

Minimally Invasive Procedures

What's The Value For Health Plans?



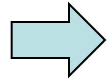
Louis I Hochheiser, MD

October 12, 2011

Medicaid Health Plans of America

HUMANA
Guidance when you need it most

AGENDA



UNDERSTANDING MIP

- MIP Defined
 - Clinical Benefits of MIP
 - Nosocomial Infections (Hospital-Acquired)
 - Total Cost of Care

UNDERSTANDING MIP WITHIN YOUR HEALTH PLAN OR ORGANIZATION

- Payors' MIP Value Proposition
- How to sell MIP within your organization & gain buy-in
- Create the marketing & sales buzz around MIP as the newest offering for Value Based Benefit Designs (VBBD)
- Implementing a Minimally Invasive Procedures VBBD product that attracts state decision makers

Scope of Procedures

Representing 4.4 Million Patients

● GENERAL SURGERY

Appendectomy — 474,032
Cholecystectomy — 1,017,342
Reflux Surgery — 60,515
Ventral Hernia Surgery — 384,669
Inguinal Hernia Surgery — 564,160

● COLORECTAL SURGERY

Colectomy — 296,949
Hemorrhoid Surgery — 585,671

● BARIATRIC SURGERY

Gastric Bypass — 167,166
Gastric Banding — 82,105
Sleeve Gastrectomy — 17,718

● THORACIC SURGERY

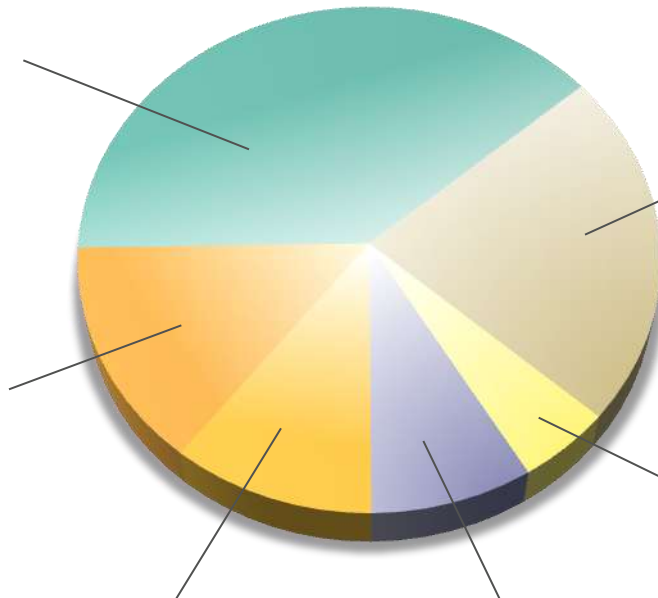
Wedge Resection — 37,676
Lobectomy — 56,766

● WOMEN'S HEALTH

Hysterectomy — 555,574

● UROLOGY

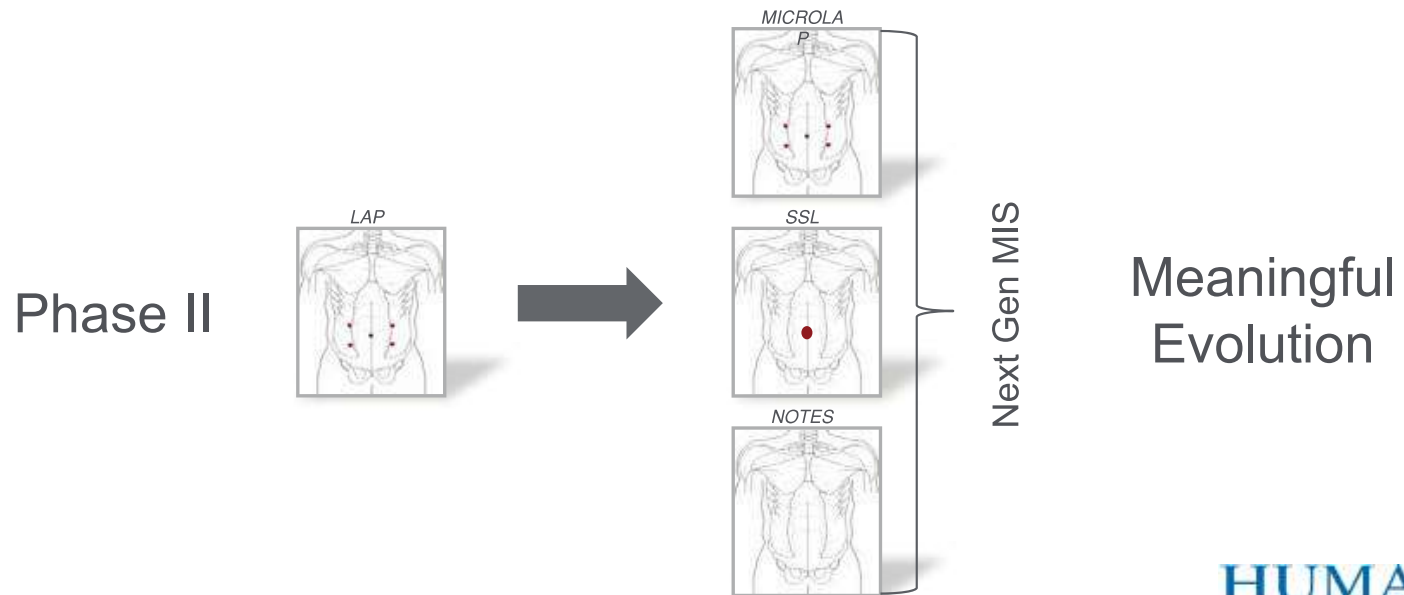
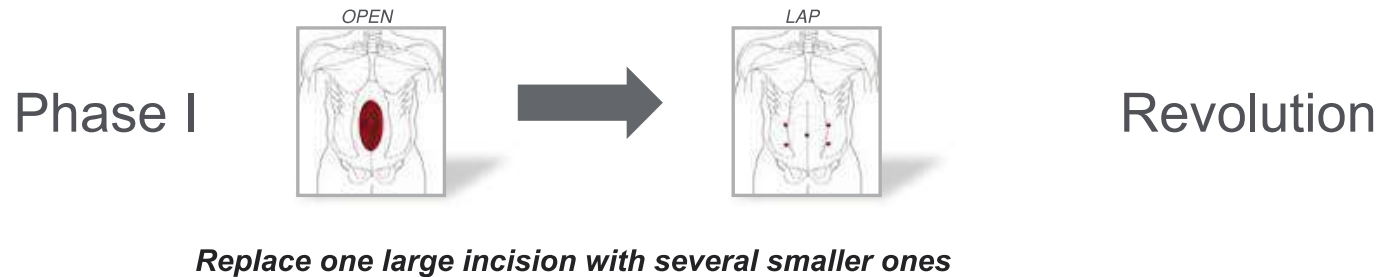
Prostatectomy — 109,040



Internal data on file: Thomson-Reuters. Estimated Procedure Volumes — 2010

Minimally Invasive Procedures: Defined

Surgery performed through small incisions or a natural orifice using video cameras and specialized instrumentation. This approach is often referred to as laparoscopic.



Reduce the size or number or change location of incisions

MIP Adoption Rates

Procedure	Rate of MIP
Hemorrhoidectomy – Removal of Hemorrhoids	9%
Colectomy – Partial or Complete Removal of Colon	28%
Hysterectomy – Removal of Uterus	44%
Appendectomy – Removal of Appendix	82%
Reflux Surgery – Surgery of Gastroesophageal Reflux Disease (GERD)	90%
Bariatric Surgery – Weight Loss Surgery	90%
Cholecystectomy – Removal of the Gallbladder	95%
VATS – Pulmonary Wedge Resection	35%
VATS – Lobectomy	27%
Inguinal Hernia Surgery – Groin Repair	19%
Ventral Hernia Surgery – Abdominal Repair	35%

Clinical Benefits of MIP Compared to Open Procedures

LESS...

Pain

Scarring

Recovery Time

Shorter...

Hospital Length of Stay (LOS)¹

In Certain Procedures, Reduction in...

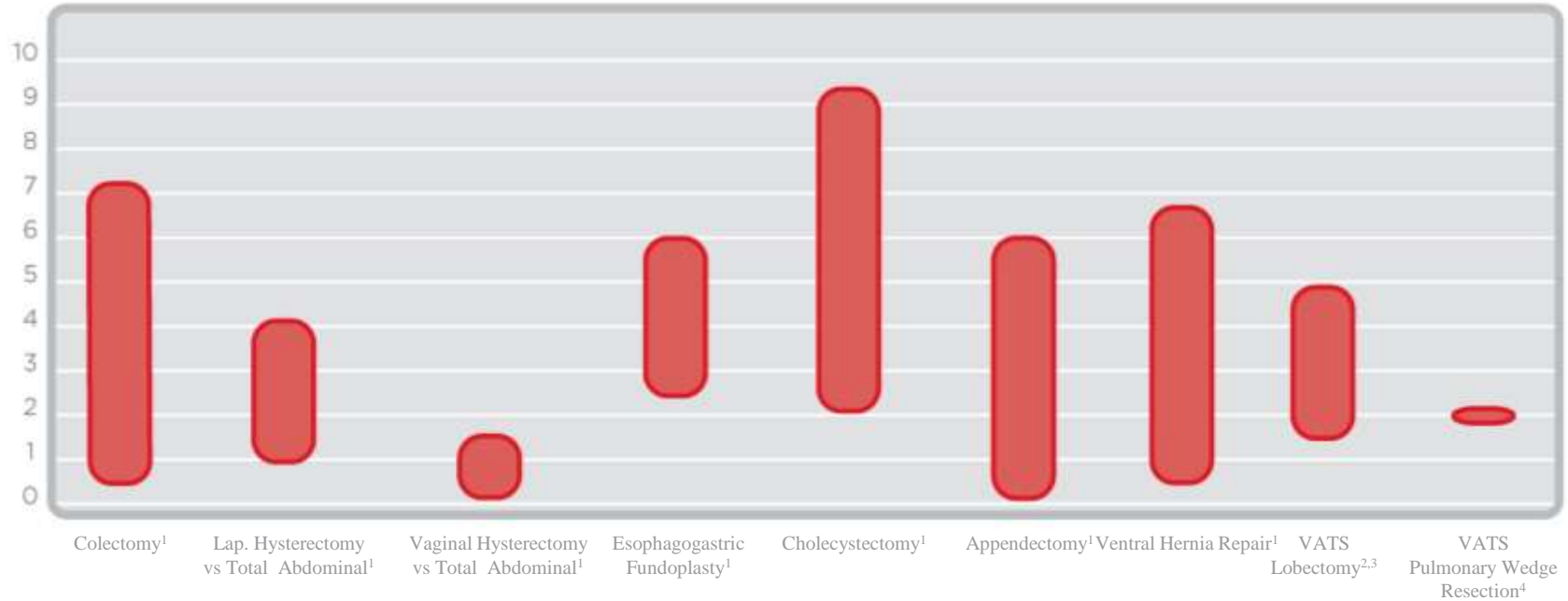
Nosocomial Infection Rates²

Readmission Rates

1. Gunnarsson C et al. The effects of laparoscopic surgery and nosocomial infections on the cost of care. *Value in Health*. 2008 July; Vol 12, Issue 1.
2. Brill A, Ghosh K, Gunnarsson C, Rizzo J, Fullum T, Maxey C, Brossette S. The effects of laparoscopic cholecystectomy, hysterectomy, and appendectomy on nosocomial infection risks. *Surg Endosc*. 2008 Apr; 22(4):1112-8.

MIP Impact on Hospital Length of Stay (LOS)

Range of reduction in days when comparing MIP to open procedures



Five of the 37 studies for appendectomy showed an increase ranging from 0.2 to 0.7 days

Studies Reviewed	25	19	8	7	14	37	9	2	1
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1. Roumm AR, Pizzi LP, Goldfarb NI, et al. Minimally invasive: minimally reimbursed? An examination of six laparoscopic surgical procedures. *Surgical Innovation*. Vol. 12, No 3; September 2005:261-287.
2. Whitson BA, et al. Surgery for early-stage non-small cell lung cancer: A systematic review of video-assisted thoracoscopic surgery versus thoracotomy approaches to lobectomy. *Annals Thoracic Surgery*. 2008; 86:2008-2018.
3. Swanson SJ et al. Video-Assisted Thoracoscopic (VATS) Lobectomy is less costly and morbid than open lobectomy: A retrospective multi-institutional database analysis. Premier Perspective® hospital database.
4. Howington J, et al. Clinical and economic consequences of pulmonary wedge resections for cancer using video-assisted thoracoscopic (VATS) techniques vs traditional open resections: a retrospective database analysis. Premier Perspective® hospital database.

MIP Has Been Shown to Reduce Risk of Complications

Comparing Open to MIP using “real world” data[†]

	Reduction in infection rates	Reduction in incidence of sepsis (Blood infection)	Reduction in overall complications	Reduction in length of stay
Colectomy ¹	37%	64%	31%	4.2 days
Appendectomy ¹	20%	55%	34%	.64 days
LH versus TAH ²	17%	50%	41%	1.1 days
VH versus TAH ²	22%	50%	17%	.96 days
VATS Lobectomy	Not Significant ³	Not Reported	14.8% ⁴	1.68 days ³
VATS Pulmonary Wedge Resection	72% ⁵	Not Reported	Not Reported	1.90 days ⁵

LH = Laparoscopic Hysterectomy
 VH = Vaginal Hysterectomy
 TAH = Total Abdominal Hysterectomy

P<.05, VATS *P*=0.000

[†] When comparing open versus laparoscopic approaches and controlling for the following factors: age, gender, type of insurance, case mix index and complexity of disease

1. Fullum et al. Comparison of the clinical and economic outcomes between open and minimally invasive appendectomy and colectomy: Evidence from a large commercial payor database. *Surg Endosc* 2009. 2. Warren L et al. Open abdominal versus laparoscopic and vaginal hysterectomy: Analysis of a large United States payor measuring quality and cost of care. *Journal of Minimally Invasive Gynecology*. Vol 16, No 5, September/October 2009. 3. Swanson SJ, et al. Video-Assisted Thoracoscopic (VATS) Lobectomy is less costly and morbid than open lobectomy: A retrospective multi-institutional database analysis. Premier Perspective[®] hospital database. 4. Whitson BA, et al. Surgery for early-stage non-small cell lung cancer: A systematic review of video-assisted thoracoscopic surgery versus thoracotomy approaches to lobectomy. *Annals Thoracic Surgery*. 2008; 86:2008-2018. 5. Howington J, et al. Clinical and economic consequences of pulmonary wedge resections for cancer using video-assisted thoracoscopic (VATS) techniques vs traditional open resections: A retrospective database analysis. Premier Perspective[®] hospital database.



The Effects of MIP on Nosocomial Infection Rates

Type of Infection	Impact of MIP on the Reduction in Odds of NI ^{1,†}
Urinary Tract	39%
Wound	59%
Respiratory Tract	80%
Bloodstream	69%
Others	48%

MIP reduces the odds of readmission with nosocomial infection by 65.4%

1. Brill A, Ghosh K, Gunnarsson C, Rizzo J, Fullum T, Maxey C, Brossette S. The effects of laparoscopic cholecystectomy, hysterectomy, and appendectomy on nosocomial infection risks. *Surg Endosc.* 2008 Apr; 22(4):1112-8.

† When comparing open versus laparoscopic approaches and controlling for the following factors: age, gender, type of insurance, case mix index and complexity of disease. $P < 0.05$

The Effects of Nosocomial Infections (NI) on Cost of Care to Payor

	Estimated Incremental Effects on the Cost of Care per NI ¹	Incremental Length of Stay Due to NI ¹
Cholecystectomy	\$ 4,794	4.29
Hysterectomy	\$ 4,528	2.52
Appendectomy	\$ 6,108	2.90
Average	\$ 5,182	3.16

Statistically significant at the 1% level, two-tailed test

Economic Impact of MIP

ROI is immediate and sustainable

Direct Medical Costs

- Less post-procedure pain
 - Less Rx
 - Less physical therapy
- Opportunity to shift from inpatient to outpatient setting²
- Reduction in readmission rates³
- Lower LOS¹

Indirect Costs

- Quicker return to work¹
- Quicker return to normal activities¹
 - Reduced absenteeism
 - Improved presenteeism
 - Leading to increased productivity

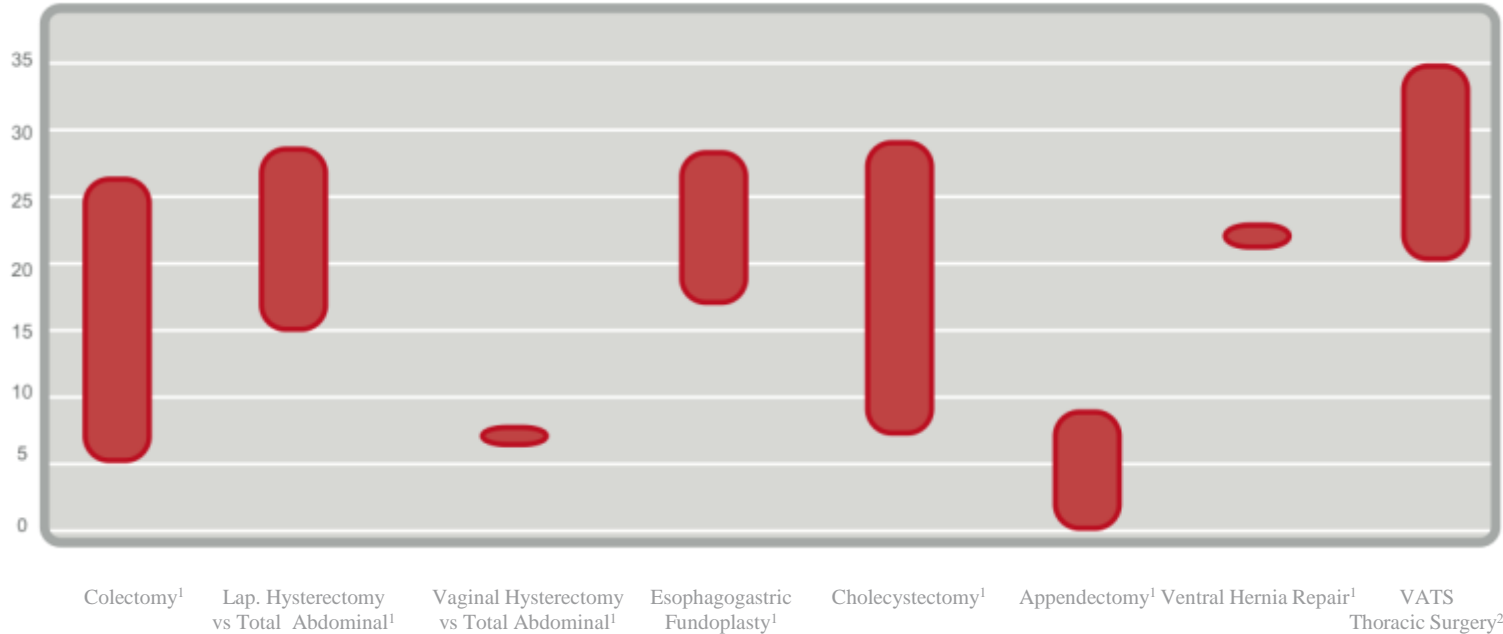
1. Roumm AR, Pizzi LP, Goldfarb NI, et al. Minimally invasive: minimally reimbursed? An examination of six laparoscopic surgical procedures. *Surgical Innovation*. Vol. 12, No 3: (September), 2005:261-87.

2. Fullum et al. Comparison of the clinical and economic outcomes between open and minimally invasive appendectomy and colectomy: Evidence from a large commercial payor database. *Surg Endosc*. 2009.

3. Brill A, Ghosh K, Gunnarsson C, Rizzo J, Fullum T, Maxey C, Brossette S. The effects of laparoscopic cholecystectomy, hysterectomy, and appendectomy on nosocomial infection risks. *Surg Endosc*. 2008 Apr; 22(4):1112-8.

MIP Impact on Return to Work (RTW)

Range of reduction in days when comparing MIP to open procedures

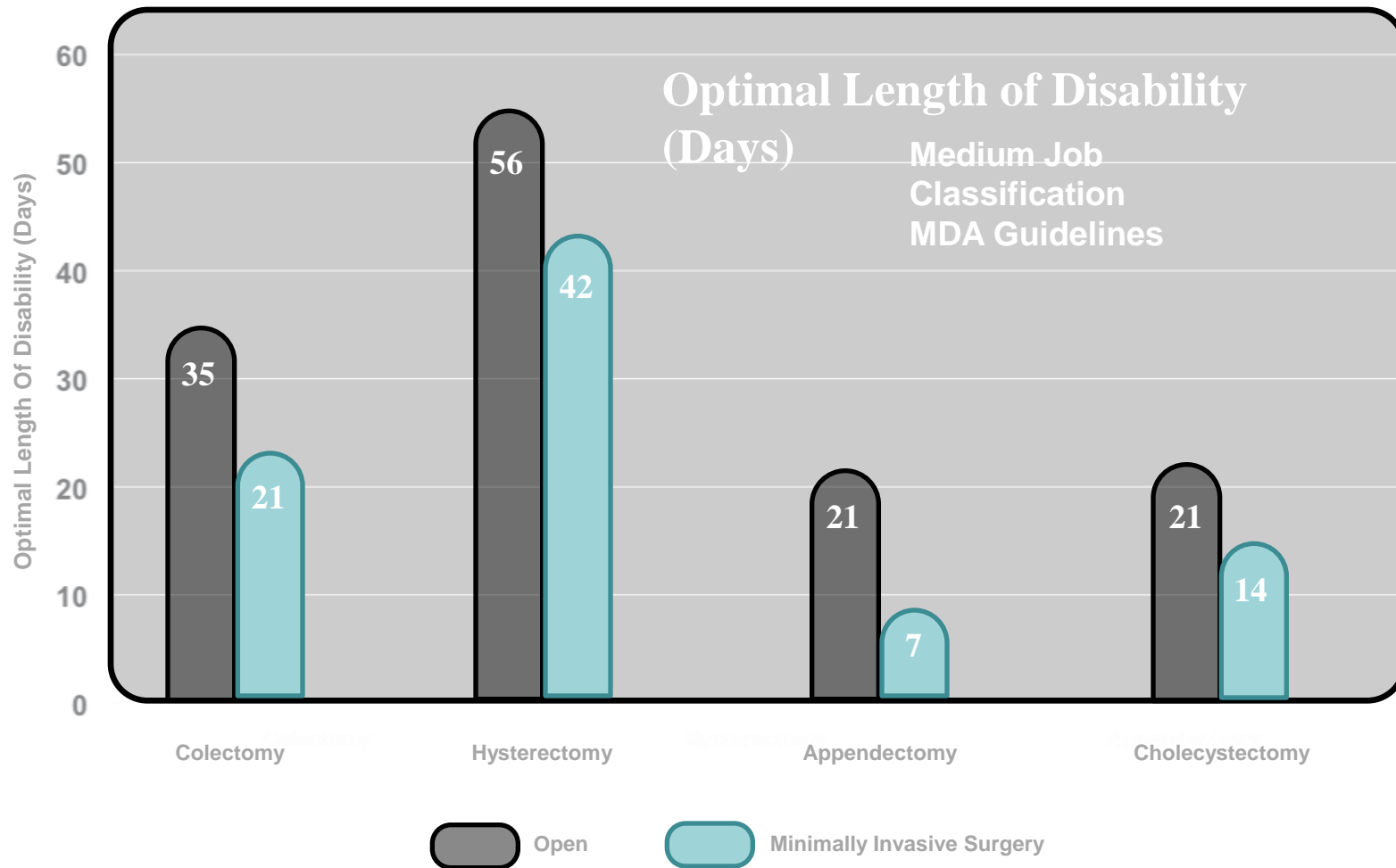


Two of the 10 studies for Appendectomy showed no reduction

Studies Reviewed	2	4	1	4	8	10	1	1
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1. Roumm AR, Pizzi LP, Goldfarb NI, et al. Minimally invasive: minimally reimbursed? An examination of six laparoscopic surgical procedures. *Surgical Innovation*. Vol. 12, No 3, September 2005; 261-87.
2. University of Pittsburgh Medical Center. Video assisted lung and chest surgery (VATS). (Online). Accessed June 19, 2007. <http://www.thoracicsurgery.medicine.pitt.edu>.

MIP Impact on Short-Term Disability



Source: 2011 MDA Internet Duration Guidelines, The Reed Group – Medical Disability Advisor (<http://www.mdainetnet.com>; accessed on 2/24/11)

MIP Impact on Overall Costs to the Payor

MIP Versus Open Difference in Cost of Episode of Care

Colectomy ¹	\$15,181* P<.05
Cholecystectomy ²	\$3,299* P<.01
Appendectomy ^{1,2}	\$700–\$1,032* P<.001
Hysterectomy ²	\$1,218* P<.01
VATS – Pulmonary Wedge Resections	\$2,582 P<.000
VATS – Lobectomy	\$12,817 ³ P<.027

*Risk Adjusted

1. Fullum et al. Comparison of the clinical and economic outcomes between open and minimally invasive appendectomy and colectomy: Evidence from a large commercial payor database. *Surg Endosc.* 2009.

2. Gunnarsson C et al. The effects of laparoscopic surgery and nosocomial infections on the cost of care. *Value in Health.* 2008 July; Vol 12, Issue 1.

3. Internal Data on file.

MIP Impact on Overall Costs

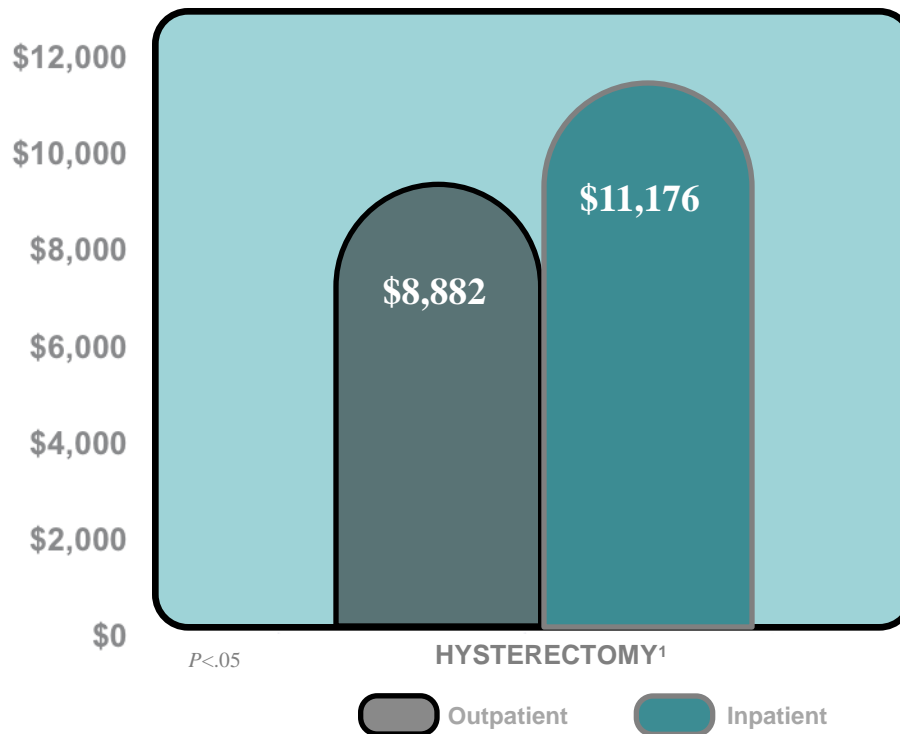
An Analysis of a Fortune 100 Company Comparing MIP vs Open Procedure Thoracic Surgery

	MIP Length of Stay	Open Length of Stay	Difference in Length of Stay	MIP Cost Per Case	Open Cost Per Case	Difference
June 2009–May 2010	5.44	13.60	8.16	\$32,174	\$66,483	\$34,309

Source: EES, Data on file, unadjusted.

Comparing Expenditures by Inpatient and Outpatient Care Setting

Reduction in spending of \$2,294 per procedure*

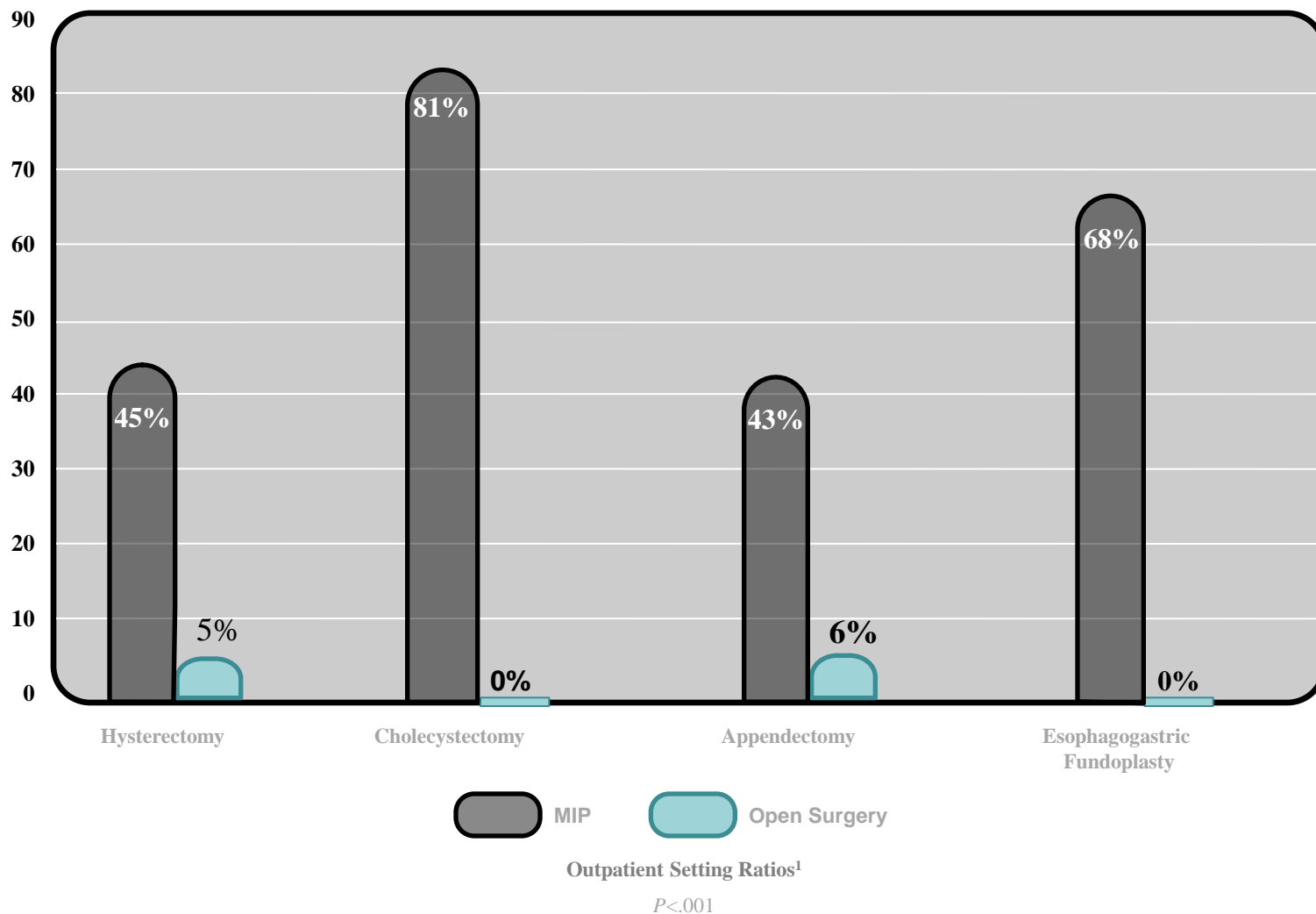


Hysterectomy is the fifth most common surgical procedure for females.²

1. Warren L et al. Open abdominal versus laparoscopic and vaginal hysterectomy: Analysis of a large United States payor measuring quality and cost of care. *Journal of Minimally Invasive Gynecology*. Vol 16, No 5, September/October 2009.
2. HCUP Facts and Figures: Statistics on Hospital-Based Care in the United States, 2007.

*Adjusted for surgery type, patient age at index date, gender, Charlson Morbidity Index, geographic region and medical degree specialty

A Greater Percent of Minimally Invasive Procedures are Performed in an Outpatient Setting



1. Not adjusted for risk factors
Internal Data on file: Thomson-Reuters. Estimated Procedure Volumes – 2010

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➔ UNDERSTANDING MIP WITHIN YOUR HEALTH PLAN OR ORGANIZATION

- Payors' MIP Value Proposition
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- Create the marketing & sales buzz around MIP as the newest offering for Value Based Benefit Designs (VBBD)
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MIP Provides Value to Payors

- Take advantage of an existing opportunity
- Demonstrates Quality Initiatives
- Improves Patient Care
- Reduces Healthcare Costs
- Offers Quicker Return to Normal Activities

All Lead to A Competitive Advantage

Minimally Invasive Procedures

Developing an MIP Product Within Your Organization

MIP Insurance Product

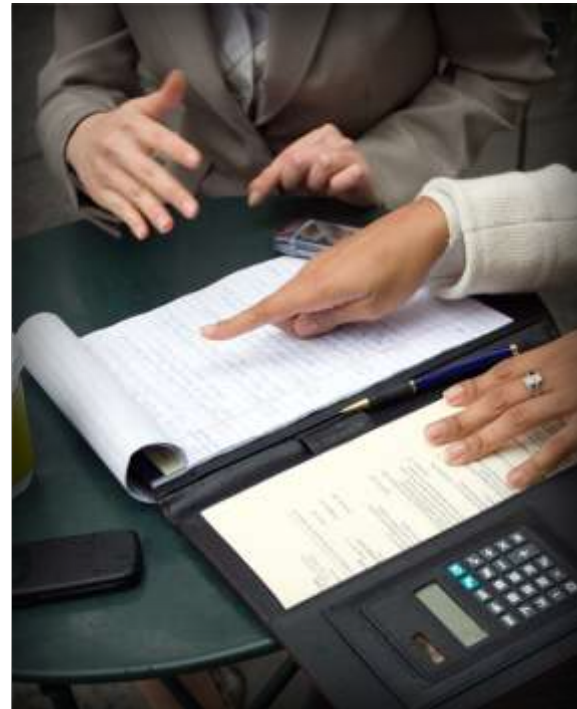
What does your data show?

- Pull data to compare open vs. laparoscopic
- Which procedures do you include?
 - General Surgery Procedures
 - Gynecology
 - Orthopedic
 - Cardiac or Thoracic
- Which procedures do you exclude?
 - Procedures without CPT (identifying) code
 - Procedures not validated within evidence based literature

MIP Insurance Product

Where are the areas of opportunity?

- Specific Procedures
- Organizational Goals



MIP Insurance Product

What do you want to offer?

- Education Campaign
- Benefit Plan Design
- High Performance Network
- Prior Authorization

Or any combination
of the above



MIP Insurance Product

To whom do you want to provide the product?

- Select book(s) of business
 - Medicare
 - Medicaid
 - ASO customers
 - Fully Insured

- Your own company's employees



MIP Insurance Product

What do you want to include in the product?

- Benefit Plan Design
 - Co-insurance differential
 - Deductible Waiver
 - Education Incentives applied to co-insurance
- Prior Authorization
- RN & Case Manager Education
- Network Development
- Education Outreach
 - Patient & Provider



MIP Insurance Product

- ✓ Gain Financial, Legal/Regulatory, Provider Network, Sales & Marketing Support by Demonstrating Value & Cost Impact



- ✓ Data Analysis & Cost Savings

MIP Analyses

Sample

Surgery Type	Procedure	Case Count	Adoption %	Net Paid per Case	% Open is More Expensive than MIP

Analyze data to show impact of co-insurance differentials & incentives on cost savings impact along with shift in MIP adoption rates

MIP Implementation

- Product Design Complete
 - Benefit Design
 - Network Design
 - Education Campaign
- Marketing Materials Developed
- Internal Communications
- Provider Communications
- Patient Communications

Health Plan Offerings

Consumer Awareness

Print and Web Educational Materials

- **Benefit Summaries**
- **Certificate Language**
- **Marketing Grids**
- **Websites**
- **Physician Locators**
- **Plan Summary Document**
- **Web Listing/Documents**

Gradual Cost Savings Potential

Provider Awareness

Print and Web Educational Materials

Plan Communications Documents

Incentives and Steerage

Benefit Design

-Copay Differential for Open Procedures

Immediate Cost Savings Potential

MIP Marketing to Customers

Direct Medical Costs

- Less post-procedure pain
 - Less Rx
- Opportunity to shift from Inpatient to Outpatient setting²
- Reduction in Readmission Rates³
- Lower LOS¹

Indirect Costs

- Quicker Return to Work¹
- Quicker Return to Normal Activities¹
 - Reduced Absenteeism
 - Improved Presenteeism
 - Leading to increased productivity

ROI is Immediate and Sustainable

²Minimally invasive: minimally reimbursed? An Examination of Six Laparoscopic Surgical Procedures. Roumm A, Pizzi L, Belsky A, et al. Surgical Innovation, Vol. 12, No 3 (September), 2005:261-287

²Fullum et al.

³Brill A, et al.

Demonstrate Value Internally & Externally by Evaluating your Program

Measure & Report

- Quality Indicators
 - Reduced readmissions
 - Reduced complications
 - Reduced hospital acquired infections
- Cost Savings
 - Decreased Length of Stay
 - Decreased total cost of care
- Quality of Life Issues

Report & Publicize

- Patient Testimonials
- Enhanced Patient Benefits
- Cost Savings

MIP... Provides Patient & Payor Benefits

MIP... Not Anything New & Is Proven Clinically

MIP... Can Be Developed & Implemented Based On The Individual Needs Of The Organization

Thank You

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MIP Resources

- Mayo Clinic = www.MayoClinic.org/minimally-invasive-surgery
- Cleveland Clinic = www.ClevelandClinic.org
- SAGES = www.Sages.com
- www.websurg.com
- www.AAGL.org

- www.MIPinfo.com
- www.surgeryoptions.info/dtcf

- AAPPO MIP Women's Health Series – www.aappo.org

Back up Slides for Speaker Reference

MIP Cost Impact: MedStat Data

- MedStat Data
- Q3 2005 – Q2 2006
- Health insurance claims across the continuum of care (e.g. inpatient, outpatient, outpatient pharmacy, carve-out behavioral health care)
- Enrollment data from large employers and health plans across the United States who provide private health care coverage for more than seven million (annual) employees, their spouses and dependents
- This administrative claims database includes a variety of fee-for-service, preferred provider organizations, and capitated health plans.
- Does not include Medicare data

Background on “Roumm et al” Article

- Summary of 112 articles on MIP vs. open surgical procedures including:
 - Prospective, randomized comparative trials
 - Systematic review
 - Prospective, non-randomized comparative trials
 - Retrospective, observational studies
- Measures included
 - Length of stay in the hospital
 - Return to normal activities
 - Return to work

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