VOLUME 7, ISSUE 28 | AUGUST 30, 2011

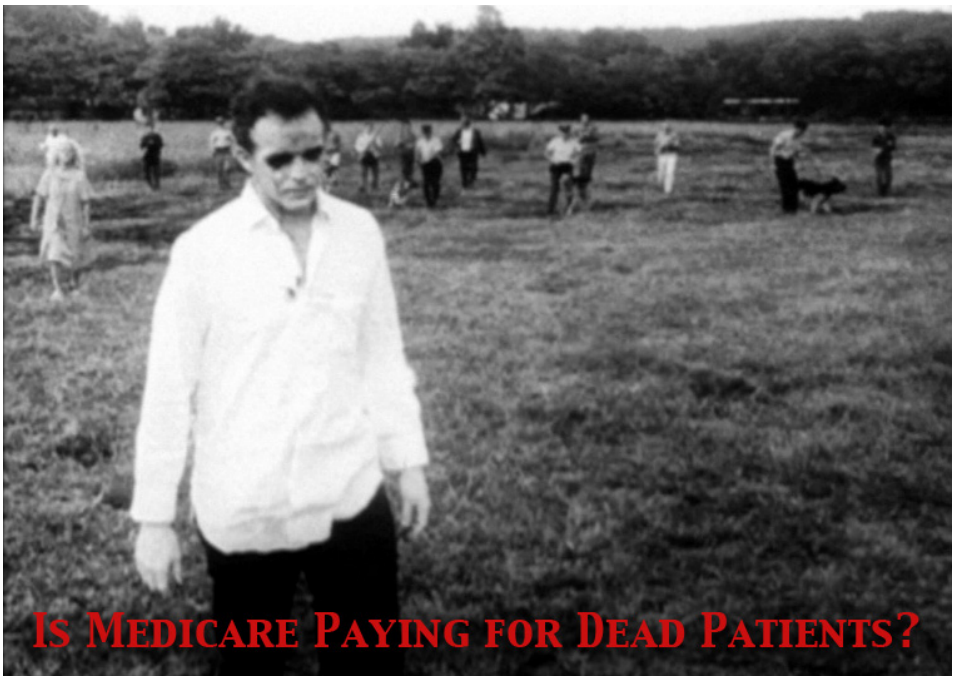
Orthopedics This Week

week in review

4 **Medicare Paying for Surgeries on Dead Patients?** ◆ The Centers for Medicare and Medicaid Services (CMS) paid millions of dollars for hip surgeries, knee surgeries and other orthopedic procedures for dead Americans between 2004 and 2008 according to a new study by PearlDiver Technologies. Who, why, what and how follows. Read on.

7 **Medtronic's New Plain Speaking CEO** ◆ Omar Ishrak, the new CEO of Medtronic, didn't mince words in his debut with Wall Street analysts about mistakes made by previous leaders. He laid it bare and described his vision. By the end of the day, the value of the company had risen $2 billion. What did he say? Read it here.

11 **Reporter's Notebook** ◆ Job offers being withdrawn, ACOs headed to an orthopedic practice near you…see what's going on in orthopedics…on and off the record.



picture of success

24 **Dr. Vernon Tolo** ◆ He has led AAOS, POSNA, and the SRS…he knows the benefits of leading by consensus. And Dr. Vern Tolo, has established the AAOS leadership fellows program, an effort to help ensure that members stay engaged and out front on the issues.

breaking news

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Stem Cell Harvest OK for Donors

Colorado **Doc Injects Stem Cells**

New Cartilage for **Knee Pain**

Strykermobile Begins China Tour

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Wright Medical Compliance Officer Resigns

Dr. Michael Harris Joins Andrews Institute

Study: **AxiaLIF - Low Complications**

For all news that is ortho, read on.

Orthopedic Power Rankings

Robin Young's Entirely Subjective Ordering of Public Orthopedic Companies

This Week: Last week the U.S. Commerce Department said that U.S. GDP growth was 1%. The orthopedic industry revenue growth is, according to a consensus of Wall Street analysts, 9.49%. What is most interesting is that the industry, on average, is expected to report 20% net profit margins on those sales. Despite such remarkable performance vs. the overall economy, the industry is being afforded only a 14x PE multiple.

Rank	Last Week	Company	TTM Op Margin	30-Day Price Change	Comment
1	1	Kensey Nash	34.24%	0.07	Only 3 orthopedic companies rose in value last month, KNSY was one of them and the most profitable by a country mile.
2	5	Zimmer	27.75	(10.95)	Standpoint Research upgraded ZMH from HOLD to BUY. ZMH is also one of the 10 least risky companies says RiskMetrics Group.
3	3	Stryker	25.23	(15.25)	The market is flat out wrong about SYK. At current prices it is 25% under its pre-correction price. PE is 3rd lowest in ortho.
4	2	Johnson & Johnson	26.33	(0.58)	JNJ has been outperforming the ortho industry for months now and, in relative terms, it's now pretty much in the middle of the pack.
5	6	Medtronic	28.63	(5.10)	Plain-spoken, upbeat, new CEO Ishrak delivered the message Wall Street wanted to hear. Creates breathing room.
6	4	Orthofix	14.72	(14.71)	Institutional investors cooling on OFIX. All the reasons we like OFIX remain intact. Rising cash flows. Top line growth. But Wall Street is reassessing.
7	9	Wright Medical	8.76	3.47	Fingers crossed, the compliance officer's departure ends this spate of negative surprises. Institutional investors clearly giving management a break.
8	7	Smith & Nephew	22.8	(11.36)	Near its 52-week low, only 12 PE. But that operating margin is a beautiful thing. Isn't investing about buying earnings and cash flows?
9	8	ConMed	9.65	(10.87)	Hospital capital purchases seemed to revive a year ago but are in the dumps again. CNMD sales growth rate in low single digits.
10	10	Symmetry	7.64	(17.49)	The purchase of Olsen Medical should build SMA's direct-to-hospital sales. Anything to move the operating margin higher.

Robin Young's Orthopedic Universe

Top Performers Last 30 Days

	Company	Symbol	Price	Mkt Cap	30-Day Chg
1	MAKO Surgical	MAKO	$32.42	$1,344	14.60%
2	RTI Biologics Inc	RTIX	$3.31	$183	11.07%
3	Kensey Nash	KNSY	$27.84	$237	6.63%
4	Wright Medical	WMGI	$14.90	$587	3.47%
5	Johnson & Johnson	JNJ	$64.28	176,150	-0.58%
6	Synthes	SYST.VX	$173.67	$20,627	-3.22%
7	Medtronic	MDT	$34.05	$36,126	-5.10%
8	ArthroCare	ARTC	$30.83	$846	-7.69%
9	TranS1	TSON	$4.38	$92	-8.37%
10	CryoLife	CRY	$5.05	$142	-8.68%

Worst Performers Last 30 Days

	Company	Symbol	Price	Mkt Cap	30-Day Chg
1	NuVasive	NUVA	$21.41	$854	-26.38%
2	Symmetry Medical	SMA	$7.88	$286	-17.49%
3	Exactech	EXAC	$14.28	$187	-16.78%
4	Integra LifeSciences	IART	$38.38	$1,056	-16.05%
5	TiGenix	TIG.BR	$1.03	$94	-15.82%
6	Stryker	SYK	$46.17	$17,929	-15.25%
7	Bacterin Intl Holdings	BONE	$1.91	$76	-15.11%
8	Tornier N.V.	TRNX	$22.07	$865	-14.82%
9	Orthofix	OFIX	$35.38	$651	-14.71%
10	Alphatec Holdings	ATEC	$2.44	$218	-14.69%

Lowest Price / Earnings Ratio (TTM)

	Company	Symbol	Price	Mkt Cap	P/E
1	Medtronic	MDT	$34.05	$36,126	10.35
2	Zimmer Holdings	ZMH	$54.18	$10,320	11.68
3	Stryker	SYK	$46.17	$17,929	13.12
4	Johnson & Johnson	JNJ	$64.28	$176,150	13.15
5	Orthofix	OFIX	$35.38	$651	14.68

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4	Wright Medical	WMGI	$14.90	$587	21.29
5	Exactech	EXAC	$14.28	$187	18.79

Lowest P/E to Growth Ratio (Earnings Estimates)

	Company	Symbol	Price	Mkt Cap	PEG
1	Orthofix	OFIX	$35.38	$651	0.85
2	Integra LifeSciences	IART	$38.38	$1,056	0.87
3	Kensey Nash	KNSY	$27.84	$237	1.19
4	Zimmer Holdings	ZMH	$54.18	$10,320	1.21
5	Stryker	SYK	$46.17	$17,929	1.22

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	Company	Symbol	Price	Mkt Cap	PEG
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5	Wright Medical	WMGI	$14.90	$587	1.69

Lowest Price to Sales Ratio (TTM)

	Company	Symbol	Price	Mkt Cap	PSR
1	Symmetry Medical	SMA	$7.88	$286	0.79
2	ConMed	CNMD	$23.44	$670	0.94
3	Exactech	EXAC	$14.28	$187	0.98
4	RTI Biologics Inc	RTIX	$3.31	$183	1.10
5	Wright Medical	WMGI	$14.90	$587	1.13

Highest Price to Sales Ratio (TTM)

	Company	Symbol	Price	Mkt Cap	PSR
1	TiGenix	TIG.BR	$1.03	$94	150.80
2	MAKO Surgical	MAKO	$32.42	$1,344	30.33
3	Synthes	SYST.VX	$173.67	$20,627	5.59
4	Tornier N.V.	TRNX	$22.07	$865	3.80
5	TranS1	TSON	$4.38	$92	3.51

PSR: Aggregate current market capitalization divided by aggregate sales and the calculation excluded the companies for which sales figures are not available.

Medicare Paying for Surgeries for Dead Patients?

By Robin Young

Wikimedia Commons and "Night of the Living Dead"

The Centers for Medicare and Medicaid Services (CMS) paid millions of dollars in benefits for dead Americans between 2004 and 2008 according to a new study by PearlDiver Technologies, Inc.

PearlDiver's analysts found that between 2004 and 2008, CMS paid for 142,000 procedures by 2,119 hospitals or clinics on approximately 4,980 dead patients. Eventually, CMS paid $33 million for those claims.

The type of orthopedic procedures performed on patients coded as "dead" included arthrocentesis aspiration of a major joint, total knee replacements, total hip replacements, knee arthroscopy surgery, fracture repair, shoulder surgeries and spine surgeries.

This isn't the first time that the Centers for Medicare and Medicaid Services have been found to pay for the dead.

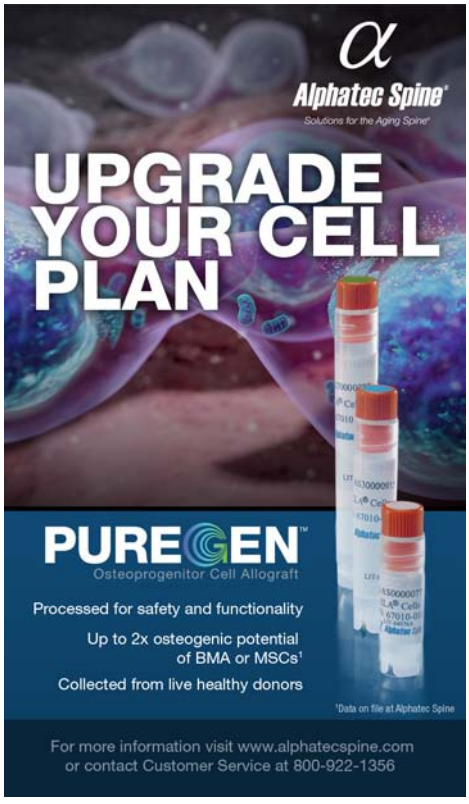
Paying Dead Doctors

In July 2008 the Senate Permanent Subcommittee on Investigations reported that Medicare paid tens of millions of dollars to suppliers improperly using identification numbers of doctors who died years earlier.

According to news reports, the subcommittee's 2008 report stated: "From 2000 to 2007, Medicare paid 478,500 claims containing identification numbers that were assigned to deceased physicians…. The total amount paid for these claims is estimated to be between $60 million and $92 million. These claims contained identification numbers for an estimated 16,548 to 18,240 deceased physicians."

In 16% of these cases, the report said suppliers used identification numbers of doctors who had been dead for more than ten years. In one case, Medicare paid more than 2,000 claims totaling $479,000 for services provided from 2002 to 2007, even though the doctor had died in 1999.

Another doctor died in 2001, but his identification number was used in more than 3,800 claims from 2002 to 2007, with payments totaling more than $354,000.



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Herb Kuhn, deputy administrator of CMS, responded to the subcommittee's report by, first, acknowledging the problem and then laying out CMS's plan for correcting the risk of improper ID numbers. He testified:

"With increasing expenditures, expanding Federal benefits, and a growing beneficiary population, the importance and the challenges of safeguarding CMS programs are greater than ever. Fraud, waste, and abuse schemes have become increasingly complex, and are quick to adapt and stump even the latest oversight strategies of Congress, CMS, and our law enforcement partners."

CMS has, in fact, reduced the rate of fee-for-service error rates. For example, in FY 2005 CMS set as its goal a medical documentation error rate of 7.9% and actually achieved an error rate of 5.2%.

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In FY 2006, the goal was 5.1% and the actual error rate was 4.4%.

In 2008 more than one billion claims from providers, physicians and suppliers for products and services were sent to Medicare for processing. So, it's really no surprise that errors would occur.

Fixing the Dead Doctor Dilemma

As a result of the OIG audit, CMS set about updating, correcting and, where necessary, deactivating provider ID numbers with invalid addresses and/or no claims activity for one year. In addition, CMS subcontracted with the American Medical Association (AMA) to obtain provider data extract files which contain physician dates of death on a bi-weekly basis. On a monthly basis, CMS claims payment contractors were sent a deceased provider identification numbers list and notified to update their physician records.

Five years after the OIG audit, in October 2006, CMS initiated a systematic deactivation of inactive physician ID codes. All told, by 2008 CMS had deactivated 1.5 million provider ID numbers.

Finally, CMS agreed to an information exchange agreement with Social Security Administration (SSA) on July 1, 2008 which provided CMS with monthly updates of the SSA's Death Master File and unrestricted state death data.

In theory, with the SSA death data, CMS is supposed to be able to match deaths with their own provider enrollment database, provider enrollment, chain and ownership system.

But somehow, it appears, CMS forgot to look for dead patients.

But Wait, Even Social Security is Paying Dead People

Ironically, while Medicare was setting up a system to use SSA's Death Master File to correct its death records, a new problem was emerging with SSA's own databases.

Earlier this summer the Office of Inspector General reported that the Social Security Administration erroneously coded approximately 14,000 Americans as dead.

When those errors occur it can have a devastating effect on living beneficiaries. As reported by CNN; "Laura Brooks, of Spotsylvania, Virginia, discovered she had been declared dead when she stopped receiving her disability checks, and her rent and student loan payments unexpectedly bounced. She went to her bank and a representative said her account had been closed because she was dead. Brooks, a 52-year- old mother of two, was already on permanent disability because of a severe depressive disorder, so hearing this turned her already difficult world completely upside down."

In its report, the OIG said that such "erroneous death entries can lead to benefit termination, cause severe financial hardship and distress to affected individuals." In Southern California and elsewhere last year, OIG investigators reviewed 305 Social Security beneficiaries who were recorded as deceased in their Social Security Administration files. At least 140 of them were still alive.

All told, investigators say, more than 6,000 current Social Security beneficiaries are recorded as being deceased. An untold number of them are still, in fact, alive.

Staff members for Rep. Jim Costa's office (D-California) said that their office handled about ten cases in the past four years in which the Social Security Administration incorrectly classified constituents as dead.

Social Security officials have agreed to investigate the correct status of 6,733 potentially deceased individuals identified in the OIG investigation's audit.

The OIG found that $2 million in improper payments were made to the 88 deceased Social Security beneficiaries. The investigators further identified 6,733 Social Security benefit recipients whose master files "contained a date of death." Extrapolating from their smaller sample, investigators estimated that more than $40 million may have been paid out improperly to deceased beneficiaries.

As a result of the new study, at least three dozen potential criminal cases have been forwarded to the agency's Office of Investigations for further inquiry and possible prosecution.

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Paying for Surgeries on Dead Patients

There are 1,908,435 patients coded as "dead" by healthcare providers and then appeared in PearlDiver's CMS records from 2004 to 2008. Of those patients, according to the PearlDiver analysis, approximately 1 out of every 400 deceased Medicare patients had one or more further medical procedures. Every single patient included in this PearlDiver study received their follow-on surgeries three months or longer after their demise. So, for example, if a patient died in March, 2006 but then had a hip replacement 90 days or longer *after* death (say, in July, 2006), they were included in the PearlDiver study. How did PearlDiver discover these needles in the CMS data haystack?

In the words of its President, Benjamin Young (brother of the author): "PearlDiver employs Big Data third generation longitudinal tracking algorithms which allow it to mine the entire 2 billion record data base rapidly and efficiently. As a result, in a matter of minutes PearlDiver was able to mine the entire Medicare database and thereby discover payments to patients who had "died." More typical methods of data mining which employ sampling techniques would not have found these anomalies. "

PearlDiver

PearlDiver is a four-year-old medical data aggregator which started with about 20 million private payer records and is today one of the largest medical data sources in the world with more than 2 billion U.S. patient records. Underlying PearlDiver's data is a search and organization engine that allows researchers to mine entire databases. The ability to mine an entire database is also known as Big Data capability and it is extremely unusual. More typically, data mining companies employ sampling techniques to handle extremely large databases.

Because PearlDiver can rapidly mine virtually any size database, it can uncover such anomalies as, for example, payments for dead Medicare patients. A sampling approach, on the other hand, which examines perhaps 1 in 100 records, would miss an event that occurs in 1 in 400 records—which these payments did.

For clinical researchers, the ability to mine an entire database lets them examine patient outcomes, costs, complications, comorbidities and then, because the mining occurs rapidly, to "play" with the data by varying age, gender and really any other factor. Recently, researchers from UCLA used the PearlDiver data mining capabilities to do a study of adult scoliosis. The resulting paper won the North American Spine Society (NASS) Editor's Choice Award as the best paper of 2010. The researchers will receive the award at the upcoming NASS annual meeting.

In many ways, the future of healthcare is all about improving ways that data is mined, interpreted and used to guide clinical and resource decisions. The curious fact that Medicare is paying for surgeries on dead people (or patients who'd been coded as "dead") is a stark illustration that the current data mining infrastructure for medicine is not yet prepared for the complexities of a changing and increasingly constrained healthcare system. ♦

Orthopedics This Week

VOLUME 7, ISSUE 28 | AUGUST 30, 2011

Medtronic's New Plain-Speaking CEO

By Walter Eisner

Make no mistake about it. The "Age of Omar" has begun at Medtronic, Inc.

From the first sound of his Bangladesh-accented voice, you knew Omar Ishrak, Ph.D., was going to be different from the insiders that have led Medtronic for the last quarter century. By the end of his first quarterly call with Wall Street analysts on August 24, this blunt and plain spoken CEO made it clear that the world's largest medical device manufacturer had made some ill advised decisions in the past and he was going to shake things up.

Investors liked it. By the end of the day, the company's stock value rose by $2.03 billion as its stock price rose by over 6% per share.

Wikimedia Commons/Omar Ishrak/RRY Image Creation

Unvarnished Criticism

Medtronic's new chief was uncharacteristically critical of the company's previous leadership by noting poor execution; an R&D investment strategy that delivered "unsatisfactory returns" and weak acquisition strategies which he promised to be a "lot more strict about" in the future.

Ishrak described the path of the company's troubled spine business as unacceptable and clearly signaled a new focus and strategy.

He didn't mention his predecessor, Bill Hawkins, by name. In fact, also uncharacteristic of "corporate speak" with analysts, Hawkins wasn't mentioned once during the call. There wasn't even the obligatory: "We appreciate the job Bill did, etc., etc."

Second Quarter 2012 – Flat Spine

Oh yeah, there was also a financial report to give for the first quarter of 2012.

Medtronic 1Q12	Sales ($ in millions)	% Change
Total Reported Sales	**$825.0**	**flat**
Core Spine	$610.0	down 2.0%
Biologics	$215.0	4.0%

Source: Medtronic Inc.

The company reported an overall 7% increase in revenue. Reported Spine sales of $825 million were flat with currency adding 3% to revenue. Kyphon continued to struggle as sales fell 13% year-over-year. InFuse sales, after The *Spine Journal*'s hit job, were down 8%, and were decelerating by the end of the quarter.

Ishrak acknowledged the "acute pressure" related to the InFuse articles, as well as the "general ongoing issues with fewer procedures, pricing pressure and the increasing prevalence of physician-owned distributors."

"This has been a difficult journey, but we are still a clear market leader and committed to winning in this market. We're continuing to launch a series of key new products that we believe will

Ishrak Targeting Major Emerging Medical Markets/Wikimedia Commons

have a big impact on our performance." He was particularly happy with Osteotech's contribution during the quarter.

Health Care Economic Value

The former GE executive described his growth strategy within the larger context of a changing health care environment.

He said there is continued pressure on global health care costs where present trends are clearly unsustainable, especially given the demographics in the developed world.

"It is therefore paramount that we… deliver better economic value…The biggest long-term opportunity will be to meet the needs of the billions of people that have no access to health care at all."

Ishrak noted that macroeconomic conditions in many developed countries have led to constrained health care budgets and increased pressure on utilization.

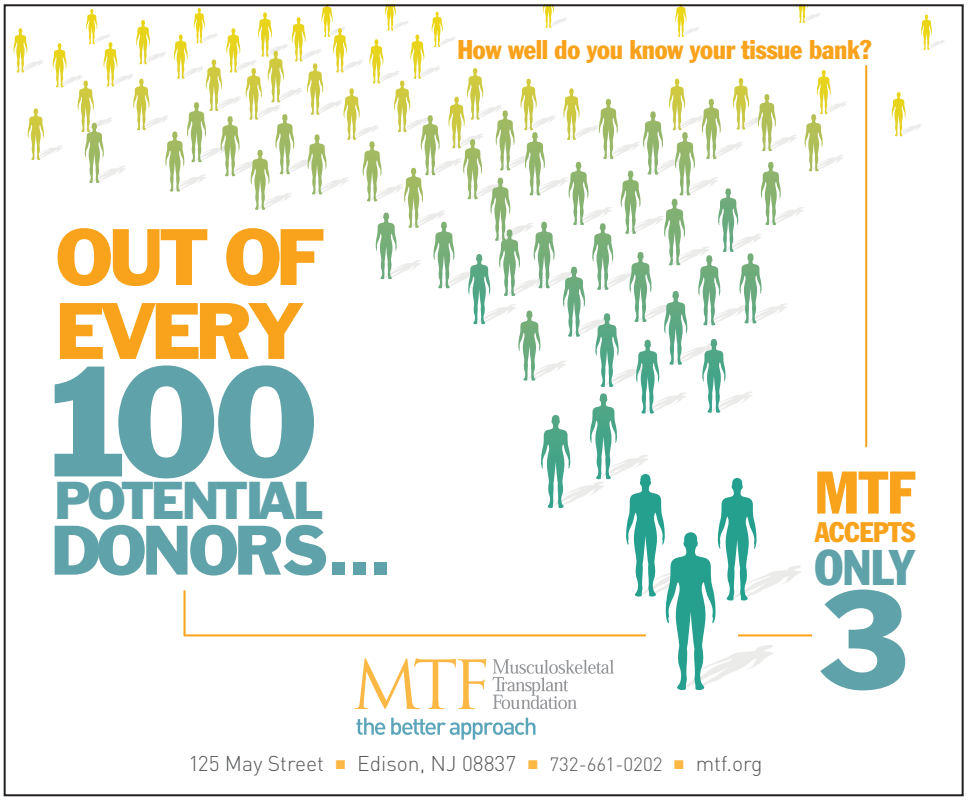
"This directly affects the financial health of our customers [and requires] medical technology that clearly demonstrates customer economic value at both the provider and payer levels."

Medtronic, according to Ishrak, has not consistently given its customers "meaningful and succinct economic value propositions…Successfully demonstrating the clinical and economic value of our technology to our customers on a broad and consistent basis will result in our customers delivering better, more cost-effective patient care, while improving their profitability at the same time."

The Ishrak Vision

As any good visionary leader, Ishrak laid out a simple three-prong strategy to deliver sustained growth:

- Improve execution
- Optimize innovation
- Accelerate global efforts



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Execution

Starting with himself, Ishrak said he will expect more accountability and follow-through on commitments, goals and deadlines at all levels. He noted the company's current operating performance was unsatisfactory as earnings per share rose less than revenue growth.

Innovation

The company has made "significant investments" in R&D over the years with, "frankly, unsatisfactory returns. This is not acceptable, and clearly cannot continue and will require some major changes," said Ishrak.

New investment will have to have the kind of evidence which will clearly demonstrate to customers that Medtronic's new technologies will improve *their* (the customer's) overall profitability.

The company will also look for ways to squeeze new growth from existing therapies, both upstream and downstream, by using diagnostics to better select patients that need Medtronic's products. Downstream, Ishrak wants to develop new business models around "connected care" and chronic disease management for patients who have Medtronic devices.

With longer regulatory cycles and more cost-sensitive buyers, Ishrak said Medtronic's history of focusing on adding new high-end therapies won't work.

"I want our businesses to significantly increase their focus on truly understanding how to expand penetration of our existing therapies. We need to understand, in granular detail, the barriers that prevent our products from becoming the standard of care. We must do this for every product in every major country and prioritize these opportunities by their economic value and also by the degree of difficulty in developing the evidence necessary to prove that economic value."

Global Expansion

Medtronic employees better have their passports up to data because Ishrak says there is no doubt that the global health care opportunity is "immense," and will continue to grow. "We have a very clear view about this, and we're not going to hesitate," he said.

The company will seek to create "potentially disruptive business models directed towards each of the major emerging markets. We will significantly increase our investment in local R&D, manufacturing and strategic partnerships in these regions. We will also be active in helping to build on health care infrastructure where needed."

Emerging markets now represent 10% of Medtronic's revenue and have grown nearly 20% annually for the past four years. "I believe this growth is sustainable," said Ishrak.

Costs are lower in emerging markets. He said his past experience taught him that as you invest in R&D in emerging markets, productivity is enhanced as the expertise gets up to speed. Ishrak is known for establishing GE Healthcare's footprint abroad with medical diagnostic equipment, particularly in China

Company Portfolios

Addressing questions from analysts about the company's current portfolios, Ishrak said, "I like what we have. I think we've got good diversification, a good mix of businesses in different state of evolution. And so I think we can work with what we have right now.

In terms of expansion, Ishrak reiterated his "Upstream/Downstream" vision of looking towards diagnostics in improving patient selection and leveraging on

morguefile

the implant in a patient through the life of the patient as opposed to simply during the implant procedure.

Tuck-In Acquisitions

The pending acquisitions of Salient Surgical and PEAK Surgical, said Ishrak, will allow the company to broaden its portfolio of innovative surgical products. He considers these acquisitions strategic tuck-ins that will have an impact on other business units, including Spine.

He said he won't accept acquisitions because someone thinks the company is behind in the market and wants to fix the problem by buying a business with a long technology cycle.

"I mean we'll selectively do some of that too, but…the two rules that I have around this are: One, I'm going to see a very clear value proposition. I want to see when the return will occur and what needs to happen to get that return. And second, a team that's got a track record of delivering. So I can trust them to produce [results].

Medtronic, Spine and Ortho and Competitors

Ishrak was asked as the biggest player in spine what he thought of J&J's strategy to expand orthopedic offerings due to more bundling, vendor consolidation and more hospitals contracting across all areas of orthopedics.

Replied Ishrak, "In terms of broadening that business, fine, I mean that's not a bad long-term philosophy, but I need to see the team execute. I need to make sure that we execute with what we have and understand that [orthopedic] market, which is a very complicated market with all kinds of ramifications around conflict of interest, physician collaboration, how we go to market, how we even do innovation."

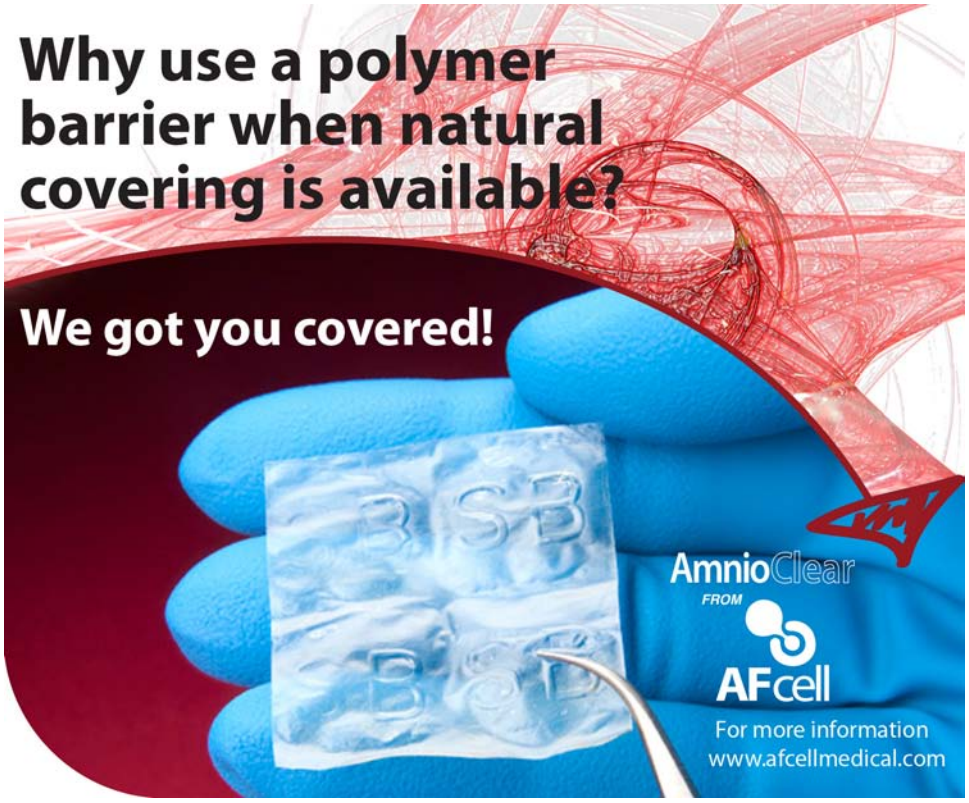
"We need to make sure that we are grounded in all of those areas in a good rigorous process, which follows our basic principles of integrity and patient safety and so on…before we think of expanding it into other areas. And then it's really as simple as that, we just walk before we run here. So have what we have and stabilize it first."

The Spine Surgeon Customer

Ishrak seemed to draw back from his predecessor's declaration of the "End of the Surgeon Champion," by describing the company's focus on surrounding the spine surgeon with other technologies that the company already has.

"We're going to use our Surgical Technologies business. We want to use our navigation business, which is a part of that and our spine implant business and collectively, we think we have a better solution for the customer, which is in many ways more efficient and provides direct economic value that the hospital buyer, in fact, will be sensitive to or responsive to."

Omar Ishrak's plain-spoken debut has encouraged and pleased Medtronic's investors. Now we'll see if his emerging honeymoon with Wall Street can translate into a re-directed, more confident and faster growing Medtronic. ♦



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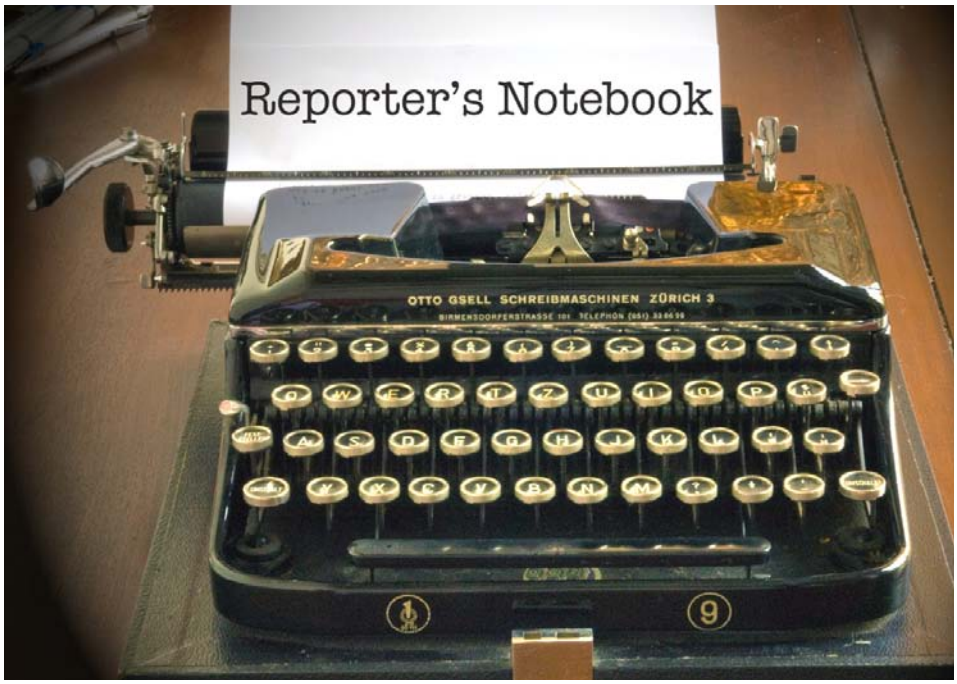
Reporter's Notebook

By Elizabeth Hofheinz, M.P.H.

Dear *OTW* Reader:



Wikimedia Commons

The Great Recession is affecting residents and fellows. "I may not be able to get a job!" Dr. James Herndon, former head of the American Academy of Orthopaedic Surgeons, told *OTW* that for the first time in his career, he is hearing the following from residents and fellows: Dr. Herndon: "Older orthopedists are probably concerned about the economic outlook, and may be making the decision to remain in practice longer. I have even heard of surgeons who have secured offers from practices, only to have those offers withdrawn. We may eventually have a situation where people may begin to shy away from our specialty."

Disclosure rules not clear enough. When you say "financial disclosure" what do you mean?…A leader in the orthopedic field told *OTW*, "When I listen to a presentation and hear a researcher say; 'I or member of my family has received more than $10K'…I want to know how much more! Most doctors will not sell their favorite pen for $10K…we've got to get better at transparency."

Sound familiar? "Medicine is the only field where you tell the payor what something's worth and they turn around and say, 'We'll pay you this. We couldn't have said it better ourselves… the eminent Dr. Claudia Thomas gets credit for that truism. She continued; "Insurance companies brag because they pay 80% of what Medicare pays… hello…the system is not working. Take the multiple tiers out of the private insurance companies and then there will more resources available to those of us who do the hard work to keep people healthy."

Economic dissing? "Orthopedics is increasingly being looked at as a commodity because it is often the leading breadwinner for the hospital. When cardiothoracic surgery was in that position it received tremendous support; nowadays orthopedics is making around 50% of the OR revenue, but we don't have the same support and/or 'PR' because we are not usually dealing with life or death situations. That is not smart on the part of hospitals."—*a voice in the trenches.*

"Sports medicine is flourishing, with a third of all orthopedic residents seeking sports medicine fellowships. The issue is funding. My hope is that the medical profession, the federal government and industry will work together and seek appropriate guidelines to help support all post-graduate education."—Dr. Peter Indelicato, president of the American Orthopaedic Society of Sports Medicine (AOSSM) to *OTW*.

Chris Harner M.D. to succeed Peter Indelicato, M.D. as president of AOSSM. Lisa Weisenberger of AOSSM tells *OTW* that the new presidential line has been announced…Chris Harner, M.D. of the University of Pittsburgh will be taking the helm after the current president, Peter Indelicato, M.D., steps down in July 2012. *Then, AOSSM will have its first-ever female president…Jo Hannafin, M.D., Ph.D., of Hospital for Special Surgery.*

Hospitals cracking down on social media postings. *Some residents have gotten in hot water with their bosses after complaining about patient experiences on*

social media sites like Facebook. *OTW* hears: "Because of this, some hospitals are reworking their social media policies." Worries about HIPPA violations spurring new rules. But will they stick?

Disappointing board scores. **"I hope residents are not getting dumber!"** says a seasoned academic …"We (orthopedics) had a 19% failure rate on the first part of the board exam this year—the highest ever. Is the shorter workweek to blame? Residents are probably not studying when they're at home, and are not following through on case studies. I know the orthopedic knowledge base has exploded, so maybe that can explain this 'red flag' failure rate." *OTW* wonders if Facebook is part of the problem.

Work hour restrictions may bleed into orthopedics. *OTW* hears: "*In general surgery some attendings are actually at home when they are called for a nighttime consult.* They are telling the ER either, 'Call my resident or send the patient to the office.' So, will academic orthopedists begin to think, 'Is it worth it if I am doing what private practitioners are doing but they are earning much more?'" Worries about income disparity and the gap between private practice and academic centers have always been a problem.

Former Pioneer Surgical exec and Mandarin speaking Chip Bao is new Bonovo CEO. Chinese orthopedics company—Bonovo Orthopedics—has a new CEO. Exec Peter Slate says to *OTW*…"Bonovo is doing well and growing rapidly in the China market. Because our business is focused primarily in Asia, we have always felt that eventually it would be best to have a Mandarin-speaking CEO located in China full time."*Translation… Mandarin speaking Chip Bao is the new chief at Bonovo*. Slate will remain on the Board of Directors.

ACOs are on the march in Massachusetts and are headed to an orthopedic practice near you…Dr. Charles Day of Beth Israel Deaconess Medical Center and Harvard Medical School tells *OTW*: "Massachusetts is the first state to try accountable care organizations (ACOs)…and insurance companies are leading the charge. They are saying to primary care groups, 'Here is this amount of money for XYZ diagnosis.' **In some cases, insurance companies are seeking bids, saying, 'Take XYZ diagnosis…how much could you treat it for?'** We don't know how this will affect orthopedists…but it will…and we had better be ready—countrywide—to see things like a one lump sum payout for treating a given diagnosis."

Sterling Bunnell Traveling Fellowship awarded to Dr. Charles Day of Beth Israel Deaconess Medical Center and Harvard Medical School. This award is granted annually by the American Society for Surgery of the Hand (ASSH) so that a young hand surgeon can development of national and international relationships which contribute to his/her pursuit of higher learning and which foster the principles of scholarship of the ASSH.

Dr. Steve K. Lee joining the Hospital for Special Surgery (HSS) *Hand and Upper Extremity Service*. Dr. Lee will also be the research director of the HSS Center for Brachial Plexus and Complex Nerve Injury. Dr. Lee comes from the NYU Hospital for Joint Diseases Orthopaedic Institute where he was associate professor of the Department of Orthopaedic Surgery and served as associate chief of the Division of Hand Surgery.

Advertisement

Texas Medical Board…thumbs up to autologous stem cell treatment? Since Presidential Candidate Rick Perry was treated with his own stem cells, the Texas Medical Board met (at the governor's direction) to discuss how to regulate this stem cell harvesting and processing procedure. Gov. Perry urged the Medical Board to consider the economic and life-altering potential of adult stem cells and recognize the "the sound science and good work that it is already being done." *OTW* hears that the Board is expected to support this approach to stem cell treatment. **We wonder…if performed in the clinic, with the patient's own cells, in a manner supported by the Texas Medical Board, does the FDA have the *right* to weigh in?**

Stem cell system used on Gov. Perry was the RNL BIO system. RNL Bio is an 11-year old Korean biotechnology company—founded by three professors of Seoul National University. The company went public on the Korean stock exchange in 2005. *This system uses the patient's own adipose tissue and then cultures those cells up to an optimum number…cells are then injected back into the patient*. The Texas physician who administered the stem cells to Gov. Perry was Dr. Stanley Jones. Dr. Jones goes "live" on YouTube and describes the RNL BIO system: http://www.youtube.com/user/rnlbio#p/u

In the Yuan family, inventing is in the DNA. Dr. Philip S. Yuan, oldest son of Dr. Hansen Yuan (former president of NASS, ISSAS, editor of the SAS Journal, legendary surgeon and inventor) was just issued a new patent for a novel device to treat vertebral compression fractures. *This father and son have kept the U.S. patent office busy—the office has issued more than 100 patents to these two gentlemen*. Turns out Dr. Philip Yuan, who did his residency under Dr. Steven Garfin and his fellowship with Drs. Todd Albert and Alex Vaccaro, eventually joined the practice of Dr. Hansen Yuan's mentors, Dr. Leon Wiltse and Dr. Douglas Jackson. The younger Dr. Yuan practices at Long Beach Memorial. He and his wife, Ruth, who is a nurse anesthetist, live in Long Beach with their two boys. ♦

Advertisement

company

Strykermobile Begins China Tour

The Strykermobile has hit China to demonstrate and sell the company's products.

Stryker Corp. announced on August 25 that the Stryker Greater China's Mobile Training Center (MTC) is about to begin a one-year, ten-city tour in China. Locations will include smaller locations with limited access to advanced medical technology and educational services and allow for hands-on training, product demonstrations and after-sales services.

Mobile Training Center/Stryker Corp.

The MTC is a convertible truck equipped with, according to the company, Stryker's state of the art medical technology and educational resources that will provide a classroom and lab environment for healthcare professionals around the country. Stryker's training and education team will accompany the MTC and provide systematic education programs as it tours China.

"Healthcare resources are primarily concentrated in China's largest cities," states William Jin, Managing Director, Stryker Greater China. "Surgeons and other healthcare professionals in smaller cities lack access to advanced medical technology and the opportunity to learn new clinical techniques due to deficiencies in funding and facility space. Stryker is the first medical technology company in China to provide a mobile training solution, a breakthrough in the medical device education and training industry in China."

Stryker ventured into China in early 2009 with the opening of a manufacturing plant in Suzhou. —*WE*

—*WE (August 25, 2011)*

legal

Wright Medical Compliance Officer Resigns

Lisa L. Michels, resigned as Vice President and Chief Compliance Officer of Wright Medical Group Inc., on August 16. The resignation was effective immediately.

morgueFile.com and genieslot

In an 8-K filing with the Securities Exchange Commission on August 22, the company stated that Ms. Michels is eligible for severance benefits.

The company's board of directors will retain a recruiting firm to conduct a national search for a replacement. John Knighton, the company's Director of Compliance since 2010, was named as interim Chief Compliance Officer. Before joining Wright, Knighton held various compliance roles for pharmaceutical companies.

Fallen Executives

Noting that Ms. Michels was eligible for severance benefits was in contrast to the announcement in April that former CEO Gary Henley's abrupt resignation was without "good reason" and was therefore ineligible for severance. Henley's resignation was followed by the firing of Frank Bono, the company's chief technology officer and senior vice president for "failing to exhibit appropriate regard for Wright's ongoing compliance program."

In May, three more executives left the company. Raymond C. Kolls, senior vice president, general counsel and secretary was replaced by Thomas L. McAllister, who was appointed interim general counsel and secretary. Alicia M. Napoli, vice president, Clinical & Regulatory Affairs, resigned and was replaced by Max K. Mortensen. Aurelio Sahagun now serves as vice president, commercial operations for Europe, the Middle East and Africa, succeeding Cary P. Hagan. All three executives resigned without good reason, according to the company.

Government Settlement Anticipated

The departure of senior executives is taking place while the company is in the process of concluding a deferred prosecution agreement (DPA) with the U.S. Department of Justice. In May the company notified the government that it discovered that it had violated the DPA earlier in the year.

Company management made very positive comments on their quarterly call with analysts on July 28 about a possible resolution with the Justice Department over the violations.

No further information was provided by the company over the resignation of Ms. Michels or whether the resignation was related to a possible settlement with the government over the acknowledged compliance violations.

Ms. Michels held various regulatory affairs positions in the health care industry since 1999. She began with GE Medical Systems and moved to Baxter Healthcare in 2003 and Smith and Nephew in 2006 before joining Wright in 2008.

She graduated from the University of Wisconsin in 1996 and the University of Tulsa College of Law in 1999.

—*WE (August 22, 2011)*

Advertisement

large joint

Study: Sex After Hip Surgery

Ryan M. Nunley, M.D. has gone where few orthopedists have… and he is getting interesting results. Dr. Nunley, the recipient of the Spring 2011 OREF (Orthopaedic Research and Education Foundation) Current Concepts in Joint Replacement Clinical Practice Award, is assistant professor, Orthopedic Surgery at Washington University School of Medicine, St. Louis. He was principal investigator on a novel retrospective study that examined the return to sexual activity after hip replacement surgery.

Dr. Nunley told *OTW*, "The average age of someone undergoing a hip replacement used to be about 65; now many more people in their late forties and early fifties are seeking these surgeries. Younger patients, some of whom still want to have children, are expecting that they can return to comfortable sexual activity after surgery. We undertook a large multicenter study and sought out particularly active patients (sports and otherwise). There were 943 patients evaluated, all of whom were under the age of 60."

"Patients were evaluated on whether or not they were having better sex and more of it. Many patients had concerns that their hip may dislocate during sexual intercourse, something that can obviously be distracting. Almost 90% said that they had been sexually active since surgery; only 10 patients total said that they had not engaged in sex because of their hip surgery. When we asked about frequency of sex after surgery 44% stated that they had had sex more frequently, 52% said it was the same as prior to surgery, while 4.5% said they were engaging in less sexual activity. When we asked whether the sex was improved after surgery, 70% said that it was better, 28% said it was the same, and 2% said it was worse (citing arthritis in the back and knee as potential other sources of pain the limited their sexual activity)."

"Another important finding was that females have more improvement in the quality and frequency of sex after surgery. Which is important when educating patients about safe activities they may participate in following hip surgery."

—EH (August 23, 2011)

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extremities

Shared Decisions Mean Better Surgery Outcomes

The majority of patients about to undergo carpal tunnel release prefer to share surgical decision making with their surgeons. Those who share it report less severe symptoms than either those who are fully in charge of the decision-making or those who are passive and leave everything up to their surgeons.

The surprising benefit of the middle-of-the-road approach is reported in the August 17 issue of The Journal of Bone & Joint Surgery.

Andrew Huth and RRY Publications LLC

Hyun Sik Gong, M.D., Ph.D., from the Seoul National University Bundang Hospital in South Korea, and his colleagues, investigated preoperative preferences and retrospective perceived levels of involvement in decision making for 78 patients who underwent carpal tunnel release. They used a five-level Control Preferences Scale, ranging from fully active to fully passive, to retrospectively determine the patients' preoperative preferred level of involvement in decision-making, and to assess their actual levels of involvement postoperatively.

The investigators found that 76% of the patients indicated a preference

for shared decision-making before their operation. After surgery, 85% of patients thought that they had experienced shared decision-making

Compared to patients who preferred a fully active or a fully passive role, those preferring a collaborative role had significantly lower scores on the Disabilities of the Arm, Shoulder, and Hand questionnaire.

"The majority of patients with carpal tunnel syndrome preferred to share surgical decision-making with the surgeon, and those who preferred a collaborative role had less severe symptoms than those who preferred a fully active or a fully passive role," the authors wrote.

—BY (August 25, 2011)

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biologics

Colorado Doc Injects Stem Cells

Colorado spine surgeon Kenneth Pettine of the Spine Institute and Loveland Surgery Center, has just performed the first minimally-invasive lumbar disc procedure in the Phase 2 clinical trial of mesenchymal precursor cells (MPC) for the treatment of low back pain and degenerative disc disease. The developer of MPC is Mesoblast Limited, a regenerative medicine company based in Melbourne, Australia. Dr, Pettine is the co-inventor of Medtronic's Maverick artificial lumbar disc device.

The outpatient procedure lasted less than 20 minutes. The patient was fully awake, under light sedation and was discharged by Pettine shortly after. There were no complications.

Commenting on the stem cell treatment, Pettine said, ""This marks the third renaissance in spine care. The first was improved diagnosis using Magnetic Resonance Imaging (MRI), the second was end-stage replacement with artificial discs, and now there is the potential widespread use of adult stem cells for disc repair and regeneration."

In preclinical trials, the company claims that a single minimally invasive injection of Mesoblast's allogeneic MPCs into severely damaged intervertebral discs resulted in significant reversal of the degenerative process, regrowth of disc cartilage, and sustained normalization of disc pathology, anatomy and function for at least six months.

Building on these results, Mesoblast hopes to show through Phase 2 of its clinical trial that a single minimally invasive injection of its allogeneic or off-the-shelf disc repair MPC product can regenerate damaged discs, reduce pain, improve function, and avoid surgery for patients experiencing lower back pain. Mesoblast's Phase 2 trial, which the United States Food and Drug Administration (FDA) cleared in July, will enroll 100 patients with chronic low back pain due to lumbar disc degeneration in 15 centers across the United States and Australia. Researchers will compare outcomes at six months in 60 patients receiving MPC injections against 40 patients receiving control injections.

—BY (August 25, 2011)

Author and Dr. Kenneth Pettine/RRY Publications LLC

biologics

Stem Cells Harvest OK for Donors

A study conducted by the University of Minnesota Medical School shows that mobilizing adult stem cells from bone marrow to their blood using granulocyte colony-stimulating factor (G-CSF) is safe for the adult donors.

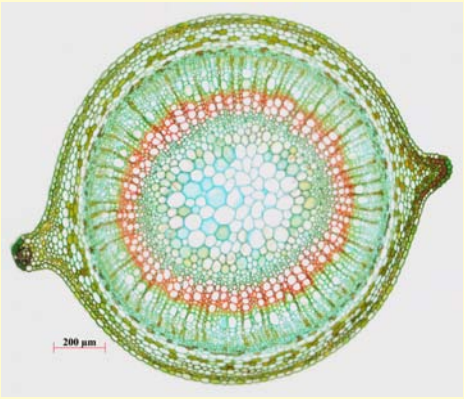
The authors point out that the familiar "bone marrow transplants" are actually adult stem cell transplants. Collecting the stem cells directly from bone marrow is often a surgical, outpatient procedure.

However, the study notes that stem cells can also be collected from peripheral blood if the donors are given the protein growth factor G-CSF (also called filgrastim or Neupogen). This stimulates adult stem cells to move out of the bone marrow and into the blood stream, a process called mobilization. Once in the blood, large doses of adult stem cells can be collected safely and without surgery by a process called apheresis, avoiding bone marrow harvest in the operating room.

According to the authors of the study, since 2003 over 70% of stem cell donors have been asked to donate mobilized cells from peripheral blood. Previously, there had been some concern that high doses of G-CSF given to donors might result in abnormalities in donors' cells.

The study, published in the journal Blood, shows that it is unlikely that the mobilization procedure puts healthy stem cell donors at risk for later development of cell abnormalities. Dr. Jeffrey McCullough, senior author on the study, said, "Our data support the conclusion that G CSF does not induce chromosomal instability through the PBSC."

—BY (August 25, 2011)



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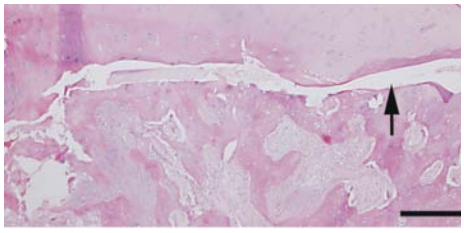
New Cartilage for Knee Pain

In a process not unlike the race to map the human genome, researchers are competing to coax chondrocytes into creating cartilage—the connective tissue in joints that helps to distribute weight and allows bones to slide past one another without causing pain.

Age brings damages to cartilage as does obesity and injuries. Unfortunately, unlike muscle, cartilage has no blood supply, which makes healing difficult.

Researchers can already grow chondrocytes in the lab, but coaxing them to make high-quality connective tissue is the hard part. At the University of Pennsylvania, Professors Jason Burdick and Robert Mauck have been growing cartilage in the lab. Burdick says the team has made a breakthrough by culturing cells in conditions that mimic the body's environment.

The team grows chondrocytes from bone-marrow-derived adult stem cells, embedded in a gel of hyaluronic acid—a growth-promoting molecule in natural cartilage. Next, these gels are compressed by tiny metal pistons that Mauck has developed. These enhance tissue development by simulating physical activity.



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Mauck says the team can now make cartilage that is almost as good as that grown in the human body. In the next month, he will be testing the system in pigs to see how it integrates into the body and withstands physical activity.

Eric Kropf, an orthopedic surgeon at Temple University Hospital, says the technique developed by Burdick and Mauck likely won't apply to pervasive cartilage damage, but he sees promise for contained injuries that can be plugged by the gel.

—BY (August 25, 2011)

people

Dr. Michael Harris Joins Andrews Institute

Michael T. Harris, M.D., an interventional pain medicine physician, has joined the Andrews Institute for Orthopaedics & Sports Medicine. Dr. Harris is a fellowship-trained physician with clinical interests in acute and chronic pain management, headache and neuropathic facial pain, sports medicine, and non-operative orthopedic care.

Michael T. Harris,, M.D.

After completing his medical training at Tulane University School of Medicine in New Orleans, he did a physical medicine and rehabilitation residency at the University of Michigan Hospital in Ann Arbor, and an ACGME-accredited pain fellowship at the University of Michigan.

Asked what specifically he hopes to bring to patient care, Dr. Harris told *OTW,* "With a background in Physical Medicine and Rehabilitation (PMR) as well as Anesthesia Pain Medicine, I hope to bring a complete multi-disciplinary model to treat acute and chronic orthopaedic-related pain. My background in PMR allows me to more fully diagnose musculoskeletal and neurological disease states and prescribe comprehensive rehabilitative options, my background in anesthesia pain medicine allows me to deliver accurate interventional spine and peripheral nerve injection procedures when indicated to alleviate pain for a variety of orthopaedic complaints."

As for what training experience has best prepared him for this new role, Dr. Harris commented to *OTW*, "The unique combination of PMR and an ACGME-accredited pain medicine fellowship has given me a more complete approach to diagnosing and treating orthopaedic pain conditions. In PMR we are not only trained in how to treat general musculoskeletal injuries but neurological diseases such as spinal cord injuries, stroke and peripheral nerve complaints. The pain fellowship has given me the skills to tackle these problems on not only a rehabilitation level but also on an interventional level."

—*EH (August 24, 2011)*

spine

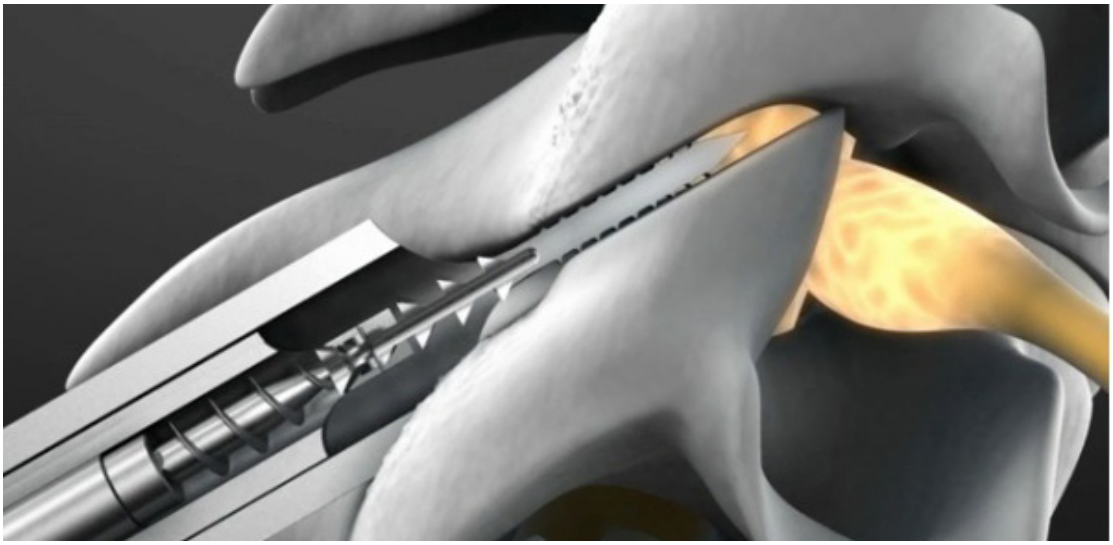
Neck and Arm Pain Treatment Receives CE Mark

Providence Medical Technology, Inc. has received CE (Conformité Européenne) Mark for its DTRAX Facet System, the first and only percutaneous titanium implant placed posteriorly within the cervical facets for the treatment of cervical degenerative disc disease.

DTRAX Facet System/Providence Medical Technology, Inc.

According to the August 22 company announcement, the device is placed within the facet joints, under X-ray guidance, through one centimeter access tubes and provides indirect decompression and stabilization to treat neck and arm pain.

The company also completed enrollment of a 60 patient prospective, multi center clinical trial to evaluate the safety and efficacy of the device. Sigurd Berven, M.D., recently presented data from the study which, according to the company, demonstrates symptom improvement comparable to anterior discectomy and fusion (ACDF) and total disc replacement (TDR). The presentation was in July at the Scoliosis Research Society's annual meeting in Copenhagen, Denmark.



Posterior Approach/Providence Medical Technology, Inc

Jeff Smith, Providence Medical's CEO told *OTW* that ACDF is the gold standard among spine surgeons treating cervical pathology and represents 90% of all cervical surgeries with excellent clinical outcomes. It is technically straightforward and has favorable reimbursement and associated implants are offered by 100+ manufacturers.

ACDF Drawbacks

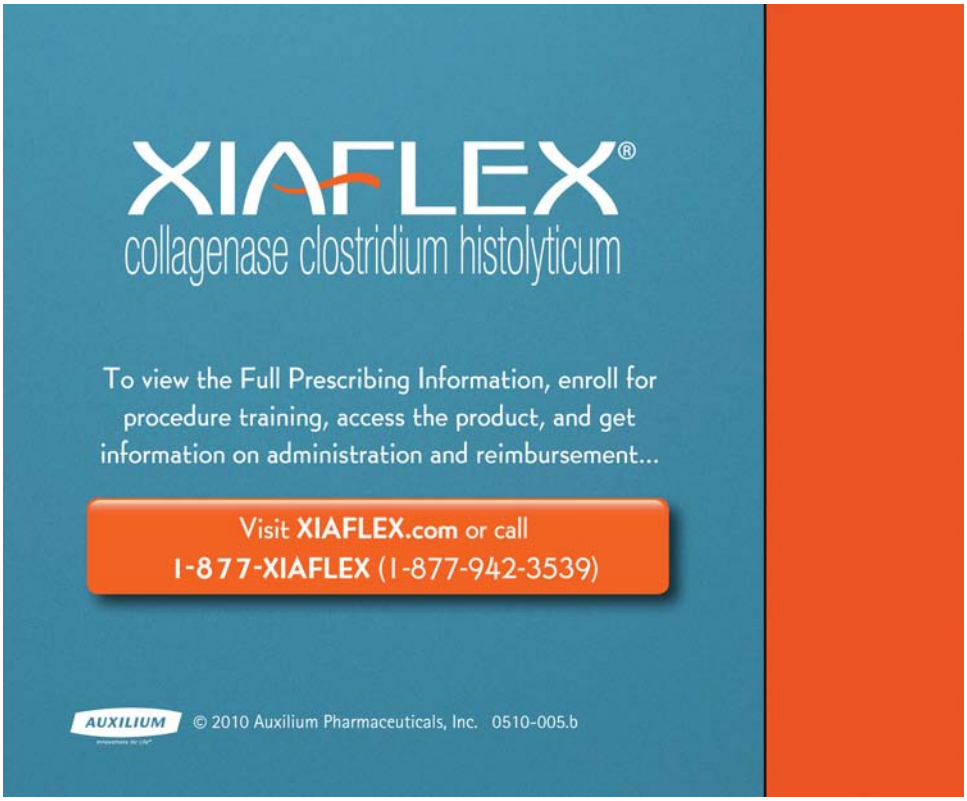
"ACDF, however," says Smith, "is not without drawbacks. Post operative complications related to the anterior approach include difficulty swallowing (dysphasia) and vocal hoarseness (dysphonia). *SPINE* published a literature review by Fountas et al. in 2007 (Volume 32, Number 21, pp 2310-2317) examining ACDF complications in 1,015 patients undergoing first time ACDF. Overall morbidity was 19.3% (195 of 1,015 patients). The most common complication was the development of isolated postoperative dysphasia."

Posterior Rationale

Smith says the idea behind DTRAX is "to offer surgeons an additional option for the treatment of neck and arm pain. We believe DTRAX can be offered earlier in the continuum of care after conservative therapy fails. We believe DTRAX will be an option for patients that do not require a complete anterior discectomy. The technique avoids open surgery; the complications associated with the anterior approach, and preserves more invasive options if necessary.

"To be clear," added Smith, "we do not expect DTRAX to replace ACDF. That procedure has an important role in the treatment of cervical pathology. We do believe DTRAX represents an important new tool for surgeons and an attractive alternative to open surgery for patients."

—*WE (August 23, 2011)*



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Low Back Pain Patent Claim Allowed

Austin, Texas-based Spinal Restoration, Inc. has received a notice of allowance from the U.S. Patent and Trademark Office (PTO) for claims concerning the delivery device and method of use of the company's Biostat System for the treatment of discogenic low back pain.

A notice of allowance, according to the patent office, means the company is entitled to a patent under the law and has three months to pay the patent issue fee.

The Biostat system consists of a human-derived, biologic tissue sealant and a unique application system specifically designed to deliver the sealant to the intervertebral disc. The allowed claims are directed to the delivery system as well as kits and methods for using the system.

Gary Sabins, company president and CEO, said on August 23 that the PTO notice of allowance strengthens the company's broad intellectual property portfolio.

Studies and Outcomes

In March of 2010, Spinal Restoration became the first company to initiate a Phase III study of a biologic therapy for discogenic low back pain. According to the company, the 260 patient Phase III study is currently enrolling subjects at 20 centers across the U.S. If successful, the company believes the study could have an extensive, far-reaching impact on the diagnosis and treatment of discogenic chronic low back pain that affects an estimated four million adults in the U.S. annually.

On August 16, the company announced that the final 2-year outcomes from a 15- patient FDA regulated pilot study of the system were presented by Way Yin, M.D., at the Annual Meeting of the International Spine Intervention Society (ISIS). The study, according to the company, demonstrated that the encouraging outcomes reported at the 6-month primary endpoint were well maintained through the final 2-year evaluation.

Medical Advisory Board

Dr. Yin is on the company's Medical Advisory Board along with Stephen Hochschuler, M.D. and Ralph Rashbaum, M.D., co-founders of the Texas Back Institute. Other advisory board members include: Hyun Bae, M.D., Jeff Lotz, Ph.D., Martin MacPhee, Ph.D., Wayne Olan, M.D., and Kevin Pauza, M.D.

—*WE (August 23, 2011)*

Biostat System/Spinal Restoration, Inc.

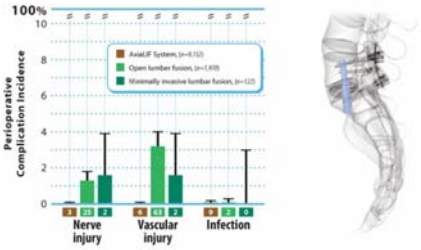
Study: AxiaLIF - Low Complications

A study published in the September issue of the *SAS Journal* says Trans1's AxialLIF's complication rate compares favorably to open fusion approaches.

Coverage

Is Trans1 finally going to get some love from insurance carriers that have balked at covering the procedure due to a lack of clinical evidence in peer reviewed journals? The company tells OTW that five papers have been accepted in peer review this year. This is the first to be published while more are coming related to efficacy.

Last January Humana Inc. changed its reimbursement policy to include coverage for the presacral approach at the same level as other interbody fusion surgeries.



Graphics Courtesy of Elsevier and Trans1

Complication Rate Findings

The study, "Complications with axial presacral lumbar interbody fusion: A 5-year postmarketing surveillance experience," was conducted by Mukund I. Gundanna, M.D., Larry E. Miller, Ph.D. and Jon E. Block, Ph.D.

The researchers found a 1.3% overall complication rate in a retrospective analysis of 9,152 AxiaLIF patients. No deaths were reported.

AxiaLIF's complication rate compares well to the complication rates found in open fusion approaches, which range from 1.5% to more than 8%, according to the study. If carriers accept this evidence, AxiaLIF simply becomes another fusion procedure.

The procedure utilizes an axial presacral approach. According to the study, a single-level L5-S1 fusion was performed in 8,034 patients (88%), and a 2-level (L4-S1) fusion was used in 1,118 (12%). A predefined database was designed to record device- or procedure-related complaints via spontaneous reporting. The complications that were recorded included bowel injury, superficial wound and systemic infections, transient intraoperative hypotension, migration, subsidence, presacral hematoma, sacral fracture, vascular injury, nerve injury, and ureter injury.

Complications were reported in 120 of 9,152 patients (1.3%). The most commonly reported complications were bowel injury (n = 59, 0.6%) and transient intraoperative hypotension (n = 20, 0.2%). The overall complication rate was similar between single-level (n = 102, 1.3%) and 2-level (n = 18, 1.6%) fusion procedures, with no significant differences noted for any single complication.

The authors concluded that axial interbody lumbar fusion through the presacral approach "is associated with a low incidence of complications."

From their lips to insurers' ears.

This study was supported, in part, by TranS1. The company provided the authors with access to their complaint-reporting database.

—WE (August 26, 2011)

trauma

Prunes Help Prevent Osteoporosis

More fiber, less fracture…the incredible prune. A researcher from Florida State University has found that people who want to maintain or improve their bone health might want to reach for some dried prunes.

"Over my career, I have tested numerous fruits, including figs, dates, strawberries and raisins, and none of them come anywhere close to having the effect on bone density that dried plums, or prunes, have," said Bahram H. Arjmandi, Florida State's Margaret A. Sitton Professor and chairman of the Department of Nutrition, Food and Exercise Sciences in the College of Human Sciences, in the August 16, 2011 news release. "All fruits and vegetables have a positive effect on nutrition, but in terms of bone health, this particular food is exceptional."

Dr. Arjmandi and a group of researchers from Florida State and Oklahoma State University tested two groups of post menopausal women over 12-months. The first group, consisting of 55 women, was instructed to consume 100 grams of dried plums (about 10 prunes) each day, while the second—a control group of 45 women—was told to consume 100 grams of dried apples.

The group that consumed dried plums had significantly higher bone mineral density in the ulna and spine, in comparison with the group that ate dried apples. This, according to Arjmandi, was due in part to the ability of dried plums to suppress the rate of bone resorption, or the breakdown of bone, which tends to exceed the rate of new bone growth as people age. The study, "Comparative Effects of Dried Plum and Dried Apple on Bone in Post Menopausal Women," was published in the British Journal of Nutrition.

"In the first five to seven post menopausal years, women are at risk of losing bone at a rate of 3 to 5% per year,"

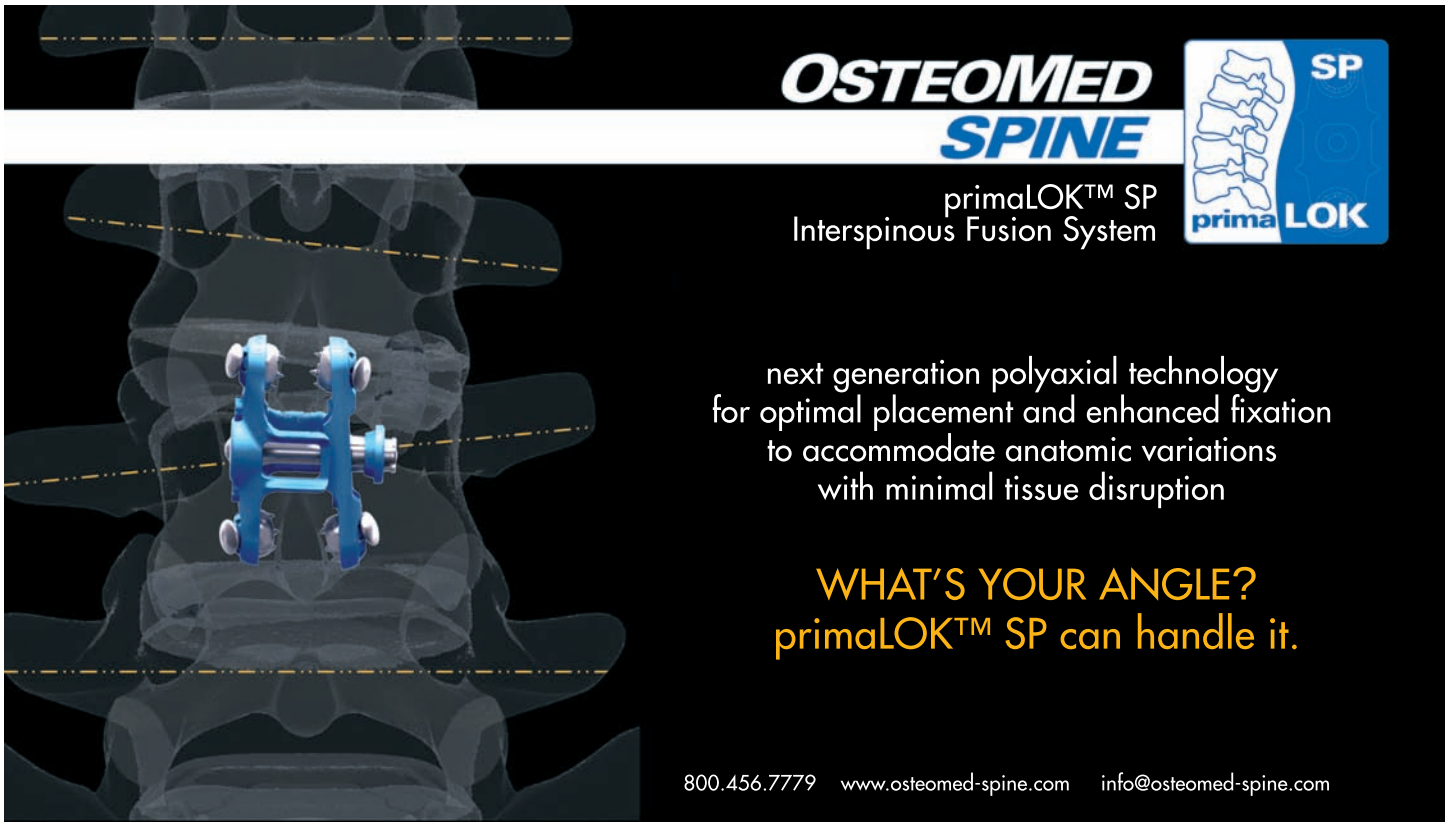
Wikimedia Commons and Paternal 1

Arjmandi said. "However, osteoporosis is not exclusive to women and, indeed, around the age of 65, men start losing bone with the same rapidity as women."

"Don't wait until you get a fracture or you are diagnosed with osteoporosis and have to have prescribed medicine," Dr. Arjmandi added. "Do something meaningful and practical beforehand. People could start eating two to three dried plums per day and increase gradually to perhaps six to ten per day. Prunes can be eaten in all forms and can be included in a variety of recipes."

Dr. Arjmandi told *OTW*, "Although I started my research using pure synthetic compound such as estrogen, I have always been interested in finding alternative therapies that can help postmenopausal women. However, dried plum was not on my list of priorities until I was approached by the California Prune Board (present: California Dried Plum Board) in 1996 to conduct an animal study for them and now the rest is history. I was surprised to learn that prunes or dried plums as a whole are far more efficacious than any of its compounds or forms, e.g. prune juice, puree, pulp, etc."

—EH (August 25, 2011)



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THE PICTURE OF SUCCESS

Dr. Vernon Tolo

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

Dr. Vernon tolo

Not much had changed in North Dakota between 1860 and 1960—except perhaps cars and electricity. The one room schoolhouse, for example, was still there when the future president of three different surgeon societies, Vernon Tolo, sat down on a wooden bench to begin a lifetime of learning. In the wind swept expanses of North Dakota, pioneers didn't choose the land, it chose them. And scratching a living out of the sea of grasses known as the prairie created a special breed of person.

When you can stand on a small hill, for example, and see to the curve of the earth, you learn the true meaning of vision and possibilities.

"The town I was raised in had 75 people," remembers Dr. Tolo. "In that kind of environment you have to learn to appreciate what each person brings to the table. That was when I learned to lead by consensus."

"People remember you for how you treat them not for what you accomplish." Wise and kind-hearted, Vernon Tolo would have been a good minister…*if* he had decided to follow in the family footsteps. "We had nine ministers in our family—including my father—and at one point I received a scholarship to a theological seminary. I was a substitute minister for a while, but decided to go into medicine because I could help people concretely *and* counsel them somewhat."

Today, as Dr. Tolo looks back at the formidable arc that describes his career, this former president of the American Academy of Orthopaedic Surgeons (AAOS), former president of the Pediatric Orthopaedic Society of North America (POSNA) ***and*** former President of the Scoliosis Research Society (SRS), recalls several key milestones in his life.

At one point, for example, he saw the handwriting on the far-off wall…and it said, "Where have all the orthopedists gone?" Dr. Vernon Tolo was concerned about the society-wide trend of individualism that was resulting in decreased participation in organizations.

"During my tenure at the helm of AAOS I read the book, 'Bowling Alone,' which discusses the increasing tendency for people to drop out of group participation. I wanted to try to head off any trend for declining participation from AAOS members and loss of leaders in the years ahead...particularly with the dramatic decline in participation by U.S. doctors in the AMA from about 65% in the mid-60s to 25%-30% in 2000."

His solution? Create leaders. "I established the AAOS leadership fellows program, an effort whereby people under the age of 40 spend a year with a mentor who was experienced with the Academy. It has been a real success, with many more applications received than places available."

In teaching younger orthopedists, Dr. Tolo highlights the thread that runs through both the ministry and medi-

"I wanted to try to head off any trend for declining participation from AAOS members and loss of leaders in the years ahead...particularly with the dramatic decline in participation by U.S. doctors in the AMA from about 65% in the mid-60s to 25%-30% in 2000."

cine…listening. "I tell residents and fellows that if they ask a question of a patient that they need to listen to the answer. It sounds obvious, but everyone is so busy that the patient's perspective can get short shrift. Since I interact with children it is especially important because their thoughts and concerns can easily get pushed to the background."

Kids just "are." They are hurt and they want help…it's very straightforward. "We pediatric orthopedists never have to worry about a workers compensation situation with children; there is never any secondary gain. More than anything else, working with young patients who have scoliosis and spinal deformities has changed my career. They are so appreciative and are much more resilient than older patients."

So how did he come to orthopedics in the first place? "It was a joyful, radical shift in my life when I was accepted to Johns Hopkins medical school. I did two years of general surgery at Hopkins after med school and was headed for cardiothoracic surgery when I was called up by the Army. I was assigned to orthopedics and the rest is history. Why? Because in general surgery there were higher rates of death, whereas with orthopedic patients I had a good chance of improving people's lives. During my time working at Valley Forge General Hospital, we had 350 orthopedic inpatients and 120 coming in every week from Vietnam. Fortunately, we had thorough teaching conferences—it was almost like a residency."

Dr. Tolo's love of orthopedics led him to want everyone to know the wonders of this field. As head of AAOS, he consistently advocated for further opening orthopedics to women and minorities. When asked how he came to care so much about this issue, Dr. Tolo replied, "I grew up in a very homogeneous population of whites of Scandinavian heritage. When I went to medical school at Johns Hopkins in 1964 I was surprised to find racially-segregated hospital wards. I don't consider myself to be a crusader but I wanted to use what influence I had to open up opportunities for under-represented individuals—both women and racial minorities—to become orthopedic surgeons. Also, it has been shown that patients of minority groups often prefer being treated by physicians from a similar background."

"Regarding women, with medical school classes being around 50% women, orthopedics is missing out on some of the best and brightest if we do not provide role models and opportunities for women to select orthopedics for their life work. I am fully cognizant that including more women and minorities in our field is a long term goal…I am glad, however, that we have made some progress."

As the editor of the *Journal of Bone and Joint Surgery*, Dr. Tolo is in a good position to witness other trends in the field. "Manuscript submissions rise just about every year…we received over 2100 manuscript submissions in 2010. Of those, we only accepted 18% for publication. We are seeing more submissions from China and India, with some of the best studies coming out of the Scandinavian countries. This is because everyone there has a health number and can easily be tracked; that means they can do a lot of randomized controlled trials (RCTs). Physicians in the U.S. see it as

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hard to do RCTs on surgical patients; it's not easy, but it can be done."

Even Dr. Tolo, who says that he thrives on optimism, can feel that his efforts are being thwarted. "Within a year of completing my fellowship in pediatric orthopedics in Toronto, I had become the chief of pediatric orthopedics at Hopkins, I got my first lessons in the frustrations of administration. Developing that program was a real mountain climbing effort, with the focus in academic orthopedic programs being on adult orthopedics more than on kids. My advice to those in the position of program development is: assess the current situation, find out what needs particular attention, and work on those things one by one. You'll need a multi-year operations plan that involves *realistic* opportunities based on resource availability."

Dr. Tolo spent 11 years refining his administration skills at Johns Hopkins. "I'm proud to say that by the time I left in 1987 we had become one of the premier treatment facilities for scoliosis. Part of how I developed this program was that I spent a lot of time talking to school groups and parent organizations. When I first came here to Children's Hospital Los Angeles I was the first full time pediatric orthopedic surgeon. Also, neither the academic program nor the research efforts were especially strong. Now we have nine full time pediatric orthopedists, several endowed chairs, and a great gait analysis lab."

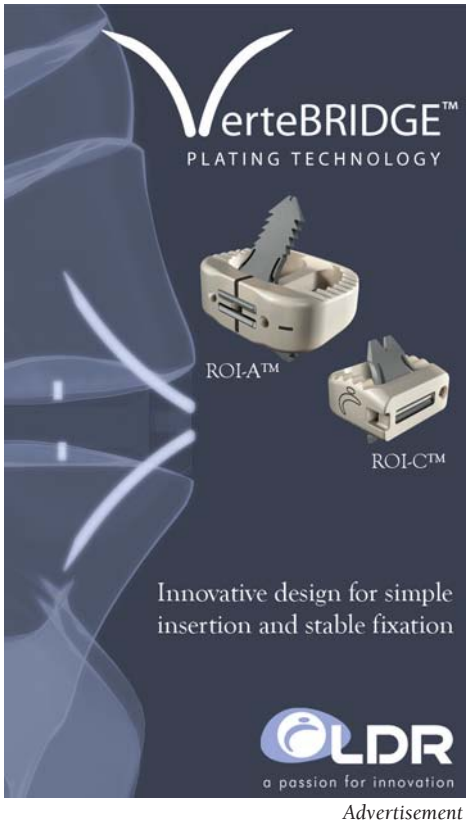
Reflecting on the changes in pediatric orthopedics, Dr. Tolo states, "Years ago we did all kinds of orthopedic surgery on the pediatric patients, whereas now pediatric orthopedists are even specializing more (hip/spine/tumors, etc.). Advances in imaging have changed what we are able to do, such as in tumor surgery, where we now are able to identify exactly where a tumor is and go in and treat it expeditiously."

As for the future of his subspecialty, says Dr. Tolo, it's not always sexy. "In pediatric trauma there is an increasing focus on injury prevention. It's not 'sexy,' but it's important…20 times more kids die of trauma than cancer every year."

"Also, there is room for improvement in our understanding of certain conditions…we just don't know what causes a lot of disorders such as clubfeet, dislocated hips, etc. Ideally, we would be able to determine if and/or how stem cells could be applicable to some of the other congenital and genetic conditions in children. Also, I would love to see ways to enhance fracture healing that wouldn't involve as many surgeries or as much casting."

When not musing about the field, he gives thanks for his family. "Charlene and I have been married 46 years and she has been my greatest supporter throughout. I have a son in Boston who is an orthopedic surgeon, and a daughter in San Francisco who is a book design editor. Unfortunately, I don't see my six grandsons enough. I have played all kinds of sports in the past, but mainly like to swing a golf club now. Non-orthopedic reading is also a pastime, and I'm now 'stuck on' Scandinavian mystery writers."

Dr. Vernon Tolo…a leader who never lost his ability to see possibilities. ♦



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