INFORMATICS AND ANALYTICS DESIGN STRATEGIES

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Entrepreneurial Healthcare Information Technology thought leader with innovative leadership style to vision, architect, plan and implement highly scalable Informatics, Data Mining, Clinical Intelligence and Business Intelligence solution; Healthcare Integration Hubs; secure portals for Physicians, Nurses, Care Givers and Patients.

Member of CIO-CHIME HiMSS AMIA
Member of MIT Sloan CIO Healthcare and analytics panels
Author/co-author of 4 Books
Frequent Speaker at National & International Conferences
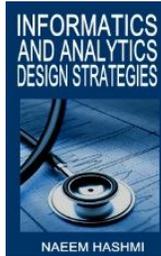
Target Audiences

- ❑ IT professionals entering in the Healthcare business
- ❑ Informaticians and Healthcare Researchers
- ❑ IT Management team responsible for defining Informatics and Healthcare data management strategies
- ❑ Compliance , Legal and Senior management team to understand legal and Social impact of Informatics and predictive analytics
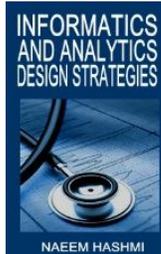
Chapters

1. Introduction to Informatics and Analytics in Healthcare
2. Thinking about Thinking – Care Providers & Business
3. Methods and Techniques for Informatics & Analytics
4. Launching Informatics and Analytics initiatives
5. Analyzing requirements
6. Preparing content for Informatics and Analytics
7. Constructing Informatics and Analytics platform
8. Developing Informatics and Analytics
9. Informatics and Analytics Quality Assurance
10. Deploying Informatics and Analytics
11. Legal/Compliance aspects of Informatics
12. Social/Ethical aspects of Informatics

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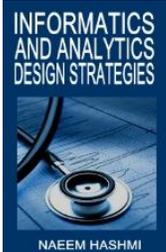
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I start this book by describing the present state of the Healthcare Business ecosystem and how information flows in such ecosystem

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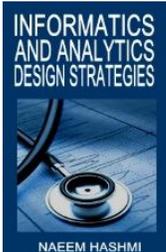
Evolving healthcare ecosystem: What keeps executives awake at night today?

STATE OF THE HEALTHCARE BUSINESS

A higher level overview of Information flows within the Healthcare ecosystem
 - Business
 - Clinical care
 - Patients

CEO/CFO
INVESTORS
PATIENT SAFETY
JVs A&M BUS DEV

CMO
MEANINGFUL USE
CLINICAL PRACTICES
COMPLIANCE

CLINICAL PROCESS

ACO MODEL

CMIO
PATIENT ENGAGEMENT
CARE COORDINATION
QUALITY / OUTCOME
CLINICAL INTELLIGENCE

EXTREMELY FRAGMENTED
SILOED HEALTHCARE SYSTEMS
INTEGRATEBILITY and SCALABILITY
CONTENT QUALITY

CIO
MEANINGFUL USE
ICD 10, HIE
PRIVACY/SECURITY
MIGRATION/INTEGRATION

INFRASTRUCTURE

30 Day Readmissions, PQRS, ICD 10
Med Reconciliation, Distributed Revenue Sharing

Source: Information Frameworks

PATIENTS
PRACTICES
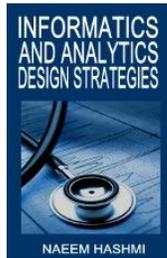
Then I synthesize the Clinical Cognitive Decision Making model to identify information artifacts needed to make clinical decision(s). I call such artifacts as Informatics & Analytics
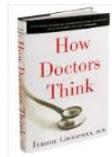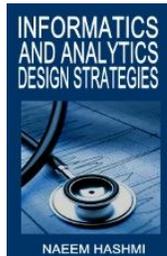
What do I mean by Informatics and Analytics?

Informatics and Analytics are not the same.

However, they both play significantly different roles in the Healthcare ecosystem.

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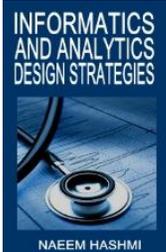
Informatics and Analytics Framework (IA2F)

I outline a comprehensive framework that describes decision layers across the Healthcare ecosystem – 'Taking care of the Patient Health' at one end and 'Taking care of the Business' on the other.

PATIENTS ●————————————● **BUSINESS**

In between, I place specific informatics and Analytics artifacts across the decision making spectrum within this Healthcare ecosystem.

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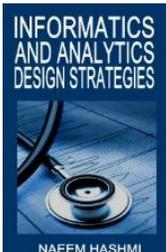
Thinking about Thinking: Informatics and Analytics

The Clinical Decision Cognitive Model describes the psychology of a care provider in context of Patient situation. A Physician thinks differently than a Nurse

The Business Decision model focuses on the business – Keep the economics of the organization healthy .

INFORMATICS — CLINICAL INTELLIGENCE — BUSINESS INTELLIGENCE

RESEARCHERS — **PHYSCIANS & PATIENTS** — **BUSINESS**
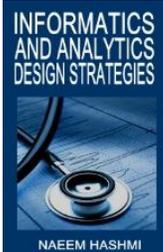
Informatics and Analytics Platform

You need to understand that Informatics and Analytics bring unique data management challenges.

- ➢ *Knowledge Management*
- ➢ *Data Management*
- ➢ *Compliance and Privacy*

I outline an Enterprise Data Management strategy that addresses which platform is best suited for Informatics and Analytics.
I also discuss Big Data platform usage in Healthcare for developing Informatics/Analytics
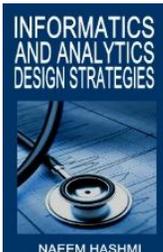
Methods and Tools

There are hundred's of methods and tools available to synthesize clinical content. Each method brings its own pluses and minuses. Which one to use?

Through use cases, I propose methodology and a checklist to select right set of methods/tools needed to meet your stated informatics and analytics objectives.

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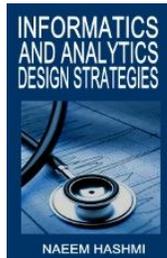
Designing Informatics and Analytics

Designing Informatics in much more than a technical task. The designers need to understand where such artifacts will be used and under what circumstances or the clinical work flow.

Clinical Cognitive Decision model must be on the backdrop of the design. Design must be simple, does not add more work or distraction for care providers.

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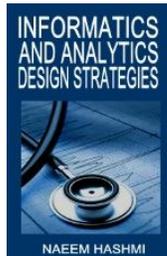
Deploying Informatics and Analytics

The major challenge for Informatics is not the deployment BUT the Change Management and Adoptability .

Through use cases, I outline few approaches to prepare facilities for Informatics and Analytics deployments. For example, the Medical Office and Clinical Services must be involved to change and approve clinical processes and workflows needed to take advantage of the Informatics and Analytics.
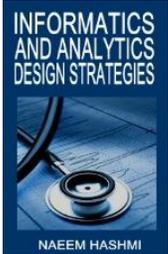
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Compliance, Legal, Social and Privacy Concerns

Health Content is still very personal and must be kept private. When designing informatics and analytics, you must not expose patient content.

Moreover data ownership must be established when data is aggregated and also who/how should communicate critical findings to patient – how, when, where?

Through use cases, I outline strategies to mitigate such concerns.
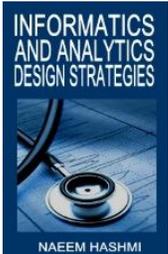
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Additional Reading Material and References

Additional food for thought
- *Books*
- *Websites*
- *Research Papers*
- *Research Organization*