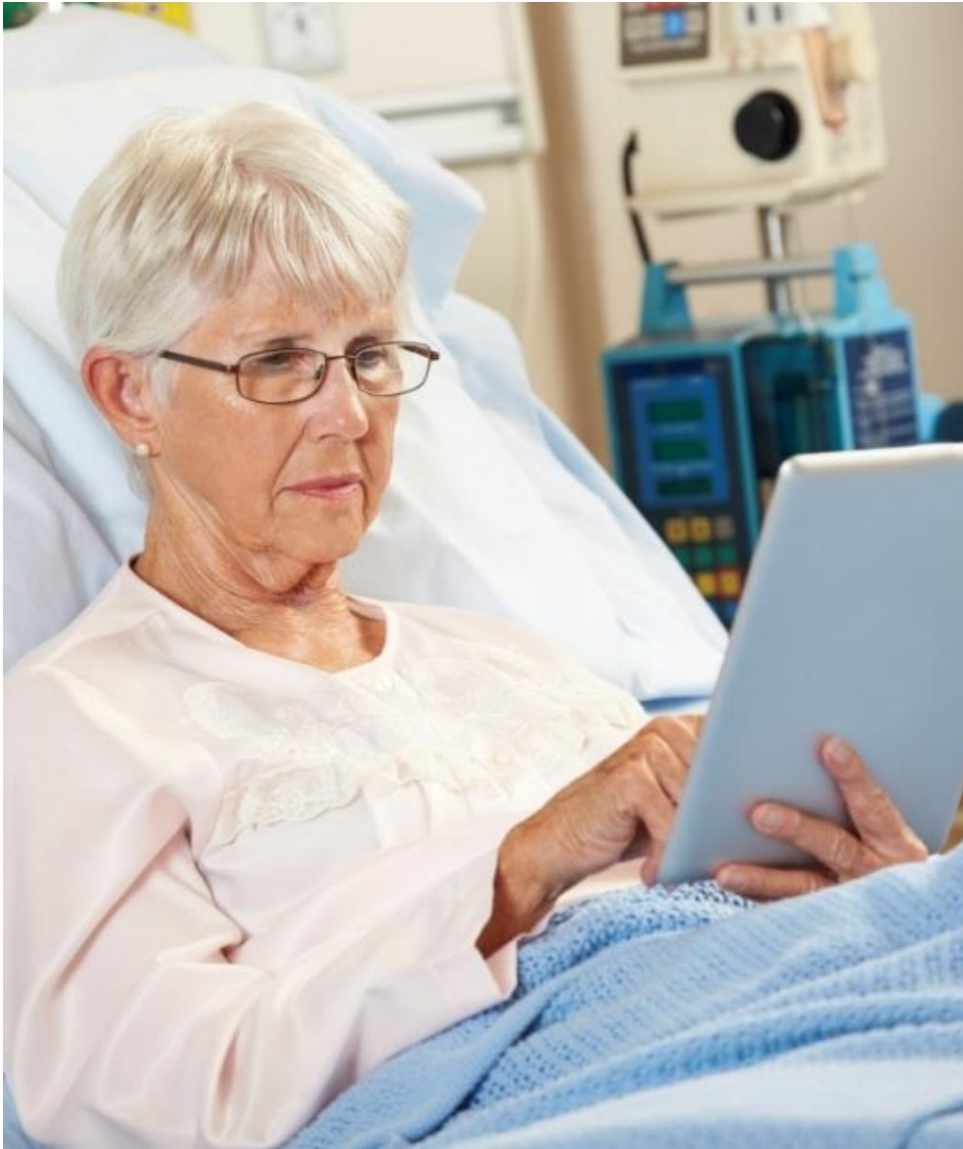# AMIA
INFORMATICS PROFESSIONALS. LEADING THE WAY.

Interventions to Increase Patient Portal Use in Vulnerable Populations: A Systematic Review

S61: Patients as Partners in Healthcare

Lisa V Grossman, Ruth M Masterson Creber, Natalie C Benda,
Drew Wright, David K Vawdrey, Jessica S Ancker

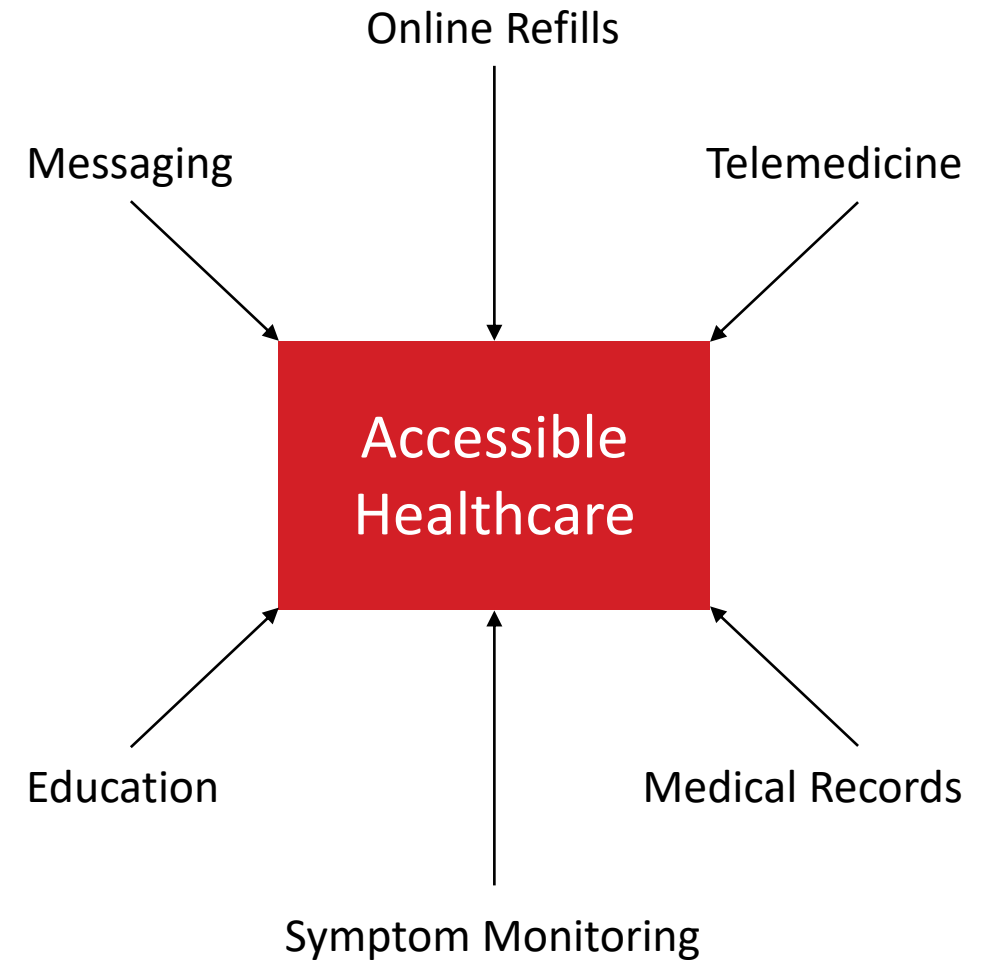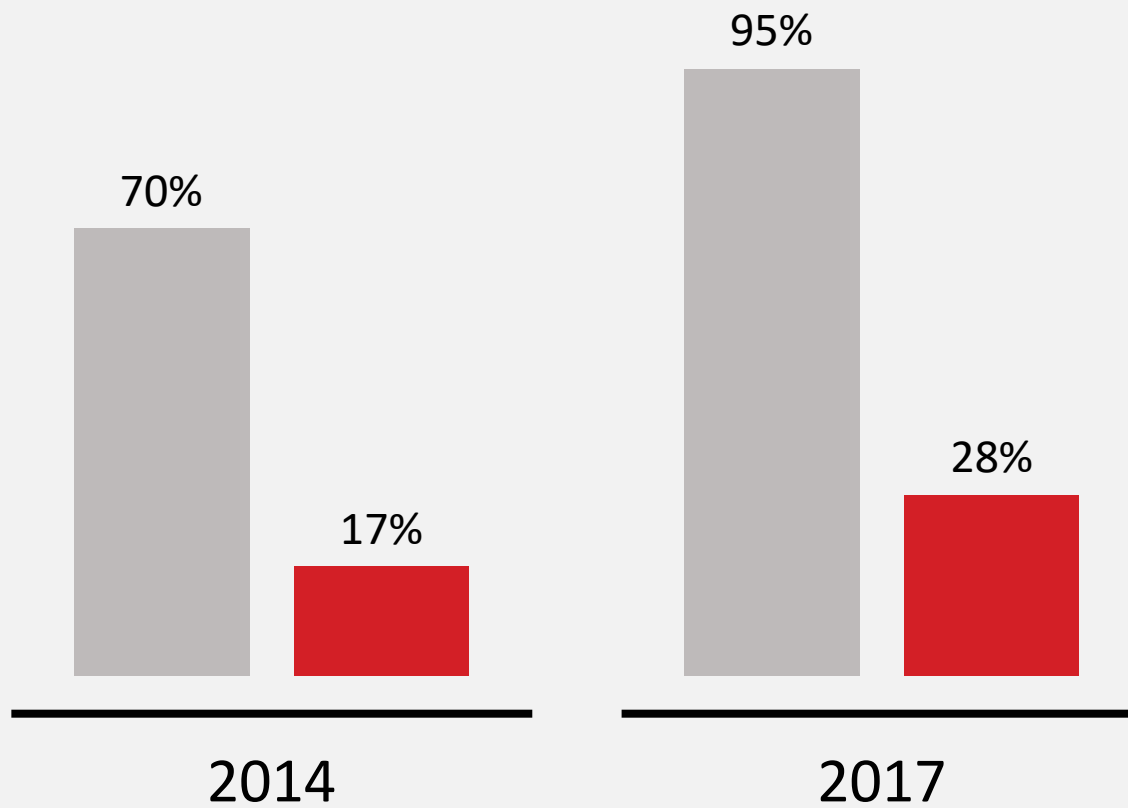Columbia University, Weill Cornell Medicine, Geisinger

Purposes of Patient Portals

- Patient-provider communication
- Monitor patient safety concerns
- Manage medications remotely
- Collect patient-reported outcomes
- Medical record verification
- Communicate costs
- Develop shared care plans
- Educate or instruct patients
- Increase patient satisfaction

Portal Use by Year

Portal Availability (⬜) and Use (🟥) in the U.S.

2014: 70%, 17%

2017: 95%, 28%

Messaging → Accessible Healthcare

Online Refills → Accessible Healthcare

Telemedicine → Accessible Healthcare

Education → Accessible Healthcare

Symptom Monitoring → Accessible Healthcare

Medical Records → Accessible Healthcare

Disparities in Portal Use

- Age

- Race & Ethnicity

- Socioeconomic status, income

- Level of education

- Internet & computer access

- Functional or health literacy

- Computer skills

- Severity of illness

- Disability status

Barriers to the use of personal health records by patients: a structured review

Chris Showell

eHealth Services Research Group, University of Tasmania, Australia

Disparities in Enrollment and Use of an Electronic Patient Portal

Mita Sanghavi Goel, MD MPH[1], Tiffany L. Brown, MPH[1], Adam Williams, BS[1], Romana Hasnain-Wynia, PhD[2], Jason A. Thompson, BA[1], and David W. Baker, MD MPH[1]

[1]Division of General Internal Medicine, Feinberg School of Medicine, Northwestern University, Chicago, IL, USA; [2]Center for Healthcare Equity, Institute for Healthcare Studies, Feinberg School of Medicine, Northwestern University, Chicago, USA.

Socioeconomic Disparities in Adoption of Personal Health Records Over Time

Jessica S. Ancker, PhD, MPH, Baria Hafeez, MS, and Rainu Kaushal, MD, MPH
Department of Healthcare Policy and Research, Weill Cornell Medical College (JSA, BH, RK), New York, NY

Research Paper ■
Disparities in Use of a Personal Health Record in a Managed Care Organization

Douglas W. Roblin, PhD, Thomas K. Houston, II, MD, MPH, Jeroan J. Allison, MD, MSc, Peter J. Joski, MSPH, Edmund R. Becker, PhD

Factors Affecting Usage of a Personal Health Record (PHR) to Manage Health

Jessica Taha and Sara J. Czaja
University of Miami Miller School of Medicine

Joseph Sharit
University of Miami

Daniel G. Morrow
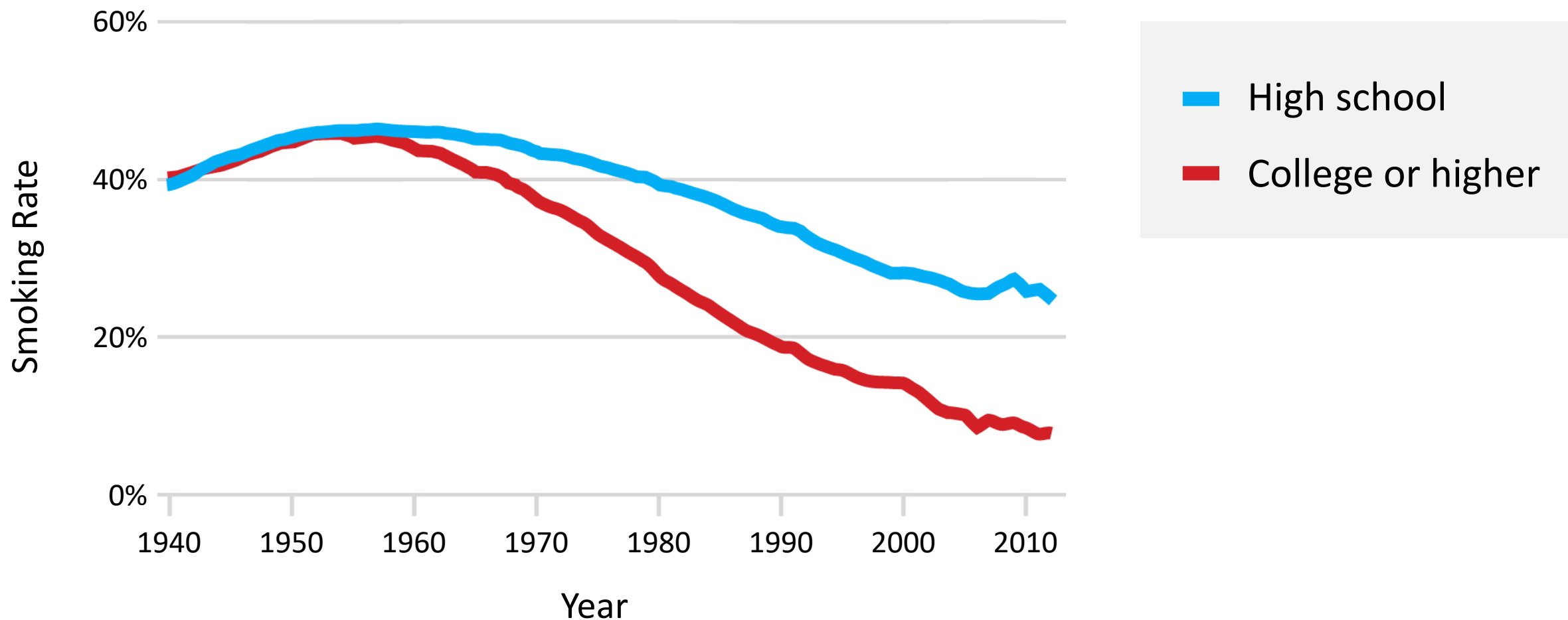University of Illinois at Urbana–Champaign

Review
Patient Portals and Patient Engagement: A State of the Science Review

Taya Irizarry, BSN, MSN; Annette DeVito Dabbs, RN, FAAN, PhD; Christine R Curran, RN, PhD
School of Nursing, University of Pittsburgh, Pittsburgh, PA, United States

Social disparities in internet patient portal use in diabetes: evidence that the digital divide extends beyond access

Urmimala Sarkar,[1,2] Andrew J Karter,[3,4] Jennifer Y Liu,[3] Nancy E Adler,[5] Robert Nguyen,[6] Andrea López,[1,2] Dean Schillinger[1,2]

Disparities in registration and use of an online patient portal among older adults: findings from the LitCog cohort

RECEIVED 19 November 2014
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Samuel G Smith[1,2], Rachel O'Conor[1], William Aitken[1], Laura M Curtis[1], Michael S Wolf[1,3], Mita Sanghavi Goel[1]

AMIA   OXFORD UNIVERSITY PRESS

Technology Access, Technical Assistance, and Disparities in Inpatient Portal Use

Lisa V. Grossman[1]   Ruth M. Masterson Creber[2]   Jessica S. Ancker[2]   Beatriz Ryan[3]   Fernanda Polubriaginof[3]   Min Qian[4]   Irma Alarcon[1]   Susan Restaino[5]   Suzanne Bakken[1]   George Hripcsak[1]   David K. Vawdrey[1,3]

HEALTH CARE REFORM
The Digital Divide in Adoption and Use of a Personal Health Record

Cyrus K. Yamin, BS; Srinivas Emani, PhD; Deborah H. Williams, MHA; Stuart R. Lipsitz, ScD; Andrew S. Karson, MD, MPH; Jonathan S. Wald, MD, MPH; David W. Bates, MD, MSc

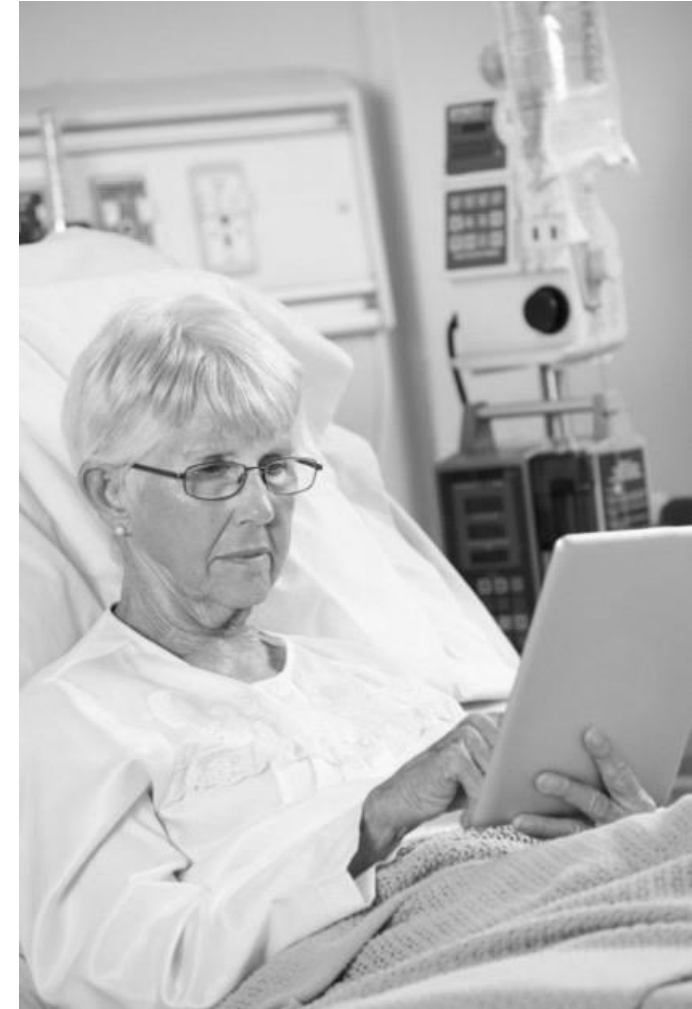# Intervention-Generated Inequity

Smoking Rate by Education Level in the U.S.

The Question

What interventions could help ensure that portals benefit vulnerable patients?

EDITOR'S CHOICE

Interventions to increase patient portal use in vulnerable populations: a systematic review FREE

Lisa V Grossman ✉, Ruth M Masterson Creber, Natalie C Benda, Drew Wright, David K Vawdrey, Jessica S Ancker

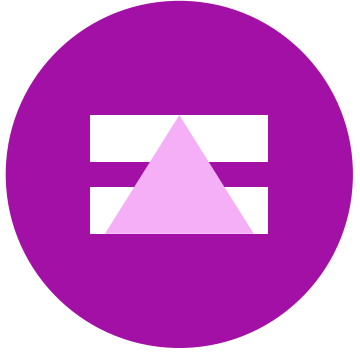📄 PDF   ▮▮ Split View   66 Cite   🔑 Permissions   ◂ Share ▾

Abstract

Background

More than 100 studies document disparities in patient portal use among vulnerable populations. Developing and testing strategies to reduce disparities in use is essential to ensure portals benefit all populations.

Methods

Guideline: PRISMA

Preferred Reporting Items for Systematic Reviews and Meta-Analyses

Annals of Internal Medicine®

ACADEMIA AND THE PROFESSION | **18 AUGUST 2009**

Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement FREE

David Moher, PhD; Alessandro Liberati, MD, DrPH; Jennifer Tetzlaff, BSc; Douglas G. Altman, DSc; and the PRISMA Group *

Article, Author, and Disclosure Information

Eligibility Criteria [PICOS]

Populations Vulnerable populations [PROGRESS-Plus]

Interventions Any intervention [no limitations]

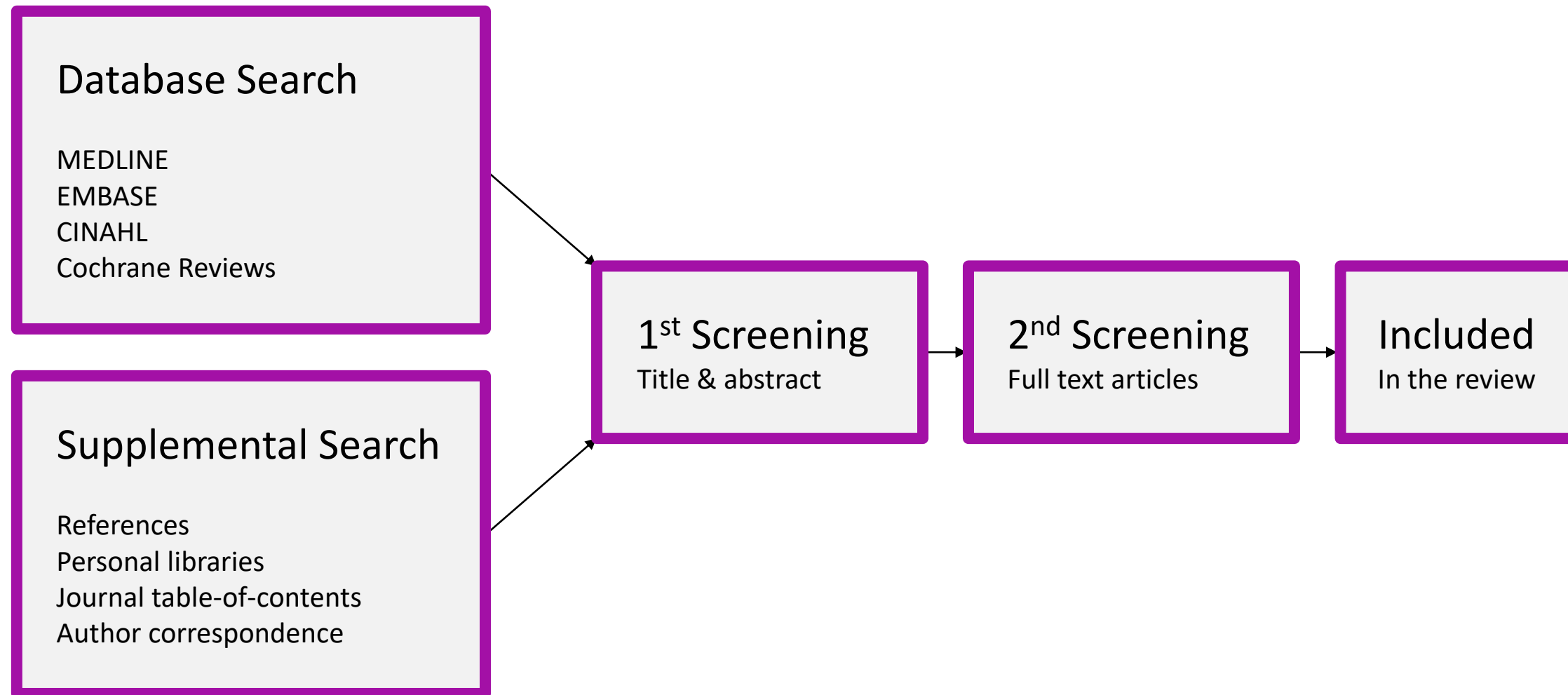**Outcomes** **1** Portal use, **2** predictors of portal use, **3** disparities in portal use

Comparisons Any comparison [pre-post, concurrent control, etc.]

Study Designs Any design [no limitations]

Study Selection

Database Search

MEDLINE
EMBASE
CINAHL
Cochrane Reviews

Supplemental Search

References
Personal libraries
Journal table-of-contents
Author correspondence

1st Screening
Title & abstract

2nd Screening
Full text articles

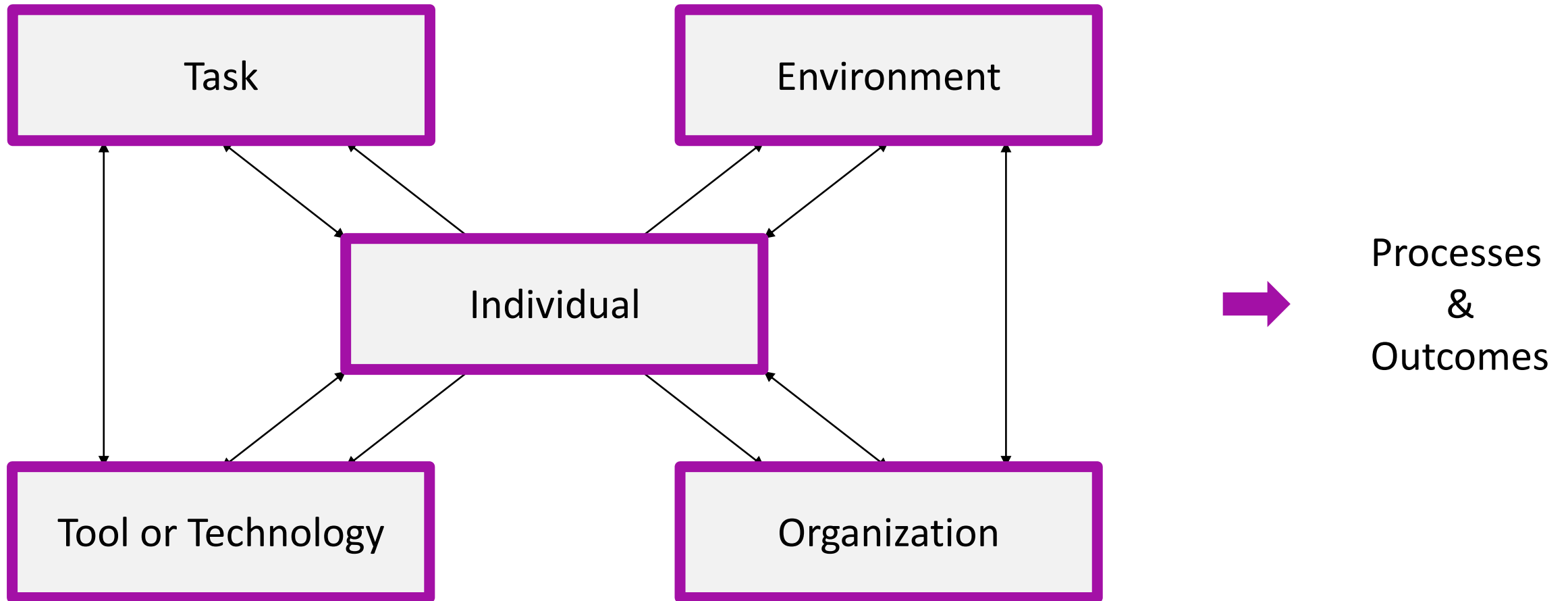**Included**
In the review

Data Extraction

- Objective
- Design
- Intervention
- Results
- Comparison

- Measures
- Sample size
- Participant characteristics
- Eligibility Criteria
- Setting

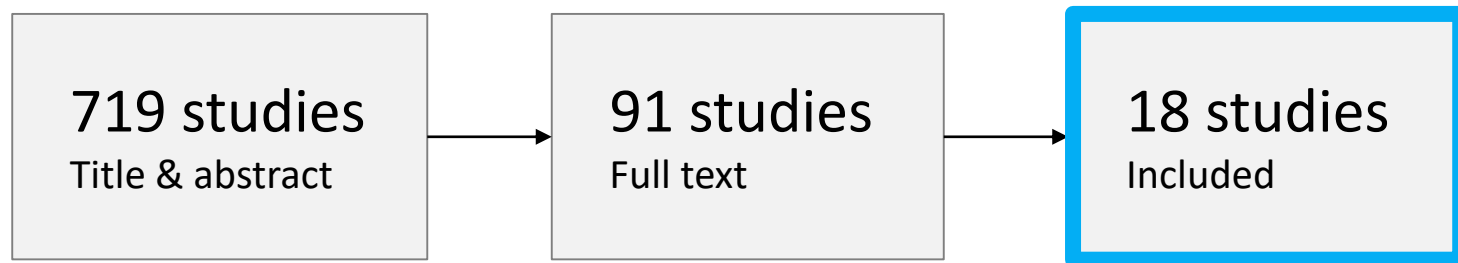Risk of Bias [AHRQ Methods Guide]

Intensity of Intervention [Cochrane Guide]

SEIPS Model

Results

Included Studies

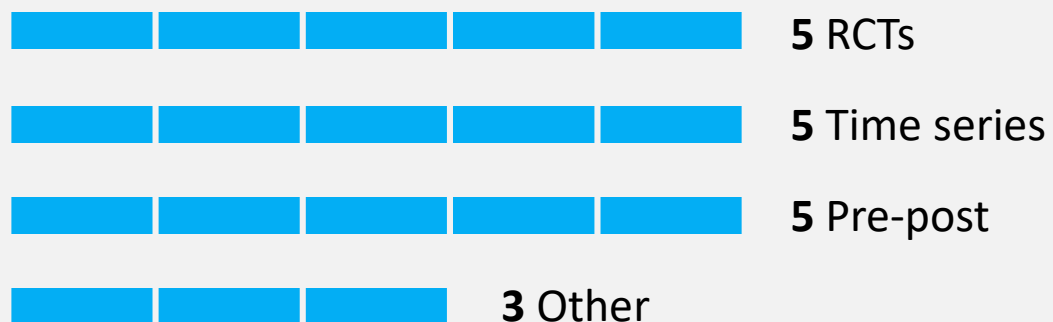| 719 studies | 91 studies | 18 studies |
| Title & abstract | Full text | Included |

15 of 18 [83%] studied impact on portal use

7 of 18 [39%] studied impact on predictors of portal use

1 of 18 [6%] studied impact on disparities in portal use
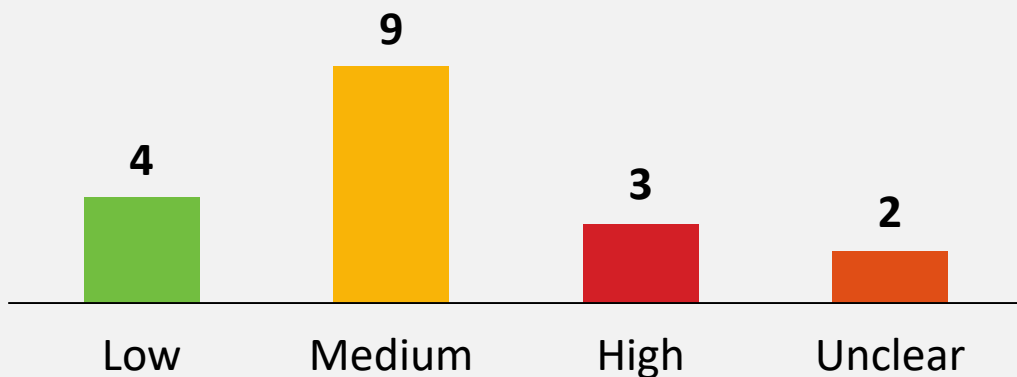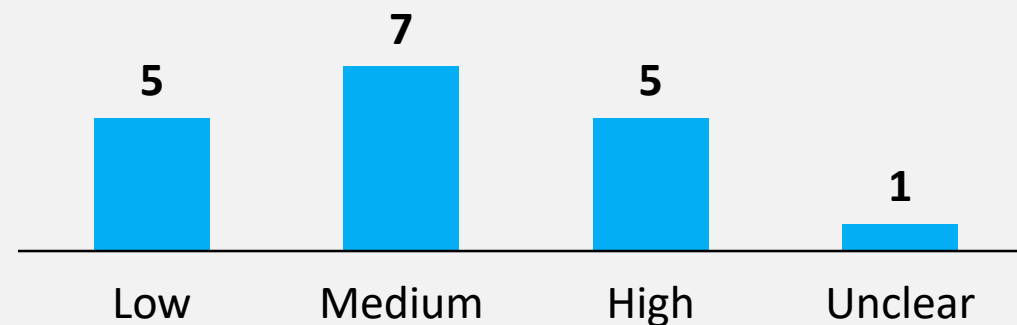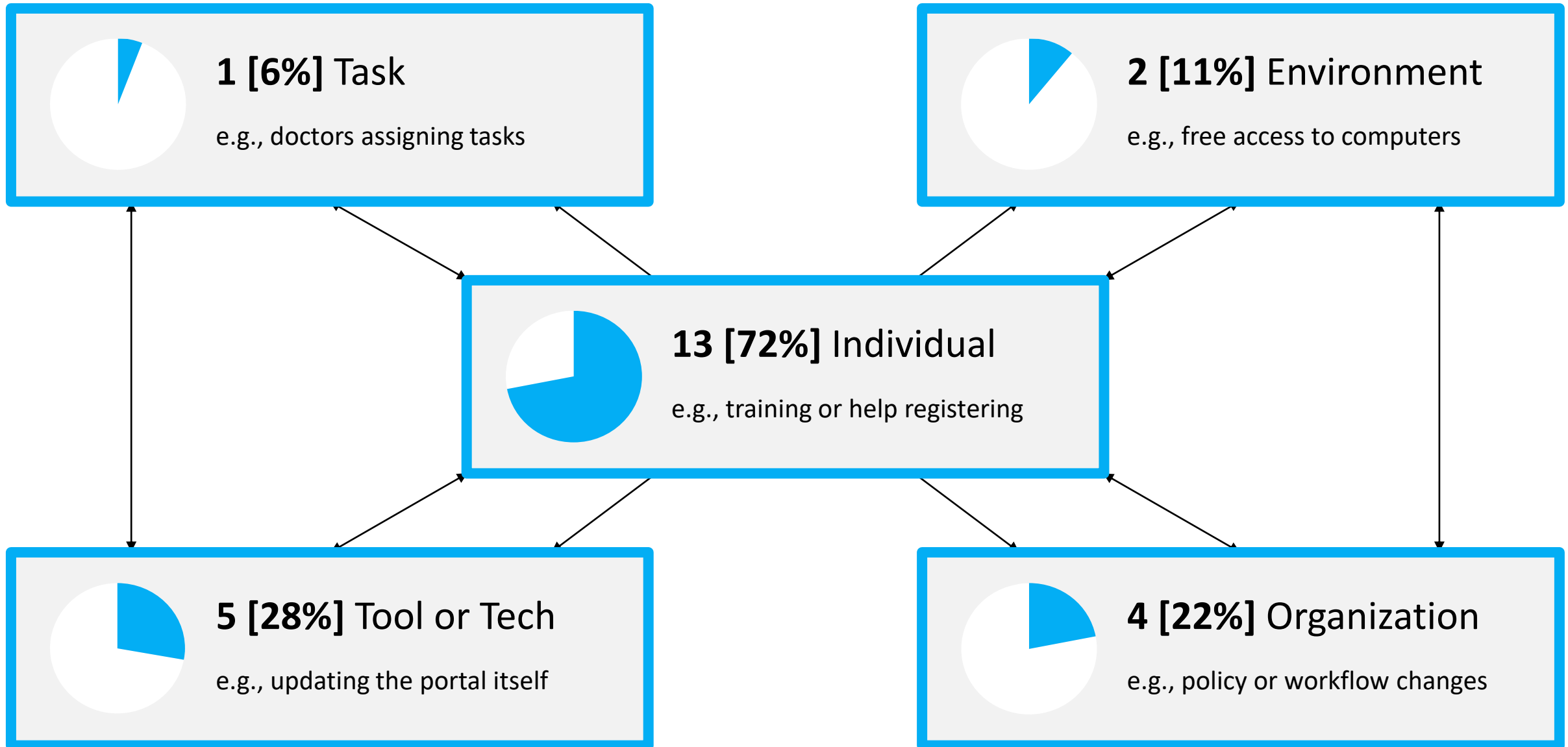
Study Characteristics (n=18)

Designs

5 RCTs

5 Time series

5 Pre-post

3 Other

Measures

- Login days
- Total logins
- Activation rates
- Clicks
- Features viewed
- And more!

Risk of Bias

Low	Medium	High	Unclear
4	9	3	2

Intensity of Intervention

Low	Medium	High	Unclear
5	7	5	1

Intervention Types

1 [6%] Task

e.g., doctors assigning tasks

2 [11%] Environment

e.g., free access to computers

13 [72%] Individual

e.g., training or help registering

5 [28%] Tool or Tech

e.g., updating the portal itself
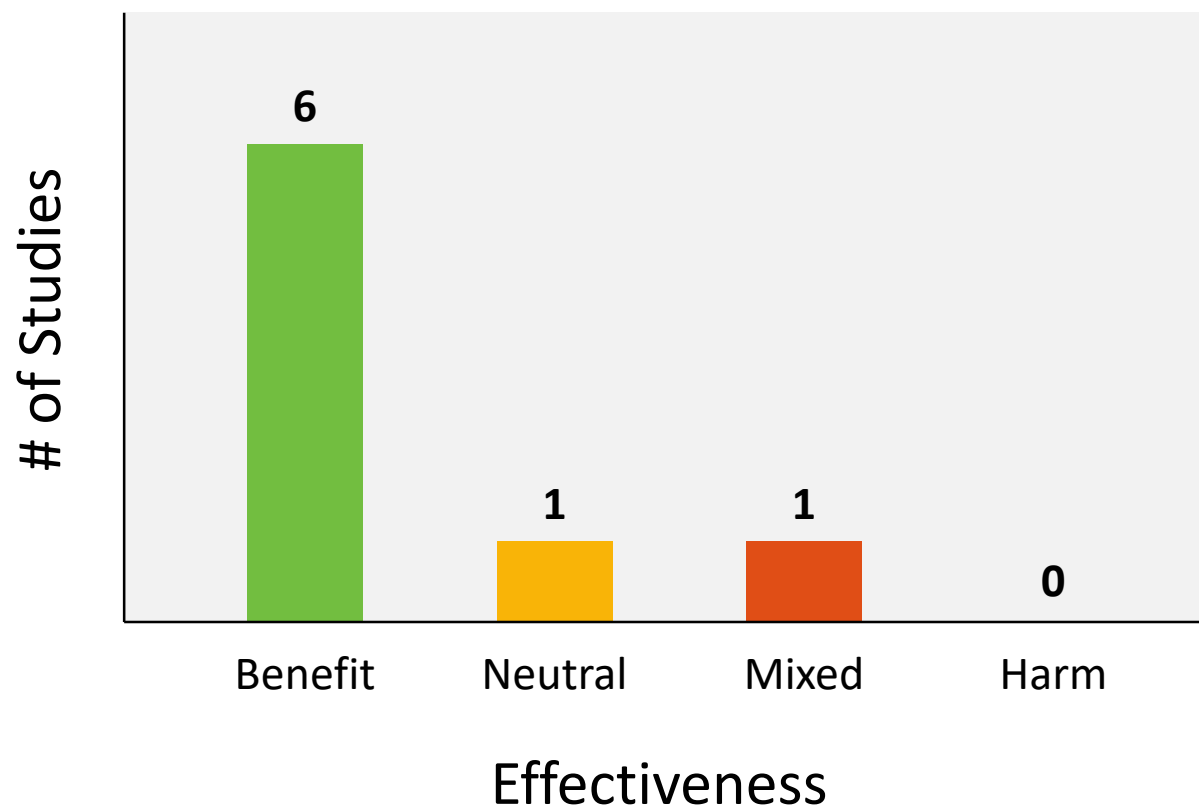
4 [22%] Organization

e.g., policy or workflow changes

Key Findings: Training

How does training and assistance impact portal use in vulnerable populations?

Key Findings: Disparities

How does a universal access policy impact disparities in portal use?

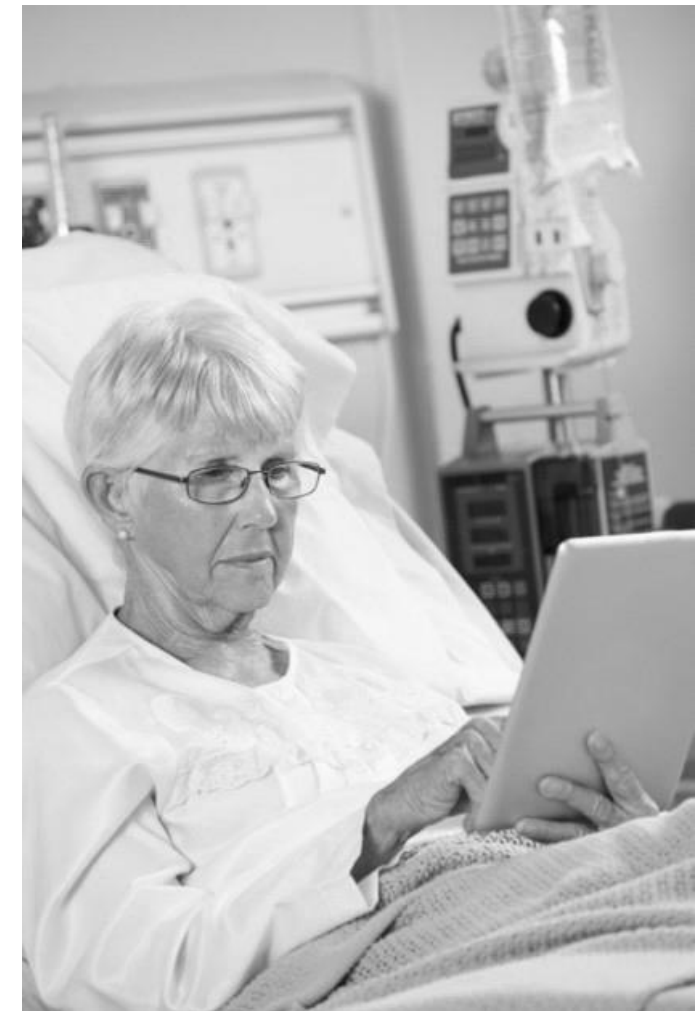Universal Access **=** Everyone is offered portal enrollment

The policy greatly reduced disparities in portal use.

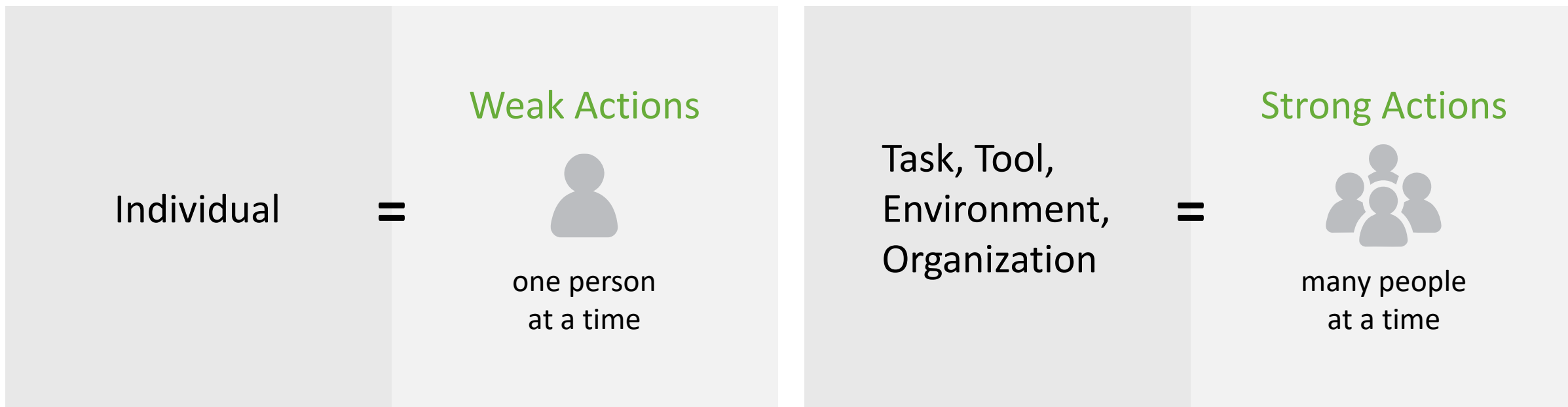# Conclusions

The Takeaway

Let us move beyond *identifying* disparities in portal use to start *addressing* them.

Intervention Types

Most interventions were individual-level.

| Individual | = | **Weak Actions**
one person at a time | | Task, Tool, Environment, Organization | = | **Strong Actions**
many people at a time |

Future interventions should be multi-level.

More Takeaways

Future studies should measure impact on disparities directly.

Standardized measures of portal use could improve comparability

Acknowledgments

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- Meghan Reading Turchioe
- Annie Myers

https://bit.ly/2Wl4QKS

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