
Abstracts from The American Telemedicine Association Seventeenth Annual International Meeting and Exposition

ATA 2012 is held in cooperation with:

- Four Corners Telehealth Consortium
- Indian Health Service
- National Center for Telehealth and Technology (T2)
- Office for the Advancement of Telehealth (OAT)
- Parkinson's Action Network
- *Telemedicine & e-Health*
- Universal Services Administrative Corporation (USAC)
- US Army Medical Command

Jointly sponsored by



April 29–May 1, 2012
San Jose Convention
San Jose, CA

Concurrent Oral Presentations Abstract Index

The American Telemedicine Association Seventeenth
Annual International Meeting and Exposition

April 29–May 1, 2012 San Jose, CA
SUNDAY, APRIL 29, 2012

12:00 pm–1:00 pm

Sunday, April 29

PRESENTATION PANEL

Session Number 74

Session Title: **534 A BRAVE NEW WORLD; USING TELEMEDICINE TO ADDRESS CHILDREN'S HEALTH IN THE GLOBAL COMMUNITY**

Track: Pediatrics Telehealth Colloquium Marriott Ballroom V

MODERATOR: Dale Alverson, MD, Director, Center for Telehealth and Cybermedicine Research
University of New Mexico, Albuquerque, NM, USA

PRESENTERS AND CONTRIBUTING AUTHORS:

Dale C. Alverson, MD, Medical Director, Center for Telehealth and Cybermedicine Research¹, Maurice Mars, MBChB, MD,² Pramod Gaur, PhD³

¹*University of New Mexico, Albuquerque, NM, USA*, ²*University of KwaZulu-Natal, Durban, KwaZulu-N, South Africa*,

³*UnitedHealth Group, White Plains, NY, USA*

SUNDAY, APRIL 29, 2012

1:00 pm–2:00 pm

Sunday, April 29

HOW-TO PANEL

Session Number 75

Session Title: **246 TELEMEDICINE TOOLKIT: THE FOUNDATION FOR STARTING A TELEMEDICINE PROGRAM**

Track: Pediatrics Telehealth Colloquium Marriott Ballroom V

PRESENTERS AND CONTRIBUTING AUTHORS:
Julie Hall-Barrow, Education Director for Arkansas SAVES, Bryan Burke, MD
University of Arkansas for Medical Sciences, Little Rock, AR, USA

PRESENTATION PANEL

Session Number 76

Session Title: **874 SPEED ROUNDS: PREVIEWS AND PEARLS FROM PEDS SIG LEADERSHIP**

Track: Pediatrics Telehealth Colloquium Marriott Ballroom V

MODERATOR: Neil E. Herendeen, MD, Associate Professor
University of Rochester, Pittsford, NY, USA

PRESENTERS AND CONTRIBUTING AUTHORS:

Dale C. Alverson, MD, Medical Director, Center for Telehealth and Cybermedicine Research¹, Bryan Burke, MD, FAAP, Professor of Neonatology and General Pediatrics and Director of Term Nursery², Madan Dharmar, MBBS, PhD, Assistant Research Professor³, Whit Hall, MD, Professor, College of Medicine, Department of Pediatrics,⁴ Julie Hall-Barrow, EdD, Assistant Professor, College of Public Health and Education Director, Center for Distance Health⁴, Neil Herendeen, MD, Associate Professor³, James Marcin, MD, Professor⁵, Steve North, MD, MPH, President⁷, Juan Trujano, Information Technology Supervisor, UC-Davis Department of Pediatrics⁵, Kathleen Webster, Director⁶

¹*University of New Mexico, Albuquerque, NM, USA*, ²*UC Davis Children's Hospital, Sacramento, CA, USA*, ³*University of Rochester Medical Center, Rochester, NY, USA*, ⁴*University of Arkansas for Medical Sciences, Little Rock, AR, USA*, ⁵*UC Davis Children's Hospital, Sacramento, CA, USA*, ⁶*Loyola University Medical Center, Maywood, IL, USA*, ⁷*Center for Rural Health Innovation, Bakersville, NC, USA*

Boldface indicates presenting author(s).

CONCURRENT ORAL PRESENTATIONS ABSTRACT INDEX

INDIVIDUAL ORAL

Session Number 71

Session Title: USING TELEMEDICINE TO DELIVER CARE IN OTHER COUNTRIES

Track: Public Policy Marriott Ballroom II

MODERATOR: Giselle Ricur, MD, Director, Telemedicine Program
Education, Research & Development, Instituto Zaldivar, Mendoza, Argentina

273 OFFICIAL TELEMEDICINE AND E-HEALTH STATUS IN FRANCE. THE ROLE OF CATEL

PRESENTERS & CONTRIBUTING AUTHORS:

Andre PETTET, MD, Head of CATEL International Commission, Gerard Comyn, Ingenior CATEL (France), LE THOR, France

278 COMPARATIVE ANALYSIS OF DEVELOPMENT OF TELEMEDICINE IN JAPAN, UK, AND US: FOCUSING ON LEGAL AND REIMBURSEMENT ISSUES

PRESENTERS & CONTRIBUTING AUTHORS:

Masatsugu Tsuji, PhD in Economics, Professor^{1,2}, Takashi Hasegawa, PhD³, Hiroki Okada, PhD in Medicine⁴
¹University of Hyogo, Kobe, Japan, ²National Cheng Kung University, Tainan, Taiwan, ³University of Gunma, Maebashi City, Japan, ⁴University of Kagawa, Takamatsu City, Japan

420 INTERNATIONAL TELECOMMUNICATIONS UNION & EMERGENCY TELEMEDICINE RESPONSE IN PAKISTAN

PRESENTERS & CONTRIBUTING AUTHORS:

Asif Zafar, Professor of Surgery^{1,2}, Cosmas Zavazava^{3,4}, Qasim Ali, MD, FCPS, MRCS^{1,5}, Faisal Murad, MD, FCPS¹
¹Rawalpindi Medical College, Rawalpindi, Pakistan, ²Telemedicine & e Health Training Center, Rawalpindi, Pakistan, ³International Telecommunications Union, Geneva, Switzerland, ⁴Chief, Projects & Knowledge Management Department, Telecommunication Development Bureau (BDT), Geneva, Switzerland, ⁵Department of Surgery, Surgical Unit II, Holy Family Hospital, Rawalpindi, Pakistan

INDIVIDUAL ORAL

Session Number 72

Session Title: PEDIATRIC TELEHEALTH COLLOQUIUM ORAL RESEARCH: PART 3

Track: Pediatrics Telehealth Colloquium Room B1

MODERATOR: Eve-Lynn Nelson, Telemedicine Coordinator, Center for Telemedicine & TeleHealth
University of Kansas Medical Center, Kansas City, KS, USA

567 GAMIFICATION OF AN MHEALTH DIABETES APP FOR ETEENS: RESULTS FROM A CLINICAL PILOT

PRESENTERS & CONTRIBUTING AUTHORS:

Joseph A. Cafazzo, PhD PEng, Lead, Centre for Global eHealth Innovation¹, Mark Casselman, MSc¹, Debra Katzman, MD, FRCP(C)², Mark Palmert, MD PhD¹
¹University Health Network, Toronto, ON, Canada, ²The Hospital for Sick Children, Toronto, ON, Canada

276 DELIVERING PROFESSIONAL SERVICES TO FOSTER CHILDREN WITH DEVELOPMENTAL DISABILITIES VIA LIVE INTERACTIVE VIDEO

PRESENTERS & CONTRIBUTING AUTHORS:

Judith Favell, PhD, BCBA-D, Director
Celeste Foundation, Mount Dora, FL, USA

578 MOBILE VIDEOTELEMEDICINE: ASSESSMENT OF ITS CLINICAL EFFECTIVENESS FOR PEDIATRIC CRITICAL CARE TRANSPORT

PRESENTERS & CONTRIBUTING AUTHORS:

Hamilton Schwartz, MD, Medical Director, Critical Care Transport Team
Cincinnati Children's Hospital Medical Center, Cincinnati, OH, USA

PRESENTATION PANEL

Session Number 73

Session Title: 198 STARTUP TO SUCCESS: STRATEGIES FOR PEDIATRIC INPATIENT TELEMEDICINE

Track: Pediatrics Telehealth Colloquium Marriott Ballroom V

MODERATOR: Kathleen Webster, MD, Director, Pediatric Critical Care
Loyola University Health System, Maywood, IL, USA

PRESENTERS & CONTRIBUTING AUTHORS:

Kathleen A. Webster, MD, Director, Division of Pediatric Critical Care¹, R. Whit Hall, MD, Professor, Neonatology², Naomi Fried, PhD, Chief Innovation Officer³
¹Loyola University Health System, Maywood, IL, USA, ²University of Arkansas for Medical Sciences, Little Rock, AR, USA, ³Children's Hospital Boston, Boston, MA, USA

CONCURRENT ORAL PRESENTATIONS ABSTRACTS

2. Participants will be able to replicate the approach/methods used to integrate telemedicine content into a graduate curriculum.

619 INTEGRATING TELEMEDICINE IN THE MEDICAL SCHOOL CURRICULUM

PRESENTERS & CONTRIBUTING AUTHORS:

Ana Maria Lopez, MD, MPH, University of Arizona, Phyllis Webster, BA, Janet Major, BS, Kameron Hanson, BA, Ronald Weinstein, MD
Arizona Telemedicine Program, Tucson, AZ, USA

The Telemedicine 101 Workshops sought to introduce first year medical students to the field of telemedicine. Students were given hands-on experience with the technologies utilized in its practice as well as the multitude of services that it provides, especially to rural communities. In its first year running, evaluation surveys given to participants indicated a high level of student satisfaction from the 76 respondents. On a likert scale of 1 (low) to 4 (high), the workshops received an average of 3.75 rating in response to 'Information presented was useful' and a 3.83 for 'Information was presented effectively.' Students were also asked to provide written feedback in response to what they found most valuable and what could be most improved. The majority of students found that learning the overall significance and practice of telemedicine to be most beneficial, as well as the hands-on activities and use of technology and equipment. Suggestions most frequently requested including reviews of actual cases with the technology and to make the program even more hands-on. In 2011, 86 responses were tallied, with increases in both whether the information was useful (3.84) and whether it was presented effectively (3.9). Student feedback showed that seeing and performing telemedicine in a clinical setting as well as exposure to the technology was most valuable. The overwhelming response to the request for suggested improvements was that nothing should be altered, with requests for more cases and live patient demos coming in a distant second and third. Based off of the student evaluations of the program, response has been extremely positive with a cumulative rating of 3.8 in usefulness and 3.86 in effectiveness. Most significantly, a demonstrated increase was seen in student satisfaction from 2010 to 2011. As the program continues, student feedback will continue to be monitored for areas of potential improvement.

Objectives

1. To understand the factors needed to present a course in telemedicine in a college of medicine.
2. To assess a telemedicine course in a college of medicine.

INDIVIDUAL ORAL

Session Number 71

Session Title: USING TELEMEDICINE TO DELIVER CARE IN OTHER COUNTRIES

Track: Public Policy Marriott Ballroom II

MODERATOR: Giselle Ricur, MD, Director, Telemedicine Program
Education, Research & Development, Instituto Zaldivar, Mendoza, Argentina

273 OFFICIAL TELEMEDICINE AND EHEALTH STATUS IN FRANCE. THE ROLE OF CATEL

PRESENTERS & CONTRIBUTING AUTHORS:

Andre PETITET, MD, Head of CATEL International Commission, Gerard Comyn, Ingenior
CATEL(France), LE THOR, France

Introduction: Until 2009, the telemedicine and eHealth story in France, as in many countries worldwide, was rather a chaotic one more than a love story. After more than 15 years, 2009 was a big curve. This was the time to adopt a basic law about healthcare and in this law a fundamental article

(n°78) is dedicated officially to the recognition of the telemedicine practice in France. This new law call HPST (July 29, 2009) and its application decree (October 19, 2010) are a new base for all health professionals, first of all for the physicians. It needs a new healthcare organization all over the country with new links between districts and the Ministry of Health. To reach the goal, it was created new administrative entities - ARS(Regional Health Agencies). Those ARS are centrally regulated and controlled by the Ministry of Health and new central agency, ASIP Sante. The body of the communication is to explain in details how this new organisation works and what are the precise missions, tasks. It is important to say that these new entities are to provide a complete telemedicine and eHealth masterplan at the end of December 2011. In the respect to help the new telemedicine and eHealth era, CATEL, the French non-profit telemedicine and eHealth association is working hard, through its pluridisciplinary members network (more than 800) to implemente and /or to create structures on the field able to relay this new telemedicine and eHealth policy and to teach all the health professionals categories to be ready to use these new tools in their daily practice.

Objectives

1. To provide an information about the big official change about telemedicine and eHealth in France.
2. To explain the role of CATEL in this big change.

278 ✓ COMPARATIVE ANALYSIS OF DEVELOPMENT OF TELEMEDICINE IN JAPAN, UK, AND US: FOCUSING ON LEGAL AND REIMBURSEMENT ISSUES

PRESENTERS & CONTRIBUTING AUTHORS:

Masatsugu Tsuji, PhD in Economics, Professor^{1,2}, Takashi Hasegawa, PhD³, Hiroki Okada, PhD in Medicine⁴
¹University of Hyogo, Kobe, Japan, ²National Cheng Kung University, Tainan, Taiwan, ³University of Gunma, Maebashi City, Japan, ⁴University of Kagawa, Takamatsu City, Japan

Introduction: Since each country has its own medical systems and social background, the development stage of Telemedicine is quite different. This paper focuses on Japanese case and attempts to explain why telemedicine in Japan is lagged behind from the viewpoint of legal and financial basis.

Methodology: To highlight Japanese obstacles, the Article 20 of the Medical Act which prohibits Telemedicine and reimbursement from public medical insurance are targeted. In order to compare with cases of US, and EU, we conducted in-depth interviews to various related Ministries in US, UK, and EC, including CMS and HRSA (US DHHS), Veterans Hospital in Seattle, WA, UK's DH, and DG SANGO and IPTS of EC. Based on these hearings, curial factors are identified for development of Japanese Telemedicine.

Results: The administrative rulings on diagnosis using ICT in 1997 and 2003 allowed telemedicine, only in seven diseases and it satisfies the same condition as face-to-face diagnosis. These rulings did not mention concrete conditions; telemedicine was not believed to be widely admitted as legal. Other countries have no general legislation to prohibit Telemedicine, except the safety of system and equipment. In March, a new administrative ruling was issued which admits Telemedicine under a condition of the same level safety as conventional medicine. The reimbursement of telecommunication fees is admitted for patients of chronic diseases but its amount is 60 yen (US\$0.78). This does not provide an economic incentive. US Medicare is analyzed intensively in terms of its perspectives, framework, treatment and diseases reimbursed, and amounts. Medicare could be a good model for Japan.

Discussion: Factors that promote US and EU telemedicine are also examined. Based on these experiences, this paper envisions what are required for further enhancing Japanese telemedicine.

Poster Presentations Abstract Index

The American Telemedicine Association Seventeenth
Annual International Meeting and Exposition

April 29–May 1, 2012 San Jose, CA
SUNDAY, APRIL 29, 2012

5:15 pm–6:30 pm

Sunday, April 29

-
- P1** TELEHEALTH REGULATION PREFERENCE AMONG PT, OT, AND ST LICENSING BOARDS & PROFESSIONAL ASSOCIATIONS IN THE UNITED STATES
PRESENTER & CONTRIBUTING AUTHORS: Alan C. Lee, PhD, PT, DPT, CWS, GCS, Associate Professor¹, Helen H. Setyan, DPT², Amy Caudillo, DPT³, Sara Jintapracha, DPT¹
¹Mount St. Mary's College, Los Angeles, CA, USA, ²Natividad Medical Center, Monterey, CA, USA, ³Yuma Rehabilitation Hospital, Yuma, AZ, USA
-
- P2** RESOLVING BARRIERS TO INTERSTATE PRACTICE FOR TELEREHABILITATION PROFESSIONALS
PRESENTER & CONTRIBUTING AUTHORS: Janice A. Brannon, MA, Director, State Special Initiatives¹, Ellen R. Cohn, PhD, CCC-SLP², Jana Cason, DHS, OTR/L³, Karen Golding-Kushner, PhD, CCC-SLP, FASHA⁴, Alan Lee, PhD, DPT⁵, Michael Campbell, MS, MBA, CCC-SLP⁶, Gregg Givens, PhD, CCC-SLP⁷, Michael P. Towey, MA⁸
¹American Speech-Language Hearing Association, Rockville, MD, USA, ²Associate Dean for Instructional Development, RERC on Telerehabilitation, SHRS, University of Pittsburgh, Pittsburgh, PA, USA, ³Auerbach School of Occupational Therapy, Spalding University, Louisville, KY, USA, ⁴The Golding-Kushner Speech Center, LLC, East Brunswick, NJ, USA, ⁵St. Mary's College, Doctor of Physical Therapy Program, Los Angeles, CA, USA, ⁶University of North Carolina–Greensboro, Director, Speech & Hearing Program, Browns Summit, NC, USA, ⁷College of Allied Health Sciences, East Carolina University, Greenville, NC, USA, ⁸Waldo County General Hospital, The Voice and Swallowing Center of Maine, Belfast, ME, USA
-
- P3** VIRTUAL INTERACTIVE PRESENCE AND AUGMENTED REALITY (VIPAR) FOR REMOTE SURGICAL ASSISTANCE
PRESENTER & CONTRIBUTING AUTHORS: Drew Deaton, BS, MS, CEO, President¹, Mahesh Shenai, BS, MSE, MD², Matt May, BA¹
¹VIPAAR, LLC, Birmingham, AL, USA, ²University of Alabama at Birmingham, Birmingham, AL, USA
-
- P4** ENHANCING MEDICATION COMPLIANCE USING TECHNOLOGY IN THE CHRONICALLY ILL POPULATION
PRESENTER & CONTRIBUTING AUTHORS: Laura Brannigan, BS, BSN, RN, MHA, Vice President of Quality Assurance and Performance Improvement
The Jewish Home for the Blind; GuildNet, Inc., New York, NY, USA
-
- P5** CHANGE AND PROJECT MANAGEMENT CRITICAL SUCCESS FACTOR MODEL FOR DESIGN AND IMPLEMENTATION OF A TELEMEDICINE PROGRAM
PRESENTER & CONTRIBUTING AUTHORS: Cynthia M. LeRouge, PhD, Associate Professor – Health Management and Policy¹, Bengisu Tulu, PhD², Pamela Forducey, PhD³, Simatini Joshi, MPH
¹Saint Louis University, Saint Louis, MO, USA, ²Worcester Polytechnic Institute, Worcester, MA, USA, ³INTEGRIS Health, Oklahoma City, OK, USA
-
- P6** IS THAT BOT HUMAN? JUDGMENT OF THE HUMANNES OF AN INTERLOCUTOR IS IN THE EYE OF THE BEHOLDER
PRESENTER & CONTRIBUTING AUTHORS: Catherine L. Lortie, Graduate Student, Matthieu J. Guitton, PhD
Laval University, Quebec City, QC, Canada
-
- P7** DIABETIC RETINOPATHY SCREENING BY TELEOPHTHALMOLOGY IN URBAN PRIMARY CARE OFFICES
PRESENTER & CONTRIBUTING AUTHORS: Christopher J. Brady, MD, Resident in Ophthalmology¹, Mark G. Graham, MD², Barbara Knight, MD², Robert C. Sergott, MD¹
¹Wills Eye Institute, Department of Ophthalmology, Jefferson Medical College of Thomas Jefferson University, Philadelphia, PA, USA, ²Department of Medicine, Jefferson Medical College of Thomas Jefferson University, Philadelphia, PA, USA
-

Boldface indicates presenting author(s).

POSTER PRESENTATIONS ABSTRACT INDEX

- P8** A KINECT-BASED FALL DETECTOR FOR THE ELDERLY HOMECARE
PRESENTER & CONTRIBUTING AUTHORS: Jui-chien Hsieh, PhD, Assistant Professor¹, Yi-Hsing Chiu, PhD², Bo-Yi Gu¹, Tsung-Han Chiang¹, Yi-Hui Chen¹, Hsiao-Tung Lan¹
¹Yuan Ze University, Chungli, Taoyuan, Taiwan, ²Hsun Chuang University, Hsinchu, Taiwan
- P9** ✓ TELEMEDICINE FOR HOME CARE PATIENTS WITH CEREBROVASCULAR DISEASES AND CANCER: A MULTICENTER CASE CONTROL STUDY
PRESENTER & CONTRIBUTING AUTHORS: Hiroyuki Morita, Associate Professor¹, Hiroki Okada², Takashi Hasegawa³, Kenji Kashiwagi⁴, Takayuki Kori⁵, Yuichiro Saito⁶, Asako Yonezawa⁷, Kazunori Minetaki⁸, Masaomi Takizawa⁹, Takamasa Ohta¹⁰, Masatsugu Tsuji¹¹, Tetsuo Sakamaki³
¹Gifu University Graduate School of Medicine, Gifu, Japan, ²Kagawa University Graduate School of Medicine, Miki-cho, Japan, ³Gunma University Hospital, Maebashi, Japan, ⁴University of Yamanashi, Chuo, Japan, ⁵Tone Chuo Hospital, Numata, Japan, ⁶Gunma University Graduate School of Medicine, Maebashi, Japan, ⁷NTT DATA Institute of Management Consulting, Inc., Tokyo, Japan, ⁸Tokyo Medical University, Tokyo, Japan, ⁹Shinshu University Graduate School of Medicine, Matsumoto, Japan, ¹⁰Ohta Hospital, Niimi, Japan, ¹¹University of Hyogo, Kakogawa, Japan
- P10** IN-HOME TELEREHABILITATION: PATIENTS' PERCEPTIONS OF BENEFITS AND LIMITATIONS
PRESENTER & CONTRIBUTING AUTHORS: Michel Tousignant, Sherbrooke Geriatric University Institute¹, Dahlia Kairy¹, Nancy Leclerc¹, Anne-Marie Cote², Melanie Levasseur²
¹Research Centre on Aging, Sherbrooke, QC, Canada, ²School of Rehabilitation, Sherbrooke, QC, Canada
- P11** FEASIBILITY OF IN-HOME TELEREHABILITATION TO IMPROVE BALANCE FOLLOWING A STROKE: A PILOT STUDY
PRESENTER & CONTRIBUTING AUTHORS: Michel Tousignant, PT, PhD, Director¹, Helene Corriveau, Sherbrooke Geriatric University Institute¹, Sylvie Gosselin², Chantal Dion¹
¹Research Centre on Aging, Sherbrooke, QC, Canada, ²Universite de Sherbrooke, Sherbrooke, QC, Canada
- P12** OPEN SOURCE-BASED CHRONIC DISEASE MANAGEMENT SYSTEM USING TELEHEALTH
PRESENTER & CONTRIBUTING AUTHORS: Xufeng Zhang, Senior Engineer¹, Ying Wang², Bin Li, MD¹, Zhiwen Tang, PhD³, Zhihong Yao, Professor⁴
¹Shanghai Center for Bioinformation Technology, Shanghai, China, ²Tongji University, Shanghai, China, ³Shanghai Baosight Software Co., Ltd, Shanghai, China, ⁴Institute of Health Sciences, SIBS, CAS, Shanghai, China
- P13** ✓ TRENDS IN TELEMEDICINE RESEARCH IN JAPAN
PRESENTER & CONTRIBUTING AUTHORS: Takashi Hasegawa, Researcher, Tetsuo Sakamaki, MD, PhD
Gunma university Hospital, Maebashi-City, Gunma, Japan
- P14** AN ADVANCE ON TELE-REHABILITATION FOR INDIGENOUS COMMUNITIES IN AMAZONAS
PRESENTER & CONTRIBUTING AUTHORS: Jorge A. Velez, MD, Director¹, Edward Lemaire, PhD², Marie-Pierre Gagnon, PhD³, Rodolfo Millan, MSc⁴, Maria Ines Largo, FTT¹, Luz Marina Sarmiento, RN⁵, Alejandro Echavarría, Eng.¹
¹Colombian Telemedicine Centre, Cali, Colombia, ²Ottawa Hospital, University. The Ottawa Hospital Rehabilitation Centre, Institute for Rehabilitation Research and Development, OTTAWA, ON, Canada, ³Centre Hospitalier Universitaire de Quebec-CHUQ, Université Laval, Quebec, QC, Canada, ⁴IDEAL Foundation for the Integral Rehabilitation, Cali, Colombia, ⁵Disability Assistance Program, Secretary of Health, Amazonas, Leticia, Amazonas, Colombia
- P15** THE PERFECT MARRIAGE: LEVERAGING RESOURCES OF A TELE ICU AND A TRANSFER CENTER
PRESENTER & CONTRIBUTING AUTHORS: Leslee Gross, RN MHCA, Director of BHSF Transfer Center, Philipp Ludwig, MHCA, Beth Willmich, RN, Louis Gidel, MD, PhD
Baptist Health South Florida, Doral, FL, USA
- P16** MORE DATA SUGGESTING SENIOR PHYSICIANS ARE MAJOR ADAPTORS OF TELEMEDICINE TECHNOLOGY
PRESENTER & CONTRIBUTING AUTHORS: Howard N. Reynolds, Associate Professor of Medicine, University of Maryland School of Medicine¹, Eliza M. Reynolds, Pre-Medical College Student²
¹University of Maryland Shock Trauma Center, Baltimore, MD, USA, ²University of Maryland College Park, College Park, MD, USA
- P17** DIFFERENCES IN REFERRAL RATES USING TELE-BEHAVIORAL HEALTH FOR SOLDIERS RETURNING FROM DEPLOYMENT
PRESENTER & CONTRIBUTING AUTHORS: Lynette Pujol, Chief, Evaluation Section, Behavioral Readiness Division, Fred Baker, CRNP, Patrick Brady, PhD, Bret Moore, PsyD, Michael West, PsyD, Dennis Grill, PhD, Bruce Crow, PhD
Southern Regional Medical Command, San Antonio, TX, USA

POSTER PRESENTATIONS ABSTRACT INDEX

- P53** HOW THE ARMY EXPONENTIALLY INCREASED THEIR ABILITY TO TREAT PAIN MANAGEMENT AND TRAUMATIC BRAIN INJURY PATIENTS
PRESENTER & CONTRIBUTING AUTHORS: Francis L. McVeigh, OD, MS, MS, FAAO, teleTBI Program Manager/Senior Clinical Consultant
TATRC, Ft. Detrick, MD, USA
-
- P54** KEY INFLUENTIAL FACTORS IN ACCEPTANCE OF E-HEALTH SERVICES FOR THE ELDERLY
PRESENTER & CONTRIBUTING AUTHORS: Miha Cimperman, BDC, PhD Candidate, Researcher¹, Mateja De Leonni Stanonik, MD, PhD², Peter Trkman, PhD³, Maja Makovec Brenčič³
¹Department for Marketing, Faculty of Economics, University in Ljubljana, University in Ljubljana, Slovenia, ²George Washington University, Washington, DC, USA, ³Faculty of Economics, University in Ljubljana, Ig, Slovenia
-
- P55** MATCHING PRIMARY CARE PATIENTS TO TECHNOLOGY-BASED PROGRAMS UTILIZING AN INNOVATIVE NAVIGATOR ASSESSMENT TOOL
PRESENTER & CONTRIBUTING AUTHORS: Bree Holtz, PhD, Post-doctorate Researcher¹, Wendy Morrish, MSN, RN², Sarah Krein, PhD, RN³
¹Ann Arbor VA Center for Clinical Management Research, Ann Arbor, MI, USA, ²Ann Arbor VA Center, Department of Primary Care, Ann Arbor, MI, USA, ³University of Michigan Department of Internal Medicine, Ann Arbor, MI, USA
-
- P56** CHILD AND ADOLESCENT TELEPSYCHIATRY IN WRAPAROUND: CAREGIVER, YOUTH AND PROVIDER SATISFACTION
PRESENTER & CONTRIBUTING AUTHORS: Mark Edelstein, MD, Medical Director
EMQ FamiliesFirst, Sacramento, CA, USA
-
- P57** VIRTUAL WORLD SUPPORT FOR AMPUTEES
PRESENTER & CONTRIBUTING AUTHORS: Ashley Fisher, MA, Portfolio Manager, Troy Turner, MBA
TATRC, Fort Detrick, MD, USA
-
- P58** PREVALENCE OF ATRIAL FIBRILLATION IN PRIMARY CARE PATIENTS: A STUDY BY A TELEMEDICINE SERVICE IN BRAZIL
PRESENTER & CONTRIBUTING AUTHORS: Milena Marcolino, PhD, Clinical Quality Control Coordinator, Daniel Moore Freitas Palhares, William Matos de Carvalho, Maria Beatriz Moreira Alkimim, MD, Antonio Luiz Ribeiro, PhD
Centro de Telessaúde do Hospital das Clínicas da Universidade Federal de Minas Gerais, Belo Horizonte, Brazil
-
- P59** ASSESSMENT OF A REMOTE MONITORING SERVICE: EUROPEAN E-HEALTH PROJECT RENEWING HEALTH
PRESENTER & CONTRIBUTING AUTHORS: Claudio Saccavini, Technical Director, Silvia Mancin, Andrea Favaro, Giorgia Centis
Arsenal.IT, Treviso, Italy
-
- P60** ✓ COMPARATIVE ANALYSIS OF E-HEALTH PROJECTS IN JAPAN, UK, AND US BY FOCUSING ON SYSTEM, OUTCOME, AND ISSUE
PRESENTER & CONTRIBUTING AUTHORS: Masatsugu Tsuji, PhD, Professor of Economics¹, Yuji Akematsu, PhD², Sue Williams³
¹University of Hyogo, Kobe, Japan, ²Osaka University, Toyonaka, Japan, ³Kent County Council, Kent, United Kingdom
-
- P61** DEVELOPING STRATEGIES - THE KEY TO SUSTAINABILITY
PRESENTER & CONTRIBUTING AUTHORS: Roy Kitchen, MS, Business Administrator for the Center for Distance Health and the Department of Obstetrics and Gynecology, Laura Rakes, MA
University of Arkansas for Medical Sciences, Little Rock, AR, USA
-
- P62** A NON-TRADITIONAL TELEMEDICINE MODEL - PROVIDING ALTERNATIVE SOLUTIONS
PRESENTER & CONTRIBUTING AUTHORS: Roy Kitchen, Business Administrator for the Center for Distance Health and Department of Obstetrics and Gynecology, Laura Rakes, MA
University of Arkansas for Medical Sciences, Little Rock, AR, USA
-
- P63** PROVIDING RURAL PATIENTS HOME TOWN CARE THROUGH MOBILE SONOGRAPHERS
PRESENTER & CONTRIBUTING AUTHORS: Roy Kitchen, Business Administrator for the Center for Distance Health and Department of Obstetrics and Gynecology, Laura Rakes, MA
University of Arkansas for Medical Sciences, Little Rock, AR, USA

Poster Presentations Abstracts

The American Telemedicine Association Seventeenth
Annual International Meeting and Exposition

April 29–May 1, 2012 San Jose, CA
SUNDAY, APRIL 29, 2012

5:15 pm–6:30 pm

Sunday, April 29

P1 TELEHEALTH REGULATION PREFERENCE AMONG PT, OT, AND ST LICENSING BOARDS & PROFESSIONAL ASSOCIATIONS IN THE UNITED STATES

PRESENTER & CONTRIBUTING AUTHORS:

Alan C. Lee, PhD, PT, DPT, CWS, GCS, Associate Professor¹,
Helen H. Setyan, DPT², Amy Caudillo, DPT³, Sara Jintapracha, DPT¹
¹Mount St. Mary's College, Los Angeles, CA, USA, ²Natividad Medical Center,
Monterey, CA, USA, ³Yuma Rehabilitation Hospital, Yuma, AZ, USA

Purpose/Hypothesis: United States faces the 2012 fiscal year with a \$1 trillion-plus deficit. In addition, America must contend with medical inflation, shortages of healthcare providers, and an unequal distribution of specialists throughout the country. Telehealth technologies may serve as tools to expand the delivery of high-quality, efficient healthcare to address the current, evolving, and future needs of our society. However, there is a gap in literature on telehealth regulation for physical, occupational, and speech therapy (PT, OT, and ST) to allow clinical practice within and across state lines. The primary aim of this study is to examine the current understanding of telerehabilitation among licensing boards and professional associations in United States.

Number of Subjects: Two telehealth surveys addressing licensure and reimbursement were modified into a single 15-items survey for this study. After pilot testing with PT, OT, and ST licensing boards and professional association members, 312 national surveys were mailed to physical addresses of state licensing boards and professional associations of physical, occupational, and speech therapy in United States and Puerto Rico.

Materials/Methods: After the initial mailing, three separate electronic reminders (weeks 3, 9, and 15) to complete the mailed survey or a duplicate Qualtrics e-Survey. Data analysis consisted of test-retest reliability and Kruskal-Wallis analysis of variance by ranks and chi square tests on non-parametric data performed on PASW/SPSS Statistics 18.

Results: A total of 53 usable surveys were returned with 31 of 52 states and Puerto Rico (60%) from licensing authorities or professional associations. There were statistically significant differences between PT, OT, and ST on familiarity of telerehabilitation definition, witnessing its use, report of complaints and types of telehealth licensure preference. Forty-seven percent of respondents reporting witnessing telerehabilitation services in ST, followed by OT at 11%, and physical therapy at 7.1%. Overall, only 6 complaints on telehealth practitioners were reported in this study.

Conclusions: Physical therapy licensing boards showed interest in either interstate licensure compacts or special purpose licensure for telehealth regulation. Speech therapy authorities preferred interstate licensure compacts for telepractice while occupational therapy authorities preferred special purpose licensure for telerehabilitation. In conclusion, standardization of telehealth

regulation should be addressed by PT, OT, and ST licensing boards and professional associations.

Clinical Relevance: As adoption of technology is destined to increase, telehealth providers in rehabilitation can serve as key collaborators with physical therapy to generate research, practice, and education in order to provide high-quality, effective healthcare in the future. Therefore, the findings of this study may address licensure regulation to sustain telehealth services in the near future.

Objectives:

1. To identify barriers to telerehabilitation licensure portability.
2. To differentiate telerehabilitation issues among PT, OT, and ST licensing boards and professional associations.

P2 RESOLVING BARRIERS TO INTERSTATE PRACTICE FOR TELEREHABILITATION PROFESSIONALS

PRESENTER & CONTRIBUTING AUTHORS:

Janice A. Brannon, MA, Director, State Special Initiatives¹, Ellen R. Cohn, PhD, CCC-SLP², Jana Cason, DHS, OTR/L³, Karen Golding-Kushner, PhD, CCC-SLP, FASHA⁴, Alan Lee, PhD, DPT⁵, Michael Campbell, MS, MBA, CCC-SLP⁶, Gregg Givens, PhD, CCC-SLP⁷, Michael P. Towey, MA⁸
¹American Speech-Language Hearing Association, Rockville, MD, USA,
²Associate Dean for Instructional Development, RERC on Telerehabilitation, SHRS, University of Pittsburgh, Pittsburgh, PA, USA, ³Auerbach School of Occupational Therapy, Spalding University, Louisville, KY, USA,
⁴The Golding-Kushner Speech Center, LLC, East Brunswick, NJ, USA,
⁵St. Mary's College, Doctor of Physical Therapy Program, Los Angeles, CA, USA, ⁶University of North Carolina–Greensboro, Director, Speech & Hearing Program, Browns Summit, NC, USA, ⁷College of Allied Health Sciences, East Carolina University, Greenville, NC, USA, ⁸Waldo County General Hospital, The Voice and Swallowing Center of Maine, Belfast, ME, USA

Rehabilitation professionals (e.g., audiologists, occupational therapists, physical therapists, speech-language pathologists, etc.) can only engage in telerehabilitation in states in which they hold a professional license. This is akin to needing a different driver's license to drive in every US state and territory. Clinicians currently report duplicative paperwork, expense, and wait times. For some professions, there can be lack of uniformity for state credentialing requirements and fees. With the changing healthcare system, attention needs to be paid to easing the ability of clinicians to obtain license or recognition in multiple states for the purpose of providing telerehabilitation services. This presentation will:

- 1) Summarize national reports that call for functional changes to facilitate inter-state practice for rehabilitation (e.g., US Department of Health and Human Services, Health Services and Resources Administration, Health Licensing Board Report to Congress (Requested by Senate Report 111-66); Connecting America: The National Broadband Plan; and the Second Report from the Healthcare Practice Taskforce to the State Alliance for E-Health);
- 2) Describe alternative models of state licensure portability (with available exemplars);

Boldface indicates presenting author(s).

controller. The Kinect can acquire 3D coordinates of the body skeleton with specific positions per 0.04 sec in real time, such as neck, waist, and hip. In this study, a threshold based algorithm is created to distinguish unexpected fall from daily activities based on the calculation of the following parameters, including (1) the angle between the trunk of the body and the vector perpendicular to ground, (2) the angular velocity, and (3) the displacement of the hip centroid. An experiment with simulated faint-, slip-, trip-induced fall, and various daily activities is performed by 4 young adults. Results indicated that Kinect can effectively detect unexpected fall with high sensitivity=92.5%; specificity=95% ; and accuracy=93.8% . As compared with the traditional fall detectors, such as wearable accelerometer, gyroscope, and costly high speed cameras, this Kinect-based fall detector proves to be more convenient, effective, and economic for the elderly tele-homecare.

Objectives:

1. To create an easy and effective technology for fall detection.
2. To monitor household safety and facilitate timely medical intervention for the vulnerable elderly.

P9 TELEMEDICINE FOR HOME CARE PATIENTS WITH CEREBROVASCULAR DISEASES AND CANCER: A MULTICENTER CASE CONTROL STUDY

PRESENTER & CONTRIBUTING AUTHORS:

Hiroyuki Morita, Associate Professor¹, Hiroki Okada², Takashi Hasegawa³, Kenji Kashiwagi⁴, Takayuki Kori⁵, Yuichiro Saito⁶, Asako Yonezawa⁷, Kazunori Minetaki⁸, Masaomi Takizawa⁹, Takamasa Ohta¹⁰, Masatsugu Tsuji¹¹, Tetsuo Sakamaki³

¹Gifu University Graduate School of Medicine, Gifu, Japan, ²Kagawa University Graduate School of Medicine, Miki-cho, Japan, ³Gunma University Hospital, Maebashi, Japan, ⁴University of Yamanashi, Chuo, Japan, ⁵Tone Chuo Hospital, Numata, Japan, ⁶Gunma University Graduate School of Medicine, Maebashi, Japan, ⁷NTT DATA Institute of Management Consulting, Inc., Tokyo, Japan, ⁸Tokyo Medical University, Tokyo, Japan, ⁹Shinshu University Graduate School of Medicine, Matsumoto, Japan, ¹⁰Ohta Hospital, Niimi, Japan, ¹¹University of Hyogo, Kakogawa, Japan

Background: Telemedicine between doctors and home care patients is a powerful means to surpass the distance and compensate for the shortage of physicians, and may improve quality of life of the patients. In Japan, we are facing an unprecedented aging society. The home care and telemedicine for the patients has been increasingly important.

Aim: We conducted a multicenter retrospective case-control study to evaluate the safety of telemedicine between a doctor and a home care patient.

Methods: Thirty-eight patients with cerebrovascular disease (mean age, 83 ± 8 years) and 29 patients with cancer (mean age, 81 ± 8 years) in 7 clinics were enrolled. We reviewed medical records of 36 patients who were only visited at home by a doctor (control group) and 31 who were seen using telemedicine in addition to at home visit (telemedicine group), and analyzed the relation between scheduled and unscheduled home visits. Equipments used in telemedicine were personal computers with web cameras or videophones.

Results: We found no difference in age, sex, level of care, and distance and traffic time between the clinics and home of patients between the two groups. There was no difference in frequency of unscheduled home visits between scheduled ones between the two groups. When the observation period is defined as the time between scheduled home visits, and unscheduled home visit, admission or death is defined as a censored event, no difference was observed in the Kaplan-Meier curves between the two groups. The frequency of the home visit during two weeks before patient death in the telemedicine group was not different from that in the control group.

Conclusion: This study indicated the safety of telemedicine for home care patients with cerebrovascular disease and cancer. A multicenter prospective case-control study by us is underway to validate the effectiveness and safety of telemedicine with videophones between doctors and home care patients.

Acknowledgement: The present study was supported in part by a Health and Labour Sciences Research Grant (H22-Iryo-Shitei-043) from the Ministry of Health, Labour and Welfare in Japan.

Objectives:

1. Safety of telemedicine for home care patients.
2. Efficacy of telemedicine for home care patients.

P10 IN-HOME TELEREHABILITATION: PATIENTS' PERCEPTIONS OF BENEFITS AND LIMITATIONS

PRESENTER & CONTRIBUTING AUTHORS:

Michel Tousignant, Sherbrooke Geriatric University Institute¹, Dahlia Kairy¹, Nancy Leclerc¹, Anne-Marie Cote², Melanie Levasseur²
¹Research Centre on Aging, Sherbrooke, QC, Canada, ²School of Rehabilitation, Sherbrooke, QC, Canada

As demands for rehabilitation at home are increasing and becoming more difficult to meet, different modes of health service delivery have been proposed and developed. Consequently, in-home telerehabilitation is increasingly used as an alternate service delivery method. An aspect to be considered when implementing such services is the patient's perception of these services. This study aimed at exploring patients' perceptions regarding the benefits and limitations of actual telerehabilitation services post total knee replacement.

Methods: Semi-structured interviews were conducted with five patients who had previously participated in the telerehabilitation arm of a randomized controlled trial post total knee arthroplasty. Patients reflected on their entire 8-week rehabilitation process and identified benefits and limitations of in-home telerehabilitation, as they experienced it and as compared to their previous experience in rehabilitation. Interviews were transcribed and a qualitative content analysis was conducted.

Results: Six overarching themes were identified: 1) improved access to services with reduced need for transportation; 2) development of a strong therapeutic relationship with therapist while maintaining a sense of personal space; 3) desire for a minimum amount of physical contact with therapist; 4) standardized yet tailored and challenging exercise programs; 5) comfort level with technical equipment and 6) achieving ongoing sense of support by team.

Conclusion: This study showed that participants were satisfied with most aspects of their experience, including the access to services, the relationship with therapist, the exercise program, the technology and the support provided by the technical team. However, a minimum amount of physical contact with the therapist is required, both to reassure patients of adequate recovery and address new concerns that may arise. This limitation may be reduced by complementing telerehabilitation with minimal in-person therapy when feasible.

Objectives:

1. To better understand patient's experience of home telerehabilitation.
2. To explore the patient's perception of the in-home telerehabilitation services received post-TKA.

P11 FEASIBILITY OF IN-HOME TELEREHABILITATION TO IMPROVE BALANCE FOLLOWING A STROKE: A PILOT STUDY

PRESENTER & CONTRIBUTING AUTHORS:

Michel Tousignant, PT, PhD, Director¹, Helene Corriveau, Sherbrooke Geriatric University Institute¹, Sylvie Gosselin², Chantal Dion¹
¹Research Centre on Aging, Sherbrooke, QC, Canada, ²Universite de Sherbrooke, Sherbrooke, QC, Canada

The functional recuperation of a stroke depends on several factors including severity of the initial impairment, the capacity of spontaneous recuperation and early rehabilitation. However, in Canada, only 10 to 15% of individuals have access to rehabilitation after a stroke because of the lack of services. Consequently, their mobility and balance diminish, which leads to important

POSTER PRESENTATIONS ABSTRACTS

risks of falls. In this context, telerehabilitation was identified as a promising alternative to improve access to healthcare services. The present study aimed to confirm the feasibility of dispensing telereadaptation in a post-stroke population with mild to moderate impairment.

Methods: Two post-stroke participants, one man (73 years old; Rankin score=3) and one woman (92 years old; Rankin score=2) were included in this pilot study. The intervention they received consisted of exercises inspired from Tai Chi movements through in-home telerehabilitation. They attended two treatments per week for a period of eight weeks (45 minutes each). Fall-related clinical variables: balance (Berg), motor function (Chedoke McMaster for the leg and postural control), gait (Time Up and Go), lower limb strength (Sit to Stand) and fear of falling (ABC-S), were assessed twice: 1) before and 2) after the intervention.

Results: Both participants showed a clinical improvement for all of the variables. Hence, the balance ($\Delta 4/56$ on Berg scale for both participants), the motor function ($\Delta 2$ stages; $\Delta 1$ stage), the gait ($\Delta 23.6\%$; $\Delta 10.9\%$), the lower limb strength ($\Delta 21.7\%$; $\Delta 50\%$), and fear of falling ($\Delta 17/60$; $\Delta 15/60$ on the ABC-S scale) were improved.

Conclusion: In-home Tai Chi telerehabilitation seems to be a feasible and effective intervention method for an elderly post-stroke population. Furthermore, this services approach offers the opportunity to increase the potential of functional recovery for this population.

Objectives:

1. To confirm the feasibility of dispensing telereadaptation in a post-stroke population with mild to moderate impairment.
2. To determine the improvement in the fall-related variables following telerehabilitation intervention.

P12 OPEN SOURCE-BASED CHRONIC DISEASE MANAGEMENT SYSTEM USING TELEHEALTH

PRESENTER & CONTRIBUTING AUTHORS:

Xufeng Zhang, Senior Engineer¹, Ying Wang², Bin Li, MD¹, Zhiwen Tang, PhD³, Zhihong Yao, Professor⁴

¹Shanghai Center for Bioinformatics Technology, Shanghai, China, ²Tongji University, Shanghai, China, ³Shanghai Baosight Software Co., Ltd, Shanghai, China, ⁴Institute of Health Sciences, SIBS, CAS, Shanghai, China

Patients with chronic diseases need careful daily care. However, it lacks clinical professionals to take care of them, particularly for the aged people, in China. Chronic disease management using telehealth instead of traditional technologies cannot only manage patients' daily life, exercise, rehabilitation, etc., but also provide sharing ability of sophisticated medical resources. Therefore, if telehealth is used in chronic disease management, it will decrease the demand for huge amount of professionals and maximize the usage of advanced medical resources. In this paper, a chronic disease management system using telehealth-based on personal care was illustrated. It has 4 significant features.

1. **Data standardization** – In this system, we used electronic health records to store a patient's information based on open EHR, open source specifications and reference implementations of future proof EHR systems. As the national personal health standard and the open EHR are adopted, information is highly organized and standardized.
2. **Interoperability** – To solve the problem of communication between different platforms, we used the ESB, Enterprise Service Bus, a software architecture model for designing and implementing the interaction and communication between mutually interacting software applications. To implement it, Synapse, a simple, lightweight and extremely high performance open source ESB and mediation engine, was adopted. With the help of this method, medical records and body check data stored in different clinics, hospitals and health centers can be imported into our system.

3. **Remote health monitoring** – With the IOT, Internet of Things, health information of each patient from different clinics can be abstracted by referring to his RFID, Radio-frequency identification. And experts in remote places are able to review his medical information and make appropriate decisions.

4. **Clear responsibility** – A production rule engine executes if-then rules in a runtime production environment. To implement this engine, we used Drools, which is an open source reasoning machine providing a human-readable webpage for doctors to develop medical rules. In this way, doctors will not be confused by complicated codes. Hence, it draws a clear line of responsibilities between IT specialists and clinical professionals.

Objectives:

1. Creatively use open source technologies to implement chronic disease management to lower clinical costs and maximize the usage of clinical resources.
2. Use open EHR specifications to realize person-centered healthcare management.

P13 TRENDS IN TELEMEDICINE RESEARCH IN JAPAN

PRESENTER & CONTRIBUTING AUTHORS:

Takashi Hasegawa, Researcher, Tetsuo Sakamaki, MD, PhD
Gunma University Hospital, Maebashi-City, Gunma, Japan

Our research group assists policy-making for telemedicine in Japan at the national level; we have examined trends in telemedicine research by extensively studying all the telemedicine research conducted over the past 20 years (1989–2010) in Japan. We found that the current policy for promoting telemedicine might not be sufficiently effective; the reasons for this low effectiveness need to be clarified. Therefore, in this study, we reexamined the status of telemedicine research in Japan. This study was funded by a grant from the Ministry of Health, Labor, and Welfare. Reexamination involved enumerating the number of published research reports for each class of clinical research, e.g., control studies; for technical research, such as that on information systems, devices, and communication protocol standardization; and for each type of telemedicine, such as teleradiology, telepathology, and telecare, used for home care patients. These reports were obtained from Ichushi-Web, a database maintained by the NPO Japan Medical Abstracts Society the highest authority in this regard in Japan. We found that very few clinical research studies had been performed in this regard. Most of the other studies involved technical research (2,999 of 4,415 studies). The number of case reports of diseases involving treatment by telemedicine was lower than that of technical reports (1,072 of 4,415 studies) and was followed by the control study reports (44 of 4,415 studies). We previously believed that the low effectiveness of the national telemedicine promotion policy might be due to inappropriate regulations and that sufficient evidence was available to indicate that public insurance reimbursement for telemedicine should be increased. However, our findings indicated that clinical evidence in this regard is too less for promoting telemedicine. Thus, we conclude that focus must be shifted from technical research to clinical research in order to develop a good national telemedicine promotion policy.

Objectives:

1. The situation of the research about telemedicine in Japan.
2. The impact of researches to the healthcare policy in Japan.

P14 AN ADVANCE ON TELE-REHABILITATION FOR INDIGENOUS COMMUNITIES IN AMAZONAS

PRESENTER & CONTRIBUTING AUTHORS:

Jorge A. Velez, MD, Director¹, Edward Lemaire, PhD², Marie-Pierre Gagnon, PhD³, Rodolfo Millan, MSc⁴, Maria Ines Largo, FTT¹, Luz Marina Sarmiento, RN⁵, Alejandro Echavarría, Eng.¹

POSTER PRESENTATIONS ABSTRACTS

Centro de Telessaúde do Hospital das Clínicas da Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Introduction: Atrial Fibrillation (AF) is associated with substantial morbidity and mortality. Because anticoagulation in AF can consistently reduce the possibility of thromboembolic events including stroke, the study of its prevalence assumes great importance in primary care. Although traditionally cardiovascular research has been based largely in secondary or tertiary care settings, the majority of care for people with cardiovascular diseases, however, takes place in the primary care.

Aim: To assess the prevalence of AF in patients who were attended at primary care centers of 608 cities in Minas Gerais, Brazil.

Methods: In this observational and retrospective study, all 12-lead standard digital electrocardiograms (ECGs) analyzed by cardiologists of the Centro de Telessaúde do Hospital das Clínicas da Universidade Federal de Minas Gerais, a public telemedicine service in Brazil, in January 2011 were assessed. This service attends primary care of 608 cities in Minas Gerais province. ECGs were sent by remote professionals through Internet to be analyzed by cardiologists who are trained and experienced in the analysis and interpretation of ECG.

Results: A total of 18,605 primary care patients underwent ECG in the study period (mean age 51 ± 19 years, 58.7% females). The overall prevalence of AF was 2.2%, 2.8% in men and 1.8% in women ($p < 0.001$). There was a progressive increase in prevalence with age: 1.5% in the ages group 55–59 years, 2.7% in 60–64 years, 3.1% in 65–69 years, 4.9% in 70–74 years, 6.7% in 75–79 years, 8.4% in 80–84 years and 11.9% in the age group 85 years or higher. When compared to other populational studies, AF prevalence was similar to all age groups in the Anticoagulation and Risk Factors in Atrial Fibrillation (ATRIA) Study, and similar to the Rotterdam study, except for a lower prevalence in octogenarians in the present study.

Conclusion: In this study in a large sample of primary care patients, prevalence of AF increased progressively with age and was higher in men than in women. AF prevalence in primary care in Brazil, diagnosed by a telemedicine service, was similar to other populational studies. This proves the importance of telecardiology as an efficient method for diagnosis of FA in remote primary healthcare.

Objectives:

1. To show an example of integration between telehealth into existing healthcare systems
2. To assess the importance of telecardiology as a method for diagnosis of important conditions in remote primary healthcare

P59 ASSESSMENT OF A REMOTE MONITORING SERVICE: EUROPEAN E-HEALTH PROJECT RENEWING HEALTH

PRESENTER & CONTRIBUTING AUTHORS:

Claudio Saccavini, Technical Director, Silvia Mancin, Andrea Favaro, Giorgia Centis
Arsenà.IT, Treviso, Italy

The use of implantable cardiac devices is increasing as a consequence of population ageing and more frequent indications for implantation. Medical therapies for these patients are strictly dependent on the information stored by the device: telemonitoring technologies for implantable devices have represented an important breakthrough in cardiovascular diseases management, even if the lack of interoperability among the different providers and of a standardized organizational model for telemonitoring delivery are still an obstacle in converting these new solutions into regular practices.

Methods: Patients involved have a home-gateway device able to receive from their implantable device a complete spectrum of technical and clinical data, and forward them automatically to the online server of the corresponding device manufacturer. Health professionals can check patient data accessing with their credentials a web application for data management. This kind of

services, are evaluated in large-scale pilots, using a rigorous Health Technology Assessment methodology including evaluation in clinical, economic, organizational and technological domains, in order to understand the “real world” impact of telemonitoring. Particular attention is addressed to the analysis of the best organizational model to sustain telemonitoring, optimize the health professionals’ activities and reduce time consumption. Great efforts are spent to invite manufacturers to cooperate for the common interfacing of different management systems, following the Integrating the Healthcare Enterprise (IHE) guidelines.

Results: RENEWING HEALTH, funded under the European CIP (Competitiveness and Innovation Framework Programme), is expected to provide for the first time strong multidisciplinary evidence on the effectiveness of large-scale telemonitoring services for chronic patients with implantable devices. First results from Veneto Region demonstrated that remote monitoring really reduces the time consumed by health professional: remote controls substitute the 75% of planned outpatient visits and take one third of the time of an outpatient visit. Savings in human resources have been estimated in €37.125/year.

Objectives:

1. Illustrate RENEWING HEALTH, one of the largest ever telemedicine trials
2. Discuss the difficulties and benefits of one of the telemedicine services implemented by the Project



P60 COMPARATIVE ANALYSIS OF E-HEALTH PROJECTS IN JAPAN, UK, AND US BY FOCUSING ON SYSTEM, OUTCOME, AND ISSUE

PRESENTER & CONTRIBUTING AUTHORS:

Masatsugu Tsuji, PhD, Professor of Economics¹, Yuji Akematsu, PhD², Sue Williams³

¹University of Hyogo, Kobe, Japan, ²Osaka University, Toyonaka, Japan, ³Kent County Council, Kent, United Kingdom

Introduction: Since each country has its own medical systems and social background, the development stage of telemedicine is quite different. This paper focuses on Japanese case and attempts to explain why telemedicine in Japan is lagged behind from the viewpoint of legal and financial basis.

Methodology: To highlight Japanese obstacles, the Article 20 of the Medical Act which prohibits telemedicine and reimbursement from public medical insurance are targeted. In order to compare with cases of US, and EU, we conducted in-depth interviews to various related Ministries in US, UK, and EC, including CMS and HRSA (both are parts of US Department Health and Human Services), Veterans Hospital in Seattle, WA, UK’s Department of Health, and DG SANGO and IPTS of EC. Based on these hearings, curial factors are identified for development of Japanese telemedicine.

Results: The administrative rulings on diagnosis using ICT in 1997 and 2003 listed seven diseases as samples and it satisfies the same condition as face-to-face diagnosis. These rulings did not mention concrete conditions; telemedicine was not believed to be widely admitted as legal. Other countries have no general legislation to prohibit telemedicine, except the safety of system and equipment. In March, a new administrative ruling was issued which admits telemedicine under a condition of the same level safety as conventional medicine. The reimbursement of consultation fees by telephone is admitted for telemedicine patients but its amount is 690 yen (about US\$9.00). This does not provide an enough economic incentive. The Ministry is still reluctant to expand telemedicine reimbursements. US Medicare is analyzed intensively in terms of its perspectives, framework, treatment and diseases reimbursed, and amounts. Medicare could be a good model for Japan.

Discussion: Factors that promote US and EU telemedicine are also examined. Based on these experiences, this paper envisions what are required for further enhancing Japanese telemedicine.

Objectives:

1. This study examines what kinds of effect e-Health provide by focusing e-Health projects in Japan, UK and US.
2. Compared subjects are, (i) operational system and devices; (ii) diseases that e-Health intends to manage; and (iii) numerical outcomes of e-Health such as reduction of treatment days.

P61 DEVELOPING STRATEGIES - THE KEY TO SUSTAINABILITY

PRESENTER & CONTRIBUTING AUTHORS:

Roy Kitchen, MS, Business Administrator for the Center for Distance Health and the Department of Obstetrics and Gynecology, Laura Rakes, MA
University of Arkansas for Medical Sciences, Little Rock, AR, USA

While grant funding often covers the initial investment to purchase telemedicine equipment or infrastructure, the post-grant period poses a new dilemma: How can this be sustained? For a program currently administering over \$103 million in grant awards, sustainability is a very real situation. This program's key to maintaining sustainability lies in thinking outside the box in producing new revenue streams from the equipment and infrastructure secured through grant funding. A program must ask itself: Is my equipment and infrastructure being used to its utmost capacity? If one answers "no," then the following strategy may pose a solution for sustainability. Most telemedicine sites and pieces of telemedicine equipment funded through grants do not require around-the-clock availability for a predestined purpose. In effect, this paid-in-full infrastructure and equipment often lies dormant until its next programmatic use. In those situations when 24/7 programmatic access is not necessary, other specialists, educationalists, and programs outside of the immediate program can be recruited to utilize equipment and infrastructure, while also paying a modest fee to access such resources in the post-award phase. This strategy creates a new revenue stream from telemedical resources that can be partially dedicated to new and expanded purposes. Telemedical resources are valuable, and in effect, use of those resources should hold value to the providers, educationalists, and programs who wish to use them. Such access would provide numerous advantages to providers, many of which result in providers being able to deliver insurer reimbursable services, offer improved patient care, see more patients, and achieve fewer no-show appointments. As such, those resources you have secured through grant funding now can continue to serve their programmatic purpose in the post-award phase, while also gaining new purpose that will not only benefit others who use them but will also create revenue for programmatic sustainability. This strategy and its application in Arkansas will be discussed in full at this presentation.

Objectives:

1. Attendees will learn how to create revenue streams by thinking outside the box.
2. Attendees, specifically subspecialists, will be educated on the benefits of telemedicine.

P62 A NON-TRADITIONAL TELEMEDICINE MODEL - PROVIDING ALTERNATIVE SOLUTIONS

PRESENTER & CONTRIBUTING AUTHORS:

Roy Kitchen, Business Administrator for the Center for Distance Health and Department of Obstetrics and Gynecology, Laura Rakes, MA
University of Arkansas for Medical Sciences, Little Rock, AR, USA

One southern academic hospital has created a powerhouse offering telemedicine- and telehealth-related resources to clinics and hospitals across the state, region, nation, and world. The Center for Distance Health at the University of Arkansas for Medical Sciences provides solutions to other

entities looking to initiate telemedicine programs. Oftentimes, entities face several key barriers that prevent them from planning or even considering telemedicine as a plausible service to provide through their clinic or hospital: lack of knowledge, lack of resources, and lack of finances. Telemedicine can seem intimidating to the inexperienced or those who do not know much about it. That anxiety is worsened when the program, hospital, or university in charge does not support telemedicine or telehealth additions and withholds financial and other resources. The Center for Distance Health can help overcome such adversity and barriers. The Center for Distance Health offers access to their established network at substantial savings when compared to creating and implementing an entirely new network. In addition, the Center for Distance Health can provide equipment and connectivity to people within a separate network. For the easiest telemedicine solution, the Center offers a sort of turnkey operation, putting together connectivity, network infrastructure, and equipment in a ready-to-use "bundle."

P63 PROVIDING RURAL PATIENTS HOME TOWN CARE THROUGH MOBILE SONOGRAPHERS

PRESENTER & CONTRIBUTING AUTHORS:

Roy Kitchen, Business Administrator for the Center for Distance Health and Department of Obstetrics and Gynecology, Laura Rakes, MA
University of Arkansas for Medical Sciences, Little Rock, AR, USA

One southern academic medical center is actively working to help rural providers secure and manage reimbursement for remote health services. The University of Arkansas for Medical Sciences' Center for Distance Health (CDH) sends sonographers to rural areas of the state to perform ultrasounds on high-risk pregnant women, which allows the patient to receive treatment in her community without traveling to a metropolitan area for specialty treatment from one of the very few Maternal Fetal Medicine Specialists in Arkansas. The images and/or videos provided by the sonographers are either stored-and-forwarded to a specialist or the images are viewed in real-time if the rural facility has a picture archiving and communication system (PACS). In order to reap full benefits from such an arrangement, the CDH provides management of the reimbursement system by first developing a contract with the outlying facility that allows the sonographer to work under one of the rural physicians. Within the contract, the CDH negotiates a payment mechanism, which hinges mainly on the availability of the telemedicine equipment, which could be provided by the CDH if not readily accessible at the rural facility. By providing these sonography services to rural high-risk pregnant women, the CDH receives a portion of the reimbursement, and the rural facility receives at least some of the reimbursement, whereas it would not if the patient had traveled to an urban clinic or hospital for specialty treatment. Most importantly, the patient is able to stay near home yet receive the specialty care she and her baby require.

Objectives:

1. Attendees will learn how one sonography program that sends sonographers to rural communities helps provide better patient care, continuity of care, and reimbursement opportunities.
2. Attendees will learn how providers and facilities benefit from sonographers sent to rural areas; benefits include decreased patient travel, greater number of accessible patients, and decreased no-show rates.

P64 TELEHEALTH TRAINING: MOVING PAST A TECHNOLOGY FOCUS TO CREATE PATIENT-CENTERED CARE

PRESENTER & CONTRIBUTING AUTHORS:

Michael Manley, Outreach Director for the Center for Distance Health and ANGELS
University of Arkansas for Medical Sciences, Little Rock, AR, USA

監修 一般社団法人 日本遠隔医療学会編集委員会

編集委員：石塚達夫／酒巻哲夫／長谷川高志／森田浩之

遠隔診療 実践マニュアル

在宅医療推進のために



篠原出版新社

『遠隔診療実践マニュアルー在宅医療推進のためにー』

| | | |
|-----|------|-----|
| 序文 | 石塚達夫 | iii |
| 巻頭言 | 野口貴史 | iv |

【総論】

| | | | |
|-----|--------------------------------------|------------|----|
| I | 遠隔診療の位置づけ | 酒巻哲夫・長谷川高志 | 1 |
| | 1. 法と制度 | | 1 |
| | 2. 診療報酬制度の中での遠隔診療 | | 4 |
| | 3. 遠隔診療開始の留意点 | | 6 |
| II | 今日の診断・治療の概要 | 石塚達夫 | 13 |
| | 1. 全身状態 | | 13 |
| | 2. 頭部の診察 | | 19 |
| | 3. 顔面の診察 | | 20 |
| | 4. 眼の診察 | | 21 |
| | 5. 耳の診察 | | 25 |
| | 6. 鼻の診察 | | 25 |
| | 7. 口の診察 | | 26 |
| | 8. 頸部の診察 | | 29 |
| | 9. 胸部の診察 | | 33 |
| | 10. 腹部 (abdomen) の診察 | | 33 |
| | 11. 肛門・直腸の診察 | | 40 |
| | 12. 四肢の診察 | | 41 |
| III | 在宅医療の概観 | | |
| | 1. 在宅で受けられる医療・介護・福祉サービスと各医療者の役割 | 田中志子・長谷川高志 | 46 |
| | 2. 在宅医療を受けられる主な疾患 | 小笠原文雄 | 58 |
| | 3. 在宅療養中に起こる合併症 | 菅原英次 | 66 |
| IV | テレビ電話を用いた在宅医療のコミュニケーション | 酒巻哲夫 | 73 |
| | 1. テレビ電話における制約と克服の工夫 | | 73 |
| | 2. 遠隔診療は対面診療で十分なコミュニケーションができていることが原則 | | 75 |
| | 3. 補助者の役割 | | 75 |
| | 4. ある遠隔診療の例 | | 76 |

| | | | |
|---|---------------|------|----|
| V | 遠隔診察の技術的環境 | 郡 隆之 | 79 |
| | 1. 遠隔診療機器 | | 79 |
| | 2. 通信手段 | | 83 |
| | 3. セキュリティ | | 84 |
| | 4. 使用上の注意事項 | | 86 |
| | 5. 法令, ガイドライン | | 88 |

【各論】

| | | | |
|------|----------------------------|-----------------|-----|
| VI | 遠隔診療の実際 | | |
| | 1. バイタルサイン | 斎藤勇一郎・山口義生 | 89 |
| | 2. 高温多湿期における在宅高齢者の栄養, 水分管理 | 山口義生 | 98 |
| | 3. 神経・筋・骨格疾患 | 森田浩之・林祐一 | 104 |
| | 4. 循環器疾患 (心不全) | 斎藤勇一郎 | 115 |
| | 5. 呼吸器疾患 | 岡田宏基 | 122 |
| | 6. 消化器疾患 | 池田貴英 | 136 |
| | 7. 内分泌・代謝疾患 | 森田浩之 | 144 |
| | 8. 褥瘡 | 木下幸子 | 152 |
| | 9. 視力 | 廣川博之 | 161 |
| | 10. 終末期医療 (特に疼痛管理) | 小笠原文雄 | 166 |
| | 11. うつ状態・認知症など精神疾患 | 岡田宏基 | 177 |
| VII | 遠隔モニタリング | | |
| | 1. ペースメーカー | 斎藤勇一郎 | 188 |
| | 2. 計測機器によるもの | 本間聡起 | 193 |
| | 3. 自覚症状のスコア化と遠隔モニタリング | 亀井智子 | 198 |
| VIII | 訪問看護師との連携 | 太田隆正・金山時恵 | 206 |
| | 1. 訪問看護と訪問看護師 | | 206 |
| | 2. 地域特性と遠隔医療の実際 | | 207 |
| IX | 遠隔診療のカルテから | 森田浩之・長谷川高志・酒巻哲夫 | 212 |
| | 1. 脳梗塞症例 | | 212 |
| | 2. がん症例 | | 213 |

厚生労働科学研究費補助金地域医療基盤開発推進研究事業
「在宅医療でのICT及び遠隔診療活用に関する調査研究」
(H24-医療-指定-048)

研究班 事務局

群馬大学医学部附属病院 医療情報部

〒371-8511 群馬県前橋市昭和町3丁目39-15
Tel: 027-220-8771 FAX: 027-220-8770

<http://square.umin.ac.jp/telecare/>
e-mail: telemed-research@umin.ac.jp

