Head & Neck 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 (HospitalCompare.hhs.gov), 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 or scan here.

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

Welcome to this 2014 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 Report (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,

Delos M. Cosgrove, MD
CEO and President
what’s inside

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

Thank you for your interest in the Head & Neck Institute's 2014 outcomes. This annual publication is a testament to Cleveland Clinic's commitment to monitoring and reporting outcomes to continuously improve patient care.

In addition to taking encouragement from many of the outcomes reported in the following pages, the Head & Neck Institute’s caregivers are proud to report the following achievements from 2014:

- Rollout of the Minimally Invasive Cranial Base and Pituitary Surgery Program, which we launched in collaboration with Cleveland Clinic’s Neurological Institute to offer quicker recovery, less postoperative pain and no facial scars for patients undergoing complex skull base surgeries

- Collaboration with colleagues in Cleveland Clinic’s Department of Pain Management to develop a novel procedure for blocking the mandibular nerve to relieve pain from TMJ dysfunction

- Development of a new procedure for subglottic stenosis — known by the acronym REACHER (retrograde endoscopically assisted cricoid hypertrophic epithelium resection) — that avoids the need for a tracheotomy tube and greatly reduces the risk of postoperative airway dehiscence

- Performance of Cleveland Clinic’s first auditory brainstem implant to rescue a patient with deafness secondary to nerve damage

- Presentation and publication of multiple studies on HPV-related squamous cell carcinoma of the oropharynx, including key distinctions from traditional tobacco-related cases of the disease

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

Sincerely,

Michael S. Benninger, MD
Chairman, Head & Neck Institute
In 2014, Cleveland Clinic’s otolaryngology program was ranked as the No. 6 ear, nose, and throat program in the nation by *U.S. News & World Report* in its annual “America’s Best Hospitals” survey, achieving the best ranking in Ohio.

The otolaryngology program is part of Cleveland Clinic’s Head & Neck Institute, a comprehensive, multidisciplinary institute that also includes general dentistry, oral and maxillofacial surgery, prosthodontics, periodontics, speech language pathology, and audiology. More than 45 faculty members in the institute pool their talents and expertise to achieve excellence in education, research, and patient outcomes and experience.

**2014 Statistics**

- Total evaluation and management visits | 76,748
- Total patients new to Cleveland Clinic | 3778
- Days’ wait for a new patient appointment | 7
- Primary surgical cases | 6011
- Admissions | 740
- Average length of stay (days) | 4.47
- APR DRG severity | 1.87
Success rates and morbidity in microvascular reconstruction continue to increase and decrease, respectively. These advances have allowed for expanded indications for free tissue transfer at Cleveland Clinic’s Head & Neck Institute, such as complex palatal fistula reconstruction, correction of large facial contour defects, and salvage of moderate osteoradionecrosis prior to full bone destruction. As a result, a subset of patients with less extensive postoperative risk has been created. For these individuals with acceptable comorbidities and negligible airway or fistula risk, a protocol of early mobilization and discharge has been adopted.

This method not only decreases overall costs, but also avoids potential risks associated with prolonged hospital stays. Review of early experience with this protocol from 2011–2014 has demonstrated high success rates with minimal postoperative complications.

**Free Flap Indication (N = 51)**

2011 – 2014

- 21% Scalp defect (N = 11)
- 17% Palate (N = 9)
- 14% Mandible/ORN (N = 7)
- 14% Orbit/maxilla (N = 7)
- 12% Parotid/facial contour (N = 6)
- 12% Nasal/septal reconstruction (N = 6)
- 10% Complex postsurgical wound following XRT/fistula closure (N = 5)

ORN = osteoradionecrosis, XRT = radiation therapy

**Significant Comorbidities (N = 50)**

2011 – 2014

<table>
<thead>
<tr>
<th>Percent</th>
<th>Prior XRT</th>
<th>HTN</th>
<th>CAD</th>
<th>Tobacco Abuse</th>
<th>Hypothyroidism</th>
<th>Diabetes Mellitus</th>
<th>Posttransplant</th>
<th>Atrial Fibrillation</th>
<th>Prior CVA</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>18</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>10</td>
</tr>
</tbody>
</table>

CAD = coronary artery disease, CVA = cerebrovascular accident, HTN = hypertension, XRT = radiation therapy
Flap Success Rate (N = 51)
2011 – 2014

98% Flap success (N = 50)

2% Flap failure (N = 1)

Average Length of Stay for Patients Undergoing Free Flap Reconstruction
2011 – 2014

Days

National average

Short Stay Admissions\(^a\)  All Admissions

\(^a\)Short stay admissions do not have a suitable literature comparison; national average based on the cumulative average of the 4 major studies referenced.\(^3\-\)\(^6\)
### Free Flap Type (N = 51)

**2011 – 2014**

- **88%** Anterolateral thigh perforator flap (N = 45)
- **4%** Radial forearm (N = 2)
- **4%** Latissimus (N = 2)
- **2%** Supraclavicular (N = 1)
- **2%** Serratus (N = 1)

### Postoperative Complications (N = 51)

**2011 – 2014**

<table>
<thead>
<tr>
<th>Flap Failure</th>
<th>Vascular Compromise With Salvage</th>
</tr>
</thead>
<tbody>
<tr>
<td>N =</td>
<td>1</td>
</tr>
</tbody>
</table>

### References


Hemodynamic Parameters in Office-Based and Operating Room Laryngoscopic Procedures

Office-based laryngology procedures have become common during the past decade as they spare a patient the potential side effects of general anesthesia. Both office-based and operating room approaches are generally considered to be safe. However, the effects on hemodynamic parameters have never been compared between these two settings; Cleveland Clinic’s Voice Center has begun this evaluation.

Of 147 procedures completed at Cleveland Clinic’s Head & Neck Institute, zero adverse events occurred. Differences in any hemodynamic parameters were not significantly different between either group ($P > 0.05$). High heart rates and blood pressures were observed in some patients, emphasizing the importance of a well prepared surgical team and consideration of preoperative comorbidities regardless of setting.

Heart rate was compared between the two groups; no statistically significant difference was observed ($P = 0.08$). Blood pressure and oxygen saturation measurements showed similar results (systolic blood pressure: $P = 0.14$; diastolic blood pressure: $P = 0.73$; pulse oximetry: $P = 0.97$).
Endoscopic Pituitary Surgery

The Minimally Invasive Cranial Base and Pituitary Surgery Program continues to thrive, offering a cutting edge 2-surgeon, 4-handed team approach to patients with disorders affecting the skull base. In 2014, the team performed endoscopic pituitary surgeries for a variety of complex pathologies. The team's expertise and advanced equipment and technology enhanced the ability to obtain outcomes that compare very favorably with the literature and the results of other leading centers.

Patient Demographics (N = 70)

2014

<table>
<thead>
<tr>
<th>Gender (N)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>34</td>
</tr>
<tr>
<td>Male</td>
<td>36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average age (years)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum</td>
<td>77</td>
</tr>
<tr>
<td>Minimum</td>
<td>16</td>
</tr>
</tbody>
</table>

Lesion Type (N = 70)

2014

100%

- 79% Macroadenoma (N = 55)
- 16% Microadenoma (N = 11)
- 3% Sellar lesion (N = 2)
- 1% Sellar cyst (N = 1)
- 1% Pituitary lesion (N = 1)

Adenoma Subtypes (N = 66)

2014

100%

56% Nonfunctional (N = 37)

- 18% Cushing disease (N = 12)
- 14% GH secreting (N = 9)
- 9% Prolactinoma (N = 6)
- 3% TSH secreting (N = 2)

GH = growth hormone, TSH = thyroid-stimulating hormone
Reconstruction Technique (N = 70)\(^a\)

2014

<table>
<thead>
<tr>
<th>Percent</th>
<th>Nasoseptal Flap</th>
<th>Free Mucosal Graft</th>
<th>None</th>
<th>Abdominal Fat</th>
<th>Lumbar Drain</th>
</tr>
</thead>
<tbody>
<tr>
<td>N =</td>
<td>42</td>
<td>21</td>
<td>7</td>
<td>7</td>
<td>4</td>
</tr>
</tbody>
</table>

\(^a\)Multiple reconstructive techniques are sometimes used in conjunction for a more complex case.

Hospital Length of Stay

2014

<table>
<thead>
<tr>
<th></th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average LOS</td>
<td>4</td>
</tr>
<tr>
<td>Maximum</td>
<td>24</td>
</tr>
<tr>
<td>Minimum</td>
<td>1</td>
</tr>
<tr>
<td>Cushing disease average LOS</td>
<td>6</td>
</tr>
<tr>
<td>Non-Cushing disease average LOS</td>
<td>3</td>
</tr>
</tbody>
</table>

LOS = length of stay
Postoperative Cerebrospinal Fluid Leak (N = 70)

<table>
<thead>
<tr>
<th>Percent</th>
<th>Cerebrospinal Fluid Leak</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>N = 3</td>
</tr>
</tbody>
</table>

Postoperative Complications (N = 70)

<table>
<thead>
<tr>
<th>Percent</th>
<th>Stroke</th>
<th>Deep Vein Pulmonary Thrombosis/Embolism</th>
<th>Temporary Sixth Nerve Palsy</th>
<th>Blood Patch</th>
<th>Readmission</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>

Reference

**Short-Term Postoperative Complications of Tympanostomy Tubes**

Tympanostomy tube placement is one of the most common surgical procedures in the US. Tympanostomy tubes are commonly placed for recurrent acute otitis media and chronic otitis media with effusion. Postoperative sequelae are common and can include early postoperative otorrhea, recurrent otorrhea, chronic otorrhea, tube blockage, premature tube extrusion, and migration of the tube into the middle ear.

In 2014, 385 patients underwent tympanostomy tube placement by pediatric subspecialists at Cleveland Clinic's Head & Neck Institute; 95% of tympanostomy tubes placed were short-term tubes. The following graphs present institute outcomes after tympanostomy tube placement in comparison with literature benchmarks.

**Early Postoperative Otorrhea (N = 385)**

<table>
<thead>
<tr>
<th>Percent</th>
<th>2014</th>
<th>Literature rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Institute patients are seen 4–6 weeks after tube placement; any drainage within this time frame is considered early postoperative otorrhea. Literature benchmarks define early postoperative drainage as that occurring within 4 weeks after surgery. Even with the institute’s expanded time frame to identify drainage, its early postoperative otorrhea rate of 13.5% (52 of 385 patients) is less than the 16% rate (95% confidence interval [CI], 14.2–17.9) reported in the literature.¹

**Otorrhea Index (N = 206)**

<table>
<thead>
<tr>
<th>Index</th>
<th>2014</th>
<th>Literature rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The otorrhea index is defined as the total number of episodes of drainage divided by the total ventilation time. The institute’s otorrhea index is calculated from the 206 patients with follow-up extending past their first postoperative visit. These patients had a total of 186 episodes of otorrhea during 39,880 days of ventilation time, amounting to 0.14 episodes of drainage per month. This compares with Van Heerbeek’s otorrhea index of 0.047 episodes of drainage per month.²
Early tube blockage is defined as occurring prior to the patient’s first postoperative appointment, which is typically 4–6 weeks after surgery; 4% (30 of 748) of tubes placed had an early blockage. This resulted in 7.5% (29 of 385) of patients experiencing early tube blockage, with 1 patient having bilateral blockage. The patency of 65% of tubes with early blockage was restored with peroxide drops or an antibiotic ear drop. After this early period, 11 institute patients experienced tube blockage for an overall rate of 6.1% during follow-up, which is comparable to the literature’s overall blockage rate of 6.9% (95% CI, 6.1–7.7). \(^1\)

Premature tube extrusion is defined as occurring prior to the patient’s first postoperative appointment, which is typically 4–6 weeks after surgery. At the time of the patient’s first postoperative follow-up, 0.4% (3 of 748) of tubes had extruded early. This is comparable to the literature’s rate of 3.9% (95% CI, 1.6–7.9). \(^1\)
The institute’s rate of migration of the tympanostomy tube into the middle ear is 0.1% (1 of 748 ears) and is comparable to a rate of 0.5% in the literature.\textsuperscript{1}

**References**

Studies have suggested that preservation of low-frequency residual hearing in cochlear implant recipients improves speech understanding, particularly in complex listening environments.\(^1\)\(^-\)\(^3\) Cleveland Clinic’s Hearing Implant Program has utilized the Cochlear™ Nucleus\(^\text{®}\) CI422 slim straight electrode array for hearing preservation in appropriate patients. From 2013 through 2014, 25 patients with potentially useable low-frequency hearing were implanted with this device. Patients experienced improvement on standardized speech recognition measures based on degree of hearing preservation. Preoperative speech recognition scores were converted to standard scores, indicating the difference between 100% and the patient’s current score. Postoperative scores were compared with this standard and the percent of possible improvement was determined. Scores were categorized based on degree of hearing preservation (minimal/no preservation = 0% to 25% hearing preserved; partial \(\geq 25\%\) to 75% hearing preserved; complete \(\geq 75\%\) hearing preserved).\(^4\) Although nearly all recipients demonstrated benefit with their cochlear implant, results suggested that more substantial improvement in speech understanding was achieved for patients with complete (\(\geq 75\%\)) hearing preservation from 125 Hz through 1500 Hz than for patients with partial, minimal, or no hearing preservation.

**Speech Recognition Improvement With Hearing Preservation Electrode Array (N = 25)**

**2013 – 2014**

<table>
<thead>
<tr>
<th>Speech Recognition Ability</th>
<th>Minimal/no hearing preservation</th>
<th>Partial hearing preservation</th>
<th>Complete hearing preservation</th>
</tr>
</thead>
<tbody>
<tr>
<td>AzBioQuiet(^a)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AzBioNoise(^a)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CNC Words(^b)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CNC = consonant-nucleus-consonant

\(^a\)AzBio sentences consist of sentences presented in quiet or in a background of multitalker babble by 2 male and 2 female speakers at a typical rate of speech.\(^5\)

\(^b\)CNC words consist of individual words presented in quiet, which minimizes the contextual cues present in sentence material.\(^6\)
References


Management of Acoustic Neuroma

Since 2010, the Head & Neck Institute's Neurotology Section has offered patients a balanced approach in the management of vestibular schwannomas (VS). The results of this approach are reported from patients undergoing surgery during 2010 to 2013 to provide at least 1 year of follow-up. The results of the middle fossa series are not reported because of small numbers of patients with adequate follow-up data. During this time period, a total of 214 unique patients were evaluated. Observation was typically recommended in elderly patients or in patients with small (ie, intracanalicular) VS who were asymptomatic other than experiencing hearing loss. Intervention was selected for patients who had large tumors, growing tumors, or other symptoms, or at the patient's choice.

Surgical Treatment Outcomes (N = 19)

<table>
<thead>
<tr>
<th>Surgical Approach</th>
<th>RS (N = 9)</th>
<th>Reference(^1)</th>
<th>TL (N = 10)</th>
<th>Reference(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hearing preservation</td>
<td>0/3 (0%)</td>
<td>36%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facial nerve dysfunction</td>
<td></td>
<td>6%</td>
<td>0/7 (0%)</td>
<td>12%</td>
</tr>
<tr>
<td>Small (≤ 15 mm)</td>
<td>0/3 (0%)</td>
<td>6%</td>
<td>0/3 (0%)</td>
<td>12%</td>
</tr>
<tr>
<td>Large (&gt; 15 mm)</td>
<td>2/6 (33%)</td>
<td></td>
<td>0/3 (0%)</td>
<td></td>
</tr>
<tr>
<td>CSF leak</td>
<td>22%</td>
<td>10.3%</td>
<td>20%</td>
<td>7.1%</td>
</tr>
<tr>
<td>Small (≤ 15 mm)</td>
<td>0/3 (0%)</td>
<td>0/7 (0%)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Large (&gt; 15 mm)</td>
<td>2/6 (33%)</td>
<td>2/3 (67%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual tumor (%)</td>
<td>11</td>
<td>6</td>
<td>0</td>
<td>5.6</td>
</tr>
<tr>
<td>Recurrence (%)</td>
<td>0</td>
<td>6.2</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

CSF = cerebrospinal fluid, RS = retrosigmoid series, TL = translabyrinthine series

During this time period, 17 patients were selected for microsurgery. Facial nerve preservation at a House-Brackmann grade 1 or 2 is a primary goal. The long-term preservation at that level occurred in 14 of 17 patients (82%). One patient maintained a grade 3 facial nerve outcome, which was baseline prior to surgery. The 22% rate of facial nerve dysfunction in the retrosigmoid series does not compare favorably with the reference\(^1\) at similar size; however, the rate of dysfunction in the translabyrinthine series does compare very favorably, giving an overall similar success rate. The rate of cerebrospinal fluid leak in this series was 20%; all of these leaks occurred in larger tumor sizes. There were no other neurosurgical complications in this series such as stroke or meningitis, and there were no deaths in the series.
Gamma Knife® radiosurgery (GKRS) was typically elected for elderly patients with growing tumors and poor hearing who had previously failed observation. Accordingly, hearing preservation at the expense of tumor coverage was not a goal of treatment. Seventeen vestibular schwannoma patients underwent GKRS performed by a single neurotologist between 2011 and 2013 to provide > 1 year of follow-up data. Two patients were excluded from these results: 1 who had neurofibromatosis type 2, and 1 who was treated with a salvage procedure after previous surgery. The results use the previously defined parameter of “control” as meaning no further surgical or GKRS intervention. Although Cleveland Clinic’s rate does compare favorably with published benchmarks, longer-term outcomes have yet to be seen. It is notable that other published series do not discriminate in the control rate of tumors that have “failed” observation and thus are actively growing at the time of treatment.

### Gamma Knife Radiosurgery Hearing Outcomes

<table>
<thead>
<tr>
<th>Pretreatment</th>
<th>Posttreatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classes A to C (“serviceable”)</td>
<td>Classes A to C (“serviceable”)</td>
</tr>
<tr>
<td>Class D</td>
<td>Class D</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average age (years)</th>
<th>66.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 70 years old (%)</td>
<td>40</td>
</tr>
<tr>
<td>Failed initial observation (%)</td>
<td>80</td>
</tr>
<tr>
<td>AAO-HNS hearing classification²</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pretreatment</th>
<th>Posttreatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classes A to C (“serviceable”)</td>
<td>Classes A to C (“serviceable”)</td>
</tr>
<tr>
<td>Class D</td>
<td>Class D</td>
</tr>
</tbody>
</table>

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### Long-Term Vestibular Schwannoma Control After Gamma Knife Radiosurgery

<table>
<thead>
<tr>
<th></th>
<th>Cleveland Clinic</th>
<th>Reference³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tumor control (%)</td>
<td>100</td>
<td>97.1</td>
</tr>
<tr>
<td>Mean length of follow-up (months)</td>
<td>20</td>
<td>76</td>
</tr>
<tr>
<td>Median length of follow-up (months)</td>
<td>20</td>
<td>69.5</td>
</tr>
</tbody>
</table>

AAO-HNS = American Academy of Otolaryngology–Head and Neck Surgery

### References


Outcomes for Advanced Supraglottic Laryngeal Cancers

Since the introduction of organ preservation chemoradiation protocols, emphasis is given not only to oncologic outcomes but also to functional outcomes. Outcomes were reviewed for 235 patients treated for stage III/IV squamous cell carcinoma of the supraglottic larynx at Cleveland Clinic between 1990 and 2013, and 97 and 138 patients received surgical and nonsurgical therapy, respectively.1

The data below show that, in comparison with surgical therapy, nonsurgical treatment as part of a larynx preservation protocol is associated with a higher likelihood of recurrence but similar overall survival and improved voice outcomes. Nonsurgical treatment should continue to be viewed as a viable option for the treatment of advanced supraglottic laryngeal cancer.

Larynx Preservation (N = 235)
1990 – 2013

Total Laryngectomy-Free (%)

Larynx preservation was 42% vs 83% in favor of the chemoradiation group (P < 0.001).

Freedom From Recurrence (N = 235)
1990 – 2013

Surgical therapy was associated with superior freedom from recurrence (5-year freedom from recurrence: 75% vs 55%, P = 0.006) but not overall survival (5-year overall survival: 52% vs 52%).

Overall Survival Rate (N = 235)
1990 – 2013
Voice function was superior in the nonsurgical group at all time-points through 5 years posttreatment (mean voice score: 3.8 vs 2.6; \( P < 0.001 \)).

Swallowing function was comparable between surgical and nonsurgical groups.

Reference

Outcomes for p16 Positive Squamous Cell Carcinoma of Oropharynx

The survival curves represent treatment outcomes of patients with p16 positive oropharyngeal (tonsil and base of tongue) squamous cell carcinoma treated at Cleveland Clinic from 2009–2014. Both overall and disease-free survival rates are illustrated for advanced stage disease, III (N = 32) and IV (N = 294). These rates represent overall and disease-free survivals that exceed national averages for oropharyngeal cancer.

Overall Survival Rate, Stages III and IV (N = 326)
2009 – 2014

There were no deaths in the stage III group, with a 5-year overall survival of 100%. The 5-year overall survival for stage IV was 85.6%. There was no statistically significant difference between the groups ($P = 0.14$).  

Disease-Free Survival Rate, Stages III and IV (N = 326)
2009 – 2014

There were 2 failures in the stage III group (5-year disease-free survival was 91.2%). The 5-year disease-free survival for stage IV was 92.4%. There was no statistically significant difference between the groups ($P = 0.48$).
Voice Restoration in Patients With Tracheoesophageal Puncture

Cleveland Clinic’s standard for total laryngectomy includes surgical prosthetic voice restoration when possible. In 2014, the Head & Neck Institute performed 33 total laryngectomies that included primary tracheoesophageal puncture (TEP) and voice prosthesis placement at the time of the total laryngectomy; 29 patients returned for follow-up and all achieved voice production. The majority achieved good to excellent TEP speech at their first outpatient speech therapy follow-up. Two patients achieved greater than expected positive outcome as they were able to begin using a free-hands speaking system on the same day.

Institute employment of primary TEP fits has resulted in dramatically improved patient outcomes, including a major reduction in time needed for a patient to recover from cancer surgery and become a proficient alaryngeal speaker.

Approach to TEP

2011 – 2014

Cases

![Bar chart showing cases for 2011-2014]

N = 13 Catheter Stent

N = 75 Primary Fit

TEP = tracheoesophageal puncture

Primary TEP Voice Restoration Outcomes (N = 75)

2011 – 2014

Percent

![Bar chart showing percent for 2011-2014]

Achieved Voice

Fair Speech

Good to Excellent Speech

TEP = tracheoesophageal puncture
**Tinnitus Management Clinic**

Patients with bothersome tinnitus are seen in Cleveland Clinic’s Tinnitus Management Clinic (TMC) following medical clearance from an otolaryngologist. The TMC, directed by the Section of Audiology, is a shared medical appointment that includes a group education session of 1.5 hours followed by a multidisciplinary team screening of 1.5 hours. The team includes specialists in audiology, dentistry, neurology, physical therapy, and psychology.

Patients attending the TMC are asked to complete a follow-up survey. A total of 91 completed surveys were received during the 2010–2014 time period.

**Patient Survey Response: Benefit of TMC (N = 91)**

2010 – 2014

![Graph showing patient survey response benefit of TMC](image.png)

GES = group education session, MTS = multidisciplinary team screening

**Patient Survey Response: Likelihood of Recommending TMC to Persons Who Have Bothersome Tinnitus (N = 72)**

2010 – 2014

![Graph showing patient survey response likelihood of recommending TMC](image.png)

Normal Spontaneous Activity

Tinnitus-Generating Activity

Neural Activity Associated With Tinnitus
Intratympanic Steroid Therapy for Meniere Syndrome

Intratympanic steroids have found utility in the treatment of patients with Meniere syndrome. In 2014, all Cleveland Clinic patients meeting AAO-HNS (American Academy of Otolaryngology–Head and Neck Surgery) criteria for the diagnosis of Meniere disease who were treated with intratympanic steroids were reviewed for response to treatment. Subjects received buffered dexamethasone sodium phosphate solution 24 mg/mL with 0.1 mL lidocaine 2%. Overall, 96% of patients experienced symptomatic control sufficient that they did not need to proceed to more invasive/ablative treatments.

Reference
Oral appliance therapy uses a mouth guard-like device worn only during sleep to maintain an open, unobstructed airway. These devices prevent the airway from collapsing by supporting the jaw in a forward position. For many, oral appliance devices are more comfortable to wear than a continuous positive airway pressure (CPAP) mask. The devices are also quiet, portable, and easy to maintain. Research suggests that oral appliance therapy can be very effective for mild to moderate apnea and offers a higher patient compliance rate than found with a CPAP mask.

The apnea-hypopnea index (AHI) is a numerical measure that accounts for the number of pauses in breathing per hour of sleep. It is used to assess the severity of an individual’s sleep apnea.

An AHI reduction under a specified value such as < 5, which is considered resolution of obstructive sleep apnea (OSA), or < 10 (very mild OSA), or by a percentage reduction in AHI from baseline that is considered clinically significant (typically 50% AHI reduction) defines successful oral appliance therapy treatment.1

---

**Average Apnea-Hypopnea Index Results Before and After Oral Appliance Therapy for Obstructive Sleep Apnea (N = 28)**

<table>
<thead>
<tr>
<th>AHI</th>
<th>Pretreatment AHI</th>
<th>Posttreatment AHI</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
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<tr>
<td>15</td>
<td></td>
<td></td>
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<tr>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
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<tr>
<td>0</td>
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</tr>
</tbody>
</table>

AHI = apnea-hypopnea index, OSA = obstructive sleep apnea

---

**Reference**

Dental implants are routinely placed in the maxilla and mandible to replace missing teeth or to provide greater retention for removable prostheses (such as dentures or partials). Many patients undergo rehabilitation after cancers or tumors of the oral cavity are resected and reconstruction is performed.

The institute success rate of 97% is greater than the 95% expected rate.¹

Implant success is commonly defined as implant immobility; no evidence of periapical radiolucency; mean vertical bone loss of < 0.02 mm after the first year of service; no persistent pain, discomfort, or infection; and implant does not preclude placement of a functionally and esthetically acceptable restoration.²

References


Cleveland Clinic is dedicated to delivering excellent clinical outcomes surrounded by the best possible experience for patients and their families. Reported patient experiences are shared with caregivers and used to identify opportunities to improve care. Cleveland Clinic's Office of Patient Experience supports caregivers through education and guidance to help them deliver consistent, patient-centered care.

**Outpatient Office Visit Survey — Head & Neck Institute**

**CG-CAHPS Assessment**

2013 – 2014

<table>
<thead>
<tr>
<th>Percent Best Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
</tr>
<tr>
<td>80</td>
</tr>
<tr>
<td>60</td>
</tr>
<tr>
<td>40</td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td>0</td>
</tr>
</tbody>
</table>

- **Appointment Access (% Always)**
- **Doctor Communication (% Yes, Definitely)**
- **Doctor Rating (% 9 or 10) 0 – 10 Scale**
- **Clerical Staff (% Yes, Definitely)**
- **Test Results Communication (% Yes)**

2013 (N = 1829) 2014 (N = 3172)

CG-CAHPS 2013 database average (all practices)

---

\(a\) In 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 and supported by the Centers for Medicare & Medicaid Services for use in the physician office setting to measure patients’ perspectives of outpatient care.

\(b\) Based on results submitted to the CG-CAHPS database from 2172 medical practices in 2013.

\(c\) Response options: Always, Usually, Sometimes, Never

\(d\) Response options: Yes, definitely; Yes, somewhat; No

\(e\) Response options: Yes, No

Source: Press Ganey, a national hospital survey vendor
**Inpatient Survey — Head & Neck Institute**

**HCAHPS Overall Assessment**

2013 – 2014

**Best Response (%)**

![Bar chart showing hospital rating and recommend hospital percentages for 2013 and 2014.]

- **Hospital Rating (% 9 or 10)**
  - 2013 (N = 152)
  - 2014 (N = 121)
  - National average all patients

- **Recommend Hospital (% Definitely Yes)**
  - 2013 (N = 152)
  - 2014 (N = 121)
  - National average all patients

---

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**

2013 – 2014

**Best Response (%)**

- **Discharge Information % Yes**
- **Doctor Communication**
- **Nurse Communication**
- **Pain Management**
- **Room Clean % Always**
- **New Medications Communication**
- **Responsiveness to Needs**
- **Quiet at Night**

![Bar chart showing domains of care percentages for 2013 and 2014.]

---

aBased on national survey results of discharged patients, January 2013 – December 2013, from 4067 US hospitals. medicare.gov/hospitalcompare

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

Source: Press Ganey, a national hospital survey vendor

---

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

Source: Press Ganey, a national hospital survey vendor

bBased on national survey results of discharged patients, January 2013 – December 2013, from 4067 US hospitals. medicare.gov/hospitalcompare
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 2014 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.

Real-time dashboard 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.

Improve the Patient Experience of Care

Cleveland Clinic Overall Mortality Observed/Expected Ratio

2013 – 2014

O/E Ratio

Cleveland Clinic Central Line-Associated Bloodstream Infection — ICU Rate per 1000 Line Days

2013 – 2014

Rate per 1000 Line Days

Cleveland Clinic has implemented several strategies to reduce central line-associated bloodstream infections (CLABSI), 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.

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

Cleveland Clinic’s observed/expected (O/E) mortality ratio outperformed its internal target derived from the University HealthSystem Consortium (UHC) 2014 risk model. Ratios less than 1.0 indicate mortality performance “better than expected” in UHC’s risk adjustment model.
Cleveland Clinic Postoperative Pulmonary Embolism or Deep Vein Thrombosis Risk Adjusted Rate per 1000 Eligible Patients

2013 – 2014

Rate per 1000 Patients

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

Cleveland Clinic Hospital-Acquired Pressure Ulcer Prevalence (Adult)

2013 – 2014

Percent

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

Improved screening, risk adjustment, and prevention strategies have supported Cleveland Clinic’s continued improvement with respect to perioperative pulmonary embolism and deep vein thrombosis (AHRQ Patient Safety Indicator 12). Embolism/thrombosis prevention remains a safety priority for Cleveland Clinic in 2015.

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 help 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 is dedicated to delivering excellent clinical outcomes surrounded by the best possible experience for patients and their families. Reported patient experiences are shared with caregivers and used to identify opportunities to improve care. Cleveland Clinic’s Office of Patient Experience supports caregivers through education and guidance to help them deliver consistent, patient-centered care.

**Outpatient Office Visit Survey — Cleveland Clinic**

**CG-CAHPS Assessment**

2013 – 2014

<table>
<thead>
<tr>
<th>Best Response (%)</th>
<th>2013 (N = 64,792)</th>
<th>2014 (N = 124,521)</th>
<th>CG-CAHPS 2013 database average (all practices)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appointment Access (% Always)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Care (% Always)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specialty Care (% Always)</td>
<td></td>
<td></td>
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<tr>
<td>Doctor Communication (% Yes, Definitely)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Clerical Staff (% Yes, Definitely)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test Results Communication (% Yes)</td>
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</tr>
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*In 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.

Based on results submitted to the AHRQ CG-CAHPS database from 2172 practices in 2013

Response options: Always, Usually, Sometimes, Never

Response options: Yes, definitely; Yes, somewhat; No

Response options: Yes, No

Source: Press Ganey, a national hospital survey vendor
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.

Inpatient Survey — Cleveland Clinic

HCAHPS Overall Assessment
2013 – 2014

Best Response (%)

<table>
<thead>
<tr>
<th>Hospital Rating (% 9 or 10) 0 – 10 Scale</th>
<th>Recommend Hospital (% Definitely Yes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013 (N = 10,730)</td>
<td>2014 (N = 10,369)</td>
</tr>
<tr>
<td>[Bar chart showing comparison between 2013 and 2014]</td>
<td></td>
</tr>
</tbody>
</table>

National average all patients^a

^aBased on national survey results of discharged patients, January 2013 – December 2013, from 4067 US hospitals. medicare.gov/hospitalcompare

Response options: Definitely yes, Probably yes, Probably no, Definitely no

Source: Press Ganey, a national hospital survey vendor

HCAHPS Domains of Care^a
2013 – 2014

Best Response (%)

<table>
<thead>
<tr>
<th>Discharge Information % Yes</th>
<th>Doctor Communication</th>
<th>Nurse Communication</th>
<th>Pain Management</th>
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<th>New Medications Communication</th>
<th>Responsiveness to Needs</th>
<th>Quiet at Night</th>
</tr>
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<tbody>
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<td>National average all patients^b</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Source: Press Ganey, a national hospital survey vendor

^bBased on national survey results of discharged patients, January 2013 – December 2013, from 4067 US hospitals. medicare.gov/hospitalcompare
Focus on Value

Cleveland Clinic is developing and implementing 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

Select Accountable Care Organization Performance Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Cleveland Clinic 2014 Performance (%)</th>
<th>Cleveland Clinic Goala (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumococcal vaccination</td>
<td>84.9</td>
<td>100</td>
</tr>
<tr>
<td>Colorectal cancer screening</td>
<td>72.3</td>
<td>100</td>
</tr>
<tr>
<td>Mammography screening</td>
<td>77.5</td>
<td>≥ 99.6</td>
</tr>
<tr>
<td>Hemoglobin A1c &gt; 9%</td>
<td>20.5</td>
<td>≤ 10b</td>
</tr>
<tr>
<td>Hypertension control</td>
<td>69.3</td>
<td>≥ 79.7</td>
</tr>
</tbody>
</table>

a2015 ACO 90th percentile
bLower is better

As part of Cleveland Clinic’s commitment to population health and in support of its newly certified Accountable Care Organization (ACO), these primary care ACO measures have been prioritized for monitoring and improvement. Cleveland Clinic is improving performance in these measures through enhanced care coordination, optimizing technology and information systems, and engaging primary care physicians and specialists 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.

Reduce the Cost of Care

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

2013 – 2014

Percent of Discharges

<table>
<thead>
<tr>
<th>Percent of Discharges</th>
<th>Case Mix Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>3.0</td>
</tr>
<tr>
<td>15</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>1.5</td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Cleveland Clinic rate
Cleveland Clinic CMI
UHC academic medical centers CMI

Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4

N= 52,104 2013 50,755 2014

Source: Data from the UHC Clinical Data Base/Resource Manager™ used by permission of UHC. 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. Strategies associated with communication, education, and follow-up have been implemented for several high-risk conditions, including heart failure and pneumonia. These practices are being expanded and enhanced to reduce overall avoidable readmissions. 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.
Head & Neck Institute
Appointments/Referrals
216.444.8500 or 800.223.2273, ext. 48500

Dentistry
Appointments/Referrals
216.444.6907 or 800.223.2273, ext. 46907

On the Web at clevelandclinic.org/hni

Staff Listing
For a complete listing of Cleveland Clinic’s Head & Neck Institute staff, please visit clevelandclinic.org/staff.

Publications
Head & Neck Institute staff authored 74 publications in 2014.
For a complete list, go to clevelandclinic.org/outcomes.

Locations
For a complete listing of Head & Neck Institute locations, please visit clevelandclinic.org/headnecklocations.
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
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 3200 Cleveland Clinic staff physicians and scientists in 130 medical specialties and subspecialties care for more than 5.9 million patients across the system, performing more than 192,000 surgeries and conducting more than 497,000 emergency department visits. Patients come to Cleveland Clinic from all 50 states and more than 147 nations.

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 42 buildings on 165 acres. Cleveland Clinic’s CMS case-mix index is the second highest in the nation. Cleveland Clinic encompasses more than 90 northern Ohio outpatient locations, including 18 full-service family health centers, 8 regional hospitals, an affiliate hospital, and a rehabilitation hospital for children. Cleveland Clinic also includes Cleveland Clinic Florida; Cleveland Clinic Nevada, which includes the Lou Ruvo Center for Brain Health in Las Vegas, and urology and nephrology services; Cleveland Clinic Canada; and Sheikh Khalifa Medical City (management contract). Cleveland Clinic Abu Dhabi is a full-service hospital and outpatient center in the United Arab Emirates (UAE), which began offering services in spring 2015. Cleveland Clinic is the second-largest employer in Ohio, with more than 42,500 employees. It generates $12.6 billion of economic activity a year.

Cleveland Clinic Global Solutions supports physician education, training and consulting, and patient services around the world through offices in Canada, China, the Dominican Republic, El Salvador, Guatemala, Honduras, Panama, Peru, Saudi Arabia, Turkey, UAE, and the United Kingdom.

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 model set forth by the founders. All Cleveland Clinic staff physicians receive a straight salary with no bonuses or other financial incentives. The hospital and physicians share a financial interest in controlling costs, and profits are reinvested in research and education.

The Cleveland Clinic health system began to grow in 1987 with the founding of Cleveland Clinic Florida and expanded in the 1990s with the development of 18 family health centers across Northeast Ohio. Fairview Hospital, Hillcrest Hospital, and 6 other regional hospitals have joined Cleveland Clinic over the past 2 decades, offering Cleveland Clinic institute services in heart and neurological care, physical rehabilitation, and more. Clinical and support services were reorganized into 27 patient-centered institutes beginning in 2007. Institutes combine medical and surgical specialists for specific diseases or organ systems under unified leadership and in a shared location to provide optimal team care for every patient. Institutes work with the Office of Patient Experience to give every patient the best outcome and experience.

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 5400 physician members, both employed 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. Cleveland Clinic is building a multidisciplinary Health Education Campus 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 2014, nearly 1800 residents and fellows trained at Cleveland Clinic and Cleveland Clinic Florida, which is part of a continuing upward trend.

U.S. News & World Report Ranking

Cleveland Clinic is consistently ranked among the top hospitals in America by U.S. News & World Report. It is ranked No. 1 in urology and has ranked No. 1 in heart care and heart surgery since 1995. In 2014, 4 of its programs were ranked No. 2 in the nation: diabetes and endocrinology, gastroenterology and GI surgery, nephrology, and rheumatology.

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

Cleveland Clinic Physician Ratings

At Cleveland Clinic, we believe in transparency. We also believe in the positive influence of the physician-patient relationship on healthcare outcomes. To continue to meet the highest standards of patient satisfaction, we now publish Cleveland Clinic physician ratings, based on nationally recognized Press Ganey patient satisfaction surveys, online at clevelandclinic.org/staff.
Referring Physician Center and Hotline
Call 24/7 for access to medical services or to schedule patient appointments: 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 at 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 eclevelandclinic.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, as well as access test results, medications, and treatment plans. my.clevelandclinic.org/online-services

DrConnect (online access to patients’ treatment progress while under referred care): 877.224.7367; drconnect@ccf.org

MyPractice Community (affordable electronic medical records system for physicians in private practice): 866.320.4573

eRadiology (teleradiology consultation provided nationwide by board-certified radiologists with specialty training, within 24 hours or stat): 216.986.2915; 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

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 2100 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 100 active clinical trials available to cancer patients at Cleveland Clinic. clevelandclinic.org/cancertrialapp.
Healthcare Executive Education
Cleveland Clinic has programs to teach people from outside the organization how it operates a 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. Learn more at clevelandclinic.org/executiveeducation.

Consult QD Physician Blog
A singular blog for physicians and healthcare professionals from Cleveland Clinic. Discover the latest research insights, innovations, treatment trends, and more for all specialties. Join the conversation: 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

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This project would not have been possible without the commitment and expertise of a team led by Erika Woodson, MD; Eric Lamarre, MD; and Terri Teresczuk, BSN, CPHQ.

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