Harnessing the Power of Social Determinant of Health Data to Improve Patient and Population Outcomes

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What are the Determinants of Health?

- Factors that contribute to a person's current state of health. These factors may be biological, socioeconomic, psychosocial, behavioral, or social in nature.
- Scientists generally recognize five determinants of health of a population.

DETERMINANTS OF POPULATION HEALTH: genes & biology; social/societal characteristics; health behaviors; total ecology; medical care

Reference: Tarlov, A.R. (1999). Public Policy Frameworks for Improving Population Health. *Annals of the New York Academy of Sciences, 896* p. 281-293.

What are Social Determinants of Health?

- Social determinants of health (SDOH) are economic and social conditions that influence the health of people and communities.
- These conditions are shaped by the amount of money, power, and resources that people have, all of which are influenced by policy choices.
- Social determinants of health factors, at the individual and patient population level, will inform how they can ultimately improve care.

SOCIAL DETERMINANTS OF HEALTH

Reference : World Health Organization. (2008). Closing the gap in a generation: health equity through action on the social determinants of health. *Final report of the Commission on Social Determinants of Health*. Commission on Social Determinants of Health (CSDH).

What are Social Determinants of Health?

The social determinants of health (SDOH) shape and affect the distribution of ethnicity, money, power, and resources. SDOH can be grouped into five major groups:

- **Economic Instability: Poverty, employment, food security, housing stability**
- **Education: High School Graduation, Enrollment in Higher Education, Language and Literacy, Early Childhood Education and Development**
- **Social and Community Context: Social Cohesion, Civic Participation, Discrimination, Incarceration**
- **Health and Health Care: Access to Health Care, Access to Primary Care, Health Literacy**
- **Neighborhood and Built Environment: Access to Healthy Foods, Quality of Housing, Crime and Violence, Environmental Conditions**

In summary, the social determinants of health have a major accountability in an individual's ability to understand the importance of healthcare. It directly connects to the availability and access to care and enhancing their health.

The Importance of Social Determinants of Health

- Health Care experts increasingly recognize that health is driven only to a small (10-20 percent) extent by clinical care delivery.
  - Much more powerful predictors of health or illness are the social determinants of health – the circumstances into which we are born, live, work and play
- Social determinants have been ignored by many for reasons questioning their capability to produce a substantial effect on the clinical outcomes.
- In recent years, it has been proven that by incorporating the social determinants of health in care framework can help in understanding the complete picture of a patient.

Social Determinants of Health

The Importance of Social Determinants of Health

- With social determinants, it becomes easier to recognize the value of economic conditions and demography are as essential to staying healthy.
- Health organizations, institutions, and education programs are encouraged to look beyond behavioral factors and address underlying factors related to social determinants of health.

social norms; work settings; neighborhoods; literacy; y childhood development; access to healthcare; raining; public safety; social support; access to natur; Social Determinants of Health; od security; built environment; socioeconomic statu; housing design; transportation; food secu; nomic stability; physical barriers; educatior; food availability; safe housing

Transformation of Care Delivery: The Role of Informatics in Defining the Social Determinants

- Informatics provides a scientific framework for:
  - the science and the platform for a comprehensive understanding of the range of risks, including social determinants of health, within a population.
  - the key to predicting the needs of individuals and populations, allocating resources, and testing innovations and adapting them for optimal efficacy.
- Uncovering new linkages between health status and social determinants of health is critical to improving health outcomes, bridging care gaps, and reducing costs

Transformation of Care Delivery: Inclusion of Social Determinant Data in Big Data Sets

- Healthcare has long focused on using big data to deliver outcomes and with a rapid transition. To bring about value-based care, harnessing data sources to collect physical, behavioral, and socioeconomic health information has become critically important.
- Integrating data from disparate sources to understand the population composition and stratify people into groups according to the risk score. This exposes the underlying factors that shape patient and community health and gain more information about what would benefit the patients.
- Provide a complete picture of a patient's lifestyle in a consolidated form and putting together a care team to track SDOH.

Transformation of Care Delivery: Creating New Knowledge through Aggregation

- Transition from the construction and analysis of large retrospective databases to the use of aggregated data in near-real time to drive changes at the point of care.
  - This shift includes not only the discovery of new knowledge, but also the ability to apply that knowledge directly and to rapidly impact care.
- Continuous and real-time or near-real-time analysis is a tool for health innovation and directly informs clinicians' about the most effective ways to care for individuals and populations.

Transformation of Care Delivery: Innovation in Action

- Social determinant data can assist in the decoding in figuring out major causes behind why a specific set of the population is becoming ill initially, and, moreover, could play a handy role in restoring their health.
- Associations between health status and social determinants of health. The roles of housing, education, food supplies, security, and the environment determine much of the health status of our communities.
- An example: -New research has demonstrated a direct link between a lack of adequate housing and intensive use of healthcare services, and has shown that the investment required to provide housing is very cost-effective, resulting in significant savings in healthcare costs and a return on investment within 12 months.

Reference: Coye, M.J. (2016). Informatics: The Frontier of Innovation in Health and Healthcare. *Social Entrepreneur in Residence, Network for Excellence in Health Innovation.* https://doi.org/10.1016/J.ENG.2016.01.009Get rights and content

Transformation of Care Delivery: Innovation in Action-Institute of Medicine (IOM)

The Institute of Medicine's (IOM) Committee on Recommended Social and Behavioral Domains and Measures for Electronic Health Records will identify domains and measures that capture the social determinants of health to inform the development of recommendations for Stage 3 meaningful use of electronic health records (EHRs). The committee's work will be conducted in two phases and produce two products.

Phase 1
- Identify specific domains to be considered by the Office of the National Coordinator.
- Specify criteria that should be used in deciding which domains should be included,
- Identify core social and behavioral domains to be included in all EHRs, and
- Identify any domains that should be included for specific populations or settings defined by age, socioeconomic status, race/ethnicity, disease or other characteristics.
- A brief Phase 1 report will be produced and submitted to the committee's sponsors.

Phase 2
- The committee will consider the following questions:
  - What specific measures under each domain specified in Phase 1 should be included in EHRs? The committee will examine both data elements and mechanisms for data collection.
  - What are the obstacles to adding these measures to the EHR and how can these obstacles be overcome?
  - What are the possibilities for linking EHRs to public health departments, social service agencies, or other relevant non-healthcare organizations? Case studies will be considered of where this has been done and how issues of privacy have been addressed.

Transformation of Care Delivery: Innovation in Action-Institute of Medicine (IOM)

- The IOM report suggests a framework for implementing this kind of system, presenting scales that have been validated by research and that can reliably measure variables like stress and depression. These scales would form the foundation of patient-submitted questionnaires, which patients could fill out quickly, perhaps even on a tablet or other device, in a waiting room along with other paperwork. Only if a questionnaire triggers a threshold for a particular variable would a provider need to address it.
- If the patient responses were then linked with the Electronic Health Record (EHR), the system could prompt the provider with key information, depending on the triggered threshold. For example, a patient who fulfilled the risk threshold for tobacco use could trigger a list of nearby smoking cessation programs, which the clinician could then give to the patient.
  - Innovation in Action: Boston Medical Center are already engaging in this kind of proactive clinical care by writing "bicycle prescriptions" for lower income patients leading sedentary lifestyles. If this style of care can be standardized and automated, e.g. in the EHR

Transformation of Care Delivery: Innovation in Action-Centers of Medicare and Medicaid (CMS)

The Accountable Health Communities Model addresses a critical gap between clinical care and community services in the current health care delivery system by testing whether systematically identifying and addressing the health-related social needs of Medicare and Medicaid beneficiaries' through screening, referral, and community navigation services will impact health care costs and reduce health care utilization.

- The Accountable Health Communities Model is based on emerging evidence that addressing health-related social needs through enhanced clinical-community linkages can improve health outcomes and reduce costs.
  - Unmet health-related social needs, such as food insecurity and inadequate or unstable housing, may increase the risk of developing chronic conditions, reduce an individual's ability to manage these conditions, increase health care costs, and lead to avoidable health care utilization.
- This model will promote clinical-community collaboration through:
  - Screening of community-dwelling beneficiaries to identify certain unmet health-related social needs;
  - Referral of community-dwelling beneficiaries to increase awareness of community services;
  - Provision of navigation services to assist high-risk community-dwelling beneficiaries with accessing community services; and
  - Encouragement of alignment between clinical and community services to ensure that community services are available and responsive to the needs of community-dwelling beneficiaries.

Call to Action: Informaticians as Change Agents

Call to Action: Informaticians as Change Agents

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