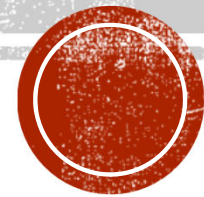


# LAPAROSCOPIC VS. ROBOTIC SURGERY:

WHICH IS BEST  
FOR THE PATIENT? WHICH IS BEST FOR THE SURGEON? WHICH IS BEST FOR THE  
HOSPITAL?



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# WHICH IS BEST FOR THE SURGEON?

F. KOCKERLING, FRONTIERS IN SURGERY, MAY 2014 ROBOTIC VS LAPAROSCOPIC TECHNIQUE-WHAT IS BETTER

- Laparoscopic Surgery
  - Proposed Limitations
    - Two Dimensional Imaging
    - Restricted Range Of Motion
    - Poor Ergonomics Positioning for the Surgeon

## Robotic Surgery

- Proposed Reversed Limitations
  - Three Dimensional Imaging
  - Unrestricted range of Motion
  - Eliminates poor Ergonomics Positioning



# WHICH IS BEST FOR THE SURGEON?

E. KOCKERLING, FRONTIERS IN SURGERY, MAY 2014 ROBOTIC VS LAPAROSCOPIC TECHNIQUE-WHAT IS BETTER

- Conclusion ????
- 2000 Robotic Surgery is superior to conventional Laparoscopic Surgery due to its significant Improvements in Visibility and Manipulation
- 2008 Gold Standard Radical Prostatectomies



# WHICH IS BEST FOR THE PATIENT?

- Nationwide Inpatients Sample Data Project
- US Rise in Robotic Procedures .8% in 2008 4.3% in 2009
- Overall Robotic Surgery Had:
  - Lower Mortality Rate (.097%) per 100,000 patients
    - Laparoscopic 0.48%
    - Open. 0.92%
  - Significantly Shorter Hospital Stay (4.9%)
    - Open (6.1 days)
  - Lower Charges (median \$30,540)
    - Laparoscopic (\$34,537)
    - Open (\$46,704)
- Am Surg (2013)79:553-560



# WHICH IS BEST FOR THE PATIENT? WHICH IS BEST FOR THE HOSPITAL?

- Comparative Systematic Reviews and Meta-Analysis
  - Jan 2014 Medline, PubMed, Cochrane Library
  - Robotics Search 6737 Papers
  - Conclusion: Complication Rates were not higher but OR times where!



# WHICH IS BEST FOR THE PATIENT? WHICH IS BEST FOR THE HOSPITAL?

- R vs. L for Gastrectomy for Ca
  - Meta-Analysis of 7 studies    N=1967
  - R = 404    O= 718    L= 845
    - Robot    Less Blood Loss
    - Robot    Less Post OP LOS
    - Robot    Greater Cost
    - Robot    Increased OR Time
    - Robot    No Difference in Nodes



# WHICH IS BEST FOR THE PATIENT? WHICH IS BEST FOR THE HOSPITAL?

- R vs. L for Roux-en-Y- Gastric Bypass
  - Meta-Analysis of 10 studies    N=2557
  - R = No Difference in Leaks, Bleeding, Stricture and Reoperation did not Differ Significantly



# WHICH IS BEST FOR THE PATIENT? WHICH IS BEST FOR THE HOSPITAL?

- R vs. L for Anti - Reflux
  - N=12,079
  - R = 339    O= 2168    L=9572
  - No Difference in Mortality or Morbidity
  - No Difference in LOS
  - Higher in Cost
  - Higher Readmission Rate





# WHICH IS BEST FOR THE PATIENT? WHICH IS BEST FOR THE HOSPITAL?

- R vs. L for Colon Rectal Procedures
  - 8 Studies. N=854
  - R = 344 L=510
    - R = Lower Conversion Rate
    - No Difference in LOS
    - Increase in OR Time
    - Increased in Cost
    - No Difference in M and M rates



# WHICH IS BEST FOR THE HOSPITAL?

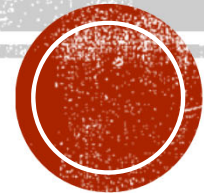
- R vs. L for Hysterectomy
  - Meta- Analysis for Benign Disease
    - No Difference in Conversion Rate
    - No Difference in LOS
    - Increase in OR Time
    - Increase GU Complication Rate
    - Increase in Cost



# LAPAROSCOPIC VS. ROBOTIC SURGERY:

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Conclusion 1:

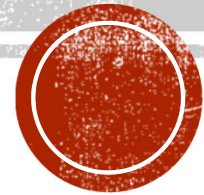


# LAPAROSCOPIC VS. ROBOTIC SURGERY:

WHICH IS BEST  
FOR THE PATIENT? WHICH IS BEST FOR THE SURGEON? WHICH IS BEST FOR THE  
HOSPITAL?

Robotic Surgery:

May Not Necessarily Be Higher in Cost  
Complication Rates May not be Higher  
Operative Times are Generally Higher  
Blood Loss, Conversion Rates and Hospital  
LOS in general May be Shorter

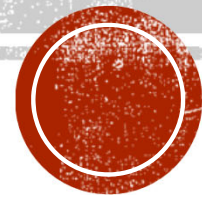


# LAPAROSCOPIC VS. ROBOTIC SURGERY:

WHICH IS BEST  
FOR THE PATIENT? WHICH IS BEST FOR THE SURGEON? WHICH IS BEST FOR THE  
HOSPITAL?

## Conclusion 2:

Robotic Over Laparoscopy in General Not Better  
High Quality Prospective Randomized Trials are  
Urgently Needed





# QUESTIONS

- A.
- Laparoscopic surgery limitation include all of the following except:
  1. Two dimensional imaging
  2. Restricted range of motion and of the instruments
  3. Poor ergonomics positioning of surgeon
  4. Haptic Capability
- Answer: 4
  
- B:
- Based on a nationwide inpatient sample data project which of the following is incorrect?
  1. Overall robotic surgery had a higher mortality rate than non robotic surgical procedures
  2. . Robotic surgery had a significant shorter hospital stay when compared to open procedures
  3. Robotic surgery had lower charges when compared to laparoscopic procedures
  4. Robotic surgery lower charges when compared to open procedures
- Answer: 1

