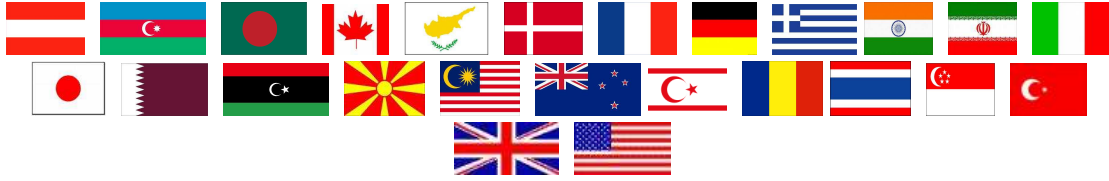


YIRCoBS'12

Yeditepe International Research Conference on Business Strategies

June 13 - 15, 2012

"Issues of Economics and Management in Health Care System"



BOOK OF ABSTRACTS

edited
by

M. Atilla ÖNER

Beyza AKBAŞOĞLU

**Istanbul
18 June 2012**

**Yeditepe University
Management Application and Research Center**



Arařtırma İlaç Firmaları Derneđi
Association of Research-Based Pharmaceutical Companies



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June 13 - 15, 2012

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- Mohammad H. Yarmohammadian** *Isfahan University of Medical Sciences, Iran*

13 June 2012

08:30 REGISTRATION

OPENING SESSION

08:50 **Osman Hayran**
Dean, Faculty of Health Sciences, Yeditepe Univ

Mehmet Yahyagil
Chairman, Dept of Business Administration, Yeditepe Univ

09:00 PLENARY SPEAKER

Takuji Hara
Kobe University, Japan

"Innovation in the Pharmaceutical Industry: The Process of Drug Discovery and Development"

10:00 BREAK

SESSION 01	SESSION 02
Health Care: Human Right - Legal Right Organizer/Chair: Sultan Üzeltürk	Health Services Administration Organizer/Chair: Mohammad H Yarmohammadian
Issues in Criminal Law Concerning the Right to Health Care A. Nuhoglu, Bahçeşehir Univ, Turkey	Evaluation of Patient Satisfaction by Two Methods L. S. Demir, Konya Health Authority, T. K. Şahin, Selçuk Univ, Turkey
Administrative Law and Health Care T. Yıldırım, Marmara Univ, Turkey	Study of health services use pattern among households in the rural region of Fars province F. Zare, Z. Kavosi, Shiraz Univ of Medical Sciences, Iran
Private Law and the Right to Health Care P. Somer, Cyprus International University, Turkish Republic of Northern Cyprus	Efficiency Improvement of Dentistry Clinics H. Alaghemandan, M. Yarmohammadian, Isfahan Univ of Medical Sciences, Iran

12:00 LUNCH

SESSION 03	SESSION 04
Foresight and Futures Studies on Health Care Organizer/Chair: Senem Göl Beşer	Health Care, Society, Management Chair: Abdullah Uz Tansel
Foresight Framing for Health System Innovation in Canada J. E. Smith, TFCI Canada Inc., Canada	Direct-to-consumer-advertising in Pharmaceutical Marketing and its possible effects in Turkish Pharmaceutical sector Y. C. Erdem, Yeditepe University, Turkey
Health Care Futures Studies S. G. Beşer, M. A. Öner, Yeditepe Univ, Turkey	Business Process Management: The third wave of quality improvement methods in healthcare F. Dusty, M. Yarmohammadian, L. Mohammadinia, Isfahan Univ of Medical Sciences, Iran
Comparison of Nanotechnology Acceptance in Turkey and Switzerland F. Karaca, Arel Univ, M. A. Öner, S. G. Beşer, Yeditepe Univ, H. Yıldırım, T-Bank, Turkey	Medical Knowledge Management and its Implications for the Practice of Medicine A. U. Tansel, Bahçeşehir Univ, Turkey, H-T Wang, CUNY, USA

15:00 BREAK

SESSION 05	SESSION 06
Restructuring of Health Care System Chair: Afsun Ezel Esatoğlu	Health Care Payment Systems Organizer/Chair: Yaşar A. Özcan
Turkish Health System Reform from the People Perspective S. Jadoo, S. Aljunid, United Nations Univ - IIGH, Malaysia S. Sulku, Gazi Univ, Turkey	Performance-based Supplementary Payment Systems in Public Hospitals A. Kaptanoğlu, Marmara Univ, Turkey
The Determinants of the Public and Foundation Owned Universities: Multivariate Analysis of the Healthcare Management Education in the Turkish University System A. Ağaoğlu, Yeditepe Univ, Turkey	A New Examination of Hospital Performance after Supplemental Payment Restructuring in Turkey: Sensitivity and Quality Comparisons H. Kaçak, Ministry of Health, Turkey, Y. A. Özcan, Virginia Commonwealth Univ, USA, Ş. Kavuncubaşı, Başkent Univ, Turkey
Electronic Health Records Standards Help Adopting Patient Bill of Rights S. Abbasi, Social Security Organization, Iran, M. Ferdosi, Isfahan University of Medical Sciences, Iran	

17:00 BREAK

SESSION 07	SESSION 08
Issues in Health Care Service Quality Chair: Fatma Gürbüz	Changes in the Organization of Health Care Delivery Chair: Rasmi Muammer
Decision Matrix of Propensity to Outsource Based on Hospital Services Features in Hospitals of Shiraz University of Medical Science, Iran Z. Kavousi, F. Setoodehzadeh, E. Kharazmi, Shiraz Univ of Medical Sciences, Iran	New Zealand Health System Performance: Is it as good as it seems? P. Sandiford, Waitemata District Health Board, New Zealand
The Improvement Quality of Health Services Methods Perform by Clinical Governance Model Organization in Iran's Hospital L. Mohammadinia, M. H. Yarmohammadian, F. Dusty, Isfahan University of Medical Sciences, Iran	Health System Responsiveness Change: A panel study of two household survey in 17th of Tehran Z. Kavosi, Shiraz Univ of Medical Science, A. Rashidian, A. Pourreza, Tehran University of Medical Sciences, Iran
JCI: The Rising Value in Health Care Service Quality F. Gürbüz, Marmara Univ, P. Acar, Okan Univ, Turkey	The Road to Patient Satisfaction: Complaint Management E. Okan, Yeditepe University, Turkey

18:45 FREE

DINNER AT LARESPARK - Invited Speaker

20:00

Ali Arpaciođlu

Vice Chairman
Pharmaceutical Manufacturers Association
"Turkish Pharma - Present and Future"

23:00

14 June 2012
PLENARY SPEAKER

Alp Sevindik	
08:45	Association of Research-Based Pharmaceutical Companies, Turkey <i>"Role and prospects of innovation and R&D in the future of Turkish pharmaceuticals industry"</i>
	SESSION 09 Economics and Health Care Chair: Alper Altınanhtar
	SESSION 10 Business Intelligence in Health Care Organizer/Chair: Serkan Türkeli
09:30	Expenditures on Work Force Health: Cost or Investment? Ö. Kunday, B. Ötken, Yeditepe University, Turkey
	Business Intelligence Best Practices in Healthcare: A Case Study Y. Yüksel, SAP Turkey
10:00	Health Services as Economic Goods D. I. Sava, Private Consultant, Romania
	The Operational Level Excellence in Health Business Intelligence: The Key Elements in Decision Making K. Akan, E. Yurtçu, Istanbul Medeniyet Univ, Turkey, H. Karapınar, Ordinatrum Bilişim Teknolojileri ve Danışmanlık, Turkey
10:30	An Econometric Study of the Healthcare Management Education within the Turkish Higher Education System: An Inventorial Perspective A. Ağaoğlu, Yeditepe Univ, Turkey
	What Makes an Organization Intelligent? S. Türkeli, M. Tepe, Istanbul Technical Univ, Turkey, K. Kaplan, Acıbadem Healthcare Group, Turkey
10:50	BREAK
	SESSION 11 Changes in Pharmaceutical Innovation Chair: Ahmet Gül
	SESSION 12 Pharmaceuticals Chair: Irini Papapetrou
11:05	Translational Research Y. Üresin, İstanbul Univ, Turkey
	The Learning of Methods of Forecasting the Volume of Medicine Sales in Pharmaceutical Firms of Azerbaijan A. Shukurova, Azerbaijan Medical Univ
11:30	Genomics U. Özbek, İstanbul Univ, Turkey
	The Effect of the Government's Price Restrictions on Pharmaceutical Raw Material Industry S. Koral, Farkim Farmasötik Kimya Ltd, Turkey
11:55	R&D Vision for Turkish Pharmaceuticals Industry H. Demirel, Novartis, Turkey
	Investigation of Polypharmacy and Rational Prescribing in Elderly Patients in a Health Centre of Nicosia, Cyprus I. Papapetrou, G. Charalambous, E. Jelastopulu, Frederick Univ, Rep of Cyprus
12:30	LUNCH
	SESSION 13 Decision Support Systems in Health Care Chair: Nuri Başoğlu
	SESSION 14 Risk and Performance in Health Care Organizer/Chair: Yaşar A. Özcan
14:00	An Analytically Guided Decision Support Tool, an Excel Macro, for Resident Allocation I. T. Değirmenci, Antalya International Univ, Turkey, C. J. Holmes, P. C. Kuo, Loyola Univ, USA, O. B. Jennings, Duke Univ, USA
	Integrated capacity and appointment scheduling in presence of seasonal walk-in demand E. Güneş, Koç Univ, T. Çayırılı, Özyeğin Univ, P. Dursun, Istanbul Technical Univ, Turkey
14:30	Cost-Volume-Profit Analysis of Surgery Rooms: A Foundation Hospital Case C. Birkan, Yıldız Technical Univ, İ. Gökçen, M. Kiyak, T. Bozaykut, Okan Univ, Turkey
	Universal appointment rule for patient types, no-shows and walk-ins T. Çayırılı, Özyeğin Univ, Turkey, K. K. Yang, Singapore Management Univ, Singapore
15:00	Adoption Factors of Electronic Health Record Systems A. N. Başoğlu, O. Kök, Boğaziçi Univ, Turkey
	Healthcare risk management and patient safety in Turkish hospitals A. Kaptanoğlu, Marmara Univ, Turkey
15:30	BREAK
	SESSION 15 Bayesian Methods in Health Sciences Organizer/Chair: Refik Soyer
	SESSION 16 Issues in Health Insurance Chair: Turhan Erkmen
16:15	A full Bayesian approach to decision & policy making: two cases from research on neuropathic cancer pain S. Deandrea, Institute for Health and Consumer Protection - JRC-EC, Italy
	Work-Family, Family-Work Conflict and Turnover Intentions among Representatives of Insurance Agencies T. Erkmen, E. Esen, Yıldız Technical University, Turkey
16:45	Bayesian Spatial Modeling of HIV Mortality via Zero-inflated Poisson Models M. Musal, Texas State Univ, USA
	Study of Catastrophic Health Expenditure in Household with Cancer Patient Z. Kavosi, H. Delavari, A. Keshtkaran, F. Setudezade, Shiraz Univ of Medical Sciences, Iran
17:15	Modeling Health State Preferences: A Bayesian approach R. Soyer, George Washington Univ, USA
	A medication Safety Model for Thai Hospitals: A Literature Review of Medication Errors Prevention P. Rattanarojsakul, N. Thawesaengskulthai, T. Auamnoy Chulalongkorn Univ, Thailand
17:45	FREE
19:00	Departure for Suada Club

20:00

DINNER - [Suada Club](#)



23:00

15 June 2012

PLENARY SPEAKER

08:30 **Ali Emrouznejad**
Aston Business School, UK
"Performance Measurement in the Health Sector: Uses of Frontier Efficiency Methodologies"

SESSION 17
Human Resources Management in Health Care System
Chair: *Erkut Akkartal*

09:15 Measuring Job Satisfaction of Nurses in the Public Psychiatric Hospital "Athalassa", Cyprus
G. Charalambous, M. Anastasiou, A. Skitsou, D. Andrioti, Frederick Univ, Rep of Cyprus

09:35 Level of Organizational Commitment of Hospital Employees: An Application in Vakıf Gureba Hospital
S. Kayas, M. Kiyak, P. Acar, Okan Univ, Turkey

09:55 Quality of health indicators management in Turkish hospitals
A. Kaptanoğlu, Marmara Univ, Turkey

10:15 **BREAK**

SESSION 18
Perspectives on Hospital Management -1
Chair: *Erkut Akkartal*

10:30 Simulation for Operational and Strategic Decision Making in Hospitals
M. Günel, Turkish Naval Academy, Turkey

11:00 Usability Evaluation of Mobile Information Communications Technology (ICT) in Healthcare
B. Akbaşoğlu, Middle East Technical Univ, Turkey

11:30 Non-medical Material Logistics in Hospitals
E. Akkartal, D. Yavuz, E. Nebol, S. Öztrancısever, Yeditepe Univ, Turkey

12:00 **LUNCH**

14:00 **DEPARTURE**

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PLENARY SESSION - 13 June

Innovation in the Pharmaceutical Industry: The Process of Drug Discovery and Development

Takuji Hara

Kobe University, Japan

harat@kobe-u.ac.jp

Abstract

In this talk, I am going to pose several analytical frameworks of pharmaceutical innovation and its management, based on sixteen case studies of major pharmaceutical developments in the twentieth century, including beta-blockers, beta-stimulants, inhaled steroids, histamine H₂-antagonists, and statins. The proposed analytical frameworks consist of four aspects of drug discovery and development, three categories of elements that shape medicines, and three types of pharmaceutical innovation. I am also going to add some mention of recent changes and challenges in pharmaceutical innovation, its analysis, and its management.



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SESSION 01- Health Care: Human Right - Legal Right

Organizer/Chair: Sultan Üzeltürk, Yeditepe University, Turkey
suzelturk@superonline.com

Issues in Criminal Law Concerning the Right to Health Care

A. Nuhoglu

Bahçeşehir University, Turkey
ayse.nuhoglu@bahcesehir.edu.tr

Abstract: The right to health is protected in the Constitution, too besides the international texts.

The 17th Article of the Constitution reads as; *“Everyone has the right to protect and develop his material and spiritual entity. The physical integrity of the individual shall not be violated except under medical necessity and in cases prescribed by law; and shall not be subjected to scientific or medical experiments without his or her consent. No one shall be subjected to torture or ill-treatment; no one shall be subjected to penalties or treatment incompatible with human dignity.”* According to this Article, all the citizens’ right to life is under State’s guarantee and is within the scope of its positive liability.

The 56th Article of the Constitution which has the title “Health Services and Conservation of the Environment” reads as; *“Everyone has the right to live in a healthy, balanced environment.*

It is the duty of the State and citizens to improve the natural environment and to prevent environmental pollution.

To ensure that everyone leads their lives in conditions of physical and mental health and to secure cooperation in terms of human and material resources through economy and increased productivity, the State shall regulate central planning and functioning of the health services.

The State shall fulfill this task by utilizing and supervising the health and social assistance institutions, in both public and private sectors.

In order to establish widespread health services, general health insurance may be introduced by law.”

Although the 17th Article of the Constitution mentions the right to life, it also includes the right to live in a healthy way. The right to health includes the right to be healthy and the right to benefit from the health services. When a right is in concern, the State has some liabilities. The first liability is “to not to touch”; the State shall not touch to the right to life of the citizens.

The second liability of the State is to protect these rights against the interferences and attacks that would come from the third parties or from any other external factors. In order to protect these rights, The Turkish Criminal Procedure Code regulates the attacks made to these rights as crimes.

The third liability of the State is to provide the citizens opportunities to benefit from these rights.

In this speech, the Turkish Criminal Code’s regulations about how to protect the right of health from attacks will be discussed.

SESSION 01 – Health Care: Human Right – Legal Right

Administrative Law and Health Care

T. Yıldırım

Marmara University, Turkey

turanyildirim@marmara.edu.tr

Abstract: Access to right to health may require positive obligations of a state. Those obligations are;

1. Providing health care services.
2. Regulating health care system.
3. Resolving conflict about health care activities.

I will address these issues when examining right to health within the concept of administrative law.

SESSION 01 – Health Care: Human Right – Legal Right

Private Law and the Right to Health Care

P. Somer

Cyprus International University, Turkish Republic of Northern Cyprus
pervins61@hotmail.com

Abstract: The international developments on health law have also affected Turkey and by the continuous legal regulations in the recent years, the positive progress is started. Turkey, which is a candidate country for European Union' is transferring the specific international articles such as patients' rights to its national law system in order to harmonize with European Union legal system.

Turkish health system has a complex structure. The current system is more the result of the sociological, economic and political change rather than the result of a conscious planning. Therefore, the restructure of healthcare service and reorganizing of healthcare functions have fundamentally changed the health policies.

In this context and as a part harmonization with European Union legislation, legal regulations on pharmaceutical and clinical research were adopted. In parallel to international developments, the awareness of the society and NGOs on patient rights and the attention of academicians increased, the conscious patient have started to use their recourse rights; yet the health law has become more and more important.

Despite the fact that the principal acts stated in the "history" part above were legislated, the development of the terms "Health Legislation" and "Patient Rights" started rather late. Recently, there have been important developments on such topics with the contribution of Turkish Supreme Court decisions and doctrine within the scope of recent legal regulations, mainly the Constitution.

Physician's Liability in the Civil Code and Code of Obligations: In the basic laws such as Civil Code and Code of Obligations, there are rules which can be applied in terms of the physician's liability.

The provision of "that upon written consent, it is possible to take human biological substances, to vaccinate and transplant the same; however, those who enter into the obligation of giving biological substance may not be asked to fulfill their acts and may not be requested to give material-moral indemnities" which was added to the 23. article with the amendment made in the Civil Code in 1998 is also included in the Civil Code dated 2001.

The physician's compensation liability in the field of private law is determined according to the provisions of the Code of Obligations. The articles related to the attorney agreement or contract of work contained in the Code of Obligations find an extensive area of application in the physicians' liability. The legal relationship between the patient and physician is subject to the attorney agreement (article 386 et. al.) as a rule and the rules of the contract of work (article 355 et. al.) are applied on this relationship in terms of certain medical interventions. Furthermore, the rules that shall be applied such as illegal abortion or illegal organ and tissue resection are the rules related to the wrongful act (article 41 et. al.). If the physician causes damage in the patient wrongfully and in case of deficient or wrong diagnosis and treatment, they shall be obliged to pay material and moral indemnity.



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SESSION 02 – Health Services Administration

Organizer/Chair: Mohammad H. Yarmohammadian, *Isfahan Univ of Medical Sciences, Iran*
mhyarm@yahoo.com

Evaluation of Patient Satisfaction by Two Methods

L. S. Demir¹, T. K. Şahin²

¹ Adıyaman Health Authority, Turkey – ² Selçuk University Meram Faculty of Medicine, Turkey

lutfi.demir@yahoo.com

tkshahin@gmail.com

Purpose: This study aims to compare satisfaction level of patients discharged from a hospital using two different methods.

Design/methodology/approach: This is a descriptive study. 341 patients hospitalized in Meram Medical School of Selçuk University were interviewed face-to-face at the discharge day by the researcher. Questionnaires were sent to their addresses by mail 2 weeks after discharge.

Findings: 52.8% of the study subjects were females and 47.2% were males. 95.0% of the patients said they were satisfied from the hospital in general and 94.4% said they will prefer the hospital in case of a future illness. Satisfaction level was significantly lower in posted questionnaires. Satisfaction level in mailed questionnaires was lower than face-to-face questionnaires. Furthermore, except sex and way of admission to hospital, there wasn't any factor affecting general satisfaction. Economic status of patients and previous hospitalization didn't affect satisfaction in both mailed and face-to-face questionnaires.

Research limitations: Application of face to face questionnaires by a physician working in the same hospital, completion of questionnaires in patients' rooms, effects of memory on questionnaires mailed to the subjects, education status (presence of illiterate subjects), wrong address reporting, return rate of the mailed questionnaires were the limitations of this study.

Practical/managerial implications: Evaluation of satisfaction level with different methods will be useful to detect un-satisfaction in several parameters.

Key words: Quality of health care, Patient satisfaction, Patient discharge, Questionnaire

Paper type: Research paper

SESSION 02 – Health Services Administration

Study of Health Services Use Pattern among Households in the Rural Region of Fars Province

F. Zare¹, Z. Kavosi¹

¹Shiraz University of Medical Sciences, Iran

fzare66@yahoo.com

zkavosi@yahoo.com

Purpose: Different Factors are affecting on the behavior of individuals facing disease. The aim of the study was to analysis treatment seeking behavior and pattern of using health service among rural households.

Design/methodology/approach: This cross-sectional study is conducted among rural households which are selected using systematic random sampling. Informed member of 198 household completed the questionnaire

Findings: Results showed that almost half of household reported sickness in previous month. Marital status, residence status, employment status, insurance status & type of insurance had significant association with the probability of seeking treatment. Among those who reported disease in during the last month, the majority of patients had a behavior for their treatment, a few of them use self-medication for their health. Rural health center and city hospital were the first place choosing by rural households and public sector compared with private sector was preferred.

Research limitations: Models are simplifications and using self-reported data may cause over/under estimation of health service usage.

Research implications: This study can be conducted in different place including urban and treatment seeking behavior models will be developed.

Practical/managerial implications: Considering low use of referral system by rural households, revising rural insurance system is highly recommended.

Public Policy Implications: Raise community awareness about referral system and training doctors and pharmacists recommended as appropriate strategies for improving patterns of health services consumption.

Originality/value: Original study

Keywords: Treatment seeking behavior, Referral system, Health system, Rural

Paper type: It is analytical and descriptive analysis.

SESSION 02 – Health Services Administration

Efficiency Improvement of Dentistry Clinics, Introducing an Interview Package for Dentistry Clinic, Isfahan, Iran

H. Alaghemandan¹, M. H. Yarmohammadiani¹

¹Isfahan University of Medical Sciences, Iran

h.alaghemandan@live.com

mhyarm@yahoo.com

Introduction: In Isfahan, the second metropolitan in Iran, there are 1448 dentistry treatment centers, including 1400 clinics and 48 polyclinics, but most of them are inefficient, economically. Today, efficiency is the most important issue in field of health care centers as well as dentistry clinics. This research goal is investigation of affordability and efficiency of dentistry clinics in Isfahan province, Iran.

Methodology: The current work is a quantitative research, designed in two methodological steps, including a survey and experimental studies, for understanding current executive and medical deficiencies of Iranian dentistry clinics (based on audiences' opinions) and also designing and evaluating an intervening package for efficiency improvement of these treatment centers. First, there was run a survey studies. A questionnaire was designed and run in which 503 dental clinics clients were interviewed about how they get acquiesce with the clinics, treatment centers visibility, and variety, quality, and costs of medical services, and also deficiencies they faced in 5 selected polyclinics in Isfahan province, from 5 February 2010 to 5 March 2010. Then, we analyzed the questionnaires results which guide us to find a particular intervening package in clinic efficiency improvement. The package has four distinctive parts: advertising, staff training, developing medical team, and promoting medical services. At the second step, we continued the research through an experimental study, there was chosen an active but inefficient clinic named Mohtasham (Iran, Isfahan) to evaluate our intervening package. At the beginning of the study, this clinic has 5 inactive and 1 active dental unit, 3 executive staff, and 5 general dentists per week.

Results: Based on what the interviewees answered, we mention the most important issues for considering substantial elements in efficiency improvement of dental clinics in Isfahan: Clients acquiescing with clinics: contracted institutions (45%), local availability (15%), interpersonal communication (10%). Patients order from dentistry menu: dental restoration (38%), surgery (7%), endodontic therapy (14%), pediatric dentistry (8%), prosthodontics (20%), and Implant services (3%). Clients' dissatisfaction on medical services: staff hospitality (32%), dentists' medical interventions (30%), health issues (14%), and price rate (20%). Considering mentioned problematic issues, an intervening package was designed on the experimental study, as the next step. The package suggests (1) clinic visibility development like distributing local paper advertisements, sending cell phone SMS for potential clients, publishing a catalogue on introducing clinic and its medical services, installing a more visible panel for clinic, and signing contracts with insurances, banks, and other institutions to subscribe their members. (2) Holding staff training courses on observing health issues, team working, and hospitality and their follow up through rewarding and punishment for staffs. (3) Revising clinics services, including improvement of expert team, for instance employment of professional and experienced dentists, increasing the variety of medical menu items such as Implant services, decreasing clients' costs in some possible services. Then, above intervening package was applied in Mohtasham clinic, since June 2010. In short, it caused to improve the clinic income from 8164 US\$ through 375 clients, February 2010, to 41490 US\$ with 1502 patients in February 2011.

Discussion: Based on this research process, the intervening package changed this typical clinic to an efficient and economic one. Its income increased 5.08 times and its patient's numbers grew 4.01 times simultaneously. In other words, Mohtasham experience indicates the reliability of the package and demonstrates its potentiality for applying in macro level to improve the other dentistry clinics.

Key words: Efficiency Improvement Intervention, Dentistry Clinic, Advertising Visibility



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SESSION 03 – Foresight and Futures Studies on Health Care

Organizer/Chair: Senem Göl Beşer, *Yeditepe University, Turkey*
senemgol@yeditepe.edu.tr

Foresight Framing for Health System Innovation in Canada

J. E. Smith

TFCI Canada Inc., Canada
jesmith@telfer.uottawa.ca

(SKYPE Presentation)

Abstract: The presentation is based on a foresight study done for Health Canada by Technology Foresight Collaborative Insights (Canada) Inc., (TFCI) as a contribution to how the future design and operation of the national- provincial public health system might be improved and made more cost and time efficient via the introduction of new technologies - premises for clients roles and use of information and other technologies.

The presentation will be structured as follows:

- An overview of the current problem and its projected future impact if left unresolved;
- Factors challenging and changing health expectations;
- Opportunities for health system innovation via S&T;
- Role and Potential for digital media in new century health;
- A New Model for shared health responsibility;
- Possible next steps toward innovation-implementation

The presentation should take about 30 minutes with 10-15 minutes available for interactive discussion over Skype, with Mr. Smith, who will be in Bangkok, where he will be attending the International Advisory Board meeting of the APEC Center for Technology Foresight.

SESSION 03 – Foresight and Futures Studies on Health Care

Healthcare Futures Studies

S. G. Beşer¹, M. A. Öner¹

¹Yeditepe University, Turkey

senemgol@yeditepe.edu.tr

maoner@yeditepe.edu.tr

Purpose – The choice of futures studies in health care serve as the ground for determining the probable, possible, preferred and prospective futures for the industry. Thus, the overall aim of the research presented is to contribute to the discussion on the theoretical perspectives behind the practice of futures studies in health care and suggest a strategizing approach in practice.

Design/methodology/approach – The paper uses meta-analysis in order to synthesize and integrate findings on health care across futures studies, providing a solid foundation for further research on the issue. By systematically combining studies on health care, the paper attempts to obtain more reliable information about its possible application in futures studies.

It combines theoretical background on health care and futures studies in order to gather insights and inputs for further implication.

Findings – The findings of the paper are rather a set of ideas where hoped to stimulate a creative dialogue and foster a debate among health care practitioners, policy makers, as well as the practitioners of futures studies in shaping the future of health care.

Research implications – The diverse range of forecasting methods in futures studies help researchers and practitioners of futures studies in understanding the organizational, technological variables

Practical/managerial implications – The ultimate goal of such foreseeing activities is helping societal actors reaching envisioned alternative future states. Thus, the paper aims to help health care managers, insurance companies, private companies, as well as the employees by suggesting the use of futures studies in order to foresee the future risks and opportunities of the industry; i.e., health care system in general, financing of health care services, quality, retaining skilled staff . Futures studies envision helping managers in planning a health care system where they could achieve a balance among quality, access and sustainability within the industry.

Public Policy Implications - This paper attempts to help policy makers on addressing problems and reforms on public health issues via the use of futures studies. It may bring a focus on the direction and priorities for health care as a whole since futures studies seize the main trends, drivers, issues shaping the present and future of the industry.

Originality/value – This paper suggests the widespread use of futures studies in the field of health care with the aim of generating new insights and future scenarios (i.e. aging, progress in medical technology, and importance of human capital) for the industry.

Keywords – Foresight, Futures Studies, Health Care, Delphi-Analysis, Scenario Planning

Paper type: Meta-Analysis

SESSION 03 – Foresight and Futures Studies on Health Care

Comparison of Nanotechnology Acceptance in Turkey and Switzerland

M. Atilla Öner¹, Fatih Karaca², Senem Göl Beşer¹, Hakkı Yıldırım³

¹Yeditepe University, Turkey, ²Arel University, Turkey, ³T-Bank, Turkey

maoner@yeditepe.edu.tr
senemgol@yeditepe.edu.tr

fatihkaraca2001@yahoo.com
hakki.yildirmaz@tbank.com.tr

Abstract: The overall aim of this study is to understand the nanotechnology acceptance in Turkey and try to derive the possible development paths for the future. The participants in our survey acknowledge the benefits of nanotechnology in achieving a preferred future (significance on the country's economy and on wealth creation, as well as quality of life) while reserving some skepticism on the institutions' responsibility in utilizing nanotechnology in the various sectors.

The development of nanotechnology in Turkey is analyzed by trying to analyze the relation between the images of the future and images of the present. The images of the future are characterized by the development scenarios of nanotechnology and the context of 2029 whereas the images of the present is by the willingness to buy decisions of the respondent of nanotechnological applications in food domain and the context of 2009. As far as the food domain is concerned, the results of the study suggest that perceived benefits and perceived risks are found to have influence on the WTB nanotechnology applications in the food domain. Affect evoked by the information existing in environment about the nanotechnology products have significant relation with benefits and risks of this emerging technology.

The relation between affect and risk in our model is found to be positive. The effect of social trust on affect is found to be insignificant in our study which was an assumption of Siegrist et al. (2007) and found to be significant in their research. The scenarios of development are found to reflect 5 different situations which converge to one final scenario for the expected context of 2029. The results show that all of the different contexts determined by the clusters, converge to a final setting where there is high development potential, neutral public awareness, almost evenly distributed consumer's demand with the lead of environmentally friendly products, more laws and regulations, high profit potential and public investments and a medium risk assessment by the public. By the year 2029 almost all of the potential nanotechnological applications in medical and pharmaceutical sector are expected to be on the market.

This study also attempts to help the managers to understand the youth and young adults' perception of nanotechnology in Turkey and to consider the importance of those perceptions for the realization of technological advances in improving their products and developing new ones.

Keywords: Youth Foresight, Nanotechnology, Turkey, Switzerland.



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SESSION 04 – Health Care, Society, Management

Chair: Abdullah Uz Tansel, *Turkey*
Abdullah.Tansel@baruch.cuny.edu

Direct-to-consumer-advertising in Pharmaceutical Marketing and its possible effects in Turkish Pharmaceutical sector

Y. C. Erdem

Yeditepe University, Turkey
canerdem@yeditepe.edu.tr

Abstract: Pharmaceutical marketing is both an essential but also a difficult -to-operate field because of major differences in consumer decision making processes. Starting with the debate of the identification of decision makers, medicine marketing is a very unique and yet complicated battlefield not so appropriate for popular marketing applications. In this manuscript, the application of Direct-to-consumer advertising (DTCA) in pharmaceutical markets is analyzed with a focus on Turkey and Turkish pharmaceutical sector. Since DTCA is a controversial issue with various implications ranging from misunderstandings and even misuse of marketing messages to having educational impact on decision making processes of patients, it deserves a comprehensive study. Following the definition and the details of its application in different countries, the arguments for and against DTCA are detailed and reviewed. Being the major advocates, the pharmaceutical industry and the associated institutions produce a good volume of research findings and reports in support of DTC. Health academicians and some lobby groups including some physicians object to DTCA with conflicting interpretations of similar research. The arguments in favor of and against the implications of DTCA are listed with a focus of potential risks of it in a developing country like Turkey. On the way to the membership of the European Union, Turkey is an attractive country for the global pharmaceutical industry and DTCA may be a good strategy to redesign both the Turkish pharmaceutical market and the healthcare system in Turkey.

SESSION 04 – Health Care, Society, Management

Business Process Management (BPM): The third wave of quality improvement methods in healthcare

F. Dousty , M. Yarmohammadian , L. Mohammadinia

Isfahan University of Medical Sciences, Isfahan, Iran

mhyarm@yahoo.com

Introduction: Today's healthcare environment is extremely daunting. Hospitals have been challenged with increasing complexity of health care, decreasing resources and increasing regulatory requirements. Healthcare sector continues to face many significant challenges in its quest to provide optimal patient care. The quality of care delivered is under expanded scrutiny and hospitals have employed various process improvement methodologies such as Total Quality Management (TQM) and Business Process Reengineering (BPR) to improve and optimize their processes. Some of these process improvement strategies have been successful but the outcome of these efforts still produces a large volume of manual tasks that must be addressed by the caregiver. In some countries, hospitals employed a Business Process Management (BPM) Strategy to automate and improve several of these processes. BPM is attracting attention more than a decade now, and its attention is now shifting from the enactment of business processes towards improving business processes. BPM is the achievement of an organization's objectives through the improvement, management and control of business process. For example, BPM engine can perform key tasks and interact with the clinician to decrease the manual requirements of a process. The result is reduced workloads and improved outcomes and it requires the power to modify organizational structures and free core business processes from non-value adding activities.

Method: This review builds on major sources of the BPM literature including the BPM Journals, the BPM Conferences and related core journals/conference databases. Forward and backward searches additionally deepen the analysis.

Findings: A total of 20 studies were identified that report the effects of process methodologies on organizational performance. Studies where positive effects are obtained are predominant. These positive effects imply that BPM helps healthcare organizations to achieve the management of all clinical functional processes.

Conclusion: Nowadays, many companies have increasingly tended to improve their operational business processes. When organizational culture is process-centric, it is preferred to respond to industry developments, reduce the risk of human error, and improve patient care. More than ever, efficiency within the healthcare industry is now a major concern for policymakers, clinicians, as well as patients. Studies have shown the value of implementation of business process management in healthcare organizations, and have allowed clients in the healthcare industry to achieve improved operational efficiency. In other word, the movement in healthcare to simultaneously reduce costs and improve quality has created a shift from organization- centered care to patient-centered care, requiring increased integration among functional units as well as enhanced cooperation and collaboration among disparate healthcare organizations. Hence, considerable attention has been paid to designing process models of healthcare delivery and to developing healthcare information systems that support intra- and inter-organizational healthcare processes.

SESSION 04 - Health Care, Society, Management

Medical Knowledge Management and its Implications for the Practice of Medicine

A. U. Tansel¹, H-T. Wang²

¹Bahçeşehir University, Turkey, ²CUNY, USA

Abdullah.Tansel@baruch.cuny.edu

Abstract: Health care by its very nature is extremely knowledge intensive. However, adoption of knowledge management technologies in health care is rather slow. Recently, we observe an acceleration of the use of knowledge management in medical practices. This is a consequence of the rapid developments in information and communication technologies and government support for the adoption of technology to reduce health care cost that are ballooning all over the world. We consider a distributed architecture where electronic health records are stored locally where they are created and accessed from any location they are needed. We review how medical knowledge management can support evidenced based medical decision making.



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SESSION 05 – Restructuring of Health Care System

Chair: Afsun Ezel Esatoğlu, *Ankara University, Turkey*
afsunezel@yahoo.com

Turkish Health System Reform from the People Perspective

S. Jadoo¹, S. Aljunid¹, S. Sulku²

¹ United Nations University – IIGH, Malaysia, ² Gazi University, Turkey
drsaadalezzi@gmail.com saljunid@gmail.com nursulku@gazi.edu.tr

Purpose: A cross sectional study was carried out in Turkey to assess the consequences of the health system reforms that had been carried out in the last decade. A total of 482 heads of household have been selected by using simple random sampling selection method. Data was collected via household's structured questionnaire. The response rate was (80%) and data was analyzed by using SPSS version 16.0. Age of respondents was around 28 to 73 years old with the mean age of 46.60 ± 11.85 years. Majority of clients' are married (59.8%) and currently employed (87.2%). Among the respondents, more than two third (69.3%) have positive views when the current situation is compared with the past in terms of accessibility, availability of resources, technical quality and the attitudes of politicians to health care. The elderly, married female, and those who believe that people are happier than 10 years ago have a more positive view of the changes, while the unemployed, low educated and those who perceived themselves as unhealthy showed less positive views. In general, 77.4% of Turkish people prefer current situation of the past. This study could bring closer the viewpoints of different categories of people and officials of the health system reforms in a way that could lead to the better implementation of such reforms.

Key words: Quality, Accessibility, Availability, Reform, Perspective, Changes, Turkey

SESSION 05 – Restructuring of Health Care System

The Determinants of the Public and Foundation Owned Universities: Multivariate Analysis of the Healthcare Management Education in the Turkish University System

A. Ağaoğlu

Yeditepe University, Turkey

agaoglu@yeditepe.edu.tr

Purpose of the Research: In year 1990, with the first foundation university which was founded in 1985, Turkey had 31 universities in total. At the beginning of year 2011, there were 166 universities (including 9 private vocational schools). 102 of these were public universities (61.45%); 55 (33.50%) were initiated by foundations; and there were 9 (5.40%) private vocational schools of higher education. Student population of the foundation universities would be nearing towards 10% of the total by the end of 2012. The phenomenon, however, is relatively new and expanding on a very rapid speed.

In this study, we intend to investigate the “Determinants” of Medicine and Medical-Health Care programs of the Turkish Higher Educational System by grouping it as “State”, and “Foundation” universities. Because of completely different criterion used in vocational placements, this study will be based upon 4-year degree programs. Next, we attempt to draw attention to the major shortcomings which need further consideration. By doing so, we expect to facilitate the long term strategic planning of the industry.

Design/Methodology/Approach: The data for 2009 and 2003 has been grouped according to the individual programs of Medicine, and Medical-Health Care areas, and the other programs with the same examination base. Each individual program has been analyzed as such by a multiple regression, with 0-1 dependent variable against entrance scores; total number of seats available; and the percentage of seats remaining unfilled. Full Descriptive Statistics results are interpreted with multiple regression results, and finally all relevant programs are tabulated. We then repeat the process for university groups under headings “namely, “State” and “Foundation”.

Findings: In general terms, the result of these regressions show that Medicine, and Medical-Health Care Departments have dominant entrance scores, while they have smaller degree of increase in the volume of seats available from 2003 to 2009. The proportion of their seat volume and unfilled seats are less significant. Each individual dimension of descriptive statistics has then been taken up with these findings. Finally, we have discussed the strategic implications of the study.

Research limitations: Any such econometric or statistical work would be confronted with enormous limitations because of the examination system keeps on changing, thus rendering little possibility of any long term cyclical analysis.

Key Words: Turkish Higher Education System; Econometric Methods; Statistical Analysis; Discriminant Analysis; Cluster Analysis; Factor Analysis; Turkish Foundation Universities; Turkish Public Universities; Analysis of Higher Education; Strategic Planning of the Higher Education.

JEL Classification Codes: B23; C10, C38, C87; I10; I21, I23, J68; 052.

SESSION 05 – Restructuring of Health Care System

Electronic Health Records Standards Help Adopting Patient Bill of Rights

S. Abbasi¹, M. Ferdosi²

¹Social Security Organization, Iran - ²Isfahan University of Medical Sciences, Iran
shirinabassi2000@yahoo.com ferdosi1348@yahoo.com

Purpose: This study was done to show how EHR standards can help to institutionalize the patient bill of rights in Iran.

Design/methodology/approach: To do this study, we carried out four steps, as following:

1. We evaluated all five main axes and 37 sub-axes of national PBR (the third version).
2. Based on it, we formed a checklist with different items including all main issues about patient rights.
3. On the other hand, we searched for the most important non-profit organizations that produce international standards regarding HER and obtained their last version of standards from their official sites.
4. Then, we compared published standards with our checklist items based on their content, meaning, scope and objectives. For each item, we proposed the most relevant standard as far as possible.

Findings: According to our surveys, the most important organizations (which are non-profit and affiliated with the Europe Union) that produce international standards regarding EHR are:

1-ASTM: “American Society for Testing and Materials” is a nonprofit society established by the National Institute of America in 1998. (10)

2-ISO: “International Organization for Standardization” works on different standards. (11)

3 -CEN: “Commission for European Normalization”

4-HIPPA: “Health Insurance Privacy and Portability Act” works as a responsive organization to develop national standards for transferring electronic health information. (12)

5-HL7: “Health Level Seven” is also a developer institution for valid standards. (13)

The most proposed axis was the second axis. Among standard organizations, the most consistent with PBR axes, is ASTM.

Research limitations: No Remarkable Limitations

Research implications: The results of this research showed that for most issues of patient bill of rights, there are substantial standards in EHR.

Practical/managerial implications: Developing EHR creates an opportunity to contemplate patient rights in its structure. To internalize them, there are some reliable EHR standards like ASTM and ISO 13606-1 that implementing them could be very helpful. It means that implementing ASTM standard may have a great influence on promoting PBR in a health institute like a hospital.

Public Policy Implications: Developing national wide EHR was recently a strategic goal of the ministry of Health. Thus, increasing general access to personal health information would be unavoidable, and deploying relevant standards related to patient rights in EHR are highly recommended.

Originality/value: Although patient rights are considerably a matter of discussion around the world, but this study was a new subject in Iran, especially for connecting HER standards with patient bill of rights.

Key words: Electronic Health Records (EHR), Standard, Patient bill of rights

Paper type: This was a comparative study.



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SESSION 06 - Health Care Payment Systems

Organizer/Chair: Yaşar A. Özcan, *Virginia Commonwealth University, USA*
ozcan@vcu.edu

Performance-based Supplementary Payment Systems in Public Hospitals

A. Kaptanoğlu

Marmara University, Turkey
aysegulkaptanoglu@gmail.com

Background & Objectives: In Turkey, healthcare reforms have been implemented via a health care transition program. The healthcare system has been going modification and changes for the past several years; however, there is insufficient research to demonstrate the effects of these changes. This paper aims to address the issues in the supplementary payment systems which are one of the recent changes of the healthcare system in Turkey.

Methods: This study is mainly based on a review of the relevant professional literature, a review and interpretation of supplementary payment in the healthcare field and a review of research and assessment work done in several health care organizations.

Results: Performance based supplementary payment system in public hospital is a payment system which aims to provide bonuses to health care employees like physicians, nurses, etc. The bonus is given to professionals, who produce the qualified health services based on records with the evaluation of the whole institution.

Supplementary payment system financing in Turkey is based mainly on social security premiums. Consequently, income expenditures balance of hospital is started to be followed sensitively. Physician productivity increased but number of patients per physician has decreased by 30 %. Also, pay for performance (P4P) to physician according to specialty has decreased. While physician like cardiologist can benefit P4P system because their work contributions are more paid compare to neurologist work.

Conclusion: The reforms resulted satisfactory and very successful improvement in healthcare performance. The main health indicators are now better than at the beginning of the transformation period. The sustainability of the reform processes will help further improvement of in the near future.

Key words: Healthcare Transition Turkey, Current Supplementary Payment, Public Hospital

SESSION 06 – Health Care Payment Systems

A New Examination of Hospital Performance after Supplemental Payment Restructuring in Turkey: Sensitivity and Quality Comparisons

H. Kacak¹, Y. A. Özcan², Ş. Kavuncubaşı³

¹Ministry of Health, Turkey, ²Virginia Commonwealth University, USA, ³Başkent University, Turkey
ozcan@vcu.edu

Abstract: The implementation of Health Transformation Program in Turkey brought opportunities to obtain new variables such as performance scores and service quality standards. The objectives of this study are: 1) perform sensitivity analysis to compare new variables to previous studies, 2) explore the effect of newly obtained quality scores on efficiency level. The study utilized data from 245 Ministry of Health general hospitals in 2008. Two models with old and new output variables were compared in sensitivity analysis. Then, a model which included quality scores was evaluated to test any evidence about efficiency and quality trade-offs. The sensitivity analysis showed that there was no significant difference between the two models. Quality variable added model have had no significant effect on existing models. The efficient hospitals in both models stayed efficient, however, quality scores had no effect on efficient hospitals, but some of the inefficient hospitals have increased their scores and became efficient.

SESSION 07 – Issues in Health Care Service Quality

Chair: Fatma Gürbüz, *Marmara University, Turkey*
gulruh@marmara.edu.tr

Decision Matrix of Propensity to Outsource Based on Hospital Services Features in Hospitals of Shiraz University of Medical Science, Iran

Z. Kavosi¹, F. Setoodehzadeh¹, E. Kharazmi¹

¹Shiraz University of Medical Sciences, Iran

zhr.kavosi@gmail.com

fsetudezade@gmail.com

erfankh2001@yahoo.com

Purpose: Background and purpose: The inefficiency of financing health care in developing countries has led many health policy-makers to consider alternate means of services provision. Outsourcing publicly financed health services to private sector organization is one such intervention. Advocates claim that the contracting out of health care services will improve service delivery performance by stimulating competition among providers and by creating economic incentives for improved performance through linking payment to provider performance.

The purpose of this cross sectional study was to determine association between Characteristics of hospital services (nursing, radiology, laboratory, nutrition) and the administrators' propensity to outsourcing and also providing decision matrix to guide decision-makers whether outsource hospital services or not, in Shiraz University of medical science.

Methodology: Two kind of questionnaire were developed and used One questionnaire for determine of Characteristics of hospital services ($\alpha=.8$), this questionnaire was developed between personal of services and one for administrators' propensity to outsourcing($\alpha=.85$).then decision matrix of propensity to outsource was draw.

Findings: Finding showed nutrition service has the highest rate of being outsourced while the lowest rate of outsourcing is in nursing service.

our results showed the personal of radiology service more than the personal of other services, thought their services are intangible (62.3%), heterogenous (73.7%), critical (68.5%), and demand uncertain (89.5%). the personal of nursing service more than the personal of other services, thought their services are inseparable (68.1%), end customer contact (90.9%). the personal of laboratory service more than the personal of other services, thought their services are complex (60%) and technology uncertain (60%). the personal of nutrition service more than the personal of other services, thought there are a lot alternate suppliers for their services.

The most propensities to outsource is for nutrition service (87%) and the least is for nursing service (43.4%), based on administrators' attitude.

Results indicated significant relationship between the rate of outsourcing services and propensity to outsourcing, inseparability and propensity to outsourcing of nutrition service, heterogeneity and propensity to outsourcing of nursing service.

Shaping of decision matrix showed propensity to outsourcing of nursing, radiology, laboratory services have to be high while for nutrition service has to be low.

Managerial implications: Finding showed some differences between results of decision matrix and administrators' propensity to outsourcing in radiology and laboratory services. Lack of attention to Characteristics of hospital services maybe the reason. Cost saving is the main reason for outsourcing the services while administrators should consider the effect and side effect of outsourcing.

Key words: Outsourcing, Characteristics of hospital services, Propensity to outsourcing

Paper type: Research paper

SESSION 07 – Issues in Health Care Service Quality

The Improvement Quality of Health Services Methods Perform by Clinical Governance Model Organization in Iran's Hospital

L. Mohammadinia¹, M. H. Yarmohammadian¹, F. Dousty¹

¹ Isfahan University of Medical Sciences, Iran

mhyarm@yahoo.com

Introduction: Since 1388, Iranian health department, have applied clinical governance model in hospitals with emphasize on exciting mechanism review in order to support strength and dispel flaws that lead to improve the services delivery quality and increase patient satisfactions.

Methodology: This is a research article study that preformed and launched by case study of implementation of clinical governance model process in one of Iranian hospital during one year. This study was performed in Faghihi hospital of Shiraz (the selected hospital in first national clinical governance festival in December 5, 2011).

Findings: Clinical governance model is the novel methods in Iran. During last year, the healthcare organizations were developed by this model and showed its significant promoting that achievement of this hospital is one of them.

The evaluation results of first sinister showed the Improvement of this hospital in some areas such as (Risk Management and Patient safety, Evidence based medicine, Clinical Audit, Patient and Public involvement, Education and Training, Staff Management and Use of Information) by applying clinical governance model. Furthermore, Fghihi hospital has improved quality through clinical governance since January 2011, In order to make implementation, first it creates infrastructures then implements activities and at last evaluates it.

Creating organizational culture

Co-occur activities: Co-occur the EFQM and ISO measures whit clinical governance

Involvement of technical, middle and supervisor managers through authorizing individually responsibilities to each manager

Implementation of model whit participation of staff

Evaluation quarterly

Public Policy Implications: This experience is suitable for decision makers in health.

Result & Conclusion: Fortunately the results showed that this hospital was successful in several scopes during this short period (in six month). It seems the collaborative and empathy emotion of staff and organizational cultural in this hospital were the essential factors for promoting this model. In Iran, Implementation health improve services quality through clinical governance during last year had considerable result; but like others methods ,this one have special challenge that has affected hospital. Generally it seems that more surveys and researches are need to Improve mentioned model by transferring the information between countries and promote improvement of health services can be useful.

Key words: Health services, Clinical governance, Hospital, Iran

Paper type: Research paper

SESSION 07 - Issues in Health Care Service Quality

JCI: The Rising Value in Health Care Service Quality

F. G. Gürbüz¹, P. Acar²

¹ Marmara University, Turkey - ² Okan University, Turkey

gulruh@marmara.edu.tr

pinar.akinci@okan.edu.tr

Purpose: The purpose of this study is to prove the effect of Total Quality Management (TQM) on Health Care Service Quality (HCSQ) through concentrating on the difference between private hospitals with and without JCI Accreditation certificate.

Design/methodology/approach: The hypotheses developed for TQM and service quality (SQ) are based on the variables which are; the independent variable (Total Quality Management) which is composed of four elements; management by fact, people based management, delight the customer and continuous improvement that affects SQ (tangibility, reliability, responsiveness, assurance, empathy, professionalism).

H1: There is a positive relationship between TQM and Service Quality.

H2: Total Quality Management significantly affects Service Quality.

H3: Service Quality varies according to the JCI Accreditation Certificate.

H4: Total Quality Management and Service Quality varies according to the JCI Accreditation Certificate.

The study was conducted in five private hospitals on 227 people who are doctors, managers, nurses and administrative staff. Hospitals were categorized according to the number of employees.

Findings: According to the result of this study the effect of TQM on HCSQ is statistically significant in terms of the private hospitals with and without JCI Accreditation certificate. Based on the results, we can easily say that private hospitals have to obtain quality certificates especially JCI accreditation certificate to compete against their rivals and to improve their quality and satisfy the needs and expectations of the customers/patients and their employees.

Research limitations: For a further study, sample would be limited with doctors, managers and administrative staff and nurses would be out of the sample. Because of their workload and time limitation, in present study answers of the nurses are inconsistent when compared with doctors, managers and administrative staff. Also besides servqual questionnaire which evaluates the customer perspectives another questionnaire should also be used to evaluate the employee perspectives. This would be a limitation for this study because it will be more reliable if both perspectives can match together.

Research implications: The forthcoming studies on private hospitals should concentrate on quality certificates in health care industry. The comparison between the certificates may help researchers to understand the needs and expectations of hospitals. The need of studying the quality certificates in the academic arena should be underlined. The hospital managers should accept the helps of the researchers. The researches done should be more empirical to test the perceptions of both the customers and employees. Concerning the succession process the studies should be longitudinal in order to see the improvement in the health industry.

Practical/managerial implications: In health care industry patients' satisfaction from the service quality and trust to the hospital is important for achieving and sustaining competitive advantage. For that reason managers in this industry should concentrate on total quality applications and give importance to obtain quality certificates in order to create a difference when compared with their rivals.

Originality/value: This study, different than other studies enables us to consider the relationship between the concepts of total quality management, service quality and JCI together. In our study, different than other studies we have applied these concepts on private hospitals in Istanbul. It is expected that cultural and industrial varieties will put different results in the research.

Key words: Total Quality Management, Service Quality, Healthcare, JCI Accreditation Certificate

Paper type: Research paper



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SESSION 08 – Changes in the Organization of Health Care Delivery

Chair: Rasmi Muammer, *Yeditepe University, Turkey*
rasmi.muammer@yeditepe.edu.tr

New Zealand Health System Performance: Is it good as it seems?

P. Sandiford

Waitemata District Health Board, New Zealand
peter.sandiford@waitematadhb.govt.nz

Purpose: This paper undertakes a critical analysis of the performance of New Zealand's (NZ) health system, to identify both its strengths and its weaknesses. The NZ health system has been ranked highly by some commentators, but other reports have been less glowing. In 2000 WHO ranked NZ 41st out of 191 countries for overall health system efficiency, putting it below even the United States.

Design/methodology/approach: This starts from the assumption that high performing health systems remain 'on track' without the need for frequent radical reforms, or corrective measures to address system failings. In other words, a 'self-correcting' health system is one in which stewardship by government policy-makers and the Ministry of Health is 'light-handed' because the system itself identifies priorities, allocates resources to them appropriately, and efficiently delivers the necessary goods and services to address these priorities. Thus, by examining major government health policy initiatives, it is possible to reveal the underlying weaknesses and structural failings in the health system.

Findings: Despite a relatively high life expectancy given its GDP and health care expenditure, NZ's infant mortality rate is about double Singapore's. There are large disparities in health outcomes between ethnic groups. It relies heavily on foreign-trained doctors and nurses, waiting times for elective procedures are long, and a high proportion of health care costs are derived from out-of-pocket expenditure. Reliance upon national health targets to drive the most basic improvements in performance such as immunization coverage and shorter emergency department attendances demonstrates that existing institutions, incentives, and management systems are not yielding the system's full performance potential.

Research limitations: The assumption that a health system's failings are revealed by its major policy shifts and reform initiatives may be criticized on the grounds that some health systems function poorly precisely because government stewardship is too light-handed or simply ineffective. Indeed this has been said of many developing country health systems as well as the United States. If the system is designed intentionally as a centralized command and control bureaucracy then heavy-handed stewardship can be seen as the driver of health system performance rather than as a symptom of its failure.

Research implications: Research is needed to better understand why the NZ health system is not 'self-correcting'. Why heavy-handed central intervention is needed to achieve even basic gains in performance? The answer may lie in the incentive structures that govern behavior among senior level managers.

Practical/managerial implications: NZ's health system performance could be improved significantly if the systemic weaknesses can be identified and corrected.

Public Policy implications: National health targets in NZ and other countries have been spectacularly successful in achieving better outcomes for patients and populations. Rather than celebrate this as a success, governments should look at these as signs of potentially serious flaws in health system design.

Originality/value: Most previous assessments of health systems have relied upon international comparisons to identify disparities in performance. Instead, this analysis uses a country's own policies and reform initiatives to reveal its underlying systemic weaknesses.

Keywords: Health system performance, Health policy, New Zealand, Healthcare management

SESSION 08 – Changes in the Organization of Health Care Delivery

Health System Responsiveness Change: A panel study of two household survey in 17th of Tehran

Z. Kavosi¹, A. Rashidian², A. Pourreza²

¹Shiraz University of Medical Sciences, Iran, ²Tehran University of Medical Sciences, Iran
zhr.kavosi@gmail.com arashidian@tums.ac.ir abolghasemp@yahoo.com

Background: Responsiveness is an indicator introduced by world health organization to evaluate performance of health systems on non-medical expectations of its consumers. The objective of this study is to evaluate responsiveness change in 17th district of Tehran in 2003 & 2008.

Methods: World Health Survey (WHS) questionnaire was used to collect data on a two-stage cluster sampling in District 17 of Tehran. In 2003 of 635 individual, 554 and 260 Individuals and in 2008, of 603 individual, 588 and 205 individual who respectively had outpatient or inpatient services utilization responded to Responsiveness module of WHS.

Results: More than 90% of respondents believed that responsiveness are very important. The least important aspects were "Freedom of choice" and "autonomy" (both 91%) in 2003 and "confidentiality" (92%) in 2008. proportion of people reported responsiveness of inpatient service as good or very good in all domains was significantly increased except for "social support" and "prompt attention" ($P < 0.001$) in 2003 compared to 2008. outpatient service responsiveness was significantly rated in 2008 worse than 2003 for all domains ($P < 0.001$). No significant differences were found in ranking responsiveness domains in terms of individual sex, education, ethnicity, marital status and also socioeconomic status both for outpatient and inpatient services

Conclusion: Non-medical aspects of health system in comparison with medical aspects are better and more correctly by patient and users and in some cases affect patient's judge about quality of whole care taken. Iran health system needs pay more attention to responsiveness domains. It sounds that health system interventions are main determinant of responsiveness score compared to demographic or user variables. Training health staff, allocating more resources and reengineering some processes sound to be effective. Furthermore, it seems that inpatient services performance is monitored better than inpatient services so more attention to outpatient services performance is recommended.

Originality/value: Few studies monitor responsiveness of health services over time.

Key words: Responsiveness, Outpatient services, Inpatient services, WHS, Iran

Paper type: Research paper

SESSION 08 – Changes in the Organization of Health Care Delivery

The Road to Patient Satisfaction: Complaint Management

E. Y. Okan

Yeditepe University, Turkey
eokan@yeditepe.edu.tr

Abstract: Complaint management is an important topic in today's competitive world because despite persistent efforts to deliver exceptional service, zero defection is an unrealistic goal in service delivery (McCollough, 2000). Due to health service characteristics like intangibility, simultaneous production and consumption, and high human involvement; achieving zero defections is very difficult (Boshoff, 1997). However, appropriate service recovery efforts and complaint management systems can cure a service failure which leads to secondary satisfaction and enhance repurchase intention and positive word-of-mouth communication.

First of all, this study aims to review the patient complaint behavior literature inspired from customer complaint behavior. Secondly semi-structured interviews with two hospital managers will be used to analyze the nature and structure of patient complaints in İstanbul. Furthermore; organizational, operational and technical determinants of successful complaints handling will be proposed.

Complaint management must aim to respond effectively toward customers' complaints and service providers should develop recovery practices, taking into consideration customer expectations and characteristics of the health service industry. This process involves developing and implementing well defined policies and procedures for seeking and responding to patient complaints. On the contrary if dissatisfaction is not predicted and complaints are not handled effectively, brand switching which leads to poor firm performance becomes unavoidable.

Key words: Patient complaints, Service recovery



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PLENARY SESSION - 14 June

Role and prospects of innovation and R&D in the future of Turkish pharmaceuticals industry

Alp Sevindik

Association of Research-Based Pharmaceutical Companies, Turkey

Abstract



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SESSION 09 – Economics and Health Care

Chair: Alper Altınanahtar, *Yeditepe University, Turkey*
aaltinanahtar@yeditepe.edu.tr

Expenditures on Work Force Health: Cost or Investment?

Ö. Kunday¹, B. Ökten¹

¹Yeditepe University, Turkey

okunday@yeditepe.edu.tr

begum.otken@yeditepe.edu.tr

Abstract: Healthcare related costs have become a important concern for an employer's financial costs. The amounts of monthly health fees that employers pay for health plans are a considerable amount of money and considered as a source for cost. Therefore, companies are searching for ways to decrease it. However, if workforce health is seen as an investment, it may foster positive attitudes and behaviors which may benefit the organization. These practices may be related to organizational climate for health and safety which reflect the perception among the employees about the priorities the organization places on wellbeing and safety of employees. Until recently, research in this area was limited to the impact of poor health –and especially of chronic diseases on worker performance. With this in mind, the purpose of this study is to discuss the shift in employers' perception of employee health issues from being a burden to being an investment for the organization. Both points of view will be presented to find out what the global trend is and its managerial implications for Turkey might be.

Key words: Workforce health costs, Employee health, Job productivity, Health investment

SESSION 09 – Economics and Health Care

Health Services as Economic Goods

D. I. Sava

Private Consultant, Romania

dsava22@gmail.com

Purpose: Governments worldwide are under increased pressure to spend money on various goods and services considered part of the public realm. It is difficult to discern which are the public goods and which are the private goods and what are the social benefits in this context. The presentation tries to propose an assessment of various types of health activities and services in regard to their public or private character, considering the externalities they yield, based on economic theory.

Design/methodology/approach: Public goods are defined in economic theory as goods which consumed by a person do not reduce their benefit to others and meet two conditions: non-rivalness and non-exclusion in consumption. If a public good is consumed, it will still remain in large enough quantities to be consumed by others and its consumption creates a benefit not only for the direct consumer but for everybody; nobody can be prevented from benefitting from a public good or service. In opposition to this, a private good doesn't satisfy these two conditions. There are very few public goods and many private goods. There are also mixed goods that satisfy only one of the two conditions, to a larger or lesser extent.

In the production and consumption of goods, as a result of the activities of actors involved, externalities are produced (gains and losses for which no compensation is paid). Here, we are particularly interested in positive externalities which occur during the production and consumption of health services.

Diseases may have various causes and the originating factors can be controlled to a larger or lesser extent through public intervention. As it regards the onset of the disease, health services can be preventive or curative; they are different from the economic point of view.

Findings: Various types of health services fall in the category of mixed goods, but they are not the same, some having more public characteristics than others. Moreover, some of them have more positive externalities than others.

Research limitations: Because there are many specific health services, for the purpose of this presentation, only large categories of health services are discussed and not individual services.

Research implications: The presentation can shed light on the social value of various types of health services and how much individuals benefit from them directly and the society as a whole, indirectly.

Practical/managerial implications: It can constitute an argument to be considered in setting ratios between fees paid by health insurance and co-payments in setting prices for health services. It can also be used to establish packages of health services to be rendered by the public health system

Public policy implications: This endeavor can clarify the motivations for subsidies and investments of public funds and might be used as a tool in policy making and budgeting process.

Originality/value: It is multidisciplinary approach, trying to bridge the gap between economic approaches and public health approaches towards the health system organization and financing.

Keywords: Public goods, Private goods, Mixed goods, Positive externalities

SESSION 09 – Economics and Health Care

An Econometric Study of the Healthcare Management Education within the Turkish Higher Education System: An Inventorial Perspective

A. Ağaoğlu

Yeditepe University, Turkey

agaoglu@yeditepe.edu.tr

Purpose of the Research: The major aim of this research is to screen the Turkish Higher Educational System and investigate the “Allocational Position” of the Health Care Education and Training. Next, we attempt to draw attention to the major shortcomings which need further consideration. By doing so, we expect to facilitate the long term strategic planning of the industry.

Design/Methodology/Approach: Since the University Placement Examination Base has changed, this research confines itself to 2009 data. We divide Programs of Turkish Higher Education into three groups, namely, (1) Medicine; Medical and Health Care Programs; (2) Programs having close indirect affiliation to the First Group; and (3) All other remaining Programs. Later these programs have been further classified in accordance with the type of Degree programs, namely, “Vocational Studies” and “4-year Faculty programs. Since the tracks of examination are different for Postgraduate programs, they have not been considered in this study. For each subclassification, we have ranked the data according to number of seats available; number of seats allocated; and number of seats remaining unfilled. Assuming, the percentage of seats remaining empty, serving as a proxy to the inclinations of choice of the candidates entering the examination, sorting of the data for each group in a descending fashion has served this purpose of measurement in this study. Later, the results for 2009 have been compared and contrasted with year 2003. The increase in allocational volumes of each program was calculated. A Dummy Dependent Variable Simple Regression (Dependent variable as 0 for groups No.1 and 2; and 1 for group 3; with the independent variable as percentage increases in the volumes of seats made available). Overall results of the study are then interpreted.

Findings: There have been 196 and 416 programs (departments) on vocational education, and faculties, respectively. In total, there are 300,563 and 316,736 seats, respectively. On an overall basis the Medicine; Medical and Healthcare programs have the least number of seats (Groups 1 and 2 together amount to 6%), with the “Remaining Empty Seats” of 4.60%; 27.16%. Group 3 has 20.50% of unallocated seats. On an overall basis, average of unallocated seats are 21.60%. Faculties on the other hand have 8.40% unallocated capacity, distributed in almost similar fashion. Results of the Dummy Regression show that increase in the allocational capacity of group 3 has exceeded Medicine; Medical-Health Care group. The results of the study show that educational planning need to go side by side with the macroeconomic and Industrial planning. In this respect, the overall results of the study have been taken up in the last part of this article.

Research limitations: Any econometric or statistical work would be confronted with enormous limitations because of the examination system which changes very frequently.

Key words: Turkish Higher Education System; Econometric Methods; Statistical Analysis; Discriminant Analysis; Cluster Analysis; Factor Analysis; Turkish Foundation Universities; Turkish Public Universities; Analysis of Higher Education; Strategic Planning of the Higher Education.

JEL Classification Codes: B23; C10, C38, C87; I10; I21, I23, J68; 052.



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SESSION 10 – Business Intelligence in Health Care

Organizer/Chair: Serkan Türkeli, *Istanbul Technical University, Turkey*
serkanturkeli@yahoo.com

Business Intelligence Best Practices in Health Care: A Case Study

Y. Yüksel

SAP, Turkey

yucel.yuksel@sap.com

Purpose: Business Intelligence Project in Hospital Alpha was initiated in order to be able to analyze all corporate data stored in various systems. The aim of the project was an enterprise business intelligence platform which enables harmonization of different data sources, ad-hoc reporting, trusted data management, excellent security and flexible mobile applications.

Design/Methodology/Approach: There are many definitions for the case study method which was firstly used in France. This method is the ideal method when it is required to make deep dive analysis as well as considering the big picture (Feagin, Orum, & Sjoberg, 1991) Gilham has defined the case study method as an observation type enabling people summarize specific findings thanks to several evidences and give the best possible answers (2000).

Findings: After a successful proof of concept process, Hospital Alpha decided to start the project with an SAP partner - DCAT Technology. Firstly, DCAT analyzed the requirements of Hospital Alpha and defined the project scope. Since the business intelligence is a living organism, last phase of the project is still going on. The design phase completed with 1 functional expert and 2 technical consultants. Nowadays, only one consultant is delivering all BI content. 2 employees from business units are also involving in the project.

KPIs from healthcare best practices along with some customized ones were displayed in dashboards and reports. Authorization and authentication were defined so that each user is going to access the data related to his responsibility. Moreover, ad-hoc reporting enabled the users to create their own reports without the involvement of IT department. The other key functionalities are scheduling and advanced publishing. IT department can also monitor the usage information via predefined admin reports. By the same token, sponsorship of executives was the most critical factor to the success of this BI project.

Originality/Value: One of the most successful BI projects in Healthcare industry in Turkey.

Key words: Business Intelligence, SAP Business Objects, Healthcare, Best Practice

SESSION 10 – Business Intelligence in Health Care

The Operational Level Excellence in Health Business Intelligence: The Key Elements in Decision Making

K. Akan¹, E. Yurtçu¹, H. Karapınar²

¹Istanbul Medeniyet University, Turkey, ²Ordinatrum Bilişim Teknolojileri ve Danışmanlık, Turkey
drakan@sbgoztepe.gov.tr dremrah yurtcu@sbgoztepehastanesi.gov.tr
hatem.karapinar@ordinatrum.com.tr

Purpose: To define the key elements for scientific and economic research and their strategically impact in two major patient groups of a training and research hospital in terms of infection and complications of Type II diabetes using a Business Intelligence Software (HOBI®).

Design/methodology/approach: Two separate groups of patients were defined to represent a hospitalized group for infection and an outpatient group to represent the complications of Type II diabetes. The search was made on the hospitals raw data between 01.01.2008 and 31.12.2010 years. To define the patient population International Classification of Diseases (ICD 10) was used. The inclusion criteria for the hospitalized group (HG) were: age >65 y/o (to define geriatric patients), the first admission diagnosis as femur neck fracture (ICD10 codes S72, S72.0, S72.8, S72.9) to the Orthopedic Clinic between 01.01.2008 and 31.12.2008, to have a second or more admissions to the same clinic in the same year (representing complications) and their additional ICD10 codes showing the risk for morbidity, their charged and uncharged procedures, medical supplies and medications. The selection for the second group representing outpatient group (OG), was based on the HbA1c levels which shows unregulated Type II diabetes. The inclusion criteria for this group were HbA1c levels ≥ 6.5 % on two successive visits, any hospital admission, and the admission cause defined by ICD10, their charged and uncharged procedures, medical supplies and medications. The limitations of the key search elements criteria both medically and economically were investigated.

Findings: The total number of patients meeting the inclusion criteria for HG was 5 (3 male, 2 female), the mean age was 79.4 years (75-89), the average number of ICD10 code per patient was 4.6 (3-6), the average number of hospitalization was 5. The total cost of admission per patient was 14129, 47 TL. The total number of patients meeting the inclusion criteria for OG was 547 (193 male, 354 female), the mean age was 59, 3 years (30 - 83), the average number of ICD10 code per patient was 2.1, the hospital admission per patient was 1.4 and the total cost per patient was 1846, 60 TL. The major complications in diabetic group were hypertension, eye and kidney problems.

Research limitations: ICD10 listing entry errors

Research implications: Operational level thinking and observation can increase the excellence in BI designs. The raw data should always be handled with someone who has field knowledge, procedural experience and wisdom.

Practical/managerial implications: The infection in the geriatric patients with hip fractures can be prevented with the knowledge of existing comorbidities and their appropriate treatment. The knowledge of patients with unregulated diabetes can help hospitals to take precautions in their most visited clinics such as ophthalmology, nephrology and internal medicine.

Public Policy implications: The hospitals can inform the patient's family doctor in order to prevent further complications due to their illnesses.

Originality/value: Original research

Key words: Business intelligence software, Operational level excellence, Key performance indicator, Hip fracture, Health cost

SESSION 10 – Business Intelligence in Health Care

What makes an Organization Intelligent?

S. Türkeli¹, M. Tepe¹, K. Kaplan²

¹Istanbul Technical University, Turkey, ²Acıbadem Health Care Group, Turkey
sturkeli@itu.edu.tr mertepe@gmail.com kkaplan@asg.com.tr

Purpose: The literature was searched for the benefits of using business intelligence (BI). The benefits of BI categorized as: organizational benefits, business supplier/partners relation benefits, internal processes efficiency benefits, and customer intelligence benefits (Elbashir et al, 2008). On the other hand a review of literature also shows that organizations often fail to realize the benefits of BI (Hawking, 2011). Moss and Atre (2003:5) state that “A staggering 60 percent of BI projects end in abandonment or failure because of inadequate planning, missed tasks, missed deadlines, poor project management, undelivered business requirements, or poor quality deliverables”. The aim of this paper is to find an answer to the question, “what makes an organization intelligent?” a technology (BI software) or an organization itself.

Design/Methodology/Approach: The research method of this paper is case study. In Turkey, there are 5 types of hospital. H1 private and multi branch, H2 private unique branch, H3 private, multi branch and foundation supported, H4 public hospital, H5 university hospital (Türkeli and Sahin, 2009). H1 type hospitals are using BI. Only one case analyzed in detail to find an answer to research question. H1 has more than 7.000 staff in over 17 branches in Turkey. Semi-structured interviews were conducted with BI project team who were knowledgeable and had experience with BI, software vendor consultants and BI log reports were analyzed.

Findings: The finding of the study was reciprocal effects of BI (technology) and organization. Software is only one of components of organizational efficiency. One of the reasons why BI project fail is the software vendors which try to sell a general BI project and do not analyze each organization. Every organization has unique needs, which means there is not one size fits all business intelligence software. BI projects should be started after analyzing organization structure and culture. After analyzing organization structure and culture, technology should be designed to fit the current needs of organization. After implementation of BI, technology (BI) will affect organization. For example, it will change working style of people. At that time technology will cause organizational change. After organizational change, the necessity of organization will also change so we need to analyze organization at that time and technology should be designed to fit the organization’s changed structure and culture. BI and organizations reciprocally change each other; this continues process makes an organization intelligent.

Research Limitations: The research method of this paper is case study, for this reason it relies on only one hospital’s BI project implementation. Generalizations about populations or universes cannot be made on the basis of case studies but case studies can be used to generalize about theoretical propositions (Yin, 1994). This case study gives clues about BI project.

Practical/Managerial Implications: BI vendor revenue expected \$7.7 billion by the year 2012 (Sommer, 2008). As in the rest of the world, organizations in the healthcare industry in Turkey try to implement BI project. There has to be greater understanding of business intelligence at every level of healthcare organizations, software vendors and other BI project team members.

Originality/Value: Even BI is a very popular topic recently, there is not a work in literature which explains BI and organization reciprocally affects each other. Every organization has unique needs; the success of a BI requires a clear understanding of the business needs. After implementing a BI (technology), BI and organization reciprocally change each other inevitably.

Keywords: Business Intelligence, Intelligent Business, Healthcare, Technology, Organization, Reciprocally Change

Paper Type: Research paper



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SESSION 11 – Changes in Pharmaceutical Innovation

Organizer/Chair: Ahmet Gül, *Istanbul University, Turkey*

Translational Research

Y. Üresin

Istanbul University, Turkey

yagizuresin@gmail.com

Abstract: To improve human health, scientific discoveries must be translated into practical applications. Such discoveries typically begin at “the bench” with basic research- in which scientists study disease at a molecular and cellular level- then progress to the clinical level or the patients “bedside”. Translational research has two areas of translation: one is the process of applying discoveries generated during research in the laboratory, and in preclinical studies, to the development of trials. The second area of translation concerns research aimed at enhancing the adoption of best practices in the community. This ‘bench-to-bedside’ approach of translational research runs two-way. This approach uses networks that connects interdisciplinary research (such as molecular libraries, bioinformatics etc) and community & public health practice (such as clinical research/ trials & training, practical trials etc).

SESSION 11 - Changes in Pharmaceutical Innovation

Genomics

U. Özbek

Istanbul Technical University, Turkey

ugurozbek1@yahoo.com

Abstract: Genomics is increasingly seen as one of several sources of information and technologies in the tool kit of clinical and public health practitioners. The information and the technologies developed in the field of genomics have great potential for making clinical and public health practice more effective, efficient and equitable. Applications of genome analysing have been used not only to prediction of disease risks but to normal physiological variation have brought the field of science communication to the post genomics era.

Personalized genomics draws on a range of disciplines including basic genetics, population genetics, genetic and clinical epidemiology, behavioral science, and emerging regulatory science. The applications of genetics and genomics in personalized medicine have included elements of risk assessment, diagnosis, prognosis, and treatment.

SESSION 11 - Changes in Pharmaceutical Innovation

R&D Vision for Turkish Pharmaceuticals Industry

H. Demirel

Novartis, Turkey

hulya.demirel@novartis.com

Abstract: Aging population, extended lifespan, and socioeconomic and ecological changes around the world have increased the need for health services. Chronic diseases and health problems in later stages of life rise as the average life span of a person increases. Considering these dynamics, while the need for health services is increasing, innovative drugs will help preventing the diseases and reducing the treatment costs. Therefore, the innovative drugs and treatments in pharma sector will gain more importance. For this reason, the pharma R&D for discovery of new treatments and the production of these drugs is accepted as one of the prioritized investment fields and considered as the strategic sector both in developed and developing countries. AIFD strongly believes in the potential of the Turkish Pharmaceutical Industry and to transform this potential into reality initiated the preparation of a report where necessary actions and a roadmap are to be defined to increase Turkey's R&D competency and competitive power.



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SESSION 12 – Pharmaceuticals

Chair: Irini Papapetrou, Frederick University, Cyprus

The Learning of Methods of Forecasting the Volume of Medicine Sales in Pharmaceutical Firms of Azerbaijan

A. Shukurova

Azerbaijan Medical University, Azerbaijan

aytens@inbox.ru

Abstract: Azerbaijan Republic is favorable conditions for the development of the owner, firm and enterprises. This condition gives an opportunity, the business activity of the new opening or existing enterprise and firm may work planning and forecast for the future.

The systematic analysis of sales volume and forecast help in the organization of the truth and efficiency of Pharmaceutical products trade in any firm and generally, allow for the organization of business activity and as a result the income of those objects would increase.

Therefore, they considered as the most important activity field for learning of sales volume on each enterprise and their forecast.

Each firm will get to set possibility at first of impact factors of sales volume, requirement level, capital investment, product range, expenses, products amounts, competitors reaction, stimulate of sales, the information on products, the seller's ability, market capacity and etc. and In order to they prevent the dangers and will decide in advance.

Keywords: Analysis, Medicines forecast with calculate, Impact to volume of sale

SESSION 12 – Pharmaceuticals

The Effect of the Government's Price Restrictions on Pharmaceutical Raw Material Industry

S. Koral

Farkim Farmasötik Kimya San. ve Tic. Ltd. Sti., Turkey
sinemkoral@hotmail.com

Abstract: The aim of this research is to understand the effect of the price restrictions of the government put for the medicines on the pharmaceutical and pharmaceutical raw material industry. Government changed and decreased very much the prices of the medicines almost 800 medicines in the industry and the pharmaceutical industry and the pharmaceutical supply chain has been affected negatively from these changes. When we mention about the pharmaceutical supply chain we mean the pharmacies, medicine stockholders, pharmaceutical manufacturing companies, trading companies, raw material trading companies and raw material producers. It is obvious that the pharmacies, stockholders and medicine manufacturing companies had some problems but also the raw material industry has been affected of this situation.

At the end of this research I saw that the raw material sector also been effected in a negative way from the price restrictions parallel with pharmaceutical industry; only a new and technological raw material is not effected in a negative way even though the price of this material is much more higher than other materials.

So the government price restrictions has effected whole sector with a parallel effect but only a new technological raw material's selling amount and using amount has been increased opposite of the whole sector even though the new product has a big price difference (high price) form the other materials.

SESSION 12 – Pharmaceuticals

Investigation of Polypharmacy and Rational Prescribing in Elderly Patients in a Health Centre of Nicosia, Cyprus

I. Papapetrou¹, G. Charalambous¹, E. Jelastopulu¹

¹Frederick University, Cyprus

renapapapetrou@cytanet.com.cy

drcharalambous@yahoo.gr

ejela@yahoo.de

Purpose: Polypharmacy is a phenomenon that occurs mainly in the elderly population. It is defined as the intake of 5 or more medications by the patient at the same time, or the use of clinically inappropriate medications. It is recognized as a serious problem in most developed countries, both in terms of health and of economy. The aim of the study was to investigate the polypharmacy in the elderly population of a health center in Nicosia, Cyprus and the association with various factors influencing it. Further aims were to attempt to find ways to address and reduce polypharmacy, by controlling the issuing of prescriptions.

Design/methodology/approach: Cross-sectional design with a random sample of elderly patients (> 65 years) who visited the health center Strovolos in Nicosia, in the period from July to September 2011. A questionnaire was designed to record the basic data, including questions aiming to determine the rate of polypharmacy. Statistical analysis was performed using the programme SPSS version 17.0, including descriptive and inferential analyses (chi square, t-test and Mann-Whitney U test).

Findings: A total of 350 patients was recorded, 145 (41.4%) men and 205 (58.6%) women, mean age 74.8 years. All of them had at least one chronic disease, with hypertension (82%) to dominate, followed by hyperlipidemia (64.6%), diabetes mellitus (24%) and heart disease (24%). The studied population consumes on average 4.1 different drugs per person regarding the chronic disease and in total 5.1 different drugs per person. Polypharmacy was evident in 54.6%, taking more than 5 different drugs concurrently. The majority of patients (58.6%) requested drugs that are not indicated for their chronic condition. We observed association of polypharmacy with age ($P = 0.043$), educational level ($P = 0.003$) and the demand for drugs by the patient ($P < 0.001$). The main reason to visit the health center was the prescription of drugs. At the end of the visit to all patients medication was given.

Research limitations: The cross-sectional design, the limitation to a specific age-group and the investigation in only one health center does not permit generalization to the whole population in Cyprus.

Research Implications: This study demonstrates that there is a serious problem of polypharmacy in the elderly population which is associated with age, educational level, the number of chronic conditions and mainly the demand for drug prescription.

Practical/managerial implications: General practitioners in primary health care should apply more strictly rational drug prescribing and inform the patients about the dangers of polypharmacy.

Public Policy Implications: The observed relationships give valuable evidence for further research and policy making.

Key words: Polypharmacy, Prescribing, Primary health care.

Paper type: Original research



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SESSION 13 – Decision Support Systems in Health Care

Chair: Nuri Başoğlu, *Boğaziçi University, Turkey*

An Analytically Guided Decision Support Tool, an Excel Macro, for Resident Allocation

I. T. Değirmenci¹, J. Holmes², P.C. Kuo², O.B. Jennings³

¹Antalya International University, Turkey, ²Loyola University, USA, ³Duke University, USA

isilay.degirmenci@antalya.edu.tr

CAHOLMES@lumc.edu

pkuo@lumc.edu

otis.jennings@duke.edu

Purpose: Design an easily applicable and flexible algorithm to determine the annual assignment allocation and recruitment needs for residency programs, where the administrators make decisions to adjust for the discrepancies in previously planned assignment allocations due to factors related with attrition and research activities, while satisfying the constraints on the number of residents that are assigned to clinical practice

Methodology: The program consists of two phases, in the first phase, an Excel sheet called the “Brain Sheet,” there are simple formulas that we have prepared to determine the number of interns to recruit, residents in the research phase and residents that advance to the following stage of training. The second phase of the program, the macro, then takes the list of current resident names along with the residency level they are in, and according to the formulas allocates them to the relevant stages for future years, creating a resident matrix.

Findings: Our algorithm allows for planning the number of residents that will be able to enter the lab as well as how many will be directly continuing to the clinical practice so that the flow of residents will soon converge to/continue to be the ideal flow. The macro allows future planning on the number of interns that will be needed in the following years and allows for planning of expansion.

Research limitations: If other programs such as optimization packages or simulation software are considered, the algorithm can be technically extended but perhaps with a loss of user-friendliness and access to medical science residency program administrators due to technical and economical considerations

Research Implications: Traditionally the process of selecting residents to move into and out of the lab consists of random trial and error. With the macro that we developed this process is transformed from error prone guess work to an analytically guided decision process.

Practical/managerial implications: Our Macro for Resident allocation would maximize the time of residency program administrators by simplifying the movement of residents through the program. It would also provide a tool for planning the number of new interns to recruit, program expansion.

Public Policy implications: The algorithm also enables administrators to visualize at what levels and years in the future there will be an excess or shortage of residents at any level depending on the gain or loss of any number of residents over the year. This way the administrators can obtain valuable insights on the effects of such phenomena and will have a chance to adjust their policies accordingly.

Originality/value: We provide, to our knowledge, a first step to transform the annual resident allocation process into an analytically guided methodology where the current resident names and the number of the residents at each level are entered into an Excel workbook along with the desired values for the number of residents at different stages and the Excel macro yields a resident allocation matrix with names and projections for future years.

Key words: Resident Allocation, Decision Support System, Excel Macro

Paper type: Original research article

SESSION 13 – Decision Support Systems in Health Care

Cost-Volume-Profit Analysis of Surgery Rooms: A Foundation Hospital Case

C. Birkan¹, İ. Gökçen², M. Kıyak², T. Bozaykut²

¹Yıldız Technical University, Turkey, ²Okan University, Turkey

cevdetbirkan@hotmail.com

higokcen@mynet.com

mithat.kiyak@okan.edu.tr

tuba.bozaykut@okan.edu.tr

Purpose: It's aimed to examine the implementation of cost-volume-profit analysis at a foundation hospital, Vakıf Grueba Hospital. By calculating the break-even points of surgery operations, it is intended to calculate the exact operation number for an efficient and effective healthcare delivery system.

Design/methodology/approach: To calculate the break-even points of surgery operations, the cost function is firstly determined using the accounting technique. Through gathering secondary data during January 2010, costs such as accounting records, personnel wages, depreciations accounts, are classified as fixed and variable costs.

Findings: The cost function of the sample hospital was calculated and it's found out that total cost was 151.387, 38+106, 79 per each surgery operation. According to this formulation, even though there was no surgery operation on January, there was a fixed cost, 151.387,38, to be born. Also, for each surgery operation, an operating cost including surgical instruments, doctor wages of 106, 79 TL had to be borne by the hospital. Through these cost analyses, the exact number of operations (264) for an equal income and expense balance was calculated. The operations were evaluated on the basis of profit and loss and it is demonstrated that group A operations were the most profitable, whereas, group E operations were the least profitable operations.

Research limitations: The single case makes it difficult to generalize about the cost-quantity-profit analyses of surgery operations for all healthcare institutions.

Research Implications: Cost-volume-profit analysis of the surgery rooms for other types of hospitals - private, university or educational research hospitals- has to be done for a holistic perspective. Classifying the hospitals and comparing them according to their cost-volume-profit analysis of operating rooms can be also analyzed in the further studies.

Practical/managerial implications: Through cost-volume-profit analysis of the surgery rooms, managers can analyze the surgery costs and incomes better and by analyzing operational costs, they can have a better financial planning.

Public Policy implications: The implications inferred from such financial researches can shed light especially for institutions like SGK and other healthcare related institutions that take permanent service from hospitals.

Originality/value: The originality of the research lies in calculating cost-volume-profit analysis of the surgery rooms in the case of a foundation hospital.

Key words: operation quantity, profitability, cost, break-even point, hospitals

Paper type: Research paper

SESSION 13 – Decision Support Systems in Health Care

Adoption Factors of Electronic Health Record Systems

A. N. Başoğlu, O. Kök

Boğaziçi University, Turkey

basoglu@boun.edu.tr

Abstract: Increasing healthcare costs, rapidly changing regulations and most importantly, globalization has made health record keeping an critical issue. Electronic Health Record systems are on the rise as a crucial and unavoidable way of record keeping for healthcare. However as do other information technology implementations, Electronic Health Records also have their own adoption processes and diffusion factors. The main goal of this study is to define a model to analyze the adoption process of Electronic Health Records systems and to understand its diffusion determinants.

The results of the study show that there are various factors affecting the adoption process by applying via a literature research, qualitative and quantitative field surveys. The model has been tested and constructs have been grouped under intermediary, dependent and external factors.



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SESSION 14 – Risk and Performance in Health Care

Organizer/Chair: Yaşar A. Özcan, *Virginia Commonwealth University, USA*
ozcan@vcu.edu

Integrated Capacity and Appointment Scheduling in Presence of Seasonal Walk-in Demand

E. Güneş¹, T. Çayırılı², P. Dursun³

¹Koç University, Turkey, ²Özyeğin University, Turkey, ³Istanbul Technical University, Turkey
egunes@ku.edu.tr tugba.cayirli@ozyegin.edu.tr dursunpi@itu.edu.tr

Abstract: This study investigates appointment systems, as combinations of access rules and appointment rules that are explicitly designed for dealing with walk-in seasonality. In terms of “access rules”, we assume a portion of capacity is reserved for walk-in demand while the rest is set as the booking limit for appointments. In terms of “appointment rules”, strategies are tested to determine which particular slots to leave open for walk-ins. Simulation experiments investigate the effects of environmental factors such as demand load, probability of walk-ins, and seasonality level, on the best access rules and the appointment rules. The performance is measured in terms of patient wait time, physician idle time and overtime and indirect wait time for appointments.

Key words: Appointment scheduling, simulation, capacity planning

SESSION 14 -Risk and Performance in Health Care

Universal Appointment Tool for Patient Types, No-shows and Walk-ins

T. Çayırılı¹, K. K. Yang²

¹Özyeğin University, Turkey, ²Singapore Management University, Singapore
tugba.cayirli@ozyegin.edu.tr kkyang@smu.edu.sg

Abstract: This study evaluates sequencing approaches that differentiate patient groups by their mean and variance of service times, no-show and walk-in probabilities. Results confirm sequencing improves clinic performance in terms of patient's wait, doctor's idle time and overtime. While it is difficult to generalize the best sequencing policy, our study shows that a proposed universal Dome appointment rule performs consistently well across different clinical scenarios and cost valuations.

Key words: Healthcare operations, Appointment scheduling, Simulation

SESSION 14 – Risk and Performance in Health Care

Healthcare Risk Management and Patient Safety in Turkish Hospitals

A. Kaptanoğlu

Marmara University, Turkey

aysegulkaptanoglu@gmail.com

Background: Patient safety is an important component of risk management in hospitals. To develop a patient safety culture at hospital, the Ministry of Health of Turkey has undertaken several recommendations such as good information flow founded on mutual trust, shared perception of the importance of patient safety, organizational learning and new non-punitive approach to incident and error reporting for prevention of harm to patient. This study provides a synopsis of the current state of patient safety culture for the Turkish hospitals.

Methods: The study uses standardized four patient safety indicators (needle sticks, cut wounds, wound dressing allergy, and infections due to contamination). Across section study was conducted through three month period based on voluntary response to questionnaire that intend to measure knowledge about needle sticks, cut wounds, and wound dressing allergy and infections. . The aim of the study is to measure physician and nurse awareness about patient safety indicators and events reported about these four indicators in the hospital. Study population consisted of accessible sample 146 different specialty physicians and 108 nurses present on duty during study period. The response rate was 83.45%. We analyzed the association between the patient safety indicators and events reported about indicators in questions.

Results: Mean patient safety knowledge questionnaire scores for needle sticks, cut wounds, dressing allergy, infections indicators were 47.13(11.8); 39.04(14.5); 38.02(10.5); 39.72(9.7), respectively. Significant statistical differences were also found between the frequency of events reported and patient safety indicators ($F= 8.34$; $p<0.05$).

Conclusion: Measuring patient safety culture via safety indicators is essential in improving patient safety. Hence, management of safety indicators has crucial importance in hospital risk management. Patient safety is the corner stone in health care management.

Key words: Patient Safety, Risk Management, Hospital



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SESSION 15 – Bayesian Methods in Health Science

Organizer/Chair: Refik Soyer, *George Washington University, USA*
soyer@gwu.edu

A full Bayesian Approach to Decision & Policy Making: Two Cases from Research on Neuropathic Cancer Pain

S. Deandrea

Task Force Public Health, Institute for Health and Consumer Protection, Joint Research Centre,
European Commission, Italy

silvia.deandrea@ec.europa.eu

Abstract: Bayesian methods are useful tools to synthesize research findings from different sources, but today the potential for the use of informative priors is still not well recognized. Neuropathic pain is an emerging research area in palliative care research: an exhaustive description of this phenomenon from published literature is not available yet.

In order to inform evidence about the risk of accidental falls in the elderly due to the use of antiepileptics (a medication frequently prescribed for neuropathic pain) and the prevalence of neuropathic cancer pain, an opinion from expert physicians was elicited using structured questionnaires. The opinions about the increased risk of falling were subsequently translated into priors suitable for the introduction into a random-effects Bayesian meta-analysis, combining relative risks from published papers and from experts. A Bayesian hierarchical model can be a feasible method as well to obtain an estimate of the neuropathic pain prevalence according either to literature data and experts opinion.

The updated estimates for the risk of falling and for the prevalence, both expressed as point estimates with a credibility interval, represent the synthesis of different sources of information. This is an example of how Bayesian methods can inform decision and policy making when data from the literature are scarce and/or inconsistent.

SESSION 15 – Bayesian Methods in Health Science

Bayesian Spatial Modeling of HIV Mortality via Zero-inflated Poisson Models

R. M. Musal¹, T. Aktekin²

¹Texas State University, USA, ² University of New Hampshire, USA
rm84@txstate.edu Tevfik.Aktekin@unh.edu

Abstract: The presentation investigates the effects of poverty and inequality on the number of HIV related deaths in 62 New York counties via Bayesian zero-inflated Poisson models which exhibit spatial dependence. We quantify inequality via the Theil Index and poverty via the ratios of the two Census 2000 variables, number of people under the poverty line and the number of people for whom poverty status is determined, in each ZCTA (Zip Code Tabulation Area). The purpose of the study is to investigate the effects of inequality and poverty in addition to spatial dependence between neighboring regions on HIV mortality rate which can lead to improved health resource allocation decisions. In modeling county specific HIV counts, we propose Bayesian zero-inflated Poisson models whose rates are functions of both covariate and of spatial/random effects.

Key words: Spatial Models, Zero Inflated, Poisson Process, Bayesian

SESSION 15 – Bayesian Methods in Health Science

Modeling Health State Preferences: A Bayesian Approach

R. Soyer

The George Washington University, USA

soyer@gwu.edu

Abstract: We present a Bayesian framework for population health state preference estimation and health policy evaluation by introducing a probabilistic interpretation of the multi-attribute utility theory (MAUT) used in health economics. In doing so, our approach combines ideas from the MAUT and Bayesian statistics and provides an alternative method of modeling preferences and utility estimation.



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SESSION 16 – Issues in Health Insurance

Chair: Turhan Erkmen, *Yıldız Technical University, Turkey*
terkmen@yildiz.edu.tr

Work-Family, Family-Work Conflict and Turnover Intentions among the Representatives of Insurance Agencies

T. Erkmen¹, E. Esen¹

¹ Yıldız Technical University, Turkey
terkmen@yildiz.edu.tr emeloz@yildiz.edu.tr

Purpose: WIF occurs when work pressures interfere with the quality of family life, whereas FIW occurs when family pressures interfere with responsibilities at work. On the other hand, turnover is about voluntary or involuntary act of leaving an organization. The purpose of the study is to examine within 95 representatives of insurance agencies the effects of work-family conflict (WFC) and family-work conflict (FWC) on turnover intentions. The main hypothesis reflects that employees experiencing high levels of WFC and FWC are likely to quit the job.

Design/methodology/approach: Data were collected using a 18- item questionnaire via e-mail containing a link to the online Internet Survey Instrument to the representatives of insurance agencies. The questionnaire was constructed to assess 3 variables (WFC, FWC and turnover intentions) and demographic characteristics as position, age, gender, total tenure, tenure at current job, marital status, income state of spouse, education level, number and ages of children. Multiple regression analysis was used to test the effects of WFC and FWC on turnover intentions.

Findings: Results indicated that work-family conflict and family work conflict have effect on turnover intentions with the family responsibilities emerging as the stronger predictor of turnover intentions. FWC also increases intentions to leave the organization.

Research limitations: There are limitations to consider in our study. First, in the literature, there are several measurements of work family conflict and family work conflict, but we use 12 items for both types of conflict. Second, we focus on representatives of insurance agencies in our study. The insurance sector has growing market share in Turkey. Axa, Anadolu, Allianz, Aksigorta, Yapı Kredi, Güneş, Groupama, Ergo and Eureka were the insurance companies in Turkey that collected the most premiums last year. The absence of these companies in the content of this research is a limitation.

Research Implications: Studies have consistently supported the positive relationship between WIF and employees' job withdrawal, such as turnover intentions or behaviors. The present research findings support previous research findings about FWC, WFC and turnover intentions. An employee may be more willing to think about leaving the organization, if he has too many responsibilities both in the family and on the job.

Practical/managerial implications: Our findings suggest that organizations who help their employees, manage the effects of WIF and FIW to reduce the turnover rate in insurance sector. In order to minimize turnover intentions, it is particularly needed to encourage employees by providing managerial and family support.

Public Policy implications: Future studies in this area should also examine and include the importance of social support in their research model. The researchers should investigate and approach the family-friendly policies and work-family balance in Turkish organizations.

Originality/value: The study examines an overlooked outcome of work-family conflict and family-work conflict: turnover intentions. In addition, it provides much needed attention to the implications of work-family conflict for representatives of insurance agencies, who have received little attention in the work-family and family-work conflict literature.

Key words: Work Family Conflict, Family Work Conflict, Turnover Intentions, Insurance Agencies

Paper type: Research Paper

SESSION 16 – Issues in Health Insurance

Study of Catastrophic Health Expenditure in Household with Cancer Patient

Z. Kavosi¹, H. Delavari¹, A. Keshtkaran¹, F. Setudezade¹

¹Shiraz University of Medical Sciences, Iran

zhr.kavosi@gmail.com

delavariha@sums.ac.ir

fsetudezade@gmail.com

Purpose: Study of catastrophic health expenditure in household with cancer patient and its some determination in Namazi Hospital, 2011.

The performance of health system is essential for improving health of population. Various methods are recommended for assessing health system performance .WHO method is based on health system three goals. Fairness in financial contribution is one of these goals which in this study we try to assess among cancer patient.

Design/methodology/approach: This cross- sectional study was conducted in Namazi Hospital. 245 patients was selected using random sampling method. Household part of WHS questionnaire was used to collect data .data were analyzed using SPSS software from stoical test chi-square has been used.

Findings: Results showed that expenditure with catastrophic health expenditure in household with cancer patient is 67/9%.facing catastrophic health expenditure has significant association with some variable including type of insurance the patient, location of patient, level of education heads of household, type of treatment. Different coping strategy used by patient including saving, barrowing from family and friends, reimbursement from insurance.

Practical/managerial implications: The high proportions of households facing catastrophic health expenditure can be guidance for policy makers to revise their policy concerning cancer patient .considering special subsidize and special package of services for these patients can be useful in reducing catastrophic expenditure.

Key words: Catastrophic health expenditure, Cancer, Household

SESSION 16 – Issues in Health Insurance

A Medication Safety Model for Thai Hospitals: A Literature Review of Medication Errors Prevention

P. Rattanaojsakul¹, N. Thawesaengkulthai¹, T. Auamnoy¹

¹Chulalongkorn University, Thailand

picrtb@yahoo.co.th

Purpose: Medication errors can actually be seen the causing adverse events. Therefore, to prevent the occurrence of adverse drug events or reduce the severity of the problem down, it is extremely important today. The objective of this review was, therefore, to describe conceptual framework and protection methods to prevent medication errors for Thai hospitals.

Design/methodology/approach: Studies were searched from 1990 to 2010 for in PubMed, ProQuest, Elsevier and Emerald employing primary search terms such as ‘medication errors’ ‘drug errors’ and ‘adverse drug events’. This paper provides a detailed review of past and current literature to examine prevalence, causes and prevention for medication errors.

Findings: According to a literature review the author concluded that the factors or causes of medication errors in the frame of Self-Assessment Questionnaire, which ECRI Institute (2008) and category of procedures to prevent medication errors. The studies concluded that medication errors in conceptual model and medication errors causes are associated with protection methods to prevent medication errors for Thai hospitals.

Research limitations: Inconsistency in preventive medication errors has been managed. It appears that the nature of medication therapy, it is near impossible to avoid all error, human and otherwise. Future research is needed to solve the problem by designing a new system to reduce medication errors is therefore needed.

Practical/managerial implications: Medication errors can be reduced if they are understood. Causes and protection methods based on the study's findings can reduce medication errors.

Originality/value: The paper highlights ways to reduce errors in the medication process.

Key words: Medication errors, Drug errors, Medication management, Patient safety

Paper type: Literature review



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PLENARY SESSION - 15 June

Performance Measurement in the Health Sector: Uses of Frontier Efficiency Methodologies

Ali Emrouznejad

Aston Business School, UK

a.emrouznejad@aston.ac.uk

Abstract: Performance measurement is essential for improvement. Although techniques for collecting, analyzing, and reporting data fall within the quantitative skill set of the organization, translating data into information that managers need to promote performance improvement requires a different and more subtle skill set.

Health services sector is a complex area that is unique in all its characteristics. It has too many dimensions to be fitted into a simple singular unit and it is therefore essentially very difficult to approach the measurement of the performance of healthcare services by using one model or another. Frontier Efficiency Methodologies have been used rigorously in recent years. Data Envelopment Analysis (DEA) is proven to be a useful tool in measuring efficiency and productivity of hospitals and health care related units.

In this paper we review various models suitable for efficiency measurement using DEA and will introduce a unified standard process for measuring efficiency of health sector.

SESSION 17 – Human Resources Management in Health Care System

Chair: Ülkü Dicle, *Yeditepe University, Turkey*
udicle@yeditepe.edu.tr

Measuring Job Satisfaction of Nurses in the Public Psychiatric Hospital “Athalassa,” Cyprus

G. Charalambous¹, M. Anastasiou¹, A. Skitsou¹, D. Andrioti¹

¹Frederick University, Cyprus

drcharalambous@yahoo.gr

anastasioumichael@windowslive.com

alex.skitsou@yahoo.gr

dandrioti@gmail.com

Purpose: To investigate job satisfaction of nurses in the Psychiatric Hospital of Athalassa, in Cyprus. More specifically, this study seeks to measure the key determinants of job satisfaction in the above hospital.

Design/methodology/approach: A 36-item translated questionnaire (English-Greek) of measuring job satisfaction “Job Satisfaction Survey” (JSS) by Paul E. Spector (1985) ranked on a 6-point Likert scale was used. The JSS questionnaire measures 9 aspect-subcales, based on 4 items each. Subcales score can range from 4 to 24 (scores of 4 to 12 represents dissatisfaction, 12-16 are ambivalent, 16-24 represents satisfaction). The summed score of the 9 subscales which represents the total satisfaction can range from 36 to 216 (scores of 36 to 108 represents dissatisfaction, 108-144 are ambivalent, 144-216 represents satisfaction).

A quantitative study with a sample including all the nurses of the above hospital was conducted. Overall, 149 questionnaires were given, and 98 were completed and returned (65.77%). Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS) Version 20.0. The internal consistency and reliability was investigated by calculating the Cronbach’s a coefficient (0.857).

Findings: Nurses of the Athalassa hospital seemed to be satisfied with their work, with only two aspects of JSS: “Co-workers” (16.66) and “Nature of Work” (16.34). On the other hand, they expressed dissatisfaction with the aspect “Promotion opportunities” (11.32). For the remaining six aspects, “Salary” (15.14), “Supervision” (14.55), “Fringe Benefits” (12.88), “Contingent Rewards” (12.45), “Operating Procedures” (13.02), and “Communication” (13.95) only ambivalent results were found. Overall, total satisfaction score was ambivalent (126.35).

Research limitations: The study reflects best the above hospital, and may not be generalized.

Research Implications: More research needs to be done in the future, both locally and internationally with regards to the above issues.

Practical/managerial implications: The results of this study should be used by the hospital management, for increasing job satisfaction of the nursing staff, and thus increasing the quality, effectiveness and efficiency of the above mentioned hospital.

Public Policy Implications: Work satisfaction is a research area that has puzzled many researchers internationally. In order to be productive, staff needs satisfaction from its work at the whole, as well as at a partial level. Especially in the case of nurses who are charged with crucial roles and their contribution for the efficiency of hospitals is enormous. Above all, job satisfaction of staff is considered to be a key issue and this especially true with regards to psychiatric hospitals, which are considered difficult places to work.

Originality/value: The study shows nurses’ attitudes about Management in the above hospital and can be used as an effective tool to create synergies with regards to quality of service provision.

Key words: Psychiatric Hospital, “Job Satisfaction Survey” (JSS), Nurses, Attitudes

Paper type: Original Paper

SESSION 17 – Human Resources Management in Health Care System

The Level of Organizational Commitment of Hospital Employees: An Application in Vakıf Gureba Hospital

S. Kayas¹, M. Kıyak¹, P. Acar¹

¹Okan University, Turkey

skayas@hotmail.com

mithat.kiyak@okan.edu.tr

pinar.akinci@okan.edu.tr

Purpose: The aim of this study is to investigate the level of organizational commitment of hospital employees.

Design/methodology/approach: Organizational commitment composed of three elements; normative, affective and continuous commitment. In this study Meyer and Allen's 'Organizational Commitment Questionnaire' was used. The hypotheses developed for this study are as follows;

H1: There is a relationship between organizational commitment and personal characteristics.

H2: There is a relationship between organizational commitment and work status.

H3: There is a relationship between organizational commitment and income.

H4: There is a relationship between organizational commitment and occupation.

H5: There is a relationship between organizational commitment and tenure.

T test, Mann Whitney U, Kruskal Wallis test and Anova test methods are used as evaluation scales to measure whether the educational, marital and social status, ages, the working hours, incomes etc. are affecting the commitment levels.

The study was conducted in Vakıf Gureba Training and Research Hospital on 247 workers.

Findings: According to the results, there is a significance difference between organizational commitment and the worker's personal characteristics at the level of 0.05. Especially, permanent staff and nurses generally have the low commitment behavior. Besides, low paid workers have higher commitment levels.

Research limitations: In this study, the questionnaire is limited with organizational commitment concept. There can be different concepts as organizational culture and leadership. There are some mediating and moderating effects which cannot be tested in this study.

Research Implications: To increase the commitment of employees, the studies should concentrate on the satisfaction level of employees. On the other hand, wage policies have to be reorganized. Further studies should also concentrate on corporate identity to increase the level of loyalty.

Practical/managerial implications: Hospitals are the organizations where the most intense work environment in health service delivery has taken place. As in every organization, for the success of hospitals, commitment to the organization should be high. During restructuring, managers' especially top managers have to provide staff involvement to decision-making process. This will be an advantage for the institutional consequences.

Originality/value: This study, different than other studies enables us to consider the relationship between the concept of organizational commitment and personal characteristics of hospital employees. In our study, different than other studies we have applied these concepts on training and research hospital. It is expected that cultural and industrial varieties will put different results in the research.

Key words: Organizational commitment, Hospital employees, Health industry

Paper type: Research paper

SESSION 17 - Human Resources Management in Health Care System

Quality of health indicators management in Turkish hospitals

A. Kaptanoğlu

Marmara University, Turkey

Purpose: One of the dimensions of quality in health care is adherence to predetermined steps in the consultation by physicians. In the consultation process vignettes offer advantages on measuring quality of health indicators. Vignette-based quality of care survey might be completed faster than a full patient record review. Vignettes are cost-effective decision tools for clinical manager and offer opportunities to discover the nuances in physician decision process. This clinical vignette-based study demonstrates physician practice variation and advocates standardization in health care delivery.

Method: For this exploratory qualitative study used two general public hospitals were selected randomly from general public hospitals located in Istanbul. A set of vignette used in this study includes particular open ended questions to elucidate the perspectives of surgeons and internal medicine physicians. For our survey, twenty four (n=24) physicians were randomly chosen from the two public hospitals.

Results: Analysis showed that vignette-based indicators produce effective measures of quality of care. Use of vignettes provides cost-effective decision making opportunities for clinical managers. Furthermore, clinical vignette are simple and economical tools in measuring physicians productivity and quality.

Although it is not right to generalize the results by using one case to measure each of the three diagnosis, it is a remarking results that 72% of surgeon diagnosed vignette right. (CI, 68.1% to 73.2%) and 74% of internal medicine physicians diagnosis was right. (CI, 64.5% to 81.0%). These findings were consistent across all hypothetical vignette scenarios and were independent of case complexity. There are statistically significant differences between these two specialty using diagnosis according to quality of clinical practice while measuring with vignette ($\chi^2=19.74$; $p<0.05$).

Conclusion: Vignettes seem to capture the range in the quality of clinical practice among physicians.

Key words: Quality of health indicators, Vignettes, Indicator Management



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SESSION 18 – Perspectives on Hospital Management

Chair: Erkut Akkartal, *Yeditepe University, Turkey*

Simulation for Operational and Strategic Decision Making in Hospitals

M. M. Günal

Turkish Naval Academy, Turkey

mgunal@dho.edu.tr

Purpose: An effective and efficient provision of health service without compromising quality is the ultimate aim in healthcare systems, and without any doubt, Operational Research (OR) has a role reaching to this aim. Hospitals are one of the strongest links in healthcare service chain and OR methods and tools are used for better management of hospitals. Particularly, as a powerful tool in the OR practitioners' tool-box, simulation methods has been widely used in modeling hospital systems. Main reason of Simulation's popularity is its flexibility in terms of its use in different scales, for example, it can help hospital managers solve operational, day-to-day problems, or solve strategic level issues related to capacity shifts, hospital extensions etc. In this talk, we will introduce three simulation methods namely, Discrete Event Simulation (DES), System Dynamics (SD), and Agent Based Simulation (ABS) in hospital management context and give practical examples of how these methods can help decision making in hospitals.

Key words: Quality of health indicators, Vignettes, Indicator Management

SESSION 18 – Perspectives on Hospital Management

Usability Evaluation of Mobile Information Communications Technology (ICT) in Healthcare

B. Akbaşoğlu

Middle East Technical University, Turkey

bakbasoglu@gmail.com

Abstract: Usability evaluation is now widely recognized as critical to the success of interactive healthcare applications. The international Organization for Standardization (ISO) 9241-11 defines usability of a product as “The extent to which the products can be used by specified users to achieve specified goals in the specific context of use with the particular environment.” ISO also pointed out that usability is measured based on the three basic parameters; effectiveness, efficiency and satisfaction. Hence usability evaluation is all about users’ experience and feedback to the design and environment. It is also associated with human experience and its influence on people’s understanding of a design context of use.

Information Communications Technology is becoming more important in modern healthcare, making healthcare increasingly complex. Introducing information communications technology into healthcare can have positive and negative effects. Little is known about such effects and how to do usability evaluation of mobile ICT intended for use in healthcare.

The increased complexity of information communications technology makes usability an important selection criterion when new equipment is purchased, moving the user interfaces of electronic health record systems on to mobile devices, doctor-patient dialogues, quality in use and etc. Usability evaluation of mobile ICT in healthcare consequently requires new ways of designing and doing tests, new ways of recording user and system behavior, and new ways of analyzing the test data.

There are many types of measures of usability and user experience. There is an increasing awareness of the need for higher usability of mobile ICT in healthcare. This requires an understanding of what usability is and what usability evaluation methods are suitable when new mobile ICT is selected and purchased in healthcare.

This study presents the definition of usability evaluation of mobile information communications technology in healthcare and its dimensions. They can be used in the design and evaluation stages of a mobile ICT in healthcare. In addition, they would be helpful in understanding the user requirements.

SESSION 18 – Perspectives on Hospital Management

Non-medical Material Logistics in Hospitals

E. Akkartal¹, D. Yavuz¹, E. Nobel¹, S. Öztanrısever¹

¹Yeditepe University, Turkey

akkartal@yeditepe.edu.tr

dyavuz@yeditepe.edu.tr

enebol@yeditepe.edu.tr

sibelöz@yeditepe.edu.tr

Abstract: Non-medical material logistics has been playing an important role in hospital management systems. Procurement schemes, delivery procedures and standardization mechanisms should be correctly and carefully performed. Warehousing and constructing the bidding standards can mostly influence the proposal of accreditation. In Turkey, bidding procedures should be performed with respect to TSEK-ISO-EN 9000. Moreover for international contracts, JCI (Joint Commission International) standards must be followed properly. Software packages such as Hospital Information System (HIS) are widely used in order to provide just-in-time delivery. The aim of this study is to determine the domestic and international accredited procedures of non-medical material logistics especially in private hospitals.

Key words: Non-medical material, Bidding, Hospital information system



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