eHealth
June 5 – June 8, 2016
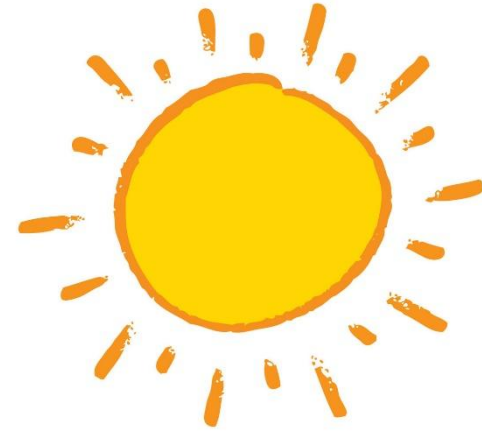Vancouver Convention Centre East

مستشفى الملك فيصل التخصصي ومركز الأبحاث
King Faisal Specialist Hospital & Research Centre
مؤسسة عامة .Gen. Org

The Impact of eHealth on Pharmaceutical Care

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Kingdom of Saudi Arabia

Administrative Divisions

Saudi Arabia has 14 emirates (*imārāt*, singular *imārah*). All are administered from Riyadh.

King Faisal Hospital & Research Center
Riyadh and Jeddah

KFSH&RC FACTS & FIGURES

MISSION Provide the highest level of specialized healthcare in an integrated educational and research setting

VISION To be a world-leading institution of excellence and innovation in healthcare

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Est 1975

Kingdom of Saudi Arabia

9.4M Population Served

Riyadh & Jeddah

2015 Statistics

1589 Beds

30,012 Admissions

1,224,806 OP Visits

1,158 Transplants

19,260 OR Cases

13,278 Employees
63 Nationalities

87,692 ER Visits

1,432,165 OP Rx
Avg. 7000 Rx/Day

38 Pharmacists
280 Rx/Day

HIMSS Analytics EMR Adoption Model

For Ambulatory Care

For Acute (inpatient) Care

HIMSS EMR Adoption Model℠

Stage	Cumulative Capabilities
Stage 7	Complete EMR; CCD transactions to share data; Data warehousing; Data continuity with ED, ambulatory, OP
Stage 6	Physician documentation (structured templates), full CDSS (variance & compliance), Closed Loop Medication Administration
Stage 5	Full complement of Radiology PACS
Stage 4	CPOE, Clinical Decision Support (clinical protocols)
Stage 3	Nursing/clinical documentation (flow sheets), CDSS (error checking), PACS available outside Radiology
Stage 2	CDR, Controlled Medical Vocabulary, CDS, may have Document Imaging; HIE capable
Stage 1	Ancillaries – Lab, Rad, Pharmacy - All Installed
Stage 0	All Three Ancillaries Not Installed

The Impact of eHealth on Pharmaceutical Care

1,432,165 OP Rx
Avg. 7000 Rx/Day

38 Pharmacists
280 Rx/Day

Aprox. 2400 formulary items

6 pharmacies in Riyadh
4 pharmacies in Jeddah

According to the Canadian National Association of Pharmacy Regulatory Authorities:

"**Prescription volumes**

It is recognized that different pharmacists have different abilities and may perform different quantities of work more effectively and safely than others. However, there is an optimum workload that pharmacists may perform, after which, the potential for increasing errors rises. With regard to prescription volumes, the following guidelines are suggested:

1) A pharmacist working alone, with no technician assistance, should reasonably be able to dispense **approximately 10 prescriptions per hour as a consistent, daily average.**

2) A pharmacist working with technician support (one or more), should reasonably be able to dispense an **average of 15-20 prescriptions per hour.**"

280 Rx/Day
Working alone for 8 hours Shift (avg. 35 Rx/hr)

MEDICATION ERRORS

More Than
7000
Annual Deaths

50%
Related to
Medical Dose Selection

5-8%
Hospital
Admissions

Effected
1.5m
Patients

Loss of
USD3bn
Per Year

79%
During Physician
Prescribing

Too Rushed	78%
Illegible Writing	68%
Mistaken Physician Order	62%
Too Many Medications	60%
Similar Drug Names	56%

MORE ERRORS

10-20%
Transcribing

30-40%
Prescribing

5-10%
Dispensing

Preventable ADEs cost
$1.5 billion
Annually

20-30%
Administration

Nurses spend
35% of their time on documentation

61%
of most serious med errors
Are IV Related

40 ADEs per day

http://psnet.ahrq.gov/primer.aspx?primerID=23

What do you think ?

Do we have a problem ?
Why is it important ?
How can we select and use a technology to enable/help us ?
Dose it impact our practice?

ScriptPRO Workflow System

ScriptPro provides an integrated platform of robotics-enabled systems and barcode driven workflow to optimize ambulatory pharmacy operations, promoting safe and effective medication use and improve adherence

Is it Enough?

ScriptPRO Workflow System

- Installed **2007** in one site (Phase I)

- Expanded in **2010** to all other remaining sites in Riyadh (Phase II)

- Expanded in **2016** to all Jeddah sites (Phase III)

- ScriptPro's Robot and SP Workflow System complements the robotic **dispensing** technology by coordinating the entire pharmacy workflow using barcode verification technology and identifying and batching all prescriptions for every patient to ensure proper medication delivery

The Impact of Adopting a New Robotic Dispensing System in Outpatient Pharmacies at King Faisal Specialist Hospital and Research Centre (KFSH&RC)

Almoeen. A*, Alolabi. S, Aljedai. A, Hijazi, A

Phase II

2010

Objectives

- We try to measure the outcome of adopting a state of the art, robotics-based management and bar-coded driven workflow systems for outpatient pharmacies and to develop a framework tool for pharmacy automation solutions outcome measurements by:

1. measure pre and post ScriptPro implementation impacts on dispensing errors as a primary objective.

2. evaluate the effect on the time required by pharmacy staff to complete six dispensing related activities (secondary objective):
   a. Receive the Rx Order
   b. Process the Rx Order
   c. Resolve Clinical Conflicts
   d. Prepare the Prescription
   e. Double check
   f. Patient counseling

Objectives

3. To study the impact of technology on staff satisfaction by conducting pre and post implementation survey.

4. To describe the changes in the pharmacy practice by comparing the robotic dispensing process (post implementation) with conventional (pre implementation) prescription dispensing process.

Method

- Mix of quantitative and qualitative methods. Prospective observational study of random selected prescriptions. Cross sectional staff survey and area managers structured interview.

Result

- KFSH&RC pharmacies dispense around 7000 prescriptions per day. A total of 4886 prescriptions were randomly selected (2602 pre and 2284 post) over a 2 weeks period and the post implementation was collected after 6 months of the go-live. 36 serious dispensing errors (wrong medication) were captured.

- The recorded time required by pharmacy staff to complete all dispensing-related activities pre-installation is around 12-16 minutes per patient (avg. no of prescriptions is around 5-6/patient) and 9-13 minutes post- installation (around 25% reduction).

Result

- Staff satisfaction is 96% positive and they are all more confident to dispense medication using ScriptPro compared to the manual process (85% respond rate from a total of 38 staff members)

Conclusion

- This study help to improve the outpatient pharmacy workflow and guide the management to develop an automation evaluation tool (framework) based on the indicators measure and the findings.

IMPACT of eHealth

>0.5% of the outpatient dispensed medication errors prevented by a barcode driving technology

Improve patient care by reducing medications errors

Staff satisfactions are very important

An estimated a yearly cost saving of 7,000,000 SR (2.3 millions CAD) is recorded

eHealth OUTCOME

Dispensing Errors

≈18,000 SR
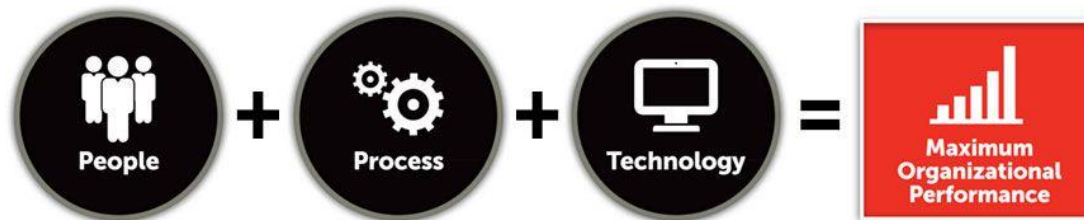Cost saving
Per Day

96%
Satisfaction

25%
Increase efficiency

EFFICIENCY

COST QUALITY

Remember

People
Process
Technology

People + Process + Technology = Maximum Organizational Performance

Strategy

Roles & Responsibilities

Segregation & Controls

Key Performance Measurement

People

Compliance

System Audit & Review

Technology

Process

Business Process Understanding

Project Management

System Implementation

Business Process Reengineering

System Identification, Evaluation & Selection

Policies, Procedures & Reporting

Change Management

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eHealth is
a 'Roadmap' Not a Checklist

Making a process electronically, does not mean it is 100% correct

Informatics is NOT just robotics, bar coding, and computer systems

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Healthcare Information Technology Affairs (HITA) - Corporate