Does a Robot Make Sense in My ASC?

JEREMY P. PARCELLS, MD FACS
MANSFIELD, TX
My Background

General & Bariatric Surgery

Fellowship
University of Nebraska Medical Center, MIS/Bariatrics

Residency
University of Texas Medical Branch, General Surgery
University of Kentucky, General Surgery

Education
Baylor College of Medicine
Baylor Surgicare in Mansfield

• We’re in Mansfield, TX
• Located in the DFW metroplex
• Just in case there was any doubt I’m in Texas...
• USPI facility
• First ASC in Texas to get a robot (2/2016)
Agenda

Site of Care
Why Surgeons are Asking for Robots in ASCs
Appropriate Case Mix
Operational Considerations
Planning Your Interaction with Payors
Difference Between ASC & HOPD

ASC: Ambulatory Surgery Center
- Not the same as an HOPD
- Do outpatient surgery
- Free-standing from any hospital
- Some have 23 hour observation

Medicare Reimbursement
- Surgeries performed in HOPDs
  - Paid by Medicare under OPPS
  - Use Ambulatory Payment Classification
- Surgeries performed in ASC
  - Paid by Medicare under ASC fee Schedule
So Why Are Surgeons Wanting Robots in ASC’s?
I believe standard of care is changing!

What percentage of patients received OPEN inguinal & ventral hernia procedures in the US Q4, 2017?¹

58%
Inguinal Hernia

Open

Conventional Lap: Dr. Clark Gerhart

Da Vinci Robotic-assisted Surgery: Dr. Conrad Ballecer

Ventral Hernia

Open

Conventional Lap – Dr. Igor Belyanksy

Da Vinci Robotic-assisted Surgery: Dr. Clark Gerhart
Risk factors For Open Conversion in MIS cholecystectomy

Percent of Laparoscopic & Robotic-assisted Open Conversions

Study shows overall conversion rates:
- Lap = 3.87%
- Da Vinci RAS = .15%

Study Design
- Single center retrospective study
- 960 MIS cholecystectomies (over 17 years)
- Performed by surgical team with >125 case experience (2011-2015)

Individuals’ outcomes may depend on a number of factors, including but not limited to patient characteristics, disease characteristics, and/or surgeon experience.

Da Vinci Xi®
Firefly Fluorescence Imaging

Nisha Dhir, MD

University Medical Center of Princeton at Plainsboro
Plainsboro, NJ
Majority of Benign Surgery Still in Hospital Setting

Note:
• Based on internal analysis of Premier, HCUP SASD and 2015 IMS data
• OP (HOPD) volume estimates based on internal 2013 CSR survey on 386 accounts with HOPDs

ASCs are driving adoption in outpatient sites of care for GYN and Hernia
So What Has Changed?

Increasing Coverage  
Rising Reimbursement  
Enabling Technologies

An opportunity today, that wasn’t as feasible yesterday
Driving Forces Shifting Site of Care

ASC access through surgeons high
~50% of ASC hernia performed by robotically trained surgeons

Site of care shift thru payors
UHC prior auth and Humana coverage decisions

Increase CMS HOPPS/ASC payments
2017 % increases slightly favor ASCs

Da Vinci® enabling more OP hernia
e.g., ventral hernia – could accelerate site of care shift
3. Note: Outpatient CPTs (49560, 49561, 49565, 49566) used for open incisional hernia, outpatient CPTs (49654-49657) used for MIS incisional hernia.
ASC Reimbursement
Trends Favoring Outpatient MIS

Inguinal Hernia - Medicare Outpatient Payments

4. Note: Outpatient CPTs (49505, 49507, 49520, 49521, 49525) used for open inguinal hernia, outpatient CPTs (47562, 49561) used for MIS inguinal hernia
Total Laparoscopic Hysterectomy >250g

CPT 58572
Outpatient Dept.

$6,861
National Avg.

CPT 58572
Ambulatory Surgery Center

$3,281
National Avg.

Yes, ASC reimbursed in 2018!
Predicted Growth Trends in MIS—Laparoscopy & da Vinci®

Predicting the need for convenient access by service line

National Adoption of da Vinci by Procedure

Growth Trends in Laparoscopy and da Vinci®

3 Yr CAGR (Compound Annual Growth Rate)

- Hernia: -11% (LAP) 347% (DA VINCI)
- Hysterectomy: -16% 3%
- Colectomy: -10% 63%
- Rectal Resection: -14% 48%
- Lobectomy: -3% 20%

1. 2016 and 2017 adoption rates for Hernia, hysterectomy, colectomy and rectal resection based on Goldman Sachs Financial Model 02/06/16
2. 2016 and 2017 adoption rates for Lobectomy based on JP Morgan Financial Model 04/19/2016
3. Intuitive Surgical Analysis of 2008-2015 Premier database
4. Intuitive Surgical internal analysis – 3 year CAGR based on Q1 2014 to Q1 2016 procedure volume
A Win-Win-Win-Win-Win Situation?

- Win for the patient
- Win for the surgeons
- Win for our ASC
- Win for the payors
Do You Have the Right Success Equation?

Right Surgeons + Right Case Mix & Technology + Right Reimbursement =
Cases Appropriate for the Robot in an ASC

Patient Selection is Important

<table>
<thead>
<tr>
<th>General Surgery</th>
<th>Benign Gynecology</th>
<th>Evolving...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cholecystectomy</td>
<td>Hysterectomy</td>
<td>Urologic cases (Pyeloplasty)</td>
</tr>
<tr>
<td>Inguinal Hernias</td>
<td>Myomectomy</td>
<td>Nissen Fundoplication</td>
</tr>
<tr>
<td>Ventral Hernias</td>
<td>Salpingectomy</td>
<td>Hiatal Hernia Repair</td>
</tr>
<tr>
<td></td>
<td>Oophrectomy</td>
<td>LINX Insertion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sleeve Gastrectomy</td>
</tr>
</tbody>
</table>
Robotic System Considerations

We firmly believe X is best for an ASC

X is \( \sim \frac{2}{3} \text{rd} \) the price of an Xi

- Where Xi is superior: generally not ASC-appropriate cases
- Docking an X is a little more cumbersome (no rotating boom)

So maybe this means that an Xi would work better in an ASC...?
WRONG!!!
Robotic System Considerations

Da Vinci X is \( \sim \frac{2}{3} \)rd the price of da Vinci Xi
Which System is Right for Your ASC?

- da Vinci Si®
- da Vinci X®
- da Vinci Xi®

1.5X Greater
than the da Vinci Si Surgical System

2X Greater
than the da Vinci X Surgical System
Important Considerations to Making the Investment

- OR time available to add more cases
- Varying physician mix and proficiency
- Capital outlay
- Volume of Cases $\times$ Reimbursement
A Successful Program: Where to Start

**Operational Impact**
- SPD
- Turn Over
- 23 hour observation

**Room Staffing**
- Motivated, interested, positive people that WANT to be on the TEAM

**Block Time Availability**
- Must have available OR time for convenient access

**Committed Surgeons**
- Specialty and volume
- Administrator must be involved and supportive of program

**Reduction of Operational Cost**
- Minimized robotic tray instrumentation
- Minimized pick sheet items
- Decreased waste
Operational Considerations

Question #1
Can your ASC do 23-hour observation?

If not, it may be worth looking into it
- Some hysterectomies require
- Certain ventral hernias (such as ETEP)
- Urology
- Sleeve
- Nissen
- Simple hiatal hernia
- LINX
Operational Considerations

Question #2
Are my ORs big enough to do robotic surgery?

- Most rooms are 20 x 20 ft or bigger
- This is an easy, comfortable fit
- When not used for robotic cases, room is easily used for most non-robotic ASC appropriate cases
Operational Considerations

Question #3
Do I have the right electrical setup?

• I have no clue. The last time I considered anything relating to physics was back when I took the MCAT.

• When you are investigating, the Intuitive ASM can help answer this question.
Operational Considerations

Question #4
What other equipment do I need?

- Biggest equipment issue will be a sterilizer and ultrasonic to handle the longer robotic instruments
- Cost was around $100K
Operational Considerations

Question #5
Do I have the right staff to do robotic surgery?

- YES
- When we got our Si robot in 2016 (Si is harder to work with vs. an X), all of our circulating nurses and scrub techs had done zero robotic cases
Avoid the Road Blocks

- Administrator support
- Physicians who dabble
- Negative connotation to the program
- No standard workflow
- Staff training
Making the Investment... Volume

1. Do we have the right surgeons? Efficient, proficient and cost conscious
2. How much volume do I need to make a robot in my ASC work?
3. Volume Required: Varies depending on payer mix, case type, reimbursements

This leads to our final topic...
Alignment of Value Across Stakeholders

- **Patients**
  - *Patient Journey*
  - Open rates, coordination of care, and opioid exposure

- **Physicians**
  - *Physician Satisfaction*
  - Access, belief, and coordination

- **Providers**
  - *Provider*
  - Productivity analysis and variation reduction strategies

- **Payors**
  - *Payer*
  - Mapping and reimbursement update

- **Policy Makers**
  - *Policy Makers*
  - CMS and society policy changes
3. The reduced cost of performing procedures in ASCs saves patients up to $5 billion annually, analysts report. The savings the government reaps from Medicare and commercial payers having procedures performed in ASCs are at $18.7 billion and $12.4 billion respectively.
Planning Your Interaction With Payors

**Robotic Surgery**
- Showing advantages, better quality outcomes
- Increasing in market share, especially in general surgery

**ASC Cases**
- Moving back into the hospital
- This is because they are better on the robot
- Payors are feeling it

**Payor Impact**
- They become motivated to support robotics in the ASC if...
  - They can see they are losing ASC cases to the hospital because of robotics

**Better Contracts**
- We’ve seen payors giving better contracts to surgeons doing more ASA 1 & 2 outpatient cases in the ASC setting
The Success Equation

Right Surgeons + Right Case Mix & Technology + Right Reimbursement = Thumbs Up
ASC Ecosystem

- Genesis (more efficient trays)
- Customer portal to analysis per case I&A
- Advanced training
- Steering committee collaboration
A Win-Win-Win-Win-Win Situation!

- Win for the patient
- Win for the surgeons
- Win for our ASC
- Win for the payors
Reference Slides
# 2017 vs 2018 ASC CMS Reimbursement

## Free-Standing Ambulatory Surgery Center (ASC) Setting

### Commonly performed procedures include, but are not limited to:

<table>
<thead>
<tr>
<th>HCP Code</th>
<th>Short Description</th>
<th>Final CY 2017 Payment Weight</th>
<th>Final CY 2017 Payment Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>58570</td>
<td>TLH uterus 250 g or less</td>
<td>72.7007</td>
<td>$3,272.69</td>
</tr>
<tr>
<td>58571</td>
<td>TLH w/o 250 g or less</td>
<td>72.7007</td>
<td>$3,272.69</td>
</tr>
<tr>
<td>58573</td>
<td>TLH w/o uterus over 250 g</td>
<td>72.7007</td>
<td>$3,272.69</td>
</tr>
</tbody>
</table>

### General Surgery

<table>
<thead>
<tr>
<th>HCP Code</th>
<th>Short Description</th>
<th>Final CY 2017 Payment Weight</th>
<th>Final CY 2017 Payment Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>47562</td>
<td>Laparoscopic cholecystectomy</td>
<td>45.2517</td>
<td>$2,037.05</td>
</tr>
<tr>
<td>49650</td>
<td>Lap ing hernia repair init</td>
<td>45.2517</td>
<td>$2,037.05</td>
</tr>
<tr>
<td>49651</td>
<td>Lap ing hernia repair recon</td>
<td>45.2517</td>
<td>$2,037.05</td>
</tr>
<tr>
<td>49652</td>
<td>Lap vent/abd hernia repair</td>
<td>45.2517</td>
<td>$2,037.05</td>
</tr>
<tr>
<td>49653</td>
<td>Lap vent/abd hern proc comp</td>
<td>72.7007</td>
<td>$3,272.69</td>
</tr>
<tr>
<td>49654</td>
<td>Lap inc hernia repair</td>
<td>72.7007</td>
<td>$3,272.69</td>
</tr>
<tr>
<td>49655</td>
<td>Lap inc hernia repair comp</td>
<td>72.7007</td>
<td>$3,272.69</td>
</tr>
<tr>
<td>49656</td>
<td>Lap inc hernia repair recon</td>
<td>72.7007</td>
<td>$3,272.69</td>
</tr>
</tbody>
</table>

### Source:

- CMS Addendum AA – Final ASC Covered Surgical Procedures for CY 2017
- CMS Addendum A – Final OPPS APCs for CY 2018
STUDY INFORMATION
Risk factors for open conversion in MIS cholecystectomy

Study shows overall conversion rates: lap = 3.87%; robotic-assisted = .15%

Study Design
- Single center retrospective study of 960 MIS cholecystectomies at University of Illinois Chicago (2011-2015)
- Authors cite ~4.9%-4 of traditional lap choles are converted to open for a variety of reasons

Patient Population
- N=284 lap; 676 robotic with use of ICG
  - Same surgical team
  - Performed >125 robotic and lap surgeries in total
- Patient demographics and outcomes were analyzed for the major indicators that may predispose to OC
- Inclusion criteria for the study were all patients age 17 and older who underwent cholecystectomy during the study period.
- Patient demographics and surgical outcomes including gender, age, BMI, prior surgical history, intraoperative diagnosis, case duration, and ASA class were compiled and analyzed for the major indicators that may predispose a patient to open conversion.

Outcomes Measured / Evaluated
- Purpose of study is to identify predictors of open conversion

Results / Conclusions
- Overall conversion rate lap = 3.87%; robotic = .15%
- Male gender and intraoperative diagnosis of acute or gangrenous cholecystitis were statistically significant individual predictors of open conversion.
- When compared with same key demographic subsets in patients who underwent robotic procedures, a statistically significant decrease was seen in each subgroup in Z-scores calculated based on the single categorical characteristic of open conversion

Study Limitations
- A clear limitation of our study is the single-institution retrospective design and the inherent biases that accompany it.

1Risk Factors for Open Conversion in Minimally Invasive Cholecystectomy, Antonio Gangemi, MD, Richard Danilkowicz, Francesco Bianco, MD, Mario Masrur, MD, Pier Cristoforo Giulianotti, MD October–December 2017 Volume 21 Issue 4 e2017.00062 JSLS www.SLS.org
ASC Specialty Type... Does it Matter?

Medicare Certified ASCs: Specialties Performed in Multi-Specialty ASCs

- Orthopedic: 1,922 [66.9%]
- Other: 1,625 [56.5%]
- Plastic: 1,600 [55.7%]
- Podiatry: 1,581 [55.0%]
- Pain: 1,428 [49.7%]
- Ophthalmology: 1,394 [48.5%]
- Otolaryngology: 1,369 [47.0%]
- Obstetrics/Gynecology: 1,200 [41.8%]
- Endoscopy: 943 [32.8%]
- Dental: 431 [15.0%]

Based on data provided by the Centers for Medicare & Medicaid Services (CMS), June 2017
Advisory Board – OP General Surgery

High OP Growth Driven By Consumerism, Technology

Patient Convenience, Payer Pressures Shifting Care to Non-HOPD Sites

National General Surgery Volume Growth Projections, by Subservice Line
Outpatient, 2015-2021

<table>
<thead>
<tr>
<th>Procedures</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBP</td>
<td>52%</td>
</tr>
<tr>
<td>Appendix</td>
<td>41%</td>
</tr>
<tr>
<td>Bone Marrow/Stem Cell</td>
<td>28%</td>
</tr>
<tr>
<td>Gallbladder</td>
<td>25%</td>
</tr>
<tr>
<td>Colorectal/Lower G1</td>
<td>22%</td>
</tr>
<tr>
<td>Endoscopy</td>
<td>21%</td>
</tr>
<tr>
<td>Soft Tissue</td>
<td>20%</td>
</tr>
<tr>
<td>Upper G1</td>
<td>18%</td>
</tr>
<tr>
<td>Hernia</td>
<td>15%</td>
</tr>
<tr>
<td>Breast</td>
<td>3%</td>
</tr>
<tr>
<td>Bariatric</td>
<td>-15%</td>
</tr>
</tbody>
</table>

Site of Care Volume Growth 2016-2021

- 11% Projected HOPD Volume Growth
- 28% Projected ASC Volume Growth
- 31% Projected Endoscopy Center Volume Growth