Quality counts when referring patients to hospitals and physicians, so Cleveland Clinic has created a series of outcomes books similar to this one for its institutes and departments. Designed for a health care 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. We hope you find these data valuable. To view all our outcomes books, visit Cleveland Clinic’s Quality Web site at clevelandclinic.org/quality/outcomes.
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Chairman’s Letter

The Department of Pulmonary, Allergy and Critical Care Medicine and the Section of General Thoracic Surgery within the Department of Thoracic and Cardiovascular Surgery are pleased to present our third edition of Respiratory Diseases Outcomes. This booklet provides a condensed overview of our clinical activities and programs, including reports of clinical volumes and patient outcomes. We believe it is important and useful to share this information with our referring physicians, training program alumni, potential patients and other individuals interested in respiratory diseases. At Cleveland Clinic, patients with respiratory disease benefit from the expertise of a multidisciplinary team consisting of clinicians specializing in pulmonary and critical care medicine, allergy and clinical immunology and thoracic surgery, all working in close collaboration with thoracic radiologists and pulmonary pathologists. In 2006, we experienced continued growth in our clinical programs, research funding and application of innovative technologies. We are proud of these accomplishments and thankful for all those who helped us achieve this level of success. We are firmly committed to providing ever-increasing levels of clinical excellence in the future.

Herbert P. Wiedemann, M.D.
Chairman, Department of Pulmonary, Allergy and Critical Care Medicine

Thomas W. Rice, M.D.
Head, Section of General Thoracic Surgery, Department of Thoracic and Cardiovascular Surgery
Department Overview

There are six formal sections within the Department of Pulmonary, Allergy and Critical Care Medicine:

- Allergy & clinical immunology
- Bronchology
- Critical care medicine
- Lung transplantation
- Respiratory therapy
- Sleep medicine

In addition, the following centers are recognized:

Center for Major Airway Diseases (in conjunction with thoracic surgery)
Asthma Center
Alpha-1 Antitrypsin Deficiency Center of Excellence

The Department of Pulmonary, Allergy and Critical Care Medicine provides expertise in the diagnosis and management of the full spectrum of respiratory and allergic disorders, including:

- Acute respiratory distress syndrome (ARDS)
- Allergic rhinitis
- Allergies
- Latex allergy
- Drug allergy
- Food allergy
- Asthma
- Beryllium-induced lung disease
- Chronic obstructive pulmonary disease (COPD), including alpha-1 antitrypsin deficiency
- Idiopathic pulmonary fibrosis
• Interstitial lung disease
• Interventional bronchology
• Lung cancer
• Lymphangioleiomyomatosis (LAM)
• Mesothelioma
• Pulmonary alveolar proteinosis (PAP)
• Pulmonary vascular diseases (idiopathic pulmonary hypertension, pulmonary embolic disease, etc.)
• Sarcoidosis
• Sepsis
• Sleep-disordered breathing
• Urticaria
• Weaning from mechanical ventilation

In collaboration with our thoracic surgery colleagues, patients are evaluated for:

• Invasive diagnostic procedures (lung biopsy, mediastinoscopy, etc.)
• Pulmonary resections (lung cancer, etc.)
• Lung-volume reduction surgery (LVRS) for emphysema
• Pulmonary thromboendarterectomy (for chronic pulmonary hypertension secondary to thromboemboli)
• Lung transplantation
Clinical and research activities of the department are primarily conducted at Cleveland Clinic’s main campus facilities (clinics, hospital and research laboratories). Outpatient services are also provided at the Beachwood Family Health and Surgery Center (Allergy & Pulmonary), Independence Family Health Center (Allergy & Pulmonary), Strongsville Family Health and Surgery Center (Allergy), Westlake Family Health Center (Allergy) and the Willoughby Hills Family Health Center (Allergy). In 2006, the department began providing inpatient and outpatient pulmonary consultation at Hillcrest and Euclid hospitals.

In 2006, clinical volumes within the department continued a strong upward trend. Total clinic visits increased 5% over 2005.
Quality & Outcome Measures

Critical Care Medicine

The department manages and staffs the medical intensive care unit (MICU) at Cleveland Clinic. There were over 1,400 admissions to this intensive care service, including many patients transferred from other hospitals' intensive care units.

Patient outcomes in the MICU are excellent, exhibited by mortality rates significantly below the risk-adjusted predicted values. SAPS II and APACHE II are two validated statistical models for predicting mortality risk based on patient physiology 24 hours after admission to the ICU.
### MICU Actual vs. Expected Survival

<table>
<thead>
<tr>
<th>SAPS II Risk Quintile</th>
<th>Cases</th>
<th>Actual Survival (%)</th>
<th>Expected Survival (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First (highest risk)</td>
<td>85</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>Second</td>
<td>57</td>
<td>49</td>
<td>30</td>
</tr>
<tr>
<td>Third</td>
<td>94</td>
<td>65</td>
<td>51</td>
</tr>
<tr>
<td>Fourth</td>
<td>122</td>
<td>80</td>
<td>72</td>
</tr>
<tr>
<td>Fifth (lowest risk)</td>
<td>293</td>
<td>89</td>
<td>92</td>
</tr>
</tbody>
</table>

### APACHE II Risk Quintile

<table>
<thead>
<tr>
<th>APACHE II Risk Quintile</th>
<th>Cases</th>
<th>Actual Survival (%)</th>
<th>Expected Survival (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First (highest risk)</td>
<td>58</td>
<td>19</td>
<td>11</td>
</tr>
<tr>
<td>Second</td>
<td>90</td>
<td>58</td>
<td>44</td>
</tr>
<tr>
<td>Third</td>
<td>116</td>
<td>69</td>
<td>62</td>
</tr>
<tr>
<td>Fourth</td>
<td>183</td>
<td>77</td>
<td>75</td>
</tr>
<tr>
<td>Fifth (lowest risk)</td>
<td>139</td>
<td>96</td>
<td>87</td>
</tr>
</tbody>
</table>
Respiratory Special Care Unit (ReSCU)

The Respiratory Special Care Unit (ReSCU) was created for persons who depend on mechanical ventilation to breathe but who are otherwise healthy enough to leave the intensive care unit (ICU). Primary goals of the ReSCU are to have patients breathe without the ventilator or teach patients and family members how to care for the patient and manage the ventilator at home or prepare the patient and family members for the patient's discharge to another facility.

![Disposition at ReSCU Discharge](chart.png)

### Primary ReSCU Stats for the Weaning Ventilator Unit

<table>
<thead>
<tr>
<th>Stat</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of discharged patients</td>
<td>71</td>
</tr>
<tr>
<td>Total ReSCU days</td>
<td>2,043</td>
</tr>
<tr>
<td>Completely weaned from ventilation</td>
<td>63.3% (45/71)</td>
</tr>
<tr>
<td>Survival</td>
<td>88.7% (63/71)</td>
</tr>
<tr>
<td>ALOS</td>
<td>28.8 days</td>
</tr>
</tbody>
</table>

Based on Data from January 1- December 31, 2006
**Respiratory Diseases**

**Bronchology**

### Bronchoscopies

<table>
<thead>
<tr>
<th>Year</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>1,000</td>
</tr>
<tr>
<td>2003</td>
<td>1,100</td>
</tr>
<tr>
<td>2004</td>
<td>1,600</td>
</tr>
<tr>
<td>2005</td>
<td>2,000</td>
</tr>
<tr>
<td>2006</td>
<td>2,500</td>
</tr>
</tbody>
</table>

**Flexible Bronchoscopies**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transbronchial lung biopsy</td>
<td>1,173</td>
</tr>
<tr>
<td>Airway examination</td>
<td>363</td>
</tr>
<tr>
<td>Endobronchial biopsy</td>
<td>202</td>
</tr>
<tr>
<td>Electrocautery</td>
<td>213</td>
</tr>
<tr>
<td>Bronchial &amp; tracheal dilation/stenting</td>
<td>223</td>
</tr>
<tr>
<td>Laser ablation</td>
<td>54</td>
</tr>
</tbody>
</table>

**Post-bronchoscopy Complication Rate**

- **Pneumothorax**: 0.6%
- **Clinically Significant Bleeding**: 0.2%
- **Sedation Reversal Agent Required**: 0.4%
The Asthma Control Test® (ACT) is a validated instrument used to gauge asthma control on a 1 to 5 scale, with higher scores reflecting improved symptom control. In Allergy/Immunology, patients who reside throughout the United States and internationally are seen for comprehensive evaluation for asthma, which includes accomplishing the ACT at each visit. Among those with ACT scores recorded at initial and follow-up visits in 2006, an improvement in degree of asthma control at follow-up was observed compared with baseline.
Allergy and Clinical Immunology

Venom Anaphylaxis Visits

Skin Test: Inhalants and Food Allergens

Stinging Insect Venom Immunotherapy Visits
Aspirin Desensitization

Sensitivity to aspirin or aspirin-like drugs is not only common but also potentially dangerous. Individuals sensitive to aspirin generally either experience respiratory (wheezing, shortness of breath, nasal/sinus congestion) or cutaneous (hives, swelling) reactions. Patients with the respiratory form of aspirin sensitivity, known as aspirin exacerbated respiratory disease (AERD), who need to take aspirin for cardiovascular or other conditions can undergo a “desensitization” procedure performed in Allergy/Immunology. This procedure, in which tolerance to aspirin is induced, is carried out at only a few centers in the United States. Aspirin desensitization can allow patients who are aspirin sensitive to take aspirin safely. Once aspirin is being taken regularly, it can also have salutary effects on the course of nasal/sinus inflammation and asthma characteristics of AERD. The need for therapeutic intervention to improve the course of AERD is the most frequent indication for aspirin desensitization. TH is a 40-year-old man who developed chronic rhinosinusitis and asthma 15 years earlier, and required four sinus surgery procedures. TH had been steroid-dependent for eight years and had anosmia for ten years. In 1995, he experienced bronchospasm after taking ibuprofen; in 2001, he inadvertently took alka seltzer and had severe bronchospasm with nasal congestion and lacrimation requiring emergency department management. He has since avoided aspirin and other nonsteroidal anti-inflammatory drugs. This is a history quite compatible with AERD.
Aspirin desensitization was proposed for TH based upon his need for frequent sinus surgery procedures, high medication reliance and impaired quality of life. The course of aspirin desensitization is shown in the figure below. TH experienced respiratory reaction one hour after dose of 60 mg aspirin on day 1. There was a combined upper airway reaction with prominent nasal/sinus congestion and bronchospasm (decline in FEV$_1$ = 26%) that responded to administration of nebulized bronchodilator, oral antihistamine and topical decongestant. Then, 60 mg was tolerated without reaction. Bronchospasm occurred again (decline in FEV$_1$ = 29%) with administration of 100 mg aspirin on day 2, which responded over several hours to nebulized bronchodilator treatments, nebulized corticosteroid and oral anti-leukotriene. Then, he tolerated 100 mg aspirin without reaction, and subsequently on day 3, this procedure resumed with 150mg, 325 mg, and 650 mg aspirin given without respiratory reaction at which point desensitization was achieved. He has experienced reduced levels of symptoms and medication reliance taking aspirin on a daily basis.
Lung and Heart/Lung Transplantation

2006 has been another very clinically active and successful year for Cleveland Clinic lung and heart-lung transplantation, which started in 1991. We reached our 500th transplant early this year. Cleveland Clinic’s lung transplantation program performed 61 lung transplants and two heart-lung transplants in 2006, a number matching 2005 and upholding our position as the leading program in Ohio and among the top programs nationally. The program clearly gained a reputation for accepting and transplanting challenging and complex patients, which led to a significant increase in referral rates since 2005. Patients have been referred from over 11 states and internationally for lung and heart-lung transplantation evaluations. Average waiting time for a graft in our program remains stable in the setting of the new lung allocation system. Currently, our average waiting time is 62 days. Hospital and 30-day mortality associated with lung transplantation remains low, despite increased complexity of our cases. Despite taking on these most challenging cases, the lung transplant program achieved very strong one-year and five-year survival rates, above national average.

<table>
<thead>
<tr>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total lung transplants</td>
</tr>
<tr>
<td>Single lung</td>
</tr>
<tr>
<td>Double lung</td>
</tr>
</tbody>
</table>
From 2002 through 2006, 1-year survival for 269 Cleveland Clinic primary lung transplant patients was 88%.
State of Residence of Patients Transplanted

<table>
<thead>
<tr>
<th>STATE</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>OH</td>
<td>33</td>
<td>52.4</td>
</tr>
<tr>
<td>NY</td>
<td>9</td>
<td>14.3</td>
</tr>
<tr>
<td>PA</td>
<td>5</td>
<td>7.9</td>
</tr>
<tr>
<td>IN</td>
<td>4</td>
<td>6.4</td>
</tr>
<tr>
<td>MI</td>
<td>4</td>
<td>6.4</td>
</tr>
<tr>
<td>MA</td>
<td>2</td>
<td>3.2</td>
</tr>
<tr>
<td>WV</td>
<td>2</td>
<td>3.2</td>
</tr>
<tr>
<td>CT</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>FL</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>KY</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>ME</td>
<td>1</td>
<td>1.6</td>
</tr>
</tbody>
</table>

Days on Waiting List and Post-Transplant Length of Stay

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days Waiting</td>
<td>62.7</td>
<td>41</td>
<td>63</td>
</tr>
<tr>
<td>Post-transplant LOS</td>
<td>18.0</td>
<td>12</td>
<td>63</td>
</tr>
</tbody>
</table>

Primary Diagnoses for Patients Transplanted

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPD</td>
<td>28</td>
<td>44.4</td>
</tr>
<tr>
<td>Idiopathic pulmonary fibrosis</td>
<td>16</td>
<td>25.4</td>
</tr>
<tr>
<td>Cystic fibrosis</td>
<td>13</td>
<td>20.6</td>
</tr>
<tr>
<td>Primary pulmonary htn</td>
<td>2</td>
<td>3.2</td>
</tr>
<tr>
<td>Sarcoidosis</td>
<td>2</td>
<td>3.2</td>
</tr>
<tr>
<td>Congenital heart defect with surgery</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>Retx/graft fail</td>
<td>1</td>
<td>1.6</td>
</tr>
</tbody>
</table>
Pulmonary Resection

Anatomic pulmonary resection is the removal or resection of lung parenchyma for benign or pulmonary cancer. Pulmonary resections accounted for about 20% of all thoracic operations in 2006.

Types of Pulmonary Resection

- Lobectomy: 55%
- Wedge: 35%
- Pneumonectomy: 6%
- Segmentectomy: 4%
Extended resection and reconstruction of pericardium and diaphragm to treat mesothelioma.

**Pulmonary Resection Mortality**

Hospital mortality for all pulmonary resections declined to 0.4% in 2006.

Endobronchial carcinoid tumor arising in the distal bronchus intermedius.

Postoperative result of right lower lobe sleeve resection and reimplantation of right middle lobe.
**Therapeutic Options**

Approximate proportions of patients who are eligible for surgery alone (Stage I), multimodality therapy (Stage II through IIIb), or palliative chemotherapy (Stage IIIb-IV).

**Airway**

The volume of complex airway cases increased significantly in 2006. Tracheal resection and airway reconstruction represent the most challenging surgical procedures.
Airway reconstruction with Silastic® prosthesis for intractable airway stenosis.

Complex Airway Procedures

- Stents: 22%
- Resection/Reconstruction: 23%
- Tracheoplasty/Bronchoplasty: 10%
- Other Tracheobronchial: 45%

Sleeve Resection
Left Main Bronchus

T-tube

Prosthesis in place
Patient Experience

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.
Innovations

Our mission includes research into the pathophysiology of respiratory diseases and our goal is to develop innovative methodologies and techniques that enhance and advance our ability to diagnose and treat respiratory diseases. The number of externally funded research grants and contracts and total funding of these activities have increased substantially over the last few years.

Major areas of research activity include asthma, acute respiratory distress syndrome (ARDS), mast cell function, the role of nitric oxide in respiratory disorders, pulmonary hypertension, beryllium-induced lung disease, idiopathic pulmonary fibrosis (IPF), sarcoidosis, COPD (including alpha-1 antitrypsin deficiency), and pulmonary alveolar proteinosis (PAP).

The department was proud to sponsor three innovation summits:

**Lung Summit 2006: Innovations in Pulmonary and Sleep Medicine**
was held April 2006 at Cleveland Clinic. Twenty-six guest speakers, including two international speakers, plus 11 Cleveland Clinic faculty presented wide-ranging and relevant topics in the areas of bronchoscopy, lung cancer, sleep apnea and thoracic imaging. Among the innovations and research discussed: VRIXP technology in diseases of the chest, auto fluorescent video bronchoscopy, wireless transmission of polysomnography and new perspectives in the diagnosis of pulmonary embolism.

**Chest Malignancies: An Update on Lung Cancer, Esophageal Cancer and Mesothelioma**
was held September 2006 at Cleveland Clinic. The summit was presented in collaboration with Cleveland Clinic Taussig Cancer Center, Case Comprehensive Cancer Center, and University Hospitals Ireland Cancer Center. Nine experts presented on state-of-the-art thoracic malignancy treatments, focusing on innovations and multimodality therapies.

**Pulmonary Hypertension Summit 2006**
was held November 2006 at Cleveland Clinic and featured over 40 Cleveland Clinic faculty and national and international experts. Topics included state-of-the-art pulmonary hypertension management. An entire afternoon was devoted to patient education, making this an important regional event for individuals with pulmonary hypertension disease.
Besides the summits, major innovations included:

**Bronchial Thermoplasty: Radiofrequency Energy in the Airway for Treatment of Asthma**

The Pulmonary, Allergy and Critical Care Medicine Department is participating in a double-blind clinical trial of bronchial thermoplasty, a new technique that applies radiofrequency energy to airway walls to treat moderate to severe persistent bronchial asthma in adults. In patients with chronic airway inflammation, an increased mass of airway smooth muscle correlates to airway hyper-responsiveness and asthma severity. Contraction of airway smooth muscle and consequent airflow obstruction are usually triggered by an allergen, irritant or psychological stress. In this trial, bronchial thermoplasty is performed to decrease the airway smooth muscle. A flexible catheter with an expanding loop to make contact with bronchial airway walls is inserted into the airways through the bronchoscopic working channel. After reaching the targeted airway, the loop is expanded and 10 seconds of radiofrequency energy is delivered. The loop is subsequently collapsed and moved to treat an adjacent section of the airway wall. The process is repeated multiple times along the airway. Treatments during bronchoscopy take 30 minutes and are performed under local anesthesia. A total of three bronchoscopic treatments are performed, each three weeks apart. Enrollment for the study recently closed, with Cleveland Clinic as one of the top U.S. sites for enrollment. Canadian trials showed significant improvements in airflow and symptom-free days in asthmatic individuals in earlier studies of bronchial thermoplasty. Outcomes over the next few years from this most recent double-blind FDA pivotal trial will allow estimation of the efficacy of bronchial thermoplasty in asthma.
Electromagnetic Navigation Diagnostic Bronchoscopy

Sixty subjects were enrolled at Cleveland Clinic in the largest trial to date of an innovative GPS (global positioning system) technology used for diagnostic bronchoscopy.

The pilot study was conducted to determine the ability and safety of electromagnetic navigation bronchoscopy to sample both peripheral lung lesions and mediastinal lymph nodes with standard bronchoscopic instruments. Electromagnetic navigation bronchoscopy is a novel method to increase diagnostic yield of peripheral and mediastinal lung lesions.

Results from this single-center prospective study of the superDimension/Bronchus system have been published in the *American Journal of Respiratory and Critical Care Medicine*.

ARDS Net Study Shows Conservative Fluid Management Is Superior

Cleveland Clinic, a member of the National Heart, Lung, and Blood Institute ARDS Clinical Trials Network, was a major participant in the recently published FACTT (fluids and catheter treatment trial). FACTT utilized a factorial trial design in which patients with acute lung injury/acute respiratory distress syndrome underwent two randomizations: 1) a conservative vs. liberal strategy of fluid management and 2) management with a pulmonary artery catheter vs. central venous catheter.

The primary endpoint was death at 60 days. Secondary endpoints included the number of ventilator-free days and organ failure-free days and measures of lung physiology.

Results support the use of a conservative strategy of fluid management in patients with acute lung injury. Conservative strategy of fluid management improved lung function (including better lung injury scores and oxygenation indices) and increased the number of days free of mechanical ventilation. There were no differences in the incidence or prevalence of shock, the number of renal failure-free days or the need for dialysis.

In the other half of this study, pulmonary artery catheter-directed therapy did not improve survival, ventilator-free days or organ function, but was associated with more complications than central venous catheter-guided therapy.


New Knowledge

Selected Publication Highlights

Transplant

Asthma/Allergic Disorders/Immunology


Dinakar C, Craff M, Laskowski D. Infants and toddlers without asthma with eczema have elevated exhaled nitric oxide levels. *J Allergy Clin Immunol* 2006;117:212-213.


**Intensive Care**


**COPD**


**Bronchoscopy**


**Pulmonary Hypertension**


**Sarcoidosis/Interstitial Lung Disease**


**Miscellaneous**


Heresi GA, Mazzone PJ, Stoller JK. Impact of positron emission tomography on clinical decision making. *Chest* 2006;130:300-301.


Herbert P. Wiedemann, M.D.
Chairman, Department of Pulmonary, Allergy and Critical Care Medicine

Appointed: 1984

Medical School: Cornell University Medical College, New York, NY

Specialty Training: Fellowship – Yale-New Haven Hospital, New Haven, CT; Chief Resident – Harborview Medical Center, Seattle, WA; Residency – University of Washington Medical Center, Seattle, WA

Other Education: B.S. – Yale University, New Haven, CT

Specialty Interests: Intensive care (including adult respiratory distress syndrome and sepsis), exercise testing, dyspnea evaluation, general pulmonary medicine
Staff Listing

**Chairman**
Herbert P. Wiedemann, M.D.

**Quality Review Officer**
Jeffrey T. Chapman, M.D.

**Pulmonary and Critical Care Medicine**
Loutfi S. Aboussouan, M.D.
Muzaffar Ahmad, M.D.
Marie M. Budev, D.O., M.P.H.
Jeffrey T. Chapman, M.D.
Daniel A. Culver, M.D.
Raed A. Dweik, M.D.
Serpil C. Erzurum, M.D.
Andrew Garrow, M.D.
Thomas R. Gildea, M.D.
Joseph A. Golish, M.D.
David A. Holden, M.D.
Constance A. Jennings, M.D.
Michael S. Machuzak, M.D.
Peter J. Mazzone, M.D., M.P.H.
Atul C. Mehta, M.D.
Omar A. Minai, M.D.
Thomas G. Olbrych, M.D.
Beverly V. O’Neill, M.D.
Joseph G. Parambil, M.D.
James K. Stoller, M.D.
Carmen Swaisgood, Ph.D.

**Allergy and Clinical Immunology**
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Mark A. Aronica, M.D.
Sandra J. Hong, M.D.
Fred H. Hsieh, M.D.
Rachel A. Koelsch, M.D.
Lily C. Pien, M.D.
Cristine Radojicic, M.D.

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David Mason, M.D.
Sudish Murthy, M.D., Ph.D.
Gosta Pettersson, M.D., Ph.D.
Thomas W. Rice, M.D.
Nicholas G. Smedira, M.D.

For more information about our staff, visit [clevelandclinic.org/staff](http://clevelandclinic.org/staff).
Department Contacts | How to Refer Patients

**Hospital Transfers**
216.444.8302

800.223.2273 toll-free

For more details about Pulmonary, Allergy and Critical Care Medicine, visit clevelandclinic.org/pulmonary.
Locations

Main Campus
9500 Euclid Avenue/A90
Cleveland, OH 44195

Pulmonary
216.444.6503

Pulmonary Cancer Center
216.444.6503

Allergy
216.444.3386

Beachwood Family Health and Surgery Center
Pulmonary & Allergy
216.839.3820

Euclid Medical Office Building
Pulmonary
216.692.7848

Hillcrest Atrium Medical Office Building
Pulmonary
440.312.7140

Independence Family Health Center
Pulmonary & Allergy
216.986.4000

Strongsville Family Health and Surgical Center
Allergy
440.878.2500

Westlake Family Health Center
Allergy
440.899.5555

Willoughby Hills Family Health Center
Allergy
440.943.2500
Cleveland Clinic Overview

Cleveland Clinic, founded in 1921, is a not-for-profit academic medical center that integrates clinical and hospital care with research and education. Today, 1,700 Cleveland Clinic physicians and scientists practice in 120 medical specialties and subspecialties.

Cleveland Clinic’s main campus, with 41 buildings on 130 acres in Cleveland, Ohio, includes a 1,000-bed hospital, outpatient clinic, subspecialty centers and supporting labs and facilities. Cleveland Clinic also operates 13 family health centers, eight community hospitals, two affiliate hospitals, and a medical facility in Weston, Florida.

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.

For more details 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 opinions through a secure Web site to patients around the world; personalized medical record access for patients; patient treatment progress access for referring physicians (see below); and imaging interpretations by the Department of eRadiology's subspecialty trained academic radiologists. For more information, please visit [eclevelandclinic.org](http://eclevelandclinic.org).

**DrConnect**

*Online Access to Your Patient's Treatment Progress*

Whether you are referring from near or far, our new eCleveland Clinic service, DrConnect, can streamline communication from Cleveland Clinic physicians to your office. This new 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 DrConnect Web site. To establish a DrConnect account, visit [eclevelandclinic.org](http://eclevelandclinic.org) or e-mail drconnect@ccf.org.

**MyConsult**

MyConsult Remote Second Medical Opinion is a secure, online service providing specialist consultations and remote second medical opinions for more than 600 life-threatening and life-altering diagnoses. MyConsult remote second medical opinion service allows you to gather information from nationally recognized specialists without the time and expense of travel. For more information, visit [eclevelandclinic.org/myconsult](http://eclevelandclinic.org/myconsult), e-mail eclevelandclinic@ccf.org or call 800.223.2273, ext 43223.
Cleveland Clinic Contact Numbers

How to Refer Patients
24/7 Hospital Transfers or Physician Consults
800.553.5056

General Information
216.444.2200

Hospital Patient Information
216.444.2000

Patient Appointments
216.444.2273 or 800.223.2273

Medical Concierge
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
216.444.6404 or visit www.clevelandclinic.org/ic

Cleveland Clinic in Florida
866.293.7866

www.clevelandclinic.org
Cleveland Clinic is determined to exceed the expectations of patients, families and referring physicians. In light of this goal, we are committed to providing accurate and timely information about our patient care. Through participation in national initiatives, we support transparent public reporting of healthcare quality data and participate 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)

In addition, this publication was produced to assist patients and referring physicians in making informed decisions. To that end, information about care and services is provided, with a focus on outcomes of care. For more information, please visit the Cleveland Clinic Quality Web site at clevelandclinic.org/quality.