The Digital Doctor
Hope, Hype, and Harm at the Dawn of Medicine’s Computer Age

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“The Challenge That Will Dominate Your Career…”

IT Adoption Skyrocketing: Now >70% in MD Offices & Hospitals

EHR Adoption in US Hospitals. Ashish Jha 2015
When Things Will Really Get Interesting

- Traditional Enterprise EHRs (Epic, Cerner, etc)
- Consumer-facing IT (pt portals, apps, sensors, etc)

The Big Picture: Two Transformational Trends

- Pressure to deliver high-value care
- The digitization of the U.S. healthcare system

The Dominant Issue Today
Prediction: The Dominant Issue in 2025
We’ve Been Waiting Patiently for Health IT, But…

- The trauma of implementation/unanticipated consequences
- Digital radiology: the canary in the coal mine
- The iPatient
- Adaptive change and the productivity paradox
- Some final thoughts on IT and the humanity of healthcare

Richard Baron on the Trauma of Computerizing His Philadelphia Office Practice

“The staff came to work one day and nobody knew how to do their job.”
Alert Fatigue: A Clear and Present Danger

- One month in UCSF ICUs (70 beds)
  - 2,558,760 alerts
  - One audible alert every 7 minutes
  - What would get a nurse scared?

vs. Boeing’s thoughtful approach to alerts
- The principles of user-centered design

Drew B. Plos One 2014

“We have the capacity to transform health with one thunderous click of a mouse after another.”
US Secretary of Health & Human Services Michael Leavitt, in 2005

“ER physicians spent 44 percent of their time entering data into EMRs, clicking up to 4,000 times during a 10 hour shift.”
Becker’s Health IT magazine, 2013
Arizona General Hospital will be coming to The Grand Canyon State later this year!! Located in Laveen, Arizona, a suburb of Phoenix, Arizona General Hospital is a 40,000 square-foot boutique general hospital.

Services offered include:
- Emergency Room
- Radiology Suite inc. CT, X-Ray, and Fluoroscopy
- Two State-Of-The-Art Operating Rooms
- Outpatient Surgery
- 16 Inpatient Rooms
- NO EMR
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The Demise of Radiology Rounds

“The man who ruined radiology”
– Paul Chang’s dad
Digital Radiology as the Canary in the Coal Mine

- The digitization of the thing creates the opportunity for infinite distribution (at no cost)
- Social relationships and communication patterns that previously depended on gathering around the thing will wither
- Power relationships mediated by who controls the thing will be renegotiated
- What happens when the thing isn’t the film, it’s the medical record…

Residents’ Room Vs. The Ward
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“The patient is still at the center, but more as an icon for another entity clothed in binary garments: the ‘iPatient.’… The iPatient’s blood counts and emanations are tracked and trended like a Dow Jones Index, and pop-up flags remind caregivers to feed or bleed. iPatients are ‘card-flipped’ in the bunker, while the real patients keep the beds warm and ensure that the folders bearing their names stay alive on the computer.”

Abraham Verghese, NEJM 2008
A 7-year-old Girl’s Depiction of her MD Visit

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Health IT: The Mother of all Adaptive Problems

“... problems that require people themselves to change. In adaptive problems, the people are the problem and the people are the solution. And leadership then is about mobilizing and engaging the people with the problem rather than trying to anesthetize them so that you can just go off and solve it on your own.”

– Ronald Heifetz, Kennedy School of Government

The Productivity Paradox of Information Technology: Review and Assessment

Erik Brynjolfsson
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Center for Coordination Science
MIT Sloan School of Management
Cambridge, Massachusetts

“You can see the computer age everywhere but in the productivity statistics.”

-- Nobel Prize winning economist Robert Solow, 1986
The Two Keys for Unlocking the Productivity Paradox

Improvements in the technology

Reimagining the work itself

One Final Thought About Health IT and the Clinician-Patient Relationship