



Mobile Applications for Self-Management of Diabetes

Presentation for: International Society for
Pharmacoeconomics and Outcomes Research
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Disclaimer

The author of this presentation is responsible for the content. Statements in this presentation should not be construed as endorsement by the Agency for Healthcare Research and Quality or the U.S. Department of Health and Human Services.

- **Rapid review:** New combination of established AHRQ technical brief and rapid review methods:
<https://effectivehealthcare.ahrq.gov/topics/rapid-reviews-end-user/white-paper>
- **Key informant process:** Diverse perspectives provided context/guidance on where review would make biggest impact
- **Consumer perspective:** “What is important to patients/clinicians?”
 - ▶ KQs/scope, report of findings, table design
- **Usability:** Contextual issue



- Hundreds of apps commercially available, only 11 with health outcome studies identified
- Of the 11 apps, 5 associated with clinically significant improvements in HbA1c
 - ▶ Type 1 diabetes- *Glucose Buddy, Diabeo Telesage;*
 - ▶ Type 2 diabetes- *Blue Star, WellTang, Gather Health*
- No studies showed patient improvements in quality of life, blood pressure, weight, or body mass index
- Studies had methodological issues:
 - ▶ Short (2-12 months); inconsistent reporting of randomization, allocation, masking, and drop-out analysis; use of co-interventions that hindered interpretation of results. None considered high quality.





Interesting Issues

- **Rating usability:** Difference between types of ratings: SUS and online app reviews
- **Patient Key Informants:** Difficult to find patients to participate in process. One KI was a diabetes patient.
- **Outcomes of focus:** What outcomes are being assessed, over what time period for evaluation?
- **Rapidly changing technologies:** Several updates to tables/findings needed in months finalizing report because apps had changed



Thank You

Mobile Applications for Self-Management of Diabetes
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Check out report at the Effective Health Care (EHC) Program website:
<https://effectivehealthcare.ahrq.gov>

Discussion Questions

- How do we balance the pace of change in technology with the need for longer studies?
- Given the state of the evidence on digital health tools, how best do we communicate value?

Designing Real World Digital Health Studies to Meet End User Needs

Producing Better Science for Digital Health through Patient-Centered Outcomes Research

Penny Mohr, MA
Senior Advisor, Emerging Technology and
Delivery System Innovation
Healthcare Delivery and Disparities Research
Patient-Centered Outcomes Research Institute

Dionna Atkinson
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Theodore Chang, D.O.
May 21, 2018



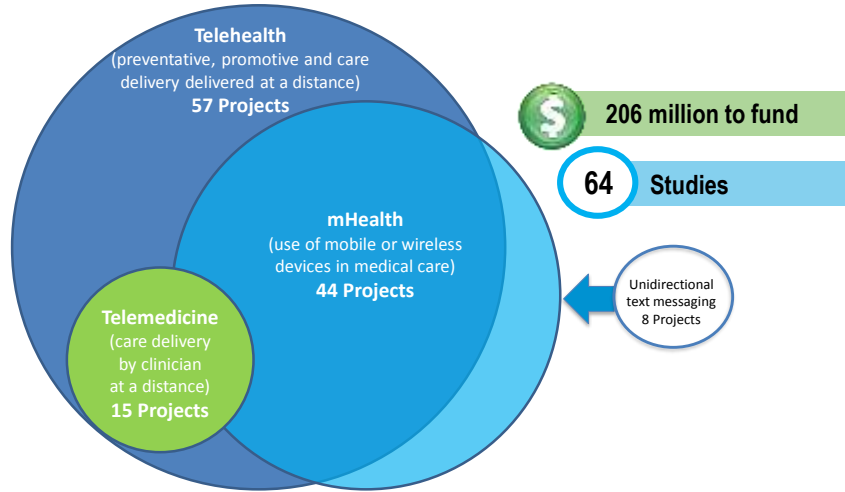
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What Are the Major Gaps Identified in the Digital Health Literature?



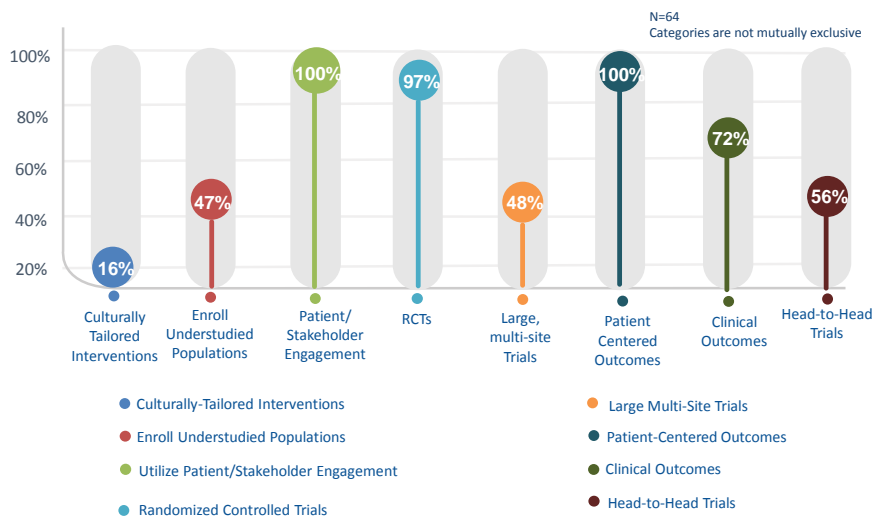
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PCORI Has Made A Sizable Investment in Digital Health Research

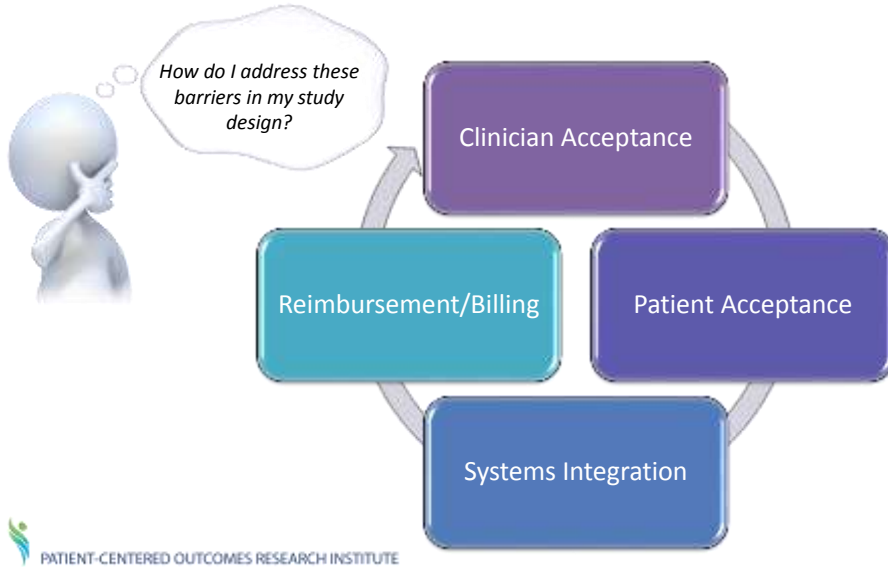


Projects may be classified as more than one type
As of March 2017

PCORI's Digital Health Portfolio is Filling Evidence Gaps



Planning for Replicability and Sustainability of Findings from Digital Health Studies



PCORI Investigators and Their Stakeholders Identify Strategies for Overcoming Barriers

Patient 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

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



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

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

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 \(P²E²T²\) Program to Improve Health in Diabetes.](#)

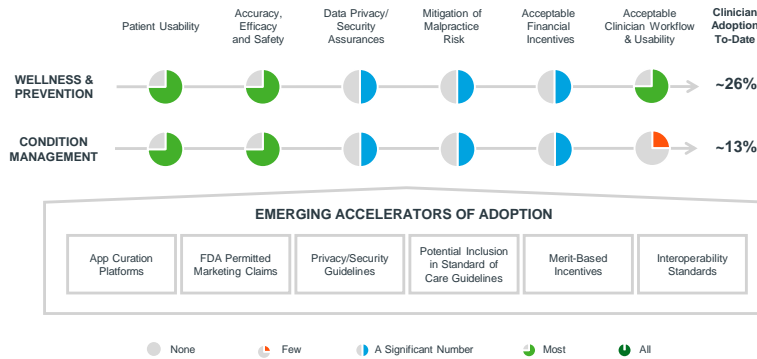


For More Information

- Visit PCORI's [Telehealth Website](#)
- Tune into our May 24th Workshop [Advancing the State of Telehealth through Patient-Centered Outcomes Research](#)
- Contact:
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Fraction of Top Apps that Adequately Address Providers' Key Requirements and Emerging Accelerators of Adoption



Source: American Medical Association, Digital Health Study, Sep 2016; IQVIA Institute Analysis, Sep 2017
HMS18 Belgian Delegation

IQVIA INSTITUTE

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Discussion Questions

- What is threshold of evidence needed to support adoption of digital health?
- What incentives are needed to bring effective digital health interventions to patients and clinicians?
- What is needed to provide help for patients, providers, and payers to choose which of the different apps to adopt?