Advanced Clinical Engineering Workshop: Peru

An advanced clinical engineering symposium and workshop was held in Lima, Perú on August 13-17, 2007. The conference was divided into a three day HTM symposium held at the Pontificia Universidad Católica del Perú (PUCP) and a two day CE workshop at PUCP. Sponsors for the workshop were the PUCP – CENGETS (the Center for HTM), MINSA (the Ministry of Health or MoH who focus on serving the poor), EsSalud (the Social Security Health System who serves workers), PAHO, WHO and ACCE. The symposium attendance was approximately 80 and workshop approximately 60. Several health leaders from MINSA, EsSalud, and other key agencies were involved.

Symposium. The Symposium was initiated with several presentations from health leaders and CENGETS-PUCP to provide the health system current status. CENGETS, with assistance from PAHO Perú, published the 2006 document – Clinical Engineering and HTM: Advances and Perspectives – which outlines HTM potential best practices for Perú.

Antonio Hernandez, Regional Advisor, Health Services Physical Infrastructure and Technology, PAHO provided an overview of HTM, efforts by PAHO and the history and success of the HTM and Advanced CE Workshops. It was critically important for the audience to see the worldwide scope of HTM.

ACCE faculty then gave brief overviews of core Symposium topic areas: (1) Health Technology-HT Policy (Tom Judd), (2) HT Assessment & Planning (Mario Castañeda), (3) HT Management (Gord McNamee), Safety-Risk-Quality or SRQ (Tobey Clark), (4) Emerging HT Topics, e.g., telehealth (Clark-Judd) and (5) Medical Device Regulation (Hernandez). Luis Martinez of CENETEC Mexico ended with an excellent example of how HTM is applied in Latin America.

The second day of the symposium covered core topics with global case studies provided by ACCE faculty. The day was highlighted by three applied HTM presentations from Perú - Luis Miguel de Aguilá on HT implications of the over 10% of the Peruvian population with handicapped needs, Luis Enrique Sifuentes on MoH issues, and Rossana Rivas on CENGETS.

Outside the Program, ACCE faculty met the Minister of Health, and, with Dr. Rigoberto Centeno of PAHO Perú and Luis Enrique Sifuentes (a clinical engineer and highest ranking CE official in MINSA at #3 level), had an extended visit with the #2 health official Dr. Elias Meliton Arce Rodriguez, the key political thought leader in MINSA. Together with meetings with the PUCP Vice President and Dean of Engineering and Science and the UNESCO representative, these discussions resulted in a proposal that MoH give CENGETS - with ACCE assistance - four major projects to conduct through DGIEM in the first 100 days after the August Program:

- HT planning for high visibility HTM work in Lima (e.g., ambulance issues and three emergency care hospitals)
- Development of a national prioritized HT Plan
- Development of projects

(Continued on page 6)
Congratulations to Newly Certified Clinical Engineers

Congratulations to the following newly certified Clinical Engineers. These individuals have shown a commitment to professional development and excellence in the clinical engineering profession:

Mark Bruley—ECRI Institute, Plymouth Meeting, PA
Anthony Caruso—Duke University Health System, Durham, NC
Vinnie DeFrancesco—Manchester Memorial Hospital, Manchester, CT
Ben Loewenbach—Hunter Holmes McGuire VA Medical Center, Richmond, VA
Barbara Maguire—American Medical Link, Somerset, NJ
Jennifer Nolan—University of Michigan Hospital, Ann Arbor, MI
George Sallwasser—Hampton VA Medical Center, Hampton, VA
Elliot Sloane—Villanova University, Villanova, PA

In addition, there are approximately seventeen additional candidates that will be taking the written exam on November 3, 2007.

For those wishing to pursue certification, a new version of the CCE study guide is now available. For information visit http://www.accenet.org.

CCE Certification: New Applicants and Renewals

1. The next CCE exam will be given in November 2008 in 28 cities around the US. The deadline for applications is September 1, 2008. Please see the website: http://www.acce-htf.org/certification to view the handbook and application for this exam.

2. Any certified clinical engineer that is currently listed with the ACCE Healthcare Technology Foundation's Healthcare Technology Certification Commission and whose listing expires on June 30, 2007 has until June 1, 2007 to complete and turn in their completed renewal form. The CCE renewal Handbook and Renewal Application Form can be downloaded from the CE certification website: http://www.acce-htf.org/certification. The renewal fee can be paid by check or by credit card on the ACCE HTF website.

3. In 2007 the mix of questions on the CCE exam will change slightly as the exam content adjusts to track the changing clinical engineering body of knowledge. This past summer ACCE released the results of a recently conducted "Body of Knowledge Survey". The US Board of Examiners for Clinical Engineering, chaired by Patrick Lynch, are making the adjustments in the mix of questions. The changes will be published in the 2007 CCE Handbook which is available on the ACCE-HTF website.

4. Any questions can be directed to Cheryl Shaw, the certification program's new secretariat, at certification@acce-htf.org.
Perspectives from ECRI Institute: Patient Supplied Medical Devices

The ACCE Healthcare Technology Foundation (HTF) published an excellent resource for patients to help understand issues related to bringing their own medical devices into the hospital. The brochure is part of an HTF public awareness initiative to bring easy-to-understand information to the public about specific technology-related safety concerns. ECRI Institute recently published a Health Devices Guidance Article that can be used by hospitals as a complement to the HTF brochure. The article is entitled “Patient-Supplied Medical Devices. Should patients be allowed to use their own medical devices in the hospital?” This article is Part 2 of a two article Health Devices series entitled “Patient Supplied Equipment. What to allow, what not to allow, and why.” Part 1 of the series focuses on patient-owned nonmedical equipment and provides guidelines for ensuring the safe use of patient-owned laptops, grooming devices, and other personal electrical equipment. The full series was published in the May 2007 issue of Health Devices.

The use of patient supplied medical devices is a tricky issue. The sense of well-being and confidence that comes with being able to use familiar and trusted devices might be an important factor in the patient’s satisfaction and progress. However, the clinical benefits associated with the use of a patient’s own medical device have not been clearly established, and a seemingly innocuous issue or unexpected problem with the device could lead to disastrous results. And, unfortunately, it’s not always in the patient’s best interest—to grant a patient’s request to bring his or her own medical device to the hospital. With some devices and under some circumstances of hospitalization, the use of a patient-supplied device could put the patient at risk. Also, such devices can create a tremendous burden for the healthcare facility.

ECRI Institute’s guidance article provides perspectives on these issues. It generally recommends that patient-supplied medical devices be prohibited, but that the use of specific types of devices be allowed—or that occasional exceptions be made—for cases in which the hospital has carefully reviewed the issues and taken appropriate safety measures. In practice, this will mean that hospitals will need to identify some devices that should always be prohibited (e.g., heating pads) and some that can generally be allowed with minimal requirements for safe use (e.g., canes, walkers). Still other devices will require more extensive consideration: A facility may decide that it can allow the use of some devices provided that specific steps and safety precautions are taken. Devices that may fall into this category include CPAP units, insulin pumps, and ventilators.

The guidance article includes a detailed discussion of the benefits and risks of using patient owned equipment, citing specific device types and scenarios. For example, an alarm for a patients-supplied ventilator or infusion pump may not be sufficiently audible to be heard by clinicians in the hospital setting. It also reviews related perspectives from the Joint Commission and presents the results from an ECRI Institute poll on hospital policies related to patient owned medical devices. Interestingly, almost 50% of surveyed hospitals allow patients to bring their own medical devices to the hospital - if they sign some type of waiver and/or require hospital inspection of the device. The major section of the article comprises seven pages of detailed guidance on how to develop a policy related to patient-owned medical devices, considering different types of devices and clinical situations.

Members of ECRI Institute’s SELECTPlus, Health Devices Gold, and Health Devices System programs can access the article on patient owned equipment on their membership Web sites at www.ecri.org. You can contact me at (610) 825-6000, ext. 5279 or jkeller@ecri.org if you would like information on how to access this article. Also, the HTF brochure can be viewed at the HTF Web site at www.acce-htf.org.

Jim Keller is ECRI Institute Vice President for Health Technology Evaluation and Safety, and a past Member at Large for ACCE’s Board.
In my past few “rants” in this space I have talked about the lack of support from manufacturers on equipment and the lack of communication between departments in the hospital. The problems are many and we all need to keep the pressure on the manufacturers to supply better documentation, reasonably priced repair parts and services or they will price themselves out of the market. Stop and think about all the companies that used to be in the medical field that have disappeared. Some of the disappearances were caused by bad products, but most were caused by bad service to bad products at a high cost. Now we have large companies selling capital goods at a break even point and charging outrageous sums for service and parts. One company has been widely reported to make seven times the profit from their service operation as from their capital sales. We need to get the hospitals to look at the long term costs of ownership not just the capital expense of new technology.

Another topic that will bite us in the butts, if we are not careful and active, is the new policy from Medicare not to pay for the “ah shoots” that happen in hospitals. If what is said in the press happens, hospitals will be under huge pressure to really do more, instead of just talking, about preventing the “ah shoots.” We will have to get involved with infection (reports that 7% of patients become infected in hospitals), to falls (reports that 3% of patients suffer falls), to med errors and wrong side surgery. I am sure that the medical staff will receive guidance in how to structure equipment complaints to indicate a malfunction instead of a user error when something happens with devices. We need to be prepared for this one as it will be a major push to keep revenues.

Moving on to another topic that is near and dear to many hearts, electrical leakage testing. I can see doing electrical leakage testing as part of the incoming process and after repairs, but I fail to see the value of such testing in clinical settings. I have yet to see a leakage problem detected with a meter that was not evident by some other means, mostly by looking. This was a problem 40 years ago but it is not now. How much longer will we, as a profession, keep this useless test in place? Just think of all the time we would save by not doing electrical leakage that could be used to get involved with other more pressing and real patient safety problems.

We are headed for more problems in this area as computers come closer to the patients, many of these are battery operated, in plastic housings, with two prong cords but we want to test them. Why do we need to test them? What is the value of the testing? What is the cost benefit of such testing? All those “W” questions from engineering 101 that we seem to have forgotten about we need to reevaluate. It is time to look at what we do and how we do it in the twenty first century and not bound by needless tasks from the twentieth century that are long past their usefulness.

While on the subject of useless tasks why do we do “PM” testing on modules in the ICU monitors? If the module has a problem the nursing staff will find it and tell us about it. If the nurse does not find the problem it can mean one of two things: 1) the problem is not related to patient care or, 2) the module is not used. Just think about how many pressure modules you have and how many invasive pressure lines you use in most ICU settings. Probably 50% could be removed with no impact on patient care.

We also need to look at time scheduled inspections, what needs a true PM? Probably less than 5% of our inventories. What needs just a functional test? What is just a vision verification that it is still in the hospital? We need to spend more time on rounds and talking with users and less time on non-productive items.

We need to spend more time and effort on documenting our value added to the hospital and less time documenting useless tasks that have little or no valued in patient care, cost containment or anything other than meeting long outdate requirements.

I look forward to hearing your comments on these items; it is time to change what we do and how we do it. Together we can make progress happen by ourselves we cannot so please send in you thoughts.

Dave Harrington
dharrington@techmed.com
Clinical Engineering Excellence Award (CE²): This award is a major new initiative of the Foundation. It is intended to promote excellence through the evaluation and recognition of best practices in broad institutional leadership in the management and advancement of healthcare technology in hospitals, outpatient facilities, and in patient’s homes. The objective of the CE² Award Program is to promote and disseminate excellence in clinical engineering leadership. The award process will identify clinical engineering professionals that demonstrate leadership excellence, by recognizing these professionals through the award itself, by supporting the award recipient’s further professional education, and by widely sharing the way in which they practice leadership in their institutions.

The focus of CE² is on individual achievement at the institutional level that go beyond that of routine operations of a quality clinical engineering department. The CE² Award also seeks individuals whose leadership is functional rather than merely being reflected by their position in the organization chart. Included in this category is their impact on public benefits. This recognition of leadership will enable improvement in processes, outcomes, and relationships associated with the management and advancement of technology throughout the health care delivery system.

The CE² program functions through a panel of experts that are charged with the implementation and administration of assessment methodology, qualification requirements, scoring guidelines, and processing criteria of submitted applications.

It is noteworthy that this award has received substantial individual and corporate funding. The latter is based on the recognition that high quality clinical engineering has considerable value to those selling equipment into the hospital environment.

The time to apply for this award is now! The application materials and additional information are at the Foundation’s website at http://www.acce-htf.org/leadership_award.asp.

Marvin Shepherd Patient Safety Award: Watch for the call for nominations for the next Marvin Shepherd Patient Safety Award. The goal of this award program is to annually identify the best qualified recipient(s) for their contributions to the advancement of patient safety. The individual selected could be an inventor, incident investigator, author, educator, technology manager, active promoter of safe use of technology in healthcare, and/or a person with similar patient safety accomplishments.

Donations: As always, donations to the Foundation are welcome at any time, and they are tax deductible. Your donations are used to fund professionally relevant activities such as those described above, as well as Certification in Clinical Engineering (CCE). Join your friends and colleagues in supporting these aspect of your professional life.

William Hyman, ScD, PE, Secretary
secretary@acce-htf.org
Wayne Morse MSBME CCE, President
president@acce-htf.org

Volunteers: NFPA 99

The National Fire Protection Association is currently undertaking a major rewrite to NFPA 99, Standard for Healthcare Facilities. These updates have the potential for large impacts to the clinical engineering community.

To ensure that ACCE is represented in these important discussions, we are seeking ACCE members who:

1) Are members of NFPA (or would like to be)
2) Will help form an ACCE committee to decide which areas ACCE will make recommendations in
3) Will help draft an ACCE position paper on the upcoming revisions to NFPA 99, and
4) Are perhaps willing to join the related NFPA 99 committee

This is a tremendous opportunity to help shape a national standard and insure clinical engineering perspectives are considered. If you are interested, please contact Arif Subhan, Chair, Education Committee, at arif@masterplan-inc.com.

Advocacy Awards: Call for Nominations

On behalf of the ACCE Board and the ACCE Advocacy Committee, we are happy to announce the call for nominations for the ACCE Advocacy Awards for 2007. The Clinical Engineering profession has many distinguished individuals that deserve to be recognized for their accomplishments.

Please take a few minutes to review the awards criteria and send in your nomination. The list of awards, criteria and nomination form can be found on the ACCE website at http://www.accenet.org.

Award nominations are due by November 15, 2007 to be considered for presentation at the next ACCE Annual Meeting in February. Please help us recognize all the great work being done by clinical engineers by nominating a deserving candidate from our community!

Nancy Presly
advocacychair@accenet.org
between Lima and a key rural province re Telemedicine and other HTM issues

- Further national development of HTM training for the continuum of healthcare professionals involved in HTM decision-making (well represented by the cross-section of Program participants – 18 physicians, 47 engineers, and several administrators, nurses, pharmacists, architects, and computer specialists).

PUCP will strongly support CENGETS and these efforts, with to be proposed financial help from UNESCO. ACCE (led by faculty member and ACCE Vice President Mario Castañeda) is also considering how to best assist these efforts.

The third day of the symposium continued a deeper look at key HTM issues such as patient safety (Clark), Quality (Judd), Infrastructure & New Construction (Castañeda and Acevedo), Health Care Technical Services-HCTS (McNamee), PACS (Sifuentes), and Leadership & Economic Analysis/Decision-Making (Castañeda, Rivas, Judd).

Perhaps a new occurrence in the history of ACEWs was the earthquake. Just before 7 pm local, the meeting was interrupted by a 5-minute long level 8.0 earthquake centered far enough away from Lima to not cause substantial damage there, but tragically with over 500 deaths in 3 cities to the south. The nearly concluded program was ended for the evening after listening instead to an ensemble of guitar musicians playing indigenous music.

Workshop. Tom Judd and Tobey Clark opened with an overview of the case study assignments/protocol which would be used in the workshop. The case study program element has continued to be an outstanding opportunity to put into practice what has been learned at the ACEW Programs, typically going beyond the expectations of the faculty.

Thursday’s program included presentations on HTA and contract management, HTM strategies, computerized HTM, Equipment PM & Repair, new CE program start-up budgeting/finance, and HTM job roles and responsibilities. The day ended with an outstanding presentation from Dr. Fernando Carvallo, Administrator of the 130-year old Dos de Mayo MoH hospital in Lima that has implemented successful HTM strategies partnering with CENGETS.

In the morning before the workshop began, the faculty had an opportunity to visit the National Perinatal Institute (MoH) and to speak with its leadership, several of whom were attending our Program. This visit perhaps created an opportunity for CENGETS-PUCP to place staffing at this highly important facility as they have done at other key hospitals in Lima.

Friday’s program continued the pattern of increasing Peruvian and Latin American presentations, opening with Luis V. re HTM & Telemedicine in Peru. Luis Martinez, Dr. Juan Valencia, and Francisco Acevedo followed with HTM and CE development in Mexico, Colombia, and Chile, respectively. Tobey, Luis V. & Rossana, and Juan shared about the PAHO sponsored emerging online HTM training course for Latin America. Tobey & Antonio presented HTM professional development and internship opportunities in North and Latin America. Luis Enrique Sifuentes discussed next steps for HTM in Peru, and Rossana Rivas closed the faculty presentations with a discussion of an HTM training strategy for Peru.

After an encouraging leadership development talk by Katherine Muller-Marin of UNESCO Peru, participant teams were given a last hour to prepare their case study work, with 15 minutes to report out their results to the entire group.

Tom Judd
judd.tom@gmail.com
2007-2008 Educational Teleconference Program

10/18/2007
Emerging Trends and Technology in Healthcare
John T. Collins, MSE
Director, Engineering and Compliance, ASHE
This session will describe the latest trends in healthcare influenced by technology affecting such diverse areas as the cardiac catheterization lab, neurosurgery, and radiology and plant operations.

11/15/2007
Medical Device Security & HIPAA
Stephen L. Grimes, FACCE, FHI MSS
Principal Consultant, Strategic Health Care Technology Associates
This presentation will: Review the developments in medical device security since HIPAA's Security Rule became effective in April 2005, provide updated information on tools and resources available to address medical device security, address industry's current best practices, describe how security now relates to and needs to be seen in context with the larger issue of medical and information technology convergence.

12/20/2007
Evaluating Medical Equipment Battery Failures Using Failure Mode and Effects Analysis (FMEA)
Arif Subhan, MS, CCE
Senior Clinical Engineer, Masterplan FMEA, which has been embraced by the Joint Commission, is an effective tool that prevents failures before harm is done. The presentation will provide some simple examples of how FMEA can be applied to medical equipment battery failures.

1/17/2008
Is There a Relationship Between Equipment Design and Use Error? A Human Factors Engineering Tutorial
Frank R. Painter, MS, CCE
Director, Clinical Engineering Program
University of Connecticut
Why is human factors engineering critical to the design and development of medical equipment? How can a clinical engineer determine how much human factors engineering went into a piece of equipment and why it is important to know this?

2/21/2008
Responding to Medical Device Incidents
William A. Hyman, ScD
Professor, Biomedical Engineering
Texas A&M University

3/20/2008
(Topic to be announced)
Julian M. Goldman, MD
MGH Anesthesia and Biomedical Engineering, Director, CIMIT Program on Interoperability

The teleconferences are held the 3rd Thursday of each month at 12 Noon Eastern Time (9:00AM Pacific Time etc) for one hour. Registrants will receive the call-in number and presentation material prior to each session. For ACCE members, the cost of each session is $150 per site. For non-members the cost of each teleconference is $195* per site. This allows for up to four participants per site, each additional participant is $10. Each registrant receives a CEU certificate from the University of Arkansas for Medical Sciences for each session they participate in. CDs of each Teleconference will also be available for $50 each.

Teleconferences Registration Form
Please register us for the following sessions:

--- August 16, 07 --- December 20, 07
--- September 20, 07 --- January 17, 07
--- October 18, 07 --- February 21, 08
--- November 15, 07 --- March 20, 08
Total: _____ sessions @ $150/$195 each = $

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5200 Butler Pike
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or
Email to: Secretariat@accenet.org
(with credit card information)

Questions: Alan Levenson
Email: Secretariat@accenet.org
Phone (Voicemail): (610) 825-6067

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Questions: Alan Levenson
Email: Secretariat@accenet.org
Phone (Voicemail): (610) 825-6067
Calendar of Events

- October 22-25, 2007
  World of Health IT Interoperability Showcase (ACCE sponsored IHE PCD will be there?)
  Vienna, Austria
- November 3, 2007
  Next CCE Exam (application deadline September 1, 2007)
  Various cities in US
- February 24—28, 2008
  HIMSS 2008, including the ACCE sponsored Clinical Engineering Symposium on February 24
  Orlando, FL
- February 25, 2008
  ACCE Annual Membership Meeting and Symposium at HIMSS
  Orlando, FL
- February 24-28, 2008
  HIMSS 2008
  Orlando, FL
- May 31–June 2, 2008
  AAMI 2008
  San Jose, CA

ACCE Clinical Engineering Certification Study Guide

The American College of Clinical Engineering has completed a Study Guide for the Clinical Engineering Certification examination offered by the Healthcare Technology Certification Commission established under the ACCE Healthcare Technology Foundation. The Study Guide is available through ACCE for $30. To order a copy of the Guide, please make out a check payable to ACCE and send to:

Alan Levenson, ACCE Secretariat
5200 Butler Pike
Plymouth Meeting, PA 19462

Or e-mail Secretariat@ACCEnet.org and include credit card information (name on card, type of card, card number, and expiration date). Applications are now being accepted for the November 2007 exam. Applications and the applicant handbook can be found at www.ACCEnet.org/certification.

The ACCE Study Guide was written by an independent group of clinical engineers not associated with the exam process.

The ACCE Board and Committee Chairs
(including the results from the recent election)

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We’re on the Web!
http://www.accenet.org