INTRODUCTION

In September 2018, the LHS Collaboratory kicked-off its 2018-2019 Seminar Series by hosting a successful poster session highlighting the work of 20 Learning Health System (LHS) projects. Continuing to build on the energy of this collective LHS work, the Collaboratory finished the year with an Implementation and Acceleration Symposium held in April, 2019. The goal of this dynamic and interactive event was to accelerate LHS projects from across the University of Michigan campus, including the work represented by the September poster authors, plus several additional LHS projects that emerged throughout the season.

The April symposium invited faculty, staff, and students to share their experiences with ongoing LHS-related work, and to engage in focused discussions. The emphasis of the event was on identifying challenges while discovering practical approaches and ways to work together.

The event included workgroup sessions focused on key challenge theme areas which had been
predetermined based on the results of a pre-symposium survey of LHS Collaboratory participants. The workgroup themes identified were:

- Data/Data Access
- Collaborations
- Funding
- Sustainability
- Resources and Availability
- Overcoming Resistance to Change

Workgroups had active participation by all attendees which enriched the discussions. What follows below are the key insights raised in each workgroup.

WORKGROUP THEME: DATA/DATA ACCESS

- **Led by:** Jim Woolliscroft, M.D., Lyle C. Roll Professor of Medicine, Professor of Internal Medicine, Professor of Learning Health Sciences, Former Dean of the Medical School
- **Focus Area:** Common data/data access challenges that have arisen in LHS project work and possible approaches or solutions to address these issues.

- **Challenges:**
  - Lack of standards/standardization
  - Ability to scale
  - Governance issues
  - Aggregating Data – e.g. leading to health disparities
  - Collaboration Issues – e.g. People, Culture, Time, Money
  - Missing data/lack of available data – e.g. rural hospital procedure data
  - Integration of data
  - Data sharing – e.g. PHI-related issues–no one will make decision about what is “safe”
  - Impacts of the cost of “not knowing”

- **Approaches/Actions (for addressing key challenges):**
  - Research ways to increase use of FHIR (API) to help with standardizing data
  - Bring in speakers from other disciplines to learn about how they have addressed standards issues: Physics, astronomy, libraries, actuaries, internet
  - Create a flowchart/infographic of data gaps. Develop landscape document from “bottom up”, and also, “top down”:  
    - “Bottom up”: 1) Individual – genomic characteristics, etc. – both inside and outside the institution; 2) Practice level –data –extracted to make someone healthier–societal groups, diet plans, health clubs, etc.; 3) Social determinants–who you interact with, where you live, etc.
“Top down”: 1) CBK – what data is needed for this? what are the characteristics?; 2) Work on gaps between the “bottom” layers and the “top” layers

- Review big tech healthcare ventures for ways of thinking differently and identifying insights into solving data challenges: e.g. Amazon-JPMorgan Chase-Berkshire Hathaway; Verily, part of Alphabet, which also owns Google; Apple; Uber, etc.
- Identify ways to address lack of institutional focus on standards/standardization by creating motivation:
  - Use example of internet: In early days of internet, non-profits stepped up to solve problems; ended up being more information in the wider internet than in the ‘walled gardens’, so people converted. Motivation here was that they would be contributing to something of historical significance.
  - Need to identify ways to harness this same type of motivation through altruism, idealism

WORKGROUP THEME: COLLABORATION

- **Led by:** Anne Sales, PhD, RN, Associate Chair for Health System Innovation, Professor, Division of Learning and Knowledge Systems, Research Scientist, Center for Clinical Management Research, VA Ann Arbor Healthcare System
- **Focus Area:** Collaboration challenges that have arisen in LHS project work and possible approaches or solutions to address these issues.

- **Challenges:**
  - Time
  - Silos with entire hierarchies
  - Leadership buy-in & staff support
  - Dispersed locations
  - Different systems – e.g. video/phone conferencing, email, calendar
  - Control
  - Defining expectations
  - Lack of understanding – personal/history
  - Size
  - Money resource
  - Social capital – trust
  - Defining value proposition
  - Bandwidth balance
  - Differential resources
  - Tech to help conferencing
  - Power: soft power vs. titles; power asymmetry
  - Communication feedback loops
  - Different languages
  - Politics/turf
  - Autonomy
  - Welfare utility – balancing different needs

- **Approaches/Actions (for addressing key Challenges):**
  - Engage with “Small World” opportunities:
    - Smallworld website: [www.smallworldapp.org](http://www.smallworldapp.org)
WORKGROUP THEME: SUSTAINABILITY

- **Led by:** Jack Billi, MD, Medical Director, Collaborative Quality Initiatives, Professor in Internal Medicine and Learning Health Sciences, Medical School, Professor of Health Management and Policy, School of Public Health, Professor of Integrated Systems and Designs, College of Engineering

- **Focus Area:** Challenges that have arisen around sustainability of LHS project work and possible approaches or solutions to address these issues. *Sustainability is reliant on adaptability to change.*

- **Challenges:**
  - Short term vs. long term balance
  - Competing/shifting priorities
  - Time, other resources
  - Communicating goals within complex systems, especially highly interdisciplinary projects

- **Approaches/Actions (for addressing key Challenges):**
  - Communication
    - Between caregivers, patients, family, etc.
    - Multidirectional
    - Pathways for feedback and communicating concerns
      - Surface concerns
      - Anticipate downstream effects
        - Money, space, technology, people
  - Identify downstream effects
    - Stakeholders (representation from the beginning)
      - Who are they?
        - Someone with a purpose
        - Someone who benefits
        - Clinical champion/early adopter
Someone who is impacted
- What do they need?
- What do they value?
  - Think about sustainability early (from the outset)
  - Long term, expansive view of what is needed
  - Give responsibility to the change – advocates

Involves/engages stakeholders
- Identify people who have already signaled an interest in working towards a LHS
- When the decisions are being made, e.g., Patient-centered care “in the room model

Infrastructure

WORKGROUP THEME: FUNDING
- **Led by:** Joe M. Piffaretti, Senior Director, Corporate and Foundation Giving
- **Focus Area:** Funding challenges for LHS project work and possible approaches or solutions to address these issues.
- **Challenges:**
  - Lack of clear messaging/identity
  - Lack of small funding opportunity to stimulate larger funding opportunities
- **Approaches/Actions (for addressing key Challenges):**
  - Define LHS
  - Create a value proposition
  - Develop concrete examples - successful learning health system
  - Create small funding opportunities, possibly leveraging M-Cubes
  - Create new alliances between internal constituents
  - Create external advisory committee (EAC) to include donors

WORKGROUP THEME: RESOURCES AND AVAILABILITY
- **Led by:** Mike Klinkman, MD, MS, Professor of Family Medicine and Associate Professor of Psychiatry, Medical School
- **Focus Area:** Resource and availability challenges for LHS project work and possible approaches or solutions to address these issues.
- **Challenges:**
  - Time constraints
  - Availability of resources
  - Lack of technical infrastructure
Work prioritization

Level of resources needed to take on the questions/problems of interest

- How do people manage resource constraints for what you’re trying to do and disseminating findings?
- How to connect people with resources while identifying what is QI vs research
- Very broad issue; NIH and most other funding mechanisms are disease-focused
- Challenges with defining the problems
- Is everyone on the same page or would everything crumble if the leader leaves?

- How does something cross-cutting within a community get scaled?
- What are the outcomes we are looking for with Social determinants?
- Who do you go to for funding?
- Michigan has a lot of variation across the state
- What is the community and what are its boundaries, how to prioritize?
- Should health delivery systems and communities work in parallel? When/ at what point should they converge?

• Approaches/Actions (for addressing key Challenges):

  - Health delivery systems and communities work in parallel
    - Engagement with communities and priority alignment will help us minimize resource waste
    - Ensures that we are using resources for improving priorities identified collaboratively with communities
    - Incentivizing community members to sustain efforts may not always work; need to make sure there is a feasible plan for sustaining activities and practice
  - Funding mechanisms tend to be disease focused; perhaps we can start by identifying opportunities within specific domains
    - Identifying funding and resources also requires attention to service boundaries (e.g. health services and social services)

WORKGROUP THEME: OVERCOMING RESISTANCE TO CHANGE

• Led by: Allen Flynn, PhD, PharmD, Assistant Professor, Department of Learning Health Sciences

• Focus Area: Identifying challenges around resistance to change for LHS project work and possible approaches or solutions to overcome these issues.

• Challenges:
• Data Quality
• Fear of Automation/human nature/power
• Incorrect incentives
• Change = Work; hard to overcome inertia
• Time Frames for change are long time frames: hard to see the long game
• Time constraints: not enough time to do the work
• Political and economic
• Conflicts of interest
• Jargon and system institution

• Approaches/Actions (for addressing key Challenges):

  o Standards
  o Use cases
  o Participatory design
  o Empower patients (as part of this, stigma must be addressed)
  o Examples of AI expert collaboration
  o Examples of useful new associations
  o Disincentivize the status quo and humanize the work
  o Pain points + champions change the effect; they catalyze the process of:
    ▪ 1. Awareness
    ▪ 2. Understanding
    ▪ 3. Accept change is needed
    ▪ 4. Engage in change making
  o Consumer oversight

NEXT STEPS
The output from these discussions will be used to inform the content for the 2019-2020 Season of the LHS Collaboratory. We encourage projects and participants from all schools, colleges and departments across campus to join the Collaboratory community as we work together to explore these and other challenges and move toward implementing approaches to further advance all LHS work.