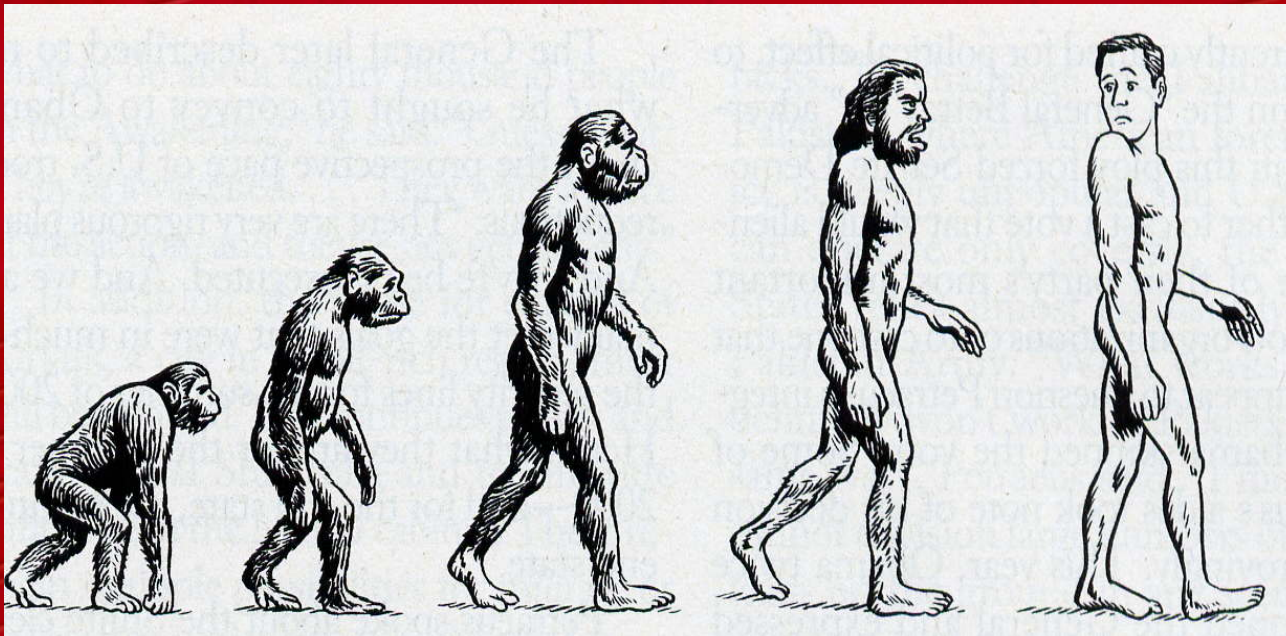


# Advances in Gastrointestinal Surgery 2008



Sean Harbison MD FACS

Dept of Surgery

Temple University School of Medicine

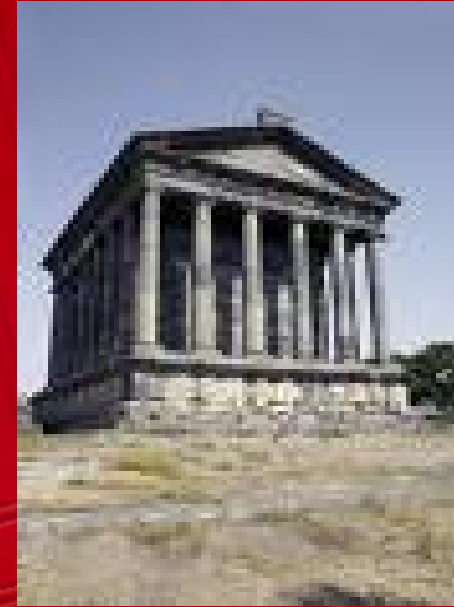
Philadelphia, Pa



# GI Surgery

## Evolutionary Eras

**Pre- 1960's: The Golden Years**



**1960-2000: Growing Pains**



**21st Century: Less=More**

# Whither Gastrointestinal Surgery?

“Evolutionary Pressure”

## Technology

IT, MIS, NOTES, Sim  
virtual technology,  
Interventional

## Evidence, Outcomes

### Based Care

NISQUIP  
Pay for Performance

## Clinical Factors

## GI Surgery

time

?

## Socio-Economic

Staffing, Work Hr, Workforce,  
Regulation, Specialization

## Education

Training, Work Hrs,  
Simulation, Specialization



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# Bariatric Surgery

'The 800 lb. Gorilla'

- **Surgical Success Story**

- **Epidemic of Morbid Obesity**

~2% US Pop BMI>40 (=> 5million)

Recognized long term risk

- **Flagship operation: LRYGB, safe and effective**

2002; 69K, 2008; .200k (Op Mort=0.6%)

Alternative procedures: Gastric Band, Gastric Sleeve, Duodenal Switch

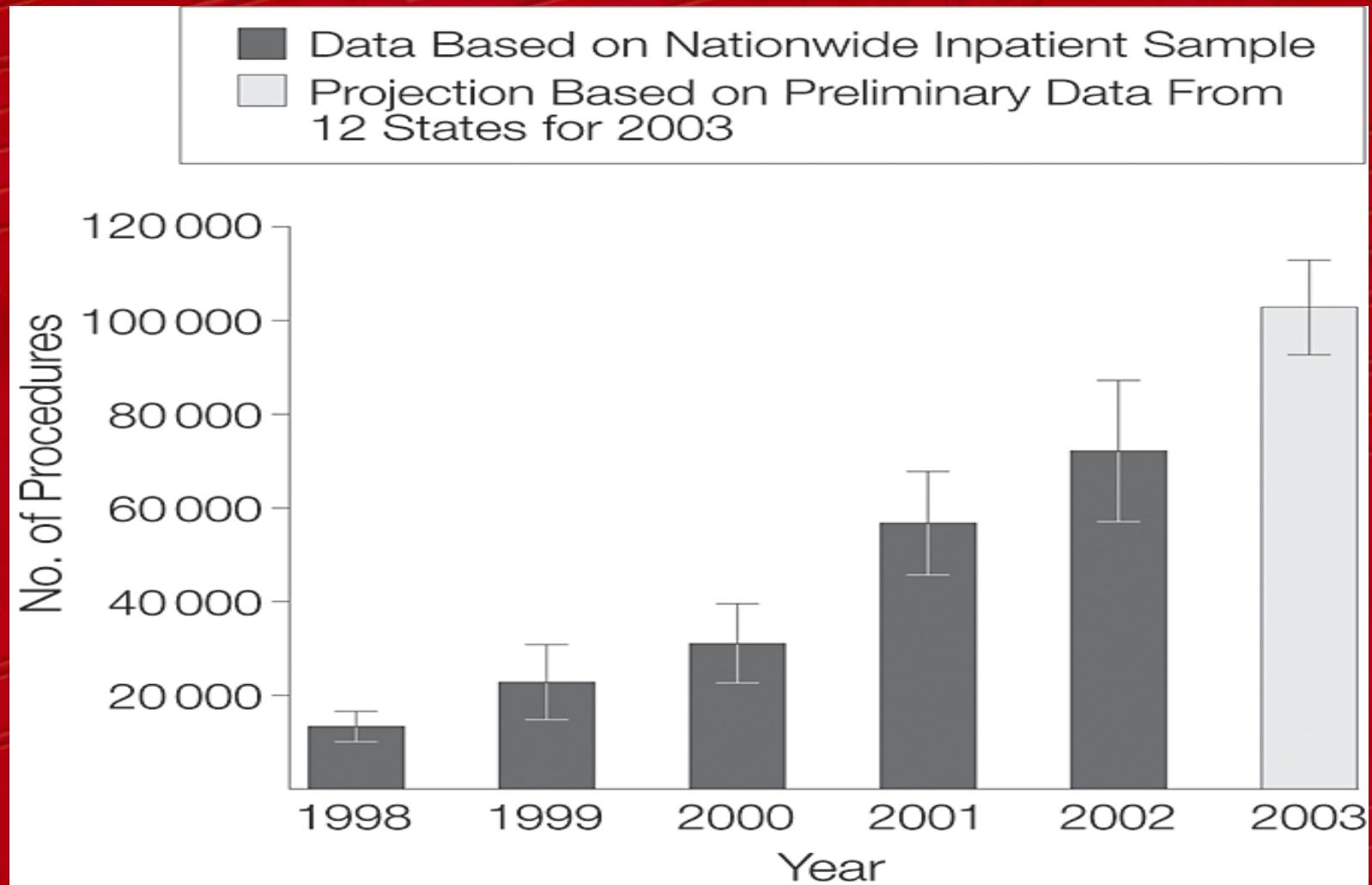
- **Bariatric Surgery has Value**

Long Term survival Benefit

95% Resolution of Metabolic Syndrome

Lee, Arch Surg, 2004;139  
Sjostrom, NEJM, 2004;351

## National Trends in Annual Numbers of Bariatric Procedures, 1998-2003



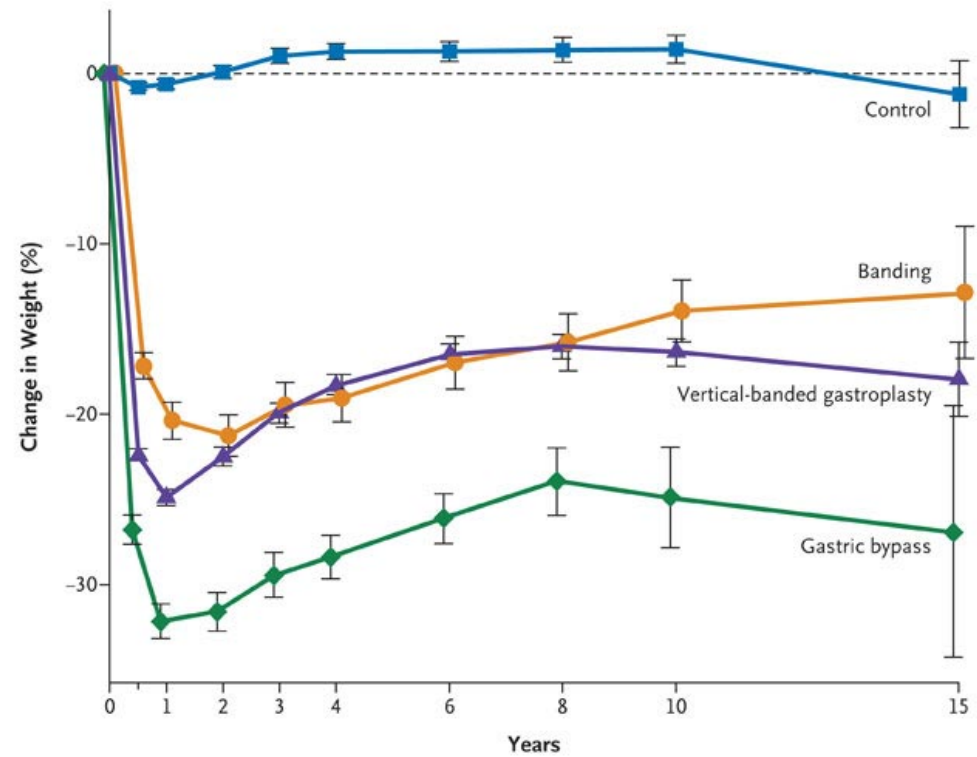
Santry, H. P. et al. JAMA 2005;294:1909-1917.

**JAMA**

Copyright restrictions may apply.



## Mean Percent Weight Change during a 15-Year Period in the Control Group and the Surgery Group, According to the Method of Bariatric Surgery



### No. Examined

Control	2037	1768	1660	1553	1490	1281	982	886	190
Banding	376	363	357	328	333	298	267	237	52
Vertical-banded gastroplasty	1369	1298	1244	1121	1086	1004	899	746	108
Gastric bypass	265	245	245	211	209	166	92	58	10

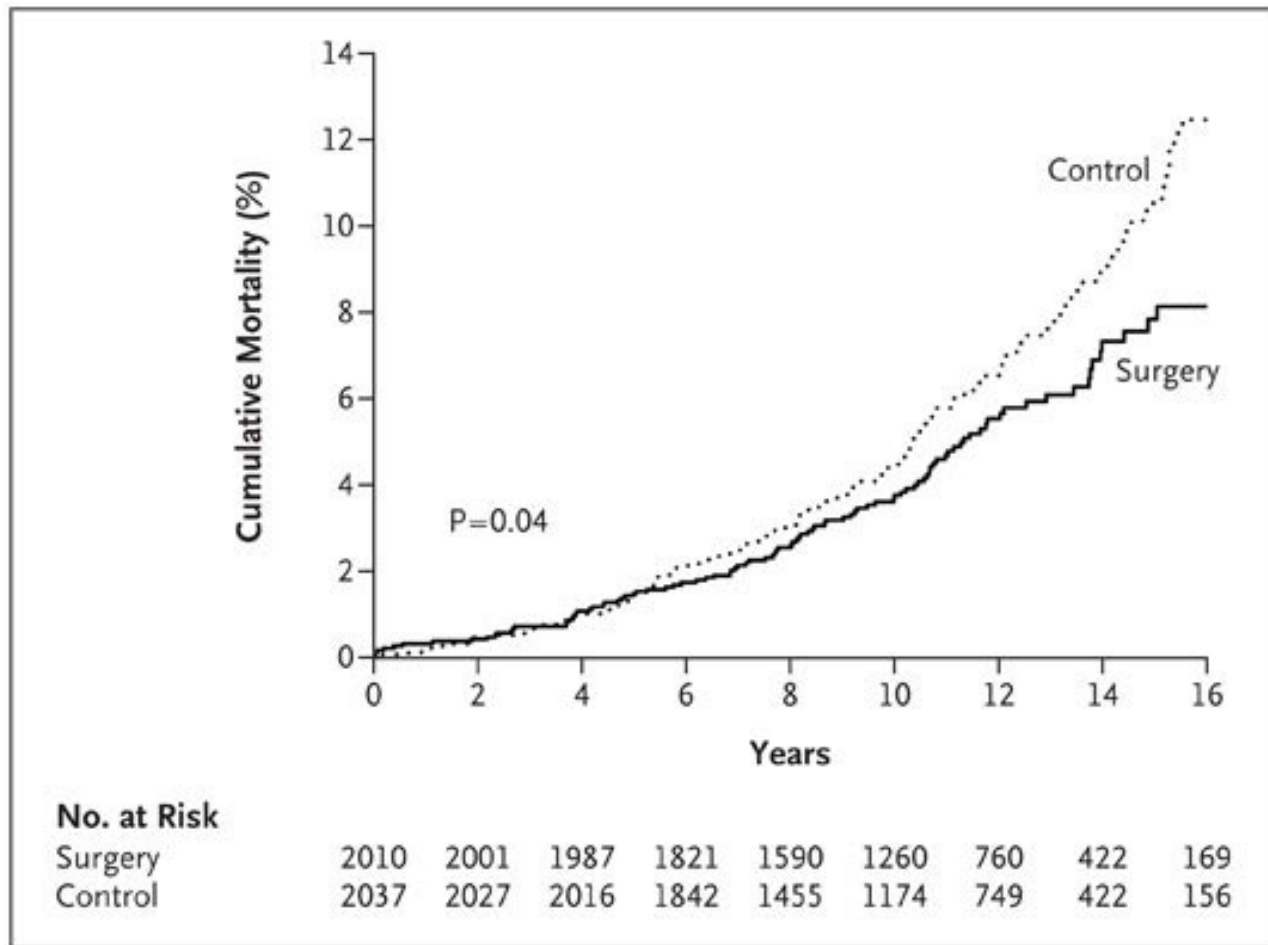
Sjostrom L et al. N Engl J Med 2007;357:741-752

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The NEW ENGLAND  
JOURNAL of MEDICINE

## Unadjusted Cumulative Mortality



Sjostrom L et al. N Engl J Med 2007;357:741-752

# Gastroesophageal Reflux Disease

## Surgical Advances

- **Perfection of Laparoscopic Technique**

Total v. Partial Fundoplication

90 to 360 deg wrap

Patti MG JAmCollSurg 2004

- **Value of Procedure**

Cost Effectiveness : PPI = Fundoplication @ 8yr

Cookson, BrJSurg 2005

- **Endoluminal Therapies**

Radiofrequency: 'Stretta'

Endoscopic Gastroplication

Lufti RE SurgEndosc 2005

Schiefke I, Gut 2005

# Peptic Ulcer Disease

## Dustbin of Surgical History?

- **Surgical Treatment: Relegated to Complications**

Perforation, Obstruction, Hemorrhage, Treatment Failure

- **Need for Definitive Curative Ulcer Procedure?**

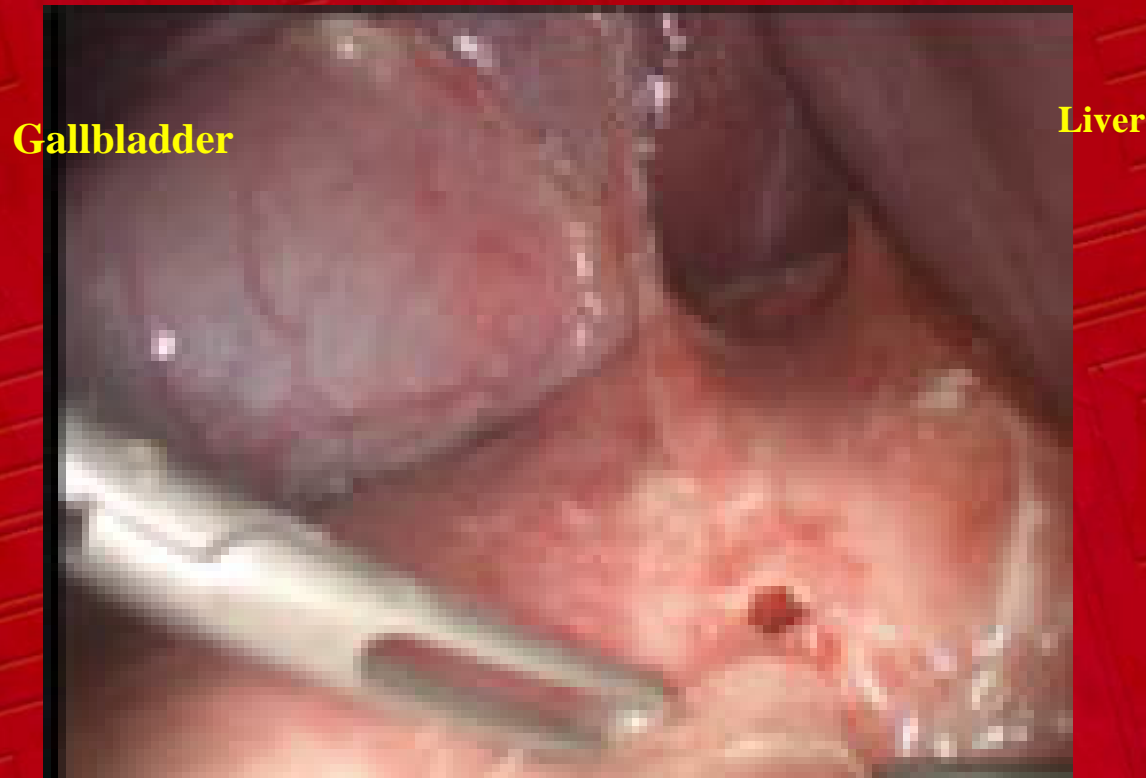
- **Minimally Invasive Treatment of Perforated Peptic Ulcer**

>80% success rate in select patients

Increased reoperation rate (3.7% v. 1.9%)

# Peptic Ulcer Disease

Dustbin of Surgical History?



Gallbladder

Liver

**Anterior Prepyloric Perforated Peptic Ulcer**



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# GI Motility Disorders

- **GI Dysmotility: Identification of Population**

Fore, Mid, and Hindgut

Multifactorial, 'Difficult', Polypharmacy,  
Polysurgery

- **Neuromotility, Electro-enterography**

Gastric Electrical Stimulation

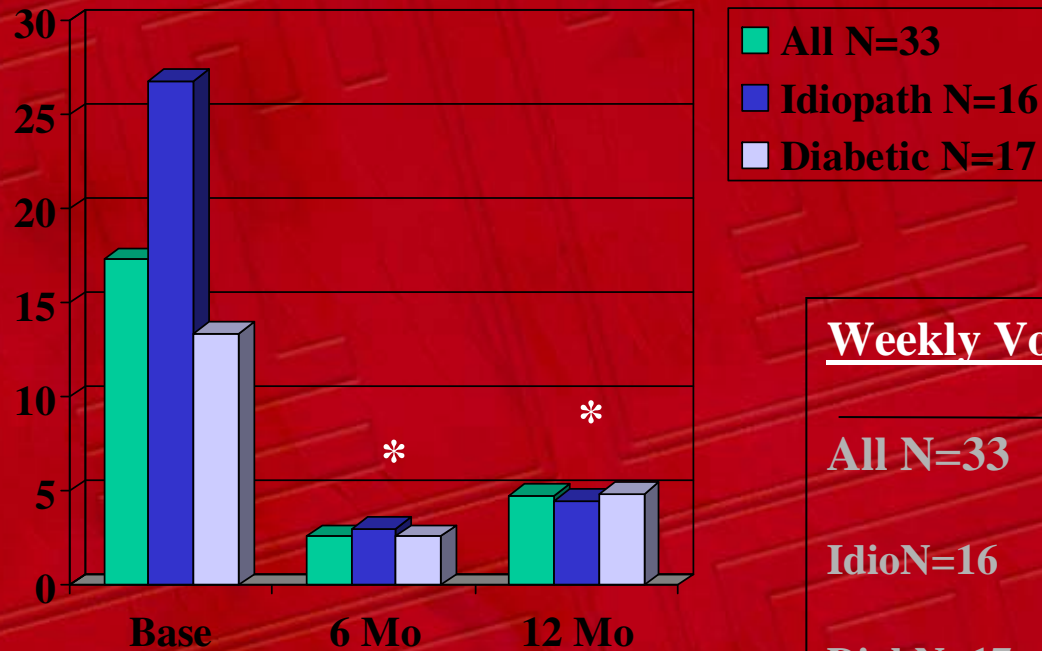
Offshoot Advances: Satiety Center Stim,  
Constipation, Urinary Retention/Incontinence



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# Gastroparesis

## Results: WAVES Study



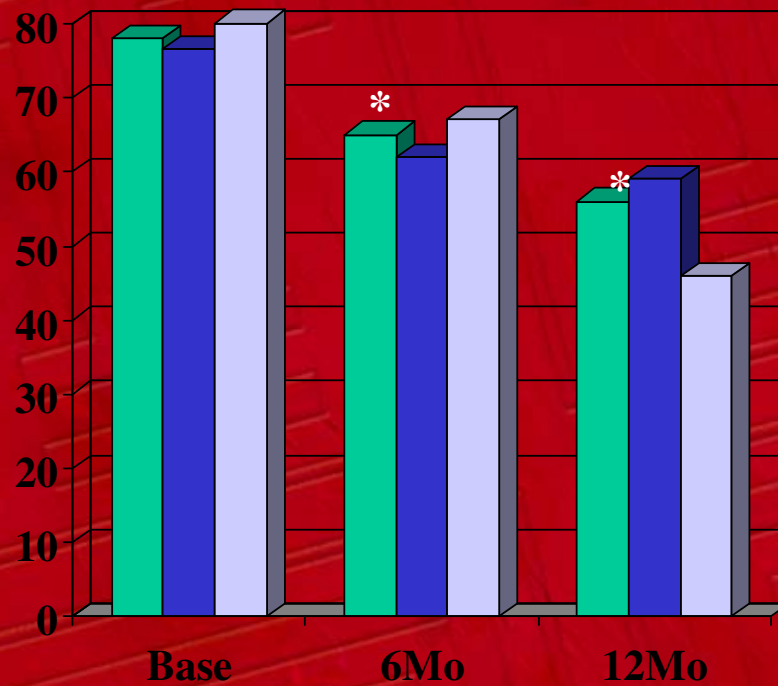
### Weekly Vomiting Frequency

	Base	6mo	12mo
All N=33	17.3(11-45)	2.6(0-12)	4.8(0-7)
IdioN=16	26.8(13-38)	3(0-13)	4.5(2-7)
DiabN=17	13.4(9-55)	2.6(0-12)	4.9(0-7)

\* =  $p < 0.05$

# Gastroparesis

## Results: WAVES Study



Gastric Emptying: % Retention @ 2hr

■ All N=33  
 ■ Idio N=16  
 ■ Dia N=17

\* = p < 0.05

	Base	6mo	12mo
All	78	65(*)	56(*)
Idio	76.5	62	59
Diab	80	67	46(*)



# Liver

## Surgical Advances: Resection

- **Resectional Therapy: Safer, Effective**

Resectional Tx remains treatment of choice for metastatic or primary liver malignancy

Resect-38% 5yrsurv v No Resect - 3% %yrsurv

- **RFA: added benefit?**

yr	#/yr	% op mort
1990	820	10
2000	1420	5.3
2008	5100	4

Tx Modal	5yr Surv	Recurr
Resect	58%	52%
Resect+ RFA	63%	64%
RFA	22%	84%

Kato, DisCol&Rect 2003

Abdalla EK, AnnSurg 2004

# Liver

## Surgical Advances: Transplantation

- End Stage Liver Disease

MELD: Model for End Stage Liver Disease

- Primary Malignancy: HCC

- Split Organ Donation: Organ Availability

Busuttil AnnSurg 2005  
Island ER Arch Surg 2005

# Notes on NOTES

‘Embraced at Arms Length’

- **PRO**

- ‘Acknowledged’ by SAGES, ASGE (NOSCAR)
- Benefits: Cosmetic, Post-op Pain (?)
- Driver of Technology, Device Development

- **CON**

- Paucity of humans studies, science
- Violates principles of surgery exposure, hemostasis
- Presupposes peritoneal contamination  
75% positive peritoneal cultures or abscess @ 14d

**Surg Endosc 2007:21.**



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# Advances in GI Surgery

## Diverticulitis

- **Initial Treatment:**

Operative: 19%

Nonoperative: 81%

7% risk elective colectomy in 10 yr

Recurrence rate 13% (~2%/yr)

**Argues against elective colectomy after initial episode**

**Cost-Effectiveness Model:**

Elective colectomy after fourth episode

**Role of Minimally Invasive Surgical Tx**

# Advances in GI Surgery

## Laparoscopic Colectomy

- Laparoscopic Colectomy Equivalent to Open  
COST Study

21% to 29% Conversion to open

Similar time to first BM, meal, analgesic use

Increased OR time

	Open	Lap
% Op Mort	5	4
# Nodes	12	13
Circ Marg	7	6
LOS	6	5

Nelson H NEJM 2004

# 'Blue Collar' Surgical Advances

## Less Glamour, More Value?

- **SBO: Postsurgical**

Open: Incidence 18% @ 10yr, 30% @ 30yr  
Laparoscopic?

Fevang BT, Ann Surg 2004

- **NG Decompression**

Metaanalysis: NO rapid return bowel function, reduced pulmonary complications, reduced anastomotic complications  
Selective use

Nelson R BrJSurg 2005

- **Postoperative Nausea, Vomiting**

Modest improvement: 5HT3 antag., Cyclo-oxygenase inhib  
Adalor trial, Laparoscopy

Schwarz NT Surgical Forum 2005

# Advances in GI Surgery

## Random Points to Ponder

- **Stapled Hemorrhoidectomy**

Equivalent: Relief of Sx, Complication Rate

Gravie JF AnnSurg 2005

Improved Satisfaction, Reduced Post-op Pain, Narcotics Req

- **Bowel Preparation**

Ram E Arch Surg 2005

Oral Antibiotics: Increased Cdiff (7.4%) v. no oral (4.2%)

Mech Prep v. None: HIGHER incidence of Leak, Wound Infection, Intra-abdominal Inf. (!)

- **Robotics in Surgery**

Feasible, Expensive, Limited, Gimmicky?

Talamini M JGastroSurg 2003

- **Capsule Endoscopy**

Highly sensitive, specific for obscure GI bleeding

Pennazio M Gastroenterology 2004



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# Advances in GI Surgery

