Social Health IT – How Digital Tech Can Boost the Social Determinants of Health

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THINK-Health and Health Populi blog
Speaker Introduction

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Conflict of Interest

Jane Sarasohn-Kahn has no real or apparent conflicts of interest to report.
Agenda

• Let’s Make Health
• The Social Determinants of Health (SDOH)
• Health tech’s role in addressing SDOH
• The evidence: some examples of health tech & SDOH
• Call-to-action: We are all part of the health/care ecosystem
• Q&A
Learning Objectives

• Discuss guidance on navigating changes in patient and physician demands, government and industry regulations, and shifting payment models

• Describe techniques to overcoming business and technical challenges associated with integrating patient-generated health data successfully in remote/virtual clinical programs

• Provide strategic recommendations for implementing wearables, mobile apps and remote clinical devices into provider workflow and processes

• Call-to-action: Develop one digital tech-tactic to take back to your organization that would positively impact the patient-provider relationship and social determinant(s) of health.
An Introduction of How Benefits Realized for the Value of Health IT

- HCAHPS scores
- Self-care efficacy, health literacy
- Consumer trust in health IT & electronic PHI
- Engagement where people live, work, play, pray and learn; health disparities; community healthy equity
- Engagement/activation → < costs (Hibbard)
Figure 1
Impact of Different Factors on Risk of Premature Death

### Social Determinants of Health

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<tr>
<th>Economic Stability</th>
<th>Neighborhood and Physical Environment</th>
<th>Education</th>
<th>Food</th>
<th>Community and Social Context</th>
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<td>Support</td>
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**Health Outcomes**
- Mortality
- Morbidity
- Life Expectancy
- Health Care Expenditures
- Health Status
- Functional Limitations
Vicious Cycle of Ill Health Due To SDOH

FIGURE 2: Social determinants of health and the broken vicious cycle of ill health for animals and humans.
“Zip code more important than genetic code.”

Robert Wood Johnson Foundation, 2009
Commission to Build a Healthier America
SDOH + Health IT Isn’t Easy – Some Barriers

• Lack of knowledge and consensus, absence of standards or tools
• Best practice still evolving
• Health care ≠ social services
• Lack of multi-sector collaboration – who does what?
• Rigid technology systems: various platforms to use – EHRs, cloud-based tech, apps
• Sharing data across sectors is a major challenge....

• But this must be done.

Source: RWJF, Using Social Determinants of Health Data to Improve Health Care and Health: A Learning Report, May 2, 2016
How Consumers Define Health and Wellness

Physical health 94%
Mental/emotional Health 91%
Personal appearance 87%
Financial health 82%

Source: Edelman Health Engagement Barometer, October 2008
Value-Based Payments Require Valuing What Matters to Patients

Sylvia Burwell, Secretary of Health and Human Services, recently announced the department’s intention to tie most Medicare fee-for-service payments to value by 2018. Most commercial plans already incentivize quality to some degree and encourage beneficiaries to consider quality and cost. Having payers aim for value should improve health system performance, certainly when compared with traditional incentives for the volume of services, which have failed to deliver the kind of care that is possible.

Paying for value, though, requires measuring what actually matters to patients. Yet almost all current quality metrics reflect professional standards: eg, medications after myocardial infarctions, cancer screening according to guidelines, or glycated hemo-globin A1c levels being under control for patients with diabetes. These metrics are relatively straightforward to calculate with available data, and patients’ interests usually align with professional standards—people want medical services to help them live longer, prevent or cure illnesses, limit the likelihood of morbidity from disease and injury, and avoid or effectively manage symptoms. Although there are instances when professional standards seem to diverge from and intensely personal conversations resulting in identification of patients’ goals—goals that the current approach to measuring quality undervalues and therefore fails to integrate. Although professional standards are important, they can fail to capture what matters most to each individual.

A century ago, these aspects of care would have been of little importance. Historically, people died within hours or days, or maybe a few weeks following becoming ill, after appearing to be fairly healthy. Now most people accumulate chronic conditions in old age. The typical 70-year-old person will need daily help from another person for an average of 2.7 years before dying, and this just to accomplish activities of daily living, including eating, dressing, and toileting. Service delivery arrangements have neither adjusted to this new demographic reality, nor have measures of quality. People known to be dying soon are often included in the denominator for metrics like cancer screening, diabetes management, or hypertension control. Only a few of the hundreds of quality measures that Medicare now uses are particularly relevant to people living with frailty or advanced illnesses, measures such as screening for depression and prevention and treatment of pressure ulcers. Even fewer may be meaningful to younger disabled persons.

So when it comes to older or disabled people, what should be measured? Two categories are important: priorities that matter to most frail or disabled people and those that are important to the specific individual. Among frail older persons, population
A Major Message for Attendees
Retail, Providers, & Digital Companies = Trusted to Manage Health

Level of Trust in Managing Consumers’ Health

- Large retail: 40%
- Provider: 39%
- Digitally enabled company: 38%
- Insurance: 37%
- Integrated payor/provider: 34%
- Pharmacy: 26%

Source: Strategy & consumer survey 2014
N=2399
Consumers Expect All Industries To Engage in Health

Source: Edelman Health Barometer, 2010
Patients Can Feel Like Rodney Dangerfield – No Respect

- Among companies consumers feel most respect are REI, Publix, Wegmans, Dove, Olay and St. Jude

- Health care, pharma, and health insurance rank lower on consumers’ respect “quotient”

- Listen up, healthcare: “technology gives [people] increasing control over brand relationships.”

Respect As SDOH – Feeling Disrespected Lowers Adherence

FIGURE 14.
Feeling Disrespected Linked to Medication Non-Adherence

Know the difference between

“What’s important for patients”

vs

“What’s important to patients.”

Source: Right Place, Right Time. Altarum, Oliver Wyman, Robert Wood Johnson Foundation, January 2017

NOTE: Medication non-adherence p < .001; HbA1c difference is not significant, but statistical power is limited by the small number of people in the disrespected diabetic group (n=53). Both comparisons control for age, gender, and income. Variables include Q73 and Q77 by Q80.
# Food As SDOH

Heat map of top risk factors that contribute to the burden of NCDs

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Food As SDOH
Amazon and Grocers Working With USDA On SNAP

- Testing viability of enabling participants in SNAP to use benefits to purchase groceries online
- Goal: to enable people in food deserts without purchasing options to gain access to more nutritious food choices
- To bring benefits of online market to low-income Americans participating in SNAP
Food as SDOH

Clinicians would first hire dietitians

Figure 1: Clinicians want broader care teams – and dietitians, clinical educators and mental health professionals top the list

Affordability aside, which of the following professionals are on your primary care team today/would be on your ideal primary care team? Please select all that apply.
Transportation As SDOH
Ride With Uber & Lyft To Health Provider

Getting to the Doctor Just Got Easier

MedStar Health and Uber have created a convenient ride option to get you to and from your medical appointments and stay on track to receive the care you need. Door-to-door transportation saves time, and our handy reminder feature will help you be ready when your ride arrives.
Health Literacy As SDOH
Medication Adherence – Wireless *Inside*

**AdhereTech: tracks & improves adherence**

- Bottles automatically send real-time data
- System automatically analyzes all data
- All data is populated on real-time dashboard
- Patients can receive both automated & live interventions via phone or text
Broadband Connectivity As SDOH

Source: Annual Broadband Report, FCC, January 2015

Without Access Rural
Address Multiple SDOHs – Via Platforms

**purplebinder**

- “1-stop shop to address SDOH,” “Yelp! for social services” → “Healthcare is local”
- Purple, over-stuffed, coffee-stained 3-ring binder
- Transformed into referral platform for food pantries, substance abuse treatment, housing, parks, jobs, education
- ER setting: 60% ↓ rate in acute care costs for frequent fliers
- RCT on clinical effects of patient navigators
Community Cloud → SDOH

Cloud-based system enables Health Leads to:
- Collect data
- Search database
- Manage cases
- Integration support for screening and referrals
City Health Dashboard NYC

- RWJF grant to NYU School of Medicine with NYU Wagner Graduate School of Public Service and the National Resource Network
- Developed city health dashboard using standardized, city-level data to inform community health improvements
- Scale to a national resource
Fighting SDOH With FHIR

• Green Circle Health winner of ONC Phase 2 Consumer Health Data Aggregator Challenge
• Uses FHIR & APIs to import patient data into platform
• Family health dashboard: personal data, medical device data, remote monitoring, reminders
• Note use of “Dr. Mom will manage it now” recognizing role of family Chief Health Officer
Cognitive Computing And SDOH
Intermountain Healthcare, AI & NLP

• Focus on adolescents with T1D
• Rx & tx adherence and condition tracking
• AI can ID behavior patterns, predict choices, coach & boost patient decision making
• Structured + unstructured data in EHRs, claims, social media, wearable tech, RHM
• ↑ adherence, lifestyle choices, outcomes, < costs, > QoL
Let’s Add Community Vital Signs To EHRs

• Providers begin with vital signs – biometric markers in clinical
• Providers should add community vital signs – aggregated measures of SDOH
• Constructed from community-level geocoded data from public sources, eg., US Census, community surveys
• GIS as proxies for SDOH

Community Vital Signs – Public Data Metrics For EHRs

<table>
<thead>
<tr>
<th>Built environment</th>
<th>Fast food restaurants/100K; liquor stores/100K</th>
<th>American Community Survey, US Census co. business patterns</th>
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<tr>
<td>Environmental exposures</td>
<td>Media housing age; air quality standards</td>
<td>CDC; Environmental Public Heath Tracking Network</td>
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<td>Neighborhood economic conditions</td>
<td>Dependency ratio (old-age); Gini-coefficient; % of vacant addresses (90-day vacancy)</td>
<td>Agency for Toxic Substances &amp; Disease Registry; Dept of HUD</td>
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<td>Neighborhood race/ethnic composition</td>
<td>Count &amp; % by race; Residential segregation</td>
<td>American Community Survey</td>
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<tr>
<td>Neighborhood resources</td>
<td>% of people in co. living &gt;1 mile from grocery, or 10 miles in rural; Urban Classification Code</td>
<td>USDA, Economic Research Service</td>
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<tr>
<td>Neighborhood SES</td>
<td># with college degrees; median HH income; % &lt; 100% of FPL</td>
<td>American Community Survey</td>
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<td>Social Deprivation Index</td>
<td>Composite measure of social deprivation associated with poor access to healthcare</td>
<td>Robert Graham Center</td>
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Summary Of SDOH Domains For Inclusion In EHRs

Sociodemographic Domains
Sexual orientation
Race/ethnicity
Country of origin/U.S. born or non-U.S. born
Education
Employment
Financial resource strain (food and housing insecurity)

Psychological Domains
Health literacy
Stress
Negative mood and affect (depression, anxiety)
Psychological assets (patient engagement/activation, optimism, self-efficacy)

Behavioral Domains
Dietary patterns
Physical activity
Tobacco use and exposure
Alcohol use

Individual-Level Social Relationships and Living Conditions Domains
Social connections and social isolation
Exposure to violence

Source: National Academy of Sciences, January 8, 2015
Morphing to Accountable Health Communities

- CMS model for “better care, smarter spending, and healthier people”
- 5-yr CMMI program (MC, MA)
- ID/address health-related social needs of beneficiaries
- Why? Unmet health-related social needs may:
  - Increase risk of developing chronic conditions
  - Reduce person’s ability to manage
  - Increase health care costs
  - Drive up avoidable health care utilization.

SDOH Topics
- Utility
- Food
- Violence
- Housing
- Transportation
AI For SDOH At Scale - ProACT
(HINT: Scale Matters)

- ProACT: EU-funded project (Jan 16-July 19)
- Focus: EU’s 50 mm patients self-manage chronic disease
- Integrating 4 modes:
  - Homecare
  - Hospital care
  - Community and social care
  - Social support networks
- Cloud-based, open API with home based sensors and wearable tech to track & provide personalized clinical and non-clinical feedback to patients.
Investing in the healthiest nation

The United States is the only country that spends more treating health issues vs social care programs.
An Introduction of How Benefits Were Realized for the Value of Health IT

- HCAHPS scores
- Self-care efficacy, health literacy
- Consumer trust in health IT & electronic PHI
- Engagement where people live, work, play, pray and learn; health disparities; community healthy equity
- Engagement/activation → < costs (Hibbard)
“The social determinants are going to be as much a part of regular health care as treating blood pressure.”

Dr. Robert Corey Waller,
Camden Coalition of Healthcare Providers
Questions

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