Cleveland Clinic

Medicine Institute

Outcomes | 2007

Patients First

Outcomes 2007

Quality counts when referring patients to hospitals and physicians, so Cleveland Clinic has created a series of Outcomes books similar to this one for many of its institutes. Designed for a healthcare provider audience, the Outcomes books contain a summary of our surgical and medical trends and approaches, data on patient volume 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 mean we necessarily 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 that have documented relationships with improved outcomes. When process measures are unavailable, we report volume measures; a volume/outcome relationship has been demonstrated for many treatments, particularly those involving surgical technique.

Cleveland Clinic also supports transparent public reporting of healthcare quality data and participates in the following public reporting initiatives:

- Joint Commission Performance Measurement Initiative (www.qualitycheck.org)
- Centers for Medicare and Medicaid (CMS) Hospital Compare (www.hospitalcompare.hhs.gov)
- Leapfrog Group (www.leapfroggroup.org)
- Ohio Department of Health Service Reporting (www.odh.state.oh.us)

Our commitment to providing accurate, timely information about patient care is designed to help patients and referring physicians make informed healthcare decisions. We hope you find these data valuable. To view all our Outcomes books, visit Cleveland Clinic's Quality and Patient Safety website at clevelandclinic.org/quality/outcomes.

Dear Colleague:

I am proud to present the 2007 Cleveland Clinic Outcomes books. These books provide information on results, volumes and innovations related to Cleveland Clinic care. The books are designed to help you and your patients make informed decisions about treatments and referrals.

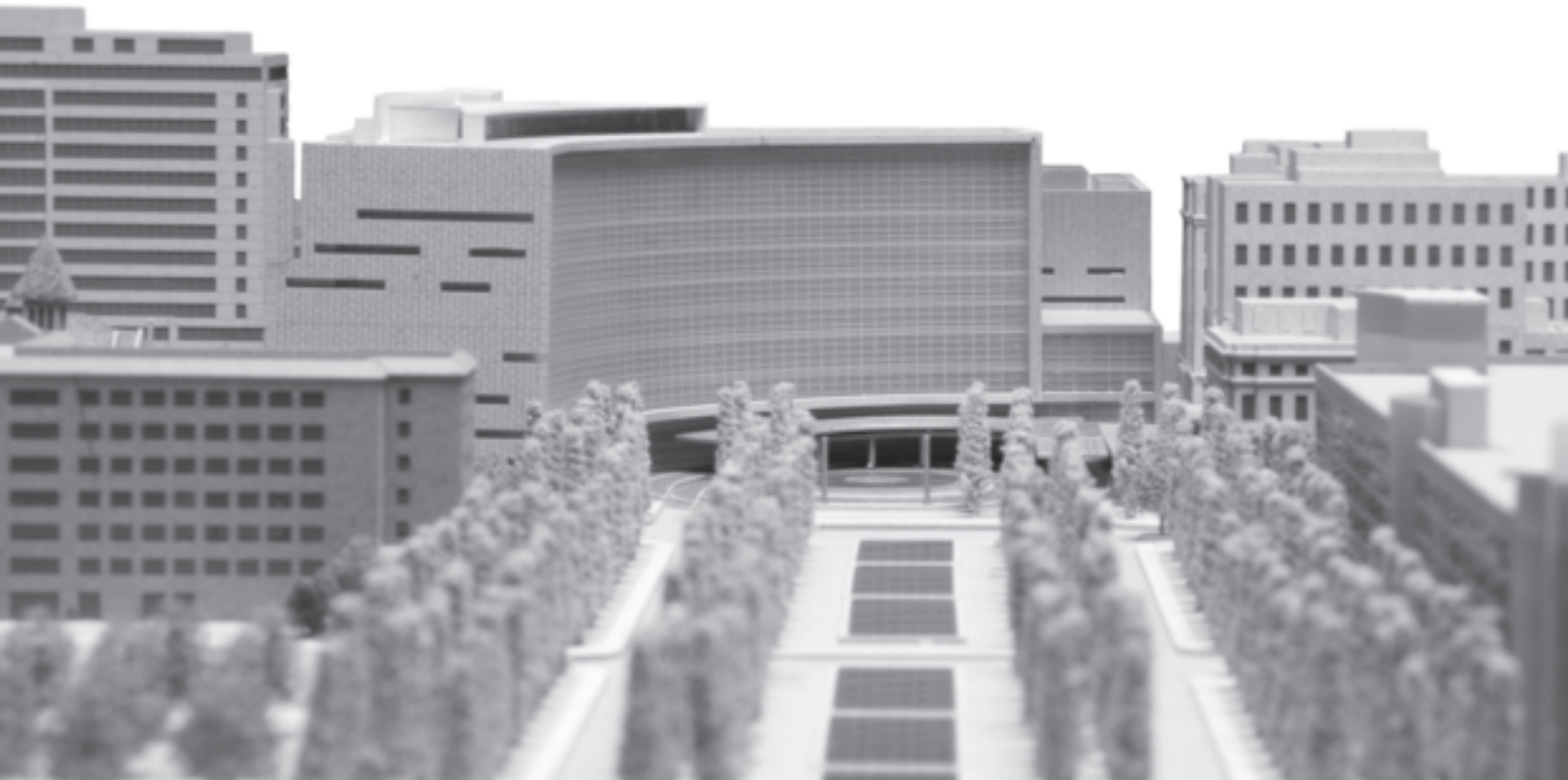
Over the past year, we enhanced our ability to measure outcomes by reorganizing our clinical services into patient-centered institutes. Each institute combines all the specialties and support services associated with a specific disease or organ system under a single leadership at a single site. Institutes promote collaboration, encourage innovation and improve patient experience. They make it easier to benchmark and collect outcomes, as well as implement data-driven changes.

Measuring and reporting outcomes reinforces our commitment to enhancing care and achieving excellence for our patients and referring physicians. With the institutes model in place, we anticipate greater transparency and more comprehensive outcomes reporting.

Thank you for your interest in Cleveland Clinic's Outcomes books. I hope you will continue to find them useful.

Sincerely,

Delos M. Cosgrove, MD
CEO and President



what's inside

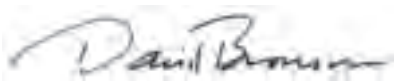
Chairman's Letter

On behalf of Cleveland Clinic Medicine Institute, I am pleased to share our 2007 quality outcomes. Our physicians and staff are dedicated to continuously improving the quality of our medical care and of the patient care experience in our practices.

In 2007, Cleveland Clinic began to reconfigure its organizational structure, moving from clinical Divisions to Institutes, with the goal of aligning similar specialties into patient-focused centers. Departments are closely linked by organ systems and diseases. The main goal in creating Institutes is better care for our patients through more efficient operations, improved communication among staff and employees and guidance of patients to the appropriate practitioner. This will continue to support the values that always have been in our forefront – patient care, collaboration, education and research. Specifically within the Medicine Institute, information flow between outpatient and inpatient care areas will be consolidated and improved.

To keep our patient care areas focused on quality, the Medicine Institute Quality Council meets regularly to direct quality improvement initiatives. This is a vitally important group of leading physicians and other clinical and administrative personnel. In 2007, performance improvement teams focusing on chronic diseases such as diabetes and high blood pressure were formed and made operational changes to help improve the quality of care provided.

We hope that this 2007 report will serve as a valuable tool and reinforce your confidence in both the quality of our care as well as our caring. Please write to us about your experiences and let us know how we can better serve you.



David L. Bronson, MD, FACP
Chairman, Cleveland Clinic Medicine Institute

Institute Overview

The Cleveland Clinic Medicine Institute was established in September 2007, with the consolidation of departments that provide coordinated patient care across the continuum of adult primary care, Hospital Care and Infectious Diseases. From establishing care with a new physician at one of our Family Health Centers or main campus locations to inpatient care through our Hospital Medicine and Infectious Disease consultants, the Medicine Institute has the expertise to deliver outstanding care and achieve superior outcomes.

Our institute strives to be the "medical home" for accessible, comprehensive, coordinated care for patients. At the same time, institute research is focused on improving outcomes in the care of chronic diseases; prevention; better care processes and outcomes for hospitalized patients; and advancing the science of infection diagnosis and management, particularly in medically or surgically complex patients.

The following provides some specifics on each of our departmental operations and activities.

Community Internal Medicine

This new Cleveland Clinic department consists of more than 70 Internal Medicine and Internal Medicine/Pediatrics physicians practicing at Cleveland Clinic Family Health Centers throughout the Greater Cleveland area. In 2007, the patient population for this department surpassed 150,000 with more than 270,000 patient visits.

This department strives to provide outstanding preventive, acute and chronic disease care for adults in an environment that is close to home and patient-focused. Our electronic medical record has proven to be a powerful tool in helping us to provide this care in a consistent, timely manner.

In keeping with Cleveland Clinic's values, focus is also placed on our educational mission. Our staff physicians are extremely active in teaching both residents and medical students. We also welcome other clinical trainees, such as nurse practitioners, nurses and medical assistants.

Family Medicine

The Department of Family Medicine at Cleveland Clinic consists of more than 60 staff members and celebrated its 10th year in 2007. Located primarily at Family Health Centers, many of these physicians are involved in the Family Medicine Residency Program at Fairview Hospital. In 2007, the patient population for this department surpassed 105,000 with more than 200,000 patient visits. As family physicians, these providers are specially trained in managing patients of all ages, from birth to death.

Internal Medicine

The Department of Internal Medicine is located at Cleveland Clinic's main campus. This group of more than 35 physicians provides outpatient primary care services for the adult population, and consultative services for patients with complex clinical problems. The education of medical students, residents and fellows is an essential mission of the department, and several members serve in key faculty and leadership positions at Cleveland Clinic's Lerner College of Medicine. A program is in place to accommodate the specific needs of patients who are referred from geographically distant locations.

Within this department, there also are several specialists in Geriatric Medicine, providing convenient and accessible consultation for adults over 75 years of age. These physicians also provide consultative services to several local nursing homes.

Infectious Disease

The 17 outstanding staff physicians of the Department of Infectious Disease primarily provide consultative services. Since supporting excellent patient care is our highest priority, these services are available 24 hours a day, every day. The diversity in clinical services reflects the spectrum of infectious diseases in patients cared for at Cleveland Clinic.

Eight inpatient services enable timely response to our colleagues' requests for infectious disease evaluation. Aligned with multidisciplinary teams of specialists, these subspecialty services provide our patients the greatest beneficial care.

5237

number of inpatient Infectious Disease consults in 2007

One example of a collaborative entity is the Transplant Infectious Diseases Section. This group is dedicated to the promotion of excellence in clinical care of the transplant recipient who is at risk for infection. The collaboration allows for translational research goals and opportunities to enhance networking and national visibility.

The outpatient Infectious Disease Clinic provides high quality referrals and consultations through the clinical team, which is composed of staff physicians, fellows, residents, nurses, medical assistants and front desk personnel. Each member of the team is committed to ensuring the highest level of care for our patients. In 2007, we completed 8,522 outpatient visits, including 1,706 new patient consultations.

Hospital Medicine

This department of 31 staff physicians was created in 2007 as part of founding the Medicine Institute. Hospitalists are general internists who devote their professional lives to the general medical care of hospitalized patients. This specialized group serves patients from a variable range of demographics as evidenced in the table below. The streamlined arrangement optimizes patient care, allowing primary care physicians to devote their full attention to patients in their outpatient clinics.

The education of internal medicine residents and fellows is a critical component of Hospital Medicine departmental operations, and we are proud to be one of only eight Hospitalist fellowship programs in the United States. Several department staff members also have Cleveland Clinic leadership roles in associated areas such as information technology and quality.

The institute model of physician practice has been studied by many institutions, and Cleveland Clinic is one of the few that has fully adopted it. As the Medicine Institute brings its individual departments together to meet our patients' needs, we will drive all of our activities in patient care, education and research to enhance the value of our care and put "Patients First".

Market Area	Percent of Total
Cuyahoga County	63.4%
6 Adjacent Counties	14.6%
Adjacent 14 Counties (Excluding Cuyahoga & 6 Adjacent States)	10.4%
Adjacent 6 States	5.4%
Ohio Outside Adjacent 14 Counties	3.8%
US Excluding Adjacent 6 States	1.9%
International	0.6%

Quality Performance Measurements

In our outpatient practice quality monitoring and improvement efforts, we have focused on measures to improve:

- screening for common preventable or treatable conditions, such as breast cancer, colorectal cancer, cervical cancer and diabetes
- management of common chronic conditions, such as diabetes and high blood pressure
- care for common childhood illnesses, such as colds and sore throats
- prevention of infectious diseases via immunizations

Over the past several years, performance measurements have been refined and expanded. Physicians are given regular feedback on their practices. This information is used to identify opportunities to improve our performance which, in turn, improves care provided to patients.

In selecting measures, standards developed by prominent national organizations are used. The National Committee for Quality Assurance (NCQA), US Preventive Services Task Force, National Quality Forum (NQF), and several other organizations are very active in this area. By choosing measures and standards commonly used nationally, we can directly compare our own performance with other physicians and organizations across the country. Wherever appropriate and available, we compare our performance against the most recent NCQA State of Healthcare Quality Report, published in 2007. Furthermore, we strive to develop measures for care that are:

- shown to be beneficial to patients based on medical research
- important for large numbers of our patients
- cost-effective

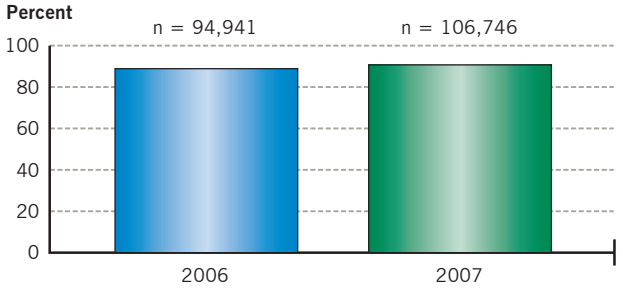
In performing measurements, data are collected from MyPractice, the Cleveland Clinic's electronic medical record system. This tool automatically collects data on all of our patients, defined by age, gender or medical condition. Our performance is reviewed on a quarterly basis. This allows regular, timely information to guide improvements in patient care.

Diabetes Management

Diabetes is an increasingly common disease that can lead to multiple circulatory, neurologic, eye and kidney problems. We closely monitor how the care of our patients with diabetes adheres to guidelines and targets promoted by prominent organizations, most notably the American Diabetes Association (ADA). Note that these targets reflect ideal levels of care aimed at minimizing diabetes complications; they are often very difficult to achieve in actual clinical practice. Given the limitations of current available treatments, controlling blood sugar levels remains a major challenge for patients and their physicians.

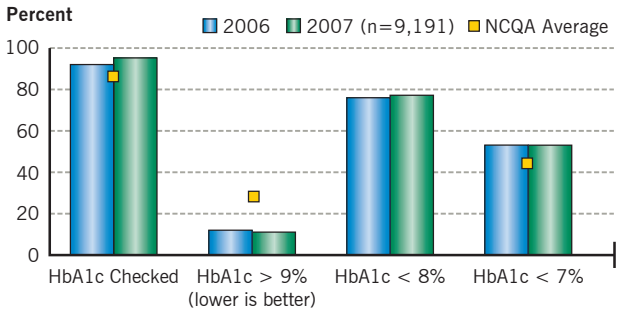
Diabetes Screening

It is recommended that all adults age 45 and older periodically be tested for diabetes (ADA). The percentage of our patients over 45 screened for diabetes with a fasting blood sugar within the past three years was evaluated. By the end of 2007, we had improved our documented testing from 90 percent to 92 percent.



Blood Sugar Control in Diabetes

HbA1c is a measure of average blood sugar in diabetics, with lower numbers (better sugar control) being linked to a lower risk of diabetic complications. The percentage of our diabetic patients whose HbA1c is checked at least once during the year was evaluated. Furthermore, we examine the percentage of diabetics who are inadequately controlled (HbA1c > 9%, NCQA measure) as well as those with good (HbA1c < 8%) and excellent (HbA1c < 7%) controls.

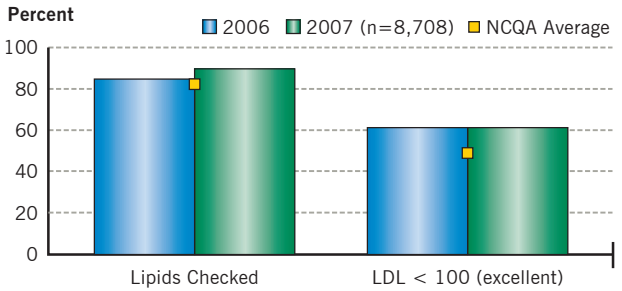


NCQA National Averages:
HbA1c Checked 87.5%
HbA1c > 9 29.6%
HbA1c < 7 41.8%

Cholesterol Control in Diabetes

Diabetes is a significant risk factor for atherosclerosis ("hardening of the arteries") in the heart and other blood vessels. Aggressive control of high cholesterol, specifically LDL ("bad") cholesterol, has been shown to prevent or delay atherosclerosis, as well as improve outcomes in patients with existing atherosclerosis. Excellent cholesterol control (LDL < 100) is a goal for our diabetic patients with performance well above national averages.

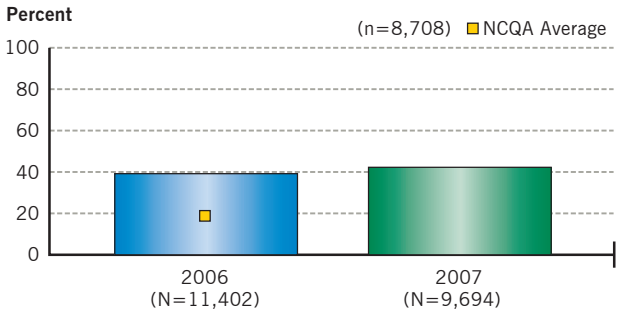
Lipid (LDL Cholesterol) Control in Diabetes



NCQA Lipid Check 83.4%
LDL < 100 43.0%

Blood Pressure Control in Diabetes

Diabetes and high blood pressure often occur simultaneously in the same patient. Excellent blood pressure control (< 130/80) is recommended in diabetic patients to help prevent complications such as heart and kidney disease and stroke. This aggressive target for blood pressure control in diabetic patients is very difficult to achieve in practice, but every effort should be made to achieve the best blood pressure control possible.



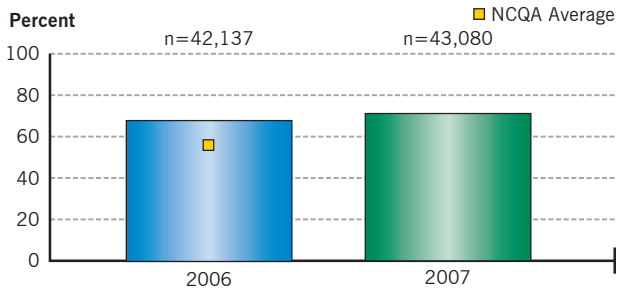
NCQA New Measure 29.9%

Hypertension Control

Hypertension Control

Hypertension is a very common condition. Appropriate control of high blood pressure has clearly shown it can prevent stroke and other cardiovascular problems, including heart attacks. The percentage of patients with high blood pressure who had a blood pressure reading < 140/90 at their most recent visit (NCQA, NQF measure) was evaluated.

Hypertension Control <140/90

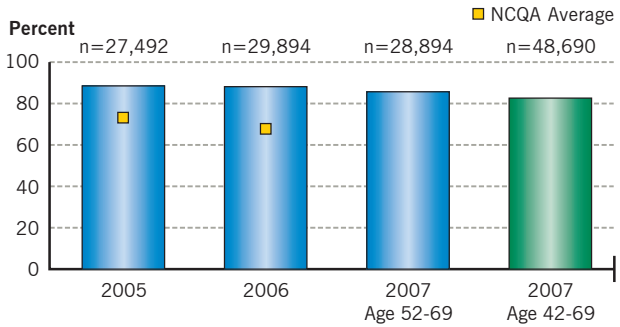


NCQA 59.7%

Preventive Screenings and Measures

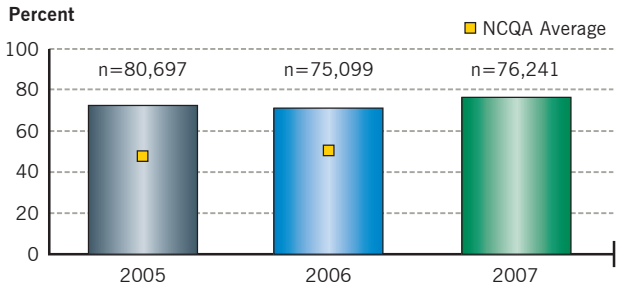
Breast Cancer Screening

Mammography has been shown to detect early breast cancers, as well as improve survival of women diagnosed with breast cancer. In 2007, we expanded our criteria to coincide with national standards, extending the previous age range of 50-69 to 40-69. We now consider both of these ranges in our quality improvement efforts. Despite the change in criteria, we continue to exceed the national standards.



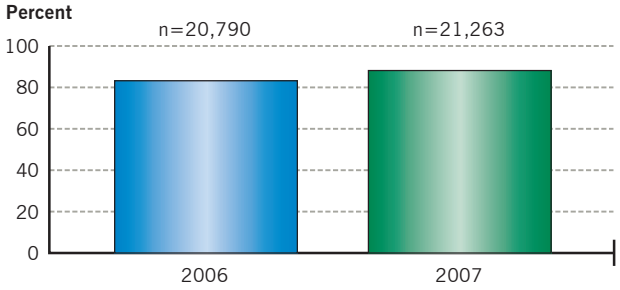
Colorectal Cancer Screening

Appropriate screening tests have clearly shown they can lead to earlier detection and reduced risk of death from colorectal cancer. We evaluate the percentage of patients age 50 and older who had documentation of colon cancer screening using colonoscopy, flexible sigmoidoscopy, and/or stool occult blood testing. Our screening percentages continue to be considerably better than NCQA nationally reported rates.



Osteoporosis Screening

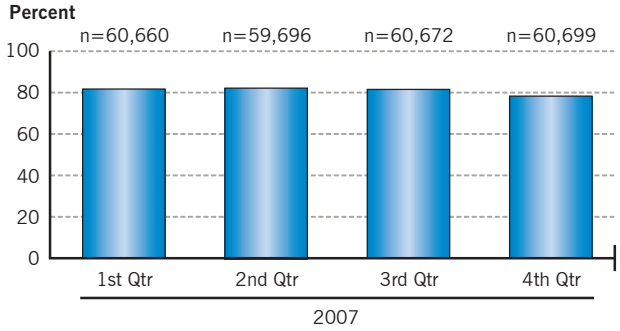
Osteoporosis is a condition of calcium loss from bone and is an increasingly common chronic condition, especially in women over age 65. Fractures caused by osteoporosis, especially in the hip and spine, have been shown to lead to considerable pain, loss of independence, and even death. As a result, we monitor the percentage of women age 65 and older who have been screened for osteoporosis with a bone density (DEXA) scan. Our efforts demonstrate improvement from the previous year.



NCQA New Measure 29.9%

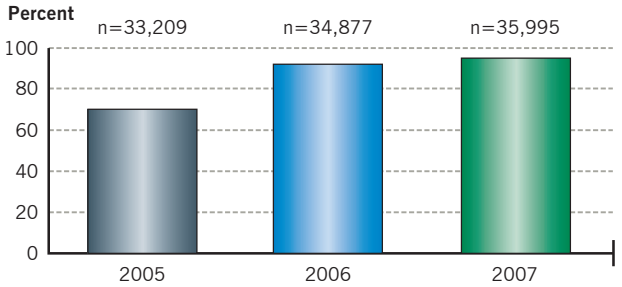
Cervical Cancer Screening

When detected early, cervical cancer is often treated successfully. In 2007, we began evaluating the percentage of women age 21-64 who received a Pap test within the last three years. Currently at 78 percent, we are slightly behind the NCQA average of 81 percent. During 2008, we will focus our efforts on improving our compliance in this crucial area.



Pneumococcal Immunization

Immunization against pneumococcal pneumonia has been shown to lower mortality from pneumococcal illness and is recommended for older adults. The percentage of adults age 65 and older showing documentation of pneumococcal immunization was measured. By the end of 2007, we had improved our immunization rate to 95 percent.

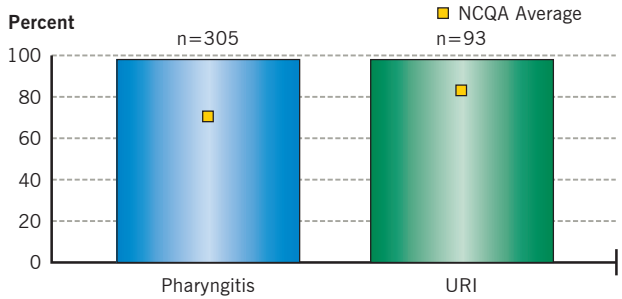


Pharyngitis and URI Care (Family Medicine)

Overuse of antibiotics is a major contributor to the growing problem of resistant bacteria in the United States. Inappropriate antibiotic use also increases cost of care and exposes patients to medication side effects. It is, therefore, important to ensure antibiotics are used only when appropriate. Two measures of antibiotic use are monitored through our community-based Family Medicine practices.

First, the percentage of children, age 2-18, with a sore throat (pharyngitis) who received antibiotics ONLY if there was documentation of testing for Streptococcal infection ("strep throat") was evaluated.

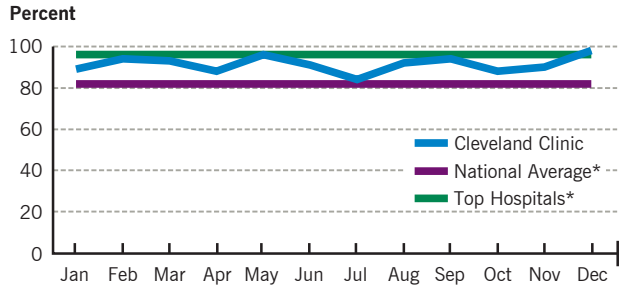
Second, the percentage of children three months to 18 years of age who were seen for an upper respiratory infection (URI) and not prescribed an antibiotic within three days was evaluated. (Since URIs are caused by viruses, antibiotics are not appropriate).



Surgical Care Improvement Program (SCIP)

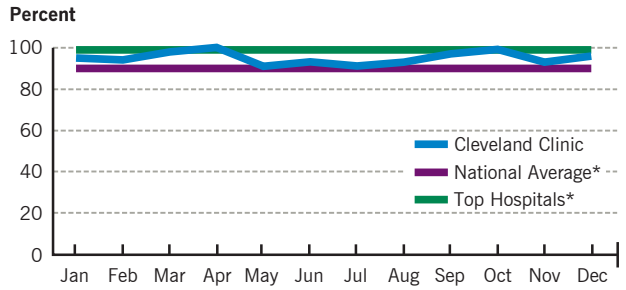
SCIP is a national campaign aimed at reducing surgical complications by 25 percent by the year 2010. SCIP is sponsored by the Centers for Medicare and Medicaid Services (CMS) in collaboration with a number of other national partners serving on the steering committee, including the American Hospital Association (AHA), Centers for Disease Control and Prevention (CDC), Institute for Healthcare Improvement (IHI), and The Joint Commission. Cleveland Clinic is committed to improving the care of surgical patients and participates in SCIP. A multidisciplinary team including Surgery, Anesthesia, Infectious Disease, Nursing, and Quality work together to ensure that our surgical patients receive appropriate care.

Appropriate Preoperative Prophylactic Antibiotic Timing 2007



* Source:
United States Department of Health and Human Services, Hospital Compare
Most current reported discharges July 2006 to June 2007.
"Top Hospitals" represent the top 10 percent of reporting hospitals nationwide.
National average of all reporting hospitals in the United States.

Appropriate Prophylactic Antibiotic Selection 2007



* Source:
United States Department of Health and Human Services, Hospital Compare
Most current reported discharges July 2006 to June 2007.
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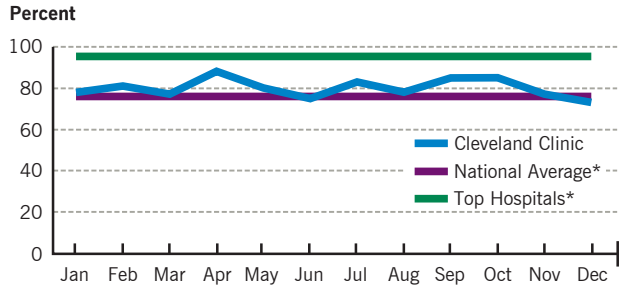
Prophylactic Antibiotics Discontinued within 24 Hours After Surgery 2007



* Source:
United States Department of Health and Human Services, Hospital Compare
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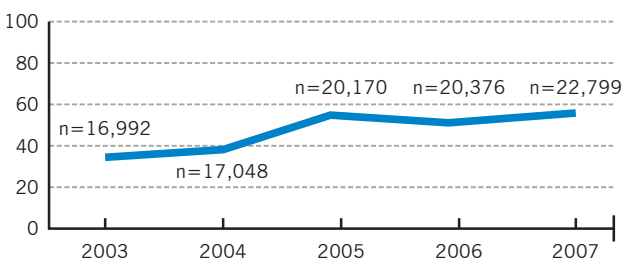
National average of all reporting hospitals in the United States.

Improving Influenza Vaccination In Healthcare Workers

The Center for Disease Control emphasizes that healthcare workers receive annual vaccination against influenza to prevent its transmission to patients. In an effort to maintain compliance without mandating vaccination, a strategy of mandatory participation with documentation of declination was developed in 2005 using our Intranet. Employees documented receipt of the vaccine or indicated decline, which automatically generated education about vaccination back to the employee.

The Intranet provides an inexpensive method for measuring and tracking healthcare worker participation, option to decline, and overall vaccination rates. This program initially resulted in vaccination well above the national average in 2005. This initiative continues annually. At the end of 2007, 89.9 percent of employees had participated in online documentation, and nearly 56 percent of employees were actually immunized.

Influenza Immunization Compliance



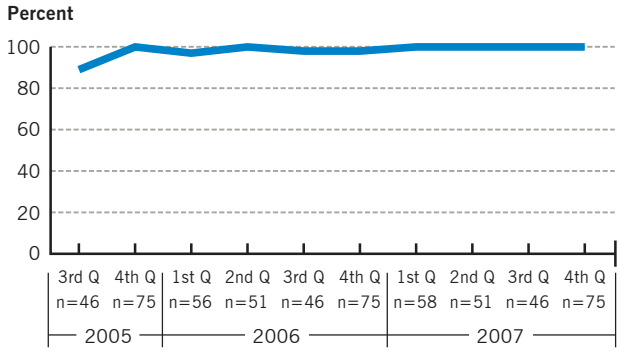
Core Measures

These measures were developed and approved for reporting by the Center for Medicare and Medicaid Services and The Joint Commission to monitor the quality of inpatient care. The following graphs represent the measures that are most impacted by our Medicine Institute physicians.

Heart Failure

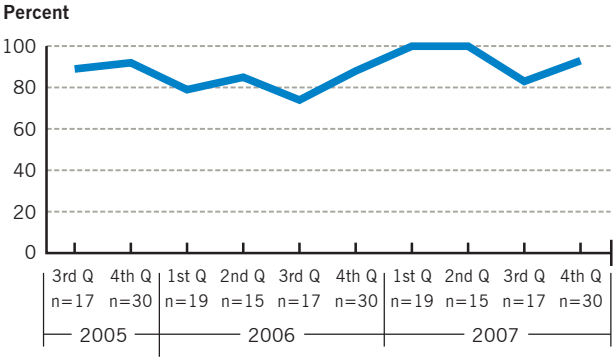
Eligible Patients: Patients discharged from Medicine Institute hospital services with a diagnosis of congestive heart failure (CHF).

Heart Failure: Left Ventricular Function Assessment



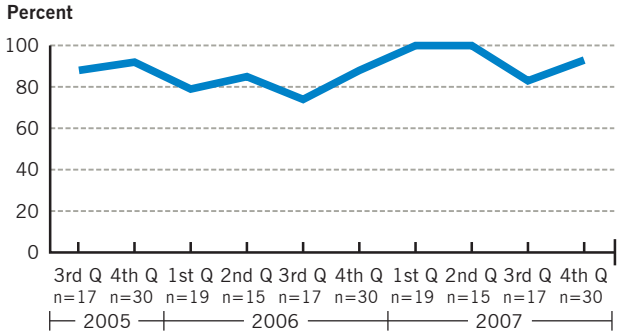
Patients with a diagnosis of heart failure discharged from Medicine Institute hospital services with a documented measurement of left ventricular function (LVF) in the medical record.

Heart Failure: ACEI or ARB Prescribed



Patients with a diagnosis of heart failure discharged from Medicine Institute hospital services with all of the following being true: treated with an angiotensin converting enzyme inhibitor (ACEI) or angiotensin receptor blocking (ARB) drug or had a documented contraindication to both classes of drugs.

Heart Failure: Smoking Cessation



Patients with a diagnosis of heart failure discharged from Medicine Institute hospital services with documentation that the patient received counseling or intervention for smoking cessation.

Community Acquired Pneumonia

Eligible Patients: Patients discharged from Medicine Institute hospital services with an admitting diagnosis of community acquired pneumonia.

Hospitalists from the Medicine Institute are often the primary caregiver for patients with this diagnosis. We are proud of our constant compliance with national measurements.

100

the percent of patients discharged from the Medicine Institute whose blood oxygen level was assessed with an arterial blood gas measure or pulse oximetry within 24 hours of admission.

Standardized Mortality Ratio and Case Mix Index

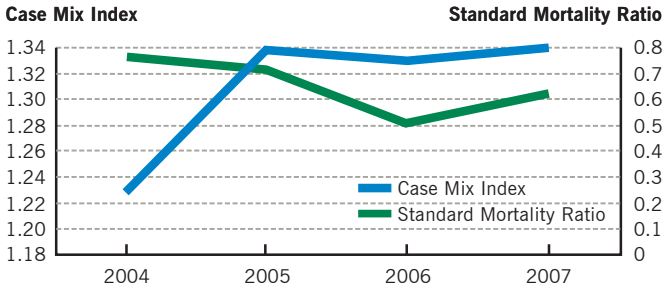
The standardized mortality ratio (SMR) is a commonly used method of representing the rate of death for a group of patients. Increasingly, it is used as a measure of care and to make comparisons.

SMR = observed deaths / expected deaths (1.0 represents the average mortality, less than 1.0 represents a better than expected mortality rate). The APR/DRG (All Patient Refined Diagnosis Related Groups) risk adjustment method is used in this calculation to make effective comparisons.

CMI = Case Mix Index (indicates overall severity and complexity of patient population). Although the CMI indicates that our severity has been trending upward, the SMR has remained essentially flat and below average mortality.

100

the percent of community acquired pneumonia patients whose blood oxygen level was assessed with an arterial blood gas measure or pulse oximetry within 24 hours of admission.



Our Goal: Continuous Improvement

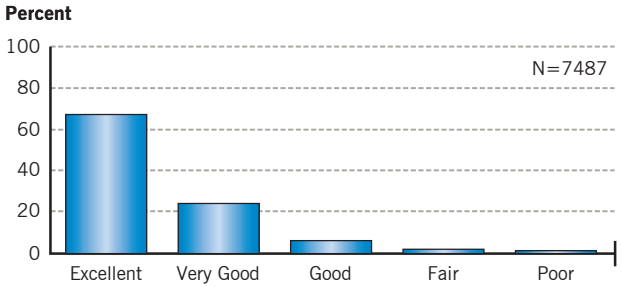
In 2007, Cleveland Clinic began the process of creating Institutes to reorganize care for one primary reason: to put the patient at the center of all of our care efforts. Within the Medicine Institute, we strive to provide consistent and timely preventive, acute, and chronic disease care to our patients. Our Quality Council, comprised of representatives from all of our member departments, is working to continuously improve the environment and systems of care for our patients and their families. Our electronic medical record also empowers our patients to take an active role in their own care and to track their progress over time. As we move forward into 2008 and look to the future, we envision ongoing achievement of superior outcomes for all whom we serve.

Patient Experience

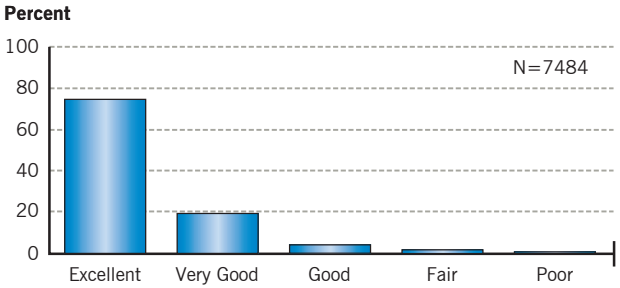
Outpatient - Medicine Institute

We ask our patients about their experiences and satisfaction with the services provided by our staff. Although our patients are already indicating we provide excellent care, we are committed to continuous improvement.

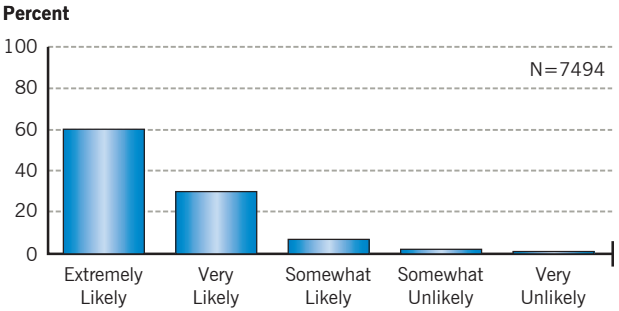
Overall Rating of Care 2007



Overall Rating of Provider Care 2007



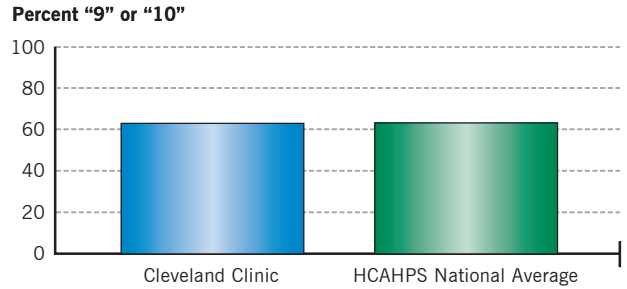
Would Recommend Provider 2007



Inpatient - Cleveland Clinic

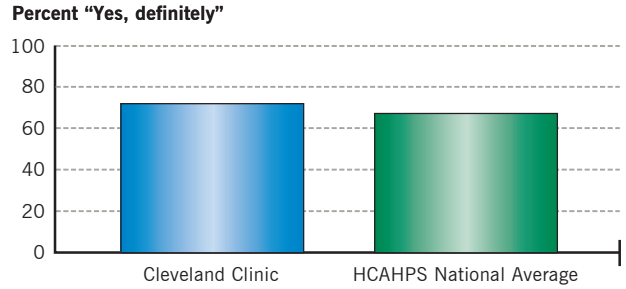
With the support of the Center for Medicare and Medicaid Services (CMS) and its partner organizations, the first national standard patient experience survey was implemented in late 2006. Adult medical, surgical, and obstetrics and gynecology patients treated at acute care hospitals across the country are included in the survey. Results collected for initial public reporting, published on www.hospitalcompare.gov in March 2008, are shown here.

Overall Rating of Care (0 worst - 10 best scale)
October 2006 - June 2007



Total Cleveland Clinic Survey Respondents = 4,725

Would Recommend Facility
October 2006 - June 2007



Total Cleveland Clinic Survey Respondents = 4,725

Primary Key to Good Health

Even at 81 years old, Charles Lindsay isn't bothered by the four-hour drive he has to make from Clarksburg, W.Va., to his appointments at Cleveland Clinic. He says he wouldn't think of changing primary care doctors.

That's because Lindsay firmly believes that internist Adele Fowler, MD, is adding years to his life. With both diabetes and hypertension, Lindsay sees the importance of staying on top of his healthcare. He has lived on his own since his wife died 25 years ago, and he still volunteers at West Virginia University, interviewing gymnasts for the college newspaper.

Dr. Fowler understands Lindsay's active lifestyle and prescribes a regimen of daily medications that has been effective. But what Lindsay appreciates most is Dr. Fowler's doggedness in monitoring and treating any changes in his health.

"Dr. Fowler never rushes me during my appointments. She really takes her time to listen to me," he says. "She even gets me in to see other specialists on the same day when I need them."

Innovations

With an eye toward continuous improvement of care, our staff is constantly searching for new and improved methods to complement all aspects of patient care. Many initiatives were undertaken in the Medicine Institute throughout 2007.

There is a high prevalence of several chronic diseases in our community. Medicine Institute primary care physicians are participating in an community-wide collaborative effort to improve chronic disease care and outcomes funded by the Robert Wood Johnson Foundation and known as Aligning Forces for Quality (AF4Q). Cleveland is just one of 14 communities participating in this initiative designed to improve care for chronic diseases through consumer engagement and public sharing of quality data. Workshops for various site teams are held semi-annually, and teams have developed action plans for their specific areas of targeted improvement. Thus far, the Cleveland AF4Q group has addressed type 2 diabetes mellitus, and the first public reports were released in the spring of 2008. We will be including other important chronic diseases such as heart failure and hypertension over the next two years.

Since diabetes is one of the most common and devastating of chronic diseases, the Medicine Institute and the Endocrinology and Metabolism Institute have entered into a collaboration with International Diabetes Center to further improve care for all our patients suffering from the burden of this disease. The Diabetes Connection program that we began to implement in 2007 constitutes a three-phased intervention designed to improve our diabetes care and education programs with the appropriate infrastructure, systems and processes. Specific physician and staff training programs will be conducted in 2008, and improved treatment services and pathways are the anticipated result.

Hypertension, or high blood pressure, also is a common chronic disease that is difficult to manage. In 2007, a dedicated performance improvement team was formed to focus on opportunities to further improve the management of our hypertension population in adult primary care areas. Clinical support staff were re-educated with respect to accuracy of blood pressure readings. Providers and their support staff benefited from lectures given by cardiologists and other specialists, focusing on team-related efforts to improve hypertension compliance percentages. Data specifics are provided in the Outcomes section of this publication.

Our Infectious Disease specialists participated in seven innovation trips throughout 2007. Their goal was to bring back new ideas to improve quality of care. Staff participants partnered closely with colleagues in the microbiology laboratory to capture synergies and create opportunities with a focus on infectious disease diagnostics, transplant infectious diseases and prevention of surgical site infections.

Using the strength of our clinical volume and its diverse spectrum of infectious diseases, partnerships are being formed to participate in clinical trials for treatment of infections.

Translational research collaborations with colleagues from the Lerner Research Institute focus on transplant-related virology and immunology in both basic and clinical aspects. The translational program is providing excellent ID fellowship training in laboratory techniques and research. The collaborations promote mutual learning and encourage innovative ideas based on insights gained from researchers approaching the field with very different expertise.

Although there is considerable literature on HHV-6 and HHV-7 in liver transplant recipients, there are only a few intriguing but not definitive reports in thoracic transplantation. The translational approach allows a deeper and more substantive foundation in understanding clinical phenomena. It is hoped delineation of these phenomena at the cellular and molecular level can lead to changes in clinical practice toward prolonging the life of the transplant recipient and the healthy function of the transplanted organ.

Infectious Disease has piloted components of an inpatient electronic medical record and order entry system. We have designed and implemented an electronic order for home IV antibiotic therapy. This tool will lead to advancements in patient care and provide a database for future research opportunities.

The Department of Family Medicine received its first Health Resources & Services Administration grant in 2004. Under the grant, the Department of Family Medicine built a realistic and sustainable research infrastructure to meet the Cleveland Clinic's needs for medical student education and community based research. In 2007, funding supported activities such as extensive training of family medicine physicians on basic research methodologies, establishment of a Community Advisory Board to implement community-based research projects, additional collaboration with Case Western Reserve University's Department of Family Medicine Research Division, and development of research initiatives in arenas of public health, health utilization patterns, and health risk and behaviors.

A collaborative effort between Hospital Medicine, Clinical Informatics and our regional hospitals will result in a more unified discharge process. This represents yet another example of the power of our electronic medical record. By capturing discharge instructions for inpatients electronically, the accuracy of information provided to patients is improved. Additionally, the patient's primary care provider will have immediate access to hospital-specific information at the time of a patient's follow-up visit.

A blood management team was created, led by Ajay Kumar, MD, a Medicine Institute hospitalist, and Mark Froimson, MD, a Cleveland Clinic orthopedic surgeon, during 2007. This multidisciplinary team's objective is to find effective alternatives to blood transfusions at Cleveland Clinic and create metrics to assist physicians in improving performance. The team consists of physician members from four institutes and is supported by several quality managers. The team has developed a new policy to standardize blood management for the institution and will be educating staff.

Patient tracking in a complex tertiary care facility is a challenging issue, especially when patient location extends up to four buildings. A real time identification of correct patient care team and physician is paramount to patient safety and satisfaction. The Department of Hospital Medicine has created a unique intranet-based process of proactively managing patient assignments with the rollout of the inpatient electronic medical record. This was achieved through a formal process improvement team and is seen as a best practice for further adoption in the institution.

The above represents a selection of the multiple innovative types of activities that occur within and across the departments of the Medicine Institute. We strive to incorporate the best of practices and most advanced methodologies currently available to provide excellent care to our patients.

New Knowledge

For a complete list of Medicine Institute 2007 publications go to www.clevelandclinic.org/quality/outcomes

Journal Articles

Allen D, Stoller JK, Minai OA. A 45-year-old woman with systemic lupus erythematosus and progressive dyspnea. *Chest*. 2007 Apr;131(4):1252-1255.

Amin AN, **Rehm SJ**. Infections in hospitalized patients: what is happening and who can help? *Cleve Clin J Med.* 2007 Aug;74 Suppl 4:S2-S5.

Andersen-Harris K, Whinney C. Does unrecognized diabetes in the preoperative period worsen postoperative outcomes? *Cleve Clin J Med.* 2007 Sep;74 Electronic Suppl 1:S15-S16.

Armstrong WS, **Taege AJ.** HIV screening for all: the new standard of care. *Cleve Clin J Med.* 2007 Apr;74(4):297-301.

Avery RK. Valganciclovir versus IV ganciclovir for therapy of cytomegalovirus viremia: has victory been achieved? *Am J Transplant.* 2007 Sep;7(9):2062-2063.

Avery RK. Management of late, recurrent, and resistant cytomegalovirus in transplant patients. *Transplant Rev (Orlando)*. 2007 Apr;21(2):65-76.

Avery RK. Ganciclovir-resistant cytomegalovirus disease in heart transplant recipients: the dilemma of donor-positive/recipient-negative serostatus. *Clin Infect Dis.* 2007 Aug 15;45(4):448-449.

Bakhru MR, Kumar A, Aneja A. A 58-year-old woman with mental status changes. *Cleve Clin J Med.* 2007 Jun;74(6):457-462.

Bertin M, Scarpelli M, Proctor AW, Sharp J, Robitson E, Donnelly T, Young C, **Gordon SM**. Novel use of the intranet to document health care personnel participation in a mandatory influenza vaccination reporting program. *Am J Infect Control.* 2007 Feb;35(1):33-37.

Bronson D, Franco K, Budur K. Posttraumatic stress disorder in primary care patients. *Compr Ther*. 2007; 33(4):208-215.

Bronson DL. Waist-to-hip ratio showed a linear association with mortality in middle-aged men and women, but body mass index did not. *ACP J Club*. 2007 Nov;147(3):79.

Bronson DL. Commentary — Review: Statin monotherapy is safe in hyperlipidemia except for increased risk for transaminase elevation. *ACP J Club*. 2007 May;146(3):70.

Brotman DJ, **Bakhru M**, Saber W, **Aneja A**, Bhatt DL, Tillan-Martinez K, **Jaffer AK**. Discontinuation of antiplatelet therapy prior to low-risk noncardiac surgery in patients with drug-eluting stents: A retrospective cohort study. *J Hosp Med*. 2007 Dec 14;2(6):378-384.

Buencamino MCA, Goel SS, Tuthill RJ, **Taege A.** A 19-year-old man with oral ulcers, pulmonary infiltrates, and rash. *Cleve Clin J Med*. 2007 Nov;74(11):773-785.

Cain RA. Navigating the Sequenced Treatment Alternatives to Relieve Depression (STAR*D) Study: practical outcomes and implications for depression treatment in primary care. *Prim Care*. 2007 Sep;34(3):505-519.

Catacutan T, Usmani A, Aneja A. Does a systolic murmur heard in the aortic area need to be further evaluated prior to elective surgery? *Cleve Clin J Med*. 2007 Sep;74 Electronic Suppl 1:S21-S23.

Chen SY, Tang WHW. Emerging drugs for acute and chronic heart failure: current and future developments. *Expert Opin Emerg Drugs*. 2007 Mar;12(1):75-95.

Chiappori AA, Eckhardt SG, Bukowski R, **Sullivan DM**, Ikeda M, Yano Y, Yamada-Sawada T, Kambayashi Y, Tanaka K, Javle MM, Mekhail T, O'Bryant CL, Creaven PJ. A phase I pharmacokinetic and pharmacodynamic study of s-3304, a novel matrix metalloproteinase inhibitor, in patients with advanced and refractory solid tumors. *Clin Cancer Res*. 2007 Apr 1;13(7):2091-2099.

Collins GB, McAllister MS, **Ford DB.** Patient-provider e-mail communication as an adjunctive tool in addiction medicine. *J Addict Dis*. 2007;26(2):45-52.

del Real GA, Rose ME, Ramirez-Atamoros MT, Hammel J, **Gordon SM**, Arroliga AC, Arroliga ME. Penicillin skin testing in patients with a history of beta-lactam allergy. *Ann Allergy Asthma Immunol*. 2007 Apr;98(4):355-359.

Factora RM. Primary progressive aphasia - In reply. *Cleve Clin J Med*. 2007 Jan;74(1):9.

Harte BJ, Dhaliwal G, Armstrong W, Pile JC. A rash decision. *J Hosp Med*. 2007 Dec 14;2(6):433-438.

Hebbar R, **Harte B.** Do preoperative nutritional interventions improve outcomes in malnourished patients undergoing elective surgery? *Cleve Clin J Med*. 2007 Sep;74 Electronic Suppl 1:S8-S10.

Huang D, Cossoy M, Li M, Choi D, **Taege A**, Staugaitis SM, **Rehm S**, Ransohoff RM. Inflammatory progressive multifocal leukoencephalopathy in human immunodeficiency virus-negative patients. *Ann Neurol*. 2007 Jul;62(1):34-39.

Jaffer AK. Warfarin reduced major stroke more than aspirin in elderly patients with atrial fibrillation in primary care. *ACP J Club*. 2007 Nov;147(3):59.

Jaffer AK, Michota FA Jr. Foreword: new topics, returning features, tools for enduring challenges. *Cleve Clin J Med*. 2007 Sep;74 Electronic Suppl 1:S1.

Karnak D, **Avery RK**, Gildea TR, Sahoo D, Mehta AC. Endobronchial fungal disease: an under-recognized entity. *Respiration*. 2007;74(1):88-104.

Kaw R, Sharma P, Minai O. What risks does a history of pulmonary hypertension present for patients undergoing noncardiac surgery? *Cleve Clin J Med*. 2007 Sep;74 Electronic Suppl 1:S20-S21.

Kaw R. Unrecognized sleep apnea in the surgical patient: implications for the peri-operative setting. *Indian J Sleep Med*. 2007 Jan-Mar;2(1):5-10.

Kaw R. Perioperative risks in patients with sleep apnea. *Sleep Diagnosis and Therapy*. 2007 Feb-Mar;2(1):17-18.

Kaw R, Dimov V, Bae C. Do all patients undergoing bariatric surgery need polysomnography to evaluate for obstructive sleep apnea? *Cleve Clin J Med*. 2007 Sep;74 Electronic Suppl 1:S10-S12.

Kroen C. Abraham Lincoln and the 'Lincoln sign'. *Cleve Clin J Med*. 2007 Feb;74(2):108-110.

Kwak EJ, **Avery RK**. Strategies for the prevention of infectious complications after renal transplantation. *Curr Opin Organ Transplant*. 2007 Aug;12(4): 362-370.

Losey R, **Messinger-Rapport BJ**. At what age should we discontinue colon cancer screening in the elderly? *Cleve Clin J Med*. 2007 Apr;74(4):269-272.

Lowenthal G. Neuropathic pain. *Cleve Clin J Med*. 2007 Apr;74(4):301.

Magauran CE, Yen-Lieberman B, Dhar S, Schindler S, Starkey C, **Gordon SM**. Lessons learned: moving from a rapid immunoassay to a molecular platform for respiratory viral testing during influenza season. *Infect Dis Clin Pract*. 2007 Jan;15(1):22-25.

Mayock R. Does a carotid bruit predict cerebrovascular complications following noncardiac surgery in asymptomatic patients? *Cleve Clin J Med*. 2007 Sep;74 Electronic Suppl 1:S18-S19.

Mehta NB, Partin MH. Electronic health records: a primer for practicing physicians. *Cleve Clin J Med*. 2007 Nov;74(11):826-830.

Messinger-Rapport BJ, Morley JE, Thomas DR, Gammack JK. Intensive session: new approaches to medical issues in long-term care. *J Am Med Dir Assoc*. 2007 Sep;8(7):421-433.

Michota FA. What are the disadvantages of sliding-scale insulin? *J Hosp Med*. 2007;2 Suppl 1:20-22.

Michota FA, Braithwaite SS. Avoiding complications in the hospitalized patient: the case for tight glycemic control. *J Hosp Med*. 2007;2 Suppl 1:1-4.

Michota FA, Umpierrez GE, Maynard GA. Hyperglycemia and diabetes in the hospitalized patient. *Hosp Pharm*. 2007 Sep;42(9 Suppl):1-9.

Michota FA. Bridging the gap between evidence and practice in venous thromboembolism prophylaxis: the quality improvement process. *J Gen Intern Med*. 2007 Dec;22(12):1762-1770.

Morris WH, Kumar A. What is the significance of an isolated elevated activated partial thromboplastin time in the preoperative setting? *Cleve Clin J Med*. 2007 Sep;74 Electronic Suppl 1:S13-S15.

Mossad SB, Avery RK. Second look at leflunomide "failure" to control cytomegalovirus infection in the setting of renal failure. *Transpl Infect Dis*. 2007 Sep;9(3):260.

Palmer R. Facts about falling. *Cleveland Women's Journal (East Edition)*. 2007 Feb-Mar;4(1):8.

Parker BM, Henderson JM, Vitagliano S, Nair BG, Petre J, Maurer WG, Roizen MF, Weber M, DeWitt L, Beedlow J, Fahey B, Calvert A, Ribar K, **Gordon S**. Six sigma methodology can be used to improve adherence for antibiotic prophylaxis in patients undergoing noncardiac surgery. *Anesth Analg*. 2007 Jan;104(1):140-146.

Rajamanickam A, Noor S, Usmani A. Should an asymptomatic patient with an abnormal urinalysis (bacteriuria or pyuria) be treated with antibiotics prior to major joint replacement surgery? *Cleve Clin J Med*. 2007 Sep;74 Electronic Suppl 1:S17-S18.

Rajamanickam A, Patel P, Usmani A. Are routine preoperative chest radiographs necessary in asymptomatic patients undergoing noncardiothoracic surgery? *Cleve Clin J Med*. 2007 Sep;74 Electronic Suppl 1:S7-S8.

Rehm SJ, Weber JT. The far-reaching impact of antimicrobial resistance. *Clin Infect Dis*. 2007 Sep 1;45 Suppl 2:S97-S98.

Ricanati EHW, Thacker HL. The evolution of women's health education: the Cleveland Clinic's women's health fellowship as a model. *J Womens Health (Larchmt)*. 2007 Sep;16(7):1070-1075.

Rose DZ, John BV, Santacruz JF, **Harte BJ**. Extreme presentation of bony metastatic disease. *J Hosp Med*. 2007 Mar;2(2):110-111.

Sahi H, **Avery RK**, Minai OA, Hall G, Mehta AC, Raina P, Budev M. Scedosporium apiospermum *(Pseudallescheria boydii)* infection in lung transplant recipients. *J Heart Lung Transplant*. 2007 Apr;26(4):350-356.

Shah SS, Karnak D, Budev M, **Avery RK**, Mehta AC. Endobronchial Pseudallescheria boydii in lung transplant patient with cystic fibrosis. *J Bronchology*. 2007 Jan;14(1):48-50.

Shoemaker L, **Sikon A, Jain A, Atreja A**, Falcone B, Richmond BJ, Thacker HL. Repeat dual-energy x-ray absorptiometry (DXA) resulting from reminder letters for women with a baseline abnormal DXA. *J Clin Densitom*. 2007 Jan;10(1):21-24.

Shrestha NK. Rapid diagnostic testing for mycobacterial infections. *Future Microbiol*. 2007 Aug;2:397-408.

Stevens T, **Palmer R**. Fecal incontinence in LTC patients. *Long-Term Care Interface*. 2007 Jul-Aug;8(4):35-39.

Teixeira L, **Johnson JL**. Prosthetic joint infection: when to suspect it, how to manage it. *Geriatrics*. 2007 Dec;62(12):18-22.

Tungsiripat M, Drechsler H, Aberg JA. Discontinuation of antiretroviral therapy postpartum: no evidence for altered viral set point. *J Acquir Immune Defic Syndr*. 2007 Jan 1;44(1):116-117.

Usmani A, Sharma P, Aneja A. Can brain natriuretic peptide identify noncardiac surgery patients at high risk for cardiac events? *Cleve Clin J Med*. 2007 Sep;74 Electronic Suppl 1:S12-S13.

Wiese J, **Jaffer AK**. A new home awaits the hospitalist. *J Hosp Med*. 2007 Jan;2(1):3-4.

Zuber M, Attenhofer Jost CH, Kipfer P, Collins SP, **Michota F**, Peacock WF. Acoustic cardiography augments prolonged QRS duration for detecting left ventricular dysfunction. *Ann Noninvasive Electrocardiol*. 2007 Oct;12(4): 316-328.

Whole Books/Monographic Serials

Jaffer AK, Michota FA Jr, Bader AM, Borkowski R, Koren C, **Harte B, Gugliotti D**. *Proceedings of the 3rd Annual Perioperative Medicine Summit: Cleveland Clinic in conjunction with the Society for Perioperative Assessment and Quality Improvement, September 10-12, 2007, Cleveland, Ohio*. Cleveland, OH: Cleveland Clinic Foundation; 2007. *Cleve Clin J Med*; v.74 Electronic Suppl 1.

Palmer R, Beal E. *Age Well!: A Cleveland Clinic Guide*. Cleveland, OH: Cleveland Clinic Press; 2007.

Rehm SJ, Amin AN. I*nfections in Hospitalized Patients: Urgent Challenges, Evolving Management*. Cleveland, OH: Cleveland Clinic Foundation; 2007. *Cleve Clin J Med*; v.74 Suppl 4.

Book Chapters

Allen D, Young JB. Devices for heart failure. In: Griffin BP, Rimmerman CM, Topol EJ, eds. *The Cleveland Clinic Cardiology Board Review*. Philadelphia, PA: Lippincott Williams & Wilkins; 2007:351-360.

Aneja A. Pericardial disease. In: Glasheen JJ, ed. *Hospital Medicine Secrets*. Philadelphia, PA: Mosby Elsevier; 2007:217-222.

Avery RK. Management of fever and neutropenia in leukemia. In: Sekeres MA, Kalaycio ME, Bolwell BJ, eds. *Clinical Malignant Hematology*. New York, NY: McGraw-Hill Medical; 2007:311-320.

Avery RK. Approach to the immunocompromised patient. In: Glasheen JJ, ed. *Hospital Medicine Secrets*. Philadelphia, PA: Mosby Elsevier; 2007:350-354.

Englund KA, Bal JS. Infections and infertility. In: Falcone T, Hurd WW, eds. *Clinical Reproductive Medicine and Surgery*. Philadelphia, PA: Mosby Elsevier; 2007:497-506.

Fares WH, **Michota FA**. Heart failure. In: Glasheen JJ, ed. *Hospital Medicine Secrets*. Philadelphia, PA: Mosby Elsevier; 2007:207-216.

Harte B. Acute liver disease. In: Glasheen JJ, ed. *Hospital Medicine Secrets*. Philadelphia, PA: Mosby Elsevier; 2007:268-273.

Jaffer AK. Perioperative venous thromboembolism prophylaxis and management of long-term warfarin therapy. In: Glasheen JJ, ed. *Hospital Medicine Secrets*. Philadelphia, PA: Mosby Elsevier; 2007:501-508.

Kumar A. Inflammatory bowel disease. In: Glasheen JJ, ed. *Hospital Medicine Secrets*. Philadelphia, PA: Mosby Elsevier; 2007:263-267.

Messinger-Rapport BJ, Palmer RM. Role of functional assessment in evaluating and managing infections in long-term care. In: Yoshikawa TT, Ouslander JG, eds. Infection *Management for Geriatrics in Long-term Care Facilities*. 2nd ed. New York, NY: Informa Healthcare; 2007:31-48.

Padmanabhan RA, **Gordon SM**. Infective endocarditis. In: Griffin BP, Rimmerman CM, Topol EJ, eds. *The Cleveland Clinic Cardiology Board Review*. Philadelphia, PA: Lippincott Williams & Wilkins; 2007:293-305.

Rolston DDK. Evaluation of the patient with abdominal pain. In: Glasheen JJ, ed. *Hospital Medicine Secrets*. Philadelphia, PA: Mosby Elsevier; 2007:243-249.

Sikon AL, Thacker HL. Menopause. In: Sokol AI, Sokol ER, eds. *General Gynecology: The Requisites in Obstetrics and Gynecology*. Philadelphia, PA: Mosby; 2007:383-407.

Singh V. Thoracentesis. In: Glasheen JJ, ed. *Hospital Medicine Secrets*. Philadelphia, PA: Mosby Elsevier; 2007:566-569.

Srinivasan V, **Palmer RM**. Approach to the elderly hospitalized patient. In: Glasheen JJ, ed. *Hospital Medicine Secrets*. Philadelphia, PA: Mosby Elsevier; 2007:465-474.

Suh TT, Palmer RM. Acute care. In: Duthie EH, Katz PR, Malone ML, eds. *Practice of Geriatrics*. 4th ed. Philadelphia, PA: Saunders Elsevier; 2007:85-92.

Suri S, Kripalani S. Safe and appropriate medication use. In: Glasheen JJ, ed. *Hospital Medicine Secrets*. Philadelphia, PA: Mosby Elsevier; 2007:23-29.

Whiteside JW, **Ricanati EHW**, Whiteside JL. Evaluation of the female patient. In: Sokol AI, Sokol ER, eds. General Gynecology: *The Requisites in Obstetrics and Gynecology*. Philadelphia, PA: Mosby; 2007:99-123.

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Craig Nielsen, MD
Elizabeth Ricanti, MD
David Rolston, MD
Benjamin Schaus, DO
Anita Shivadas, MD
Andrea Sikon, MD
Theodore Suh, MD, PhD
Kathryn Teng, MD
Holly Thacker, MD
Alan Weiss, MD, MBA

Some physicians may practice in multiple locations. For a detailed list including staff photos, please visit clevelandclinic.org/staff.

Contact Information

General Patient Referral

24/7 hospital transfers or physician consults
800.553.5056

Internal Medicine and Geriatric Medicine Appointments/Referrals

216.444.5665 or 800.223.2273, ext. 45665

Allergy Appointments/Referrals

216.444.3386 or 800.223.2273, ext. 43386

On the Web at clevelandclinic.org/pulmonary

Additional Contact Information

General Information

216.444.2200

Hospital Patient Information

216.444.2000

Patient Appointments

216.444.2273 or 800.223.2273

Special Assistance for Out-of-State Patients

Complimentary assistance for out-of-state patients and families
800.223.2273, ext. 55580, or email medicalconcierge@ccf.org

International Center

Complimentary assistance for international patients and families
800.884.9551 or 001.631.439.1578 or visit clevelandclinic.org/ic

Cleveland Clinic in Florida

866.293.7866

For address corrections or changes, please call 800.890.2467

Locations

Main Campus
9500 Euclid Avenue
Cleveland, OH 44195
216.444.5665

Cleveland Clinic in Avon
36901 American Way
Avon, OH 44011
440.899.5555

Avon Lake Family Health Center
450 Avon Belden Road
Avon Lake, OH 44012
440.930.6800

Beachwood Family Health and Surgery Center
26900 Cedar Road
Beachwood, OH 44122
216.839.3000

Brunswick Family Health Center
3574 Center Road, Suite 100
Brunswick, OH 44212
330.225.8886

Chagrin Falls Family Health Center
551 E. Washington St
Chagrin Falls, OH 44022
440.893.9393

Chestnut Commons Family Health Center
303 Chestnut Commons Drive
Elyria, OH 44035
440.366.9444 or 440.204.7900

Independence Family Health Center
5001 Rockside Road
Crown Center II
Independence, OH 44131
216.986.4000

Lakewood Family Health Center
16215 Madison Ave.
Lakewood, OH 44107
216.521.4400

Lorain Family Health and Surgery Center
5700 Cooper Foster Park Road
Lorain, OH 44053
440.204.7400

Solon Family Health Center
29800 Bainbridge Road
Solon, OH 44139
440.519.6800

Strongsville Family Health and Surgery Center
16761 SouthPark Center
Strongsville, OH 44136
440.878.2500

Westlake Family Health Center
30033 Clemens Road
Westlake, OH 44145
440.899.5555

Willoughby Hills Family Health Center
2570 SOM Center Rd.
Willoughby Hills, OH 44094
440.943.2500

Cleveland Clinic Wooster
1739 Cleveland Road
Wooster, OH 44691
330.287.4500

Cleveland Clinic Overview

Cleveland Clinic, founded in 1921, is a nonprofit multispecialty academic medical center that integrates clinical and hospital care with research and education. Today, 1,800 Cleveland Clinic physicians and scientists practice in 120 medical specialties and subspecialties, annually recording more than 3 million patient visits and more than 70,000 surgeries.

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 point-of-care service, institutes will improve the patient experience at Cleveland Clinic.

Cleveland Clinic's main campus, with 37 buildings on 140 acres in Cleveland, Ohio, includes a 1,000-bed hospital, outpatient clinic, specialty institutes and supporting labs and facilities. Cleveland Clinic also operates 14 family health centers; eight community hospitals; two affiliate hospitals; a 150-bed hospital and clinic in Weston, Fla.; and health and wellness centers in Palm Beach, Fla., and Toronto, Canada. Cleveland Clinic Abu Dhabi (United Arab Emirates), a multispecialty care hospital and clinic, is scheduled to open in 2011.

At the Cleveland Clinic Lerner Research Institute, hundreds of principal investigators, project scientists, research associates and postdoctoral fellows are involved in laboratory-based research. Total annual research expenditures exceed $150 million from federal agencies, non-federal societies and associations, and endowment funds. In an effort to bring research from bench to bedside, Cleveland Clinic physicians are involved in more than 2,400 clinical studies at any given time.

In September 2004, Cleveland Clinic Lerner College of Medicine of Case Western Reserve University opened and will graduate its first 32 students as physician-scientists in 2009.

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, visit clevelandclinic.org.

Online Services

eCleveland Clinic

eCleveland Clinic uses state-of-the-art digital information systems to offer several services, including remote second medical opinions to patients around the world; personalized medical record access for patients; patient treatment progress for referring physicians (see below); and imaging interpretations by our subspecialty trained radiologists. For more information, please visit eclevelandclinic.org.

Dr**Connect**

Online Access to Your Patient's Treatment Progress

Whether you are referring from near or far, Dr**Connect** can streamline communication from Cleveland Clinic physicians to your office. This online tool offers you secure access to your patient's treatment progress at Cleveland Clinic. With one-click convenience, you can track your patient's care using the secure Dr**Connect** website. To establish a Dr**Connect** account, visit eclevelandclinic.org or email drconnect@ccf.org.

My**Consult**

My**Consult** Remote Second Medical Opinion is a secure online service providing specialist consultations and remote second opinions for more than 600 life-threatening and life-altering diagnoses. The My**Consult** service is particularly valuable for people who wish to avoid the time and expense of travel. For more information, visit eclevelandclinic.org/myconsult, email eclevelandclinic@ccf.org or call 800.223.2273, ext 43223.

Please visit us on the Web at clevelandclinic.org.

Cleveland Clinic

9500 Euclid Avenue, Cleveland, OH, 44195

Cleveland Clinic is a nonprofit multispecialty academic medical center. Founded in 1921, it is dedicated to providing quality specialized care and includes an outpatient clinic, a hospital with more than 1,000 staffed beds, an education institute and a research institute.