Digital Health Action Collaborative

Webinar

October 7, 2020 | 10:00 AM – 1:30 PM EST

Share your thoughts!

@theNAMedicine

NATIONAL ACADEMY OF MEDICINE
Welcome & Introduction

Michael McGinnis
National Academy of Medicine
Advancing the Learning Health System

A learning health system is one in which science, informatics, incentives, and culture are aligned for continuous improvement, innovation, and equity—with best practices seamlessly embedded in the delivery process, individuals and families active participants in all elements, and new knowledge generated as an integral by-product of the delivery experience.

Leadership Consortium Charter 2006
Learning Health System Series

Vision • Research • Evidence • Effectiveness • Trials • IT Platform • Data Quality & Use • Health Costs • Value • Complexity • Best Care • Patients • Systems • Measures • Leadership

THE LEARNING HEALTH SYSTEM SERIES
Anchor Principles
...for health system performance

Quality Chasm

Learning Health System

✓ Personal
✓ Safe
✓ Effective
✓ Equitable
✓ Efficient
✓ Accessible
✓ Transparent
✓ Adaptive
✓ Secure
## Anchor Principles

...for health system performance

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<thead>
<tr>
<th>Quality Chasm</th>
<th>Learning Health System</th>
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<td>✓ Patient-centered</td>
<td>✓ Personal</td>
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<td>✓ Safe</td>
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focus:

COLLABORATIVE ACTION
COLLABORATIVE ACTION

SCIENCE: Evidence Mobilization Action Collaborative

INFORMATICS: Digital Health Action Collaborative

INCENTIVES: Value Incentives & Systems Action Collaborative

CULTURE: Culture, Inclusion & Equity Action Collaborative
Stakeholder leaders in private, public, and independent organizations from key health sectors, collaborating under the auspices of the National Academy of Medicine for action on their common interest in advancing effectiveness, efficiency, and equity in health, medical care, and biomedical science.
COVID-19 as a PERFECT STORM
A poignant and painful reveal of system fragilities

Novel, highly contagious lethal virus
Public health system poorly supported
Medical care system highly resourced but fragmented
Fragmented medical supply lines
Care financing system unaligned to population’s health
Groups vulnerable from systemic bias and neglect

LESSON: science, informatics, incentives, culture matter
LESSON: their alignment matters even more
Aligning science, informatics, incentives, culture

- Sectoral assessments of COVID-19 impacts and opportunities
- Sector and system-wide priorities for transformation
- Financing that rewards effectiveness, efficiency & equity in health
COVID-19 SECTOR IMPACT ASSESSMENTS

Patients, families, and communities
Clinicians and professional societies
Care delivery organizations
Digital health stakeholders
State and local public health
Health care payers
Health product manufacturers and innovators
Health and biomedical research
Quality, safety, and standards organizations
Digital Health Action Collaborative Chairs

Reed Tuckson
Tuckson Health Connections

Jonathan Perlin
HCA Healthcare
Agenda

Welcome
- Michael McGinnis, National Academy of Medicine
- Reed Tuckson, Tuckson Health Connection
- Jonathan Perlin, HCA Healthcare

10:00 – 10:05 AM

Strategic Framing
- Jon Perlin, HCA Healthcare

10:05 – 10:20 AM

Overview of Testing in the U.S
- Tom Frieden, Resolve to Save Lives, an initiative of Vital Strategies

10:20 – 10:50 AM

Digital Tools for Treatment and Monitoring
- Aletha Maybank, American Medical Association

10:50 – 11:30 AM
Agenda

Contact Tracing: New York City as a Case Study  11:30 – 12:00 PM
   Theodore Long, NYC Health + Hospitals

Panel Discussion: Call to Action and Q&A  12:00 – 1:15 PM
   All Panelists

Summary of Next Steps and Closing Remarks  1:15 – 1:30 PM
   Michael McGinnis, National Academy of Medicine
   Reed Tuckson, Tuckson Health Connection
   Jonathan Perlin, HCA Healthcare

Adjourn  1:30 PM
Zoom Instructions

Panelists

• Always keep your line muted unless you are called on to speak
• If possible, turn on video while speaking to the group. To enable video click the ‘start video’ option at the bottom left of your screen

Attendees - Q & A

• Please type in questions into the Q&A located at the bottom of the screen on your zoom interface
• Question format:
  • Your name and organization
  • To whom
  • Question
Strategic Framing
Digital Health Action Collaborative

- **Collaborative focus**: Digital health infrastructure and data as core utility for health progress
- **Anchor Principles**: LHS principles for stewards of health data and the digital infrastructure
- **Stakeholder initiatives**: *Digital Health and the Learning Health System* (2020, G-science, 14 countries); “Our Digitally Enabled Health Futures” (in progress); *AI for Care Delivery* (2020, joint with GAO); Health Equity, AI, and Algorithmic Integrity; *Artificial Intelligence and Machine Learning in Health & Health Care*
- **Dashboard metrics**: Individuals with full access to their health data; Health care experiences with seamless connectivity among care sources; Care events with clinical decision support available
Digital Health

Virtual Health DataTrust

- Cybersecurity
- Results release protocol
- Artificial intelligence & machine learning
- Data curation & analysis
- Data access & transfer protocols
- Digital interoperability & connectivity
- Standardized multi-level core indicators
- Identity protection protocol
- Data integrity & reliability
- Data ownership & control
- Coding cross-walk protocols

NAM working group
Anchor principles for stewards of health data

Organizations and individuals generating, storing, and using health data are responsible for assuring that the activities are:

**Personal**
Discretion on control and use of personal data resides with individual or their designee.

**Safe**
Data stewardship protocols safeguard against personal harm.

**Effective**
Data are collected and maintained according to validated collection protocols.

**Equitable**
Data systems are designed to identify and counter bias or disparities.

**Efficient**
Every digital equipment purchase enhances health system interoperability.

**Accessible**
Data are available when, where, and on devices most proximate to decisions.

**Transparent**
Personal data sources and uses are clearly indicated, including as to timing and context.

**Adaptive**
Data strategies are regularly calibrated to adjust for needs for continuity and currency.

**Secure**
Data are shared only through protocols considered secure by users.
Candidate dashboard indicators

• Availability of industry-wide health data stewardship standards (including consent, transparency, equity, privacy and security) and public reporting of performance relative to those standards for all parties who handle health data, regardless of regulatory requirements
• Degree to which synthesized, relevant and actionable information is available to and used by clinicians and individuals to support care decisions
• Degree to which individually generated health data is integrated into the learning health system
• Percentage of digital health tool use supported by evidence
Overview of Testing in the U.S
Tom Frieden
President and CEO
Resolve to Save Lives
Testing and Tracing for COVID-19:

Digital Tools Can Enhance But Not Replace Traditional Public Health Interventions

Tom Frieden MD, MPH

President and Chief Executive Officer
TEST WIDELY

ISOLATE ALL INFECTED PEOPLE

FUNDAMENTAL EPIDEMIC CONTROL

QUARANTINE ALL CONTACTS FOR 14 DAYS

BOX IT IN
To Get Us All Working Again

FIND EVERYONE WHO HAS BEEN IN CONTACT WITH INFECTED PATIENTS
Comprehensive Test-and-Trace Strategies Are Key to Controlling the Virus

• Digital tools can supplement and improve – but not supplant – traditional public health test-and-trace processes

• Exposure notification (via GPS, Bluetooth) has overpromised and underdelivered, muddied the waters, and been a distraction
  • But they should definitely be tried, evaluated, and may have useful roles

• Digital tools likely to be most useful are probably those that provide incremental benefits by making staff work more effective
Contact Tracing - Key Lessons

• Contact tracing is the process of supporting patients and warning people who have been exposed

• Works only as part of strategy that includes strategic testing, rapid isolation of cases, and supportive quarantine of contacts

• Labor- and time-intensive - a skill that requires training, expertise
  • Technical knowledge, people skills, detective work, and access to resources to help find and support index cases and their contacts

• Supportive, expert supervision is essential
Technology Can Help

• Digital tools can make the traditional contact tracing experience more efficient and effective
  • Workflow support
  • Call center technology
  • Assistance finding contact information for cases and contacts
  • Support to help people remember contacts and locations
  • Support for contacts to monitor health and get help

• These technologies have great potential but are not yet widely available
Current workflow

- Index case from lab report
- Index case is reached
- Interview is conducted
- Each contact is reached
- Contacts are monitored

Pain points

- NOT ENOUGH PEOPLE
- Often incomplete contact information, delayed, nonstandard; many antigen tests not reported
- Takes multiple tries, many can’t be located or don’t answer
- Manual data entry takes too much time
- Incomplete contact elicitation
- Language, culture, trust mismatch
- Often incomplete information
- Takes multiple tries, many can’t be contacted
- Cluster investigations require specialized skills
- Daily symptoms reporting
- Fielding questions, linking to services
RTSL Digital Tools

**Epi Viaduct**  
LIVE in NY and NJ  
Fast, reliable lab data pipeline

**Stay Home**  
Quarantine and isolation support

**Epi Viewpoint**  
The simple case management system

**Epi Contacts**  
Index case contact elicitation

**Epi Locator**  
LIVE in NY (NJ - Pilot in Oct)  
Easy contact information look-up

Lab reporting system  
Index case queue  
Call index case  
Case investigation w/ contact elicitation  
Call index case  
Contact interviews  
Monitor cases & contacts in isolation/quarantine  
Release  
Case management system
Epi Viaduct

Spend less time cleaning COVID lab records coming into case management system and more time investigating those cases sooner

**PERFORMANCE IMPROVEMENTS**

- Efficiency fixing reports of missing cases
- Speed of lab data ingestion into case management system once test result reported by the lab

<table>
<thead>
<tr>
<th>EARLY PERFORMANCE INDICATORS</th>
<th>Original pipeline</th>
<th>Viaduct pipeline</th>
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<tbody>
<tr>
<td>Time to fix missing cases</td>
<td>Multiple days</td>
<td>&lt; 6 hours</td>
</tr>
<tr>
<td>Time to fix reported issues</td>
<td>Not capable of tracking</td>
<td>20-30 min/day</td>
</tr>
<tr>
<td>Speed to ingest data</td>
<td>2.5 hours +</td>
<td>&lt; 1 minute</td>
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Epi Locator

Get in touch with a higher percentage of cases and contacts in less time

ANTICIPATED PERFORMANCE IMPROVEMENTS

• Establish contact with >90% of all known cases
• Establish contact with >50% of all elicited contacts
• Find missing contact details for people within the case & contact investigation workflows
Epi Contacts

Enable index cases to easily provide accurate and complete locator information for their contacts

ANTICIPATED PERFORMANCE IMPROVEMENTS

- Increase # of contacts elicited and improve accuracy of locating information
- Increase success rate to reach elicited contacts
- Reduce time spent during investigation eliciting contacts
Dear Jolene,

You were tested for COVID-19 on 04/24/20. Your test result came back **positive**, meaning that you are likely infected with COVID-19 and can infect others.

We are calling everyone who has tested positive. We ask you for the names and phone numbers of the people you've been in contact with to let them know they should be evaluated. **Your name will never be disclosed to people we call.**

We will call you [Time TBD], and will make 3 attempts if you do not pick up.

Please fill out our questionnaire before the call. It’s like an intake form at your doctor’s office. Doing this will help the call go faster.

We truly appreciate your help in stopping the spread of COVID-19.

[Take 15 minute questionnaire]

---

Add contact

Only include people who were within 6 feet of you for more than 15 minutes. Enter as much as you know.

- Kristen
- Smith
- (323) 1234-7890
- kristensmith@gmail.com

Contact's preferred language

[English]

[Save contact]
Major Challenges to Technology Implementation

- Heterogeneity and lack of standardization of health care, laboratory, and public health systems
- Sustainability, cost, interoperability
- Adopting new technologies for their own sake, not because they solve a problem
- Not implementing the right systems and procedures
- Failing to design for the end-user, gain staff buy-in, and ensure adequate training and response to problems
- Not properly monitoring, analyzing, or using the data collected
Promoting Diversity, Equity, and Inclusion

- New technologies and adequate bandwidth and hardware are less likely to be available to low-income communities, rural communities, and communities of color.
- More must be done to ensure equal access to beneficial technology advances – disproportionate access requires disproportionate response.
- Broadband internet is an essential service and should be freely available to all.
  - 1 in 3 kids – primarily from low-income communities, rural communities, and communities of color – have no broadband access needed for school.
  - Broadband access would benefit isolated cases and quarantined contacts to provide connectivity for work,
What We Need Now

• Focus on public health – Places that are guided by and fully support public health have less disease, death, and economic devastation

• Digital tools to enhance existing testing and contact tracing programs

• Open-source technology platform with full interoperability and ease of use

• Proper staff training and supervision

• Ensuring that all communities can benefit from technology advancements
Reflections

Jay Butler
U.S. Centers for Disease Control and Prevention

Linda Rae Murray
University of Illinois Chicago
Digital Tools for Treatment and Monitoring
Aletha Maybank
Chief Health Equity Officer & Vice President
American Medical Association
Digital Tools for Treatment & Monitoring: Health Equity Implications

National Academy of Medicine Digital Health Action Collaborative
October 7, 2020

Aletha Maybank, MD, MPH
Chief Health Equity Officer, GVP
American Medical Association
AMA Center for Health Equity

**Vision:** A nation where all people live in thriving communities where resources work well, systems are equitable and create no harm, and everyone has the power to achieve optimal health; and all physicians are equipped with the consciousness, tools, and resources to confront inequities as well as embed and advance equity within and across all aspects of the healthcare system.

**Mission:** Strengthen, amplify, and sustain the AMA’s work to eliminate health inequities – improving health outcomes and closing disparities gaps – which are rooted in historical and contemporary injustices and discrimination.

Health equity means…

Having the conditions, resources, opportunities, and power to achieve optimal health.
Digital health tools for COVID-19 treatment & monitoring

A recent Lancet Viewpoint proposed 6 categories of digital technology applications in COVID-19 planning and response:

• Contract tracing
• Quarantine and self-isolation
• Screening for infection
• Clinical management
• Planning and tracking
• Medical supplies

These technologies have proven effective in countries such as South Korea, Sweden, Germany, and Singapore, where they have coordinated on policy, data management, and integration into care – all challenges in the US’s response.
Digital health & telehealth advancements during COVID-19 continue to leave marginalized patients behind

While overall use of telehealth services has exploded during COVID-19, a NYC health system study showed that Black and Latinx patients had far fewer telehealth visits than Whites or Asians in spite of disproportionate burden of COVID-19 on these populations. This is one example of how advancements in technology are not reaching nor improving health in all communities equally – with Black, Latinx, and low-income populations left behind most.

Patient Portals

- Despite nearly universal provision of patient portals, only about a third of patients are using them.
- Black and older patients are less likely to use portals.
- Even when digital devices are provided, there are still persistent gaps in usage.

Mobile Health

- There are a wide variety of digital health apps in the marketplace, but few apps address the needs of the patients who could benefit the most.
- Many do not have clinical utility or properly ensure crisis management for high-need populations with chronic conditions.

Telehealth

- At least 1 in 4 Americans may not have “digital literacy skills” or access to Internet-enabled digital devices to engage in video visits.
- Medicaid, low-income, and rural populations do not use live video communication as widely as other groups.

References:
What creates health

Adapted from the Bay Area Regional Health Inequities Initiative (BARHII) Conceptual Framework, 2006.
What’s behind inequities in digital health: Upstream causes behind 5 main drivers

**POWER & PRIVILEGE, RACISM, BIAS, EXCLUSION, NARRATIVE**
Political, economic, and power structures perpetuating historical inequities, based on race, gender, sexual orientation, etc.

1. Device access
   - Inability to afford tech and/or lack of health insurance coverage
2. Connectivity
   - Lack of access to broadband due to cost and/or network coverage
3. Digital literacy
   - Lower literacy in marginalized communities and/or false narrative that places blame
4. Design relevance
   - Tech solutions are primarily designed by and for young White heterosexual men
5. Health Care Delivery System Inequities
   - Income disparities due to inequities in employment, pay, education, access to capital
   - Income disparities due to inequities and/or discriminatory policies related to broadband access
   - Educational disparities due to inequities and the drivers of the other 3 factors
   - Marginalized populations not funded by, employed in, or meaningfully engaged in tech

Income disparities due to inequities in employment, pay, education, access to capital
Inability to afford tech and/or lack of health insurance coverage
Lack of access to broadband due to cost and/or network coverage
Lower literacy in marginalized communities and/or false narrative that places blame
Income disparities due to inequities and the drivers of the other 3 factors
Marginalized populations not funded by, employed in, or meaningfully engaged in tech
Political, economic, and power structures perpetuating historical inequities, based on race, gender, sexual orientation, etc.
Dominant narratives, embedded in our institutions and culture, represent voices reinforcing social relations that generate social, political, and economic inequality and racial injustice marginalizing or silencing the voices of social groups with limited power. These narratives shape consciousness, meaning, and explanations of events.

Their effect is to obscure power (and responsibility), divide populations with common concerns, enforce compliance, and ensure that opposing visions of society's future do not become reality.
Narrative shapes beliefs and actions
...dominant narratives (myths) undermine health equity

• Racial and class inequities are “unfortunate, but not necessarily unjust”
• Self-determining individuals make right or wrong “lifestyle” choices (Rendering political, structural, and social determinants of health inequities invisible)
• Cultures of oppressed and marginalized racial and ethnic groups are responsible for and blamed their own poorer health outcomes (“Othering”)
• Pick ourselves by our bootstraps (meritocracy)
• American exceptionalism
• “If you gain, I lose” (zero-sum game)
• Hierarchy of human value based on skin color (White supremacy)
Critical questions for advancing equity in solution design:
How do we ensure our efforts and innovation do not discriminate, exacerbate inequities, or deny care?

What’s the data? What does the data tell us? What data are missing?

How have communities (physicians, patients, etc.) been engaged?
Are there opportunities to expand engagement?

Who benefits from or will be burdened by your proposal?
What are your strategies for advancing equity or mitigating unintended consequences?

Who holds the decision-making power and privilege?
Are there opportunities to share/shift power?

How will you ensure accountability to communicate, and evaluate results?

Adapted from the Racial Equity Toolkit: An Opportunity to Operationalize Equity – Gov’t Alliance on Race and Equity
Examples of active efforts to center equity in telehealth and digital health

- **ConsejoSano** and **Planned Parenthood Federation of America** – examples of organizations that have prioritized equity in promoting telehealth, virtual care, and digital information access among their networks in response to COVID-19
- UCSF Center for Vulnerable Populations: [Resources for Telehealth at Safety Net Settings](#)
- **Connect2HealthFCC Task Force**
- Ivor Horn, MD, MPH & Rock Health: [Diversity in Digital Health Survey](#)
- Center for Care Innovations [Connected Care Accelerator](#)
- **Health Equity and Access Leadership Coalition**
- **HealthTech4Medicaid** & Call for Telehealth Equity
- **Radical Health** Virtual Radical Conversations on Telehealth Access
Call to Action

• Anti-racism praxis @ institutions and corporations
• Changing the narrative and calling out distribution of power
• Centering expertise and experience of marginalized patients in solution design (problem ID, research, development/testing, & market selection)
• Advocate for equitable distribution of resources
  • Act more upstream at the structural/policy level for wealth/economic inequities
  • Sustaining and standardizing universal telehealth coverage; inclusive of telephonic visits
  • Equitable reimbursement and pay parity (telephonic & in-person)
  • Ensuring security, privacy, and interoperability
  • Protect ACA and other intersecting policies

Physicians’ powerful ally in patient care
Reflections

Gezzer Ortega
Brigham and Women’s Hospital

Courtney Lyles
University of California, San Francisco
Contact Tracing: New York City as a Case Study
Theodore Long
Senior Vice President of Ambulatory Care & Executive Director of NYC COVID-19 Test and Trace Core
NYC Health + Hospitals
Contact Tracing: New York City as a Case Study

Ted Long, MD, MHS
Exec. Dir., Test & Trace Corps
Sr. VP, Ambulatory Care
NYC Health + Hospitals
Test & Trace Corps – October 2020

- Test – Trace – Take Care
- Results to Date
- CovidAlertNY Notification App
October 2020

Test – Trace – Take Care
>300 testing sites
Universal testing; tests are free
More than 30k tests per day in NYC (up to 46k/day)

4,000 tracers
Speaking 40 languages
More than half from hardest hit communities

Resource navigators to separate safely at home
Housing Recovery Office
Health + Hospitals

Test - Trace - Take Care
October 2020

Results to Date
*All data represent two week time periods except the most recent time period, in grey, which accounts for only the last week of data.

Percentage calculated as Total Cases Reached divided by Total New Cases during time two week time period.
*All data represent two week time periods except the most recent time period, in grey, which accounts for only the last week of data. Percentage calculated as Total Cases who Completed Intake divided by Total New Cases during time two week time period.
Isolation and Quarantine Compliance

Percentage of cases who report having NOT left their home since last time they spoke with us: 96%

Percentage of contacts who report having NOT left their home since last time they spoke with us: 93%
COVID ALERT NY
NYS COVID Exposure Notification App
TRACE AND COVID ALERT NY

- Rolled out in NYS last week
- All New Yorkers are encouraged to download the app
- Lab-confirmed Cases enrolled into Trace who have the app will be offered a validation code to input into the app
- Contacts notified by the app:
  - Encouraged to get tested and quarantine
  - Eligible for Take Care services

CovidAlertNY Notification App
Onboarding Screens

1. Get started
2. Help Stop the Spread of COVID-19 in Your Community
3. Set Up Closeness Sensing for COVID Alerts
4. Enable COVID-19 Exposure Logging and Notifications
5. "COVID Alert NY" Would like to Send You Notifications

Close Terness Sensing and COVID Alerts are now active!
Thanks for doing your part to stop the spread of COVID-19.
Share this app with friends. Help keep it safe.
Exposure Notification (Close Contact)

App notifies the user of close contact.
Reflections

Urs Gasser
Berkman Klein Center for Internet & Society at Harvard University

Emiliano Falcon-Morano
American Civil Liberties Union
Panel Discussion: Call to Action and Q&A
Question & Answer

Panelists

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Digital Health Action Collaborative

For more information about the Digital Health Action Collaborative or to share opportunities to address and advance this work, please contact:

Noor Ahmed
National Academy of Medicine
MAhmed@nas.edu
Closing Remarks

Thank you for joining!

For more information about the National Academy of Medicine’s initiatives, please visit us at: nam.edu