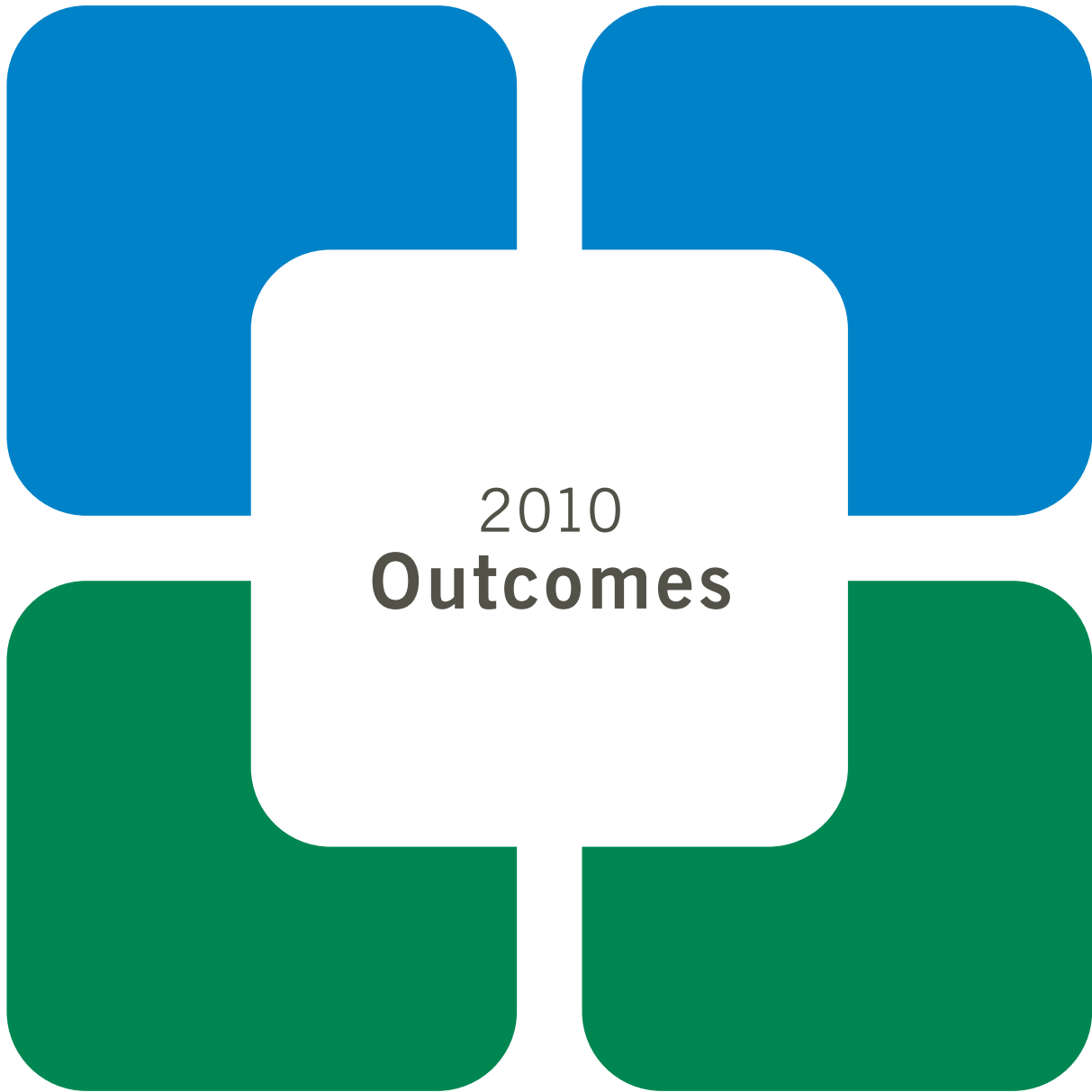


Endocrinology & Metabolism Institute



2010
Outcomes





To promote quality improvement, Cleveland Clinic has created a series of Outcomes books similar to this one for many of its institutes. Designed for a physician audience, the Outcomes books contain a summary of our surgical and medical trends and approaches, data on patient volumes and outcomes, and a review of new technologies and innovations.

Although we are unable to report all outcomes for all treatments provided at Cleveland Clinic — omission of outcomes for a particular treatment does not necessarily mean we do not offer that treatment — our goal is to increase outcomes reporting each year. When outcomes for a specific treatment are unavailable, we often report process measures associated with improved outcomes. When process measures are unavailable, we may report volume measures; a volume/outcome relationship has been demonstrated for many treatments, particularly those involving surgical techniques.

In addition to our internal efforts to measure clinical quality, Cleveland Clinic supports transparent public reporting of healthcare quality data and participates in the following public reporting initiatives:

- Joint Commission Performance Measurement Initiative (qualitycheck.org)
- Centers for Medicare & Medicaid (CMS) Hospital Compare (hospitalcompare.hhs.gov)
- Ohio Department of Health (ohiohospitalcompare.ohio.gov)
- Cleveland Clinic Quality Performance Report (clevelandclinic.org/QPR)

Our commitment to providing accurate, timely information about patient care also will help patients and referring physicians make informed healthcare decisions.

We hope you find these data valuable. To view all our Outcomes books, please visit Cleveland Clinic's Quality and Patient Safety website at clevelandclinic.org/quality/outcomes.



Dear Colleague:

It is my great pleasure to present Cleveland Clinic's annual Outcomes books. The current edition includes outcomes and volumes along with recent innovations and publications for Cleveland Clinic's clinical services through calendar year 2010.

Cleveland Clinic is celebrating its 90th Anniversary in 2011. Our founders were innovators. They created a unique model of medicine based on patient care, enhanced by research and education. We honor this legacy, measuring quality, reporting outcomes and continuously improving the value of medical services.

Cleveland Clinic Outcomes books are offered in print and online. Additional data is available through our online Quality Performance Report (clevelandclinic.org/QPR). The site offers data in advance of national and state public reporting sites, in key areas including heart attack, heart failure, stroke and infection prevention.

Thank you for your interest in Cleveland Clinic Outcomes books. We hope you will find them useful and informative.

Sincerely,

A handwritten signature in black ink, appearing to read "DMC".

Delos M. Cosgrove, MD
CEO and President

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Prefer an e-version?

Visit clevelandclinic.org/OutcomesOnline, and we'll remove you from the hard copy mailing list and email you when next year's books are online.

Chairman's Letter

Dear Colleague:

On behalf of Cleveland Clinic's Endocrinology & Metabolism Institute, I am pleased to share our 2010 quality outcomes. Quality, patient safety, patient experience and employee engagement remain top priorities for us.

Cleveland Clinic is entering its fourth year of delivering patient care from an institute (disease management) perspective. Our institute is composed of endocrinologists, endocrine surgeons, bariatric and general surgeons, psychologists, bariatricians and a cardiologist, as well as dietitians, nurse practitioners and clinical nurse specialists. This large and diverse group of providers staff five areas that make up the Endocrinology & Metabolism Institute:

- The Department of Endocrinology, Diabetes and Metabolism (including all Regional Endocrinology practices at Cleveland Clinic Family Health Centers)
- The new Diabetes Center on our main campus
- The Department of Endocrine Surgery on our main campus and at several Family Health Centers
- The Bariatric and Metabolic Institute on our main campus

Research continues to be an important part of what we do every day in our institute. We concluded recruitment for the STAMPEDE trial in 2010. This trial focused on advanced medical therapy alone for obesity versus laparoscopic Roux-en-Y or sleeve gastrectomy surgery and medical therapy combined. Stampede II, funded by the NIH, will start in 2011 and will compare laparoscopic Roux-en-Y with medical management treatment options.

This type of research keeps our institute and all who practice in our field on the cutting edge of treatment for obesity, liver/adrenal tumors, thyroid cancer, pituitary disorders, and type I and type II diabetes.



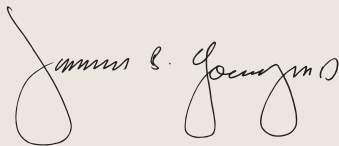
In 2011, the Endocrinology & Metabolism Institute (EMI) will partner with the Lerner Research Institute to form the EMI Center for Clinical Translational Research (CTR). The mission of this center, based in the Endocrinology & Metabolism Institute, will be to develop, promote, facilitate and support:

- interdisciplinary basic and clinical translational research in obesity, endocrinology and metabolism
- education and training of medical students, graduate students, residents, fellows and junior staff in conducting research related to endocrine and metabolic disease

The number of providers within the Endocrinology & Metabolism Institute continues to grow. In 2010, nine endocrinologists and one endocrine surgeon joined our staff, enhancing our patients' access to high-quality, convenient care as we continue to provide care throughout Greater Cleveland.

Our new Diabetes Center opened in September of 2010 at 10685 Carnegie Ave. in Cleveland. In this beautiful freestanding building with convenient parking and shuttle service, patients can see endocrinologists, certified diabetes educators, nurse practitioners and registered dietitians with special expertise in diabetes care, teaching and research.

The Endocrinology & Metabolism Institute continues to take on all of the clinical challenges that chronic disease management continues to offer. We invite our colleagues to review in detail the programs, projects and outcomes summarized in this text. We hope you find this booklet informative and applicable to your practice, as we truly want to collaborate and develop a relationship with all providers for a healthier community.

A handwritten signature in black ink, reading "James B. Young, MD". The signature is written in a cursive style with a large initial 'J' and 'Y'.

James B. Young, MD
Chairman, Endocrinology & Metabolism Institute
Professor of Medicine and Executive Dean, Cleveland Clinic Lerner College of Medicine
The George M. and Linda H. Kaufman Chair in Cardiovascular Medicine

Institute Overview

Cleveland Clinic's Endocrinology & Metabolism Institute is committed to providing the highest-quality healthcare for patients with diabetes, endocrine or metabolic disorders, or obesity; to exploring ways to improve their care; and to teaching the best methods of treating these disorders. Our Diabetes & Endocrinology services are ranked 6th in the nation by *U.S. News & World Report*.

Enhancing Diabetes Care

In 2010, we opened up our new Cleveland Clinic Diabetes Center. This freestanding facility allows our patients to see endocrinologists, certified diabetic educators, nurse practitioners and registered dietitians with special expertise in diabetes care, teaching and research. With our dedicated staff, access to care is quick and convenient.

Research studies on many new tools for managing diabetes are ongoing. Our inpatient multidisciplinary team collaborates on the Diabetic Care Committee, addressing quality initiatives and the unique needs of diabetic patients throughout the hospital – from assessing patient knowledge of insulin pumps to best approaches for using high-dose steroids.

Additionally, in September 2010, Cleveland Clinic hosted the **15th Annual Diabetes Day: Controversies in Diabetes for Healthcare Professionals**.

A Diabetes Education Task Force has been formed with the goal of establishing a single diabetes education program across the entire Cleveland Clinic system. This will allow our patients to receive the same care at any location convenient to them. The curriculum will focus on the seven themes of diabetic care:

- healthy eating
- being active
- glucose monitoring
- taking medication
- problem-solving
- reducing risk
- healthy coping

Variety of Endocrine Clinics Offered

The Endocrinology & Metabolism Institute has an array of disease-specific clinics, including clinics for:

- type 1 and type 2 diabetes
- post-pancreas transplant diabetes
- pituitary disorders
- thyroid/parathyroid disorders
- calcium disorders
- post-pancreas transplant care
- liver/adrenal tumor care

We also have a preventive cardiology clinic and a transition clinic to help children move on to adult endocrine care.

Endocrinology	2009	2010
Total Patient Visits	23,103	27,465
New Patient Visits	1,006	1,435
Total Fine Needle Aspirations	456	489
Endocrine Surgery		
Total Patient Visits	3,934	4,271
Endocrine Surgery	588	680
Total Fine Needle Aspirations	302	337
Bariatric Surgery		
Total Patient Visits (Bariatric and General)	18,570	21,277
Total Bariatric Cases	561	692
Gastric Bypass Surgery	329	451
Laparoscopic Sleeve Gastrectomy Surgery	63	81
Laparoscopic Adjustable Gastric Band Surgery	67	55
Other Bariatric Surgery	102	105

An Experienced Endocrine Surgery Team

Our endocrine surgery service has the largest experience in the world in the surgical care of thyroid, parathyroid, adrenal, endocrine and pancreas disorders. We are one of the busiest centers in the country for laparoscopic radiofrequency thermal ablation of neuroendocrine tumors that metastasize to the liver. We offer a laparoscopic liver resection program. We also utilize advanced minimally invasive technology; 70 percent of our adrenalectomies were performed robotically in 2010, and we also perform robotic thyroidectomies and parathyroidectomies.

Our thyroid and parathyroid surgery cases have more than quadrupled in volume in the past 10 years, with increasing referrals of patients with complex conditions such as reoperative problems, advanced cancers and hereditary endocrine syndromes.



Multifaceted Bariatric Program

For patients with severe obesity, we provide bariatric surgery through minimally invasive approaches. Our ultimate goal for this patient population is management of all degrees of obesity and its comorbidities. Bariatric surgeons, bariatricians, psychologists, dietitians, endocrinologists, internists, anesthesiologists, scientists, gastroenterologists, cardiologists and pediatricians are involved in care and research.

We are one of the few bariatric centers in the United States recognized as a Center of Excellence by both the American Society for Metabolic and Bariatric Surgery (ASMBS) and the American College of Surgeons (ACS). This designation is awarded only after independent program review and demonstration of the highest quality in patient management and outcomes.

Our state-of-the-art bariatric care facility includes an inpatient bariatric unit, an adjacent outpatient clinic, patient waiting and conference rooms, physician and support staff offices, and a surgical endoscopy unit — all on one floor. We are conducting multiple clinical and basic science studies that address a broad range of topics related to obesity and associated diseases, including an Obesity Research Day that drew 75 attendees.

In fact, bariatrics, endocrine surgery and endocrinology have a total of 68 active research studies.

Promoting Subspecialty Education

Several Endocrine & Metabolism Institute chairs and staff hosted educational conferences throughout 2010. In January, Endocrine Surgery hosted the **First Annual Thyroid Expo 2010: A Multidisciplinary Symposium on Thyroid Diseases and Thyroid Cancer**, with nearly 100 attendees; in May, the **First Annual Update on the Management of Adrenal Diseases and Lesions**, with approximately 50 participants; and in November, the **First Annual Update on Minimally Invasive Solid Organ Surgery: Laparoscopic Ultrasound, Liver Ablation Techniques, Laparoscopic Resection and Robotics**.

In November 2010, the **5th Annual Obesity Summit: Science and Practice of Obesity Management** was held, drawing more than 300 healthcare providers from throughout the United States and beyond. Prior to that, the Bariatric and Metabolism Institute helped to host the **2010 Medical Innovation Summit: Obesity, Diabetes & the Metabolic Crisis**, which brought more than 900 healthcare professionals to Cleveland for an outstanding conference.

The Department of Endocrinology, Metabolism and Diabetes hosted the **13th Annual Board Review Course** in September, bringing in more than 200 participants from the United States and Canada. In April, the department also assisted in directing the **5th Annual Contemporary Issues in Pituitary Disease: Case-based Management Update** in Cleveland.



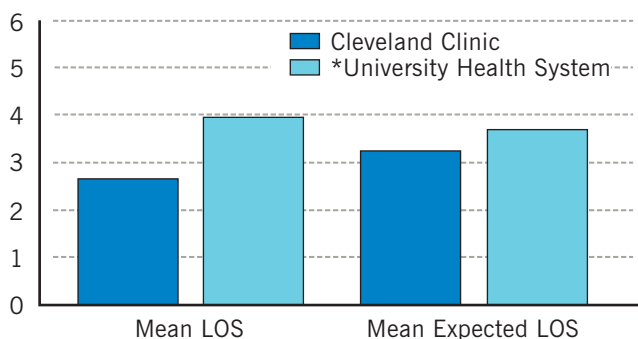
Adrenal

The information contained in the following three outcomes was based in part on the Performance Accelerator Suite Program maintained by the *University HealthSystem Consortium.

Endocrine Surgery: Adrenalectomy Length of Stay (N = 67)

2010

Days

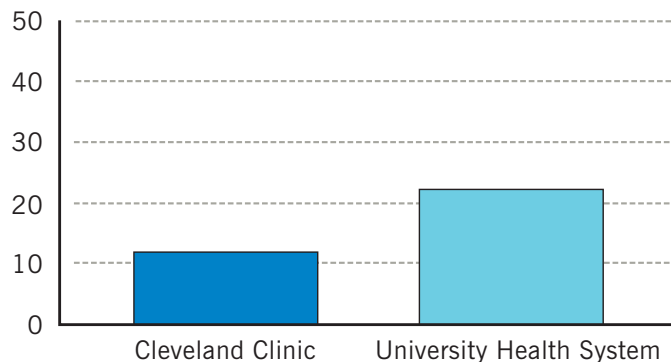


Average observed hospital LOS (length of stay) for adrenalectomy at Cleveland Clinic was significantly less than expected compared to U.S. News Honor Roll Hospitals subscribing to University Health System's (UHC) Clinical Database.

Endocrine Surgery: Adrenalectomy Cases Requiring ICU Stay (N = 67)

2010

Percent

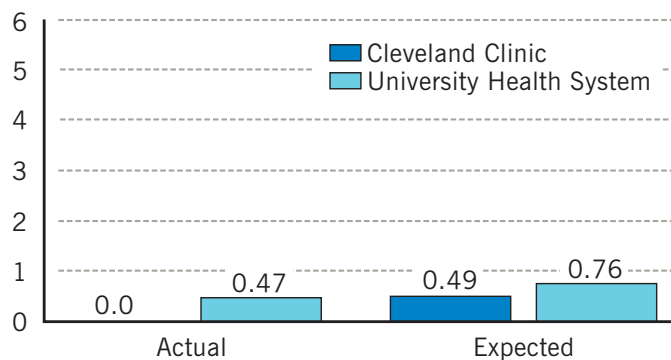


Cleveland Clinic endocrine surgery patients required less ICU stay compared to U.S. News Honor Roll Hospitals subscribing to University Health System's Clinical Database.

Endocrine Surgery: Adrenalectomy Observed Mortality (N = 67)

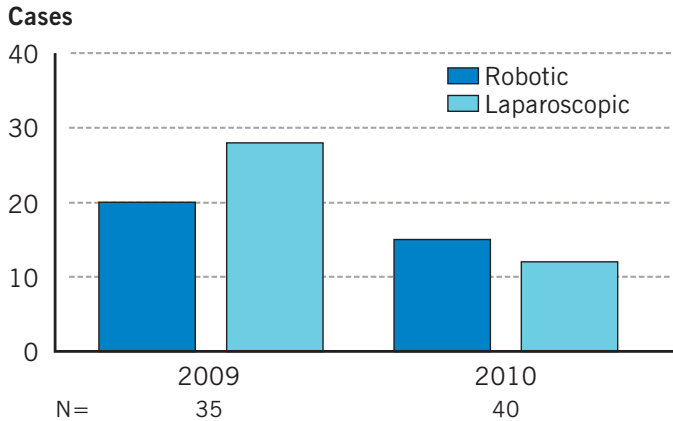
2010

Percent



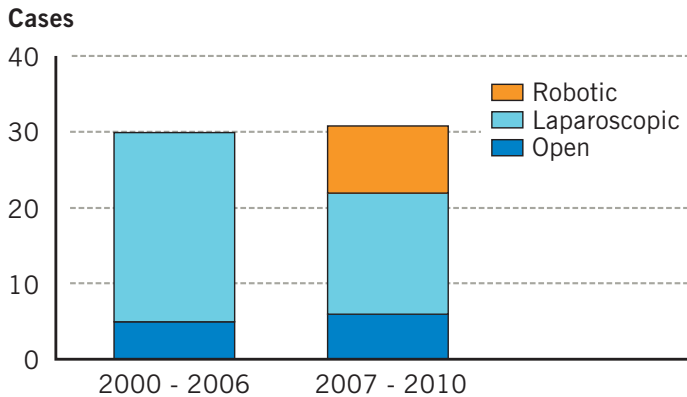
Endocrine Surgery observed mortality at Cleveland Clinic was better than U.S. News Honor Roll Hospitals subscribing to University Health System's Clinical Database.

Endocrine Surgery: Robotic and Laparoscopic Minimally Invasive Adrenalectomy Volume

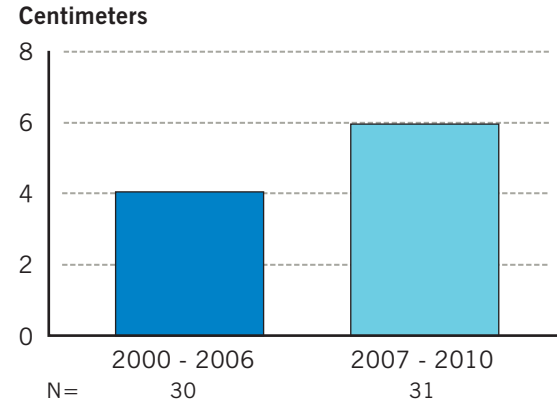


Robotic adrenalectomy represented 57% of the cases in 2009 and 70% percent in 2010.

Endocrine Surgery: Operative Approach for Pheochromocytomas and Abdominal Paragangliomas



Endocrine Surgery: Pheochromocytomas and Paragangliomas - Mean Tumor Size



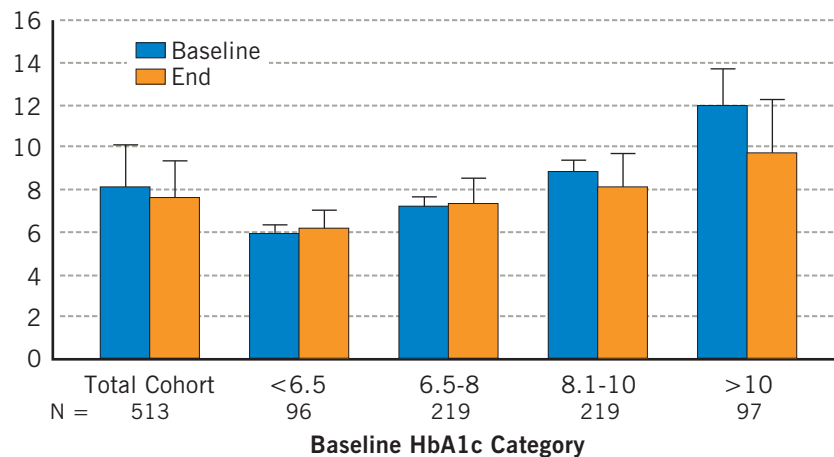
Cleveland Clinic endocrine surgeons were able to treat larger tumors with minimally invasive surgery over the past three years. The range of tumor size from 2000 to 2006 was 1.9 cm - 12.0 cm and from 2007 to 2010 was 1.7 cm - 8.0 cm.



Change in Hemoglobin A1c Over Time

2010

HbA1c Value



Data were collected on new patients seen in the Endocrinology Department in 2009 and followed through 2010. Hemoglobin A1c values from baseline and last visit were compared (Mean +/-SD).

Metabolic Effects of Bariatric Surgery			
Five-year followup of type 2 diabetic patients undergoing bariatric surgery			
	Remission	Improvement	No change/worse
T2DM	44%	40%	16%
Hypertension	16%	50%	34%
Dyslipidemia	39%	20%	41%
BMI, kg/m²			
Pre-bariatric surgery	50.5±7.3	48.5±9.7	48.0±9.6
5yr post-op	34.6±7.4	38.4±7.6	43.2±11.5
HbA1C %			
Pre-bariatric surgery	8.0±1.5	7.7±1.1	8.1±1.1
5yr post-op	5.9±0.7	6.9±1.0	7.9±0.8
Fasting glucose (mg/dL)			
Pre-bariatric surgery	172.5±62.7	177.7±74.7	160.5±41.2
5yr post-op	97.2±11.6	119.1±28.9	157.5±75.1
Blood pressure (mmHg)			
Pre-bariatric surgery	139/83	137/74	135/73
5yr post-op	128/77	128/75	126/72
Enrollment 2004 - 2006 (N = 52)			

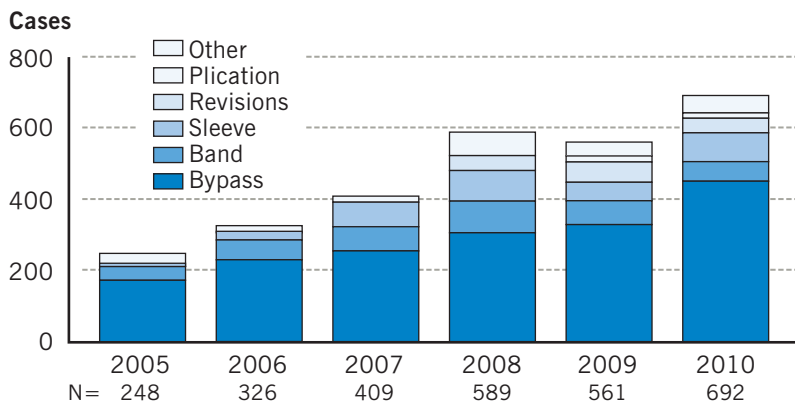
In addition to weight loss, bariatric surgery has powerful metabolic effects, including resolution of obesity-related comorbidities such as type 2 diabetes mellitus (T2DM). Patients' current T2DM status was determined by biochemical analyses and review of medications. Remission was defined as fasting glucose <120 without diabetic medications. T2DM remained resolved or improved in 84 percent. Insulin and oral hypoglycemic medications were stopped or reduced, respectively, in all patients. In those whose T2DM status was unchanged at five years (16%), all had regained some weight in that interval.

Obesity

In 2010, Cleveland Clinic Bariatric and Metabolic Institute (BMI) marked its 6th anniversary and was re-accredited as a designated Bariatric Surgery Center of Excellence by the American Society for Metabolic and Bariatric Surgery and the American College of Surgeons. This designation is awarded to programs that meet high quality standards and perform a minimum of 125 procedures annually.

Bariatric Cases by Type

2010



Laparoscopic Roux-en-Y gastric bypass continues to be the predominant procedure at Cleveland Clinic. Due to patient preference, laparoscopic adjustable gastric banding has declined over the past two years.



Plication



Sleeve



Band

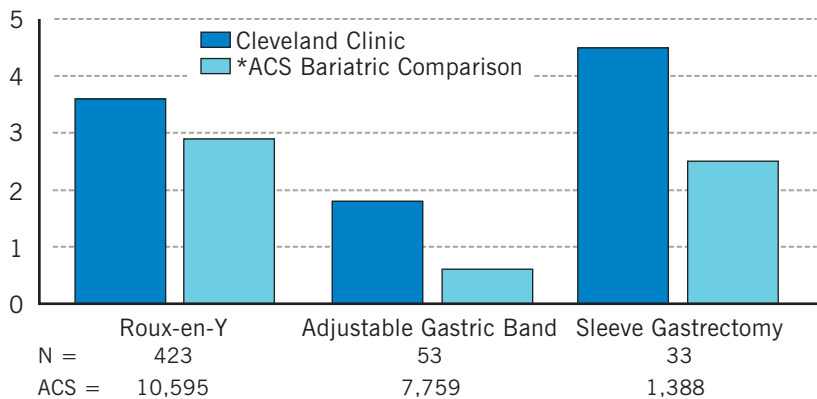


Bypass

Laparoscopic Bariatric Surgery Length of Stay

2010

Days



Cleveland Clinic bariatric patients have higher-risk baseline demographics and comorbidities.

*As a Level 1A accredited American College of Surgeons (ACS) Bariatric Center, Cleveland Clinic participates in the ACS Bariatric Surgery Database, a national program that objectively measures and reports risk-adjusted surgical outcomes for 100 percent of all bariatric surgery cases at participating facilities. Hospitals with Level 1A certification are recognized for high-volume practices and management of the most challenging and complex patients.

The ACS has 131 bariatric surgery centers located in 31 states.



In

2010

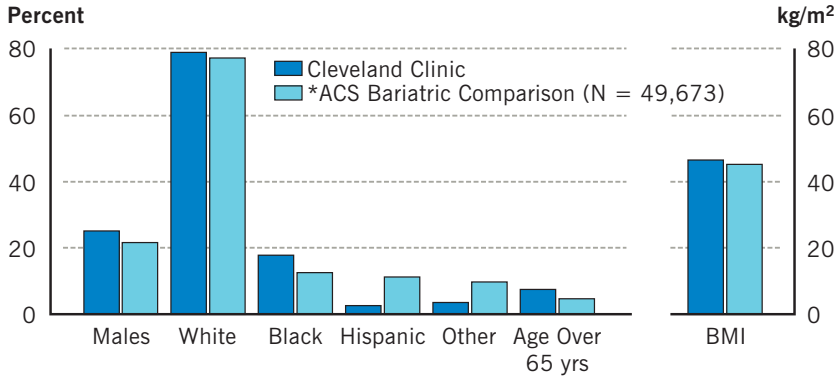
laparoscopic

sleeve gastrectomy was recognized by AMA (CPT code 43775) as a primary bariatric procedure and is our procedure of choice for high risk patients.

Obesity

Demographic Baseline for Bariatric Surgery (N = 1,531)

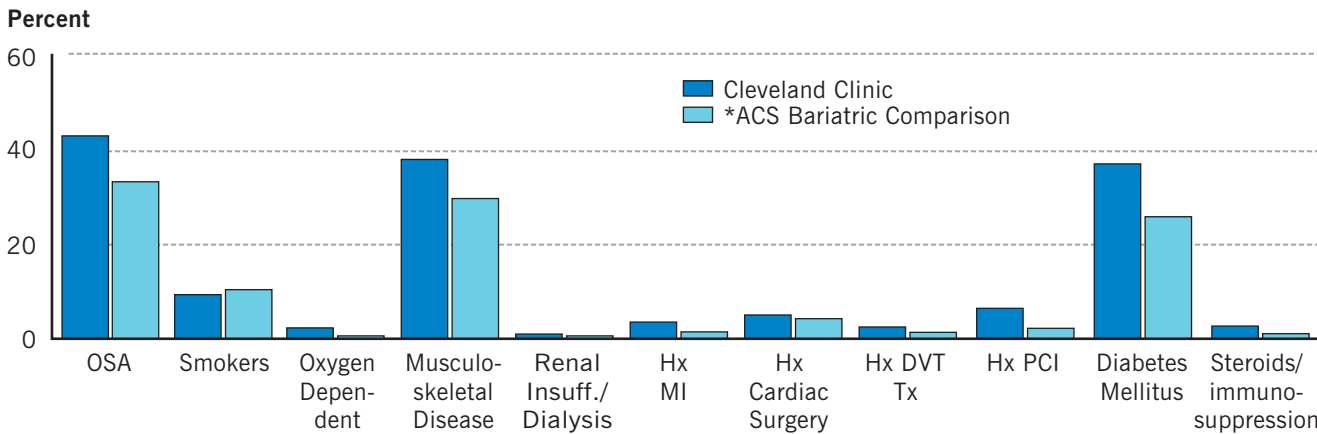
2007 – 2010



Patients having bariatric procedures completed at Cleveland Clinic were higher risk at baseline due to increased prevalence of comorbidities and higher age and male population.

Comorbidities at Baseline for Bariatric Surgery (N = 1,531)

2007 – 2010



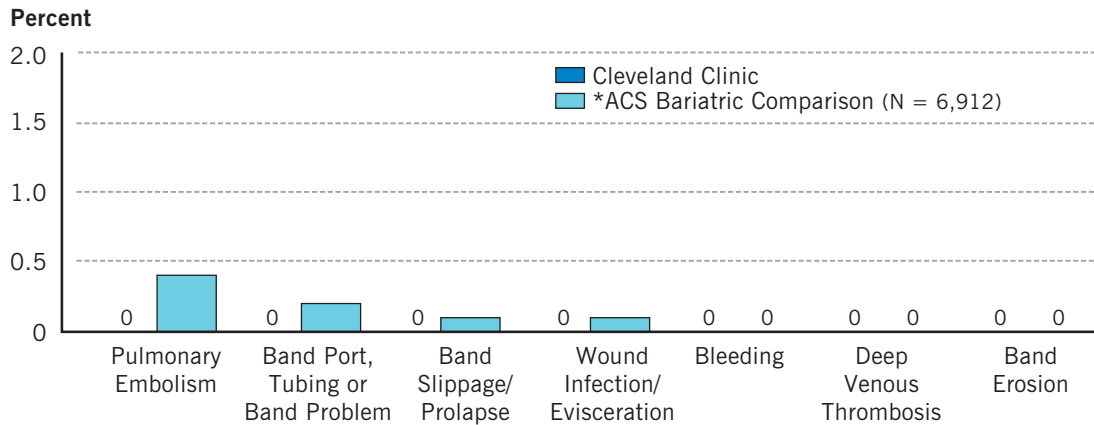
MI = Myocardial Infarction; DVT = Deep Venous Thrombosis; PCI = Percutaneous Coronary Intervention

*ACS = **American College of Surgeons** Bariatric Surgery Database.

Cleveland Clinic bariatric surgery patients were higher risk at baseline compared to American College of Surgeons - Bariatric Surgery Database.

Bariatric Surgery Complications (30 Days): Laparoscopic Adjustable Gastric Band (N = 53)

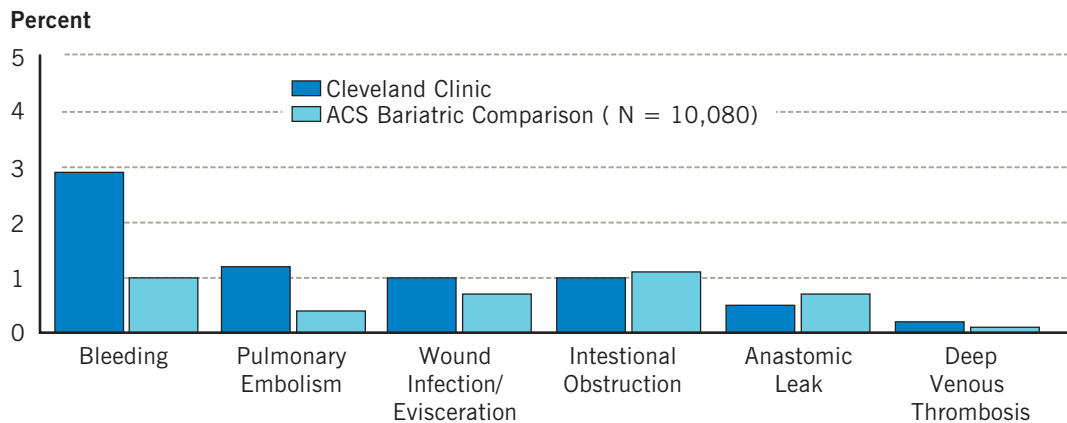
2010



American College of Surgeons - Bariatric Surgery Database comparisons showed that complications of laparoscopic gastric banding were low.

Bariatric Surgery Complications: Laparoscopic Roux-en-Y (N = 423)

2010



*ACS = American College of Surgeons Bariatric Surgery Database.



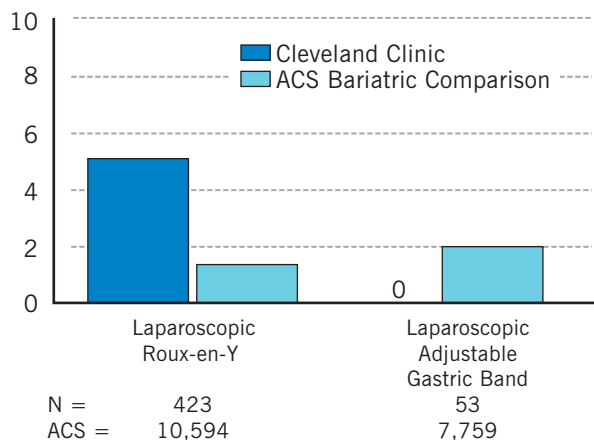
46.1
was the average BMI for bariatric surgery patients in 2010

117.8
was the highest baseline body mass index prior to bariatric surgery in 2010

Unplanned ICU Admissions within 30 Days of Bariatric Surgery

2010

Percent



Despite the relatively high-risk patient population, 5 percent or less of bariatric procedures required postoperative ICU stays.

ACS = American College of Surgeons Bariatric Surgery Database.

Bariatric Surgery/Percent Mortality (30 Days)

2010

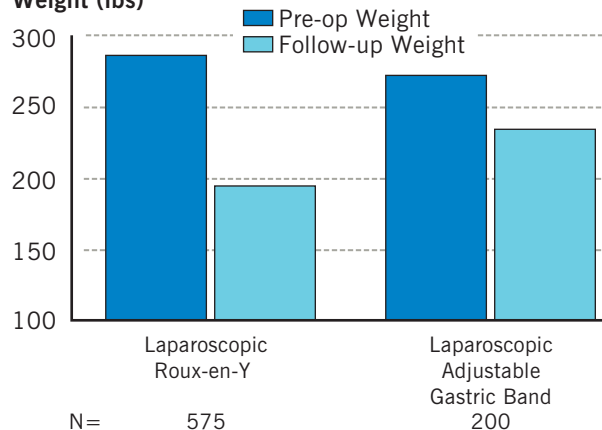
Procedure	Cleveland Clinic	ACS Comparison
Laparoscopic Gastric Bypass	0.2 (N = 423)	0.1 (N = 10,080)
Laparoscopic Adjustable Gastric Band	0 (N = 53)	0 (N = 6,912)
Laparoscopic Sleeve Gastrectomy	0 (N = 81)	0.2 (N = 1,392)
Other Bariatric Surgery Types	0 (N = 105)	0.1 (N = 1,121)

ACS = American College of Surgeons Bariatric Surgery Database

Bariatric Surgery: Weight Loss Over Time

2005 – 2010

Weight (lbs)



Average weight loss for Cleveland Clinic laparoscopic Roux-en-Y patients was 92 pounds with a mean follow-up period of 1.9 years. Laparoscopic adjustable gastric band patients lost an average of 36 pounds with a mean follow-up duration of 2.5 years.

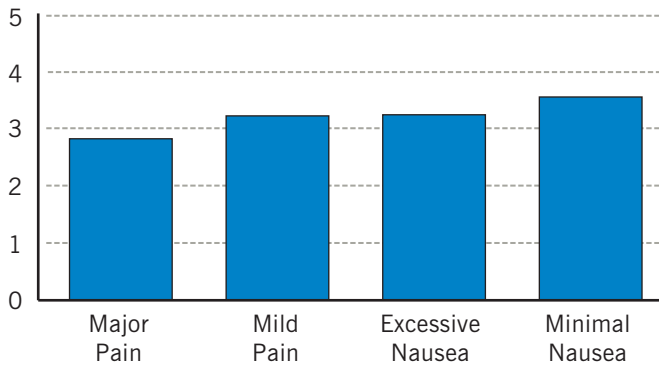
Psychological Evaluation Ratings Predict 1-Month Postoperative Adjustment

The Bariatric and Metabolic Institute's behavioral health team examined whether psychological ratings at the time of initial evaluation were associated with non-specific complications 1-month postoperatively.

Social Support Ratings at Behavioral Health Visit Pain and Nausea at 1-Month Follow-up (N = 139)

2010

Likert Scale - Social Support



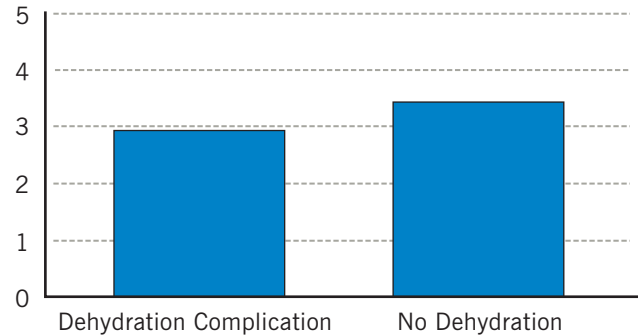
Cleveland Clinic Behavioral Rating Scale:
1 = Poor; 2 = Guarded; 3 = Fair; 4 = Good; 5 = Excellent

Patients experiencing significant nausea and/or pain received lower social support ratings on the Cleveland Clinic Behavioral Rating Scale (Heinberg et al., 2010).

Adherence Ratings at Behavioral Health Visit and Complication of Dehydration at 1-Month Follow-up (N = 139)

2010

Likert Scale - Adherence



Cleveland Clinic Behavioral Rating Scale:
1 = Poor; 2 = Guarded; 3 = Fair; 4 = Good; 5 = Excellent

Patients reporting dehydration had been rated significantly lower on adherence.

The results demonstrate preliminary predictive utility of behavioral ratings at the time of psychological evaluation and may help identify nonspecific patient complications, nonadherence with fluid intake and postoperative regret.



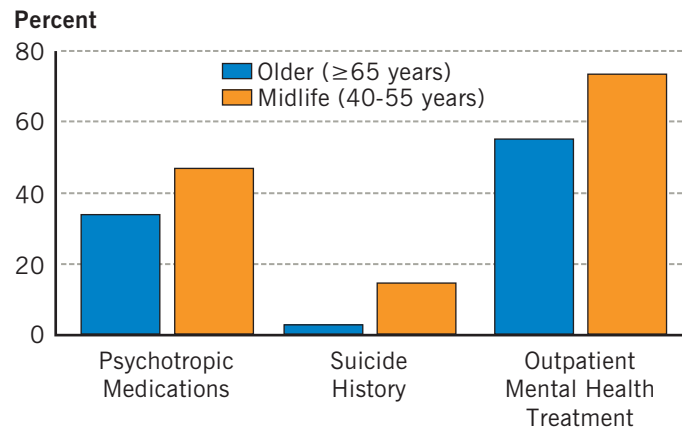
74 was the age of the oldest patient undergoing bariatric surgery in 2010

Less Psychological Risk and Equivalent Weight Loss Outcomes Among Older Bariatric Surgery Candidates

Although severe clinical obesity is dramatically increasing in older adults, many bariatric programs utilize age cut-offs due to concerns about greater perioperative morbidity and mortality. The Behavioral Health team examined differences in psychiatric history and postoperative weight loss between patients at midlife (40-55 years of age) versus older patients (≥ 65 years of age).

Percent Answering Yes to Psychiatric Comorbidities Comparing Older to Midlife Patients (N = 441)

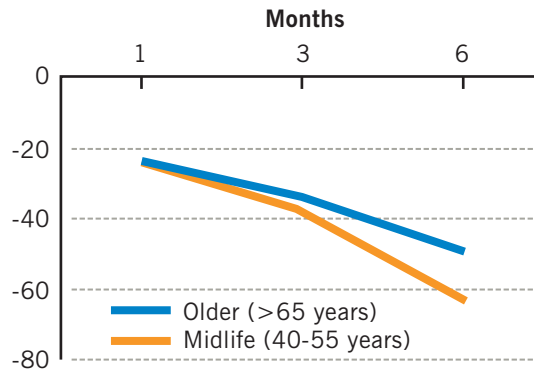
2010



Midlife patients had higher percentages of endorsing mental health comorbidities.

Percent Excess BMI Units Lost in 2 Cohorts
Comparing Older (≥ 65 yrs) to Midlife (40-55 yrs)
Patients (N = 441)

2010



Percent Excess BMI Loss

No differences were found in psychiatric history for follow-up adherence or BMI change at 1-, 3- and 6-months after controlling for baseline weight comparing older to mid-life patients.

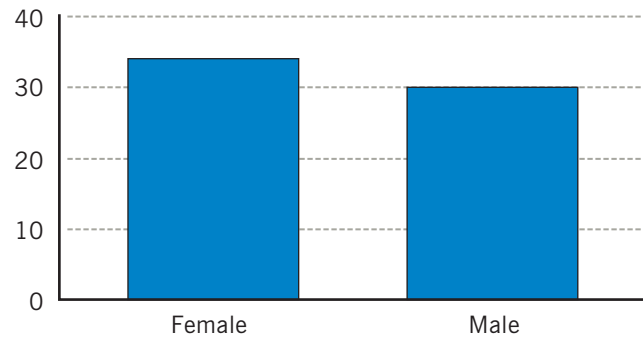
Although medical risk factors may cause concern, the findings indicate that older adults do not demonstrate any increased psychological risk factors over middle-age adults, and may be less likely to have a psychiatric history. Equivalent weight loss benefits were also found.



Acromegaly Patients by Gender (N = 64)

2010

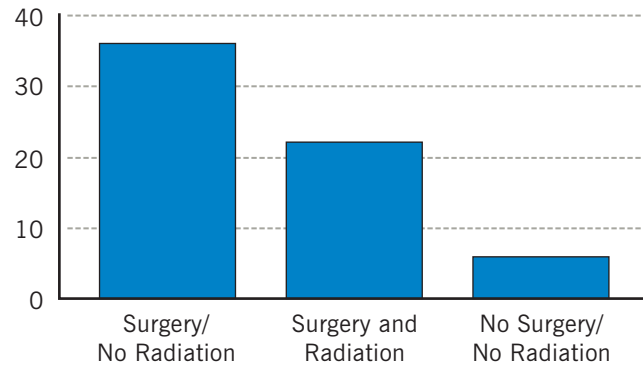
Patients



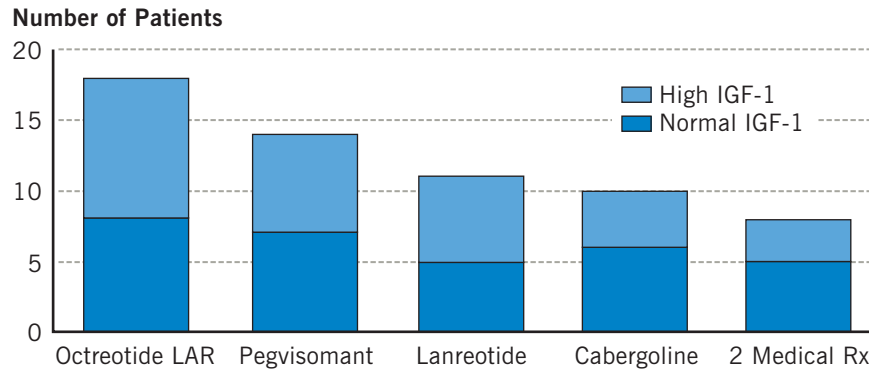
Acromegaly Patients - Treatment Modality (N = 64)

2010

Patients

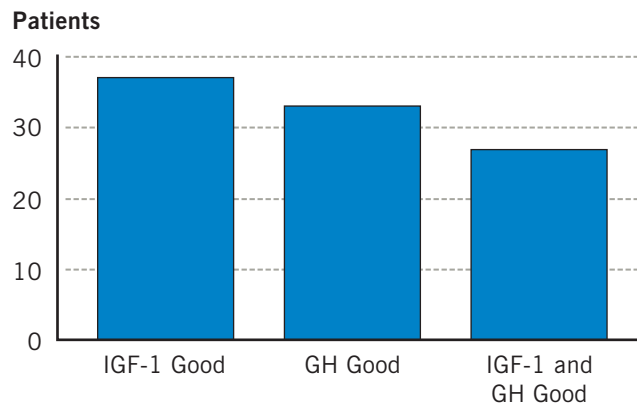


**Acromegaly Patients - IGF-1* Normalization by Treatment Assignment
(N = 64)**



Acromegaly Patients Considered Controlled (N = 64)

2010



*Criteria for control used in this cohort are serum insulin like growth factor-1 (IGF-1) in the normal range and serum growth hormone (GH) <1 ng/mL.

Not all patients had labs available.

GH is not followed in patients receiving Pegvisomant.

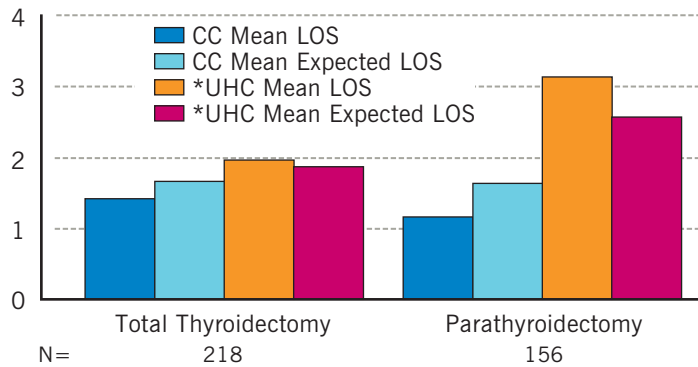
Thyroid and Parathyroid



Endocrine Surgery: Length of Stay Thyroidectomy and Parathyroidectomy

2010

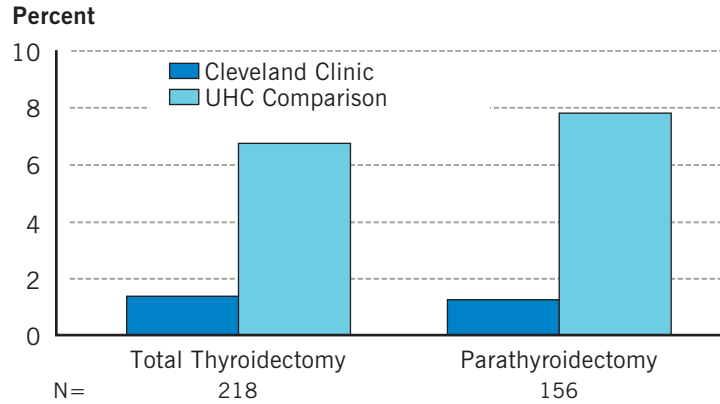
Days



Average observed hospital length of stay for thyroidectomy and parathyroidectomy at Cleveland Clinic was significantly less than expected compared to U.S. News Honor Roll Hospitals subscribing to University HealthSystem's (UHC) Clinical Database.

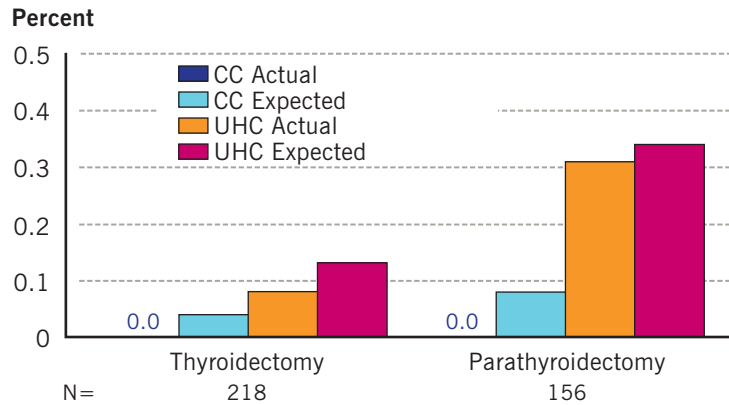
*This information was based in part on the Performance Accelerator Suite Program maintained by the University HealthSystem Consortium (UHC).

Endocrine Surgery: Cases Requiring ICU Stay Thyroidectomy and Parathyroidectomy



Cleveland Clinic endocrine surgery patients required a shorter ICU stay compared to U.S. News Honor Roll Hospitals subscribing to University HealthSystem’s (UHC) Clinical Database.

Endocrine Surgery: Observed Mortality Thyroidectomy and Parathyroidectomy 2010



Endocrine Surgery observed mortality at Cleveland Clinic was better than U.S. News Honor Roll Hospitals subscribing to University HealthSystem’s (UHC) Clinical Database.



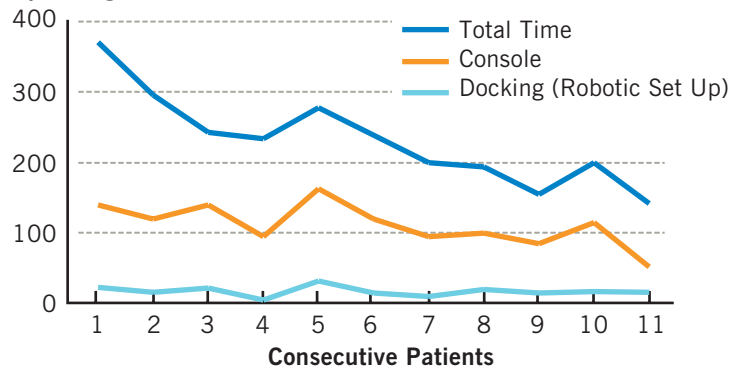
Thyroid and Parathyroid



Endocrine Surgery: Transaxillary Thyroid Robotic Operating Times

2009 – 2010

Operating Time (minutes)



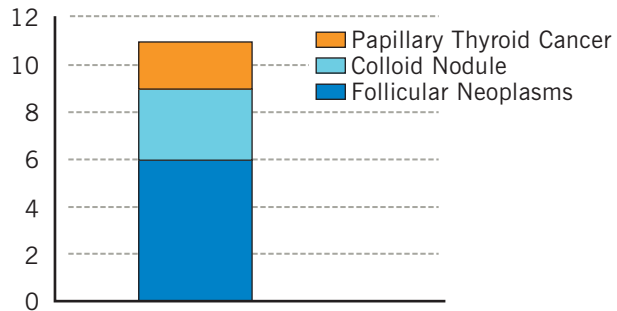
Robotic-assisted transaxillary endocrine surgery was first performed at Cleveland Clinic in 2009. Over the subsequent 21 months, 15 robotic-assisted transaxillary surgeries were performed (11 thyroidectomies and 4 parathyroidectomies). No cases required conversion to conventional open technique and there were no major complications. During the implementation of this new technique, all operations were performed as two-surgeon operations. Operating time has significantly decreased over this period.

Eleven robotic thyroidectomies were performed for symptomatic or diagnostic purposes or for the treatment of malignancy.

Robotic-Assisted Transaxillary Thyroid Surgery Preoperative FNA Diagnosis (N = 11)

2009 – 2010

Patients



Robotic-Assisted Transaxillary Thyroidectomy

Initial Experience

Number of Patients	11
Age Range (years)	31 – 66
Gender	
Female %	100
BMI Range (kg/m ²)	19.9 - 23.7
Nodule Size Range (mm)	10.2 - 31.9
Operation Performed	
Left Hemithyroidectomy	3
Right Hemithyroidectomy	2
Total Thyroidectomy	6
Postoperative Histology	
Benign	6
Carcinoma	5
Operation Time (minutes)	
Total Operation Time	*241.0 ± 61.8
Complications	
Transient Hypocalcaemia	1

*Mean ± Std Dev

Thyroid and Parathyroid



Robotic-Assisted Transaxillary Parathyroidectomy

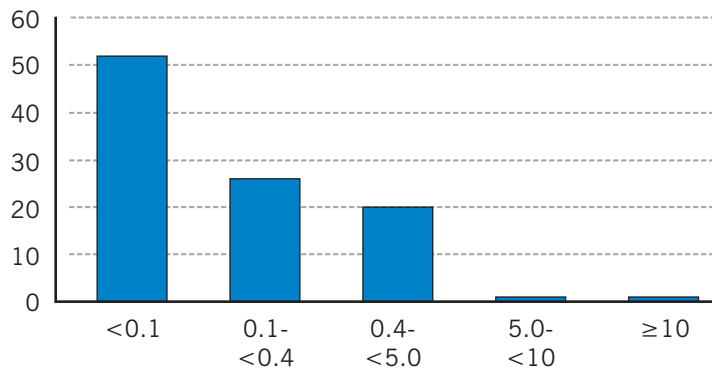
Initial Experience

Number of patients	4
Age Range (years)	34 - 57
Gender	
Female	3
Male	1
BMI Range (kg/m ²)	20.7 - 29.7
Parathyroid Adenoma Size Range (mm)	10.0 - 19.9
Complications	
Wound Infection & Seroma	1

TSH in Thyroid Cancer Patients (N = 623)

2000 – 2010

Percent

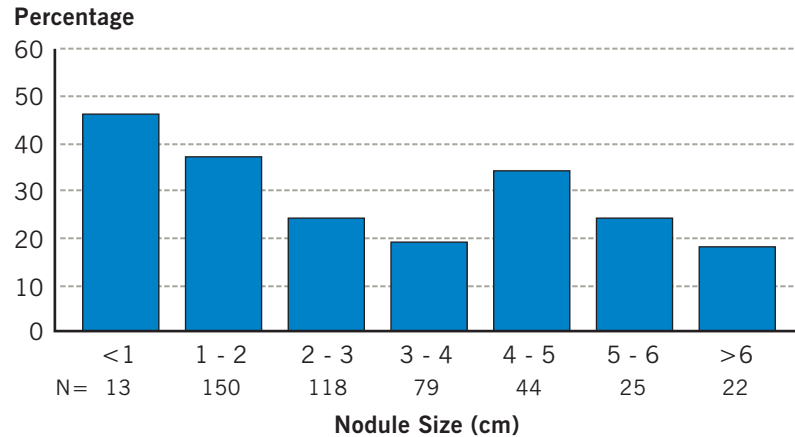


Thyrotropin (TSH) was intentionally suppressed in patients with differentiated thyroid cancer. Seven patients had a TSH above 10. Three of them were purposely made hypothyroid for radioactive iodine ablation.

Surgeon-Performed Fine Needle Aspirations of Thyroid Nodules

Rate of Malignancy by Nodule Size

2000 – 2010



Data from 1000 consecutive FNA-sampled thyroid nodules were evaluated. The series included only FNAs performed by our endocrine surgeons. Histology was available on 451 patients. Bethesda classification was used.

(Ali SZ et al. The Bethesda System for Reporting Thyroid Cytopathology Definitions, Criteria and Explanatory Notes. 1st edition. Springer).

FNA: fine needle aspiration.

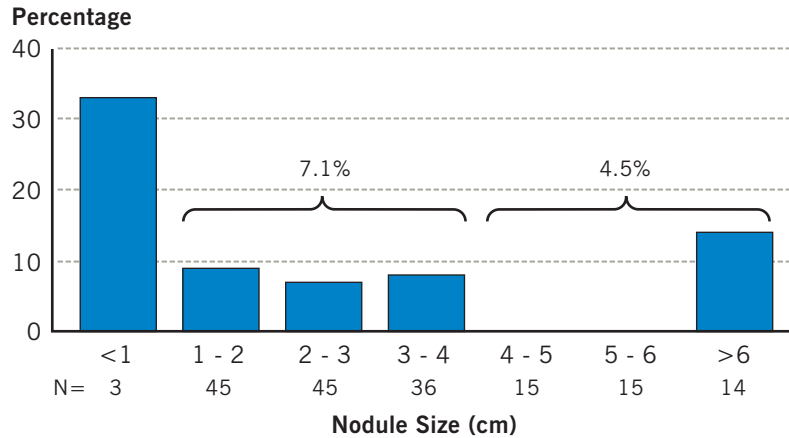


Thyroid and Parathyroid



Nodule Size and Percent of Nodules With Benign FNA but Cancer on Final Histology (False Negative FNA)

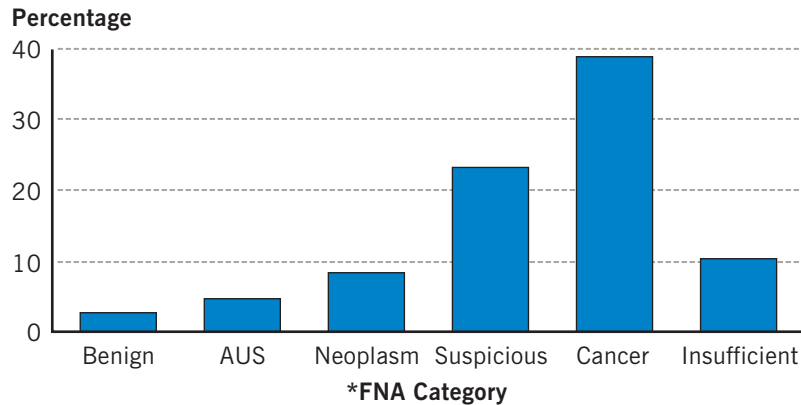
2000 – 2010



Percentages above the brackets indicate the usual false negative rates for the 1-4 cm category and the 4-6 cm category respectively. FNA: fine needle aspiration.

Rate of Malignancy by FNA Category *(N = 451)

2000 – 2010



FNA: fine needle aspiration.

AUS: Atypia of Unknown Significance.

FNA category: findings on cytology prior to surgery.

Rate of malignancy: how often cancer was found when the thyroid was removed.

*Using the Bethesda classification.

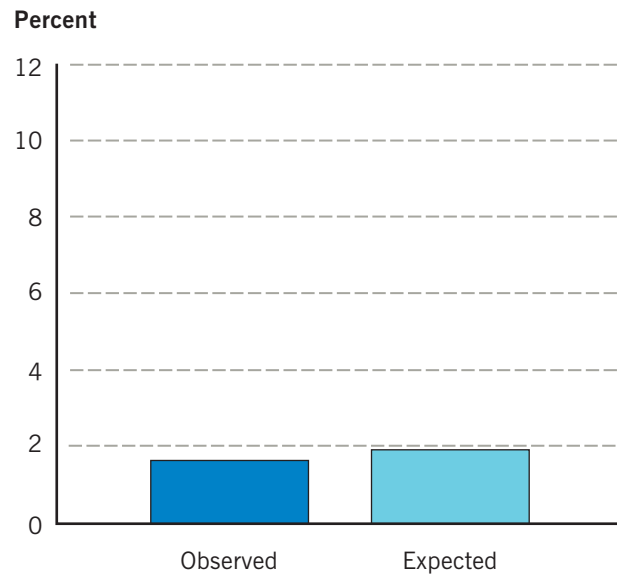
Surgical Quality Improvement

National Surgical Quality Improvement Program

The American College of Surgeons' National Surgical Quality Improvement Program (NSQIP) is a national program that objectively measures and reports risk-adjusted surgical outcomes based on a defined sampling and abstraction methodology. Cleveland Clinic has participated in multispecialty NSQIP since May 2008, and the outcome data below reflect our surgical cases between July 1, 2009, and June 30, 2010.

Overall Multispecialty 30-Day Mortality (N = 4,518)

July 2009 – June 2010



Overall multispecialty mortality was lower than expected; however, the difference was not statistically significant.

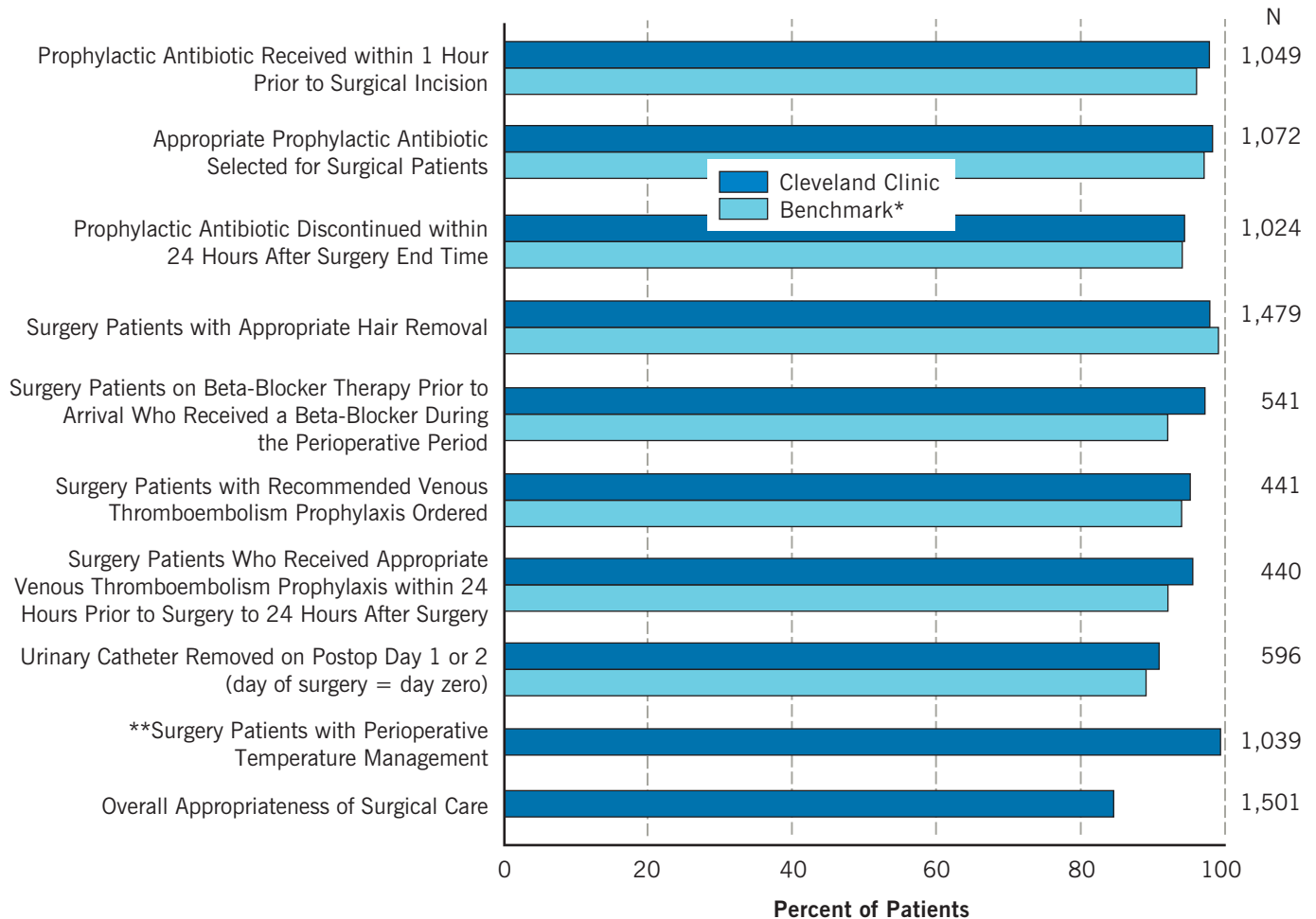


Surgical Care Improvement Program (SCIP) — National Hospital Quality Measures and Overall Appropriateness of Care

2010

Process Measures (often referred to as “core” measures) Surgical care performance measures are available online at hospitalcompare.hhs.gov, a consumer-oriented website hosted by the Centers for Medicare & Medicaid Services (CMS). Hospitals submit surgery process-of-care data that show how consistently recommended care was provided to adult patients, irrespective of payer. Cleveland Clinic’s National Hospital Quality Measure surgical care data appear on the opposite page.

Appropriateness of Care Measure To supplement process-specific measures, Cleveland Clinic generates “appropriateness of care” data. We calculate how often we provided every recommended surgical care process intervention for which each individual patient was eligible. The results, also shown on the opposite page, are generated on a per-patient, “all or nothing” basis.



Cleveland Clinic data source: hospitalcompare.hhs.gov

Visit clevelandclinic.org/QPR to view Cleveland Clinic's current Quality Performance Report.

* Benchmarks: National average for discharges, April 2009 through June 2010, hospitalcompare.hhs.gov (except Urinary Catheter Removal, January through March 2010)

** Applies to all surgical patients, irrespective of age or payer; includes pediatric patients

Notes: A national average for Perioperative Temperature is not available.

An overall "Appropriateness of Care" national average is not available for the group of surgical care measures shown above.

National Hospital Quality Measure (NHQM) volumes are based on NHQM inclusion/exclusion criteria and sampling methodologies.

Patient Experience

“Patients First” is the guiding principle of Cleveland Clinic. Patient experience is a key component of Cleveland Clinic’s strategic plan to achieve a coordinated delivery model that integrates patient and family-centered care with clinical outcomes, quality, safety and employee experience.

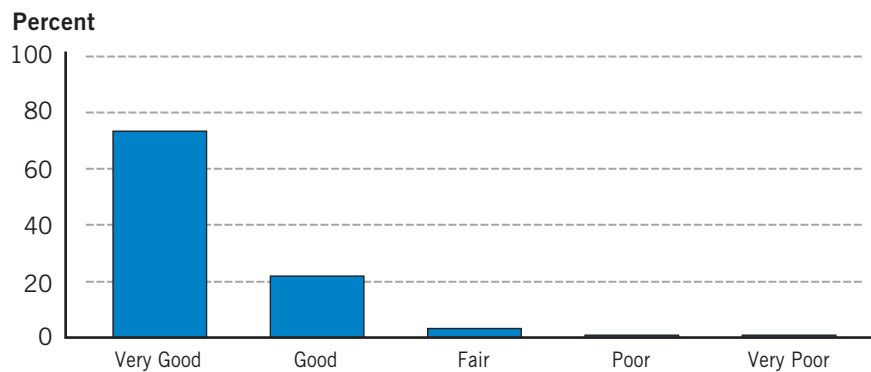
The Office of Patient Experience’s mission is to ensure consistent, patient-centered care by partnering with caregivers to exceed the expectations of patients and families. Programs and services include:

- Expertise for critical initiatives throughout the organization to ensure the consistent delivery of patient-centered care
- Patient satisfaction data analysis, HCAHPS education and resources
- Identification and sharing of sustainable best practices
- Support of employee experience and recognition initiatives

- Customer service education programs, including the Respond with H.E.A.R.T.® service recovery program, to positively impact the Cleveland Clinic culture and support caregivers in providing outstanding service to patients, families and colleagues
- Personalized, holistic Healing Services for patients, families and employees including light massage, Reiki, Healing Touch™, reflexology, personal aromatherapy, guided imagery, spiritual support, Code Lavender first-response holistic care service and others
- Health literacy education and solutions
- Voice of the Patient Advisory Councils, an advisory resource that empowers patients and families to take an active role in improving the patient experience by providing real-time feedback and creative solutions to specific challenges
- Ombudsman Office, which serves as a centralized complaint center

Outpatient – Endocrinology & Metabolism Institute

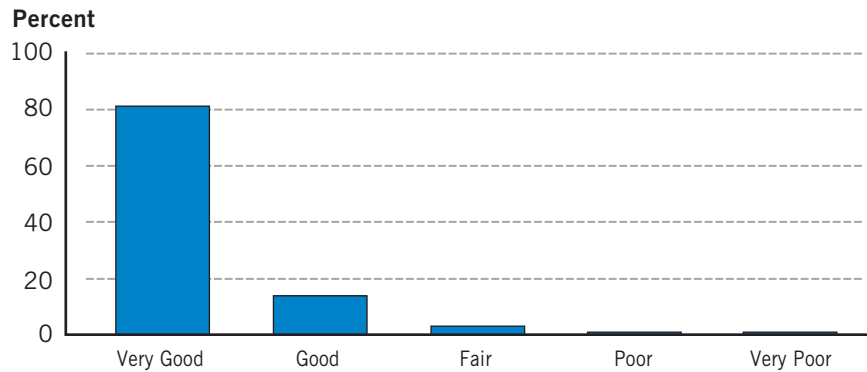
Overall Rating of Outpatient Care and Services During Outpatient Visit (N = 567)
2010



Source: Press Ganey, a national hospital survey vendor

Rating of Outpatient Care Provider (N = 567)

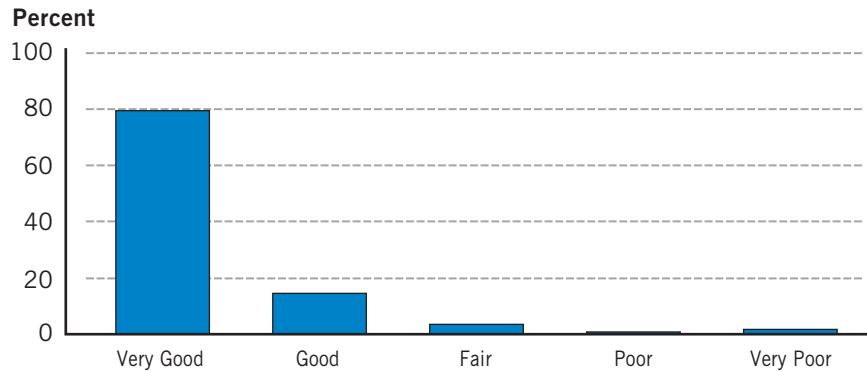
2010



Source: Press Ganey, a national hospital survey vendor

Likelihood of Recommending Outpatient Care Provider (N = 567)

2010



Source: Press Ganey, a national hospital survey vendor

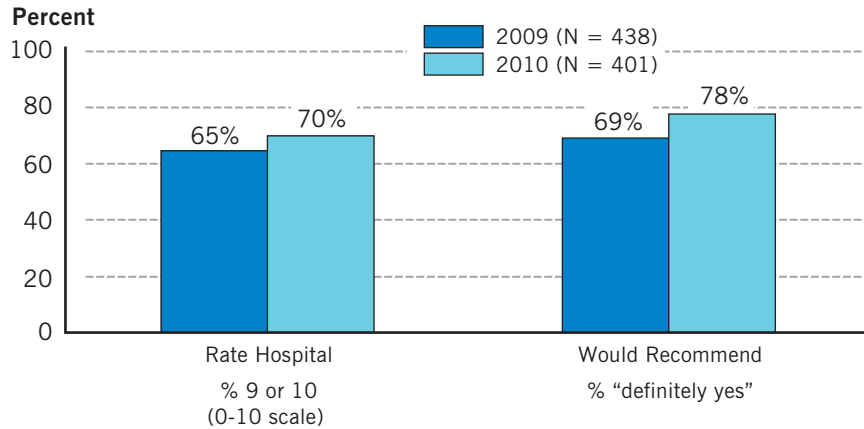
Patient Experience

Inpatient – Endocrinology & Metabolism Institute

With the support of the Centers for Medicare & Medicaid Services (CMS) and its partner organizations, the first national standard patient experience hospital survey (HCAHPS) was implemented in late 2006. Results collected for reporting are available at hospitalcompare.hhs.gov.

HCAHPS Overall Assessment

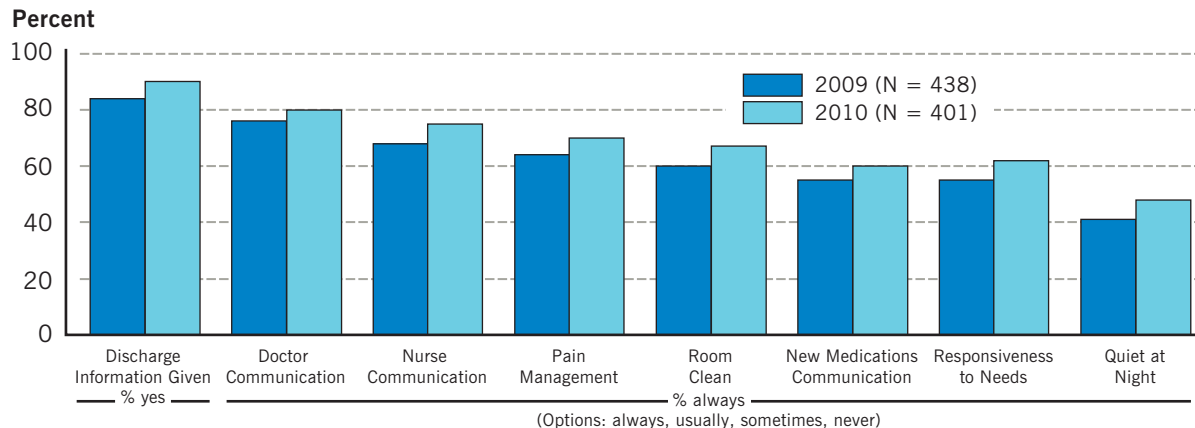
2009 – 2010



Source: Press Ganey, a national hospital survey vendor

HCAHPS Domains of Care

2009 – 2010



Source: Press Ganey, a national hospital survey vendor



Cleveland Clinic Experience — Our Mission, Vision and Values

In 2010, the Office of Patient Experience worked in collaboration with several departments, including the Office of Learning and Performance Development, to introduce “Cleveland Clinic Experience” to every employee across the organization. Cleveland Clinic Experience is an initiative designed to enhance and transform the culture at Cleveland Clinic by integrating exceptional employee and patient experiences. Interactive learning sessions taught caregivers the Cleveland Clinic expected service behaviors, how to positively respond to patient and family concerns, and what it means to live the Cleveland Clinic mission, vision and values on the job every day.

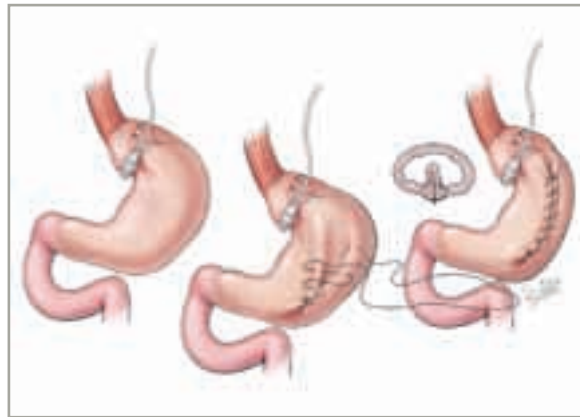
Robotic Parathyroidectomy

Endocrine surgeons in Cleveland Clinic's Endocrinology & Metabolism Institute have pioneered an alternative technique for removing the parathyroid glands in patients with primary hyperparathyroidism. The robotic technique avoids making an incision in the neck. The procedure is done through the axilla by creating a flap between the axilla and the central neck. Through a 6-cm axillary incision, the parathyroid adenoma is removed robotically. The patient stays overnight in the hospital. Four cases have been performed in 2010 using this technique, and all patients were cured. Candidates for the robotic procedure are thin patients with a single parathyroid adenoma that has been imaged preoperatively. The project has been driven by endocrine surgeons Eren Berber, MD, and Allan Siperstein, MD.



Banded Gastric Plication

Gastric plication is a new bariatric procedure designed to reduce the volume of the stomach and achieve weight loss for the severely obese patient. Surgeons in Cleveland Clinic's Bariatric and Metabolic Institute have helped to pioneer this procedure and are now combining gastric plication with gastric banding in selected patients. The addition of gastric plication to the adjustable gastric band is designed to promote earlier weight loss than the band alone can achieve. Placement of the band above the plicated stomach will allow for further adjustments in gastric restriction to maintain long-term weight loss. This novel approach remains investigational and is currently being offered as an alternative for carefully selected patients.



Bariatric Single-Site Surgery

Operative approaches for treatment of severe obesity continue to evolve. The application of laparoscopic surgery has allowed patients to realize the significant medical benefits of bariatric surgery while simultaneously decreasing postoperative pain, hospital length of stay, and complications associated with surgery. As we continue to try to improve patient outcomes, surgeons in the Bariatric and Metabolic Institute at Cleveland Clinic are now performing these procedures through smaller, single incisions. This new approach, termed single-site surgery, results in less scarring for patients and may have other potential benefits as well. Using advanced cameras, unique instruments and robotic platforms, our surgeons continue to perform advanced procedures with the goal of providing better care for our patients.



Endocrine Surgery Intake Process Improvement

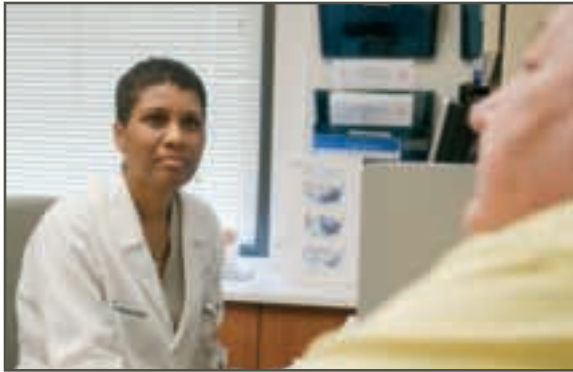
The length of time from patient phone call to initial consult has had a high degree of variability. Inefficiencies stemming from multiple phone calls, time-record collection and batching, interdisciplinary communication and scheduling protocols have affected the lead time from phone call to surgical consult to surgical scheduling. This has directly impacted access to care, patient satisfaction, cancellation rates and resource utilization.

To improve lead time and communication, the team implemented LEAN process improvement tools, which included a patient flow analysis, communication planning, standard work sequencing and visual control development. Several collaborative team sessions were held to create an ideal process and implementation plan. The following solutions were implemented:

- Continuous, uninterrupted work flow, from patient call through scheduling appointments
- Improved communication to patients about individual testing requisites
- Defined, documented standards of work flow for secretaries, nurses and schedulers
- Tools to facilitate communication about the completion of patient testing

Capability and Culture:

Since implementation, the team has continued to track the average time from phone call to scheduled appointment and from phone call to consult, as well as cancellation rates and total patient visits. Positive comments from the team illustrate a new dedication to optimal patient care in the spirit of continuous improvement, along with a commitment to work together to address any challenges that may arise.



Weight Sensitivity: Putting Patients First

Overweight and obese patients are at risk for weight stigmatization and weight bias. Research demonstrates a linear relationship between body mass index and avoidance of medical care — oftentimes due to concerns about stigmatizing experiences. Over the last several years, the Behavioral Health team in the Bariatric and Metabolic Institute has conducted sensitivity training sessions for caregivers within our department and for many other departments that interact with our patients.

In 2010, the institute's behavioral health specialist, Leslie Heinberg, PhD, MA, worked with the Cleveland Clinic Center for Online Medical Education and Training to develop weight sensitivity instruction for all Cleveland Clinic employees. This brief tutorial will help to ensure that patients of all sizes receive Cleveland Clinic's world-class patient experience. By the end of 2010, approximately 1,300 employees had completed training. The majority (78 percent) of employees were pleased with the training experience and 83.3 percent "agreed" or "strongly agreed" that the education would be helpful in applying skills and knowledge to their jobs.

Body Mass Index: The '5th Vital Sign'

The Bariatric and Metabolic Institute launched a pilot project utilizing the EPIC electronic medical record (EMR) to create an alert making the Body Mass Index (BMI) a "5th vital sign." Spearheaded by Karen Cooper, DO, the EMR alerts providers at the point of care when adult patients between 18 and 65 years of age have a BMI of 40 or greater.

The goals are:

- To improve screening of patients at high risk of overweight, obesity and associated comorbid conditions
- To improve patient and provider education
- To assist with management of obesity

This project has been a work in progress for almost two years. The pilot will run in selected departments for six months in hopes of capturing outcomes data: frequency of alert firing, responses to the alerts, referral volume (requested versus actually scheduled consults), number of patients seen in the Bariatric Outpatient Clinic, and number of consulted patients showing at least a 10- to 15-pound weight loss over time.

Bariatric and Metabolic Institute Website: Paper to Online Intake Questionnaire

A new and improved website for Cleveland Clinic's Bariatric and Metabolic Institute went live in May 2010 with the overall goal of streamlining and improving the intake process for bariatric surgery and medical weight management patients. The website replaces paper documentation with online functionality, fully automating the Initial Patient Worksheet, a questionnaire used to capture patient demographics, insurance and information about the patient's medical history, and decreasing turnaround time for scheduling patients for bariatric workshops by about two weeks. Overall, the new site has had a major impact, allowing staff to leverage technology to minimize the time required to bring patients into and help them proceed through the bariatric program after the initial contact and inquiry.

www.clevelandclinic.org/weightloss

Behavioral Health Options for Nonsurgical Weight Management

In 2010, we expanded our bariatric Behavioral Health Program by providing a non-surgical weight management group for patients actively pursuing medical weight management in Cleveland Clinic's Bariatric and Metabolic Institute. The group, called "Changing Habits, Attitudes, New Goals, and Exercise" (CHANGE), educates patients on cognitive behavioral aspects of healthy eating and activity, and identifies strategies for making healthy lifestyle changes and for coping with challenges. The addition of this group has improved access for both non-surgical and surgical weight management patients awaiting appointments with BMI psychologists.



Selected Publications



Endocrinology & Metabolism Institute staff authored more than **100** publications in 2010. For a complete list go to clevelandclinic.org/quality/outcomes.

Bariatric & Metabolic Institute

Alasfar F, Sabnis A, Liu R, Chand B. Reduction of circular stapler-related wound infection in patients undergoing laparoscopic Roux-en-Y gastric bypass, Cleveland Clinic technique. *Obes Surg*. 2010 Feb;20(2):168-172.

Alasfar F, Chand B. Intraoperative endoscopy for laparoscopic Roux-en-Y gastric bypass: leak test and beyond. *Surg Laparosc Endosc Percutan Tech*. 2010 Dec;20(6):424-427.

Alkhoury N, Gornicka A, Berk MP, Thapaliya S, Dixon LJ, Kashyap S, Schauer PR, Feldstein AE. Adipocyte apoptosis, a link between obesity, insulin resistance, and hepatic steatosis. *J Biol Chem*. 2010 Jan 29;285(5):3428-3438.

Attaluri V, Lebeis C, Brethauer S, Rosenblatt S. Advanced laparoscopic techniques significantly improve function of peritoneal dialysis catheters. *J Am Coll Surg*. 2010 Dec;211(6):699-704.

Bell LN, Temm CJ, Saxena R, Vuppalanchi R, Schauer P, Rabinovitz M, Krasinskas A, Chalasani N, Mattar SG. Bariatric surgery-induced weight loss reduces hepatic lipid peroxidation levels and affects hepatic cytochrome P-450 protein content. *Ann Surg*. 2010 Jun;251(6):1041-1048.

Berger NK, Carr JJ, Erickson J, Gourash WF, Muenzen P, Smolenak L, Tea CG, Thomas K. Path to bariatric nurse certification: the practice analysis. *Surg Obes Relat Dis*. 2010 Jul-Aug;6(4):399-407.

Brethauer SA. Comment on: Initial human experience with restrictive duodenal-jejunal bypass liner for treatment of morbid obesity. *Surg Obes Relat Dis*. 2010 Mar 4;6(2):131.

Brethauer SA, Chand B, Schauer PR, Thompson CC. Transoral gastric volume reduction for weight management: technique and feasibility in 18 patients. *Surg Obes Relat Dis*. 2010 Nov-Dec;6(6):689-694.

- Gatmaitan P, Huang H, Talarico J, Moustarah F, Kashyap S, Kirwan JP, Schauer PR, Brethauer SA. Pancreatic islet isolation after gastric bypass in a rat model: technique and initial results for a promising research tool. *Surg Obes Relat Dis*. 2010 Sep-Oct;6(5):532-537.
- Gill IS, Advincula AP, Aron M, Cadeddu J, Canes D, Curcillo PG, II, Desai MM, Evanko JC, Falcone T, Fazio V, Gettman M, Gumbs AA, Haber GP, Kaouk JH, Kim F, King SA, Ponsky J, Remzi F, Rivas H, Rosemurgy A, Ross S, Schauer P, Sotelo R, Speranza J, Sweeney J, Teixeira J. Consensus statement of the consortium for laparoendoscopic single-site surgery. *Surg Endosc*. 2010 Apr;24(4):762-768.
- Heinberg LJ, Ashton K. History of substance abuse relates to improved postbariatric body mass index outcomes. *Surg Obes Relat Dis*. 2010 Jul-Aug;6(4):417-421.
- Heinberg LJ, Ashton K, Windover A. Moving beyond dichotomous psychological evaluation: the Cleveland Clinic Behavioral Rating System for weight loss surgery. *Surg Obes Relat Dis*. 2010 Mar 4;6(2):185-190.
- Heinberg LJ, Kutchman EM, Berger NA, Lawhun SA, Cuttler L, Seabrook RC, Horwitz SM. Parent involvement is associated with early success in obesity treatment. *Clin Pediatr (Phila)*. 2010 May;49(5):457-465.
- Heinberg LJ, Keating K, Simonelli L. Discrepancy between ideal and realistic goal weights in three bariatric procedures: who is likely to be unrealistic? *Obes Surg*. 2010 Feb;20(2):148-153.
- Jewett LR, Hudson M, Haythornthwaite JA, Heinberg L, Wigley FM, Baron M, Thombs BD. Development and validation of the brief-satisfaction with appearance scale for systemic sclerosis. *Arthritis Care Res (Hoboken)*. 2010 Dec;62(12):1779-1786.
- Kaouk JH, Haber GP, Goel RK, Crouzet S, Brethauer S, Firoozi F, Goldman HB, White WM. Pure natural orifice transluminal endoscopic surgery (NOTES) transvaginal nephrectomy. *Eur Urol*. 2010 Apr;57(4):723-726.
- Karmali S, Schauer P, Birch D, Sharma AM, Sherman V. Laparoscopic sleeve gastrectomy: an innovative new tool in the battle against the obesity epidemic in Canada. *Can J Surg*. 2010 Apr;53(2):126-132.
- Kashyap SR, Gatmaitan P, Brethauer S, Schauer P. Bariatric surgery for type 2 diabetes: Weighing the impact for obese patients. *Cleve Clin J Med*. 2010 Jul;77(7):468-476.
- Kashyap SR, Daud S, Kelly KR, Gastaldelli A, Win H, Brethauer S, Kirwan JP, Schauer PR. Acute effects of gastric bypass versus gastric restrictive surgery on beta-cell function and insulinotropic hormones in severely obese patients with type 2 diabetes. *Int J Obes (Lond)*. 2010 Mar;34(3):462-471.
- Kashyap SR, Bhatt DL, Schauer PR. Bariatric surgery vs. advanced practice medical management in the treatment of type 2 diabetes mellitus: rationale and design of the Surgical Therapy And Medications Potentially Eradicate Diabetes Efficiently trial (STAMPEDE). *Diabetes Obes Metab*. 2010 May;12(5):452-454.
- Kelly KR, Kashyap SR, O'Leary VB, Major J, Schauer PR, Kirwan JP. Retinol-binding protein 4 (RBP4) protein expression is increased in omental adipose tissue of severely obese patients. *Obesity (Silver Spring)*. 2010 Apr;18(4):663-666.
- Khwaja HA, Bonanomi G. Bariatric surgery: techniques, outcomes and complications. *Curr Anaesth Crit Care*. 2010 Feb;21(1):31-38.
- Kroh M, Brethauer S, Duellely N, Rogula T, Schauer P, Chand B. Surgeon-performed fluoroscopy conducted simultaneously during all laparoscopic adjustable gastric band adjustments results in significant alterations in clinical decisions. *Obes Surg*. 2010 Feb;20(2):188-192.
- Lott DG, Shipchandler TZ, Dan O, Lorenz RR, Strome M. A new mouse laryngeal transplantation rejection grading system. *Laryngoscope*. 2010 Jan;120(1):39-43.

Selected Publications

Lott DG, Dan O, Lu L, Strome M. Long-term laryngeal allograft survival using low-dose everolimus. *Otolaryngol Head Neck Surg.* 2010 Jan;142(1):72-78.

Lott DG, Dan O, Lu L, Strome M. Decoy NF-kappaB fortified immature dendritic cells maintain laryngeal allograft integrity and provide enhancement of regulatory T cells. *Laryngoscope.* 2010 Jan;120(1):44-52.

Navaneethan SD, Kelly KR, Sabbagh F, Schauer PR, Kirwan JP, Kashyap SR. Urinary albumin excretion, HMW adiponectin, and insulin sensitivity in type 2 diabetic patients undergoing bariatric surgery. *Obes Surg.* 2010 Mar;20(3):308-315.

Ransom D, Ashton K, Windover A, Heinberg L. Internal consistency and validity assessment of SCL-90-R for bariatric surgery candidates. *Surg Obes Relat Dis.* 2010 Nov-Dec;6(6):622-627.

Rubino F, Schauer PR, Kaplan LM, Cummings DE. Metabolic surgery to treat type 2 diabetes: clinical outcomes and mechanisms of action. *Annu Rev Med.* 2010; 61:393-411.

Rubino F, Kaplan LM, Schauer PR, Cummings DE. The Diabetes Surgery Summit consensus conference: recommendations for the evaluation and use of gastrointestinal surgery to treat type 2 diabetes mellitus. *Ann Surg.* 2010 Mar;251(3):399-405.

Semanscin-Doerr DA, Windover A, Ashton K, Heinberg LJ. Mood disorders in laparoscopic sleeve gastrectomy patients: does it affect early weight loss? *Surg Obes Relat Dis.* 2010 Mar 4;6(2):191-196.

Siram S, Oyetunji T, Johnson SM, Khoury AL, White PM, Chang DC, Greene WR, Frederick WA. Predictors for survival of penetrating trauma using emergency department thoracotomy in an urban trauma center: the Cardiac Instability Score. *J Natl Med Assoc.* 2010 Feb;102(2):126-130.

Thomas S, Schauer P. Bariatric surgery and the gut hormone response. *Nutr Clin Pract.* 2010 Apr;25(2):175-182.

Wiese DM, Isaacson JH, Windover A, Pien L, Larson B. A comprehensive communication skills teaching elective for senior medical students: a pilot program. *Med Teach.* 2010 Jan;32(1):93-94.

Windover AK, Merrell J, Ashton K, Heinberg LJ. Prevalence and psychosocial correlates of self-reported past suicide attempts among bariatric surgery candidates. *Surg Obes Relat Dis.* 2010 Nov-Dec;6(6):702-706.

Center for Endocrine Surgery

Akyildiz HY, Mitchell J, Milas M, Siperstein A, Berber E. Laparoscopic radiofrequency thermal ablation of neuroendocrine hepatic metastases: Long-term follow-up. *Surgery.* 2010 Dec;148(6):1288-1293.

Berber E, Akyildiz HY, Aucejo F, Gunasekaran G, Chalikonda S, Fung J. Robotic versus laparoscopic resection of liver tumours. *HPB (Oxford).* 2010 Oct;12(8):583-586.

Berber E, Heiden K, Akyildiz H, Milas M, Mitchell J, Siperstein A. Robotic transaxillary thyroidectomy: report of 2 cases and description of the technique. *Surg Laparosc Endosc Percutan Tech.* 2010 Apr;20(2):e60-e63.

Berber E, Mitchell J, Milas M, Siperstein A. Robotic posterior retroperitoneal adrenalectomy: operative technique. *Arch Surg.* 2010 Aug;145(8):781-784.

Berber E, Siperstein A. Laparoscopic radiofrequency thermal ablation of adrenal tumors: technical details. *Surg Laparosc Endosc Percutan Tech.* 2010 Feb;20(1):58-62.

Flechner SM, Berber E, Askar M, Stephany B, Agarwal A, Milas M. Allotransplantation of cryopreserved parathyroid tissue for severe hypocalcemia in a renal transplant recipient. *Am J Transplant.* 2010 Sep;10(9):2061-2065.

Mazzaglia PJ, Milas M, Berber E, Siperstein A, Monchik JM. Normalization of 2-week postoperative parathyroid hormone values in patients with primary hyperparathyroidism: four-gland exploration compared to focused-approach surgery. *World J Surg.* 2010 Jun;34(6):1318-1324.

Milas M, Shin J, Gupta M, Novosel T, Nasr C, Brainard J, Mitchell J, Berber E, Siperstein A. Circulating thyrotropin receptor mRNA as a novel marker of thyroid cancer: clinical applications learned from 1758 samples. *Ann Surg.* 2010 Oct;252(4):643-651.

Pantalone KM, Gopan T, Remer EM, Faiman C, Ioachimescu AG, Levin HS, Siperstein A, Berber E, Shepardson LB, Bravo EL, Hamrahian AH. Change in adrenal mass size as a predictor of a malignant tumor. *Endocr Pract.* 2010 Jul-Aug;16(4):577-587.

Rodriguez J, Tellioglu G, Siperstein A, Berber E. Myoglobinuria after laparoscopic radiofrequency ablation of liver tumors. *J Gastrointest Surg.* 2010 Apr;14(4):664-667.

Shin J, Chute D, Milas M, Mitchell J, Siperstein A, Berber E. A rare case of chronic lymphocytic leukemia/small lymphocytic lymphoma presenting in the thyroid gland. *Thyroid.* 2010 Sep;20(9):1019-1023.

Shin JJ, Milas M. Detection of disease recurrence in differentiated thyroid cancer. *Minerva Chir.* 2010 Feb;65(1):101-116.





Endocrinology

Abdelmalak B, Abdelmalak JB, Knittel J, Christiansen E, Mascha E, Zimmerman R, Argaliou M, Foss J. The prevalence of undiagnosed diabetes in non-cardiac surgery patients, an observational study. *Can J Anaesth*. 2010 Dec;57(12):1058-1064.

Alkhoury N, Gornicka A, Berk MP, Thapaliya S, Dixon LJ, Kashyap S, Schauer PR, Feldstein AE. Adipocyte apoptosis, a link between obesity, insulin resistance, and hepatic steatosis. *J Biol Chem*. 2010 Jan 29;285(5):3428-3438.

Bhatwadekar AD, Guerin EP, Jarajapu YPR, Caballero S, Sheridan C, Kent D, Kennedy L, Lansang MC, Ruscetti FW, Pepine CJ, Higgins PJ, Bartelmez SH, Grant MB. Transient inhibition of transforming growth factor-beta1 in human diabetic CD34+ cells enhances vascular reparative functions. *Diabetes*. 2010 Aug;59(8):2010-2019.

Faiman B, Licata AA. New tools for detecting occult monoclonal gammopathy, a cause of secondary osteoporosis. *Cleve Clin J Med*. 2010 Apr;77(4):273-278.

Gatmaitan P, Huang H, Talarico J, Moustarah F, Kashyap S, Kirwan JP, Schauer PR, Brethauer SA. Pancreatic islet isolation after gastric bypass in a rat model: technique and initial results for a promising research tool. *Surg Obes Relat Dis*. 2010 Sep-Oct;6(5):532-537.

Grover V, Licata AA. Gastrointestinal side effects of bisphosphonates obscuring vascular disease. *Endocr Pract*. 2010 Mar-Apr;16(2):334.

Harvey A, Pasiaka JL. Sporadic medullary thyroid cancer. *Cancer Treat Res*. 2010;153:57-74.

Kashyap SR, Gatmaitan P, Brethauer S, Schauer P. Bariatric surgery for type 2 diabetes: Weighing the impact for obese patients. *Cleve Clin J Med*. 2010 Jul;77(7):468-476.

- Kashyap SR, Daud S, Kelly KR, Gastaldelli A, Win H, Brethauer S, Kirwan JP, Schauer PR. Acute effects of gastric bypass versus gastric restrictive surgery on beta-cell function and insulinotropic hormones in severely obese patients with type 2 diabetes. *Int J Obes (Lond)*. 2010 Mar;34(3):462-471.
- Kashyap SR, Bhatt DL, Schauer PR. Bariatric surgery vs. advanced practice medical management in the treatment of type 2 diabetes mellitus: rationale and design of the Surgical Therapy And Medications Potentially Eradicate Diabetes Efficiently trial (STAMPEDE). *Diabetes Obes Metab*. 2010 May;12(5):452-454.
- Kashyap SR. In reply [Bariatric surgery, vitamin C, and kidney stones]. *Cleve Clin J Med*. 2010 Dec;77(12):844.
- Kashyap SR, Roman LJ, Mandarino L, Defronzo R, Bajaj M. Hypoadiponectinemia is closely associated with impaired nitric oxide synthase activity in skeletal muscle of type 2 diabetic subjects. *Metab Syndr Relat Disord*. 2010 Oct;8(5):459-463.
- Kelly KR, Kashyap SR, O'Leary VB, Major J, Schauer PR, Kirwan JP. Retinol-binding protein 4 (RBP4) protein expression is increased in omental adipose tissue of severely obese patients. *Obesity (Silver Spring)*. 2010 Apr;18(4):663-666.
- Kennedy L, Pilar Solano M, Meneghini L, Lo M, Cohen MP. Anti-glycation and anti-albuminuric effects of GLY-230 in human diabetes. *Am J Nephrol*. 2010;31(2):110-116.
- Li-Ng M, Verbalis JG. Conivaptan: Evidence supporting its therapeutic use in hyponatremia. *Core Evid*. 2010;4:83-92.
- Licata AA. Current concepts in corticosteroid-induced bone disease. *J Musculoskelet Med*. 2010 Aug;27(8):295-304.
- Marko NF, Hamrahian AH, Weil RJ. Immediate postoperative cortisol levels accurately predict postoperative hypothalamic-pituitary-adrenal axis function after transsphenoidal surgery for pituitary tumors. *Pituitary*. 2010 Sep;13(3):249-255.
- Mehta A. Management of cardiovascular risk associated with insulin resistance, diabetes, and the metabolic syndrome. *Postgrad Med*. 2010 May;122(3):61-70.
- Mihailescu DV, Mustafa N, Barengolts E, Blumenthal S, Hatipoglu B. Papillary thyroid cancer presenting as a neck mass and massive pleural effusion. *Endocrinologist*. 2010 Jan;20(1):10-12.
- Milas M, Shin J, Gupta M, Novosel T, Nasr C, Brainard J, Mitchell J, Berber E, Siperstein A. Circulating thyrotropin receptor mRNA as a novel marker of thyroid cancer: clinical applications learned from 1758 samples. *Ann Surg*. 2010 Oct;252(4):643-651.
- Mulligan GB, Licata A. Taking vitamin D with the largest meal improves absorption and results in higher serum levels of 25-hydroxyvitamin D. *J Bone Miner Res*. 2010 Apr;25(4):928-930.
- Navaneethan SD, Kelly KR, Sabbagh F, Schauer PR, Kirwan JP, Kashyap SR. Urinary albumin excretion, HMW adiponectin, and insulin sensitivity in type 2 diabetic patients undergoing bariatric surgery. *Obes Surg*. 2010 Mar;20(3):308-315.
- Nyalakonda K, Sharma T, Ismail-Beigi F. Preservation of Beta-cell function in type 2 diabetes. *Endocr Pract*. 2010 Nov-Dec;16(6):1038-1055.
- Olansky L. Do incretin-based therapies cause acute pancreatitis? *J Diabetes Sci Technol*. 2010 Jan 1;4(1):228-229.
- Olansky L, Kennedy L. Finger-stick glucose monitoring: issues of accuracy and specificity. *Diabetes Care*. 2010 Apr;33(4):948-949.
- Olansky L. Q: Do incretin drugs for type 2 diabetes increase the risk of acute pancreatitis? *Cleve Clin J Med*. 2010 Aug;77(8):503-505.

Selected Publications

Pantalone KM, Gopan T, Remer EM, Faiman C, Ioachimescu AG, Levin HS, Siperstein A, Berber E, Shepardson LB, Bravo EL, Hamrahian AH. Change in adrenal mass size as a predictor of a malignant tumor. *Endocr Pract*. 2010 Jul-Aug;16(4):577-587.

Pantalone KM, Kattan MW, Yu C, Wells BJ, Arrigain S, Jain A, Atreja A, Zimmerman RS. The risk of overall mortality in patients with type 2 diabetes receiving glipizide, glyburide, or glimepiride monotherapy: a retrospective analysis. *Diabetes Care*. 2010 Jun;33(6):1224-1229.

Pantalone KM, Nasr C. Approach to a low TSH level: Patience is a virtue. *Cleve Clin J Med*. 2010 Nov;77(11):803-811.

Shewmon DA, Craig JM. Creatine supplementation prevents statin-induced muscle toxicity. *Ann Intern Med*. 2010 Nov 16;153(10):690-692.

Skugor M, Gupta M, Navaneethan SD. Evolution and current state of assays for measuring parathyroid hormone. *Biochemia Medica*. 2010 Jun;20(2):221-228.

Solomon TPJ, Haus JM, Kelly KR, Cook MD, Filion J, Rocco M, Kashyap SR, Watanabe RM, Barkoukis H, Kirwan JP. A low-glycemic index diet combined with exercise reduces insulin resistance, postprandial hyperinsulinemia, and glucose-dependent insulinotropic polypeptide responses in obese, prediabetic humans. *Am J Clin Nutr*. 2010 Dec;92(6):1359-1368.

Solomon TPJ, Haus JM, Kelly KR, Rocco M, Kashyap SR, Kirwan JP. Improved pancreatic beta-cell function in type 2 diabetic patients after lifestyle-induced weight loss is related to glucose-dependent insulinotropic polypeptide. *Diabetes Care*. 2010 Jul;33(7):1561-1566.

Thomas S, Schauer P. Bariatric surgery and the gut hormone response. *Nutr Clin Pract*. 2010 Apr;25(2):175-182.

Yusupov E, Li-Ng M, Pollack S, Yeh JK, Mikhail M, Aloia JF. Vitamin D and serum cytokines in a randomized clinical trial. *Int J Endocrinol*. 2010;2010:305054.

Zerikly RK, Amiri L, Faiman C, Gupta M, Singh RJ, Nutter B, Kennedy L, Hatipoglu B, Weil RJ, Hamrahian AH. Diagnostic characteristics of late-night salivary cortisol using liquid chromatography-tandem mass spectrometry. *J Clin Endocrinol Metab*. 2010 Oct;95(10):4555-4559.

Endocrinology & Metabolism Institute Office

Avery RK, Mossad SB, Poggio E, Lard M, Budev M, Bolwell B, Waldman WJ, Braun W, Mawhorter SD, Fatica R, Krishnamurthi V, Young JB, Shrestha R, Stephany B, Lurain N, Yen-Lieberman B. Utility of leflunomide in the treatment of complex cytomegalovirus syndromes. *Transplantation*. 2010 Aug 27;90(4):419-426.

Baliga RR, Young JB. Pharmacogenomics transforming medicine to create a world of immortal Struldbruggs or even a Methuselah? So be it! *Heart Fail Clin*. 2010 Jan;6(1):xi-xiii.

Baliga RR, Young JB. Staying in the pink of health for patients with cardiorenal anemia requires a multidisciplinary approach. *Heart Fail Clin*. 2010 Jul;6(3):xi-xvi.

Baliga RR, Young JB. Editorial: Giant strides and baby steps in pediatric cardiac disease and heart failure in children. *Heart Fail Clin*. 2010 Oct;6(4):xiii-xiv.

Baliga RR, Young JB. Editorial. Unleashing our healthy avatars using cardiovascular genetics. *Heart Fail Clin*. 2010 Apr;6(2):xi-xiii.

Ekundayo OJ, Adamopoulos C, Ahmed MI, Pitt B, Young JB, Fleg JL, Love TE, Sui X, Perry GJ, Siscovick DS, Bakris G, Ahmed A. Oral potassium supplement use and outcomes in chronic heart failure: a propensity-matched study. *Int J Cardiol.* 2010 May 28;141(2):167-174.

Kirklin JK, Naftel DC, Kormos RL, Stevenson LW, Pagani FD, Miller MA, Ullisney KL, Baldwin JT, Young JB. Second INTERMACS annual report: more than 1,000 primary left ventricular assist device implants. *J Heart Lung Transplant.* 2010 Jan;29(1):1-10.

Ogletree ML, Sweet WE, Talerico C, Klecka ME, Young JB, Smedira NG, Starling RC, Moravec CS. Duration of left ventricular assist device support: Effects on abnormal calcium cycling and functional recovery in the failing human heart. *J Heart Lung Transplant.* 2010 May;29(5):554-561.

Young JB. Diabetes, obesity, and heart failure: the new pandemic. *Methodist DeBakey Cardiovasc J.* 2010 Apr;6(2):20-26.

Young JB, Neumayer HH, Gordon RD. Pretransplant cardiovascular evaluation and posttransplant cardiovascular risk. *Kidney Int.* 2010 Sep;78 Suppl 118:S1-S7.

Young JB. Michael E. DeBakey, M.D.: a mentor remembered. *Methodist DeBakey Cardiovasc J.* 2010 Dec;6(4):53-57.



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For help with service issues, information about clinical specialists and services, details about CME opportunities and more

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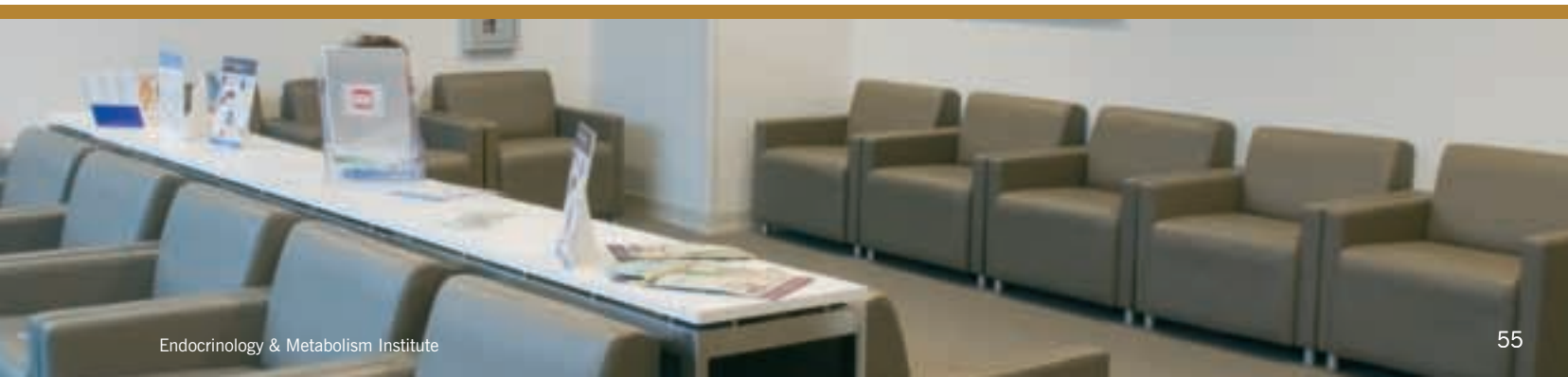
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About Cleveland Clinic

Overview

Cleveland Clinic is a nonprofit multispecialty academic medical center that integrates clinical and hospital care with research and education. Today, more than 2,500 Cleveland Clinic physicians and scientists practice in more than 100 medical specialties and subspecialties, annually recording more than 1.5 million physician visits and more than 70,000 surgeries. Cleveland Clinic currently has the highest CMS case-mix index in America. Patients come for treatment from every state and from more than 80 countries annually.

Cleveland Clinic's main campus, with 50 buildings on 180 acres in Cleveland, Ohio, includes a 1,300-bed hospital, outpatient clinic, specialty institutes and supporting labs and facilities. Cleveland Clinic also operates 16 family health centers, nine community hospitals, one affiliate hospital, a rehabilitation hospital for children, Cleveland Clinic Florida, the Lou Ruvo Center for Brain Health in Las Vegas, and Cleveland Clinic Canada. Cleveland Clinic Abu Dhabi (United Arab Emirates), a multispecialty care hospital and clinic, is scheduled to open in 2012. With 41,000 employees, Cleveland Clinic is the second largest employer in Ohio, and is responsible for an estimated \$9 billion of economic activity every year.

The Cleveland Clinic Model

Cleveland Clinic was founded in 1921 by four physicians who had served in World War One and hoped to replicate the organizational efficiency of military medicine. The organization has grown through the years by adhering to the model set forth by the founders. All Cleveland Clinic staff physicians receive a straight salary with no bonuses or other financial incentives. The hospital and physicians share a financial interest in controlling costs and profits are reinvested in research and education.

In 2007, Cleveland Clinic restructured its practice, bundling all clinical specialties into integrated practice units called institutes. An institute combines all the specialties surrounding a specific organ or disease system under a single roof. Each institute has a single leader and focuses the energies of multiple professionals onto the patient. From access and communication to billing and point-of-care service, institutes are improving the patient experience at Cleveland Clinic.

Cleveland Clinic Lerner Research Institute

At the Cleveland Clinic Lerner Research Institute, hundreds of principal investigators, project scientists, research associates and postdoctoral fellows are involved in laboratory-based, translational and clinical research. Total annual research expenditures exceed \$272 million from federal agencies, non-federal societies and associations, endowment funds and other sources.

Cleveland Clinic physicians, scientists, fellows, residents and other employees are involved in more than 3,000 human-subject research activities at any given time.

Cleveland Clinic Lerner College of Medicine

Now in its seventh year of existence, Cleveland Clinic Lerner College of Medicine of Case Western Reserve University offers all students full-tuition scholarships. The program graduated its first 29 students as physician-scientists in 2009.

U.S. News & World Report Ranking

Cleveland Clinic is consistently ranked among the top hospitals in America by *U.S. News & World Report*, and our heart and heart surgery program has been ranked No. 1 since 1995.

For more information about Cleveland Clinic, please visit clevelandclinic.org.

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For help with service-related issues, information about our clinical specialists and services, details about CME opportunities and more, contact the Referring Physician Center at refdr@ccf.org, or 216.448.0900 or 888.637.0568.

Critical Care Transport Worldwide

Cleveland Clinic's critical care transport team and fleet of mobile ICU vehicles, helicopters and fixed-wing aircraft serve critically ill and highly complex patients across the globe.

To arrange a transfer for STEMI (ST elevated myocardial infarction), acute stroke, ICH (intracerebral hemorrhage), SAH (subarachnoid hemorrhage) or aortic syndromes, call 877.379.CODE (2633).

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Medical Records Online

Cleveland Clinic continues to expand and improve electronic medical records (EMRs) to provide faster, more efficient and accurate care by sharing patient data through a highly secure network. Patients using MyChart can

renew prescriptions and review test results and medications from their own personal computer. MyChart offers a secure connection to Google™ Health, where users can securely share personal health information with Cleveland Clinic and record and share details of their Cleveland Clinic treatment with the physicians and healthcare providers of their choice. To establish a MyChart account, visit clevelandclinic.org/mychart.

Remote Consults

Online medical second opinions from Cleveland Clinic's MyConsult are particularly valuable for patients who wish to avoid the time and expense of travel. Cleveland Clinic offers online medical second opinions for more than 1,000 life-threatening and life-altering diagnoses. For more information, visit clevelandclinic.org/myconsult, email eclevelandclinic@ccf.org or call 800.223.2273, ext. 43223.

CME Opportunities: Live and Online

Cleveland Clinic's Center for Continuing Education operates one of the largest and most successful CME programs in the country. The center's website (ccfcme.com) is an educational resource for healthcare providers and the public. Available 24/7, it houses programs that cover topics in 30 areas — if not from A to Z, at least from Allergy to Wellness — with a worldwide reach. Among other resources, the website contains a virtual textbook of medicine (Disease Management Project), a medical newsfeed refreshed daily, and *myCME*, a system for physicians to manage their CME portfolios. Live courses, however, remain the backbone of the center's CME operation. Most live courses are held in Cleveland, but outreach plans are under way. In 2010, the center offered 11 simultaneous courses at Arab Health, a major world healthcare forum, in Dubai, United Arab Emirates.

This project would not have been possible without the commitment and expertise of a team led by Christian Nasr, MD and Ronald R. Gambino, RN, MPA.



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