

CMIA/Los Angeles

September 20011

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NIHON KOHDEN

Nihon Kohden is Japan's leading maker of EEG, patient monitors, AED, and medical electronic equipment



Profile

Nihon Kohden is Japan's leading manufacturer, developer and distributor of medical electronic equipment with subsidiaries in the USA, Europe and Asia and distributors in nearly every country in the world.



Our major product lines for export are patient monitors, electroencephalographs, evoked potential and electromyograph systems, electrocardiographs, defibrillators, and hematology analyzers. Nihon Kohden equipment is well known for its quality and ease of use.

Nihon Kohden actively contributes to the advance of medical technology. Nihon Kohden researchers have published valuable research in some of the world's most prestigious medical, engineering and scientific journals. Nihon Kohden has significantly contributed to the advancement of modern medical treatment with many innovative products and technologies. Pulse oximetry, the technology to noninvasive measure oxygen in the blood, was invented by Dr. Takuo Aoyagi, a Nihon Kohden scientist.

In addition to supplying the world with our own high quality medical equipment, Nihon Kohden imports outstanding overseas products into Japan. Our wide range of imported equipment includes cardiology, urology, respiratory care, anesthesiology, emergency care, sports medicine and rehabilitation. Our extensive domestic sales network consists of over 650 direct sales staff with over 100 offices throughout the country.

Founded in 1951, our mission is to improve the quality of life through advanced medical technology.

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FROM THE PRESIDENT

MIKE SPEER; President CMIA/LA

Well, I hate to say it, but summer is almost over and the stores will be setting up for Christmas soon. Hope you all had good things happen and life is treating you well.

I saw several of you at the four chapter meeting in July. I hope you enjoyed it and thanks for attending.

I also want to say thanks to all of you that worked hard to put it together and helped out at the event. I know it takes a lot of planning and time to make these events a success and it was a very successful event.

Our last meeting was several months ago but was a big hit. We had one of the largest turn outs in a long time. Prescott did a great job going over the surgical microscopes and thanks to Wayne Craig and his team we had a microscope there to help out in the presentation.

Our next meeting is just over a week away. I am disappointed to say that NASA/JPL just let me know that they were unable to get a speaker for the September 13th meeting which will be at Glendale Adventist. I will keep trying to get them to speak at the November meeting but don't know if that will happen.

I am happy to say that Nihon Kohden is going to sponsor the meeting instead. Even with the short notice they willing to present and continue supporting the CMIA.

Thanks

I hope we can get a big turn out again and that all of you continue to support the CMIA.

Remember, it is all of us that make the CMIA work and the more you put into it the more you get out of it.

See you there.

Mike Speer President CMIA Los Angeles

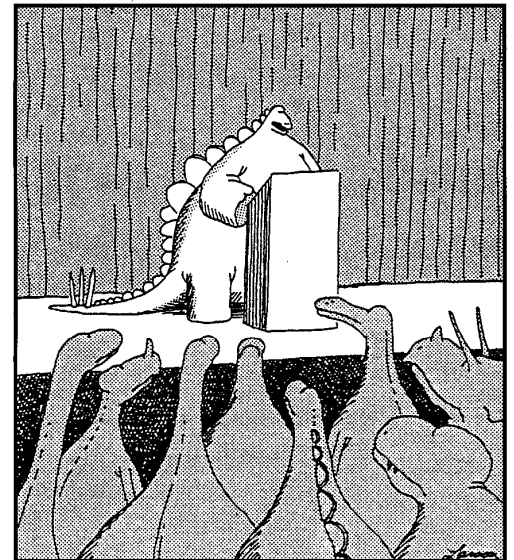
PS November is voting time and we are always looking for individuals to get involved and run for office so consider getting more involved with the CMIA.

Dear Friends:

I don't usually pass on sad news like this, but sometimes we need to pause and remember what life is about.

There was a great loss recently in the entertainment world. Larry LaPrise, the Detroit native, who wrote the song, "The Hokey Pokey", died last week at 83.

It was especially difficult for the family. They had trouble placing him in the casket. They'd put his right leg in and . . . well, you know the rest.....



"The picture's pretty bleak, gentlemen. . . . The world's climates are changing, the mammals are taking over, and we all have a brain about the size of a walnut."

Technological Leadership

In addition to designing medical equipment for hospital and clinical use, Nihon Kohden actively contributes to the advance of medical technology. Cutting edge research by Nihon Kohden developers has been published in a variety of medical journals and turned into a number of pioneering products.

Pulse Oximetry and Pulse Spectrophotometry

Pulse oximetry is a method to non-invasively monitor oxygen saturation in the arterial blood using a clip-on finger or foot probe.



Prior to this, blood oxygen saturation could only be measured by withdrawing arterial blood and measuring the sample in a blood gas analyzer. This provided only a series of disconnected snapshots. Pulse oximetry is non-invasive, instantaneous, continuous and accurate.

Pulse oximetry was particularly valuable in life support in anesthesia. In the USA, several states require by law the use of a pulse oximeter, or its equivalent, in all surgery.

The principle of pulse oximetry was developed by Takuo Aoyagi, a Nihon Kohden scientist, and Nihon Kohden introduced the world's first commercial model, OLV-5100, in 1975. All pulse oximeters today are based on Dr. Aoyagi's original principle of pulse oximetry.

In a 1972 presentation "Pulse Oximetry: Its Origin and Development," Dr. Aoyagi said that "pulse oximetry is no more than the first fruits of a new concept of noninvasive monitoring of the blood which might be called 'pulse spectrophotometry.'" More recently, Nihon Kohden's DDG analyzer for less invasive blood volume measurement is one concrete realization of this. We look forward to even more innovative developments in the future.

Space Exploration

In September 1992, NASA launched the Endeavor space shuttle. Among the crew was Japan's first astronaut, Dr. Mamoru Mori, who carried out many onboard experiments.



Nihon Kohden was honored to be chosen to supply equipment to monitor Dr. Mori's physical condition during the flight. Collecting information without restricting his movement was one major goal. The monitoring equipment consisted of ECG electrodes, respiration signal conditioners and infrared digital telemetry transmitter. Equipment had to meet very strict NASA requirements without using radio wave telemetry. We are proud to report that all experiments monitoring Dr. Mori's condition were completed without problem.

Nihon Kohden engineers supervised the special equipment from the control room of NASA's Marshall Space Flight Center and monitored the down-linked physiological data during the flight.

Nihon Kohden products are also used extensively by NASDA, Japan's space exploration agency.

Patient Safety

Across healthcare and at home, patients face the risk of medical error. A landmark study by the Institute of Medicine (IOM), entitled, *To Err is Human: Building a Safer Healthcare System*, estimated that as many as 98,000 Americans die each year due to a variety of medical errors.

- 7,000 of these deaths are due to errors involving medications.
- The Agency for Healthcare Research and Quality found that more than 770,000 people are injured or die each year from adverse drug events, and that many of these injuries could be prevented by reducing the number of medication errors.
- According to Bates et al., 12 percent of all patients admitted to the hospital are exposed to an adverse drug event (ADE) or potential ADE. An ADE is an injury resulting from medical intervention related to a drug. 1.8 percent of these ADEs are preventable.

Where hospital medication errors occur
The hospital medication use process is comprised of four stages:

- **Prescribing** (whereby the physician indicates what drug a patient should receive when and at what dosage)
- **Transcribing** (when the order is entered into the pharmacy system)
- **Dispensing** (when a given drug is distributed to the patient floor by the pharmacy)
- **Administration** (the last stage, when the nurse gives the drug to the patient)

Errors in medication use can occur at any one of these four stages. Fortunately, many errors in prescribing, transcribing, and dispensing are intercepted prior to administering the drug to the patient. Unfortunately, as these data from the landmark study by Leape et al. illustrate, almost no errors that occur during administration are caught, thereby causing 51 percent of all preventable and potential ADEs. Therefore, medication administration is a focus of effort.

Types of errors

To help reduce the risk of ADEs, experts have identified the types of errors that occur during the hospital medication -use process.

Wrong dose and wrong drug are two leading types of errors, accounting for 39 percent.

Error-reduction strategies

The five rights of medication administration are:

- Right Drug
- Right Dose
- Right Patient
- Right Time
- Right Route

By confirming the accuracy of the drug, dose, patient, time, and route, medication errors at the bedside can be prevented before an ADE occurs. Medication Management systems, with bar code capabilities, are devised to help caregivers confirm these five rights and reduce medication errors.

Caregiver Safety

Needlestick injuries are a major concern of healthcare workers:

- According to the Centers for Disease Control and Prevention, needlestick injuries account for more than 18,000 new cases of hepatitis annually
 - The preliminary treatment cost for a single needlestick incident is estimated to be between \$500 to \$3,000
- Needleless intravenous (I.V.) systems decrease needlestick injuries

OSHA: Needlestick Prevention — OSHA estimates that 8 million workers in the healthcare industry and related occupations are at risk of occupational exposure to bloodborne pathogens. Learn about disposal of contaminated needles and blood tube holders used for phlebotomy, compliance, review OSHA's Frequently Asked Questions and more. related to I.V. administrations by 62 to 88 percent

OSHA

<http://www.osha-slc.gov/SLTC/bloodborne pathogens/index.html>

JOINT COMMISSION URGES VIGILANCE IN RADIATION-BASED IMAGING



Healthcare providers need to use diagnostic radiation sparingly and cautiously, implored the Joint Commission in Issue 47 of *Sentinel Event Alert*. It also implied a recommendation for obtaining information about patients' recent radiation from other providers.

Over the past two decades, the U.S. population's total exposure to ionizing radiation has nearly doubled, the alert pointed out, adding that harm can occur due to the cumulative effect of multiple doses over time.

“While experts disagree on the extent of the risks of cancer from diagnostic imaging, there is agreement that care should be taken to weigh the medical necessity of a given level of radiation exposure against the risks, and that steps should be taken to eliminate avoidable exposure to radiation,” according to the alert, which focuses on diagnostic radiation and does not cover therapeutic radiation or fluoroscopy.

The Joint Commission used the alert to recommend specific practices healthcare providers might employ to reduce patients' exposure to radiation, such as:

- Use of imaging techniques other than CT, such as ultrasound or MRI and collaboration between radiologists and referring physicians about the appropriate use of diagnostic imaging.
 - Assurance by radiologists that the proper dosing protocol is in place for the patient being treated and review of all dosing protocols against the latest evidence either annually or every two years.
- Implementation of centralized quality and safety performance monitoring of all diagnostic imaging equipment that may emit high amounts of radiation cumulatively.

“Diagnostic imaging is a necessary medical tool, but it must be used with great care,” Mark R. Chassin, MD, president of the Joint Commission, said in a statement. “Although there is still debate about how much is too much radiation, and the timeframe within which radiation can be safely administered, the recommendations in this *Alert* give healthcare organizations practical strategies to make sure that patients get the right diagnostic imaging tests with the lowest dose of radiation needed to make a diagnosis.”

The Joint Commission publishes *Sentinel Event Alert* as a free service to its accredited organizations. The alert on the

EXPERTS DEBATE SAFETY OF X-RAY SCANNING AT U.S. AIRPORTS

The Transportation Security Administration (TSA) announced that it would re-test 247 x-ray scanners in use at U.S. airports after maintenance checks indicated that the devices emitted radiation doses 10 times higher than expected. As the agency attempts to untangle the matter and a March 16 Congressional hearing focuses on the TSA and whole-body imaging, experts weighed in on the potential health risks posed by backscatter x-ray screening in the April issue of *Radiology*.

David J. Brenner, PhD, from the Center for Radiological Research at Columbia University in New York City, argued that while the extensive deployment of x-ray backscatter scanners is likely safe for most individual passengers, it presents long-term population concerns. Meanwhile, David A. Schauer, ScD, from the National Council on Radiation Protection and Measurements (NCRP) of Bethesda, Md., suggested that extrapolating

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very small individual risks to large populations distorts risk.

Both authors agreed that millimeter wave technology provides a viable alternative to backscatter scanners because it entirely eliminates radiation at the same cost and functionality as x-ray scanning.

In December 2009, in response to the “Underwear Bomber,” the TSA bolstered its advanced imaging technology (AIT) program and recommended the use of AIT as a primary screening method at U.S. airports. The new policy could translate into one billion whole-body scans annually.

“The effective doses [associated with backscatter scanners] are extremely low, of the order of 1 uSv (microsievert),” offered Brenner. The 1 uSv figure is based on a mathematical formula to estimate dose rather than tests of actual backscatter x-ray systems, according to a spokesperson from the Radiological Society of North America (RSNA). Manufacturers of the scanners claim that the equipment meets the lower 0.1 uSv threshold established by NCRP.

However, recent TSA maintenance checks indicating potential discrepancies may mean that doses are higher than the 0.1 uSv threshold.

Risk is ambiguous as well. Brenner acknowledged, “We do not know with any certainty the magnitude of individual cancer risks associated with such low doses.”

Nevertheless, Brenner relied on a standard cancer mortality risk of 5 percent per sievert to estimate a 10^{-7} lifetime cancer mortality for a trip involving two 1 uSv security screens, while recognizing the major uncertainties associated with such low level exposure. Brenner referred to arguments that individual risk at extremely low doses is zero. Also, he pointed to indicators that “suggest that low-dose radiation risks could be higher than those anticipated on the basis of extrapolating risks estimated at higher doses.”

According to Brenner’s extrapolation, one billion annual scans at individual cancer risk per scan of 10^{-7} could result in 100 cancers. A “risk of 10^{-7} multiplied by 10^9 exposures no longer represents a trivial population risk,” he wrote.

In a second *Radiology* article on the topic, Schauer referred to the primary objectives of radiation protection: justification, optimization and limitation, while advocating for strict regulatory control of backscatter scanners to ensure use consistent with these principles.

The NCRP, he noted, recommends an administrative control of 0.25 mSv effective dose per year be employed for individuals undergoing security screening. The council also stated that general use backscatter systems adhere to an effective dose of 0.1 uSv or less per scan. About the exposure, he suggested that “such systems can be used without regard to the number of scans per individual in a year.”

As TSA re-checks equipment and Congress mulls health concerns and other issues related to backscatter x-ray security scanning, Schauer concluded. “The time is right for countries like the United States to take a comprehensive look at the use of x-rays for medical and nonmedical imaging applications to ensure their use is consistent with the goals and objectives of radiation protection.”

These glorious insults are from an era before the English language got boiled down to 4-letter words..

- **A member of Parliament to Disraeli: "Sir, you will either die on the gallows or of some unspeakable disease."**
- **"That depends, Sir," said Disraeli, "whether I embrace your policies or your mistress."**
- **"He had delusions of adequacy." - Walter Kerr**
- **"He has all the virtues I dislike and none of the vices I admire." - Winston Churchill**
- **"I have never killed a man, but I have read many obituaries with great pleasure." Clarence Darrow**
- **"He has never been known to use a word that might send a reader to the dictionary." - William Faulkner (about Ernest Hemingway).**
- **"Thank you for sending me a copy of your book; I'll waste no time reading it." - Moses Hadas**
- **"I didn't attend the funeral, but I sent a nice letter saying I approved of it." - Mark Twain**
- **"He has no enemies, but is intensely disliked by his friends.." - Oscar Wilde**
- **"I am enclosing two tickets to the first night of my new play; bring a friend, if you have one." - George Bernard Shaw to Winston Churchill**
- **"Cannot possibly attend first night, will attend second ... if there is one." - Winston Churchill, in response.**
- **"I feel so miserable without you; it's almost like having you here." - Stephen Bishop**
- **"He is a self-made man and worships his creator." - John Bright**
- **"I've just learned about his illness. Let's hope it's nothing trivial." - Irvin S. Cobb**
- **"He is not only dull himself; he is the cause of dullness in others." - Samuel Johnson**
- **"He is simply a shiver looking for a spine to run up." - Paul Keating**
- **"In order to avoid being called a flirt, she always yielded easily." - Charles, Count Talleyrand**
- **"He loves nature in spite of what it did to him." - Forrest Tucker**
- **"Why do you sit there looking like an envelope without any address on it?" - Mark Twain**
- **"His mother should have thrown him away and kept the stork." - Mae West**
- **"Some cause happiness wherever they go; others, whenever they go." - Oscar Wilde**
- **"He uses statistics as a drunken man uses lamp-posts... for support rather than illumination." - Andrew Lang**
- **"He has Van Gogh's ear for music." - Billy Wilder**
- **"I've had a perfectly wonderful evening. But this wasn't it." - Groucho Marx**

CMIA/LA Dinner & Meeting

DATE: Tuesday Sept. 13, 2011

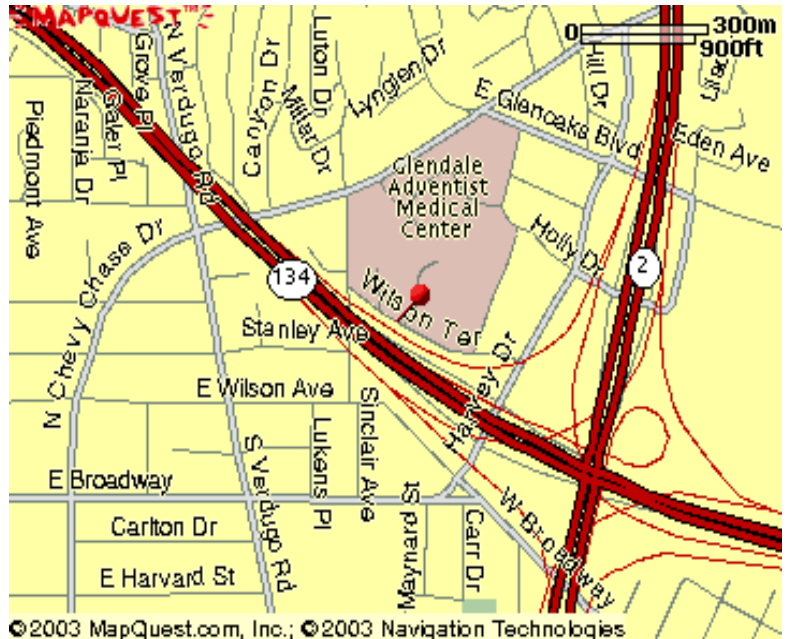
TIME: Officers: 5:00pm

Dinner: 6:00pm

Meeting: 6:30pm

PLACE: Glendale Adventist
Medical Center
1509 Wilson Terrace
Glendale CA 91206
(818) 409-8000
www.glendaleadventist.com

Host: Nihon Kohden



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