RESEARCH FOCUS IN MEDICAL INFORMATICS IN SAUDI ARABIA

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Outline

- Review
- Definition
- Knowledge management
- Why Knowledge management in Healthcare
- Examples of research in medical informatics:
  - Evidence based medicine
  - Medical records
  - Tele-health
  - Students
  - Public health
- What is next?
- Facts and conclusions

Definitions….. Why?

- Medical informatics
- Health informatics
- Clinical informatics ….
- E-health
- EMR, EPR, HER, …
- Tele-medicine
- Tele-health

Knowledge

- Data, information and knowledge are often used interchangeably, however, they are not the same

- Data, in itself is not knowledge, nor is information. Data *is without a meaningful relation to anything else"* (Bellinger, 2004).

Data?

- **Data:** *"data are numbers, words or images that have yet to be organized or analyzed to answer a specific question"* (Audit Commission, 2007).
- What makes numbers, words and images all data? rawness. No exact meaning or context.
- **Information:** Information is the result of *processing, manipulating and/or organizing data* or combinations of data *to answer question.*
- *"Knowledge is the full utilization of information and data, with the potential of people's skills, competencies,…..* (Grey, 2009*7)

Knowledge

- Knowledge *Involves interpreting information received, adding relevance and context to clarify the insights the information contains"* (Audit Commission, 2007)
- Knowledge: is the understanding and **interpretation** of information and its **settings** within a **meaningful** context
- There are numerous theories existence regarding not only the creation of knowledge, but also the different types of knowledge that exist.
- Cook and Brown (1999) define four types of knowledge: individual/explicit; individual/tacit; group/explicit; group/tacit.

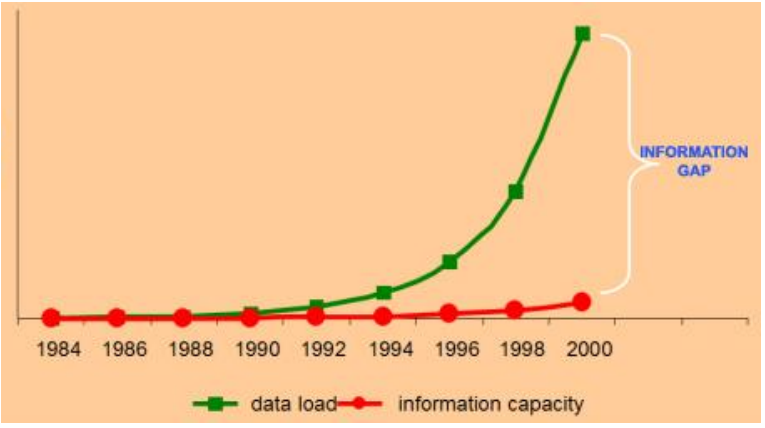
Environment public health KM

	Data	Information	Knowledge
Asthma	Number of hospital visits due to asthma	Asthma case data organized by geographic location, population, etc.	Understanding of the times and places to alert asthma patients due to risks posed by air quality
Air Quality	Ambient air quality monitoring data	Air quality measurements organized by geographic location and time.	

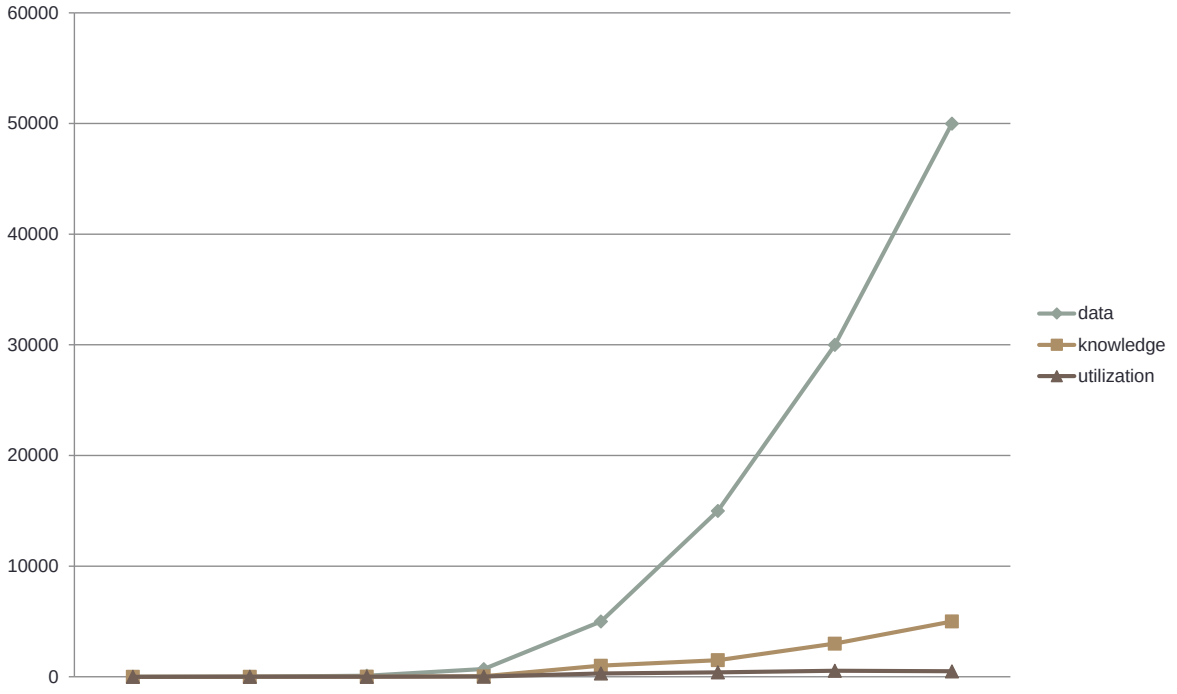
Why Knowledge in Health care

Flood of Information

- Huge gap in data acquisition and information → knowledge capacity



Data – knowledge - utilization



- Institute of Medicine (IOM) estimated that around 98,000 patients die each year as a consequence of preventable errors. Likewise, a study of two UK hospitals found that 11% of admitted patients experienced adverse events of which 48% of these events were most likely preventable if the **right knowledge was applied**.

- The **under-utilization** of healthcare data- infromation-knowledge contributes to improper clinical decisions, medical errors, under-utilization of resources and raise in healthcare delivery costs

Concepts introductions

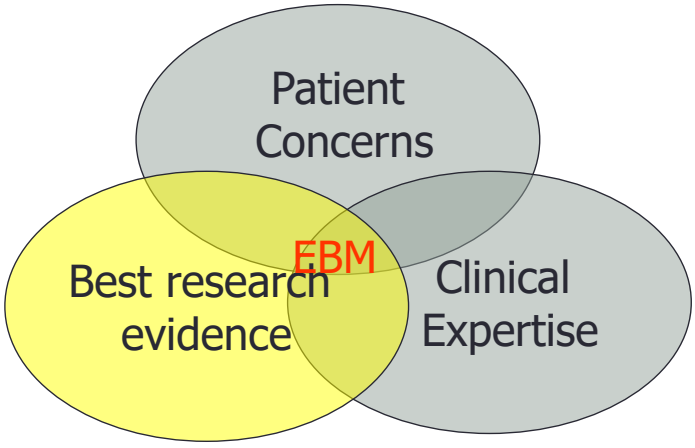
- Patient safety
- CPOE
- EHR
- Tele-health
- Tel-Medicine
- PCD
- HIS
- EBM

Examples
Research in Medical Informatics

Evidence Based Medicine (EBM)

Evidence based medicine definition:

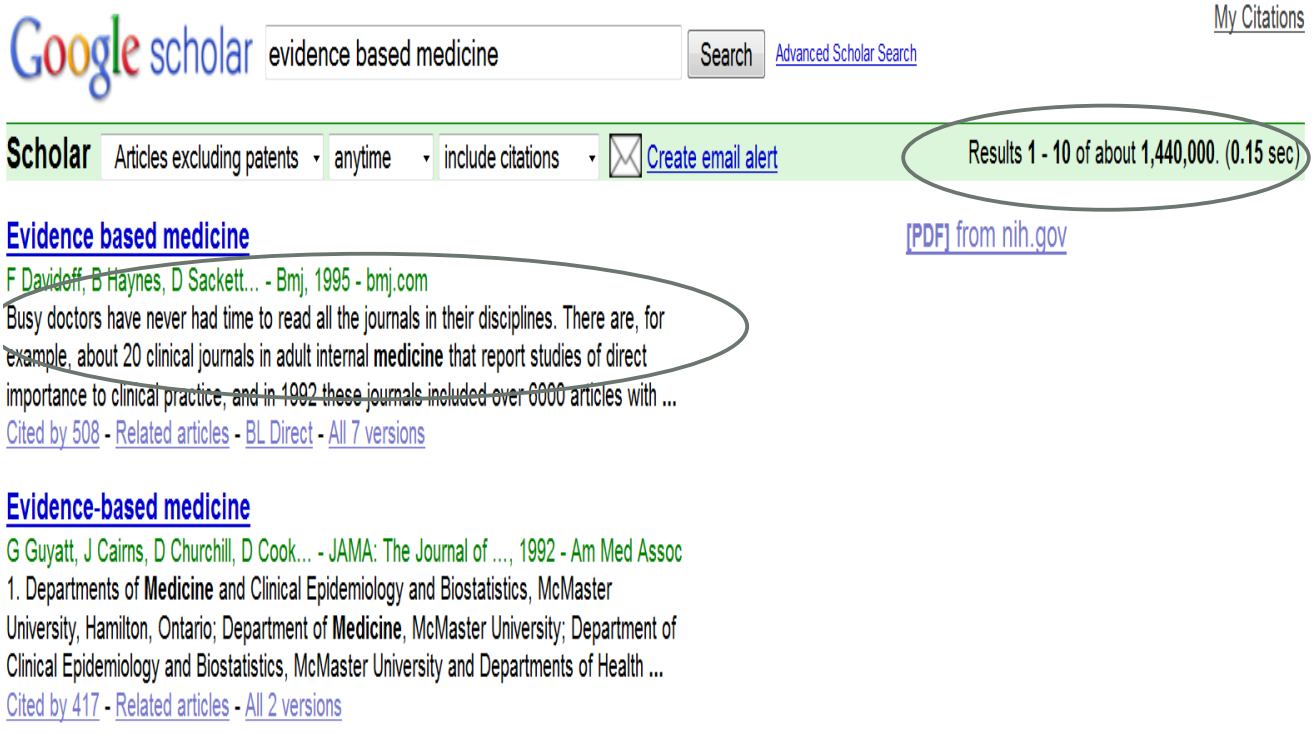
- Evidence based medicine (EBM) is the integration of best research evidence with clinical expertise and patient values.



History of EBM

- The name of EBM appeared in 1992 by group led by **Gordon Guyatt** at McMaster University in Canada.
- Since then the number of articles about evidence based practice has grown exponentially from one publication in 1992 to about 1000 in 1998 and international interest has led to the development of six evidence based journals that summarize the most relevant studies in clinical practice and have a combined worldwide circulation of over 175000.

EBM Feb 17 2012



Literature Searching

- Can improve the treatment of medical inpatients, even those already receiving evidence-based treatment.

  - Random sample of 146 inpatients cared for by 33 internal medicine attending physicians.
  - After physicians committed to a specific diagnosis and treatment plan, investigators performed standardized literature searches and provided the search results to the attending physicians.
  - Attending physicians changed treatment for 23 (**18%**) of the 130 eligible patients as a result of the literature searches.*

*. Lucas BP, Evans AT, et al. The impact of evidence on physician's inpatient treatment decisions. J Gen Intern Med 2004;19:402-409.

Example
Medical Records

The Accenture study

- The Accenture survey asked physicians about the extent to which they used **12** different “functions” of EMR and HIS such as electronic entry of patient notes, electronic referrals, electronic ordering and prescribing and communicating with other physicians or patients via secure email.
- By Jim Burke, Managing Director, Accenture UK Health Industry Published Friday, 3 February 2012 –
- Research among more than 3,700 doctors in eight countries reveals ripe opportunities to accelerate broad healthcare IT initiatives, according to a new survey from Accenture

The Accenture study

- The findings clearly show that the broadest, fastest path to integrated, effective health practices requires outreach, education and changing mindsets.

- Results showed that physicians who are routine users of a wider range of healthcare IT functions have a **more** positive attitude towards the these technologies. On average across all the countries, as physicians start to use more “functions” the more positive they are about the benefits

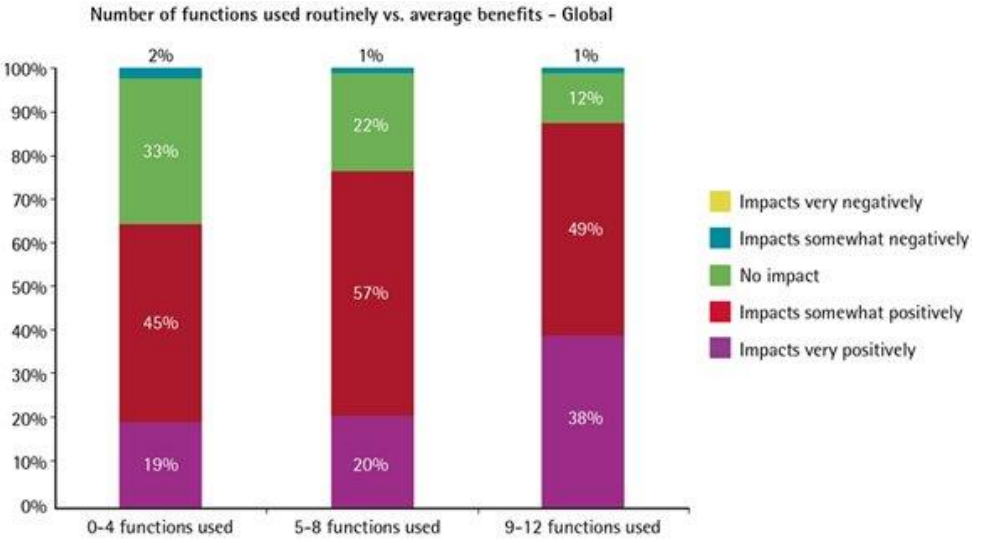


Figure 1 Average Benefits of Functions Used Routinely -- The Accenture eight-country physician survey found, as the number of routinely used healthcare IT functions increases, doctors' overall perception of the benefits grows more positive

The Accenture study

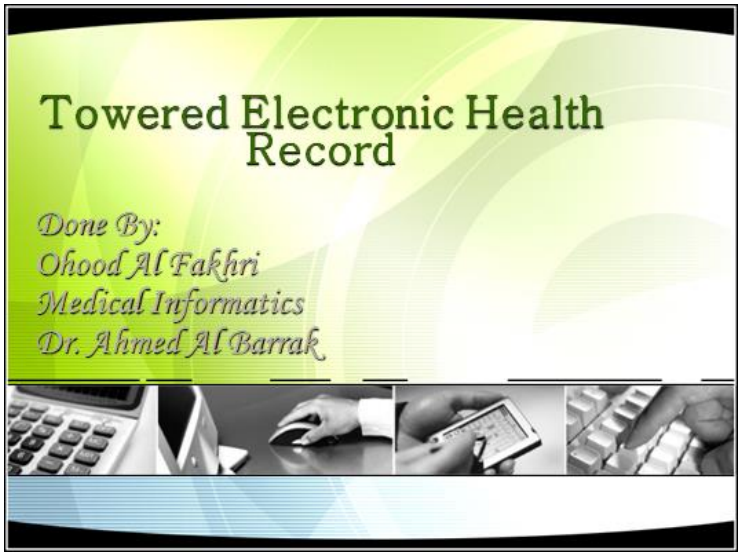
- Majority of doctors surveyed believe that healthcare IT does provide some common top benefits, including;
- better **access**, **quality** data for clinical research (70.9%),
- improved coordination of care (69.1 %)
- reduction in medical errors (66 %).
- average score of 61 %,
- In England, physicians perceived other healthcare IT benefits to include: increased speed of access to health services to patients (55.3 %), reduced number of unnecessary interventions and procedures (52 %).

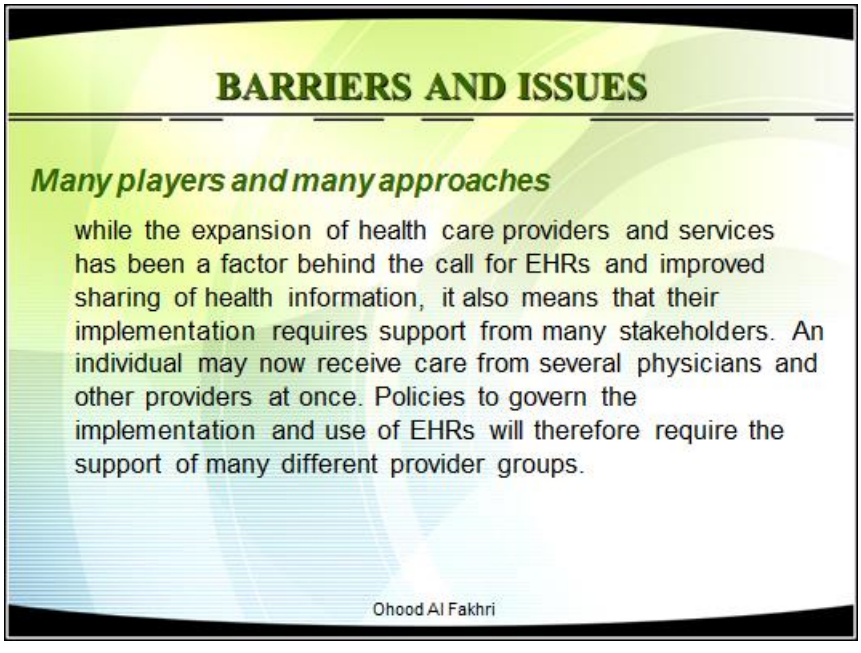
Veterans Health

- Veterans Health, which runs the largest and one of the most cost-effective healthcare systems in the United States. The VA has been employing tele-health tools for more than 11 years. “The VA is absolutely a pioneer in the use of telehealth,” They published a study linking telehealth and 17,000 VA patients with chronic disease that showed a tremendous impact – nearly a **20 %** reduction in hospital admissions.”.

Students examples

2006


Towered Electronic Health Record
Done By:
Ohood Al Fakhri
Medical Informatics
Dr. Ahmed Al Barrak


BARRIERS AND ISSUES
Many players and many approaches
while the expansion of health care providers and services has been a factor behind the call for EHRs and improved sharing of health information, it also means that their implementation requires support from many stakeholders. An individual may now receive care from several physicians and other providers at once. Policies to govern the implementation and use of EHRs will therefore require the support of many different provider groups.
Ohood Al Fakhri

BARRIERS AND ISSUES

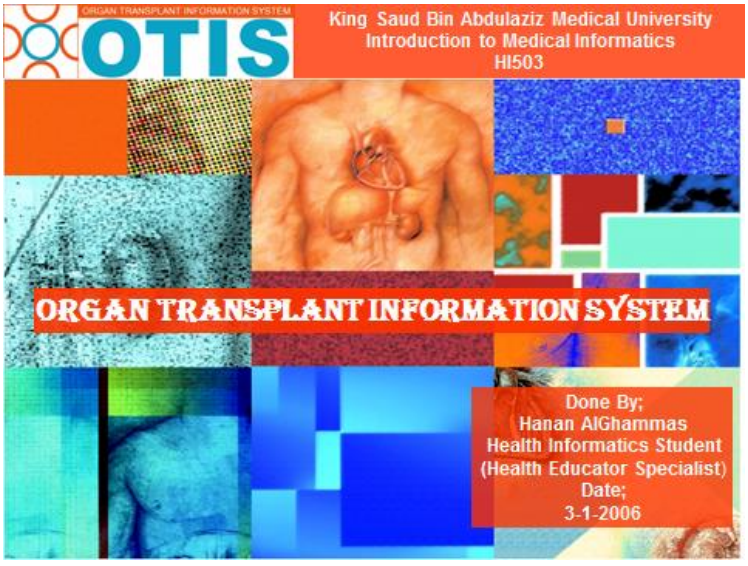
Lack of a health network architecture

Privacy issue:

- What information should be included in the EHR?
- Who should have access to the EHR? Which information in the EHR and under what circumstances should the EHR be shared with other health providers? How will a patient be able to access his or her own EHR?
- In what instances can the information in an EHR be used for secondary purposes (e.g. research, administration)? When is consent from the patient required?

Ohood Al Fakhri

2006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Done By;
Hanan AlGhammas
Health Informatics Student
(Health Educator Specialist)
Date;
3-1-2006

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Help

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Information Technology in Medical and Patient Education

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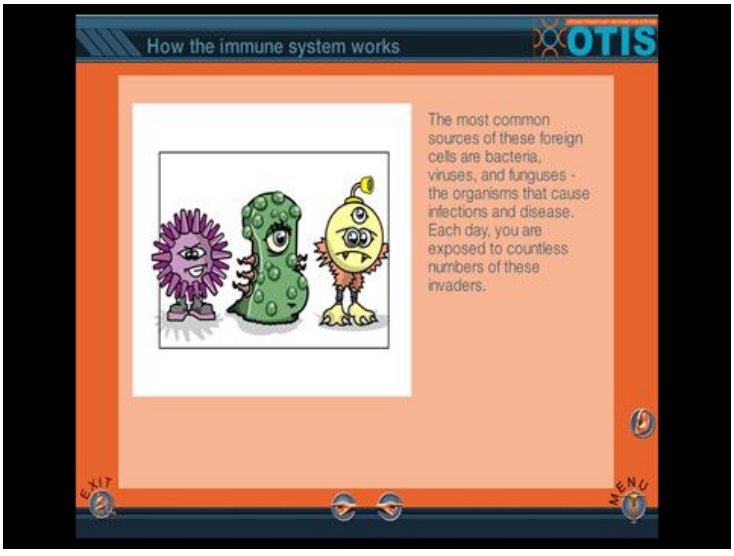
Submitted for publication: 18 February 2006

Background. Patient education and awareness play an important role in the quality and effectiveness of health care outcome. Information technology has a significant role in delivering and improving health care performance on individual, society, and organization. However, medical staff has an important role in conducting and applying information technology in the health care organizations.

Aim. The aim of this study is to assess medical staff

the PE in their unit, while (n to take computer training to develop their knowledge in using information technology. 80% rated themselves as "Good" or above hospital information system (HIS), while rated the same level for general computer skil time and language were among the biggest conducting patient education.

Conclusion. In conclusion medical staff h


How the immune system works
OTIS
The most common sources of these foreign cells are bacteria, viruses, and funguses - the organisms that cause infections and disease. Each day, you are exposed to countless numbers of these invaders.
EXIT
MENU

METHODS

- A total of 60 medical staff from different specialty (Physician = 21, Nurses = 25, Health Educator = 8, others = 6; Total N = 60, Female = 33, Male = 27) responded to the study questionnaire in KFSH&RC.
- The questionnaire was designed in six sections.

RESULTS

Barriers of conducting patient education in %

Barriers	%
Language barrier	18.3
Lack of time	23.3
Lack of plans for educational activates	8.3
Lack of financial resources	8.3
Uncooperative patient	11.7
All of the above	28.3
Other	1.7

Continued

CONCLUSION

- In conclusion medical staff had a very positive attitude towards applying patient education information system. However, the language barrier and lack of time were considered as the biggest barriers for conducting patient education. Accordingly the results showed that there is a significant need for computer training.

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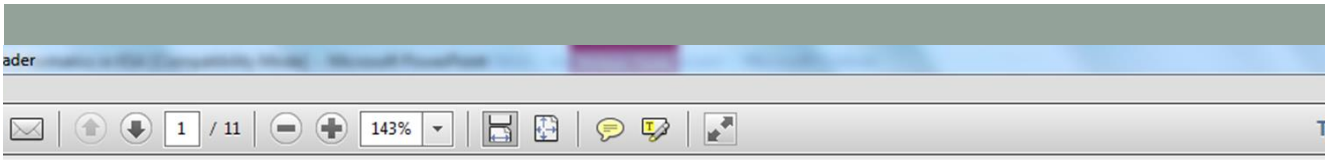

Assessment of Skills and Attitude of Dental Students and Interns toward e-learning in KSU

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Vol. 5, Issue 1

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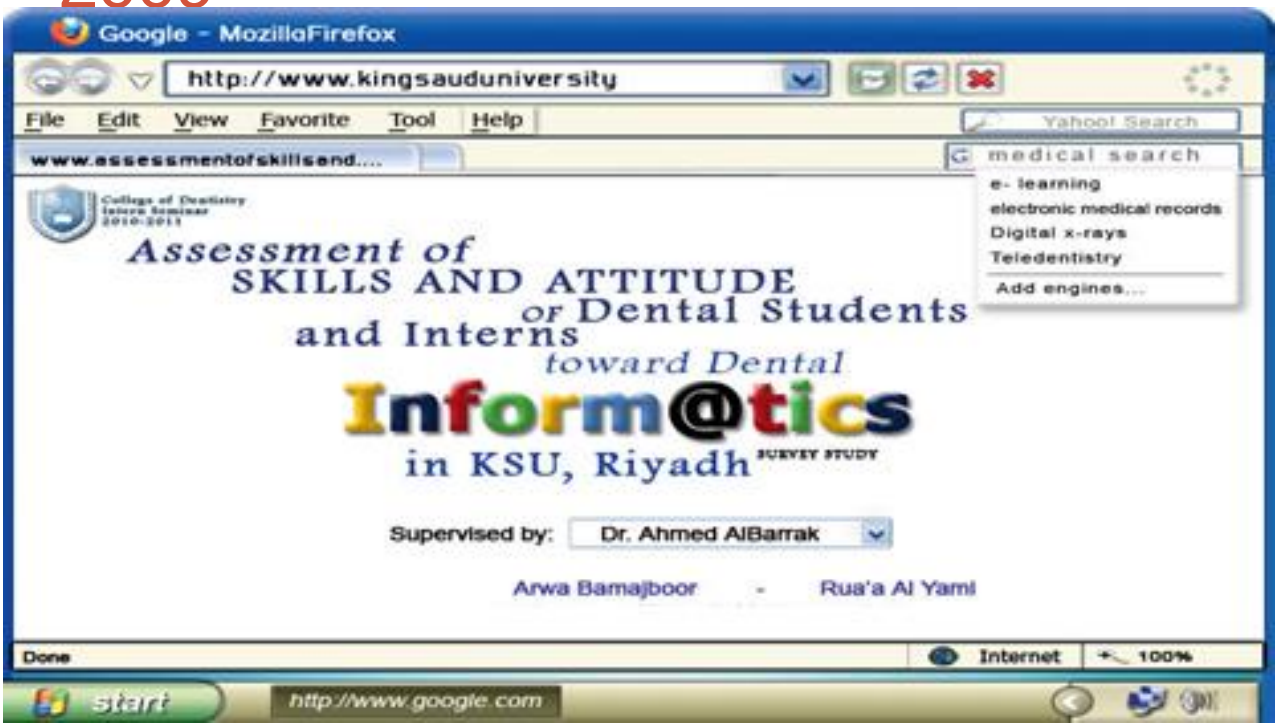
2009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Assessment of
SKILLS AND ATTITUDE
of Dental Students
and Interns
toward Dental
Inform@tics
in KSU, Riyadh
SURVEY STUDY
Supervised by: Dr. Ahmed AlBarrak
Arwa Bamajboor - Rua'a Al Yami
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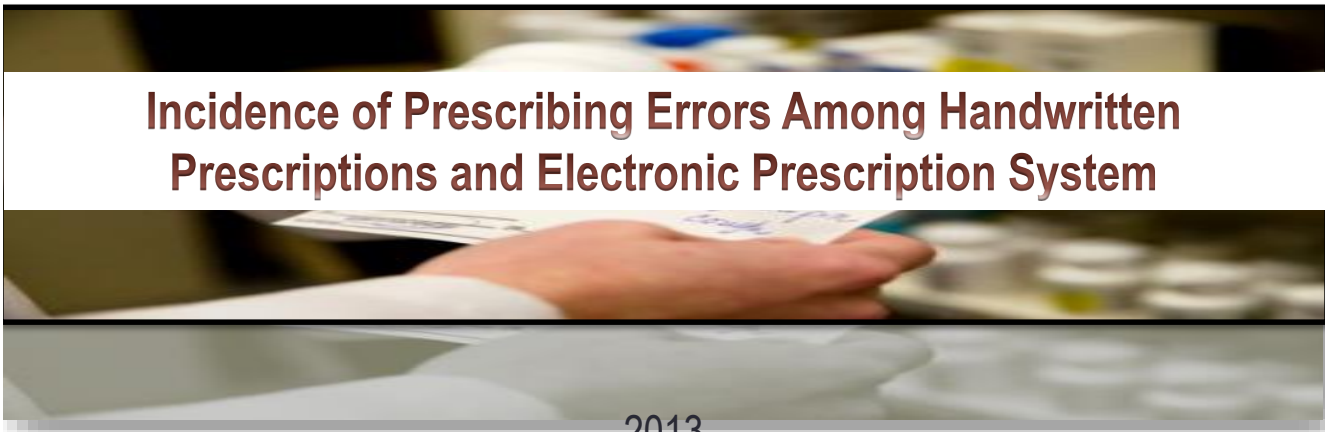
EGYPTIAN DENTAL JOURNAL
VOL. 55, 1513:15019, APRIL, 2009
I.S.S.N 0070-9484
WWW.EDA-EGYPT.ORG

ATTITUDE OF GENERAL PRACTITIONERS TOWARD ONLINE CONTINUING MEDICAL EDUCATION

Ahmed. I. Albarrak;* Abdulrhman Alsughayr** and Alia Alzawawi**

ABSTRACT

Background: online CME is obtaining continuing medical education through the internet, a relatively new and important way of learning which is becoming increasingly popular in recent years. ***Objectives:*** To study the attitude of general practitioner (GP) toward online CME, and to investigate barriers toward online CME. ***Methods:*** cross sectional study using a structured questionnaire that was distributed to primary care physicians working in National Guard Hospital in Riyadh, KSA. ***Results:*** 40% of our physicians are using online CME, mainly because it is accessible, saves time, and serves their needs (68%, 59% and 55% respectively). None of GP negatively evaluated it, and more than 90% recommended online CME. In addition, 90% of participated physicians believed it is important for them, and 98% of them wanted to know more about online CME. Only 5% knows the local regulation for accepting and approving online CME. On the other hand, the main barriers to online CME found to be the lack of: 1-information about it (90 %), 2-time (80%), 3- governmental and organizations recognition and approval (67%) as well as computer skills (65%). No significant relation was observed between the use of online CME and other variables such as age, sex, qualifications and years since last degree, and training for computer skills. However, the study showed significant difference in deciding which is more informative online or traditional CME between physicians who used it and those who didn't (P=0.035). ***Conclusion:*** Main barriers been identified are lack of information, time limitation, lack of computer skills, and governmental, organizational recognition and approval. However, most of the physicians think it is valuable and want to know more about it.



Incidence of Prescribing Errors Among Handwritten Prescriptions and Electronic Prescription System

2013

Students :

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Rwaa Kamel Fatani

Shoog Ibrahim Al-Ageel

Supervisor:

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Saudi Pharmaceutical Journal (2014) xxx, xxx–xxx

King Saud University

Saudi Pharmaceutical Journal

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ORIGINAL ARTICLE

Assessment of legibility and completeness of handwritten and electronic prescriptions

Ahmed I Albarrak *, Eman Abdulrahman Al Rashidi, Rwaa Kamil Fatani, Shoog Ibrahim Al Ageel, Rafiuddin Mohammed

College of Medicine, King Saud University, Riyadh, Saudi Arabia

Received 6 February 2014; accepted 28 February 2014

KEYWORDS

Abstract *Objectives:* To assess the legibility and completeness of handwritten prescriptions and

Academic satisfaction among traditional and problem based learning medical students

A comparative study

Ahmed I. Albarrak, PhD, Rafiuddin Mohammed, MSc, Mohammed F. Abalhassan, MBBS, Nasser K. Almutairi, MBBS.

ABSTRACT

الأهداف: تقييم الرضا الأكاديمي والأهمية الأكاديمية عند طلاب التعليم الطبي التقليدي والتعليم الطبي القائم على حل المشكلات وتقييم مواطن الاهتمام في التعليم الطبي من وجهة نظر الطلاب.

الطريقة: أجريت دراسة مقطعية في كلية الطب، جامعة الملك سعود، الرياض، المملكة العربية السعودية. شارك طلاب التعليم الطبي التقليدي والتعليم الطبي القائم على حل المشكلات عن طريق العينات العشوائية. يتألف الاستبيان من 6 أقسام رئيسية: التعليم والتعلم، والإشراف والتغذية

Methods: A cross sectional study was conducted at the College of Medicine, King Saud University, Riyadh, Kingdom of Saudi Arabia from May to June 2012. The survey questionnaires were self-administered and consisted of mainly 6 sections: teaching, learning, supervision, course organization, information technology (IT) facilities, and development of skills.

Results: A total of 92 TL (males: 66 [71.7%]; females: 26 [28.3%]), and 108 PBL (males: 84 [77.8%]; females: 24 [22.1%]), with a mean age of 21.3 ± 1.3

Saudi Pharmaceutical Journal (2013) xxx, xxx–xxx

King Saud University

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ORIGINAL ARTICLE

Evaluating factors affecting the implementation of evidence based medicine in primary healthcare centers in Dubai

2013

Ahmed I. Albarrak [a,*], Suhair Aqil Ali Abbdulrahim [b], Rafiuddin Mohammed [c]

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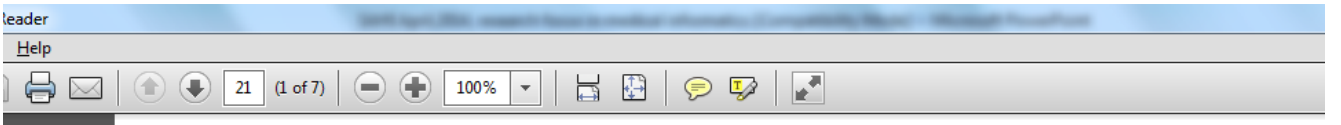
KEYWORDS
Evidence based medicine;

Abstract *Objectives:* To assess the current evidence based medicine (EBM) knowledge, attitude and perceptions of physicians at Dubai Primary Health Care Sector (PHCS). Further to evaluate



Relationship between Patients' Understanding of Treatment Plan and Medication Compliance

2011

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Jawaher Almulhem (2)
Saad H. Alfraikh (2)
Mohammed Alotaibi (2)
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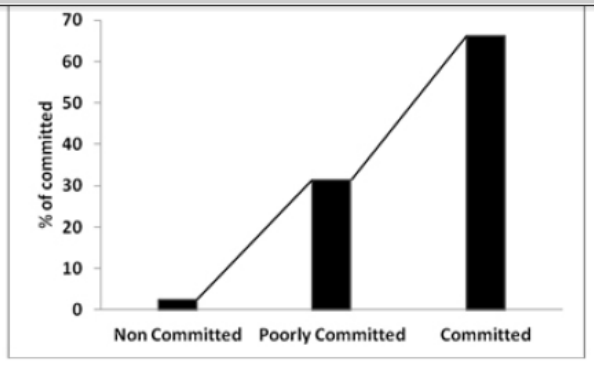


Figure 1: Patients' point of view in compliance to treatment plan

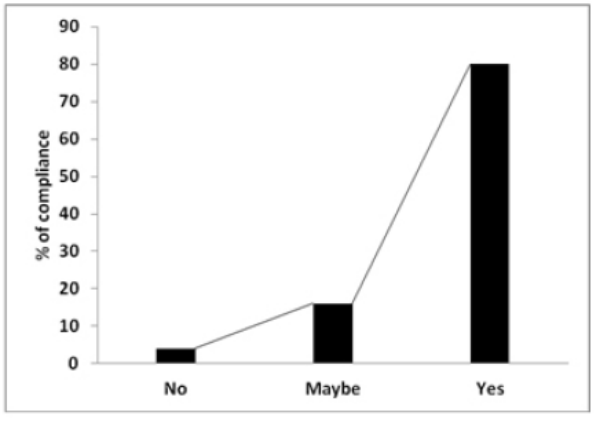


Figure 2: Patients' self-reported compliance if the physician explains to them the proper treatment plan

age, gender, duration of disease, the attitude of staff and information/

The results of the current study indicated that there is

elderly heart failure patients is due to shortcomings in patients' knowledge

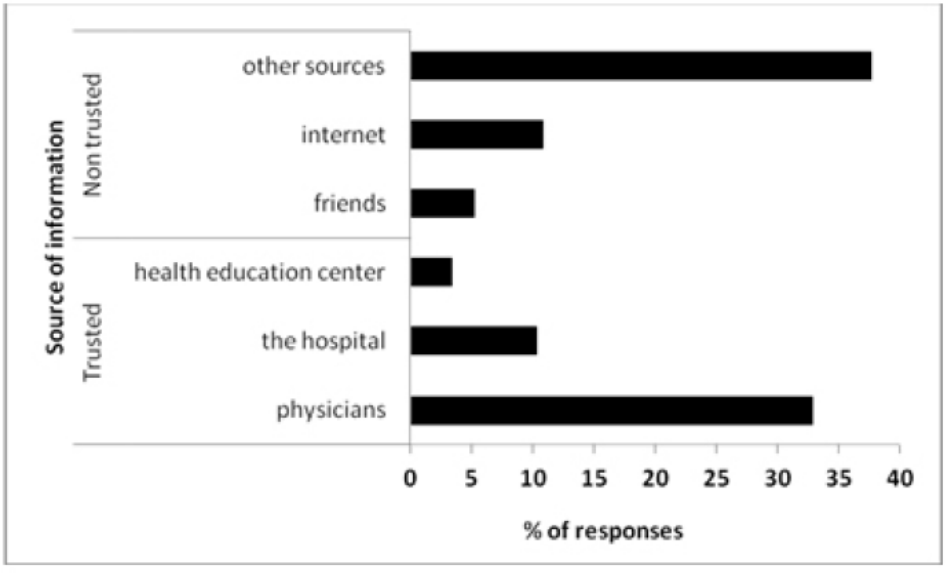
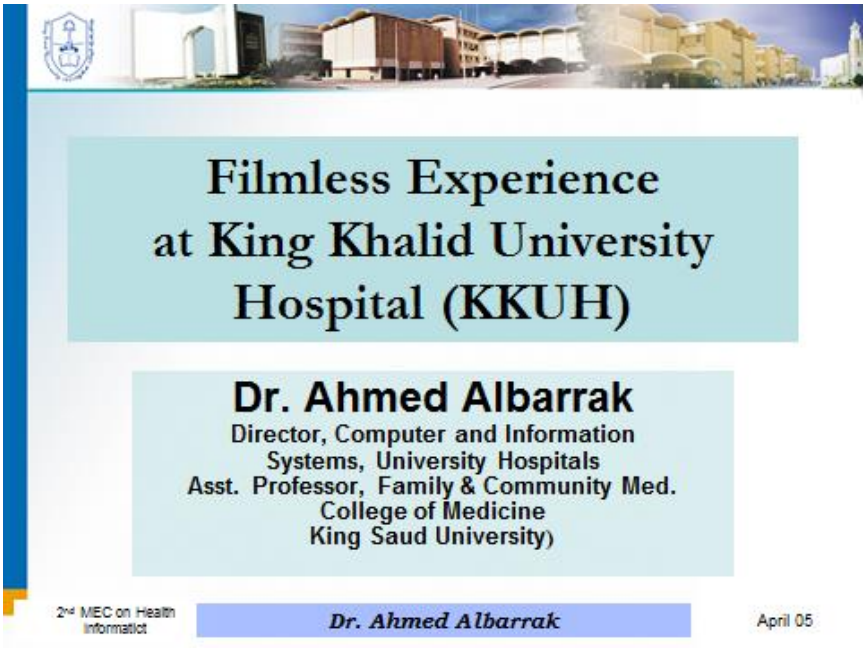


Figure 3: Patients' trusted sources of information

among the earlier defaulting patients. Based on the earlier mentioned study patient report may be a valid method for detecting non-adherence, but physicians as a source of medical information in the complications of

2005


Filmless Experience
at King Khalid University
Hospital (KKUH)
Dr. Ahmed Albarrak
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Asst. Professor, Family & Community Med.
College of Medicine
King Saud University)
2nd MIEC on Health
Informatict
Dr. Ahmed Albarrak
April 05

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Medical Informatics in Undergraduate Medical Study

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Introduction: The main goals of medical education are to equip students and graduate clini with the required knowledge and to provide them with the strategies and skills for applying it in th practice. Variety of strategies are applied for teaching in medical schools ranging from traditional on lectures to interactive online methods. The way medicine is taught and learnt has changed dramat in the past two decades. Education technologies and the revolution in information technology h great impact on medical education and research.

The field of medical informatics (MI) is an essential component in the current and future me practice and education. It is considered as an important medical learning and practicing tool.

Information Security Behavior among Nurses in an Academic Hospital

Ahmed I. Albarrak

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Abstract

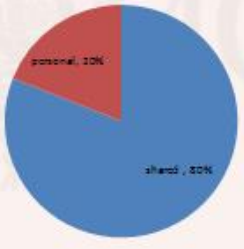
Background: High quality healthcare services can be achieved only by utilizing information technology. Information security is an ongoing challenge and security breaches emerging from user misbehavior are considered to be a devastating latent source of threats to patient data. This study evaluated information security practices of nurses at the King Saudi University Hospitals in Saudi Arabia.

Method: A random sample of nurses (n=352; 328 females and 24 males; age 40 ± 0.6 yr (mean ± SE)) was interviewed.

Results: The results show that while 92% of nurses agree that the principle of password authentication is important, their behavior in practice is completely inconsistent with this principle. This is clearly indicated by the fact that 81% of

to achieve their goals and boost the quality and efficiency of the services provided to patients (Vaast, 2007; Stanton, 2004). Recent studies have shown that high quality healthcare services can only be delivered when relevant patient information is easily and electronically accessible to clinicians (Linden, 2009). Utilization of IT in healthcare delivery, where services are provided by multidisciplinary teams of healthcare professionals in a shared environment, has been accompanied by several challenges related to protecting the privacy and confidentiality of patient information (Lekkas, 2007). These challenges have become a major concern for healthcare providers and regulators especially with the progressive worldwide transition from traditional paper-based patient records to electronic patient records (EPR) (Yang et al., 2006; Gobuty, 2003; Safran & Gol-

- More than 80% of hospital nurses uses shared computers,



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- 88% of respondents have a password composed of either digits or letters alone. No user has a complex password of digits, letters, and symbols.
- only 5% of nurses have a user password with a minimum of eight characters

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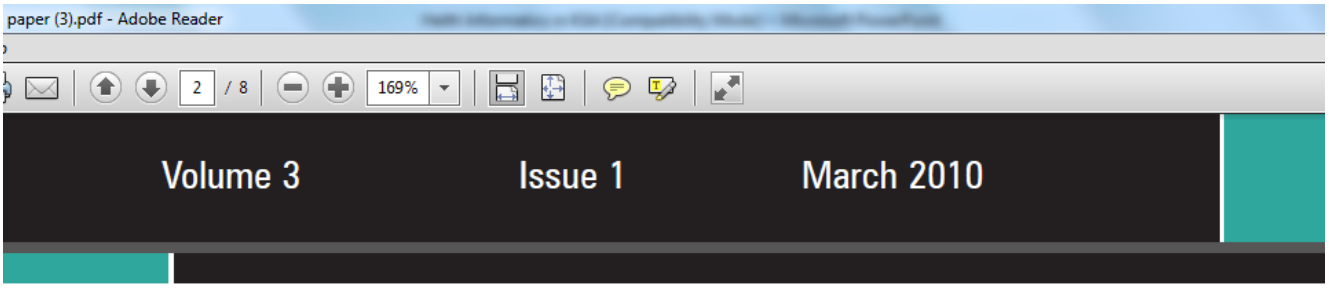


Designing e-Learning Systems in Medical Education:

Abstract

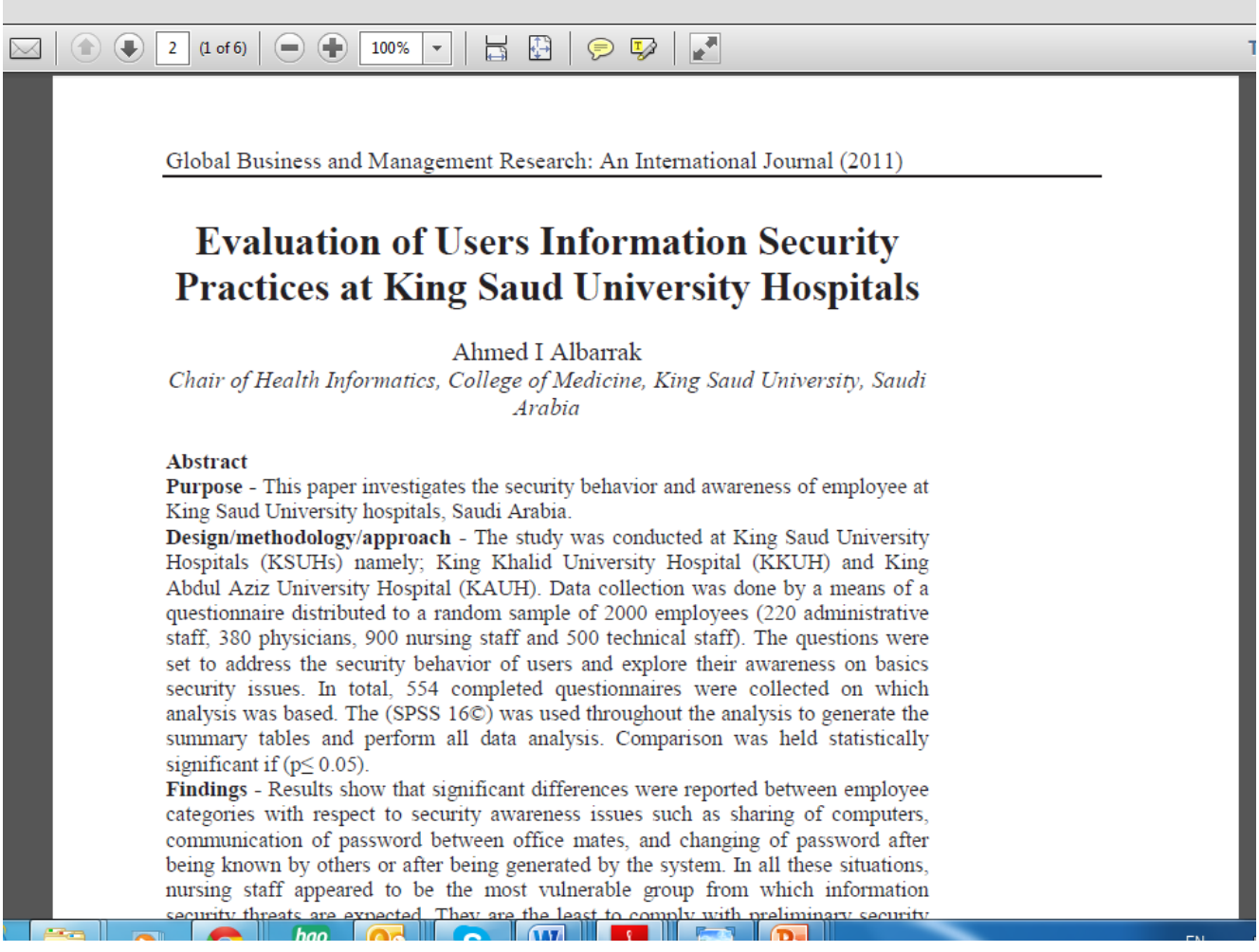
Purpose

This study represents a case study of King Saud University Hospitals' (KSUH) approach in designing a comprehensive medical e-learning system. This system takes into consideration the special requirements of medical e-learning and how these requirements are best met.

Methodology

Introduction

For ages, education has been centered on attending classes day after day, listening to a lecturer who provides the necessary information, and going through exams to assess knowledge. Education focused on the material itself rather than the "learners" and the differences between their capabilities and learning skills (Chen Kinshuk, Wang, 2005).



Global Business and Management Research: An International Journal (2011)

Evaluation of Users Information Security Practices at King Saud University Hospitals

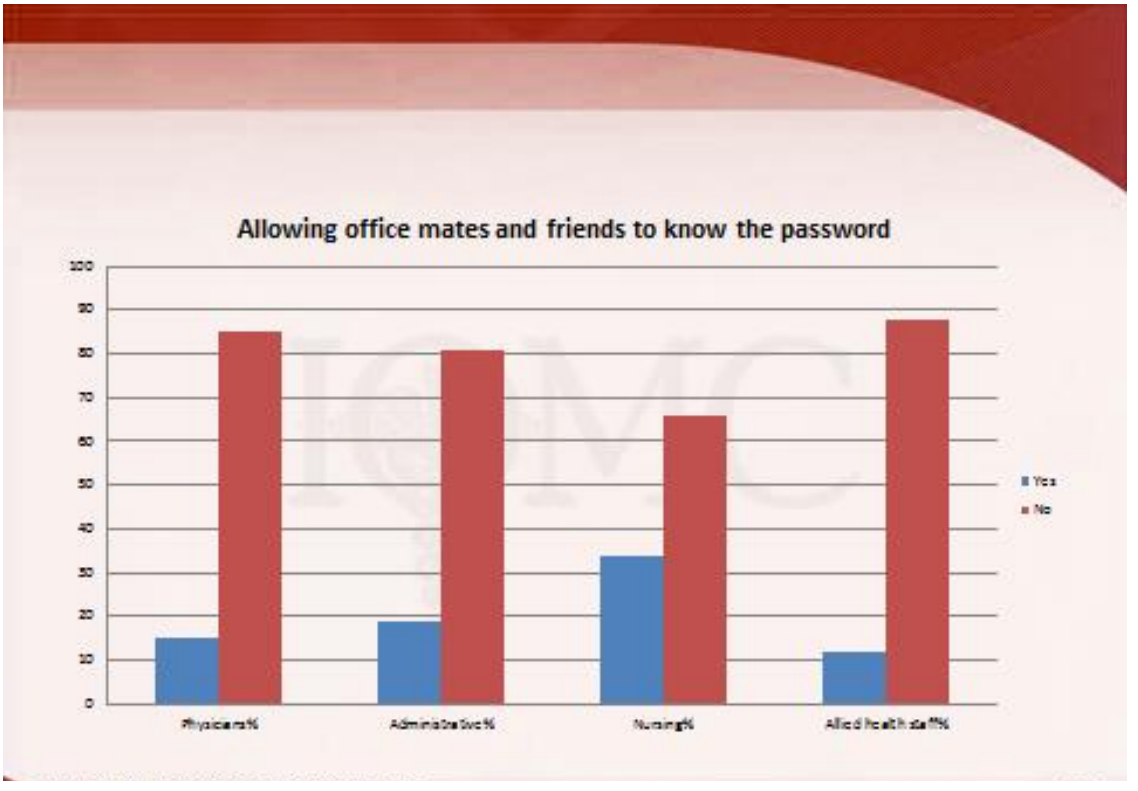
Ahmed I Albarrak
Chair of Health Informatics, College of Medicine, King Saud University, Saudi Arabia

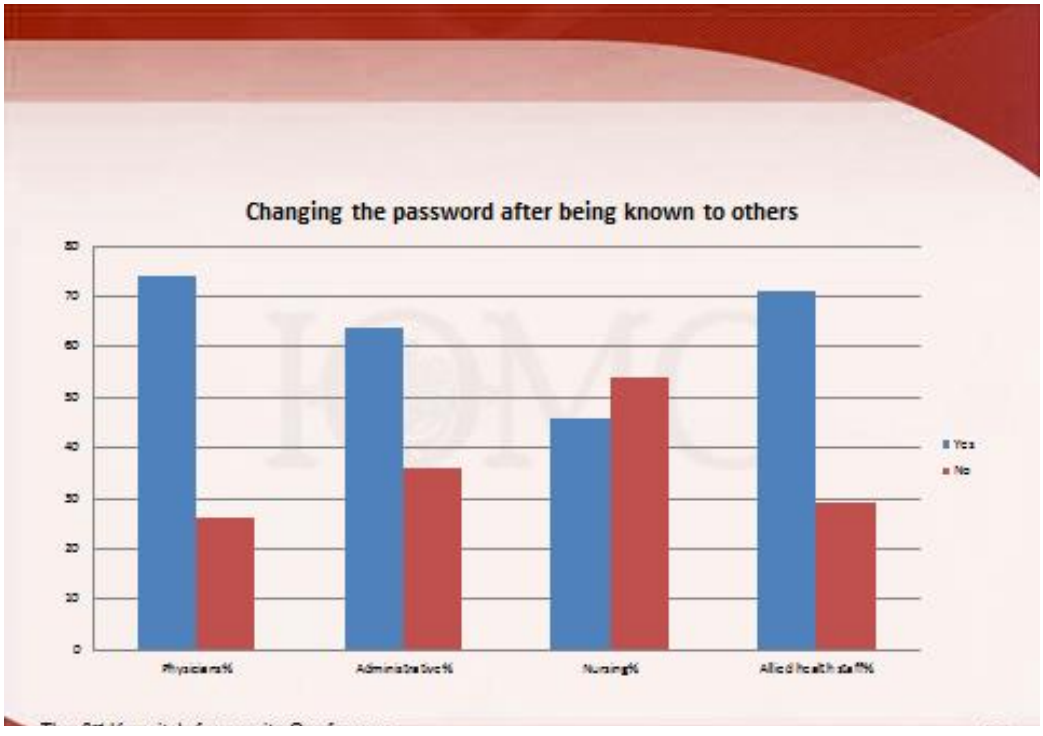
Abstract

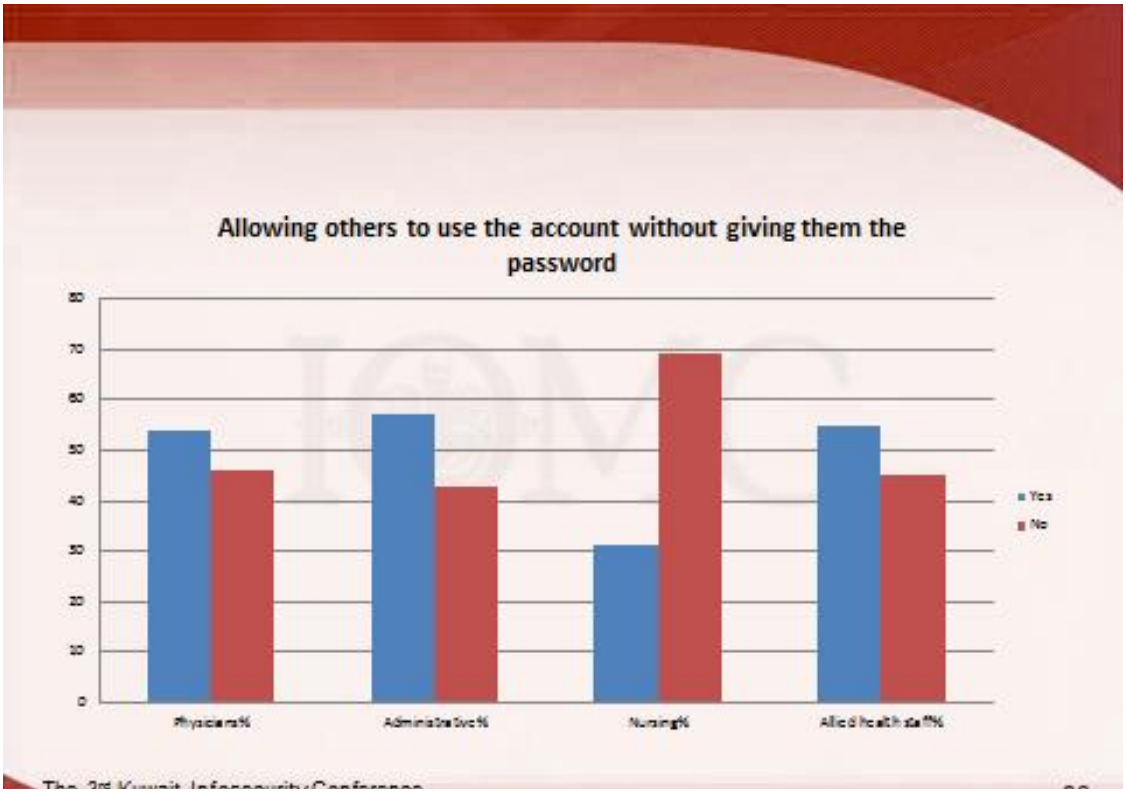
Purpose - This paper investigates the security behavior and awareness of employee at King Saud University hospitals, Saudi Arabia.

Design/methodology/approach - The study was conducted at King Saud University Hospitals (KSUHs) namely; King Khalid University Hospital (KKUH) and King Abdul Aziz University Hospital (KAUH). Data collection was done by a means of a questionnaire distributed to a random sample of 2000 employees (220 administrative staff, 380 physicians, 900 nursing staff and 500 technical staff). The questions were set to address the security behavior of users and explore their awareness on basics security issues. In total, 554 completed questionnaires were collected on which analysis was based. The (SPSS 16©) was used throughout the analysis to generate the summary tables and perform all data analysis. Comparison was held statistically significant if ($p \leq 0.05$).

Findings - Results show that significant differences were reported between employee categories with respect to security awareness issues such as sharing of computers, communication of password between office mates, and changing of password after being known by others or after being generated by the system. In all these situations, nursing staff appeared to be the most vulnerable group from which information security threats are expected. They are the least to comply with preliminary security

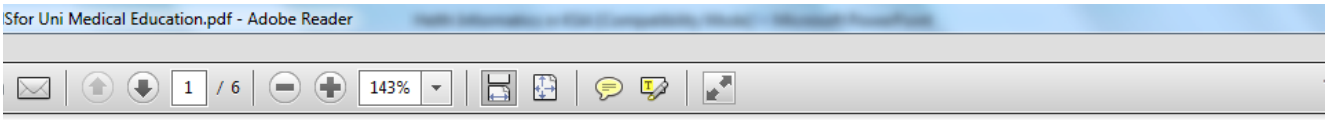

Allowing office mates and friends to know the password
100
90
80
70
60
50
40
30
20
10
0
Physicians%
Administrative%
Nursing%
Allied health staff%
Yes
No


Changing the password after being known to others
Yes
No


Allowing others to use the account without giving them the password
80
70
60
50
40
30
20
10
0
Physicians%
Administrative%
Nursing%
Allied health staff%
Yes
No

Conclusions

- It is clearly proofed that the technical security measures alone can NOT prevent security breaches.
- Insider threats, are difficult to detect and manage because they primarily emerge from the authorized user malicious practices
- Which emphasized that awareness training and education of users on information security issues are very important for achieving a reliable level of information security in any organizations



2010 International Conference on Education and Management Technology (ICEMT 2010)

Evaluating Learning Management Systems for University Medical Educatio

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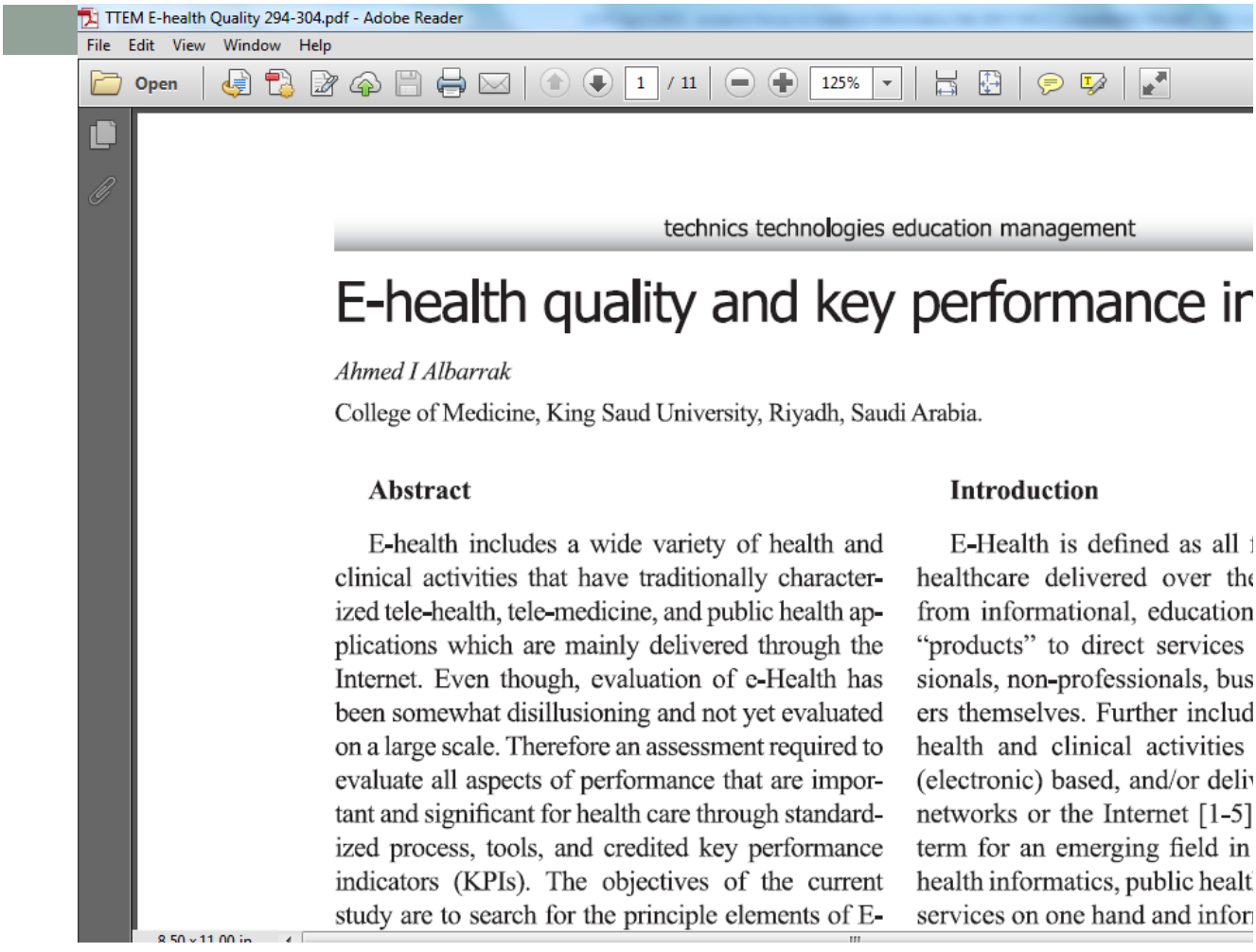
***ract*- Student is becoming the key focus of the educational ess, where students' creativity and interactions are ıgly encouraged. Student role changed to be knowledge information hunter rather than receiver, and teaching, ıwhile, is becoming a peripheral activity. Several 'active and new methods of learning has evolved in the last decades aimed to utilizing the information and**

benefits of such systems including exchange of experi e-courses if the development efforts are guaranteed, a the availability of the skills required for the develop the current study, the evaluation focused on the fe LMS systems and a combination of several frame enhance the evaluation process. All three LMS system excellent tools for student interactions and activities. S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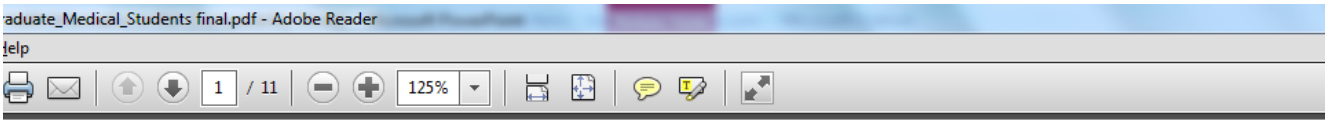
technics technologies education management
E-health quality and key performance ir
Ahmed I Albarrak
College of Medicine, King Saud University, Riyadh, Saudi Arabia.
Abstract
E-health includes a wide variety of health and clinical activities that have traditionally characterized tele-health, tele-medicine, and public health applications which are mainly delivered through the Internet. Even though, evaluation of e-Health has been somewhat disillusioning and not yet evaluated on a large scale. Therefore an assessment required to evaluate all aspects of performance that are important and significant for health care through standardized process, tools, and credited key performance indicators (KPIs). The objectives of the current study are to search for the principle elements of E-
Introduction
E-Health is defined as all
healthcare delivered over th
from informational, education
"products" to direct services
sionals, non-professionals, bus
ers themselves. Further includ
health and clinical activities
(electronic) based, and/or deli
networks or the Internet [1-5]
term for an emerging field in
health informatics, public healt
services on one hand and infor



Journal of Administrative Science, 7(1)

Assessment of Medical Informatics Skills of Undergraduate Medical Students at College of Medicine, King Saud University

Dr. Ahmed. I. Albarrak

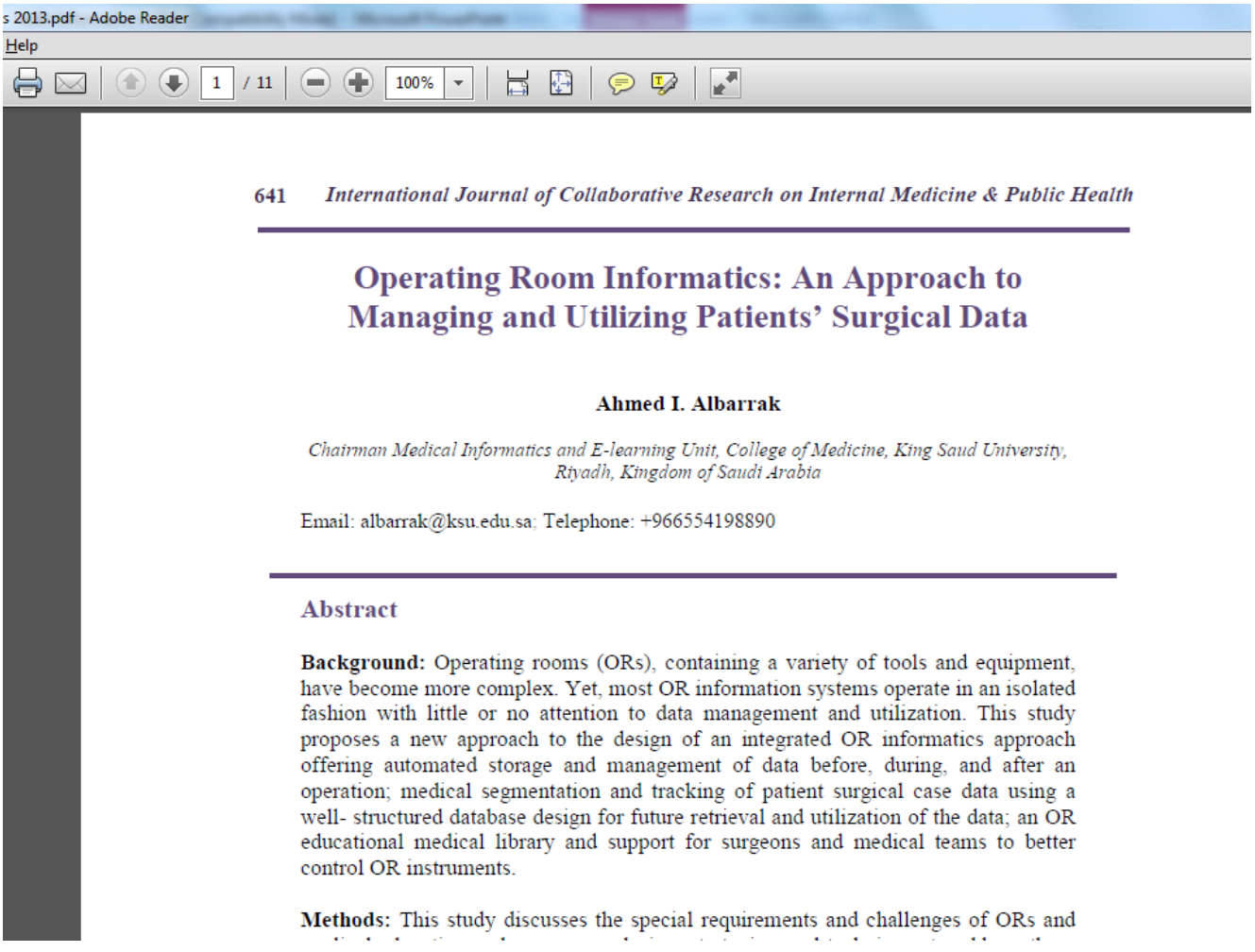
Assistance professor of Medical informatics

Head, medical informatics unit

Family and Community Medicine

College of Medicine

KSU, Riyadh, KSA



Operating Room Informatics: An Approach to Managing and Utilizing Patients' Surgical Data

Ahmed I. Albarrak

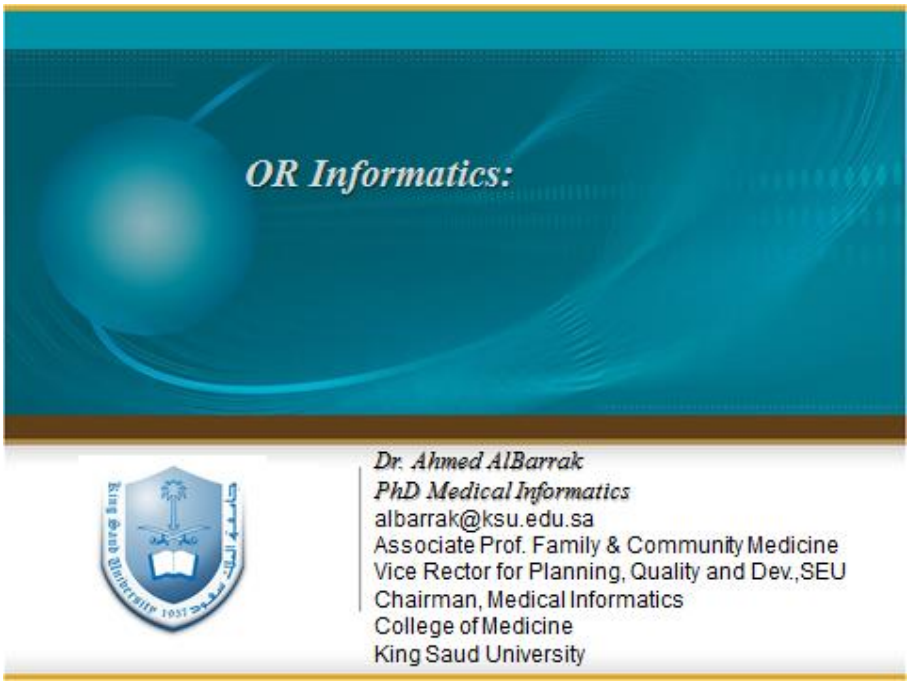
Chairman Medical Informatics and E-learning Unit, College of Medicine, King Saud University, Riyadh, Kingdom of Saudi Arabia

Email: albarrak@ksu.edu.sa; Telephone: +966554198890

Abstract

Background: Operating rooms (ORs), containing a variety of tools and equipment, have become more complex. Yet, most OR information systems operate in an isolated fashion with little or no attention to data management and utilization. This study proposes a new approach to the design of an integrated OR informatics approach offering automated storage and management of data before, during, and after an operation; medical segmentation and tracking of patient surgical case data using a well- structured database design for future retrieval and utilization of the data; an OR educational medical library and support for surgeons and medical teams to better control OR instruments.

Methods: This study discusses the special requirements and challenges of ORs and


OR Informatics:
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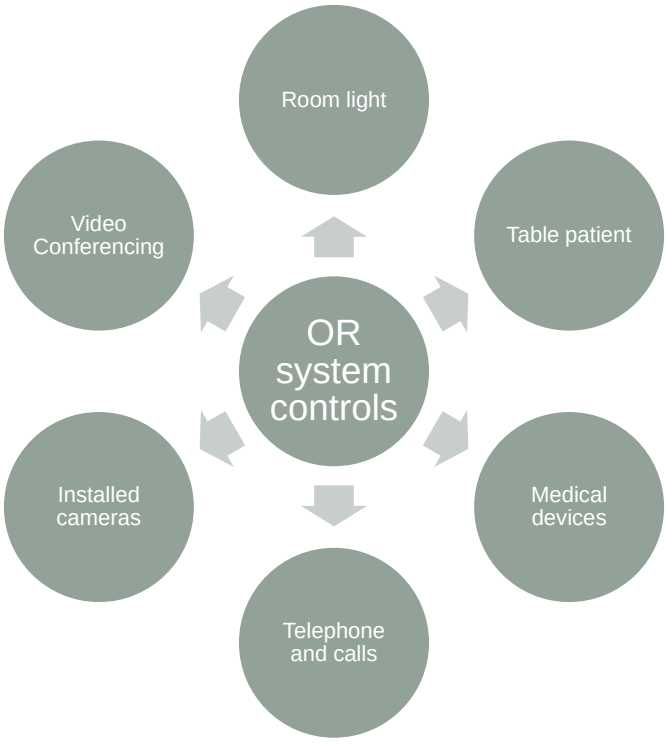
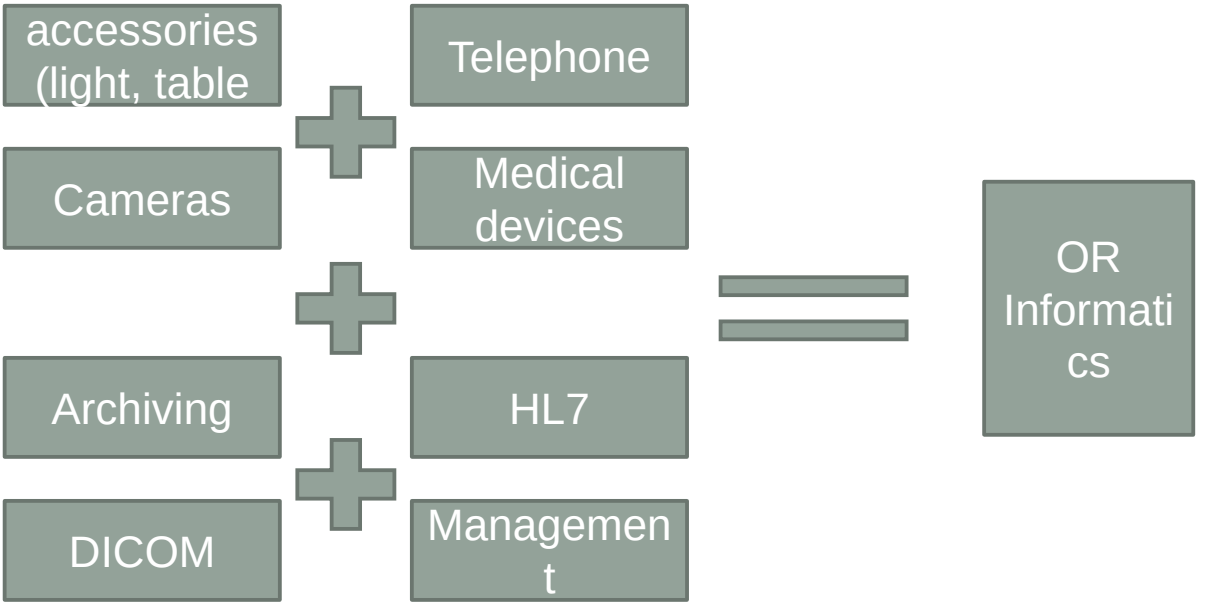
Associate Prof. Family & Community Medicine
Vice Rector for Planning, Quality and Dev.,SEU
Chairman, Medical Informatics
College of Medicine
King Saud University

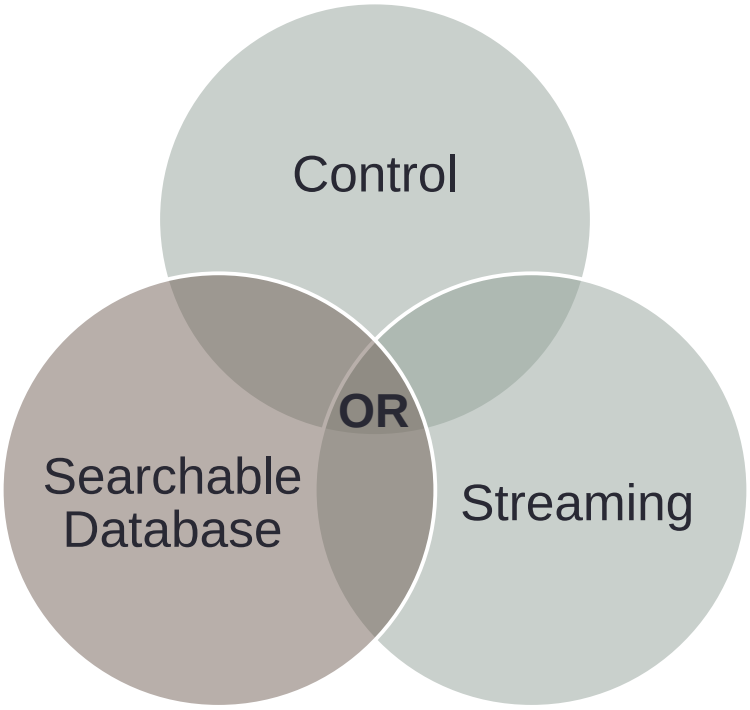
OR – control system



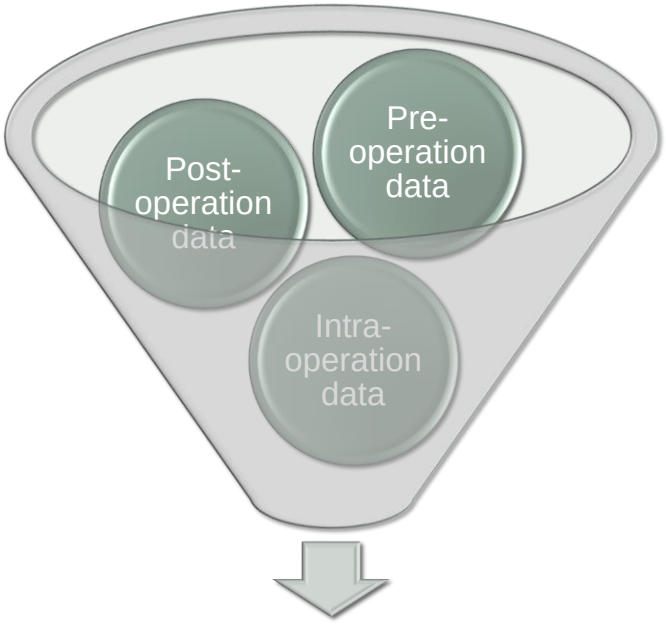
OR – HD & SW integration



OR Automation & Informatics

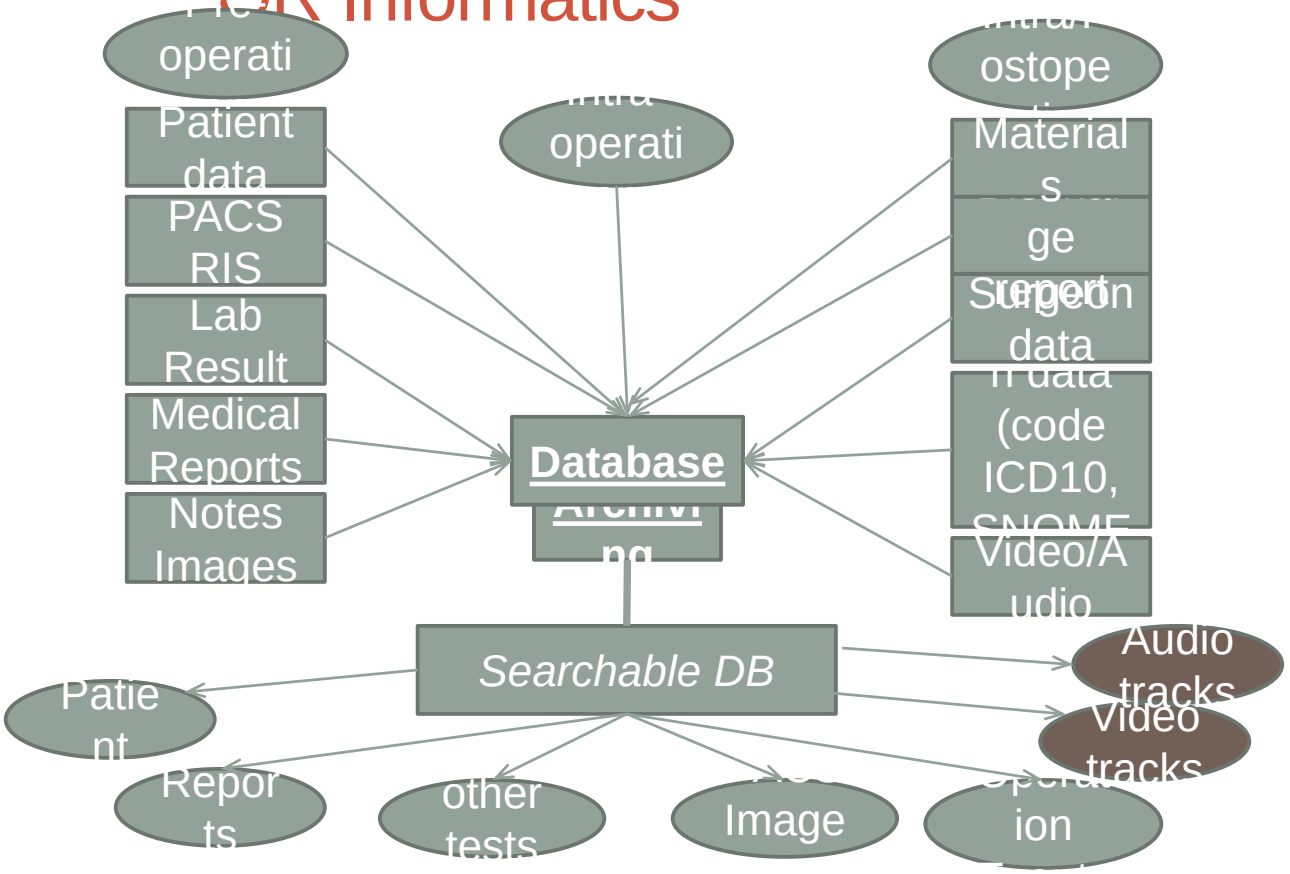


OR Informatics



OR Informatics

OR Informatics



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IJDR

International
DEVELOPMENT RE

International Journal of Development Research
Vol. 4, Issue, 3, pp. 496-501, March, 2014

Full Length Research Article

INTEGRATION OF HOSPITAL SYSTEMS INTO MEDICAL EDUCATION: A BLENDED LEAI APPROACH

***Ahmed I. Albarrak**

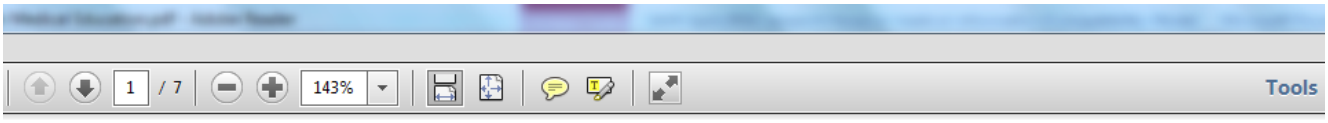
Department of Health Informatics, College of Medicine, King Saud University, Riyadh, Saudi Ara

ARTICLE INFO

Article History:

ABSTRACT

The E-learning tools facilitate and extend students learning experiences beyond the



E-learning in Medical Education and Blended Learning Approach

Dr. A. I. Albarrak

Medical Informatics Unit, Department of Medical Education, College of Medicine, King Saud University,Riyadh, Saudi Arabia.

Introduction

on has evolved from a material based process, where the instructor (teacher) focused on presenting informati nts, to a student (learner) centered process where students are able to learn at their own pace. Furthermore, t s role has changed from being a receiver to a being a learner and the instructor's role has changed to being guiding students to acquire knowledge and improve their learning skills [1]. The focus has shifted from centered model to a learner-centered one, offering stronger learning motivation and interactivity. Interactivi ns learner interest and provides a means for personalized learning and reinforcement. Evidence suggests th ng is more efficient in most cases because learners gain knowledge, skills, and attitudes faster than throu ual instructor-based methods. This efficiency translates into improved motivation and performance. In additio of e-learning is associated with improved retention rates and efficient use of content [2]

JIPH-1070; No. of Pages 8

Journal of Infection and Public Health xxx (2019) xxx–xxx

Contents lists available at ScienceDirect

Journal of Infection and Public Health

journal homepage: http://www.elsevier.com/locate/jiph

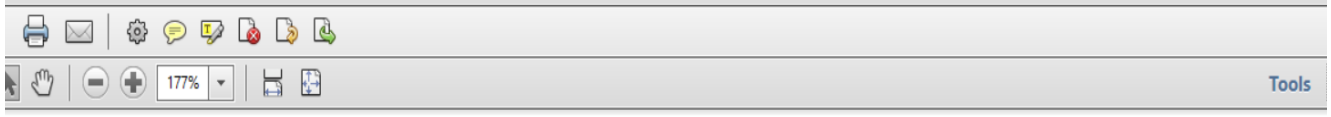
Assessment of physician's knowledge, perception and willingness of telemedicine in Riyadh region, Saudi Arabia

Ahmed I. Albarrak[a,*], Rafiuddin Mohammed[b], Nada Almarshoud[c], Lama Almujalli[c], Rawan Aljaeed[c], Sarah Altuwaijiri[c], Tahani Albohairy[c]

[a] Medical Education Dep., Research Chair For Health Informatics and Promotion, College of Medicine, King Saud University, Riyadh, Saudi Arabia
[b] Department of Health Informatics, College of Health Sciences, Saudi Electronic University, Riyadh, Saudi Arabia
[c] College of Medicine, AlMaarefa University, Riyadh, Saudi Arabia

ARTICLE INFO

ABSTRACT



MEDINFO 2019: Health and Wellbeing e-Networks for All
L. Ohno-Machado and B. Séroussi (Eds.)

doi:10.3233/SHTI190703

Acceptance of Tele-Dental Health Education Among Head and Neck Cancer Patients in Saudi Arabia

Sarah Alradhi[a], Ahmed Albarrak[a], Meshael Alghamdi[b]

[a] Medical informatics and E-learning Unit, Medical Education Department, College of Medicine, King Saud University, Riyadh, Saudi Arabia
[b] King Fahad Medical City, Dentistry Administration, Riyadh, Saudi Arabia

Abstract

Results

/olume 30, Issue 4
May 2018

Article Contents

Development of Saudi e-health literacy scale for chronic diseases in Saudi Arabia: using integrated health literacy dimensions FREE

Nasriah Zakaria, Ohoud AlFakhry, Abeer Matbuli, Asma Alzahrani, Noha Samir Sadiq Arab, Alaa Madani, Noura Alshehri, Ahmed I Albarrak

International Journal for Quality in Health Care, Volume 30, Issue 4, May 2018, Pages 321–328, https://doi.org/10.1093/intqhc/mzy033

Published: 24 March 2018 **Article history** ▾

Vaccination adherence: Review and proposed model

Asma A. Abahussin [a], Ahmed I. Albarrak [b]

Show more

https://doi.org/10.1016/j.jiph.2016.09.006

Summary

Journal of Infection and Public Health

Available online 17 August 2019

In Press, Corrected Proof

Middle East Respiratory Syndrome (MERS): Comparing the knowledge, attitude and practices of different health care workers

Ahmed I. Albarrak [a], Rafiuddin Mohammed [b], Ali Al Elayan [c], Feras Al Fawaz [c], Musab Al Masry [c], Mohammed Al Shammari [c], Saud Bin Miaygil [c]

What is next?

KM research in health care

Among the most relevant areas to link with knowledge and research in health care are:

- Research, applying research results through access and utilization of knowledge
- Human resources management.
- Data mining
- Machine Learning and Data Analysis
- Probabilistic and Statistical Models
- Symbolic Learning and Rule Induction Symbolic learning

Area of research in Health care

- Evidence based medicine
- Clinical decision support systems
- Public health and epidemiology
- Consumer public health
- Data mining
- Physiological modeling and simulation
- Artificial intelligence

" الخطة الوطنية للعلوم والتقنية والابتكار"

Project Supported by the national Plan Project, Science and Technology and innovation

مشروع وطني لبناء نموذج وإطار وطني للتثقيف الصحي لمرضى السكري و الأمراض القلبية وضغط الدم

A National Project to Build a Model and a National Framework for Health Education of patients with Diabetes and Heart Disease and Hypertension

أهداف المشروع

The Objectives of the Project

تقييم وضع برامج وأنشطة التثقيف الصحي في المنشآت الصحية على مستوى المملكة العربية السعودية.
Evaluate programmers and health education activities in healthcare facilities on the level of K.S.A.

تقييم الوضع الحالي في التثقيف الصحي لمرضى القلب و الأوعية الدموية و السكري على مستوى المملكة العربية السعودية.
Assess the current of the Pt. with cardiovascular and diabetes on the level of K.S.A.

تطبيق دراسة مقارنة على نموذج التثقيف الصحي

Comparative study on application of health education model

بناء نموذج تثقيفي صحي.
Building health education model

Proof. Sulaiman Al-Shammari
أستاذ واستشاري طب الأسرة قسم طب العائلة والمجتمع والمشرف على مركز التثقيف الصحي بالمستشفيات الجامعية
Professor & Consultant Department of Family & Community Medicine College of Medicine, and supervisor of health education in KKUH

د .أحمد البراك
Dr. Ahmad Al Barrak
استاذ المعلوماتية الطبية المشارك _ كلية الطب
Chairman, Medical Informatics Unit
Associate Prof. of Medical Informatics
College Of Medicine

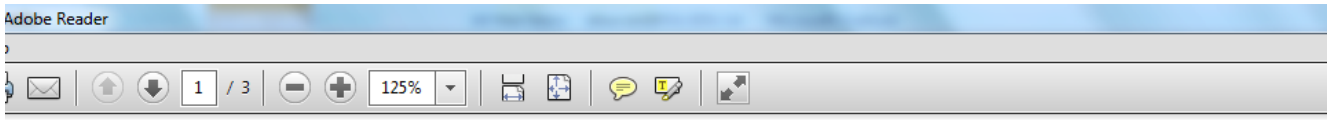
Evaluation of the Effectiveness of a Structured and Interactive Patient Health Education Model in the Control of Chronic Diseases in Saudi Arabia

- Diabetes and cardiovascular diseases are a major cause of death and disability worldwide.
- The incidence of chronic diseases has increased in the KSA, and will continue to do so if no immediate actions are undertaken.
- Health education is an integral component of self-management programs & an important element for control & management of chronic diseases.
- Patients involved have demonstrated better health outcomes and satisfaction, with reduced health costs.

- The widespread use and popularity of technology & communication infrastructures in KSA & globally, can be effectively utilized.
- Taking into consideration the available health information sources and patient preferences, information and communication technologies are well positioned to overcome most of the limitations around providing timely, convenient, accessible and interactive HE.

Project objectives

- To assess the current status of diabetes & cardiovascular disease-related patient HE programs and activities in various health care settings
- To assess the current status of diabetes & cardiovascular disease-related patient HE, regarding knowledge, attitudes, practice, satisfaction and efficacy;
- To assess patient literacy, attitudes, practice and preferences with regard to technologies, i.e. text, audio, images, animation, video and interactive content forms;
- To design and validate structured HE models for patient with diabetes and cardiovascular disease based on the findings of the first three objectives; and
- To convert and assess selected validated HE models into interactive informatics materials.



King Abdulaziz City for Science and Technology 2012

Project Title: Designing and validating of a knowledge based model for monitoring, reporting and managi
medical errors based on evaluation of the current status of medical errors in Saudi Arabia
PI: Ahmed I Albarrak
Institution: KSU
Technology Sector: Medical Research
Code Number: 12-MED2938-02
Reviewer: Consensus Review

Please analyze the proposal against the following criteria:

1)The quality of the proposed research. Is the proposed research innovative? Can it contribute significantly to the state of knowledge in its field? How does the proposed research compare to established programs?
In this application, the investigators propose to design a model for monitoring, reporting and management
medical errors in Saudi Arabia. The proposed research is innovative insofar as there is little available information about medical errors in Saudi Arabia and as no system for monitoring, reporting and managing medical errors exists. However, although the investigators are clearly knowledgeable about the issues and

Artificial Doctors and artificial intelligence in clinical practice

- Artificial Doctors is and will be much criticized. We'll see all sorts of press wisdom decrying "they don't work" or "look at all the silly things they come up with. However it is getting better and better and will go from providing "bionic assistance" to second opinions to assisting doctors to providing first opinions and as referral computers (with complete and accurate synopses and all possible hypotheses of the hardest cases) to the best 20% of the human breed doctors. And what's more?!!!

Applications and examples

- Ford Motor Co. & Microsoft and health care start-up Healthrageous to roll out a pretty interesting health care product: A car equipped to monitor vital signs and feed that data wirelessly into an electronic medical record to watch out for any abnormalities or warning signs. Or, as Ford describes the new product, it's a "doctor in your car."
- The prototype that Ford has shown off doesn't have the skills of a physician in diagnosing diseases (there is, however, another machine for that: IBM supercomputer Dr. Watson). But it does look like the kind of device that could support those diagnoses, a non-obtrusive way to capture a lot of health-care data that currently goes unmonitored.

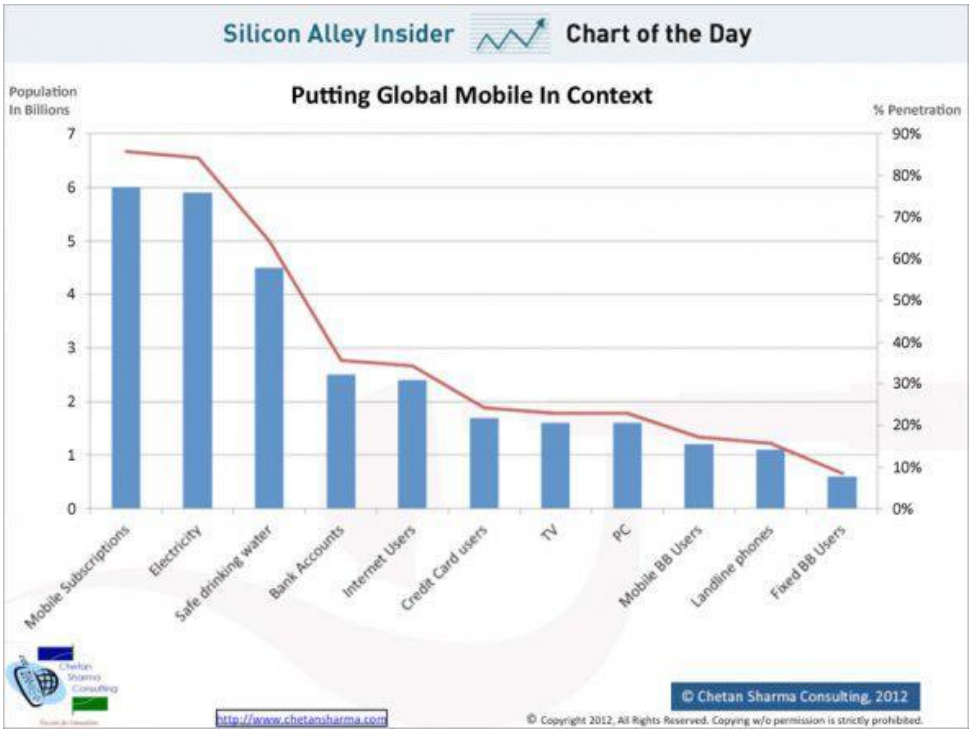
Mobile health

- M-health or Mobile health is a term used for the practice of medicine and public health, supported by mobile devices. The term is mainly used in reference to using mobile communication devices, such as mobile phones, tablets and PDAs, for health services and information. The mobile Health is a sub-segment of eHealth,

- The mHealth market earned revenues of $230 million in 2010 and is estimated to reach $392 million in 2015 in USA, according to a new report from research firm Frost & Sullivan.

mHealth

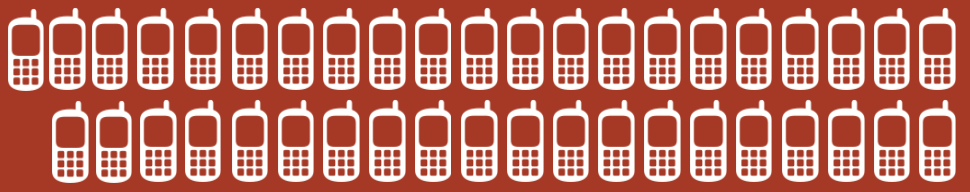
Mobile is the most Pervasive technology ever invented



The mHealth Opportunity

7 Billion
People

By 2014
More mobile phones than people



Expanding the coverage and reach of critical health information and services and moving towards citizen-centered health and well-being

Home continues care

- "Meadville Medical Center is using the remote vital signs monitoring program to improve chronic condition outcomes and ongoing care for patients after discharge from the hospital," Barry Bittman, MD, chief innovation officer at Meadville.
- "As part of our Community Care Network model, the Electronic House Call (EHC) solution will allow our clinicians to remotely monitor our patients' conditions and continue to coordinate their care after they leave the hospital," he adds. "Electronic House Call is designed for this type of program and includes the intuitive technology and rich feature-set that we were seeking to support our continuous care objectives, our patients and our own clinicians."
- The EHC remote patient monitoring solution allows patients to return home, while providing for frequent updates of patient data to healthcare providers without a face-to-face visit, Bittman said.

Dr Watson the **IBM's supercomputer**

- The computer can analyze about 200 million pages of data in less than three seconds, which could allow physician to more accurately diagnose and treat complex cases. Physicians could, for example, use Watson to consult medical records and the latest research findings for recommendations on treatment.
- FDA Approved?

Thank you

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albarrak@ksu.edu.sa