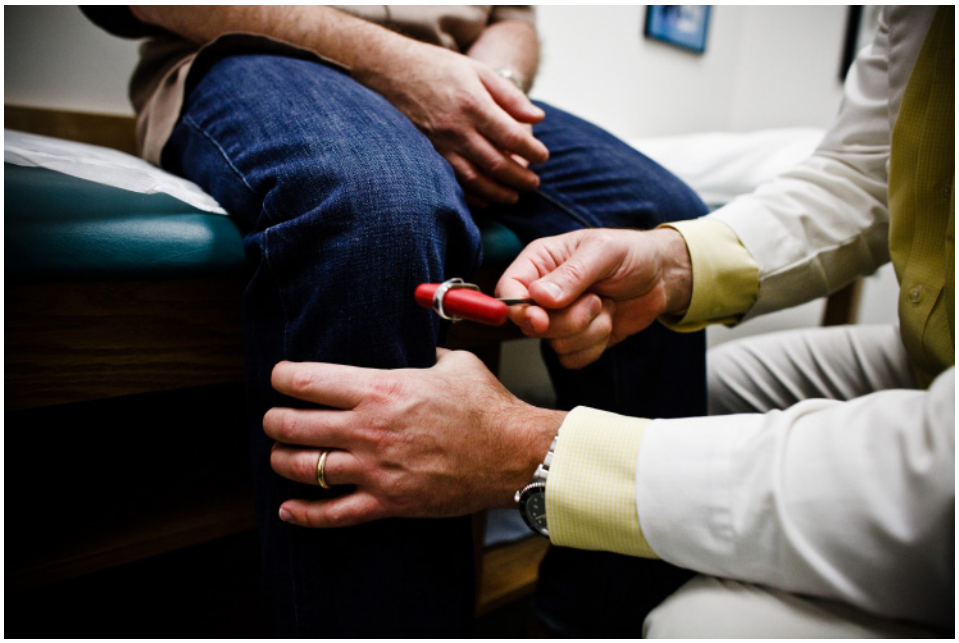
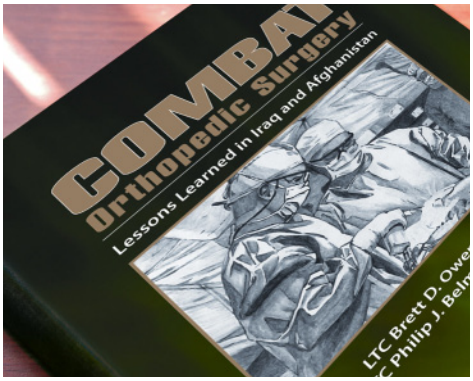
VOLUME 7, ISSUE 7 | FEBRUARY 22, 2011

Orthopedics This Week

week in review





picture of success

breaking news

For all news that is Ortho, read on.

Orthopedic Power Rankings

Robin Young's Entirely Subjective Ordering of Public Orthopedic Companies

This Week: Conditions are changing rapidly in the capital markets these days. It's easy to miss both opportunity and risk in this kind of environment. The Fed's easy money policy is having an effect and, remember, it is a lagging effect. We are looking at a SOLID six more months of capital expansion in this economy.

Rank	Last Week	Company	TTM Op Margin	30-Day Price Change	Comment
1	1	Orthofix	14.49%	(2.32%)	Wow. OFIX is the only 14 P/E company growing sales at double digits and growing profits even faster than sales.
2	2	Zimmer	27.38	13.48	Wall Street has rediscovered Big Blue and is making up for lost time by putting ZMH in many new portfolios.
3	5	NuVasive	6.69	8.58	Up two spots this week. Now among the least expensive equities in ortho.
4	6	Stryker	25.61	7.9	Fourth best value among ortho equities, but with higher-than-average growth expectations.
5	3	Smith & Nephew	23.22	5.91	Buyers increasing their positions in all large diversified ortho suppliers including SNN.
6	4	Wright Medical	7.34	(4.65)	Super sales and profit numbers to close out 2010. Unfortunately, the market didn't pay attention.
7	7	Medtronic	31.23	9.44	Second lowest P/E and #1 lowest future P/E. Plus 31% operating profit margin. Wouldn't some pharma company like to get into devices?
8	9	Integra LifeSciences	15.18	4.43	Waiting for IART's sales report. Latest news is that Spine is moving out of Akron.
9	10	ConMed	8.99	5.22	Five new products at AAOS. FIVE! All from Linvatec. Up one spot.
10	8	Alphatec	1.11	(2.17)	HPC spent a lot of time at ATEC booth at AAOS. Reminds us of their role at the firm. Down two spots.

Robin Young's Orthopedic Universe

Top Performers Last 30 Days

	Company	Symbol	Price	Mkt Cap	30-Day Chg
1	TiGenix	TIG.BR	$2.91	$90	49.3%
2	ArthroCare	ARTC	$33.75	$919	21.2%
3	Mako Surgical	MAKO	$20.13	$685	20.0%
4	Zimmer Holdings	ZMH	$63.73	$12,510	13.5%
5	Medtronic	MDT	$41.27	$44,300	9.4%
6	NuVasive	NUVA	$30.26	$1,190	8.6%
7	Stryker	SYK	$63.00	$24,860	7.9%
8	Exactech	EXAC	$18.88	$244	6.1%
9	Smith & Nephew	SNN	$60.19	$10,640	5.9%
10	ConMed	CNMD	$27.41	$772	5.2%

Worst Performers Last 30 Days

	Company	Symbol	Price	Mkt Cap	30-Day Chg
1	Bacterin Intl Holdings	BIHI.OB	$4.70	$171	-32.2%
2	Wright Medical	WMGI	$16.00	$627	-4.6%
3	Orthovita	VITA	$2.44	$188	-3.6%
4	CryoLife	CRY	$5.37	$151	-3.1%
5	Orthofix	OFIX	$30.69	$544	-2.3%
6	Alphatec Holdings	ATEC	$2.71	$240	-2.2%
7	Symmetry Medical	SMA	$9.71	$349	-2.0%
8	Johnson & Johnson	JNJ	$61.11	$167,910	-1.6%
9	TranS1	TSON	$3.85	$80	1.0%
10	RTI Biologics Inc	RTIX	$2.71	$149	1.5%

Lowest Price / Earnings Ratio (TTM)

	Company	Symbol	Price	Mkt Cap	P/E
1	Kensey Nash	KNSY	$26.12	$223	12.12
2	Medtronic	MDT	$41.27	$44,300	12.43
3	Johnson & Johnson	JNJ	$61.11	$167,910	13.16
4	Wright Medical	WMGI	$16.00	$627	13.23
5	CryoLife	CRY	$5.37	$151	13.64

Highest Price / Earnings Ratio (TTM)

	Company	Symbol	Price	Mkt Cap	P/E
1	Alphatec Holdings	ATEC	$2.71	$240	224.95
2	Smith & Nephew	SNN	$60.19	$10,640	81.82
3	RTI Biologics Inc	RTIX	$2.71	$149	31.02
4	Symmetry Medical	SMA	$9.71	$349	29.24
5	ArthroCare	ARTC	$33.75	$919	25.29

Lowest P/E to Growth Ratio (Earnings Estimates)

	Company	Symbol	Price	Mkt Cap	PEG
1	Mako Surgical	MAKO	$20.13	$685	0.23
2	Orthofix	OFIX	$30.69	$544	0.61
3	NuVasive	NUVA	$30.26	$1,190	0.90
4	Zimmer Holdings	ZMH	$63.73	$12,510	1.32
5	Medtronic	MDT	$41.27	$44,300	1.35

Highest P/E to Growth Ratio (Earnings Estimates)

	Company	Symbol	Price	Mkt Cap	PEG
1	Kensey Nash	KNSY	$26.12	$223	3.42
2	Alphatec Holdings	ATEC	$2.71	$240	3.36
3	CryoLife	CRY	$5.37	$151	2.62
4	Johnson & Johnson	JNJ	$61.11	$167,910	2.24
5	ConMed	CNMD	$27.41	$772	2.06

Lowest Price to Sales Ratio (TTM)

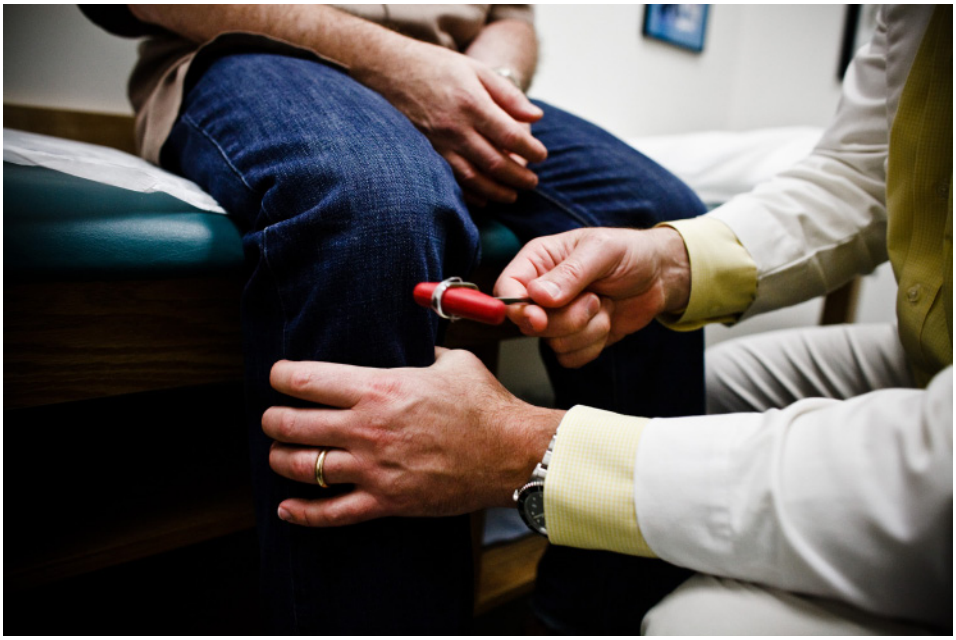
	Company	Symbol	Price	Mkt Cap	PSR
1	RTI Biologics Inc	RTIX	$2.71	$149	0.89
2	Orthofix	OFIX	$30.69	$544	0.98
3	Symmetry Medical	SMA	$9.71	$349	1.02
4	ConMed	CNMD	$27.41	$772	1.06
5	Wright Medical	WMGI	$16.00	$627	1.20

Highest Price to Sales Ratio (TTM)

	Company	Symbol	Price	Mkt Cap	PSR
1	TiGenix	TIG.BR	$2.91	$90	321.16
2	Mako Surgical	MAKO	$20.13	$685	16.85
3	Bacterin Intl Holdings	BIHI.OB	$4.70	$171	13.77
4	Synthes	SYST.VX	$123.54	$14,662	8.13
5	Stryker	SYK	$63.00	$24,860	3.28

So You Think You Know How to Examine a Knee?

By Elizabeth Hofheinz, M.P.H., M.Ed.



Andrew Huth

Surprisingly, and the data seems to bear this out, most physicians and surgeons don't know how to examine—correctly—a knee. Why? One reason may be that there is no "home" for knee specialists.

In spine? You have a home base. Work with hands? You have an organization as well. Knees are your thing? Sorry, no home for you. And that, say our experts, means that orthopedists lack the expertise necessary to thoroughly assess knee problems.

Dr. Donald Shelbourne is the founder of the Shelbourne Knee Center in Indianapolis. When it comes to the number of in-depth knee examinations he has performed, think, "stars in the sky." He states, "The problem in orthopedics is that despite the frequency of knee problems, there is no knee subspecialty. Someone with a foot and ankle or spine problem can seek out a specialist, but if you have a knee problem—and are in your 40s—you will likely be treated by a sports medicine specialist, whose expertise is 'spread out' over shoulder, elbow and other joints as well. If you are a 60 year old then you will probably see a total joint specialist, who, again, has several areas of focus. I can't say exactly why our field has evolved this way, but to provide the best care for patients we need to change things."

Dr. Shelbourne, who has worked solely with knee patients for 25 years, says that this situation is inevitably linked to the quality of knee exams that are being performed. "When people come to see me about their right knee it is because it feels somehow different than their left knee. People tend to know something is wrong because knees are supposed to be identical, as are hands."

The problem is not just with orthopedists, says Dr. Shelbourne. Family doctors—often the starting point for orthopedic patients—play a part as well. "A family physician may get an X-ray, but seldom does he or she know how to do a knee exam. Or they might do an MRI, but they don't know that it's rarely normal in those over 30. So the patient thinks they have confirmation of their suspicion that something is wrong, brings the positive MRI to an orthopedist, and thinks they may need surgery.

Orthopedics This Week

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"There is definitely too much knee arthroscopy being performed. I see a substantial number of patients who are seeking out a second opinion after having been told by another orthopedist that they need a total knee replacement. It is amazing that these people are surprised when I have them change into shorts for their exam…they were told they needed surgery and had never had their knee properly examined."

The problem is that few orthopedic surgeons know how to do a thorough knee exam—and even fewer know how to proceed with nonoperative care."

Dr. Shelbourne is not just spouting opinions…he has the numbers to back up his words. "Last year I published an article, 'The art of the knee examination: Where has it gone?' in the *Journal of Bone and Joint Surgery*. In this study, I saw 900 patients over six months; about 410 of those had previously seen another orthopedist. I asked this subset of patients a series of questions, including, 'How were you dressed for the exam (shorts/gown/ some type of situation where they had to remove their pants)?' If they did have their knee examined I asked, 'Did this doctor look at your normal knee before examining your involved knee?' Amongst the 87% of patients who underwent knee exams, half did so with their clothes on. This makes it difficult to assess tenderness, effusion, and range of motion, amongst other things. Only one-third of patients

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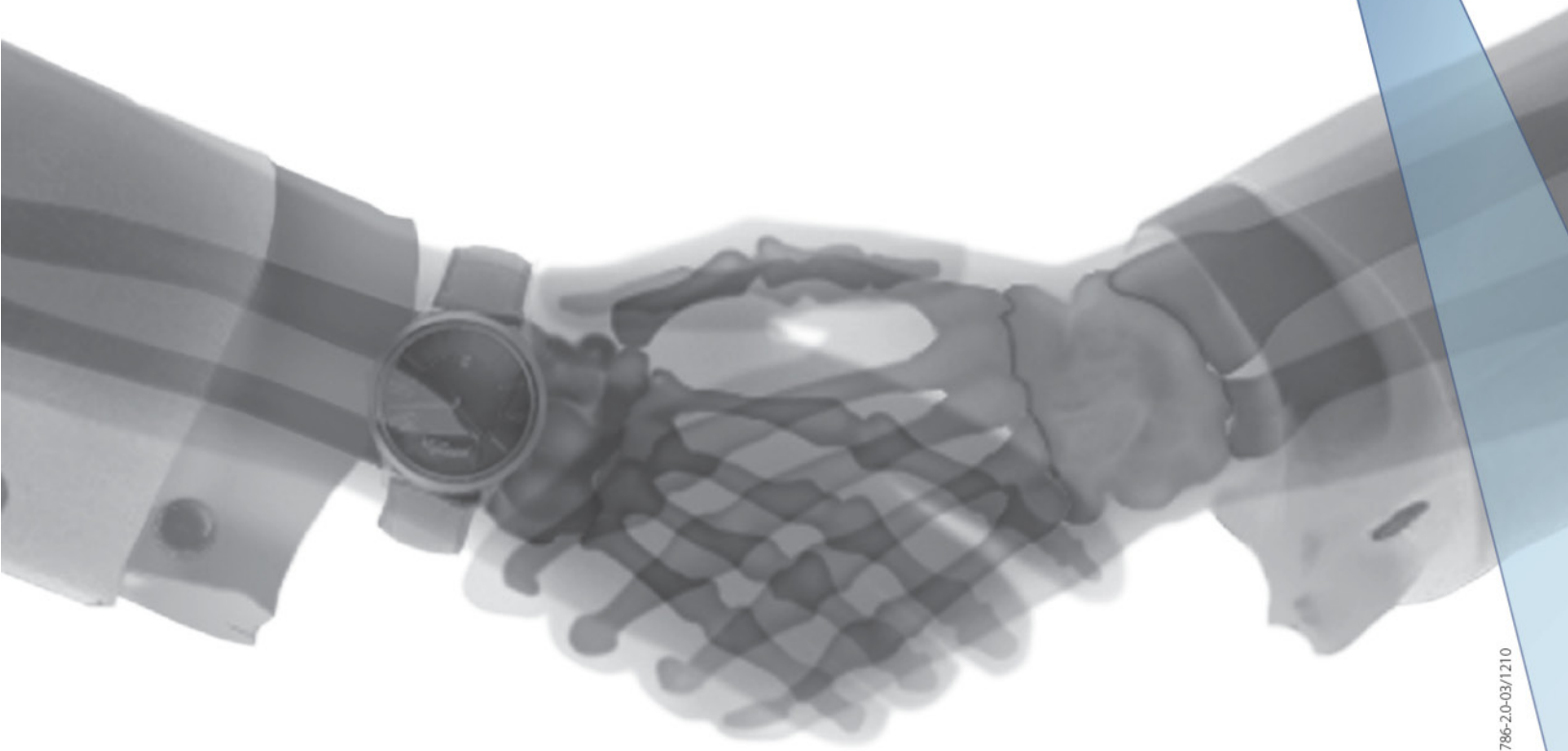

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had their normal knee examined before their involved knee; 70% of these patients underwent MRIs."

Thus, says Dr. Shelbourne, an over-reliance on technology and failure to understand the subtleties of a knee exam means that a lot more people end up being draped, prepped, and cut than need to be. "There is definitely too much knee arthroscopy being performed. I see a substantial number of patients who are seeking out a second opinion after having been told by another orthopedist that they need a total knee replacement. It is amazing that these people are surprised when I have them change into shorts for their exam…they were told they needed surgery and had never had their knee properly examined."

Dr. Shelbourne also fights this "pushing an MRI machine up a hill" battle when educating residents. "I recall a fourth year resident who said to me, 'You saw 28 new patients today, but you only 'signed up' four patients for surgery and you could have done 20.' There is a real tidal wave attitude out there of, 'Lead with imaging and get to the OR.'"

To those who are willing to slow down and be medical detectives, Dr. Shelbourne explains, "The first thing I do is have the patient change into gym shorts. Typically, the person is complaining about a knee problem *as compared to* the other knee (when people play basketball for two hours and both knees are sore they don't come see me). If a patient puts his hand out and says, 'My thumb is swollen,' then the doctor is going to look at the other hand; it should be the same with knees."

Unlike many physicians, Dr. Shelbourne is looking for garrulous patients. "I have them talk a lot…when and how did the injury occur…is it getting better or worse, etc. Most patients tend to ignore an injured knee for awhile, hoping that the pain will abate. They stop using that leg as much, the pain goes away; then they begin to use the leg again and the knee becomes sore. And orthopedists hate to see someone come in the door complaining of a 'sore' knee. Why? Because most of us don't know what to do with this vague complaint…we are much happier to see a broken knee…*that* we know how to handle."

Dr. Shelbourne was the team doctor for the Indianapolis Colts. And, much to the disappointment of injured NFL players entering the draft process, he also brought his expertise to the NFL combine. Dr. Shelbourne says, "When working with professional football players who were preparing for the draft, I realized that if these athletes had subtle differences in their legs or minor knee problems, that they were never going to reveal that information. Working from the fundamental truth that knees are symmetric, I carefully examined the players for any difference in motion in the knee (strength loss, etc.). If someone is undergoing a Cybex (isokinetic) Test, and can handle 100lbs on one leg, but only 80lbs on the other then something is amiss. When I did find an asymmetry, I asked the player, 'What did you do to your right knee?' While the reply was usually, 'nothing,' with some talking to they would break down and tell the truth."

While most orthopedists will never see the legs of an NFL player up close, *whomever* walks in the door should have a thigh-high exam. Dr. Shelbourne: "When performing the physical exam, make sure you can see the patient's thighs. You need to look for atrophy, as well as any asymmetry in the musculature. You want to find out what type of asymmetry is present, so you should assess whether they can hop on both feet equally as well, and whether they can squat equally. Once they are on the exam table then you should see how far the knee extends and how far it bends, determine if there is fluid in the joint, and see if there are obvious differences in the knee from side to side. Only then do you look at the X-rays to see if the normal and involved knees are different."

"Five years ago I tracked 41 patients with obvious asymmetry who had osteoarthritis present on X-rays. Although they had all been told that they needed a knee replacement, my team and I found many nonoperative things we could do to make those knees symmetrical. Thirty-eight patients improved to the point where they didn't need surgery."

Dr. Shelbourne adds, "In the old days doctors were able to detect problems/discern subtleties with a stethoscope. Now the general sentiment is, 'Why bother? If I examine someone it's not going to help me because I don't know

what I am looking for. I might as well do an MRI.'"

Dr. Stephen Howell, an orthopedic surgeon in Sacramento, California, and the designer of the OtisKnee, is also concerned about these issues. He states, "Both surgeons and patients can get caught up the imaging. I recently treated a distance runner who read his MRI report and told me that he had a meniscus tear and wanted it removed to eliminate his pain. The physical examination of both his normal and symptomatic knee did not reveal any joint line pain. It turned out that the MRI was 'overread.' It took considerable discussion to convince the runner and his mother that scoping the knee was not the answer to his discomfort. The overread MRI can lead to unnecessary and ineffective surgery, which is best prevented by a careful history and physical examination of both knees."

Detailing his procedure, Dr. Howell says, "I observe patients as they get up, and as they walk. I want to see if one leg is shorter than the other, if they are bowlegged, etc. They then walk toward me on their heels, and away from me on their toes; then they face me and do a squat so that I can assess muscle atrophy, balance, and alignment, and determine if they are flatfooted or knock kneed. If the patient has a meniscus tear, then they will feel sore on the joint line where the tear is when they walk on their heels and even more so when they squat. Let the patient tell you where the pain is…then your job is to examine them with your hands."

"One example of an underdiagnosed and misdiagnosed condition is patellar tendonitis, so often missed because orthopedists don't look for it. The most common cause of this tennis elbow-like condition is anterior knee pain. When patients squat and then get up they will point to the front of the knee as being painful—and they will have trouble getting up. Once they are on the table and in a supine position, assist them with internal and external hip rotation. Range of motion should be equal; if there is pain in the groin, thigh or knee when you rotate the hip then it is typically hip arthritis that is causing referred pain to the knee. You should also have the patient lift her heels off the table to see if she can extend equally…you are looking for muscle atrophy and fluid in the knee. Finally, ask them to bend the knee to see if they have full flexion. If they cannot do this, then there is fluid, arthritis, or both."

Bottom line, slowing down and doing more medical detective work will deliver not only better patient outcomes, but will put you on the right side of the data. ◆

Orthopedics This Week

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Proposed 2012 Healthcare Budget

By Walter Eisner

On Valentine's Day, the biggest payer of healthcare in America put out a proposed budget for the next fiscal year. The budget was part of President Obama's overall $3.73 trillion federal budget submission for fiscal 2012 which proposes more than $1 trillion in spending cuts.

That payer, the U.S. Department of Health and Human Services (HHS), which includes the FDA and the Centers for Medicare and Medicaid Services (CMS), among other agencies, proposes to spend $79.9 billion of that $3.73 trillion between October 2011 and September 2012.

The proposed HHS funding is $400 million less than last year's request and $1.4 billion less than estimated 2011 expenditures.

The FDA will receive $2.7 billion in budget authority and $4.4 billion in total program resources.

However, as the old saying goes in Washington, the President proposes, but the Congress disposes. Republicans in Congress have made it abundantly clear, that's exactly what they intend to do with the President's healthcare budget and Affordable Care Act—put it in the disposal.

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Because an estimated $1 out of every $7 dollars of healthcare is spent on orthopedics and 13% of hospital admissions are attributed to orthopedics, *Orthopedics This Week* took a look under the hood of the proposed budget.

Primary Care Physician Focus

There are things for all physicians to like in this budget, including a provision to protect them from cuts in Medicare payments for the next two years. But for specialists like orthopedic surgeons, the results are mixed. For example, any additional funding to deal with physician shortages and training goes to the primary care physicians championed by the American Medical Association (AMA).

These increases are offset by a series of consolidations and eliminations among public health programs such as the elimination of a children's hospital graduate medical education program.

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"Doc Fix"

Specifically, the budget temporarily delays a scheduled 25% cut in the sustainable growth rate (SGR), Medicare's physician payment formula that was slated to go into effect in 2012. This "Doc Fix" is paid for by squeezing $62 billion in savings out of Medicare and Medicaid payments to hospitals and doctors and via expanded use of generic drugs in federal health programs.

Surgeon Society Responses

John Callaghan, M.D., the president of the American Academy of Orthopaedic Surgeons (AAOS) told *OTW* at the Academy's annual meeting in San Diego that the organization "applauds many of the initiatives within [the] budget proposal to promote patient safety and ensure that patients of all ages and conditions receive quality, affordable care."

However, he continued, "While the AAOS appreciates the administration's commitment to investing in biomedical and battle wound research, as well as its continued efforts to make our healthcare system more efficient, the AAOS is disappointed that the President did not include a permanent solution to Medicare's physician payment formula in his budget, and believes that the absence of a replacement to the flawed sustainable growth rate formula critically threatens our most vulnerable patients' access to care."

The North American Spine Society (NASS) and the Alliance of Specialty Medicine told their members in a statement: "This policy would provide a bridge that would allow cuts scheduled under the [SGR] formula to be postponed for two years, but fails to replace the current reimbursement system with a long-term solution that reimburses physicians based on the cost of care they provide to Medicare beneficiaries. NASS and the Alliance oppose any changes that fall short of providing a long-term solution."

American Medical Association President Cecil Wilson, M.D. praised the proposal, saying it would stop "devastating cuts…for another two years, which is important for providing stability in the Medicare system while a permanent solution is enacted."

Affordable Care Act (ACA)

The ACA is estimated to reduce the deficit by approximately $230 billion over the next decade and about $1 trillion over the second decade, based on the most recent Congressional Budget Office analysis.

Andrew Huth

Republicans argue the Act actually increases the deficit and will cost jobs.

The Administration says the ACA reduces the deficit by employing a wide range of strategies that achieve the goal of delivering better healthcare for less, including provisions to fight waste, fraud, and abuse; reward providers for delivering high-quality care; and reform America's healthcare delivery system by developing innovative ways to deliver care for patients. One of those innovations is the establishment of Accountable Care Organizations (ACOs)

Healthcare reform funding remained intact, with $465 million in funds to implement the law. CMS would receive $4.4 billion, a $700 million increase over 2010 spending. The budget lays out a plan for CMS to prioritize fighting fraud, including efforts to track "high prescribers and utilizers" of Medicaid prescription drugs, and creating a system that checks physician orders for "certain high-risk" products and services.

Disease Prevention

There are provisions for healthcare services which are preventative in nature, such as arthritis treatment and disease management. Medical device CEOs have already been singing the praises of orthopedic procedures as preventative measures and research and development dollars going into joint disease research to prevent the need for joint replacements in the first place. Keeping people "in motion" and active is a key prevention tool for controlling diseases such as diabetes and avoiding obesity.

The budget includes a new "Comprehensive Chronic Disease Prevention Program (CCDPP) by consolidating Centers for Disease Control and Prevention (CDC) Heart Disease and Stroke, Diabetes, Cancer, Arthritis and other Conditions, Nutrition,Health Promotion, Prevention Centers, and select school health activities into one competitive grant program."

There is also a $1 billion allocation within the Prevention and Public Health Fund, for activities that have demonstrated improved health outcomes and will help reduce healthcare costs.

Health Centers

Health Centers are sites that offer comprehensive, high quality, primary and preventative health care services for anyone regardless of ability to pay.

In 2009, the Recovery Act provided $500 million to expand health center services to an additional 2 million patients. The proposed budget continues this effort by investing a total of $2.2 billion in new resources for health center services in 2011 and 2012. The Budget builds on this investment by providing an additional $2.1 billion. In 2012, health centers are estimated to serve 24 million patients.

Biomedical Research

The budget includes $32 billion for basic and applied biomedical research supported by the National Institute of Health (NIH).

The budget document notes this investment is essential in keeping people and the economy healthy: "Innovation is this field creates and sustains companies, products and jobs."

Other HHS Budget Highlights

According to the budget document, in addition to the "Doc Fix," other highlights of the overall HHS budget include:

- Provides new consumer protections and review of unreasonable premium increases, expands coverage for uninsured Americans with pre-existing conditions, and funds programs to hold health insurance companies more accountable to their enrollees.
- Strengthens the program integrity in Medicare, Medicaid, and the Children's Health Insurance Program, and provides new resources to reach the Administration's goal of reducing the Medicare fee-for-service error rate in half by 2012. This is potentially a big problem for surgeons. Speakers at an AAOS symposium noted that the CMS CERT (Comprehensive Error Rate

Testing) program is a "claw-back" effort where surgeons are audited to billing errors.

- Strengthens national preparedness through funding for the advanced development of next generation medical countermeasures against chemical, biological, radiological and nuclear threats.
- Invests approximately $3.5 billion for discretionary HIV/AIDS prevention and treatment activities across the Department to expand access to affordable healthcare and prevention services and align activities with the National HIV/AIDS Strategy.
- Increases access to healthcare services among American Indians and Alaska Natives.
- Strengthens the FDA's food safety system by implementing provisions of the FDA Food Safety Modernization Act and recommendations from the President's Food Safety Network Working Group.

The Sausage Making Begins

Given that Congress has not yet passed the 2011 fiscal budget and continues to operate the government on a Continuing Resolution, there is very little reason to believe that this proposed 2012 budget will make it through the sausage factory on Capitol Hill.

Gordon Wheeler, associate executive director for public affairs at the American College of Emergency Physicians reportedly said, "I don't think anything meaningful will come from any of this. The intensity of the debate right now is on the debt and the deficit."

However, the Executive Branch possesses significant administrative powers to move federal agencies in the direction outlined in the proposed budget. Whether or not President Obama has the political strength to push this budget through Congress as the next presidential and congressional elections heat up, is unknown.

If history is any indication, the interests of physicians and surgeons will be represented by fragmented efforts of the American Medical Association and the Specialty Societies. Such fragmented efforts in a political environment dominated by calls for reigning in the federal debt can result in defeat.

As we saw last year when Congress had a permanent "Doc Fix" up for a vote, even many physicians in Congress voted against the measure because it increased the federal debt.

Let the disposing begin…. ◆

Lessons From Afghanistan/Iraq

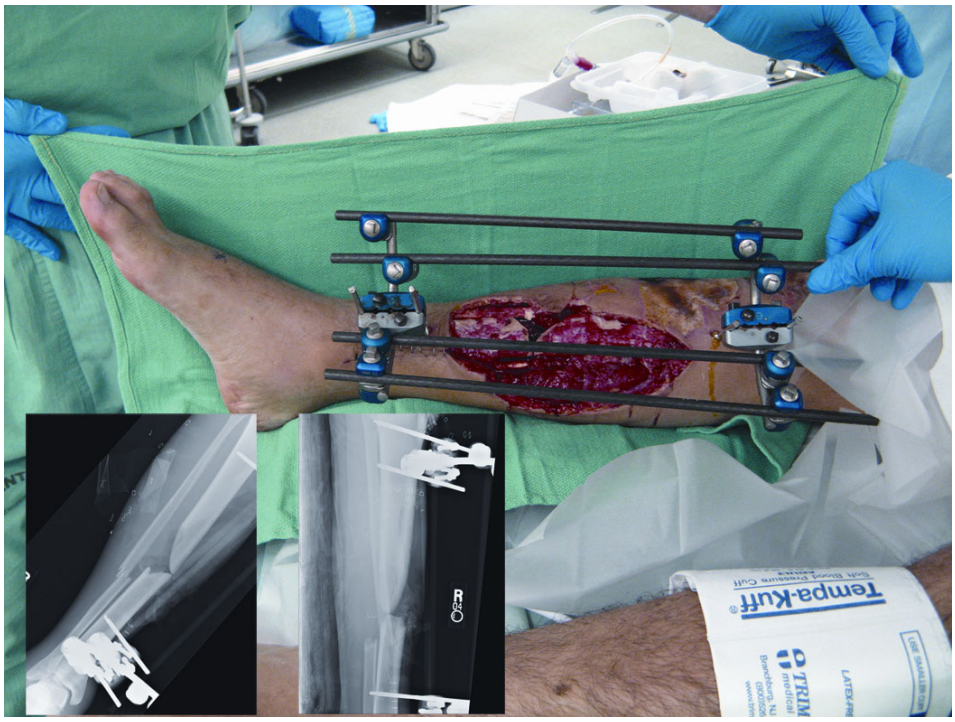
By Robin Young

"In the early years we boarded planes for Afghanistan and Iraq with a copy of Rockwood and Green and Hoppenfield's Surgical Exposures, only to find that none of the improvised explosive device (IED) blasts we were seeing resembled those hallowed texts. There is a loneliness one feels when faced with such cases where there is so little to guide one's hand. But one learns." — LtCol John M. Tickis, M.D., Mc USAF

Oh yes they learned.

How to treat the chaos of an IED blast wound as well as the other unconventional traumas encountered in Afghanistan and Iraq was little more than oral tradition until two Army surgeons LTC Brett D. Owens, M.D. and LTC Philip J. Belmont, M.D. decided to convert that institutional memory into a comprehensive reference book. Fifty-one combat physicians from the U.S. Army, Navy/Marine and Air Force joined the project and their enthusiastic participation allowed the entire project to be completed in just 12 months.

Combat Orthopedic Surgery: Lessons Learned from Iraq and Afghanistan is a 320-page, 29-chapter powerhouse of a reference book that was published last month. It is the first reference book for orthopedic surgeons emerging from the two wars of the past decade. It was published by SLACK, Incorporated and the two authors were at AAOS—which is where we sat down to discuss their landmark book.

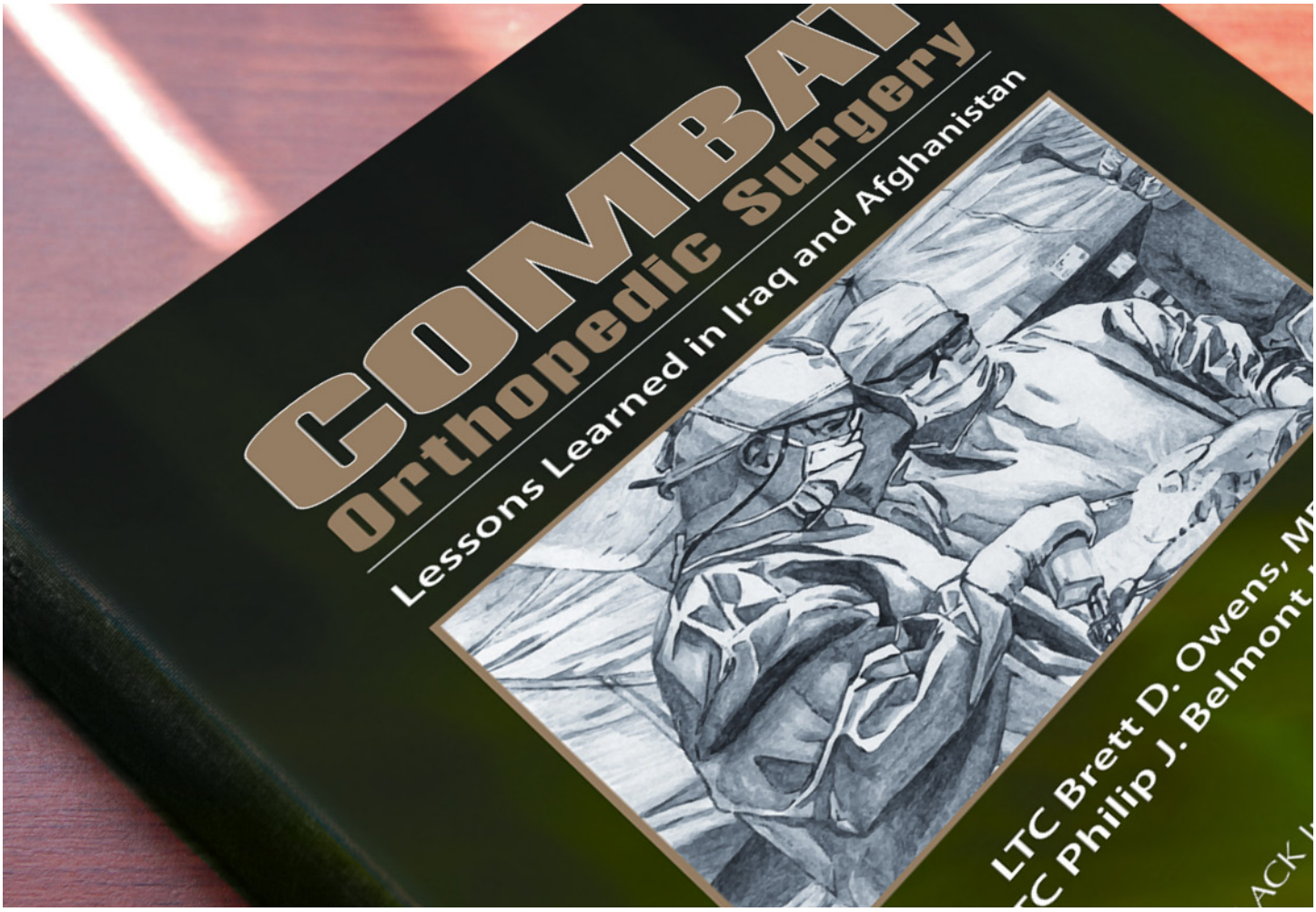


Combat Orthopedic Surgery: Lessons Learned from Iraq and Afghanistan/SLACK Inc.

Combat care in Afghanistan and Iraq is a paradigm shift from Vietnam, Korea and World War II. No training or education program adequately prepared these physicians for missions they faced. How they learned to treat IED wounds, improve the processes of limb salvage, amputation, tourniquet use, infection reduction, prosthetic design, and how to employ regenerative medicine techniques in front line care are the subjects of this remarkable book.

Considering how orthopedic therapies have vaulted forward during war time, this book reads like a skeleton key into the future. It is, in fact, the first orthopedic combat reference book to emerge from these two wars.

Brett D. Owens, M.D



Combat Orthopedic Surgery: Lessons Learned from Iraq and Afghanistan/SLACK Inc.

This book also exemplifies the culture of duty, honor, fidelity, patriotism, and collaboration which defines the U.S. professional military services today.

"When the country sounded a call to arms, these men and women responded. For me, working on this book was my way to honor their service," said 42-year-old co-author LTC Philip J. Belmont Jr., M.D. when we asked him why he committed roughly 1,500 hours of evening and weekend time over two years to assemble this book.

Said his 38-year-old co-author LTC Brett D. Owens, M.D. "When we started to treat these wounded soldiers we weren't handed anything, no books. We wrote this book because it had to be written."

Musculoskeletal Combat Wounds in OIF/OEF

More than 65% of all operative cases at combat support hospitals are orthopedic in nature. Owens and his colleagues collected data from these orthopedic injuries during Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) from October 2001 to January, 2005. He found that explosions were responsible for 75% of all extremity combat wounds, the highest percentage in U.S. military history. Gunshot wounds only accounted for 16% of extremity wounds.

Explosions create distinctive patterns of injuries including severely traumatized limbs, open fractures, disproportionately large zones of injury, frequent bone and volumetric soft tissue loss which is usually accompanied by gross foreign body and bacterial contamination. The three large and largely novel problems that these warrior physicians confronted in OIF/OEF were:

- Wound healing
- Infection
- Heterotopic ossification

As we noted earlier, when these physicians went scrambling back to their text books, they found significant gaps in the knowledge base. Open injury rates in these conflicts were 40% compared

to 10% in civilian trauma. Transfusion rates are three times higher—*yet combat mortality rates are at a historically low rate of 3%.*

The authors, the collaborators and their editors organized their reference book into three major sections.

Section One: Principles

This section describes the history of combat orthopedic surgery from 1700 BCE to the modern day (MAJ Andrew J. Schoenfeld, M.D. author), today's combat environment and the epidemiology of musculoskeletal combat injuries (LTC Philip J. Belmont Jr. M.D. and CPT Gens P. Goodman, D.O. authors), the military's echelons of care (LTC Mark Pallis, D.O. and COL Tad Gerlinger, M.D. authors), the Forward Surgical Team (MAJ Andrew Schoenfeld, M.D., MAJ Dirk L. Slade, M.D. and LTC Belmont authors), Combat Support Hospitals (COL James R. Ficke, M.D. author) and finally a fascinating description of the Landstuhl Regional Medical Center (COL Joachim Jude Tenuta, M.D. author) which has treated so many service men and women over the years.

Section Two: Advancements

Here is where the authors and their collaborators collected the institutional knowledge of battle field innovation from hundred of physician warriors. There is so much in this section that is, on its own merit, fascinating but also provocative in the classic sense of stimulating new ideas and insights. The section begins with a clearly written chapter on ballistic, blast and burn injuries (COL (Ret) Roman Hayda, M.D. author) and then picks up speed with Management of Complex Combat-Related Soft Tissue Wounds/Negative Pressure Wound Therapy (MAJ Brett A. Freedman, M.D. and MAJ Leon J. Nesti, M.D., Ph.D. authors) and Basic Science of War Wounds (LCDR Jonathan Agner Forsberg, M.D., Trevor S. Brown, Ph.D. and MAJ Benjamin K. Potter, M.D. authors).

Heterotopic ossification is covered brilliantly by MAJ Potter and LCDR Forsberg. This topic may be one of the most provocative since it pulls in fundamental concepts of healing and protein signaling. For this reader, this was one of the most interesting and thought provoking of all chapters.

MAJ Scott Waterman, M.D., CDR Mark E. Fleming, D.O. and LTC Owens put together a special chapter on irrigation and debridement—the keys to successful wound repair. That chapter is followed by a detailed overview of the advancements in Tissue Engineering and Regeneration that have come from treating these combat injuries (LCDR Jared A. Vogler, D.O., Wesley Jackson, Ph.D. and MAJ Nesti M.D., Ph.D. authors), Infection in Orthopedic Extremity Injuries (LTC Clinton K. Murray, M.D. author), Tourniquets (COL John F. Kragh, Jr., M.D. author) and External Fixation Principles (LCDR Joseph Carney, M.D. and CAPT D.C. Covey, M.D. authors).

Section Three: Upper Extremity, Lower Extremity and Spine/Pelvis Injury Care

The last 14 chapters take the general principles and advancements of the previous two sections and apply them in a detailed reference section which give the combat surgeon and, yes, the civilian surgeon a comprehensive field

manual and definitive reference for all orthopedic surgeons. As the authors put it, this is the nuts and bolts section.

Buy This Book

What, we asked the two lead authors, were the scientific advances that impressed them the most as they collected these articles? Dr. Belmont was most focused on the ways in which soldiers are better protected from injury:

1. Advances in individual and vehicular body armor
2. Much better limb salvage techniques and, therefore, reduced amputation
3. More rapid evacuation to combat support hospitals
4. Significant prosthesis advances—specifically for above-the-knee amputations where computer chip technologies offer the soldier more efficient ambulation and more normal gait.

Dr. Belmont also mentioned the major advances in pushing advanced care down to the most forward surgical units. Orthopedic surgeons treating wounded combat soldiers find that while they will certainly be working in their "zones of comfort," they will also be working in their "zones of ability." That means that the surgeon whose residency may have been in large joint reconstruction will be also called upon to address hand, foot or spine cases.

Dr. Owens recommended these three topics from the book:

1. The advancements in tourniquet use and design
2. The excellent discussion of basic science of how wounds heal, the functional relationships of cytokines and chemokines.
3. Heterotopic ossification and the cellular mechanisms, unique to the types of wounds encountered in OIF/OEF, that cause them.

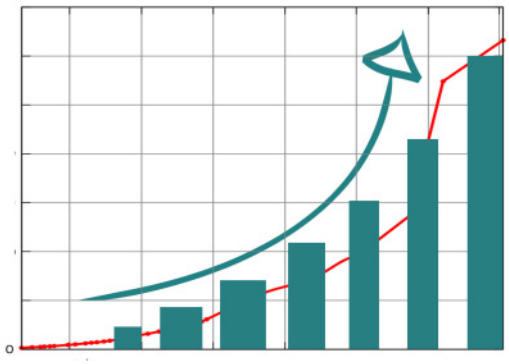
Every practicing orthopedic surgeon should have this valuable new reference book in their library. To order call or write:

SLACK Incorporated
6900 Grove Road
Thorofare, NJ 08086 USA
Telephone: 856-848-1000 ◆

company

Orthofix Spine and Implants Sales Rise

Orthofix International NV reported sales of $143.8 million for the fourth quarter of 2010.



RRY Publications LLC

Orthofix 4Q10	Sales ($ in millions)	% Change
Total Reported Sales	143.8	down 0.2%
Spine Stim	42.4	down 1%
Implants/Biologics	36.3	11.3%
Total Spine	78.7	5.6%
Orthopedic	37.5	4.5%
Sports Medicine	25.1	9.1%

Source: Orthofixr International N.V.

The reported sales were down 0.2% due to the exit from two of the company's non-strategic product lines.

The big product category winner for the quarter was spine implants and biologics, which rose 11.3% to $36.3 million, respectively, on a reported basis. It was the third consecutive quarter of double-digit growth. Trinity Evolution posted $9.3 million in fourth quarter sales and was up 20% sequentially over the third quarter

Spine stimulation growth slowed due to a U.S. Department of Justice investigation. The government has been interviewing company sales reps, which has reduced their selling time in the field. Orthofix recorded $4.1 million of legal expenses associated with the investigation of the bone growth stimulation industry and the company's internal investigation into compliance with the Foreign Corrupt Practices Act at its distribution subsidiary in Mexico.

"We continue to be encouraged by the growth in our spinal implants and biologics business, as well as the return to positive growth for our sports medicine business, " said President and CEO Alan Milinazzo. "Additionally we continue to take the appropriate steps to improve our operating leverage which has allowed us to absorb higher costs associated with certain ongoing legal matters."

Sports medicine sales of 25.1 million were up 9.1%, marking a return to growth after four consecutive quarters of decline.

For 2011, the company expects to generate between $580 million and $590 million in net sales or 3% to 5% over reported net sales in 2010.

—WE (February 18, 2011) ◆

Stryker's Newest Clearance Hits MoM Competitors

Stryker Corporation announced on February 10 that is has received 510(k) clearance for its MDM X3 Modular Dual Mobility Mobile Bearing Hip System. At the same time, the company took a shot at competitor's metal-on-metal hips devices.

Stryker believes the system addresses a broader patient population and can be used for both primary and revision surgery

A company statement said the clearance, "follows the significant commercial success of the company's innovative ADM X3 Mobile Bearing Hip System which launched one year ago and contributed to Stryker's strong performance in the hip reconstruction market in 2010."

The MDM X3 is a third-generation dual mobility device and like the company's ADM X3, MDM X3 is, according to the company, designed to enhance stability and jump distance, which may increase range of motion in specific patients. The press release stated it intends lead the market in the mobile bearing hip category with "products that address the limitations of competitive hip products and highlights the significant investments Stryker continues to make in its hip business."

ADM X3 Mobile Bearing Hip System is Stryker's flagship mobile bearing product and was developed to enhance joint stability. To address limitations in stability, conventional designs focus on

Stryker's MDM X3/Stryker Orthopaedics

the use of metal-on-metal large head technologies. The announcement says recent studies, "suggest added risk due to metal-on-metal articulation. Combining an evolution in design with the only anatomic dual mobility acetabular system and its patented X3 Advanced Bearing Technology3, Stryker Orthopaedics' Mobile Bearing Hip is designed to offer the benefits of a large diameter bearing without a metal-on-metal articulation."

Citing several studies, the company statement says the dual points of articulation in dual mobility constructs "help accommodate multi-directional movement, which provides the potential for greater range of motion and reduced wear compared to competitive fixed implant designs, based on laboratory testing."

—*WE (February 16, 2011)* ◆

ArthroCare Raises 4Q Revenue; Settles Investigation

ArthroCare Corporation

They've got to be happy and relieved in Austin, Texas, as ArthroCare Corp. announced a small increase in revenue for the fourth quarter of 2010 on February 14. Sales of $92.6 million beat last year's $90.9 million. Product sales were up $2.4 million internationally, but down slightly in the Americas.

Perhaps the better news happened the week before, when the company announced on February 9, that it put to bed a three year investigation with the SEC over financial practices. There was no fine imposed on ArthroCare, and no current officers or employees were charged with any violations. In accepting the settlement, the SEC specifically, according to a company statement, considered ArthroCare's remedial actions and the substantial cooperation it provided in connection with the SEC investigation.

In 2008, ArthroCare said it was going to restate its financial results going back to 2006 because of the way its business relationship with DiscoCare Inc., a company it acquired, had been represented. The SEC investigated and subsequently the company's CEO, chief financial officer and several officers resigned.

Under the settlement, the company has agreed to a cease and desist consent order whereby it says it will not cause violations of the reporting, books and records and internal control provisions of the federal securities laws. The company did not have to deny or admit to any factual findings of the investigation.

The SEC investigation had an impact on ArthroCare's income from operations for the fourth quarter. Income was $14.8 million compared to $10.7 million for the same period in 2009. The increase, according to a company statement, was the result of lower investigation and restatement related expenses, partially offset by charges recorded to further restructure the company's spine marketing and distribution organization in the Americas.

Sports medicine product sales increased $0.8 million, or 1.3%, in the fourth quarter, while ENT (ear, nose & throat) product sales increased $2.8 million, or 13.2%. The ENT increase was a result

of increased sales volumes in the Coblation and Rapid Rhino products , and higher average sales prices in the Americas. International product sales rose , particularly due to increased market penetration in the Asia Pacific region.

Other product sales, which consist principally of spine product sales, declined $0.8 million in the fourth quarter of 2010 compared to the same period of 2009.

—WE (February 14, 2011) ◆

legal

MDDS Devices Down-Classified

Continuing a campaign to push their innovation agenda, the FDA has down-classified certain hardware and software products used with medical devices in a final rule announced on February 14.

The rule classifies medical device data systems (MDDS), as Class I or low-risk devices, making them exempt from premarket review but still subject to quality standards.

morgueFile.com

"This rule is a common-sense regulatory approach that provides clarity and predictability for manufacturers of these data systems," said Jeff Shuren, M.D., director of the Center for Devices and Radiological Health. "This shows our flexibility in applying regulations for medical device data systems that are not overly burdensome for manufacturers but continue to assure that data stored, transferred or displayed on these systems remain reliable."

The data systems are off-the-shelf or custom hardware or software products used alone or in combination that display unaltered medical device data, or transfer, store or convert medical device data for future use, in accordance with a preset specification. Examples include: devices that collect and store data from a glucose meter for future use or that transfer lab results to be displayed at a nursing station for future use.

Before this new rule, such systems were classified either as Class III (high risk), requiring premarket approval or accessories to an existing medical device.

The down-classification exempts all manufacturers of MDDS from premarket notification and applies the level of regulation reserved for low risk devices. Manufacturers must still register with the FDA, listing the products, reporting adverse events and complying with the agency's Quality Systems regulations.

The rule also levels the playing field for medical device manufacturers. Information technology companies that design, install or market these systems, and hospitals that develop them in their facilities, must follow Class I requirements as well.

—WE (February 18, 2011) ◆

large joints

Pfizer, Takeda Sign RA Agreements

If it ain't broke, don't fix it…Pfizer Japan Inc. and Takeda Pharmaceutical Company Limited have announced an agreement to extend the period for co-promotion in Japan for the rheumatoid arthritis (RA) drug Enbrel. The companies also signed a new co-promotion agreement in Japan for the investigational drug tofacitinib, formerly known as tasocitinib, which is being studied for several conditions, including RA.

"We are looking forward to the next phase of our successful partnership with Takeda," said Michael Goettler in the news release. Goettler, regional president of Asia-Pacific and Japan Head, Specialty Care Business Unit, Pfizer, added, "We are proud of our current inflammation product portfolio, and excited about the prospect of bringing new innovative treatments to our patients."

"With these new contracts, we will be able to further strengthen our initiatives in the rheumatoid arthritis field," added Yasuhiko Yamanaka, a member of the board, senior vice president, Pharmaceutical Marketing Division of Takeda.

Melodi2/morgueFile

"Takeda and Pfizer together provide Enbrel to patients suffering from RA, and if the development program is successful, we look forward to offering a new treatment option. We are committed to further contribution to treatments for RA therapy."

Regarding the next phase of their work together, Goettler told *OTW,* "We are looking forward to extending our partnership in Japan with Takeda for Enbrel and broadening it with the possibility of a new RA treatment with our investigational compound tofacitinib."

As for the state of RA in Japan, Yamanaka told *OTW,* "According to epidemiological surveys, between 0.5% and 1% of Japanese people have rheumatoid arthritis. The total number of patients is thought to be in excess of 700,000. The domestic rheumatoid arthritis market for internal medicines such as Rheumatrex and other DMARDs and BIO preparations such as Enbrel is thought to be around 100 billion yen."

He also commented to *OTW,* "Regarding patient education, generally, specialist doctors and pharmacists offer information to patients about the clinical condition and treatment of RA. Patient education brochures published by companies as well as the Internet also play a role in educating patients. For further information including guiding principles for patient treatment, please contact professional organizations such as the Japan College of Rheumatology, whose members include practicing physicians, research scientists, and academic scholars."

—EH (February 15, 2011) ◆

Ski Prohibition Eased—A Little

To ski or not to ski—after a joint replacement—is the question. Bruce Alemian, an alpine skier in his 70s with two worn-out knees, feared that his skiing days were over. So did his orthopedic surgeon at Massachusetts General Hospital who replaced the aging knees and advised against skiing. What if he had a fall? Twisted his knee?

But Alemian found that he could not so easily walk away from the ski slopes. Four years after his last surgery he began skiing on easy trails. There he found others like himself, with implanted knees and hips, flying down the hills.

There was Bruce McDonald, 68, head of the ski school at Wachusett Mountain in Princeton, who had had two hip replacement surgeries and disc-fusion surgery. And Mike O'Gara who, eight months after surgery for a new hip, was the No. 1-ranked NASTAR skier for his age group in New Hampshire, and winner of the prestigious Hannes Schneider Memorial race.

According to a February 10 report in the *Boston Globe*, as body part replacement becomes commonplace in an aging generation, doctors and physical therapists are moving away from their automatic opposition to downhill skiing.

"What I tell my patients with total hip and total knee replacement is if you've never skied, or you're a lousy skier, it's probably not a good thing to try to pick up or improve," said Dr. Thomas Thornhill, chairman of orthopedic surgery at Brigham and Women's Hospital. "If you're a good skier, or you don't feel you have to ski moguls or in icy conditions—that's perfectly all right."

One of Thornhill's patients is Dr. Eli Factor, a Brockton dentist who had two hip replacements in his mid-60s and wondered about his future in skiing. Now 80, Factor, who skied until last year, remembers the advice he received.

Esquiant/Wikimedia Commons

"Most of medicine absolutely said no." he said.

Factor spent the next 25 years at the sport and founded the "Steel Hipsters Ski Club of America" which sends out newsletters keeping members current on the state of replacement surgery as it applies to skiers.

Thornhill, who skis and plays tennis, said there have been many changes since the early days of joint replacement. "With shaped skis that are easier to turn you stay in better control," he said. "The skis are shorter, and that's easier on the joints. People who skied in the old days probably had to be better. Now I think people can rely more on their equipment than their talent."

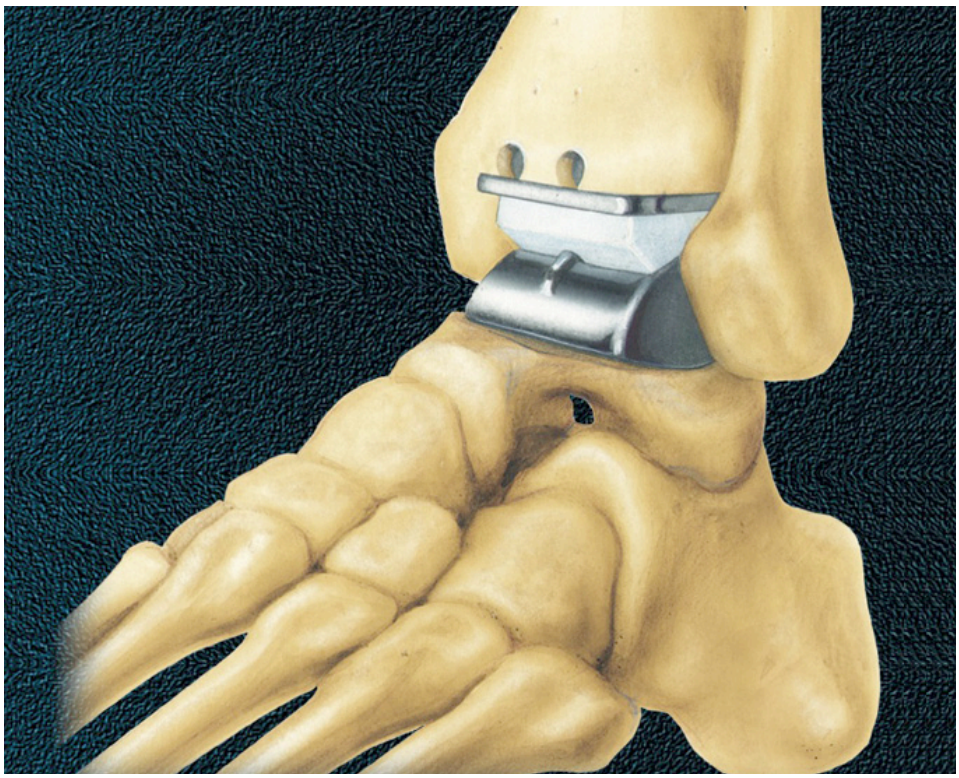
—BY (February 15, 2011) ◆

extremities

Aetna: STAR and Others OK

A sigh of relief from ankles everywhere…Small Bone Innovations, Inc. (SBi), reported that it will benefit from the decision of Aetna to revise its coverage policy to cover Total Ankle Replacement (TAR) using FDA-cleared or approved devices.

Following the U.S. introduction of STAR total ankle in June 2009, SBi engaged Musculoskeletal Clinical Regulatory Advisers, LLC (MCRA), which then presented the case for the product's reimbursement to insurers and independent organizations that provide authoritative guidance on health care issues and practices. The firm provided insurers with information about TAR


Small Bone Innovations, Inc.

generally and specific evidence supporting the use of the STAR ankle in suitable patients.

Anthony G. Viscogliosi, Chairman & CEO of SBi, said in the news release: "Eminent orthopedic foot and ankle surgeons that conducted the STAR PMA IDE [premarket approval application investigational device exemption] clinical trials are now part of a faculty educating surgeons by conducting laboratory workshops around the country. To date, more than 500 surgeons have been trained in the procedure in North America to provide broader access to the STAR ankle among patients with painful and debilitating conditions of moderate to severe ankle arthritis. It is estimated that as many as 70,000 patients annually require surgery to treat painful ankle arthritis."

In addition to insurers, two medical societies representing foot & ankle surgeons, the American Orthopaedic Foot & Ankle Society (AOFAS) and American College of Foot and Ankle Surgeons (ACFAS) have each revised their position statements on ankle replacement and acknowledged TAR as an acceptable and viable alternative to fusion for carefully selected patients with ankle arthritis.

Anthony Viscogliosi told *OTW*, "If there was a tipping point, I believe that the weight of favorable, published data on the STAR is hard to ignore. Major carriers such as Aetna—and even more recently CIGNA—considered the compelling body of published outcomes with total ankle replacement generally, the FDA PMA data on the STAR's performance compared to ankle fusion, and STAR's long-term (up to 14 years) clinical data."

He also said, "In addition, the Work Loss Data Institute (WLDI), which publishes the Official Disability Guidelines (ODG) for treating more than 200 conditions, reviewed the clinical evidence relating to STAR and amended its guidelines to support patient access to

the technology. The guidelines are frequently referenced by private and government insurance carriers. The current ODG now has a sub-section devoted to STAR and recommends its use with select total ankle replacement patients and highlights the distinction between 510(k) & PMA regulatory pathways by continuing to advise against the use of 510(k) total ankles that require to be cemented in place."

—EH (February 17, 2011) ◆

Bunions Bump Hips & Knees

Shrinking healthcare funding and quirks of government are pushing Canadian surgeons to delay costly hip and knee-replacement operations in favour of less expensive procedures. Such as removing bunions.

As explained in a story in the February 9 issue of *Globe and Mail*, the government established a $5.5 billion fund to reduce waiting times in Canada's hospitals. To divide up the money, the provinces set targets for the number of operations to be done within each fiscal year. Once that money ran out, operations had to be paid for out of the hospitals' own budgets until the next round of funding began.

The fund, initiated in 2004, was intended to cut waiting times in five designated procedures—among them hip and knee replacements. "When you look at the overall success of the 2004 accord, hips and knees never was a stellar success across the country," said Lorne Bellan, co-chairman of the Wait Time Alliance.

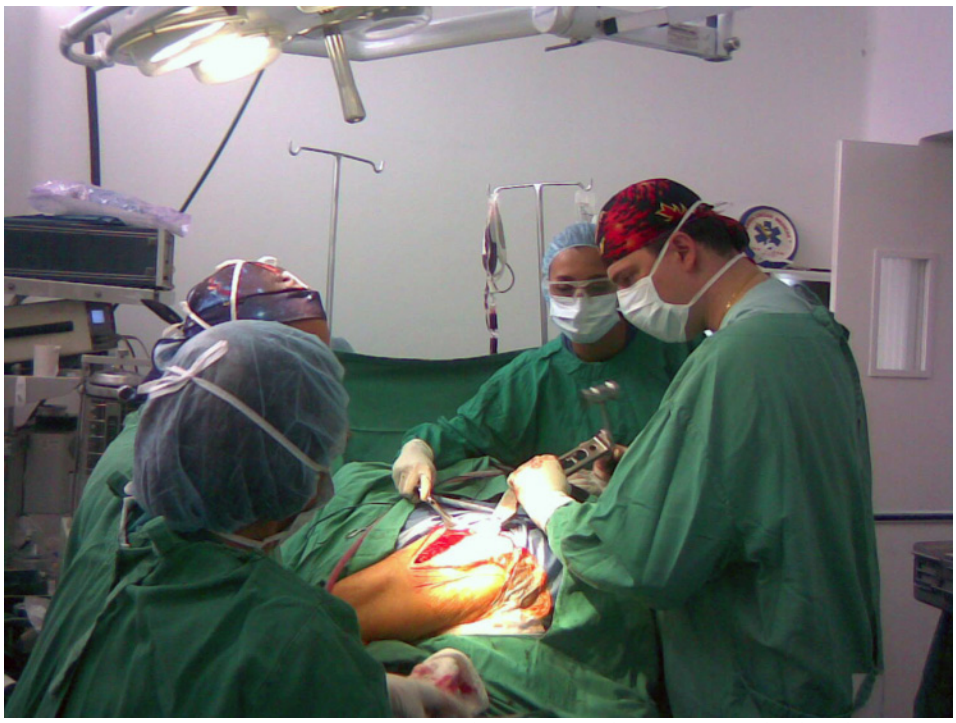
Despite the government's cash infusion, some hospitals in Toronto performed fewer joint replacements. Orthopedic surgeon Rod Davey saw a reduction to 232 joint replacements this fiscal year compared with the last. For some patients, that meant postponed surgery. "If we do it [the operations], we do it at a loss," said Davey, co-chairman of the Toronto Central LHIN Joint Health and Disease Management Committee. "… No one likes to operate for nine months and do nothing for three months."

The hospital where Davey operates—Toronto Western—has some of the shortest waiting times in the province, with 90% of hip-replacement patients being operated on 78 days after a consultation with a surgeon, according to figures from December 2010.

Other physicians, such as Dr. Dana Fleming, must select cases that suit a hospital's bottom line, while patients requiring more costly hip and knee operations stay stuck in the queue. "What's less expensive [to the hospital] is bunions and shoulder surgeries," said. Fleming, who practices in Windsor, Ontario, and is past president of the Ontario Orthopaedic Association. Dr. Fleming received an official letter at Hôtel-Dieu Grace Hospital in Windsor last week, stating that expensive procedures such as hips and knees will be curtailed until the next fiscal year, starting April 1.

In Ontario, about 90% of hip-replacement patients were operated on 120 days after having a consultation with a surgeon, compared with five years earlier when the average waiting time was 345 days, according to the December numbers.

—BY (February 14, 2011) ◆



Dr. Pedro Antonio Sánchez Mesa, MD and Wikimedia Commons

THE PICTURE OF SUCCESS

Dr. Richard Haynes

By Elizabeth Hofheinz, M.P.H., M.Ed.

Dr. Richard Haynes

Have a five minute conversation with Dr. Richard Haynes, former Director of the American Board of Orthopaedic Surgery (ABOS), and the theme of his life will be evident…what a privilege it is to take care of patients with orthopedic problems. As the former Chief of Staff at Shriners Hospital for Children in Houston, Dr. Haynes did witness much suffering. But he didn't just stand on the sidelines—he got involved.

Dr. Haynes: "I was particularly drawn to working with children who were missing limbs, most of them who were born this way. Getting involved with them and their families seemed to be a privilege as opposed to a burden…I was genuinely surprised to learn that not all doctors feel this way."

The winner of the 2006 Tipton Award for Outstanding Orthopaedic Leadership, Dr. Haynes has led parents through the grief process and orthopedic trainees through difficult educational and life lessons. "To be selected for an award with Bill Tipton's name attached to it is an honor indeed. I think one of the leadership mantras I have followed is, 'Focus on what you can do about a situation as opposed to dwelling on the event itself.' Rather than spending one's efforts on ruminating about a problem (although it is important to review one's mistakes later), in the moment you should focus on how you can salvage the situation. If, for example, a patient gets a postop infection, instead of attempting to deny your involvement or blame others, focus on having a mature reaction, i.e., being calm and finding a solution."

This responsible attitude was cultivated with the help of Richard Haynes' psychiatrist father. "My father was a neurologist and a psychiatrist, and was the most influential person in my life. We moved several times, but 'landed' in Toledo, Ohio, where I grew up. He never pressured me to go into medicine, but he did point out that medical school would give me more options than any other field. Between my dad—a southern Democrat—and my mother, a Boston conservative, my brother and I were treated to animated discussions—and quizzes…lots of quizzes about medicine, life, and self knowledge."

Richard Haynes would develop self knowledge in part by getting to know the suffering and strivings of those who saw too much in Vietnam. "Upon the recommendation of my father, I joined the Army and did an internship in Honolulu. I also trained at Letterman Army Hospital and began to develop a love of orthopedics courtesy of the young men (and it was mainly men) who served in military during Vietnam. Their fortitude and perseverance were awe-inspiring, and their stories are still with me today."

Indeed, the memory of being in that Honolulu military hospital in 1975 put an eternal stamp on Dr. Haynes' life. "In July 1975 we had 750 inpatients; by October there were 1,700 people in our care. When I continued on as an orthopedic resident at Letterman, our practice was dominated by casualties from Vietnam. Although I did not serve in Vietnam, more than anything else in my career, I was impacted by taking care of these men who were suffering from horrific injuries. To be responsible for the future of hundreds of 18-year-

"I think one of the leadership mantras I have followed is, 'Focus on what you can do about a situation as opposed to dwelling on the event itself.'"

"At Shriners the work is about children with lifelong problems, meaning that you have the privilege of meeting a child early in his or her life, and then having them, in essence, grow up alongside you. I've often said that for me, the 'surgery' part of orthopedic surgery was almost incidental."

old men who were severely wounded was quite daunting. Communicating bad news is one of the hardest things that doctors have to learn. During these years I was doing it quite often."

Having an enthusiasm for the field of orthopedics, says Dr. Haynes, is the major reason for his success. And observers would likely say that it is Dr. Haynes' unselfish, mature attitude as well. As there so often is, there was an early mentor to thank. "During my fourth year of medical school I worked with a superb general surgeon who created an enthusiasm in me for learning the principles of patient care. He was also the perfect example of how to be a responsible physician. I recall a situation where a patient didn't survive and I commented to him, 'What a sad thing.' He looked at me and said, 'The patient came to the operating room alive, and we are responsible for the patient leaving the operating room alive.' That was a stunning statement for me, and helped transition my thinking from medical student to mature physician."

Richard Haynes took this—and other life lessons—and went on to be involved with teaching future orthopedists at eight residency programs. "I was one year out of training when I was assigned as the junior faculty member of the residency program at Brooke Army Hospital. It was pretty stressful because I was about the same age as my students. But I did my best, and tried to convey some wisdom I received from my father, namely, that more mistakes are made by not *looking* than by not *knowing*. In your heart you must know that you have done your best for your patients; they will likely know it as well…and will be very grateful."

"I also counsel young surgeons to keep their options open via participation in the wider field of orthopedics. There are fascinating volunteer opportunities available if you just keep your eyes open and are willing to learn something new."

Dr. Haynes, winner of the 2005 Distinguished Service Award from the American Academy of Pediatrics Section on Orthopedics, explains how working with children brought a lifetime of gifts…not only to the children, but to him. "The majority of orthopedics is what you call 'incident medicine,' i.e., you break your arm, you are treated by a doctor, and you move on. The total time that you and the patient spend together is brief, and is usually incidental to your overall life. At Shriners the work is about children with lifelong problems, meaning that you have the privilege of meeting a child early in his or her life, and then having them, in essence, grow up alongside you. I've often said that for me, the 'surgery' part of orthopedic surgery was almost incidental."

"The success story is that in ten years the number of women in orthopedics has doubled, and now stands at 14%. Increasing the diversity of our specialty remains a work in progress. The recruitment of underrepresented minorities to consider a career in orthopedic surgery through mentoring programs has been a real privilege."

Dr. Haynes' eyes were unexpectedly opened even wider when he transitioned from a career in the military to one in private practice. He notes, "After ten years of military service I thought it was time to try something different. I joined two orthopedists in Phoenix, and had the interesting experience of getting used to a wider range of individuals. Whereas I used to treat American GIs, who are the very finest of Americans, in private practice I encountered a broader spectrum of people, some of whom didn't follow the same set of principles. In addition to treating those involved with violent crime, I recall one patient who, after he robbed our office and 'borrowed' our cast saw, cut the locks on neighboring offices and helped himself to various supplies."

Dr. Haynes let the justice system handle that gentleman. His investigational capabilities would be put to use later, however. "I have recently completed ten years as Director of the American Board of Orthopaedic Surgery. During that time I got to meet and review up and coming orthopedists either on paper or in person, all the while overseeing the certification process. The Board's responsibility is to ensure to the American public the Board Certified Orthopaedic Surgeons are competent to care for their musculoskeletal problems. While prior to my tenure the Board had never revoked a physician's certification, during my time we found the need to revoke approximately fifty certifications. Fundamentally, it's about assuring the public that they are safe under our care."

A leader at—and with—heart, for three years Dr. Haynes had the helm of the AAOS (American Academy of Orthopaedic Surgeons) Diversity Advisory Board (DAB). "I just finished three years as Chair of the DAB where my colleagues and I sought to further incorporate the concept of diversity into orthopedics. We also focused on promoting the practice of culturally competent care. The success story is that in ten years the number of women in orthopedics has doubled, and now stands at 14%. Increasing the diversity of our specialty remains a work in progress. The recruitment of underrepresented minorities to consider a career in orthopedic surgery through mentoring programs has been a real privilege."

Dr. Haynes' latest role puts him in a position to learn more about this and other issues facing the field. "I retired from Shriners in 2007 and now work half time for the Accreditation Council for Graduate Medical Education (ACGME). The 14 years I spent volunteering for the organization in various capacities set the stage for this job. Now, I review orthopedic and other programs all over the country, typically visiting about 70 residencies a year. I'm not speaking for the ACGME here, but from my personal observation only… I have found that the vast majority of residents are excited about their specialty and their programs. The biggest thing programs struggle with is support for graduate medical education. In my opinion there should be less reliance on the federal government and more support from the home institutions."

And the highlight of Dr. Haynes' career? Working with children who have special orthopedic needs. "I know that this is not an area that all people can or are willing to tackle. Several years ago the Pediatric Orthopaedic Society of North America surveyed graduating residents, and asked why they selected their subspecialty. This was done to help define recruitment of orthopedic residents to pediatric orthopedics. One of the results that struck me was that many of the young doctors really struggled with the prospect of treating children with special orthopedic needs. I had always thought that everyone would be enthused about that."

When Dr. Haynes shifts gears, he reflects on the life he has built with his wife of 45 years, Sherrill. "Growing up, my wife had the best preparation possible for being the wife of an orthopedic surgeon…she is the daughter of an orthopedic surgeon. We have two spectacular children, one of whom is a radiologist and has given us two perfect grandchildren. We also have an accomplished, thoughtful son in San Francisco. Aging has changed our hobbies; whereas we used to be avid skiers, our biggest hobby now is taking our new puppy hiking in the mountains around Phoenix."

Dr. Richard Haynes…finding privilege in the art and science of being of service. ◆

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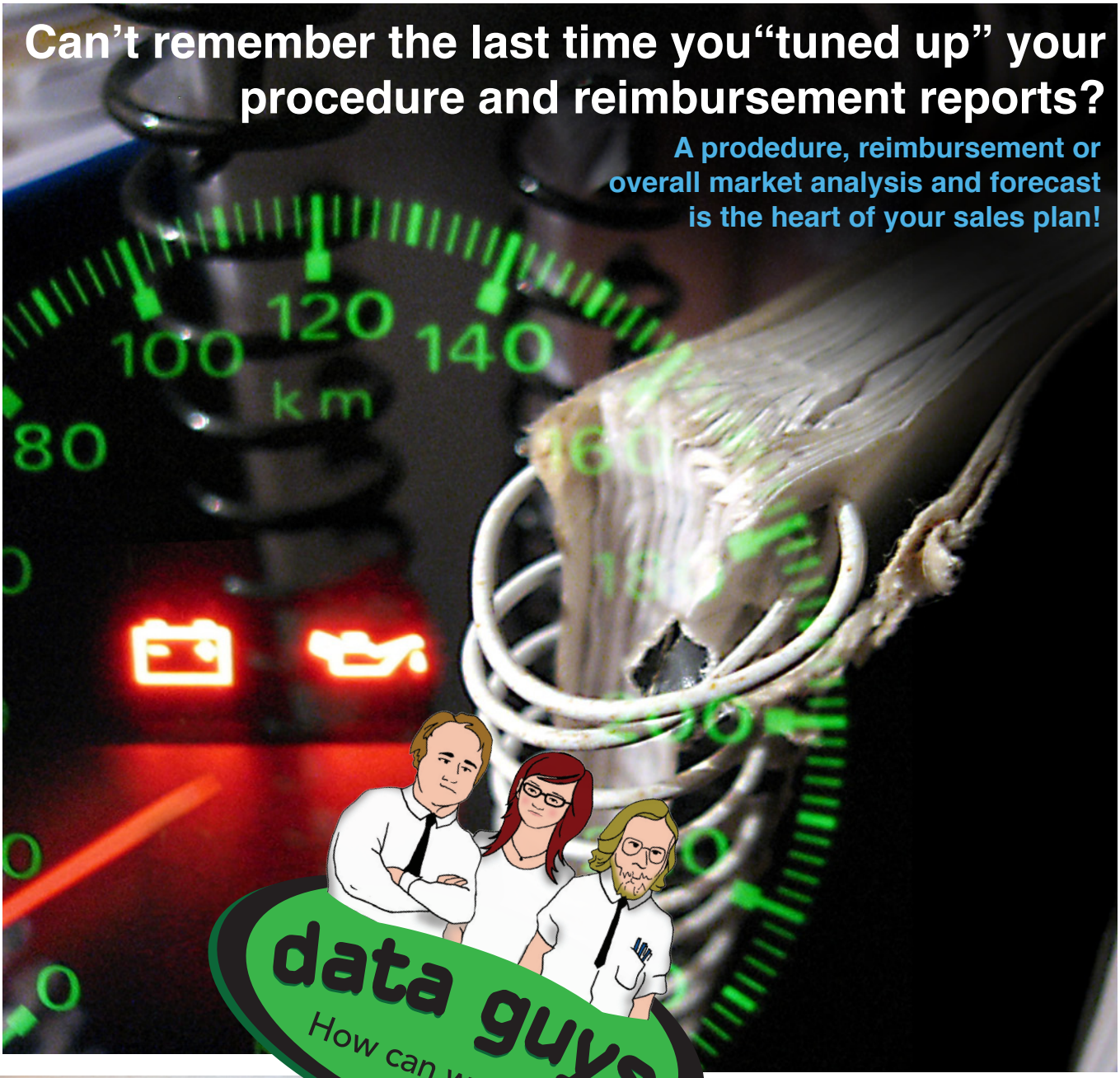

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Orthopedics This Week | RRY Publications LLC

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