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Orthopedics This Week

picture of success

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For all news that is Ortho, read on.

Orthopedics This Week

VOLUME 7, ISSUE 3 | JANUARY 18, 2011

Orthopedic Power Rankings

Robin Young's Entirely Subjective Ordering of Public Orthopedic Companies

This Week: Stryker's 8.8% 4th quarter sales jump (+4.5% in global ortho sales) reassured investors who were concerned after Biomet's dismal results. On deck are 4th quarter reports from Zimmer, DePuy and SNN. With the first wave of Boomers turning 65 this year, can orthopedic suppliers maintain 5%–10% sales growth rates?

Rank	Last Week	Company	TTM Op Margin	30-Day Price Change	Comment
1	1	Orthofix	13.51%	11.23%	Bob Vaters is now Chief Operating Officer. OFIX just gets more and more attractive.
2	2	Medtronic	32.59	3.56	MDT's high cash flow attracting institutional interest. Second least expensive ortho stock with 33% profit margins.
3	3	Alphatec	1.59	15.02	The price of ATEC's equity is still on an upward trajectory after last year's collapse.
4	8	Wright Medical	6.36	7.35	Announcements daily. New foot & ankle plate. IDE approval for total ankle system. FUSIONFLEX distribution agreement.
5	5	Smith & Nephew	22.83	6.92	The JNJ buyout rumors will not die. New articles out this morning.
6	4	Stryker	24.71	7.33	After Biomet, expectations were low for all players, including SYK. But 15% MedSurg growth turned that around.
7	7	ConMed	9.07	2.7	Who do we think benefits the most from the JNJ + SNN rumors? CNMD. How do you spell scale? L-i-n-v-a-t-e-c.
8	9	Zimmer	27.69	4.01	Believe it or not, the consensus of analysts on Wall Street is that ZMH will report down sales in Q4.
9	6	Integra LifeSciences	15.37	(0.27)	IART has consistently delivered upside surprises to the Street. This time the Street is expecting it.
10	10	Exactech	10.79	(5.31)	Feeling nervous about Q4 report. Consensus on the Street is 2% sales growth but declining earnings.

Robin Young's Orthopedic Universe

Top Performers Last 30 Days

	Company	Symbol	Price	Mkt Cap	30-Day Chg
1	TranS1	TSON	$3.46	$72	96.6%
2	TiGenix	TIG.BR	$2.91	$90	49.3%
3	NuVasive	NUVA	$27.97	$1,100	19.1%
4	Bacterin Intl Holdings	BIHI.OB	$7.40	$266	18.4%
5	Orthovita	VITA	$2.33	$179	15.9%
6	Alphatec Holdings	ATEC	$2.68	$237	15.0%
7	Orthofix	OFIX	$31.39	$556	11.2%
8	Mako Surgical	MAKO	$16.79	$572	11.2%
9	Wright Medical	WMGI	$16.51	$647	7.3%
10	Stryker	SYK	$57.82	$22,960	7.3%

Worst Performers Last 30 Days

	Company	Symbol	Price	Mkt Cap	30-Day Chg
1	ArthroCare	ARTC	$28.08	$759	-10.0%
2	Kensey Nash	KNSY	$25.70	$218	-9.2%
3	Exactech	EXAC	$17.84	$230	-5.3%
4	CryoLife	CRY	$5.44	$153	-0.4%
5	Johnson & Johnson	JNJ	$62.55	171,780	-0.4%
6	Integra LifeSciences	IART	$48.34	$1,370	-0.3%
7	RTI Biologics Inc	RTIX	$2.74	$150	0.4%
8	*Average*			*$12,076*	*1.6%*
9	ConMed	CNMD	$25.91	$729	2.7%
10	Medtronic	MDT	$37.20	$39,930	3.6%

Lowest Price / Earnings Ratio (TTM)

	Company	Symbol	Price	Mkt Cap	P/E
1	Medtronic	MDT	$37.20	$39,930	11.20
2	Kensey Nash	KNSY	$25.70	$218	11.26
3	ArthroCare	ARTC	$28.08	$759	12.40
4	Zimmer Holdings	ZMH	$55.77	$11,010	12.99
5	*Average*			*$12,076*	*13.48*

Highest Price / Earnings Ratio (TTM)

	Company	Symbol	Price	Mkt Cap	P/E
1	Alphatec Holdings	ATEC	$2.68	$237	222.46
2	Smith & Nephew	SNN	$54.83	$9,730	75.93
3	RTI Biologics Inc	RTIX	$2.74	$150	42.67
4	Symmetry Medical	SMA	$9.90	$356	29.81
5	ConMed	CNMD	$25.91	$729	19.92

Lowest P/E to Growth Ratio (Earnings Estimates)

	Company	Symbol	Price	Mkt Cap	PEG
1	Orthofix	OFIX	$31.39	$556	0.63
2	NuVasive	NUVA	$27.97	$1,100	0.85
3	Medtronic	MDT	$37.20	$39,930	1.24
4	Zimmer Holdings	ZMH	$55.77	$11,010	1.32
5	Smith & Nephew	SNN	$54.83	$9,730	1.47

Highest P/E to Growth Ratio (Earnings Estimates)

	Company	Symbol	Price	Mkt Cap	PEG
1	Alphatec Holdings	ATEC	$2.68	$237	3.93
2	Kensey Nash	KNSY	$25.70	$218	3.29
3	ConMed	CNMD	$25.91	$729	2.47
4	CryoLife	CRY	$5.44	$153	2.29
5	Johnson & Johnson	JNJ	$62.55	171,780	2.26

Lowest Price to Sales Ratio (TTM)

	Company	Symbol	Price	Mkt Cap	PSR
1	RTI Biologics Inc	RTIX	$2.74	$150	0.94
2	Orthofix	OFIX	$31.39	$556	0.98
3	ConMed	CNMD	$25.91	$729	1.01
4	Symmetry Medical	SMA	$9.90	$356	1.04
5	Exactech	EXAC	$17.84	$230	1.23

Highest Price to Sales Ratio (TTM)

	Company	Symbol	Price	Mkt Cap	PSR
1	TiGenix	TIG.BR	$2.91	$90	321.16
2	Bacterin Intl Holdings	BIHI.OB	$7.40	$266	21.86
3	Mako Surgical	MAKO	$16.79	$572	15.01
4	Synthes	SYST.VX	$123.54	$14,662	8.13
5	Stryker	SYK	$57.82	$22,960	3.20

THE PICTURE OF SUCCESS

Dr. John Tongue

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

Dr. John Tongue

While there may be a silver lining in difficult situations, the 17-year-old John Tongue probably wasn't thinking about that when his car flipped over repeatedly one rainy night, sending him on a long rehabilitation journey. "I am alive today because I was wearing a safety belt," says Dr. Tongue, Second Vice President of the American Academy of Orthopaedic Surgeons (AAOS).

Years later, the silver lining emerged, and today there are innumerable Oregonians who are alive because of Dr. Tongue. For his work in passing the Oregon Safety Belt Law, Dr. Tongue was honored with both the AAOS Humanitarian Award and the National Highway Traffic Safety Association Public Service Award.

John Tongue's connection to—and interest in—public service began early. "I was born and raised in Portland, Oregon, where my brothers and I gleaned inspiration and education from our father, an attorney, and our mother, a wise woman who handled three sons with grace. My father was a scholar, and a 'lawyer's lawyer,' who donated a great deal of time in volunteer public service in our state. He finished his career as an Oregon Supreme Court Justice. He was a model of integrity and taught us the importance of citizenship. So, I grew up with respect for our institutions of government and appreciate what a marvel the democratic process is. I felt connected to this process, and at a young age felt a responsibility for it."

But the bar exam/a life as a lawyer was not in the cards. Why? Because the *four-year-old* John Tongue had already declared his major, so to speak. "When I was four I was enchanted with a children's book about people helping others. I told my parents that I would become a doctor…and I never wavered."

Dr. Tongue, now a proud community orthopedic surgeon, did have a change of heart with regard to his medical interest. "I was a surgical extern in Bern, Switzerland, and had my sights set on pediatrics. But I couldn't get around the fact that communicating with the mothers was difficult for me. One day I was walking past an OR where the surgeons were pinning a hip. When I saw the fluoroscopy image of the pin cross-

> **"I spent six intense years working on this, and led an Oregon safety belt use initiative petition drive to get 80,000 signatures to get it on the ballot. Then we won! We are the only state to pass a safety belt law by public vote—now 97% of my fellow Oregonians wear seat belts, the highest use rate in the nation."**

ing the hip fracture a switch flipped in my head. I immediately decided that I wanted to do that."

Not only did John Tongue craft a career in hand, wrist, hip, knee, and shoulder, he mastered—and then taught—those communication skills that had plagued him with "the moms." "One of my proudest accomplishments is my involvement in the AAOS Communication Skills Mentoring Program, an effort through which over 40 orthopedists have taught these skills to more than 5,000 of our peers. As part of this program, we conducted an eye-opening study in which we asked fellows how they ranked in terms of interpersonal skills. While they rated themselves as 'excellent,' they were far less charitable when it came to rating their colleagues. At the same time, we surveyed the public, and they agreed with our views of our colleagues: that orthopedic surgeons' communication skills were quite lacking. Our greatest deficiency is the ability to express empathy…we tend to feel uncomfortable with this. While physicians are concerned that it takes more time to show compassion, research shows that it really doesn't, and that patients do better clinically—and report higher satisfaction rates. Fortunately, when we repeated the survey ten years later things had improved significantly."

If John Tongue didn't know how to communicate, he couldn't have lasted. "I have worked and lived in the same community for over 30 years; patients come in with tremendous trust, something that motivates me to live up to

"While orthopedic surgeons tend to be fair and open to ideas, when change is necessary sometimes our first reaction is often 'no.' The key thing is to not put someone in a position where he or she can't 'move down the bench' and change their minds."

"The most common failure in communication is to assume that it has already occurred. This can be counteracted by careful listening, and by saying what we mean and meaning what we say."

their expectations. I think some younger orthopedists greatly underestimate the value of creating a 'deep well of goodwill' just by being a good listener and demonstrating empathy for your patients. Now we are seeing that electronic medical records can be a barrier to patient-physician communication, because physicians' attention is divided."

The goodwill and trust exists not only between Dr. Tongue and his patients, but between the good doctor and his on-call partners. "I have been blessed to work in a hospital with other small group and solo colleagues, and that has given me a substantial amount of flexibility. While I take ER call and weekend call, I also have seven on-call partners to exchange practice coverage with me, allowing me to travel for volunteer Academy work. All of this is done on a handshake."

Without such support, says Dr. Tongue, he would not have been able to give time to the volunteer work on traffic safety issues that has resulted in lives saved and grateful families. "In 1981 I read an article about Mothers Against Drunk Driving in *Time* magazine, and, recalling my car crash experience, I decided to join the Governor's Advisory Committee on Driving Under the Influence of Intoxicants. We got 14 new laws passed. In studying the data about traffic deaths and injuries I was shocked to learn that most Oregonians were not wearing seat belts. I spent six intense years working on this, and led an Oregon safety belt use initiative petition drive to get 80,000 signatures to get it on the ballot. Then we won! We are the only state to pass a safety belt law by public vote—now 97% of my fellow Oregonians wear seat belts, the highest use rate in the nation."

The lessons Dr. Tongue learned during this process will serve him well when he takes the helm at AAOS next year. Dr. Tongue elaborates: "One day I was debating a law professor on the seat belt issue; I had ample data and was brimming with confidence. I was surprised to later read the evaluations and find that he had destroyed me with personal freedom arguments. That taught me that I had to improve my 'pitch.' I learned to mix statistics with compelling stories that people respond to."

"While orthopedic surgeons tend to be fair and open to ideas, when change is necessary sometimes our first reaction is often 'no.' The key thing is to not put someone in a position where he or she can't 'move down the bench' and change their minds. Be respectful, listen with openness, and when you disagree, continue to look for common ground. If you have a good idea and are invested in it then you just need to keep plugging away, improving your knowledge and talking points until others can join you and help resolve the issue."

Dr. Tongue, who will be the first AAOS President from the Northwest, and the first modern day solo practitioner to head the organization, says, "One of my leadership philosophies is that there is an ebb and flow to progress when you're trying to do meaningful work. All of us will fail at some point…we must accept that. To this day I follow the advice of my medical school professor who said that I would learn much more from studying complications than from studying successes."

"The reasons that I am interested in teaching interpersonal communication skills are so that there will be less misunderstanding between surgeons and patients, higher satisfaction for both, as well as a lower liability exposure for surgeons. When I teach residents I tell them that they must be aware of a tipping point where they are working too fast. Their personal satisfaction decreases because they are making errors and not enjoying valuable interactions with their patients and staff. At that point, liability exposure explodes. It can be very seductive to be too busy because you feel important and make more money. But then your home life also becomes compromised."

Yes, he talks…but, says Dr. Tongue, the most important thing he wants to be remembered for at AAOS is listening. "The most common failure in communication is to assume that it has already occurred. This can be counteracted by careful listening, and by saying what we mean and meaning what we say. Also, when we have patient care issues that don't involve surgery, then we often don't fully value the importance of clear, meaningful communication. Related to this is the fact that we don't pay enough attention to matching the treatment to the lifestyle of the patient. There are several non-operative possibilities for

those with knee pain, for example, but it takes time to explain these things to the patients, many of whom may think that surgery is the only answer."

Dr. Tongue is concerned about recent media reports that are critical of orthopedic surgery. "I think it is important to talk to the public about the value of orthopedics…about how our field helps people walk again, get back to work, return to sport, or relieve chronic pain. One of my goals is to undertake a research project on the human and economic value of orthopedics."

While conducting this study, Dr. Tongue will likely consult the history books for details. The fact is, he himself derives strength and courage from reading history. "I recently sat with a group of young orthopedists and discussed their futures, and the future of the field. I told them about the strength I derive from reading history, in particular the founding fathers, whose hard work, ethics and perseverance provide superb lessons for how to conduct one's life. My hero is President Lincoln because he brought the country through extraordinarily difficult times with genuine humility. If I were able to meet him, I would simply say, 'Thank you.'"

These and other profundities stream through the brain of Dr. Tongue all week long. Then, he hits the river. "If I have an evening off I head to the Deschutes River and go fly fishing. It is true 're-creation,' and when I wake up it feels as if someone has scrubbed my brain clean. For more active enjoyment I enjoy skiing on Mount Hood, or hiking along the beautiful Oregon coast. My wonderful wife of 34 years and I are blessed to have raised three healthy, employed children!"

Dr. John Tongue…creating community and, through his traffic safety work, ensuring that communities will survive. ◆

Orthopedic Industry Consolidation? Really?

By Robin Young

Last week's reports of rumors of JNJ (Johnson & Johnson) buying SNN (Smith & Nephew), which started with random trader rumors and then matriculated to "anonymous sources" in *The Daily Telegraph* and knowledgeable sources in *SkyNews*. The rumors, repeated by the *Financial Times* and the *Wall Street Journal*, evaporated into a vague whiff of stock market manipulation by the end of the week.

UK newspaper *The Daily Telegraph* said early in the month that privately owned U.S. orthopedics' group Biomet Inc. (BMET) was set to begin informal talks with SNN about a potential GBP15 billion merger.

Then, on January 8, London-based *SkyNews* City Editor Mark Kleinman wrote in his blog that JNJ had made an indicative offer of more than 750 pence a share for the shares of UK-based Smith & Nephew. According to Kleinman, SNN's board rejected the proposal because it "substantially undervalued" the company. Kleinman didn't say where he got the information.

The next day *Bloomberg* picked up the news and shot it across the world. Then the *Wall Street Journal* upped the ante with additional information on January 10: "Where there's smoke there's fire, and Smith & Nephew is clearly now in play," was how one banker summed up the company's week.

Then on the 14th SNN put out a statement through the London Stock Exchange that said "Smith & Nephew has a long-standing policy of not commenting on press speculation, unless there is a regulatory obligation to do so. However, exceptionally, Smith & Nephew wishes to clarify that it is not engaged in any discussions which could lead to a merger or a takeover."

Porter's 5 Forces/Wikimedia Commons

So there! Put a fork in it, the rumor is over and done.

Still…those reports sure got a lot of airtime and more than their 15 minutes of circulation. After all, "everyone" knows that the orthopedic industry is due for consolidation. Even SNN's CEO David Illingworth has been quoted as saying that orthopedics is likely to go through a period of consolidation.

At last week's JP Morgan conference in San Francisco, CEOs from Zimmer and Stryker acknowledged that the orthopedic industry was likely to go through a period of consolidation sooner than later.

Consolidation is accepted wisdom. Except, isn't orthopedics already one of the most consolidated of all industries?

Seven orthopedic suppliers, for example, generate more than $30 billion in orthopedic product sales annually and represent about 90% of all shipments. That's right. Seven companies ship 90% of all orthopedic products.

In hip and knee reconstruction, five companies (Zimmer, DePuy, Stryker, Smith & Nephew and Biomet) sell nine out of every ten such implants to hospitals.

In spine, nine companies (Medtronic, DePuy, Synthes, Stryker, Zimmer, Ortho-

MorgueFile

fix, Biomet, NuVasive and Globus) have a consolidated 83% market share.

In trauma, five companies (Synthes, Stryker, Smith & Nephew, Zimmer and DePuy) hold 80% share.

Could this industry consolidate further? If so, why would they and how would they?

Harvard professor and strategic theorist, Michael Porter developed the famous Five Forces of competitive and consolidative strategy. They are:

- The threat of new entrants (low in orthopedics)
- The bargaining power of buyers/customers (average but getting much stronger. There are, for example, virtually no costs for switching hip, knee or spine implants.)
- The bargaining power of suppliers (orthopedic implant manufacturers have historically been very effective negotiators within the fragmented hospital market. But, like the rider on the back of a bicycle built for two, insurance companies are leaning very heavily on hospitals to steer their payment decisions with manufacturers.)
- The threat of substitute products (thanks to the FDA and CMS [Centers for Medicare and Medicaid Services], that threat is low and declining).
- Rivalry with competitors. (It is intense in orthopedics. With every surgeon worth roughly $6 million in annual purchases, virtual wars have erupted between manufacturers, rep organization and individual sales people over the signing of contracts with hospitals and clinics).

Balance of Power and Disintermediation

What may be changing is the balance of power between orthopedic implant buyer and implant supplier. Historically, buyers were fairly (and are still) fragmented. Buying decisions were and still are to some extent driven by individual surgeon preferences. In those cases the role of the sales rep is important since they can play a critical role in convincing a surgeon to purchase one product over another.

But new demands from hospitals for comparative effectiveness data, new surgeon consulting restrictions and a more difficult reimbursement environment are, at a minimum, undermining the surgeon champion of years past and may be pushing a form of disintermediation.

Part of the accepted wisdom of consolidation is that larger suppliers will generate more scale efficiencies. Higher sales volumes equal lower per unit production or marketing costs.

But here, we suspect, is where the industry's ability to differentiate products will come under increasing pressure. Most hospital buyers view each manufacturer's products as largely substitutable with another manufacturer's product. Therefore there is really no cost to

switching from, say, a Zimmer knee to a Stryker knee or from a Medtronic spine plate to a DePuy spine plate. Yes, there are differences. But are they substantial enough to **impose a cost** on the buyer who switches?

The Productivity Frontier

Ultimately, the differences between companies in cost or price is derived from hundreds of activities like design, implant profile, manufacturing, the way customers are serviced by their rep, assembling the products, navigating the FDA and CMS processes, training employees and incentivizing buyers to buy.

Porter refers to this as Operational Effectiveness. In many ways, operational effectiveness is at the heart of the current healthcare care system debate. The companies that are paying the healthcare bill in the United States—Medicare, United Healthcare, Cigna, Aetna, Blue Cross Blue Shield—are saying very explicitly that delivery of healthcare products in the United States is *inefficient.*

Think of the maximum value that a healthcare system (and manufacturers are part of that system) can deliver to patients as being a *productivity frontier* that constitutes the sum of all existing best practices at suppliers, hospitals, surgical technique, rehab, etc. at any given time. Think of it as the maximum value (healing, if you will) that our system can create at a given cost, using the best available technologies, skills, management techniques and purchases inputs.

The productivity frontier is constantly shifting. But its trajectory, slope and speed are determined by the pace of technological innovation, managerial innovation and distribution innovation, including the possibility of disintermediation and regulatory innovation.

For at least the past couple of decades orthopedic manufacturers have been preoccupied with manufacturing effectiveness and such programs as Six Sigma or TQM or other benchmarking strategies. But now managerial, distribution and regulatory effectiveness are moving up the priority list and will have more influence on the productivity frontier than ever.

The FDA is probably the greatest single barrier to innovation in orthopedics. Automobile manufacturers, for example, have adopted the practice of rapid changeovers and use that approach to lower cost and improve product differentiation simultaneously. The FDA will not allow for rapid incremental product changes. There is really not much that consolidation can do to affect this.

The Consolidation Strategy

Is consolidation a strategy? By definition, strategies are based on customer needs, accessibility and/or the variety of a supplier's products or services. Stryker, alone among the major orthopedic companies, made a strategic decision years ago to supply hospital beds

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and other MedSurg equipment. Some years, the hospital buying cycle is off and MedSurg sales pull down Stryker's overall performance. This past quarter, however, MedSurg sales rose more than 13% year-over-year and that, in turn, compensated for traditional recon's much lower single digit growth rate.

Stryker's strategy to diversify its product lines to include hospital equipment has given that firm a more consistent rate of sales growth. Stryker defines its customer as the hospital and the surgeon and, has come to the conclusion that a strategy of supplying a broad range of its customer's needs will also create more value for its shareholders.

So, with hospitals looking at orthopedic products as being largely undifferentiated, where the cost of switching is not only low but may in some cases be negative, how does consolidation help?

It probably doesn't.

Attractive Consolidation Candidates

With perhaps this one exception. Small to medium size companies with leading market shares in attractive niche markets might make the only attractive consolidation candidates.

Osteotech, for example, is a small company that has the biggest market share in the allograft bone void filler market with a product called Grafton. Late last year, Medtronic snapped up Osteotech. Two companies, Wright Medical and Tornier, may also fit this one narrow criterion since they hold the leading market shares in such key extremity markets as hand, foot and shoulder.

Finally, ConMed's Linvatec subsidiary is a kind of no-brainer fold-in under any consolidation strategy since it is the market leader in orthopedic power tools.

But consolidation between the top six or seven companies, as was suggested by last week's flurry, seems very unlikely. Indeed, widespread consolidation within orthopedics seems roughly as likely as JNJ breaking up into independent companies. It might make sense as part of some academic exercise, but it won't happen in the real world. ◆

The Payments They Are A-Changin'

By Walter Eisner

Divisions between specialists like orthopedic surgeons and primary care physicians were evident in the debate over healthcare reform last year.

The American Medical Association (AMA), representing many primary care physicians, supported reforms with the anticipated increase of payments for some of their members. The specialty societies, including among others, the American Academy of Orthopaedic Surgeons (AAOS) and the North American Spine Society (NASS), opposed reforms of the ACA (Patients Protection and Affordable Care Act), citing a failure to address a broken sustainable growth rate (SGR) formula dictated by the Medicare Physician Fee Schedule (MPFS) and fear that these changes would reduce patient access to care, particularly as provided by members of the specialty societies.

SGR, Fee Schedules and Relative Values

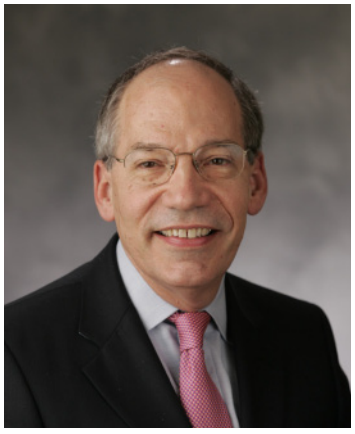
Since 2002, the SGR formula has been the single most important and direct payment policy affecting physicians who receive payments through the Medicare system.

That fee schedule is determined by the resource-based relative-value scale (RBRVS). That scale, in turn, tries to accurately determine the relative costs of providing different physician services. Payment rates are adjusted to account for physician work, practice expenses and malpractice expenses, geography, and there is a factor that converts relative values to dollars.

Wikimedia Commons

The Centers for Medicare and Medicaid Services (CMS) is required to update relative work values at least every five years.

Health economist, Paul B. Ginsburg, Ph.D., writing in the December 8 issue of the *New England Journal of Medicine* (the Journal), says that during an update implemented in 2002, "approximately 900 Current Procedural Terminology (CPT) codes, that mostly involved surgical procedures, **were identified as being improperly valued**. Of these, approximately 750 were reviewed by the Relative Value Update Committee of the AMA. This review resulted in recommendations to increase the values of 477 services and reduce the values of 28."



Paul Ginsburg, Ph.D./AAO Foundation

Ginsburg says that concerns began to surface that the update process, which revolved around those codes proposed by specialty societies for review, was "leading to an undeserved deterioration of the incomes of primary care physicians."

The services with increases in either physician productivity or facility pro-

ductivity should have coincided with reductions in relative values. "But those who delivered the services and had the best knowledge of productivity had no incentive to bring them forward. When coupled with severe resource limitations, shortcomings in the update process appeared to result in distortions in the payment structure."

In other words, no good deed should go unpunished.

New Values and Calculations

By the mid-2000s, Ginsburg says, there was a turning point and an attempt was made to increase the accuracy of the relative value scale and deal with the issue of low payments for primary care physicians.

The Relative Value Update Committee recommended higher work values for evaluation and management services on the basis of increased complexity. CMS accepted these recommendations and increased rates for evaluation and management services by 6.5%.

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An important change was made in 2007, as the method for calculating relative values changed from a "top-down" approach to a "bottom-up" approach. This meant, says Ginsberg, that instead of calculating relative values using survey data on aggregate practice expenses in each specialty, the values would be calculated by direct costs of specific procedures based on the inputs of clinical labor, equipment, and supplies that were identified by "clinical-practice panels."

2010: Physician Practice Information Survey

Then in 2010 even larger changes took place as a new survey of physician practices was incorporated into the calculations of relative values.

Because of a lack of funding to conduct surveys, Congress directed CMS in 1999 to use surveys conducted by specialty societies that met certain standards. As a result, Ginsburg noted that specialty societies that believed that their practice expenses had increased substantially—and which had the resources to do so—contracted for surveys of their members, but others did not, meaning that substantial inconsistencies were introduced into the RBRVS.

Ginsburg says the AMA and many specialty societies jointly sponsored a broad survey of all specialty and non-physician practitioners in 2007 and 2008. This Physician Practice Information Survey replaced the older survey data for the 2010 MPFS. As a result, says Ginsburg, effects on some specialties were substantial. Cardiology and radiology had considerable payment reductions, whereas primary care specialties gained.

The new healthcare law, according to Ginsburg, will likely increase the speed and scope of such reviews. The ACA includes specific directions concerning codes to review, including those for

which there has been the fastest growth in volume, those that have been associated with substantial changes in practice expense, and those recently established for new procedures that had not been reviewed since the implementation of the MPFS.

The Zero-Sum SGR

And therein lays the heart of the divide between physicians. In a zero-sum budget process where the pie of available healthcare dollars is expanding, everyone gets something. However, as healthcare spending expands faster than the overall federal budget, one physician's gain must come at the expense of another.

And that's where the SGR comes in. The SGR tries to control total Medicare spending by adjusting the conversion factor on the basis of previous trends in the utilization (and relative value) of physician services as compared with a benchmark. However, since the SGR sets changes in payment rates for all physicians, regardless of whether their use or mix of services has increased or decreased, it does not change incentives for individual physicians.

The SGR resulted in positive annual updates to the fee schedule until 2002, when a 4.8% reduction occurred. Since then Congress has repeatedly blocked subsequent sharp rate reductions.

Add in an increase of newer and more expensive procedures with requirements to recalculate the relative value of various physician services and you have a recipe for a big political food fight between physician groups.

Payment Reform Strategies

Under the ACA, two distinct strategies call for broadening the unit of payment beyond fee for service and incorporating quality into the payment system.

One strategy expands existing initiatives for Medicare value-based purchasing. The second strategy authorizes extensive experimentation with initiatives—such as bundled payments and accountable care organizations—that would broaden the unit of payment.

The Physician Quality Reporting Initiative was extended through 2014 and becomes mandatory in 2015. Payment rates for physicians who do not report will be reduced by 1.5% in 2015 and by 2.0% in subsequent years.

The physician-feedback program will be strengthened, in part through the development of a transparent episode grouper (i.e., a publicly accessible algorithm that sorts claims into those connected with an episode of care and those that are unrelated). Beginning in

2012, physician feedback will be based on episodes of care and will include adjustments for patient demographic characteristics and health status. Only aggregate reports on physicians will be made available to the public.

Value-Based Modifier Adjustment: Quality/Costs

Ginsberg said Medicare will implement a value-based modifier—a payment adjustment based on how quality compares with costs. Using data developed for the physician-feedback program, CMS will establish a composite of risk-based measures of quality that reflect health outcomes and the health status of beneficiaries.

A parallel composite of appropriate measures of costs will be developed, including the episode-based measures. The value-based modifiers are to be applied to specific physicians or groups selected by the program beginning in 2015 and to all physicians and groups beginning in 2017.

This approach, noted Ginsberg, has some resemblance to high-performance network approaches implemented by some health insurers. The Medicare approach appears to address many of the problems that physicians have had with private-insurer approaches through greater emphasis on transparency of methods, involvement of physicians in the development of these methods, and risk adjustment of both quality and cost measures.

Better Value – Higher Payments

However, says Ginsberg, the reward for better value in Medicare will be higher payment rates, rather than steering patients to physicians with better value. Medicare's efforts will probably have profound effects on how private insurers measure value, if only because of greater provider acceptance; this could influence both pay-for-performance initiatives and network strategies.

Beyond updating the RBRVS, Congress also included a five-year incentive program to increase access for primary care services and general surgery services. For five years, beginning in 2011, primary care practitioners (both physicians and nonphysician practitioners) will receive a 10% increase in payment for primary care services. General surgeons practicing in Health Professional Shortage Areas will receive a 10% increase in payment rates for major surgical procedures.

Payment Reforms Uncertain

Ginsberg says many policy experts believe that the reform of payment methods for physicians and other providers is the most promising method of improving the quality of care and controlling costs.

"The ACA may launch an era of large-scale development of payment methods that incorporate quality and broaden incentives to episodes of care and all services required by patients over a period of time. The outcomes of these efforts are uncertain, but, finally, much stronger initiatives will be pursued. Nevertheless, Congress has still not addressed the prospect of sudden sharp reductions in payment rates due to the SGR. To some people, fixing the SGR would seem easier than reforms of payment methods. But in the political world it is not," concluded Ginsberg. ◆

CORD - a Life Line for Residency Directors

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

Morguelfile

It's 9 o'clock at night…you've already missed your child's basketball game and your spouse is not exactly pleased to be turning out the light without you—again. But alas, you are struggling with an uncooperative/troubled resident, in addition to trying to establish an appropriate method for assessing surgical competence. Then you discover CORD, the Council of Orthopaedic Residency Directors, a new resource that can, among other things, assist orthopedic leaders with best practices. Eureka.

Dr. Keith Kenter, the Chair of CORD who was on the task force that created the organization, describes this unique and uniquely valuable resource, "Along with several colleagues, I worked with the American Orthopaedic Association (AOA) to launch the Council of Orthopaedic Residency Directors. We meet twice a year, hold educational sessions, examine best practices, and exchange ideas about programmatic problems. It is easy for program directors, especially those who are inexperienced, to reach the point of feeling overwhelmed and helpless because they have 'hit a wall' and have no idea how to deal with a problem. CORD is a valuable resource that, with our online blog feature, is available 24 hours a day."

Dr. Terrance Peabody, Second President Elect of the American Orthopaedics Association and former Chair of the AOA Academic Leadership Committee adds, "We held the first CORD meeting nearly two years ago although planning had being going on for several years prior. The AOA was aiming to be a hub for academic orthopedists and a 'home' for those people who run residencies and fellowships. At the same time we weren't connecting with some of the other orthopedic organizations; we had association with ARCOS (The Association of Residency Coordinators in Orthopaedic Surgery), but we did not have a formal way of interacting with them. It was obvious that we program directors were inventing our responses to some critical issues on our own, and had limited interaction with people making the decisions—such as the Residency Review Committee (RRC) and ARCOS. It was time to streamline our efforts."

Take some thin air, add some ideas and sweat equity, and you have the seeds of a new group focused on academic leadership, all within the AOA. Dr. Peabody: "We had no infrastructure and in essence we had to decide under what umbrella CORD should reside. We concluded that the best way forward was to put the new organization under the AOA Academic Leadership Committee governance. After clearing that hurdle, we then had to deal with financing issues. Since it is usually easier for programs to locate funds, we decided to extend membership to programs as opposed to individuals. The other significant challenge of our startup phase was to create a taskforce of members and nonmembers that could identify the benefits of being a member."

Providing specifics, Dr. Kenter states, "One issue that has emerged from our discussions was that of how a program purchases surgical loupes. A member needed to know—and posed the ques-

"It is easy for program directors, especially those who are inexperienced, to reach the point of feeling overwhelmed and helpless because they have 'hit a wall' and have no idea how to deal with a problem. CORD is a valuable resource that, with our online blog feature, is available 24 hours a day."

tion on our bulletin board—if programs allowed loupes to be a departmental expense or if the residents themselves would have to pay for them. Another, broader, example of an early issue involved research. Academic programs need concrete information on how to develop and fund their research programs. There have also been a number of questions on the bulletin board lately about the match process—for example, 'How important are letters of recommendation? Should we dispense with them? Etc.'"

Also, says Dr. Kenter, the age-old issue of fear might be getting in the way. "We are finding that the same people are participating in the bulletin board. We would like it if more surgeons used this as a forum to seek support and advice—and if more than the 'usual suspects' would respond to questions. I am not sure what to make of this limited participation, but perhaps people are intimidated. The bulletin board is in its infancy, so we will see what happens in the future."

Now "sitting atop" 128 member programs, CORD could well grow into the "go-to" organization for program directors who need a place to turn for advice and networking. But first there are the occasional growing pains…Dr. Peabody explains, "While we are experiencing a great deal of success, there is the ongoing issue of the need to prove membership benefits. Why? Because people have differing opinions about what this organization should do for them. For example, when we talk about establishing the most useful goals and objectives we sometimes can't agree on what we would consider essential knowledge and skills."

Some of the good news, however, is that CORD is indeed interacting regularly with other orthopedic entities in order to smooth the way for residents and program directors alike. "CORD has the same fundamental goals as the RRC, so they have been very supportive. Also, we have formalized a liaison membership with ARCOS and we often present at their meetings."

In the trenches of CORD is Jim Weiss, Education and Member Services Manager at the AOA. He says, "I've been in association management for nearly 20 years and have rarely come across such a group of dedicated individuals. They are tireless in their pursuit of excellence and keep me hopping."

Weiss, the staff liaison to the AOA governing committee, is working to help shape the future of orthopedic educa-

"One of the first things that we did was to emphasize learning objectives so that what I teach sports medicine residents in Cincinnati is no different than what someone teaches in Miami or Seattle. The next 'streamlining' project is to compile a list of procedures that we feel are core competencies."

tion. "One of our projects is to define learning objectives for the residents/directors, and to provide them with a reference manual for their programs. We are also working on skills assessments for residents, something that is in great demand by our members. At this point the assessment committee has tested the skills assessment tools that we have developed and they are now ready to be distributed to the general membership so that they can adapt them to their programs."

Elaborating, Weiss says, "Take the process of defining learning objectives. For each subspecialty we had to define the specific learning objectives, i.e., upon graduation a resident in spine should know XYZ. Program directors can then take that basic list and craft a curriculum. Within each subspecialty learning objectives were defined for *both* junior and senior residents. For a junior resident in foot and ankle a learning objective in patient care is, 'The resident will be able to effectively deliver patient care and use his or her clinical skills to facilitate the evaluation of foot and ankle conditions in adolescents and adults.' Then we list the particular skills that the residents should demonstrate. Other areas where learning objectives have been

Andrew Huth

established are practice based learning and improvement, interpersonal and communication skills, professionalism, and system based practice. The good news for program directors is that they can go to the CORD website, take our template, and modify these things as they see fit."

Fundamentally, these efforts should mean that Hip Specialist X in Tucson is learning the same things as Hip Specialist Y in Manhattan. Dr. Kenter: "One of the first things that we did was to emphasize learning objectives so that what I teach sports medicine residents in Cincinnati is no different than what someone teaches in Miami or Seattle. The next 'streamlining' project is to compile a list of procedures that we feel are core competencies. The sticking point here is that one camp feels there should be a set curriculum and the other camp thinks it should be based on the number of cases. Let's say that a resident comes into our program and within two weeks I feel that he is competent in basic sports medicine procedures. Why should this person have to spend another five months with me if they are competent in that arena? I think it makes more sense to say, for example, 'This person needs work in trauma, so let's give them extra time on that rotation.' This is just one of a number of 'minor' points that can have a major effect on training…and that remains to be worked out."

Not content to leave fellows and fellowship directors in the lurch, Dr. Kenter and his cohorts are looking to bring them into the CORD family as well. "While we endeavor to have fellowship programs as members, working out the details for this particular group is, as they say, 'a whole other animal.' At Cincinnati, for example, we have the hand, sports medicine, and spine fellowships under the University umbrella; then there are fellowships that aren't part of any residency institution. Since paying an annual fee allows one person to come to a meeting this can all get a bit confusing. We have gained much experience with the development of the program for residents, however, something that should help lay the foundation for working with fellowships."

Dr. Kenter concludes, "We are thrilled to be bringing quality tools and products to the program directors around the country. There are so many smart people out there directing programs…by putting our heads together we can derive concrete solutions to real problems." ◆

company

NuVasive's Almost $500 Million 2010

NuVasive, Inc. didn't quite reach $500 million in sales for 2010, but the company beat its original guidance for the year and beat 2009 by nearly 30%.

The fifth largest player in the $7.7 billion global spine market announced preliminary unaudited financial results for 2010 on January 10.

Alex Lukianov, NuVasive's chairman and CEO, has always told investors that the company's goal was to eventually reach $500 million in annual sales. In 2010, the company got close with $478 million in revenue. The announcement said revenue results are ahead of previously issued guidance of $470 million to $475 million.

For the full year 2011, the company issued revenue guidance of $525 million to $535 million.

"Based on our preliminary results, we achieved year-over-year revenue growth of nearly 30% and exceeded our non-GAAP earnings per share estimates amid an exceptionally difficult market environment in spine," said Lukianov.

Lukianov added, "In the fourth quarter, we saw strong contributions from our international operations as well as our biologics and cervical offerings, giving us further confidence in meeting our growth expectations for 2011. Our U.S. lumbar business outperformed expectations in the quarter, and could be a source of upside to our guidance range for 2011 and beyond. We anticipate the spine market will remain highly competitive in 2011, but expect our market share taking strategy to continue to fuel growth at several multiples of the industry."

NuVasive is being closely watched as insurance carriers are clamping down on paying for certain fusion procedures. NuVasive has been a key player in supporting medical societies as the societies engage payers.

The company will announce complete financial details on February 23, 2011.

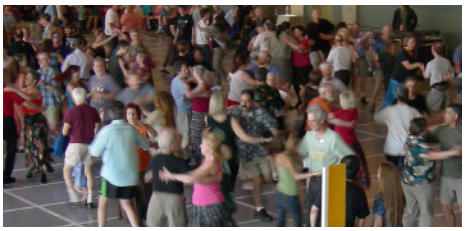
—*WE (January 12, 2011)* ◆

Dancin' at Stryker

Stephen MacMillan must have happy feet and is dancing a jig in Kalamazoo.

His company, Stryker Corporation, just announced an 8.8% increase in net sales to $1.99 billion for the fourth quarter of the year.

Why shouldn't he be happy? He's jettisoned the troublesome OP-1, increased his device footprint by buying Ray Elliott's (Boston Scientific) neurovascular business, and hospitals are buying again.



Folklife/wikimedia

Diversified Footprint

Staying with his favorite new "footprint" metaphor, MacMillan, Stryker's CPCEO (Chairman, President and CEO) said in a January 10 press release, "We took a number of important steps to reshape our company and enhance our competitive position by executing on several strategic acquisitions that are strengthening our core product offerings while also allowing us to further diversify our sales footprint in some of the highest growth segments in medical technology. And with the sale of the OP-1 product family for use in orthope-

Churchill Downs/Wikimedia.org

dic bone applications, we refocused our biologic R&D activities.

"Finally, we utilized our exceptional cash flow generation to further enhance shareholder return with a 20% increase in our quarterly dividend coupled with ongoing share repurchases."

2010 Up 8.9%

The news wasn't just good for the fourth quarter. MacMillan also announced that net sales for 2010 would come in at $7.32 billion, a rise of 8.9% over 2009.

Oh yeah, they're dancing in Kalamazoo especially after one of their competitors, Biomet, just reported flat sales for the fourth quarter.

"Despite ongoing economic uncertainty and a slowdown in elective surgeries, we delivered sales growth at the high end of the range established at the start of 2010. Additionally, we achieved earnings growth above the high end of the stated range while making significant investments in our quality and compliance systems, as well as sales, marketing and R&D," added MacMillan.

Total orthopedic implant sales rose 4.5% to $1.16 billion, while medical surgical equipment sales rose 15.3% to $829 million.

Rosy 2011 Outlook

The financial forecast for 2011 includes a constant currency sales increase of 11%-13% as a result of growth in shipments of orthopedic implants and MedSurg equipment as well as sales from the recently acquired neurovascular business.

"We believe our results for 2010 and our financial forecast for 2011 underscore the strength of our unique sales footprint that is driving superior results in the near term while investing in critical growth areas for the long term," concluded MacMillan

The dancing today is a long way from the moment of dejection and defeat at last year's FDA OP-1 panel meeting as the obviously pained MacMillan made his way out of the door.

Hips, Knees, Spine…

For those keeping track of product categories, here are the numbers:

Stryker 4Q10	Sales $ in million	% Change
Net Sales	$1,995	8.8
Orthopaedic Implants	$1,166	4.5
Hips		6.0
Knees		3.0
Trauma		8.0
Spine		down 3.0
MedSurg	$829	15.3

Source: Stryker Corp.

—WE (January 11, 2011) ◆

Trans1's AxiaLIF Wins Coverage

Great news for Trans1 Inc.

On January 7, the company announced through an 8-K filing that Humana, Inc.

will now reimburse providers for the company's pre-sacral AxiaLIF approach.

Humana recently informed the company that the insurer had changed its spinal surgery reimbursement policy to include coverage for medically necessary interbody fusion procedures when using Trans1's procedure. Humana will reimburse these procedures at the same level as other spinal interbody fusion surgeries for which it currently provides reimbursement.

"We have been working with a firm that has been working with payers, including Humana, regarding new, minimally invasive spine surgery initiatives, including our AxiaLIF," newly appointed company Executive Chairman Rick Randall reportedly said in a January 7 interview.

According to recent Humana public filings, it has approximately 10.1 million medical members and 7.0 million specialty members. The statement from Trans1 said the company believes this coverage decision for the pre-sacral approach to interbody fusion represents the first such decision by any health benefits company in the United States.

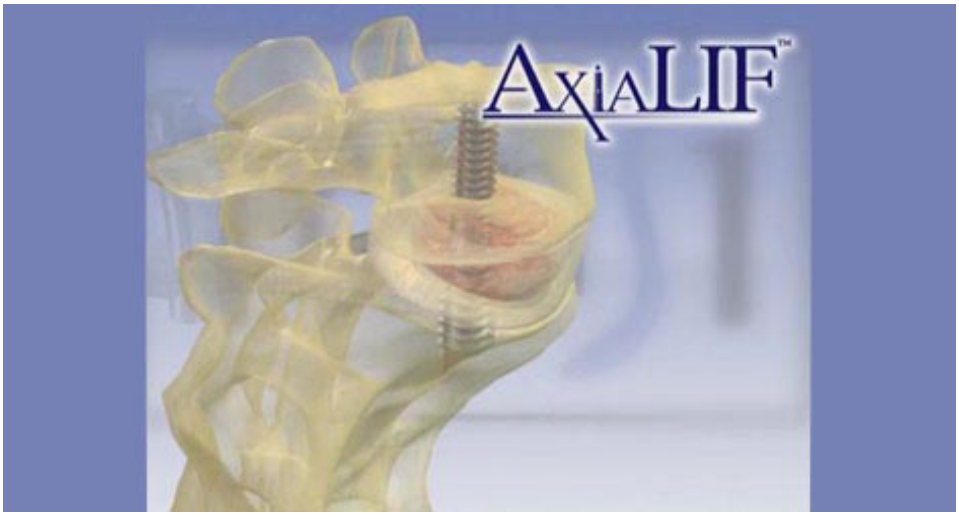
Historically, there has been a lack of consistent reimbursement for the specific CPT code (used to describe specific services performed by physicians when submitting reimbursement claims) used to describe the AxiaLIF interbody fusion surgery, such that some physicians have found it difficult to obtain reimbursement for the procedure.

Stock Rises

The news caused shares of TranS1's stock to jump 80% in early trading on Friday, January 7. The jump made Trans1 the biggest gainer on NASDAQ for the day.

With all the bad news recently about insurance coverage for fusion procedures, Trans1 is offering some new hope.

—WE (January 10, 2011) ◆



TranS1 AxiaLIF

biologics

Astonishing Fracture Repair From DARPA

What if orthopedists, when faced with fractured bones, had a kind of putty that would express stem cells, growth factors and antibiotics in a symphony of healing and regeneration—without requiring nails or pins for fixation?

Chelle/morgueFile.com/Silicon Fractures

Hoping to develop such a substance, DARPA, the research-funding agency of the Department of Defense, funded a collaboration two years ago among a group of biologists, nanoengineers and mathematicians to work on developing such a product. According to a report in the December 29 issue of *The Economist,* they were successful.

The researchers, led by doctors Mauro Ferrari and Ennio Tasciotti, now with the Methodist Hospital Research Institute, Houston, Texas, came up with an idea that could change orthopaedic surgery. Using a chemical called polypropylene fumarate they created a putty that, when applied to a broken bone, solidifies and works like a glue to bring the two parts of the fracture together. The substance not only fixes a fractured bone quickly, it also promotes its regeneration.

The material relies on small spheres of porous silicon to create the material's unique properties. As the spheres dissolve in the patient's body, they release mesenchymal stem cells, proteins and drugs which help the body create new bone tissue. The spheres also contain a cocktail of growth factor molecules

and cytokines that recruit the patient's own stem cells and get them to develop new bone tissue. Antibiotics (to prevent infections), and pain-suppressing drugs complete the package. The compound is in the form of a paste that can be injected with a syringe.

The key to success, says Dr Tasciotti, is timing. Stem cells must reach the site of the fracture, proliferate and turn into osteoblasts at the right moment. If they start to specialize too early, there will not be enough bone cells to heal the fracture. Using computer simulations, the mathematicians in the group found the ideal thickness for the spheres and the ideal size for their pores, so that the spheres degrade and release their content at the right rate. While this happens, the polypropylene fumarate becomes integrated with the body, thanks to protein fragments called peptides placed on its surface

Dr Tasciotti believes the technique will provide enough limb stability that doctors will be able to do away with external fixation devices.

The project, underway for two years, has succeeded on rats, getting the rodents back on their once-fractured legs. Dr. Tasciotti's team is now testing it on sheep, whose legs have more weight to sustain. If these tests are successful, tests on humans may follow soon.

—BY (January 13, 2011) ◆

large joints

Farmers Afflicted With Arthritis Earlier

Tilling the soil and ruining one's joints…researchers from Ohio State University have found that farmers are being affected by arthritis at younger ages than initially predicted. Given existing data, the team expected any instances of disabling arthritis in farmers to begin showing up sometime in their 60s. This was not the case, however.

"As we screened farmers, many of those in their young 50s already had a serious arthritic condition," said Margaret Teaford, an associate professor in the occupational therapy division of Ohio State's College of Medicine, in the news release. "Some farmers told us that by the time they reached age 50 they already knew they would need a joint replacement due to their arthritis. We were very surprised and concerned with what we were seeing."

Teaford and her students partnered with OSU Extension educators to screen farmers, using a tool developed by Sharon Flinn, assistant professor in Ohio State's School of Allied Medical Professions, and her students. To date, faculty members and students have screened nearly 400 farmers at county fairs and community gatherings; additional screenings are scheduled for 2011. The researchers also will re-contact more than 250 farmers deemed to be at higher risk to determine if they are making lifestyle changes based on the educational materials they were provided.

PandaDB/Wikimedia Commons

"We want to receive feedback from them about the materials and resources we provided," added Teaford. "Ultimately, we want there to be standard and effective resources that can help make farmers aware of their risk for arthritis and enable them to prevent the disease or manage the condition appropriately."

Researchers offer several tips and suggestions for farmers to help prevent or manage arthritis. "I know it may sound a little counter intuitive, but exercising and stretching can help warm up muscles and decrease the risk of injury," said Teaford. "Farmers also can adapt their equipment by adding extra handles and steps at key points on tractors and other implements to eliminate jumping to the ground and unnecessary impact on the knees. If you protect your joints, you can really go a long way in managing the disease."

—EH (January 14, 2011) ◆

Zimmer Brings LPS-Flex Mobile Knee to U.S.

Zimmer Holdings, Inc. is bringing its NexGen LPS-Flex Mobile knee with Prolong Highly Crosslinked Polyethylene (XLPE) to the U.S.

The company, in a January 13 press release, says combining prolong poly-

ethylene with its LPS-Flex Mobile knee provides a "revolutionary anteriorly positioned pivot near the entry point of the anterior cruciate ligament, replicating the anatomic center of knee rotation."

Zimmer NexGen LPS-Flex Mobile Bearing Knee With Prolong Highly Crosslinked Polyethylene (XLPE)/ Zimmer

Zimmer was the first company to launch XLPE over nine years ago for the NexGen Fixed Bearing system. Since its launch, the company says the blend specifically formulated for the knee has been utilized in more than 450,000 implantations worldwide and has demonstrated an 81% (CR) and 78% (PS) wear reduction compared to conventional poly during in vitro wear simulator testing.

According to the announcement, during in vitro wear simulator testing, the knee demonstrated an 83% wear reduction compared to conventional polyethylene.

"Our Prolong Highly Crosslinked Polyethylene provides a number of clinical advantages, including reduced wear and delamination resistance," said Jeff McCaulley, Zimmer President, Reconstructive. "Applying this exciting material to our already successful NexGen LPS-Flex Mobile Bearing Knee System represents a major step forward in mobile bearing design."

The LPS-Flex system has more than ten years of clinical history in Europe and Japan with more than 130,000 knees implanted worldwide.

—WE (January 14, 2011) ◆

International Osteoporosis Foundation: Pre-Clinical Symposium

If you want to learn what's happening behind the scenes (under the skin) in the world of bone biology, you might consider attending the International Osteoporosis Foundation's 1st Pre-Clinical Symposium. J.P. David will be lecturing on periarticular bone remodeling, while T. Schinke will cover the details of controlling bone formation. Many others will also contribute through a number of plenary lectures and seven hours of oral presentations. The 1st IOF-ESCEO Pre-Clinical Symposium, highlighting the state of the art in pre-clinical and translational science in bone biology, is to be held from March 22-23, 2011, immediately preceding the European Congress on Osteoporosis and Osteoarthritis in Valencia. The symposium will be chaired by Gerard Karsenty, Professor and Chair, Genetics & Development, Columbia University Medical Center.

The new event is meant for scientists engaged in pre-clinical research in osteoporosis, osteoarthritis and related metabolic bone diseases. In addition there will be "meet the faculty" sessions of interest to up and coming researchers. Some of those on hand to discuss their work include E. Wagner (Inflammation and bone development), A. Teti (The osteoclast in tumoral bone involvement), Ph. Clézardin (Pathophysiology of tumoral bone disease), and M. Kassem (Skeletal stem cell: Basic biology and clinical applications).

All program information as well as online registration and abstract submission is available at **http://www.ecceo11-iof.org**

—EH (January 10, 2011) ◆

Ricardo Stuckert/PR/Wikimedia Commons

spine

First Three-Level GLIF Performed

Alphatec Spine, on January 4, announced that the first ever three-level guided lumbar interbody fusion (GLIF) procedure had been successfully used to treat developmental stenosis associated with adjacent level degeneration. The novel technique was performed on a 62-year-old male patient with spinal instability and developmental stenosis associated with adjacent level degeneration. The surgeon was Dr. Morgan Lorio, an orthopedic spine surgeon at Neurospine Solutions, Bristol, Tennessee.

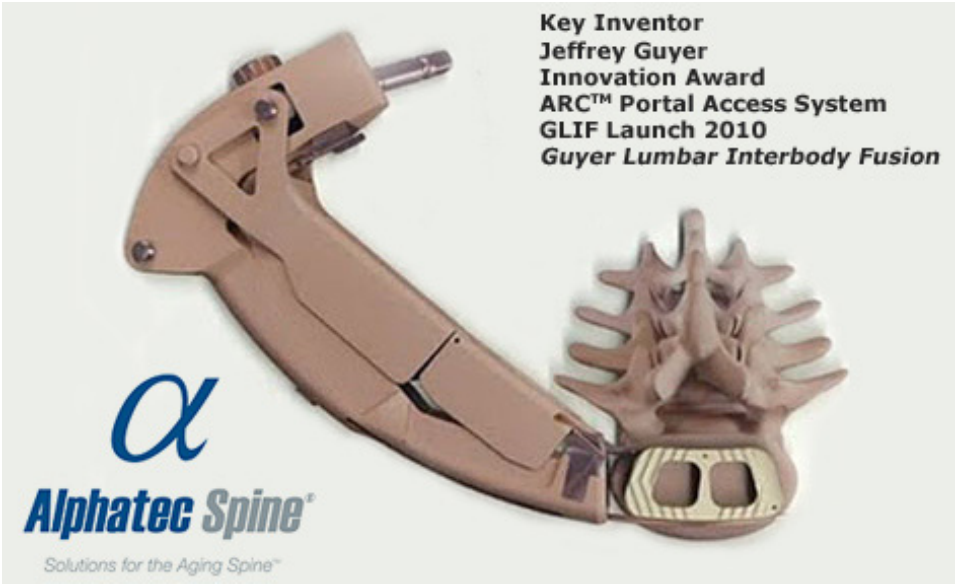
The GLIF technique and the ARC Portal Access System was designed by a team led by Jeffrey Guyer at Alphatec Spine and his team's objectives was to design an instrument which would allow surgeons to achieve full circumferential fusion of the spine (fusion to the front and back of the spine) while the patient remains in the prone position (on their belly).

Before the Guyer team's design, this type of spine fusion required the surgeon to move the patient during the surgery, either starting on their back then flipped to their belly or starting on their side and flipped to their belly. Clearly, moving the patient requires additional operating room time, more anesthesia and theoretically increases blood loss, etc.

The GLIF instrument and technique delivers lateral access with direct visualization to the intervertebral disc space while also allowing the patient to remain in the prone position and avoiding dangerous approaches around the intestines.

When augmented with posterior pedicle fixation, the ARC system eliminates the need to reposition the patient intraoperatively which, of course, should reduce the overall length of the lateral lumbar fusion operation.

Jeffery Guyer



GLIF/Alphatec Spine

Dr. Lorio said: "The GLIF system allowed me to achieve correction in a minimally invasive and timely manner that would not otherwise be possible with any other procedure currently on the market. The differentiated and unique dorso-lateral approach allows you to access both anterior and posterior elements of the spine to allow for a true 360-degree correction."

Dirk Kuyper, President and CEO of Alphatec Spine believes that the GLIF technique "significantly advances the direct lateral approach in the form of a less-invasive and more-efficient lateral interbody fusion technique and the ability to perform a 360-degree procedure without repositioning the patient."

For more information about the GLIF and its lead design engineer, Jeffrey Guyer (son, incidentally of former NASS President Richard D. Guyer, M.D.); **http://www.alphatecspine.com/products/glif.asp and http://jeffsfightwithcancer.blogspot.com/2010/08/guyer-interbody-fusion-device.html.**

—BY (January 10, 2011) ◆

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