

Robotics on the Rise: Expansion of Minimally Invasive Robotic Surgery and Implementation of a Standardized Training Curriculum Across Multiple Campuses.

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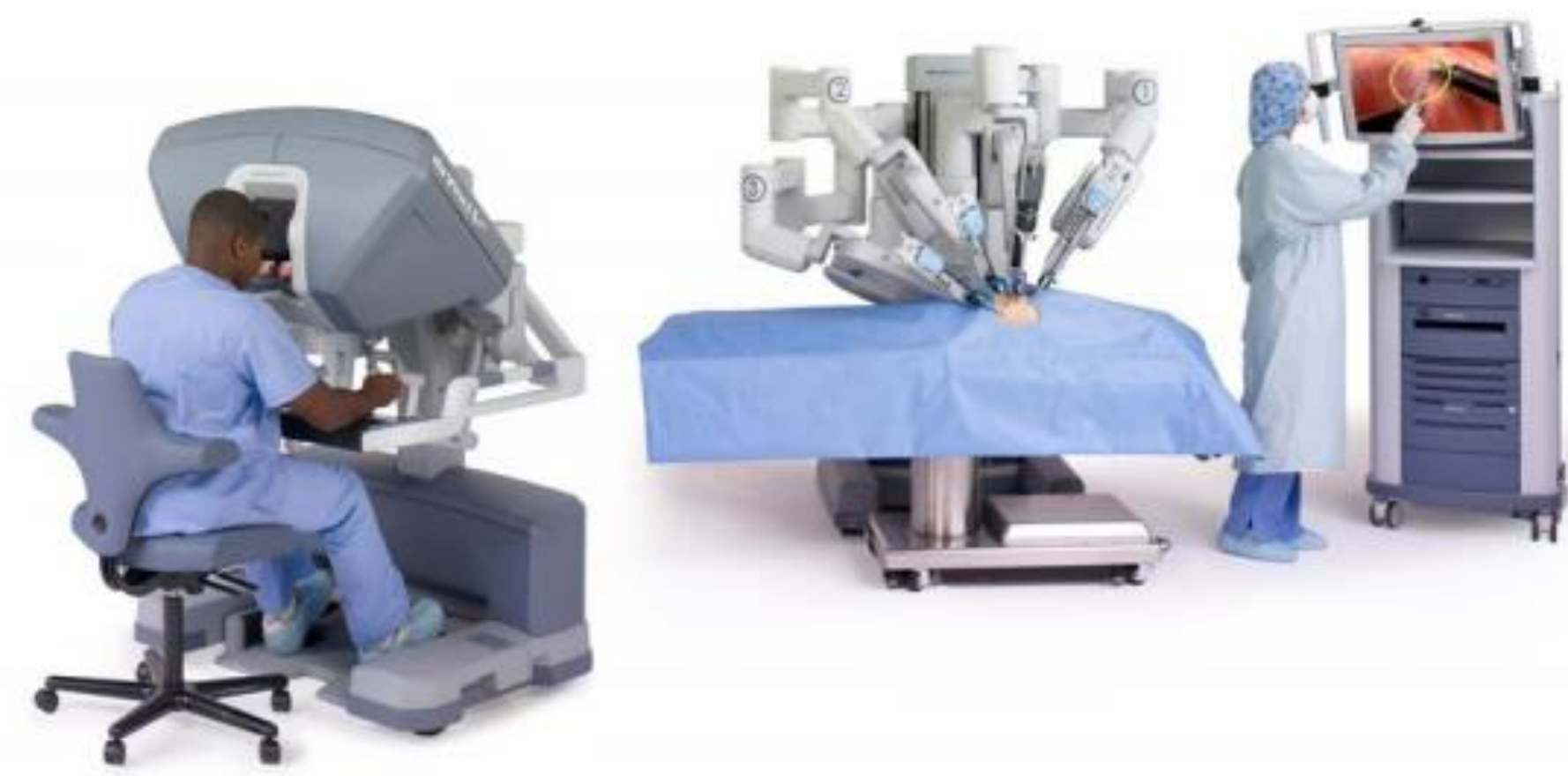
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By: David Labib, Kyle Langston PA-C, Hope Johnson RN, James Miller CRNA, Brian Leader, and Martin Martino MD

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INTRODUCTION

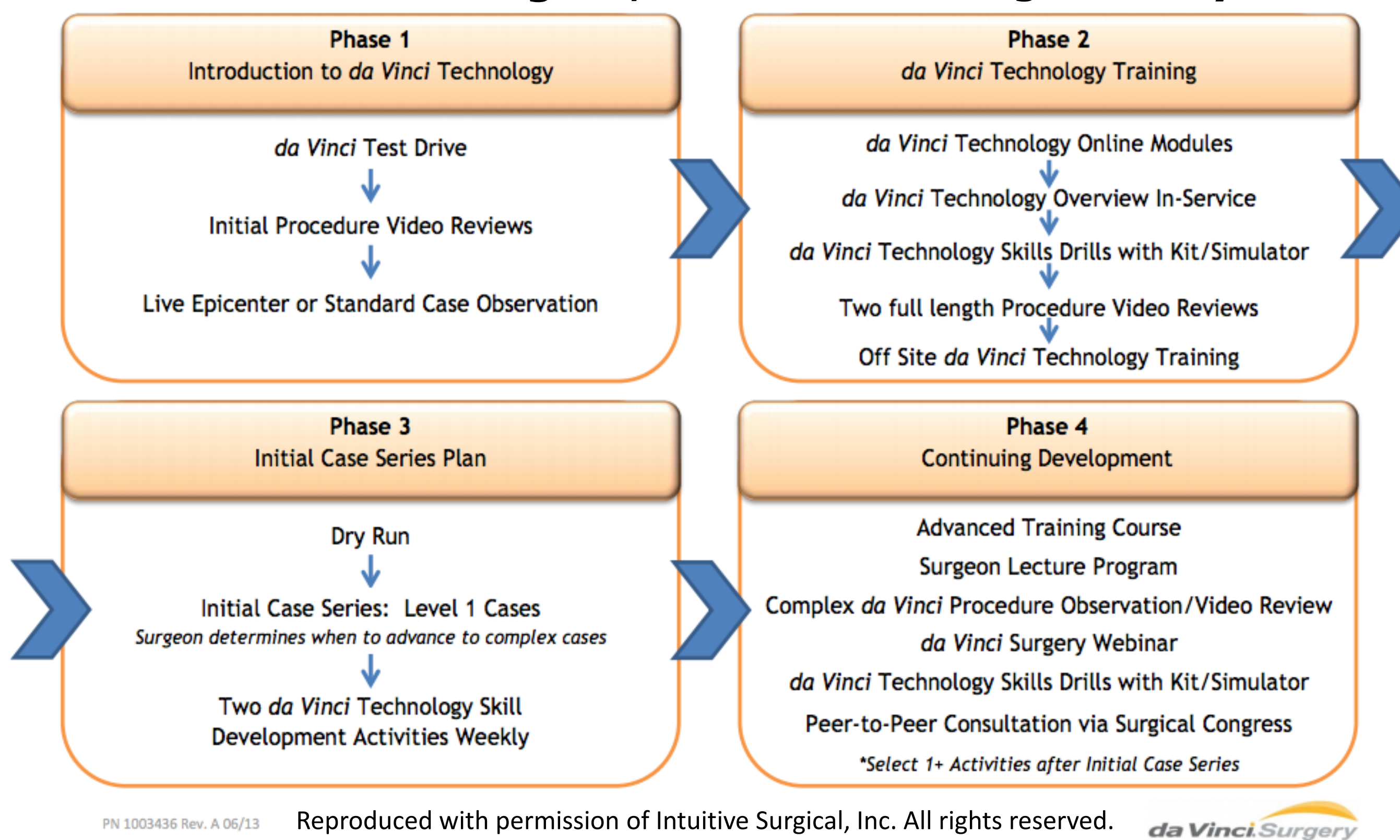


Robotic Surgery

- Robotic Surgery began at Lehigh Valley Health Network in 2008 with the purchase of the da Vinci® Surgical System and has since expanded to three systems in 2012 and a planned eight systems by September 2017.
- With the acquisition of three new systems and expansion of LVHN as a whole, the robotics program can now exceed the current case volumes, with over 10,000 cases to date, utilizing a standardized training curriculum to train staff and clinicians
- Benefits of robotic surgery include enhanced three-dimensional visualization and improved dexterity, which leads to smaller incisions, less pain, and faster recovery^{1,2}

METHODOLOGY

Intuitive Surgical, Inc. Credentialing Pathway



Robotic Training Network (RTN): LVHN Credentialing Pathway

Phase I:
Didactic Learning



Phase II:
Psycho-motor Skill Training

RESULTS

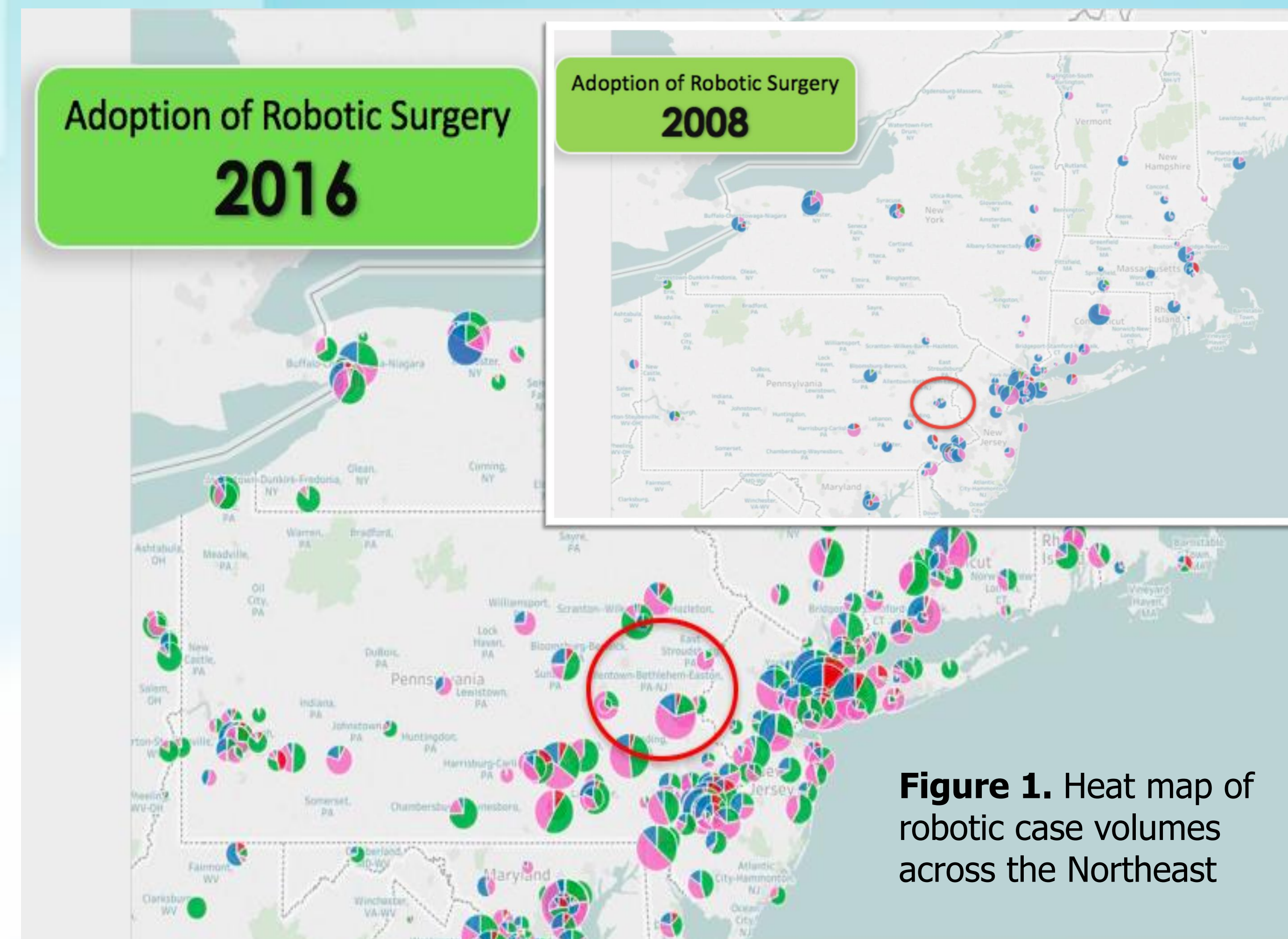


Figure 1. Heat map of robotic case volumes across the Northeast

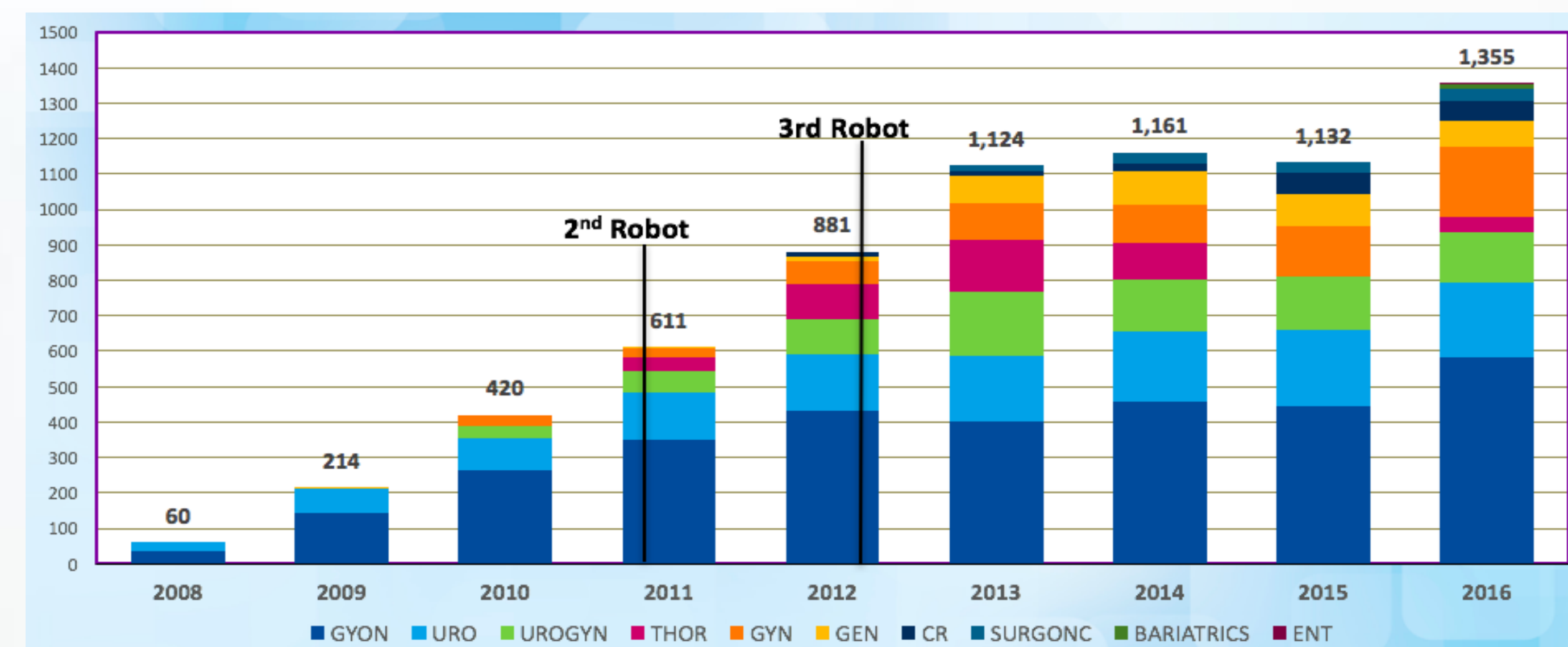


Figure 2. Yearly case volumes separated by specialty

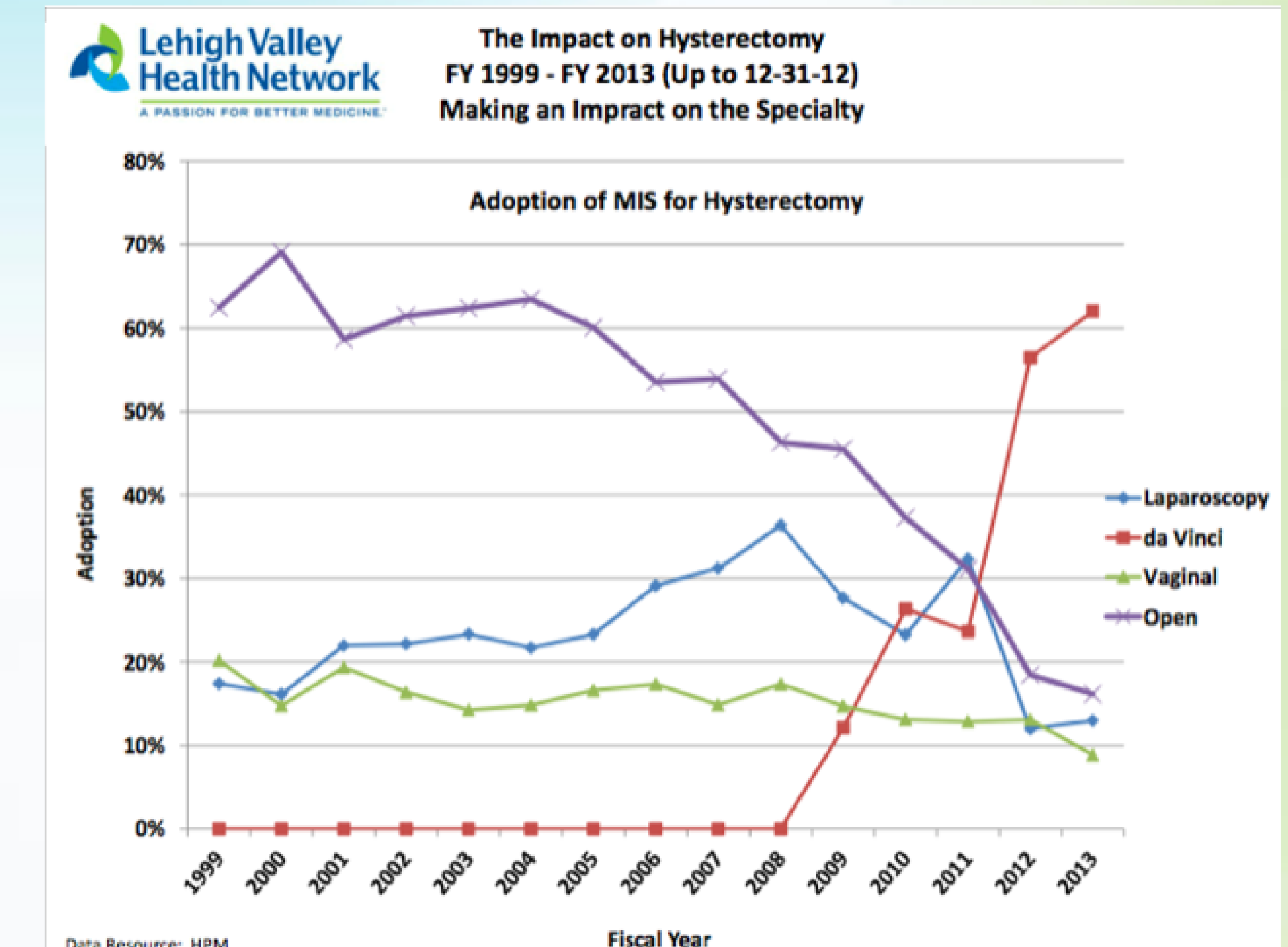
DISCUSSION

Maintaining Quality

- Rigorous and standardized training curriculum set by Medical Staff Services and robotic leadership to ensure quality with increasing case volumes
- C-SATS and B-Line SimCapture recording systems introduced to develop benchmarks and provide objective feedback for performance improvement
- Simulation of surgical skills required for annual credentialing (dv-trainer/backpack)

Minimizing Cost

- With improved outcomes, shorter recovery time, decreased length of hospitalization, and reduced complications, cost of a patient's entire treatment is minimized which benefits both the hospital and the patient
- Several studies have yielded that robotic surgery renders shorter hospitalization, less intraoperative bleeding, faster recovery, and fewer complications^{3,4}
- Improved technologies (Firefly)



CONCLUSION/FUTURE DIRECTION

- LVHN to serve as the leading center of robotic surgery

	2005	2017	2022
Gynecologic Oncology		Gynecologic Oncology Gynecology Urogynecology	Estimates: 1/3 of all surgical cases Projected to be done with robotics*
Urology		Urology Thoracic Surgery General Surgery Surgical Oncology Colon-Rectal Surgery Bariatrics ENT	<ul style="list-style-type: none"> • Pediatric surgery • Orthopedics • Spine surgery • Cardiac surgery • Vascular surgery

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