6th International Conference on

Medical Informatics & Telemedicine

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Scientific Tracks & Abstracts

Day 1

Medical Informatics 2018

Sessions:

Sessions: Medical Informatics | Medical Informatics and Health Information technology | Medical Informatics and Telemedicine | Medical Informatics and Public Health, Epidemiology | Medical Informatics and Aging, eHealth | Medical Informatics and Healthcare Technologies

Session Chair
Marion Ben Jacob
Mercy College | USA

Session Co-Chair:
Mirna Becevic
University of Missouri | USA

Session Introduction

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Kevin Power | Royal College of Surgeons | Ireland

Dimitri Delacroix et al., J Health Med Informat 2018, Volume 9
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PEOPLE WITH ALZHEIMER'S DISEASE AND ROBOTS TOWARD A DISCOURSE SHIFT IN SOCIAL ROBOTIC: FROM COMPANION ROBOT TO EXTENSION ROBOT PARADIGM.

Dimitri Delacroix[a], **Sophie Sakka**[b], **Renald Gaboriau**[c], **Laurent Billonnet**[d] and **Nicolas Couegnas**[d]
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Robotic services and therapies know a strong development and interest for older people and especially for people with dementia like Alzheimer diseases. According to studies, the use of robots shows benefits like reducing stress and foster communication and interactions. In this context robots are pre-determined and used in a second step by users. This service design avoids sharing and collaborating with the end-users and creates a technical determinism. This one confines people in a passive position and generates negative effects. In contrast to this technical determinism this paper goes on to explore the use of mutual shaping of people and robots as a framework for social robot service design. Sharing and collaborating in a service design involve the active people's participation in the process from the beginning. To illustrate this process this paper describes a preliminary work aimed at setting a communication support for Alzheimer's disease using three humanoid robot NAO (SoftBank Robotics). The approche is based on master puppet concept: The subjects program the robots, and use them an an extension for communication. Twenty sessions are organized, alterning ten preparatory sessions and ten robotics programming sessions. During the preparatory sessions, the subject prepares the story: Voice recording, scenery creation, etc. During the robot programming session, the subjects program the motion to be realized to make the robot tell the story. The program is concluded by a public performance. The experiment involves six AD aged to 60-85. As first observations, a dynamic of the group a presence and action of everybody and very positive reactions are observed. The approach allows the subject to shift a passive position to an active one, and therefore helped them remaining human being.

Biography

Dimitri Delacroix is a Phd candidate in semiotics and human-robot interactions. He is collaborating in a pluridisciplinary research with robotic experts and speech therapy specialists using robots with Alzheimer 's disease people and children with autistic spectrum. These experiments propose an alternative approach to the robot companion: the robot is used as an extension, for talking and doing things. The robot companion has its own character and personality. This perspective creates some issues. First, The robot programmed to stimulate a character so to present the robot like this it is a lie and create a confusion. Then, this approach put the subject in a reification process limiting the subject's ability to express himself or act by his/her own will on the environment, or to organize its relation to the world. So the research aims to explore the individuation concept (Simondon,1958) in the robot extension paradigm and to understand meaning mechanisms.

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NUTRITION IN MEDICAL EDUCATION

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Generally, Nutrition is under presented in medical education. Nutrition did not exist in medical education till late nineties, when the Medical School of North Carolina University, USA had launched its nutrition course into the medical curriculum. Afterwards, several medical schools took the courage to do the same in their teaching program. In this article, we are going to put guidelines of teaching nutrition through a structured module in medical education. This module comprises the nutrients and their daily intake, different methods of nutritional assessment, in addition to the types of nutrition: enteral & parenteral feeding, highlighting their indications, routes, formulas and complications. This study set a platform module for nutrition in medicine in general, more specifically in the surgical course. It can be applied, modified and easily updated in the process of medical education.

Biography

Ahmed Makki works as an assistant professor of surgery at medical school- department of surgery. He works as examiner of the royal college of surgeons in Ireland. I.D. 2121, Examiner of the royal college of surgeons of Edinburgh. I.D. 2121, fellow of the royal college of surgeons of Glasgow and fellow of the royal college of surgeons of England. He has several credentials like membership of the royal college of physicians & surgeons of Glasgow.

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Carolina Ramírez, J Health Med Informat 2018, Volume 9
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DETERMINATION AND EVALUATION OF THE RATE OF SOLID WASTES GENERATION IN HEALTH CARE CENTERS IN MONTEVIDEO, URUGUAY

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Statement of the Problem: An affirmed growth of interest with respect to the management of Health Care Waste (HCW) has occurred in Latin America in the last years. Even though, the scarcity of environmental statistics series is still noticeable in Latin American countries; the situation of countries is heterogeneous. Several studies have been performed to find out the rate of solid waste generation in Health Care Centers (HCC). However comparative analysis of the results of these studies should take into account that the methodologies used in each case, and even basic definitions adopted in respect of HCW, were different. There are currently no systematic studies concerning the management of HCW in Montevideo city, which means that the generation rates usually come from bibliographic data, of which most of the time there is no clear information on how they were obtained. Our studies are intended to overcome this weakness.

Methodology & Theoretical Orientation: The inter-institutional system of waste management of a HCC in Montevideo was analyzed. Four years of data (2008-2011) about removal of hazardous, common and recyclable sanitary waste were available to work with. They were daily data about removing of hazardous and common waste, and monthly data on the disposal of recyclable waste. The characteristics of the available data have led to the need to work with removing rates rather than waste generation rates, as it is usual, to avoid introducing additional uncertainty to the information.

Conclusion & Significance: The management of HCW involves potential risks. This has been the main motivation in Uruguay to start studying and working in the management of HCC. In this study, we sought to determine local HCW removal rates to generate representative data about the national situation. Also a set of HCW management protocols has been set up, that could be useful as a reference for other Latin-American countries to set up their own protocols.

Biography

Carolina Ramírez is a teacher and researcher at the Department of Environmental Engineering (DIA) of the Institute of Fluid Mechanics and Environmental Engineering (IMFIA) of the Faculty of Engineering (UdelaR). She is working since about 10 years on the subject of solid waste management. It is a challenging area at a national level in Uruguay and throughout Latin America, mainly in regard both to inter-institutional management and to the design and management of the final disposal sites. Carolina has worked on the issue of waste management continuously, generating significant progress for the working group, participating simultaneously in extension activities, research and teaching. She has completed her Magister thesis in Environmental Engineering in the area of sanitary waste. She is currently doing her PhD research in Environmental Engineering with a thesis plan in the area of recovery and final disposal of waste.

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Jean Marie Kayembe, J Health Med Informat 2018, Volume 9
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DETERMINATION OF THE ROOT CANAL LENGTH OF TEETH OF BANTU PATIENTS ATTENDING THE TEACHING HOSPITAL OF KINSHASA UNIVERSITY

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Background: There is paucity of literature on the determination of the root canal length of Bantu subjects in dental professional practicing in Africa and Democratic Republic of Congo in particular. Aims: The aim of the present study was to determine the root canal length of teeth of Bantu patients attending the Teaching Hospital of Kinshasa University.

Methods and Material: Prospective cross-sectional study was carried out in the service of Conservative Dentistry. The patients suffering with pulpitis of permanent teeth which were selected for root canal treatment during the period of January 2014 to December 2016 were included. All patients whose main root canals were inaccessible, teeth carrying prosthesis, teeth with large coronal decay, teeth having periapical periodontitis, supernumerary teeth, wisdom and primary teeth were excluded.

Results: The upper canines presented some significant longer canals compared to the lower canine (23.4 ± 2.3 mm and 21.6 ± 1.8 mm). Palatal canals of the first and second molar were respectively longer as compared to the superior teeth canals (21.5 ± 1 mm, 21.3 ± 2 mm). The distal canals of the first and second molar were the longest in the mandibular arch respectively measuring 20.7 ± 2.0 mm and 21.5 ± 1.7 mm.

Conclusion: Data obtained from Bantu patients show slightly shorter roots compared to some European populations, but longer than some Asian populations.

Biography

Jean Marie Kayembe graduated at the University of Kinshasa as a Dental Surgeon. He became Specialist and is now Chairman of the service of Conservative Dentistry and Endodontics at the Dental Medicine Department of the Teaching Hospital of Kinshasa University in the Democratic Republic of Congo. His research focuses on endodontics in the context of African population especially of Bantu (Black African). He is also a visiting teacher at Dental school of the "Université des montages" in Cameroon.

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INPATIENT FALL PREDICTION AND PREVENTION

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Statement of the Problem: Inpatient falls are recognized to be among the most problematic adverse events reported in hospitals, frequently prolonging and complicating hospital stays. In the US, between 700,000 and one million patients fall in hospitals each year, leading to an average of 6 additional hospitalization days, where the cost of treatment for fall injuries amounts to $13000.

Observational studies: It shows that 60–70% of all falls in the hospital occur from the bed or bedside chair. The current state of art mentions sitters, bed rails, and fall risk assessment questionnaires, alongside a number of technological solutions. In spite of extensive research, current solutions are not cost efficient or scalable, with fall risk assessment protocols applied inconsistently. Philips addresses the state of art limitations with a technology providing remote supervision of multiple patients simultaneously. The system receives input concurrently from a camera and/or a biosensor, and assesses the fall risk of patients by detecting in real-time a number of risks factors known to precede and contribute to a bed fall incident: patient restlessness, hazardous posture and position in the bed space. Based on the assessed fall risk, the system issues a notification to a remote sitter about patients at risk, allowing timely preventative interventions. Results of a laboratory study on 112 tests indicate that the system triggers a notification of average 23 seconds in advance of patient bed exit/fall events. The PPV values of the risk factors detected are 0.975 (restlessness), 0.924 (hazardous posture), 0.826 (hazardous position). The system also detects bed falls and exit events (PPV = 1.0)

Conclusion & Significance: We have presented a technology for remote supervision of multiple patients in parallel, enabling effective, cost-efficient, scalable services for inpatient fall prediction and prevention.

Biography

Par Dunias has been working in research and development (R&D) research organizations for the past 25 years. Since his PhD study at the Eindhoven Technical University, Electrical Engineering, he is developing sensors and invents measuring technologies in processes and in the past ten years in medical applications. Up to 2007 he worked at Philips CFT, in the sensor group where he has been system architect in sensor systems especially continues monitoring of cardiovascular post-operative patients. He switched in 2007 to TNO an applied research organization, where he was leading a Medical Instrumentation Program based on an Open Innovation business model, performing fundamental research in optical technologies for real-time diagnosis of biological tissue and fluids based on spectral technologies. Finally, related to the present work as independent external developer, he has been involved a Bed Fall Prediction system at Philips Research in Eindhoven.

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Eiman Al Jafara, J Health Med Informat 2018, Volume 9
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USEFULNESS OF ELECTRONIC HEALTH INFORMATION SYSTEM (EHIS): HEALTH CARE SERVICE PROVIDER'S PERCEPTION IN KUWAITI HOSPITALS

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Statement of the Problem: Electronic health information system (EHIS) is an essential technology for today's health care delivery facilities and will lead to a quality health care, patient satisfaction, increase the scientific base of medicine and nursing and reduce health care costs. However, due to limited and in-effective use of the EHIS by healthcare professionals the implementation of the system is unsuccessful in many countries. Acceptance of EHIS and full utilization by healthcare professionals depend on many factors. The purpose of this study is to identify the underlying unobserved factors those may explain the health care professionals' perception toward EHIS and how those factors correlate with background characteristics of the respondents.

Methodology & Theoretical Orientation: Structured questionnaires were distributed among 400 healthcare professionals (physicians, nurses, pharmacists, technologists, health information administrators and other) resulting in a response rate of 67.8 percent. Perceptions regarding EIHS were measured using nineteen items each representing a Likert-type scale along with the background characteristics. Cronbach's alpha (reliability coefficient) was used to determine the internal consistency of the instrument and the factor analysis to identify the common perceptions of healthcare professionals regarding EHIS.

Findings: Four factors are identified as efficiency, timeliness and quality of care, accessibility and; ease of use. The relationship of each item to the underlying factors is mostly very strong as expressed by the factor loading. Internal consistency of all factors measured by Cronbach's alpha.

Conclusion & Significance: The EHIS with efficiency, timeliness and quality of care, accessibility and ease of use are important factors for regular use by healthcare professionals which will increase the use of EHIS and lead to the successful implementation of the EHIS.

Biography

Eiman Al Jafar is one of the pioneers in Health Information Systems/Management in Kuwait. Currently she is working as the Chairperson of the Department of Health Informatics and Information Management at the Faculty of Allied Health Sciences, Kuwait University. Since 2002, she provided consultancy services to ministry of health, government hospitals and private sector. She worked with the Kuwait Institute for Medical Specialization (KIMS) an institute specialized in providing current advances in residency medical education. The services at KIMS included improving Clinical Documentation and the use of Information Technologies by Health Care Team. Her primary research focus is in evaluating Electronic Health Records, Health Informatics, Information & Communication technologies, m-Health and e-Health.

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Otakar J. Mikaa, J Health Med Informat 2018, Volume 9
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PROTECTION OF PASSENGERS FROM CHEMICAL TERRORISM IN THE PRAGUE METRO

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The author of the article considers vulnerability of the Prague Metro (subway) to a possible chemical attack. Possible threat of nerve agent attack is discussed hereafter and the system of subway protection is described. Based on complex assessment of toxicity and evaporableness of individual nerve agents, sarin was found the most dangerous substance applicable in a subway attack. Use of the protection system in a case of a subway nerve agent attack and the conditions for distribution of contaminants are examined and several possible scenarios are considered. Resulting from the analyses of possible distribution of a nerve agent and from characteristics of underground spaces, a couple of detailed recommendations to protect passengers and staff against chemical terrorism in subway are suggested. The authors describe long negotiations of the responsible state bodies concerning a creation of a new plan for protection against chemical terrorism in the Prague subway. This plan was accepted and published in mid 2013. A new management plan is not public for obvious reasons. At the end of 2014 a verification exercise took place to assess the prepared management plan in the Prague subway. Finally the article indicates the main findings and experiences from this important verification exercise.

Biography

Otakar J. Mika is senior university teacher with more than 23 years of experience at several universities in the Czech Republic. He is a senior investigator and contributor to research projects in the Czech Republic for its Ministry of Interior and Technological Agency. He is a professional qualified in the field of Radiation Protection (SONS certificate is valid from 2013 to 2023), and the court-appointed expert in the field od evaluation of the cases and impacts of Industrial Chemical Accidents (appointed by the Regional Court in Brno, Czech Republic on 30 June 2008). He currently works at one university, and he has a full-time job at the Faculty of Logistics and Crisis Management in Uherske Hradiste, Czech Republic.

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TELE EVIDENCE: INNOVATIVE USE OF TECHNOLOGY TO IMPROVE HOSPITAL FUNCTIONING AND BENEFIT ALL STAKEHOLDERS

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Background: Expert medical opinion in legal cases is a necessity which till recently was asked by courts and given by doctors through personal appearance in courts. Time spent in this could be better used in patient care, research and teaching. Also, court appearances by doctors lead to substantial expenditure.

Objective: The Medical Superintendent Office at PGIMER took up the challenge of addressing this issue through use of technology i.e. video conferencing.

Intervention: By virtue of amendment in Evidence Act, a special provision as to evidence relating to electronic records had been introduced. A written request was made to hon'ble high court to accord permission for providing of expert opinion by doctors through video conferencing. Once permitted, the challenge was to establish a link between PGIMER's real IP address and state wide area network due to the problem of routing. This was overcome by involving National Informatics Centre, New Delhi which established a link. Once the hardware was in place, Medical Superintendent Office established SOPs for smooth running of system and then worked towards ensuring success of this system through regular monitoring. The system so developed now allows doctors of PGIMER to give expert medical evidence through video conferencing without leaving PGIMER campus.

Result: 3107 court evidences have been given by doctors of PGIMER till date through tele evidencing. Year wise breakup of evidences given through this system in PGIMER is as shown in the figure below. This resulted in saving of 2187 man-days of doctors at PGIMER, time which was utilized for patient care. Also by obviating need to travel, tele evidence led to direct saving of around INR 3.3 crores and around 100 metric tonnes of carbon footprint.

Biography

Anil Kumar Gupta is a medical superintendent-cum-professor and head, department of hospital administration. He started his academic career as faculty at AIIMS, New Delhi in 1988 and later joined PGIMER, Chandigarh. He was trained in UK and was awarded Commonwealth Medical Fellowship for one year in 1991-92, availed at University of Liverpool, UK. He has been short term Consultant to World Health Organization (SEARO), New Delhi, an International Consultant to World Health Organization, Nepal and has provided training/consultation in hospital administration to the doctors belonging to Government of Nepal, Maldives, and Indonesia.

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Muna E. AlMulla, J Health Med Informat 2018, Volume 9
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THE IMPORTANCE OF APPLIED INTELLIGENCE ANALYSIS IN DIAGNOSTIC IMAGING PRELIMINARY ANALYSIS IN A DIAGNOSTIC IMAGING DEPARTMENT OF A PUBLIC HOSPITAL IN KUWAIT

Muna E. AlMulla[a]
[a]Kuwait university, Kuwait

Statement of the Problem: Diagnostic imaging has grown faster over the years, with more technologies being introduced providing diverse imaging options for physicians. However, that is not necessary good in some cases as diagnostic imaging procedures can be miss used. According to choose wisely (2014) reasons for this include, malpractice, wanting to be safe or reassurance for physicians and patients, or simply testing new technologies. Eventually, this causes hospital overcrowding, delay in appointments and proper health care, and increase hospital coasts. One way to avoid miss use is to monitor and keep records of departmental practice. The Purpose of this work is to present how a computer tool implementation (applied intelligence, GE, Kuwait) in the electronic clinical format of a diagnostic imaging department. The computer tool is used to analyse information and clinical data within the diagnostic imaging department. The information targets the frequent use of diagnostic imaging procedures in the hospital results obtained in the first months after the tool's implantation in 2018.

Methodology & Theoretical Orientation: In January 2018, the computer tool was established in the electronic history of the diagnostic imaging department of a public hospital in Kuwait. It was coded to record all radiological requests that arrives to the department, the tool then generates comparisons and data alerts.

Findings: In these 120 days there have been 28532 alerts for requested radiological tests, most of which were for general and mobile X-rays 75%, secondly was ultrasonography (US)11%, third highest was for Computed Tomography (CT) 8%, remaining included Magnetic resonance imaging (MRI), bone scans, mammography, and orthopedic theater imaging. The highest imaging procedure requested in the hospital was chest X-rays performed by the medical and surgical department outpatient.

Conclusion & Significance: X-rays and the traumatology service are the scenes of the greatest number of requested procedures. Patients and doctors do not follow through with appointments causing delays in future appointments. This tool is a useful way of keeping track of department activity to avoid unnecessary repetitions or miss use of X-ray procedures.

Biography

Muna E. AlMulla did her PhD from Kuwait university, She is also a MR-specialist employed at the ministry of health -Al-Sabah hospital since August 2007-2018, she is also a clinical instructor Kuwait university since January 2018. She did her BSc. in Diagnostic Imaging from Kuwait University in 2007 after that she completed her MSc. in Magnetic Resonance Imaging from the University College Dublin, Ireland in 2011. She completed her PhD in Magnetic Resonance Imaging from the university college Dublin, Ireland in 2014. Currently she is the member of the Technologists Research Committee in Al-Sabah hospital since 2015.

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RESTORATION OF INSULIN PRODUCTION AND PROTECTIVE ACTION AGAINST DIABETES COMPLICATIONS BY WAKOUBA AN EXTRACT OF LOCAL PLANT

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Statement of the Problem: Globally, an estimated 422 million adults were living with diabetes in 2014, compared to 108 million in 1980. Diabetes and obesity have reached such proportions worldwide we're talking about pandemic. Diabetes and its complications bring about substantial economic loss to people with diabetes and their families and to health systems and national economies through direct medical costs and loss of work and wages. The purpose of this study is to evaluate the restoration of insulin production by Wakouba in diabetic rats and evaluate the protective action against diabetes complications.

Methodology & Theoretical Orientation: We focused first on evaluating in diabetics rats treated by Wakouba, the rate of glucose and the level of insulin. Histopathological sections of the pancreas were observed. And secondly, we evaluated the evolution of NO production and the activity of catalase to see the action of Wakouba during the diabetes in these rats.

Findings: The results show, blood glucose decreases and normalizes and the production of insulin increases during the treatment of the diabetic animals by Wakouba. At the same time, Wakouba restores the integrity of the beta Langerhans cells. The treatment by Wakouba restores NO production which will play fully its physiological role in the nervous, cardiovascular, genitourinary and digestive and immune systems in diabetic rats.

Conclusion & Significance: Wakouba restores the integrity of the beta cells of Langerhans, by converting pancreatic α cells into pancreatic β cells. We can also say that Wakouba participates to the restoration of the nervous, cardio-vascular, genito-urinary, and digestive and immune systems, in the organism of these diabetic rats. Wakouba may be also involved in the fight against insulin resistance.

Biography

Kouame Felix is a PhD student in Biotechnology and Pharmacology of Natural Substances in the Laboratory of Pharmacodynamie Biochimique of Universite Felix Houphouet Boigny de Cocody Abidjan. He is working to find new medical molecular against diseases from natural substances. He is having a Bachelors degree in Biochemistry and Microbiology and Master's degree in Biotechnology and Pharmacology of Natural Substances. He also has a Master's degree in Business administration in Abidjan and a certificate in Marketing and Commercial Engineering. He is working for more than 14 years in Sales, Marketing, International Trades, Shipping and Logistics. He is currently working for an international agribusiness, as a commercial representative in charge of shipping and logistics.

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PISCES: LEARNING FROM PEOPLE WITH EPILEPSY AND THEIR CARE-PARTNERS ABOUT HOW AN ELECTRONIC PATIENT PORTAL CAN IMPROVE CLINICAL CARE

Kevin Power[a], Mary Fitzsimons[a], Elizabeth Comerford[a], Maire White[b], Norman Delanty[b] and **Colin Doherty[c]**
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[b]Beaumont Hospital, Ireland
[c]Saint James Hospital, Ireland

Statement of the Problem: To learn from people with epilepsy and their care-partners (their families/carers) about how the Irish epilepsy ePortal can improve clinical care. With the advent of electronic health records, there is a move towards involving patients as partners in their healthcare by providing them with access to their own health data via electronic patient portals (ePortal). For example, a recently developed ePortal to the Irish National Epilepsy Electronic Patient Record (EPR) provides access to summary medical records, tools for patient reported outcomes (PROM), health goal-setting and preparation for clinical appointments.

Methodology & Theoretical Orientation: A socio-technical process was employed to co-design, develop and implement the epilepsy ePortal involving 30 families/care-partners of people with epilepsy who also have an intellectual disability (ID). Participants engaged in usability and utility testing which involved a face to face meeting to learn about the ePortal, register for a user account and evaluate its structure and content.

Conclusion & Significance: Family members/care-partners responded positively to the ePortal and indicated that it can help improve: information sharing between clinicians and care partners; create a passport between different healthcare settings (e.g. primary care to hospital). Elderly parents of person with epilepsy (PWE) valued the ePortal as a tool for facilitating shared care between family members. Clinical processes that may benefit from implementation of patient portals include: the care of PWE in the ID residential setting; young adults transitioning from paediatric to adult services; cross-sectoral integrated care (e.g. community, primary and hospital-based care); patient and care partner education. ePortals have the potential to promote personalization care by improving patient involvement in clinical decision making, engage them as quality and safety partners, and help clinicians be more responsive to patient needs.

Biography

Kevin Power is the Requirements Engineer and Implementation Manager for the Epilepsy Lighthouse Project (PISCES). The Pisces Lighthouse project is funded by e-Health Ireland and HSE to help build an understanding of the benefits of eHealth technologies in the Irish Healthcare System. He has his expertise in investigating requirements engineering and implementation processes in the Irish health care arena.

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Scientific Tracks & Abstracts
Day 2

Medical Informatics 2018

Sessions:

Sessions: Medical Informatics and Health Informatics | Medical Informatics and Health System Informatics | Medical Informatics and Public Health, Epidemiology | Medical Informatics and Healthcare Technologies

Session Chair
Jaroslav Jansa
NovioSys, B.V | Netherlands

Session Co-Chair
Mirna Becevic
University of Missouri | USA

Session Introduction

Title: **How combining DICOM archiving and enterprise content management (ECM) can provide advanced integrated clinical information**
Laura Pietromica | Hyland Software | USA

Title: **Leveraging Teletriage in an urban emergency department to improve patient flow and experience**
Aditi U. Joshi | Thomas Jefferson University | USA

Title: **Latent tuberculosis infection among household contacts of pulmonary tuberculosis cases in central state, Sudan: Prevalence and associated factors**
Zeidan Ali | Taibah University | Saudi Arabia

Title: **Systems approach for visualization of somatic balance restoration therapy to alleviate pain of human musculoskeletal system**
Yoshiaki Ohkami |SDM Keio University | Japan

Title: **Proposal for secure medical image sharing system with blockchain technology**
Ryohei Takahashi | Kompath, Inc | Japan

Title: **Ultrasound-Guided central venous catheterization: A protocol to be followed in pediatrics?**
Regina Grigolli Cesar | Shahid Beheshti University | Brasil

Title: **Information security and patient privacy: Crucial ıssue in healthcare management**
Pinar Kilic Aksu | Yeditepe University | Turkey

Title: **Current state of abdominal computed tomography performed in emergency department of a tertiary university hospital and development of a preliminary interpretation checklist**
Ju-Hyun Song | Korea University Ansan Hospital | South Korea

Title: **Trends in research, five year experiences in a tertiary referral hospital**
Charuwan Manmee | Rajavithi Hospital, Thailand

Title: **Simulation based learning for cardiac residents and fellows**
Sawsan Alyousef | King Fahad Medical City | Saudi Arabia

Laura Pietromica, J Health Med Informat 2018, Volume 9
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HOW COMBINING DICOM ARCHIVING AND ENTERPRISE CONTENT MANAGEMENT (ECM) CAN PROVIDE ADVANCED INTEGRATED CLINICAL INFORMATION

Laura Pietromica[a]
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It is a necessity to develop an integrated, enterprise-wide medical imaging and clinical information strategy. Specialty departments such as radiology, cardiology, obstetrics, pathology and dermatology are generating images and disparate, unstructured clinical information and storing it in silos. Healthcare organizations need to implement a comprehensive clinical information strategy to capture, view, share and archive images and other unstructured data alongside their structured content. Clinicians need easy access to this information from multiple types of devices including mobile technologies. Traditionally, integrated medical imaging and clinical information solutions were developed independently for departments such as radiology and cardiology. It was quickly determined that a wide array of other departments could benefit from these integrated solutions. Soon data repository silos of clinical information emerged presenting inefficient process challenges for clinicians. Combining digital imaging and communications in medicine (DICOM) archives within the enterprise content management (ECM) solution turns the challenge into an opportunity as it helps the organization establish a clinical information strategy to capture, view, share and archive images and information in order to improve patient care. By combining the DICOM archives with ECM, the organization can improve operational and business process efficiencies. This integrated advanced clinical information solution provides a single point of access to DICOM and non-DICOM content available without the need to log into different systems or reselect the patient. Taking this a step further and connecting the DICOM archive and ECM solution to the organization's electronic health record (EHR) provides a more comprehensive view of the patient record with access to patient and episodic documentation thus improving the quality and continuity of patient care.

Biography

Laura Pietromica has been working in the healthcare field for more than 16 years and has spent the past nine years with Hyland's Healthcare division. Prior to joining Hyland, she was the lead system administrator responsible for overseeing the software platform used in all endoscopy departments at a large multidisciplinary academic medical center in the USA. Since joining Hyland, she shares her time working with customers to strategically plan projects, consult and develop ECM roadmaps. She is a HIMSS Analytics Certified Educator for EMR Adoption Model as well as the Analytics Maturity and Continuity of Care Adoption Models. She has Bachelor of Science degree in Communication from Ohio University and holds certificates in Document Imaging Architect (CDIA+) and Enterprise Content Management Practitioner (ECMp). Her experience in the use of technology within the healthcare space positions her as a trusted advisor to healthcare organizations around the world.

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LEVERAGING TELETRIAGE IN AN URBAN EMERGENCY DEPARTMENT TO IMPROVE PATIENT FLOW AND EXPERIENCE

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Background: Overcrowding in emergency departments leads to increased wait times and patients leaving without treatment, resulting in delayed care and a decrease in patient satisfaction. We and others have successfully implemented a physician in triage model to decrease left without being seen (LWBS), improve flow metrics and increase patient satisfaction. However, these programs have a significant cost associated with them. We studied whether a telemedicine physician could successfully be used to improve LWBS and door to provide time in an urban academic affiliated community hospital ED.

Methods: We conducted a before and after study. During the intervention period, an On-Demand Telemedicine provider was utilized to triage patients remotely in an urban community hospital emergency department. Tele-triage was conducted from 11am - 6pm, seven days per week. Tele-triage providers performed a brief history and physical, wrote a triage note and placed orders in the medical record. Our primary outcomes were the rates of patients that left without being seen (LWBS) and the time to provider (TTP) compared to the same two month period in the prior year (October 10-December 10, 2017 versus 2016). Data are presented as means with 95% confidence intervals (CI) and medians with interquartile ranges (IQR).

Results: Comparing tele-triage numbers in 2017 versus 2016, there were 6520 vs. 6362 patients who presented to the ED. Overall, the LWBS rates were reduced to 0.9%; (95% CI 0.6-1.1%) vs. 2.0%; (95% CI 1.6%-2.3%, $p<0.001$) and the TTP was also reduced (median 14 minutes, IQR 7.2-27.6 v 22 minutes, IQR 11-44). Compared to prior year, the overall door to discharge time (138.1 minutes IQR 84.4-215.5 vs. 150 minutes IQR 87-235, $p<0.001$) and door to admit time (185 minutes, IQR 131.4-253.2 vs. 192 minutes IQR 138-266.3, $p<0.001$) was also reduced.

Conclusion: Remote tele-triage for only seven hours per day in an urban community hospital emergency department reduced overall LWBS and TTP times compared to years prior. It also had a positive impact on overall door to discharge and door to admit times.

Biography

Aditi U Joshi is an Emergency Medicine Specialist in Philadelphia, Pennsylvania. She graduated with honors from University Of Illinois At Chicago Health Science Center in 2006. She is having more than 12 years of diverse experiences, especially in Emergency Medicine. She is particularly interested in the issues of patient access and engagement, provider education and fostering international collaboration. Currently she is the Medical Director of JeffConnect and part of Thomas Jefferson University Hospital's Telehealth program.

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LATENT TUBERCULOSIS INFECTION AMONG HOUSEHOLD CONTACTS OF PULMONARY TUBERCULOSIS CASES IN CENTRAL STATE, SUDAN: PREVALENCE AND ASSOCIATED FACTORS

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Introduction: Tuberculosis is a major health problem in developing countries including Sudan. Screening for TB cases through Household contacts (HHCs) investigation is an appropriate strategy to interrupt transmission of TB.

Objectives: To determine the prevalence tuberculosis infection and risk factors for tuberculosis infection among household contacts in Wadimadani locality, Central State, Sudan, between November 2015 and April 2016.

Methods: An analytical cross-sectional study conducted. During study period, To confirm TB diagnosis all suspects contacts were tested through sputum samples, tuberculin skin test or chest x-ray. Structured questionnaire was used to collect socio-demographic and environmental factors.

Results: One hundred forty six patients of smear-positive pulmonary tuberculosis were included in the study, 657 household contacts were identified and screened. Forty three new TB cases were detected from household contacts, yielding a prevalence of 6.5% (95% confidence interval= 0.05, 0.09) of latent tuberculosis infection (LTBI). Two factors were significantly associated with LTBI among HHCs: duration of contact with a TB patient ≤ 4 months (P= 0.03) and the educational status (P= 0.02).

Conclusion: Screening of HHCs of index case of TB will contribute in early detection and treatment of new cases, and considered as a forward step towards eliminating TB.

Biography

Zeidan Ali was a assistant professor in University of Khartoum, Sudan from the year 1993-2003 and after that he was an associate professor in University of Khartoum, Sudan 2003-2011. Currently he is the professor of epidemiology and community medicine. He has 24 years of experience in community medicine and epidemiology.

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Systems approach for visualization of somatic balance restoration therapy to alleviate pain of human musculoskeletal system

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Statement of the Problem: Chronic pain and general physical discomfort are common symptoms among those seeking medical or physiotherapy treatment, as it relates to disorders found in the Human Musculoskeletal System (HMS). Since this system is highly complex and large in scale, clinical pain research has been confounded by many complex factors. To tackle with such a complex problem, the authors have applied a system engineering approach to examine a therapist-guided exercise method for restoring human musculoskeletal balance called the *Somatic Balance Restoration Therapy* (SBRT). The SBRT is a simple but effective self-exercise therapy with minimal assistance by a trained therapist. As shown in Fig. 1, the SBRT starts with diagnoses of a series of voluntary motions self-excited by patient and the results are recorded in a systematic way in which the motions are categorized according to the patient reactions; painful, hard or comfortable. The voluntary motions are usually accompanied by involuntary motions that are utilizes in the SBRT. The results of the diagnosis are analyzed by matrix manipulations leading to identification of malfunctioning part of HMS. The process is to relate 80 voluntary motions and 58 associated motions to joint motions, which are converted to the functional anatomical terms. This realizes smooth communication between specialists of three different disciplines: therapy, conventional medicine and systems engineering. It is noted that each voluntary motion accompany more than one anatomical motions. This step is extremely important to integrate conventional medicine and oriental therapy. Furthermore, joint DOF expression is immediately linked to robotics, which leads to computer-aided support of the therapy process. Some examples will be given to demonstrate the proposed therapy.

Biography

Yoshiaki Ohkami obtained his Engineering from Tokyo Institute of Technology and joined National Aerospace Laboratory of Japan (1968-1992). During the period of 1972-1974, he worked at UCLA as NASA International Fellow, in 1985-1986 Deputy Director for International Space Station Program Office at Science and Technology Agency. He served as a professor of Tokyo Institute of Technology in 1992-1999, and was invited by JAXA to manage the overall R& D activities of the Tsukuba Research Center from 1999 to 2006. In 2000, he was invited as a professor of graduate school of Keio University to augment the higher education programs in system design engineering, and now he is the Dean of Graduate School of Systems Design and Management, Keio University. He took the initiatives in establishing this new graduate school that started in April, 2008.

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PROPOSAL FOR SECURE MEDICAL IMAGE SHARING SYSTEM WITH BLOCKCHAIN TECHNOLOGY

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Statement of the Problem: Introducing medical image sharing systems for widespread use is beneficial for medical practice. There are several ways to share medical images, and there are high expectations for cloud computing at present because of its scalability. However, image sharing via a cloud-based environment has raised some security and privacy concerns. The purpose of this study is to propose a method that applies blockchain technology to a cloud-based environment to address concerns regarding security and privacy without impairing IT resource effectiveness at a practical level.

Methodology & Theoretical Orientation: This method divides medical images, especially digital imaging and communications in medicine (DICOM), in to metadata and pixel data. The former is managed by blockchain technology in a secure manner, and the latter is managed in a cloud-based environment. In addition, we created a multi-use key from the metadata by hashing. When physicians use medical images, the original DICOM data can be reconstructed with the key. Furthermore, we implemented pilot system to evaluate performance and scalability and access security level.

Findings: For processing 1000 medical images, our proposal takes about four seconds, and it could increase approximately linearly with number of processing. Furthermore, our proposal has some security advantages; improvement integrity, confidentiality, and privacy level.

Conclusion & Significance: The demand for medical image sharing has significantly increased; therefore new methodologies are required to manage medical images more securely and in a scalable manner. We propose applying a blockchain to a cloud-based environment to generate a synergistic effect. Although some technical challenges remain, this methodology has better security and the potential for practical application. Furthermore, our proposal could be expanded not only to academic use but also private sector for image-based system development, because patient registration is a point of departure.

Biography

Ryohei Takahashi has his expertise in Technology Management especially Data Management. He proposed model using bibliometrics for evaluating medical technology trend was published in *International Journal of Medical Informatics* in 2017. In addition to academic achievement, he has extensive experience in investment for Japanese largest trading company: Mitsubishi Corporation, and in management for technology startup in healthcare industry: Kompath. Depending on both academic and business experience, he has conducted research and development system for healthcare establishments.

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ULTRASOUND-GUIDED CENTRAL VENOUS CATHETERIZATION: A PROTOCOL TO BE FOLLOWED IN PEDIATRICS?

Regina Grigolli Cesar[a] and **Mayara Gonçalves Marques**[a]
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Objective: To investigate the effectiveness of ultrasound-guided central venous catheterization when compared to the conventional procedure.

Method: A prospective cohort study was carried out over a 9-month period from February to October 2016 involving 144 inpatients at PICU of Irmandade Santa Casa de São Paulo Hospital, undergoing central venous catheterization. The patients were matched in pairs of identical patients according to the levels of potentially intervening variables (age, nutritional status, puncture site, professional experience), differing only as to the central venous catheter (CVC) technique: ultrasound-guided (USG-CVC) or conventional (C-CVC). Discarding data from non-paired patients, the remaining did forming 47 pairs, matched as two related samples: USG-CVC and C-CVC groups. Success parameters: number of puncture attempts; time spent at CVC; success rate and complications.

Results: In the USG-CVC group, the number of attempts (mean=2.04) and the time spent at catheterization (mean=11.89 minutes) were lower ($t=2.34$, $df = 46$, $t0.95=2.02$, $p<0.05$) and ($t=2.34$, $df=46$, $t0.95=2.02$, $p<0.05$), respectively, when compared to the results obtained for the control group (C-GVC), (mean=3.21) and (mean=28.26 minutes), respectively. As to success, there was observed a significant difference ($F(1, 46)=16.6$; $Q(1)=12.5$, $p < 0.05$) when considering only one trial (USG-CVC=27/47; C-CVC=9/47), but no significant difference ($F(1, 46)=3.76$; $Q(1)=3.56$, $p>0.05$) when considering several attempts. Complications were found less frequently in the USG-CVC group (3/47) than in the CVC-C (13/47), ($F(1, 46)=8.24$; $Q(1)=7.14$, $p < 0.05$).

Conclusion: USG-CVC was found to be more effective than the conventional technique, especially regarding success at the first puncture attempt.

Biography

Regina Grigolli Cesar is working in Pediatric Intensive Care Unit, Department of the Santa Casa de São Paulo, School of Medicine, São Paulo, Brazil. Her main interest is on Pediatric research. Her current reserach work is on Ultrasound-guided central venous catheterization.

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INFORMATION SECURITY AND PATIENT PRIVACY: CRUCIAL ISSUE IN HEALTHCARE MANAGEMENT

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Technologies for information security are actively used in organizations where information is intensely used. Information security covers the entire process of protection, processing and transmission of information within organizations. The information security process starts with a security policy designed to protect the organization's general assets. Information security policies include rules and practices on obligations of employees, the use of security control instruments and the management of process.

In healthcare management, information management systems provide the information needed at each stage of processes related to health care activities.

Hospital Information Management Systems (HIMS) are an example for the use of information and communication technology in healthcare. Hospitals are complex structures where multiple functions are carried out together. As well as keeping a complete medical record, basic functions of hospital information management system can be listed as keeping financial records, using resources properly, increasing the service quality, provision of information support for important decisions for clinicians and managers. In this frame, information security and patient privacy are critical points for these functions in healthcare management.

Biography

Pinar Kilic Aksu is a Dentist and an expert in Healthcare Management. She has her MSc and PhD degrees on Health Management. She is Head of the Health Care Management Department in Yeditepe University. She is interested in Information Security and Patient Privacy especially.

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CURRENT STATE OF ABDOMINAL COMPUTED TOMOGRAPHY PERFORMED IN EMERGENCY DEPARTMENT OF A TERTIARY UNIVERSITY HOSPITAL AND DEVELOPMENT OF A PRELIMINARY INTERPRETATION CHECKLIST

Ju-Hyun Song[a]
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Statement of the Problem: Abdominal computed tomography (CT) is a widely recognized method to diagnose patients with acute abdominal pain in the emergency department (EDs). We aimed to investigate the current state and interpretations of abdominal CT performed in the ED of a tertiary university hospital.

Methodology & Theoretical Orientation: This was a retrospective study based on an abdominal CT database and medical records of patients over 15 years of age, who had visited our ED between January 1 and December 31, 2013. The data collected included CT types, final interpretations, characteristics of the patients, and location of pain at the time of CT.

Findings: A total of 1,978 abdominal CTs were performed among 1,923 patients during the research period. The most frequent organs involved in the major diagnosis were those in the urinary system, followed by the appendix, liver, large intestine, and gallbladder. The most frequently interpreted diagnosis in these organs was in the order of urinary stone, appendicitis, liver cirrhosis, infectious colitis, and acute cholecystitis. The most frequent location of pain was the right lower quadrant (429 cases, 21.7%), and the most frequently performed CT type was contrast-enhanced abdominal and pelvic CT (1,260 cases, 63.7%).

Conclusion & Significance: Various interpretations were derived based on the abdominal CTs, ranging from critical to mild diseases and from common to rare diseases. Based on this study, we have developed a preliminary interpretation checklist for abdominal CT.

Biography

Ju-Hyun Song is an Emergency Physician who is interested in Emergency Radiology and Education. From this study, he and his colleagues developed a preliminary interpretation checklist for abdominal CT. Emergency department residents in his institution are now utilizing that checklist for preliminary interpretation of abdominal CT. In addition to this study, he investigated learning curve for competent diagnosis of acute appendicitis using abdominal computed tomography. In that study, novice residents require 16 to 20 checklist interpretation to acquire acceptable CT interpretation for acute appendicitis. He plans to investigate learning curve for other significant diseases such as diverticulitis, cholecystitis and ureteral stone using preliminary interpretation checklist.

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TRENDS IN RESEARCH, FIVE YEAR EXPERIENCES IN A TERTIARY REFERRAL HOSPITAL

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Statement of the Problem: Research is important to solve health problems. Hospitals under the Ministry of Public Health, Thailand give priority to conduct medical and public health research. Rajavithi Hospital, a tertiary referral hospital promotes research to be used for promotion, prevention, protection and treatment of patients. Moreover, some researches are further created to be medical innovation. The purpose of this descriptive study is to describe research database and trends between 2011 and 2015 in Rajavithi hospital.

Methodology & Theoretical Orientation: The data of investigator background, research types and designs and subjects were collected. Descriptive statistics was employed for describe research characteristics and trend. The ethics committee of Rajavithi Hospital approved this study.

Findings: There were 930 research projects for five year duration. A number of researches were 185, 203, 178, 166, and 198 projects by years. The majority of principal investigators were female (82.7%). Three-fourths of research was mainly conducted by physicians followed by nurses and multidisciplinary team. Most of researches were single project and conducted in one year. Research fund was given to almost 80%. Regarding research types, medical research (85.4%), public health research (15.8%) and social science research (1.8%) were performed. According to study designs, cross-sectional, experiment and cohort study were the top three most carried out. Almost 62% of researches were explored in out-patients. Ultrasound, X-ray, laboratory and specific procedures were used for clinical examination. Data were collected using medical records, experiment and interview. The research findings clearly stated the magnitude of problem, causation and association, and diagnostic test.

Conclusion & Significance: Research identification and classification is useful for service management. The findings examine key issues to inform the policy making process. The utilization of these research data are used to develop the electronic research management system which is informative, easy to access and user friendly.

Biography

Charuwan Manmee has her expertise in identification of the determinants of ill health and evaluation of interventions to improve health and reduce the burden of disease. There is considerable expertise in the analysis of routinely collected data, the conduct and analysis of observational studies, large-scale field studies, the design and evaluation of interventions and biostatistical and demographic methodology. Currently her research is focused on health data mining and using health care records as sources of data for research. In addition, she develops program and model to improve patients care with medical innovation and informatics.

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SIMULATION BASED LEARNING FOR CARDIAC RESIDENTS AND FELLOWS

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Medical simulations aim to imitate real patients, anatomic regions, clinical tasks, virtual reality devices and electronic manikins or to mirror real-life situations in which medical services are rendered. Simulation – based learning (SBL) applies these modalities. Benefits of medical simulation includes safe environment, mistake forgiving, trainee focused vs. patient focused, controlled, structured, proactive clinical exposure, reproducible, standardized, debriefing, deliberate and repetitive practice. Medical simulation can assess professional competence as patient care, medical knowledge, practice-based learning & improvement, communication skills, professionalism and systems-based practice. Patient safety priorities are at the forefront of health providers' concerns.

The see one, do one, teach one philosophy certainly should be eliminated. This is best summarized by "simulators have the potential to take the early and dangerous part of the learning curve away from patients". Simulation has rapidly evolved as a learning tool and technology over the past 15 years, and has been shown to be an effective method for teaching. Despite this, the field of cardiovascular medicine is still in the primitive stages of adopting simulation. The reasons cited for this include: the high cost of simulators, a dearth of didactic curricula to accompany the psychomotor skill learned on a simulation, the wide variability and/or lack of consistency that exists among the simulation platforms, and a complete absence of large trials showing that this expensive technology actually improves operators' skill in the angiography suite and presumably enhances patient outcomes. Despite all this, the ACGME now mandates that cardiovascular fellowship training programs must have simulation as part of fellow training. Cardiac simulation training ranges from as simple as training on listening to normal and abnormal heart sounds, differentiating different types of heart murmurs, interpreting ECG findings, utilizing high fidelity manikins for different cardiac scenarios such as heart failure and cardiogenic shock apply team work as crew resource management, practicing transthoracic echocardiogram plus transoesophegeal echo (TEE), cardiac catheterization and central line insertion up to different cardiac interventional procedures.

On 2016, we conducted a survey for pediatric and adult cardiac residents whom had attended different cardiac simulation courses at CRESENT, KFMC. We received 130 responders. 100% of the candidates found these courses are enjoyable, safe, not stressful and very useful training methods, 98% enjoyed it mostly because it is repetitive and mistakes are forgiven with zero hazards to patients.100% feels video debriefment following cardiac medical scenarios is very helpful as it clarify areas for improvement much better than conventional training. In conclusion, although cardiac Simulation courses is expensive but it plays important role in patient safety so at the end it is cost effective so would encourage to make it mandatory in the curriculum for cardiac residents and fellows.

Biography

Sawsan Al Yousef is an assistant professor at King Saud Bin Abdulaziz University. Currently he is appointed as consultant pediatric Intensive Care and Pulmonary at King Fahad Medical City(KFMC) and also a chairperson of post graduate simulation Department at Center for research , Education, Simulation enhance training (CRESENT)KFMC, at the same time he is a Director of Saudi Commissioner for Health specialty for PICU Fellowship Examination Committee, Saudi Arabia.

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AN EICU/ICU COLLABORATIVE TO REDUCE SEPSIS MORTALITY

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Sepsis costs over 20 billion dollars annually to treat making it the most expensive diagnosis for hospitals to treat, and carries with it an average mortality rate of 45%. The electronic intensive care unit/ intensive care unit (eICU/ICU) collaborative project was developed to improve sepsis mortality at Sutter Solano from 41.2% to the system-wide goal of 18.8% over the course of a year by implementing two technologies. The first was the onboarding of the non-invasive cardiac output monitoring (NICOM) technology by Sutter Solano to guide and fulfill the 6-hour bundle compliance for septic shock resuscitation. The other technology was the activation and enhancement of the core measure manager (CMM) high-quality data surveillance technology by the eICU to screen all patients at Sutter Solano for early identification and treatment of sepsis and septic shock. After twelve months of quality improvement measures including education, training, implementation, enhancement, tracking and treatment management; the dashboards revealed Solano's sepsis/septic shock mortality rate dropped from 41.2% to 6.1%. Nurses and physicians need to recognize that central venous pressure (CVP) is no longer a recommended or accepted measure of hemodynamic stability. The latest evidence-based practice supports NICOM in conjunction with passive leg raise (PLR) as a foundational guideline for fluid resuscitation. The clinical nurse leader (CNL), as systems analyst and risk anticipator, must manage information as well as the care environment to improve quality patient outcomes in the presence of evolving knowledge and the ever-changing healthcare system.

Biography

Laura Maples is an accomplished Critical Care Nurse, having recently completed her RN Masters in Clinical Nurse Leadership from University of San Francisco in May 2017. In addition to her formal education and training, she has a solid 20-year history of hands on experience in ICUs and 10 years working in the eICU, a system-wide quality oversight unit providing in-time critical care interventions for all critical care patients throughout the system. She has on boarded hospitals to the eICU system and performed system-wide quality improvement programs utilizing telemedicine. Further, her ability to build, facilitate, and laterally integrate multidisciplinary care to provide improved quality outcomes for patients and influence positive change has been repeatedly proven.

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DETERMINANTS OF PRETERM BIRTH AT THE POSTNATAL WARD OF KENYATTA NATIONAL HOSPITAL, NAIROBI, KENYA

Okubatsion Tekeste Okube[a]
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Statement of the Problem: Preterm birth remains the leading cause of perinatal and postnatal mortality and morbidity especially in developing countries like Kenya where the health care services are suffering from limited resources. In Kenya, in 2014, the under-five and infant mortality rates were 52 and 39 per 1000 live births respectively (UNICEF, 2015). Although, the burden of preterm birth is heavy in Kenyatta National Hospital, there is limited information available about the determinants of preterm birth at the hospital. Hence the aim of this study was to determine the determinants of preterm birth at Kenyatta national hospital (KNH), Nairobi, Kenya.

Materials and Methods: This was a hospital based cross-sectional study involving randomly selected respondents (N=183) from the post natal ward of KNH. Systematic random sampling method was applied to recruit the study respondents. A pre-tested semi-structured questionnaire was employed to collect information on the possible determinants of Preterm birth. Data was analysed using SPSS software version 22.0.Descriptive analysis was done using mean and frequency proportion. Pearson's chi-square test and odds ratio with corresponding 95% confidence intervals were used to find the association between the various variables.

Findings: The prevalence of preterm birth was 20.2%. History of urinary tract infection during pregnancy, history of preterm birth, history of abortion, history of hypertension during pregnancy, maternal age and alcohol consumption during pregnancy were determined as significant risk factors for preterm birth.

Conclusion and recommendation: The determinants of preterm birth are multifactorial and most of them are controllable if reproductive age mothers are educated properly. It is very important for antenatal mothers to adhere to the guidelines of antenatal visits so that those at risk are early spotted and closely monitored.

Biography

Okubatsion Tekeste Okube is a Nurse lecturer at The Catholic University of Eastern Africa (CUEA), Department of Nursing, Nairobi, Kenya. He has a bachelor degree in nursing from Asmara College of Health Sciences, Asmara, Eritrea and Master degree in Nursing (Community Health Nursing) from the University of Nairobi, Nairobi, Kenya. Currently, he is pursuing his PhD in Nursing at the University of Nairobi, Kenya.

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