Advancing the State of Evidence for Decisionmakers About Telehealth

A Patient-Centered Outcomes Research Institute Stakeholder Workshop

May 24, 2018

Welcome and Introductions

Kristin Carman, MA, PhD

Director

Public and Patient Engagement,
PCORI

Housekeeping

- Today's meeting is open to the public and is being recorded
  - Members of the public are invited to listen to the teleconference and view the webinar
  - Questions will be invited from PCORI-funded investigators of telehealth projects at the end of the day
  - Meeting materials can be found on the PCORI website
- Visit www.pcori.org/events for more information

Housekeeping (cont.)

- We ask that participants stand up their tent cards when they would like to speak and use the microphones
- Please remember to state your name when you speak

Workshop Goals

- Identify themes related to the potential impact of PCORI's telehealth portfolio to aid in decision making for various stakeholder groups
- Discuss barriers to the sustainability and replicability of the telehealth interventions being studied, and how they could be addressed before the study findings are released
- Provide information that would be useful to PCORI PIs in order to magnify the utility of the findings from their project for decision makers before the studies are completed

Agenda

Agenda Item	Time
Welcome and Introductions	9:00 AM - 9:15 AM
Overview of PCORI's Telehealth Portfolio and How it is Addressing Evidence Gaps	9:15 AM - 9:45 AM
Evidence Map on mHealth for Self-management of Chronic Disease	9:45 AM - 10:30 AM
Break	10:30 AM – 10:45 AM
How is PCORI's Telehealth Portfolio Addressing Stakeholder Needs for Decisionmaking: Facilitated Discussion	10:45 AM - 12:30 PM
Lunch	12:30 PM - 1:00 PM
Addressing Sustainability and Replicability	1:00 PM - 1:45 PM
Addressing Sustainability and Replicability: Small Group Discussions	1:45 PM - 2:45 PM
Break	2:45 – 3:00 PM
Addressing Sustainability and Replicability: Report Back and Facilitated Discussion	3:00 PM - 3:45 PM
Facilitated Q&A with PCORI Investigators	3:45 – 4:15 PM
Wrap Up	4:15 – 4:30
Adjourn	4:30 PM

Introductions

- Please quickly state the following:
  - Name
  - Stakeholder group you represent
  - Position title and organization

Stakeholders

- **Danielle Brooks, JD**
  Senior Consultant and Director of Engagement and Experience, WiseThink Health Solutions
- **Carolyn Petersen, MS, MBI**
  Senior Editor, Mayoclinic.org, Mayo Clinic
- **Elinor Schoenfeld, PhD**
  Research Professor, Department of Biomedical Informatics, Stony Brook University School of Medicine
- **Donald Klepser, PhD, MBA**
  Associate Professor of Pharmacy, Department of Pharmacy Practice, College of Pharmacy, University of Nebraska
- **James Reston, PhD, MPH**
  Associate Director, ECRI
- **Kelly Cochran, MS, RN**
  Senior Policy Advisor and Health Information Technology Policy Lead, American Nurses Association
- **Patrick Willard**
  Senior Director of State and National Strategic Partnerships, Families USA
- **Steven Waldren, MD, MS**
  Director, Alliance for eHealth Innovation, American Academy of Family Physicians
- **John Johnson, JD, MBA, BSN**
  Vice President, Quality Management and Operational Support, Association of Community Affiliated Plans
- **Jeffery Smith, MPP**
  Vice President of Public Policy, American Medical Informatics Association
- **Natalie Weiner, MPP**
  Project Manager, Bipartisan Policy Center
- **Sabrina Smith, PhD, MHA**
  Interim Chief Executive Officer, Chief Operating Officer, American Telemedicine Association
- **Renee Robinson, PharmD, MPH**
  Senior Research, Southcentral Foundation
- **Mei Kwong, MD, MPH**
  Senior Policy Associate and Program Director, Center for Connected Health Policy
- **Neil Evans, MD**
  Chief Officer, Office of Connected Care, Veterans Health Administration
- **Andrew Sperling, JD**
  Director, Legislative and Policy Advocacy, National Alliance on Mental Illness
- **Dianne Hasselman, MSPH**
  Deputy Executive Director, National Association of Medicaid Directors

Stakeholders, Continued

- **Jennifer Reck, MS**
  Project Director, National Academy for State Health Policy
- **Ann Huffenberger, DBA, BSN**
  Director, Penn Center for Connected Care, University of Pennsylvania Health System
- **Sylvia Trujilo, JD, MPP**
  Senior Washington Counsel, American Medical Association
- **A. Colby Tiner, MA**
  Policy Adviser, Center for Health Technology and Innovation, American Heart Association
- **Kristine, Sande, MBA**
  Associate Director, Center for Rural Health, University of North Dakota School of Medicine and Health Sciences
- **Hank Fanberg, MALA,CAE, FHIMSS**
  Director, Technology Advocacy, CHRISTUS Health
- **Kate Berry**
  Senior Vice President, Clinical Affairs and Strategic Partnerships, America's Health Insurance Plans

PCORI Staff

Kristin Carman, MA, PhD
Director
Public and Patient Engagement

Penny Mohr, MA
Senior Advisor
Emerging Technology and Delivery System Innovation Research Initiatives
Healthcare Delivery and Disparities Research

Dionna Attinson
Program Assistant
Healthcare Delivery and Disparities Research

Anum Lakhia, MPH
Program Associate
Healthcare Delivery and Disparities Research

Goals for the Morning

- Identify themes related to the potential impact of PCORI's telehealth portfolio to aid in decision making for various stakeholder groups

Communicating the Strengths of PCORI's Telehealth Portfolio

Penny Mohr, MA

Senior Advisor

Healthcare Delivery and Disparities Research

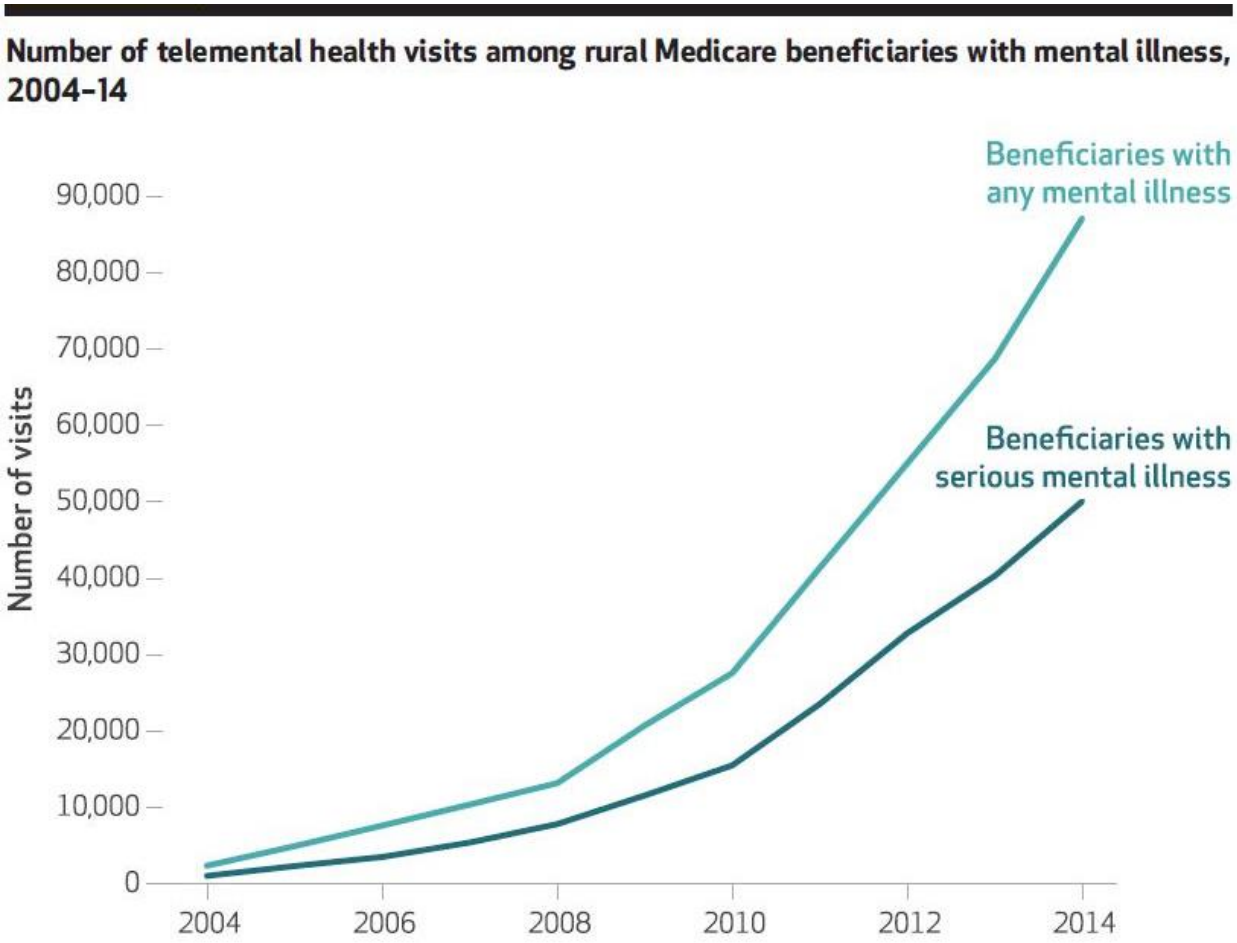
PCORI

PATIENT-CENTERED OUTCOMES RESEARCH INSTITUTE

Overview

- Provide an overview of PCORI's Telehealth Portfolio
- Portray how our Telehealth Portfolio fills specific evidence gaps
- Showcase three specific PCORI-funded telehealth projects

Telehealth is Rapidly Shaping the Future of Medicine



Source: Mehrotra et al. Rapid growth in mental health telemedicine use among rural Medicare beneficiaries, wide variation among states. Health Affairs 2017; 36(5):909-917.

Why Is Telehealth a Particularly Fruitful Area for PCOR?

- **Personalization.** Tailoring of the interface can allow for capturing individuals' preferences, autonomy, and needs, e.g.,
  - Low health literacy
  - Limited English proficiency
  - Cultural preferences

- **A Need for Comparative Telehealth Research That Focuses on Patient-Centered Outcomes.** Focusing on outcomes that people notice and care about such as survival, function, symptoms, and health-related quality of life.

- **Engaging Stakeholders in the Design and Implementation to Address Barriers to Adoption.**
  - User-centered design to better integrate telehealth into the workflow and is acceptable to patients is needed

PCORI Definitions

Telehealth

- The use of medical information exchanged **from one site to another** via **electronic communications** to improve a patient's clinical health status.

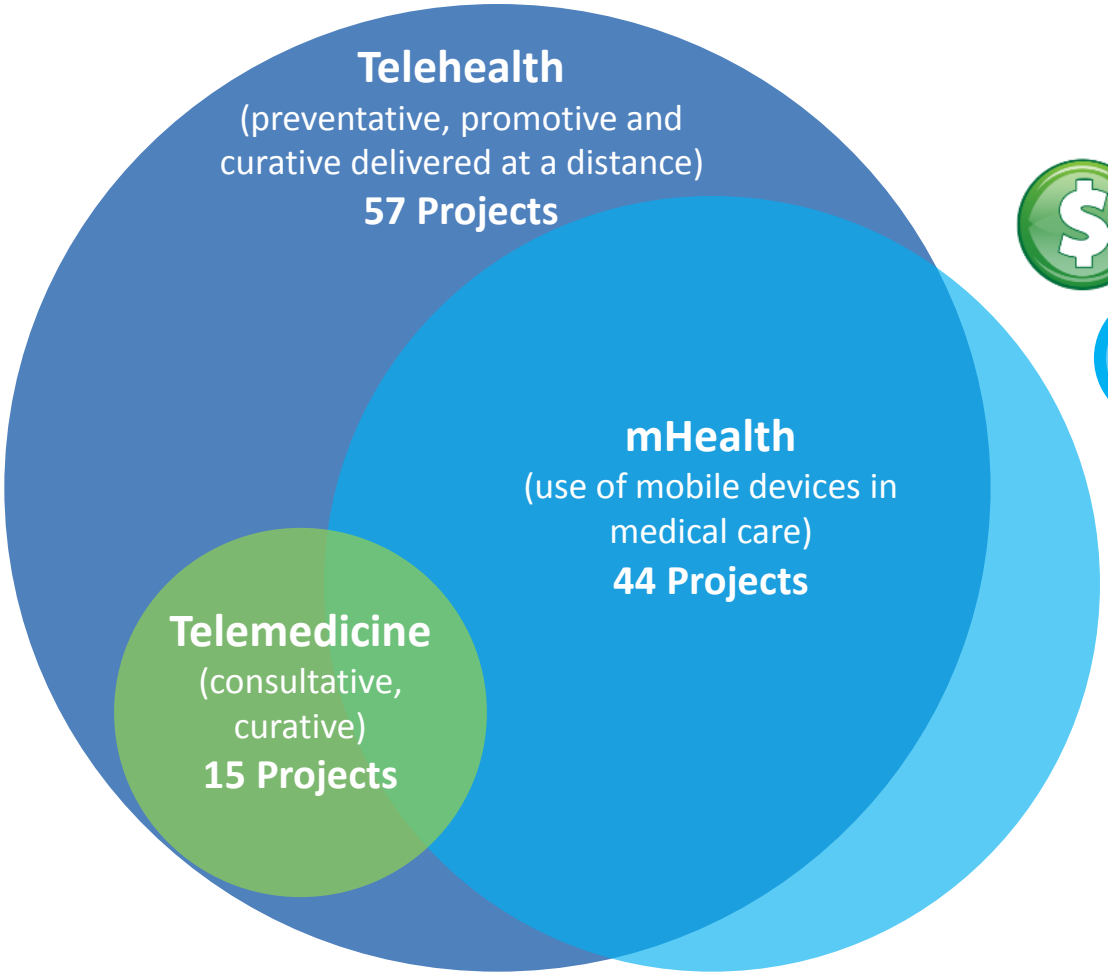
Telemedicine

- Telemedicine seeks to improve a patient's health by permitting **two-way**, **real time** interactive communication between the **patient, and the physician or practitioner** at the distant site. It allows health professionals to **evaluate, diagnose, and treat** patients at a distance.

mHealth

- The use of **mobile and wireless devices** to improve health outcomes and healthcare services at a distance to the provider. Voice only interactions are excluded.

PCORI's Telehealth, Telemedicine, and mHealth Portfolio

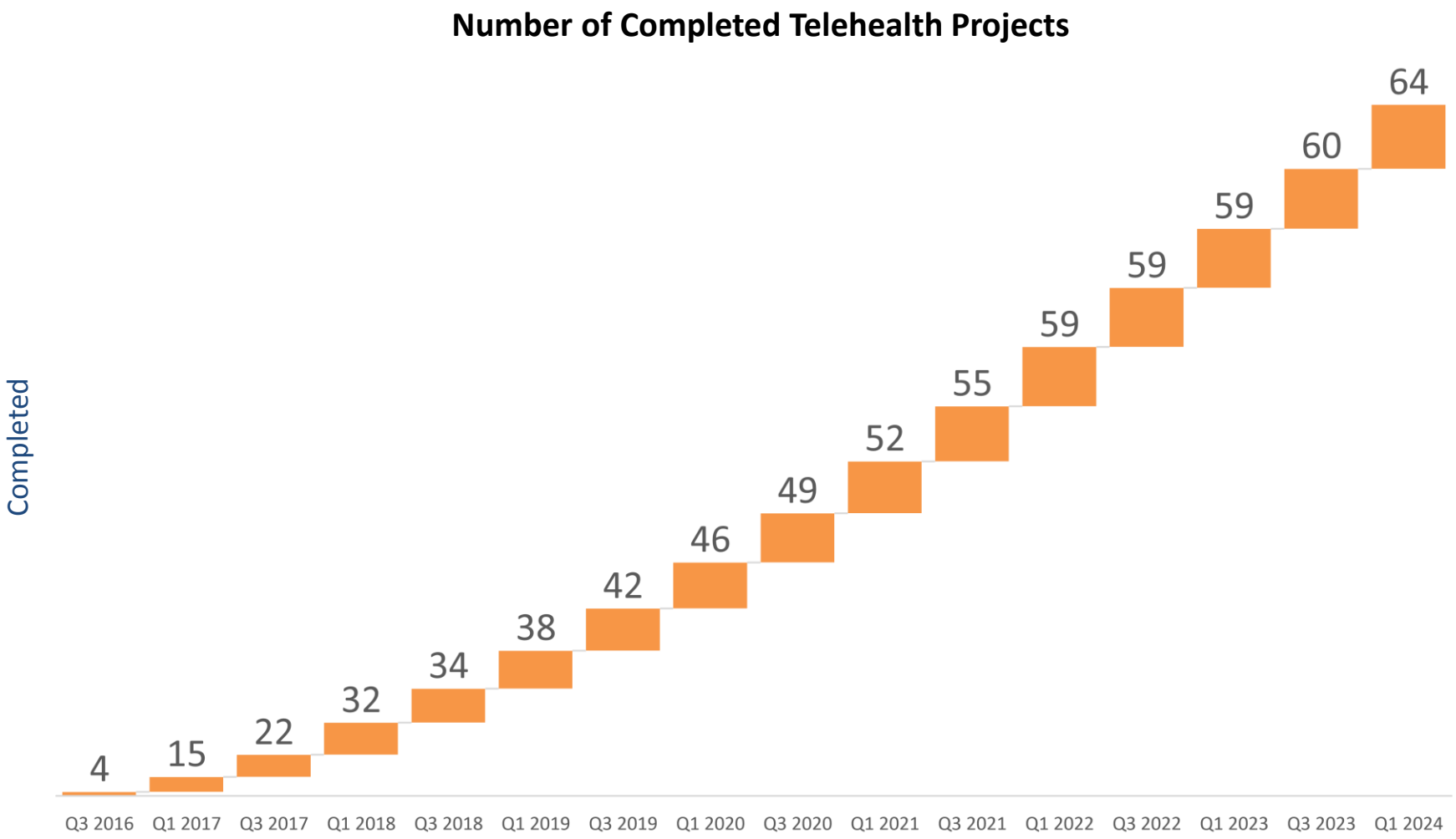


206 million to fund

64 studies

Projects may be classified as more than one type
As of March2018

When Will Results From Telehealth Studies Likely Be Available?



n=64 CER studies, as of March 2018

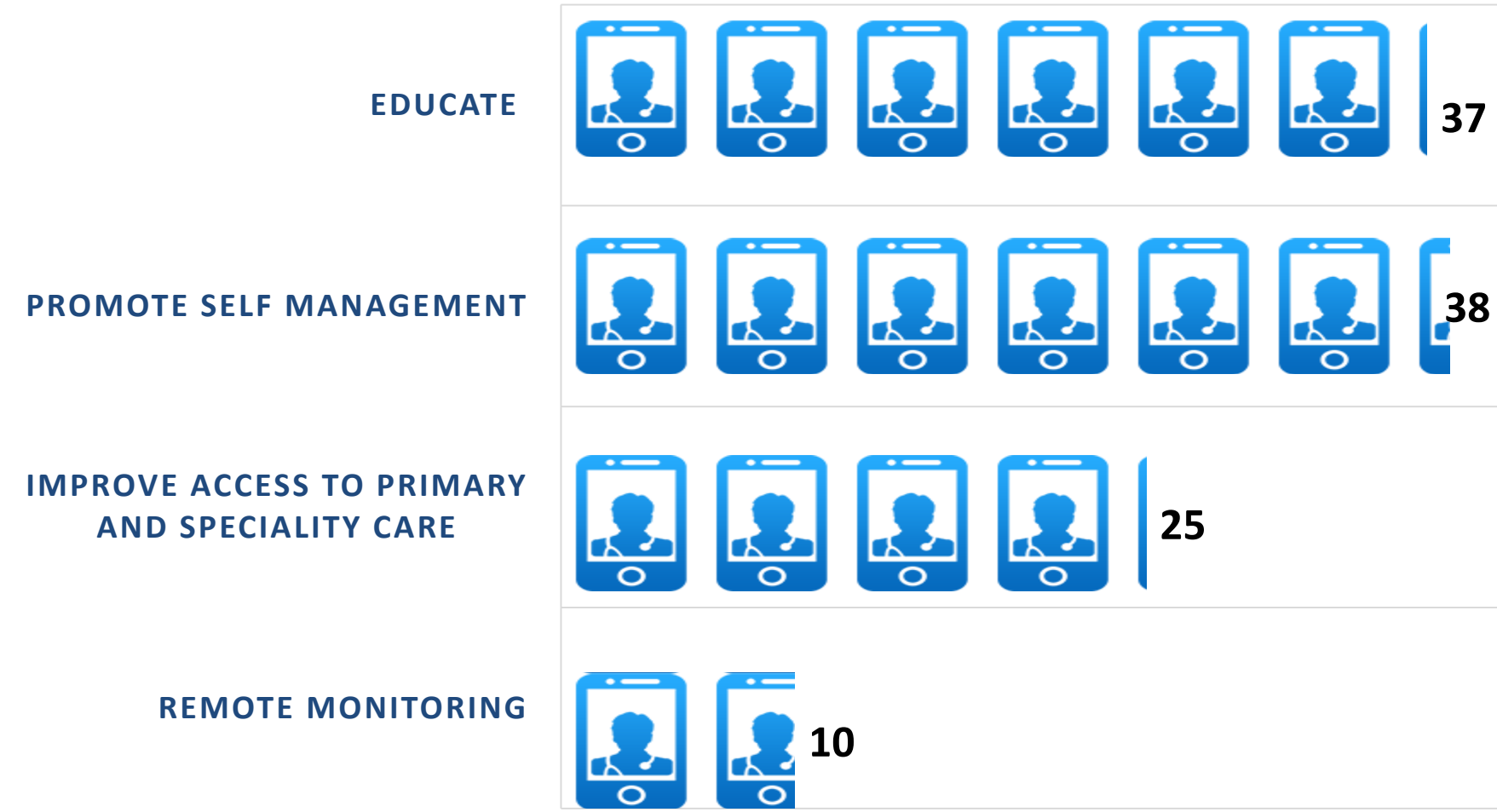
Conditions

As of March 2018, PCOR's telehealth portfolio includes n=64 CER studies. The PCORI CER portfolio includes n=406 active/completed CER studies funded as of March 2018

Nutritional and Metabolic Disorders	9
Cardiovascular Diseases	8
Mental and Behavioral Health	7
Neurological Diseases	6
Rare Diseases	5
Kidney Disease	5
Cancer	5
Respiratory Diseases	3
Infectious Diseases	3
Trauma/Injury	2
Reproductive and Perinatal Health	2
Other or Nondisease Specific	2
Muscular and Skeletal Disorders	2
Skin Diseases	1
Multiple/co-morbid Chronic Conditions	1
Functional Limitations and Disabilities	1
Ear, Nose, and Throat Diseases	1
Allergies and Immune Disorders	1

Purpose of Telehealth Intervention

PCORI portfolio focuses on prevention and health promotion



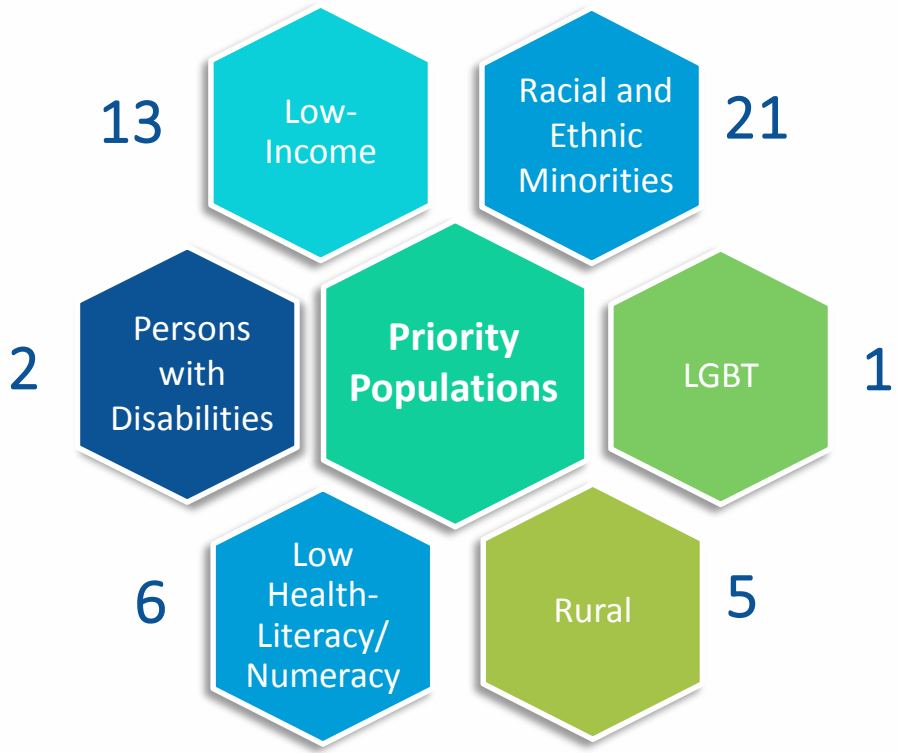
Projects may be classified as more than one type.
As of March 2018.

Telehealth Portfolio that Addresses Disparities: Portfolio Analysis

30
STUDIES
Are utilizing telehealth to address disparities by addressing at least 1 of the priority populations

100%
RANDOMIZED CONTROL TRIALS
All 30 studies are randomized control trials

$91
MILLION
The total research investment towards telehealth studies that address disparities



N=30, as of March 2018.
Categories are not mutually exclusive

Technology Platform

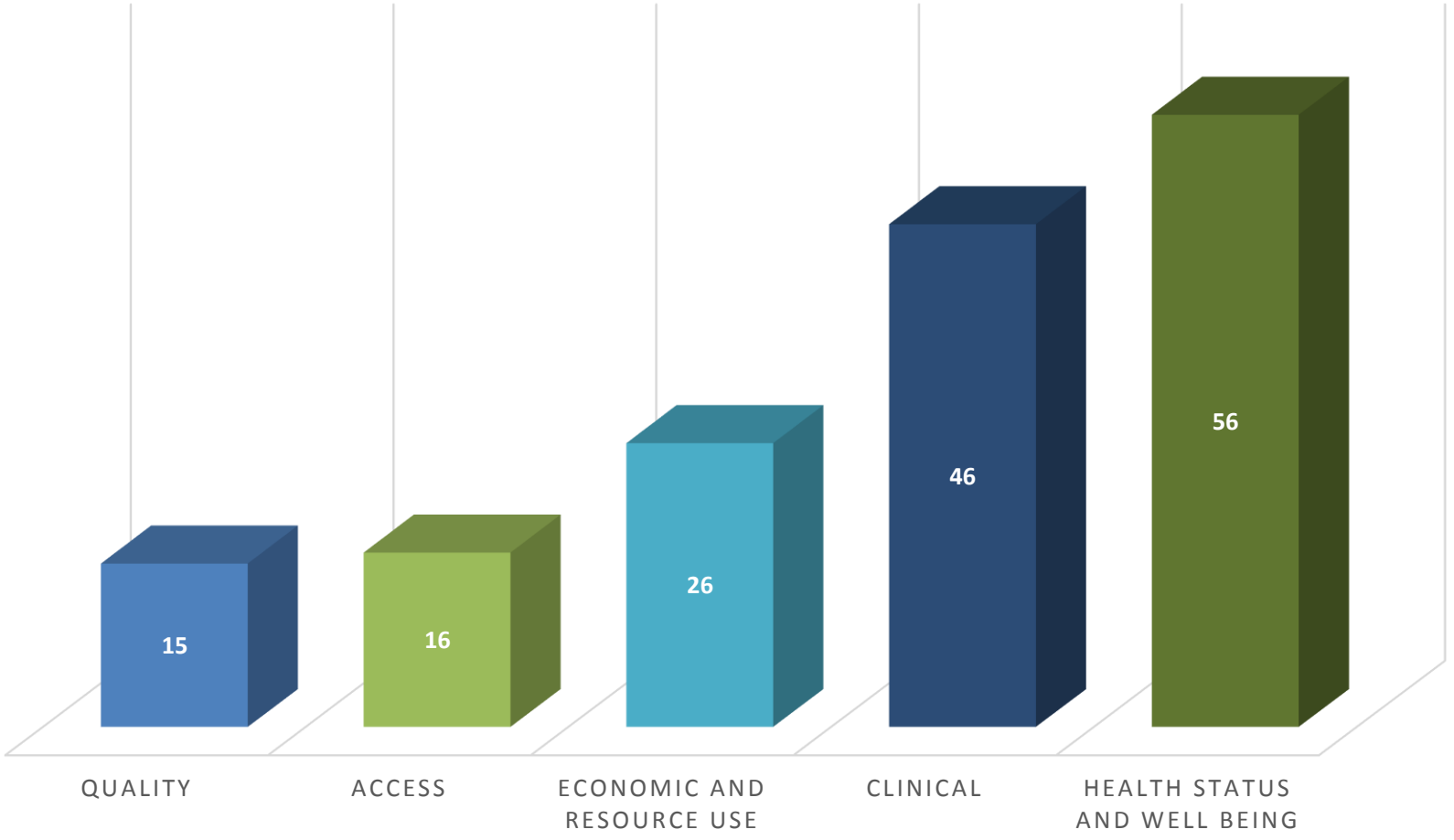
Across PCORI, 64 studies incorporate telehealth into their interventions:

- **43 studies use mobile phone or tablet as the mode of care delivery.**
  - **20 studies incorporate tailored messaging**
- **23 studies use virtual video conferencing/counseling.**
- **46 studies use web-based portals accessible by a multitude of devices (computers, smartphones, and tablets.)**
- **7 studies incorporate remote monitoring through wireless devices (e.g., FitBit, Bluetooth-enabled blood pressure cuffs).**
- **5 studies implement store and forward technology.**

Projects may be classified as more than one type
As of March 2018.

Outcome Targets for Telehealth Studies

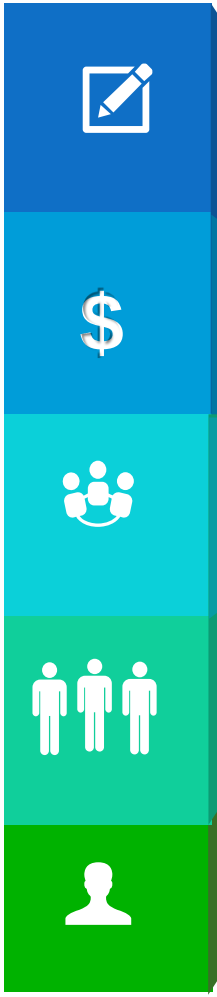
PCORI funds telehealth research that measures a range of outcomes:



Framework adapted from: Edmunds et al. An Emergent Research and Policy Framework for Telehealth. *eGems* 2017; 5(2): available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5389433/

Projects may be classified as more than one type
As of March 2018.

What Are the Major Gaps Identified in the Digital Health Literature?



Scientific Rigor/ Meaningful Outcomes

"Future studies are needed to examine the comparative effectiveness of implementing these strategies in real world settings, with attention to not only health outcomes but also patient-centered outcomes…"

Economic Analysis

"More primary research is needed on how telehealth impacts costs and utilization…"

Increased Patient/Stakeholder Engagement

"Solutions for bringing telemedicine to reservations should include…engagement "gathering input from the local communities, leading to the process of co-creation"

Conducting Research in Understudied Populations

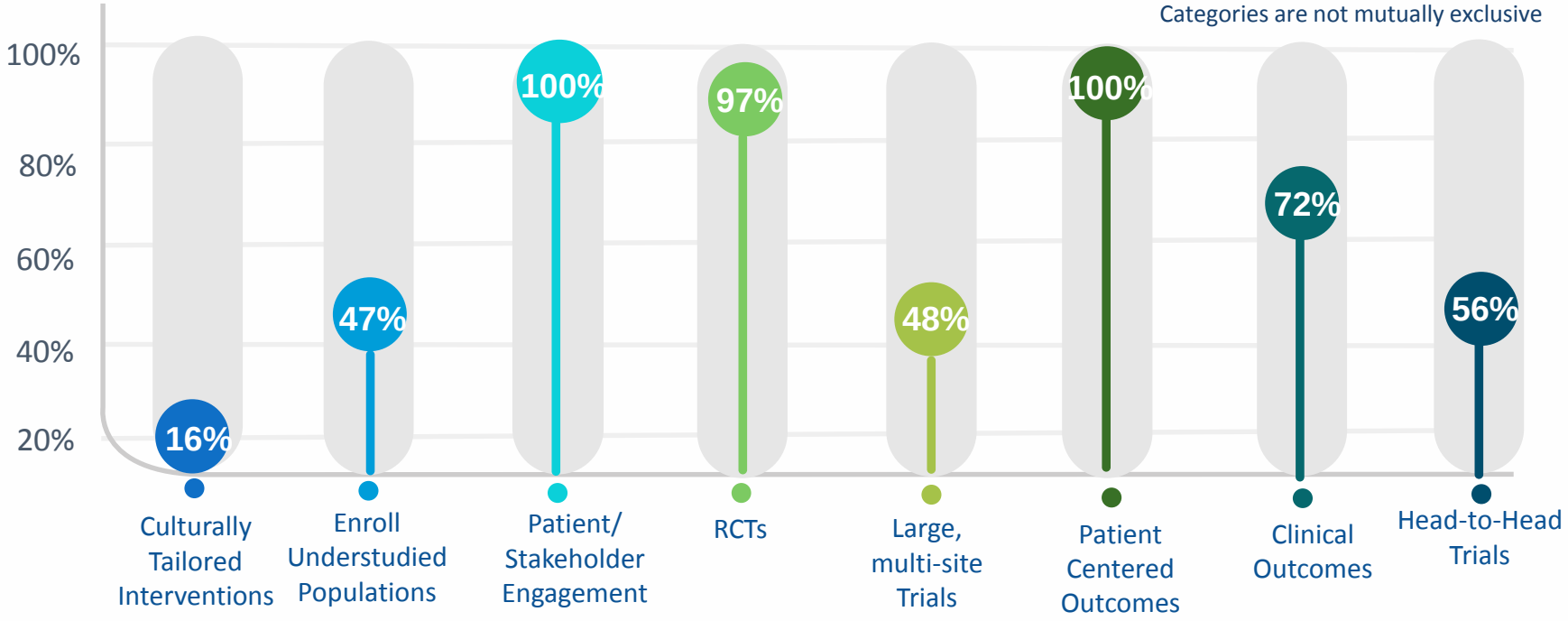
"Gaps in knowledge about the access to and use of health services by historically underserved populations exist in terms of learning practices, methods to navigate services, and help-seeking behaviors "

Culturally-tailored Interventions

"They [reviewed studies] did not employ strategies, such as cultural tailoring, that may improve outcomes among racial/ethnic minority participants."

PCORI's Digital Health Portfolio is Filling Evidence Gaps

N=64, as of March 2018.
Categories are not mutually exclusive



- Culturally-Tailored Interventions
- Enroll Understudied Populations
- Utilize Patient/Stakeholder Engagement
- Randomized Controlled Trials
- Large Multi-Site Trials
- Patient-Centered Outcomes
- Clinical Outcomes
- Head-to-Head Trials

How PCORI's Telehealth Portfolio is Filling Evidence Gaps

- The PCORI Telehealth portfolio is addressing evidence gaps by:
  - Engaging patients and end users in designing the interface and selecting outcomes
  - Enrolling diverse, previously understudied populations
  - Studying outcomes of importance to patients
  - Using active comparators
  - Enhancing the generalizability of outcomes through large, multi-site, cross-state research

- The PCORI portfolio holds promise for demonstrating how patient-centered outcomes research can enhance the effectiveness of telehealth interventions in improving the health and health care outcomes for populations

Highlighting 3 Telehealth Projects

- Diabetes Self-Management
- Specialty Care Delivery for Chronic Skin Disease
- Telepsychiatry for Complex Psychiatric Disorders in FQHCs

Patient and Provider Engagement and Empowerment through Technology ($P^2E^2T^2$) Program to Improve Health in Diabetes

Potential Impact

- Could change current practice by showing ways to leverage consumer technologies to increase the effectiveness of care management approaches to building self-efficacy in disease management

Design

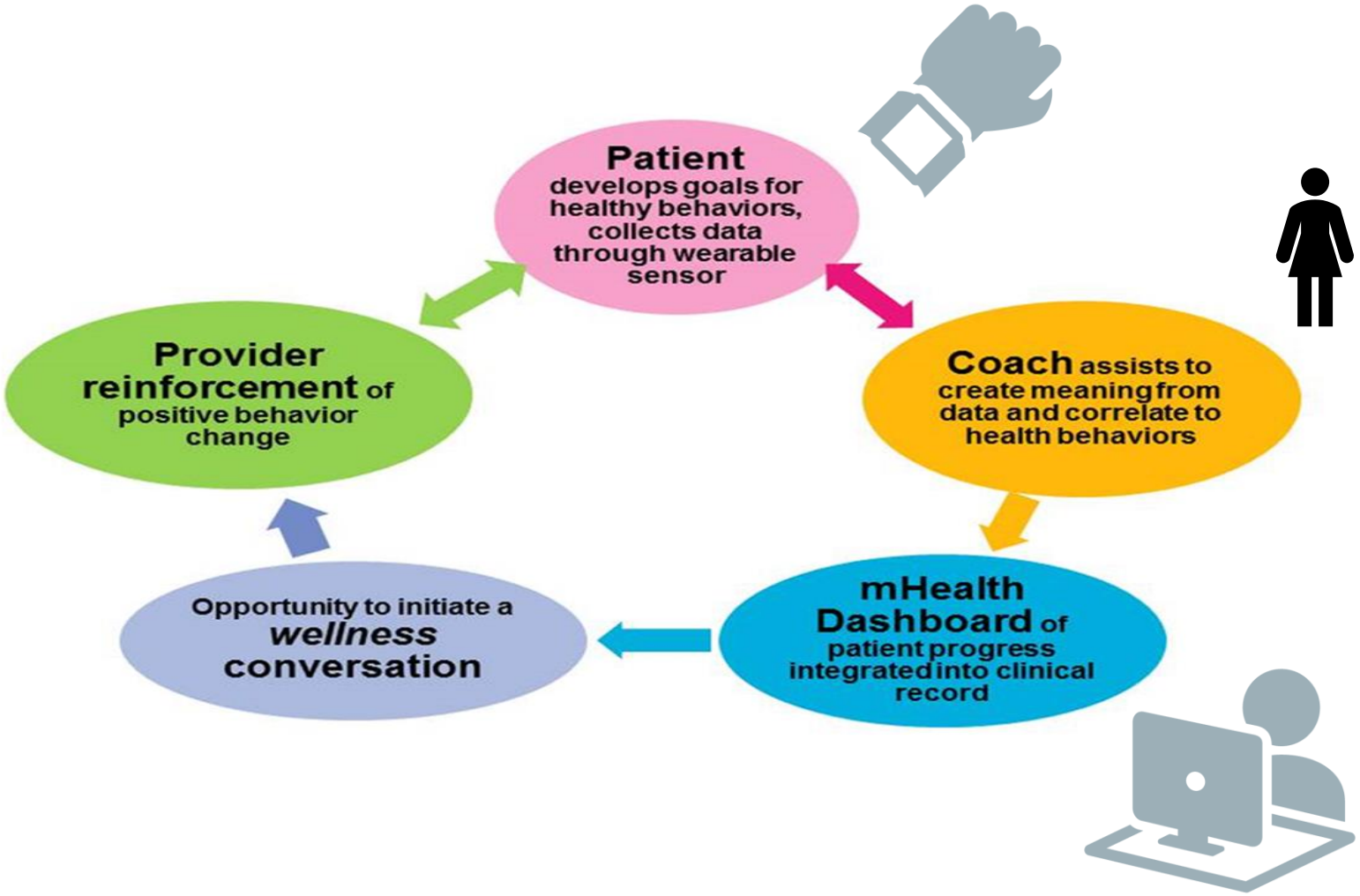
- Mixed: qualitative focus groups followed by a randomized controlled trial
- 300 patients (150:150)

Tests a program of patient goal-directed care through motivational interviewing, patient-generated sensor data, and a mobile health dashboard compared to a traditional care management program for diabetic patients. Measures treatment effects on quality of life, self-efficacy, readiness to change, and clinical outcomes.

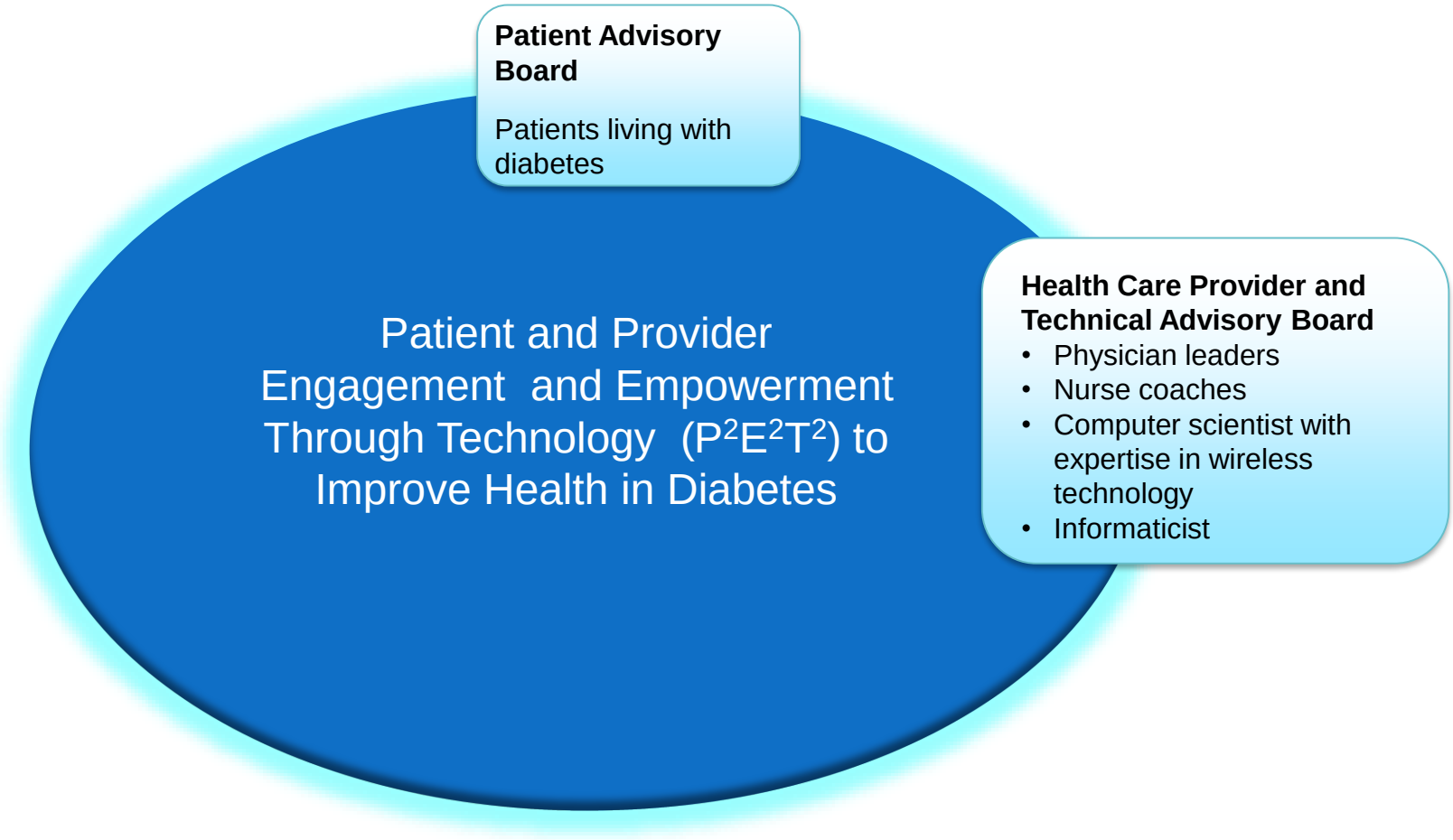
Heather Young, MS, PhD, RN
University of California, Davis
Davis, CA

Improving Healthcare Systems,
awarded July 2014
Completed

Changing the Conversation



Stakeholder Engagement



Evidence Gaps Addressed

- Engages patients and end users in designing the interface and selecting outcomes
  - Modifying language
  - Enabling patients to select which data to share
  - Streamlining dashboard for physicians
  - Selecting which activities to track and tracking device
  - Partnering in development of instructional videos
- Integrates patient-generated data into EHR and work flow

Improving Specialty-Care Delivery in Chronic Skin Diseases

Potential Impact

- Could improve access to care for underserved populations. Asynchronous models of teledermatology (e.g., store and forward) are not well reimbursed by Medicaid and other payers. Could provide evidence needed to change reimbursement policy.

Design

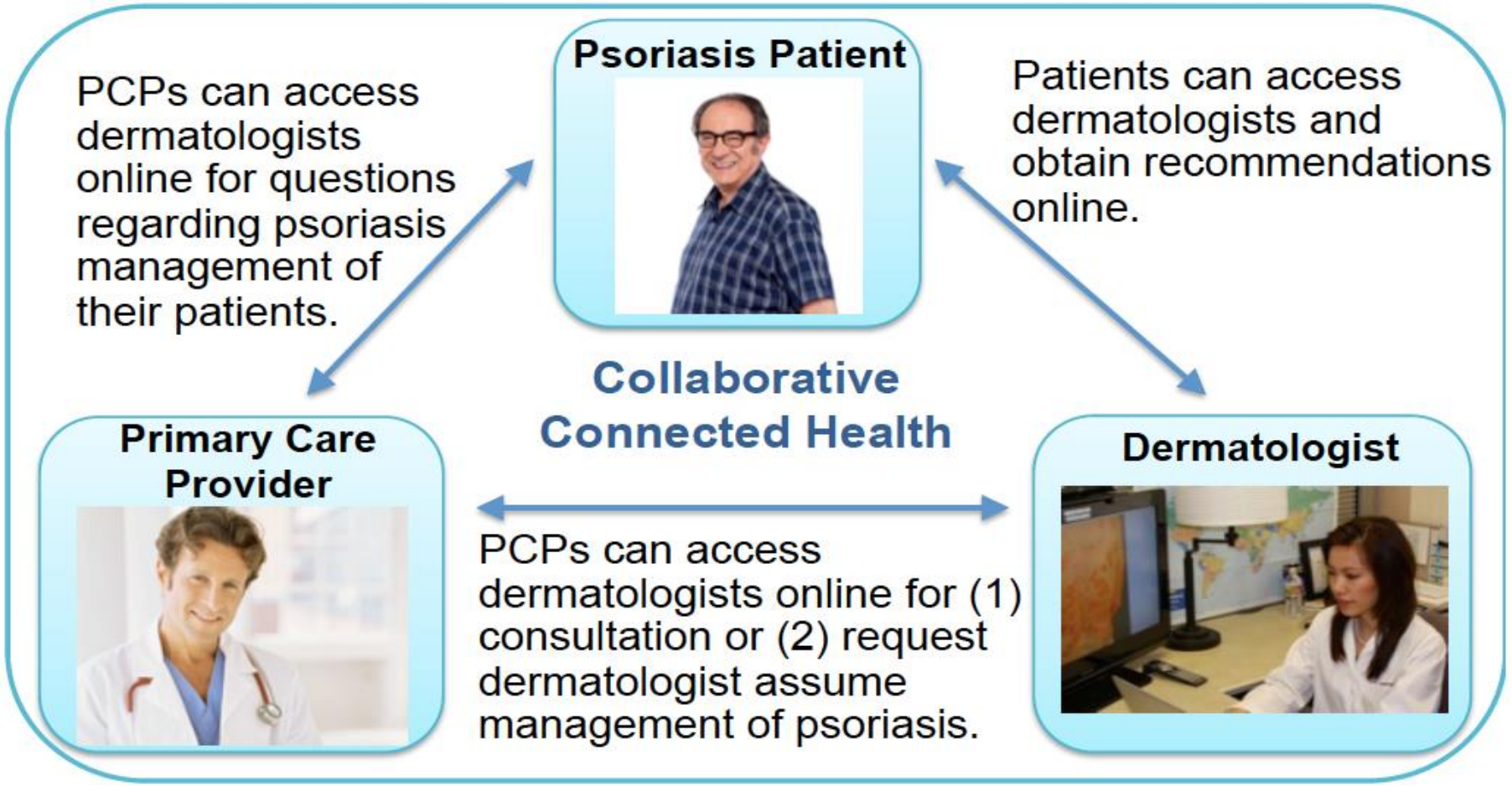
- Pragmatic RCT equivalency trial
- 300 patients (150:150)
- 12-month follow up

Evaluates the effectiveness of an online specialty-care delivery model on access to care, severity of chronic skin diseases, depression, and quality of life compared to in-person care. This delivery model provides patients with direct online access to dermatologists for management of chronic skin conditions.

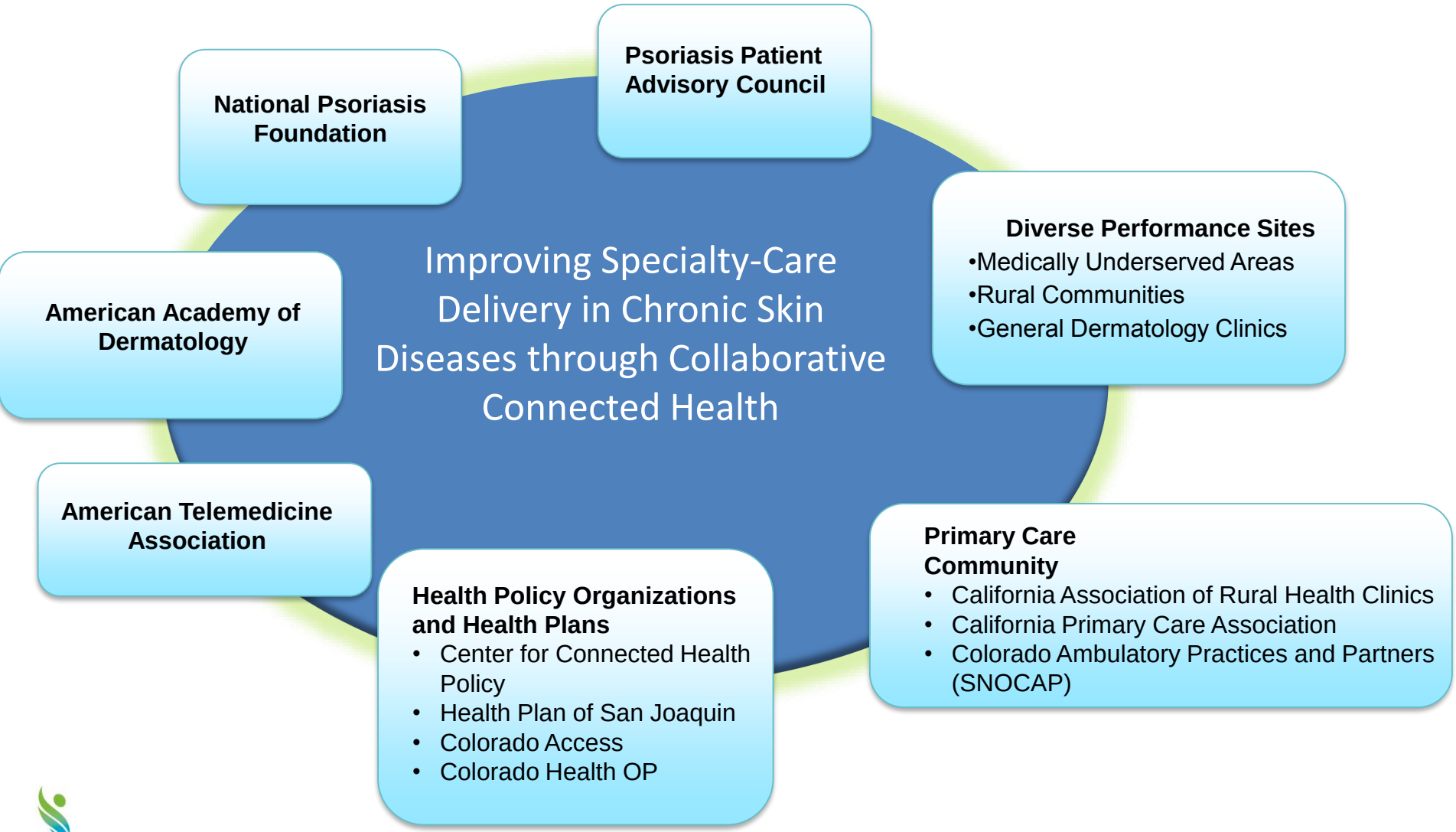
April W. Armstrong, MD, MPH,
University of Colorado Denver
Aurora, Colorado

Improving Healthcare Systems,
awarded September 2014
Completed

Collaborative Connected Health Model: An Overview



Stakeholder Engagement



Evidence Gaps Addressed

- Studies outcomes of importance to patients
  - Disease severity, QOL, Access to Care
    - Prior studies examined:
      - Diagnostic concordance and accuracy
      - Management concordance
- Enhances the generalizability of outcomes through multi-site, cross-state research
  - Southern California, Northern California, Colorado
  - Spans both urban and rural areas
- Enrolls a diverse, previously understudied population
  - large Hispanic population

Integrated Versus Referral Care for Complex Psychiatric Disorders in Rural FQHCs

Potential Impact

- Could help reduce disparities by providing evidence on the best ways to provide mental health care to the millions of rural patients with post-traumatic stress disorder (PTSD) and bipolar disorder (BD).

Design

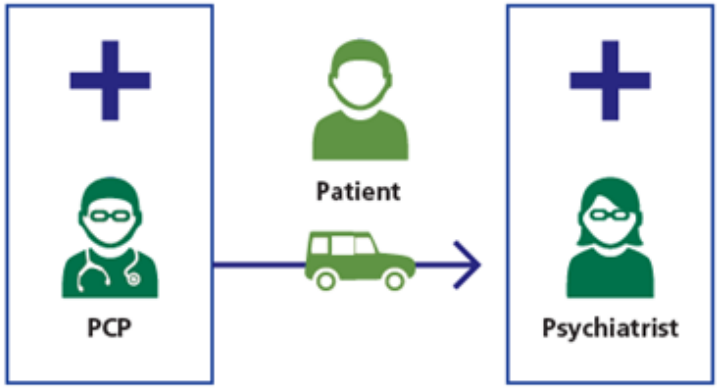
- Pragmatic RCT (Sequential, Multiple Assignment, Randomized Trial (SMART)
- 1,000 patients
- 12-month follow up

Examines whether it is better for offsite mental health specialists to support primary care providers' treatment of patients with post-traumatic stress disorder (PTSD) and bipolar disorder (BD) through an integrated telemedicine care model or to use telemedicine technology to facilitate referrals to offsite mental health specialists

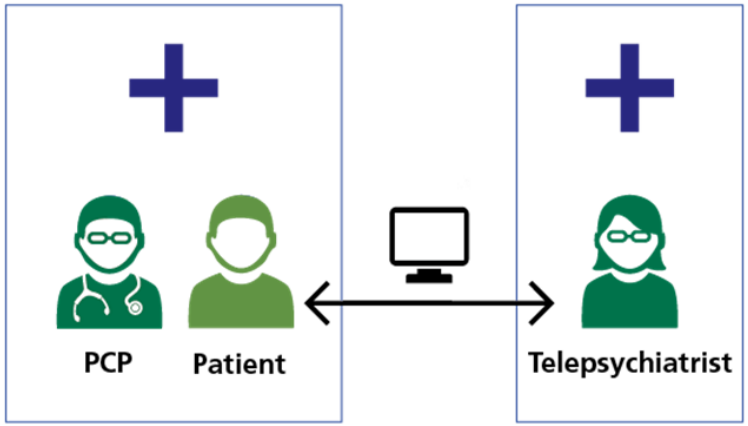
John C. Fortney, PhD
University of Washington

Pragmatic Clinical Studies,
Awarded 2015
Expected to be complete June 2021

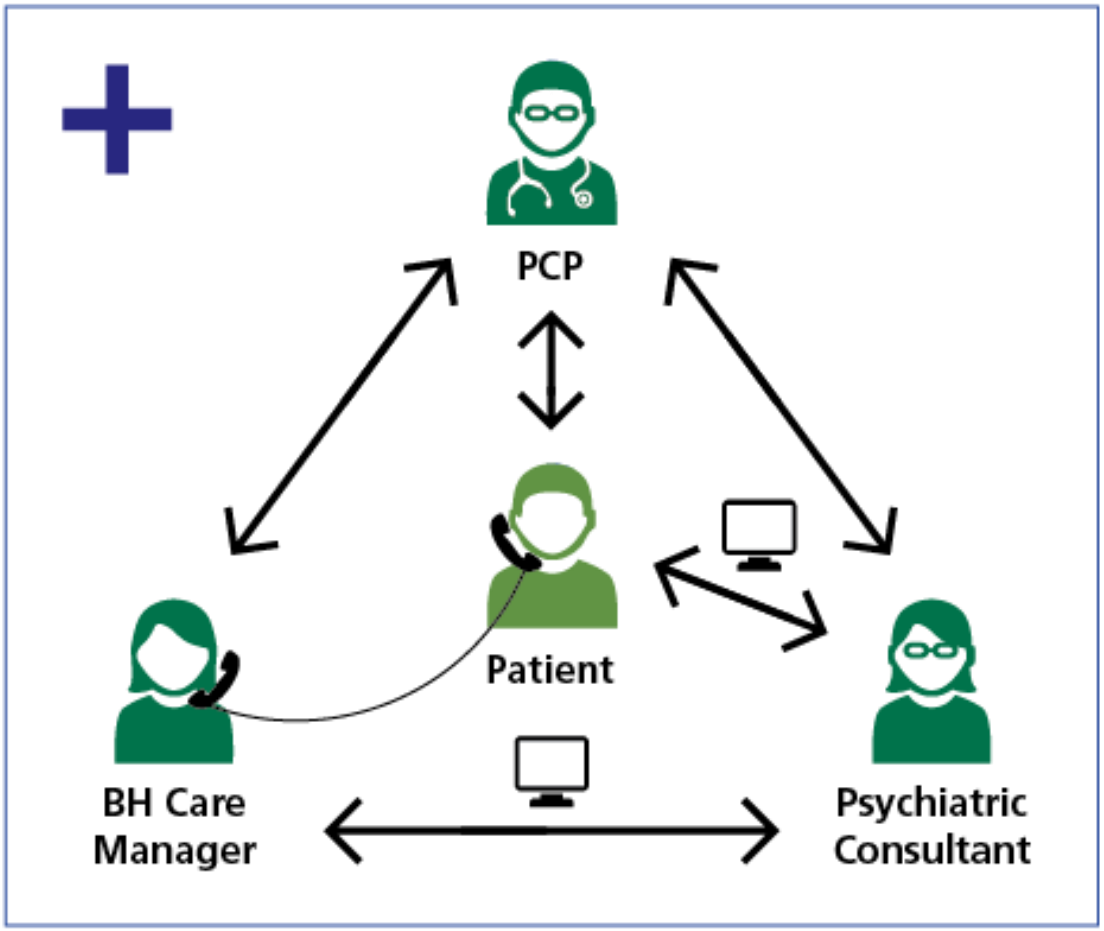
Traditional Referral Model



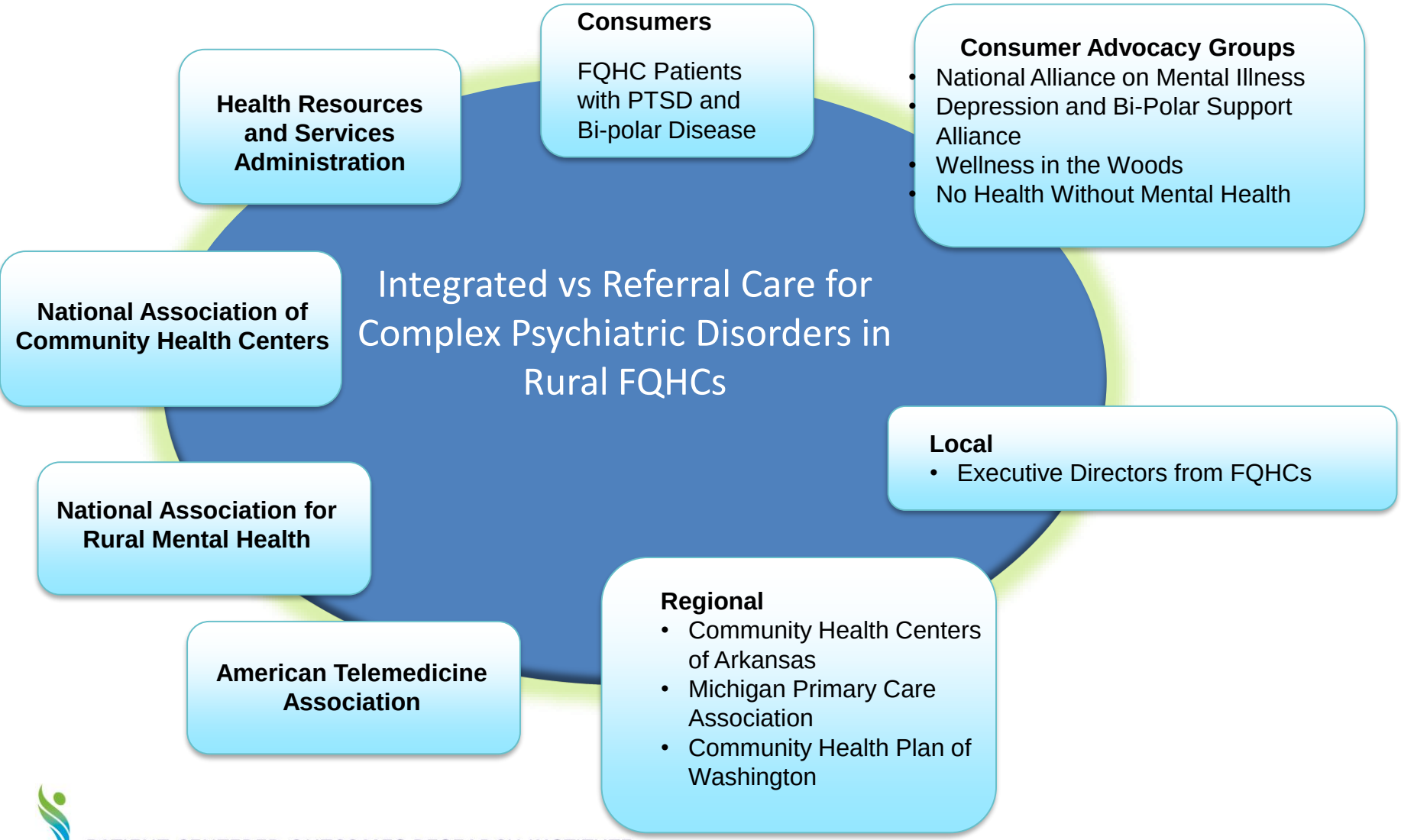
Telepsychiatry Enhanced Referral



Telepsychiatry Collaborative Care



Stakeholder Engagement



Evidence Gaps Addressed

- Users involved in designing intervention
- Uses active comparators
  - Collaborative, team-based care with telepsychiatry vs referral based telepsychiatry
- Tests a model to integrate mental health with primary care
- Enhances the generalizability of outcomes through large, multi-site, cross-state research
  - 15 Community Health Centers in 3 states (AK, MI, WA)
- Enrolls diverse, previously understudied population
  - FQHCs provide care to underserved population (93% at or below poverty level, 49% in rural areas, 62% racial/ethnic minorities)

Questions and Discussion

PCORI Evidence Map: The Impact of mHealth for Self-Management of Chronic Disease on Patient-Centered Outcomes

James Reston, PhD, MPH
Senior Associate Director,
ECRI Institute-Penn Medicine EPC and Health Technology Assessment Group
ECRI Institute
Plymouth Meeting, PA 19462

May 24, 2018

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Objectives

- To search, review, and describe the evidence landscape of mHealth interventions for self-management of chronic disease
- Illustrate the potential of PCORI's funded research to address gaps identified in the evidence

Process

- Interviewed clinical and policy experts who research and implement mHealth applications (Technical Expert Panel)
- Developed protocol
- Performed literature searches, screening, data extraction
- Assessed quality of the evidence
- Created evidence maps

Selection and engagement of technical expert panel (TEP)

- Carolyn Turvey, PhD, MS (Veterans Administration)
- Wendy Nilsen, PhD (National Science Foundation)
- Susan Day, MD, MPH (University of Pennsylvania)
- Neha Patel, MD (University of Pennsylvania)

Search for evidence

- Systematic reviews: PubMed, EMBASE/Medline, PsycINFO and Cochrane Library databases
- January 2010 – November 2017
- Ongoing PCORI-funded trials: ClinicalTrials.gov and PCORI Web site

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Definition of self-management interventions

Aim to equip patients with skills to actively participate and take responsibility

- in the management of their chronic condition
- in order to function optimally through at least knowledge acquisition and
- a combination of at least two of the following:
  - stimulation of independent sign/symptom monitoring,
  - medication management,
  - enhancing problem-solving and decision-making skills for medical treatment management,
  - changing their physical activity, dietary, and/or smoking behavior

Jonkman et al. (2016)

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Inclusion Criteria

- Systematic reviews (SRs), published in English
- Self-management of any chronic disease/disorder
- Relevant mHealth interventions (see following slide)
- SRs that covered broader interventions (e.g. telehealth) must have included a separate evaluation of mHealth interventions.
- The majority of studies included in SRs must have been conducted in populations from the United States, Canada, Australia, or Europe
- SRs must have assessed risk of bias of included studies using validated instruments

mHealth Functionality and Definitions*

- Alert – send alert or reminder to the user
- Educate – provide information in a variety of formats (text, photo, video) or provide instruction to the user
- Counsel – provide guidance based on user-entered information (e.g. recommend a physician consultation or course of treatment)
- Monitor – automatic detection of patient behavior/activity or clinical measures by a monitoring device
- Record – capture user-entered data

*Farzandipour et al. Appl Clin Inform 2017; 8 (4): 1068-81.

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Summarizing SR Findings (Direction of Effect

- Coding system adapted from AHRQ Telehealth Technical Brief
- Four categories:
  - No effect
  - Unclear
  - Possible positive effect
  - Positive effect

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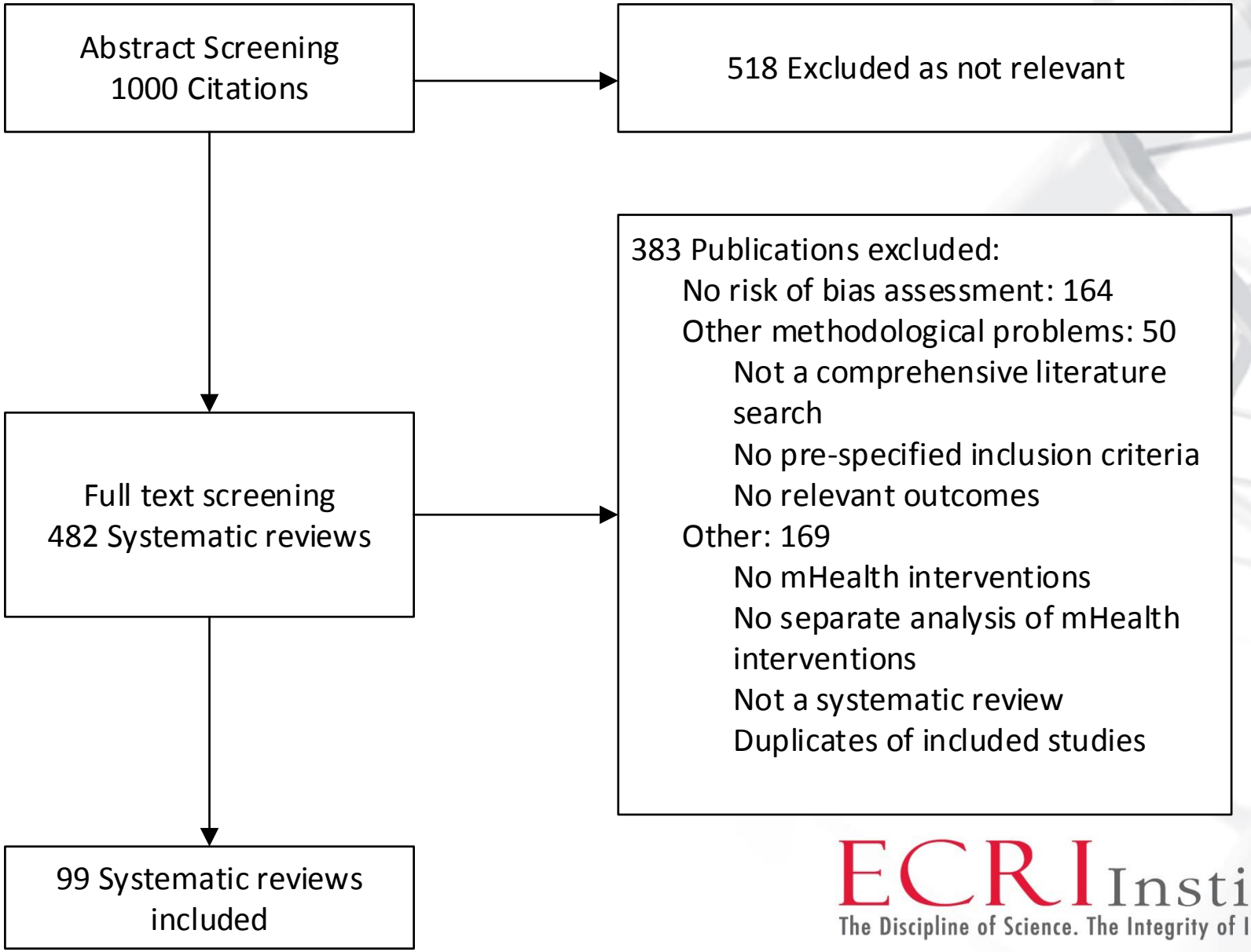
Strength of Evidence Ratings

- Assessment of quality of evidence base included in each SR
- Based on AHRQ guidance that considers risk of bias, directness of comparisons, inconsistency in results, and imprecision in effect estimates
- Used GRADE categorizations (4 levels) expressing confidence in direction of effect:
  - High
  - Moderate
  - Low
  - Very low

Results – Evidence Base



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Results – Evidence Base

- 99 SRs covered 13 broad categories of chronic conditions:
  - Diabetes (26 SRs)
  - Mental disorders (22 SRs)
  - Obesity (21 SRs)
  - Respiratory disorders (18 SRs)
  - Cardiovascular disorders (11 SRs)
  - Smoking (12 SRs)
  - Infectious diseases (9 SRs)
  - Neurologic disorders (5 SRs)
  - Chronic kidney disease (2 SRs)
  - Cancer (2 SRs)
  - Chronic pain (2 SRs)
  - Multiple comorbid conditions (2 SRs)
  - Other (4 SRs)

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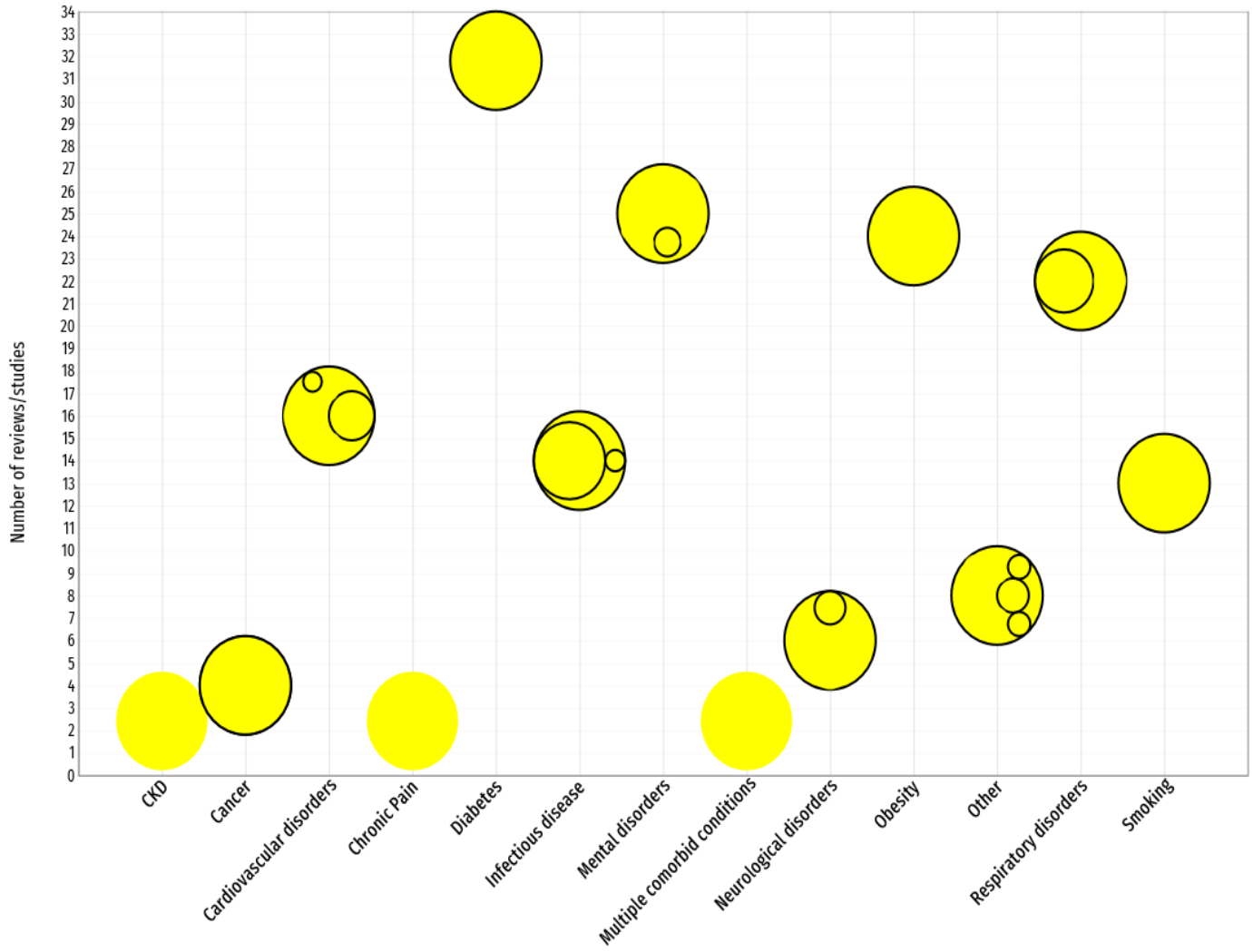
Overview of mHealth SRs and PCORI Studies

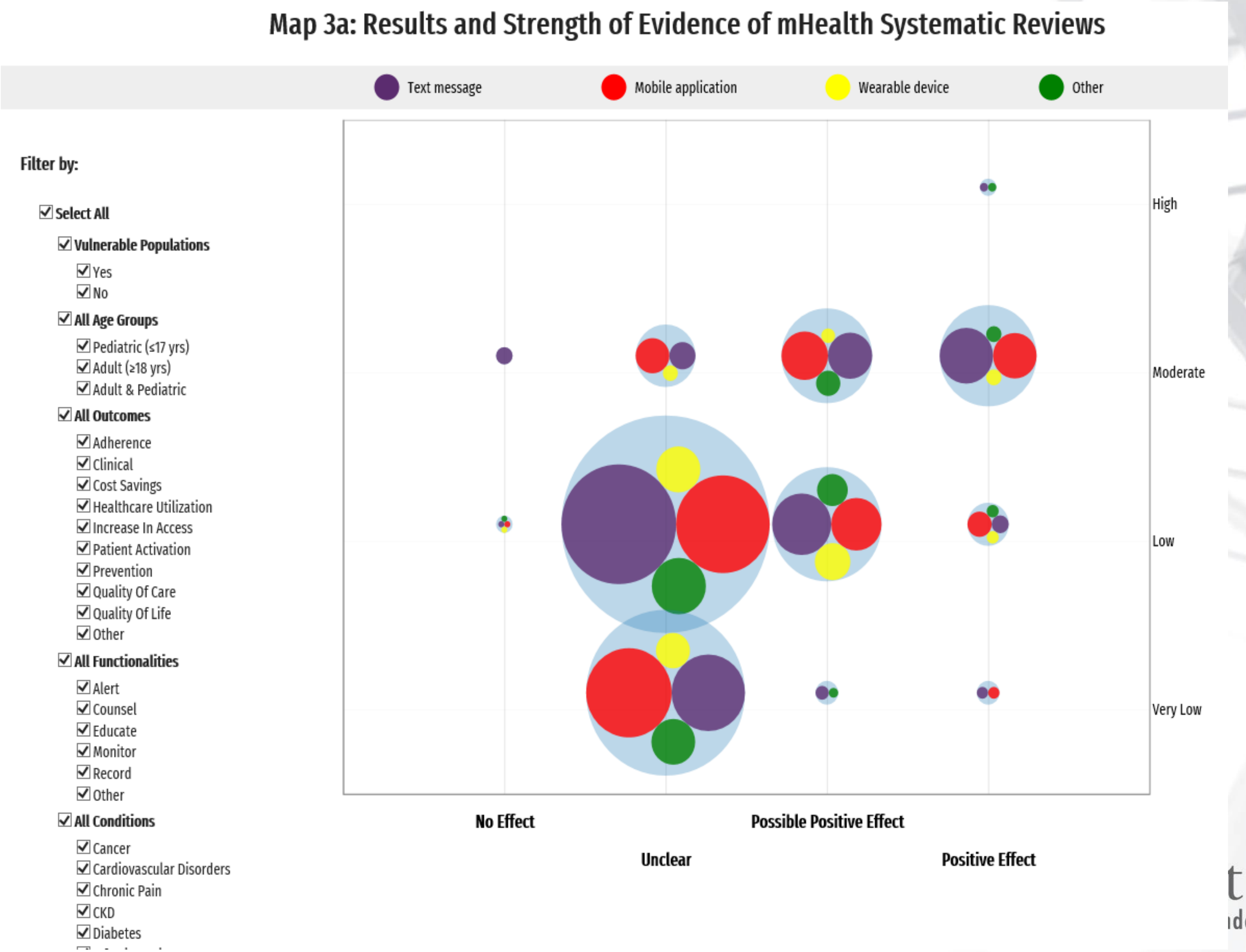
Map 1: Overview of mHealth Systematic Reviews and PCORI Studies

Filter by:

- ☑ Select All
  - ☑ Vulnerable Populations
    - ☑ Yes
    - ☑ No
  - ☑ All Age Groups
    - ☑ Pediatric (≤17 yrs)
    - ☑ Adult (≥18 yrs)
    - ☑ Adult & Pediatric
  - ☑ All Outcomes
    - ☑ Adherence
    - ☑ Clinical
    - ☑ Cost Savings
    - ☑ Healthcare Utilization
    - ☑ Increase In Access
    - ☑ Patient Activation
    - ☑ Prevention
    - ☑ Quality Of Care
    - ☑ Quality Of Life
    - ☑ Other
  - ☑ All Technologies
    - ☑ Mobile Application
    - ☑ Text Message
    - ☑ Wearable Device
    - ☑ Other



Strength of Evidence of mHealth Systematic Reviews



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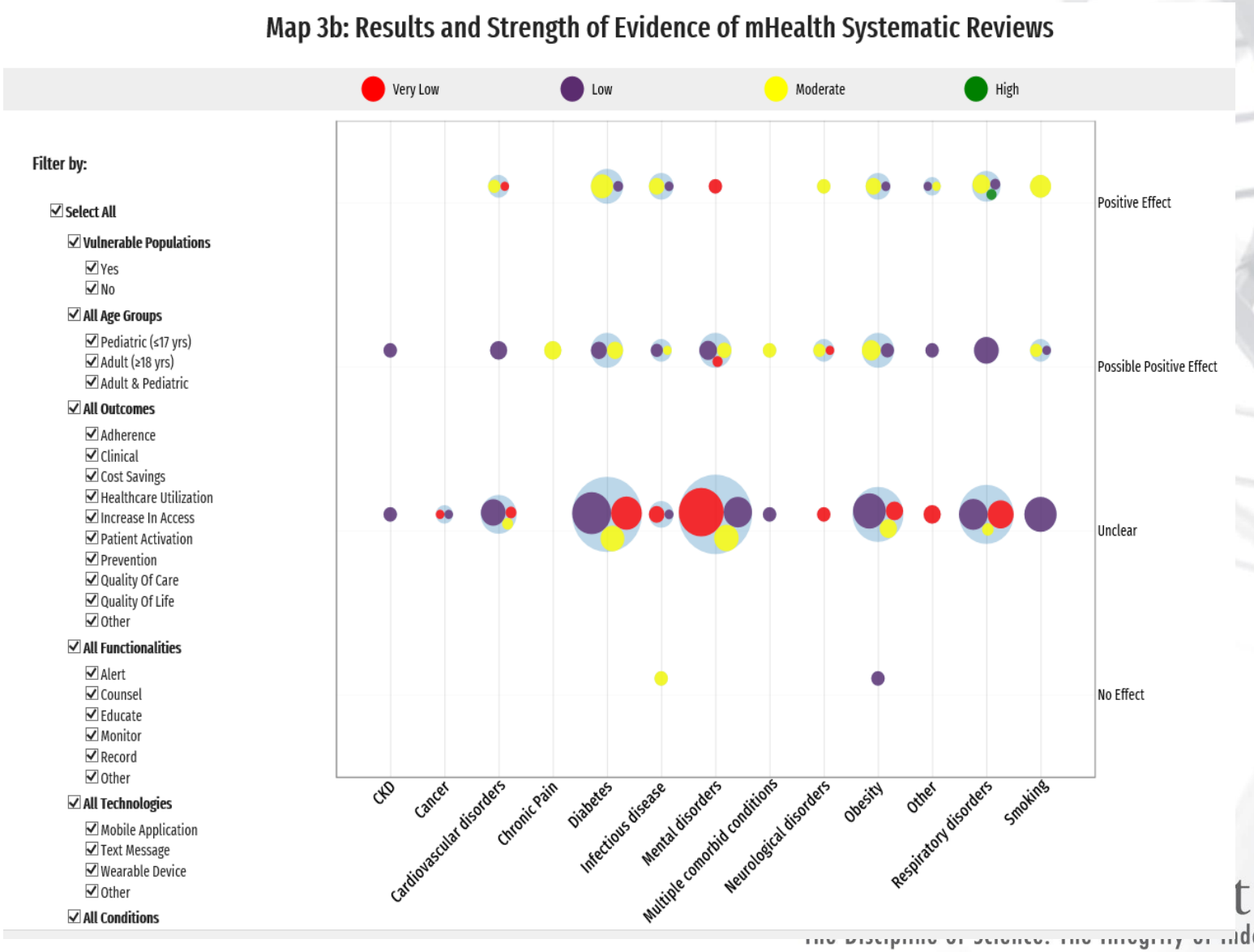
Alternate View of Strength of Evidence



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Future Research

- Included SRs noted several evidence gaps that led to suggestions for future research
- Several common themes emerged across the various conditions and interventions

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Evidence Gaps

- Most of the literature comprised of low-quality studies
- Few studies randomized, most RCTs had small sample sizes, inadequate statistical power, and were poorly reported
- Most studies short-term, few evaluated long-term efficacy/sustainability
- Few RCTs evaluated pediatric patients
- Few RCTs focused on vulnerable populations
- Many studies evaluated multicomponent interventions, did not separately evaluate mHealth component

Evidence Gaps

- Many mHealth mobile apps have never been evaluated in clinical studies
- Mobile apps with similar functions should be compared in clinical studies
- Adherence to medication often measured by self-report, which is less reliable than objective measurements

Future Research - Summary

- Evidence gaps noted above indicate several areas where PCORI funding could be directed
- Evidence maps 1 and 2 suggest that PCORI is already helping to address gaps in research on pediatric and vulnerable populations

BREAK

10:30 – 10:45 a.m.

How PCORI's Telehealth Portfolio Addresses Stakeholder Needs: Facilitated Discussion

Kristin Carman, MA, PhD

Director

Public and Patient Engagement,
PCORI

Discussion Questions

- Is our framework for illustrating PCORI's investment in telehealth research helpful?
- Do the main messages that we stated resonate with you?
- What more do you need to know?

Our Framework

- **Overarching classification**: Telehealth, Telemedicine, mHealth
- **Purpose**: Educate, Promote Self-Management, Improve Access to Primary and Specialty Care, Remote Monitoring
- **Technology Platform:** mobile phone/tablet, wireless monitoring device, live video conferencing, web portal, store and forward
- **Outcome Targets:** quality, access, economic and resource use, clinical, health status and well being

Is this framework for illustrating PCORI's investment in telehealth research helpful? How would you modify it?

Our Narrative

- The PCORI Telehealth portfolio is addressing evidence gaps by:
  - Engaging patients and end users in designing the interface and selecting outcomes
  - Enrolling diverse, previously understudied populations
  - Studying outcomes of importance to patients
  - Using active comparators
  - Enhancing the generalizability of outcomes through large, multi-site, cross-state research

- The PCORI portfolio holds promise for demonstrating how patient-centered outcomes research can enhance the effectiveness of telehealth interventions in improving the health and health care outcomes for populations

Do these main messages resonate with you?
If not, how should we rethink this?
What more do you need to know?

LUNCH

12:30 – 1:00 p.m.

Goals for the Afternoon

- Discuss barriers to the sustainability and replicability of the telehealth interventions being studied, and how they could be addressed before the study findings are released

- Provide information that would be useful to PCORI PIs in order to magnify the utility of the findings from their project for decision makers before the studies are completed

Addressing Sustainability and Replicability: Lessons from Case Studies

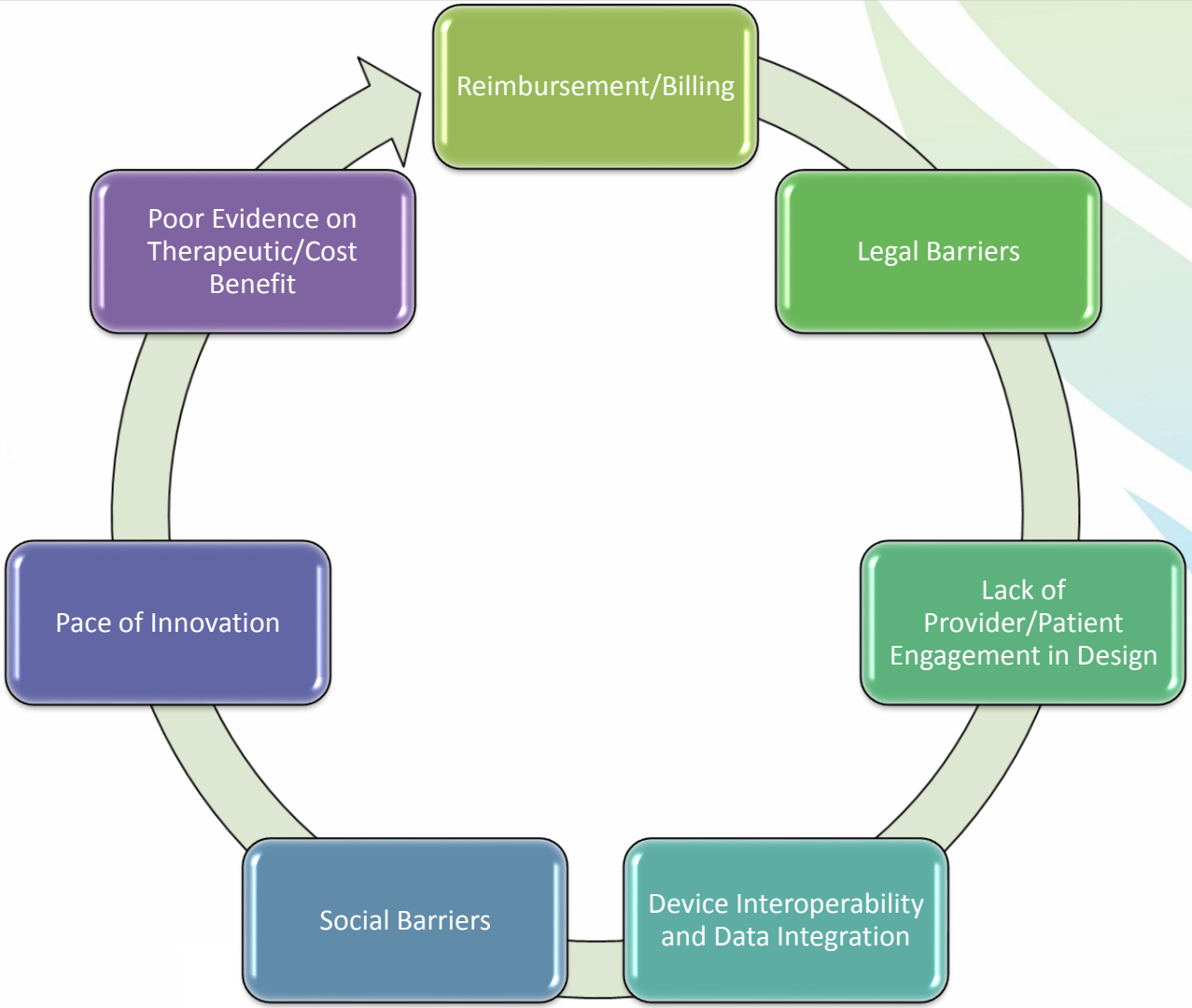
Penny Mohr, MA

Senior Advisor

Healthcare Delivery and Disparities Research

PCORI

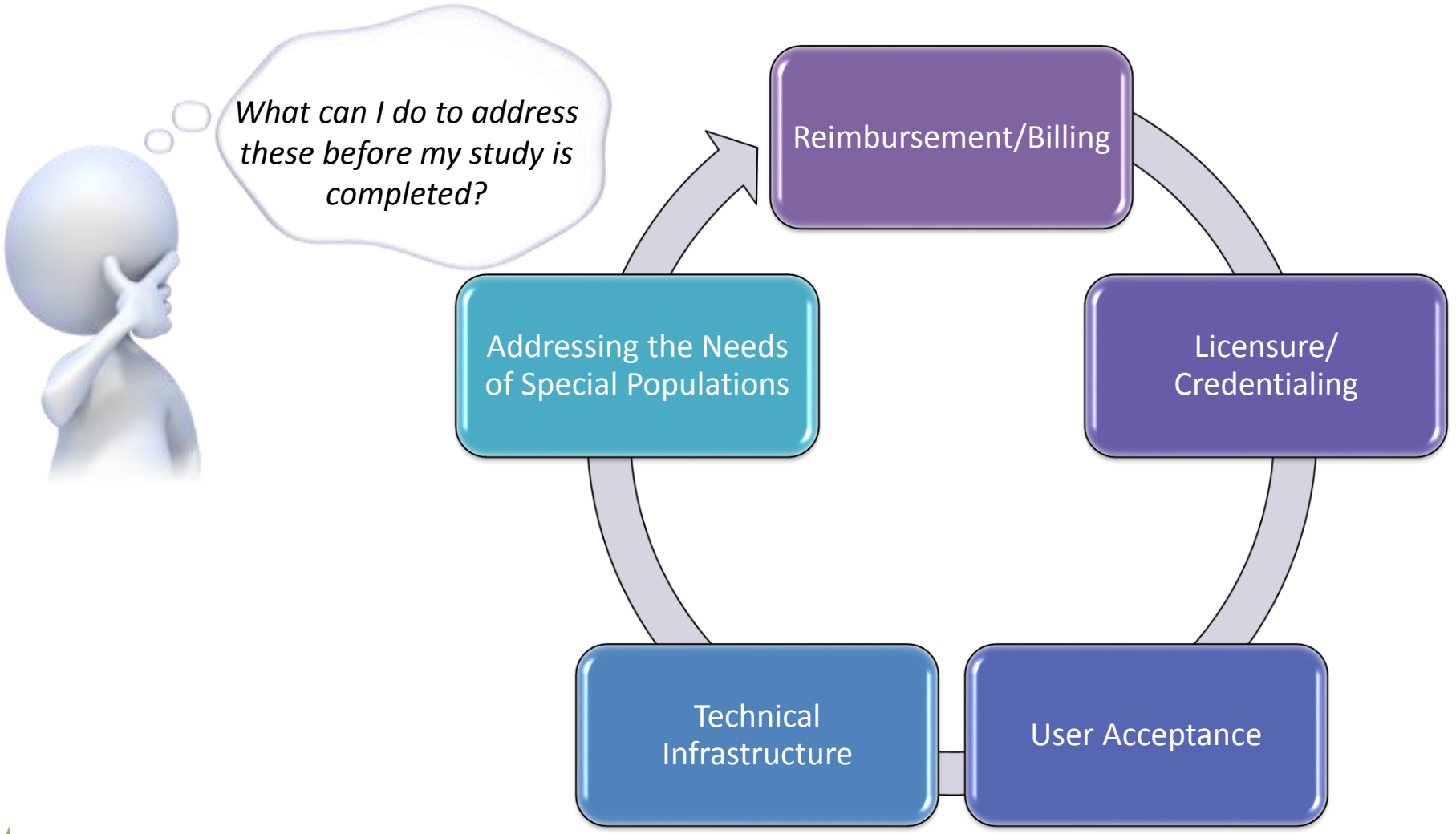
Common Barriers to the Implementation and Sustainability of Telehealth



Case Studies to Understand Barriers to Implementation and Sustainability

Improving Specialty Care Delivery in Chronic Skin Care (Armstrong) ✓	•Tele-dermatology •Reimbursement for store and forward technology, •Racial/ethnic diversity
Comparing mHealth and clinic-based self-management for Serious Mental Illness (SMI) (Ben-Zeev) ✓	•Mhealth app supported by mHealth specialist with provider dashboard for self-management of SMI •Commercialization and adoption of mobile health applications
Using Technology to Deliver Care to Individuals with Parkinson's Disease in their Home (Dorsey) ✓	• Video consultation for Parkinson's disease • Reimbursement for telemedicine in the home
Integrated vs Referral Care for Patients with Complex Psychiatric Disorders in Rural FQHCs (Fortney)	•Video consultation for patients with Bipolar Disease and PTSD •Integrating telemedicine in FQHCs across multiple states
Comparing Telehealth Care and Optimized Clinic-based Care for Uncontrolled Hypertension (Margolis)	•Remote monitoring of hypertension supported by pharmacists •Health system buy-in for investment in the technology
HCV Care via Telemedicine for Patients on Opiate Substitution Therapy (Talal) ✓	•Video consultation for hepatitis C in methadone clinic •Addressing patient and provider concerns about privacy
Patient and Provider Engagement and Empowerment Through Technology in Diabetes (Young)	•Integrated remote monitoring, mHealth app, and provider dashboard for self-management of diabetes •Health system and clinician buy-in, patient education and support

Themes About Major Barriers to Implementation and Sustainability Heard from Selected PCORI Investigators



PCORI Investigators and Their Stakeholders Identify Strategies for Overcoming Barriers

User Acceptance

- Cultural tailoring of messages/interface
- The importance of multi-cultural, bi-lingual trainers and support personnel
- Allowing a patient to choose what information to share with providers

Systems Integration

- Obtain C-Suite buy-in from the outset, consider scalability to other diseases
- Scale down physician dashboard to must know clinical information

  Support with other clinical staff for more detailed reporting

Reimbursement and Billing

- Use a check list to help distinguish between consultation and follow up in the platform.
- Provide educational modules to help train billing departments.
- Collect utilization and cost data/model ROI

Technical Support

- Having on-call tech support for end-users

  E.g. mHealth Specialist, CHW, and other key personnel

  To address concerns, solve technical issues, and encourage use of telehealth

Special Thanks To:

- April Armstrong. University of Southern California. Improving Specialty Care Delivery in Chronic Skin Disease.
- Dror Ben-Zeev. Dartmouth College. Comparing Mobile Health (mHealth) and Clinic-Based Self-Management Interventions for Serious Mental Illness: Patient Engagement, Satisfaction, and Outcomes
- Ray Dorsey. University of Rochester. Using Technology to Deliver Multidisciplinary Care to Individuals with Parkinson's Disease in Their Homes
- John C. Fortney. University of Washington. Integrated versus Referral Care for Complex Psychiatric Disorders.
- Karen Margolis. Health Partners Institute. Pragmatic Trial Comparing Telehealth Care and Optimized Clinic-Based Care for Uncontrolled High Blood Pressure
- Andrew Talal. State University of New York. Patient-Centered HCV Care via Telemedicine for Individuals on Opiate Substitution Therapy: A Stepped Wedge Cluster Randomized Controlled Trial.
- Heather Young. University of California, Davis. Patient and Provider Engagement and Empowerment through Technology ($P^2E^2T^2$) Program to Improve Health in Diabetes.

Questions and Discussion

Introduction to Break-out Sessions

Penny Mohr, MA

Senior Advisor

Healthcare Delivery and Disparities Research

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Three Case Studies

- **Case Study 1: mHealth to Improve Self-Management of Diabetes**
  - Location: Main event room
  - Facilitator: Elinor Schonfield
  - Scribe: Anum Lakhia
  - Rapporteur: Carolyn Peterson
- **Case Study 3: Remote Monitoring of Blood Pressure Supported by Pharmacists for Patients with Uncontrolled Hypertension**
  - Location: Conference Room P (4th Floor)
  - Facilitator: Don Klepser
  - Scribe: Penny Mohr
  - Rapporteur: Kelly Cochran
- **Case Study 2: Team-based Model of Telepsychiatry to Improve Mental Health in FQHCs**
  - Location: Conference Room O (4th Floor)
  - Facilitator: Danielle Brooks
  - Scribe: Candace Hall
  - Rapporteur: Ann Huffenberger

Discussion Questions

- What do you perceive are the major barriers to sustainability and replicability of this intervention, and why?
- How do these barriers differ by the different stakeholder perceptions in your group?
- What recommendations would you provide to PCORI investigators for enhancing the likelihood of adoption into practice?
- What can be done to enhance the likely sustainability of this intervention?

BREAK

2:45 – 3:00 p.m.

Addressing Sustainability and Replicability: Report Back from Small Groups

Kristin Carman, MA, PhD

Director

Public and Patient Engagement,
PCORI

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Report Back

- Brief summary of the case study
- What did your group perceive are the major barriers to sustainability and replicability of this intervention, and why?
- How do these barriers differ by the different stakeholder perceptions in your group?
- What recommendations would the group provide to PCORI investigators for enhancing the likelihood of adoption into practice?
- What can be done to enhance the likely sustainability of this intervention?

Facilitated Discussion with PCORI Investigators

Kristin Carman, MA, PhD

Director

Public and Patient Engagement,
PCORI

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Questions

- What would you like to know from the stakeholders in this meeting that might help you with your study?

Wrap Up and Adjourn

Kristin Carman, MA, PhD

Director

Public and Patient Engagement, PCORI

Penny Mohr, MA

Senior Advisor

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