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Every physician matters, each patient counts.

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Social Determinants of Health:
Current State and the Opportunity Impact of Health Information Technology

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September 17, 2019

Agenda

- Social Determinants of Health (SDOH)

- Impact on Community and Patient Well-being

- Clinical and Business Drivers for Managing SDOH

- Technology Enablers for Addressing SDOH in Health care Practices, Healthcare Delivery Systems and Public Health Infrastructure

SOCIAL DETERMINANTS OF HEALTH

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Objectives

- Increase knowledge of social determinants of health (SDOH) and their impact on community and patient health and wellbeing

- Increase understanding of the clinical and business drivers associated with SDOH

- Define barriers to addressing SDOH in health care practice and public health infrastructure

- Understand information technology barriers and emerging solutions to support clinicians in managing SDOH

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Health Equity

Health equity is the absence of the unfair and avoidable differences in health status.

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Vulnerable Populations

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Health Disparities

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Why are Social Determinants of Health Important?

SDOH – Effect Every Aspect of Life

What Drives Health?

CDC Health Impact Pyramid
Factors that Affect Health

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SDOH – Influencers - 80/20

- **80%** - Environment

  - 40% Socioeconomic
    - Access to nutritious food.
    - Adequate and safe housing
    - Available transportation
    - Financial ability to pay for medications
    - Financial ability to pay for utilities
    - Caregiver needs
  - 20% - Health Behaviors
  - 20% - Physical Environment

- **20%** - Clinical Health Care Services

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Pivotal Questions Surrounding SDOH

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Social Determinants of Health

Economic Stability	Neighborhood and Physical Environment	Education	Food	Community and Social Context	Health Care System
Employment	Housing	Literacy	Hunger	Social integration	Health coverage
Income	Transportation	Language	Access to healthy options	Support systems	Provider availability
Expenses	Safety	Early childhood education		Community engagement	Provider linguistic and cultural competency
Debt	Parks	Vocational training		Discrimination	
Medical bills	Playgrounds	Higher education			Quality of care
Support	Walkability				

Health Outcomes
Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations

Source: Artiga, Samantha, and Elizabeth Hinton. 2018. "Beyond Health Care: The Role of Social Determinants in Promoting Health and Health Equity." The Henry J. Kaiser Family Foundation. May 10. (accessed July 20, 2018).
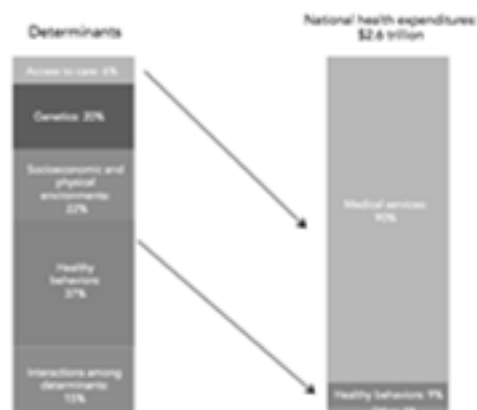
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Health Determinants vs. Health Expenditures

The Mismatch

- Medical care is insufficient for ensuring better health outcomes

- Medical care is estimated to account for only 10-20 percent of the modifiable contributors to healthy outcomes for a population

Source: Hood, C. M., K. P. Gennuso, G. R. Swain, and B. B. Catlin. 2016. County health rankings: Relationships between determinant factors and health outcomes. American Journal of Preventive Medicine 50(2):129-135.
Photo via *Healthy People/Healthy Economy: An Initiative to Make Massachusetts the National Leader in Health and Wellness.* 2015. Data from NEHI 2013. Also featured on *18 Charts That Make the Case for Public Health*, August 28, 2016.9+

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Strategies to Address Social Determinants of Health from within Health Care

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Strategies to Address Social Determinants of Health from within Health Care – Provider-Level

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MMS Initiatives to Address Social Determinants of Health

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SDOH and Population Health

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Integrating the SDOH in All Sectors

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Strategies to Address Social Determinants of Health from within Health Care – Information Technology

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SDOH & Information Technology

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How do We Acquire & Utilize SDOH Data When Clinicians Practice on a Volume-Driven Assembly Line?

RESULTS Clinicians spent 355 minutes (5.9 hours) of an 11.4-hour workday in the EHR per weekday per 1.0 clinical full-time equivalent: 269 minutes (4.5 hours) during clinic hours and 86 minutes (1.4 hours) after clinic hours. Clerical and administrative tasks including documentation, order entry, billing and coding, and system security accounted for nearly one-half of the total EHR time (157 minutes, 44.2%). Inbox management accounted for another 85 minutes (23.7%).

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Pay for Performance, Regulatory and Business Requirements Drive System Consolidation, Integration and Platform Implementation

Clinicians are burned out with data entry burden, information overload and "relevant" data retrieval burden

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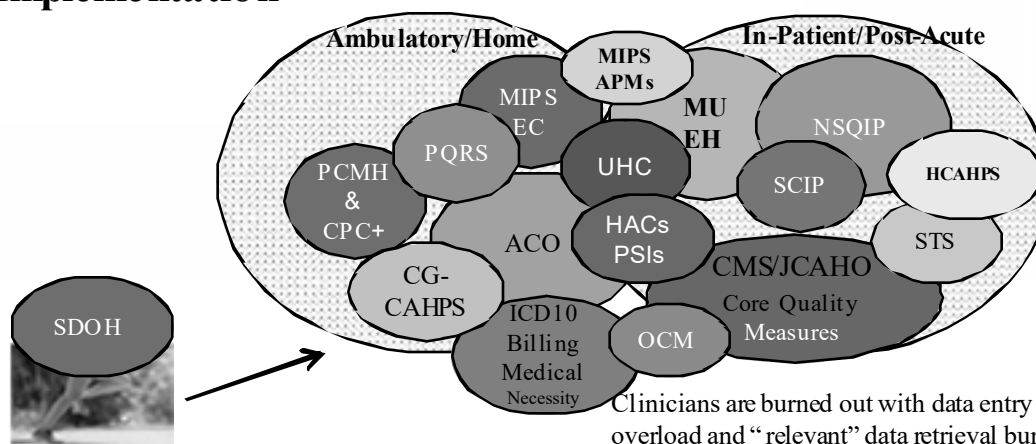
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Health Systems Need to Transform to Leverage SDOH Data

Operations establishes and drives new
teamwork processes to adopt new workflow
tools, applications, & analytics

System Leadership prioritizes
investments in Systems, Infrastructure
and Workforce Composition to
leverage SDOH

IS Team Implements SDOH
apps and tools to support
data capture, analytics,
clinical decision support

System SDOH
Transformation

Clinical leadership develops
new guidelines for leveraging
SDOH data in clinical practice

EHR Vendors Need to Modernize Their Systems

Focus of the last decade has largely been on
compatibility with MU Certification criteria and
developing workflows and reporting tools to help
clients meet regulatory compliance:

- System Integration
- Accountable Care
- Patient Portals
- Revenue Cycle
- Data and Application Interoperability

Demonstrating a renewed focus on clinician
usability and efficiency, but regulations keep
evolving; seem to burden more than simplify.
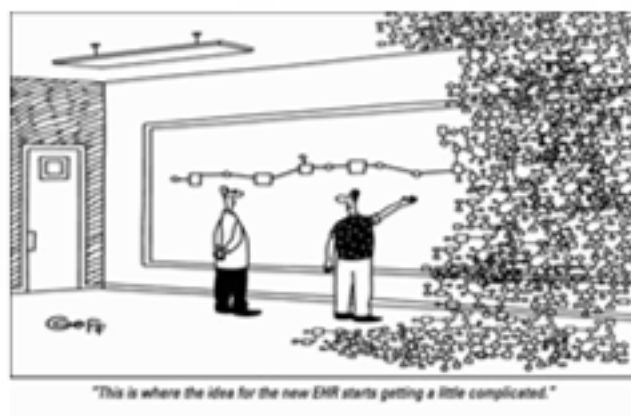
"This is where the idea for the new EHR starts getting a little complicated."

SDOH Technology Enablers

Standard, Encoded Terminologies and Screening Tools for SDOH Data

Infrastructure to Integrate Public Services and Health Systems

Artificial Intelligence and Deep Learning Architectures

Privacy/Confidentiality Regulations and Standards

Interoperability for application and services integration
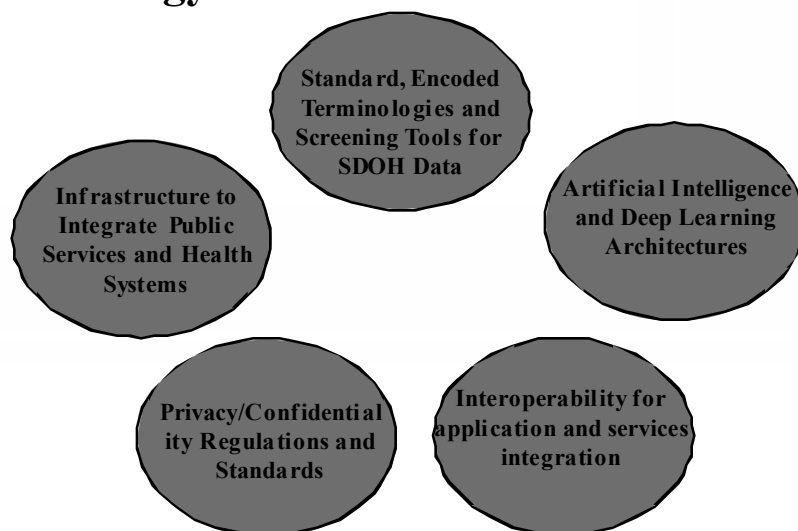
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Terminology and Coding Initiatives Underway

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The Gravity Project

A National Collaborative to Advance Interoperable Social Risk and Protective Factors Documentation

Focuses on coding standards for Screening, Diagnosis and Treatment in 3 priority domains: Food Insecurity, Housing Stability, Transportation https://sirenetwork.ucsf.edu/TheGravityProject

Fair Haven CHC ICD10 Crosswalk

Children's Healthcare Watch: Food Insecurity as a Vital Sign

https://childrenshealthwatch.org/wp-content/uploads/An-Overview-of-Coding_2.15.18_final.pdf

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Standard Screening Tools are Emerging

CMS

The Accountable Health Communities
Health-Related Social Needs Screening Tool

What's the Accountable Health Communities (AHC)
Health-Related Social Needs (HRSN) Screening Tool?

AHC HRSN Screening Tool Core Questions

Living Situation

PRAPARE
Protocol for Responding to and Assessing
Patients' Assets, Risks, and Experiences

Patient-reported data will be eventually likely be reconciled with data from other sources (wearables, data submitted to government agencies, publicly available data, etc.)

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Terabytes of Public Data, Social Network Data, Wearables Data, Genomic Data, Clinical Data

MN Ahmed, A S Toor, K O'Neil and D Friedland
Cognitive Computing and the Future of Healthcare
IEEE Pulse, May 2017

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Artificial Intelligence and SDOH

SDOH data risks adding to the cognitive overload for clinicians and AI can be leveraged to help focus the clinician on actionable, relevant data, and interventions

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Many Roles of AI in SDOH

Interpret SDOH Data and Development of Prediction Models

Clinical Decision Support

SDOH Data Acquisition from Free Text Data

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SDOH-Enabled App/Services are Emerging and EHR Platforms are Becoming More Open

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Blurred Boundaries - Social Network Data, EHRs, Apps and SDOH

I'm prescribing you a new set of Friends and Family

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The Health Care System Tug-of-War

Between Pressure to Not Block Information Sharing and Privacy Protection

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Systems Integration between Health System EHRs and Public Health Resources
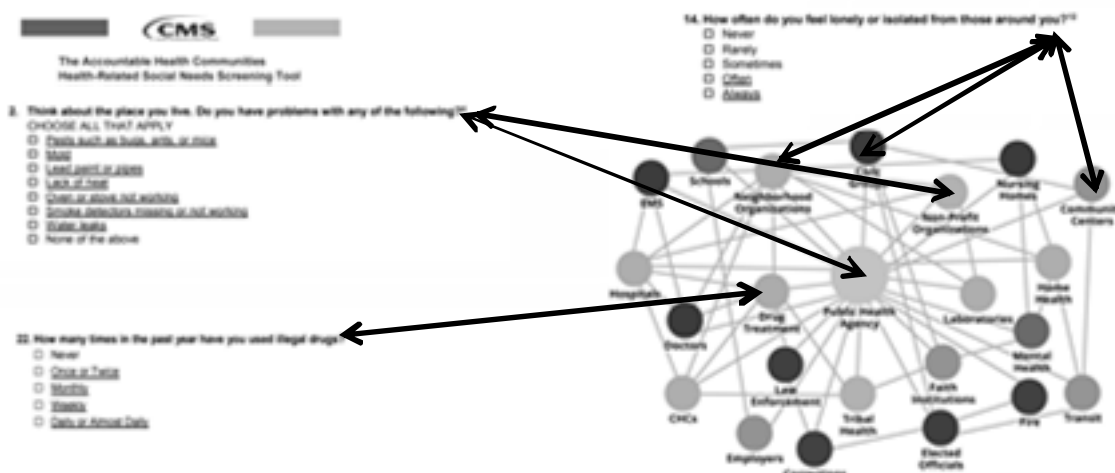
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Thank you / Questions / Discussion

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