

Medicine Institute



Measuring Outcomes Promotes Quality Improvement





Measuring and understanding outcomes of medical treatments promotes quality improvement. Cleveland Clinic has created a series of Outcomes books similar to this one for its clinical institutes. Designed for a physician audience, the Outcomes books contain a summary of many of our surgical and medical treatments, with a focus on outcomes data and a review of new technologies and innovations.

The Outcomes books are not a comprehensive analysis of all treatments provided at Cleveland Clinic, and omission of a particular treatment does not necessarily mean we do not offer that treatment. When there are no recognized clinical outcome measures for a specific treatment, we may report process measures associated with improved outcomes. When process measures are unavailable, we may report volume measures; a relationship has been demonstrated between volume and improved outcomes for many treatments, particularly those involving surgical and procedural techniques.

In addition to these institute-based books of clinical outcomes, Cleveland Clinic supports transparent public reporting of healthcare quality data. The following reports are available to the public:

- Joint Commission Performance Measurement Initiative (qualitycheck.org)
- Centers for Medicare and Medicaid Services (CMS) Hospital Compare (medicare.gov/hospitalcompare), and Physician Compare (medicare.gov/PhysicianCompare)
- Cleveland Clinic Quality Performance Report (clevelandclinic.org/QPR)

Our commitment to transparent reporting of accurate, timely information about patient care reflects Cleveland Clinic's culture of continuous improvement and may help referring physicians make informed decisions.

We hope you find these data valuable, and we invite your feedback. Please send your comments and questions via email to:

OutcomesBooksFeedback@ccf.org.

To view all of our Outcomes books, please visit clevelandclinic.org/outcomes.



Dear Colleague:

Welcome to this 2016 Cleveland Clinic Outcomes book. Every year, we publish Outcomes books for 14 clinical institutes with multiple specialty services. These publications are unique in healthcare. Each one provides an overview of medical or surgical trends, innovations, and clinical data for a particular specialty over the past year. We are pleased to make this information available.

Cleveland Clinic uses data to manage outcomes across the full continuum of care. Our unique organizational structure contributes to our success. Patient services at Cleveland Clinic are delivered through institutes, and each institute is based on a single disease or organ system. Institutes combine medical and surgical services, along with research and education, under unified leadership. Institutes define quality benchmarks for their specialty services and report on longitudinal progress.

All Cleveland Clinic Outcomes books are available in print and online. Additional data are available through our online Quality Performance Reports (clevelandclinic.org/QPR). The site offers process measure, outcome measure, and patient experience data in advance of national and state public reporting sites.

Our practice of releasing annual Outcomes books has become increasingly relevant as healthcare transforms from a volume-based to a value-based system. We appreciate your interest and hope you find this information 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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Chairman's Letter

Dear Colleagues:

Thank you for your interest in the Medicine Institute's 2016 outcomes. This book exemplifies and highlights Cleveland Clinic's commitment to measuring and transparently reporting outcomes in an effort to continuously improve patient care.

The past year was one of growth, sustained clinical transformation, and quality, which positively impacted the lives of our patients and community. Achievements for 2016 included:

- A 33% increase in research dollars, totaling \$1.6 million
- Joint Commission Primary Care Medical Home recertification
- No. 1 ranking among first-year Medicare Shared Savings Programs and No. 6 overall ranking among accountable care organizations with \$34 million in shared savings
- Improved hypertension control in 10,500 patients, which translated to 131 fewer strokes, 100 fewer heart attacks, and 75 fewer patient lives lost to our families and our community
- Online scheduling capability available to our patients to access our primary care providers
- Automated screening for depression in 162,000 patients through Cleveland Clinic's Knowledge Program
- No. 8 ranking of our Center for Geriatric Medicine in *U.S. News & World Report*
- No. 1 *U.S. News/Doximity* ranking in Ohio for our Internal Medicine Residency Program
- 40 practices accepted into the Comprehensive Primary Care Plus program of the Centers for Medicare and Medicaid Services

We welcome your feedback, questions, and ideas for collaboration. Please contact me via email at OutcomesBooksFeedback@ccf.org and reference the Medicine Institute Outcomes book in your message.

Sincerely yours,



J. Gregory Rosencrance, MD
Chairman, Medicine Institute



Institute Overview

Cleveland Clinic's Medicine Institute brings together departments that provide coordinated care across the practices of adult primary care, family medicine (including the care of children and adolescents), consultative internal medicine, geriatrics, hospital medicine, and infectious disease. From establishing outpatient care with new physicians to ensuring effective inpatient care through hospital medicine and infectious disease consultants, the Medicine Institute has the expertise to deliver outstanding care and achieve superior outcomes.

The Medicine Institute strives to be the medical home for accessible, comprehensive, coordinated, high-quality, cost-effective care for patients. Based at Cleveland Clinic's main campus, the Medicine Institute has family medicine and internal medicine physicians at 13 family health centers, 8 regional hospitals, and 22 regional primary care practices.

Key programs include the following:

- Center for Geriatric Medicine, consistently ranked among the top 10 geriatrics programs in the *U.S. News & World Report* "America's Best Hospitals" survey
- Center for Value-Based Care Research, aimed at studying new models of healthcare
- Internal Medicine Preoperative Assessment, Consultation, and Treatment (IMPACT) Center for preoperative consultation and care
- Primary Care Women's Health program for gender-specific care, education, and research
- National Consultation Service for out-of-town patients with complex conditions requiring streamlined access to specialists
- Center for Lesbian, Gay, Bisexual, and Transgender (LGBT) Care, providing a multidisciplinary, team-based approach to care

Physicians

Primary care — Ohio	227
Infectious disease	24
Hospital medicine	133
National consult service	3
Geriatrics	4
Primary care, women's health	45
Residents and fellows	178

Volumes

Primary care — Ohio	713,140
Infectious disease: outpatient consults	9061
Infectious disease: inpatient consults	41,567
IMPACT	18,261
Inpatient admissions — Ohio	43,108

Quality Performance Measurement Overview

As healthcare shifts to value-based care, managing and reporting process and outcomes measures for preventive care and chronic conditions are vehicles to help drive practice changes to deliver patient-centered care. Making results transparent aids both the caregiver and the patient in understanding how a clinician is applying best practices and giving the patient the best opportunity to remain in optimal health.

In selecting measures, Cleveland Clinic's Medicine Institute uses standards developed by prominent national organizations, including the National Committee for Quality Assurance and the U.S. Preventive Services Task Force, as well as those adopted by the National Quality Forum. These measures include:

- Management of common chronic conditions, such as diabetes and high blood pressure
- Screening for common preventable or treatable conditions, such as breast cancer and colorectal cancer
- Inpatient care for heart failure and pneumonia
- Prevention of infectious diseases with immunizations
- The patient's hospital experience
- Hospital readmissions and mortality rates

In addition to the results presented in this Outcomes book, these measures are shared with our primary care teams regularly. The information guides performance improvement activities to optimize the care the institute provides for patients.

Note: The accountable care organization (ACO) outcomes reported for the Medicine Institute are for those patients who have a Cleveland Clinic primary care physician in Ohio.

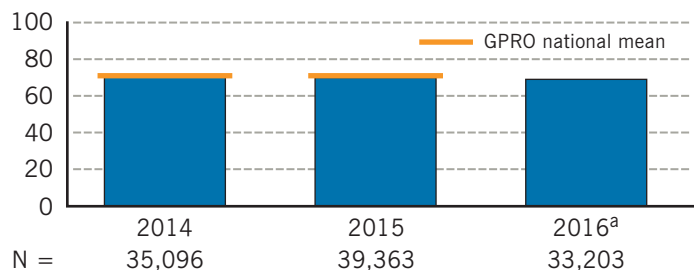
At-Risk Population: Diabetes

The epidemic of diabetes mellitus is of great concern. Medicine Institute physicians closely monitor the care of patients with diabetes. Glycemic control for patients aged 18 to 75 is reported. The percentage of patients with diabetes whose glucose is adequately controlled ($HbA_{1c} < 8\%$) is reported, as well as the percentage of patients with poor control ($HbA_{1c} \geq 9\%$). Institute performance has remained stable during the past 3 years and was compared with benchmarks established through the national group practice reporting option (GPRO) created by the Centers for Medicare & Medicaid Services (CMS) for the Physician Quality Reporting System in 2010.

ACO 22: Blood Sugar Control in Patients With Diabetes ($HbA_{1c} < 8\%$)

2014 – 2016

Percent



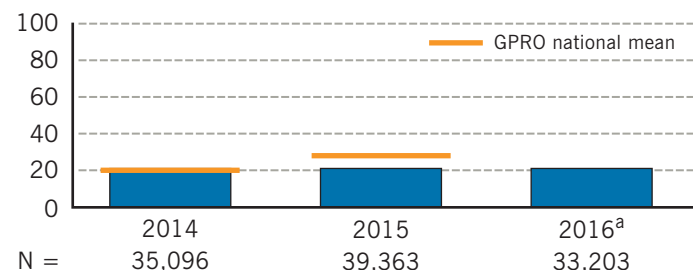
ACO = accountable care organization, GPRO = group practice reporting option

^aGPRO national mean not available

ACO 27: Blood Sugar Control in Patients With Diabetes ($HbA_{1c} \geq 9\%$)

2014 – 2016

Percent



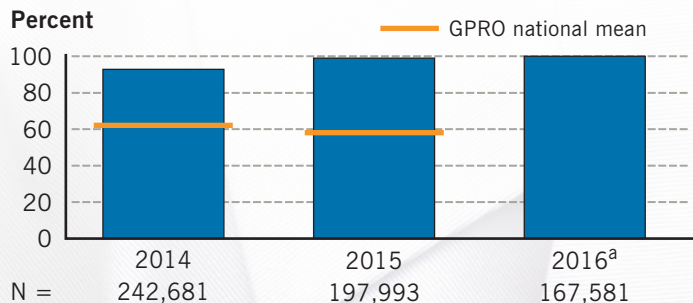
ACO = accountable care organization, GPRO = group practice reporting option

^aGPRO national mean not available

At-Risk Population: Hypertension

ACO 21: Screening for High Blood Pressure

2014 – 2016



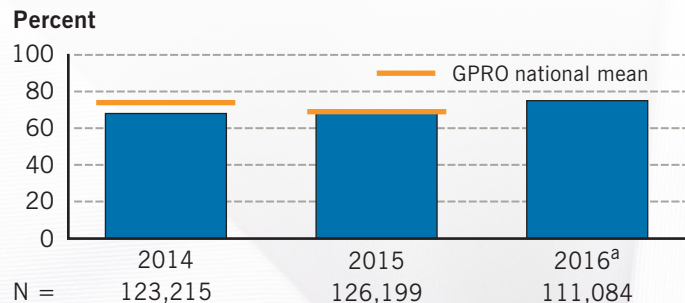
ACO = accountable care organization, GPRO = group practice reporting option

^aGPRO national mean not available

Many people have prehypertension and undiagnosed hypertension. The rate of patients aged 18 and older without the diagnosis of hypertension who had their blood pressure measured *and* had a follow-up plan documented is reported. Follow-up plans include weight reduction, Dietary Approaches to Stop Hypertension (DASH) eating plan, increased physical activity, moderation in alcohol consumption, and medical follow-up.

ACO 28: Hypertension Control (< 140/90 mm Hg)

2014 – 2016



ACO = accountable care organization, GPRO = group practice reporting option

^aGPRO national mean not available

The percentage of patients aged 18 to 85 with a documented diagnosis of hypertension and a blood pressure reading of < 140/90 mm Hg at their most recent ambulatory office visit is displayed.

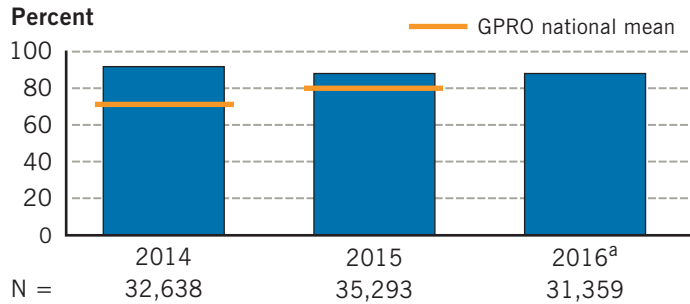
In 2016, Cleveland Clinic formed a multidisciplinary continuous improvement team to support the management of patients with high blood pressure. Each practice site was supplied with process and outcome data twice a month to guide improvement efforts. Educational programs and improved access for patients also contributed to improvement.



At-Risk Population: Ischemic Vascular Disease

ACO 30: Ischemic Vascular Disease: Use of Aspirin or Another Antithrombotic

2014 – 2016



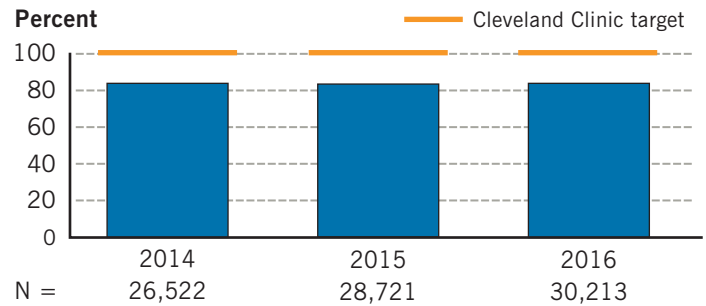
ACO = accountable care organization, GPRO = group practice reporting option

^aGPRO national mean not available

The percentage of patients older than 18 years with ischemic vascular disease who were prescribed aspirin or another antithrombotic during the previous year is reported.

Percentage of Patients With Ischemic Vascular Disease Prescribed a Statin

2014 – 2016



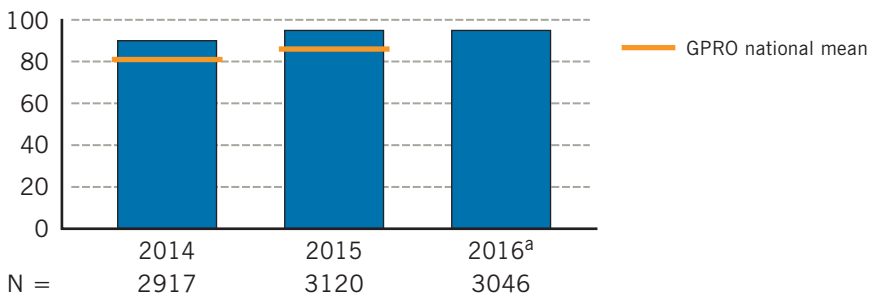
The pharmacologic treatment plan for patients with ischemic vascular disease includes statin therapy. The percentage of patients with ischemic vascular disease who were prescribed a statin is reported. No benchmark is available at this time.

At-Risk Populations: Heart Failure & Coronary Artery Disease

ACO 31: Heart Failure: Beta Blocker Therapy for Left Ventricular Systolic Dysfunction

2014 – 2016

Percent



The percentage of patients older than 18 years with a diagnosis of heart failure and left ventricular systolic dysfunction (ejection fraction < 40%) who were prescribed beta blocker therapy is reported.

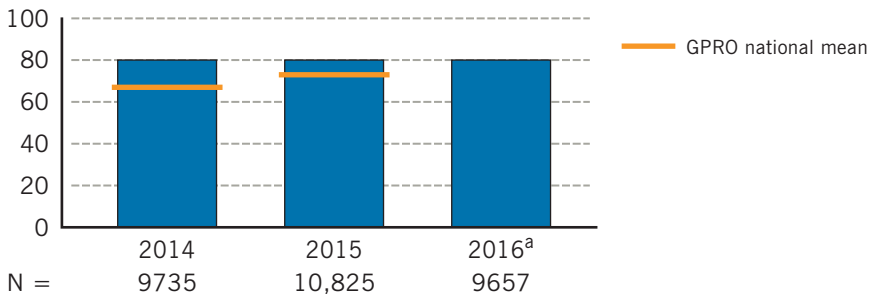
ACO = accountable care organization, GPRO = group practice reporting option

^aGPRO national mean not available

ACO 33: Angiotensin-Converting Enzyme Inhibitor or Angiotensin Receptor Blocker Therapy for Patients With Coronary Artery Disease and Diabetes and/or Left Ventricular Systolic Dysfunction

2014 – 2016

Percent



The percentage of patients older than 18 years with coronary artery disease who also have diabetes and/or left ventricular systolic dysfunction and were prescribed an angiotensin-converting enzyme inhibitor or an angiotensin receptor blocker is reported. The Medicine Institute's performance has been consistent and continues to exceed the national benchmark.

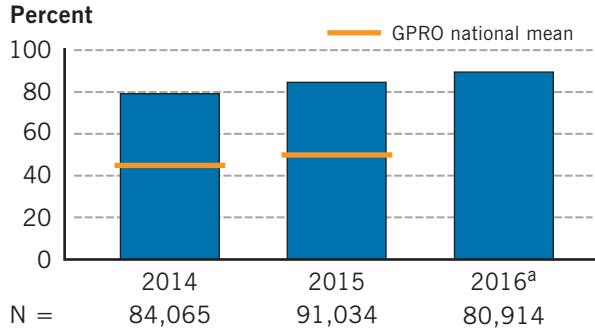
ACO = accountable care organization, GPRO = group practice reporting option

^aGPRO national mean not available

Preventive Health

ACO 15: Pneumococcal Immunization for Adults \geq 65 Years

2014 – 2016



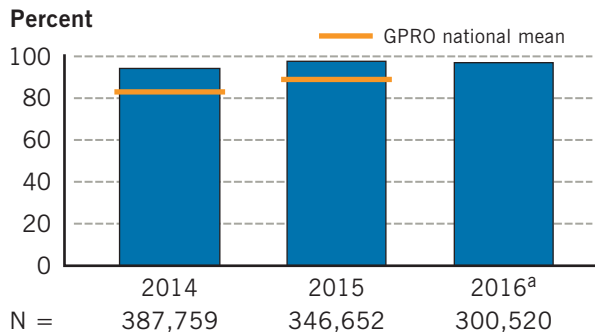
ACO = accountable care organization, GPRO = group practice reporting option

^aGPRO national mean not available

The percentage of adults aged 65 or older showing documentation of pneumococcal immunization was measured. The Medicine Institute consistently surpasses the national benchmark for the administration of the pneumococcal vaccine.

ACO 17: Tobacco Use: Screening and Cessation Intervention

2014 – 2016



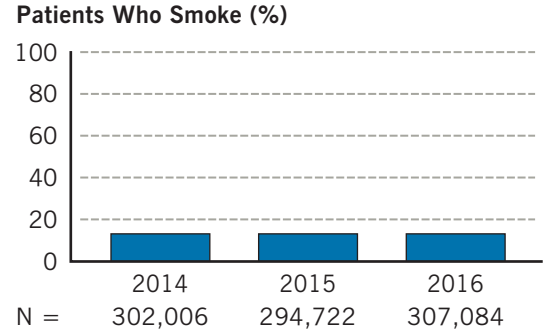
ACO = accountable care organization, GPRO = group practice reporting option

^aGPRO national mean not available

The percentage of adults aged 18 or older who were screened for tobacco use and received smoking cessation counseling if identified as a tobacco user was measured.

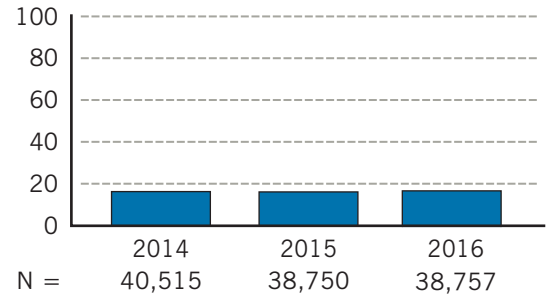
Patients Who Smoke, and Who Quit Smoking

2014 – 2016



The percentage of patients aged 18 or older seen at least once in the past 2 years who were smokers at their last visit was measured.

Smokers Who Quit (%)

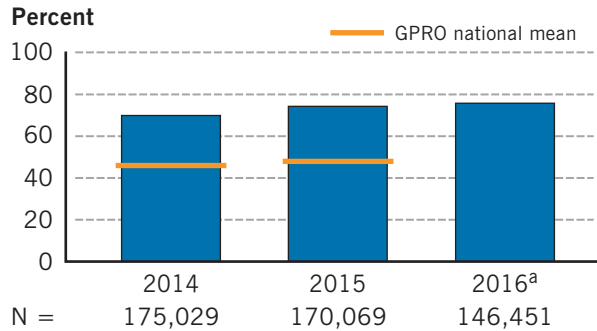


The percentage of patients aged 18 or older who were smokers and quit smoking during the measurement year was tabulated.

Preventive Health

ACO 19: Colorectal Cancer Screening

2014 – 2016



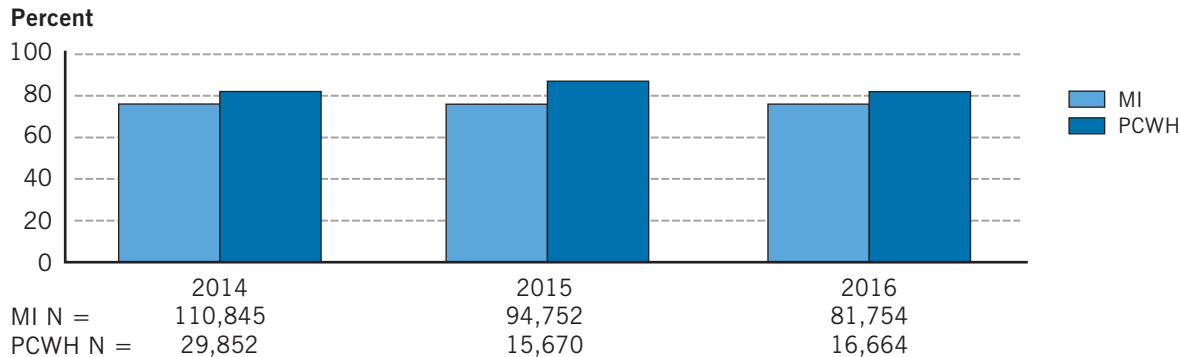
Completion of appropriate colorectal cancer screening tests leads to earlier detection and reduced risk of death from colorectal cancer. The Medicine Institute evaluated the percentage of patients aged 50 to 75 who had documented colon cancer screening using colonoscopy, flexible sigmoidoscopy, and/or stool occult blood testing.

ACO = accountable care organization, GPRO = group practice reporting option

^aGPRO national mean not available

ACO 20: Breast Cancer Screening

2014 – 2016



ACO = accountable care organization, MI = Medicine Institute, PCWH = Primary Care Women's Health

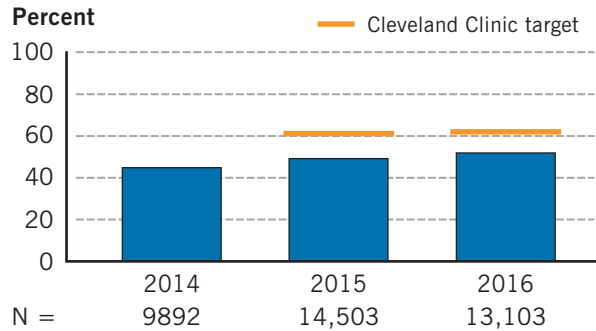
The Medicine Institute monitored rates of screening mammography for 2014 in women aged 40 to 69. Changes in guidelines led to adjusting the age group for 2015 to 50 to 74. The institute's performance during the past 3 years has been steady and above the traditional

national benchmark. The Primary Care Women's Health section performance has been consistently higher than that of the overall institute and the national benchmark.

Family Medicine

Adolescent Well Care Visits

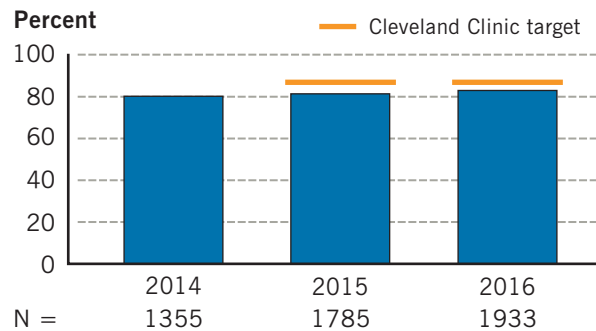
2014 – 2016



The Medicine Institute's Department of Family Medicine reports the percentage of patients aged 12 to 21 who had a well care visit in the past year. Tracking this information will allow outreach to this population to improve care.

Well Child Visits at 3, 4, 5, and 6 Years

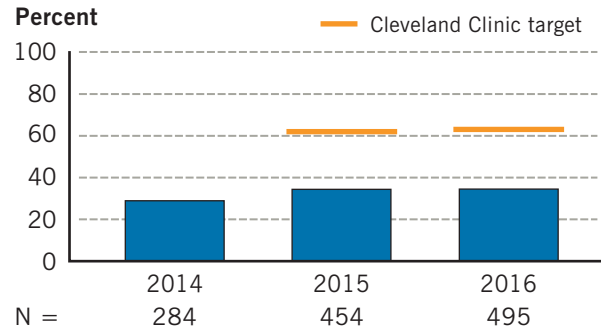
2014 – 2016



The Department of Family Medicine provides excellent rates of well child care visits for patients aged 3, 4, 5, and 6 and is beginning to track and report this measure. The department is near the 90th percentile target and is striving to improve.

Childhood Immunization Combination 10

2014 – 2016

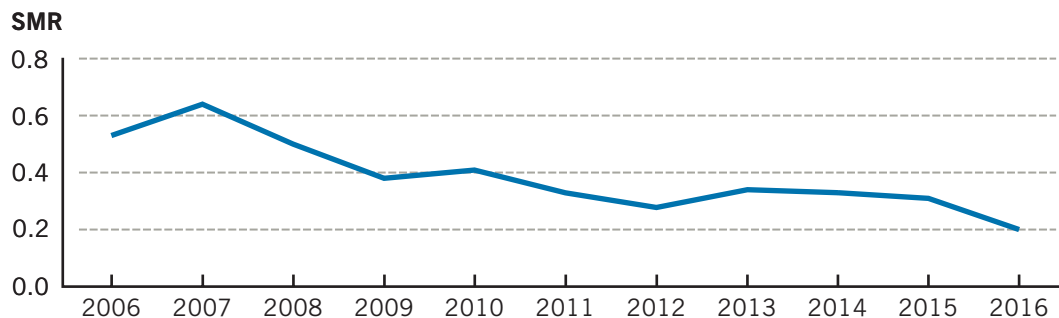


Prompt and complete immunization for children remains a top priority. Unfortunately, alternative vaccination schedules and myths about vaccine safety challenge pediatric providers across the country. Immunizing children prior to their second birthday with all doses of 10 different vaccines (4 diphtheria, tetanus, and acellular pertussis; 4 pneumococcal conjugate; 3 to 4 *Haemophilus influenzae* type b; 3 hepatitis B; 3 polio; 2 to 3 rotavirus; 2 influenza; 2 hepatitis A; 1 varicella; and 1 measles, mumps, and rubella) can be a challenge.

Readmissions and Mortality

Standardized Mortality Ratio (All Patients Admitted to Medicine Institute's Service)

2006 – 2016



The standardized mortality ratio (SMR) is observed deaths/expected deaths (1.0 represents the average mortality rate; < 1.0 represents a better-than-expected mortality rate). SMR is a commonly used method of representing care and making data comparisons. The All Patient Refined Diagnosis Related Groups (APR DRG)^a risk-adjustment method is used in this calculation to make effective comparisons. The institute's SMR remains well below expected. The population is defined as all patients admitted to the Medicine Institute's service.

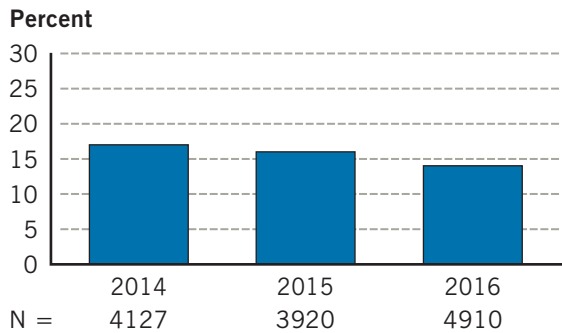
^aThe 3M™ All Patient Refined Diagnosis Related Groups (APR DRG) Classification System is used for adjusting data for severity of illness and risk of mortality.

solutions.3m.com/wps/portal/3M/en_US/Health-Information-Systems/HIS/Products-and-Services/Products-List-A-Z/APR-DRG-Software

The Medicine Institute hospitalist provides inpatient care, which covers a very wide range of diagnoses and conditions. To better determine readmission rates, the institute leadership continues to focus on the discharge status of patients and to pair interventions with each of the main modes by which patients are discharged. The 3 main discharge modes are home, home with home healthcare, and skilled nursing facility. Care coordination efforts contribute to decreased readmission rates for all 3 modes.

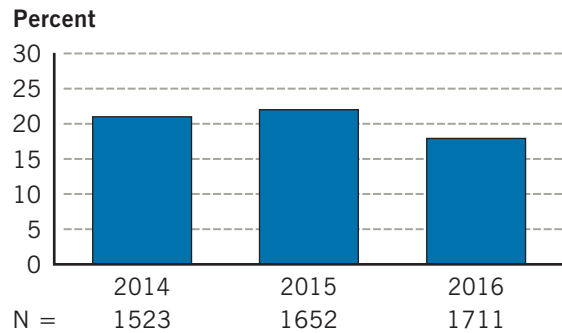
Thirty-Day All-Cause Readmission Rate for Patients Discharged to Home

2014 – 2016



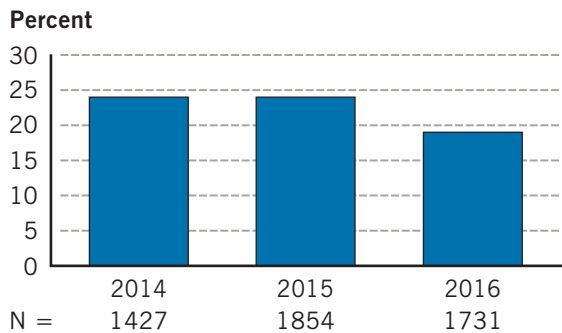
Thirty-Day All-Cause Readmission Rate for Patients Discharged to a Skilled Nursing Facility

2014 – 2016



Thirty-Day All-Cause Readmission Rate for Patients Discharged to Home With Home Healthcare

2014 – 2016

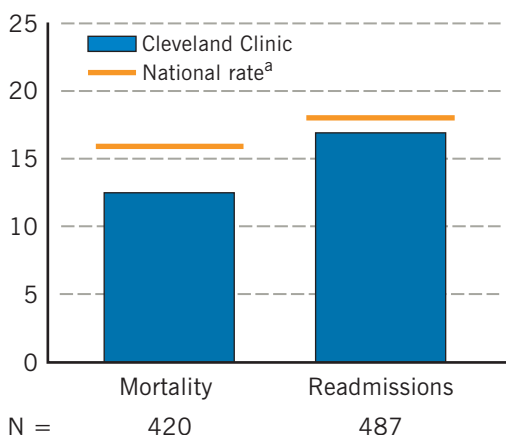


Readmissions and Mortality

Pneumonia All-Cause 30-Day Mortality and All-Cause 30-Day Readmissions

July 2013 – June 2016

Percent



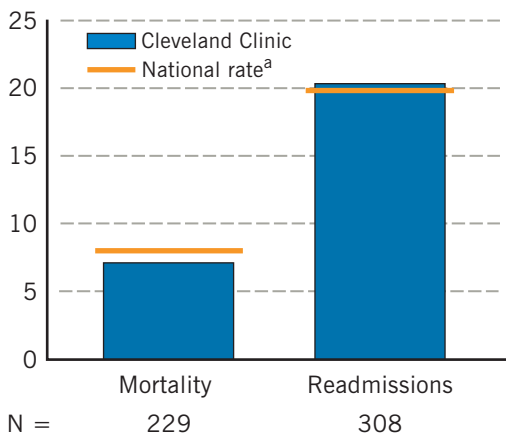
^aSource: medicare.gov/hospitalcompare

CMS calculates 2 pneumonia outcomes measures based on Medicare claims and enrollment information. The most recent risk-adjusted data available from CMS are shown. Cleveland Clinic's pneumonia patient mortality rate is ranked "better than" the US national rate. Cleveland Clinic's pneumonia readmissions rate is ranked "no different than" the US national rate. To further reduce avoidable readmissions, Cleveland Clinic is focused on optimizing transitions from hospital to home or postacute facility. Specific initiatives have been implemented to ensure effective communication, education, and follow-up.

COPD All-Cause 30-Day Mortality and All-Cause 30-Day Readmissions

July 2013 – June 2016

Percent



COPD = chronic obstructive pulmonary disease

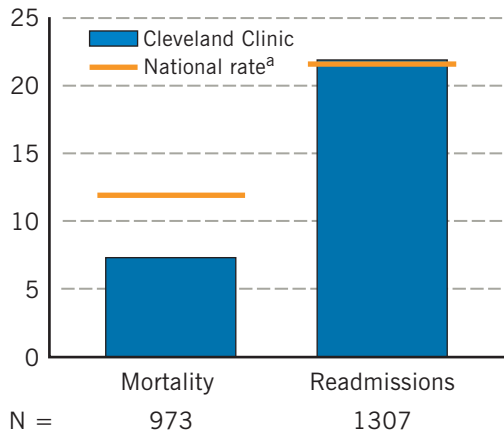
^aSource: medicare.gov/hospitalcompare

CMS calculates 2 COPD outcomes measures based on Medicare claims and enrollment information. The most recent risk-adjusted data available from CMS are shown. Although Cleveland Clinic's COPD patient mortality rate is lower than the US national rate, CMS ranks Cleveland Clinic's performance as "no different than" the US national rate. Cleveland Clinic's COPD readmissions rate is slightly higher than the US national rate and also ranked by CMS as "no different than" the US national rate. To further reduce avoidable readmissions, Cleveland Clinic is focused on optimizing transitions from hospital to home or postacute facility. Specific initiatives have been implemented to ensure effective communication, education, and follow-up.

Heart Failure All-Cause 30-Day Mortality and All-Cause 30-Day Readmissions

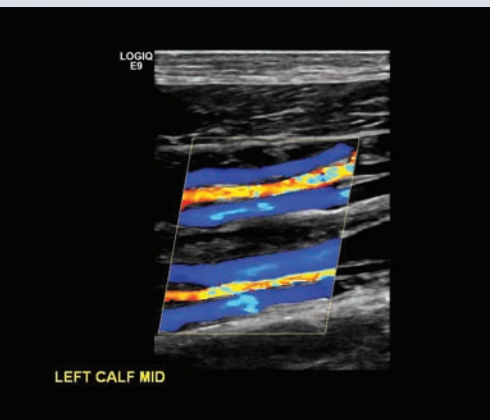
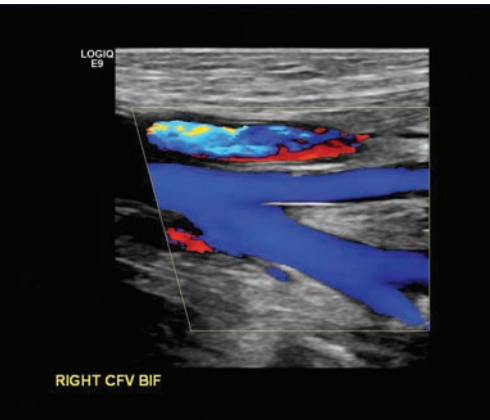
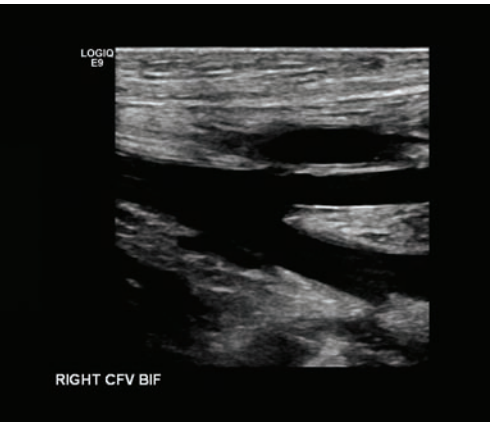
July 2013 – June 2016

Percent



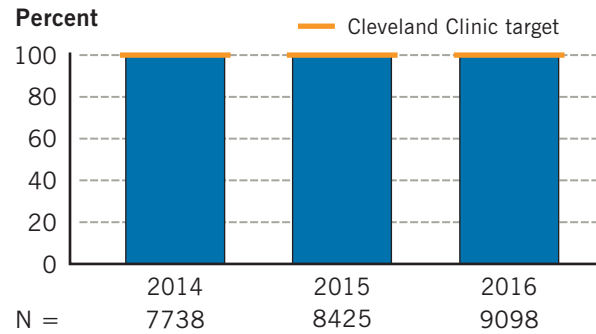
^aSource: medicare.gov/hospitalcompare

CMS calculates 2 heart failure outcomes measures based on Medicare claims and enrollment information. The most recent risk-adjusted data available from CMS are shown. Cleveland Clinic's heart failure patient mortality rate is ranked as "better than" the US national rate. Although Cleveland Clinic's heart failure readmissions rate is slightly higher than the US national rate, CMS ranks Cleveland Clinic's performance as "no different than" the US national rate. To further reduce avoidable readmissions, Cleveland Clinic is focused on optimizing transitions from hospital to home or postacute facility. Specific initiatives have been implemented to ensure effective communication, education, and follow-up.



Appropriate Risk Assessment for Venous Thromboembolism

2014 – 2016

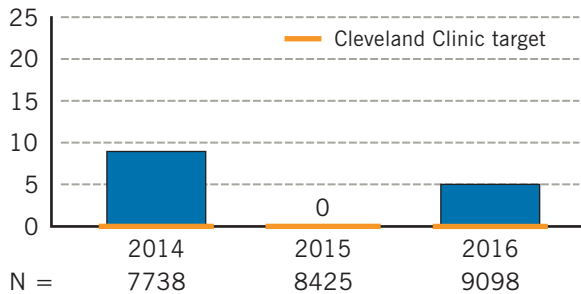


Timely venous thromboembolism risk assessment is a process to prevent deep vein thrombosis and pulmonary embolism for hospitalized patients. By building the risk assessment into the standard Cleveland Clinic admission process, the Medicine Institute has consistently achieved compliance for patients aged 18 and older.

Unit-Acquired Pressure Ulcers \geq Stage II

2014 – 2016

Number of Patients

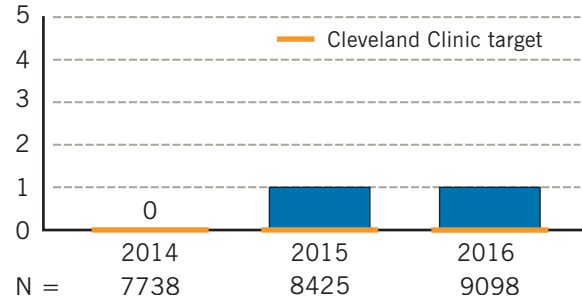


Aggressive monitoring of pressure ulcer prevalence, the coordinated initiatives of the clinical nurse specialists, the addition of unit-based skin care nurses, and the implementation of multidisciplinary skin care rounds have substantially decreased unit-acquired pressure ulcers \geq stage II, with just 5 reported in 2016.

Inpatient Falls With Major Injury

2014 – 2016

Number of Patients



Initiatives to prevent falls during 2016 continued to focus on identifying those patients whose fall risk may have changed over the course of their care and treatment, as a result of either their own health status change or new medications/procedures known to increase their risk. The Medicine Institute had great success and improvement in 2014 with zero falls with major injury and in 2015 and 2016 with 1 fall with major injury each year.

Patient Experience — Medicine Institute

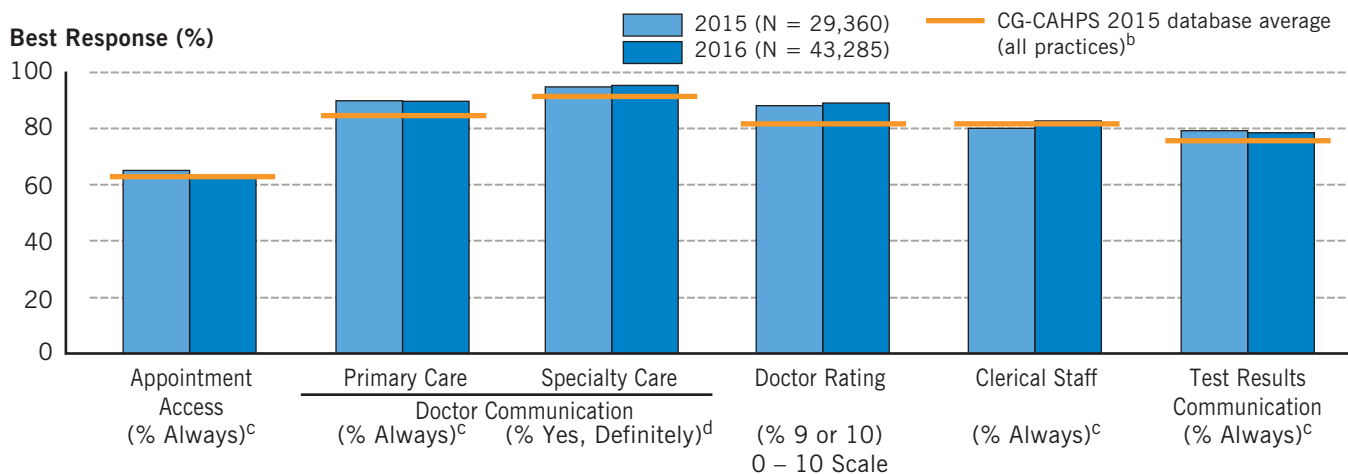
Keeping patients at the center of all that Cleveland Clinic does is critical. Patients First is the guiding principle at Cleveland Clinic. Patients First is safe care, high-quality care, in the context of patient satisfaction, and high value. Ultimately, caregivers have the power to impact every touch point of a patient's journey, including their clinical, physical, and emotional experience.

Cleveland Clinic recognizes that patient experience goes well beyond patient satisfaction surveys. Nonetheless, sharing the survey results with caregivers and the public affords opportunities to improve how Cleveland Clinic delivers exceptional care.

Outpatient Office Visit Survey — Medicine Institute

CG-CAHPS Assessment^a

2015 – 2016



^aIn 2013, Cleveland Clinic began administering the Clinician and Group Practice Consumer Assessment of Healthcare Providers and Systems surveys (CG-CAHPS), standardized instruments developed by the Agency for Healthcare Research and Quality (AHRQ) and supported by the Centers for Medicare & Medicaid Services for use in the physician office setting to measure patients' perspectives of outpatient care.

^bBased on results submitted to the AHRQ CG-CAHPS database from 2829 practices in 2015

^cResponse options: Always, Usually, Sometimes, Never

^dResponse options: Yes, definitely; Yes, somewhat; No

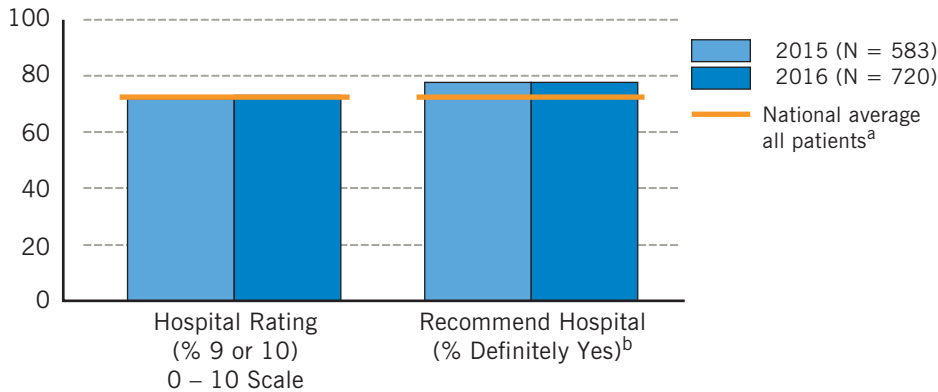
Source: Press Ganey, a national hospital survey vendor

Inpatient Survey — Medicine Institute

HCAHPS Overall Assessment

2015 – 2016

Best Response (%)



^aBased on national survey results of discharged patients, January 2015 – December 2015, from 4172 US hospitals. medicare.gov/hospitalcompare

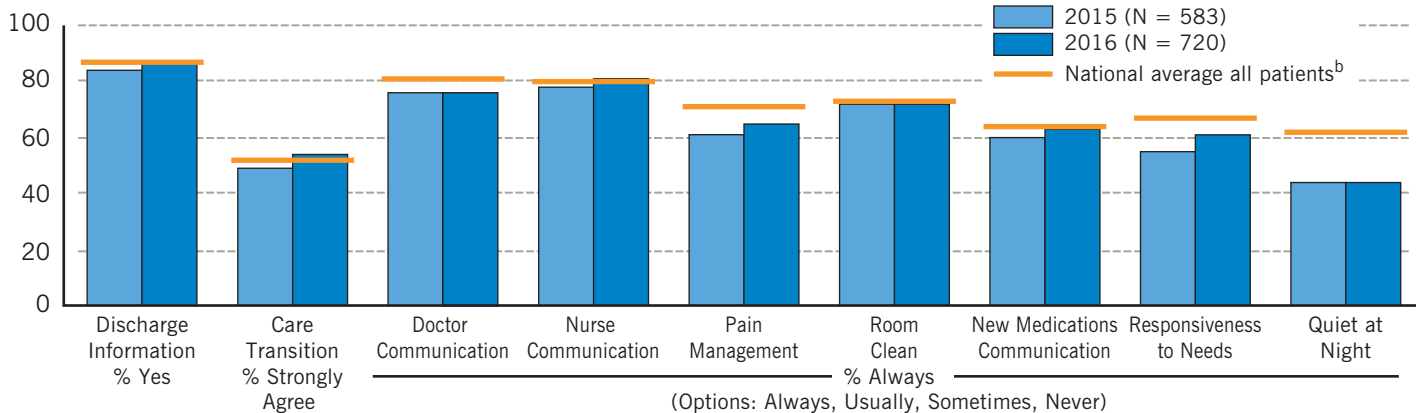
^bResponse options: Definitely yes, Probably yes, Probably no, Definitely no

The Centers for Medicare & Medicaid Services requires United States hospitals that treat Medicare patients to participate in the national Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey, a standardized tool that measures patients' perspectives of hospital care. Results collected for public reporting are available at medicare.gov/hospitalcompare.

HCAHPS Domains of Care^a

2015 – 2016

Best Response (%)



^aExcept for "Room Clean" and "Quiet at Night," each bar represents a composite score based on responses to multiple survey questions.

^bBased on national survey results of discharged patients, January 2015 – December 2015, from 4172 US hospitals. medicare.gov/hospitalcompare

Source: Press Ganey, a national hospital survey vendor, 2016

Cleveland Clinic — Implementing Value-Based Care

Overview

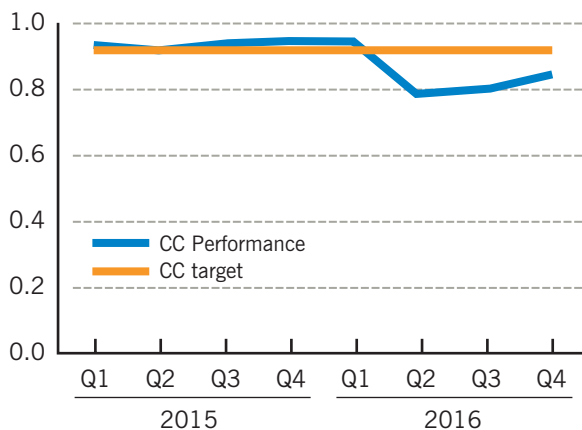
Cleveland Clinic health system uses a systematic approach to performance improvement while simultaneously pursuing 3 goals: improving the patient experience of care (including quality and satisfaction), improving population health, and reducing the cost of healthcare. The following measures are examples of 2016 focus areas in pursuit of this 3-part aim. Throughout this section, “Cleveland Clinic” refers to the academic medical center or “main campus,” and those results are shown.

Improve the Patient Experience of Care

Cleveland Clinic Overall Mortality Ratio

2015 – 2016

O/E Ratio



Source: Data from the Vizient Clinical Data Base/Resource Manager™ used by permission of Vizient. All rights reserved.

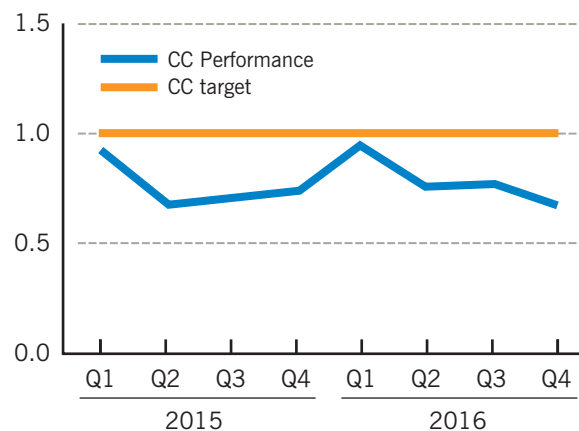
Cleveland Clinic’s observed/expected (O/E) mortality ratio outperformed its internal target derived from the Vizient 2016 risk model. Ratios less than 1.0 indicate mortality performance “better than expected” in Vizient’s risk adjustment model.

Real-time data are leveraged in each Cleveland Clinic location to drive performance improvement. Although not an exact match to publicly reported data, more timely internal data create transparency at all organizational levels and support improved care in all clinical locations.

Cleveland Clinic Central Line-Associated Bloodstream Infection, reported as Standardized Infection Ratio (SIR)

2015 – 2016

Rate per 1000 Line Days

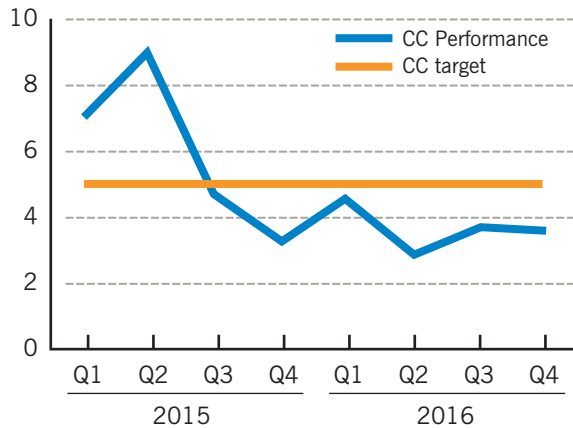


Cleveland Clinic has implemented several strategies to reduce central line-associated bloodstream infections (CLABSIs), including a central-line bundle of insertion, maintenance, and removal best practices. Focused reviews of every CLABSI occurrence support reductions in CLABSI rates in the high-risk critical care population.

Cleveland Clinic Postoperative Respiratory Failure Risk-Adjusted Rate

2015 – 2016

Rate per 1000 Eligible Patients



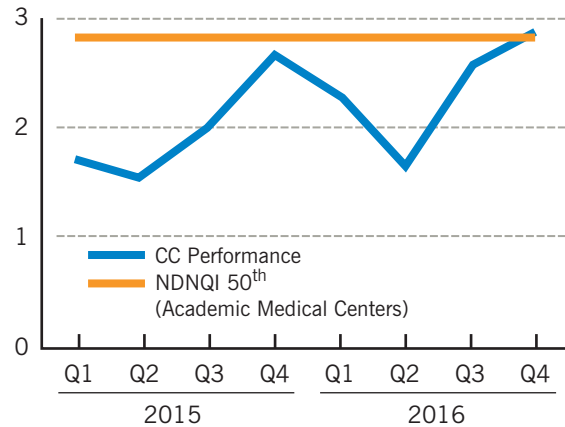
Source: Data from the Vizient Clinical Data Base/Resource Manager™ used by permission of Vizient. All rights reserved.

Efforts continue toward reducing intubation time, assessing readiness for extubation, and preventing the need for reintubation. Cleveland Clinic has leveraged the technology within the electronic medical record to support ongoing improvement efforts in reducing postoperative respiratory failure (AHRQ Patient Safety Indicator 11). Prevention of respiratory failure remains a safety priority for Cleveland Clinic.

Cleveland Clinic Hospital-Acquired Pressure Ulcer Prevalence (Adult)

2015 – 2016

Percent



Source: Data reported from the National Database for Nursing Quality Indicators® (NDNQI®) with permission from Press Ganey.

A pressure ulcer is an injury to the skin that can be caused by pressure, moisture, or friction. These sometimes occur when patients have difficulty changing position on their own. Cleveland Clinic caregivers have been trained to provide appropriate skin care and regular repositioning while taking advantage of special devices and mattresses to reduce pressure for high-risk patients. In addition, they actively look for hospital-acquired pressure ulcers and treat them quickly if they occur.

Cleveland Clinic strategies to mitigate the risk of these pressure injuries include routine rounding to accurately stage pressure injuries, monthly multidisciplinary wound care meetings, and ongoing nursing education, both in the classroom and at the bedside.

Cleveland Clinic — Implementing Value-Based Care

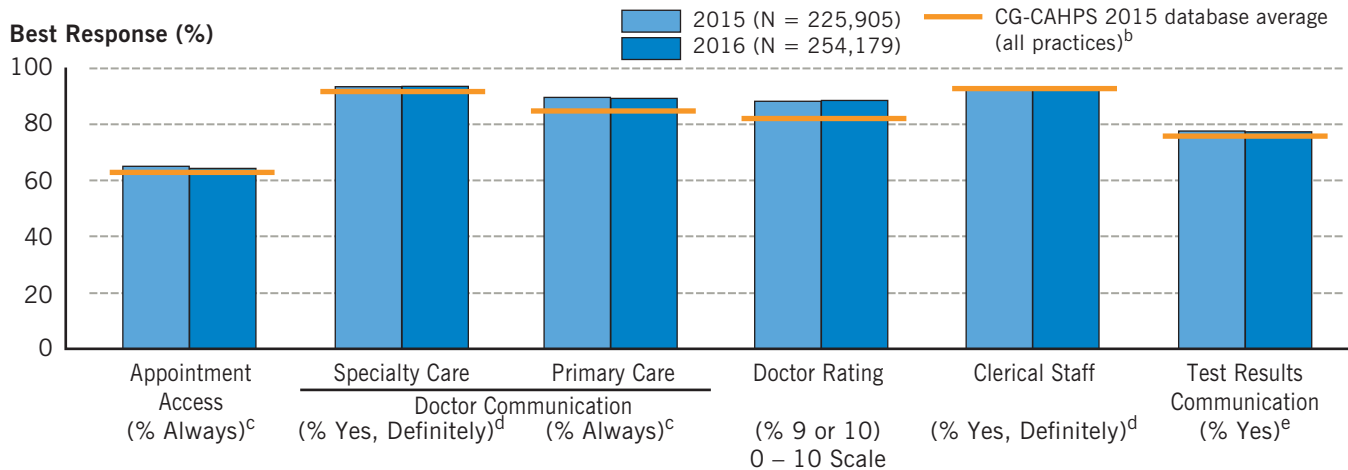
Keeping patients at the center of all that we do is critical. Patients First is the guiding principle at Cleveland Clinic. Patients First is safe care, high-quality care, in the context of patient satisfaction, and high value. Ultimately, our caregivers have the power to impact every touch point of a patient's journey, including their clinical, physical, and emotional experience.

We know that patient experience goes well beyond patient satisfaction surveys. Nonetheless, by sharing the survey results with our caregivers and the public, we constantly identify opportunities to improve how we deliver exceptional care.

Outpatient Office Visit Survey — Cleveland Clinic

CG-CAHPS Assessment^a

2015 – 2016



^aIn 2013, Cleveland Clinic began administering the Clinician and Group Practice Consumer Assessment of Healthcare Providers and Systems surveys (CG-CAHPS), standardized instruments developed by the Agency for Healthcare Research and Quality (AHRQ) and supported by the Centers for Medicare & Medicaid Services for use in the physician office setting to measure patients' perspectives of outpatient care.

^bBased on results submitted to the AHRQ CG-CAHPS database from 2829 practices in 2015

^cResponse options: Always, Usually, Sometimes, Never

^dResponse options: Yes, definitely; Yes, somewhat; No

^eResponse options: Yes, No

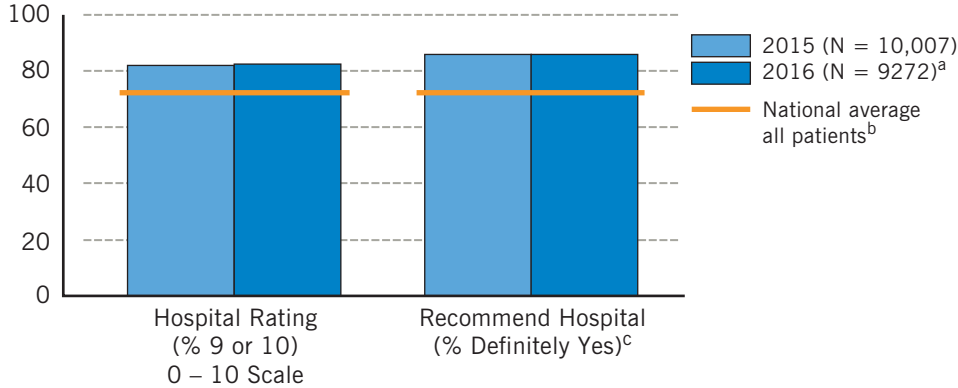
Source: Press Ganey, a national hospital survey vendor

Inpatient Survey — Cleveland Clinic

HCAHPS Overall Assessment

2015 – 2016

Best Response (%)



^aAt the time of publication, 2016 ratings have not been reported by the Centers for Medicare & Medicaid Services and ratings are not adjusted for patient mix.

^bBased on national survey results of discharged patients, January 2015 – December 2015, from 4172 US hospitals. medicare.gov/hospitalcompare

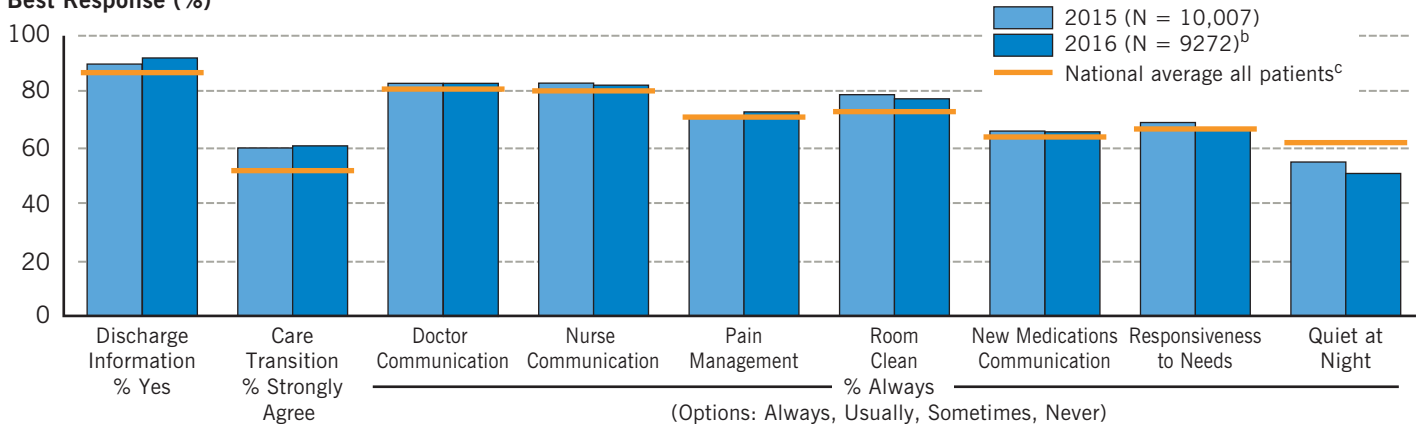
^cResponse options: Definitely yes, Probably yes, Probably no, Definitely no

The Centers for Medicare & Medicaid Services requires United States hospitals that treat Medicare patients to participate in the national Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey, a standardized tool that measures patients' perspectives of hospital care. Results collected for public reporting are available at medicare.gov/hospitalcompare.

HCAHPS Domains of Care^a

2015 – 2016

Best Response (%)



^aExcept for "Room Clean" and "Quiet at Night," each bar represents a composite score based on responses to multiple survey questions.

^bAt the time of publication, 2016 ratings have not been reported by the Centers for Medicare & Medicaid Services and ratings are not adjusted for patient mix.

^cBased on national survey results of discharged patients, January 2015 – December 2015, from 4172 US hospitals. medicare.gov/hospitalcompare

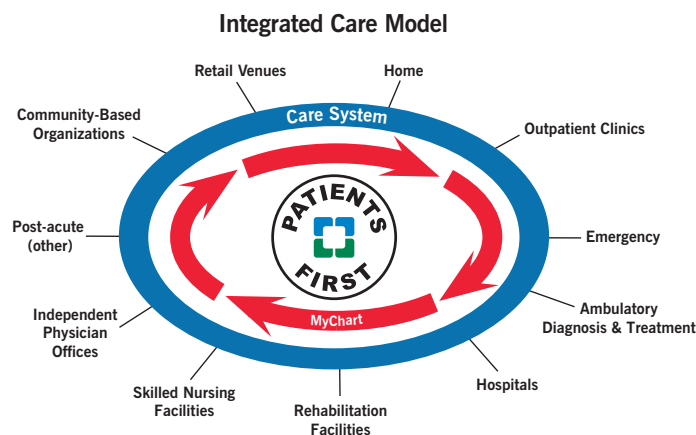
Source: Centers for Medicare & Medicaid Services, 2015; Press Ganey, a national hospital survey vendor, 2016

Cleveland Clinic — Implementing Value-Based Care

Focus on Value

Cleveland Clinic has developed and implemented new models of care that focus on “Patients First” and aim to deliver on the Institute of Medicine goal of **Safe, Timely, Effective, Efficient, Equitable, Patient-centered** care. Creating new models of Value-Based Care is a strategic priority for Cleveland Clinic. As care delivery shifts from fee-for-service to a population health and bundled payment delivery system, Cleveland Clinic is focused on concurrently improving patient safety, outcomes, and experience.

What does this new model of care look like?



The Cleveland Clinic Integrated Care Model (CCICM) is a value-based model of care, designed to improve outcomes while reducing cost. It is designed to deliver value in both population health and specialty care.

- The patient remains at the heart of the CCICM.
- The blue band represents the care system, which is a seamless pathway that patients move along as they receive care in different settings. The care system represents integration of care across the continuum.
- Critical competencies are required to build this new care system. Cleveland Clinic is creating disease- and condition-specific care paths for a variety of procedures and chronic diseases. Another facet is implementing comprehensive care coordination for high-risk patients to prevent unnecessary hospitalizations and emergency department visits. Efforts include managing transitions in care, optimizing access and flow for patients through the CCICM, and developing novel tactics to engage patients and caregivers in this work.
- Measuring performance around quality, safety, utilization, cost, appropriateness of care, and patient and caregiver experience is an essential component of this work.

Improve Population Health

Cleveland Clinic Accountable Care Organization Measure Performance

2016

National Percentile Ranking

90th	<ul style="list-style-type: none">• Falls Screening• Heart Failure• Ischemic Vascular Disease• BMI Screening• Tobacco Screening
80th	<ul style="list-style-type: none">• Coronary Artery Disease• Diabetes• Breast Cancer Screening• Pneumonia Vaccination
70th	<ul style="list-style-type: none">• Colorectal Cancer Screening• Influenza Vaccination• Blood Pressure Screening• Hypertension
50th	<ul style="list-style-type: none">• Depression Screening

Higher percentiles are better

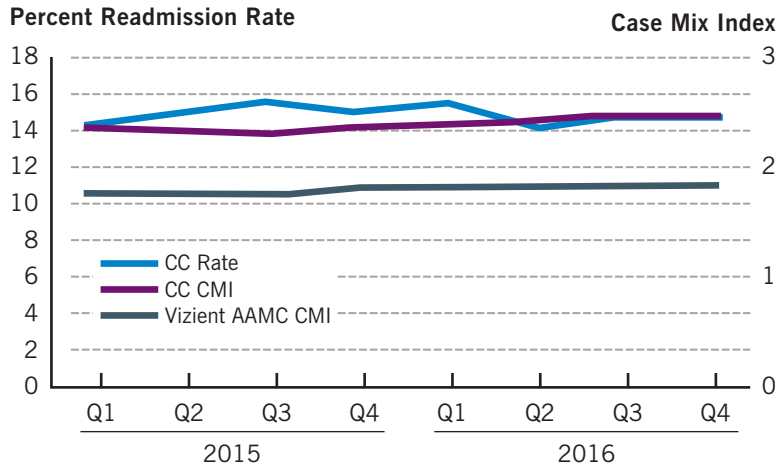
As part of Cleveland Clinic's commitment to population health and in support of its Accountable Care Organization (ACO), these ACO measures have been prioritized for monitoring and improvement. Cleveland Clinic is improving performance in these measures by enhancing care coordination, optimizing technology and information systems, and engaging primary care specialty teams directly in the improvement work. These pursuits are part of Cleveland Clinic's overall strategy to transform care in order to improve health and make care more affordable.

Cleveland Clinic — Implementing Value-Based Care

Reduce the Cost of Care

Cleveland Clinic All-Cause 30-Day Readmission Rate to Any Cleveland Clinic Hospital

2015 – 2016

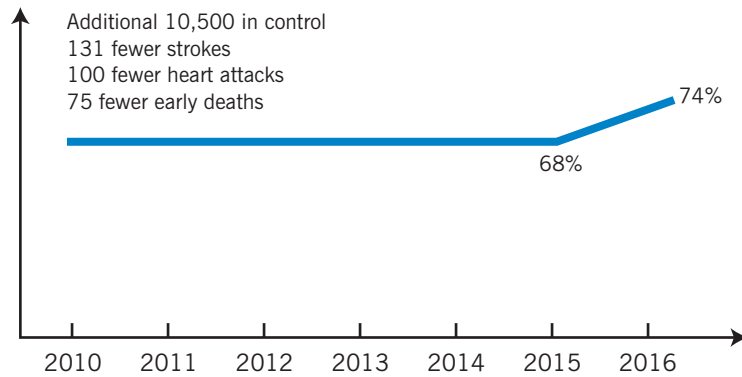


CMI = case mix index

Source: Data from the Vizient Clinical Data Base/Resource Manager™ used by permission of Vizient. All rights reserved.

Cleveland Clinic monitors 30-day readmission rates for any reason to any of its system hospitals. Unplanned readmissions are actively reviewed for improvement opportunities. Comprehensive care coordination and care management for high-risk patients has been initiated in an effort to prevent unnecessary hospitalizations and emergency department visits. Sicker, more complex patients are more susceptible to readmission. Case mix index (CMI) reflects patient severity of illness and resource utilization. Cleveland Clinic's CMI remains one of the highest among American academic medical centers.

Accountable Care Organization (ACO) Improving Outcomes and Reducing Costs



Cleveland Clinic was one of the top performing new ACOs in the United States (for 2015 performance as determined in 2016) due to efficiency, cost reduction, and improvements in effectiveness of chronic disease management such as treating hypertension, reducing preventable hospitalizations through care coordination, and optimizing the care at skilled nursing facilities through its Connected Care program.

For example, a system-wide effort to improve the control of blood pressure for patients with hypertension was begun in 2016 and resulted in an additional 10,500 patients with blood pressure controlled. This will translate to many fewer strokes, heart attacks, and preventable deaths.

Telemedicine PrEP Clinic

The healthcare industry has undergone significant change during the past several years as health providers seek programs and initiatives that can provide enhanced value to patients. Such initiatives often intersect with new technologies because of rapid growth in the technology sector. One such initiative is the launch of a telemedicine clinic within the Medicine Institute's infectious disease practice. This clinic is specifically targeted toward patients who may benefit from preexposure prophylaxis (PrEP) to guard against the risk of HIV infection. Through Cleveland Clinic's Express Care[®] Online platform, these patients can now receive this service remotely by connecting with an infectious disease provider from their local computer, tablet, or smartphone app.

Internal Medicine Residency Program

The Internal Medicine Residency Program (IMRP) comprises 167 categorical, primary care, and preliminary residents. It also provides a year of internal medicine (IM) training to an additional 14 prespecialty residents who will move on to training in dermatology and neurology. As one of the largest programs in the country, the IMRP provides residents with robust clinical training, as well as didactic and experiential curriculum designed to optimize their educational opportunities for development within the program by implementing the following innovations:

FRAME

FRAME (**F**oundations of **R**esident **A**ssessment, **M**entorship, and **E**motional Intelligence) is a conference series of small group, interactive, discussion-based educational experiences guided by IMRP leadership, faculty, and chief medical residents. FRAME incorporates important competencies into the curriculum, such as emotional intelligence, teamwork, leadership, and resilience, while promoting empathy, relationship building, self-awareness, and humanism. Residents reflect on these topics by reviewing related articles, essays, and other media to enhance connections with each other and build resilience strategies. Relationships enriched within these small groups provide a natural avenue for meaningful and individualized observations and feedback from program leadership in a number of clinical settings. FRAME facilitates a "personal, introspective process of learning," connects residents with each other and with faculty, and provides a safe space for enhancing psychological safety.

Resident Coaching

Under the direction of Cleveland Clinic's Staff Coaching and Mentoring Program, the IMRP developed its own coaching program, which matches residents with Cleveland Clinic physicians who are IM-trained staff coaches. Coaching is distinct from mentoring and is specifically designed to promote residents' self-reflection and to focus on individual strengths with the purpose of enriching their growth and maximizing residents' potential within their careers. The coaching program has been a successful addition to the residency mentoring program.

4 + 1 Schedule Structure

The 4 + 1 schedule structure for IM residents is composed of 4 “X” weeks of inpatient, consult, and elective rotations, followed by 1 “Y” week of longitudinal continuity clinic and extended educational conferences. The 4 + 1 structure optimizes and maximizes residents’ exposure to ambulatory medicine without interfering with training in the inpatient setting. This creates 2 unique opportunities: the ability to deliver IM curriculum in a dedicated manner without interference with clinical duties, and empowerment of residents to be the primary care physician (PCP) for their ambulatory clinic patients. This structure allows IM residents to truly serve as their patients’ PCP because they can see their patients again in days, weeks, or months. It also enhances team unity during inpatient rotations as residents no longer must leave their inpatients to attend an afternoon of clinic or didactics. Residents can concentrate on the task at hand, enhancing the care they deliver to both hospitalized and ambulatory patients.

Contact Information

Internal Medicine and Family Medicine Appointments/Referrals

216.444.5665 or 800.223.2273,
ext. 45665

National Consultation Service

216.444.2323 or 800.223.2273,
ext. 42323

Infectious Disease Appointments (Main Campus)

216.444.8845 or 800.223.2273,
ext. 48845

Center for Connected Care

Providing home care, hospice, mobile
primary-care physician group practice,
home infusion pharmacy, home
respiratory therapy, and facility-based
(SNF and LTAC) services
216.444.HOME (4663) or
800.263.0403

On the Web at [clevelandclinic.org/
medicine](http://clevelandclinic.org/medicine)

Staff Listing

For a complete listing of Cleveland
Clinic's Medicine Institute staff,
please visit clevelandclinic.org/staff.

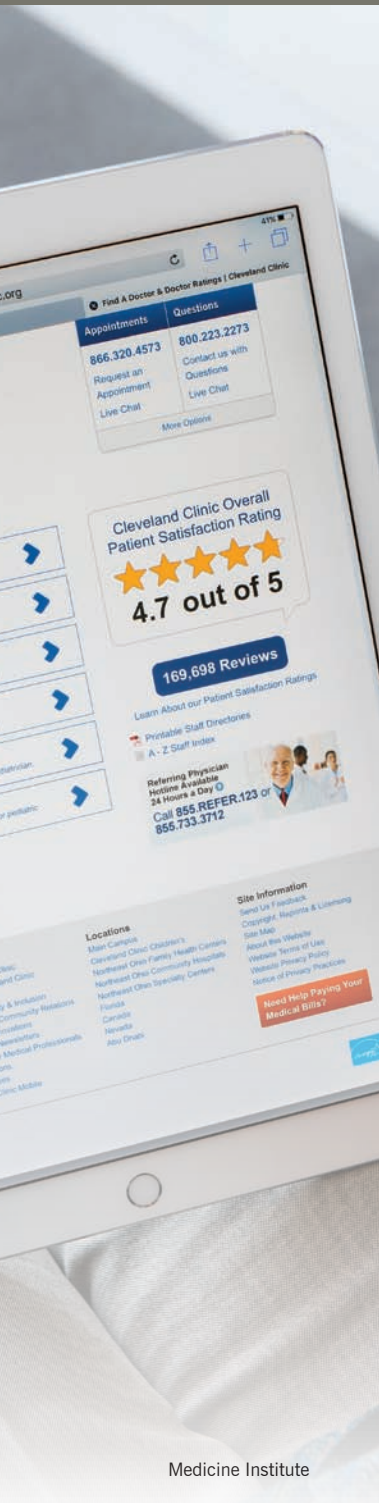
Publications

The Medicine Institute published
119 articles in 2016 as indexed
within Web of Science.

Locations

For a complete listing of
Medicine locations,
please visit [clevelandclinic.org/
medicine](http://clevelandclinic.org/medicine).





Additional Contact Information

General Patient Referral

24/7 hospital transfers or physician consults

800.553.5056

General Information

216.444.2200

Hospital Patient Information

216.444.2000

General Patient Appointments

216.444.2273 or 800.223.2273

Referring Physician Center and Hotline

855.REFER.123 (855.733.3712)

Or email refdr@ccf.org or visit clevelandclinic.org/refer123

Request for Medical Records

216.444.2640 or
800.223.2273, ext. 42640

Same-Day Appointments

216.444.CARE (2273)

Global Patient Services/ International Center

Complimentary assistance for international patients and families

001.216.444.8184 or visit clevelandclinic.org/gps

Medical Concierge

Complimentary assistance for out-of-state patients and families

800.223.2273, ext. 55580, or email medicalconcierge@ccf.org

Cleveland Clinic Abu Dhabi

clevelandclinicabudhabi.ae

Cleveland Clinic Canada

888.507.6885

Cleveland Clinic Florida

866.293.7866

Cleveland Clinic Nevada

702.483.6000

For address corrections or changes, please call

800.890.2467

About Cleveland Clinic

Overview

Cleveland Clinic is an academic medical center offering patient care services supported by research and education in a nonprofit group practice setting. More than 3500 Cleveland Clinic staff physicians and scientists in 140 medical specialties and subspecialties care for more than 7.1 million patients across the system annually, performing nearly 208,000 surgeries and conducting more than 652,000 emergency department visits. Patients come to Cleveland Clinic from all 50 states and 185 nations. Cleveland Clinic's CMS case-mix index is the second-highest in the nation.

Cleveland Clinic is an integrated healthcare delivery system with local, national, and international reach. The main campus in midtown Cleveland, Ohio, has a 1400-bed hospital, outpatient clinic, specialty institutes, labs, classrooms, and research facilities in 44 buildings on 167 acres. Cleveland Clinic has more than 150 northern Ohio outpatient locations, including 10 regional hospitals, 18 full-service family health centers, 3 health and wellness centers, an affiliate hospital, and a rehabilitation hospital for children. Cleveland Clinic also includes Cleveland Clinic Florida; Cleveland Clinic Nevada; Cleveland Clinic Canada; Cleveland Clinic Abu Dhabi, UAE; Sheikh Khalifa Medical City (management contract), UAE; and Cleveland Clinic London (opening in 2020). Cleveland Clinic is the largest employer in Ohio, with more than 51,000 employees. It generates \$12.6 billion of economic activity a year.

Cleveland Clinic supports physician education, training, consulting, and patient services around the world through representatives in the Dominican Republic, Guatemala, India, Panama, Peru, Saudi Arabia, and the United Arab Emirates. Dedicated Global Patient Services offices are located at Cleveland Clinic's main campus, Cleveland Clinic Abu Dhabi, Cleveland Clinic Canada, and Cleveland Clinic Florida.

The Cleveland Clinic Model

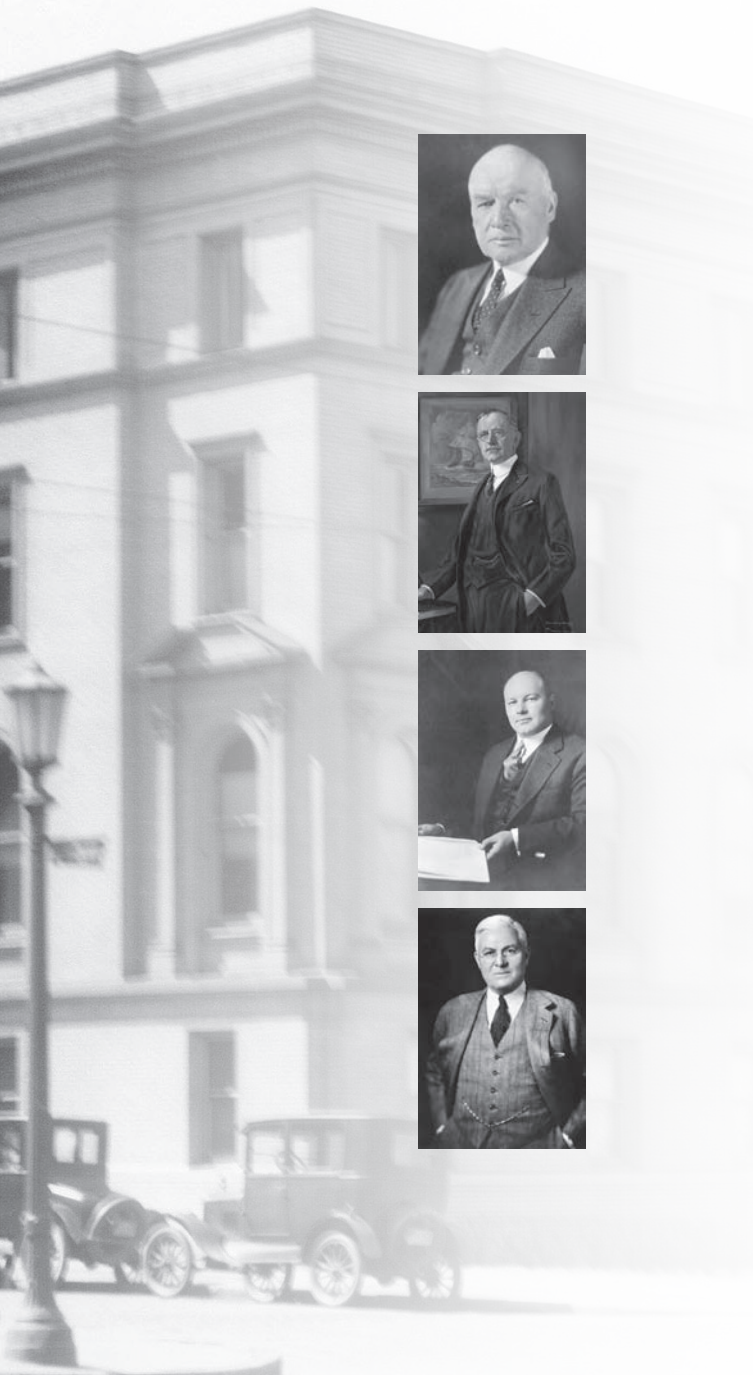
Cleveland Clinic was founded in 1921 by 4 physicians who had served in World War I and hoped to replicate the organizational efficiency of military medicine. The organization has grown through the years by adhering to the nonprofit, multispecialty group practice they established. All Cleveland Clinic 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.

Cleveland Clinic Florida was established in 1987. Cleveland Clinic began opening family health centers in surrounding communities in the 1990s. Marymount Hospital joined Cleveland Clinic in 1995, followed by regional hospitals including Euclid Hospital, Fairview Hospital, Hillcrest Hospital, Lutheran Hospital, Medina Hospital, South Pointe Hospital, and affiliate Ashtabula County Medical Center. In 2015, the Akron General Health System joined the Cleveland Clinic health system.

Internally, Cleveland Clinic services are organized into patient-centered integrated practice units called institutes, each institute combining medical and surgical care for a specific disease or body system. Cleveland Clinic was among the first academic medical centers to establish an Office of Patient Experience, to promote comfort, courtesy, and empathy across all patient care services.

A Clinically Integrated Network

Cleveland Clinic is committed to providing value-based care, and it has grown the Cleveland Clinic Quality Alliance into the nation's second-largest, and northeast Ohio's largest, clinically integrated network. The network comprises more than 6300 physician members, including both Cleveland Clinic staff and independent physicians from the community. Led by its physician members, the Quality Alliance strives to improve quality and consistency of care; reduce costs and increase efficiency; and provide access to expertise, data, and experience.



Cleveland Clinic Lerner College of Medicine

Lerner College of Medicine is known for its small class sizes, unique curriculum, and full-tuition scholarships for all students. Each new class accepts 32 students who are preparing to be physician investigators. In 2015, Cleveland Clinic broke ground on a 477,000-square-foot multidisciplinary Health Education Campus. The campus, which will open in July 2019, will serve as the new home of the Case Western Reserve University (CWRU) School of Medicine and Cleveland Clinic’s Lerner College of Medicine, as well as the CWRU School of Dental Medicine, the Frances Payne Bolton School of Nursing, and physician assistant and allied health training programs.

Graduate Medical Education

In 2016, nearly 2000 residents and fellows trained at Cleveland Clinic and Cleveland Clinic Florida in our continually growing programs.

U.S. News & World Report Ranking

Cleveland Clinic is ranked the No. 2 hospital in America by *U.S. News & World Report* (2016). It has ranked No. 1 in heart care and heart surgery since 1995. In 2016, 3 of its programs were ranked No. 2 in the nation: gastroenterology and GI surgery, nephrology, and urology. Ranked among the nation’s top five were gynecology, orthopaedics, rheumatology, pulmonology, and diabetes and endocrinology.

Cleveland Clinic Physician Ratings

Cleveland Clinic believes in transparency and in the positive influence of the physician-patient relationship on healthcare outcomes. To continue to meet the highest standards of patient satisfaction, Cleveland Clinic physician ratings, based on nationally recognized Press Ganey patient satisfaction surveys, are published online at clevelandclinic.org/staff.

Referring Physician Center and Hotline

Call us 24/7 for access to medical services or to schedule patient appointments at 855.REFER.123 (855.733.3712), email refdr@ccf.org, or go to clevelandclinic.org/Refer123. The free Cleveland Clinic Physician Referral App, available for mobile devices, gives you 1-click access. Available in the App Store or Google Play.

Remote Consults

Anybody anywhere can get an online second opinion from a Cleveland Clinic specialist through our MyConsult service. For more information, go to clevelandclinic.org/myconsult, email myconsult@ccf.org, or call 800.223.2273, ext. 43223.

Request Medical Records

216.444.2640 or 800.223.2273, ext. 42640

Track Your Patients' Care Online

Cleveland Clinic offers an array of secure online services that allow referring physicians to monitor their patients' treatment while under Cleveland Clinic care and gives them access to test results, medications, and treatment plans. my.clevelandclinic.org/online-services

DrConnect (online access to patients' treatment progress while under referred care): call 877.224.7367, email drconnect@ccf.org, or visit clevelandclinic.org/drconnect.

MyPractice Community (affordable electronic medical records system for physicians in private practice): 216.448.4617.

eRadiology (teleradiology consultation provided nationwide by board-certified radiologists with specialty training, within 24 hours or stat): call 216.986.2915 or email starimaging@ccf.org.

Medical Records Online

Patients can view portions of their medical record, receive diagnostic images and test results, make appointments, and renew prescriptions through MyChart, a secure online portal. All new Cleveland Clinic patients are automatically registered for MyChart. clevelandclinic.org/mychart

Access

Cleveland Clinic is committed to convenient access, offering virtual visits, shared medical appointments, and walk-in urgent care for your patients. clevelandclinic.org/access

Critical Care Transport Worldwide

Cleveland Clinic's fleet of ground and air transport vehicles is ready to transfer patients at any level of acuity anywhere on Earth. Specially trained crews provide Cleveland Clinic care protocols from first contact. To arrange a transfer for STEMI (ST-elevation myocardial infarction), acute stroke, ICH (intracerebral hemorrhage), SAH (subarachnoid hemorrhage), or aortic syndrome, call 877.379.CODE (2633). For all other critical care transfers, call 216.444.8302 or 800.553.5056.

CME Opportunities: Live and Online

Cleveland Clinic's Center for Continuing Education operates the largest CME program in the country. Live courses are offered in Cleveland and cities around the nation and the world. The center's website (ccfcme.org) is an educational resource for healthcare providers and the public. It has a calendar of upcoming courses, online programs on topics in 30 areas, and the award-winning virtual textbook of medicine, The Disease Management Project.

Clinical Trials

Cleveland Clinic is running more than 2200 clinical trials at any given time for conditions including breast and liver cancer, coronary artery disease, heart failure, epilepsy, Parkinson disease, chronic obstructive pulmonary disease, asthma, high blood pressure, diabetes, depression, and eating disorders. Cancer Clinical Trials is a mobile app that provides information on the more than 200 active clinical trials available to cancer patients at Cleveland Clinic. clevelandclinic.org/cancertrialapp

Healthcare Executive Education

Cleveland Clinic has programs to share its expertise in operating a successful major medical center. The Executive Visitors' Program is an intensive, 3-day behind-the-scenes view of the Cleveland Clinic organization for the busy executive. The Samson Global Leadership Academy is a 2-week immersion in challenges of leadership, management, and innovation taught by Cleveland Clinic leaders, administrators, and clinicians. Curriculum includes coaching and a personalized 3-year leadership development plan. clevelandclinic.org/executiveeducation

Consult QD Physician Blog

A website from Cleveland Clinic for physicians and healthcare professionals. Discover the latest research insights, innovations, treatment trends, and more for all specialties. consultqd.clevelandclinic.org

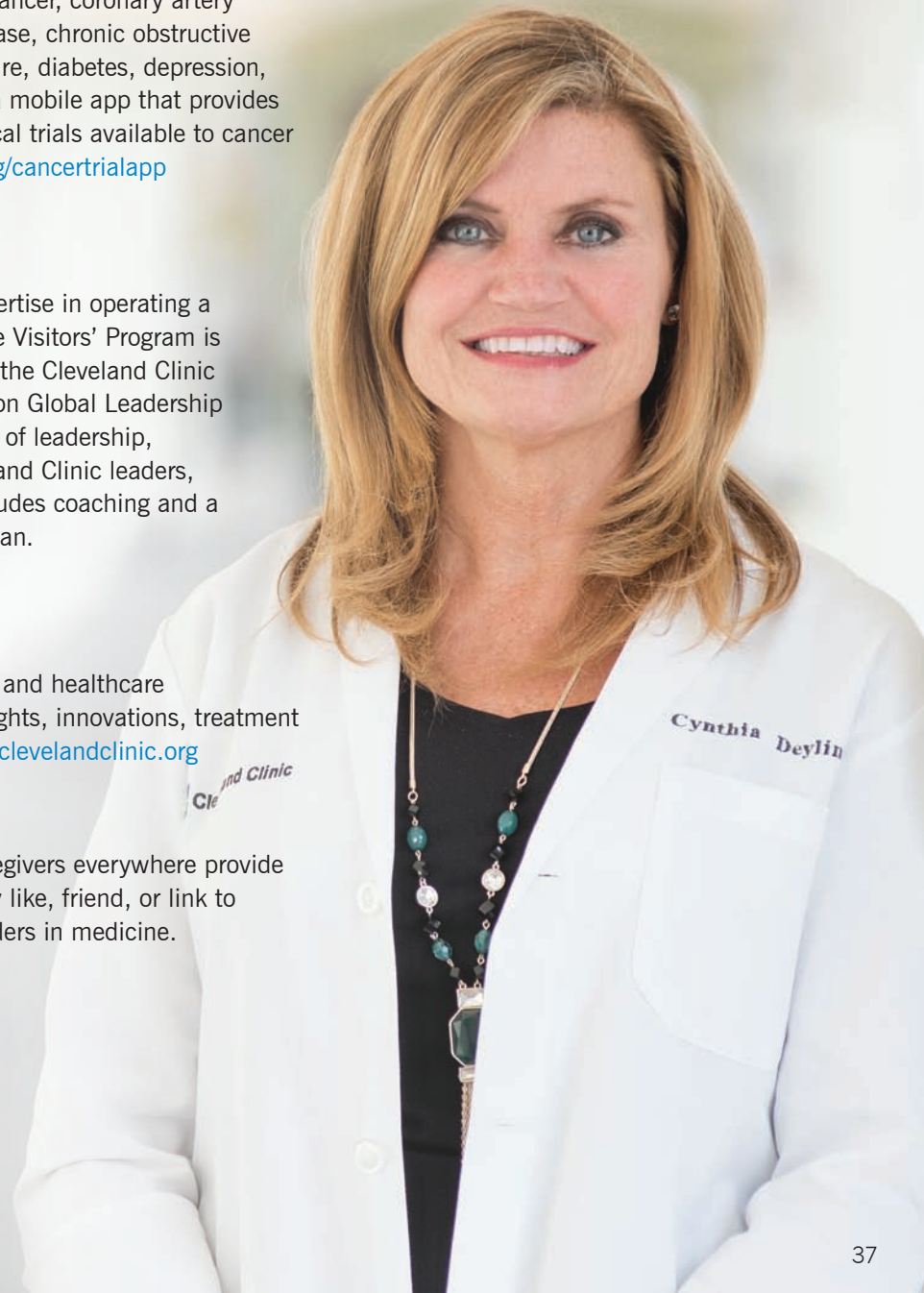
Social Media

Cleveland Clinic uses social media to help caregivers everywhere provide better patient care. Millions of people currently like, friend, or link to Cleveland Clinic social media — including leaders in medicine.

Facebook for Medical Professionals
facebook.com/CMEclevelandclinic

Follow us on Twitter
[@cleclinicMD](https://twitter.com/cleclinicMD)

Connect with us on LinkedIn
clevelandclinic.org/MDlinkedin





Every life deserves world class care.

This project would not have been possible without the commitment and expertise of a team led by Robert Jones Jr., MD; Kathleen D. Roth; Janice SanMarco; and James Thomascik.

Graphic design and photography were provided by Cleveland Clinic's Center for Medical Art and Photography.



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