

Georgia eHealth Summit



Georgia Health Information
Exchange Inc.



GEORGIA DEPARTMENT
OF COMMUNITY HEALTH

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Georgia eHealth Summit

HIE-Enabled PHR Systems: The Consumer/Patient 'Glue' Connecting the Personal, Care Delivery and Population Health Domains

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Dossia Consortium

Vice President & Executive Director

Discussion Roadmap

- Speaker Perspective Context
- Health System (Not So) Future State
- The Emerging Role of the Consumer/Patient
- The Three Health Domains
- 'Universal Health Record' (UHR) as a Common Information Transformation Vehicle
- Examples Tying the Three Domains Together
- Concluding Comments and Q&A

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Speaker Perspective Context

Major Health Care Industry Battle Scars

- 30 years business strategy, IT, systems development, vendor selection/implementation, operations, marketing, finance; 20+ within health care industry (both provider & payer segments)
- 3 ½ Years as the CEO of an operational HIE
 - First worked in HIE back in the Community Health Information Network (CHIN) days in the early 90s
- 6 Years as a traveling strategist/consultant for national health care-only firm
- Launched industry analyst health care division for global firm
- Development team member for the nation's first consumer e-health tool: 'Consumer Choice System' - Health Partners, Minnesota (1995)

Dossia Founder/Customers - On a Mission To Facilitate Health Care Transformation

Goal is to drive IT enabled joint consumer/patient – provider decision-making and accountability ...

Dossia Today

2011

Delivered Innovative Application Framework & Supporting Universal Health Record Platform

2009

Additional Founders



2008

Company Founded

Dossia Consortium (Not-for-Profit Advocacy Group)

Dossia Service Corporation (For-Profit)

2006

Founders: Large US Employers



... leading to safer, higher quality and more cost effective health and health care.

Dossia Consortium - An Active Health & Health Care Transformation Enabler

- Dossia Consortium's not-for-profit mission is to **enable a transformed IT enabled health and health care system**
 - Support policy-enabled information access and transparency
 - **Shared information exchange of data before, at and after the provider point of care to support effective communications, engagement and shared accountability**
- **Institute of Medicine**
 - Learning Health System, Value Incentives programs – Consumer work groups
- **Markle Foundation**
 - Long-time Steering Committee member; Member of Consumer, HIE and ACO workgroups
- **Patient-Centered Primary Care Collaborative**
 - Consumer, employer, ACO and payment reform workgroups
- **National eHealth Collaborative**
 - Steering Committee member for Consumer Consortium group
- **eHealth Initiative** - Consumer work group

Dossia Consortium - Support For and Active Involvement in ONC & HHS Related Initiatives

- **Policy & Standards Committees/Workgroups**
 - Attendance via web or in-person for vast majority of Federal Advisory Committees
 - Provide public comment in writing and orally when appropriate
- **Standards & Interoperability Framework**
 - Transition of Care use case work group volunteer
 - Proposed to move beyond completed core deliverable to create a **new care planning initiative** to support requirements needed for stage 2/3 Meaningful Use and ACO regulations
- **Direct Project**
 - Participated in collaborative work group activity, code-a-thon, announced support; currently participating in DirectTrust workgroup
- **SHARP SMArt** - Member of Advisory Committee
- **HHS Partnership for Patients** – Announced support day of launch
- **HHS/ONC Consumer Pledge Program** – Declared support as launch event participant
- **ONC/FTC PHR Roundtable** – Provided written & verbal testimony
- **Previous: HITSP** – Consumer Empowerment work group

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What is the Vision for the Health and Health Care Delivery System? (The Core Principles Version)

Current State (Still Majority Today)	Future State (Adaptation in Italics/Cross-Outs)
Care is based primarily on visits	Care is based on continuous healing relationships, <i>delivered when, where and how it is needed</i>
Professional autonomy drives variability	<i>Well-being and care are customized according to patient preferences which includes their needs and values</i>
Professionals control care	<i>The patient shares decision-making as a key informed member of the care team</i> is the source of control
Information is a record	<i>Knowledge is shared freely and information flows freely without friction on a as-needed consented basis</i>
Decision making is based on training and experience	<i>Decision making is foundationally evidence-based within the context of a continuous learning system</i>
'Do no harm' is an individual responsibility	<i>Safety and quality are system properties</i>
Secrecy is necessary	<i>Transparency is necessary, required and encouraged</i>
The system reacts to needs	<i>Needs are anticipated and meeting them continuously assessed</i>
Cost reduction is sought	<i>Waste is continuously decreased and quality continuously improved to improve value</i>
Preference is given to professional roles over the system	<i>Team-based care is essential to high value outcomes</i> Cooperation among clinicians is a priority

What is the Vision for the Health and Health Care Delivery System? (Integrated Summary Version)

A Vision For Health Care

“We envision a culture that is open, transparent, supportive and committed to learning; where doctors, nurses and all health workers treat each other and their patients competently and with respect; where the patient’s interest is always paramount; and where patients and families are fully engaged in their care.”

BMJ Quality & Safety (Berwick et. al.), “Transforming Health Care: A Safety Imperative”, 2009

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What Do Consumer/Patients Really Want/Need?

But first, what has changed? Consumer/patients are ...

- Experiencing **more financial shared responsibility** each year
- Expecting that health and health care **must work like all the vast majority of other products and services** that are being offered to me today, increasingly in a mobile-enabled way
- **Demographically changing:** The computer, gaming and information generations are entering their life cycle period where they are beginning to require a significant amount health care services

Medical providers from these generations are also increasingly in a position to determine organizational strategy and associated resource allocation within health delivery organizations

What Do Consumer/Patients Really Want? (CONTINUED)

- Health and health care industry should work for me on my terms
 - Fit into my lifestyle and preferred communication channel(s)
 - *When* (e.g. same day appt., Sat. evening), *where* (e.g. mobile, home) and *how* (e.g. secure messaging, lay health worker at church) I need them
- Services tailored to me
 - Advice and decisions to be made by me (or my designated proxy) and/or my physician need to be in the context of my preferences, goals and my specific circumstances
 - *Includes leveraging everything 'the system' should already know about me*

What Do Consumer/Patients Really Want? (CONTINUED)

- Efficient and effective value-based services
 - All service providers function as a coordinated team, including my PCP, specialists, pharmacists, mental health professionals, dieticians, therapists and any other entity/person that touches me
 - **Consumer/patient is a respected member of the care team** – As with any good team, each member is provided with the information they need to perform the individual and joint tasks they are responsible for to the best of their ability

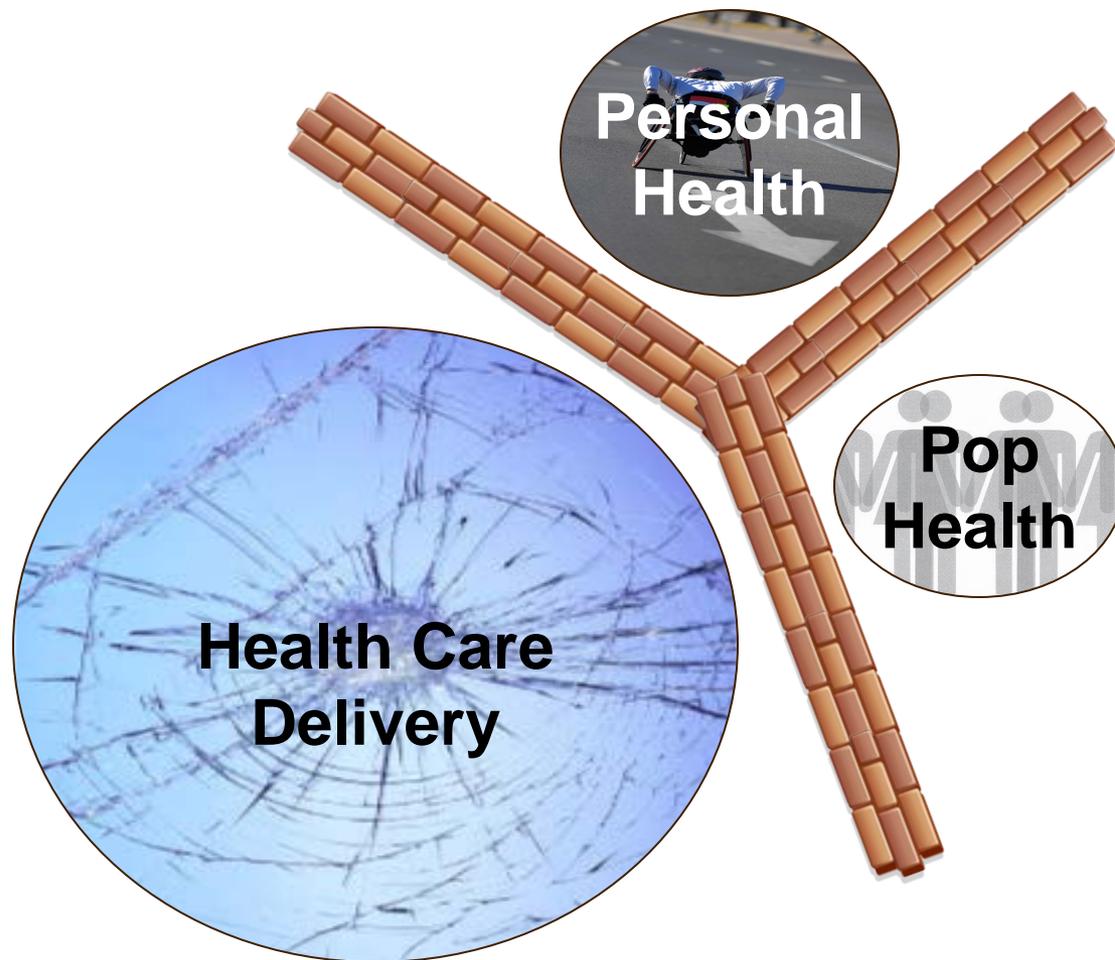
Many of us in the industry frequently forget:

There is no health care industry without the consumer/patient!

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Three Domains of Health & Health Care Today's Reality (In General)



Not a pretty picture!

- *Health Care Delivery* is a fractured, perfectly optimized FFS 'sick system'

- *Personal Health* is FFS irrelevant and thus a you-are-on-your-own and I hope-things-work-out for you environment

- *Population Health* is focused on studying from afar and in the rear-view mirror (of a journey taken two years ago)

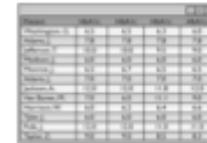
Health Delivery Domain: 'Health (Medical) Homes' as the Foundation of Transformation

Defining "Medical Home" Practice



Team of Providers

Additional non-physician providers support medical home's ability to provide additional services



Disease Registry

Provides data around key patient metrics to help track and monitor patients allowing for improved overall patient management

Source:
Advisory Board
Company, Jan.
2012

All core health/medical home capabilities require a comprehensive, multiple care setting, longitudinal health and medical history that is shared by the care team, internally and externally within the health/medical neighborhood and the patient

Health Delivery Domain: AHOs (ACOs) Require Comprehensive & Dynamic Data Interactions

Premier Coordinated Care HIT Capability Maturity Model™ Enabling technology for accountable care organizations

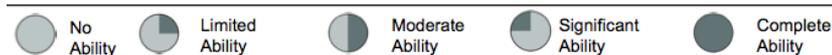
	LEVEL 1 "Transaction"	LEVEL 2 "Interaction"	LEVEL 3 "Integration"	LEVEL 4 "Collaboration"	LEVEL 5 "Transformation"
	IT supports individual providers in delivering care and measuring outcomes	Basic care coordination capabilities emerge with initial population-based metrics	Care coordination capabilities improve and health status measurement is possible	Seamless care coordination with demonstrable improvement in population health status	Triple Aim™ goals realized across the population
	POPULATION-BASED ANALYTIC REQUIREMENTS				
Care management	Provider-centric quality reporting Harm index	Population-based quality reporting	Health status analytics using self-reported outcomes Patient profiling	Predictive models for disease prevalence services required, cost, outcomes, etc.	Real-time feedback loops on outcomes analytics between providers and patients
Performance management	Shared savings tracking Physician profiling	PMPM-based reimbursement and cost modeling Comprehensive practitioner profiling	Population-based performance measurement	Population health improvement benchmarking and modeling	Revenue and incentive modeling – scenario planning Population-based performance forecasting
	Resource utilization benchmarking Productivity	Demand forecasting and modeling	Risk adjustment Population pool definitions	Venue comparison Patient experience profiling	
	POPULATION MANAGEMENT TRANSACTION SYSTEM REQUIREMENTS				
	EHR (certified)	Personal health record	Patient health and experience self-reporting	Wellness management	Personalized self-management health improvement programs
	Patient portal (self-service)	Case management	Decision support embedded in workflow	Remote patient intervention	
	Registration and scheduling	Health assessments	Disease management Remote patient monitoring		
	POPULATION INTEGRATION INFRASTRUCTURE REQUIREMENTS				
	EMPI Enterprise-wide interoperability	Standards-based connectivity to key stakeholders Standard clinical vocabulary mapping	HIE connectivity to state-based and other exchanges Semantic interoperability	Real-time connectivity of evidence-based best practice to clinical systems	Ubiquitous access to health and wellness information
	SHARED SAVINGS		SHARED RISK		PERSONALIZED CARE MODELS

Highlighted capabilities require significant data interaction with patients (as well as providers who may not be external to the organizations)

Health Delivery Domain: AHOs (ACOs) Require Comprehensive & Dynamic Data Interactions

Phase I: Laying the IT Foundation

ACO Core Competency	Progress	Representative IT-Enabled Capabilities
Network Interconnectivity		<ul style="list-style-type: none"> Support for Direct Project and CCDs Physician portal
Clinical Knowledge Management		<ul style="list-style-type: none"> Inpatient and Ambulatory EMRs Site-specific CDS
Patient Activation		<ul style="list-style-type: none"> Patient portals and PHRs Contact center (inbound)
Financial Operations		<ul style="list-style-type: none"> BI capabilities for "drill down" reporting, dashboards Acute Care Episodes (ACE) billing
Population Risk Management		<ul style="list-style-type: none"> Basic employee analytics to identify cost-savings opportunities Site-specific disease registries



What Is Wrong With This Picture?? WE ARE UPSIDE DOWN!

What is critically important today (see phase I 'progress' column) was least important in health care delivery over the past decade under FFS

Note that both patient portals AND PHRs are required for patient engagement

Health Delivery Domain: AHOs (ACOs) Require Comprehensive & Dynamic Data Interactions

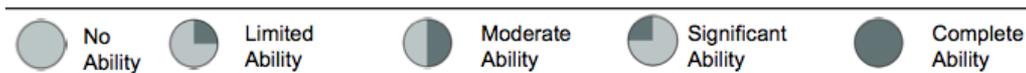
Phase II: Integrating and Delivering High-Impact Data

Supporting Performance Risk Management

ACO Core Competency	Progress	Representative IT-Enabled Capabilities
Network Interconnectivity		<ul style="list-style-type: none"> Private HIE Unified Communications
Clinical Knowledge Management		<ul style="list-style-type: none"> CDS – standardized and evidence-based, where possible Structured clinical documentation with CDS
Patient Activation		<ul style="list-style-type: none"> Patient education tools Contact center (outbound)
Financial Operations		<ul style="list-style-type: none"> RCM support for new payment approaches (e.g. bundled payments) Performance management tools for inpatient and outpatient
Population Risk Management		<ul style="list-style-type: none"> Readmission risk stratification tools Enterprise registries

CDS requires *comprehensive* health history (not just medical from one entity)

Registries need to be populated with *current* self-management and extra-entity data

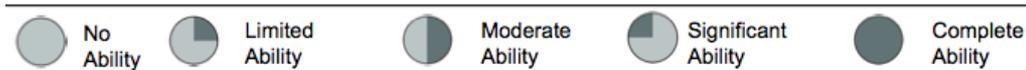


Health Delivery Domain: AHOs (ACOs) Require Comprehensive & Dynamic Data Interactions

Phase III: Leveraging Population Health Visibility

Supporting Utilization Risk Management

ACO Core Competency	Progress	Representative IT-Enabled Capabilities
Network Interconnectivity		<ul style="list-style-type: none"> Community HIEs Patient "connectivity" Semantic interoperability
Clinical Knowledge Management		<ul style="list-style-type: none"> Predictive analytics and advanced clinical decision support CDS across care venues
Patient Activation		<ul style="list-style-type: none"> Continuous passive monitoring of patient health status PHRs to support wellness
Financial Operations		<ul style="list-style-type: none"> Actuarial capabilities RCM support for new payment approaches (e.g. shared savings)
Population Risk Management		<ul style="list-style-type: none"> Clinical risk stratification, prediction and management Patient attribution



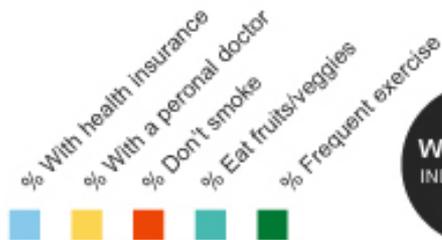
Continuous patient health status monitoring **REQUIRES** rich interaction with Personal Health domain

Wellness is supported through PHR systems containing apps that 'bring data to life' to maximize engagement, coordinated with employers where applicable

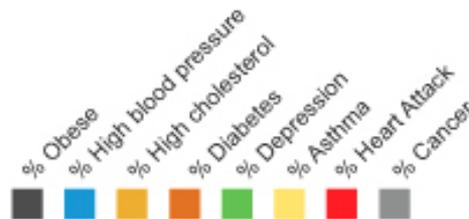
Personal Health Domain: Defined and Impacted By a Number of Interrelated Sub-Domains

2011 Gallup U.S. Well-Being Index

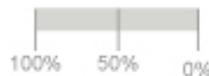
HEALTHY BEHAVIORS



CHRONIC CONDITIONS



Well-Being
INDEX SCORE



SCALE



Male

66.5

Female

65.9

The complexity of addressing each individual's well-being without a transformational approach is at best naïve

- Gallup undertook effort to better understand and measure well-being in the U.S. – uses WHO definition of health which is "... not only the absence of infirmity and disease but also a state of physical, mental and social well-being."
- Includes 6 dimensions: live evaluation, emotional health, physical health, healthy behavior, work environment, basic access
- Million+ surveys in 4 years

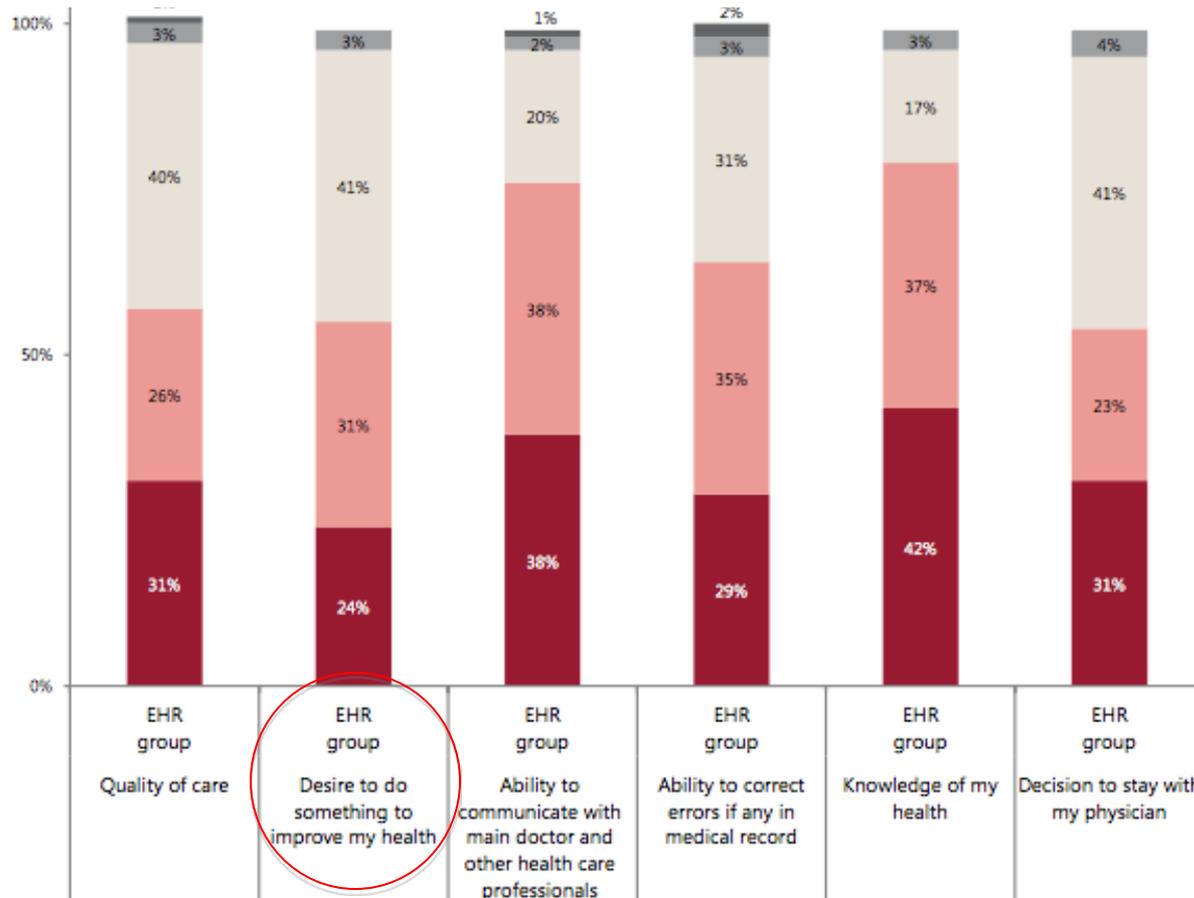
Personal Health Domain: Current Consumer/Patient Situation

- An estimated 95%+ of a consumer/patient's time is spent outside formal health delivery care settings – *Where is the continuous guidance?*
- mHealth and associated remote monitoring and health tracking use is exploding – Data collection and summarization must occur in PH domain
- Traditionally disconnected from health delivery system due primarily to FFS payment model
 - Consumers/patients are left to having to figure out most of their well-being and health themselves or by following advice, marketing influence, etc.
 - “Patient centeredness” at its core embraces the tenet that the **consumer/patient is a valuable member of the care team**
 - The most under-utilized resource in health care is the “free” patient – Our nation’s ability to avoid a health care induced financial crisis demands that patients are engaged, jointly accountable and that *care happens with them, not to them*
- One in six adults are performing informal care for an elderly relative

Personal Health Domain: Latest National HIT Value Survey Shows 'Access to EHR' Not Enough

How has having access to your medical and health information online impacted the following?

Base = EHR group who use doctor-provided online access (n=254)



Of the 26% of patients who had access to their provider's EHR, 44% said it had no or negative impact *on their desire to improve their health*

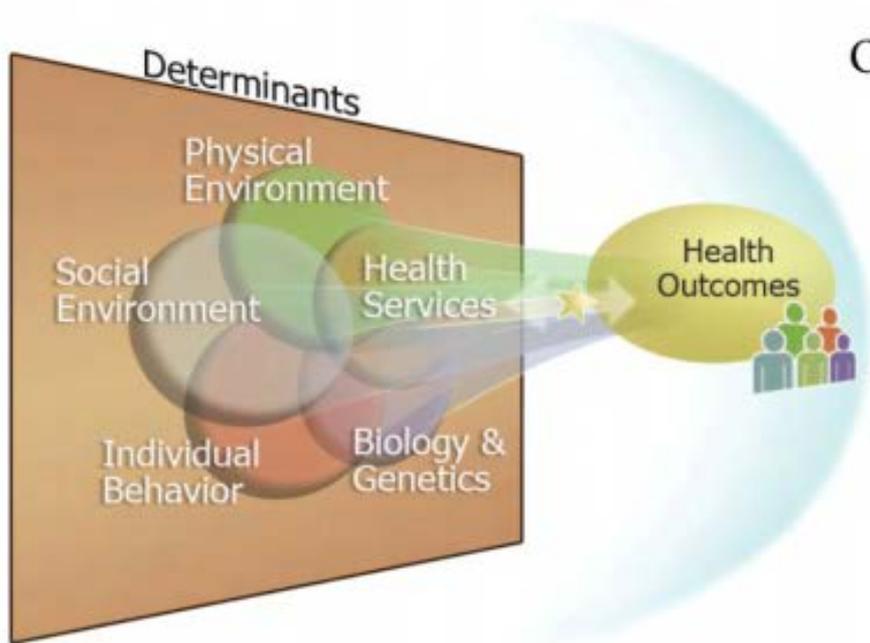
Access is not enough - **moving each bucket to a higher impact level will require data-enhanced communications and rich bi-directional data exchange to support engaging consumer apps**

Source: National Partnership for Women & Families, "Making IT Meaningful: How Consumers Value & Trust HIT", Feb. 2012

Population Health Domain: Multi-Dimensional Influence Circles

Healthy People 2020

A society in which all people live long, healthy lives



Overarching Goals:

- Attain high quality, longer lives free of preventable disease, disability, injury, and premature death.
- Achieve health equity, eliminate disparities, and improve the health of all groups
- Create social and physical environments that promote good health for all.
- Promote quality of life, healthy development and healthy behaviors across all life stages.

Certainly includes federal, state, county, and city public health at it's core, but also includes community influence circles such as regional/city coalitions, employers and faith-based and ethnic organizations

Population Health Domain: Emerging Opportunities

- **Public Health**

- ARRA and Meaningful Use policy enablers
- Ability to leverage both the community resources on the ground and individuals directly, connected with passive and active technology to access real-time and much shorter lag-time data
 - Geo-aware smartphone apps (crowd-sourcing environmental and plain old SMS texting (reminders, simple health status inputs))
 - Lay health worker dashboards accessing program and role specific consented identified and de-identified data
- Public health genomics: opportunity to work more directly with individuals

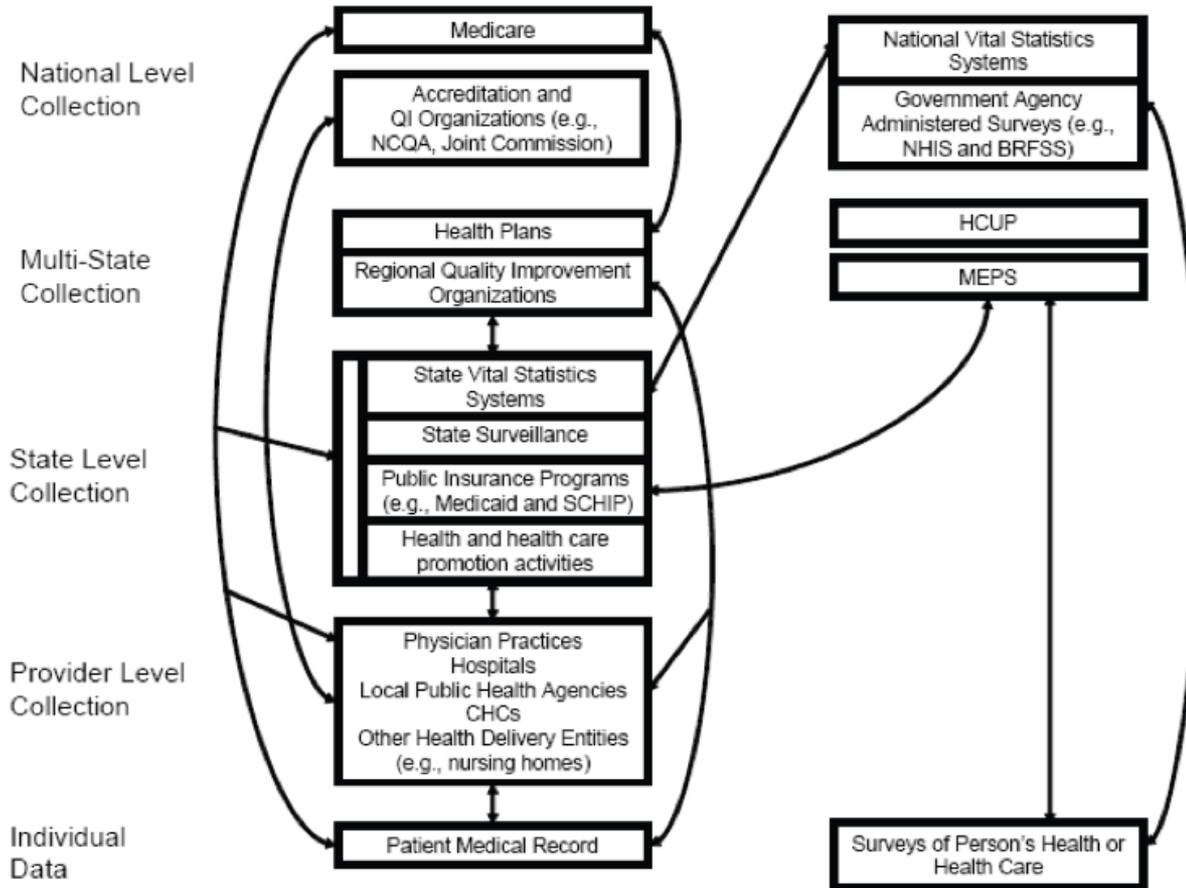
- **Employers**

- Health reform policy enablers: well-being and preventative care
- Disconnecting well-being market from health insurance and delivery market
 - Well-being programs apply to all employees whether they get insurance through the employer or not
- Implementation of health/medical home and experimenting with ACO models

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An Example as a Reminder of the Problem at Hand: Incredible Data Quality Issues and Inefficiencies



Is this a a data flow showing:

- Post-market drug surveillance?
- Creation of key evidence-based medicine pathways?
- Creation of outcome-based quality metrics?

No ... unfortunately is a *partial* representation of the data flow required to gather **race, ethnicity and language** information for quality reporting

Source: Institute of Medicine, "Race, Ethnicity, and Language Data: Standardization for Health Care Quality Improvement", 2009

The Solution: Universal Health Record (UHR)

What Is It?

- A universal health record is a **person-centric longitudinal collection of information that transcends health and care organizations, settings and data types.**
- **Aggregated data includes clinical & claims sourced (medical, drug, behavioral health, dental), and patient-sourced (device and self-entered including observations of daily living and health risk assessments) - standards-based taxonomy-enforced where applicable.** Systems are being extended to add community-sourced environment and social assessments.
- **Typically includes process capabilities** to support automatic data integration, consumer/information specific sharing consent and authorization, role-based access control and audit trail reporting
- **Maintains tracking and integrity of data by data source** (e.g. patient cannot change institutionally sourced information)

Universal Health Record (UHR)

Why is it Needed?

- **Optimal well-being and care outcomes require decisions (clinician and/or consumer/patients) to be made in the context of the *most relevant collective health information***
- **Better meets the needs of health and health care team**
 - Single go-to data source/repository to support the organizational and/or virtual health and health care team and related stakeholders (including non-traditional ones such as care coordinators, health coaches, LTC, etc. – *An ecosystem data transformation point*)
- Provides “collective truth” for as for patient-centered care planning and organizational/virtual entity/community reporting and quality metrics calculations
- **Better meets the needs of consumer/patients**
- Able to share data easily with their providers and others who are partnering to help them on their well-being and health care journey
- Single place to connect health and health care self-management applications which brings their collective data to life

Universal Health Record (UHR)

Other Considerations

- **EHRs are not currently designed to handle rapidly emerging needs from:**
 - The wide variety of data types required to gain a more complete view
 - Read-write access by external stakeholders including patients, providers in the health neighborhood, community and public health
 - Potential volume of data (especially from continuous, real-time data generating remote monitoring devices)
- **UHR provides a data quality/data management buffer to the provider's operational systems including EHR and data warehouse**
- **UHR can be located and HIE-enabled at the state, region, community and organizational levels**
 - For communities where ACO(s) do not own/employ a majority of the care entities, it can be located in a trusted "DMZ" to facilitate virtually connects services

Example: Dossia UHR - Open, Transparent & Codified Data Model & Associated Consent Process

The screenshot shows the 'Dossia Schemas' page with a table of contents. The 'Contents [hide]' section lists the following items:

- 1 Dossia Data Type Definitions
- 2 Use of Enumerated Lists
- 3 Use of Coding Systems
- 4 Allergy
 - 4.1 Data Type Schema
 - 4.2 Data Element Definitions
 - 4.3 Example XML
- 5 Annotation
 - 5.1 Data Type Schema
 - 5.2 Data Element Definitions
 - 5.3 Example XML
- 6 Appointment
 - 6.1 Data Type Schema
 - 6.2 Data Element Definitions
 - 6.3 Example XML
- 7 BinaryData
 - 7.1 Data Type Schema
 - 7.2 Data Element Definitions
 - 7.3 Example XML
- 8 Clinical Reports
 - 8.1 Data Element Definitions
 - 8.2 Example XML
- 9 CodingSystem
 - 9.1 Data Type Schema
 - 9.2 Data Element Definitions
 - 9.3 Example XML
- 10 Dental
 - 10.1 Data Type Schema
 - 10.2 Data Element Definitions

- 23.2 Data Element Definitions
- 23.3 Example XML
- 24 Medication - Compliance
 - 24.1 Data Type Schema
 - 24.2 Data Element Definitions
 - 24.3 Example XML
- 25 Micro
 - 25.1 Data Type Schema
 - 25.2 Data Element Definitions
 - 25.3 Example XML
- 26 PersonalHealthData
 - 26.1 Data Type Schema
 - 26.2 Data Element Definitions
- 27 Problem
 - 27.1 Data Type Schema
 - 27.2 Data Element Definitions
 - 27.3 Example XML
- 28 Procedure
 - 28.1 Data Type Schema
 - 28.2 Data Element Definitions
 - 28.3 Example XML

Use of Coding Systems

Coding System element types allow for data to be stored in Dossia with referenc

- ICD - International Classification of Diseases
- CPT - Current Procedural Terminology
- CDT - Current Dental Terminology
- CMS - Centers for Medicare and Medicaid Services
- HL7 - Health Level Seven
- NDC - National Drug Code
- LOINC - Logical Observation Identifiers Names and Codes
- RxNorm - National Library of Medicine's **standardized nomenclature for c**
- SNOMEDCT- Systematized Nomenclature of Medicine - Clinical Terms

Consent Process

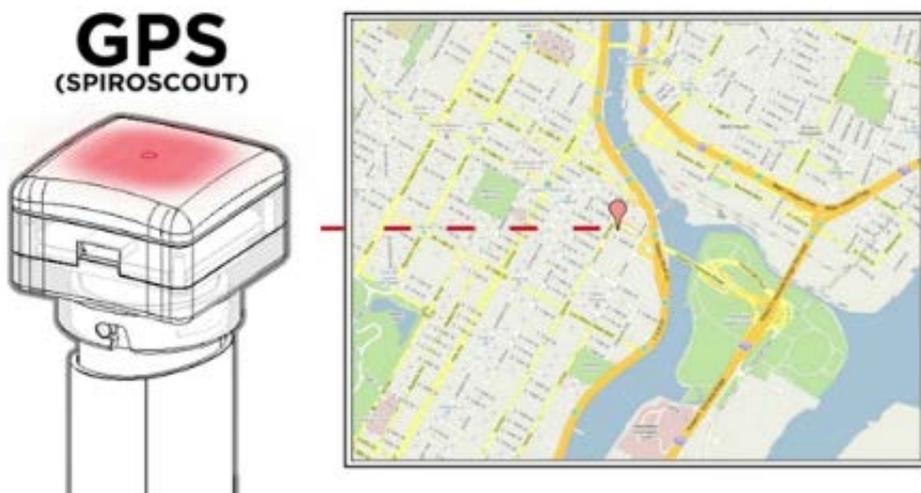
Patient	Wants to organize his or her healthcare data Consents to participate at Dossia.org Requests data from data providers
Data Provider	Collects consents from Dossia.org Transmits records for consenting patients
Dossia	Secures data on behalf of users Offers open interface for secure Personal Health Applications
PHA's	Personal Health Applications help users manage their healthcare Consumers are grateful to have their whole record easily available!

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Asthmapolis: An example of Individual/Physician/Public Health Data Intersection Through Technology

- A primary goal of **Asthmapolis** is to provide more timely, comprehensive and objective data on the burden of asthma in communities.
- When *the Spiroscout* and *mobile diary* are used by people in their communities, asthma epidemiologists and public health researchers now have information on the patterns of asthma medication use as well as **a variety of key surveillance outcomes for which data has previously been absent, of poor quality, or untimely.**



- For example, public health partners may now access data on:
 - adherence to controller medication,
 - most common symptoms and triggers
 - absences from school and work, and
 - asthma-related health care utilization (including office visits, emergency room visits, and hospitalizations).

New York City Public Health Department – Dossia Partnership Background

Consistent with their history of innovation, NYC Department of Health and Mental Hygiene (DOHMH) issued a RFI in the Spring of 2011, *“Personal Health Record System for Community-Based Health Promotion”* with the following requirements:

- **“Providing community members with access to a PHR that supports their efforts to prevent and manage chronic disease** and allows them to securely and electronically share information with trusted care-givers. *This will require applications for data visualization, goal-setting and alerting.*
- **To provide lay health workers (LHWs) with a Community Health Dashboard that:**
 - Strengthened the capacity of LHWs to perform targeted outreach to members at risk of adverse health events. *This will require a customized registry function capable of generating lists of members sorted by data.*
 - Enables LHWs to track trends in the population health of all consenting community members using a PHR. *This will require the visualization of aggregated data shared with the LHW.”*

New York City Public Health Department – Dossia Solution & Project Overview

- The initial target community organizations are churches and senior centers with existing paper-based BP, weight and walking programs
- Project approach
 - First phase: 1,000+ participant pilot (system began rollout first week in March 2012)
 - Second phase: Move to a full rollout (Mid-2012)
 - Third phase: **Integration with the existing Primary Care Information Program (PCIP) which has 2,500+ PCPs operating on a shared, customized EHR (public health and quality metric extensions) and HIE-enabled platform to bi-directionally exchange data between providers and patients (2013)**
- Background scenario for the following screen shots:
 - *A NYC church operates an on-going blood pressure health initiative. The program is run by a Mrs. Davenport (Lay Health Worker), where she interacts with congregation participants between the Sunday 9 am and 11 am services by both taking/entering readings but also using real-time data enhanced-communication and materials for both the group and individuals.*

NYC Public Health - Dossia Community Initiative Review Group Results

The screenshot displays the NEXJ SYSTEMS web application interface. The top navigation bar includes 'Participants', 'Groups', 'Community Dashboard', 'Quick Reports', and 'SJC: Afternoon Service'. The main content area is divided into two sections. The left section lists three groups: 'SJC: Afternoon Service', 'SJC: Morning Service', and 'St. James Church'. The right section shows the 'Week Blood Pressure Distribution (%)' for the selected group, with a bar chart showing 53% (green), 40% (orange), and 7% (red). A second screenshot below shows the detailed view of the 'SJC: Afternoon Service' group, including a profile picture, group name, and a list of participants with their names, ages, birth dates, and weekly average blood pressure (mmHg).

1. Mrs. Davenport (LHW) navigates to the "Groups" tab

2. Selects the "SJC:Afternoon Service"

At a glance see the current group BP Distribution

3. Clicking on the group opens a new tab for that group

Group Name	Week Blood Pressure Distribution (%)
SJC: Afternoon Service	53% (Green), 40% (Orange), 7% (Red)
SJC: Morning Service	20% (Green), 27% (Orange), 53% (Red)

Name	Weekly Average Blood Pressure (mmHg)
Alexander, Barbara 25 years old (Dec 2, 1985)	119 / 77
Alvarez, Joseph 46 years old (Feb 28, 1965)	115 / 78
Espitia, Sally 42 years old (Nov 1, 1968)	118 / 78

NYC Public Health - Dossia Community Initiative Review Group Results (Continued)

nexj SYSTEMS Settings Help
Welcome, Bennett Davenport | Sign Out

Participants Groups Community Dashboard Quick Reports **SJC: Afternoon Service X**

Detail | **Progress**

Blood Pressure

Percentage: 200%, 180%, 160%, 140%

4. She uses the slider bar to show the groups progress

The BP group distribution graph allows you to see how the group is progressing over time

7 Aug 2011 **13 Aug 2011** 21 Aug 2011 28 Aug 2011 4 Sep 2011 11 Sep 2011
1 Jul 11 15 Jul 11 1 Aug 11 15 Aug 11 1 Sep 11 15 Sep 11 1 Oct 11

Blood Pressure

- Hypertension
- Prehypertension
- Normal
- Low

The group BP grid shows you the measurements week over week for the group members

Alexander, Barbara	116/77 mmHg	116/76 mmHg	116/77		
Alvarez, Joseph	118/78 mmHg	116/78 mmHg	118/75		
Sally	135/99 mmHg	132/100 mmHg	134/102		
Elizabeth	133/83 mmHg	134/83 mmHg	122/84		
Matthew	131/83 mmHg	135/84 mmHg	128/85		
Kendall	132/88 mmHg	130/91 mmHg	129/89		
Lawrence	115/82 mmHg	118/83 mmHg	120/85 mmHg	117/82 mmHg	118/84 mmHg
Kirby, Crystal	112/74 mmHg	110/75 mmHg	113/72 mmHg	113/72 mmHg	114/75 mmHg
LYNCH, CALVIN	133/80 mmHg	138/90 mmHg	129/88 mmHg	131/83 mmHg	113/76 mmHg
Okelley, Roy	145/99 mmHg	144/98 mmHg	146/100 mmHg	146/99 mmHg	142/97 mmHg
Paul, Antonio	135/90 mmHg	136/92 mmHg	136/91 mmHg	136/89 mmHg	132/90 mmHg
Reeves, Roberto	142/96 mmHg	140/92 mmHg	140/92 mmHg	122/85 mmHg	128/85 mmHg
Reyes, Donald	142/90 mmHg	141/89 mmHg	142/91 mmHg	139/90 mmHg	123/87 mmHg
Strickland, Sandy	119/79 mmHg	120/79 mmHg	120/78 mmHg	120/78 mmHg	118/78 mmHg
Wilcox, Christine	160/99 mmHg	154/99 mmHg	158/97 mmHg	155/100 mmHg	158/102 mmHg

NYC Public Health - Dossia Community Initiative

Record BP Measurements

The screenshot shows the Nex Systems interface for a patient named Joseph Alvarez. The top navigation bar includes 'Participants', 'Groups', 'Community Dashboard', 'Quick Reports', and 'SJC: Afternoon Service'. A user profile for 'Alvarez, Joseph X' is selected. The main content area is titled 'Progress' and features a 'Select Charts to View:' section with icons for Blood Glucose, Blood Pressure, Weight, Exercise, Food, Energy, How I Feel, and Pain. The 'Blood Pressure' chart is active, displaying a line graph of blood pressure measurements from August 28 to September 27, 2011. The y-axis represents Blood Pressure (mmHg) from 70 to 120. The x-axis shows dates from 28 Aug to 26 Sep 2011. A data point for 9/26/2011 at 05:52 PM is highlighted with a blue callout showing a reading of 114/78 mmHg. A list of records is visible on the left, showing multiple entries with dates, times, and blood pressure/pulse readings.

Date	Time	BP (mmHg)	Pulse (bpm)
9/26/2011	05:52 PM	114/78	78
9/21/2011	08:50 PM	116/77	75
9/15/2011	08:50 PM	114/76	76
9/08/2011	08:50 PM	116/76	77
9/01/2011	08:50 PM	118/75	79
8/25/2011	08:50 PM	116/78	75
8/18/2011	08:50 PM	118/78	78
8/11/2011	08:50 PM	116/76	79
8/04/2011	08:50 PM	124/86	77
7/28/2011	08:50 PM	142/102	

Clicking on Joseph launches a new tab

5. Mrs. Davenport selects the BP tracker and reviews Joseph's measurements

NYC Public Health - Dossia Community Initiative

Record BP Measurements (Continued)

The screenshot displays the NEXJ SYSTEMS patient progress graph for Joseph Alvarez. The patient's profile includes a photo, name, age (46 years old), and membership in the SJC: Afternoon Service. The progress graph shows various health metrics over time, including Blood Glucose (6.1), Blood Pressure, Weight (135), Exercise, Food, Energy, How I Feel, and Pain. An 'Add Blood Pressure Entry' dialog box is open, allowing for the entry of a new blood pressure reading. The dialog box contains fields for Systolic (mmHg), Diastolic (mmHg), Pulse (bpm), Entry Time (Sep 27, 2011, 12:14:25 PM), and Notes. A callout box points to the 'Add Blood Pressure Entry' button, and another callout box points to the dialog box.

Joseph Alvarez
46 years old (Feb 28, 1965)
Member of SJC: Afternoon Service
Edit Profile

Progress

Select Charts to View:

Blood Glucose Blood Pressure Weight Exercise Food Energy How I Feel Pain

Add Blood Pressure Entry -- Webpage Dialog

Systolic mmHg
Diastolic mmHg
Pulse bpm
Entry Time Sep 27, 2011 12:14:25 PM
Notes

OK Cancel

7/28/2011 08:50 PM
BP: 142/102 mmHg
Pulse: 100 bpm

2011-07-13 - 2011-08-13

124
86

17 Jul 21 Jul 25 Jul 29 Jul 2 04 Aug 2011 10 Aug
Nov 10 Jan 11 Mar 11 May 11 Jul 11 Sep 11

7. The "Add Measurement" dialogue pops up and Mrs. Davenport enters the BP reading

6. To add a new measurement, Mrs. Davenport selects the "Add Blood Pressure Entry"

NYC Public Health - Dossia Community Initiative

Record BP Measurements (Continued)

Progress

Settings Help
Welcome, Bennett Davenport | Sign Out

Participants Groups Community Dashboard Quick Reports SJC: Afternoon Service Alvarez, Joseph X

Joseph Alvarez
46 years old (Feb 28, 1965)
Member of SJC: Afternoon Service
Edit Profile

Notes + Add

Select Charts to View:

- Blood Glucose (6.1)
- Blood Pressure**
- Weight (135)
- Exercise
- Food
- Energy
- How I Feel
- Pain

Print Progress Report -- Webpage Dialog

https://nyph.nexjdemo.com/nexj/form/SysPortletServer/PatientPr...

A progress report contains a blood pressure chart and blood pressure readings for the selected participant during the selected date range.

Start Date: 8/27/2011 End Date: 9/27/2011

Click Run Report to generate a report of this participant's progress.

Run Report Cancel

2011-08-28 - 2011-09-27

28 Aug 31 Aug 3 Sep 6 Sep 9 Sep 12 Sep 2011 15 Sep 18 Sep 21 Sep 24 Sep 27 Sep

9. She then selects the desired date range

8. Mrs. Davenport selects the "Print..." option to show a summary of Joseph's results

10. She runs the report

NYC Public Health - Dossia Community Initiative

Using the Dossia *Health Manager*

The screenshot displays the Dossia Health Manager interface for user Joseph Alvarez. The top navigation bar includes 'Health Manager Home', 'News Feed', 'My Apps', 'Marketplace', and 'Calendar'. The left sidebar contains 'My Connections', 'Profiles' (with a link to Joseph Alvarez), and 'My Health Apps' (with links to Challenges, Health Content, Measurements, and Health Tracker). The main 'News Feed' shows five entries, each with a profile picture of Joseph Alvarez and a message: 'Health Tracker added measurements to Joseph Alvarez's record.' Each entry includes a 'View measurements' link and a timestamp. A yellow callout box on the left points to the 'Health Tracker' app in the sidebar, containing the text: '11. Joseph and Mrs. Davenport log in and select the "Health Tracker"'. The right sidebar features 'Profile Completeness' (12% progress), 'Health Rewards' (0 coins), 'To-Do List' (Nothing To Do), 'Calendar' (Family Calendar for SEP 27), and 'Available Health Challenge' (Walking On Sunshine, Available).

NYC Public Health - Dossia Community Initiative

Using the Dossia *Health Manager*

The screenshot displays the Dossia Health Manager interface for user Joseph Alvarez. The interface includes a navigation menu on the left with options like 'Health Manager Home', 'My Connections', 'Profiles', 'My Health Apps', 'Challenges', 'Health Content', 'Measurements', and 'Health Tracker'. The main content area shows a 'Blood Pressure' chart and a 'Records Log'.

Records Log:

Date	Time	BP (mmHg)	Pulse (bpm)
9/26/2011	05:52 PM	114 / 78	78
9/21/2011	08:50 PM	116 / 77	75
9/15/2011	08:50 PM	114 / 76	76
9/08/2011	08:50 PM	116 / 76	77
9/01/2011	08:50 PM	118 / 75	79
8/25/2011	08:50 PM	116 / 78	75
8/18/2011	08:50 PM	118 / 78	78
8/11/2011	08:50 PM	116 / 76	79
8/04/2011	08:50 PM	124 / 86	77
7/28/2011	08:50 PM	142 / 102	

Blood Pressure Chart: The chart shows blood pressure (mmHg) on the y-axis (70-120) and time on the x-axis (14 Aug to 09 Sep 2011). The chart displays a series of vertical bars representing individual measurements. The most recent measurement on 09 Sep 2011 is highlighted with a blue box, showing a systolic pressure of 116 mmHg and a diastolic pressure of 76 mmHg.

12. Mrs. Davenport shows Joseph how to enter a BP measurement through the Health Manager

13. Mrs. Davenport shows Joseph the "Print..." option to show a summary of his results

NYC Public Health - Dossia Community Initiative

Activating the Mobile Portal



- Health Manager Home
- My Connections
- Profiles
 - Joseph Alvarez
- My Health Apps
 - Challenges
 - Health Content
 - Measurements
 - Health Tracker

Home > My Profile > Health Tracker

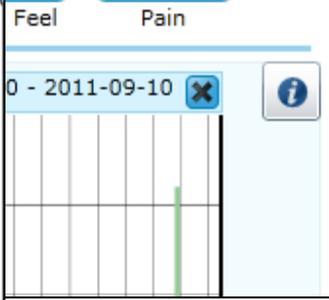
Select Charts to View:

- Blood Glucose (6.1)
- Blood Pressure
- Weight (135)
- Activity
- Nutrition
- Battery
- Feel (Smiley face)
- Pain (Sad face)

Rec	Date	BP	Pulse
	9/26/2011	114	78
	9/21/2011	116	

Add Blood Pressure Entry Print... Settings

Get NexJ Health Coach for BlackBerry
Mobile Account Settings



14. To activate the Mobile Application for Health Coach, the participant select the "Get NexJ Health Coach for Blackberry" from the Settings link



Joseph Alvarez
Help Logout

Get NexJ Health Coach for BlackBerry -- Webpage Dialog

https://nyph.nexjdemo.com/nexj/SysPortletServer/PatientProgressGraphPortlet

Send a download link to your email. You will also need to create a password to sign into the app.

Username JosephBAlvarez@pookmail.com

Password

Re-enter Password

Send link to email No thanks

15. The Participant is then asked to create a Password for the Mobile Application and is sent an email containing the link and instructions to install the Mobile Application

Dossia Health Manager: A Data-Enabled Engaging Consumer Decision-Support Solution

Discussion Roadmap

- Speaker Perspective Context
- Health System (Not So) Future State
- The Emerging Role of the Consumer/Patient
- The Three Health Care Domains
- 'Universal Health Record' (UHR) as a Common Information Transformation Vehicle
- Examples Tying the Three Domains Together
- Concluding Comments and Q&A

Concluding Comments

There IS a business model for HIE, it's the patient and the physician!

• It is in the patient's and physician's best safety, quality and cost interest to have each clinical encounter to be informed by a comprehensive, relevant aggregation of previous health information (HIE + UHR + engaging apps)

- Physicians and the rest of the care team cannot practice highest outcome-based medicine without HIE + UHR, thus physicians and their organizations can't earn their maximum revenue under non-FFS care models
- Patients can't maximize their role within the care team, particularly self-management, without HIE + UHR + Engaging apps

'Deja Vu all over again': Finally the health and health care system has come full circle to focus on a deeper core physician/care team-patient relationship and the joint accountability and better outcomes that comes from it

Q & A / Contact Information

Q & A

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