• Introductions & Some Background

• Key Topics:
  • Social Determinants of Health and Well-being Meets Medicine
  • Model Concepts and Tools
  • Applying Artificial Intelligence to Social Care settings
  • Case Study: Preventing/mitigating the Opioid Crisis
  • The National Interoperability Gallery & Murals
• SOC surveyed HHS leaders across the nation who were working in isolation to improve data sharing and interoperability.

• We convened thought leaders from multiple sectors to share ideas, successes and challenges; publish findings; and create models and tools.

• Synthesized learning, highlighted successes and failures, started documenting using graphic murals, and began building a learning community.
• Too many children have been injured or killed because known risks and threats are not readily shared. Lack of sharing inhibits timely, informed decision-making.

• Legacy technology, rigid policies, tunnel vision and high turnover inhibits solving complex problems.

• Organizations *still* don’t focus enough on bridging silos, upstream or prevention.

• Interoperability wasn’t (and generally isn’t) anyone’s job. So we made it ours.

The Case for Sharing Information is Profound
The Garcia Family
Current System

Gloria, 20, Pregnant

Needs:
- Health Insurance
- Prenatal Care
- Medical Home
- Medical Referral for substance abuse
- Transportation

Becky, 2

Needs:
- Immunization Screening
- Lead Screening
- Developmental Screening
- Parenting education
- Well child visits

Ms. Simpson, 40, Widow

Needs:
- Medical referral – Primary care
- Medical referral – Specialty care
- Medical referral – depression and counseling
- Transportation
Person-centered Care Coordination Through Interoperability

DATA

Marisol, 20, Pregnant
Angelina, 2
Ms. Garcia, 40, Widow
SDOH
SOCIAL DETERMINANTS OF HEALTH & WELLNESS

Live Learn Work Play
Growing Interest in SDOH in Clinical Settings

November 08, 2019:
Fourteen of the nation’s leading hospitals and health systems will be investing a collective $700 million to address community health needs and the social determinants of health in their respective regions, according to Democracy Collaborative.
Can the silos actually be connected?
Implementing SOC’s Generative Theory of Change

**Policy** — The principles or rules that guide decisions by which human services organizations define how they will achieve desired outcomes across the range of programs, activities and disciplines.

**Structure** — The way public and private human services systems design, organize and implement work processes to achieve policy and practice goals.

**Practice** — The way public and private human services organizations deliver services and care, monitor and report results, and achieve intended outcomes.
Precision Targeting Across The Spectrum of Care Demands New Models & Tools (InterOptimability Cube)
Initial Artificial Intelligence: Activating and Enabling InterOptimability
ARTIFICIAL INTELLIGENCE OVERVIEW

ARTIFICIAL INTELLIGENCE
An application that attempts to mimic human behavior, such as sensing, reasoning, acting and adapting.

MACHINE LEARNING
An application that continuously improves its ability to perform tasks through the use of statistical methods.

DEEP LEARNING
An application that trains itself to perform humanlike tasks, such as summarization of case notes, through the use of neural networks, or the modeling of computer algorithms similar to the way human brains think.

Natural Language Processing = Statistics + Linguistics + AI
AI can be used to comb through vast amounts of data to understand context, similar to how humans learn. Natural language processing (NLP) is a type of AI that mimics a human’s ability to understand free-form text – particularly case notes. AI-NLP applications process vast amounts of case notes then provide real-time information, insights and alerts to staff.
AI Case Study Animation
WHY IT’S NEEDED

1. **Case prep is arduous** – caseworkers must review 100’s of pages of case notes across multiple data systems, limiting time caring for families.

2. **Case supervision** and quality control is essentially random – supervisors spend 40% of their time reading through staff’s notes to identify issues.

3. Preparation, supervision and decision support tools are limited – 80% of data is “unstructured” case notes, but today’s tools are limited to 20% of remaining “structured” data.
AI APPLICATIONS IN SOCIAL SERVICES

Timeline - Most Important Events and Concepts

Sentiment of Case Notes Content over Time

Relationships, Frequencies of Interactions, and Sentiment of Relationships
HOW TO START AN AI INITIATIVE

1. Identify AI Use Cases and Data Sources
2. Partner With Technology Community to Design, Build and Pilot Applications
3. Measure Impact, Assess and Control for Bias, then Deploy
Noteworthy Interoperability Initiatives

- Interoperability Action Plan – the Administration for Children and Families
- Implementing Social Determinants & Code Standardization
  - The Gravity Project by Social Interventions Research & Evaluation Network (SIREN)
- Trusted Exchange Framework and Common Agreement (TEFCA)
- Sequoia Project just selected by ONC as the Recognized Coordinating Entity (RCE) to support sharing electronic health information
- DaVinci Project is develop FHIR Implementation Guides and sample codes to enhance providers-payers exchanges to support value-based care requirements
Compelling and Promising Interoperability Examples

- “Chapter 55” - Massachusetts Interoperability Opioid Response
- Michigan Health Information Network (MiHIN)
- LiveWell & ConnectWell San Diego (DHHS, Health Connect and 211)
- Allegheny County, PA - DHHS
- Montgomery County, MD - DHHS
- Boulder Colorado, CO – Housing and Human Services
- Delaware - HHS
- New Hampshire - DHHS
Case Example: Opioid Use Disorder Treatment and Prevention
What is the National Interoperability Collaborative (NIC)?

NIC is a “Community of Networks” designed to increase collaboration within and across multiple domains to improve health, safety, well-being and operations.

The Six Domains:

Human Services, Public Health, Education, Public Safety, Emergency Medical Response, Health Care & IT

"NIC is an idea whose time has come!"

David Fukazawa, Managing Director of Kresge Foundation's Health Program
The Hub in Numbers

Launch day: September 14, 2018

871+ members  8 groups  1,350+ resources

87%+ engagement rate

15k+ visits  99k+ page views
How You Can Get Involved

- Join NIC as a Member, Partner or Sponsor
- Engage in discussions, webinars, proof of concept, co-create projects, etc.
- Participate and/or lead a NIC Group:
  - Let’s Get Technical (Friday’s from 12:00 – 1:30)
  - Opioid Prevention, SDOH, Confidentiality and Privacy, HIMSS
- Curate / facilitator one of the 6 domains or groups

https://hub.nic-us.org/
A showcase for a body of knowledge focused on a decade of cross-domain information-sharing and interoperability

A way to “make thinking visual” and to activate whole-brain thinking, teaching and learning

A means for engaging people from multiple domains to accelerate scaling and spreading ideas for whole person care

A tool for building for the National Interoperability Collaborative – which is a Community of Networks

https://stewardsofchange.org/graphic-murals/murals-showcase/
For any organism to survive, its rate of learning must be equal to or greater than the rate of change in its ecosystem.

Reg Revan