Innovation in Information Technology: How Mobile Technology, IoT (Internet of Things) and Big Data Analytics are Transforming Healthcare Delivery

Mark N. Blatt MD
Worldwide Medical Director
ESS, Intel Corporation
Summer 2014

Healthcare at Intel
Where information and care meet
Objective
Evaluate consumer perceptions of technology innovations and various ways that it is expected to impact daily life.

Methodology
Penn Schoen Berland conducted a quantitative poll with over 12,000 interviews, spanning 8 countries in Q3, 2013.
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Intel Global Innovation Survey

57% said traditional hospitals will become obsolete.
75% are willing to see a doctor via video conferencing

Intel Global Innovation Survey
70% said they would use prescription bottle sensors, toilet sensors, or ingested sensors to collect data.
53% would trust a test they administered as much as one administered by a doctor.
84% would share their personal health details to lower overall health costs.
Innovation in HIT: Three Trends

Move to value based care

- Mobile Technology and Collaborative Workflow: Care outside the hospital
- Patient Empowerment/ Consumerism -> IoT -> Virtual Care
- Big Data Analytics -> Personalized Medicine / Genomics
Mobile Technologies and Collaborative Workflows
The End of Fee for Service?

Many Private Practices Face Significant Financial Struggles
Two new Current Procedural Terminology (CPT) codes (99495 and 99496) which are intended to pay physicians (and qualified non-physician providers like NPs and PAs) for post-hospital discharge care coordination provided to their Medicare beneficiary patients within two business days of discharge (phone, e-mail, whatever)

• Non-face-to-face services provided by practice staff may include:
  • communication with home health or other community services used by patients
  • patient/family caregiver education to support self-management
  • assessment and support for treatment adherence and medication management
  • identification and facilitating access to available community and health resources

• Non-face-to-face services provided by physician or other qualified provider may include:
  • review of discharge information
  • review and follow-up on diagnostic tests and treatments
  • interacting with other health professionals (specialists?) assuming or resuming care of "system specific problems"
  • education of patient/caregiver
  • referrals and arranging for needed community services
  • assistance in scheduling any required follow-up with providers or services

• A face-to-face visit (office or home) within 14 or 7 calendar days of discharge (while the visit may be done anywhere, people discharged to nursing facilities are not eligible for this benefit)

For these services, a provider stands to get paid $163.88 or $230.86, depending on the complexity of the medical decision making (E&M 3 or 4) and how quickly there is a face-to-face visit (less than 14 days or less than 7 days).

CMS is expecting 2.17 million claims under these codes for total payments of $600 million.
The proposed rule, released on July 3, 2014, offers details on how officials at the Centers for Medicare & Medicaid Services (CMS) plan, starting Jan. 1, 2015, will pay Medicare physicians for certain care management services outside of the face-to-face office visit.

CMS proposes to pay $41.92 for a new G-code for chronic care management services provided to patients with two or more chronic conditions that are expected to last at least a year. The code could be billed only once a month for each patient.

- To bill for the code, physicians would have to:
  - offer some type of 24/7 access
  - continuity of care
  - care management for chronic conditions including medication reconciliation
  - creation of a patient-centered care plan
  - management of care transitions including visits to the hospital and emergency department
  - and coordination with community-based services
Beginning October 1, 2012, DRG payments to hospitals who have “excess” readmissions for certain conditions will be reduced.

The floor adjustment factor will be 99% for fiscal year 2013, 98% for 2014, and 97% for fiscal year 2015 and thereafter.

First three conditions to track AMI, heart failure and pneumonia.

October 1, 2014, the list expands

- COPD (chronic obstructive pulmonary disease),
- CABG (coronary artery bypass graft),
- PTCA (percutaneous transluminal coronary angioplasty),
- and other vascular conditions.

3. The Patient Protection and Affordable Care Act (HR 3590 enrolled: Sec 3025)
# Patient Center Medical Home: A Collaboration Model

## PPC-PCMH Content and Scoring

<table>
<thead>
<tr>
<th>Standard 1: Access and Communication</th>
<th>Pts</th>
<th>Standard 5: Electronic Prescribing</th>
<th>Pts</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Has written standards for patient access and patient communication**</td>
<td>4</td>
<td>A. Uses electronic system to write prescriptions</td>
<td>3</td>
</tr>
<tr>
<td>B. Uses data to show it meets its standards for patient access and communication**</td>
<td>5</td>
<td>B. Has electronic prescription writer with safety checks</td>
<td>3</td>
</tr>
<tr>
<td>C. Has electronic prescription writer with cost checks</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard 2: Patient Tracking and Registry Functions</th>
<th>Pts</th>
<th>Standard 6: Test Tracking</th>
<th>Pts</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Uses data system for basic patient information (mostly non-clinical data)</td>
<td>2</td>
<td>A. Tracks tests and identifies abnormal results systematically**</td>
<td>7</td>
</tr>
<tr>
<td>B. Has clinical data system with clinical data in searchable data fields</td>
<td>3</td>
<td>B. Uses electronic systems to order and retrieve tests and flag duplicate tests</td>
<td>6</td>
</tr>
<tr>
<td>C. Uses the clinical data system</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Uses paper or electronic-based charting tools to organize clinical information**</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Uses data to identify important diagnoses and conditions in practice**</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Generates lists of patients and reminds patients and clinicians of services needed (population management)</td>
<td>21</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard 3: Care Management</th>
<th>Pts</th>
<th>Standard 7: Referral Tracking</th>
<th>Pts</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Adopts and implements evidence-based guidelines for three conditions**</td>
<td>3</td>
<td>A. Tracks referrals using paper-based or electronic system**</td>
<td>4</td>
</tr>
<tr>
<td>B. Generates reminders about preventive services for clinicians</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Uses non-physician staff to manage patient care</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Conducts care management, including care plans, assessing progress, addressing barriers</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Coordinates care/follow-up for patients who receive care in inpatient and outpatient facilities</td>
<td>20</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>A. Assesses language preference and other communication barriers</td>
<td>2</td>
<td>A. Measures clinical and/or service performance by physician or across the practice**</td>
<td>3</td>
</tr>
<tr>
<td>B. Actively supports patient self-management**</td>
<td>4</td>
<td>B. Survey of patients’ care experience</td>
<td>3</td>
</tr>
<tr>
<td>C. Electronic Care Management Support</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard 9: Advanced Electronic Communications</th>
<th>Pts</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Availability of Interactive Website</td>
<td>1</td>
</tr>
<tr>
<td>B. Electronic Patient Identification</td>
<td>2</td>
</tr>
<tr>
<td>C. Electronic Care Management Support</td>
<td>4</td>
</tr>
</tbody>
</table>

**Must Pass Elements:**

- Standard 1: Access and Communication
- Standard 2: Patient Tracking and Registry Functions
- Standard 3: Care Management
- Standard 4: Patient Self-Management Support
- Standard 5: Electronic Prescribing
- Standard 6: Test Tracking
- Standard 7: Referral Tracking
- Standard 8: Performance Reporting and Improvement
- Standard 9: Advanced Electronic Communications
ED Visits by Source of Care and Income

Note: Data restricted to persons with at least one medical visit per calendar year; ambulatory care visits include all visits to emergency departments, outpatient clinics, and office-based sites.


Having a Usual Source of Care Reduces ED Visits

Note: Data restricted to persons with at least one medical visit per calendar year; ambulatory care visits include all visits to emergency departments, outpatient clinics, and office-based sites.

Examined medical home/PCMH studies published between August 2012 and December 2013

http://www.pcpcc.org/webinar/results-are

- 61% of studies report cost reductions
- 61% report fewer ED visits
- 31% report fewer inpatient visits
- 13% report fewer readmissions

- 31% of studies report improved access
- 23% of studies report improved patient satisfaction

- 31% of studies report increase in preventive services
- 31% report improvements in population health
BlueCross BlueShield of Michigan Physician Group Incentive Program

PCMH Strategies

• Develop patient registries to track and monitor patients’ care
• Offer 24-hour patient access to a clinical decision-maker through
  • extended office hours
  • telephone access
  • a linkage to urgent care
• Provide online patient resources that allow for electronic communication and greater patient access to medical information

Results

• 13.5% fewer pediatric ED visits
• 10% fewer adult ED visits
• 17% fewer inpatient admissions
• 6% fewer hospital readmissions
• Savings of $26.37 PMPM
• $155 million in cost savings

PCPCC 2014. All Rights Reserved.
UPMC Health Plan Medical Home Pilot

PCMH Strategies

- Practice-based nurses provide care management
- Create telehealth options for care managers to connect to patients when in-office visits are not possible or necessary
- Offer incentives to payers to enter into PCMH contracts

Results

- 2.6% reduction in total costs
- 160% ROI
- 2.8% fewer inpatient admission
- 18.3% fewer hospital readmissions
- 6.6% increase in patients with controlled HbA1c
- 23.2% increase in eye exams
- 9.7% increase in LDL screenings

Real-time Collaboration in Action

Mobility and Collaboration in Health IT

Source: http://www.youtube.com/watch?v=Fh520P56wQ8
### Possible Collaborative Workflows to Consider

<table>
<thead>
<tr>
<th>Workflow</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EMS: Treat in Place</strong></td>
<td>EMT / Doc / Homecare nurse / Community care worker</td>
</tr>
<tr>
<td><strong>ED Discharge to Home</strong></td>
<td>Doc / Homecare nurse / Community care worker</td>
</tr>
<tr>
<td><strong>ED Admit</strong></td>
<td>ED nurse / Floor nurse / Transportation</td>
</tr>
<tr>
<td><strong>Consults Acute Inpatient</strong></td>
<td>Doc / Doc / Therapists / Pharmacist / etc.</td>
</tr>
<tr>
<td><strong>Consults Chronic Disease Outpatient</strong></td>
<td>Doc / Therapists / Homecare nurse / Community care worker / etc.</td>
</tr>
<tr>
<td><strong>Homecare</strong></td>
<td>Doc / Homecare nurse / Community care worker</td>
</tr>
</tbody>
</table>
Call to Action

In order to improve care delivery, shorten delays, reduce rework, and improve patient satisfaction, IDENTIFY a workflow within your organization that might be improved with real-time collaborative communications and data sharing.

Define the ICT infrastructure you need to support that workflow.
Polling Question One

Does your organization have a plan that drives your clinicians towards improved collaboration?

1. We have no plans
2. We are working on developing a plan and expect to roll out soon/with the year
3. We have an active plan around collaboration and are implementing
4. While we want to collaborate, we are not sure how to get started
5. Other IT and workflow priorities take precedent over developing a collaboration environment at this time
Patient Empowerment and the Internet of Things
A Wide Array of Applications

Person to Person

- Hug Simulation Jacket Lets Parents Calm Kids Via Mobile Devices
- A Kimono* with sensors monitors the baby’s temperature, breathing and communicates with parents.
- Long Distance Togetherness
- Sleep Monitoring

Person to Computer

- Printed Prosthetic Offers The Functionality Of A Human Hand
- Bespoke Biotech
- Emotional Mirror
- Biometrically Attuned

Person as Computer

- Biohacked, Implanted Headphones Allow User To Echolocate
- Augmented Sensory Perception
- Electronic Make Up Lets You Activate Gadgets By Blinking
- On-board Interface

Data Streamed Care

- Tooth Embedded Sensor Relays Eating Habits To Dentist
- Workout Gear Visualizes Activity Levels Of Wearer In Real Time
- Responsive Bracelet Sends Thermoelectric Pulses To Heat Or Cool A Person’s Entire Body

Emotional Care

- Responsive Coaching
- Running App Personalizes Workouts Based On Current Stamina
- Smartphone Provider Introduces Ingestible Password Pill For Devices
- Authenticated Self

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- Smartphone Provider Introduces Ingestible Password Pill For Devices
- Authenticated Self
- Cloud Memory

On-board Interface

- Electronic Make Up Lets You Activate Gadgets By Blinking
- On-board Interface
- Wearable Camera Life Blogs By Snapping Photos Throughout The Day

Healthcare at Intel
Where information and care meet
Wearable Computing Forecast
Growth beyond the Clamshell and Rectangular Shapes

Global Wearable Computing Devices
World Market, Forecast: 2013 to 2019

Source: ABI Research

**EXHIBIT 2**

<table>
<thead>
<tr>
<th>Visits per member</th>
<th>Electronic health record implemented</th>
<th>Office visits</th>
<th>Scheduled phone visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
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</tbody>
</table>

**SOURCE:** Authors’ analysis using data from the Kaiser Permanente Hawaii Data Warehouse and secure messaging database.

EXHIBIT 1
Changes In Office Visit Rates Among Kaiser Permanente (KP) Hawaii Members, 1999–2007

<table>
<thead>
<tr>
<th>Office visits per member</th>
<th>Electronic health record implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5</td>
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<tr>
<td>2.0</td>
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<td>1.5</td>
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<td>1.0</td>
<td></td>
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<tr>
<td>1.0</td>
<td></td>
</tr>
</tbody>
</table>


Primary care

Specialty

SOURCE: Authors’ analysis using data from the Kaiser Permanente Hawaii Data Warehouse and secure messaging database.

EXHIBIT 5

Contacts per member: Office visits, Scheduled phone visits, Secure messaging

1999: 5 contacts
2000: 5 contacts
2001: 5 contacts
2002: 5 contacts
2003: 5 contacts
2004: 5 contacts
2005: 5 contacts
2006: 5 contacts
2007: 5 contacts

SOURCE: Authors’ analysis using data from the Kaiser Permanente Hawaii Data Warehouse and secure messaging database.

©2009 by Project HOPE - The People-to-People Health Foundation, Inc.
Use Of Online Applications At kp.org, 2008–13.

- Viewing lab results
- Secure e-mail with providers
- Rx refills
- Booking appointments

Pearl R Health Aff 2014;33:251-257
©2014 by Project HOPE · The People-to-People Health Foundation, Inc.
In-Person And Virtual Patient-Physician Visits, Kaiser Permanente Northern California, 2008–13.

Pearl R Health Aff 2014;33:251-257
©2014 by Project HOPE - The People-to-People Health Foundation, Inc.
Worldwide Telehealth Patients Growing to 1.7 Million Visits

The World Market for Telehealth – An Analysis of Demand Dynamics – 2012 INMedica, IMS Research
Analytics makes it all “Smarter”

- Level of Intelligence
- Better Decisions
- Level of Business Impact

- Diagnostic Analytics
- Prescriptive Analytics
- Predictive Analytics
- Descriptive Analytics

- Systems of Innovation
- Systems of Differentiation
- Systems of Record

- What is Happening?
- Why Did it Happen?
- What Will Happen?
Edison Board

How Intel Sees The Future of Wearables

The Intel Edison development board is a tiny, ultra-power-efficient development platform the size of an SD* card that can be designed to work with computers, phones, tablets, but also chairs, coffeemakers, and even coffee cups.

The possibilities are endless for inventors, entrepreneurs and investors of all kinds.


The Intel Edison board features a low-power 22nm 400MHz Intel Quark processor with two cores, integrated Wi-Fi and Bluetooth*, and much more.

Intel Edison board-powered devices can cooperate in highly customized and sophisticated ways. They can house multiple apps that can be downloaded and installed just like we do with phones and tablets.
Intel has industry leading products spanning from devices to the cloud, enabling rapid deployment of end to end IoT Solutions

**Things**
- XMM Modem product line
- Kendrick Peak
- Quark processor
- I210 Ethernet controller

**Gateway**
- Wind River Intelligent Device Platform
- Intel® Gateway Solutions for the IoT
  - Quark SoC and Atom E3800
  - Wind River Operating System
  - Intel Embedded Security

**Network**
- Wind River Intelligent Network Platform
- ONP Open Networking Platform
- SDI Software Defined Infrastructure

**Cloud**
- Intel Data Center Manager
- IEEL Lustre for HPC
- Intel Distribution for Apache Hadoop

**Services & Solutions**
- API Management
- API Orchestration
- Intel Express Gateway & Tokenization
- Intel Security Solutions
- Wind River Systems
Mimo: Baby Care and the Intel Quark
Intel Acquisition of BASIS Science Inc

BASIS Science Inc. is the creator of the Basis band, the world’s most advanced health tracker and web and mobile service.

The $199 Basis band has sensors that sit against the skin and can analyze sleep patterns, motion, heart rate, calorie expenditure, perspiration and skin temperature.

The trackers will still be sold and supported through existing channels.

Strategy is to create wearable reference devices, SoCs (systems on a chip) and other technology platforms “ready to be used by customers in development of wearable products.”

BASIS Team brings a proven track record of innovation in wearables for health and fitness applications.
Investments in Sotera

ViSi Mobile System, “monitoring in motion.”

• Platform for comprehensive vital signs monitoring
• Keeps clinicians connected to their patients, whether in or out of bed, or while in transport
• Comfortable body-worn sensors allow for freedom of movement,
• Highly accurate, continuous monitoring of all vital signs.
Make It Wearable Challenge – makeit.intel.com
Polling Question Two

What best describes your organization's attitude towards “virtual Care delivery”:

1. We feel Face to Face care remains the standard and have no plans/desires to develop a “virtual care capability”
2. We are interested but remain cautious and have no active plans
3. We are developing plans to roll out “virtual care delivery” capabilities with the year
4. We have ongoing pilots delivering “virtual care” to select patients
5. We believe virtual care can be superior to Face to Face care in certain setting and are actively rolling it out to our patient populations
Personalized Medicine

Big Data analytics
Moore’s Law and Arrival at the $1,000 Genome

Cost per Genome

NGS Shift Toward Downstream Analytics

Big Data Technologies – The Power of the Platform

**Intel® Xeon® 5600**
HDD 1GbE

- **Upgrade to Intel® Xeon® Processor E5-2600 V2**
  - 50% reduction

- **Upgrade to SSD**
  - 80% reduction

- **Upgrade to 10GbE**
  - 50% reduction

- **Intel® Distribution**
  - 40% reduction

TeraSort for 1TB sort
>4 hour process time

Hadoop processing time
<10 minutes with Complete Intel-based solution

Source: Intel internal measurement using a standard Hadoop benchmark, TeraSort, on a cluster of 10 top bin Xeon 5600 based servers sort 1TB of data Westmere 3HDD + 1GbE = 250 minutes; Romley 3HDD + 1GbE = 125 Minutes; Romley 4SSD + 1GbE = 23 minutes; Romley 4SSD + 10GbE = 12 minutes; Romley 4SSD + 10GbE + Intel Hadoop Distribution = 7 minutes

Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products.

Other names and brands may be claimed as the property of others.

Genomics & Health Analytics Appliances

Scale through independent solutions, each targeting a different segment & usage model
The Genetic Testing Landscape

Should I order one of these tests?

If I do, will I be able to understand and apply the result?

Pharmacogenomics

Pharmacogenetic testing has the potential to minimize side effects and decrease the frequency of adverse drug events by allowing for individualized rather than “one size fits all” prescribing. Among drugs for which pharmacogenetic testing is currently available are:

- SSRI and TCA antidepressants
- Opioid pain medications
- Beta blockers
- Type I antiarrhythmics
- Anticoagulants (coumadin and plavix)
Genomic Testing meets Computer Assisted Diagnosis

Corus™ CAD Validation Data Published in Annals of Internal Medicine – October 2010

“Rosenberg and colleagues’ study lies at the vanguard of clinical genetics in cardiovascular care.”

-Excerpt from AIM editorial, Donna Arnett Ph.D., M.S.P.H.
2007: 23andMe introduces the first Personal Genome Service. Unlock the secrets of your own DNA. Today.

Welcome to 23andMe, a web-based service that helps you read and understand your DNA. After providing a saliva sample using an at-home kit, you can use our interactive tools to shed new light on your distant ancestors, your close family and most of all, yourself.

Sign up for our Email Newsletter

Gene Journal
What do your genes say about you?

Family Inheritance
Do you have your mother’s sense of taste?

Ancestry
Who were your ancient ancestors?

Genome Labs
Would you like to search your genome?

© 23andMe 2009
What are you and organization doing to make Personalized Medicine the Norm by 2020?
ACTIONABLE EHR ANALYTICS - PAYER, PROVIDER
Challenge: Team of cancer researchers had to screen a drug concept with a list of tens of millions of molecules working with a tight deadline, a fixed budget, and strict security and compliance requirements. Schrödinger’s existing in-house servers would be tied up for weeks.

Solution: Schrödinger leveraged software from AWS partner (CycleComputing) to provision a fully secured cluster of 50,000 cores, powered by the Intel® Xeon® processor E5 family.

- This configuration enabled the team to run 16 million molecular simulations an hour.
- Developed 1000 molecule list in < 8hrs.
Top-5 Pharmaceutical Company - SAS Grid

- **Challenge**: Need to accelerate and optimize “time to results” clinical trial simulation environment; resource allocation and job prioritization was manual/ad-hoc

- **Solution**: “Scale-Out” architecture:
  - SAS Visual Analytics, Enterprise Miner, Grid Manager
  - Red Hat Enterprise Linux
  - Xeon E5 servers (HP)

- **Benefits**: Clinical trial simulation exercises reduced from hours to < 5 minutes; registration decisions accelerated with multi-hundred million USD impact
Regional Health Information Network RHIN – China (Jinzhou, Pop 3M)

- **Challenge**: RHIN has challenges with scalability, performance and maintenance. Data storage is expensive.

- **Solution**: EMR data and healthcare services running on Intel Hadoop Distribution and Xeon E5 servers.

- **Benefits**: High performance and scalability demonstrated via POC and stress testing. Significantly reduced storage cost.

- **1/5 Reduction in Response Time; 5x Concurrent Users**

http://hadoop.intel.com/pdfs/IntelChinaHealthyCityAnalyticsCaseStudy.pdf
China Regional Health Information Network (RHIN)

Integrated User Interface (Citizen, Physician, Health Authority)

Cloud-based Regional Healthcare Service System

Multi-Tenancy Application
- Public Health
- Medical Service
- New Rural Medical Insurance
- Operation Mgt.
- Drug Mgt. Service

Infrastructure Virtualization
- Network Virtualization
- Storage Virtualization
- Server Virtualization

Distributed Data Service System

Presentation (Report, Viewer)
- Data Mining (Mahout*)
- Language & Compiler (Hive*)
- Distributed Batch Processing Framework (Map/Reduce)
- Real-time Database (HBase*)
- Distributed File System (HDFS)
- Coordination Service (Zookeeper*)
- Structured Data Collector (Sqoop*)
- Log Date Collector (Flume*)

EHR data Repository

Health Information Access Layer (HIAL)

Hospital

Hospital

Grassroots Care Institution
The use of big data analysis on our patient care notes enables us to prove things our clinical intuition was telling us. In the new world anecdotal evidence isn’t enough. What we think isn’t sufficient to spend money. We need proof.”

Iain MacBrairdy, Business Manager, Emergency Medicine, Leeds Teaching Hospitals

**Challenge** – Capture data at the point of admission, throughout the patient care cycle and use natural language processing (NLP) to make sense of unstructured care notes and combine with structured care data for analysis

**Solution** – Partnering with ISVs – Ascribe, Two 10degrees, Microsoft and machines powered by Intel Xeon processor E5 family;

**30M patients, > 7M attendances each year worth of records**

**Benefits** – Billing optimizations (doctors log the correct data), Resource Optimizations (learning patient trends for resource planning)
THANK YOU

mark.n.blatt@intel.com
Learn more
Find out more

www.intel.com/healthcare
Collaborative workflow

Collaborative Workflows, Coordinated Care: Meeting the Challenges of 21st Century Healthcare

Reducing Readmissions at Presbyterian Healthcare Services


ACO: 10 Things You Need to Know About Accountable Care

Maccabi Healthcare Services delivers coordinated care to over 1.9 million members

Innovation for Accountable Care A Workflow Redesign Workshop at Grady Health System

Groundbreaking Intelligence for World-Class Patient Care

Increasing the Performance of Ultrasound Breast Cancer Diagnosis

Mobilizing Health Workers | In an Emergency

For more... www.intel.com/healthcare/coordination

*Other names and brands may be claimed as the property of others.
Mobility

*Other names and brands may be claimed as the property of others.

For more... www.intel.com/healthcare/mobility
Privacy and security

*Other names and brands may be claimed as the property of others.

For more, www.intel.com/healthcare/security
How Mobile Tools Enable Collaborative Workflows to Shape Mobile Healthcare

Enabling Collaborative Workflows to Shape Mobile Healthcare

Choosing the Right Health IT Mobile Device

Intel Mobile Point of Care Device Selector Tool

Mobilizing Health Workers: On the Go with an Ultrabook

Intel Healthcare Innovation Summit

Mobile Point of Care: Choosing Devices for Collaborative Workflows

Nigerian Healthcare Access Increases in Underserved Areas

Enabling Collaborative Workflows

Choosing the Right Health IT Mobile Device

Intel Health Workforce

Streaming and Virtual Hosted Desktop Study: Phase 2

Mobile IT Infrastructure Enhances Pediatric Health Care

Using Mobile Point of Care to Improve Healthcare Delivery

mHealth – Powering the Health Workforce

www.intel.com/healthcare