MUSC/RJVAMC GS Residency Robotic Surgery Curriculum Highlights

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We are thankful to Jamie Cannon MD FACS, Associate professor of Surgery, UAB the original author of this curriculum for allowing us to use this document to serve as a guideline for Robotic Surgery training in MUSC.

LEARNING OBJECTIVES

1. Describe the potential advantages and disadvantages unique to robotic surgery.
2. Understand the basic components of a robotic operating system and how they interact with each other.
3. Identify operations appropriate for a robotic approach.
4. Recognize patient safety issues unique to robotic surgery.
5. Learn how to dock the robot on to the patient, and insert and exchange robotic instruments.
6. Become comfortable with basic manipulation of robotic instruments, to include camera control and clutching.
OPPORTUNITY FOR MORE ADVANCED TRAINING

Residents that anticipate performing robotic operations after residency will have the opportunity to gain additional console experience, with the goal of being able to operate independently on the robot at the completion of residency. Residents who choose to pursue this opportunity will have additional training requirements, as outlined below. Trainees, who meet these requirements and are deemed competent on the console by the Director of Robotic Surgery, will be provided with a letter at the completion of their residency documenting their experience and competency. While all hospitals will have different requirements regarding surgical readiness, documentation of adequate robotic training in residency generally replaces on site clinical training with Intuitive.

REQUIREMENTS
The following requirements are to be completed by all residents sequentially during their residency. Additional information about the requirements follows.

1. Complete online robotic training at [www.davincisurgerycommunity.com](http://www.davincisurgerycommunity.com)
2. Attend an in house workshop for introduction to docking, instrument exchange, simulator, and console training.
3. Bedside assistant in 5 robotic cases, with responsibility for docking, instrument exchange, and assisting.*
4. Complete 6 designated modules on the simulator with a score of 90% or greater.
5. Console surgeon for minimum 5 cases.

*Residents currently in their 3rd, 4th, or 5th year who have completed simulator training can log themselves both as bedside assistant and console surgeon if they docked the robot and inserted the instruments, and operated from the console in the same case.

Residents who desire a letter documenting their experience and competency at the time of graduation need to meet the following additional requirements:

1. Completion of additional more advanced modules on the simulator with a score of 90% or greater
2. Console surgeon for minimum of 15 cases
3. Minimum of 5 cases as console surgeon must include a post case review with the attending surgeon. Must be deemed as competent on the console for these five cases. These cases should be performed during the final year of residency.
ACTIVITIES BY POST GRADUATE YEAR

1. PGY-1
   a. Complete online training
   b. Attend an in-house workshop.
   c. Observer or bedside assistant for robotic cases
   d. Practice on the simulator

2. PGY-2
   a. Review online training and/or attend an in-house workshop if needed for review
   b. Observer or bedside assistant for robotic cases
   c. Complete all required modules on the simulator
   d. Perform uncomplicated cholecystectomies

3. PGY-3
   a. Review online training and/or attend an in-house workshop if needed for review
   b. Continue practice on the simulator
   c. Perform robotic cholecystectomies.
   d. Perform portions of the suturing in Inguinal Hernias.

4. PGY-4
   a. Review online training and/or attend an in-house workshop if needed for review
   b. Continue practice on the simulator
   c. Perform robotic cholecystectomies and inguinal hernias.
   d. Perform portions of the mobilization in segmental colectomies

5. PGY-5
   a. Review online training and/or attend an in-house workshop if needed for review
   b. Complete advanced modules on the simulator
   c. Assist junior residents in robotic cholecystectomies and inguinal hernias.
   d. Perform segmental colectomies, Sleeve Gastrectomies, Nissen Fundoplications.
   e. Perform portions of the mobilization for proctectomies
   f. Have the attending surgeon evaluate at least 5 cases to assess skills and competency
Instructions for Online Robotics Training

Completing the pre-requisite Preparation & System Training for the da Vinci Si Surgical System will yield a more productive experience in that you will have already covered the basics and have a working knowledge of the Si System prior to hands-on experience.

Below is a step-by-step outline of the procedure modules & evaluation process:

1. Go to **www.davincisurgerycommunity.com**. You will need to establish an account and password.
2. From the left menu, select “Training” -> “Surgeons” -> “Online Training Courses”
3. We have a da Vinci Si system. You are to do the following modules. Make sure you are doing them on the Si system, not the S system. We do have SmartPedal technology.
   a. "da Vinci Si System Overview"
   b. "Docking"
   c. "Advanced Surgeon Console Controls"
   d. "Safety Features"
   e. "Assessment" (Save and Print your Assessment Certificate)
4. Turn in your assessment certificate to Sue Wetherholt.

You may want to spend some time exploring the website. You will find links to papers about robotic surgery, as well as videos of common robotic operations.

If you have questions or need assistance with either on-line training or simulator training please contact our local Intuitive Rep. Erin Stephenson.
(erin.stephenson@intusurg.com)
Simulator Training

The robotic simulator is located in the VA along with the main console. The simulator consists of the robotic console with a computer behind it, and a separate monitor to the right. The image on the monitor is the same image that is seen from the console itself. If the console is not on, turn it on via the power button on the right. If it does not come on, the computer may need to be powered on. It is behind the console on the back left and has a flip switch.

Find your name on the drop down list. We will help you enter your name and create a profile if it isn’t already there. From the main menu you will find a variety of exercises. I suggest you start with the overview and work through the simulator exercises. While I encourage you to explore all the exercises, the following are required. To meet the requirement you need to achieve a 90% score. Some will be easy, but others will take multiple attempts to improve your skills and reach 90%. Please record your score and the date you achieved it below. Once you have finished all the required modules with a 90% or greater, turn this sheet in to Sue Wetherholt.

<table>
<thead>
<tr>
<th>Module</th>
<th>Date Completed</th>
<th>Score (%)</th>
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<tbody>
<tr>
<td>Camera and Clutching → Camera Targeting</td>
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<tr>
<td>Endowrist Manipulation → Peg Board 2</td>
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<td>Energy &amp; Dissection → Energy Switching 1</td>
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<tr>
<td>Camera and Clutching → Ring Walk 2</td>
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<tr>
<td>Needle Control → Thread the Rings</td>
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<tr>
<td>Needle Driving → Suture Sponge 2</td>
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Resident:

____________________________________  ______________________________________
Name                                       Signature

Verified by:

____________________________________  ______________________________________
Rana C Pullatt MD                            Date
Robotic Case Log- Bedside Assistant

Please place stickers from cases in which you were the bedside assistant and participated in inserting trocars, docking the robot, and inserting and exchanging instruments. You need a minimum of five cases. Once you have five, please copy this page and turn in to Sue Wetherholt.

<table>
<thead>
<tr>
<th>Patient Sticker</th>
<th>Date</th>
<th>Attending</th>
<th>Operation</th>
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Name

Signature
Robotic Case Log - Console Surgeon

Please place stickers from a minimum of 5 cases in which you were the console surgeon and performed a significant portion of the case. You may copy this page as many times as necessary. Once complete, please copy and turn in to Sue Wetherholt.

<table>
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Name ___________________________  Signature ___________________________
Console Surgeon Evaluation

This form is for residents in their final year who have already performed 15 cases as console surgeon. The evaluation is to be completed by the attending physician and reviewed with the resident at the completion of the case. Make a copy of this form for each case, and turn forms into Sue Wetherolt when complete.

<table>
<thead>
<tr>
<th>Patient Sticker</th>
<th>Resident</th>
<th>Date</th>
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<tbody>
<tr>
<td>Operation</td>
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<table>
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<tr>
<th>Skill</th>
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<tbody>
<tr>
<td>Demonstrates understanding of trocar placement and spacing</td>
</tr>
<tr>
<td>Understands principles of docking and is able to dock in a timely fashion</td>
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<tr>
<td>Uses camera appropriately and is able to focus the camera</td>
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<tr>
<td>Demonstrates appropriate clutching and maintains hands in a comfortable workspace</td>
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<td>Demonstrates ability to use third arm and switch between instruments</td>
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<tr>
<td>SAFTEY: Does not move instruments that are not in view</td>
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<tr>
<td>SAFETY: Recognizes tissue response to assess grip strength and handles tissue appropriately</td>
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<tr>
<td>Demonstrates ability to troubleshoot system and manage collisions</td>
</tr>
</tbody>
</table>

Please comment on areas of strength:

Please comment on opportunities for improvement:

The resident demonstrates competency on the robotic system.  

YES  NO

Attending Name ______________________  Attending Signature ______________________
Advanced Simulator Modules

<table>
<thead>
<tr>
<th>Module</th>
<th>Date Completed</th>
<th>Score (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera and Clutching → Camera Targeting 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endowrist Manipulation 2 → Ring and Rail 2</td>
<td></td>
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<tr>
<td>Camera and Clutching → Ring Walk 3</td>
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<td></td>
</tr>
<tr>
<td>Needle Driving → Tubes</td>
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<td></td>
</tr>
<tr>
<td>Needle Driving → Suture Sponge 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endowrist Manipulation 2 → Ring and Rail 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Resident:

Name ___________________________ Signature ___________________________

Verified by:

_____________________________ Date ________________________________

Rana C Pullatt MD