



ACCE News

Newsletter of the American College of Clinical Engineering

Summer 2011

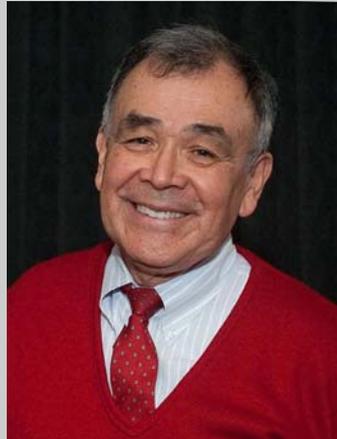
Volume 21, Issue 3

**SPECIAL
20th ANNIVERSARY
DOUBLE ISSUE!**

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President's Message



As we monitor strategic drivers of health technology, we can identify several recurring themes with significant impact on healthcare organizations and clinical engineering.

- Health IT and medical device innovation
- Social media
- Cloud computing

C-suite leadership is trying to understand these technology drivers in order to leverage their potential and manage their challenges. This presents an opportunity for clinical engineers to deliver value to our employers and clients by providing them with useful information that separates marketing hype from the realities of

rigorous assessment and safe and effective implementation of new technologies in the patient care environment.

Cloud Computing - for example - is becoming one of the most visible, disruptive technologies in the trade media. The U.S. GAO defines cloud computing as "a form of computing where users have access to scalable, on-demand IT capabilities that are provided through Internet based technologies." The promises of cost savings, flexibility, and scalability are sufficient to turn the heads of health care leadership and stimulate some fundamental re-thinking about healthcare infrastructure and services. If we imagine solutions available directly from the internet (such as computerized asset management and maintenance management where clients pay only for what they use), the opportunities for more efficient management of clinical systems seem substantial. But it is important for these IT-mediated cloud solutions to build on the historical experience and insights of their clinical stakeholders ---

(Continued on page 2)

Help Wanted: Writers and a Co-Editor

The ACCE News team gives a BIG THANK YOU to Ismael Cordero for his work as co-editor the past few years. Ismael's efforts significantly improved the look and format of ACCE News. With Ismael stepping down, we are now looking for a co-editor to join our team, Jim Keller, Managing Editor and Ted Cohen, co-editor. Responsibilities include editing every other edition (3 times a year), prepublication review of the other three annual editions and occasionally writing an article. This is a challenging and often fun and rewarding job if you like to write and/or edit, although the pay is poor (ZERO). Contact Jim Keller at jkeller@ecri.org if interested.

Also, as usual, ACCE News is always looking for new articles. If you would like to submit an article of interest to your ACCE colleagues, please send it to co-editor Ted Cohen at Theodore.cohen@ucdmc.ucdavis.edu. Articles should not exceed 1,700 words. Look for additional ACCE News article guidelines in the next issue.

Ted Cohen

President's Report: Committee Updates

(Continued from page 1)

physicians, nurses, clinical and biomedical engineers, and hospital administrators.

In the international realm, cloud computing may be a transformational model where a global entity can provide the cloud services for health technology management -- with appropriate safeguards for security, privacy, data management, and performance metrics. Developing countries can tap directly into these standardized services without the need to build expensive and rapidly obsolete infrastructure for it. Clinical engineers are in an excellent position to assist leadership in defining the system requirements, assessing the technology, negotiating contract terms, deliberating the final decisions, and designing the deployment processes.

ACCE International Committee news

- I am happy to announce that Antonio Hernandez has been confirmed as Chair of the International Committee. Antonio is coordinating the transition with Tony Easty, former Chair, and will begin implementing the great foundational work (defining vision, mission, goals, and priorities) that the International Committee has already done in 2011 under Tony's leadership.

Our **Education Committee** will announce the specific subjects and venues to keep our members up to date on an ongoing fashion. In addition to sponsoring symposia, white papers, and presentations on subjects related to the future of health care integrated systems, impact of social media, cloud computing, and meaningful use requirement readiness, the Committee's teleconference series will address other relevant subjects such as:

- MDDS
- Medical Devices and Meaningful Use
- Managing the Integrated Environment: Part 1: The Basics (Terminology, Common architectures), Part 2: Risk Management (example IEC 80001-1), Part 3: IHE PCD, MDPnP, and/or Continua updates, and Part 4: Medical Device Security
- Networking Basics, Part 1
- Networking Basics, Part 2: Wireless
- Budgeting and Finance
- Service Contract Negotiation

The **Education and Advocacy Committees** completed great programs in San Antonio's ACCE Symposium and the ACCE awards. We appreciate the work that our Event Manager Pratyusha Mattegunda performed to coordinate with service providers and participants to ensure flawless implementation of all ACCE programs.

The ACCE Board of Directors met face to face in San Antonio for a strategic meeting. We discussed a new business model and revenue strategy, naming of the profession initiative, Communication Strategy, and a collaboration roadmap.

It was great to see so many of you in San Antonio!

Mario Castañeda

president@accenet.org

Welcome New Members

Let's welcome our newest members, approved by Board of Directors on Jul 26, 2011:

- Douglas George/Individual Member Elkhart General Hospital, Elkhart, IN
- Omer Iqbal /Individual member, Sharif Medical City Hospital – Pakistan
- Rupert Kishun /Individual Member, NYU Medical Center, New York, NY
- Lloyd Mukunza/Individual Member, LAB ASSIST ZIMBABWE, Harare, Zimbabwe

- Gnana Sakaran Rajagopal/Individual Member, SIHAT Sdn Bhd, Kuala Lumpur, Malaysia
- Dean Skillicorn/Associate Member, Philips Multivendor Services, Franklin, TN

Please welcome these new members!

James Wear

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ACCE News

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ACCE Celebrates 21st Anniversary!

As ACCE turns 21 years old, the following are some highlights of its leadership history and many successes.

Conception

According to a 1989 article in the Journal of Clinical Engineering, although by then the clinical engineering profession was already 20 years old, it still needed to establish an identity. The needs of the profession were broader, however, and it was determined that a project or organization was needed to better identify the profession, recognize the CE field and the individuals active in it, create an avenue for better visibility of the contributions of CEs, and influence both public opinion and national policy as it related to medical technology.

Birth

On a fall day in Houston in 1990, ACCE was born and Dr. Yadin David was elected its first President. See the table on page 4 for a list of all the past and current presidents of ACCE.

Infancy (1991-1993)

According to the October-November 1991 issue of ACCE News, Past President Yadin David reports, "... It is hard to believe



Joe Dyro (center), the perennial collector of hats from all over the world, and one of the first ACCE News editors, enjoys a new hat with former ACCE Presidents, Elliot Sloan (left) and Bob Morris.

how fast time flies, especially when you feel great about what you are doing. Regardless of whether vacationing, working, socializing or promoting your profession, it is that combination of circumstances and individuals that tells you, this is it! You know something is happening and you feel good about it. Thank you for being a friend! Here are some of those actions from our (ACCE's) first year:

Established an independent professional association based on a highly qualified membership & mutual respect for a common vision, elected officers, had an annual meeting and grew the membership

Produced landmark documents.

Became an ICC board member.

ACCE Newsletters published.

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Remembering ACCE—View from Past Prez Izabella Gieras

The two years I spent as the President of ACCE (2004-2006) were extremely fulfilling. I was privileged to work with many distinguished individuals on the ACCE Board, Steve Grimes, Jennifer Jackson, Colleen Ward, Joe Skochdopole, Ray Zambuto, Bill Rice, Paul Sherman, Ted Cohen and Tony Easty, Jim Keller, Antonio Hernandez, Ron Baumann and many more.

In my first term as the President of ACCE, I had the pleasure of attending the HTAi (Healthcare Technology Assessment International) Conference in Rome, Italy in June 2005 and speak on the "Clinical Engineering's Role in Health Technology Assessment: The U.S. Perspective". This opportunity was based on a generous invitation from the Association of the Italian Clinical Engineers (AICC) which further led to closer partnership with the Italian clinical engineers. Some of them became ACCE members and at-

tended our ACCE gatherings in the US.

During my two years, ACCE entered into a partnership with HIMSS, which as we know today, continues to be very strong and successful on many different levels. In February 2006, ACCE and HIMSS collaborated together on the first half-day CE and IT Leadership Forum in San Diego at the HIMSS Annual conference, featuring speakers from across the country discussing the CE and IT partnership and its impact on patient safety. Dr John Halamka delivered the closing address, "Making the Case for the Integration of Data and Devices". The leadership forum was very well attended, prompting the two organizations to expand the program to a full day symposium the following year and a much bigger room! It was also at the

same conference that ACCE hosted its first ACCE Reception and Meeting for Members and Friends.

Some of you might be interested to know that in 2006, John Wiley and Sons, Inc. featured a full chapter on ACCE in the six-volume Encyclopedia of Biomedical Engineering which provided further visibility for our organization.

My two years as the President of ACCE were remarkable and will always be remembered with fond memories. It is now wonderful to watch our organization and its people grow and continue to be prosperous in everything that is undertaken.

Izabella Gieras

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ACCE Celebrates 21st Anniversary!

(Continued from page 3)

Co-sponsored the 1st Advanced Clinical Engineering Workshop (ACEW).

Provided input to FDA panels.

In 1992 ACCE published the Definition of a Clinical Engineer: "A Clinical Engineer is a professional who supports and advances patient care by applying engineering and managerial skills to healthcare technology." In 1993, Wayne Morse designed the attractive and elegant ACCE lapel pins that we so proudly wear.

Childhood (the rest of the 90s (1994 - 1999))

By 1994 ACCE had grown to 150 USA members and 24 International Members. The first ACCE teleconference series started in 1995 with "Understanding the Healthcare Marketplace", led by Wayne Morse and James Wear. ACCE also developed the "Guidelines for Donating Medical Equipment" brochure. Biomed Bubba (Joe Dyro), the antithesis of a real CE, can be heard loudly and frequently proclaiming, "Biomed Bubba is my name and Electrical Safety's my game." ACCE presented the ACCE Symposium on "The Future of Clinical Engineering" in Philadelphia, hosted by Ira Tackel. Additional symposia were held annually with each AAMI annual meeting (and since 2007 at the HIMSS annual meetings as well). By 1999, ACCE had also added its website: <http://www.accenet.org>.

Youth (2000- 2006)

Jennifer Ott, ACCE's President in 2000 and 2001 states "My involvement with the ACCE Board began when Joe Dyro cajoled me into becoming Secretary (and later President). As first female ACCE President, I was proud to start the tradition! Other highlights of the early 2000s were: AAMI suspended CE certification, and Frank Painter began his earnest pursuit of a new CCE program, ACCE implemented the Secretariat position to help with member communication and support to the Board, the ACEWs grew tremendously with several Latin American workshops, ACCE assisted with the coordination of Infratech's global HTM Listserv. ACCE celebrated its 10 year anniversary.

On a sad note, in March 2001 ACCE mourned the loss of Bob Morris after a courageous battle with cancer. He was a Charter Member, a Fellow, and a former President. His international work gave him his greatest



In 2011, at the ACCE reception as part of AAMI San Antonio, several former ACCE Presidents got together for this photo session. Front row, left to right: Jennifer Ott, Jennifer Jackson, Izabella Gieras; rear, left to right Ray Zambuto, Matt Baretich, Steve Grimes, Tom Bauld, current President Mario Castañeda, Elliot Sloan, Frank Painter, and Founding President Yadin David

ACCE Presidents			
1990-1991	Yadin David	2000-2001	Jennifer Ott
1991-1992	Matt Baretich	2001-2002	Elliot Sloane
1992-1994	Joe Dyro	2002-2004	Raymond Zambuto
1995-1996	Tom Bauld	2004-2006	Izabella Gieras
1996-1997	Ira Tackel	2006-2008	Stephen Grimes
1998-1999	Frank Painter	2008-2010	Jennifer Jackson
1999-2000	Robert Morris	2010- present	Mario Castañeda

inspiration and he truly made ACCE the international leader of CE activities. ACCE with AAMI in 2001 created the Bob Morris Humanitarian CE award in his honor.

In 2005, ACCE President Izabella Gieras attended the HTAi in Rome, Italy and spoke on the CE Role in HTA: The US Perspective, which led to several Italian CEs joining ACCE. ACCE entered into a partnership with HIMSS, that continues to be very strong and successful on many different levels. In February 2006, ACCE and HIMSS collaborated together on the first half-day CE-IT Leadership Forum

and had the 1st ACCE Reception & Meeting at a HIMSS conference.

Maturity (2006 – present)

ACCE continues to grow in membership and influence. With the burgeoning importance of healthcare IT, ACCEs formal and informal collaborations with HTF, HIMSS, IHE, AAMI and other organizations increases every year. Education plays a large role in ACCE's mission and several ACEWs and teleconference series have been completed and are planned for the future.

Some ACCE History: Memories from Past President Tom Bauld

ACCE developed the Definition of a Clinical Engineer and it was approved by the Board in May, 1991 (or May 1992?). The committee was chaired by Tom Bauld, then at the University of Michigan Hospitals. The definition was later adopted by the Canadian Medical & Biological Engineering Society (CMBES) and the International Federation of Medical and Biological Engineering (IFMBE) as well as the US Board of Examiners for Clinical Engineering of the international Certification Commission (ICC).

The first ACEW was held in Washington DC, May 15-June 7, 1991 with attendees from 24 countries. It was the culmination of two years of hard work by Tom Judd, Binseng Wang, Yadin David, and Frank Painter and was supported by the IFMBE and the Pan American Health Organization (PAHO). It was a model for future ACEWs incorporating classroom instruction with two weeks of practicum experience at eleven different sites around the country.

We crafted a response to the FDA when they published regulations regarding Medical Device User Facility reporting under the Safe Medical Devices Act of 1990. The Task Force was lead by Tom Bauld. The letter signed by Matt Baretich was published in the March-April 1992 of the ACCE News. In our response, we offered many suggestions to improve the proposed regulations as well as many questions that we felt the FDA should address.

In 1992, under the leadership of Mo Kasti, ACCE submitted a detailed response to the FDA's proposal for Device Tracking Requirements for User Facilities. The letter was signed by President Dyro and also submitted to Congressman John Dingel (longest serving Congressman in US history and proponent of healthcare reform for decades as well to Congressman Henry Waxman).

In 1995 we began the first ACCE Teleconferences with the topic Understanding the Healthcare Marketplace. These courses which continue to this day with

two separate tracks were conceived by Wayne Morse and were implemented by James Wear, the ACCE Education Chair at that time.

We developed the ACCE Guidelines for Donating Medical Equipment to help both the donors and recipients to effectively transfer technology with practical information. The work was chaired by Al Jakniunas.

Also in 1995, ACCE developed a position paper to address the FDA's initiative to regulate medical device servicers and particularly hospital based service providers as part of the Current Good Manufacturing Practices Final Rule. We argued that the rule did not establish a factual basis for a concern that inadequate ser-

vice lead to significant risks to patients and that the potential benefits did not justify the excessive expected expenses. The effort along with that of many others was successful and the provisions were dropped and in-house departments will not have to report all service events to the manufacturers.

Engaging the FDA regulatory process again, Binseng Wang led the effort in 1998 and ACCE presented a formal response to the FDA's proposal to require servicers, refurbishers and reconditioners to register with the FDA and comply with the GMP/Quality System regulation.

Tom Bauld

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Why Clinical Engineering?

One of the more difficult things to justify in our minds is the career that we have selected. Why clinical engineering? It sure is not the highest paid of the engineering specialties. It requires us to be able to think and act like a mechanical engineer as we try to jam more technology into the clinical areas. We need to think like an industrial engineer when we have to match technology to clinical needs. We have to understand finance as everyone seems to want the best technology but is not willing to pay.

As a clinical engineer we have to understand that many technology users are not tech savvy, and don't understand that the equipment is not meant to be bounced off the floors and walls. Many also have a mindset that the equipment does need to be cleaned, especially when the patient's bodily fluids decorate it. They will instead send it down to the shop for repair without cleaning it.

As a clinical engineer we have to have a working knowledge of structural problems as departments try to cram more equipment into smaller areas which then brings up the problem of ventilation.

No one wants to deal with that problem until the failures become too much for the medical personnel to handle. So they call for the clinical engineer to solve the problems.

Why do we stay in this unforgiving, stressful, and underpaid field? Because we are the type of people who like to help others. That's how we get our satisfaction. Many of us travel around the world on medical missions, often paying costs out of our own pocket. We try to help others around the world answer questions and help patients.

In 1989 a group of clinical engineers met at the AAMI convention to discuss setting up another organization that would be devoted to promoting clinical engineering as a profession. For two years we worked out the details of what and how we wanted to do things and finally in 1991 the ACCE came into existence. In the past 20 years we have had many successes and some not so successful ventures as an organization.

(Continued on page 7)

ACCE 2010 Body of Knowledge Survey Results

Editor's note: ACCE News co-editor, Ted Cohen, interviewed Colleen Ward, ACCE Board member and Body of Knowledge survey coordinator, on the results of the Body of Knowledge survey.

Editor: What is the ACCE Body of Knowledge survey and how is it used?

CW: The purpose of the Body of Knowledge (BoK) Survey is to identify the scope of practice for Clinical Engineers during their day-to-day work, as well as to identify the knowledge and skills that are important in successfully performing that work.

The results of the survey were compiled and analyzed for use by the U.S. Board of Examiners for Clinical Engineering Certification in designing the Clinical Engineering Certification exam. The results of the survey are used to ensure that the certification exam closely matches the body of knowledge that Clinical Engineers need to function in their jobs.

In addition, the survey provides ACCE with important demographic data for the survey's respondents. This demographic data is useful to ACCE in providing services that best meet the needs of our members, as well as our profession.

Editor: When were this survey and previous surveys, completed?

CW: The 2010 survey was completed in November 2010, and the previous survey was completed in June 2006. A survey was also conducted in 2001.

Editor: What were the primary results of the 2010 survey?

CW: Requests to participate in the survey took place primarily through email to Clinical Engineers and other Healthcare Technology Management staff. 428 responses were received, 140 from individuals that identified themselves as Clinical Engineers.

The data from the survey were analyzed in two groupings. First, an analysis of all respondents was performed, and then a second analysis of just those respondents that self-identified as Clinical Engineers, was performed.

Demographic Data:

All Respondents Group: 28 different coun-

tries were represented, 64.7% of respondents work in a hospital, clinic, or health system, and the majority of respondents identified the nature of their current position as either management (37.8%), service delivery (18.5%), or professional support (24.2%).

CE Only Group: 10 different countries

were represented, 60.7% of respondents work in a hospital, clinic, or health system, and the majority of respondents identified the nature of their current position as either management (55.7%) or professional support (14.7%).

(Continued on page 7)

All Respondents		CE Only	
Knowledge Category		Knowledge Category	
1	Physiological Monitoring	1	Physiological Monitoring
2	General Medical / Nursing Equipment	2	General Medical / Nursing Equipment
3	Surgical Equipment	3	Surgical Equipment
4	Computers, Networking, Information Technology	4	Computers, Networking, Information Technology
5	Anesthesia	5	Presentation Skills
6	Respiratory Therapy	6	Anesthesia
7	Presentation Skills	7	Medical Imaging
8	Medical Imaging	8	Respiratory Therapy
9	Medical Terminology, Anatomy, Physiology	9	Management Theory
10	Electronics (theory, design, analysis, etc.)	10	Medical Terminology, Anatomy, Physiology

Table 1: Knowledge category data for All Respondents and Clinical Engineers only

All Respondents		CE Only	
Categories of Work	Time Spent in Each Activity (Average %)	Categories of Work	Time Spent in Each Activity (Average %)
Service Delivery Management	30.3	Technology Management	32.2
Technology Management	21.8	Service Delivery Management	16.8
Education of Others	10.0	General Management	10.7
General Management	10.0	Education of Others	10.6
Risk Management/Safety	8.7	Risk Management/Safety	10.6
Information Technology (IT)/Telecommunications	8.0	Information Technology (IT)/Telecommunications	8.0
Testing, Evaluation, & Modification	4.9	Testing, Evaluation, & Modification	4.9
Facilities Management	3.7	Facilities Management	4.7
Other	2.5	Other	1.5
<i>answered question</i>	330	<i>answered question</i>	122
<i>skipped question</i>	98	<i>skipped question</i>	18

Table 2: Service Delivery category data for All Respondents and Clinical Engineers only

Body of Knowledge Survey Results continued

(Continued from page 6)

Knowledge Data:

The purpose of the knowledge section (see Table 1) is to assess the level of importance (a measure of both criticality and frequency) with which various categories of knowledge are used in day-to-day duties and work responsibilities. The following tables display the top ten knowledge categories for the two respondent groups (most important listed at the top of the list).

It is notable that for both groups, the top four ranked tasks are identical, and the next four tasks were very closely aligned.

Scope of Practice Data:

Respondents were asked to identify the percentage of time spent on each of a number of major categories of work. The results (Table 2) show that Service Delivery Management and Technology Management are the two categories of work that our respondents spend the most time on. For Clinical Engineers, Technology Management rose to the top and for the All Respondents group, Service Delivery Management took up the largest percentage of time.

Responsibilities Data:

Within each Category of Work, we asked respondents to identify the types of activities they were responsible for performing. For the two Categories of Work that took up the most time (Service Delivery Management and Technology Management), the top responsibilities were identified as Technology Assessment, Product Selection/ Vendor Selection, Service Contract Management, Equipment Repair and Maintenance, Equipment Performance Testing, and Equipment Acceptance.

Editor: What are the primary differences between the results of the 2010 survey and the previous survey?

CW: The previous survey used slightly different methods for ranking the various categories (importance and frequency were scored separately in 2005, but were combined into one score in 2010). However, a few comparisons between the two surveys can still be made.

In the Knowledge category, the top ten tasks were very much in line with 2005

results. The primary difference was that in 2005, Computer Networking was ranked #10 (for all respondents) and in 2010 Computers, Networking, and Information Technology (a new, but closely related, category name) had moved up to #4. Networking and IT has definitely moved up in importance!

In the Categories of Work section, Technology Management and Service Delivery Management were the top two categories in both surveys. Because of differences in scoring methodology between 2005 and 2010, a clear numerical comparison cannot be made of the Responsibilities section. However, many of the top Responsibilities sections remained stable between the two surveys. The most notable difference was in the Information Technology/ Telecommunications section. In 2010, respondents had an updated and greatly

expanded responsibilities list (for IT/ Telecommunications) from which to choose, and as a result, Installation Management (which was not a choice in 2005) received the top score in 2010.

Editor: Any further comments about the 2010 survey?

CW: We (the ACCE Board and Body of Knowledge Survey Committee) would like to extend a big thank you to everyone who took the time to complete the survey. This very important activity has allowed us to gain valuable insight into the practice of the CE profession, as well as assist in ensuring that the Clinical Engineering Certification process is both effective and relevant.

Colleen Ward

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Why Clinical Engineering? continued

(Continued from page 5)

We wrote a code of ethics, we started training programs, we brought the CCE exam back from the dead, we have teleconferences, we give out awards but we still have much more to do to be sure that we continue helping others.

What do we need to do? We need to communicate to others, both inside and outside of clinical engineering, problems that we find. We need to mentor new people in the profession because many of us are getting old and will need someone to handle the equipment when we are in a hospital bed. We need to push the government agencies to look at benefits and risks of new devices in a timely fashion so the good technologies come out quickly and the bad items never get out or if they do they are not out for long. We need to tell the IT people that interconnecting devices to their systems means that they cannot change addresses of systems without telling

us. We need to work with the vendors telling them clearly what is right and wrong with their products. We need to push the vendors to provide us with current software to test devices in our hospitals. But most of all we need to get involved as much as possible with the planning that goes on in our hospitals. Too many of us have seen a bunch of boxes arrive for incoming inspections that we were never told was coming and that we would have to install the equipment, take out the older equipment, moving that to another floor or department and do it quickly.

In 20 years we have made some progress but there sure is still a lot that our profession needs to do. We are helping others so we can hold our heads high because we truly help others regain their health. Now if they would only pay us a little more.

Dave Harrington

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The View from the Penalty Box

As I write this column many things race through my mind. Some come from many years ago and others come from our current situation. It seems that everyone was predicting problems or the end of the world in the near future. Well the world did not end, for everyone on May 21 as predicted but to those in tornado alley it was close. I just hope that no more hospitals are damaged like St. John's in Joplin MO was. Of course there were all the hospitals in New Orleans that flooded out in 2005, those in Houston in 2001 plus many others over the years and they have come back. The spirit of the workers in these troubled hospitals is amazing and their desire to help others is so great that they can overcome most problems.

Predictions for the "end of the world" dates include October 21, 2011 when some believe that the world will be destroyed by fire; December 21, 2012 where some believe that the Mayan calendar predicts an apocalypse, or October 1, 2013, when all of our equipment must be interconnected and electronic records in place? We sure are getting a lot of predictions.

I think the majority of us in this profession of clinical engineering, or whatever we will be called, are in it to help others in every way that we can, it sure isn't for the money. We have done great work in

the past but now we have to look to the future and go after the problems plaguing healthcare. Some are very correctable with technology and other problems are not. But all can be corrected if we work together. This has to start out by listening to each other and simplifying the problems. As we learned so many years ago $2 + 2 = 4$ but then we progressed, (some may say regressed), to calculus and it complicated everything. So many problems with equipment application come from the users not reading or understanding the instructions on how to use that device. Why is this happening? Some of us believe that a major contributor is the demand by many for instant information from equipment and others, as seen in all the "social networks" that many people seem to be putting their time into instead of following directions and doing their jobs. This next generation about to enter the work place or college seems to have a limit of 145 characters per message. Can these people be trained to work as engineers or technicians or nurses or physicians? I sure hope so or our healthcare in the future will be really bad.

Moving on to other topics, the debate that we have going on about the cost of healthcare is finally getting down to specifics. A recent newspaper article in the Boston area listed the common charges by hospitals for certain procedures. The

range was huge and the highest priced hospitals were not necessarily providing the best quality of care. In another recent news item a drug used to prevent premature labor that has been in use for over 50 years and was just forced by the FDA to go through the full drug approval process. Like many other drugs, it had been sold as "generally regarded as safe". But now it costs over \$1,000 per treatment up from the \$15 per treatment before it was approved. It was also reported that the drug is unchanged but has a new name so the company can and will charge more.

We have some major tasks ahead of us on getting everything connected and communicating in the same language so the data is real and useful. We need to share the wins and losses with our colleagues so we are not all reinventing the same solutions. Can we work together and get the problems solved or will we go passive and let someone else come up with the solutions and then complain that "we get no respect"? Rodney used that line for a long time but so have all too many clinical engineers. Respect is earned and not automatically given to a title or job.

Have a great rest of your summer!

Dave Harrington

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ORBIS-Sponsored Memberships

ACCE would like to thank ORBIS International for its visionary leadership in sponsoring Clinical Engineering professionals from developing countries who have limited economic means to afford the benefits of ACCE's membership.

The ORBIS sponsorship started in 2002 with a donation of \$3,000 to be used as payment on a one year ACCE membership for fifty international CE professionals designated by ORBIS. ACCE can also nominate international CE professionals as beneficiaries of this generous donation with ORBIS' agreement. At the time, it was estimated that the process would be

completed in one year. But the complexities of providing judicious stewardship of these funds while complying with ACCE's high professional standards proved to be more time consuming than expected.

With the assistance of numerous ACCE members who were determined to bring the benefits of membership to colleagues from developing countries, every obstacle and every challenge was overcome in order to fulfill ORBIS's original purpose for the donated funds.

I am happy to report that the ORBIS sponsorship has finally resulted in 25 CE

professionals from three developing countries having their memberships paid through 2013.

ACCE would like to invite other organizations to follow ORBIS's example and leadership in this area. The challenges of supporting healthcare technology are shared by every country and over the years ACCE has demonstrated its commitment to promote the best CE practices throughout the world.

Julio Huerta, ACCE Treasurer

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The ACCE Clinical Engineering Symposium and other Highlights from AAMI 2011

AAMI 2011 was a great conference. It was kicked off by the annual ACCE Clinical Engineering Symposium. The symposium was aimed at addressing Clinical Engineering needs in today's world. The theme of this year's symposium was "Interoperability – The Path to Lower Cost and Higher Quality Interfaces". We had six distinguished speakers who shared their knowledge on medical device connectivity and interoperability. We had a packed house with over 250 attendees.

The symposium was opened by ACCE President, Mario Castañeda, who introduced the speakers and set the tone for the program. It was followed by Jim Keller Vice President for Health Technology Evaluation and Safety for ECRI Institute and President-Elect of ACCE who shared his perspectives on hospitals' early efforts with device connectivity. Jim spoke about the new challenges that medical device connectivity has introduced to Clinical Engineering departments. He also stressed the importance of Clinical Engineering taking on a leadership role in their hospitals' interoperability efforts through, for example, helping to develop a clear strategic vision, fostering relationships, and making sure that clinical input and processes are carefully considered in all interoperability-related plans.

Glen McQuien, Manager of Clinical Engineering for the Mayo Clinic and Ted Cohen, Manager of Clinical Engineering, for UC Davis Health System shared how they approached integration in their organizations. Glen addressed the need for Clinical Engineering to provide input from the very beginning of medical device connectivity projects. He spoke about the importance of having a good understanding of change management and of cooperation between Clinical Engineering, IT, and vendors. Ted described how UC Davis achieved integration through a strategic approach. He also addressed the importance of change management, network knowledge, and the ever-burning issue of associating physiological data with the correct patient (Positive Patient Identification).

John G. Rhoads, Co-Chair of the Integrating the Healthcare Enterprise Patient Care Device (IHE-PCD) Technical Committee, and Ken Fuchs, Co-Chair of the Health Level Seven (HL7) Health Care Devices Work Group, also spoke about the importance of Positive Patient Identification, and on how to move from Standards to Interoperability and what IHE-PCD is doing about this. They addressed the fact that today's device interfacing continues to require considerable time, effort, and resources, which many hospitals do not

have enough of. They also spoke about the fact that standards are a starting point for interoperability. They concluded that supporting and specifying IHE-PCD compliant products (e.g., in RFPs, vendor discussions, etc.) is a step in the right direction that will move us closer to real interoperability.

Bridget Moorman, President of BMoorman Consulting, shared valuable data on medical device replacement costs required to meet Meaningful Use Criteria in 2011. She spoke about the importance of considering standards (e.g., IEEE 11073 data standards, specific networking standards, security standards, IHE profile conformance, etc.) in acquisition documents. She also spoke about how early tracking of interoperability characteristics of existing device inventory can assist providers in making prudent and cost effective medical device integration decisions. For more information on the Symposium and to download the presentations, please visit <http://www.accenet.org/default.asp?page=news§ion=symposium>

Other highlights from the conference include Dr. Bruce Hallbert's keynote on lessons from the nuclear industry; Dr. Ann Scott Blouin's keynote in which she emphasized how human factors engineering needs to be built into the healthcare system; perspectives from George Mills on the Joint Commission's Environment of Care Standards; a session on alarm safety presented by ACCE President-Elect, Jim Keller, ACCE Vice President, Jim Welch, and ACCE member Alan Lipschultz; an overview of AAMI's Top Ten Medical Device Challenges led by Carol Davis Smith of Premier, Dave Francoeur of CREST Services, and Tobey Clark from the University of Vermont and Past President of ACCE; and of course the ACCE reception.

Illir Kullolli, MS,

ACCE Education Committee Chairman

Jim Keller, MS

President-Elect, ACCE

MEDICAL DEVICE ALARMS SUMMIT



October 4-5, 2011 — Herndon, VA

You are invited to play an active role in a multidisciplinary "all hands on deck" summit of medical device industry representatives, clinicians, clinical engineers and technicians, academics, patient safety officers, subject experts, and other stakeholders.

Following the model of the successful 2010 AAMI-FDA Infusion Device Summit, stakeholders will develop priorities on the key issues with the safety and effectiveness of medical device/system alarms.

Over a recent four-year period, the U.S. Food and Drug Administration reportedly received more than 500 reports of patient deaths related to alarms on monitoring devices. The topic has been the focus of national media attention, a Joint Commission sentinel alert, a special ECRI Institute report, a special AAMI issue of *Horizons* (May 2011), and peer-reviewed articles from all three conveners plus many other organizations. Alarm safety was one of the top issues in recent AAMI and ECRI Institute surveys on "top 10" device issues.

Your input is essential to this effort, and we look forward to working with you on October 4-5.

Program details for this event will be available in early August. Please check back.

Questions? Contact Chris Dinegar, Vice President, Education at 703-253-8270 or e-mail cdinegar@aami.org.

Are Hospitals Operating Rooms Wet Locations?

In April, the NFPA hosted a Webinar on the evaluation of health care operating rooms as wet/dry locations. The topic is not new. The risk assessment approach by NFPA to quantify the basis for an outcome is new. As noted, the purpose of the study reported in the Webinar was to define and analyze the hazards associated with hospital operating rooms to clarify the classification type. The historic issue is the requirement to use isolated power systems (IPS) and their associated line isolation monitors (LIM's) in the operating room. The use of the acronym LIM seems to be more common to designate the isolated system.

The 2008 National Electrical Code (NEC), in Article 100, defines separately a dry location and a wet location. Article 517 defines a wet procedure location. A distinguishing characteristic between a dry location and a wet procedure location is whether the area is "normally" subject to wet conditions during patient procedures.

The background of the IPS is well-known, and is actually a combination of issues including the use of flammable anesthetic agents, and issues related to the use of electrocautery.

IPS was required in 1948 in NFPA 56 (predecessor to NFPA 99). The requirement was dropped in 1987 from NFPA 99. A key area of debate for the 2009 ROP and ROC cycles was the question of requiring a risk assessment methodology to classify an operating room as a wet or a dry procedure area.

The risk assessment methodology as described by the NFPA study can be based on the volume of surgery by type and fluid losses in surgery. Irrigation fluid usage, blood contamination of medical staff (blood as a conductor), blood spray, and the evidence of fluids on the floor are the more specific data points.

In the US, ORs are not considered wet procedure locations by the Department of Defense (DOD), Veteran's Health Administration (VHA), ECRI Institute, the American Society for Healthcare Engineering (ASHE), and the Association for the Advancement of Medical Instrumentation (AAMI). By contrast, ORs are considered wet locations by the American Society of Anesthesiologists. Internationally, there is a mix of requirements regarding IPS. As presented in the NFPA

data, the basis for the differing opinions appears to be a lack of data indicating a problem.

The lack of conclusive data on the nature of the electric shock hazard in the operating room is consistent with the lack of data in general on medical errors. The most common issues on reporting adverse events, be they electric shock or medical errors, is a workplace culture that does not favor recording or reporting. Drawing attention to an unsafe act is not in an employee's best interest.

Perhaps the most interesting part of the presentation was the proposed risk assessment methodology. The methodology calculated the probability of contact with a liquid release based on the volume of fluids present in OR, the size of OR, and the frequency of OR use. The calculated probability of OR staff exposure to fluid was the ratio of liquid area to area of the room. Calculating spill size was based on the SFPE Handbook (4th Ed.) Section 2 Chapter 15 "Liquid Pool Fires", by Gottuk & White.

The overall conclusions from the study were not unexpected. There is a high volume of fluid in the OR, but quantitative liquid release frequency data is lacking. Some anecdotal evidence for fluid releases and spills was found, but not enough information to quantify volume and frequency. There are few reported electrical injuries in the OR, but many injuries are believed to go unreported (I think in general this conclusion is based on the general feeling about under reporting of adverse events and not specifically related to under reporting of OR injuries). Most of the international community uses IPS/LIM in ORs, the most notable exceptions being the US, Canada, Australia, and New Zealand. Cost data is lacking, and a detailed cost benefit analysis would be valuable.

William Hyman

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Reference: NFPA Webinar on the Evaluation of Health Care Operating Rooms as Wet/Dry Locations. Melissa K. Chernovsky, Ph.D., Joel E. Sipe, Ph.D., and Russ A. Ogle, Ph.D., P.E., CSP. Presented April 28, 2011

Editorial: Healthcare Technology Management Name

What's in the "new" name, Healthcare Technology Management? The AAMI Technology Management Committee (TMC) recently completed its a draft of its profession naming report. Based on a session I attended at AAMI's annual meeting in San Antonio in June, their conclusion is to name the profession: "Healthcare Technology Management". Being a degreed engineer (B.S., Electrical Engineering, M.S., Biomedical Engineering) and the manager of a "Clinical Engineering Department" that has worn that name for more than 35 years, I have no plans on making any changes to what I call myself or my department. However, as this edition of ACCE News went to press, I thought a little personal reflection on this naming issue was relevant so, let's dissect this new name.

The American Heritage College dictionary (4th Edition, 2002), defines "Healthcare" as follows: "the prevention, treatment and management of illness and the preservation of well-being through the services offered by the medical and allied

health professions."

"Technology" is defined as: 1). "the application of science, especially to an industrial or commercial objective; 2). The scientific method and material used to achieve a commercial or industrial objective."

"Management" is defined as: "the act, manner, or practice of managing, handling, supervision or control. The person(s) who controls or directs a business or enterprise."

In order to compare the new name to Clinical Engineering, let's do a dictionary dissection of Clinical Engineering. "Clinical" is defined as: "Of, related to, or connected with, a clinic, involving or based on a direct observation of a patient."

"Engineering" is defined as: "The application of science to practical ends such as the design, manufacture and operations of structure, machines and systems. The profession of, or work performed by, an engineer."

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Perspectives from ECRI: Another Anniversary

ECRI Institute would like to congratulate ACCE for reaching its twentieth anniversary. It's an admirable milestone that ACCE should be very proud of, especially because of its strong support, advocacy, and leadership in the clinical engineering community. ECRI Institute also just reached a milestone. We published the fortieth anniversary of our *Health Devices* journal in April 2011.

Interestingly, as described in our fortieth anniversary issue, when *Health Devices* premiered in April 1971, healthcare was a very different world. However, some of the challenges that we dealt with then are very similar today. The clinical engineering profession was just getting started then but it was already helping healthcare organizations deal with their most difficult technology challenges.

For example, the first *Health Devices* devoted almost half of its content to the controversy over the installation of isolated electrical power centers in special care units. In 1971, many hospitals were considering investing thousands of dollars in these power centers. They were being beset by manufacturers and other parties who claimed (1) that isolated electrical power centers were a cost-effective technology that significantly decreased electrical safety risks, (2) that these power centers were required by applicable codes and by accrediting bodies, and (3) that they would minimize the need to train hospital staff in electrical safety.

However, none of the isolated power claims were true. To make matters worse, some advocates of isolated power technology were spreading bogus information about the number of deaths in hospitals from accidental electrocution, trying to panic hospitals into acquiring these systems. ECRI Institute's report (Emergency Care Research Institute was our name at the time) provided strongly worded, point-by-point rebuttals to each of the arguments. We cleared up the misinformation and advised hospitals to redirect their resources toward more effective safety-related efforts. The early members of the clinical engineering profession were instrumental in helping hospitals make these decisions, with the support of ECRI Institute's findings and commentary.

Amazingly, this same issue is still being dealt with 40 years later. It has again been proposed that the National Fire Protection Association's NFPA 99 standard be revised in a way that would encourage the use of isolated power in ORs. ECRI Institute and the clinical engineering profession, now represented by ACCE, are in the thick of it again. ECRI Institute continues to believe that there is no valid justification for making the change to NFPA's standard. Both ECRI Institute and ACCE are providing feedback on this issue to the relevant NFPA committee. A decision is scheduled to be made at the June NFPA conference.

ECRI Institute published another article on the isolated power topic in the June 2011 issue of *Health Devices*. This information can be used by our ACCE colleagues to again help their healthcare or-

ganizations make the most appropriate decisions about isolated power. The new isolated power article is one of the ways that ECRI Institute will be supporting the clinical engineering community and ACCE during next forty years of *Health Devices*. We look forward to working with our ACCE colleagues on this and many more challenging health technology topics and issues as we move toward our new anniversary milestones.

The *Health Devices* anniversary issue and the new isolated power article are available on the member webpages for ECRI Institute's *Health Devices* System, *Health Devices* Gold, and *SELECTPlus* programs. Feel free to contact me if you have any questions about how to access this information.

Jim Keller, ACCE President-Elect

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Healthcare Technology Management name continued

(Continued from page 10)

"Engineer" (noun) is defined as: "One who is trained or professionally engaged in a field of engineering, 2). One who operates an engine." As an aside, the last engineer definition explains why firemen, bulldozer operators and drivers of trains call themselves engineers. Enough of the dictionary browsing!

So, back to the name Healthcare Technology Management. One argument that the dictionary supports is that "healthcare" is a good naming term to use because it is broad and has a wider "umbrella" than "clinical" which implies at a clinic or healthcare facility or treating an illness, and does not adequately cover homecare and prevention. Technology certainly applies to our profession, so there is no argument there. Many Clinical Engineers, but not all, hold management positions, but I question whether "management" should be in the title. Certainly the majority of people in this field (clinical engineers, BMETs, field service staff etc) are not in management, although you can argue that they are "managing" the technology, not the people. Does a field service staff person

"manage" the technology that he works on? Another way to look at the term management in the name is: Does the Information Technology (IT) department call themselves Information Technology Management? Most do not!

So, in my view, we (BMETs, Clinical Engineers, medical device field service staff etc) are all under the Healthcare Technology umbrella, albeit most are not managers. However, healthcare IT is also under the same naming umbrella. Since healthcare IT is at least 10 times bigger than clinical engineering, or whatever the department name is this year, I'm sticking with the clinical engineering name for myself and my department and hoping that my department is not gobbled up by IT before I retire.

This editorial is the opinion of Ted Cohen, and is solely my opinion, and in no way reflects the official position of the ACCE, the ACCE News nor my employer, UC Davis Health System.

Ted Cohen, ACCE News Editor

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ACCE

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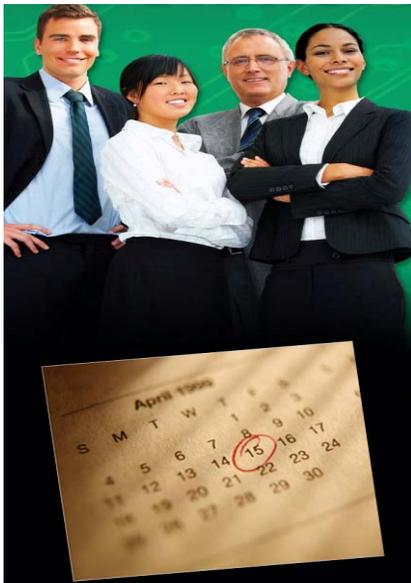
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ACCE Mission

1. To establish a standard of competence and to promote excellence in Clinical Engineering Practice
2. To promote safe and effective application of Science and Technology to patient care
3. To define the body of knowledge on which the profession is based
4. To represent the professional interests of Clinical Engineers

Journal of Clinical Engineering – Call for Papers

The Journal of Clinical Engineering, which prints the ACCE News in each issue, is interested in papers from you. If you have an urge to write, and good clinical engineering activities or thoughts to share, please consider JCE as one of your outlets. One type of article not seen in a while is the Department Overview which presents how your department is structured and how it performs its functions. Shorter “Perspective” pieces are also welcome. You can discuss manuscript ideas with fellow member William Hyman, who is one of the editors of JCE. He can be reached at w-hyman@tamu.edu. Completed manuscripts can be sent to William or Michael Leven-Epstein at le-comm1@aol.com



Calendar

August 30—Sept 3

IEEE EMBS
Boston, Mass

September 8-9

3rd Medical Device Connectivity
Conference and Exhibition
Boston, Mass

October 4, 5

Medical Device Alarm Summit
Herndon, VA

Feb 20-24, 2012

HIMSS 2012
Las Vegas, NV

We are on the Web:

www.acenet.org

June 2-4, 2012

AAMI Annual Conference and Expo
Charlotte, NC

ACCE Teleconferences:

See <http://accenet.org/> for information about two teleconference series: CCE Study course (August 2011 through October) and the monthly educational series starting in September.