



WHAT'S NEW ON THE MEDICAL DEVICE HORIZON?

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INTUITIVE SURGICAL

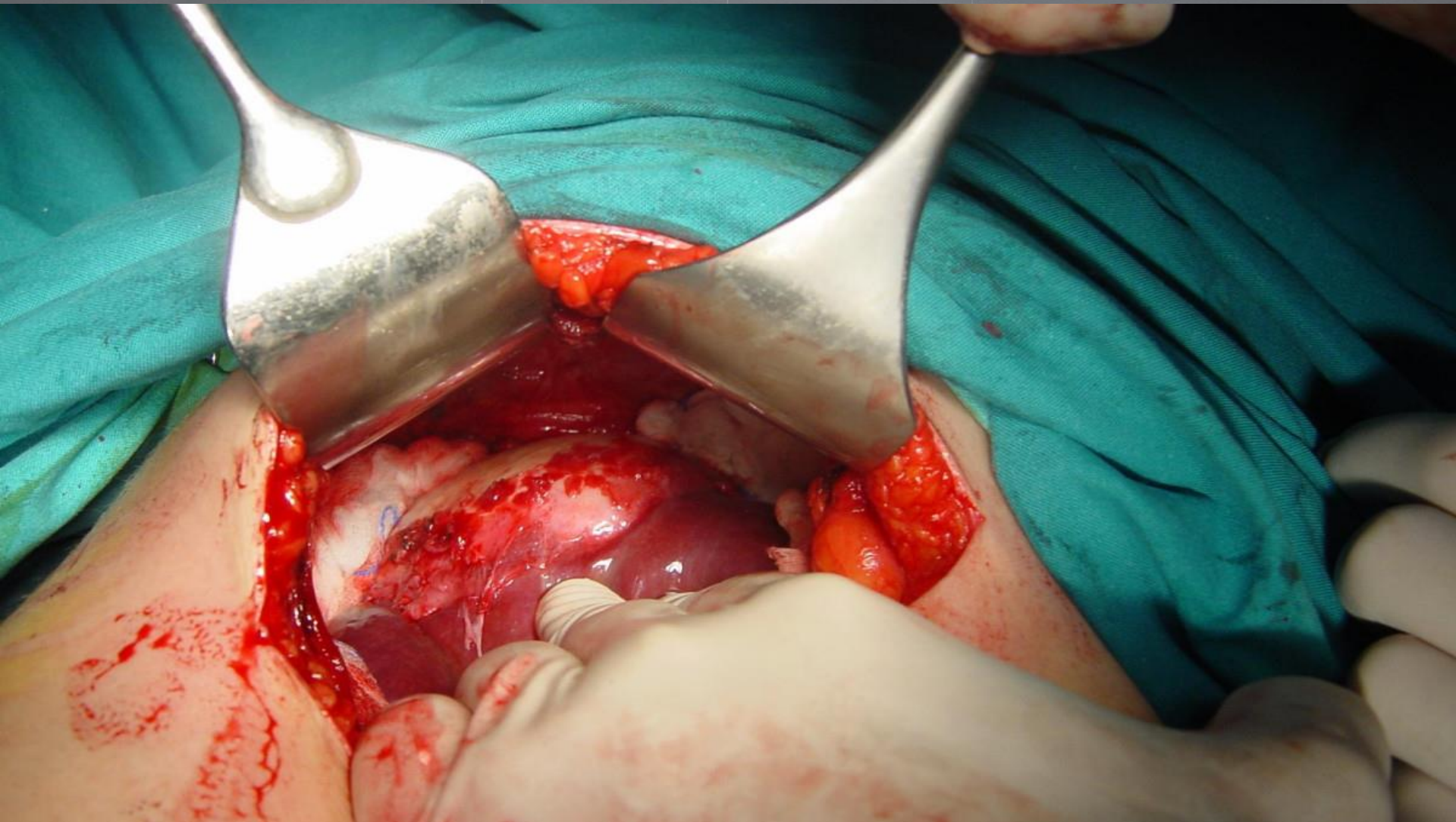
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Healthcare Challenges

- Aging population
 - Longer exposure to diseases and surgery
 - Need for longer product life
- Total cost of care
 - Hospital stays, complications, readmissions, reoperations, recovery, etc.
- Matter of life or quality of life

Can Surgery Be Better?



A close-up photograph of a person's bare abdomen. A large, vertical, hand-stitched surgical incision runs down the center of the torso. The stitches are dark and prominent. The incision starts near the top of the frame and ends just above the waistline, where it curves slightly to follow the contour of the body. The person is wearing blue denim jeans with a metal buckle. The background is a plain, light-colored wall.

Other choices?

Can MIS Be Better?

(Minimally Invasive Surgery)

- Counter-intuitive control
- Long learning curve
- Ergonomic challenge
- Unstable vision
- Injury to surgeons



Toward Better Surgery

- Innovate to improve outcomes and shorten recovery time to enable minimally invasive surgery (MIS) as the standard of care in complex procedures
- Innovate in access, precise tissue interaction, and imaging to improve upon conventional MIS procedures
- Reduce the total treatment cost for surgery by reducing complications, readmissions, and recovery time

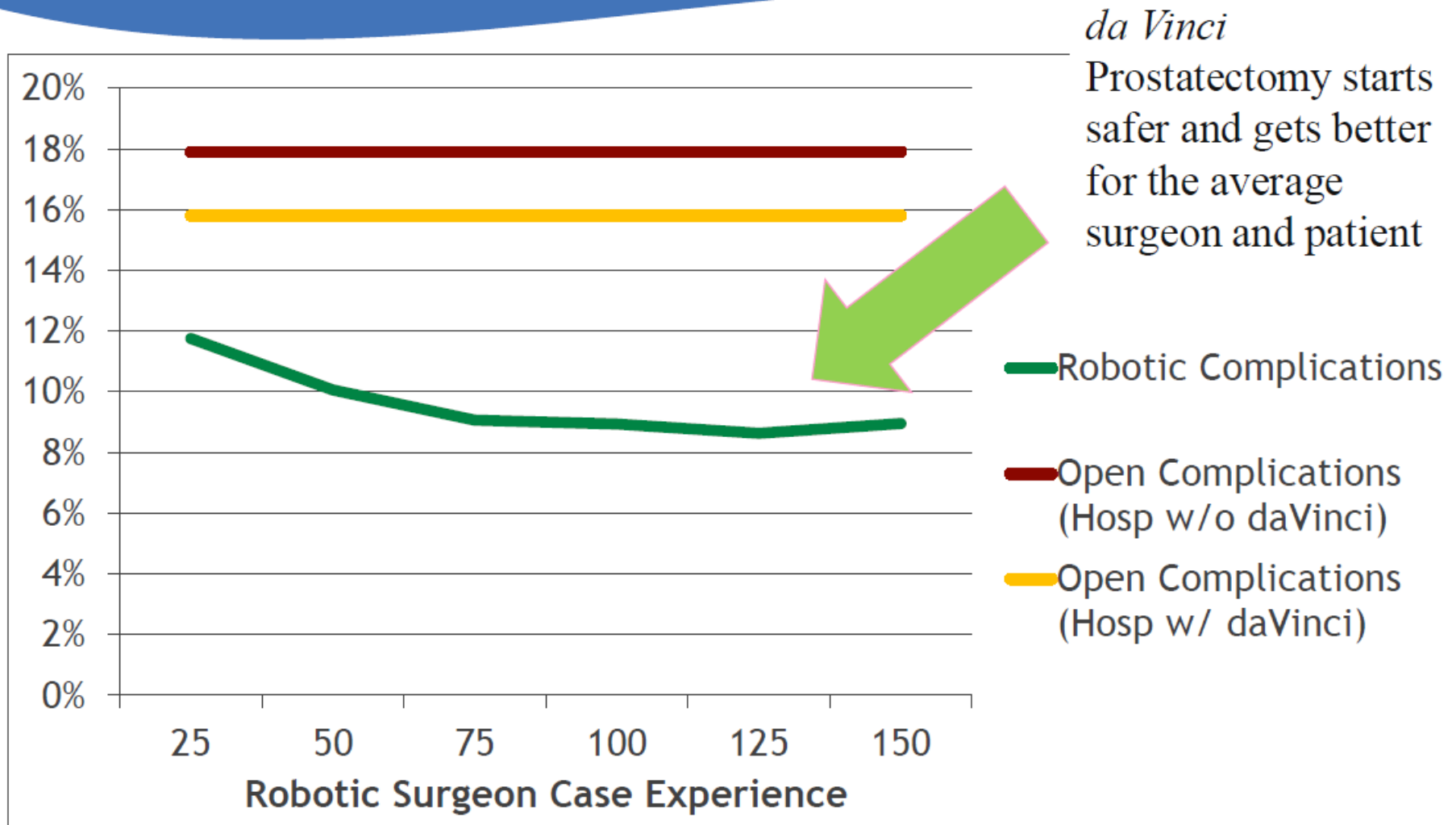
An Example of Innovations in MIS





Only Surgeon Benefit?

Surgeon Benefit = Patient Benefit



Population-based study using the Premier Perspective Database; 71,312 prostatectomies performed between 2004 and 2010 at more than 300 hospitals - 27,348 Robotic Prostatectomies, 43,964 Open Prostatectomies. The authors examined perioperative outcomes stratified by surgeon experience with robotics. Intuitive Surgical paid for access to the Premiere database and Axistat consulting services. Lead author Dr. Davis was reimbursed for travel expenses related to this study. Author Jessica Gabbert is employed by InClin (formerly Axistat). Author Usha Kreaden, Principal Biostatistician, is employed by Intuitive Surgical.

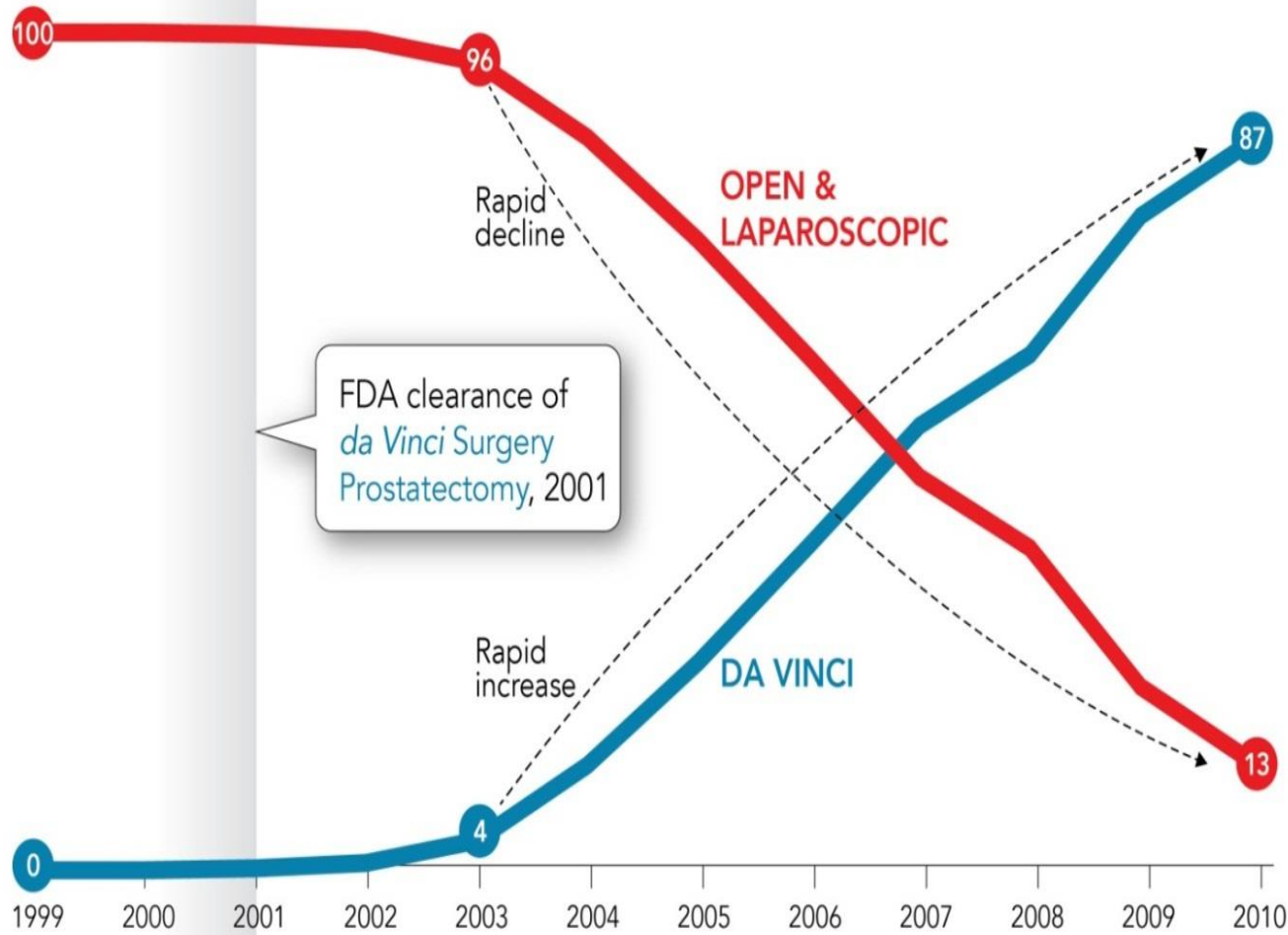
A close-up photograph of a person's bare midsection, showing the lower abdomen and waist. Three adhesive bandages (band-aids) are stuck to the skin. One is on the left side, one is in the center, and one is on the right side. The person is wearing a dark denim belt. The background is a solid blue color with a white grid pattern.

Is it only cosmetic?

U.S. PROSTATECTOMY MARKET BY MODALITY

Estimated Adoption of Minimally Invasive Surgery (MIS)

Percentage of all procedures



IMPACT OF ROBOTIC SURGERY

Since 2010 over 85% of men in the United States who undergo a prostatectomy benefit from a minimally invasive approach to the procedure. In 2004, prior to the widespread adoption of robotic surgery, less than 5% of men in the United States undergoing a prostatectomy received a minimally invasive approach via traditional laparoscopy².

A number of complexities can limit the patients who may benefit from minimally invasive procedures including:

- Prior abdominal surgery
- High Body Mass Index
- Enlarged prostate gland
- Advanced stage of disease

The enhanced visualization, precision, and control allowed robotics to overcome these limitations and enabled this shift in the market.

1. Prostatectomy prevalence data: Nationwide Inpatient Sample (NIS), Healthcare Cost and Utilization Project (HCUP), Agency for Healthcare Research and Quality.
2. MIP percentage prior to introduction of robotic prostatectomy: Premiere Prospective Database 2004-2010 as cited by Davis et. Al. BJUI 2013 (accepted for publication) 3. da Vinci® Prostatectomy data: ISI Internal Estimates



Prostatectomy Robotic vs Open

Complications: - 57%

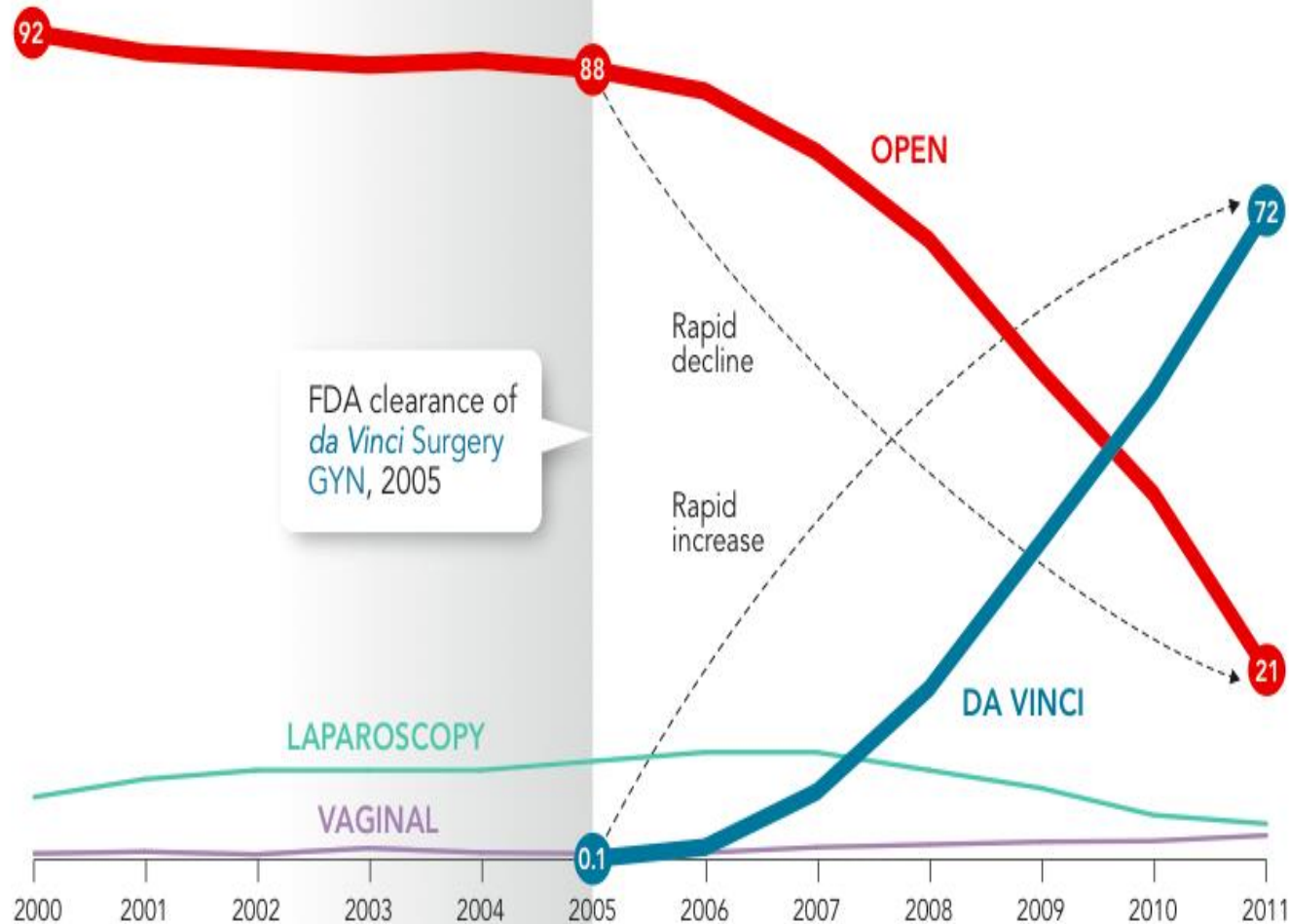
Readmissions: - 67%

Mortality: - 83%

U.S. MALIGNANT HYSTERECTOMY MARKET BY MODALITY

Estimated Adoption of Minimally Invasive Surgery (MIS)

Percentage of all procedures



FDA clearance of *da Vinci Surgery* GYN, 2005

IMPACT OF ROBOTIC-ASSISTED SURGERY:

Since 2012, more than 70% of U.S. gynecologic cancer patients now receive a minimally invasive procedure.

Prior to robotic-assisted surgery, less than 15% of these patients received a minimally invasive surgical option.

A number of complexities can prevent patients from receiving a traditional MIS approach.

Surgical complexities include:

- Stage of disease
- High patient BMI
- Size of uterus

The enhanced visualization, precision, and control of the *da Vinci* Surgical System helps experienced surgeons overcome these complexities and has enabled this shift in the market.

1. Inpatient data: Nationwide Inpatient Sample (NIS), Healthcare Cost and Utilization Project (HCUP), Agency for Healthcare Research and Quality
2. Outpatient data: Solucient® Database - Truven Health Analytics (Formerly Thomson-Reuters) 3. *da Vinci* data: ISI Internal Estimates



Hysterectomy Robotic vs Open

Complications: - 72%

Readmissions: - 86%

Wright , JAMA 2013 ; Wright, Clin Onc, 2012 , Scandola, JMIG , 2011; Boggess AM J Obstet Gyn,2008; Paley, AM J Obstet Gyn,2011 ; Martino, J of Min Invasive Gyn, 2013; Wiser, Gynecol Surg



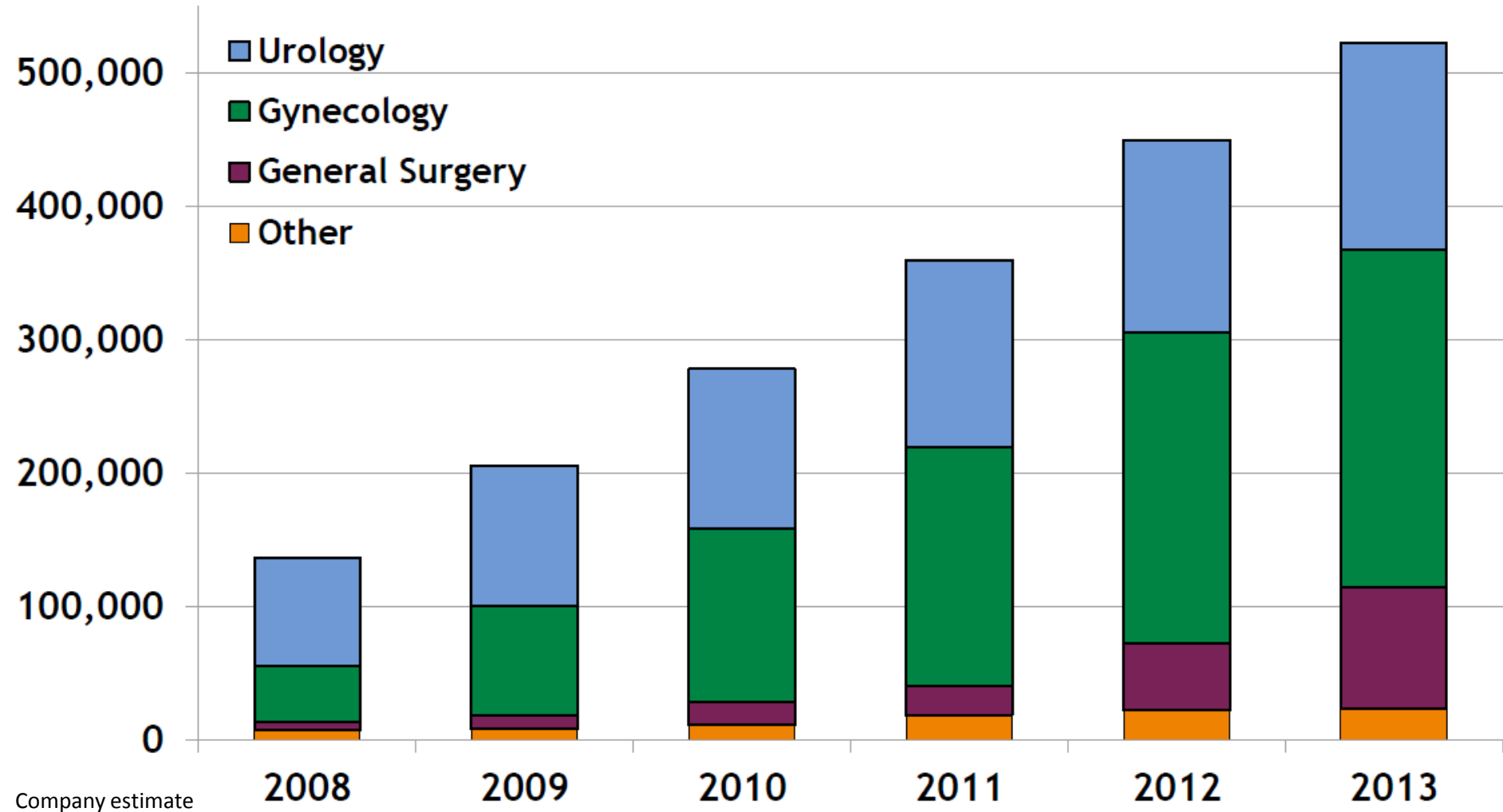
Colon Resection Robotic vs Open

Complications: - 54%

Readmissions: - 18%

Mortality: - 80%

Worldwide Robotic Procedures



Company estimate

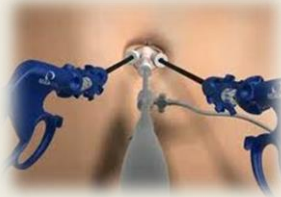
Making Surgery Better

Access

Multi-Port



Single-Port, NOTES*



Visualization

HD, Flexibility, Fluorescence & Augmentation



Instrumentation



Simulation Training



* Some images from Google.com

* NOTES: Natural Orifice Transluminal Endoscopic Surgery

THANK YOU

