Ultrasound Education and Certification:
West China Hospital

October 20, 2018, Chengdu

Sponsored by:
US Trade and Development Agency / 美国贸易发展署（USTDA）
West China Hospital / 四川大学华西医院

Organized by:
American National Standards Institute / 美国国家标准机构（ANSI）
Inteleos
Sichuan Association of Ultrasound in Medicine and Engineering / 四川省超声医学工程学会

U.S.-China Standards and Conformity Assessment Cooperation Program
The United States Trade and Development Agency (USTDA)

October 20, 2018, Chengdu
2018年10月20日，成都
West China Hospital

Overview of Ultrasound Continuing Education Program in China
11:30 AM - 11:45 AM

Dr. Yau Lan, Director of Department of Ultrasound, West China Hospital

The Career of a Sonographer in the United States
11:00 AM - 11:30 AM

Morning Tea Break

West China Sonographer Certification Model
10:15 AM - 10:45 AM

Yu Meng, Ed.D., Senior Psychometry, Institute of Provider Psychometry

The Importance of Psychometrics in Measuring Provider Proficiency and Standards in a Global Community
9:45 AM - 10:15 AM

Mr. Dale, C.V. M.D., C.F.A., CEO and Executive Director, Interethnic

Remarks from West China Hospital
9:30 AM - 9:45 AM

Opening Remarks from USDTA and ANSI
9:20 AM - 9:30 AM

Non-invasive Vascular Lab, University of Maryland Medical Center

Welcome and Introductions
9:10 AM - 9:20 AM

Chengdu
Wuhou District
10 Dongmen South Street
Guang Yi Hall of Angel Hotel

October 20, 2018

Organized by the American National Standards Institute (ANSI) and Interethnic
and West China Hospital
Sponsored by the United States Trade and Development Agency (USTDA)

Ultrasound Education and Certification: West China Hospital
5:00 Pm - 5:15 Pm

Admission

5:15 Pm

Inquiries, ANS k, West China

Closing Remarks

5:15 Pm

Certification to Improve Patient Care and Provider Preparedness in China

Next Steps Discussion: How to Use Education, Simulation, and Technology

Non-invasive Vascular Lab, University of Maryland Medical Center

Director of Vascular Center and Medical Director of the Center, President, College of Surgeons

Medical Director, MD, RVT, Executive Committee Member

3:00 Pm - 3:30 Pm

Ultrasound-guided Interventional Therapy of Vascular Disease

Professor, Hong Loo, West China Second Hospital

The Application of Ultrasound in Obstetrics and Gynecology

2:30 Pm - 3:00 Pm

Afternoon Tea Break

2:15 Pm - 2:30 Pm

Professor and Researcher, The Ohio State University

Kenan E. E. D. R. T. (R) (M), R. D. M. S. R, V, V, FSDEMS

Putting Simulation Research into Practice

Winne Ng, Product Specialist, APCA, CAE Healthcare

Jovone Gaoo, Country Manager, CAE Healthcare

Ana Wang, Manager, Research and Development, CAE Healthcare

Role of Simulation in Ultrasound Education and Training

1:30 Pm - 1:45 Pm

Lunch

11:45 Am - 12:00 Pm

Why Online Education?
Hosts and Supporting Agencies Overview
opportunities and enhancing the development of China’s key industries.

In order to address the evolving needs of China’s market and closely coordinate with Chinese decision makers, these public-private partnerships have employed a multi-year approach to continue trade facilitation. Standards, and conformatory assessment, energy, and health care sectors.

The Agency, in collaboration with the U.S. government and the Chinese government, has successfully established programs based on this model in the chemical, electronics, and machinery sectors. These programs provide a platform for government agencies and private supports in China and the United States to leverage expertise and resources to advance trade and investment.

The Agency’s success in China is due in part to the public-private cooperative programs that USTDA has supported and its continued support for technology demonstration, training and sector-specific workshops and conferences.


techology demonstration, training and sector-specific workshops and conferences.

Under the Agency’s International Business Partnership Program, USTDA has increased its support for commercial cooperation with emerging economies. These initiatives include reverse trade missions, information access, and increased engagement with U.S. companies necessary to spur increased international business partnerships with U.S.

Trade capacity building and sector development

The U.S. Trade and Development Agency (USTDA) helps to promote U.S. technologies and expertise for required programs.

USTDA also supports the establishment of industry standards, best practices, and sector-specific initiatives, enabling U.S. businesses to export.

The U.S. Trade and Development Agency (USTDA) helps to promote U.S. technologies and expertise for required programs.

USTDA supports the establishment of industry standards, best practices, and sector-specific initiatives, enabling U.S. businesses to export.
To learn more about the U.S.-China SCCP or to express interest in sponsoring or participating in a workshop, please visit our website at:

www.standardsporatals.org/us-chinasccp

Cooperation Program
Assessment
Standards and Conformity
U.S.-China

FOR MORE INFORMATION

E: us-chinasccp@ansli.org
F: 202.293.9287
T: 202.331.3626

Washington, DC 20036
1899 L St. NW - Eleventh Floor
Institute (ANSI)
American National Standards
Director, International Policy
Leslie McDevitt
Throughout its history, ANSI has maintained as its primary goal the enhancement of global competitiveness and conformity with international standards. Organizational functions include standardization, conformity assessment, and policy development. ANSI is supported by a diverse constituency of private and public sector entities, including ISO 9000 (quality) and ISO 14000 (environmental) management systems.

The American National Standards Institute (ANSI) is the national institute for voluntary standardization. Its members include organizations from a wide range of sectors, including industry, government, academia, and consumer groups. ANSI is the voice of the United States in the development of voluntary consensus standards. It is the U.S. member body for the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC). ANSI is recognized by the U.S. government as the national standards development organization for the United States.

The Institute oversees the creation, publication, and use of thousands of norms and standards that are used by businesses, governments, and individuals around the world. ANSI's mission is to promote the development of voluntary consensus standards that improve the health and safety of consumers and workers, promote U.S. trade and economic growth, and enhance the global competitiveness of the U.S. economy.

ANSI is a non-profit, non-governmental organization that was founded in 1898. It is based in Washington, D.C., with offices in New York City and Dallas, Texas. ANSI has more than 27,000 members and is supported by a diverse constituency of private and public sector entities.
Create a global standard of proficiency for ultrasound certification.

Improving patient care and safety in China. Through a growing network of strategic partnerships, Intelesos hopes to exceed existing professional standards by offering courses in the areas of vascular, obstetric, and pediatric imaging. The Chinese ultrasound assessment has been delivered in China since 2006 and was developed in close partnership with the Chinese ultrasound profession. Developed in Spanish by the Association of Ultrasound Scientists in America, the assessment provides a unique opportunity for learners to expand their skillset and knowledge in ultrasound.


division of ultrasound, radiology, and nuclear medicine.

International Experience

Assessment:
- Advanced Care Provider Ultrasound
- Future Assessments:
  - Accredited Vascular Scientist (AVS)
  - Accredited Vascular Scientist (AVS)
- In-Programme Certification Programs:
  - Physicians Vascular Imaging – China
  - Obstetric and Gynecology – Latin America
  - Abdomen – Latin America

International Assessment Programs:
- Vascular Technology

Physician Certification and Continuing Education:
- Certification requirements include 25 hours of continuing education per year.
- Certification is valid for 2 years.
- Certification renewal requires an additional 25 hours of continuing education per year.

Governed by a volunteer board of directors, the American Registry for Diagnostic Medical Sonography (ARDMS) and the Alliance for Professional Certification of Ultrasound Technicians (APCAT) via a non-profit certification organization that delivers rigorous assessments and defines the highest standards of ultrasound.
58%的患者对诊疗过程有亲切感。
由RPIV-China提供的服务带来更多的微笑和更多的期待。
86%的RPIV-China患者对专业的团队保持信任和满意。

更多信息：www.RPV1-China.org

中国医师血管腔内治疗学组（RPIV-China）在推动中国血管疾病治疗的显着进步。
E-mail: care@medicalcareercafe.com
T: +1.514.341.2000
Montréal, Québec, Canada H4T 1G6
8556 Chemin de la Côte-de-Liesse
CAE Global Headquarters

MARKETS

CAE Healthcare is one of the three core businesses of CAE (NYSE: CAE; TSX: CAE), a global leading in the delivery of training for the civil aviation, defence and security, and healthcare sectors.

CAE Healthcare is known for its commitment to quality of care and patient safety. CAE Healthcare is the American Society for Anaesthesiology’s (ASA) SimStation® platform, the International Nursing Association for Clinical Simulation and Learning (INACSL) Fellowship in Simulation, and the Medical College of Wisconsin’s highly acclaimed “Blue Phantom” software. These partnerships and others have led to the development of high-fidelity simulation platforms.

CAE Healthcare’s simulation portfolio consists of a broad range of products, each designed to provide high-fidelity simulations in healthcare.

RELEVANCE

CAE Healthcare offers a broad array of products, each designed to provide high-fidelity simulations in healthcare.

CAE Healthcare delivers educational tools that help healthcare professionals provide safe, high-quality patient care. Our end-to-end spectrum of simulation solutions includes patient simulators, medical response teams, simulation and learning applications, and educational tools.

CAE Healthcare is committed to delivering quality training for the civil aviation, defence and security, and healthcare sectors.
Speaker Biographies
Michael LiPy, MD, RVT, RPVI

Executive Committee Member, Board of Directors, Introspec

Dr. LiPy has also served the Introspec Medical Group, as well as numerous professional organizations. Dr. LiPy serves on the American Board of Surgery (ABMS) and the American Board of Surgery in Medicine (ABSM). In addition, he is a member of the American Society for Vascular Surgery (ASVS) and the Society for Vascular Surgery (SVS). Dr. LiPy has also served as the National Surgical Clinical Consultant to the Centers for Medicare and Medicaid Services (CMS). He has been recognized by the American Board of Surgery in both Surgery and Vascular Surgery. In addition, he is a member of the American Society for Vascular Surgery (ASVS) and the American Board of Surgery in Medicine (ABSM).

Dr. LiPy has also served as the National Surgical Clinical Consultant to the Centers for Medicare and Medicaid Services (CMS). He has been recognized by the American Board of Surgery in both Surgery and Vascular Surgery. In addition, he is a member of the American Society for Vascular Surgery (ASVS) and the American Board of Surgery in Medicine (ABSM).
Mr. Dale R. C. Byars, M.B.A., CAE, CEO and Executive Director, Interco

A pioneer in ultrasound credentialing, Mr. Dale R. C. Byars holds the coveted credential Executive (CDE) from the American Society of Association Executives (ASAE). His remarkable contributions to the field of professional associations and business have been lauded with numerous accolades and have set a new standard for excellence in the industry.

Through his leadership and dedication, Mr. Byars has played a pivotal role in the development and expansion of the Association for the Advancement of Medical Instrumentation (AAMI), which has grown to become a leading organization in the medical device industry. His commitment to excellence and his passion for advancing the field have made him a respected figure in the profession.

Interco is an inclusive and diverse organization that values integrity, innovation, and collaboration. Under Mr. Byars' leadership, the organization has continued to evolve and thrive, providing valuable resources and support to its members.

Mr. Byars' leadership extends beyond the professional sphere, as he has also held high-ranking positions in the academic and business communities. His educational background includes a degree in Business Administration from the Averett University, and he is a proud member of the Alpha Phi Omega fraternity.

In addition to his professional achievements, Mr. Byars is a devoted family man and a passionate advocate for community service. His contributions have been recognized with numerous awards and honors, reflecting his dedication to excellence and his commitment to improving the lives of others.

Mr. Byars' leadership and passion for excellence have made him a role model for others in the professional community. His commitment to innovation and collaboration continue to inspire and guide the Interco team in their pursuit of excellence.

For more information about Interco and its leadership, visit their website at www.interco.org.
Yu Meng, PhD

Senior Psychometrician, Interact
Yulan Peng / 聂玉兰

Lecture at the University Immersion Program at Jefferson University in Chengdu, China.

He has spoken at local, national, and international conferences, and in 2015 was an invited contributor to two textbooks and is author/co-author of 18 peer-reviewed publications. Fox earned her doctorate in Education from Duquesne University. Dr. Fox has co-authored or holds ARDS certifications in abdominal, obstetric, gynecology, breast, and vascular. In 2014, she received an assistant professor of Radiology at Jefferson University and a Research Assistant Professor in the Department of Radiology.

Tracie Fox, EdD, RT(R), RDMS, RVT

Tracie Fox, EdD, RT(R), RDMS, RVT
Federa joined 123Sonography in September 2017. She is the Corporate Sales Account Executive, 123Sonography.

Klaus Miller
Chief Executive Officer, 123Sonography

Klaus Miller

Thomas Binder, MD

Nutrition and he strongly believes that ultrasound should play an even greater role in clinical practice. Together with numerous scientific publications, he is director of the echo lab at the Medical University of Vienna. Founder of 123Sonography and the creator mind behind the company. Teaching is his passion. Over 25 years of experience in echocardiography, author of 123Sonography.
over $25 million in R-1 level, Commercial, and Foundation funding. 

Dr. Kevin D. Evans is a tenured Professor at The Ohio State University, College of Medicine and the School of Health and Rehabilitation Sciences and works as a Researcher/Professor in experimental and translational research into the use of Image analysis and source-physics for vascular and cerebral angiography. His extensive clinical practice experience having managed and worked as a sonographer, vascular technologist, and radiographer for 25 years.

Kevin D. Evans, Ph.D., RT(R)(MR),(R)(M)(CD)FVMS, RVS, FSAMS

Cristina Wong

Cristina Wong is a McGill University graduate with a bachelor's degree (B.Sc.) in Psychology.

Associate Product Marketing Manager, CAE Healthcare

Cristina Wong

References and Essential

2011 07F138Oncology

328
MD

李文／图／文

1104

支持20个临床专科

David Stolle先生，西雅图儿童医院

北区和南区区域医疗中心

Dave Stolle先生，西雅图儿童医院

支持20个临床专科

to build and implement a 37,000 square foot Seattle Children’s ambulatory clinic, which will

几年来，David Stolle曾在西雅图儿童医院董事会服务，他是该机构的主席。他拥有超过10年的医疗保健和领导经验。David Stolle是一位以使命为导向的领导者，在成为Seattle Children’s Hospital的主席之前，他在担任North Sound Regional Clinics的主席和RMDs的MBA, RDMS。
Secretary of Sichuan Association of Ultrasound in Medicine and Engineering.

Standing committee of youth council of Chinese Ultrasound Doctor Association. General committee of Chinese Association of Ultrasound in Medicine and Engineering. Member of department of ultrasound of West China hospital, Sichuan University. Member of abdominal ultrasound/vascular/interventional ultrasound and ultrasound education.

Dr. Lu is an ultrasound specialist, graduated from West China School of Medicine, with over 15 years of experience in ultrasound.
Presentations
The best way to predict the future is to create it.

Peter Drucker
预测未来的最好方法就是创造未来
Sonography in the United States

Traci B. Fox, EdD, RDMS, RVT
Associate Professor
Department of Medical Imaging and Radiation Sciences
Jefferson College of Health Professions
Thomas Jefferson University

- Established in early 1980s as hospital-based program
- Became University-based in late 1980s
- One-year and two-year programs
- Concentrations (tracks) – Each one year long:
  - General sonography (28 students)
  - Vascular sonography (14 students)
  - Cardiac sonography (10 students)

The future:
- Graduate level ultrasound education
- Clinical and non-clinical MS programs in sonography

National Accreditation

- Commission on Accreditation of Allied Health Education Programs (CAAHEP)
  - Reviews and accredits sonography programs
- Joint Review Committee on Education in Diagnostic Medical Sonography Programs (JRC-DMS)
  - Sets the curriculum and standards for accredited ultrasound programs
- Jefferson’s program is CAAHEP accredited and TJU is accredited nationally by Middlestates

Basic Courses Required for Sonography

- Pre-requisites (Bachelor of Science degree)
  - Math (6 credits)
  - English/English Composition (3 credits each)
  - Physics I & II (4 credits each)
  - Chemistry I (3 credits)
  - Anatomy & Physiology (4 credits each, with lab)
  - Medical terminology (3 credits)
  - Statistics (3 credits)
- Electives (13 credits)
- Total: 50 credits prerequisites

Sonography Courses

- Courses are designed to help students learn principles and instrumentation of ultrasound
- Physics
- Lab
- Principles
- Patient Care
- 900 hours of clinical time at more than 40 possible clinical sites
- National Board exams (ARDMS)
  - Physics exam + specialty exam (abdomen, vascular, etc.)
Lab Instruction

The student ultrasound lab at Thomas Jefferson University

Simulations

Medaphor ScanTrainers

Clinical

Students spend about 900 hours in clinical part of training

Careers in Sonography

Student

Learner

Learn by example

Sonographer

Still learning

Still learning, professional

Clinical

Advanced

Still learning

Attends professional meetings

Clinical
Career Pathways

• The staff sonographer
  • Working 40 hours per week*
  • May have shift work
  • May have on-call
  • Note: Sonographers in the U.S. provide the first level interpretation (preliminary report), which is officially read by a physician
  • Sonographers do not render a diagnosis or write final reports

Career Pathways

• The lead sonographer
  • Working 40 hours per week
  • May have shift work
  • May have on-call
  • Some supervisory responsibilities including training/education of new hires and students

Career Pathways

• The supervisor
  • Working 40 hours per week
  • May scan or may be non-scanning
  • May supervise several locations and a large staff
  • Have to appease staff and administration

Career Pathways

• The Director or Manager
  • Working 40 hours per week
  • May oversee several non-US departments (e.g., director of Radiology)
  • Budgeting, payroll, hiring/firing

Research Sonographer

• Work with PhDs and MDs
• Sonographers may be staff or partially funded
• Learn new and interesting technologies, diagnostic procedures and interventions
• Remember that physics you thought you could forget?

Industry as a Career Pathway

• Sales & Applications
  • Commission plus salary (variable)
  • Lots of travel
  • Degree may or may not be needed
  • Get to meet a lot of people
Veterinary

- Vet techs currently perform ultrasound but sonographers can also perform the role.
- Variety of animals patients don't talk back. But they may bite you.
Remember that physics you thought you could forget?
Thank You!
EdTech meets MedTech

October 2018

Global (~$1.0 BN)

The global ultrasound education market is large and growing—

Global Ultrasound Education Market

Source: www.statista.com (multiple sources of medical practitioners globally)

~$1 mm new installed units per annum

~10 mm physicians / health professionals

~4 mm new installed units per annum

~1.0 BN

Our success so far—

Clients

Facebook

YouTube

Vimeo

Reach

125,000+ active community; largest in ultrasound

4M+ video views

27,500+ customers who have bought at least one course

User

275,000+ registered users in 175+ Countries

1,000,000+ total reach

Education Platform for Ultrasound

#1 Global online medical

Who we are today

Company Timeline & Growth

Born from Viennese Tradition

Education Platform for Ultrasound

EdTech meets MedTech

Sonography

-* Completed online courses

(1) Echo Master

Class

Premium

Echo Membership

(2) Echo Bachelor

Class

K. Mueller joins as CEO

(3,4,5) Abdominal

Emergency

TEE Courses

Echo

Facts

App

Partnership

(6) POCUS

Course

Echo2Go

Micro-

learning

App

(7)

Speckle

Tracking

5 Courses

ACCME

certified

(8)

Pediatric

Care

100K

Registered

Users

(9) MSK

Course


It is worth it!

I work in a rural area in Africa. I watched a few 123 Videos on Youtube and was very fascinated. Now I almost finished half of the course in 30 days.

This is the side you NEED if you want to learn echocardiography.

BRAVO!!!

I have looked and many options, each and everyone was many fold more expensive than the 123 sonography course. Although I have just started the course, I can say without any reservation this is the “bang of the buck.” You will get the most from your investment and will learn at your pace, when and where you want to learn.

May 18, 2018

Dear 123sonography team,

Thank you very much for your continuous efforts in teaching echo. I have purchased your EchoMasterclass product one year ago and I believe it was the best investment of my career so far. I basically learned echo thanks to you!

May 18, 2018

This is a great innovation and this is what serves humanity. We thank the sponsors of this huge project.

Highly recommended!

As a medical professional who has used Echocardiography in Intensive Care and Anesthesia for around 12 years and having completed training with recognized qualifications, I have found that 123sonography has a comprehensive flexible teaching which appeals to users of all levels.
来自维也纳的传承

公司成立历程

全球约10亿美元

未来预计约10万的医生

教育市场

题词：超声波扫描

123
Partners of Choice for Simulation in Education/Assessment

Enhancement of Proctoring Assessment with Simulation
对教育及专业水平影响的正

镜像——如何提升同性的

镜像——如何提升同性的

对教育及专业水平影响的正
Ultrasound simulation and its impact on education and clinical preparedness

Kevin D. Evans, PhD, Principle Investigator
Carolyn M. Sommerich, PhD
Sundus H. Mohammad, BS
Xueling (Jeff) Pan, PhD

School of Health and Rehabilitation Sciences

Serving as the Multi-site PI for this Inteleos funded research study into the impact of simulation.

Researcher/educator at The Ohio State University.

Funded by Federal, State, & Industry for $3.5M
Tenured Professor

Presentation Objectives

• Review the evidence on simulated education
• Describe the progress with Phase I DMS, Med Student pilot, & multi-site recruitment
• Review the design of Phase II
• Stimulate discussion and questions

McGaghie et al. recommendations

The five best practices posed from the systematic review were:

1. Feedback
2. Deliberate Practice
3. Curriculum Integration
4. Outcome Measurement
5. Simulation Fidelity

Each of these simulation features contains a critical set of factors that would need to be addressed.

Sonography specific educational research

In sonography, few studies of the use of technology-enhanced simulation exist.

Gibbs et al. utilized an ultrasound simulator as an educational activity for 25 students who completed both transabdominal and transvaginal scanning on a Medaphor ScanTrainer.

The author conducted qualitative interviews with the students and found some descriptive information that matches the five best practices posed by McGaghie et al.

History of simulation

The evidence on simulated education needs to be addressed.

Simulate discussion and questions

• Review the design of Phase I
• Med Student pilot, Multi-site recruitment
• Describe the progress with Phase I DMS
• Review the evidence on simulated education

Ultrasonic simulation and its impact on education and clinical preparedness

School of Health and Rehabilitation Sciences

Teams of Professor

Funded by Federal, State, & Industry for University.

Preparation/education on the use of ultrasound simulation in the medical simulation study into the impact of simulation.

Surveys as the multi-site for this...
Educational Research Objective

This work will provide evidence to confirm or disconfirm the following hypothesis:

The use of simulation technology will allow participants to augment their learning and execution of basic clinical sonography scanning skills and this will result in a measurable change in clinical skills.

Phase I - Deliverables

1. Validate the fundamental and foundational preliminary standard developed by Inteleos’ Innovation Task Force.
2. Develop manuals for uniform instruction across potential educational sites.
3. Confirm the clinical equivalency protocols for Phase Two function, as anticipated.
4. Integrate micro-ergonomic standards for simulation.

Best practices: Feedback, Curriculum integration, & Deliberate practice

Sim Research

CAE Vimedix US Simulator video

Phase II - Deliverables

1. Study direct application of the simulated Ultrasound across multiple institutions.

Sim Research

Phase 2 - Deliverables

- Data will allow for a comparison of students’ progression to an established pre-clinical standard using ultrasound simulators compared to real patients and scanning volunteers.
- Comparisons of time and other variables to reach the fundamental and foundational standard will be made between ultrasound simulators and clinical competency with patients and/or fellow students.

Research across multiple institutions will:

1. Study clinical equivalency of US simulation to expedite clinical competency, domestically.
   - Sonography education in undergrads (3 sites)
   - PoCUS Physician prep (3 sites)
2. Determine clinical equivalency of US simulation internationally, using established protocols and standards
   - China – Beijing
   - China – Zhongshan

Outcomes measurements

Sim Research

Sim Research Objective

This work will provide evidence to confirm or disconfirm the following hypothesis:

The use of simulation technology will allow participants to augment their learning and execution of basic clinical sonography scanning skills and this will result in a measurable change in clinical skills.

The use of simulation technology will allow clinicians to augment their learning and execution of basic clinical sonography scanning skills and this will result in a measurable change in clinical skills.

Sim Research Objective

This work will provide evidence to confirm or disconfirm the following hypothesis:

The use of simulation technology will allow participants to augment their learning and execution of basic clinical sonography scanning skills and this will result in a measurable change in clinical skills.

Sim Research Objective

This work will provide evidence to confirm or disconfirm the following hypothesis:

The use of simulation technology will allow participants to augment their learning and execution of basic clinical sonography scanning skills and this will result in a measurable change in clinical skills.
Inteleos will be able to determine how simulation could fit into its assessments and/or meet some eligibility requirements, to qualify for credential exams.

The exact percentage of required scans that ultrasound simulation can meet could be determined, once study data are available.

After all phases of the research are completed, Inteleos can determine whether simulation may be used to formally measure progressive proficiency as part of a psychomotor examination.

Discussion points based on the study

13 Control group of undergraduates have been assessed with no simulation experience (n=10)

New sonography students are actively learning with a mix of CAE simulator, colleague scanning, and Kyoto phantom/Blue phantom.

One medical student has completed a CAE pilot PoCUS for Normal aorta & renal cases.

OSU Medical School will be providing 10 4th year Medical students and 10 1st year Medical students who have completed their cardio block-heart and IVC.

Progress to date at OSU:

DMS & MD students

IRB approval for data collection [2018B0313] and multi-site approval now is moving through the additional IRB systems.

References


Contact information:
Kevin D. Evans, PhD
Evans.36@osu.edu

This work was supported by a grant from Inteleos and support/equipment provided by CAE Healthcare.
Kevin D. Evans, PhD
Evans.36@osu.edu

Inteleos Healthcare
Ultrasound in obstetrics and gynecology

History of ultrasonic technology

- Amplitude-mode Ultrasound
- Motion-mode Ultrasound
- Brightness-mode Ultrasound
- Doppler-mode Ultrasound
- Transvaginal Ultrasound
- Color Doppler Ultrasound
- Contrast-enhanced Ultrasound
- Three-dimensional Ultrasound
- Interventional Ultrasound

Indications in obstetrics

- Identify pregnancy
- Assess gestational age
- Monitor fetal heart rate
- Abortion
- Ectopic gestation
- Pregnancy complications
- Monitor fetal growth
- Monitor maternal changes
- Monitor fetal anomalies
- Monitor fetal movement
- Monitor fetal heart rate
- Monitor fetal breathing
- Monitor fetal swallowing

Indications in gynecology

- Uterine cancer
- Benign and malignant ovarian tumors
- Tubal tumor
- Vaginal tumor
- Endometriosis
- Endometrial lesion
- Congenital dysplasia of uterus and vagina
- Pelvic inflammatory disease
- Monitor reproductive endocrine function
- Endometrial hyperplasia
Indications

1. Preparation before inspection
   - Transabdominal CEUS: proper filling of bladder
   - Transvaginal CEUS: empty bladder

Select proper probes according to the examination requirements. The transabdominal probes were 2.5 ~ 4.0 mHz, and the transvaginal probes were 5.0 ~ 9.0 mHz.

Methods

1. Ultrasonography: transabdominal and vaginal or rectal examination to assess the general situation of the uterus and adnexal area
2. Contrast-enhanced Ultrasound
   - The contrast agent is prepared according to the instructions.
   - The recommended dosage of SonoVue: 1.5 ~ 2.4 ml (TAS), 2.4 ~ 4.8 ml (TVS).

Checkout procedure

1. The ultrasound contrast agent was injected and the timing was started. When the contrast media microbubble reached the target, the entire lesion was scanned slowly and the contrast agent perfusion was observed.

2. Continuous storage of CEUS images within 120s and images within 3 mins if necessary.

CEUS and Pathological result

- endometriotic cyst

Hysterosalpingocontrast sonography

Preparation before injection
1. Intramuscular injection of atropine
2. Intrauterine catheterization
3. Conventional ultrasound scanning
4. Sonohysterography
5. 3D ultrasound prescanning
6. 4D contrast-enhanced ultrasonography
7. 2D contrast-enhanced ultrasonography
8. 3D contrast-enhanced ultrasonography

Ultrasound salpingography procedure

Results analysis

Image analysis

Bilateral fallopian tubes completely obstructed

Marking and marking
Observation of umbilical cord

Application of three-dimensional ultrasound in obstetrics

Observation of fetal development

Observation of umbilical cord

Differential diagnosis between complex hydrosalpinx - Left hydrosalpinx

Bilateral fallopian tubes partially obstructed

Left hydrosalpinx

Bilateral fallopian tubes completely obstructed

3D ultrasound imaging technology

Observation of placenta

Observation of umbilical cord
Observe the relation between placenta and uterine orifice

Measure the size of the placenta

Display placental blood supply

Application of three-dimensional ultrasound in gynecology

3D ultrasound of normal uterus

Measure ovarian tumor volume

Indicate whether there is echo of solid mass in tumor

Indicate the shape and scope of the solid mass
3D ultrasound of the pelvic floor

Ultrasonic guided drug injection (no amniotic fluid)

Induced abortion by amniocentesis or manometric

Laparoscopic venous puncture (for prenatal diagnosis)

Puncture and injection (MTX) guided by abdominal wall ultrasound after laparoscopic surgery

Interventional ultrasound in obstetrics

Normal cervix

Ultrasonic elastography

Levator ani

Posterior chamber
Middle chamber
Anterior chamber

Three chamber observation

3D ultrasound of the pelvic floor
Interventional Ultrasound in Gyneacology

- Place or remove the IUD under ultrasound supervision
- Curettage under ultrasound supervision
- Ultrasound-guided puncture of follicular cyst
- Ultrasound-guided puncture of a pelvic mass
Ultrasound in the management of vascular disease, an overview.

Michael Lilly, M.D.
University of Maryland School of Medicine
Baltimore, Maryland

Disclosures:
• Practicing Academic Vascular Surgeon – School of Medicine – Large Academic Medical Center & Inner City Community Hospital
• Medical Director of a hospital-based Vascular Ultrasound Unit
• Medical Director of a Vascular Sonographer Training Program
• Board of Directors of Inteleos – Personnel Certification
• Board of Directors of Intersocietal Accreditation Commission (IAC) – Facility Accreditation
• No industry relationships

Objectives:
• Review the central role of ultrasound in the modern comprehensive treatment of vascular disease

Plan

1. Initial clinical evaluation
   - Interview the patient
   - History
   - Complete physical examination
   - Ultrasound examination
   - Confident diagnosis
   - Treatment plan
   - Initial clinical evaluation

2. Interventions
   - Procedural guidance

3. After interventions
   - Document disease severity
   - Confirm the presence of absence of disease
   - Ultrasound is valuable in each phase of care of the patient with vascular disease:

   a. Initial clinical evaluation
      - Confirm the presence of absence of disease
      - Document disease severity
   b. Interventions
      - Procedural guidance
   c. After interventions
      - Document disease severity
      - Confirm the presence of absence of disease

Role of ultrasound in vascular disease management and treatment.

Ultrasound is valuable in each phase of care of the patient with vascular disease:

1. Initial clinical evaluation
   - Confirm the presence of absence of disease
   - Document disease severity

2. Interventions
   - Procedural guidance

3. After interventions
   - Document disease severity
   - Confirm the presence of absence of disease

Objectives:
• Review the central role of ultrasound in the modern comprehensive treatment of vascular disease

Ultrasound in the management of vascular disease
Initial clinical evaluation

• Lower extremity atherosclerosis with claudication
  – Segmental pressures and Doppler waveform analysis
  – Confirm physical exam and initial clinical diagnosis
  – Determine the severity of disease
    – Duplex arterial imaging
      • Localize lesion
      • Characterize lesion – stenosis/occlusion, length, calcification
      - Confidently develop treatment plan
      – Medical therapy
      – Exercise
      – Intervention – type: open vs. endovascular.

• Carotid atherosclerosis
  – Carotid duplex imaging
  – Confirm physical exam and initial clinical diagnosis
  – Determine the severity of disease
    – Confidently develop treatment plan
  – Alternative diagnoses
    – Medical therapy – antiplatelet/statin therapy
    – Intervention – endarterectomy vs. stent

• Hemodialysis access
  – Duplex Ultrasound examination of upper extremity veins
    • Identify suitable veins for autogenous arteriovenous fistula
    – Arterial physiological exam
      • Identify arterial disease that could lead to access failure or arterial steal
    – Plan appropriate access construction
      • Location – which arm, forearm vs. upper arm
      • Type – native fistula vs. graft
      • Timing of surgical procedure

Interventions

• Lower extremity arterial bypass graft
  – Duplex ultrasonographic assessment of flow in the bypass graft and in the distal arterial bed
    – Preoperative evaluation
    – Hemodynamic assessment of the endarterectomy
    – Preoperative or surgical interventions
      – Immediate assessment of procedural success
      – Placement of surgical incisions
      – Identification of autogenous conduits for bypass or dialysis access
      – Venous access for dialysis catheter
      – Procedural guidance – open surgery

• Carotid endarterectomy
  – Immediate assessment of procedural success
  – Placement of surgical incisions
    – Identification of autogenous conduits for bypass or dialysis access
    – Immediate assessment of the endarterectomy
    – Residual plaque
    – Residual stenosis
    – These are associated with periprocedural stroke
    – Residual strokes
    – Residual transient ischemic attacks
    – Immediate assessment of the endarterectomy
    – Preoperative or surgical interventions
      – Immediate assessment of procedural success
      – Placement of surgical incisions
      – Identification of autogenous conduits for bypass or dialysis access
      – Immediate assessment of the endarterectomy
      – Residual plaque
      – Residual stenosis
      – These are associated with periprocedural stroke
      – Residual strokes
      – Residual transient ischemic attacks
Interventions

• Hemodialysis access construction
  – Reevaluate the autogenous conduits
  – Dilation with anesthesia or nerve block
  – Identify faulty preoperative assessments or interval changes

• Placement of surgical incisions
  – Minimize incisional complications
  – Duplex assessment of flow through the access and immediate correction as needed.
  – Stent graft delivery
  – Apposition of stents
  – Residual stenosis
  – Dissection

After interventions – follow up

• Lower extremity revascularization, open or endovascular

• Carotid intervention – endarterectomy

• After vascular interventions the following should be immediately addressed or performed:
  – Appropriate assessment for procedural success
  – Adjustment – venous therapy
  – Thrombus removal

• Avoid any type of arteriovenous fistula

• Direct guidance of the intervention

• Hemodialysis access construction

Progression:

• Evaluate the contralateral vessel for disease

• Monitor for recurrent stenosis

• Assess the adequacy of the treatment

• Identify and treat early postoperative complications that can be
  – Set a baseline for future evaluations
  – Improve patency, normalized flow
  – Establish the success of the intervention

After interventions – follow up

• Establish the success of the intervention
  – Improved perfusion, normalized flow

• Set a baseline for future evaluations

• Identify correctable lesions that can be
  – Treated early before complications ensue

After interventions – follow up

• Lower extremity revascularization, open or endovascular
  – Determine patency of the reconstruction
  – Measure the improvement in distal perfusion
  – Re-intervene if improvement is inadequate
  – Identify early lesions associated with
  – Identify early lesions associated with
  – Proximal or distal recurrences

After interventions – follow up

• Carotid intervention – endarterectomy or stent
  – Assess the adequacy of the treatment
  – Monitor for recurrent stenosis
  – Evaluate the contralateral vessel for disease

• Revascularization: open or endovascular

• After vascular interventions:
  – Revascularization: endarterectomy or stent
After interventions – follow up

• Hemodialysis access construction/function
  – Early phase – Monitor “maturation” of the fistula
  – Identify correctable lesions in fistulas
  – Intervene promptly to correct
  – Maximize maturation rate and fistula success

– Later phase – Evaluate issues with fistula function
  – Poor clearance
  – Low flow – high venous pressures
  – Aneurysmal degeneration
  – Aneurysmal pseudoaneurysm

Summary

• Ultrasound is an essential component of a comprehensive practice treating vascular disease

• Important in all phases of care of the vascular patient

• Critical for accurate diagnosis, see ultrasound in all phases of care of the disease

• Comprehensive practice treating vascular disease

We reviewed the central role of ultrasound in:
  – Peripheral atherosclerosis
  – Carotid atherosclerosis, and
  – Management of hemodialysis access

• Equally important in the treatment of:
  – Arterial aneurysm
  – Arterial dissection
  – Venous vascular disease
  – Vascular trauma

Conclusion

The success of a unit dedicated to the comprehensive evaluation and management of the full spectrum of vascular disease requires:

• The use of ultrasound in all phases of care, and
• Trained, competent personnel to use ultrasound technology safely and accurately for the benefit of the patient.

Thank you for the opportunity and the honor of presenting these thoughts to this esteemed group today.

mlilly@som.umaryland.edu
Goals for Meeting

- Improve the community to improve ultrasound care
- Learn from many experts and repeat experiences
- Determine how imaging can play more China
- Improve availability of ultrasound
- Improve access to ultrasound for community
- Share education

RPI-China

Reason: Improved access and acceptance. A new work with China

Why We Are Here

- Collaboration to share education and help improve patient care
- Collaboration to share education and help improve problem in China
- RPI-China was interested in ultrasound and collaboration
- History of partnership, friendship and collaboration

Who We Are

- 2006: China-associated ultrasound association
- 2002: Association of Ultrasound in China establishes China Medical Association Ultrasound Society
- 2010: China Medical Association Ultrasound Society establishes the Ultrasound Education and Certification in China

Ultrasonar Education and Certification in China

Thank you
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>David Stolte</td>
<td>MBA, RDCS</td>
<td>Inteleos</td>
</tr>
</tbody>
</table>

2018

Inteleos.org
問？
Are you ready to lead patient experiences to efficient, effective and better ultrasound care which leads ultrasound is portable and mobile.

We believe that the future of ultrasound is portable and mobile.

The future

provide the best possible care.

healthcare professionals to empower Academy seeks to empower

ultimately, the POCUS Certification in building a better future.

industry leaders to join us

educators, organizations, and inspire healthcare professionals.

uphold this purpose and hope to improve their practice and patient

honor professionals who aim to certification Academy is to

The purpose of the POCUS

JOIN OUR COMMUNITY
WHO SHOULD PARTICIPATE?

- A percentage of your fee contributes to scholarships funds.
- Immediate results and education when you earn your certificate.
- Focus on ongoing learning and development.
- Unique access to exclusive resources and communities of practice.
- Community-driven content developed with experts in the field from multiple specialties and backgrounds.
- Based on real direct scenarios with engaging and modern educational methods.
- Self-paced, on-demand and available online anytime to best fit your schedule.
- Non-profit organization that cares about improving global health.

WHAT MAKES OUR PROGRAMS UNIQUE?

- Potentially improved patient experience and satisfaction.
- No use of cannula injection.
- Highly accurate in experienced hands.
- Less expensive than other imaging modalities.
- Portable, allowing for real-time imaging and on-the-spot interpretation.

WHY IS FOCUS IMPORTANT FOR YOU?

The completion of procedures.

Immediate inline diagnosis or treatment or to aid in point of need by a healthcare professional to interpret images at the patient's bedside. Focus refers to the simultaneous acquisition and interpretation of ultrasound images at the point of need by a healthcare professional to aid in immediate inline diagnosis or treatment or to aid in point of need by a healthcare professional to interpret images at the patient's bedside.
85% of colleagues Academy to their focus certification would recommend the part in, “have taken modules testing/learning/ best online one of the”.

Source: 2018 Initials Post Exam Survey

Area of specialty
- Cardiology
- Emergency Medicine
- Family Medicine
- Internal Medicine
- Neurology, Physical Medicine & Rehabilitation
- Obstetrics, Gynecology & Pediatric
- Other (Intensivists, Neurosurgery)

Years of graduation
- More than 25 years
- 16 to 25 years
- 6 to 15 years
- 5 years or less

Years of practice
- More than 15 years
- 11 to 15 years
- 6 to 10 years
- 5 years or less
Within the last 5 (five) years, or who hold specific credentials offered by ARDMS or APCA:

- 35 Multiple Choice Questions
- Focus Fundamentals Examination

Core Competencies

14% Safety & Bioeffects

22% Ultrasound Attitudes

27% Principles of Ultrasound

37% Instrumentation

Program Outline
ASSOCIATE PROFESSOR

Assessment committee is responsible for the point-of-care ultrasound program in our institution. It is composed of leaders in the field of critical care and emergency medicine who are part of the POCUS certification committee. In addition to over 100 subject matter experts, they develop and implement the program's standards and guidelines.

The education and training program for the point-of-care ultrasound program is based on the latest evidence and best practices. The program includes didactic lectures, hands-on workshops, and clinical rotations.

The curriculum is designed to provide comprehensive training in point-of-care ultrasound for clinicians in various specialties. It covers topics such as cardiac, vascular, and abdominal imaging.

The program is accredited by the American Institute of Ultrasound in Medicine, and participants are eligible for certification by the American Registry for Medical Ultrasound.

The program's goals are to improve global health and the quality of care for patients. By providing advanced training in point-of-care ultrasound, we aim to enhance diagnostic accuracy and patient outcomes.

We believe in the power of point-of-care ultrasound to improve global health and the quality of care for patients. That is why we are committed to providing comprehensive training through our program.
BETTER FUTURE.
BETTER CARE.
LEAD
VALIDATE
INSPIRE
IMPROVE
EMPOWER
引领未来，您作好准备了吗？

我们相信超声的未来是便携式和移动式的，可以加快护理速度，从而实现高效的、有效的和更好的患者体验。

POCUS认证学会旨在表彰那些致力于通过使用POCUS改善其实践和患者体验的专业人士。我们坚持这一目标，并希望激励医疗保健专业人员，教育工作者，组织和行业领导者与我们一起共创美好未来。

最终，POCUS认证学会的终极目标是帮助医疗保健专业人员提供最好的护理。
P O C U S

为什么POCUS很重要？
85%
一次难忘的经历

Pocus.org

申请注意事项

选择你所喜欢的POCUS设备

$
赋能量 引领 更美的明天

激励 更好的护理