The Wild Wild West of Quantified Healthcare: A Think Tank Meeting and Conference on mHealth Integration for Exercise is Medicine® (EIM)

Dec. 5, 2016
Open Conference (8:00 a.m.-6:00 p.m.)

Emory University Hotel and Conference Center, Atlanta, GA
Sponsors
AGENDA
MONDAY, DECEMBER 5

7:00 – 8:00 am  
Registration and Continental Breakfast  
Emory Conference Center, South Wing Lobby; Starvine Foyer

8:00 – 8:30 am  
Introduction from Emory (Felipe Lobelo, MD PhD) and the American College of Sports Medicine (ACSM) (Adrian Hutter, PhD)  
Making physical activity a standard of care in US and global health systems: the need for a harmonized technology framework

8:30 – 9:00 am  
Validity of mHealth devices and applications – do we need standards?  
Greg Welk, PhD; Department of Kinesiology, Iowa State University, USA

9:00 – 9:30 am  
Data Integrated into Healthcare Delivery: Using Electronic Health Information to Support Physical Activity and Prevent Chronic Disease  
Jennifer Fultz, MD PhD; Senior Medical officer; Division for Heart Disease and Stroke Prevention; Centers for Disease Control and Prevention (CDC)

9:30 – 10:00 am  
Real-life considerations for Health Systems Integrating Patient-generated Data  
Sheri Chernetsky Tejedor, MD; Associate Professor of Medicine and Biomedical Informatics; Emory University School of Medicine and Medical Informatics Advisor at CDC

10:00 – 10:15 am  
Panel Q&A session

10:15 – 10:45 am  
Refreshment break; Exhibits

10:45 – 11:15 am  
Perspective from the apps and wearable device and technology industry  
Chris Eschbach, PhD; Co-chair of the Consumer Electronics Association (CEA) Health and Fitness standards subcommittee

11:15 – 11:45 am  
Effectiveness of Integrating mHealth into routine clinical workflow: success stories, best practices and pitfalls  
Seth Martin, MD, MPH; Assistant Professor of Medicine/Cardiology; Ciccarone Center for the Prevention of Heart Disease, Division of Cardiology, Johns Hopkins University School of Medicine, Baltimore, MD

11:45 – 12:00 am  
Panel Q&A session

12:00 – 1:00 pm  
Lunch  
Location: Emory Conference Center Main Dining Room (EIM Section – Badge required)
The *EIMGRCC Conference Study*, which is being conducted for and on behalf of Exercise is Medicine by Public Good Ventures Limited, is now actively enrolling participants.

**What is involved?** To participate in this study, we ask that you do the following:

If you have already created an account with e4 Research, please login to your account on the web or using your mobile app and start with Step 3 of the process below. If you have not registered yet, please do so now by starting with Step 1 below.

1. Click a link below to download the e4 Research mobile application to your phone or visit the website to **Sign Up** for a new account.
2. Set up a personal e4 Research account. You will be asked to create a username and password for your account and complete your profile during the registration process.
3. Agree to participate in the study by completing the electronic consent form. The study can be accessed in the **Research** section of your account.
4. Complete the online research survey, which will only take a couple of minutes of your time.
5. Attend the interactive demonstration at 1:00 pm during the open conference on December 5th.
EIM Technology Integration Framework

Lobelo F et al; Progress in CVD 2016
The Wild Wild West of Quantified Healthcare:
A Conference and Think Tank on mHealth Integration for Exercise is Medicine®

Objectives

• Refine Framework
• Develop Implementation plan
• Catalyze widespread implementation

(Objective) Physical Activity as a Vital Sign
UnitedHealthcare Motion™ provides employees enrolled in fully insured health plans with wearable devices at no additional charge to earn financial reimbursement incentives up to 

INCENTIVE TARGETS:

- **Intensity**: 3,000 steps in 30 minutes
- **Frequency**: 300 steps in 5 minutes
- **Tenacity**: 10,000 steps in one day

WALKING CAN REDUCE THE RISK OF:

- High blood pressure by 7.2%¹
- High cholesterol by 7%¹
- Diabetes by 12%¹
- Heart disease by 9%¹

Source: ¹bit.ly/1jtbyWr
© 2016 United HealthCare Services, Inc. 02/2016
NIH’s transformative opportunities for the behavioral and social sciences

Emerging scientific and technological opportunities, such as new sensor tools that better characterize neurological, behavioral, and social processes, have the potential to produce a scientific paradigm shift in the behavioral and social sciences. This shift from a fragmented, data-poor science to an integrated data-rich science facilitates greater translation from basic to applied research and from applied research to clinical practice. In November 2016, the U.S. National Institutes of Health (NIH) Office of Behavioral and Social Sciences Research (OBSSR) released its strategic plan for fiscal years 2017 through 2021, which seeks to take advantage of these scientific and technological developments (1). Here, we outline four key developments that influenced the scientific priorities of the OBSSR strategic plan, each of which offers the potential for accelerating research and translation in the behavioral and social sciences.

INTEGRATING NEUROSCIENCE INTO BEHAVIORAL AND SOCIAL SCIENCES

Advances in neuroscience experimental approaches and technologies provide an ability to observe brain function and activity in real time and with increasing levels of granularity (2), but these brain functions and activities do not occur in isolation; they are influenced by an organism’s environment and are expressed as behaviors that, in turn, have the potential to influence the environment. To understand these complex dynamic interactions, the brain must be studied in the context of environmental and social systems. The behavioral and cognitive neuroscience have already invested in this integration, but more progress and expanded attention are needed to further integrate brain functions with higher-level processes (for example, social and cultural neuroscience and neuroeconomics). New transdisciplinary efforts that merge these areas of research hold promise for a more comprehensive research effort that explores the mechanisms of behavior and social phenomena that reside both within and beyond the dura.

TRANSFORMATIONAL ADVANCES IN MEASUREMENT SCIENCE

Advances in measurement science and technology are converging to provide the basis for increasingly accurate measurement that will accelerate new discoveries. The precision and efficiency of self-reported measurement approaches have been improved greatly by the application of (i) modern psychometric theory (for example, item response theory) and (ii) smartphone technologies to obtain prospective, real-time assessments throughout the course of a day (for example, ecological momentary assessment). Digital footprints from routine interactions of people with technology provide new methods of capturing thought and behavior, and the rapid emergence of sensor technologies has provided an efficient and objective means for assessing physiology, behavior, and social and environmental contexts. The application of these scientific and technological advances to the measurement of behavioral and social processes provides a level of granularity and precision that has the potential to transform the behavioral and social sciences into a much more data-rich science (3).

DIGITAL INTERVENTION PLATFORMS

Advances in technology also hold the potential to transform the means by which behavioral and social science interventions are delivered. These interventions are often resource- and labor-intensive, which results in limited reach, scalability, and duration. The limited duration of these interventions negatively affects the ability to maintain behavioral change. The operationalization of these interventions into code ensures treatment fidelity from research to clinical practice settings and may extend their reach to anyone in any place at any time. Efficient delivery of behavioral and social change strategies via smartphones and other digital technologies provides the potential to extend treatment duration and thus improves behavioral maintenance. Technology-based delivery of behavioral and social interventions also holds promise for improving the precision of these interventions, not only by personalizing or tailoring treatment at initiation but also by adapting the intervention over the course of treatment on the basis of context, timing, and prior responses (4).

LARGE-SCALE POPULATION COHORTS AND DATA INTEGRATION

The behavioral and social sciences are benefiting from the expansion of large-scale surveys and longitudinal cohort projects that take advantage of digital technologies to provide extensive databases for studying the role of behavioral and social factors on health (5). Long-standing survey projects (for example, the National Health Interview Survey) continue to provide new and important data, and
Themes

• Validity
• Evidence-based (Behavior change)
• Data Privacy/Security
• Clinical Utility / Meaningful use

Principles

• Technology and program agnostic
• Patient-centered (BYO)
• Standardization
• Innovation
Stakeholders

• Health Systems
• Clinicians
• Community Care Team
• Tech Industry
  – Wearables
  – Apps
  – Software aggregation/analytics
  – EMRs
• Fitness/Wellness Industry
• Researchers/Academia
• Government (Funding, regulators)
• Public/patients
Health Systems/Clinicians/ Medical Societies (6)

• American Diabetes Association
• Intermountain Health Care
• Emory Healthcare
• American Heart Association
• American College Sports Medicine
• Sylvester Comprehensive Cancer Center – U Miami
Tech Industry (7)

- People Powered Health
- Public Good Ventures
- Quantextual
- StepsCount
- Inov8 Health
- Consumer Technology Association
- Valencell
Fitness/Wellness/Community Care Industry (6)

• Medical Fitness Association
• Lean Nutrition Inc
• Technogym
• Sohookd
• Healthy Emory – Move More
Universities / Academia (12)

- LSU
- Emory University
- Gwinnett Technical College
- UAB School of Nursing
- Valdosta State University
- Old Dominion University (Emerita)
- Wright State University
- Florida State University
- Georgia Institute of Technology
- University of Tennessee Chattanooga
- Iowa State
- Johns Hopkins
Government/Regulators (2)

- Centers for Disease Control and Prevention
- HHS / ONC