



THE ATHENS INSTITUTE FOR EDUCATION AND RESEARCH

Abstract Book

4th Annual International Conference on
Public Health

25-28 June 2018, Athens, Greece

Edited by
Gregory T. Papanikos

2018

Abstracts
4th Annual International
Conference on
Public Health
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8 Valaoritou Street
Kolonaki, 10671 Athens, Greece
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Preface

This book includes the abstracts of all the papers presented at the 4th *Annual International Conference on Public Health (25-28 June 2018)*, organized by the Athens Institute for Education and Research (ATINER).

In total 44 papers were submitted by 52 presenters, coming from 21 different countries (Australia, Austria, Canada, China, Croatia, Egypt, Ethiopia, France, Hungary, India, Italy, Japan, Pakistan, Poland, Saudi Arabia, South Africa, Switzerland, Taiwan, Thailand, UK and USA). The conference was organized into 10 sessions that included a variety of topic areas such as chronic diseases, informal care and more. A full conference program can be found before the relevant abstracts. In accordance with ATINER's Publication Policy, the papers presented during this conference will be considered for inclusion in one of ATINER's many publications.

The purpose of this abstract book is to provide members of ATINER and other academics around the world with a resource through which to discover colleagues and additional research relevant to their own work. This purpose is in congruence with the overall mission of the association. ATINER was established in 1995 as an independent academic organization with the mission to become a forum where academics and researchers from all over the world could meet to exchange ideas on their research and consider the future developments of their fields of study.

It is our hope that through ATINER's conferences and publications, Athens will become a place where academics and researchers from all over the world regularly meet to discuss the developments of their discipline and present their work. Since 1995, ATINER has organized more than 400 international conferences and has published nearly 200 books. Academically, the institute is organized into seven research divisions and 37 research units. Each research unit organizes at least one annual conference and undertakes various small and large research projects.

For each of these events, the involvement of multiple parties is crucial. I would like to thank all the participants, the members of the organizing and academic committees, and most importantly the administration staff of ATINER for putting this conference and its subsequent publications together. Specific individuals are listed on the following page.

Gregory T. Papanikos
President

4th Annual International Conference on Public Health, 25-28 June 2018, Athens, Greece Organizing and Academic Committee

ATINER's conferences are small events which serve the mission of the association under the guidance of its Academic Committee which sets the policies. In addition, each conference has its own academic committee. Members of the committee include all those who have evaluated the abstract-paper submissions and have chaired the sessions of the conference. The members of the **academic committee** of the 4th Annual International Conference on Public Health were the following:

1. Gregory T. Papanikos, President, ATINER.
2. Nicholas Pappas, Vice President of Academic Membership, ATINER & Professor of History, Sam Houston University, USA.
3. Steven Jonas, Academic Member, ATINER & Professor Emeritus, Stony Brook Medicine, Stony Brook University, USA.
4. Paul Contoyannis, Head, Health Economics & Management Unit, ATINER & Associate Professor, McMaster University, Canada.
5. Vickie Hughes, Director, Health & Medical Sciences Division, ATINER & Assistant Professor, School of Nursing, Johns Hopkins University, USA.
6. Jean Moraros, Academic Member, ATINER & Associate Professor, University of Saskatchewan, Canada.
7. Norma Raynes, Director, From Generation to Generation, England, UK.
8. Cynthia Alexander, Professor, Acadia University, Canada.
9. Stephen David Edwards, Emeritus Professor and Research Fellow, University of Zululand, South Africa.
10. Thomas Wickizer, Professor, The Ohio State University, USA.
11. Harald Stummer, Professor, UMIT – University for Health Sciences, Medical Informatics and Technology, Austria.
12. Chux Gervase Iwu, Academic Member, ATINER & Assistant Dean of Research and Innovation, Cape Peninsula University of Technology, South Africa.
13. Wei Yang, Lecturer, King's College London, UK.
14. Abida Perveen, Academic Member, ATINER & General Manager Production Operations, High-Q Pharmaceuticals, Pakistan.
15. Pravati Mahapatra, Professor, Utkal University, India.
16. Maher Kamel Ahmed, Professor and Head of Biochemistry Department, Alexandria University, Egypt.
17. Bramanandam Manavathi, Associate Professor, University of Hyderabad, India.

The **organizing committee** of the conference included the following:

1. Fani Balaska, Researcher, ATINER.
2. Olga Gkounta, Researcher, ATINER.
3. Hannah Howard, Research Assistant, ATINER.
4. Eirini Lentzou, Administrative Assistant, ATINER.
5. Konstantinos Manolidis, Administrator, ATINER.
6. Kostas Spyropoulos, Administrator, ATINER.

FINAL CONFERENCE PROGRAM
4th Annual International Conference on Public Health,
25-28 June 2018, Athens, Greece

PROGRAM

Conference Venue: Titania Hotel, 52 Panepistimiou Street, 10678 Athens, Greece

Monday 25 June 2018

08:00-08:45 Registration and Refreshments

08:45-09:30 Welcome and Opening Address (Room A - 10th Floor)

Gregory T. Papanikos, President, ATINER.

Nicholas Pappas, Vice President of Academic Membership, ATINER & Professor of History, Sam Houston University, USA.

09:30-11:00 Session I (Room C - 10th Floor): Health Systems

Chair: Harald Stummer, Professor, UMIT – University for Health Sciences, Medical Informatics and Technology, Austria.

1. Thomas Wickizer, Professor, The Ohio State University, USA. Improving Quality and Outcomes in US Workers' Compensation.
2. Paolo Orlando, Professor, Università degli Studi di Genova, Italy & Fernanda Perdeli, Professor, Università degli Studi di Genova, Italy. The Ageing of the Population and the Development of New Health Technologies Have a Serious Impact on Health Systems.
3. Eva Orosz, Professor and Head of Doctoral Programme in Social Policy, Eötvös Loránd University, Hungary. Catching up with or Lagging behind the EU15 Countries? Revealing the Patterns of Changes in Health Status, Health Spending and Health System Performance in Four Post-Socialist EU Countries.
4. Ching-Fu Lin, Assistant Professor, National Tsing Hua University, Taiwan. Legitimacy and Accountability Challenges to Global Tobacco Control.

09:30-11:00 Session II (Room D - 10th Floor): Chronic Disease and other Issues I

Chair: Bramanandam Manavathi, Associate Professor, University of Hyderabad, India.

1. Silviu Faitar, Associate Professor, D'Youville College, USA. A Serological Analysis of the Autoimmune Response Associated with Inflammatory Bowel Disease.
2. Young Jung, PhD Candidate, McMaster University, Canada, Christopher Longo, Associate Professor, McMaster University, Canada, Emile Tompa, Associate Professor, McMaster University, Canada & Philip DeCicca, Associate Professor, McMaster University, Canada. The Untold Economic Story of Cancer Diagnoses: Longitudinal Study.
3. Bin Li, Associate Professor, Jinan University, China. Aberrant Expression of Mesoderm-Specific Transcript Homolog Protein (MEST) in Lung Cancer Promotes Invasion and Metastasis.

11:00-12:30 Session III (Room C - 10th Floor): Pharmacy & Drugs

Chair: Wei Yang, Lecturer, King's College London, UK.

1. Adel Zaki, Professor, Alexandria University, Egypt, Gamal El Sawaf, Professor, Alexandria University, Egypt, Ghada Abu-Sheasha, Lecturer, Alexandria University, Egypt & Ola Aly, Health Governance Specialist, Alexandria University, Egypt. Sales of anti-Diarrheal Drugs as an Indicator for Rationality in Treating Childhood Diarrhea, Alexandria, Egypt.

11:00-12:30 Session IV (Room D - 10th Floor): Special Topics I

Chair: Pravati Mahapatra, Professor, Utkal University, India.

1. Kevin Mearns, Professor, University of South Africa, South Africa & Jana Liebenberg, Graduate Student, University of South Africa, South Africa. An Evaluation of the Public Perception of the Role and Need for Zoos: A National Zoological Gardens of South Africa Perspective. (Monday, morning session)
2. Nancy Haynsworth, Adjunct Professor, The Citadel, USA & Phillip Bogle,

<p>2. Shigeaki Mishima, Associate Professor, Osaka University of Economics, Japan. Job Satisfaction in Japanese Community Pharmacy.</p> <p>3. Abida Perveen, General Manager Production Operations, High-Q Pharmaceuticals, Pakistan. A New Dynamic for the Safety of Drugs Product during Supply Chain - A Big Challenge-Serialization.</p>	<p>Instructor, The Citadel, USA. An Action Research Approach to Fear as an Impact on Water Safety outcomes among Adult African Americans in Charleston, SC.</p> <p>3. Fredrick Okaka, Postdoctoral Research Fellow, University of Venda, South Africa. Health Vulnerability and Adaptation Measures of Households in Flood-Prone Informal Settlements in the Coastal City of Mombasa.</p>
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<p>12:30-14:00 Session V (Room C - 10th Floor): Health Care Providers</p> <p>Chair: Cynthia Alexander, Professor, Acadia University, Canada.</p> <p>1. Chux Gervase Iwu, Assistant Dean of Research and Innovation, Cape Peninsula University of Technology, South Africa. What are the Problems and Prospects of Franchising?</p> <p>2. Ebtsam Abou Hashish, Assistant Professor, King Saud bin Abdul-Aziz University for Health Sciences, Saudi Arabia & Sally Fargally, Lecturer, Alexandria University, Egypt. Assessment of Professional Nursing Governance and Hospital Magnet Components at Alexandria Medical Research Institute, Egypt.</p> <p>3. Evangelos Zormpas, PhD Student, University of Leeds, UK & Gail Douglas, Professor/Chair in Dental Public Health, University of Leeds, UK. Investigating Dentists' and Patients' Preferences in Relation to new Caries Diagnostic Tools.</p> <p>4. Tesfaye Woldesemayat, DCEO, Hamlin Fistula Ethiopia, Ethiopia. Modelling and Optimizing Ethiopian Patient Referral and Care Pathway using Supply Chain Management Knowledge and Genetic Algorithms.</p>	<p>12:30-14:00 Session VI (Room D - 10th Floor): Chronic Disease and other Issues II</p> <p>Chair: Abida Perveen, General Manager Production Operations, High-Q Pharmaceuticals, Pakistan.</p> <p>1. <u>Maher Kamel Ahmed</u>, Professor and Head of Biochemistry Department, Alexandria University, Egypt, Eman Abd Allah, PhD Student, Alexandria University, Egypt, Mervat Hanafi, Assistant Consultant in Biochemistry, Alexandria University, Egypt, Shima Mahmoud, Lecturer, Alexandria University, Egypt & Madiha Helmy, Professor, Alexandria University, Egypt. The Metabolic Effect of Estrogen in Ovariectomized Female Rats Mediated through Modulation of miR-33a and miR-34a Expression.</p> <p>2. <u>Helen Naug</u>, Senior Lecturer, Griffith University, Australia, Natalie Colson, Senior Lecturer, Griffith University, Australia & Indu Singh, Associate Professor, Griffith University, Australia. Targeting Diabetes in the Workplace: An Intervention Aimed at Raising Awareness and Reducing Occupational Risk Factors among Transport Workers.</p> <p>3. <u>Magdalena Barbara Kaziuk</u>, PhD Student, Jagiellonian University, Poland & <u>Waldemar Kosiba</u>, Medical Doctor, Stefan Żeromski Hospital in Kraków, Poland. Influence of Hypertension on the Body Balance.</p> <p>4. Ibrahim Gosadi, Associate Professor, King Saud University, Saudi Arabia. Assessment of the Influence of Family History of Type 2 Diabetes or Hypertension on the Physical Activity Pattern of Adolescents Aged 15-25 Years.</p>
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14:00-15:00 Lunch

15:00-17:00 Session VII (Room C - 10th Floor): General Issues

Chair: Chux Gervase Iwu, Assistant Dean of Research and Innovation, Cape Peninsula University of Technology, South Africa.

1. Marianne Vardalos, Professor, Laurentian University, Canada. Not a Chemical Imbalance; a Power Imbalance. Why the Biomedical Narrative of Depressive Disorders must be Replaced by a Sociological Critique of Neoliberal Meritocracy.
2. Yim Wah Mak, Associate Professor, The Hong Kong Polytechnic University, Hong Kong. Association between Screen Viewing Duration, Sleep Duration, Sleep Quality and Quality of Life among Young Children in Hong Kong: Implications for University Students Engagement in Service Learning.
3. Wei Yang, Lecturer, King's College London, UK. Catastrophic Health Payments among Older People in China. What if we Count for Indirect Costs?
4. Robertson Tengeh, Head, Department of Entrepreneurship and Business Management, Cape Peninsula University of Technology, South Africa & Phikiso Ziyanda, Graduate Student, Cape Peninsula University of Technology, South Africa. Intra-Family Succession in South African Townships: Women's Account of the Desirable Attributes.
5. Ting Zhang, Weifang Medical University, China & Yuhan Zhao, Weifang Medical University, China. The Present Situation and Countermeasures of the Residual Risk of Blood Transfusion - Taking Weifang City as an Example.
6. Ramesh Kumar, Assistant Professor, Health Services Academy / Chulalongkorn University, Pakistan / Thailand. Correlates of Knowledge, Attitude and Practices about Health Care Waste Management among Health Workers of Pakistan.

17:00-19:00 Session VIII (Room A - 10th Floor): ATINER's 2018 Series of Academic Dialogues A Symposium Discussion on *Future Developments and Prospects of Engineering and Science Education & Research in a Global World*

Chair: Nicholas Pappas, Vice President of Academic Membership, ATINER & Professor of History, Sam Houston University, USA.

1. Dimitrios Goulias, Head, Civil Engineering Unit, ATINER and Associate Professor & Director of Undergraduate Studies Civil & Environmental Engineering Department, University of Maryland, USA. University of Maryland's Civil Engineering Education & Research Activities in the Global World.
2. Ram Balachandar, Professor, University of Windsor, Canada. Recent Developments in Engineering Education and Research – The Canadian Experience.
3. Fouad Mohammad, Senior Lecturer, Nottingham Trent University, UK. Teaching Civil and Structural Engineering for the Next Generation.
4. Jeh-Nan Pan, Professor and CSQ Fellow, National Cheng Kung University and Chinese Society for Quality, Taiwan. Quantitative Education for Creating an Interface between Statistics and Engineering.
5. Timothy M. Young, Director, Center for Business & Manufacturing Excellence (CBME) & Professor and Graduate Director, Center for Renewable Carbon, The University of Tennessee, USA. The Importance of Data Quality Management in the Era of Predictive Analytics.
6. Theodore Trafalis, Director, Engineering & Architecture Division, ATINER, Professor of Industrial & Systems Engineering and Director, Optimization & Intelligent Systems Laboratory, The University of Oklahoma, USA. Future Developments of Engineering and Science Education & Research in a Big Data Era.

21:00-23:00 Greek Night and Dinner

Tuesday 26 June 2018

07:45-11:00 Session IX: An Educational Urban Walk in Modern and Ancient Athens

Chair: Gregory A. Katsas, Vice President of Academic Affairs, ATINER & Associate Professor, The American College of Greece-Deree College, Greece.

Group Discussion on Ancient and Modern Athens.

Visit to the Most Important Historical and Cultural Monuments of the City (be prepared to walk and talk as in the ancient peripatetic school of Aristotle)

11:15-13:00 Session X (Room C - 10th Floor): Health Promotion and Policy

Chair: Thomas Wickizer, Professor, The Ohio State University, USA.

1. Cynthia Alexander, Professor, Acadia University, Canada. ReDress and Reconciliation in Canada: Decolonization and Public Health Service Delivery in Canada.
2. Stephen David Edwards, Emeritus Professor and Research Fellow, University of Zululand, South Africa. The Effectiveness of the HeartMath Coherence Model in Promoting Public Health.
3. Roberte Manigat, Public Health Medical Specialist, Scientific Counselor, Association de Valorisation des Relations Internationales Scientifiques et Techniques (AVRIST), France & Jean Claude André, Directeur de Recherche, Centre National de Recherche Scientifique (CNRS), France. The Impacts of Climate Change in Public Health Policy.
4. Norma Raynes, Director, From Generation to Generation, England, UK. Public Health Approaches to Service Provision to Promote Benefits in Childhood & Olderagehood.
5. Ahmed Bahri, Lecturer, Jazan University, Saudi Arabia. Waterpipe Smoking: Prevalence and Associated Factors among Jazan University Students, Kingdom of Saudi Arabia (KSA).

11:15-13:00 Session XI (Room D - 10th Floor): Special Topics II

Chair: Maher Kamel Ahmed, Professor and Head of Biochemistry Department, Alexandria University, Egypt.

1. I-Ming Jou, Orthopedic Surgeon, Vice Superintendent, E-Da Hospital, Taiwan, Chia-Lung Li, Orthopedic Surgeon, National Cheng Kung University, Taiwan, I-Chien Chen, Orthopedic Surgeon, E-Da Hospital, Taiwan, Chien-An Shih, Orthopedic Surgeon, National Cheng Kung University Hospital, Taiwan, Chao-Liang Wu, Director Professor, National Cheng Kung University, Taiwan, Fang-Lin Chiu, Assistant Manager, National Cheng Kung University Hospital, Taiwan, Wei-Ren Su, Chairman of Orthopedic Department, National Cheng Kung University Hospital, Taiwan, Po-Ting Wu, Orthopedic Surgeon, National Cheng Kung University Hospital, Taiwan & Shih-Yao Chen, Postdoctoral Fellow, National Cheng Kung University Hospital, Taiwan. Inhibition of CD44 Induces Apoptosis, Inflammation and Matrix Metalloproteinase Expression in Tendinopathy.
2. Bramanandam Manavathi, Associate Professor, University of Hyderabad, India. G2/M Regulator HPIP is a Substrate of Anaphase Promoting Complex/Cyclosome APC/Ccdc20 during Mitosis.
3. Pravati Mahapatra, Professor, Utkal University, India. A Study on Retinoic Acid induced Formation of Blood Vessels during Tail Regeneration in the Indian Tree Frog *Polypedates Maculatus*.
4. Wei-Jen Chang, Associate Professor, Hamilton College, USA. RNA-seq of the Fish Parasite *Ichthyophthirius Multifiliis*.

13:00-14:00 Lunch

14:00-15:30 Session IX (Room C - 10th Floor): Interventions

Chair: Stephen David Edwards, Emeritus Professor and Research Fellow, University of Zululand, South Africa.

1. Harald Stummer, Professor, UMIT – University for Health Sciences, Medical Informatics and Technology, Austria, Klaus Buttinger, Medical Doctor, Associate Researcher, UMIT – University for Health Sciences, Medical Informatics and Technology, Austria & Silvia Angerer, Senior Scientist, UMIT – University for Health Sciences, Medical Informatics and Technology, Austria. The Influence of Imaging on Stroke Outcome – Evidence from Austria.
2. Hanan Elkafafi, Assistant Professor, King Saud bin Abdulaziz University for Health Sciences, Saudi Arabia. Factors Affecting Nutritional Adequacy Delivered by Enteral Tube Feeding Among ICU Patients.
3. Patrice De Micco, Postdoc, University of Siena, Italy, Maria Pia Maraghini, Assistant Professor, University of Siena, Italy & Tiziana Spadafina, Researcher, Fondazione Achille Sclavo ONLUS, Italy. An Economic and Financial Analysis for the Sustainable Introduction of a Vaccine against Invasive non Typhoidal Salmonella (iNTS) in Sub-Saharan Africa.

15:30-17:00 Session X (Room C - 10th Floor): Formal and Informal Care

Chair: Norma Raynes, Director, From Generation to Generation, England, UK.

1. Sime Smolic, Assistant Professor, University of Zagreb, Croatia, Marija Beg, Assistant Professor, University of Zagreb, Croatia & Tamara Sliskovic, Assistant Professor, University of Zagreb, Croatia. Working Hours across Physician Specialties in Croatia – Key Findings and Implications.
2. Diana Pacheco Barzallo, Research Fellow, Schweizer Paraplegiker-Forschung, Switzerland. Formal Care & Working Decisions. The Situation of Informal Caregivers.
3. Michael O'Driscoll, Researcher, Middlesex University, UK. The UK Health and Social Care Act (2012) and New Public Management – More of the Wrong Medicine?
4. Xin He, PhD Student, University of Macau, Macau, China. Satisfaction Survey among Primary Health Care Outpatients in Backward Region: Empirical Study from Rural Western China.
5. Wilfried Guets, PhD Student, University of Lyon, France, Matthias Schell, Oncologist Specialist, Institute of Hematology and Pediatric Oncology (IHOP), France, Anne Lefranc, Head of Alqualine, ALQUALINE, France, David Perol, Head of the Clinical Research and Innovation Direction Department, Centre Léon Bérard, France & Lionel Perrier, Team Manager of the Area “Innovations and Strategies”, Centre Léon Bérard, France. Determinant of Respite Needs According to the Informal Caregiver's Characteristics: Results from the French Handicap-Santé-“Aidants Informels” Survey.

20:00- 21:30 Dinner

Wednesday 27 June 2018
Mycenae and Island of Poros Visit
Educational Island Tour

Thursday 28 June 2018
Delphi Visit

Friday 29 June 2018
Ancient Corinth and Cape Sounion

Ebtsam Abou Hashish

Assistant Professor, King Saud bin Abdul-Aziz University for Health
Sciences, Saudi Arabia

&

Sally Fargally

Lecturer, Alexandria University, Egypt

Assessment of Professional Nursing Governance and Hospital Magnet Components at Alexandria Medical Research Institute, Egypt

Background and objective: In the context of a rapidly evolving health care system, health care institutions strive to set a path towards an excellent professional practice environment. Since improving clinical nurse work environments is a major issue faced by nurse executives and administrators, they become challenged to establish nursing governance models, and leadership practices so that clinical nurses can engage in the work processes and relationships that are empirically linked to quality patient outcomes.

The **main** aim of this study was to assess the current status of professional nursing governance and hospital magnet components at Alexandria Medical Research Institute, Egypt.

Methods: A descriptive research design was conducted at Alexandria Medical Research Institute hospital, using a convenience sample (N = 220) that composed of two groups including; all hospital medical administrators (n = 10) and hospital nursing workforce (n = 210). Index of Professional Nursing Governance Questionnaire (IPNGQ) and Magnet Hospital Forces Interview were proved valid and reliable to measure study variables.

Results: The overall mean score of professional nursing governance was (187.59 ± 63.74) reflected that staff nurses practice the first level of nursing shared governance (primarily nursing management who take the decision with some staff input). In addition, both medical administrators and nursing staff identified the hospital has a good structure, nursing leadership practices that support shared governance and magnet recognition. Structural equation model and correlation analysis revealed a positive association between overall professional nursing governance and hospital magnet components ($p < .05$).

Conclusions and recommendations: The study emphasized the hospital administrators' important role for providing supportive organizational structures and leadership practices for increasing participation of nursing staff in work design, problem-solving, conflict resolution, committees and organizational decision-making as "key ingredients to a successful organization" in turn, lead to a healthy and

magnet-like work environment. Training programs for nurses' professional development are recommended which enhance and increases their autonomy and empowerment.

Maher Kamel Ahmed

Professor and Head of Biochemistry Department, Alexandria University,
Egypt

Eman Abd Allah

PhD Student, Alexandria University, Egypt

Mervat Hanafi

Assistant Consultant in Biochemistry, Alexandria University, Egypt

Shima Mahmoud

Lecturer, Alexandria University, Egypt

&

Madiha Helmy

Professor, Alexandria University, Egypt

The Metabolic Effect of Estrogen in Ovariectomized Female Rats Mediated through Modulation of miR-33a and miR-34a Expression

In postmenopausal women, there is a frequent increase in body weight, impaired glucose tolerance, increased insulin resistance, disturbed lipid metabolism, and increased risk of serious diseases such as cardiovascular diseases (CVD) and metabolic syndrome. The mechanism by which estrogen deficiency (natural or surgical) could cause insulin resistance and accelerate the progression of fatty liver and CVD are not clear.

The aim of the present study is to investigate the effect of estrogen deficiency and re- supplementation (alone or in combination with progesterone) on the hepatic expression of miR-33a and miR-34a and their targets gene including SREBP-1c and SIRT-1 in ovariectomized female rats.

Female Wistar rats were used in the present study. The rats were anesthetized with ether then were bilaterally ovariectomized (OVX) and allowed to recover for 4 weeks, then they will be subdivided into the untreated group, Estrogen-treated groups, Progesterone treated groups and Estrogen+progesterone-treated group. All groups were treated for 4 weeks then sacrificed to obtain blood and liver tissues for the determination of glucose and lipid homeostasis parameters, adipocytokines, hepatic expression of SREBP-1 and -2, SIRT1, miR-33a and miR-34a

The results clearly indicated that in comparison to control females; estrogen deficiency results in disturbed glucose and lipid homeostasis, insulin resistance, heavier weight, imbalanced adipocytokines production, enhanced expression of miR-34a and downregulation of miR-33a-5p and miR-33a-3p. These defects were associated with down-regulation of the expression SIRT1 and SREBP-2 at mRNA level and up-regulation of SREBP-1c at mRNA level and protein level.

The estrogen treatment for 4 weeks caused significant amelioration in the parameters of glucose and lipid homeostasis which associated with enhanced

expression of miR-33a-5p and miR-33a-3p and down-regulation of miR-34a. Also, The target genes of these miRs showed significant amelioration. Progesterone treatment results in mild ameliorative effects o the studied parameters and showed mild synergistic effect with estrogen only on the SREBP-1c and-2 at mRNA level.

We can conclude that the metabolic effects of estrogen on the ovariectomized female rats as a model of estrogen deficiency may mediate mainly through modulating the hepatic expression of microRNAs (miR-33a-5p, miR-33a-3p, and miR-34a) and their targets genes.

Cynthia Alexander
Professor, Acadia University, Canada

REDress and Reconciliation in Canada: Decolonization and Public Health Service Delivery in Canada

Across Canada, red dresses have become the symbol of missing and murdered Indigenous women and girls, and families. Across Canada, Indigenous peoples and allies are asking for redress for colonial policies that persist. The authors, recognizing that we cannot wait for sweeping institutional reform in the field of health care led by a government of any political stripe, developed the Default to Deliberative (D2) Framework to assist non-Indigenous health professionals recognize their individual and collective roles in decolonization and reconciliation in Canada, following the national Truth and Reconciliation Report (2015). Individually and collectively, health professionals can contribute to excising the historic and persistent oppression embedded in Indigenous health and wellness systems.

‘Shape-shifting colonization’ (Corntassel and Alfred, 2005) cannot be decontextualized (ie. underfunding health care systems, burnout among health professionals, and reliance on technological fixes). The authors illustrate how ‘apparently imperceptible’ micro-actions reinforce persistent neo-colonial system of the Default Mode, in public health as in education and legal systems. As in fields of education and justice, health professionals can be among those Canadians who give into the gravitational pull of the Default Mode of neo-colonialism, *or alternatively*, they can identify and act on decolonializing micro-moments in health care delivery.

Our paper illustrates, with examples from Nunavut, the D2 Framework and shares explicit case studies of how health care professionals can decolonize themselves. The ‘gravitational pull’ graphically represented in the D2 Framework is one of the ways the authors explore the challenges in both individual and collective decolonizing endeavours. The D2 Framework highlights the need for vigilance in the midst of some of the positive reforms apparent in the delivery of health care services to Indigenous peoples. The challenge exists in becoming overly self-congratulatory, and perhaps even complacent, with innovations in health care delivery in Indigenous communities that may be defined as “awesome/better than before/adequate for now”.

Drawing inspiration from the Ottawa Charter for Health Promotion (1986) and from the recommendations of the national Truth and Reconciliation Report, and innumerable national and international commitments between the two initiatives, the authors share how the D2 Framework provides a tool for a critically self-reflective process, with

explicit stages and clear steps to illustrate how non-Indigenous individuals in their professional lives can decolonize themselves in Canada, and elsewhere.

Ahmed Bahri

Lecturer, Jazan University, Saudi Arabia

Waterpipe Smoking: Prevalence and Associated Factors among Jazan University Students, Kingdom of Saudi Arabia

Background: Research on Water Pipe Tobacco Smoking (WPTS) is of increasing interest as evidences suggested the increase of its use among all segments of the population including university students. Like cigarette smoking, WPTS has severe effects on human life, including health hazards and economic negative impact.

Objectives: This study was conducted with the aim of assessing the prevalence and predictors of WPTS among Jazan University students, Jazan Saudi Arabia. Jazan is located in the south east of Saudi Arabia.

Methodology: A cross-sectional study was conducted with a representative sample ($n = 600$) of Jazan university students during the academic year 2016/2017. Participants were selected using stratified random sampling, stratification was conducted using college type. A structured questionnaire was used for data collection, descriptive statistics, a chi-squared test, and logistic regression were performed to examine the associations and predictors of WPTS.

Results: The overall current prevalence of WPTS was 33.5 % (95% CI 29.8-37.4) significantly higher for males 42.7 % (95% CI 37.2-48.3) than for females 24.3% (95% CI 19.8-29.5) ($P < 0.001$). The majority of WPTS smokers (65.3%) reported curiosity as the most common reason to initiate smoking followed by friend's effect 36.0%. Almost (47.7%) of study participants have misconceptions that a WPTS hazards are similar to cigarette smoking. The multivariate logistic regression analysis suggests that the most important independent predictors of WPTS were having friend who use water pipe, participant's cigarette smoking status and gender of participant.

Conclusion: A significant proportion of Jazan university students practice WPTS. The use WPTS is significantly associated with having a friend who use WPTS, participant's cigarette smoking status, and gender of participant. Jazan university should design and implement a health education prevention programme to curb the high prevalence of WPTS in the university.

Wei-Jen Chang

Associate Professor, Hamilton College, USA

RNA-seq of the Fish Parasite *Ichthyophthirius Multifiliis*

The ciliated protozoan *Ichthyophthirius multifiliis* infects a wide range of freshwater fish and causes the highly lethal white spot disease. This parasite possesses three morphologically and physiologically distinct life stages: an infectious theront, a parasitic trophont, and an asexually reproductive tomont stages. During the theront stage, the spindle-shaped *I. multifiliis* actively seeks for host fish, and after establishing successful infection in the subcutaneous layer of skin of the host fish, the parasite will transform into round-shaped trophont cells and grow into significantly larger, eye-visible ones (hence the white spots) five to seven days post infection. Mature trophont cells will leave the host and start asexual division that gives rise to hundreds, if not thousands of new theront cells and restart the cycle. Despite detailed morphological observations, we know very little about molecular mechanisms accounted for each stage and transitions between stages. Here we use RNA-seq as the first attempt to try discovering stage-specific genes and how they may contribute to *Ichthyophthirius multifiliis* life cycle.

Patrice De Micco

Postdoc, University of Siena, Italy

Maria Pia Maraghini

Assistant Professor, University of Siena, Italy

&

Tiziana Spadafina

Researcher, Fondazione Achille Sclavo ONLUS, Italy

An Economic and Financial Analysis for the Sustainable Introduction of a Vaccine against Invasive non Typhoidal Salmonella (iNTS) in Sub-Saharan Africa

In Sub-Saharan Africa, invasive non typhoidal Salmonella (iNTS) has been reported as a prominent cause of bloodstream infection principally in children under 5 years of age, where it is mainly associated with malaria, anemia and malnutrition, and in immune-compromised adults. The iNTS disease is devastating, with an estimated case-fatality of about 20-25%, and no vaccine is available today. Clinically the disease is often not recognized or misdiagnosed and until recently the prevention of iNTS has received relatively little attention.

This work is one of the first health economics studies assessing the cost-effectiveness of the introduction of an affordable candidate vaccine against iNTS in Sub-Saharan Africa, based on the GMMA (Generalized Module for Membrane Antigens) technology.

This study provides a precise estimation of the cost of illness, using the health investment life course approach, and an exhaustive categorization of the main costs of vaccination program, considering the vaccine research and development, procurements, administration costs and comparing also different immunization campaigns. The estimations will allow establishing a realistic financial and economic plan of the sustainable introduction of a new vaccine in Sub-Saharan countries. The plan will provide a cost-benefit analysis by comparing two main scenarios, with and without the vaccination programme. Our work contributes not only to filling the gap in the literature on iNTS but it will also provide policy planners and decision makers with evidence on the economic benefits in reducing child mortality, improving health conditions and ensure long term prosperity, thanks to the use of the vaccine against iNTS in Sub-Saharan Africa.

The University of Siena and Fondazione Achille Sclavo are collaborating in this study as one of the activities of the S-AFRIVAC project, co-financed by the Toscana Region and aimed at improving the knowledge on the iNTS disease, supporting the GMMA vaccine progression towards clinical trials, and evaluating the sustainability of its introduction and use in Sub-Saharan Africa, where the disease is endemic.

Stephen David Edwards

Emeritus Professor and Research Fellow, University of Zululand, South
Africa

**The Effectiveness of the HeartMath Coherence Model in
Promoting Public Health**

The Institute of HeartMath is an interdisciplinary public health, research and educational organization committed to preventing illness, disorder and stress through a model of personal, social and global coherence. The aim of this presentation is to describe this model and review its effectiveness through evidence readily available on the website www.heartmath.org.

Coherence implies interconnectedness, consistency, synchronicity and harmony, typically involving a holistic, global order where the whole is greater than the sum of the parts. At the natural scientific level, auto-coherence implies stability in a single wave form as in the sine-wave, while cross-coherence, phase locking and resonance reflect harmony in various rhythmic activities. At the psychophysiological level, coherence occurs between positive emotions, cardiovascular, respiratory, immune, autonomic and central and nervous systems. At the human, interpersonal, team and social levels, coherence includes dyads, couples, groups, organizations and communities, where harmonious relationships promote efficient energy flow, communication, synchronization and collective action. At the global level, groups, nations and countries working co-operatively promote optimal ecological and planetary peace and harmony, which is one goal of the HeartMath Global Coherence Initiative (GCI).

Major HeartMath research findings revealed various forms of heart intelligence, beginning with heart communication of electromagnetic, neurochemical, biophysical and hormonal information. International and local South African research evidence based research has consistently indicated the effectiveness of practical, heart based tools and technology, to facilitate heart rate variability (HRV) coherence, biofeedback training and promote public health individually, interpersonally, socially and globally. This can be demonstrated practically if time permits.

Hanan Elkafafi

Assistant Professor, King Saud bin Abdulaziz University for Health
Sciences, Saudi Arabia

Factors Affecting Nutritional Adequacy Delivered by Enteral Tube Feeding Among ICU Patients

Background: Adequate nutritional support is crucial in the prevention and treatment of malnutrition in critically ill patient. Patient in the intensive care unit who cannot take food orally require either enteral or parenteral nutritional support. Enteral nutrition is generally preferred over parenteral nutrition because the former associated with lower incidence of infectious and non-infectious complication, reduced cost, and decreased length of hospital stay.

Patients and Methods: In this study we investigate factors affecting nutritional adequacy delivered by enteral feeding in 40 patients were randomly selected who are on continuous enteral feeding via nasogastric tube in intensive care unit (ICU) at King Fahd University Hospital. Al-khobar, Eastern Province in Saudi Arabia. a prospective, descriptive design was used in this study. Two instruments were used for data collection:1) Demographic and medical data sheet, 2) Nutritional data sheet.

Results: The result of the present study showed a mean age of 50.75 ± 23.12 years, 60 % of the subjects were males. There is highly significant relationship between the daily requirement energy and actual daily energy delivered ($P < 0.005$). The common causes for enteral feeding interruption were found to be because of change in position and suctioning (35%). During morning care, before extubation and feeding hold for increasing residual volume (11%). Patients were kept nil per oral (NPO) because of surgical or diagnostic procedure (5%). Beside this there is no replacement for feeding interruption. the simplified acute physiology score II in relation to enteral feeding tube interruption are highly significant ($P = .000$).

Conclusion & Recommendation: It can be concluded that there is an inadequacy of enteral nutritional intake for critically ill patient. Also the factors affecting nutritional adequacy delivered by enteral feeding are change position, suctioning, during morning care, extubation, feeding hold for increasing residual volume, NPO, surgical procedure, diagnostic procedure and patient's illness . It can be recommended that specific nutritional protocols, a multidisciplinary approach to nutritional support, regular training of medical and nursing staff involved in nutritional support, routine review prescribed and actual calorie intake might help to achieve optimal nutrition care for critically ill patients.

Silviu Faitar

Associate Professor, D'Youville College, USA

A Serological Analysis of the Autoimmune Response Associated with Inflammatory Bowel Disease

Inflammatory bowel disease (IBD) is a generic term that refers to two distinct diseases: Crohn's disease (CD), also known as regional enteritis, and ulcerative colitis (UC). Because many of the clinical symptoms overlap, these two conditions are often treated as one disease, even though the general clinical presentation, as well as the prognosis and therapy differ. IBD is a lifelong disease with a high incidence in the young population. It is believed that IBD is immunologically mediated, even though there are also some indications pointing toward a genetic susceptibility. IBD is generally seen as a loss of immune tolerance to the normal intestinal flora, event that triggers an abnormal immune response at the gastrointestinal level. The present study focused on the isolation and characterization of the autoantibodies associated with each one of the two forms of the disease. Serum samples from 25 normal individuals, 25 patients suffering from Crohn's disease and 25 patients suffering from ulcerative colitis were analyzed using immunofluorescence microscopy and ELISA. The results showed that 56% of the CD patients were positive for the staining pattern associated with the presence of exocrine pancreatic autoantibodies, while all UC patients and normal controls were negative. Patients and normal controls sera were also tested for other IBD markers (pANCA, ASCA IgG, ASCA IgA) and it was found that the exocrine pancreatic autoantibody testing was able to detect a subpopulation of CD patients that were ASCA negative. Thus, when combining this new serological marker results with ASCA testing, the sensitivity of the assay was increased from 52% to 76%, stressing the importance of testing multiple markers for an accurate distinction between UC and CD.

Ibrahim Gosadi

Associate Professor, King Saud University, Saudi Arabia

Assessment of the Influence of Family History of Type 2 Diabetes or Hypertension on the Physical Activity Pattern of Adolescents Aged 15-25 Years

Introduction: This study is aiming to provide an evidence assessing the influence of family history of diabetes or hypertension on Saudi adolescents physical activity levels.

Methodology: A Cross sectional study was conducted to obtain the study sample comprising of boys and girls in the age group of 15 to 25 years. One university and four schools (two boys and two girls school) were chosen by multi stage cluster random sampling technique between December 2016 to March 2017. The survey instrument used was a validated physical activity questionnaire developed for the Saudi population. Classification of the study sample was based on gender, study level, and family history of diabetes mellitus or hypertension.

Results: The study included 497 subjects with a well-balanced male to female ratio (49%:51%). The proportion of subjects from high school and university was similar (48%:52%). The study population seems to be largely sedentary. Almost 40% of the students had a parental history of either diabetes or hypertension. Gender comparison showed females to have significantly higher sedentary behavior and lower levels of intense physical activity per week than the males (p value: 0.002). University education seemed to have significant influence on reducing the physical activity levels in comparison with school students (p value: <0.001). It was observed that levels of moderate and vigorous activities are higher in students where both parents were affected with diabetes in comparison to students who reported neither parents were affected (p value: 0.025). No influence was observed in relation to parental history of hypertension.

Conclusion: These findings suggest an increased physical activity level among the offspring of parents affected with diabetes in addition to other important influence of gender and education level.

Wilfried Guets

PhD Student, University of Lyon, France

Matthias Schell

Oncologist Specialist, Institute of Hematology and Pediatric Oncology
(IHOP), France

Anne Lefranc

Head of Alqualine, ALQUALINE, France

David Perol

Head of the Clinical Research and Innovation Direction Department,
Centre Léon Bérard, France

&

Lionel Perrier

Team Manager of the Area "Innovations and Strategies", Centre Léon
Bérard, France

**Determinant of Respite Needs According to the Informal
Caregiver's Characteristics: Results from the French
Handicap-Santé-"Aidants Informels" Survey**

Objective: The demographic and social changes associated with the aging of the population and the increasing incidence of chronic diseases underline the important role of informal caregivers. However, despite increasing numbers of informal caregivers and the known negative consequences of providing care in terms of burn out, the consequence of socio-economical and psychological factors on respite needs are not well characterized. The purpose of this study is to analyze the impacts of caregiver's health on the respite care need.

Data and Methods: Data was obtained from the 2008 French National Disability-Health survey (Handicap-Santé Aidants - HSA) of the National Institute of Statistics and Economic Studies (INSEE) and the Directorate for Research, Studies, Evaluation and Statistics (DREES). Logistic regressions distinguished cohabitant and no-cohabitant caregivers.

Results: N = 891 informal caregivers were included in the study (N = 304 cohabitants and N = 586 no-cohabitants). The mean caregiver age was 54 years old (SD \pm 16). Women accounted for 61% of the caregivers. Female gender, poor health status, lack of time for self, as well as the lack of institutional support significantly increased the caregiver's need for respite care. Seniority decreased the need for respite care for cohabitants only. No effect of caregiver's income or age on respite need were found.

Discussion: Our results show that respite needs vary according to the informal caregiver's characteristics. These findings provided useful information to policymakers in order to prioritize health care services. Since the French welfare system cannot cover all the formal and informal costs related to the health of dependent people, policymakers should

promote an innovative respite care health strategy by providing a pack of services to in-need caregiver-recipient dyads.

Nancy Haynsworth
Adjunct Professor, The Citadel, USA

An Action Research Approach to Fear as an Impact on Water Safety outcomes among Adult African Americans in South Carolina

Drowning is a major, yet preventable public health issue that is most acute among African Americans. Knowing how to swim is an important drowning prevention strategy, yet many African Americans residing in Charleston County, South Carolina do not know how to swim, despite living in the immediate vicinity of water. This places African Americans at a distinct and dangerous disadvantage that is amplified by elevated levels of aquatic fear within the community. The purpose of this study was to explore aquatic fear reduction among adult African Americans randomly assigned to two leading swimming education programs. Utilizing a mixed methods approach for data collection, 37 participants completed a Beliefs about Water Questionnaire at pre- and post-test junctures and a semi-structured interview. The study's findings suggested that global fear levels decreased dramatically using swimming education programs. However, the level and type of fear of water is relative to the individual and difficult to predict within the context of the ability to acquire basic swimming skills. The findings provide valuable information to public health officials for identifying the impacts of fear levels and fear types on the ability to acquire basic swimming competency skills. Further research that addresses fear as a barrier to learning how to swim is noteworthy and essential to the health and well-being of the local African American and the global communities.

Xin He

PhD Student, University of Macau, Macau, China

Satisfaction Survey among Primary Health Care Outpatients in Backward Region: Empirical Study from Rural Western China

Background: With the increasing population and patient expectation, patient satisfaction analysis is essential to evaluating the accessibility and medical service performance, especially in developing countries such as China. Factors including hospital environment, medical facility, service attitude, patients' involvement in decision making, doctors and nurses' proficient skills, effective communication between patients and doctors, disease severity, medical cost, waiting time and service time were reported associated with Chinese outpatients' satisfaction in advanced areas or tertiary hospitals. Considering the relatively lower education level, less individual income and heavier economic burden, it is necessary to conduct a region-specific questionnaire survey for the outpatient's satisfaction of rural Western China.

Objective: To conduct a validated and acceptable satisfaction questionnaire survey in primary outpatient service in Western China, and explore the factors affect outpatients' satisfaction.

Methods: Questionnaire was composed to survey the primary health care outpatient satisfaction among randomly selected samples in 11 provinces of Western China. Exploratory factor analysis (EFA) was conducted to study the factor structure of questionnaire. Stepwise multilinear regression analysis was performed to study the influencing factors.

Results: 3193 patients participated in the survey, and total response rate was 88.7%. Respondents were most satisfied with medical staff service attitude (3.71 ± 0.83) and least satisfied with medical cost (2.97 ± 0.83). EFA result showed that a 2-factor solution was adopted to explain the overall satisfaction. Factors identified were "hospital facility and service" and "patients' cost". And the questionnaire was proved with good overall reliability and acceptable internal consistency. Stepwise multilinear regression analysis results presented that factors including sample hospital type, age, education level, occupation, monthly income, health insurance type, and chronic disease conditions were significantly associated with the dimensional or overall satisfaction.

Conclusions: The feasibility of the self-designed questionnaire in this study is acceptable. The primary health care outpatient satisfaction in rural Western China is lower than developed areas and tertiary hospitals, demographic characteristics and chronic disease conditions were significantly associated with dimensional and overall satisfaction. Local department of health care service and policy makers should pay more

attention on patients' demographic characteristics, different diseases and medical institutions, to meet outpatients' actual demand, improve the service quality and balance the allocation of healthcare resources between developed and backward areas.

Chux Gervase Iwu

Assistant Dean of Research and Innovation, Cape Peninsula University of
Technology, South Africa

What are the Problems and Prospects of Franchising?

Different circumstances motivate people to undertake entrepreneurial activities and probably start their own business. These circumstances could be unemployment, desire to earn extra income, business expansion, freedom from working for a boss, identifying and taking advantage of an opportunity or scientific innovation. Some successful entrepreneurs may want to expand their business without being involved in the day to day running of the business while some prospective entrepreneurs may not want to undergo the pain of starting a new business but rather prefer to buy into an existing business that has been tried and tested.

This loose characterization of franchising as an organisational form used by entrepreneurs to embark on business ownership by becoming franchisees or franchisors locates franchising as a key entrepreneurial activity that can drive powerful economic change. But despite its flowery merits such as offering an established product, service and brand image, franchising can be a difficult terrain for small and medium enterprises. This assumption is based on documentary evidence which shows that small and medium enterprises are in many cases cash-strapped, and owned/managed by novices.

Our initial exploratory exercise indicates that the initial capital needed to buy a franchise is sometimes higher than what it would cost to start up an independent business. This study wishes to examine the potential of franchising for small and medium investors. For now, we consider a mixed method as the appropriate means to collect relevant data while the analysis will take form of descriptive statistics as well as content analysis. Industry watchers believe that if franchising – an entrepreneurial activity, is effectively utilized, it can propel Africa into prominence, especially in the area of skills transfer, job creation, entrepreneurship development and balancing the uneven distribution of wealth among its populace. It is against this background and the ever increasing call for the franchising sector to play a more vital role in entrepreneurship growth that this study intends to investigate the levels of development in the franchising sector in South Africa with the objective of understanding the prospects and challenges inherent in the sector.

It is hoped that an understanding of these prospects and challenges will provide clarity on the dynamics of the sector and also enable:

- (1) a much larger integration of South African community into the sector;
- (2) an expanded knowledge of franchising among South Africans; and
- (3) prospective franchisors/franchisees to adopt the franchising model in their entrepreneurial quest.

I-Ming Jou

Orthopedic Surgeon, Vice Superintendent, E-Da Hospital, Taiwan

Chia-Lung Li

Orthopedic Surgeon, National Cheng Kung University, Taiwan

I-Chien Chen

Orthopedic Surgeon, E-Da Hospital, Taiwan

Chien-An Shih

Orthopedic Surgeon, National Cheng Kung University Hospital, Taiwan

Chao-Liang Wu

Director Professor, National Cheng Kung University, Taiwan

Fang-Lin Chiu

Assistant Manager, National Cheng Kung University Hospital, Taiwan

Wei-Ren Su

Chairman of Orthopedic Department, National Cheng Kung University
Hospital, Taiwan

Po-Ting Wu

Orthopedic Surgeon, National Cheng Kung University Hospital, Taiwan
&

Shih-Yao Chen

Postdoctoral Fellow, National Cheng Kung University Hospital, Taiwan

Inhibition of CD44 Induces Apoptosis, Inflammation and Matrix Metalloproteinase Expression in Tendinopathy

Introduction: Apoptotic cell death has been postulated to be a primary cause of tendinopathy. CD44 had been reported to exert the anti-apoptotic and -inflammatory effects on tumor cells, chondrocytes, and fibroblast-like synoviocytes by engaging with its ligand, hyaluronic acid (HA). The aim of this study was to examine the association among CD44, apoptosis and inflammation in contributing to tendinopathy.

Materials and Methods: Expression levels of CD44 and apoptosis in tendon tissue from patients with long head of biceps (LHB) tendinopathy were determined according to the different histological grade of tendinopathy. Primary rat tenocytes were cultured with the antagonizing antibody against CD44, designated OX-50. Treatment responses were determined by evaluating cell viability, and the expression of apoptosis, tendon-related proliferation markers, and inflammatory mediators.

Results: The expression of CD44 and apoptosis was significantly positively correlated with the severity of tendinopathy in human LHB tendinopathy ($p < 0.05$). Blocking the CD44 signaling pathways in rat tenocytes by OX-50 significantly decreased the cell viability, and expression of collagen type I (COL1A1), type III (COL3A1), tenomodulin (tnmd) and phosphorylated AKT (all $p < 0.05$). Furthermore, there were significant elevated levels of cleaved caspase-3, inflammatory mediators including

interleukin (IL)-1 β , IL-6, tumor necrosis factor (TNF)- α , cyclooxygenase (COX)-2 and phosphorylated NF- κ B, as well as matrix metalloproteinase (MMP) family members including MMP-1,-3,-9, and -13 expression in response to OX-50 treatment (all $p < 0.05$).

Discussion: This study is the first to demonstrate the association of CD44 and apoptosis in tendinopathy. Our data imply that the CD44 may play a role in tendinopathy via regulating expression of apoptosis, inflammation and MMPs.

Young Jung

PhD Candidate, McMaster University, Canada

Christopher Longo

Associate Professor, McMaster University, Canada

Emile Tompa

Associate Professor, McMaster University, Canada

&

Philip DeCicca

Associate Professor, McMaster University, Canada

The Untold Economic Story of Cancer Diagnoses: Longitudinal Study

Objective: Our target objective is to develop a comprehensive understanding of the dynamic effects of cancer diagnoses on labour-market decisions, income, out-of-pocket-costs (OOPC), and potential social inequality over a span of ten years from the point of diagnosis

Approach/Methods: The data used for this study is a date linkage only available in-house at Statistics Canada's head office in Ottawa, Canada. The three key outcomes we will model are:

- 1) yearly labour-market outcomes of individuals diagnosed with cancer (treatment group) relative to their peers (control group),
- 2) out of pocket medical expenses used as tax credits, and
- 3) level of poverty and ten-year survival statistics will also be investigated.

To identify controls, we will undertake a matching approach also known as the "Nearest Available Mahalanobis Metric Matching within Calipers Defined by the Propensity Score". The technique allows for a mix of exact match characteristics and characteristics matched within a defined range. For each case, up to ten controls will be identified. The second stage of analysis will employ various regression modelling techniques. The two-stage linear regression will account for the selection effect and control for selection bias.

Results: Based on the advanced descriptive analysis, the data shows that, on average, cancer lowers the probability of working by 3 % relative to the non-cancer population controls, and the average earning loss is about 12%, and OOPC spending is 20% greater than the comparison/control sample. Additional analysis is currently in progress and will be completed by April 2018. Results will be presented by year (2000-2010), age group, cancer types, sex, province/territory, and urban/rural

Conclusion: Our preliminary results show negative cancer effects on the work status and annual earnings, increase in OOPC over a span of 10 years since the onset of cancer. Overall findings suggest that, in the long run, cancer is more likely to affect survivors' work status than their

earnings. The full analysis will allow us to explore these relationships more completely.

Magdalena Barbara Kaziuk

PhD Student, Jagiellonian University, Poland

&

Waldemar Kosiba

Medical Doctor, Stefan Żeromski Hospital in Kraków, Poland

Influence of Hypertension on the Body Balance

Background: In industrialized countries, hypertension refers to nearly half of the adult population, and is a risk factor of cardiovascular diseases. It's predicted that this percentage will increase and with it number of complications of hypertension, including imbalances. Uncontrolled hypertension, sensitizing the entire system of balance to its effect, interferes formed on a lifetime pattern of stable posture, which leads to falls.

Materials and Methods: Study involved 114 people: 67 women and 47 men, aged: 43-62 (mean age 52), with diagnosed hypertension without comorbidities that may affect balance. Control group were healthy people aged 42-60 years (mean age 51; 60 women and 40 men). The study was performed on two-base stabilometric platform. Consisted of two tests by 30 seconds: first with eyes open, second with closed in the same standing position. The aim was to evaluate the effect of hypertension on body balance what based on an objective method recording movement of the center of gravity during quiet standing on the stabilometric platform.

Results: Patients with uncontrolled hypertension presented worse balance parameters on stabilometric platform. The higher were blood pressure the higher values of balance parameters were achieved. Well-controlled hypertension improved sway path parameter with eyes open, and mean amplitude, size of the marked area in circle with radius of 5 mm and the front margin of safety with closed eyes in control study after 3 months.

Conclusions: Uncontrolled hypertension, which values exceed 140/90 mmHg, worsening body balance control and leads to complications as dizziness and falls. Well-controlled hypertension benefit not only in prevention of cardiovascular events, but also to maintain good body balance, what can prevent falls in the elderly.

Ramesh Kumar

Assistant Professor, Health Services Academy/Chulalongkorn University,
Pakistan/Thailand

Correlates of Knowledge, Attitude and Practices about Health Care Waste Management among Health Workers of Pakistan

Background: Hospitals in Pakistan face the challenge of spread of infections in patients, hospital workers and nearby communities because of poor handling of infectious waste. Well-informed workers who strictly follow the healthcare waste management guidelines can help prevent such a problem in hospitals. We aimed this study to explore the factors affecting the Knowledge, attitude and practices of health workers regarding healthcare waste management in Pakistan.

Methods: Present study is part of our research project, in which we used Quasi-experimental study design. A validated data collection tool was used to collect data from 275 healthcare workers in both hospitals through face-to-face interviews.

Results: The responses to 24 knowledge, 12 attitude and 20 variables on practice were used to create three respective dependent variables for analysis to measure independent association of socio-demographic factors on the health workers' knowledge, attitude and practice. Logistic regression univariate analyses with controlling the confounding factors were used during the analysis. Health workers in younger age groups as compared to older, males as compared to female and paramedics as compared to nurses were statistically significantly less likely to achieve mean score on knowledge and practices about HCWM ($P < 0.05$). Operation theatres workers as compared to others departments were 25 times more likely to be knowledgeable and better practices ($P < 0.05$). Paramedical staff were more knowledgeable and had better practices while handling the healthcare waste as compared to doctors and nursing staff ($P < 0.001$). However, doctors had positive attitude as compare to paramedics and nursing staff ($P < 0.001$). Those workers who had experience of 5-10 years as compared to less than 5 and more than 10 years of experience were 4 times more likely to have positive attitude ($P < 0.02$).

Conclusion: Our study has concluded the need for interventions directed at various groups of hospital workers for them to enhance their KAP and reduce the gap between workers with higher and lower KAP by imparting regular and effective trainings.

Bin Li

Associate Professor, Jinan University, China

Aberrant Expression of Mesoderm-Specific Transcript Homolog Protein (MEST) in Lung Cancer Promotes Invasion and Metastasis

Lung cancer is the most common cause of cancer-related deaths worldwide. Identification of critical regulators and signaling pathways that drive invasion and metastasis is urgently needed. Our recent study identified MEST (Mesoderm-specific transcript homolog protein) as one of the most upregulated genes in highly invasive cancer cell subpopulation. In this study, we aimed to explore the biological function, clinical significance, and molecular mechanism of MEST in lung cancer invasion and metastasis. An increased level of MEST is detected in lung cancer tissues compared with adjacent normal tissues and is an independent prognostic factor for poor overall survival and disease free survival in patients. Gain- and loss-of-experiments indicated that MEST overexpression enhanced the invasive potential of A549 and H1299 cells, whereas knockdown of MEST suppressed invasion. In addition, SILAC (Stable Isotope Labeling by Amino acids in Cell culture) quantitative proteomics was used to screen MEST-regulated proteins, and 136 proteins with significant change in expression were identified. Ingenuity Pathway Analysis (IPA) suggested the role of MEST in the regulation of inflammation pathway. Our experiments confirmed that MEST promotes the nuclear translocation of NF- κ B proteins in cells. Furthermore, valosin containing protein (VCP), a typical NF- κ B pathway trigger, was proved to directly interact with MEST. Using various functional assays and rescue experiments, we demonstrated that MEST serves as a co-factor with VCP to degrade p-I κ B- α and thus activate NF- κ B pathway, converting a profound effect on cancer invasion. In summary, we uncovered the important role of MEST-VCP-NF- κ B signaling cascade in lung cancer progression. Our data suggest MEST as a potential therapeutic target in treating the lung cancer patients with metastasis. [This work was supported by the National Key Research and Development Program of China (No. 2017YFA0505100), the National Natural Science Foundation of China (81773085), and the Fundamental Research Funds for the Central Universities (21617434)].

Ching-Fu Lin

Assistant Professor, National Tsing Hua University, Taiwan

Legitimacy and Accountability Challenges to Global Tobacco Control

Due to the grave threat to global public health posed by tobacco consumption and its significant economic, social, and trade ramifications, there has been considerable momentum to address the issue of tobacco control at the national, regional, and international levels. The WHO Framework Convention on Tobacco Control (WHO FCTC) represents the most significant milestone, as well as a paradigm shift in regulatory philosophy to combat noncommunicable diseases (NCDs) on a global scale. With 181 Parties, the WHO FCTC is the most universally recognized treaty under the United Nations.

As a multilateral normative anchor of global tobacco control, the WHO FCTC has generated fruitful results in many respects. A considerable number of Parties have undertaken national legislative and policy initiatives pursuant to the obligations stipulated in the WHO FCTC, indicating sufficient compliance. However, the manner in which the WHO has more recently exercised its authority may breed potential governance challenges in the future due to the potential decline in the accountability of the treaty regime. Some of these issues relate to the “internal accountability” (accountability of the treaty regime to its formal members) of the WHO FCTC, such as decreasing participation among developing country Parties and the lack of a complete and functioning dispute settlement mechanism. Other issues are concerned with the “external accountability” (accountability of the treaty regime to external stakeholders) of the system, such as the tightening up of rules to restrict participation by members of the public. Such issues of internal and external accountability raise important normative questions, threaten to undermine the institutional legitimacy, governance effectiveness, and sustainable development of the WHO FCTC, and have broad implications for the contemporary system of global governance.

This paper endeavors to offer a normative mapping of accountability deficit issues—both the internal and the external dimensions of the problem—faced by the WHO FCTC. Further, the study argues that the treaty regime must proactively address such issues in order to move forward as the leading institution for global tobacco control. Part II reviews the potential distributional justice and accountability deficit linked to declining participation among developing country Parties, as well as the underdevelopment of the dispute settlement mechanism, highlighting their adverse effects on the internal accountability of the WHO FCTC. Part III turns to the external dimension of the WHO FCTC’s accountability profile, analyzing the problematic Rules of Procedure, which unduly restrict the

attendance of members of the public in the COP and other meetings. Based on a careful examination of the above issues, Part IV concludes by identifying venues through which the WHO FCTC may strengthen its overall accountability and secure better governance—in terms of both input and output.

Pravati Mahapatra
Professor, Utkal University, India

**A Study on Retinoic Acid induced Formation of Blood
Vessels during Tail Regeneration in the Indian Tree Frog
*Polypedates Maculatus***

The influence of retinoic acid (RA) during tail regeneration in anuran tadpoles of *Polypedates maculatus* has led to bewildering results. In particular, the development of ectopic limbs and large bulbular mass at the site of regenerating tail are matter of special interest as investigation in this direction shall provide valuable insights altogether into the mechanisms of abnormal tissue growth, homeosis and appendage regeneration. Our present investigation based on the study of teratogenic effect of RA during tail regeneration in the Indian tree frog, *P. maculatus* provides preliminary evidence of a negative regulatory effect RA holds on the regeneration of the three major blood vessels of the tail mesenchyme namely the dorsal aorta, posterior cardinal vein and the dorsal lateral anastomosing vessel where the regeneration was suppressed in most of the tissues investigated. However, their regeneration was found to be complete in the control counterparts. Surprisingly, histological analysis of the tissue regenerates, in particular reference to the tip region is indicative of development of numerous new structures having blood vessel morphology containing blood cells. Such cells stained positive for FGF2 (Fibroblast growth factor 2). In fact, FGFs are known to control neovascularization by influencing other growth factors and chemokines. Hence, based on our experimental observation we hypothesise a possible role of RA in inducing the development of new blood vessels (neovascularization) during abnormal tail regeneration and formation of large bulbular mass that could also serve as a tumor model in a vertebrate system.

Yim Wah Mak

Associate Professor, The Hong Kong Polytechnic University, Hong Kong

Association between Screen Viewing Duration, Sleep Duration, Sleep Quality and Quality of Life among Young Children in Hong Kong: Implications for University Students Engagement in Service Learning

Excessive electronic screen viewing often been considered to have negative impacts on physical, psycho-social health on children and adolescents. However, a few studies were investigated the relationship between screen viewing and sleep quality among young children.

The present study examined the duration of screen viewing among young children aged 6-12 and its relationship with sleep duration, sleep quality and quality of life. A cross-sectional survey was conducted in 2012. Parents of children from 4 primary schools were invited to complete a set of questionnaire. The questionnaires were distributed to children through the schools and completed by the parents. A total of 1556 sets of questionnaire were collected (response rate: 72.24%). Results indicated that the prevalence of any type of screen viewing (television, computer, mobile phone, game console and other portable media) was 94.8%. On average, children used 2.87 types of screen with increasing trend in average number of types of screen use with advance in age. On average, children spent 351 minutes per day using screen. The average time spent per day on TV watching and on using the computer were 166 minutes and 105 minutes respectively. They spent about half an hour a day on game console, mobile phone use and other portable screen devices. Only 17.4% of the children achieved the recommended at least 10 hours sleep per day. Comparing children who spent equal or more than 120 minutes vs. <120 minutes per day on screen viewing, the high use group of children had daytime sleepiness and lower quality of life were observed. The results demonstrated a trend of increase in the prevalence and number types of screen viewing and their effects on the sleep quality and quality of life among young children.

Bramanandam Manavathi

Associate Professor, University of Hyderabad, India

G2/M Regulator HPIP is a Substrate of Anaphase Promoting Complex/Cyclosome APC/Cdc20 during Mitosis

Hematopoietic PBX-interacting protein (HPIP) has been demonstrated to play a role in cell proliferation in addition to its role in cell invasion, epithelial to mesenchymal transition (EMT) and tumor metastasis. Several studies showed that HPIP is frequently overexpressed in many tumors that include glioma, invasive ductal carcinoma, ovarian carcinoma, etc. Although previous reports suggest that HPIP promotes cell proliferation, the precise mechanism of its regulation remains largely unknown. Here, we identified that HPIP protein levels oscillate during cell cycle. HPIP is proteolysed by anaphase promoting complex/cyclosome (APC/C)-CDC20 complex and this degradation is necessary for proper cell cycle progression. Live cell imaging demonstrated a significant delay in cell division upon HPIP silencing in HeLa cells. We found that HPIP degradation requires the presence of its D box motif but not KEN domain, where the D box mediates interaction between HPIP and CDC20, a coactivator of APC/C complex and therefore, D box mutant of HPIP is resistant to proteolysis by APC/C-CDC20. We further show that HPIP stabilizes Cyclin B1 during the mitosis to enhance the G2/M transition by antagonizing APC/C functions and thus acts as a pseudo-substrate. HPIP mediated stabilization of CycB1 is necessary to allow cells to properly enter and exit mitosis. Together our findings have shown that HPIP is a critical regulator of G2/M transition during cell cycle and its proteolysis by APC/C-Cdc20 complex ensures proper cell division.

Roberte Manigat

Public Health Medical Specialist, Scientific Counselor, Association de
Valorisation des Relations Internationales Scientifiques et Techniques
(AVRIST), France

&

Jean Claude André

Directeur de Recherche, Centre National de Recherche Scientifique
(CNRS), France

The Impacts of Climate Change in Public Health Policy

Context: The impacts of Climate Change on the development of micro-organisms are no longer questioned, notably with the emergence of infectious diseases. However, addressing health risks arising seem to lead to conflict between real policy and ethical values, including in public health programme planning.

In our analysis, centred on dengue, we explore the question of data for public health policy, along with their direct and interdependent consequences, with France, mainland and overseas territories, as a starting point.

Method: Considering the huge amount of data available and speed of generation, we opted for data published online, using 4 criteria applied to rigorously select relevant information and narrow it down. Data found included health centred and environmental centred indicators and was analysed for most affected territories. We developed a second step in our analysis adding social and economic indicators, and the results achieved in reaching the Millennium Development Goals (MDGs).

Results: Surveillance and information systems evolve in an ongoing manner notably to adapt to emerging risks. However, long term geographic and other crucial data are not always available or robust for certain territories. We suggest concrete means to apprehend and tackle the issue differently.

Disparities in health and access to health care are on an astonishing increasing trend with a growing income gap between the wealthiest and the poorest, including in high-income countries. This can affect many sectors of society's organization and lead to dreadful consequences

Main messages: When any steps in the elaboration of a public health policy is disregarded or not well conducted, proper implementations can be jeopardized. Global health is not merely a matter of public health but an issue of political and societal choices, with ethical considerations pushed forward on the agenda.

Kevin Mearns

Professor, University of South Africa, South Africa

&

Jana Liebenberg

Graduate Student, University of South Africa, South Africa

An Evaluation of the Public Perception of the Role and Need for Zoos: A National Zoological Gardens of South Africa Perspective

The future existence of zoological institutions is in a precarious state. Zoos are viewed by some people as cruel and redundant, whilst others are of the opinion that zoological institutions are the last hope and haven for the survival of animal species facing the ever-increasing risk of extinction. This study investigated and evaluated users' perceptions and attitudes towards the National Zoological Gardens of South Africa, with particular reference to interest, satisfaction and an overall understanding of the roles zoological institutions claim to play. The study further strives to provide recommendations, based on the results obtained during the investigation and evaluation. The study also investigates ways to mitigate problem areas in order to obtain higher visitor satisfaction amongst users' and potentially attracting non-users to visit the National Zoological Gardens of South Africa thereby contributing to the long-term sustainability and survival of zoological institutions.

Shigeaki Mishima

Associate Professor, Osaka University of Economics, Japan

Job Satisfaction in a Japanese Community Pharmacy

Because community pharmacists who belong to traditional chain across the globe had lower or the lowest level of job satisfaction than their professional peers in other settings (Barnett and Kimberlin 1984; Humphrys and O'Brien 1986; Cox and Carroll 1988; Bond and Raehl 2001; Hassell 2006; Seston, et al. 2009; Hincapie, et al. 2012; Al Khalidi and Wazaify 2013), a number of studies has addressed the importance of job satisfaction for pharmacist.

For patients, in terms of quality of healthcare service, pharmacist's job satisfaction is very important. Bond and Raehl (2001) verified as satisfaction with time to provide clinical services increased, the risk of dispensing errors decreased. For community pharmacy companies, in terms of organizational productivity, it is also important. Segal (1981) believed that job dissatisfaction of pharmacists have a negative impact to the net productivity of an organization in an indirect way. This was echoed in some studies as they pointed out that dissatisfaction with the profession and lack of challenging work lead pharmacists to turnover intentions (Wolfgang 1987; Gaither and Mason 1994).

If that is the case, what kinds of operations are sources of job satisfaction for pharmacists actually? Although there are so many literatures in terms of this theme around the world, Japanese pharmacists have not been researched. This study focuses on Japanese pharmacists in community setting in order to extract some operations which provide them job satisfaction. Ethical approval was obtained for this study from University College London (UCL) ethics committee on 15th September 2016.

This study has two research stages for participants. First ones were done with questionnaire form through sending it by email before conducting interview. Second ones were semi-structured interview with using the result of first stage. All participants were received cover letter and leaflet which explained the purpose, method and information control of this research before being a participant. Community pharmacists practicing in the areas around Tokyo and Osaka were contacted through public relations department of some multiple companies which represent Japanese huge ones. After obtaining company's consent, respondents who share characteristics relevant to this study were elected by researcher.

The necessary conditions of making for job satisfaction in Japanese community setting are (1)to increase much clinical operations which have contact with patient such as prescription optimization and/or other healthcare profession such as prescription question to prescriber, (2)to be

respected their professionalism from others. This conclusion is in consistency with previous studies which were conducted around world.

Helen Naug

Senior Lecturer, Griffith University, Australia

Natalie Colson

Senior Lecturer, Griffith University, Australia

&

Indu Singh

Associate Professor, Griffith University, Australia

Targeting Diabetes in the Workplace: An Intervention Aimed at Raising Awareness and Reducing Occupational Risk Factors among Transport Workers

Background: Metabolic syndrome (MetS) is a chronic condition defined by the co-existence of measurable metabolic risk factors that place an individual at high risk of cardiovascular disease and type 2 diabetes. Sedentary behaviour and poor food choices are established risk factors for developing MetS. Transport workers have a unique work environment in that they are confined to the driver's seat of a vehicle for prolonged periods. In this study, we investigated the incidence of MetS among transport workers, and designed and evaluated the efficacy of an educational workplace intervention specifically targeted at transport workers.

Methods: Ethical approval and written consent was obtained from a recruitment pool of eighty-nine transport workers (n= 89) from four depots in south-east Queensland. Baseline metabolic data were collected through anthropometric measurements, blood collection and diet/lifestyle questionnaires. Metabolic risk factors that were analysed included waist circumference; blood pressure; fasting glucose; blood triglycerides and HDL -cholesterol. Three interactive seminars were scheduled and delivered over a 3- 6 month period. At the end of the period, data collection was repeated. An additional survey was distributed at the final session.

Results: At the commencement of the study, 46% of the participants exhibited 3 or more of the metabolic risk factors that characterise metabolic syndrome. 43% of participants remained committed to the intervention and provided pre and post intervention data. Of these, 26% showed a decrease in one or more of the risk factors associated with metabolic syndrome. Qualitative feedback indicated that workers benefited from the program, especially regarding their awareness of risks associated with their profession.

Conclusions : Transport workers are at risk of MetS due to the sedentary nature of their occupation. This study provides evidence that work-place interventions that empower the workers with education and awareness can improve the well-being of a percentage of the driver

population. In addition, employers and training managers become aware of the hidden health risks inherent in this occupation.

Michael O'Driscoll
Researcher, Middlesex University, UK

The UK Health and Social Care Act (2012) and New Public Management – More of the Wrong Medicine?

This paper will examine recent restructuring of the NHS following the Health and Social Care Act (2012) and the apparent short term effects of this restructuring. The focus of the paper will be an examination of the extent to which we can understand the changes in the Health and Social Care act and subsequent related 'reforms' in the NHS in terms of the public administration model known as 'new public management' or whether other models of public administration management may be more consistent with these changes. There is also a focus on the 'democratic deficit' relating to these reforms in terms of the lack of political consent or consultation and how public discourse relating to the NHS has changed since these reforms began.

Fredrick Okaka

Postdoctoral Research Fellow, University of Venda, South Africa

Health Vulnerability and Adaptation Measures of Households in Flood Prone Informal Settlements in the Coastal City of Mombasa

The problem that this study intends to address is the health vulnerability of households in flood prone informal settlements in the coastal city of Mombasa in Kenya and their adaptation measures. Mombasa city is situated in low lying area close to the sea which make it highly susceptible to flooding in case of any rise in the sea level. In the recent past, significant flooding events have already been experienced in the city. Most affected areas are the informal settlements which are mainly located in areas that are severely prone to flooding. However, there is dearth of evidence regarding vulnerability of households living informal settlements in the city to the health risks of flooding and household coping mechanisms. The study participants were randomly drawn from three purposively selected informal settlements in Mombasa City. Health vulnerability was assessed in terms of flood exposure, flood sensitivity, and flood adaptive capacity. While adaptation measures was explored based on the autonomous steps that household have adapted in response to the health risk of flooding. Primary data were collected using questionnaire, Key Informants Interview and Focus Group Discussions. Data were analysed using both quantitative and qualitative methods of analysis. The findings showed that up to 40.8% of the households had a high level vulnerability, 46.9% had a medium level, while only 12.3% had low level vulnerability. The findings also showed that household characteristics, water, sanitation and environmental risk factors had an impact on the level of household vulnerability. Some of the coping strategies that households had adapted included cleaning living area to avoid infestation by vectors, clearing trenches to unblock drainage channels, always washing after exposure to flood water, piling sand bags around the house and staying alert to warning from neighbours. The study concludes that for poor people living in flood prone areas in urban setting flood early warnings, flood prevention and mitigation strategies need to be strengthen as these people are exposed to greater health problems.

Paolo Orlando

Professor, Università degli Studi di Genova, Italy

&

Fernanda Perdelli

Professor, Università degli Studi di Genova, Italy

Public Health Changes from Ophthalmology Surgery Advancement & Population Ageing

The ageing of the population and the development of new health technologies have a serious impact on health systems.

An example of this situation is the considerable increase in the demand of ophthalmic surgery (MDC-02), which is mostly needed by the elderly population. At the same time the development of surgical technology like retinal surgery, laser surgery, etc. has allowed to perform a faster, less invasive and less complex surgery, which is possible to execute in non-hospital outpatient clinics.

A careful analysis of recent years Italian health data has shown that the Italian-NHS has decreased its production of MDC-02 (-68.4% between 2005 - 2015), failing to meet these needs, which have been satisfied by privateclinics outside I-NHS.

In 2005-2015 the activity of the Italian-NHS for MDC-02 has been deeply transformed making public structures the place for operations on clinically more severe patients or on those needing a more complex surgery, reducing by 444,010 cases the number of operation made by the Italian-NHS.

At the same time the number of cases that, because of their greater complexity, require to be performed in hospital with a period of hospitalization of one or more days have increased by 25,8%.

For this reason there is a situation in which public hospitals treat serious patients/complex operations with the consequent need of a different organization and integration with the other hospital activities.

A similar situation to I-NHS there is in other European NHS. The internal organizational model of ophthalmology departments and the structural features of the hospitals must therefore be reviewed according to the changed characteristics of the activity and the patients treated.

The report illustrates the I-NHS demographic and activities data, their interpretation and the organizational models for hospitals with ophthalmological departments deriving from this study.

Eva Orosz

Professor and Head of Doctoral Programme in Social Policy, Eötvös
Loránd University, Hungary

Catching up with or Lagging behind the EU15 Countries? Revealing the Patterns of Changes in Health Status, Health Spending and Health System Performance in Four Post- Socialist EU Countries

Purpose: The presentation compares long term trends in health status and health systems characteristics across four post-socialist EU countries focusing on the question of *whether the processes of catching up or lagging behind the EU15 can be discern*. The four countries often identified together as Visegrad Four or V4 are: Czech Republic, Hungary, Poland and Slovakia. The fact that they inherited similar characteristics of health systems from their socialist past and had relatively small differences in terms of health status and health spending in the early 90s underlines the relevance of their comparison.

Methods: The paper presents the first results of an ongoing research that combines descriptive, statistical analysis of key socio-economic, health status and health expenditure indicators with qualitative analysis of changes in health system characteristics and health policies, in particular reactions to the 2008 economic crises.

Key findings: As a whole, *diverging trends* have been emerged between Hungary and the other three countries (V3 countries). The V3 countries have been considerably *catching up* with the EU15 in most of the indicators examined. To the contrary, the Hungarian health system has drifted into a *lagging track* compared not only to the EU15, but to the V3 countries also. The decline in the Hungarian public spending on health due to the 2008 economic crises was far deeper than in the V3 countries, as well as more severe than that the country's economic situation would have justified. The gap between Hungary and the Czech Republic in terms of the overall performance of health systems (measured by amenable mortality) has been alarmingly increasing. Finally, the presentation puts forward initial ideas concerning a conceptual framework – to be developed in the next phase of the research – for the interpretations of the empirical results.

Diana Pacheco Barzallo

Research Fellow, Schweizer Paraplegiker-Forschung, Switzerland

Formal Care & Working Decisions: The Situation of Informal Caregivers

Informal care has significant effects on caregivers' working decisions. In most of the cases, caregivers reduce their working time, or even stop working in order to care for a family member. Access to formal care can reduce, in some extent, the burden on family caregivers by allowing them to keep their jobs outside home.

Compared to related literature that focuses on caregivers of old people, this paper analyzes the case of caregivers of people with spinal cord injury (SCI). SCI is of special interest because it is mostly the results of a traumatic event, which requires long-term care. Since the injury can happen at any age, people with SCI and their caregivers are from different ages and socio-economic background.

Using a comprehensive cross-section survey of caregivers in Switzerland (N=717), we estimate whether access to formal care increases the working hours of family caregivers. First, we implement a non-linear model to estimate the probability of working if the caregiver has formal care support. And second, using a linear model, we estimate the effect of access to formal care on the monthly working hours.

The results suggest that people who have access to formal care can increase, on average, 10% their working time. This result holds only for people who were working before they became caregivers. For people who were unemployed before becoming caregivers, access to formal care does not change their working decisions. Nevertheless, most caregivers are heavily overloaded. Therefore, access to formal care gives some relief to caregivers, but it is very unlikely they get enough time to increase the working time outside home.

Abida Perveen

General Manager Production Operations, High-Q Pharmaceuticals,
Pakistan

**A New Dynamic for the Safety of Drugs Product during
Supply Chain - A Big Challenge - Serialization**

The voice of serialization is striking around the world for the effective monitoring against counterfeit during supply chain of pharmaceutical drug products. Records evident that the counterfeit prescription drugs have become an exploding industry with an estimated market worth of \$75 billion a year worldwide and as per WHO it has raised about 90% in 5years. The high price of prescription drugs and the relative ease of duplication and diversion make them a prime target for counterfeit.

The system of serialization is ensured by the data matrix code instead of formerly used bar code, the ability to track each drug unit is provided by gathering the information of each unit at every single step and traceability is provided by its pedigree, this ensured the full track and trace of drug product from Manufacturer to the point of dispense.

Serialization regulates the controlling and monitoring of highly complex distribution network from manufacturer to consumer in which a product change hands as many as 10times. This system has been regulated by GS1 organization through harmonization and issuance of GTIN numbers to each pack type. Its purpose is to provide a common foundation for business by uniquely identifying, accurately capturing and automatically sharing vital information about product and its location.

This system introduces electronically data capture technology in health care sector without human involvement and helps to provide automatic identification of Drug Product i.e. track and trace is applied to primary, secondary and tertiary commodities of the product to retrieve pre-defined information of every item that is current, correct and available via single globally accessible network.

The track and trace system enable safer and more efficient supply chain to ensure that the current product and monitoring device is available at the right place and the right time for the right patient. This is usually done with hierarchy level at different stages from device level to network level.

At last it provides heightened level of assurance that at least the serial number on the product packages match those issued by the manufacturer and are linked to specific shipments. At large it safeguard the patient safety in terms of Quality, safety and efficacy.

Norma Raynes

Director, From Generation to Generation, England, UK

Public Health Approaches to Service Provision to Promote Benefits in Childhood & Older Age

The approach of Public Health to understanding the causes of problems is distinguished by its focus on the interrelationships between neurophysiology, sociology and experimental observations, for example that is its identification of a range of different kinds of factors that contribute to any population based problem. (Marmot, Middleton, Acheson, Cochrane). It breaks down closed system thinking, and can be applied to the building of services to help prevent and contribute to the reduction in the problems of low self-esteem, under-performance and depression in school age children and older people.

A model that takes a public health approach to the provision of services for these two populations challenges the building of silos and looks to using a common space in local communities to address simultaneously the sets of pathologies that beset the two groups.

Our work addresses in one place and at the same time the needs of both older and school age members of communities. We have built and tested a model to bring the two populations together in a community setting meant only for one of the populations. Testing the model in practice in 15 schools we have been able to show, younger people are getting additional time and input from the older members of their local community and enrichment of learning opportunities which enable them to achieve more and reduce low performance and self-esteem. Engaging with school age children, older people can be seen to and feel they are contributing to the development of the community. They gain a sense of self-worth and become part of a key institution in their local communities.

In our experimental work we have been able to show the cost and benefit of this school based service we have developed and refined. We think now that the model is robust enough after five years of testing and refinement to make it freely available to any community where there is an interest in helping demonstrate that older people are capable of making important contributions to life and not constituting a burden and enriching the educational experience of school age and nursery aged children.

Our model is simple and easily implemented. In return we would value the collection of data about its impact on old and young members of society. We can provide key questions to which we would like to get answers.

Sime Smolic

Assistant Professor, University of Zagreb, Croatia

Marija Beg

Assistant Professor, University of Zagreb, Croatia

&

Tamara Sliskovic

Assistant Professor, University of Zagreb, Croatia

Working Hours across Physician Specialties in Croatia - Key Findings and Implications

We use anonymized data of medical doctor's workload in public health sector institutions in Croatia in 2016. The data were obtained from the Financial Agency (Fina) i.e. centralized payroll accounting (CPA) for the public sector and budget beneficiaries in Croatia. Our sample consists of 11,584 medical doctor subjects or practicing physicians (medical specialist, specializing doctors, trainee doctor/intern and doctors without specialization) who were registered in the CAP system within 2016, and who worked in the public health system either in full or part time job hours. CAP data reflect only one dimension of the workload of medical doctors in Croatian public health system, and the second dimension is in the form of natural data that originate in the database of Croatian Health Insurance Fund (CHIF).

For the purpose of this paper, we use the natural indicators for primary health care doctors (family doctors, paediatricians and gynaecologists); precisely the average number of enrolled patients, the average daily number of patients, monthly number of procedures and treatments, and age structure of insureds. On average, doctor's workload was 43,3 hours or 8,3 percent higher when compared to normal working week of 40 working hours. Almost 75 percent of observed doctors worked on average 40 to 50 hours per week, and one of six doctors had weekly workload 51+ hours. We found quite large gender differences in working hours; share of women is higher in the area where the average number of hours worked weekly is 44 or less, and the share of men is significantly higher in the area where the average number of hours worked weekly is 45 or higher. Full time equivalent (FTE) analysis revealed much higher workload of doctors in outpatient care (14 percent above the average), and inpatient care (10 percent above the average). Doctors in public general hospitals, clinical hospitals, and clinics were working 16, 11, and 11 percent above full time annual workload respectively. Heavy workload is found for surgical specialties (abdominal surgery, vascular surgery, neurosurgery, thoracic, general or children's surgery), and for anaesthesiology, reanimation and intensive medicine, cardiology, gastroenterology, gynaecology and obstetrics, urology and paediatrics. The average workload for early mentioned medical specialties was 20 percent or more above the average workload for all doctors.

This finding may shed light on severe issues of overtime work of doctors in Croatian hospital, and consequences of this practice, both on quality of health services and doctors' job satisfaction. In addition, this analysis could serve for more efficient planning both the quantity and type of specializations necessary in health system. For many recently accessed EU countries, comprehensive human resources analysis in health care sector should be the starting point in shaping health policies that will response to substantial emigration of health professionals.

Harald Stummer

Professor, UMIT – University for Health Sciences, Medical Informatics and
Technology, Austria

Klaus Buttinger

Medical Doctor, Associate Researcher, UMIT – University for Health
Sciences, Medical Informatics and Technology, Austria

&

Silvia Angerer

Senior Scientist, UMIT – University for Health Sciences, Medical
Informatics and Technology, Austria

The Influence of Imaging on Stroke Outcome – Evidence from Austria

Background: Acute Stroke is known as a neurologic emergency, which should be treated as soon as possible. The differences in treatment are dependent on the subtypes of stroke (intracranial bleeding/brain infarction). To discriminate between bleeding and infarction it is necessary that the patients undergo CT or MRI before treatment. Many recent studies suggest rapid neuroimaging (CT/MRI) for better outcome. However an association between delay of medical imaging and outcome (mortality rate) has not been systematically investigated.

Method and Results: Data was collected over a period of 9 years (2007 – 2015) by using clinical data (N = 48,355). Binomial logistic regression was used to estimate odds ratios (OR) and 95% confidence intervals (CI) for the association between age (5 groups) as well as neuroimaging (none/CT/CT-Perfusion/MR/MR-Diffusion and/or MR-Perfusion) and mortality-rates (Innerhospital/7/30/90 days) for two main stroke subtypes (Intracranial Bleeding/Brain Infarction) using Stata ©. In several models controlling for patient age and severity of stroke using common stroke scales (Barthel Index) MRI was associated with a lower mortality rate (Innerhospital/7/30/90 days after incident). However, the time between the stroke and imaging seems to be as important as the better system of imaging.

Conclusions: In patients presenting with clinical signs of acute stroke doing MRI was associated with a lower mortality rate (Innerhospital/7/30/90 days after incident). However, in future research, better standardized routine data from stroke registers should be able to compare pairs of patients with the same level of morbidity, as controlling for Barthel-index, what is a nursing and life-domain index, cannot standardize patients the way it needs to be to be totally sure, even if the results are quite unambiguous.

Robertson Tengeh

Head, Department of Entrepreneurship and Business Management, Cape
Peninsula University of Technology, South Africa

&

Phikiso Ziyanda

Graduate Student, Cape Peninsula University of Technology, South Africa

**Intra-Family Succession in South African Townships:
Women's Account of the Desirable Attributes**

Although it is customary that family-owned businesses would want to ensure an effortless transition from one generation to another, many a times the transition efforts are comprised in circumstances where the incumbent does not know what to look for in a potential successor.

Aim: Accordingly, this article investigates the qualities and attributes which family-owned businesses desire in a potential successor.

Methods: The study was conducted using a mixed method approach namely, quantitative and qualitative research method. This paper was based on quantitative data from 120 participants collected by the way of semi-structured questionnaire. As such, the study benefited from the qualitative insights associated with the use of open ended question in the questionnaire. The data was analysed using Statistical Package for Social Sciences (SPSS) software.

Results: The results suggest that the incumbents prefer the potential successor to have management skills, leadership skills, ability to relate well with other members of the family, interest in becoming a successor, possess greater aptitude than other members of the family, understands the business's vision, be trustworthy, be committed to the business, has management experience, must be related by blood or law and able to balance the interests of the family with that of the business.

Value/contribution. This paper presupposes that understanding the attributes desired by the incumbent will impact on the succession process and the extent to which a family member is chosen to be a successor. Through the narratives of women owners and managers, this paper contributes to the succession planning discourse with a specific reference to family-owned businesses in South African townships.

Marianne Vardalos
Professor, Laurentian University, Canada

**Not a Chemical Imbalance, but a Power Imbalance:
Why the Biomedical Narrative of Depressive Disorders must
be Replaced by a Sociological Critique of Neoliberal
Meritocracy**

In preparation for World Health Day in 2017, the United Nations reviewed the best independent evidence available on depression, distress and anxiety. In a statement read by a representative of the UNHO, the world was told that “the dominant biomedical narrative of depression” is based on “biased and selective use of research outcomes” that “must be abandoned”. What was the UN’s recommendation to tackle what it called an epidemic? To move from “focusing on ‘chemical imbalances,’” to focusing more on “power imbalances”.

Sociologists calling for a more critical epidemiology of depressive disorders, have long held that individual distress in all its forms, is not individual at all, and is, almost without exception, linked to the social world. Depression, anxiety and grief are not chemical or neurological diseases, but biological manifestations of social needs not being met. All humans require certain social conditions for survival no different than the physical requirements of food, water and rest. When an individual exhibits signs of depression, it is a form of grief or lamentation that one’s social conditions are unacceptable.

Without self-determination, meaningful work and lasting relationships of attachment, humans cannot survive. Informed by the recent study by Thomas Curran and Andrew Hill (2017), we identify the root cause of most depressive disorders as disempowerment. As long as neoliberal meritocracy rewards power, reveres domination and encourages individual competition over cooperation, there will be immutable, incurable feelings of hopelessness.

In this presentation, we propose a social cure to the social epidemic of chronic despair: solidarity. The only possible antidote to agonial, alienating neoliberalism is to reject absolute individualism and reintroduce into society, collective values.

Thomas Wickizer
Professor, The Ohio State University, USA

Improving Quality and Outcomes in US Workers' Compensation

The US currently has the lowest labor force participation rate in its history. One of the reasons for the low labor force participation rate is the prevalence of occupational injuries that result in long-term work disability. Often such injuries are inappropriately diagnosed, or treated, or both. Injured workers suffering long-term disability have a greatly increased likelihood of going on Social Security Disability Insurance (SSDI), a federal program that provides permanent wage replacement and access to medical care via Medicare. In 2016, the SSDI program became insolvent. Congress appropriated new funding to keep SSDI solvent through 2026.

In 2001, the Washington State Department of Labor and Industries (DLI) initiated an ambitious pilot project to create a large-system transformation to improve quality and outcomes for injured workers receiving occupational care through the state workers' compensation system. Two pilot Centers for Occupational Health and Education (COHE) were created to enroll community physicians in the pilot, provide care coordination, and offer financial incentives to physicians if they adopted best practices. A previous detailed evaluation, based on the health care received by 105,000 patients, documented significant reductions in one-year disability ($p < .01$), along with decreased disability and medical costs ($p < .01$). In 2011, the evaluation results led to the passage of a state law expanding the COHE pilots on a statewide basis and requiring all injured workers to have access to care provided through the COHE model.

We recently obtained long-term, 8-year follow-up data on the original 105,000 patient cohort. We have conducted regression analyses to determine the effect of COHE on transition to SSDI, as well as the impact on work disability and medical and disability costs. These analyses have documented favorable long-term outcomes. The COHE was associated with an 18% reduction ($p < .05$) in the odds of a patient going onto SSDI and permanently exiting from the labor force. It was also associated with significantly decreased combined medical and disability costs (\$587 per claim; $p = .05$). Reflecting the favorable SSDI and cost outcomes, the COHE was associated with a significant difference in the rate of disability days per 10,000. The rate of disability days per 10,000 over the 8-year follow-up period among the 51,142 patients treated through the COHE was 391,559. In contrast, the rate among the 54,788 non-COHE comparison patients was 646,724 ($p < .01$), a difference of 255,165 disability days per 10,000 injured workers.

These findings suggest that successful large-system transformations can have important long-term favorable outcomes. In our study, these outcomes

took the form of substantial reductions in the work disability burden among injured workers and corresponding reductions in medical and disability costs. Our pilot experience has had significant impact beyond Washington State. The federal Department of Labor and Social Security Administration have included funds in the 2018 federal budget to support large demonstrations of the COHE model in two or three others states, along with a comprehensive evaluation.

Tesfaye Woldesemayat
DCEO, Hamlin Fistula Ethiopia, Ethiopia

Modelling and Optimizing Ethiopian Patient Referral and Care Pathway using Supply Chain Management Knowledge and Genetic Algorithms

This research paper aims to conceptualize the Ethiopian patient referral and care pathway as a supply chain and borrows knowledge and best practice from the field of supply chain to optimize flow across the three-tier health care supply chain of the country. Unlike most other supply chains where goods or services flow, this supply chain navigates patients from downstream to upstream through the treatment and referral pipeline. Patients are not only considered as objects that flow through the channel but they are entities capable of interacting with other entities and co-create value in the health care supply chain. Genetic Algorithms (GAs) are used to optimize conflicting multi-objectives through, first, multi-population trial runs and then through simulation runs that search for convergence to the true pareto-front. Optimized run results are then compared to actual performance of the current referral system in selected health institutions from Addis Ababa City. Convergence to pareto-optimal solutions was achieved and better and more optimal solutions were produced. It is recommended that knowledge from supply chain management and optimization tools such as GA can be used to streamline patient flow within and across the health-tier system.

Wei Yang

Lecturer, King's College London, UK

Catastrophic Health Payments among Older People in China. What if we Count for Indirect Costs?

Indirect costs can constitute a substantial part of total patient care, especially for older people. While these costs may be deemed as irrelevant from health care viewpoint, this is not the case for health care provided to older people. Using an individual level dataset—China Health and Retirement Longitudinal Survey Dataset 2015, this paper compares the level of catastrophic health payment for inpatient care before and after the inclusion of indirect costs (e.g. productivity loss, carer, accommodation, food and transportation costs). Concentration Index is used to measure the distribution of catastrophic health payments across income groups. The study finds that there exists significant differences in terms of catastrophic health payments after considering indirect costs. Indirect costs account for 9.5% of the total patient costs. The health payments are 13.64% more likely to be catastrophic when indirect costs are included in the analysis; and the economic burden of these costs is concentrated disproportionately among the poor elderly. The study calls for a more comprehensive and effective financial protection package which covers part of the indirect costs for older people.

Adel Zaki

Professor, Alexandria University, Egypt

Gamal El Sawaf

Professor, Alexandria University, Egypt

Ghada Abu-Sheasha

Lecturer, Alexandria University, Egypt

&

Ola Aly

Health Governance Specialist, Alexandria University, Egypt

Sales of anti-Diarrheal Drugs as an Indicator for Rationality in Treating Childhood Diarrhea, Alexandria, Egypt

Objective: We intend to test the hypothesis that evidence based recommendations in the last two decades about the treatment of childhood diarrhea positively influence the pattern of sales of anti-diarrheal drugs in Alexandria, Egypt.

Methods: We collected data from the sale records of all drug companies in Alexandria Egypt in the last 14 years (from 2003 to 2016). Only sales of anti-diarrheal drug syrups and ORS sachets were collected (the number of units in thousands for each year).

Based on WHO and UNICEF recommendations we divided anti-diarrheal drugs into 3 categories:

1. Rational drug group (ORS and Zinc preparation)
2. Irrational drug group (adsorbents, combination drugs, and Nifuraxozide)
3. Metronidazole.

Results: The following findings are considered as indicators for non-adherence of the health policy makers and physicians to the available evidence based guidelines and recommendations of the WHO about the rational treatment of diarrhea in children.

1. Sixty three percent of the sales of antidiarrheal drugs are irrational.
2. -The ratio between irrational to rational antidiarrheal drugs is increasing from 70/30 in the year 2003 to 85/15 in the year 2011. This high ratio is nearly kept stationary in the following years up to 2016.
3. Nifuroxazide - which is an antibiotic category not recommended in treatment of diarrhea- represents 31% of all sales.
4. Though WHO recommended the use of zinc preparation since the year 2004, this was not reflected on the sales of zinc.

5. Despite the strong recommendations by WHO against the use of adsorbent drugs and combined drugs, the sales of these drugs exceed the sales of ORS.

Conclusion: The health policy makers in Egypt need to revise their policy about the marketing of antidiarrheal drugs which have been proved to be of no value.

Ting Zhang
Weifang Medical University, China
&
Yuhan Zhao
Weifang Medical University, China

The Present Situation and Countermeasures of the Residual Risk of Blood Transfusion - Taking Weifang City as an Example

Purpose: The residual risk of HIV infection transmitted by the transfusion after the screening of anti- HIV in the blood center under the premise of no fault transfusion was evaluated by investing the HIV infection in unpaid blood donors in Weifang during 2007-2017, and the establishment of a reasonable risk sharing mechanism was discussed.

Methods: The results of the initial screening and confirmatory test of HIV project of the unpaid blood donors during 2007-2017 were collected, and the HIV prevalence rates of the repeated donors and the blood donors for the first time were calculated. Also the residual risk of HIV transmitted by blood was studied by using the prevalence rate/window-phase transfusion model.

Results: The prevalence rate of HIV for the unpaid blood donors for the first time was 0.02788% (141/505818), and the prevalence rate of HIV for those repeated unpaid blood donors was 0. The residual risk of the blood transfusion was 5.7942×10^{-6} , and the residual risk of the blood transfusion during 2009-2017 had increased year by year.

Conclusion: Although the blood center of Weifang strictly tested the blood from the unpaid blood donation, there was still a residual risk of HIV infection transmitted by the transfusion under the premise of no fault transfusion. And the residual risk of the transfusion had been rising in recent 9 years. The department of health and related departments need to consider the establishment of a risk sharing mechanism to fill the gap of the injury, including improving the legal basis, establishing national compensation fund, establishing commercial insurance and popularizing the related common sense to the public.

Evangelos Zormpas

PhD Student, University of Leeds, UK

&

Gail Douglas

Professor/Chair in Dental Public Health, University of Leeds, UK

Investigating Dentists' and Patients' Preferences in Relation to new Caries Diagnostic Tools

Introduction: With traditional radiographs and clinical exam being unable to figure out minimal changes in enamel corresponding to early caries progression and de or remineralization, there is a higher need for diagnostic tools ready to provide a more quantifiable assessment. This study explores patients' and dentists preferences' about carries diagnostic tools to reveal which tools' attributes are important to each group, to quantify the level of significance of these attributes, measure trade-offs and investigate how much patients and dentists are willing to pay to achieve a transition from current states of caries diagnostic devices to improved versions or scenarios of devices.

Methods: Data in both experiments were analysed using a random effects probit model.

Results: Four attributes were flagged up as important to patients and dentists in relation to preferences for diagnostic tools namely, discomfort caused to the patient, accuracy of detecting caries, time required for diagnosis and cost which was the only attribute differing between groups, indicating the cost of dental check-up to patients' experiment and cost of diagnostic tool to dentists' experiment. All four coefficients are statistically significant ($p=0.00001$) in each experiment with discomfort, cost and time having negative signs while accuracy a positive sign in both cases as expected. Marginal rates of substitutions are also reported.

Conclusion: Direct implications for designing diagnostic tools highly receptive from dentists and patients can be drawn out of this study.