

Proposal for
Royal Embassy
of **Saudi Arabia** and
Ministry of Health





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Introduction

Swedish Medical Center: The Region's Premier Health-Care Provider

Swedish Medical Center, the largest, most comprehensive nonprofit health-care provider in the Pacific Northwest, has consistently been named the area's best hospital, with the best doctors, nurses and overall care in a variety of specialty areas, according to National Research Corp. Most recently, Swedish was ranked as the top hospital in the state of Washington by *Washington CEO* magazine.



The First Hill Campus of Swedish is just one of three hospital campuses in the comprehensive Swedish health system.

Since its inception in 1910, as a 24-bed hospital, Swedish has grown into a 1,245-bed medical center comprising three hospital campuses, a freestanding emergency room, home-care services and a network of 12 primary-care clinics. Swedish has more than 6,500 employees and a medical staff of more than 2,000 physicians, representing virtually every medical, diagnostic and surgical specialty and subspecialty.

The Swedish Neuroscience Institute (SNI) is dedicated to treating patients with neurological and neurosurgical diseases and disorders – and applying innovative and promising

solutions, from surgery and minimally invasive procedures of the brain and spine to radiosurgery and image guidance systems. The medical staff at the institute includes dozens of experienced neurologists, neurosurgeons and subspecialists. The Swedish Neuroscience Institute provides a full range of services in many neurological areas, including treatment of cerebral aneurysms, arteriovenous malformations, carotid stenosis, movement disorders using deep brain stimulation, stroke, brain tumors, spinal disorders, multiple sclerosis and epilepsy.

The Swedish Cancer Institute treats more people for more kinds of cancer than any other facility in the region. The Swedish Heart and Vascular Institute offers the most advanced diagnostic and therapeutic techniques, including minimally invasive heart surgery and electron beam tomography for the early detection of coronary-artery disease.

Surgeons at Swedish perform more than 32,000 surgeries each year. In orthopedics, Swedish ranks as a national leader in both volumes and outcomes with nearly 11,000 orthopedic procedures performed annually, including more joint replacements and spine surgeries than elsewhere in the northwest United States.

Swedish and its physicians are at the forefront of literally dozens of other medical specialties as well, including pediatric care, organ transplant, obstetrics and sleep medicine.

The Swedish Neuroscience Institute: Merging Compassionate Care with Advanced Technologies

The Swedish Neuroscience Institute is dedicated to providing exceptional care to people with disorders of the brain, spine and other parts of the nervous system. To that end, SNI offers a unique combination of medical expertise, advanced technologies, state-of-the-art facilities and leading-edge research to diagnose and treat a full range of neurological disorders. Patients at SNI receive highly personalized, easy-to-access care in a comfortable, attentive setting.

Swedish has been providing specialty care in the neurosciences for more than a decade, but the demand for specialized neuroscience services has never been greater. Neurological disorders affect nearly 6 billion people worldwide.

To meet the increased demand for neurological services and establish a center with international recognition, Swedish Medical Center expanded its neuroscience services in 2004 by re-establishing the Swedish Neuroscience Institute to reflect a broader scope and reach. A newly remodeled 47,000 square-foot clinical complex serves as the largest, most comprehensive source of advanced neurological care in the Northwest.

Swedish recruited two prominent physician leaders as executive directors of the institute:

- **Marc R. Mayberg, M.D.**, came to Swedish from the Cleveland Clinic where he was chairman of the department of neurological surgery. He is one of the country's leading neurosurgeons for skull-base and pituitary tumors and has been a national leader in stroke and neurosurgery.
- **David W. Newell, M.D.**, was formerly professor of neurosurgery at the University of Washington, and chief of neurosurgery at Harborview Medical Center in Seattle. He is internationally recognized for his expertise in cerebrovascular disease, including stroke, arteriovenous malformations and cerebral aneurysms (he co-authored the No. 1 medical textbook on the subject).

Building upon its past success, the Swedish Neuroscience Institute has charted a course to become not only the region's preeminent neuroscience provider, but a national and international resource as well. A total of nine neurosurgeons, 15 neurologists, two interventional radiologists as well as a number of other physicians specializing in sleep disorders, neurointensive care, rehabilitation, oncology and neuropathology provide the core of the neuroscience expertise at SNI.



Marc R. Mayberg, M.D.



David W. Newell, M.D.



Facilities

State-of-the-Art Operating Rooms Support Advanced Neurosurgical Procedures

Swedish Medical Center has the most technologically advanced neurological operating rooms in the country. The Swedish Neuroscience Institute recently opened a \$30 million operating room (OR) complex at Swedish Medical Center's Cherry Hill campus. Centerpieces of the new facility are four state-of-the-art operating and endovascular suites that feature the most advanced minimally invasive, computer-assisted neurosurgical and brain-imaging technologies.



SNI's comprehensive diagnostic and surgical capabilities include:

- Integrated, GPS-like guidance systems built into every OR that help surgeons navigate in critical areas of the brain during operations
- Intraoperative MRI and CT scanners and 3-D angiography that provide vital images during surgery
- Brain-mapping capabilities to identify areas of critical brain function through microelectrode recordings of brain tissue

- Interventional neuroradiology techniques to block blood flow to tumors or blood-vessel malformations prior to surgery, place stents in narrowed brain arteries, and repair cerebral aneurysms

The Swedish Neuroscience Institute has created a center that relies heavily on interventional radiology, endoscopic procedures and other less-invasive technologies, so procedures can be done with less risk and patients can go home as quickly as possible.

Four of the major innovations incorporated into the new SNI ORs include:

- **PoleStar™ Interoperative MRI image guidance** — This advanced technology



produces real-time interior MRI images of the brain during surgery, so a neurosurgeon can more accurately detect and evaluate tumor boundaries while avoiding healthy

tissue. This technique, which is used for both malignant and benign brain tumors, significantly improves effectiveness of tumor removal, lowers the risk of surgery, and decreases the likelihood of the need for additional surgery.

- **Storz OR-1™ Integration System** — This



system allows all of the information available to the surgeon to be integrated and displayed on

ceiling-mounted LCD screens for continuous access by the OR team, including pre-operative and intra-operative images, operating microscope views, navigation and anesthesia monitoring. In addition, the surgeon can transmit images outside the OR for teaching other surgeons, or to consult with colleagues if necessary.

- **CereTom™ portable computed tomography (CT) scanner** — This new technology allows physicians to do brain scans on critically ill or injured patients in ORs, emergency departments or intensive-care units without moving them. CereTom™

gives physicians quick access to high-quality CT images of patients' internal tissues and blood vessels in the cranium. This is particularly valuable in cases of severe head trauma or stroke, where "time to treatment" is critical in saving a patient's life. CT scanning is especially helpful for cerebral arterial and cerebral vascular cases, plus deep-brain stimulation procedures for Parkinson's disease.



- **Biplane 3-D neuro-interventional suite**

— This technology is the most advanced system in the Pacific Northwest for diagnostics and interventional treatment of brain lesions, including



cerebral aneurysms, arterio-venous malformations, intracranial vessel narrowing, and brain-tumor embolization. Devices such as coils and stents, and new embolic materials that can be introduced through the cerebral vessels, can eliminate the need for surgery. In cases where surgery is needed, selective vessel embolization, with micro catheters, can make the surgery safer. Swedish is one of the first in the world to bring this angiogram capability into the OR.

Neuroscience Care

World-Class Interdisciplinary Care

One of the unique attributes of the Swedish Neuroscience Institute is the way we have consolidated all of our neurological programs under the SNI umbrella. This consolidation of services is distinct in our region and rare in the country. Along with the comprehensive range of services available through the Swedish health system – from sophisticated diagnostics, to innovative medical and surgical treatments, to advanced rehabilitation resources – we promote a model of interdisciplinary patient care.



That means our patients have access to medical experts in multiple disciplines who work together as a team to treat the “whole” patient from different vantage points. For example, the care team for a brain tumor patient could comprise a neurosurgeon, radiation oncologist, pathologist, physical therapist and social worker – all in consultation with each other, via regularly scheduled case conferences and other means, about the patient’s treatment plan and progress.

SNI provides sophisticated treatment in a variety of neuroscience areas, including:

Epilepsy

The Epilepsy Center at Swedish provides long-term monitoring, diagnosis and treatment for children and adults with epilepsy and conditions mimicking epilepsy – especially patients with complex or troubling cases that are not responding well to standard medications. Our regional, level-4 epilepsy center has earned a national reputation for



the medical and surgical treatment of pediatric and adult epilepsy. SNI is widely called on for referral services by neurologists and neurosurgeons across the state and region.

Now in its 15th year of operation, the center is treating a growing population of patients and performing more than 150 epilepsy surgeries each year.

The Epilepsy Center treats an increasing number of outpatients with new-onset seizures – one of the center’s areas of specialized focus. The center is also available to consult and manage inpatients with seizure disorders.

Additionally, the Epilepsy Center at Swedish is the Northwest site for several major surgical research studies and new medication and medical device trials, including a study to develop a seizure-prediction device. Participation in such research studies and clinical trials ensures that the Epilepsy Center is at the leading edge of all epilepsy treatment options.

Neurophysiology Laboratory

The neurophysiology laboratory at Swedish is a critical component of the epilepsy program. The lab is currently performing EEG (electroencephalography)-monitoring for epilepsy patients at a rate of more than 400 per year.

In addition, inpatient and outpatient neurophysiology lab services, such as intraoperative neurophysiology monitoring for complex, high-risk spine and brain cases, are also available.

To ensure that Swedish maintains its position as a leader in neurophysiology services, recent improvements include:

- New neurophysiology monitoring instruments for the operating rooms
- The replacement of analog instruments with new digital electroencephalographs
- Equipment upgrades for pediatric EEG-monitoring

Multiple Sclerosis

The multiple sclerosis (MS) program at Swedish addresses the emotional, psychological, social and physical needs of people living with MS – and fills a particular regional need, since the Pacific Northwest has a higher incidence of MS than many other parts of the country.

Swedish’s comprehensive approach to treating and managing the day-to-day symptoms of MS includes physical, occupational and speech therapy; cognitive rehabilitation; ophthalmologic, urologic, psychological and social services; and medical treatments to alleviate symptoms and



Lily Jung, M.D., medical director of Swedish’s multiple sclerosis program, seen here with Washington state Congressman Jim McDermott, is an active advocate on behalf of her patients.

lessen the severity of MS attacks. And because Swedish is a clinical trial site, MS patients have access to some of the latest, most progressive treatments available.

The MS program collaborates with the Swedish Pain Clinic and Rehabilitation Services at Swedish to offer a comprehensive spasticity program. Program enhancements such as this, along with participation in MS research studies and clinical trials, ensure that MS patients at Swedish have access to the most progressive treatments available.

To make it easier to monitor a patient's progress, an MS patient registry was developed that links the offices of all physicians who are affiliated with the MS program at Swedish. The registry also makes it easier to enroll patients in clinical research studies.

Neuro-ophthalmology

The clinic that provides neuro-ophthalmology services for the Swedish Neuroscience Institute is the only full-time neuro-ophthalmology practice in Washington state. Neurological conditions are diagnosed and treated in



patients who have visual symptoms, such as loss of vision, visual field defects, double vision and eye movement disorders. The most common conditions they diagnose are stroke, migraines, brain tumors and multiple sclerosis.

Neuro-ophthalmologists at Swedish specialize in the care and study of patients with optic neuritis who have or are at risk of developing multiple sclerosis. The program also participates in a number of research trials, including a study on the early treatment of MS and a long-term study of the outcome of patients with optic neuritis.

Deep Brain Stimulation/Movement Disorders

In 2005, the Swedish Neuroscience Institute added deep brain stimulation (DBS) to its comprehensive array of services. The movement disorders program offers the region's leading specialists, the latest treatment options and the most advanced technologies available. In fact, SNI is one of the few facilities in the region to offer treatment to control the symptoms associated with movement disorders, including muscle tremor, muscle contractions, stiffness and slowness.

DBS is becoming an increasingly effective treatment for controlling the symptoms associated with Parkinson's disease, essential tremor and dystonia. In DBS, a pacemaker-like device, implanted in the chest wall under the skin, is used to deliver electrical impulses to electrodes placed in areas of the brain involved in movement-related communication.

The majority of patients who undergo DBS report a significant reduction in movement-related symptoms, along with improved quality of life. More than 35,000 DBS implants have been performed in the United States, with the vast majority of patients reporting a significant reduction in movement-related symptoms – along with improved quality of life.

Stroke

Swedish was the first medical center in western Washington to receive certification as a primary stroke center by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Among other things, this means that, 24 hours a day, seven days a week, stroke patients who come to Swedish are evaluated by a specially trained stroke team within 15 minutes of arrival; a head CT scan or brain MRI is performed and interpreted within 45 minutes of a stroke patient being admitted; and a neurosurgeon is available, if needed.



In 2005, JCAHO presented Swedish with the Codman Award in the disease-specific category of stroke care. This prestigious national honor recognizes exemplary performance in using outcomes measurements to improve the quality of patient care.

Neurosurgery

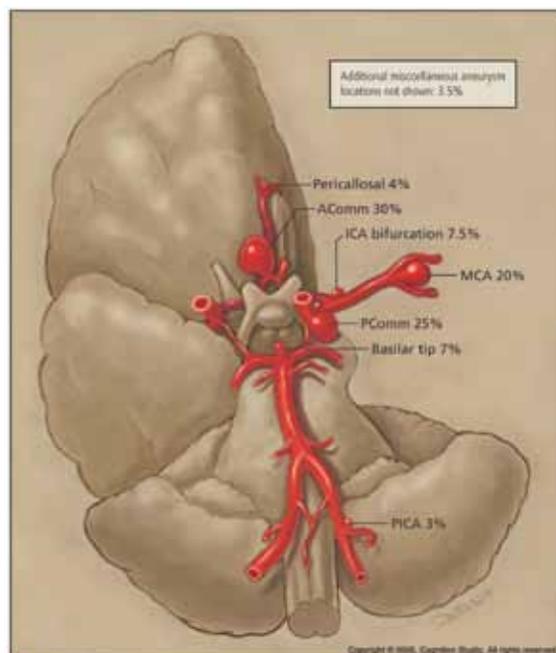
The Swedish Neuroscience Institute has the largest, most broadly experienced neurosurgery team in Washington state. Neurosurgeons at Swedish have decades of combined experience, as well as medical expertise that covers the full range of neurosurgical disorders and procedures. They perform over more than 2,000 neurosurgical procedures each year.

Swedish surgeons perform virtually every kind of neurosurgery using the latest surgical techniques and technologies, including surgical clipping of aneurysms, brain tumor removal, stereotactic radiosurgery for brain tumors, and minimally invasive spine surgery. Many specialize in select areas of neurosurgery, such as skull-base tumors, arteriovenous malformations and spinal and spinal-cord tumors, giving patients the benefit of their extensive, highly focused experience.

Brain Tumors

Patients with all varieties of brain tumors are offered comprehensive treatment. Advanced surgical treatment – including brain mapping techniques, stereotactic localization and skull-base techniques, such as transnasal resection of anterior skull-base tumors – is offered. Genetic analysis of tumor tissue is provided for determination of predictive responses for chemotherapy and radiation treatment. Advanced conformal radiation, as well as stereotactic radiosurgery, including Gamma Knife and CyberKnife treatment, is available for patients. Specialized surgical, radiosurgical and neuroendocrine treatments are available for patients with pituitary tumors.

Cerebral Aneurysms



The Swedish Neuroscience Institute is dedicated to offering the most advanced care anywhere for treatment of cerebral aneurysms. For diagnosis and treatment of these disorders, the Swedish Neuroscience Institute offers the region's most experienced physician specialists, who:

- Have performed more surgical and interventional treatments of cerebral aneurysms than anyone else in the region
- Pioneered the use of transcranial Doppler to diagnose vasospasm after aneurysms rupture
- Were first in the region to offer interventional coiling and stenting treatment for aneurysms
- Were first in the country to use angioplasty to treat vasospasm to minimize the risk of stroke after aneurysm treatment

- Offer cerebral bypass surgery for the treatment of complex aneurysms
- Co-authored the No. 1 medical textbook on aneurysm: *Management of Cerebral Aneurysms* (Elsevier Inc., 2004)
- Have successful, published outcomes of more than 90 percent for patients who have a ruptured aneurysm and are good-grade
- Treat patients and provide consultations to physicians and hospitals throughout the region

In addition, specialized cerebrovascular care teams offer:

- 24-hour coverage by neurosurgery, neurology, radiology, interventional neuroradiology and pharmacy departments
- Specially trained surgical, interventional and nursing teams in the operating room, intensive care and neurological units

State-of-the-art facilities and the latest technologies include:

- Specially equipped neurosurgical operating rooms
- 3-D CT, MRI and angiogram for the diagnosis of cerebral aneurysm
- A dedicated neuro ICU with 24-hour electronic monitoring of patients

Complete Neurological Care

The Swedish Neuroscience Institute also provides specialized care for headache, sleep disorders, Alzheimer's disease, neuromuscular conditions and other neurological disorders.

Education/Telemedicine/Research



The Seattle Science Foundation hosts physician education symposiums in which physicians from the Swedish Neuroscience Institute actively participate.

Continuing Medical Education

Swedish Medical Center provides medical education activities that enhance our physicians' ability to deliver quality health-care services and improve patient outcomes by providing up-to-date information and clinical training. Our Continuing Medical Education (CME) program includes medical conferences and series, which are presented by recognized leaders in their fields.

In the area of neurosciences, Swedish has hosted CMEs on variety of topics, including:

- Stroke care and new technologies in stroke
- The use of cerebrovascular ultrasound in the management of stroke
- Interventional vascular therapies
- Neurophysiology

- Neurology medical therapeutics
- Symptom management in multiple sclerosis
- Pediatric neurology
- Psychiatry and neurology

To further physician education, SNI also offers a neurosurgery fellowship to physicians who want to train intensively in cerebrovascular neurosurgery. Swedish can also train physicians from other countries who wish to visit Swedish in the latest neuroscience technologies and techniques, allowing them to introduce and use these advances in their home countries.

Telemedicine

The Swedish Neuroscience Institute offers “electronic communication” between physicians around the world to preserve continuity of care. This allows physicians at Swedish to talk with doctors in other countries about their patients’ medical needs, without those physicians having to be in Seattle.

Research

As part of its commitment to provide the most advanced and progressive neurological care, the Seattle Neuroscience Institute offers new and innovative therapies that are only available through clinical research trials. As a major research center, Swedish is in a unique position to give many neurological patients the opportunity to be among the first to benefit from emerging medical breakthroughs. Investigational therapies include new equipment and medical devices, new medications, and new surgical techniques and procedures.

Swedish presently conducts research in neurosurgery (brain and spine), brain tumor genetics, neuro-interventional radiology (minimally invasive procedures), acute stroke, epilepsy and multiple sclerosis.



Partners

Partnering for Future Advancement of Treatment

The Swedish Neuroscience Institute has joined forces with a number of highly respected organizations to collaborate on research and treatment leading to cures for diseases of the brain. These alliances include:



The Allen Institute for Brain Science

Located in Seattle, the Allen Institute for Brain Science is a non-profit medical research organization dedicated to performing innovative basic research on cellular function in the brain and distributing its discoveries to researchers around the world. In doing so, the institute aims to advance a new understanding of diseases that result from disorders of the brain.

Founded in 2001, and launched in 2003 with a \$100 million grant from philanthropist and Microsoft co-founder, Paul G. Allen, the institute recently completed the Allen Brain Atlas, a Web-based, three-dimensional map of gene expression in the mouse brain.

Detailing more than 21,000 genes at the cellular level, the atlas provides scientists with a level of data previously not available.

For more information about the Allen Institute, visit alleninstitute.org.

The Institute for Systems Biology (ISB)

ISB is an internationally renowned, non-profit research institute dedicated to the study and application of systems biology. Founded in 2000, ISB seeks to unravel the mysteries of human biology and identify strategies for predicting and preventing diseases such as cancer, diabetes and AIDS. The driving force behind the innovative “systems” approach is the integration of biology, chemistry, physics, computation and

technology. This approach allows scientists to analyze all of the elements in a system, rather than one gene or protein at a time. Unlocking the keys to these dynamic relationships may provide answers to how illness and disease work in the human brain.

Located in Seattle, the institute has 11 faculty and more than 170 staff members, an annual budget of more than \$25 million, and an extensive network of academic and industrial partners.

One of the group's first collaborative research projects involves the study of brain tumor samples from Swedish patients with the aim of learning how the growth of these tumors might be slowed or stopped.

For more information about the ISB, visit systemsbiology.org.

The Seattle Science Foundation

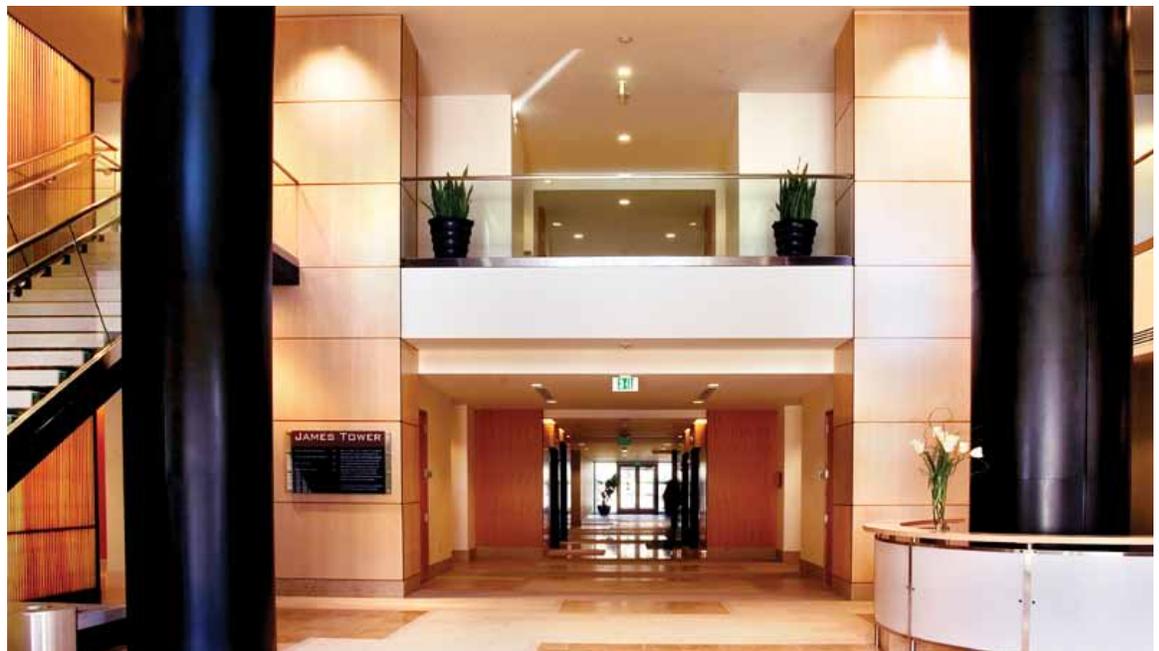
With access to a world-class professional education center, the Seattle Science

Foundation provides a unique opportunity for collaboration between physicians, scientists, technologists, engineers and educators to improve worldwide health care through education and training. The center offers both simulation and cadaveric facilities for surgical and endovascular procedures.

The Seattle Science Foundation offers:

- The ability to teach new medical procedures to both new and experienced practitioners through didactic seminars, simulation and hands-on sessions, with access to cadavers in state-of-the-art operating rooms
- Integrative courses that encourage practitioners to share and evaluate the latest in minimally invasive surgical techniques
- High-quality two-way communication that enables live demonstrations and peer interaction in real time from around the globe

For more information on the Seattle Science Foundation, visit seattlesciencefoundation.org.



The James Tower at Swedish Medical Center/Cherry Hill is home to the Swedish Neuroscience Institute as well as its education partner, the Seattle Science Foundation.

Seattle CyberKnife Center

Swedish Medical Center is one of the few facilities in the country to offer patients the latest generation of CyberKnife stereotactic radiosurgery through a partnership with the Seattle CyberKnife Center. CyberKnife stereotactic radiosurgery is a nonsurgical procedure that uses interactive robotics and real-time motion tracking, which allows physicians to precisely target and deliver multiple treatments of radiation to hard-to-reach or inoperable tumors, lesions or other medical disorders.

Treatment involves a single high-dose or multiple doses of X-ray beams that converge on the specific area where the abnormality resides. Advanced three-dimensional computer-aided planning software helps minimize the amount of harmful radiation to healthy surrounding tissue. CyberKnife's advanced robotics and image guidance has the precision and accuracy to treat abnormalities anywhere in the body.

For more information about Seattle CyberKnife, visit seattlecyberknife.com.



International Patient Services

Global Care and Comfort

Patients from all parts of the globe regularly travel to Swedish Medical Center to access state-of-the-art surgical facilities and a staff of physicians considered among the finest in the world.



International Patient Services (IPS) at Swedish provides the highest level of personalized, confidential and culturally sensitive service to patients seeking exceptional medical care and gracious hospitality. From the first inquiry until the return trip home, each patient is assured the utmost care and comfort.

Patients are connected to the best physician specialists and services for their unique needs. IPS works directly with patients and their referring medical teams to assess the situation, identify a physician team and develop an individualized care plan.

In addition, each international patient is assigned a clinically trained personal liaison.

From arrival to departure, the liaison serves as a patient advocate, providing a single point of contact to help explain and manage the care process, while coordinating whatever services are necessary to meet special patient or family requests.

Travel Services and Visa Assistance

Our patient liaison works closely with foreign embassies to expedite visas, ensuring our international patients have smooth entry into and out of the United States. The liaison provides all necessary medical verification and documentation.

The staff of International Patient Services is available to prepare travel plans for international patients and their guests, including arrangements for a personal escort to and from the airport. Limousine and taxi service can also be arranged as needed for travel during the length of stay.

First-Class Patient Accommodations

In the comfort of private rooms, patients and their visitors can order fine meals, freshly prepared to meet their personal tastes and special dietary needs. To accommodate individual preferences for dining times, this service is available 24 hours a day. Because Seattle has a varied ethnic population and an appreciation of cultural diversity, special dietary needs are also easily accommodated at local restaurants, if preferred.

Language Interpreters

Interpreters for any language can be arranged for by the International Patient Services liaison. Interpreters work with medical center staff to ensure that patients have a complete understanding of all medical procedures. They are also available to assist with any other communication needs.

Family and Guest Services

Several four-star hotels are located within walking distance of Swedish Medical Center, and many more are within a 10-minute drive. Hotel arrangements for both patients and their guests may be handled by the International Patient Services staff.

For More Information

To learn more about the services available to international patients at Swedish, call International Patient Services at 206-386-3099.

Executive Health

Care with a Personal Touch

Not only do patients come from around the world to get treatment for medical problems at Swedish Medical Center, but clients and executives from top corporations come from around the world to receive comprehensive physicals and health screenings at our spa-like Swedish Executive Health Center.



The center offers one-on-one consultations, usually 60 to 90 minutes in length, with an esteemed Swedish physician, who can address any health concerns a client may have. Our exams and screenings are conducted in one discreet location because we place a premium on privacy and confidentiality. While at the Swedish Executive Health Center, clients have exclusive use of a private suite with their own bathroom, wireless technology and hotel-like amenities.

In addition to a comprehensive physical examination, clients receive a suite of sophisticated, technologically advanced screening tests. These include:

- A bone density screening that gauges susceptibility to fracture
- A carotid ultrasound that assesses the condition of the carotid arteries, which deliver blood to brain

- A cardiac treadmill test that evaluates the heart's function under physical exertion
 - A stress echocardiogram that combines a treadmill test with ultrasound imaging and can reveal abnormalities in the heart as well as disruptions in blood flow
 - An EBT (electron-beam tomography) screening that can reveal cardiovascular disease in its earliest stages
 - Laboratory blood tests that yield valuable information about metabolism, organ function and susceptibility to heart disease
 - A chest X-ray that can detect problems in the heart and lungs
 - Pulmonary function tests that measure the strength and capacity of the lungs
- Upon completion of the physical examination and health screenings, the Executive Health physician collaborates with the client to develop a personal wellness plan. If the client wishes, we will share the results of the tests with their personal physician. And if further follow-up is desirable, we will facilitate referrals to highly regarded specialists at Swedish Medical Center, at the client's request.



Visiting Seattle, Washington

Welcome to the Emerald City

Swedish Medical Center is located in downtown Seattle, a city known for its sophistication, technology and diverse cultural offerings. Seattle, surrounded by Puget Sound, Lake Washington and Lake Union, with views of the Cascade Mountains and the Olympic Mountains, is considered one of the country's most livable cities. With Mount Rainier looming majestically to the south of the city, Seattle is a cosmopolitan city well-known for its lush landscapes, moderate climate and multinational corporations.



Cultural attractions include nationally acclaimed opera, symphony, ballet, art museums and theater. Seattle also offers numerous professional sporting events and great recreational and family activities all year long.

Additionally, Seattle boasts fine hotels, diverse dining experiences, world-class shopping and a robust nightlife. The clouds and rain attributed to the Northwest make it a coffee lover, book lover and movie lover's paradise.

The city also offers many churches, synagogues and mosques.

Seattle is a major port city for trans-Pacific and European trade. The Port of Seattle is the fifth largest container port in the United States and the 25th largest in the world.

Boeing, Microsoft, Amazon, and the Bill and Melinda Gates Foundation all call Seattle home. Boeing is the largest aircraft manufacturer in the world and consistently one of the

top three exporters in the United States. Although Boeing corporate offices are now officially located in Chicago, most aircraft assembly still takes place in Greater Seattle. Microsoft is the world's leading personal computer software company, but is only one of 2,500 software development firms in the state. Biotechnology also contributes to Seattle's strong and diversified economy, and large retail employers include Nordstrom and Costco. Another business, which has become an icon of Seattle, is Starbucks, with its string of coffee stores across the nation and around the world.

Specific Proposal for Neuroscience Care for Saudi Arabian Patients at SNI

The Swedish Neuroscience Institute and Swedish Medical Center in Seattle is pleased to offer a program of care for Saudi Arabian patients with neurosurgical and neurological disorders. In order to make this program maximally successful and achieve the highest possible level of care and the best outcome for patients, we propose that the program be composed of four main elements.



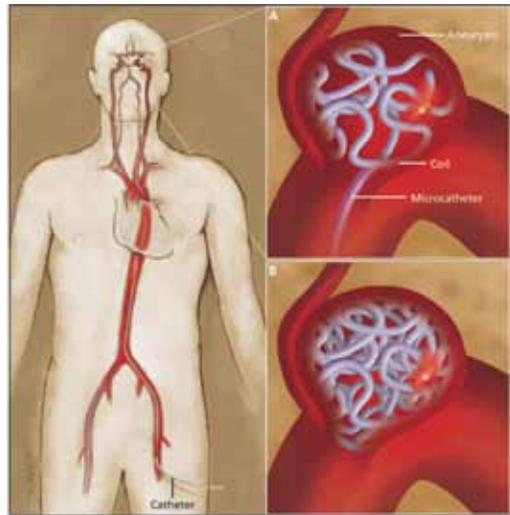
- 1) **Initial evaluation and intake** — Patient and case evaluation from distant locations using state-of-the-art telemedicine technology
- 2) **Treatment of specific disorders** — Treatment of specific disorders as listed to be provided at SNI in Seattle, Washington
- 3) **On-site training** — On-site training and integration of Saudi Arabian physicians and other health-care professionals in Seattle, specifically to provide expertise for patients in neurosurgical and neurological conditions
- 4) **Establishment of satellite centers** — At the strong encouragement of SNI, establishment of satellite centers in Saudi Arabia for follow-up and ongoing care for patients after they return home

1) Initial evaluation and intake — Patients will initially be evaluated in Saudi Arabia by health-care professionals who have familiarity with the specialized services offered by SNI. Case details and imaging studies, such as CT, MRI and possible angiography, will be presented via teleconferences. SNI physicians will advise on treatment possibilities. If it is deemed appropriate for the patient to travel to benefit from the range of services offered at SNI, then the case will be accepted for treatment. Cost estimates for diagnostics, hospital services and professional services will be provided to the agency. Following approval by the Saudi Arabian Ministry of Health, the care plan and arrangements will begin.

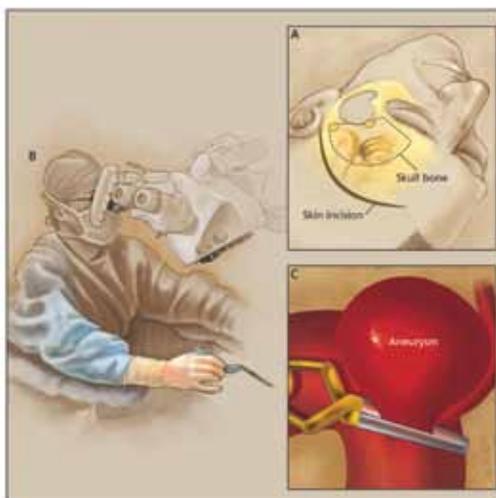
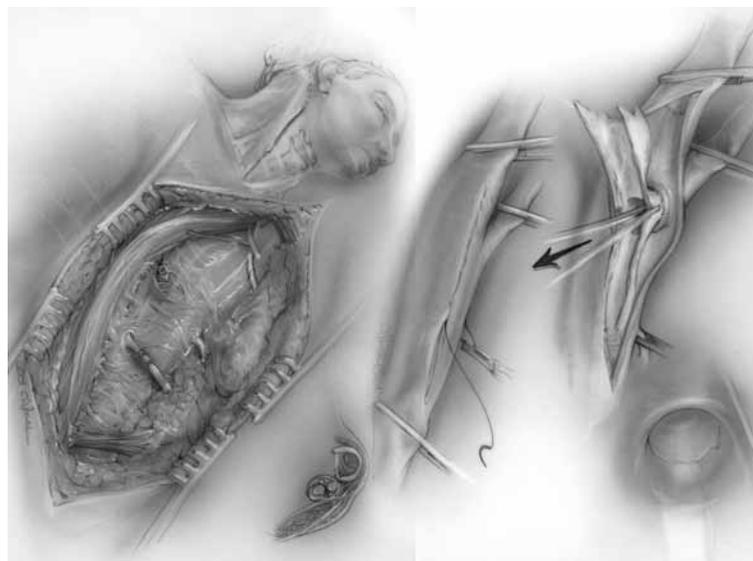
2) Treatment of specific disorders and neuroscience care — We propose to offer an initial range of treatments for patients with neurosurgical and neurological conditions. SNI has the specialized expertise, experienced professionals and unique facilities to provide for these patients.

Services and Treatments

- Neurovascular
 - Cerebral aneurysm treatment, including bypass surgery, endovascular coiling treatments and surgical clipping



- Treatment of arteriovenous malformations using surgery and/or radiosurgery, including CyberKnife and Gamma Knife
- Treatment of carotid artery and extra-cranial and intracranial vascular disease using surgery and endovascular stent procedures



- Treatment of cavernous malformations
 - Microvascular decompression and radiosurgery for trigeminal neuralgia (tic dolooureux) and surgical decompression for hemifacial spasm
 - Risk-factor management for long-term prevention of stroke, including medical and surgical treatments and bypass
 - Brain tumor treatment
 - Comprehensive treatment for brain tumors, including surgery, radiosurgery, radiation treatment, chemotherapy, genetic analysis and follow-up treatment
 - Epilepsy
 - Comprehensive evaluation and treatment of adult and pediatric patients with epilepsy and seizure disorders
 - Epilepsy monitoring for seizure localization and treatment
 - Medication trials for complex seizure disorders
 - Surgical treatment of refractory seizures using surgical resection and neurostimulation
 - Treatment of movement disorders, including essential tremor and Parkinson's disease
 - Medical management
 - Deep brain stimulation
 - Gamma knife radiosurgery
 - Hydrocephalus
 - Surgical treatment, including shunt placement and endoscopic third ventriculostomy
 - Neuroendocrine treatment
 - Comprehensive medical neuroendocrine evaluation for patients with pituitary tumors
 - Surgical and radiosurgical CyberKnife treatment of pituitary tumors
 - Spinal disorders
 - Treatment of degenerative spinal disorders, including disc disease, deformities and spinal stenosis of the cervical, thoracic and lumbar spine
 - Treatment of spinal cord tumors, including intradural and intramedullary tumors, using surgery or CyberKnife radiosurgery
 - Rehabilitation services
 - Comprehensive rehabilitation for neurological injury, stroke and spinal disorders
- 3) On-site training** — On-site training will be established for Saudi Arabian physicians and health-care professionals to come to Seattle and spend time becoming familiar with the conditions treated and the follow-up needed for each condition. Saudi Arabian professionals will also become familiar with telemedicine programs and capability for screening intake and follow-up care for patients.
- 4) Establishment of satellite centers** — SNI strongly suggests that satellite centers be established in Saudi Arabia for patient intake, transfer of records and imaging studies, as well as possible real-time patient interactions in selected cases, through telemedicine services. These centers should consist of an office suite, patient area, database for records and patient demographics and medical history. Additionally, a communications network and technical, clerical and medical staff should be provided.

For more information about medical care
for Saudi Arabian patients at the
Swedish Neuroscience Institute,
call 206-320-2805.



500 17th Ave.
Seattle, WA 98122
www.swedish.org/neuroscience