Study Reveals Direct Link Between Surgeon Experience and Outcomes for Mitral Valve Operations

Researchers at the Icahn School of Medicine at Mount Sinai have found that patients who undergo mitral valve operations with surgeons who perform more than 25 such procedures annually experience lower one-year mortality and reoperation rates when compared to individuals treated by surgeons who do fewer procedures. Significantly, those high-volume surgeons also were more likely to perform a valve repair—the preferred treatment that offers important clinical advantages, such as better life expectancy and quality of life—over a valve replacement with a mechanical or animal valve.

The findings were presented recently at the American Association for Thoracic Surgery Centennial meeting and simultaneously published online by the Journal of the American College of Cardiology.

Mount Sinai Spin-Off to Revolutionize Diagnostics

Eric Schadt, PhD, a pioneer in big data and systems biology and Founding Director of the Icahn Institute for Genomics and Multiscale Biology, recently launched Sema4, a new venture at the Mount Sinai Health System that is looking to revolutionize clinical diagnostics and offer sophisticated genetic testing to doctors and patients across the country.

Operating as an independent, for-profit company based in Stamford, Connecticut, Sema4 (pronounced semaphore) will continue to collaborate closely with Mount Sinai. The company is combining comprehensive genetic screening, diagnostic testing, predictive modeling, and open access data to create innovative tools that enable patients and their physicians to make more informed decisions about patient health.

The first spin-off of its kind at Mount Sinai, Sema4 has a staff of more than 550, including many scientists, doctors, engineers, clinicians, and genetic counselors from the Icahn Institute and the Department of Genetics and Genomic Sciences. Mount Sinai's significant investment in Sema4
The Icahn School of Medicine at Mount Sinai has created the new Women's Health Research Institute, with the mission of advancing science in women's health. The Director of the Institute is a nationally recognized physician-scientist, Elizabeth A. Howell, MD, MPP, Vice Chair of Research and Professor of Obstetrics, Gynecology and Reproductive Science, and Professor of Population Health Science and Policy, Icahn School of Medicine at Mount Sinai.

“Developing a rigorous research program in women’s health is an essential component of the strategic plan of the Icahn School of Medicine at Mount Sinai and a natural complement to Mount Sinai’s rapidly growing clinical services and fellowship training programs in this area,” says Eric J. Nestler, MD, PhD, Dean for Academic and Scientific Affairs, Director, The Friedman Brain Institute, and Nash Family Professor of Neuroscience.

Dr. Howell laid the groundwork for the Institute in close collaboration with Michael Brodman, MD, Ellen and Howard C. Katz Chair and Professor, Obstetrics, Gynecology and Reproductive Science; and Annetine C. Gelijns, PhD, JD, Chair and Edmond A. Guggenheim Professor, Population Health Science and Policy. The two departments are co-sponsors of the new interdisciplinary Institute.

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—Elizabeth A. Howell, MD, MPP

“I think that now is a great time for women’s health research,” says Dr. Howell. “You see a lot of clinical centers of care for women, but you do not see many that are focused on the science of women’s health.” Two Centers of Excellence will provide the initial platform for achieving the Institute’s goals:

• **The Center for Outcomes and Quality Research in Women’s Health**
  With particular attention to underserved populations, the Center will build upon Mount Sinai’s strong research portfolio on quality of care and outcomes, with a focus on developing and evaluating interventions to improve women’s health and wellness.

• **The Center for Early Translational Research in Women’s Health**
  Drawing on the expertise of multiple departments, institutes, and programs, the Center will develop tools and core resources for translational research in genetics and immunology and build new diagnostic and treatment techniques for gynecologic and other conditions in women’s health.

“The idea is that the same topic areas can be studied at both centers,” Dr. Howell says. “Looking at cervical cancer, for example, you can address screening, treatment practices, and patterns in health services. At the same time, you could be doing advanced work on tumor immunology and trying to find ways to diagnose it earlier and treat it more effectively. The centers will be very integrated, but you need both.”

The Institute is now seeking a director for the Center for Early Translational Research and recruiting faculty members with expertise in health services research, cancer research, and other complementary fields. The Institute also hopes to establish the Women’s Health Scholars Program, recruiting residents and fellows to spend a year learning research methodology for a career in women’s health.

Dr. Howell is working closely with Stephanie V. Blank, MD, Director of Women’s Health at Mount Sinai Downtown-Chelsea Center. Dr. Blank will be the clinical lead for the Center for Early Translational Research in Women’s Health, and because she treats many patients with gynecologic cancer, “she will be one of the key people who can bring both our questions and our learning to the bedside,” Dr. Howell says. Drs. Blank and Howell aim to build a strong ovarian cancer research program as part of this effort.

The Institute is also building on Dr. Howell’s work. Supported by grants from the National Institutes of Health, she leads research concerning maternal depression, outcomes for very low birth-weight babies, and the effect of hospital quality on severe complications and death in childbirth, which are persistently higher for black women and other ethnic minorities, compared with white women.

In a 2016 study published in the *American Journal of Obstetrics & Gynecology*, Dr. Howell’s team looked at 555,775 deliveries in 40 New York City hospitals from 2011 through 2015, and found that some hospitals had rates of serious complications as low as 1 percent, while others had rates up to 6 percent. The study also found that 65 percent of white women delivered at hospitals with the lowest number of complications, and only 25 percent of black women did. Dr. Howell says, “We need to figure out why some hospitals are doing so much better than others, and how to address these disparities.”
or maintain employment, says Michael A. Crane, MD, MPH, Director of the World Trade Center Health Program Clinical Center of Excellence (CCE) at the Icahn School of Medicine at Mount Sinai, and Medical Director of the Selikoff Centers for Occupational Health. He says the situation at Ground Zero became so toxic that “airborne concentrations of dust overwhelmed the upper airways of the 3

The findings showed that among surgeons who performed any mitral valve procedures, the median volume was 10 cases per year, with a mean valve repair rate of 55 percent. In the subgroup of patients with degenerative disease, the mean repair rate ranged from 77 percent for surgeons with total annual volumes of more than 51 cases, to 48 percent for surgeons who performed fewer than 10 cases. Other key results showed that surgeons who performed 25 or more surgeries annually had reoperation rates at 1.3 percent compared to 3.6 percent for surgeons doing fewer surgeries. Additionally, survival improved for every 10 additional cases.

“Our findings add further clarity to the American Heart Association and American College of Cardiology guidelines that already recognize that patients with degenerative mitral valve disease should be referred to experienced mitral surgeons whenever feasible,” says the study’s senior author, David H. Adams, MD, Cardiac Surgeon-in-Chief of the Mount Sinai Health System, and the Marie-Josée and Henry R. Kravis Professor and Chair of the Department of Cardiovascular Surgery at the Icahn School of Medicine at Mount Sinai. “This is the first study to link individual surgeon volume to survival and freedom from reoperation at one year in patients undergoing operations for degenerative mitral valve disease.”

The study’s lead author, Joanna Chikwe, MD, Clinical Professor of Cardiovascular Surgery at the Icahn School of Medicine at Mount Sinai, and Professor of Surgery, Chief of Cardiothoracic Surgery, and Co-Director of the Heart Institute at Stony Brook School of Medicine, notes, “Considering that there was an incremental improvement in survival and probability of repair with increasing volume over 25 operations, one could make the argument that a minimum volume target of 50, or even more, annual operations would be optimal and particularly beneficial in patients with complex but repairable mitral valve disease.”
Pioneer in Therapies for Rare Diseases is Honored

The National Organization for Rare Disorders (NORD), a nonprofit organization that supports 30 million Americans with rare diseases, recently awarded a 2017 Rare Impact Award to Robert Desnick, MD, PhD, Dean for Genetics and Genomic Medicine at the Icahn School of Medicine at Mount Sinai.

NORD cited Dr. Desnick’s longstanding dedication to developing life-changing treatments for people with lysosomal storage diseases and porphyrias. (Lysosomal storage diseases are characterized by an abnormal buildup of toxic materials in the body’s cells, whereas porphyrias are a group of disorders caused by deficiencies of enzymes involved in the production of heme—a key component of important proteins in the body.)

In nominating Dr. Desnick, NORD stated that he “is among the few physician-scientists whose outstanding and innovative basic, translational, and clinical research accomplishments have led to effective treatments and prevention of rare genetic diseases.”

Over the course of his more than 40-year career, Dr. Desnick—who is also Professor and Chair Emeritus of the Icahn School of Medicine’s Department of Genetics and Genomic Sciences—has developed therapies for Fabry disease and Niemann–Pick disease, and co-founded the biotech company Amicus Therapeutics, Inc.

His work in genetics has also led to the development of routine screening tests for more than 280 pan-ethnic pediatric diseases.

An elected Fellow of the American Association for the Advancement of Science and a Member of the National Academy of Sciences, Engineering, and Medicine, Dr. Desnick has published more than 500 peer-reviewed articles and 255 chapters and reviews.

In accepting his award at NORD’s Rare Impact Awards event in Washington, D.C., in May, Dr. Desnick expressed his support for patient advocacy and the need for government-sponsored research funding. “Most of all,” he said, “we need to encourage young researchers to ride the wave of innovation.”

Mount Sinai Spin-Off to Revolutionize Diagnostics (continued from page 1)

reflects its commitment to genetic research, diagnostics, and next-generation treatments.

Sema4 will build upon Mount Sinai’s success in genetic testing under the leadership of Lisa Edelmann, PhD, the long-time Executive Director of the Mount Sinai Genetic Testing Laboratory in New York City, who now serves as Sema4’s Chief Diagnostics Officer, and Todd Arnold, PhD, Managing Director of Sema4’s Branford, Connecticut, laboratory.

“As part of its national expansion, Sema4 recently launched CarrierCheck™, the only carrier test that screens for 67 inherited conditions and can be ordered online by consumers. CarrierCheck, a simple, saliva-based test, was developed in collaboration with Helix, a personal genomics company based in the San Francisco Bay Area. Sema4 also launched a new test that analyzes key cancer genes to help doctors personalize cancer therapy. In the future, Sema4 will offer new and enhanced, non-invasive prenatal and supplemental newborn screening tests.

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The more data Sema4 collects through its tests, the more information it will have to develop better insights, computer models, and predictions that can be used to help transform the way diseases are diagnosed, treated, and prevented, says Dr. Schadt, Sema4’s Chief Executive Officer, who also serves as Dean for Precision Medicine at the Icahn School of Medicine at Mount Sinai and the Jean C. and James W. Crystal Professor of Genomics.

“Most of all, we need to encourage young researchers to ride the wave of innovation.”

— Robert Desnick, MD, PhD

“We would like to create larger sets of data about patients that they and their doctors can analyze to make the best health care decisions,” Dr. Schadt says. “Our bet is that medicine will become much more of an information science, and providers who can master the information and base meaningful decisions on that data will be able to better serve their patients.”

Dennis S. Charney, MD, Anne and Joel Ehrenkranz Dean, Icahn School of Medicine at Mount Sinai, and President for Academic Affairs, Mount Sinai Health System, says, “We look forward to collaborating closely with the Sema4 team and to rapidly deploying the tools they develop throughout the Mount Sinai Health System.”

For additional information about Sema4, please go to sema4genomics.com or call 800-298-6470.
A Rooftop Garden Blooms Each Summer

The rooftop of Klingenstein Pavilion is a bright and bounteous place, thanks to a team effort led by Michael Brodman, MD, Ellen and Howard C. Katz Chair and Professor, Obstetrics, Gynecology and Reproductive Science; and Charles J. Ascher-Walsh, MD, Associate Professor, Obstetrics, Gynecology and Reproductive Science. “Dr. Brodman built the original planters about six years ago,” Dr. Ascher-Walsh says. “We expand every year, and it just takes off when the summer comes.” Their garden grows (in alphabetical order) arugula, basil, chard, dahlias, eggplant, figs, gladiolus, kale, leeks, mint, onions, peppers, radishes, sunflowers, thyme, and zucchini. The faculty, fellows, and staff take the produce home, have it for lunch and communal dinners, and place cut flowers around the offices. They also brighten their workdays by holding meetings on the rooftop deck. Dr. Brodman adds, with tongue in cheek, “Let everyone know we also rent it out for weddings and Bar Mitzvahs!”

Mount Sinai Celebrates Pride

Roughly 40,000 people covered the two-mile parade route down Fifth Avenue to Christopher Street during the 48th Annual New York City Pride March on Sunday, June 25. Among the marchers, the rainbow-colored flags, and festive floats were more than 80 Mount Sinai Health System employees—many of whom wore T-shirts that read, “We Take Pride in Your Health.”

At a PrideFest street fair held concurrently in Greenwich Village, members of Mount Sinai’s LGBT Health Services, Office of Diversity and Inclusion, and Institute for Advanced Medicine also staffed information booths and distributed free condoms, pamphlets, and Mount Sinai-branded favors. In addition to celebrating inclusivity, “Mount Sinai is ensuring that employees feel comfortable and safe to be themselves at work and outside of work,” says Richard Cancio, MPH, Program Manager of LGBT Health, Mount Sinai Health System.

Sharing the Love of Jazz

Musicians with Lincoln Center’s Jazz for Young People program treated patients, staff, and visitors at Mount Sinai Downtown-Union Square, The Mount Sinai Hospital, and Mount Sinai West to free performances in June that celebrated the music of Duke Ellington, Louis Armstrong, and other jazz greats. At each Mount Sinai location, people enjoyed listening to popular favorites, such as “When the Saints Go Marching In” and “Take the A Train.”

Lincoln Center offers educational programming for children and adults that fosters an appreciation of jazz as an enjoyable and uniquely American art form. The Jazz for Young People program—based on the idea that jazz embraces personal freedom and humanity and serves as a metaphor for democracy—typically brings jazz artists and performances to New York City schools.
Epic Inpatient Implementation Town Hall

Staff is encouraged to attend a Town Hall on the latest updates on the Epic Inpatient Implementation project at Mount Sinai St. Luke’s and Mount Sinai West. The hour-long discussion will include an overview, recent accomplishments, upcoming deadlines, and a Q&A session.

Tuesday, September 19
3 – 4 pm
Mount Sinai St. Luke’s
Muhlenberg Auditorium
Fourth Floor Conference Center

Videoconference locations:
Mount Sinai West
Second Floor, Conference Room B
Mount Sinai Corporate Services Center
Tenth Floor, Large Videoconference Room, 10-C.2

Contact the project team leaders: To learn more about the Epic Inpatient Implementation project, or to submit a question or a topic idea for the event, email EpicSLWinPatient@mountsinai.org.

Hurricane Harvey Relief

Many hospital workers in Texas who worked around the clock to help those impacted by Hurricane Harvey have experienced significant property damage themselves.

To obtain additional information or to donate to the newly created Texas Hospital Association (THA) Hospital Employee Assistance Fund, please go to www.tha.org/Harvey/AssistanceFund.

Sleep Specialist to Discuss New Therapy

Fred Lin, MD, Chief, Division of Sleep Surgery, Department of Otolaryngology—Head and Neck Surgery, Mount Sinai Health System, will discuss Inspire therapy for people with sleep apnea at a free community education event at The Mount Sinai Hospital.

RSVP: InspireSleep.com

Monday, September 18
6 pm
Hess Center for Science and Medicine
Second Floor, Seminar Room A

Mount Sinai Transformation Update

For the most recent updates on Mount Sinai’s downtown transformation, please go to:
http://www.mountsinaihealth.org/locations/downtown