

# CITY OF HOPE LUNG AND THORACIC CANCER OUTCOMES SUMMARY

City of Hope's survival for nonsmall cell lung cancer exceeds the SEER National averages at all stages.\*

# The Multidisciplinary Lung Cancer and Thoracic Oncology Program: Providing Optimal Outcomes for Patients



City of Hope's Lung Cancer and Thoracic Oncology Program is achieving superior outcomes by bringing together the best and brightest clinicians and medical researchers who possess vision, integrity, compassion and a state-of-the-art skill set.

Our program offers a comprehensive and personalized therapeutic approach, as well as customized care for our cancer patients. We are experts at treating advanced and recurrent disease, and we believe that the best patient care comes from collaboration. When your patient arrives at City of Hope, our multidisciplinary team becomes your partner in seeking optimal outcomes. It is our multidisciplinary approach, combined with our dedication to advancing cancer care, that results in our superior survival outcomes data compared to SEER National, making City of Hope the best choice for lung and thoracic cancer treatment.

We've received national recognition for 15 consecutive years as **one of the best cancer hospitals by U.S. News & World Report**, as well as an additional commendation from the same outlet as a high performing hospital for lung cancer surgery for more than a decade.

## Comprehensive Care Throughout Southern California

Whether receiving care at our state-of-the-art hospital in Duarte, California, or across our expansive clinical network of more than 35 cancer-focused locations in the Southern California region, patients have seamless access to a broad suite of lung and airway health services. These include precision screening and prevention services, state-of-the-art diagnostic technologies, superior treatments and additional programs that can meet each patient's individual treatment needs and provide successful outcomes.

The multidisciplinary teams that lead each City of Hope patient's lung or thoracic cancer treatment work collaboratively to deliver complex, subspecialized care that results in optimal patient outcomes. Our teams are comprised of:

- Pulmonologists
- Thoracic oncologists
- Radiation oncologists
- Interventional pulmonologists
- Pathologists
- Oncology nurses
- Thoracic surgeons
- Geneticists
- Social workers

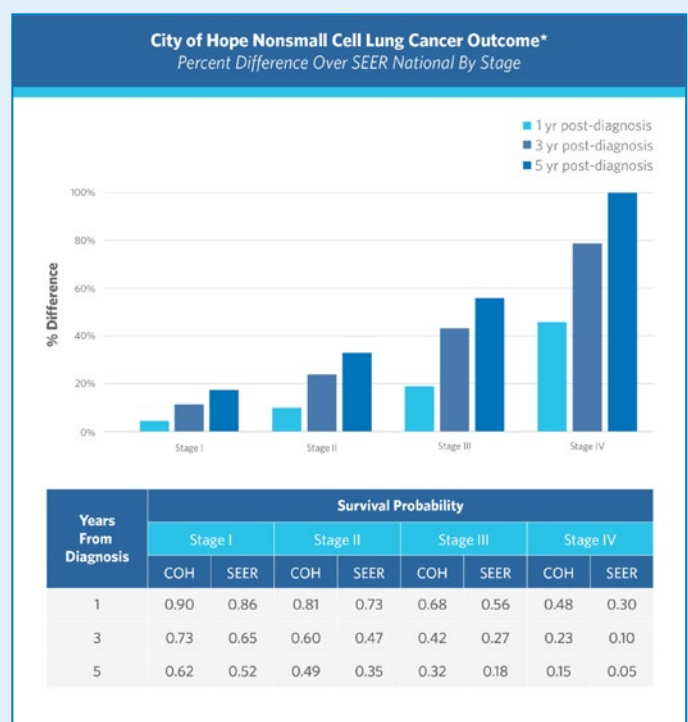
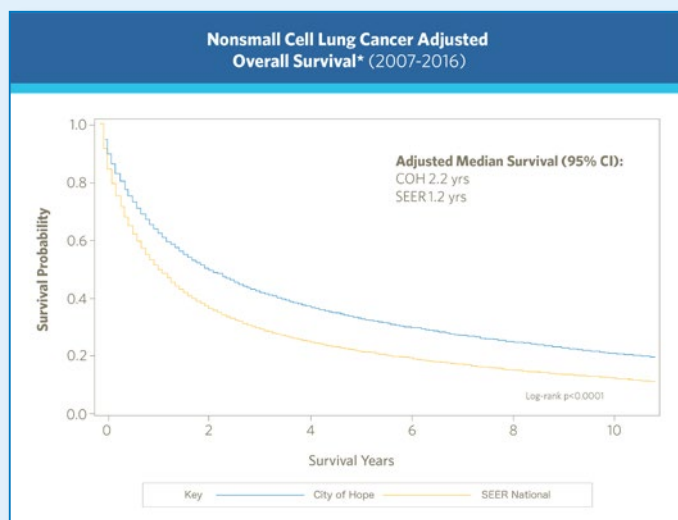
## Why We Measure Outcomes

We measure outcomes to assess the quality of care we're providing, to provide information to clinicians about our performance and to offer our patients transparency. Our outcomes measurements hold us accountable to our mission of transforming the future of health by eliminating cancer and show us the areas we can continue to improve.

# City of Hope Surpasses SEER National Median Survival for Nonsmall Cell Lung Cancer at All Stages

City of Hope Nonsmall Cell Lung Cancer (NSCLC) Adjusted\* Overall Survival vs SEER National (2007-2016)

City of Hope Stage IV survival is 100% greater than the SEER national average five years postdiagnosis.



The adjusted survival probabilities for City of Hope NSCLC patients across all stages (I, II, III and IV) were compared to the SEER† national data one, three and five years after diagnosis. **The percent difference after three years was ≥12% at all stages of cancer**, with the largest differences seen in Stage IV patients regardless of year (1 year: 46%; 3 year: 79%; 5 year: 100%).

## The National Cancer Institute’s Surveillance, Epidemiology and End Results (SEER) Program

An authoritative source on cancer incidence and survival, the SEER Program provides cancer statistics to reduce the cancer burden among the U.S. population. It is supported by the Surveillance Research Program, which provides national leadership in cancer surveillance using analytical tools and methodological expertise in collecting, analyzing, interpreting and disseminating reliable population-based statistics.

\*Proportional hazards regression survival estimates adjusting for age category (15-44, 45-54, 55-64, 65-74 and 75+), race (white, black and other) and gender (male or female)

Data were derived from the City of Hope Cancer Registry (CNexT) and SEER November 2019 Disease Specific Data Files as the comparator. All City of Hope patients were diagnosed from 2007 through 2016, and the City of Hope follow-up cutoff date was 12/31/2017, to align with SEER data. Survival time was based on first occurring NSCLC diagnosis during the time period of interest.



## This Is How We Do It

# State-of-the-Art Screening, Prevention, Diagnostic Technology and Treatment

At City of Hope, we recognize that each patient, tumor and immune system is unique. With this understanding, we determine a personalized course of treatment that will produce the best patient outcome. When compared to other centers, patients treated for lung cancer at City of Hope had lower lengths of stay overall and the lowest unplanned readmission rates. From screening to treating to advancing research discoveries into therapies, City of Hope is committed to providing patients with the best outcomes.

- **Cost-effective, low-dose computed tomography (LDCT) scanning technology** can detect cancer earlier and help save lives. LDCT is sensitive enough to detect pulmonary nodules caused by secondhand smoke.
- **Robotic-assisted endoscopy technology**, which City of Hope is one of the first hospitals in Southern California to offer, enables bronchoscopic visualization and **lung cancer diagnosis at Stage 1 or 2**, which results in safer, quicker and more accurate diagnosis.
- **Molecular and genetic testing** can inform the treatment team of experts as to whether a targeted therapy approach is feasible.
- **Minimally invasive procedures** are used, including sputum cytology, needle biopsy, bronchoscopy, endobronchial ultrasound, electromagnetic navigation bronchoscopy, pulmonary function testing, thoracentesis, cervical mediastinoscopy and thorascopy.
- **Investigational diagnostic testing**, not yet available to the general public, is offered through enrollment in one of **our clinical trials**.
- **A Smoking Cessation Program** has been designed to help patients successfully stop smoking through the use of medications, behavioral strategies, strategic problem solving and social support.



From lobectomies to video- or robotic-assisted surgeries, our multidisciplinary care teams are prepared to guide each patient through their unique, individualized cancer journey.

Our main campus located just northeast of Los Angeles in Duarte, California:

- Manages one of the **largest volumes of thoracic surgeries in the state**
- Is the **first in Southern California** to offer the **robotic-assisted endoscopic Monarch platform**, which can safely and reliably diagnose patients with small, peripheral nodules in the lung
- Offers **advanced radiotherapy options**, which may be used as an alternative to surgery, when warranted
- Houses our **Interventional Pulmonology Program**, where expert interventional pulmonologists provide a number of leading-edge procedures
- Provides **innovative targeted therapies and immunotherapies**, many of which have been discovered or developed at City of Hope

City of Hope's clinical network locations are equipped with the latest advances in surgical treatment options and provide same day appointments. With locations across Southern California, including Los Angeles, Ventura, Riverside, Orange and San Bernardino counties, City of Hope's premier treatment is available in your community.

# City of Hope Is Advancing Cancer Care Through Breakthrough Research and Innovative Clinical Trials



City of Hope is home to the first of five Beckman Research Institutes — renowned for driving scientific advances — and, unlike other cancer centers, has three certified good manufacturing practice (GMP) facilities on-site at our main campus location. The GMP facilities enable us to conduct translational research that blends the best of academics and medical care within a biotechnology environment. We refer to this setup as a biotechnology hybrid model, and it's designed to speed discoveries to patients by fast-tracking the commercialization of potentially life-changing new therapies.

As a leader in research and innovation, City of Hope scientists, clinical staff and manufacturing specialists work side-by-side so advances in treatment can travel from laboratory to patient with lifesaving speed. Home to more than 1,000 research investigators and 87 active investigational new drugs, our experts conducted more than 700 clinical trials last year, enrolling more than 4,700 patients.

**By focusing primarily on the development of groundbreaking ways to treat and care for people with cancer, City of Hope has been able to transform the future of lung health. Current clinical trials include:**

## EARLY STAGE/LOCALLY ADVANCED TRIALS

- A Phase III, Randomized, Controlled, Multicenter, 3 Arm Study of Neoadjuvant Osimertinib as Monotherapy or in Combination with Chemotherapy versus Standard of Care Chemotherapy Alone for the Treatment of Patients with Epidermal Growth Factor Receptor Mutation Positive, Resectable Non-Small Cell Lung Cancer (NeoADAURA) [NCT04351555](#)
- Study Evaluating the Safety and Efficacy of Neoadjuvant and Adjuvant Tiragolumab plus Atezolizumab, with or without Platinum-Based Chemotherapy, in Patients with Previously Untreated Locally Advanced Resectable Stage II, IIIA, or Select IIIB Non-Small Cell Lung Cancer [NCT04832854](#)

## EARLY STAGE/LOCALLY ADVANCED TRIALS (CONTINUED)

- A Phase III, Randomized, Double-blind, Placebo-Controlled, Multicenter, International Study of Osimertinib as Maintenance Therapy in Patients with Locally Advanced, Unresectable EGFR Mutation-Positive Non-Small Cell Lung Cancer (Stage III) whose Disease has not Progressed Following Definitive Platinum-Based Chemoradiation Therapy (LAURA)  
[NCT03521154](#)
- A Phase II Randomized Double-blind Study of Relatlimab plus Nivolumab in Combination with Chemotherapy vs. Nivolumab in Combination with Chemotherapy as First Line Treatment for Participants with Stage IV or Recurrent Non-Small Cell Lung Cancer  
[NCT04623775](#)

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## METASTATIC TRIALS

- Phase Ib Study of Brigatinib Plus Bevacizumab in Patients with ALK-rearranged Non-Small Cell Lung Cancer Who Have Previously Progressed on Prior ALK-Directed Therapy  
[NCT04227028](#)
- A Phase 1b Open-label, Dose-Escalation, Safety, and Pharmacodynamic Study of Minnelide Capsules given in combination with Osimertinib in patients with EGFR mutated NSCLC  
**NCT Number: Pending**
- A Phase 1/2a, Open-Label, Multi-Center Trial to Assess Safety, Tolerability, Pharmacokinetics, Pharmacodynamics, and Efficacy of CLN-081 in Patients with Non-Small Cell Lung Cancer Harboring EGFR Exon 20 Insertion Mutations  
[NCT04036682](#)
- A Phase 1b/2, Open-label, Multi-center Study of ERAS-007 ERK Inhibitor in Patients with Advanced or Metastatic Solid Tumors (HERKULES-1)  
[NCT04866134](#)
- A Phase 1b/2 Open Label Umbrella Study of Sasanlimab Combined With Anti-Cancer Therapies Targeting Multiple Molecular Mechanisms in Participants with Non-Small Cell Lung Cancer  
**Sub-Study A:**  
Sasanlimab + Encorafenib + Binimetinib  
**Sub-Study B:**  
Sasanlimab + Axitinib + SEA-TGT  
[NCT04585815](#)
- NCI 10327 / PhI-113: A Phase 1 Trial of MLN0128 (sapanisertib) and CB-839 HCl (telaglenastat) in Advanced NSCLC and SCC Patients  
[NCT04250545](#)
- A Phase 1/2 Multiple Expansion Cohort Trial of MRTX849 in Patients with Advanced Solid Tumors with KRAS G12C Mutation  
[NCT03785249](#)
- A Phase Ib Open-Label Study of LB-100 in Combination with Carboplatin/Etoposide/Atezolizumab in Untreated Extensive-Stage Small Cell Lung Carcinoma  
[NCT04560972](#)

The latest research publications from our physician scientists can be found at [pubmed.ncbi.nlm.nih.gov](https://pubmed.ncbi.nlm.nih.gov).

To refer a patient to a clinical trial, call **626-218-1133** or visit [CityofHope.org/clinicaltrials](https://CityofHope.org/clinicaltrials).

# Meet Our Lung and Thoracic Cancer Experts



**Ravi Salgia, M.D., Ph.D.**

- Medical Oncologist



**Edward Kim, M.D., M.B.A.**

- Medical Oncologist



**Erminia Massarelli, M.D., Ph.D., M.S.**

- Medical Oncologist



**Marianna Koczywas, M.D.**

- Medical Oncologist



**Miguel Villalona-Calero, M.D.**

- Medical Oncologist



**Victoria Villaflor, M.D.**

- Medical Oncologist



**Ranjan Pathak, M.D., M.H.S.**

- Medical Oncologist



**Jack West, M.D.**

- Medical Oncologist



**Jae Y. Kim, M.D.**

- Thoracic Surgeon



# Meet Our Lung and Thoracic Cancer Experts



**Dan J. Raz, M.D., M.A.S.**

- Thoracic Surgeon



**Loretta Erhunmwunsee, M.D.**

- Thoracic Surgeon



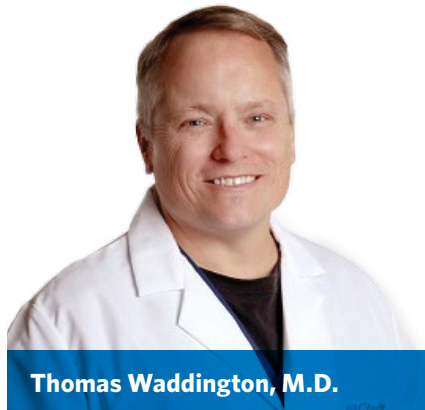
**Sagus Sampath, M.D.**

- Radiation Oncologist



**Arya Amini, M.D.**

- Radiation Oncologist



**Thomas Waddington, M.D.**

- Pulmonologist



**Waasil Kareem, M.D.**

- Pulmonologist



**Leonidas Arvanitis, M.D.**

- Pathologist



**Massimo D'Apuzzo, M.D., Ph.D.**

- Pathologist



**Stanley Hamilton, M.D.**

- Pathologist



# Compassionate Care That Supports Patients Throughout Treatment and Recovery



At City of Hope, we strive to make patients' lives whole again, which is why we provide a number of support programs for patients and their families to access before treatment, through remission and beyond. Supportive care at City of Hope includes, but is not limited to:

- A one-of-a-kind Couple's Coping With Cancer Together program
- Biopsychosocial screening and psychosocial support resources
- Our Positive Image Center<sup>SM</sup> where oncology-trained, licensed cosmetologists provide a welcoming and supportive environment
- Access to specialized clinics for patients with unique treatment needs, such as young people with cancer-related fertility issues and older people who may benefit from geriatric-informed oncology expertise
- A Survivorship Program which helps people deal with long-term effects of treatment
- Clinical follow-up care every six months for the first two years and then annually thereafter
- Surveillance for recurrence and second cancers
- Integrative medicine, including yoga, acupuncture, meditation and massage therapy

For a complete listing of supportive care offered in addition to our Survivorship Program, visit our Supportive Care Medicine website at [CityofHope.org/supportive-care-medicine](https://www.cityofhope.org/supportive-care-medicine). Personalized assistance may be requested by contacting the Sheri & Les Biller Patient and Family Resource Center at **626-218-2273**.

# About City of Hope



Founded in 1913, City of Hope is an independent biomedical research and treatment center for cancer, diabetes and other life-threatening diseases. As a world leader in cellular immunotherapies, including chimeric antigen receptor (CAR) T cell therapy, we are one of the few institutions in the nation that innovates CAR T cell technology through our research and clinical trials, in addition to collaborations with other academic research institutions and global biopharmaceutical companies.

City of Hope is also a global pioneer in stem cell transplantation innovation, having performed over 17,000 transplants to date with exceptional survival rates, according to the Center for International Blood & Marrow Transplant Research. Human synthetic insulin, monoclonal antibodies and numerous breakthrough cancer drugs are based on technology developed at our institution.

A National Cancer Institute-designated comprehensive cancer center and a founding member of the National Comprehensive Cancer Network, City of Hope has been ranked among the nation's "Best Hospitals" in cancer by U.S. News & World Report for 15 consecutive years and received Magnet® recognition from the American Nurses Credentialing Center. Our main campus is located near Los Angeles, with additional locations throughout Southern California and in Arizona.

To find out more about City of Hope's lung cancer program, visit [CityofHope.org/lung-cancer-care](https://www.cityofhope.org/lung-cancer-care).

To begin the referral process for your patients with lung cancer:

- Call **800-COH-4DRS (264-4377)**, Monday through Friday, 8 a.m. to 6 p.m., to speak with a patient referral specialist.
- Fax a referral request letter with a patient face sheet to **626-301-8432**.
- Complete an online referral request form at [CityofHope.org/refer-a-patient](https://www.cityofhope.org/refer-a-patient).
- Visit [clinicaltrials.coh.org](https://clinicaltrials.coh.org) or call **626-218-1133** to see if one of our clinical trials holds promise for your patients.



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