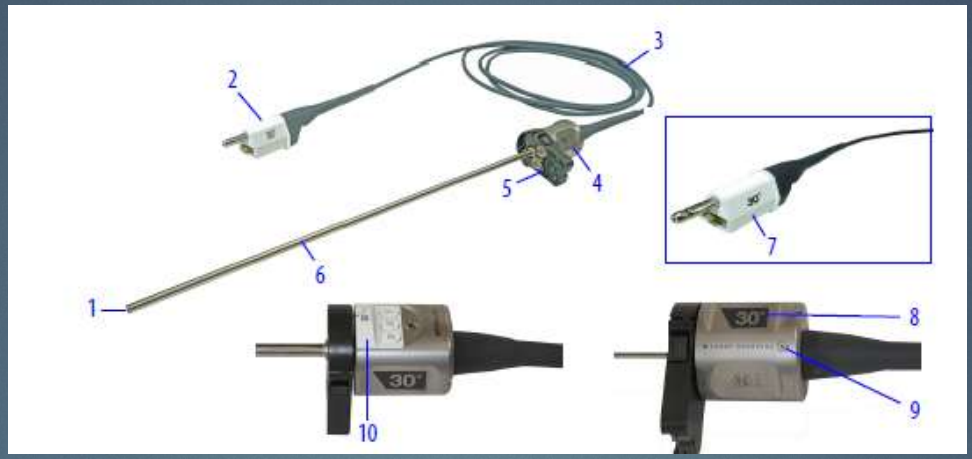
Vision Cart: ERBE Connections

Monopolar

Bipolar

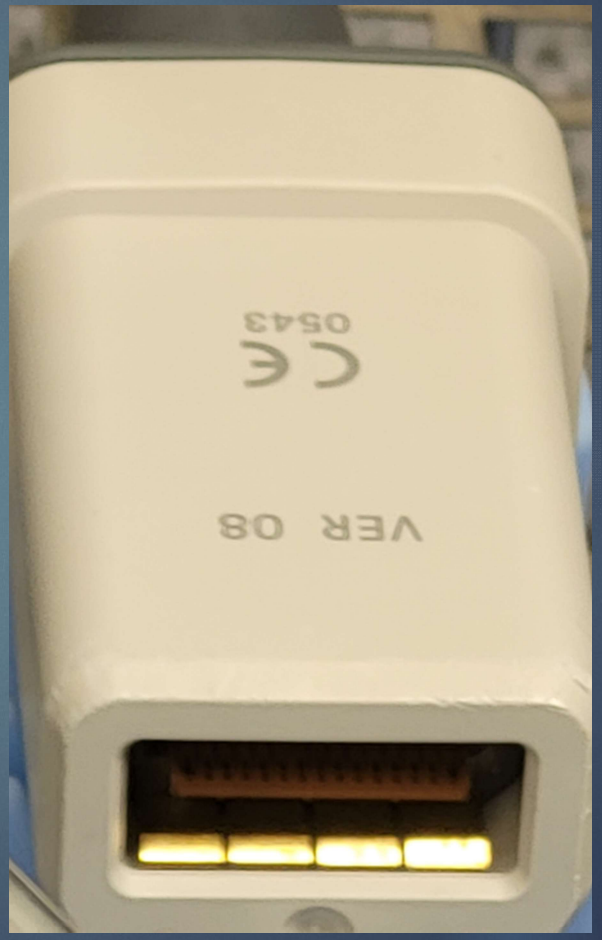
Vision Cart: Endoscope & Controller

1. Tip
2. White connector
3. Short cable
4. Housing
5. Base
6. Shaft
7. No connector cover
8. Angle marking
9. 8 mm marking
10. White label



1. Base
2. Release lever (one on each side)
3. Buttons
4. Endoscope LED

Vision Cart: Endoscope & Controller

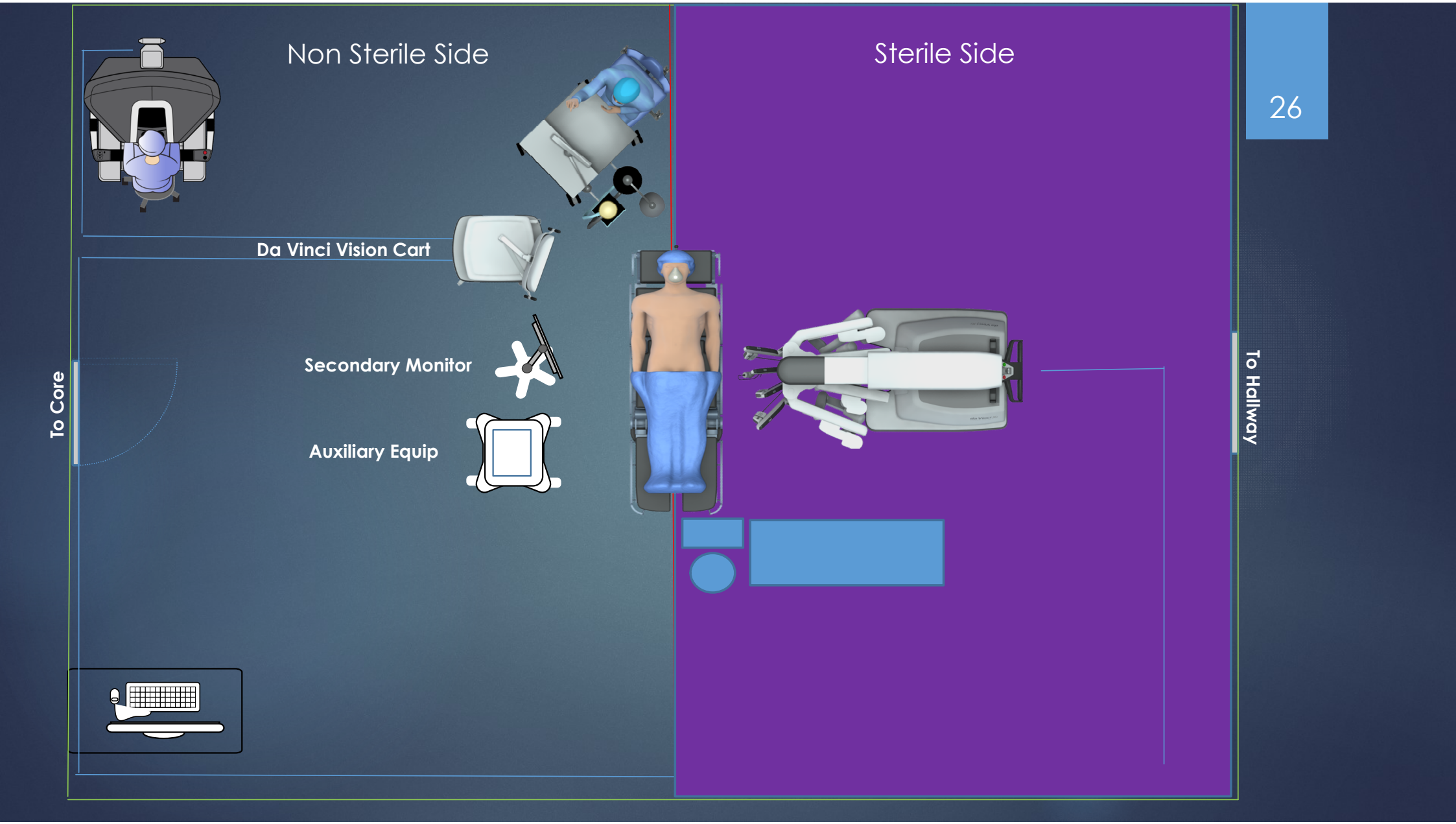


Vision Cart: Endoscope & Controller

OR Set Up

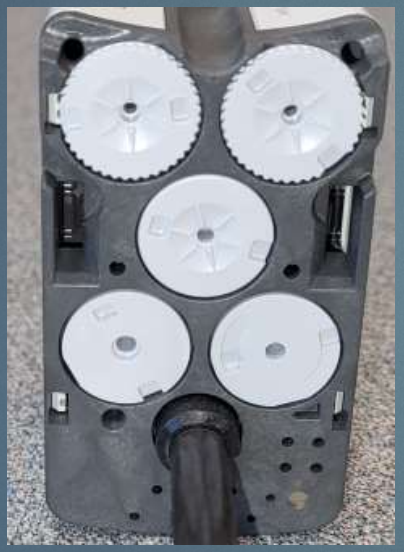
Learning Objectives:

- Articulate considerations for efficient da Vinci Xi setup in the OR where training is held
- Describe conditions under which system components are used in standalone mode
- Manage cables to maintain open traffic pathways, sterility and sufficient reach needed during surgery


Non Sterile Side
Sterile Side
Da Vinci Vision Cart
Secondary Monitor
Auxiliary Equip
To Core
To Hallway

Instrumentation

Instrument Components, Lives and Processing



Monopolar Curved Scissors

Incorrect

Incorrect

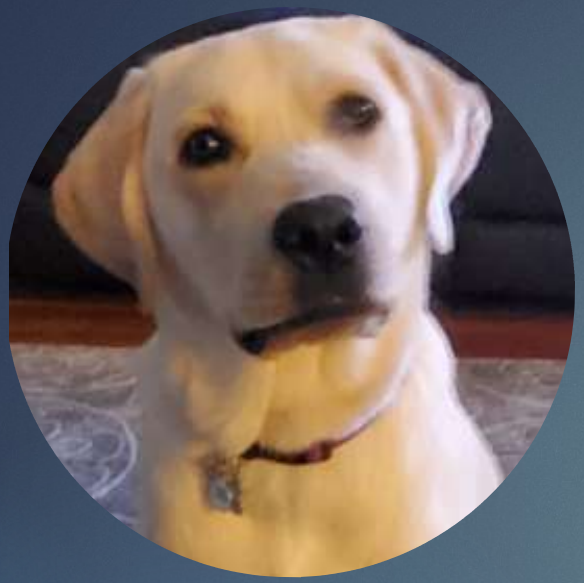
Correct

Instrument Categories

Monopolar Cautery Instruments
8 mm Monopolar Curved Scissors
8 mm Permanent Cautery Hook
8 mm Permanent Cautery Spatula
Bipolar Cautery Instruments
8 mm Maryland Bipolar Forceps
8 mm Fenestrated Bipolar Forceps
8 mm Curved Bipolar Dissector
8 mm Micro Bipolar Forceps
8 mm Long Bipolar Grasper
Needle Drivers
8 mm Large Needle Driver
8 mm Mega™ Needle Driver
8 mm Large *SutureCut*™ Needle Driver
8 mm *Mega SutureCut* Needle Driver
Graspers
8 mm Black Diamond Micro Forceps
8 mm *ProGrasp* Forceps
8 mm Tenaculum Forceps
8 mm Tip-up Fenestrated Grasper
8 mm Resano Forceps
8 mm *Small Graptor*™ (Grasping Retractor)
8 mm Long Tip Forceps
8 mm Cadiere Forceps
8 mm Cobra Grasper

Clip Appliers
8 mm Large Clip Applier
8 mm Medium-Large Clip Applier
8 mm Small Clip Applier
Specialty Instruments
8 mm Dual Blade Retractor
8 mm Atrial Retractor Short Right
8 mm Cardiac Probe Grasper
8 mm DeBakey Forceps
8 mm Suction Irrigator
Scissors
8 mm Potts Scissors
8 mm Round Tip Scissors

Key Takeaways



Questions?