

Can Information Technology, Nursing and Informatics Shape Operations? A Case Study

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Conflict of Interest

Edwina Bhaskaran Michelle Machon

Has no real or apparent conflicts of interest to report.



Agenda

Journey

- Background: What makes this discussion unique? Or is it?
- It started with IT: The Technology & Approach
- The *People* Factor
- To get to the **Process**

Summary

- The Challenges
- Outcomes
- Recommendations



Learning Objectives

- Demonstrate the advantages of information and technology, informatics and clinical partnerships during an EMR implementation
- Create a strategy for robust relationships with departments where strong partnerships are not the norm
- Identify the opportunities within organizations for managing the issues that arise within greenfield projects
- Apply their learning's to their own organizations as information and technology, clinical informatics and nursing work together
- Identify the challenges of opening a "first of its kind" American healthcare system in the Middle East



Introductions & Background

Clinical Applications Director

IT Employee # 2

Clinical Informatics Director

Nursing Employee # 1



Clinical Educator and Unit Manager

Clinical Educator # 1



Case Study: Background and Mission

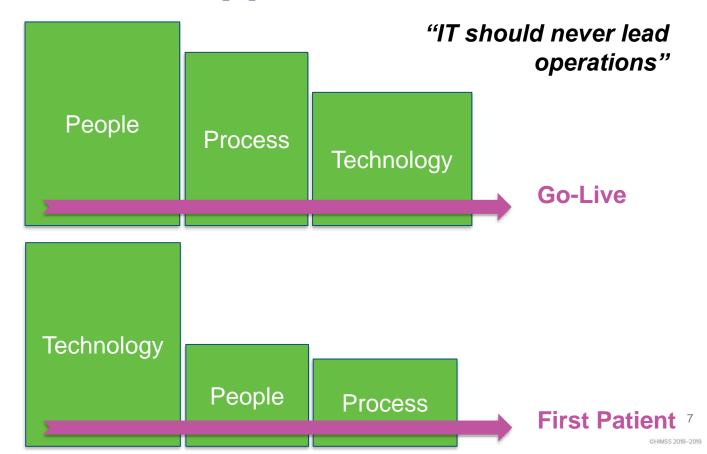
Replicate the First US Multispecialty Hospital Outside North America

Cultivate a Sustainable Healthcare System

Support the Development of Local Healthcare Talent



Traditional Approach

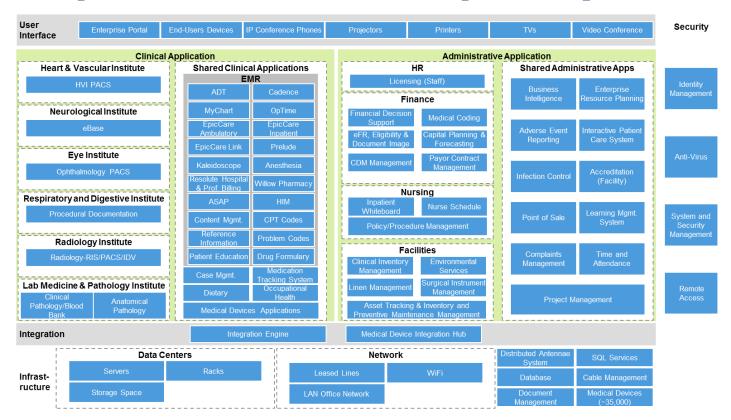




1. The Technology

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Implementation Complexity





Focus on EMR Implementation

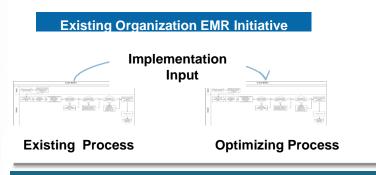
Operational processes are now embedded within EMR more than ever.

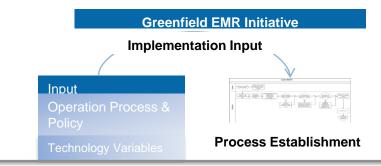
In this case:

- EMR served as an "anchor" implementation project for the IT Portfolio and for clinical operations
 - Timeline & Strategy
 - Integration

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Greenfield EMR Implementation Goal





GOAL: Operational Optimization & Efficiency

GOAL: *Establish* Operations

Initiative Objective:

Implementation of an integrated Electronic Medical Record system that supports hospitals *future vision* for patient care and will serve as the *foundation* for future optimization (captured during implementation).

Accomplished By:

- Use existing EMR as a point of reference
- Leveraging industry standards to establish interoperability standards and functions
- Rigorous documentation of implementation process, decisions, assumptions that will provide historical background





Content for EMR Design

EMR Design/Build Inputs

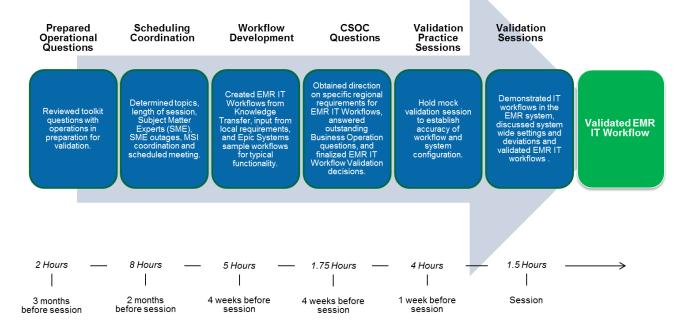
- Process Flows
- Regulatory Information
- Operating Models
- Organization Charts
- Staffing Plans
- Policies and Procedures
- Scope of Services
- Physical Locations
- Determining IP vs. OP areas
- Specialties
- Clinical Documentation Standards

In a standard EMR implementation, hospitals have provided services and many of the information listed already exist.



A different approach was required....

The EMR Design Process included six steps per workflow validation session. Each session required approximately 22.25 hours per session in preparation time. This yielded a 96 % validation rate.





Design Deliverables

Design Deliverables

EMR IT Workflow Validation Schedule

Schedule of 149 sessions

EMR IT Workflow Validation Materials

EMR IT Workflow Presentations

Strategy Session

Documented decisions from Strategy Sessions

Deviations

Documented differences in the sequence of which activities are completed by an end user within an application, or in the point of reference system

Design Deliverables Under Change Control

EMR IT Workflow Visios

 446 EMR IT Workflow Visios and a Table of Contents listing co-dependent EMR IT Workflows

Business Operations Input Toolkit

806 Business Operational questions that define the design of the system

Functionality Matrix

Reference document to show the Epic functionality that will be used

Facility Organization Structure

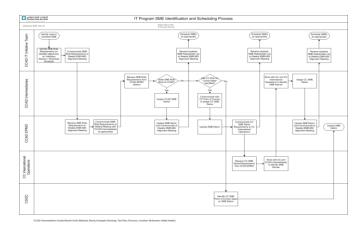
Document detailing departments, locations and service areas



Scheduling

The most significant challenge to completion of the EMR build was lack of operational resources and schedule maintenance. The EMR and operations teams re-visited SME identification, schedule approach and overall process several times during the course of Workflow and Content Validation.

- Established Operational Identification Owner (OIO) group to act as operational champions for the EMR Validation Schedule
- Had dedicated EMR Scheduling Analyst to manage schedule and meeting invites
- Used Change Control process to track changes



EMR Validation Schedule Facts

- 890 instances of session rescheduling
- 487 (54.7%) rescheduled sessions due to business operations availability
- 305 (34.3%) rescheduled sessions due to other EMR team changes (usually shortening of sessions)
- 51 (5.7%) rescheduled sessions due to follow up not being completed on time
- 33 (3.7%) rescheduled sessions due to EMR Project Team availability
- 14 (1.6%) rescheduled sessions due to other reason



2. The People



Let's talk about people...

- The most crucial success factor for EMR implementations is operational involvement and input.
- When the EMR Implementation commenced the following individuals provided operational involvement:

Medical Informatics Director

Clinical Informatics Director

Chief Nursing Officer

Chief Medical Officer

Pharmacy Director

Administrative Services Director

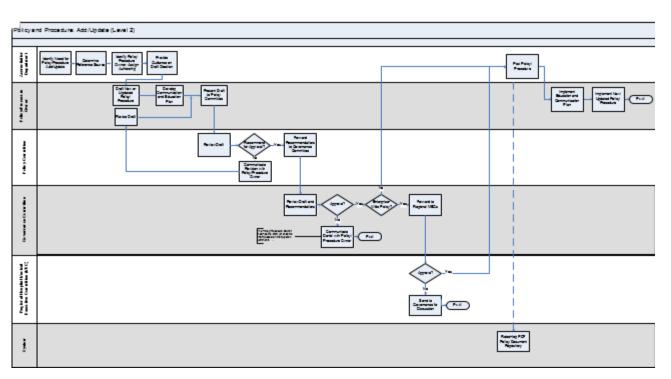
Revenue Cycle Director

Finance Director



Process Framework

 200 design sessions back at Main Campus to prepare the on site SMEs with a "frame of reference"





The Relationship Begins...

- The IT strategy was based on replication from reference US site
- Became evident that answers were required to questions that the newly hired clinicians had not considered.
- As the implementation progressed, the differences were evident:
 - Cultural
 - Regulatory
 - Facility differences
 - More complex issues such as
 - Anglicized spelling and date format
 - DNR status
 - Patient naming convention
 - Fasting during Ramadan.



Evolution of a Partnership

This could have caused friction

however....

 The key clinical and informatics stakeholders realized that this was an opportunity to form innovative collaboration avenues and they took advantage and respected the direction IT was bringing to the clinical staff

 Information Technology adapted to provide flexibility while meeting implementation timelines.



Resources Skill Mix

- Operational Resources were sought with these skills
 - √ With local operational clinical experience
 - $\sqrt{}$ With Main Campus clinical and IT Experience
 - √ With EMR experience
 - √ With Project Management experience



More Partnerships...

- Back in the States
 - SMEs from every area were referred to daily
- From external local organizations
 - Other hospitals
 - Payors
 - Regulators



3. The Processes



Operational Questions Examples

Scope of Practice

What is the scope of practice for Physician Extenders and Associate Physicians?

Scope of Services

What types of organ transplants do you plan to perform? Do any of these types require specialized units? How often do you expect to be doing these transplants?

Policy

Will a second signature (not a co-sign) for specific medications (i.e. antibiotics) from infectious disease be required? If not, will Pharmacy restrict the ordering of certain medications to specific medical specialties (Infectious Disease)?

Patient Flow

Where will direct admission patients arrive in the hospital? A registration desk, the ED or directly on the floor? Will this change based on acuity or time of day?



A Process to get to the Process

- 1. IT generated "design questions"
- 2. Needed a forum for these discussions which became a multidisciplinary committee responsible for the clinical decisions needed



Example:

- "how often will you be reassessing your patients in pain"
- "how often are you documenting on patients in restraints".



Operational Process Evolution

The options were trifold:

- let iCAG decide the processes,
- look to the evidence
- reach back to the main campus in the States.

- ✓ All three of these were utilized
- ✓ IT drove timelines, deadlines and the project plan in general.



The Challenges



Different processes "in-country"

Challenge:

The local cultural, regulatory and legal environment prevented a replication of the US processes in the UAE

Solution:

Every single US process, document, order set and workflow had to be touched and revisited for the environment of the new facility.



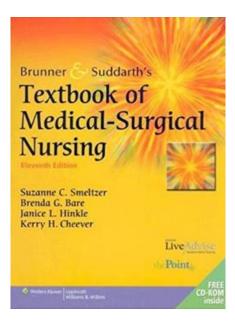
Lack of clinical workflows

Challenge:

Only IT workflows had been documented

Solution:

Utilizing the index from a standard nursing textbook and the IT workflows, the basis of nursing operations was formed.





Multiple Workstreams

Challenge

"Bigest Bang" go live:

- All Clinical Applications, including the EMR
- All Medical Equipment + Device Integration
- All hospital policies & procedures, job orientation, department orientation.
 - Everyone was onboarding **together**, at the same **time**.

Solution

A highly coordinated operations training plan orchestrated by the IT PMO



Extended timeline and changes Challenge:

The original construction timeline elongated and so did the correlating IT implementation/EMR build. New employees were onboarded during these delays and there were challenges with these new SMEs asking for new iterations of the formal design

Solution:

Workflows that were developed were placed under "change control" and incorporated into the IT change control process



Resources eventually came but...

The EMR Team ran monthly sessions for new hires as an introduction to the EMR, including work-to-date to design, build, test the EMR system, policies and procedures related to workflow and/or content changes, and related IT PMO processes.

Approach	
Audience	Type of Orientation
Physicians (Chairs)	 One-on-One Meeting Frequency: As needed Topics Covered: EMR Overview Demonstration of related Epic functionality Governance and Change Control Process
Physicians (Non-Chairs), Nursing Directors, Finance Directors, Department Administrators	 "Introduction to EMR" Session Frequency: Monthly Topics Covered: EMR Overview Demonstration of related Epic functionality (breakout session) Governance and Change Control Process
Managers, Analysts	• None

Tools/Supporting Documentation

- Powerpoint Presentation
- Epic System Demonstration
- Access to EMR Sandbox

- EMR IT Workflows
- Validation Session Materials
- EMR Decisions & Assumptions Documentation

- Epic Glossary
- Epic E-Learning



Training Challenge:

- frontline staff were not immediately using the system so knowledge gained was often lost
- learning multiple business/clinical apps at once meant the caregivers were often confused/ had cognitive overload

Solution:

- Hundreds of end-to-end multi-disciplinary walkthroughs
- Post go-live round the clock shoulder to shoulder support, geographically located in depts
- Peer to peer (super-user) learning was vital.



70+ Applications to train on

	Application Description	Vendor	DRAFT Training Lead	Caregivers Involved	Manager responce
al according to the second of	Endoscopy-Procedural documentation is a solution that replaces dictation and transcription and that allows physicians to efficiently document procedures at the point of care. It produces complete, coding-ready and image-enhanced documentation that results in greater efficiency, increased profitability and clinician satisfaction	Provation	Norie Calinao/ Jesus Manalo/Tim Murphy	all RNs, techs and MDs involved in Endoscopies.	From Manish; Site Support will support Provation. From Margaret: I think this would be appropriate and realistic. From Joe K: CE will be able to assist with the support of equipment, training will fall under the clinical department I believe.
	Ophthalmology PACS improves ophthalmic practices by taking the data captured by ophthalmic imaging devices and integrating them into a single system, enabling physicians to pull up all of a patient's data on a single screen, from anywhere, instantly	Zeiss	Alex	Opthalmology	Site Support Specialist
	Medical Device Integration allows hospitals to improve efficiency by connecting medical devices to EMR. The medical device and EMR connectivity solution is designed to retrieve and deliver data from virtually any type of bedside medical device and send it to clinical or hospital information systems using HL7 standards	Capsule	interface only		
	Case Management/Utilization Management is a process to provide appropriate and quality health care to individuals in a fragmented environment. Health care administrators are readjusting current systems rapidly to improve and maximize reimbursement while attempting to maintain quality of care for their patients	3M	Sheila Burns	Case Management only	Sheila Burns: yes we will manage within dept and Jacquie will support as our super user.
	Medication Tracking System records and monitors the status of the medication preparation and delivery activities. The system identifies when the medication will leave the pharmacy and where the	MadRoard			



Post go-live Change requests

Challenges

 After opening- clinicians wanted nearly every process to be adapted, changed or redesigned

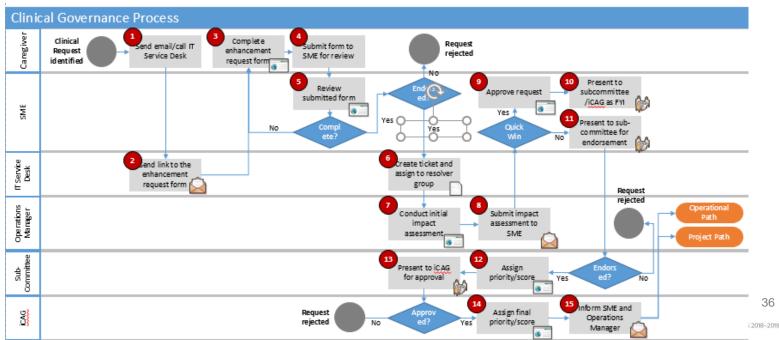
Solutions

Strong leadership commitment to a governance process



Eventually worked with IT to put a change management process in place...

Clinical Governance Process Map





The End Result



Partnership

Trust

- Operations needed to rely heavily on IT expertise.
- IT needed to rely heavily on operations to keep the implementation moving.

Collaboration

 Approach needed to be modified several times over the course of the implementation to facilitate changes to hospital operations (e.g. organ donation)

Open (Effective) Communication

Welcomed and acknowledged risk and issues

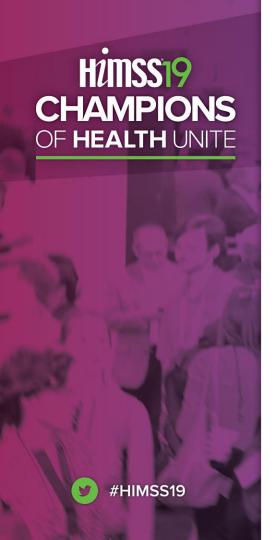


Result

Facility opened HIMSS stage 7 enabled

Virtually "paper" less system

 IT Implementation enabled hospital operations and provided a foundational system for optimization



The Recommendations



Recommendations from IT

- View go-live as a "phase"
- Plan resources to projected patient volume
- Create an agile governance process



Recommendations from Nursing

- Create a robust Mock Operations plan
- Mirror your "Sandbox" environment as close to reality as possible
- Remember that "perfection is the enemy of progress" (Winston Churchill).



Recommendations from Informatics

- Maintain your strategic partnerships
- Create a strong clinical governance process pre-opening.
- Do not be "married" to your build.
- Set very clear expectations with your Clinicians



Questions

- Michelle Machon, RN, MSN
- Edwina Bhaskaran, RN, MSN

Please complete your evaluations!