A Team-Based Approach to Lower-Back Pain

Most low-back pain can be successfully treated using a symptom-based approach. A primary-care physician (PCP) plays a critical role in this initial phase of care. When a patient’s pain does not respond as expected, however, a team of musculoskeletal specialists at Swedish is available to help. The team’s physical therapists, physical medicine and rehabilitation specialists (also known as physiatrists), pain-management specialists, musculoskeletal radiologists, orthopedists, neurosurgeons and other specialists use evidence-based approaches to develop and orchestrate a diagnostic and therapeutic treatment plan that advances the patient’s care. A thorough evaluation includes many factors, including:

• Mechanical (musculoskeletal changes, obesity, posture, arthritis, referred pain, disc problems)
• Environmental (work environment, heavy lifting, strain, daily routines that affect the back)
• Psychological (stress, anxiety, depression, relationship or work issues)

This is a comprehensive approach to care management that facilitates early detection of patients who are high risk for treatment failure or have complex medical comorbidities. These patients can be referred and receive the most appropriate care early in the course of their problem.

When a patient has progressed to optimal function with minimal to no pain, the patient returns to his or her PCP and the specialist remains available if needed.

All members of the team approach lower-back pain in an integrative and collaborative

Structural Heart Program: Collaborative Medicine Benefits Patients

It is a simple equation: the right patient + the right procedure = the right outcomes.

Determining that simple equation for patients with complex structural heart conditions is the foundation of the Structural Heart Program and the Swedish Heart & Vascular Institute.

“We believe that there is always hope,” said Ming Zhang, M.D., an interventional cardiologist with the Structural Heart Program. “At Swedish, our Structural Heart team promotes availability, ability and accountability, and offers second opinions as an opportunity to effectively and efficiently balance the risks and benefits of multiple treatment options.”

The program has brought together multiple specialists in cardiology, interventional cardiology, cardiothoracic and vascular surgery, and echocardiography. Specially trained nurses and a dedicated administrative staff round out this mature, well-developed and precisely organized team.

Together the team evaluates patients to determine the best treatment option — medical therapy, traditional surgery or an interventional procedure — to correct anatomical and functional conditions. Each patient is unique and requires a thorough evaluation and a consensus-building discussion. Younger patients are often good candidates for traditional open-heart surgery and are referred to the surgical team. Seniors are not. Therefore, the discussions include an evaluation about frailty, comorbidities, quality of life, social support system and the contribution the patient plays in his or her family.

(continued on page 2)
In the past, older patients with complex structural heart conditions and multiple comorbidities often had few or no options. Their disease progressed and their quality of life deteriorated. That has changed dramatically with the advent of newly developed minimally invasive procedures, such as transcatheter aortic valve replacement (TAVR) and MitraClip (a procedure to correct degenerative mitral regurgitation).

As shown in the following case study, interventional procedures can repair the defect and give patients a meaningful quality of life — regardless of their age.

To consult on a patient or to request a second opinion, please call the Structural Heart Program at 206-320-8100. Referral forms are available online at www.swedish.org/structuralheart.

An 89-year-old resident of assisted living enjoyed an age-relevant, physically active life, walking and fishing, and running his own errands. His medical history included:

- Age-related frailty
- Mild dementia
- Successful coronary-bypass surgery
- Past history of transient ischemic attack (TIA)

In March 2014, he began experiencing increased fatigue, reduced energy and dyspnea. His condition declined rapidly. He had profound shortness of breath and poor appetite, and effectively became bed ridden. His dementia worsened, he became disoriented and he was no longer able to take care of his daily-living activities.

Because of his age, comorbidities and dementia he was deemed high risk for traditional open-heart surgery. The patient was referred to the Structural Heart Program at the Swedish Heart & Vascular Institute for a second opinion.

During his first visit in early May, his presenting symptoms included:

- Progressive severe dyspnea
- Poor appetite
- Light headedness

The team discussed whether the patient had a meaningful chance of recovery to his baseline with MitraClip therapy to reverse the anatomic defect causing the MR. The consensus was that a successful MitraClip procedure could provide reasonable improvement in the patient’s quality of life in accordance with his age and comorbidities.
Working side by side, a cardiothoracic surgeon, interventional cardiologist and echocardiologist performed the MitraClip procedure in the hybrid operating room on the Cherry Hill campus. This room is equipped with the leading-edge technology that is required for this type of highly sophisticated procedure. The patient was under general anesthesia. With echocardiography providing real-time 3-D cardiac imaging, the team accessed the common femoral vein to place three MitraClips across the mitral valve. The patient experienced immediate hemodynamic improvement post clip placement, with increased blood pressure and reduced pulmonary pressures.

The patient’s recovery was uneventful. He noticed significant symptom improvement within two days. His appetite returned, his mental status improved and he became more clear-minded. MitraClip improved his MR from extremely severe to mild-moderate. His heart failure symptoms resolved.

The patient was discharged to his assisted living facility after a few days of medication optimization. He was able to resume his baseline active lifestyle, out of bed, walking and running errands. The patient and his family have been exceedingly happy with his recovery and the improvement in his quality of life.

Figure 3. Post MitraClip placement, a tissue bridge has been created across the valve, which allows the leaflets to be opposed and functioning properly to prevent regurgitation.

Figure 4. Post MitraClip black and white (left) and color imaging show the regurgitant jet is completely gone.

Figure 4. Post MitraClip black and white (left) and color imaging show the regurgitant jet is completely gone.

On the left, the steerable MitraClip delivery catheter, which has been deployed via the femoral vein, enters the mitral valve to begin placement of the MitraClip device. On the right, the MitraClip is in place, resolving the patient’s MR.

Lower-Back Pain (continued from page 1)

way. Using clinical pathways, they enlist multiple resources and evaluate all modalities in order to design tailored treatment plans. The team first attempts to resolve the problem with a non-surgical approach (physical therapy, medication and activity modification). Most patients get better with non-surgical treatment. If, however, the patient does not respond and there is a surgical solution, the patient receives a consultation with one of the team’s spine surgeons. In some cases (progressive loss of strength or bowel/bladder control) non-surgical approaches are bypassed for an urgent surgical consultation. The goal is always to get the patient to the right provider at the right time for the best possible value-driven care.

The following case study is a typical scenario. It describes a patient’s journey to regain his quality of life and return to the activities he enjoyed prior to experiencing debilitating lower-back pain. It is an example of the comprehensive and collaborative approach to lower-back pain that is available at Swedish.

When to Refer to Swedish

If one of your patients has unresolved lower-back pain, please call Swedish Spine, Sports and Musculoskeletal Medicine. For the convenience of your patients, we have clinics in Bellevue, Issaquah, Mill Creek, Redmond and Seattle.

Swedish Spine, Sports & Musculoskeletal Medicine
Phone: 206-386-2677  •  Fax: 425-498-2334
Swedish Cherry Hill
1600 E. Jefferson St., Suite 600
Seattle, WA 98122

Swedish Spine, Sports & Musculoskeletal Medicine
Phone: 206-386-2677  •  Fax: 425-498-2334
Swedish Mill Creek
13020 Meridian Ave. South, 2nd Fl.
Everett, WA 98208

Swedish Redmond
18100 N.E. Union Hill Road, 2nd Fl.
Redmond, WA 98052

(Lower-back pain case study - page 4)
A 38-year-old male presented with acute low-back pain after lifting a heavy rock in his back yard. He described severe pain radiating into his buttocks, but no lower. He was unable to find a comfortable position to stand, sit or recline. He did not have numbness, tingling or weakness in his legs, and reported no bowel or bladder changes.

The patient's job requires sedentary desk work and some field work. He was eager to return to soccer, biking, hiking and kayaking.

His past medical history was unremarkable:
• One or two incidents of back pain, but never this bad
• Recollection of a football injury and being told of a slippage in his spine
• Occasional use of ibuprofen for pain
• Drug allergies: tetracycline

The patient is married. He quit smoking about 15 years ago, drinks one or two beers a week and does not use illicit drugs.

Visit 1. During his first visit, a comprehensive examination showed:
• An appropriately fit man for his age (Ht: 72", Wt: 185 lbs., BP: 130/76)
• Significant loss of range of motion (ROM) all cardinal planes
• Tense musculature
• Strength grossly intact in lower limbs
• Slump test: positive
• Neurological exam: normal
• Abdominal and cardiac exams: normal
• Peripheral vascular exam: normal

Our initial impression was lumbar strain. We recommended relative rest and massage as a first-course treatment. The patient declined medication, other than ibuprofen. He said he planned on trying chiropractics.

Visit 2. After two weeks, two massages and four chiropractic visits, he had minimal pain. An exam showed:
• The patient's weight had increased to 190 lbs., BP: 140/75, pain scale: 6/10
• Reduction in ROM on flexion to 45 degrees
• Slump test: positive
• Minimal muscular tenderness
• LaSegue's and Bragard's signs (dural tension): negative

Suspecting lumbar strain without radiculopathy, we told the patient to finish the prescribed medications. We also recommended relative rest and provided him a physical therapy prescription for lumbopelvic stabilization and a home-exercise program.

Four weeks later. The patient called because the pain was still present. He had tried chiropractic and massage, but the pain did not go away completely. He had not gone to physical therapy because he felt he would get better without it. We advised him to begin physical therapy.

Visit 4 (four weeks later). After six physical-therapy visits, the patient reported the pain had improved and he was engaged in a home-exercise program. However, a week before his visit he slipped and fell during a hike. Although he did not have any immediate back pain, he complained of a sharp pain to the right of his tailbone. That pain was worse when bending, walking or lying on his right side.

Four weeks later. The patient called because the pain was still present. He had tried chiropractic and massage, but the pain did not go away completely. He had not gone to physical therapy because he felt he would get better without it. We advised him to begin physical therapy.

Visit 4 (four weeks later). After six physical-therapy visits, the patient reported the pain had improved and he was engaged in a home-exercise program. However, a week before his visit he slipped and fell during a hike. Although he did not have any immediate back pain, he complained of a sharp pain to the right of his tailbone. That pain was worse when bending, walking or lying on his right side. An exam showed:
• Wt: 192, BP: 140/70, pain scale: 4/10
• Neurological exam: normal
• Lumbar ROM: normal
• Side bending: pain on right
• FABER's maneuver (flexion, abduction, and external rotation of the hip): positive
• Sacroiliac joint compression: positive
• Thigh thrust maneuver: positive

We diagnosed sacroiliac joint strain. We noted the patient was gaining weight and now had persistent elevated BP. We recommended:
1. Manual medicine intervention, followed by physical therapy
2. Diet and exercise prescriptions
3. Follow up with his PCP regarding BP
4. Follow up in our clinic in six weeks

(continued next page)
Visit 5. During his six-week follow-up, the patient said he no longer had back pain; however, he still had persistent pain in the right tailbone/buttock. We administered a sacroiliac joint injection under fluoroscopic guidance.

Visit 6. Two weeks later, the patient reported the pain was 90 percent better after the injection. He was back to regular activity. He reported intermittent back pain, which he controlled with stretching. We reviewed his home-exercise program. The patient had seen his PCP and his BP was improving with dietary modification and exercise.

One year later. One year after his sixth clinic visit, the patient fell off a ladder while landing on his back. He visited the emergency department. An X-ray showed a lumbar spondylolisthesis at L5-S1, Grade 2. He was treated and released with anti-inflammatories and pain medications. He improved to some degree and scheduled an appointment in our clinic for follow up.

Visit 7. The patient’s back pain, which was radiating to his buttocks, was sharp, achy and continuous. The pain was worse with bending, standing and rotation. Occasionally the pain radiated into his posterior thigh and of his right knee. There was no numbness, tingling, bowel or bladder changes, or weakness in his legs. He was having trouble sleeping and finding a comfortable resting position. Upon exam, we found:

- Significant loss of ROM
- Exaggerated lumbar lordosis
- Rigid, guarded back musculature
- Tight hamstrings bilaterally
- Neurological exam: normal

We recommended continued physical therapy, modified activities and NSAIDs for the pain.

Visit 8. The patient was seen one week later. Although his initial symptoms had improved, he still had some pain in his back and right buttock. He was taking anti-inflammatories, but had stopped the opiates previously prescribed by the emergency department. He had returned to work, but found it increasingly difficult to work as the week progressed. His symptoms were worse with physical activity and certain movements. Upon examination, we noted:

- Neurological exam: normal
- Bowel and bladder changes: none
- Limited lumbar ROM

We ordered lumbar spine flexion/extension radiographs. The studies showed 6 millimeters of motion at the L5-S1 spondylolisthesis between flexion and extension with an offset of 6 millimeters at neutral.

We recommended rest and a surgical consultation.

Visit 9. The patient returned in six weeks with ongoing back and buttock pain, and occasional shooting pain down his right leg into the top of his foot. The back pain was slightly improved, but the buttock pain had worsened. He was working, but had given up soccer and kayaking.

We discussed both surgical intervention and non-operative treatment options. The patient opted to continue with non-operative treatment.

Visit 10. Two weeks later the patient was continuing to work, but the pain in his back, right buttock and right leg persisted. He questioned whether the medication was helping. It had further limited his recreational activities in order to get through the work day. The leg pain was the most limiting problem now.

We reviewed the MRI with him, which was normal except for L5/S1, which had bilateral pars defects at L5 with associated bilateral foraminal stenosis, facet arthrosis, Grade 2 spondylolisthesis.

We again discussed surgery, including an L5/S1 decompression and instrumented fusion using either a posterior (preferred) or anterior approach.

With motor/sensory intact, but symptoms essentially unchanged, and the back and right leg pain fairly clearly an L5 pattern, we increased his gabapentin dose. We also administered a right L5 transformaminal epidural injection and recommended continued non-operative care.

Visit 11. Two weeks later the leg pain was somewhat better, although recreational activities were still limited. He was finding it difficult to complete the work week. He still was not ready for surgery, though.

We again increased his gabapentin dose, changed the NSAID and administered a second L5 injection.

Visit 12. Four weeks later he returned. His activities were still limited. He had visited the emergency department for an acute exacerbation over the weekend. He missed a few days of work due to back and leg pain, and needed Vicodin® for a few days, which the emergency department physician prescribed. He was now ready to consider surgery. Following a discussion with the surgeon, he was scheduled for an L5/S1 decompression and fusion in two weeks.

Surgery. The surgery, which was performed posteriorly, was uneventful. The patient remained in the hospital for three days. His leg pain improved post-operatively and he was discharged home with a prescription for oxycodone and Tylenol®.

One month post surgery. The patient’s activity level was steadily improving. He was walking once or twice a day for 10-15 minutes. The back pain was improving, allowing him to taper the opiates. An exam showed he was neurologically intact and radiographs showed satisfactory alignment and stable implants. We recommended he continue to increase in his activity level, further tapering off the opiates, and gentle physical therapy to improve conditioning.

Three months post surgery. The patient continued to improve. The back and leg pain was resolved and he was walking several (continued on page 7)
Supportive Care Helps Personalize Cancer Treatment

Cancer patients are parents, spouses, partners, brothers and sisters, caregivers, employees and children. How cancer affects patients depends on the clinical aspects of their particular disease, but also on their family or work responsibilities, their social interests and activities — even their hobbies and their overall outlook on life. Because that mix is unique to each patient, the cancer team at the Swedish Cancer Institute (SCI) goes above and beyond to ensure resources are available and each patient’s care plan is highly personalized.

Personalized medicine at SCI harnesses every tool — from the rapidly evolving science of gene sequencing to clinical expertise in all disciplines and the most current sophisticated technology. It also includes a wealth of supportive services that are deployed depending on the needs of the patient. Within Supportive Care, these programs focus on SCI and community resources and education that attend not only to patients’ physical needs, but also to their psychological, social and nonphysical needs. And — because we know that patients have many important personal relationships that predate their battles with cancer, we also offer supportive services designed specifically for patients’ families.

“Our goal is to maintain quality of life for patients and their families,” says Barbara Kollar, director of Supportive Care at SCI.

New Products Available for Allergy Treatment

Marlene Peng, M.D., Allergy and Immunology, Minor & James Medical

For some individuals with seasonal allergies, treatment can be as simple as an over-the-counter medication. For others, however, treatment requires more. The good news is that there are now multiple options. Most recently, the U.S. Food and Drug Administration (FDA) approved several new products to help individuals who are dealing specifically with grass and ragweed allergies.

Together, these medications help with itchy, sneezy, watery noses and eyes. Prescription nasal antihistamines also help with these symptoms, and nasal steroids help decrease congestion and postnasal drip.

**Allergen immunotherapy**

A long-standing solution for those with multiple allergies is allergen immunotherapy. Each injection is customizable to the individual’s allergies. Allergy shots are not just for immediate symptomatic treatment, but also change an individual’s long-term immune reaction to the identified allergens.

The FDA approved dissolvable tablets for immunotherapy for grass and ragweed allergies. The tablets can be taken at home and there is less risk of an allergic reaction than there is with allergy shots. They are not useful, however, for people who react to other allergens. The tablets just combat grass and ragweed allergies.

Treating allergies is multi-faceted. The best treatment is avoidance, but that may not be feasible for your patients. Antihistamines and nasal steroid sprays can treat sneezing, runny nose, itchy eyes and congestion. Allergen immunotherapy — whether with recently approved grass and ragweed tablets or customizable shots for those with multiple allergies — will help minimize the allergic reaction.
Experience the Value of Swedish TeleHealth

Patients want exceptional care close to home — regardless of where they live. The Swedish TeleHealth Network is making it possible for patients to do just that. Launched in 2004, Swedish TeleHealth has grown to include 26 network hospitals, emergency departments and medical practices, and numerous telehealth programs. Currently, Swedish offers:

- TeleEEG
- TeleEKG
- TeleEpilepsy
- TeleGI (Medical)
- TeleGI (Surgical)
- TeleHospitalist
- TeleICU
- TeleInterpreter
- TeleMovement Disorders
- TeleNeuroHospitalist
- TeleNeurology-Inpatient
- TeleNeurosurgery
- TelePediatricHospitalist
- TelePsychiatry
- TeleSleep
- TeleSocialWork
- TeleSpeechPathology
- TeleSpine
- TeleStroke
- TeleWound

Each of these programs offers patients the ability to see sub-specialists without driving long distances to a large, urban medical center. Programs such as TeleStroke add even more value. TeleStroke has proven to be a critical resource for network emergency departments, allowing them to beat the narrow window of opportunity to evaluate, diagnose and treat stroke patients. Clinic-based telehealth programs, such as TeleNeurology, make it possible for physicians to offer their patients local consults and follow-up visits via telehealth technology. An additional 13 telehealth programs are in development.

For more information about Swedish TeleHealth and how these programs work, go to [www.swedish.org/telehealth](http://www.swedish.org/telehealth). To learn more about joining the Swedish TeleHealth Network, contact Sherene Schlegel, director of Swedish TeleHealth, at 206-320-3112 or TeleHealth@swedish.org.

Case Study: Lower-Back Pain  (continued from page 5)

Times a week for about an hour. He was going to the gym, but was not yet ready for kayaking or soccer. He was ready to return to work. We referred him back to physiatry for further rehabilitation and to coordinate his return to sports activities.

Six months post surgery. The patient was now biking and going on day hikes.

Nine months post surgery. The patient resumed recreational soccer, but not indoor soccer. Stretching helped resolve and prevent occasional back stiffness. He was planning to take out his kayak for a trial run this summer when the waters are calm.

DocTalk Videos

View short video didactics presented by Swedish providers at [www.swedish.org/doctalk](http://www.swedish.org/doctalk). DocTalk Videos are intended to provide insight to a colleague's clinical interests. Some of the titles include: Atrial Fibrillation Overview, Contemporary Management of Fecal Incontinence, Back Pain in Children: Common Etiologies, MRSA in the Outpatient Setting, Vertigo, Sudden Hearing Loss & Eustachian Tube Dysfunction, Fetal Renal Abnormalities, and Advancements in Pediatric Epilepsy.
Swedish Named to *Consumer Reports* Top-Scoring-Hospitals List

In the August 2014 issue of *Consumer Reports*, Swedish Cherry Hill appears in the “top-scoring hospitals” list for earning top marks in both coronary bypass surgery and aortic valve replacement surgery. Out of more than 1,000 hospitals that report data to the Society of Thoracic Surgeons (STS), 400 allowed STS to share the data with *Consumer Reports*, which allowed the organization to complete its first-ever heart-surgery rating.

The bypass surgery rating reflects a hospital’s performance in isolated coronary artery bypass graft surgery, including the open-heart approach and less invasive procedures. The overall score is a composite of four measures, including survival, complications, best surgical technique and right drugs.

The valve replacement rating reflects a hospital’s performance in surgical aortic valve replacement. It does not include data for transcatheter aortic valve replacement. The overall score is a composite of two measures: survival and complications. Data was adjusted based on the health of patients.

For more information about the methodology, go to [www.ConsumerReports.org/cro/howweratehospitals](http://www.ConsumerReports.org/cro/howweratehospitals). *Consumer Reports* website subscribers can go to [www.ConsumerReports.org/hospitalratings](http://www.ConsumerReports.org/hospitalratings) to see the complete rating. Visit [www.swedish.org/heart](http://www.swedish.org/heart) to see a list of other Swedish cardiac-care achievements.

The Newest Members of the Swedish Medical Staff

The following individuals joined Swedish during the second quarter of 2014. We invite you to view their online profiles at [www.swedish.org/physicians](http://www.swedish.org/physicians).

<table>
<thead>
<tr>
<th>Name</th>
<th>Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emily Ashbaugh, M.D.</td>
<td>Family Medicine with Obstetrics</td>
</tr>
<tr>
<td>Jason Harper, M.D.</td>
<td>Gastroenterology</td>
</tr>
<tr>
<td>Peter Bouz, M.D.</td>
<td>Neurosurgery</td>
</tr>
<tr>
<td>Daniel Kianpour, M.D.</td>
<td>Anesthesiology</td>
</tr>
<tr>
<td>Lisa Brown, M.D.</td>
<td>Thoracic Surgery</td>
</tr>
<tr>
<td>Richard Kim, M.D.</td>
<td>Critical Care</td>
</tr>
<tr>
<td>Tiffany Cardinal, M.D.</td>
<td>Pediatrics</td>
</tr>
<tr>
<td>Prashant Kelkar, M.D.</td>
<td>Neurosurgery</td>
</tr>
<tr>
<td>Sunna Kwun, M.D.</td>
<td>Endocrinology</td>
</tr>
<tr>
<td>Ellyn Lee, M.D.</td>
<td>Geriatric Medicine</td>
</tr>
<tr>
<td>Evan Ong, M.D.</td>
<td>General Surgery</td>
</tr>
<tr>
<td>Andreas Schneider, M.D.</td>
<td>General Surgery</td>
</tr>
<tr>
<td>Joseph Sniezek, M.D.</td>
<td>Otolaryngology/Otorhinolaryngology</td>
</tr>
<tr>
<td>Heather Warren, M.D.</td>
<td>Thoracic Surgery</td>
</tr>
<tr>
<td>Jonathan Wells, M.D.</td>
<td>Family Medicine with Obstetrics</td>
</tr>
<tr>
<td>Eric Williams, M.D.</td>
<td>Cardiac Electrophysiology</td>
</tr>
</tbody>
</table>

CME Course Listing – September 2014

Physicians from across the region and around the world come to Swedish Medical Center’s Continuing Medical Education (CME) courses to learn about new research and innovative treatment techniques.

<table>
<thead>
<tr>
<th>Course</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fourth Annual Intensive Update in Neurology</td>
<td>Thursday and Friday, Sept. 11-12</td>
</tr>
<tr>
<td>TeleHealth: Improving Access to Healthcare</td>
<td>Friday, Sept. 19</td>
</tr>
<tr>
<td>18th Annual Pain Management Symposium</td>
<td>Friday, Sept. 26</td>
</tr>
</tbody>
</table>

Swedish Medical Center is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.