

## Orthopedics in China. Wow!

By Robin Young

The Chinese Orthopedic Association (COA) wrapped up its third year as an international meeting and is already setting its sights on becoming the AAOS (American Academy of Orthopaedic Surgeons) of Asia, if not the globe. With more than 30,000 members and a record 7,200 papers submitted to this meeting, COA is an important international meeting. Not only are the numbers impressive (this is only its third year) but the quality of the research being done in China, Hong Kong, Korea, Taiwan, and other Asian countries is strong with many innovative and novel papers.



The Chengdu quake measured 8.0 on the Richter scale and killed more than 69,000 people. Its devastation captured the world's attention, and the Chinese government's immediate and powerful reaction was yet another indication of China's capabilities. COA's members were at the front lines of that disaster recovery effort. A video tribute to the hundreds of orthopedic surgeons who devoted their skills and time to treating their fellow countrymen was presented at COA. The video showed COA members treating earthquake victims as well as helping in a multitude of other ways. Inspiring is too mild a word, and being in the room with these surgeons was an extraordinary experience. We have found, as we've written the life stories of leading surgeons, how strong and present this impulse is among surgeons to donate of their skills to those in need.

**The COA's members who selflessly gave their time and expertise to the victims of the Chengdu earthquake are our orthopedic heroes of 2008.**

**U.S. Surgeons in China** – While we don't know the exact number, the presence of U.S. surgeons was strong at COA and, as we heard repeatedly, at the major teaching institutions in China. Leading U.S. surgeons are playing a significant role (which, we saw firsthand last year as well) training Chinese surgeons in Western technique as well as introducing Western style instrumentation and implants. Many of the U.S. surgeons we met at COA had been in training sessions two, three and even four times in 2008!

COA's sub-specialties include: Spine, Large Joint, Trauma, Arthroscopy, Bone Tumor, Foot and Ankle and Basic Research. Surgeons from approximately 20 countries other than China attended this year's meeting.

### COA and the Earthquake in Sichuan Province

Scores of the COA's members responded on May 12, 2008, to the 19th worst earthquake in recorded world history.

In the following picture is Dr. Anthony Yeung from Phoenix, Arizona, with a team of residents and training fellows in Beijing. Dr. Yeung is the former President of SIX surgeon

The International Congress of Chinese Orthopaedic Association Key Statistics, 2006-2008			
Year	Number of Participants	Number of Presenters	Number of Published Scientific Papers
2006	5,000	130	389
2007	6,000	212	842
2008	8,200E	948	4,400+

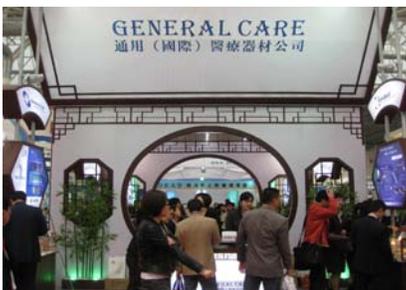




societies including the American Academy for Minimally Invasive Spinal Medicine and Surgery and the International Intradiscal Therapy Society. He is one of the most accomplished spine surgeons in the world and probably the #1 MIS spine surgeon. Very soon, more than 100 Chinese surgeons will have been trained by Dr. Yeung in highly advanced MIS techniques.

That same hospital in Beijing, incidentally, opened a world-class spine center of excellence the week before COA and a large group of U.S. surgeons were there as advisors and teaching fellows.

### In the Exhibit Hall



It has been about 15 years since the markets for Western-style medical products opened up for China's 1.3 billion people. During the same time period, China's industrial economy has exploded and increased both the demand for

and supply of medical products.

The culmination of these changes was in full display in the COA exhibit hall—particularly with the dominating presence of all manner of trauma plates, screws and nails. U.S. companies were represented, although we think their number could easily triple. And should.

### Leader and Laggards

Leaders:

1. **Kanghui** – At 400 employees, Kanghui is the largest medical products supplier and manufacturer in China. Earlier this year, Kanghui was recognized by a major private equity and venture capital firm in China, Zero21IPO, as being the #1 investment worthy company in China within a list of 50 firms. In July 2008 four venture funds invested \$27 million into Kanghui. At COA, the Kanghui booth announced itself with a 20-foot skeleton of a dinosaur with trauma plates holding the femur together. Kanghui is also the oldest firm of its kind in China and was the first company to offer Western-style trauma plates and nails. Today this firm, in addition to being #1 in China, is also distributing product in Europe, Japan, South America, Mideast Asia, Southeast Asia and, on an OEM basis, to Biomet and other American suppliers.
2. **Trauson** – This is the second-largest orthopedic product supplier in China. The company is a full-line manufacturer with more than 300 distributors in place throughout China. It is 22 years old and, like Kanghui, holds a number of firsts in terms of product introductions in China. Like Kanghui, Trauson is supplying orthopedic surgeons throughout Asia, Latin America, North Africa, and Eastern Europe.
3. **Link** – The largest booth at COA, but the least noisy and most China-centric in a modest way. Walking through the Link booth, which was a massive two-story “ship,” was both relaxing and informative with, at the end of the booth, a large map of China with red dots to signify where the company's distributors were located. It was subtle, but effective. The second floor was a massive seating and discussion area that was crowded with surgeons. Interesting strategy—take the surgeons off the floor and away from competition.
4. **Exactech** – As we commented last year, Exactech is one of the leading U.S. companies in China. According to the company, a recent survey showed that 80% of China's surgeons know the name Exactech. It is synonymous with precision in surgery. Again, Exactech had a large presence and was promoting its Optetrak®, Opteform®, Equinox® shoulder, and the full range of hip and knee products. No trauma or spine...which in China are the #1 and #2 surgical specialties, we were told.

5. **Synthes** – The worldwide leader in trauma products is not #1 in China, but it appears to be near the top with the broadest range of trauma products in the COA hall. Synthes' booth emphasized training with live surgeon presentations. Good news: Crowds of surgeons watching the presentations were always large and typically spilled out of the Synthes booth into the hallway. Bad news: the same. It could have used private class rooms. Although, Synthes did attract surgeons—even a few Americans stopping by to pick up pointers.
6. **Bonovo** – The merger of a surgeon-owned U.S. firm and an 11-year-old Chinese orthopedic supplier, Bonovo had one of the larger booths and displayed some of the most innovative surgical products at COA. Approximately 30 products were in the booth including an innovative surgical head lamp and products from such firms as Pioneer Surgical, A&A, Cervitech, Japan Medical Materials, A-Spine, and Onknow. The booth was probably the most energetic 400 square feet at COA—complete with Western-style female models and video games. This is an ambitious new company whose objective is to bring Western-style technology and quality products to China, but to do so with a powerful teaching and training component led top U.S. surgeons.
 
7. **ChunLi** – A major presence on the floor, this company offered the full spectrum of spine, trauma, hip, and knee products, but what impressed us most was its broad line of instrumentation. According to its general manager, the company distributes in every province of China and is rapidly penetrating the Russian, Eastern Europe, and Indian markets. Furthermore, the company has developed its own lines of implants which, management told us, are better suited to the Asian patient in terms of sizing and other factors.
8. **DePuy** – To these Western eyes, this was the most impressive booth of the majors with product emphasis in the trauma and spine arenas and an excellent lineup of products from Mitek. It was also routinely crowded which, to us, indicates that DePuy was largely in sync with the attending surgeons. Very well received booth, we thought.
9. **Zimmer** – A large booth with two built-in classes that were about half-full each time we looked in. Featured

mostly hip and knee with quite a bit less dedicated to spine and trauma. MIS approaches were emphasized. It looked like the junior version of Zimmer City at AAOS.

10. **Blackstone/Orthofix** – Given the pounding that this company and its stock have taken in the U.S. markets, it was a surprise to see such a strong presence via Cicel at COA. Not one of the largest booths, but one with excellent attendance and particularly strong product displays. InSwing™, the company's new interspinous process device, was there and this is an interesting product, for sure.

**Novabone, LDR Spine** and **Corin** also deserve recognition, and while their booths weren't as large as these top 10, they also put in strong and notable presences both on the exhibit floor and in scientific presentations.

Laggards:

1. **Wego/Medtronic** – Large booth and prime real estate, but it was like air was leaking out of the balloon. And speaking of balloons, while Medtronic certainly had its kyphoplasty front and center—so did THREE other companies. Yes, three other companies were offering surgeons balloon kyphoplasty—including, interestingly enough, Bonovo. Wego seemed to have the stronger brand than Medtronic.
2. **Stryker** – A decent-sized booth, but smaller than Zimmer's or DePuy's. It had the look of an effort for a second-tier meeting in the U.S.—not the future “AAOS” of Asia.
3. **Biomet** – Mostly knee products for an audience looking for trauma and spine. This was a sparsely attended booth.
4. **CONMED Linvatec** – Literally on a side wall with a simple table and product display. Even the booth professionals looked bored. Because this company holds the #1 share in surgical power tools, we would have expected something more determined. Next year, we think it should try distributing through Bonovo in China.
5. **Smith & Nephew** – Poor product display and literature hand out. This booth looked China-centric and SNN was trying to show off its hip and instrumentation products—but we had to literally move papers out of the way to view product.

## How the Chinese System Works

Four key points emerged from our many conversations with orthopedic surgeons and Chinese healthcare officials at COA this year:

1. The average annual salary for a Chinese surgeon is approximately \$10,000. But other fee income can be 5x–20x higher than the salary. Specifically, the surgeon sells the implant or pharmaceutical directly to the patient and can receive a commission as a result.
2. The Chinese are soaking up all that the leading U.S. surgeons can teach them. As we noticed last year, these surgeons are highly motivated and diligent and are learning everything the top U.S. surgeons can offer while, at the same time, breaking new ground with some innovative scientific studies of their own.
3. Confucian principles are at the core of much of the way in which Western medicine is being incorporated into Chinese life. And this, I think, is affecting the way in which capitalism is entering the healthcare system. One person told us, and we're paraphrasing, 'we were raised with the Confucian ideals of what is right and what is wrong and that money was not as important as doing right and avoiding wrong. We were also taught the communist way. Today's young people will do anything for money. There is too much of the wrong side of capitalism in China.' American companies, we think, need to be carefully aware of these issues and be sure that their activities and messaging is in sync with helping physician's achieve the "greater good" as defined by these foundational Confucian ideals. But the exchange of money for healthcare delivery doesn't appear to happen in the same manner as in the U.S.—although private health insurance programs are growing very rapidly. It will be FASCINATING to see how all this shakes out. I'm convinced; it will be different from the

U.S. or European models. It is fairly common, we were told, for a patient to engage in a traditional gift ritual before requesting service. It may be a fruit basket with an envelope of "lucky money". No direct payment, but a gift to ensure top quality service. (I gave my physician a bottle of wine for Christmas—maybe we're not so different after all.)

4. The Chinese middle class is large in numbers but still modest in terms of economic power. Some experts we've read estimate that China's middle and upper classes amount to about 110 million people. This indicates that only 8% of the total 1.4 billion population is middle class in terms of having measurable discretionary purchasing power. And despite their higher than average incomes, they accounted for only 25% of GDP in 2005.

Having said all that, the Chinese market for medical implants is growing very rapidly and the skill levels of Chinese surgeons, according to the U.S. surgeons who've been training them (by the hundreds, incidentally), are excellent and in some ways superior to those of the average U.S. surgeon. Specifically, we have heard the story both last year and this year that the Chinese surgeons devote more time and practice to technique than do their U.S. counterparts. That means they may be more technique driven than implant driven—that has, we think, clear implications in favor of instrumentation.

If China continues to develop at the current rate, the size of the market for implants will, we expect, reach and then surpass that of the United States over the coming two or three decades. As we said last year, every manufacturer, every chairman of an orthopedic department, and every senior industry analyst needs to put COA on his or her annual list of conferences. This is a very important meeting and gives all attendees a glimpse into the future of the Asian and, indeed, global markets. Next year: COA is in Beijing.

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