ORTHOPAEDICS IN MOTION
Motion Orthopaedics
Summer 2011 / Volume 1 / Number 2

"We are Safe" A first-hand account of disaster in Japan

The following excerpt was taken from a letter written by Lorne Spry, a resident of Sendai, in the aftermath of the Japanese earthquake and published by the Canadian publication ***The Barrie Examiner*** *(www.thebarrieexaminer.com).*

Dear My Frantic Family and Concerned Friends Around the World and Especially My Daughter, Morgan Young,

So…we are safe—Mari, Shoh and I. Shoh was at school. I was in my room doing e-mail and procrastinating a training run on a vintage bicycle I had finished the week before. Mari was downstairs in the living room.

All quakes start about the same. A tremor…more…and then it either shudders and fades…or the noise starts. This time the shuddering got ever more intense and the roaring just amplified. Everything went crazy. I managed to grip the walls of the staircase as everything upstairs flew around the room. The noise was so loud that I was yelling to Mari. I noticed the fridge dancing around the kitchen like a cartoon animation. A lot of quakes are over in 30 seconds but this one just went on and on…louder and louder.

The place to which I was intending to bike ride was completely destroyed. I may have been safe up on the dike, next to the river—I don't know. Two hundred people died there for sure. But a 100 were still missing yesterday. My outright laziness may have been my best trait that day.

Workers inspect a caved-in section of a prefectural road in Satte, Saitama Prefecture.

Saitama Shimbun/Associated Press/Kyodo News Photo

The aftershocks continued and they continue as I write this. Every time it happens, and there have been hundreds of them—unprecedented in memory here—

> *"I noticed the fridge dancing around the kitchen like a cartoon animation."*

you are wondering if this is another giant quake. Every time it happens you get a great shot of adrenaline shooting into your guts. At least I do.

But, we are among the lucky ones. We and our home are intact. Can you imagine feeling all this stuff after being washed around in a tsunami, losing everything,

continued on page 5

INSIDE

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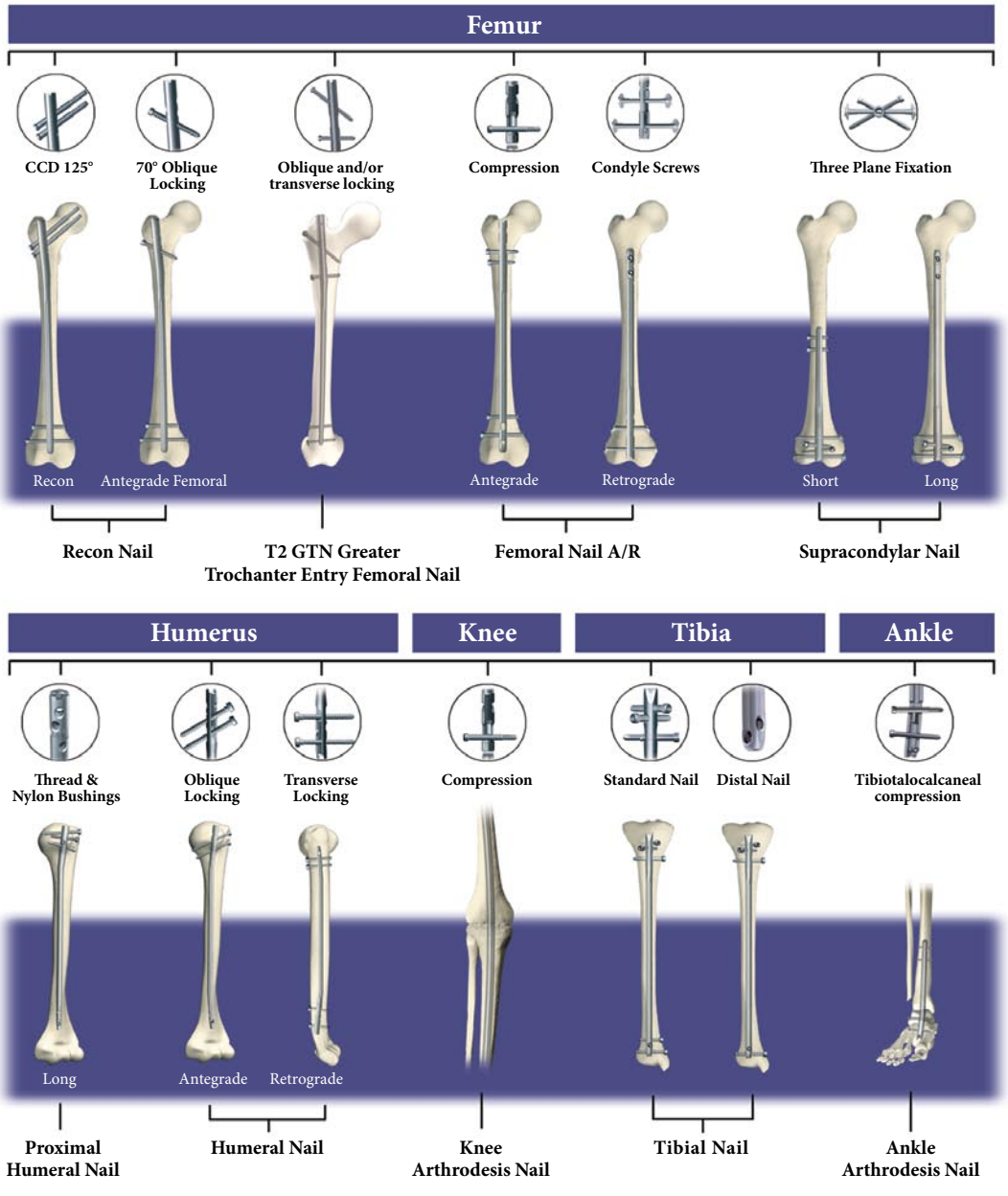

[1] Data on file at Stryker based upon published literature on the Internet/ printed Operative Technique Guides.
[2] Gamma3 Targeter can be used with the T2 Nail.
[3] Millenium Research Group 2010.
[4] Sales Data on file at Stryker.

Trauma in the Field

An excerpt from Disaster-Rx.com, a blog designed to educate surgeons on austere environment medical care

Only two weeks into his second tour of duty in southeastern Afghanistan, regional ANA Commander Khan, a 45-year-old male, was returning to base when his vehicle triggered an improvised explosive device (IED). "One minute we were headed down the road and the next thing I knew, I felt pain in my legs and someone was pulling me away from the wreckage."

A combat medic determined Khan had a bilateral closed femur fracture in his right leg and a pilon closed femur fracture in his left leg. The medic splinted both legs, then Khan was accepted in a transfer for continuation/definitive care.

On arrival at a level II field hospital, Khan was 24 hours out from injury. The receiving surgeon noted, "Khan's right leg was in a long posterior splint and his left leg was in a short posterior splint. He was hemodynamically stable, had an intact neurovascular exam, and base excess of 4."

On Khan's right leg, initial images showed a mid-shaft femur fracture and on his left side, a segmentally comminuted subtrochanteric femur fracture, a pilon equivalent ankle fracture, and foot fractures (cuboid, cuneiform, and 3rd and 4th metatarsals).

What would be your next steps as the receiving surgeon?

Visit www.disaster-rx.com to find out what our treating physician did next. Or, scan this Quick Code with your smart phone to take you directly to the blog!

Lessons to Learn

The Movement Magnitude Scale, which replaced the Richter scale in the 1970s, is the scale on which seismic energy is measured. Movement magnitude is a logarithm which takes into account the size of the section of the tectonic plates involved in an earthquake, the distance the plates moved, and the amount of force required to move them.

The devastating earthquake in 2010 that struck Haiti registered an M7.0. The quake that struck Japan in March 2011 finalized as an M9.0. The Movement Magnitude scale increases exponentially, meaning that an M9.0 earthquake is *1,000 times* stronger than an M7.0.

Despite the stronger magnitude of the Japanese quake, the loss of life in Japan was significantly lower than that in Haiti. At the writing of this article, the death toll in Japan was 13,500, with nearly another 15,000 still missing and presumed dead. While horrifying, this number is paltry compared to the final toll estimates of 230,000 to 316,000 lives lost in Haiti. Additionally, much of the toll in Japan comes from the devastating tsunami that struck minutes after the quake, not from being caught in rubble as had been the case in Haiti.

Preparation makes a difference. Despite facing an earthquake 1,000 times stronger than their Haitian counterparts, the Japanese fared better.

There were an estimated 125,000 buildings damaged or destroyed in Japan while nearly twice that, 280,000 buildings, were destroyed in Haiti.

There is a hard lesson to be learned here. Preparation makes a difference. Despite facing an earthquake 1,000 times stronger than their Haitian counterparts, the Japanese fared better. A long history of earthquakes in Japan prompted the country, years ago, to set stringent building codes, designing their buildings to withstand such disasters.

A loss of life and property will never be completely avoidable in these types of disasters, but we can make a difference with preparation.

Did You Know?

California has a 99.7% chance of having a magnitude 6.7 or larger earthquake during the next 30 years. The likelihood of an even more powerful quake of magnitude 7.5 or greater in the next 30 years is 46%.

www.scec.org

Earthquake risk in the US? Look East, not West.

When Americans think about earthquakes, they think about the West Coast states and certainly there is a large earthquake risk in these historically active areas.

Despite newer building codes, many urban buildings were not retrofitted in the San Francisco Bay area and are prone to collapse and cause serious damage. Parallel faults on either side of the Bay could produce a strong earthquake that would affect more than six million residents. Similarly, Los Angeles is home to many 1960's era concrete frame buildings also prone to heavy damage in strong shaking.

However, the US has many other faults that, while less active, could pose a greater risk to our personal and economic well-being.

The impact of even a moderate earthquake in the Central and Eastern US is our greatest concern. Earthquake energy travels more efficiently in this stable part of the country.

Unreinforced brick and stone buildings are abundant; the infrastructure is old and not built to earthquake standards. While Central and Eastern US earthquakes are less frequent, they have historically occurred throughout the region.

Scientists at Columbia University studied hundreds of small earthquakes in the New York area from 1677 to 2007 and concluded that an M6 earthquake should strike the New York region every 670 years or so. An M5 earthquake has usually struck every 100 years or so.

Even a moderate earthquake centered beneath Manhattan with its dense population, vulnerable buildings, bridges, and subways could cause more than $1 trillion in damage and unimaginable mortality.

In 1811 and 1812, four of the strongest earthquakes ever to hit the US, all between M7.2 and M8.0, occurred in the American heartland at the New Madrid fault, which runs along some of the largest commercial ports on the Mississippi River. Shocks from these quakes were felt as far away as New Hampshire.

An earthquake along this fault today could affect more than 15 million people in eight states, level bridges, and destroy older highways that cross the Mississippi River, potentially cutting the Eastern part of the country off from the West.

Scientists predict another sizable earthquake will likely strike this woefully unprepared region within the next 50 years.

Great Golfers! So you think you've done it all, but have you...?

...played a hole on a floating, moveable island? Check out the 14th hole at Coeur d'Alene Resort Golf Course in Coeur d'Alene, Idaho. This hole can only be reached via its dedicated "Putter Boat" shuttle. *(cdaresort.com/golf)*

...ridden in a helicopter to reach a tee 400m above the green? Check out the "Extreme 19th" at the Legend Golf & Safari Resort in Africa, where golfers must take a helicopter ride up to majestic Hanglip Mountain to attempt this par 3. *(legendgolfsafari.com)*

...had to chase a glow-in-the-dark golf ball? The Coober Pedy Opal Fields, located in Southern Australia are so hot that the majority of games are played at night to avoid the unbearable heat. The heat also prevents grass from growing so golfers carry a patch of turf around the course to use while teeing off.

Coeur d'Alene Resort's 14th hole. *Photo courtesy of visit.idaho.gov.*

...played over crocodiles? At the 13th hole of The Lost City Course at Sun City in Pilanesberg, South Africa, 38 crocodiles await in a deep pit to claim your errant golf ball. *(aboutsuncity.com)*

...replaced a ball stolen by a fox? At the North Star course in Fairbanks, Alaska, a local rule states that "When a raven or fox steals a golf ball, a replacement may be dropped without penalty at the scene of the crime." *(northstargolf.com)*

...taken a wild ride in a golf cart? The Wolf Creek Golf Club in Mesquite, Nevada is self-described as an "18-hole roller coaster ride over, around and through the canyons." The cart paths are so treacherous in places that a signed waiver is required before they'll hand over your golf cart keys. *(golfwolfcreek.com)*

Orthopaedics in Motion

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Published by
Data Trace Publishing Company
PO Box 1239
Brooklandville, MD 21022
www.datatrace.com

"We are safe"

continued from page 1

and taking shelter in a place that is short on everything from fuel to food and diapers. Tens of thousands of people are without their medication, and there is concern for serious viral infections. The infrastructure all up and down the coast is shattered. Sendai is practically sealed off, as are all the Pacific coastal communities north of us.

Many people in Sendai are in refuge centers—including some friends—so I have just heard. There are line-ups lasting hours for everything. Gasoline has been unavailable due to the lack of electricity for the pumps. Kerosene that space-heats most of our homes is virtually unavailable. I hectored a guy to sell me the last few liters we will get for some time. The city gas is off for at least a month—so it's cold showers or sponge baths for the duration and no one will be at home on the range.

I cannot even imagine how long it will be before life in these charming coastal fishing villages returns to normal. It is easily 'never' or at least for decades. But, this has not proved to be the case in other great disasters in Japan. It will be some time before normalcy returns to Sendai, but I am hoping for sooner than later. Right now the focus is on essentials such as the power grid and getting the arterioles reopened to supply the region.

The roof of some platforms in Sendai station are collapsed. Only local trains are running. The freight yards near our house are idle. The subway runs four or so stations short of its length. According to one source, the main bridge going into the northern part of the city is heavily damaged. Lots of roads have cracks, heaves, fissures, etc. Sendai International Airport was flooded by the tsunami and is now being used as a helicopter base at the exclusion of civilian carriers.

Jo Yong-Hak/Reuters Photo

Residents buy food at a temporarily opened supermarket in Sendai, northeastern Japan. The supermarket set a limit on buying items at five per person.

People who are wanting to leave the city and get out of the country are having to resort to a long, roundabout journey. This is a bus journey, unless you have your own private fuel stocks. One source said that there was a line-up of 800 people waiting to board.

The behavior of the Japanese people has been exemplary. I've seen no pushing or shoving or nasty behavior. In recent hours, television has shown us much of the resilience and resolution of this nation, even in the most grievous circumstance. And yet, even the up-close CNN newstainment and bulletins of fresh disaster cannot describe the scale and poignancy of this disaster.

In the meantime, the three of us have a rice cooker, an electric frying pan, and some electric heat. Let's hope that is not taken away. Some of you down south are going to experience grid blackouts due to shortage of supply. The control rods are in, the reactors are shut down, and skeleton crews (no pun intended) are fighting to cool off the residual heat in reactors that have run short of purified coolant.

BIG aftershock…just now. More adrenaline. Can't help it. It feels like we are rolling about on the sea.

So that is where I will leave you.

My very warmest regards to all of you,

Lorne

Did You Know?

According to the Geographical Survey Institute of Japan, the earthquake that struck Japan on March 10, 2011 was so powerful that it shifted the Japanese coast as much as 13 feet in some areas, averaging 8 feet along most of the coastline.

www.gsi.go.jp

Ortho-Preferred®: An Opportunity You Can't Afford to Miss

Professional liability insurance costs continue to strain practices all over the country prompting many Orthopaedic Surgeons to evaluate their insurance options. Those who have taken the time to shop around for more competitive rates have been the first to discover a new evolution of professional liability insurance programs — ***Ortho-Preferred®***.

As the only nationwide professional liability insurance program exclusively for Orthopaedic Surgeons, ***Ortho-Preferred®*** is unique in the marketplace. A program conceived by DT Preferred Group, LLC (a risk purchasing group), ***Ortho-Preferred®*** is built on the premise that insurance programs and coverage should be tailored to the specific needs of each medical specialty. As Orthopaedic Surgeons join the RPG and unite together under the common goal of leveraging the power of a group to favorably influence their professional liability insurance pricing and terms, the program continues to gain traction.

In early 2011, DT Preferred Group, LLC announced the selection of Medical Protective, the nation's most trusted and highest rated (A++) carrier in the healthcare liability industry, as the exclusive carrier for ***Ortho-Preferred®***. Medical Protective, a Warren Buffett/Berkshire Hathaway company, was founded in 1899 by physicians and maintains a century-old tradition of defending the reputation and assets of surgeons. ***Ortho-Preferred®*** members can have confidence in the stability and strength of being insured by an experienced national carrier, while also reaping the benefits of competitive premiums with specialized rate classes exclusive to Orthopaedic Surgeons.

In addition to comprehensive professional liability insurance benefits, the ***Ortho-Preferred®*** program places a strong emphasis on education and risk management. Members of ***Ortho-Preferred®*** receive complimentary membership in one of three regional associations (Eastern, Southern, or Western Orthopaedic Association), a free continuing medical education (CME) and self assessment examination (SAE) course to satisfy maintenance of certification (MOC) requirements, and free specialized risk management courses. These opportunities are a part of what distinguishes ***Ortho-Preferred®*** from its competitors and brings new value to professional liability insurance coverage.

If you are interested in learning more about what the ***Ortho-Preferred®*** program can do for your practice or you are approaching your renewal date call 1-877-304-3565 to speak with a representative or visit Ortho-Preferred.com.

2010 Tax Relief Act: What Physicians Need To Know

The Tax Relief, Unemployment Insuance Reauthorization, and Job Creation Act of 2010 contains several provisions that may affect you and your medical practice. Here are some highlights:

BUSINESS INCENTIVES

If you have been considering investing in new equipment or other assets for your practice, the new law contains several incentives designed to encourage you to make your purchases during 2011 and 2012.

100% Write-Off in 2011. Your practice may deduct 100% of the cost of qualified new property purchased and placed in service after September 8, 2010 and before January 1, 2012. (Used property does not qualify.) Most machinery and equipment, computers, office furniture and the like are eligible for the deduction. As an added bonus, there is no limit on the amount of qualified property eligible for the 100% write-off.

50% Depreciation Bonus in 2012. Although the 100% write-off will no longer be available in 2012, your practice may elect to accelerate depreciation deductions by writing off 50% of the cost of qualified property placed in service during the year. The remainder of your cost would be eligible for regular depreciation deductions.

Section 179 Expensing in Both Years. Deducting asset costs under Section 179 of the tax code is another option for qualifying taxpayers. The expensing election has a $500,000 limit in 2011. This $500,000 limit is reduced dollar-for-dollar as total eligible asset purchases exceed $2,000,000. Also, for 2011 only, as much as $250,000 of qualified real property (including certain leasehold improvement property) may be treated as Section 179 property.

In 2012, the Section 179 expensing election will be limited to $125,000 in eligible purchases, and the dollar-for-dollar phase-out will begin when purchases for the year exceed $500,000. For tax years beyond 2012, the expensing limit drops to $25,000, and the phase-out threshold decreases to $200,000.

Health Care Emancipation

By David H. Janda, MD

The issue of health care reform is very frustrating for those of us on the front-line of health care delivery. Health care reform always becomes a political, Right/Left/Liberal/Conservative issue. It isn't! It affects every man, woman and child, every business and every community.

I believe Americans' health care freedoms are currently being oppressed by a number of different entities. Many individuals at the Federal government level are hindering health care freedom. I believe there are corporate entities in the HMO and the insurance industry that are also limiting freedom. They have decimated the doctor/patient relationship and I believe they are putting people and businesses in harm's way.

There is only one solution that unlocks the shackles that have been placed on every person, family, and business by HMOs, some insurance companies, and some Federal bureaucrats – **Health Savings Accounts.** Competition reduces costs in health care, just as in other "industries." Personal Health Savings Accounts (HSAs) can already demonstrate an ability to change things for the better. Putting people in charge of their own health care gives them incentives like nothing else can. People make healthier choices about how they live, "having a dog in this fight."

Personal HSAs are coupled with higher deductibles and catastrophic insurance coverage, so no one falls through the net by an unexpected major need. Such coverage is much less expensive. The difference is putting funds into the HSA before taxes. Both immediate and long-term savings ensue. HSAs earn investment income and can be used for all medical expenses, covering the deductible, as well as medications and incidentals. Unspent, it grows yearly. Your HSA is fully portable if you change jobs, as many now do. It is also inheritable by a spouse.

A recent analysis of Health Savings Accounts by the Department of the United States Treasury revealed 33% of small businesses with HSAs previously did NOT offer coverage. In addition, 31% of those individuals signing up were previously uninsured. Forty-two percent of HSA purchasers had family incomes below $50,000. The benefits of the HSAs are many, including reduced health care costs and extended coverage.

Health Savings Accounts, coupled with prevention-related interventions, are the keys to reducing health care costs across the board. Prevention of health care need, as opposed to manipulation of health care need, is the most efficient and ethical means of cutting costs. Health Savings Accounts are the vehicle to drive health care costs down and prevention is the key that ignites the engine to the HSA vehicle.

The goal is to make health care available and affordable. When I became a physician, I took an oath to "Do No Harm." I decided to add "Prevent Harm" to that oath. We have an opportunity, through prevention initiatives and Health Savings Accounts, to bring health care freedom to every person, every family, and every business. If we don't act now, we will never be free of the HMO and insurance industries.

Did You Know?

Japan's history with tsunamis is such that the coastline is dotted with large stone tablets, some as many as 600 years old, carved with warnings such as "High dwellings are the peace and harmony of our descendants. Remember the calamity of the great tsunamis. Do not build any homes below this point."

dtp data trace
PUBLISHING COMPANY
P.O. Box 1239
Brooklandville, MD 21022-9978

Orthopaedics in Motion

Editorial

It is an unfortunate fact that the first half of 2011 has already brought us several examples, at home and abroad, demonstrating the need for disaster preparedness and surgical training in austere environments.

The people of Japan experienced an unimaginable situation on March 11, 2011 in the form of a 9.0 earthquake and subsequent tsunami that took the lives of thousands. American forces were sent into Libya on March 19, 2011 in support of protestors against the Libyan government. Between April and June 2011 hundreds of tornadoes devastated the Midwest and South, took hundreds of lives, caused hundreds of injuries, and trapped many individuals under the rubble of their homes. Flooding in the midwest has left many homes and businesses in ruin.

Situations such as these inevitably cause us to reflect on our own abilities and reactions. As medical professionals, the public looks to us for aid in times of crisis. You likely deal with emergency situations in your office or hospital every day. But what if you could not get to your hospital or practice? What if you did not have clean running water or sterile equipment? Would you stand by while victims were pulled from the rubble of a building, or would you have the where-with-all to improvise splints, beds, and other life-saving devices until help arrived?

Disasters happen all over the world and whether you are traveling in a foreign, unstable country, or experience an earthquake or tornado at home, there is a need for a disaster preparedness plan. We urge you to talk with your family, your staff, and your friends. Create a plan. Discuss options and techniques. Don't be caught unprepared.

About the Editor: L. Andrew Koman, M.D. *is Professor and Chair of the Department of Orthopaedic Surgery at Wake Forest University School of Medicine in Winston-Salem, North Carolina. Dr. Koman is board certified in Orthopaedic Surgery and has a Certificate of Added Qualification in Hand Surgery. His clinical practice is devoted to Hand, Microsurgery, and Pediatric Orthopaedics.*

Dr. Koman is a member of 20 professional societies and is Editor-in-Chief of the Journal of Surgical Orthopaedic Advances, *a peer-reviewed scientific journal and* Orthopaedic Care, *an online textbook. He reviews manuscripts for more than 10 national and international journals.* ❖

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