



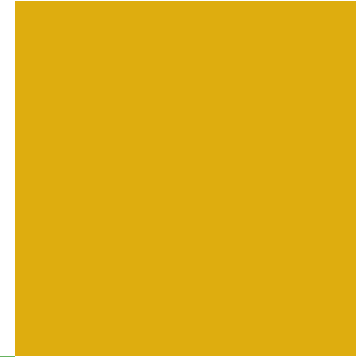
Scientific Resource Center  
for the AHRQ EPC Program



# AHRQ Evidence-based Practice Center (EPC) Program Grand Rounds

March 16<sup>th</sup>, 2023

Welcome and thank you for joining!



**This meeting will be recorded and shared externally. Please use the chat and hand-raising functionality.**

# Continuing Medical Education Credit

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of OHSU School of Medicine and the Agency for Healthcare Research & Quality (AHRQ). OHSU School of Medicine designates this live activity for a **maximum of 1.5 AMA PRA Category 1 Credits™**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Presenters		
Name	Disclosure	Role/ Received
Lionel Banez, MD	Nothing to disclose	
Elham Hatef, MD, MPH	Nothing to disclose	
Annette Totten, PhD	Nothing to disclose	

Planning Committee		
Name	Disclosure	Role/ Received
Craig Umscheid, MD, MPH	Nothing to disclose	
Christine Chang, MD, MPH	Nothing to disclose	
Lisa Simpson, MB, BCh, MPH, FAAP	Nothing to disclose	
Lucy Savitz, PhD, MBA	Nothing to disclose	
Mark Helfand, MD, MPH	Nothing to disclose	
Celia Fiordalisi, MS	Nothing to disclose	

## Disclosure Information

In accordance with the requirements of the Standards for Commercial Support of the ACCME, each instructor and member of the planning committee has been asked to disclose any relevant financial relationships with commercial interests that produce health care goods or services. The information disclosed for this activity is listed to the left.

In addition, the planners and instructors listed have agreed that all recommendations involving clinical medicine will be based on evidence that is generally accepted within the profession as adequate justification for their indications and contraindications in the care of patients; that all scientific research used in support or justification of a patient care recommendation will conform to the generally accepted standards of experimental design, data collection and analysis; and that material to be presented will be made available for advance peer review if requested.



# Learning Objectives

Participants will be able to:

1. Identify which barriers and facilitators of provider-to-provider telehealth in rural areas may be present in one's own practice.
2. Apply effective strategies for implementing rural provider-to-provider telehealth in the appropriate clinical scenario.
3. List patient characteristics and clinical conditions that telehealth care may or may not benefit the patient.
4. Illustrate elements of successful telehealth interventions during the Covid-19 pandemic.



# Agenda

1:00	Welcome and Review of Program	Lisa Simpson, MB, BCh, MPH, FAAP
1:05	Introductions of EPC Report Authors	Lionel Bañez, MD
1:07	Presentation of Reports	Elham Hatef, MD, MPH Annette Totten, PhD
1:40	Initial Reactions	Arshad Rahim, MD, MBA, FACP Janice Tufte Ann Zerr, MD
1:50	General Moderated Discussion and Q&A	Lucy Savitz, PhD, MBA
2:10	Thematic Focus: Policy, Equity, and Health Systems	Arshad Rahim, MD, MBA, FACP Janice Tufte Ann Zerr, MD
2:55	Closing Remarks	

**Are you familiar with  
or have you used an  
EPC report before?**

**How would telehealth  
research be of most  
use to you?**



# EPC Telehealth Report Authors

**Elham Hatef, MD, MPH**

[Use of Telehealth During the COVID-19 Era | Effective Health Care \(EHC\) Program \(ahrq.gov\)](#)

**Annette Totten, PhD**

[Improving Rural Health Through Telehealth-Guided Provider-to-Provider Communication | Effective Health Care \(EHC\) Program \(ahrq.gov\)](#)





# EPC Telehealth Discussants

## Arshad Rahim, MD, MBA, RACP

Chief Medical Officer and Senior Vice President of Population Health – Mount Sinai Health System

## Janice Tufte

Owner of Hassanah Consulting, an active patient ambassador whose work focuses on systems improvement, evidence-based medicine, quality measurements, and clinical guidelines

## Ann Zerr, MD

Medical Director – Indiana Medicaid



# Use of Telehealth During the COVID-19 Era

## Prepared by:

Johns Hopkins University Evidence-based Practice Center Baltimore, MD

## Investigators:

Elham Hatef, M.D., M.P.H.

Renee F. Wilson, M.S.

Susan M. Hannum, Ph.D.

Allen Zhang, B.S.

Hadi Kharrazi, M.H.I., M.D., Ph.D.

Jonathan P. Weiner, Dr.P.H.

Stacey A. Davis, M.P.H.

Karen A. Robinson, Ph.D.



# Objectives

To assess how to provide telehealth care by identifying characteristics of telehealth delivery, patient populations, settings, benefits and harms, and implementation strategies during the COVID-19 era.

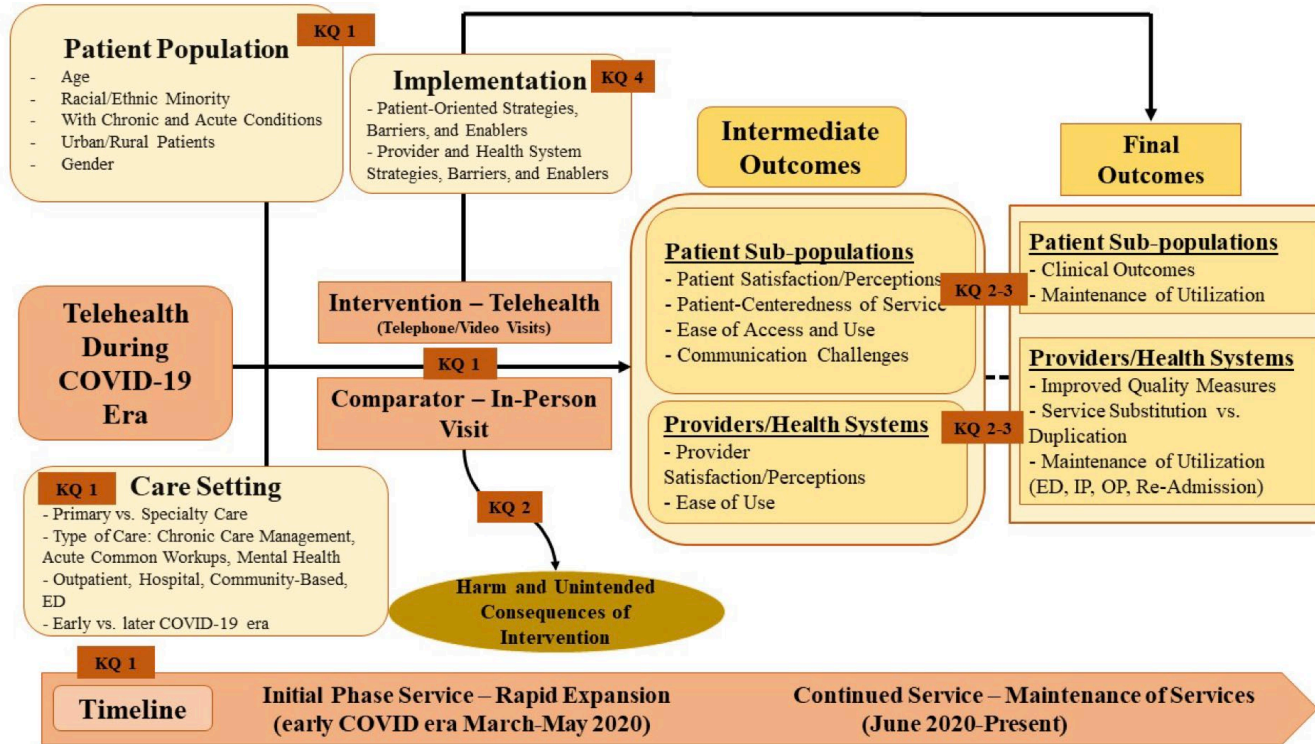
## Data sources

- PubMed®, CINAHL®, PsycINFO®, and the Cochrane Central Register of Controlled Trials were searched from March 2020 to May 2022. Additional studies were identified from reference lists and experts.

## Review methods

- We conducted a mixed-methods review, synthesizing quantitative and qualitative studies.
- Two reviewers independently screened search results for eligibility, serially extracted data, and independently assessed risk of bias of included studies.

# Analytic Framework for Telehealth During COVID-19



ED = emergency department; IP = inpatient; KQ = Key Question; OP = outpatient

# Key Questions

## **KQ 1. What are the characteristics of patients, providers, and health systems using telehealth during the COVID-19 era? Specifically:**

1. What are the characteristics of patients (e.g., age, race/ethnicity, gender, socioeconomic status, education, geographic location [urban vs. rural])?
2. What are the characteristics of providers and health systems (e.g., specialty, geographic location, private practice, hospital-based practice)?
3. How do the characteristics of patients, providers, and health systems differ between the first 4 months of the COVID-19 era versus the remainder of the COVID-19 era?

## **KQ 2. What are the benefits and harms of telehealth during the COVID-19 era?**

1. Does this vary by type of telehealth intervention (e.g., telephone, video visits)?
2. Does this vary by patient characteristics (e.g., age, gender, race/ethnicity, type of clinical condition or health concern, geographic location)?
3. Does this vary by provider and health system characteristics (e.g., specialty, geographic location, private practice, hospital-based practice)?

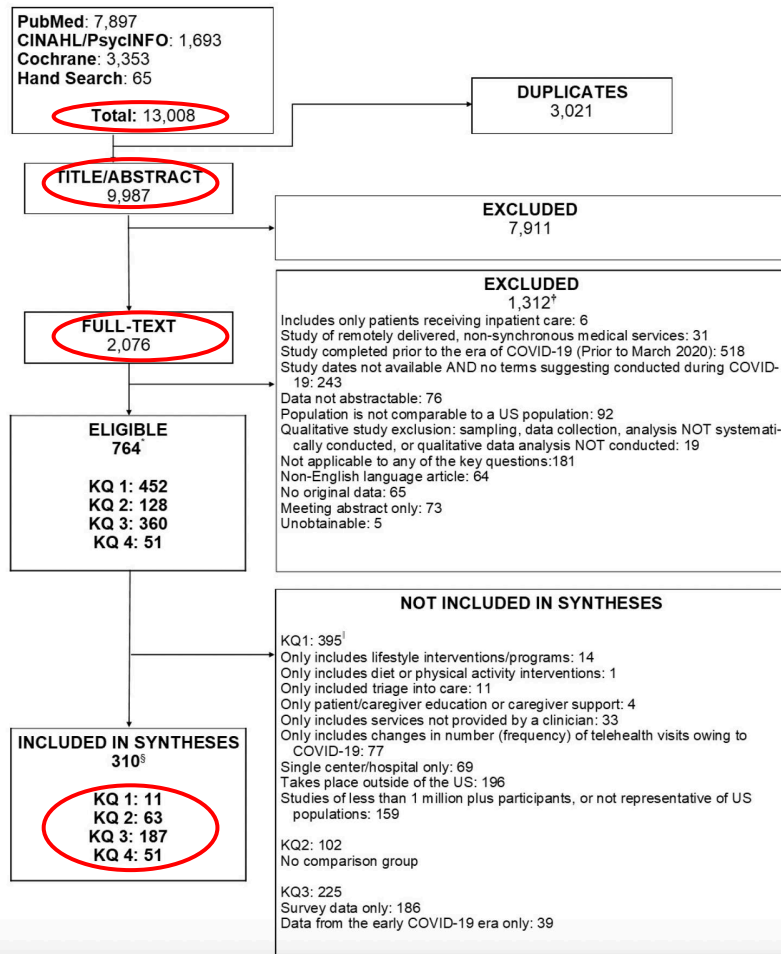
## **KQ 3. What is considered a successful telehealth intervention, and what are the barriers and facilitators of these interventions during the COVID-19 era?**

1. From the patient or caregiver perspective?
2. From the provider perspective?

## **KQ 4. What strategies have been used to implement telehealth interventions during the COVID-19 era?**



# Results of the Search and Screening





# Results

## KQ1. What are the characteristics of the patients, providers, and health systems using telehealth during the COVID-19 era?

Summary of studies analyzing characteristics of patients, providers, and health systems using telehealth during the COVID-19 era (N=11 studies)

Data Source, N	Study	Dates/ COVID-19 Eras	Patient Population/ Conditions	Characteristics Reported
Blue Health Intelligence	Weiner, 2021 <sup>2</sup>	Pre-COVID-19: Mar-Jun 2019 Early COVID-19: Mar-Jun 2020	Ambulatory care	Age SES Urban/rural Provider specialty (patient condition)
Blue Health Intelligence	Hatef, 2022 <sup>3</sup>	Pre-COVID-19: Mar-Jun 2019 Later COVID-19: July-December 2020	All	Age SES Urban/rural Provider specialty (patient condition) (Also looked at post-visit follow up outcomes, See KQ2)
CastlightHealth	Whaley, 2020 <sup>42</sup>	Pre-COVID-19: Mar-Apr 2018 & 2019 Early COVID-19: Mar-Apr 2020	All	Race/ethnicity SES
CDC: Amwell Medical Group, Boston, Massachusetts; Teladoc Health, Inc., Purchase, New York; MDLIVE, Miramar, Florida; and Doctor on Demand, Inc., San Francisco, California	Koonin, 2020 <sup>41</sup>	Pre-COVID-19: Jan-Mar 2019 Early COVID-19: Jan-Mar 2020	All	Gender Age
Change Healthcare	Campion, 2021 <sup>43</sup>	Pre-COVID-19: Jan 2019 Later COVID-19: Dec 2020	All	Provider specialty (patient condition)
IQVIA's National Disease and Therapeutic Index	Alexander, 2020 <sup>39</sup>	Pre-COVID-19: Q1/Q2 2018 & 2019 Early COVID-19: Q1/Q2 2020	Outpatient	Gender Age Race/ethnicity
IQVIA's National Disease and Therapeutic Index	Mansour, 2020 <sup>40</sup>	Pre-COVID-19: Q1/Q2 2018 & 2019 Early COVID-19: Q1/Q2 2020	Outpatient Anxiety, bipolar disorder, insomnia, opioid use disorder, overactivity	Gender Age Race/ethnicity
Office Ally (Electronic Claims Interchange),	Zhu, 2022 <sup>44</sup>	Pre COVID-19 Early and later COVID-19: March 2020-Dec 2020	Mental Health Ambulatory Services	Age Gender MH provider type
Optum Clinformatics (United Health Care),	Rabbini, 2022 <sup>45</sup>	Pre COVID-19 Later COVID-19: January 21-March 21	Children's Ambulatory Services	Age (patient condition)
Optum Labs (United Health Care),	Patel 2021 <sup>46</sup>	Pre COVID-19 Early COVID-19: March -June 2020		Age SES Urban/rural Provider specialty (patient condition)
Veterans Affairs Corporate Data Warehouse (electronic records),	Ferguson, 2021 <sup>47</sup>	Early COVID-19: Jan-Jun 2020	Outpatient	Gender Age Race/ethnicity Urban/rural Provider specialty (patient condition)

# Results

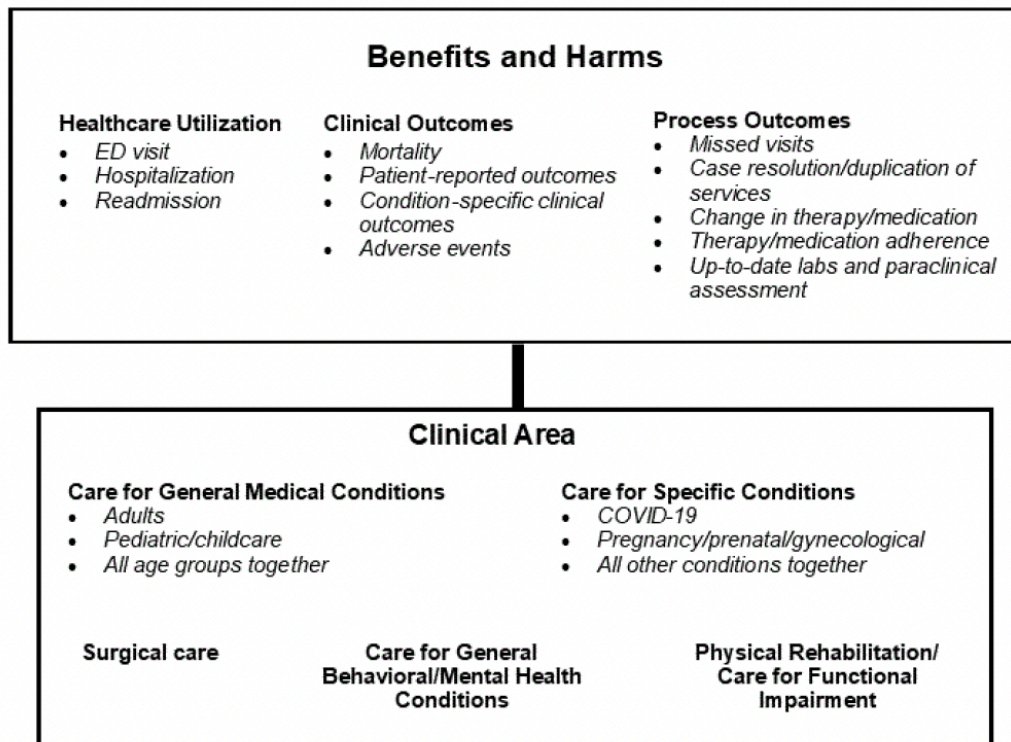
KQ1. What are the characteristics of the patients, providers, and health systems using telehealth during the COVID-19 era? **11 studies** were included in the synthesis.

- **Telehealth** may **improve access to care**; however, patients using telehealth during the COVID-19 era are, like before COVID-19, more likely to be people who are **young to middle-aged, female, White**, of **higher socioeconomic status**, and **living in urban settings**.
- **Visits** for **mental and behavioral health conditions** were more frequent than visits for other conditions
- **Mental or behavioral care** was also more likely to be delivered via telehealth than care for other conditions.



## KQ 2. What are the benefits and harms of telehealth during the COVID-19 era?

### Organization of Key Question 2.



# Results

**KQ 2. What are the benefits and harms of telehealth during the COVID-19 era? 63 studies** were included in the synthesis.

- Differences, if any, for **healthcare utilization rates** between in-person and telehealth care were generally **small and/or not clinically meaningful** (i.e., would not result in changing the clinical practice or care plan for the patient) and varied across clinical areas.
  - Patients seeking care for **COVID-19** and for **women's health** (including pregnancy/prenatal/gynecological care) who received an **initial telehealth** visit had **higher ED visit and hospitalization rates** compared with those who received in-person care.
  - Of **adult patients** who received **care for general medical conditions**, those who received an **initial telehealth** visit had **lower hospitalization rates** compared with those who received in-person care.

# Results

## KQ 2. What are the benefits and harms of telehealth during the COVID-19 era?

- For clinical outcomes, the **difference** between telehealth and in-person care **varied by the type of outcome**.
  - **Differences** in **mortality rates** and **reported adverse events** between telehealth and in-person care were **small and/or not clinically meaningful**.
  - Patients who received an **initial telehealth** visit may have had **better patient-reported outcomes** and **condition-specific clinical outcomes** compared with those who received in-person care.

# Results

## KQ 2. What are the benefits and harms of telehealth during the COVID-19 era?

- For process outcomes, the **difference** between telehealth and in-person care **varied by the type of outcome**.
  - There was a mostly **lower rate of missed visits, lower rate of change in therapy/medication, lower rate of up-to-date labs and paraclinical assessment**, but **higher rate of therapy/medication adherence** among patients receiving an **initial telehealth visit**.
  - Among patients who received **general medical care or surgical care**, those who received **telehealth care** may have had **lower rates of care resolution** in their initial visit, thus **higher rates of follow-up visits**.
  - Among patients who received **care for specific conditions** (excluding COVID-19 and pregnancy/prenatal/gynecological care) those who received an **initial telehealth visit** may have had **higher rates of case resolution**.

# Results

**KQ 3. What is considered a successful telehealth intervention, and what are the barriers and facilitators of these interventions during the COVID- 19 era?** 187 studies + 138 surveys, were included in the qualitative synthesis.

- Telehealth is **more convenient**, provides **greater access** for many patients, provides **patient and provider flexibility**, is **more efficient** in terms of **time and use of office space**, allows for **remote work**, and supports **greater inclusion of family caregivers**.
- Telehealth may **not be suitable** for all patient populations, such as those who are **more difficult to reach and engage** via telehealth and **may result in missed or delayed diagnoses** owing to the lack of a physical exam.
- Telehealth raises concerns about the **maintenance of privacy and confidentiality** in the digital environment, especially if patients access telehealth in public places or in multi-person homes.
- **Insufficient communication and technical issues** emerged as critical barriers to **long-term implementation of telehealth**.
- A **combination of telehealth with traditional, in-person visits** may help to ensure regular and appropriate follow-ups, especially for specific patient populations (e.g., those who live far away from in-person care).

# Results

**KQ 4. What strategies have been used to implement telehealth interventions during the COVID-19 era?** **51 studies** were included in the synthesis.

- We identified **no studies** that **directly evaluated or compared implementation strategies**, which was not surprising given the haste with which telehealth had to be implemented.
- Even during the update of the search, when we more than doubled the number of studies that addressed implementation, we found **none that directly evaluated or compared implementation strategies**.
- There is a **lack of evidence about telehealth implementation cost and sustainability of services**, as well as about **implementation outcomes at the health-system level**.
- On the provider side, telehealth **adoption and acceptability** were affected by factors such as **prior training in and experience with telehealth**.
- The **appropriateness of telehealth services** in achieving planned outcomes was mixed on both patient and provider levels.
  - Among providers, the **feasibility of telehealth services was generally high**.
  - For patients, feasibility was **sometimes limited** by the availability of telehealth technologies.

# Limitations

- Included studies **lacked standard information on the type of telehealth** and how it was **implemented**.
- **Outcomes** were **defined widely and were measured** using a variety of approaches.
- Most of the quantitative studies were at **high risk of bias** and the qualitative studies often **lacked rigorous reporting or methods**.
- Evidence was lacking regarding the **burden and costs of telehealth for patients, providers, and health systems**.
- The **outcomes** reported were often **short-term**; long-term sustainability and implementation issues were not evaluated.

# Conclusions

- Whereas telehealth use spiked after the beginning of the pandemic, the **characteristics of patients using telehealth** follow a pattern **similar to that for other healthcare and digital health services**.
- The use of telehealth may be **comparable to in-person care** across different clinical and process outcomes.
- Telehealth implementation has **addressed the needs of both patients and providers** to some extent, even as clinical conditions, patient and provider characteristics, and type of assessment varied.
- Telehealth has provided a **viable alternative mode of care delivery** during the pandemic and **holds promise for the future**.





# Improving Rural Health Through Telehealth-Guided Provider-to-Provider Communication

**Systematic Review:** NIH Pathways to Prevention (P-2-P) Workshop

**Prepared by:** Pacific Northwest Evidence-based Practice Center

**Investigator(s):**

Annette M. Totten, PhD, et al.



# Background

## Rural Health Disparities

- 1/5 of US population in rural areas
- Higher mortality and morbidity
- Reasons are Multi factorial, but access is a key factor

## Potential of Telehealth

- Means to improve access, quality, and ultimately outcomes
- Pre pandemic: growth but slower than anticipated
- Exponential growth during pandemic
- Current: mixed of return to in-person and continued expansion
- Future???



# Definitions

## Telehealth

Use of information and telecommunications technology to provide health care across time and/or distance; many possible

- Modes (asynchronous, real-time video, and many others)
- Functions (consultations, mentoring)
- Clinical indications (from mental health to remote surgery)

## Provider-to-Provider Telehealth

Any form of interactive support using telecommunications technology provided to health care professionals while they are caring for patients and populations

## Rural

Defined by studies, not limited for the review

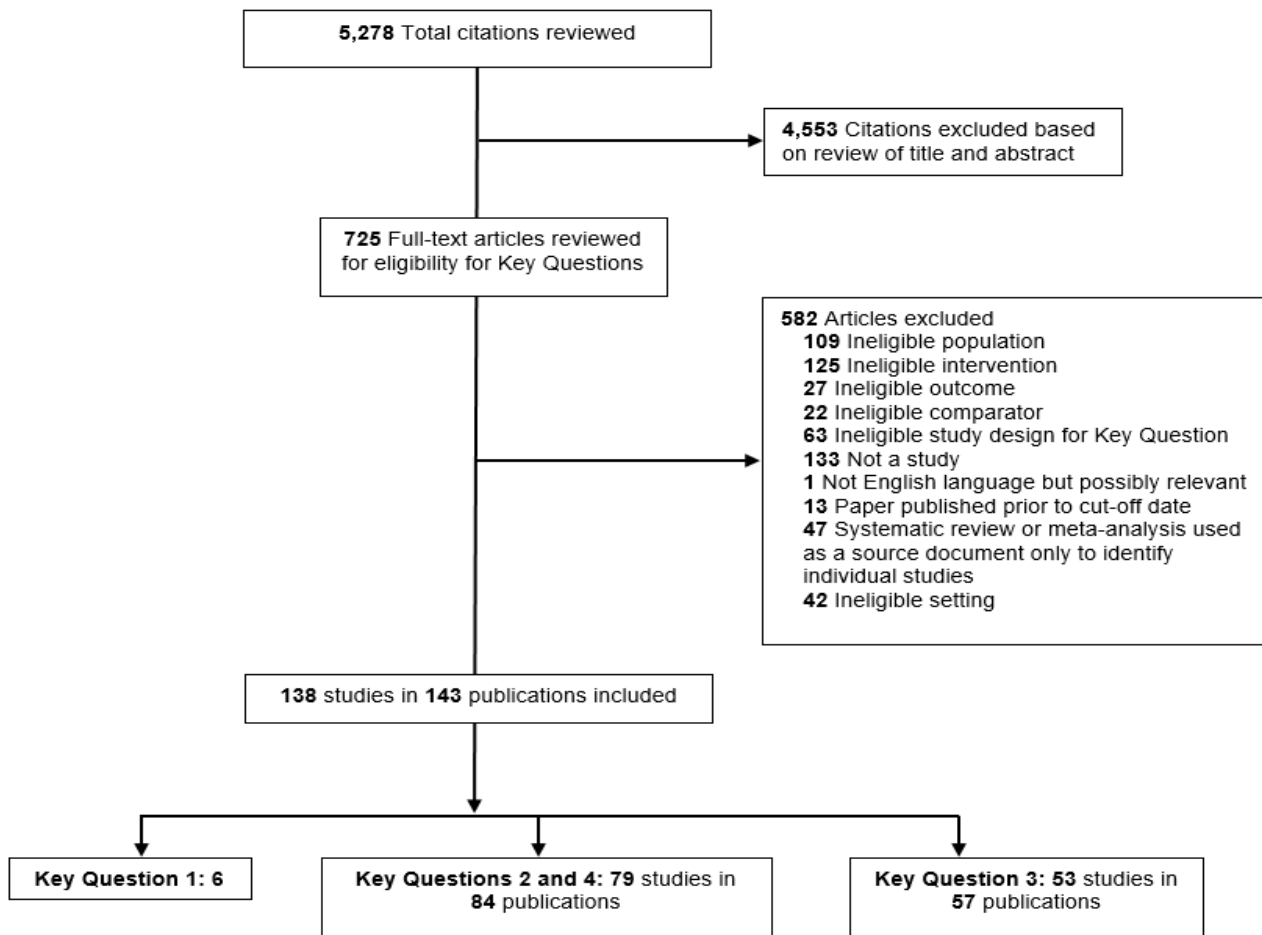


# Systematic Evidence Review: Questions

- Question 1. What is the **uptake** of different types of provider-to-provider telehealth in rural areas?
- Question 2. What is the **effectiveness** of provider-to-provider telehealth for rural patients?
- Question 3. What are the **barriers and facilitators** to implementation and sustainability of provider-to-provider telehealth in rural areas?
- Question 4. What are the **methodological weaknesses** of the included studies of provider-to-provider telehealth for rural patients and what improvements in study design (e.g., focus on relevant comparisons and outcomes) might increase the impact of future research?



# Literature Search Results





## Question 1: Rural Use



# Use of Provider-to-Provider Telehealth

- Did not identify surveys or national datasets on overall or varied uses of P-P Telehealth that were specific to rural areas or populations
- Six reports on specific uses
  - Telepsychiatry (2)
  - Emergency (2)
  - Telestroke (1)
  - Telepharmacy (1)



# Summary

Based on limited data from regional and national surveys and claims:

- Telehealth for provider-to-provider communication has been used across specific clinical care uses such as psychiatry, emergency, and stroke care
- Type of Telehealth varies

Use was increasing even before the COVID-19 pandemic.





## Question 2: Effectiveness



# Inpatient Summary

**12 Studies**      **Designs: 8 before/after**      **Locations: 8 in U.S.**

- Telehealth consultations at a rural hospitals vs. in person or phone consultations.
  - Similar lengths of hospital stay
    - Low SOE; 5 studies; N=1974
  - Similar rates of transfers
    - Low SOE; 2 studies; N=762
- Care for neonates at rural hospitals vs. transfer to hospital with a Level 4 newborn intensive care
  - Similar clinical outcomes
  - Low SOE; 2 studies; N=298
- Remote intensive care units (ICUs) in rural areas
  - Insufficient; 1 study; N=525



# Outpatient Summary

**23 Studies**

**Designs: 11 RCTs**

**Locations: 10 in U.S.**

- Outpatient telehealth consultations with specialists vs. care without specialist involvement:
  - For patients with diabetes:
    - Some improvement in medication adherence and treatment response for patients with depression
      - Low SOE; 3 studies; N= 225
    - Improvements in A1c, and self-management; No effect on blood pressure or cholesterol levels in patients with diabetes
      - Low SOE; 3 studies; N= 225
    - Improvements in A1c, fasting glucose, and blood pressure in patients with hypertension and diabetes with pharmacy teleconsultations.
      - Low SOE; 2 studies; N= 879
  - For patients with depression:
    - Higher utilization and corresponding costs for outpatient consultations for depression with increased access and overall cost-effectiveness
      - Low SOE; 2 studies; N= 974

# Emergency Care Summary

**25 Studies: 8 stroke; 3 heart attack; 2 chest pain; 5 critical care, trauma; 4 multiple conditions; 1 each, sepsis, suicidal, sexual abuse**

- Telehealth consultations to treat stroke/heart attack/pain at a rural hospital vs. other location:
  - Similar rates of mortality
    - Low SOE; 4 studies; N = 2030
  - Similar time to treatment
    - Low SOE; 7 studies; N= 3443
- Telehealth consultations by specialists for rural emergency department (ED) critical care and trauma patients
  - Similar appropriate or inappropriate transfers
    - Low SOE; 5 studies; N= 147,910

# Education/Mentoring Summary

## 19 Studies

**10 ECHO; 5 non-ECHO; 3 online course; 1 SMS**

## Clinical topics

**9 mental health; 2 liver disease; 2 diabetes;**

**1 each: antibiotic therapy, childhood obesity, pediatric burns, perioperative care, dermatology, multiple conditions**

- ECHO programs are associated with better or similar patient outcomes
  - Low SOE; 2 studies
    - Reduction in of A1c in patients of trainees after ECHO compared to before participation (1 study)
    - Hepatitis C viral response and serious adverse events rates at “spoke” site with ECHO participation were similar to those at an academic medical center (1 study)



# Education/Mentoring Summary con't

- ECHO and non-ECHO video training programs result in desired changes in provider behavior (e.g., increased appropriate prescribing practices, screening, and patient counseling)
  - Low SOE; 8 studies
- ECHO and non-ECHO video training are associated with increased confidence, efficacy, and scores on knowledge tests
  - Low SOE; 10 studies

# Conclusions: Effectiveness

- Provider to Provider Telehealth to support direct patient care may provide benefits for:
  - **Inpatient care**
  - **Neonates in rural hospitals**
  - **Outpatient management of depression and diabetes**
  - **Emergency care for stroke/heart attack/chest pain as well as trauma**
- Evidence was insufficient to support conclusions on other uses, outcomes or populations
- **No studies reported harms or unexpected negative outcomes for provider-to-provider telehealth**
- Telehealth for provider education and mentoring, including ECHO-like programs that use video for instruction and collaboration, may improve patient outcomes, change provider behavior, and increase provider knowledge and confidence in treating specific conditions



## **Question 3: Barriers and Facilitators**



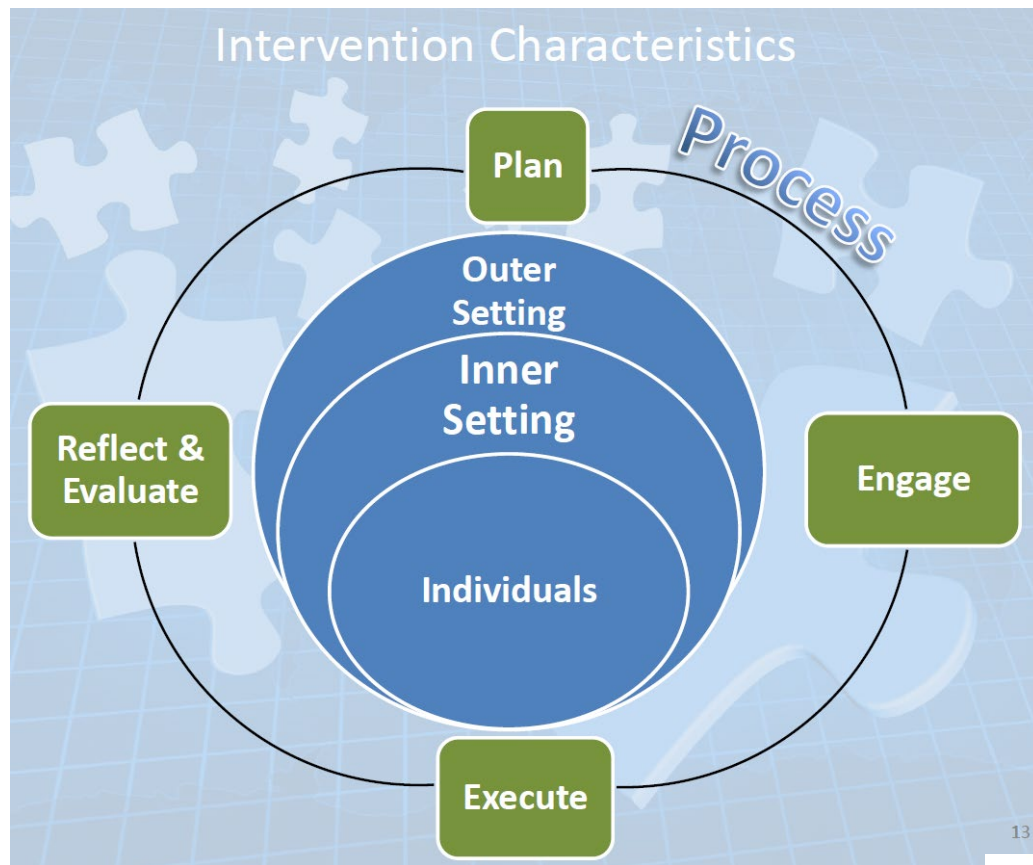
# Included Studies Characteristics

- 53 program evaluation studies
  - 57 publications
  - 29 in US
- Various Methods: Interviews; Focus groups; Surveys; Case studies; Site visits; Program records
  - Many program evaluations combine data from multiple sources
  - Qualitative analyses that categorize or catalog specific barriers and facilitators to implementation, ongoing operations, longer term sustainment, or spread of the use of telehealth

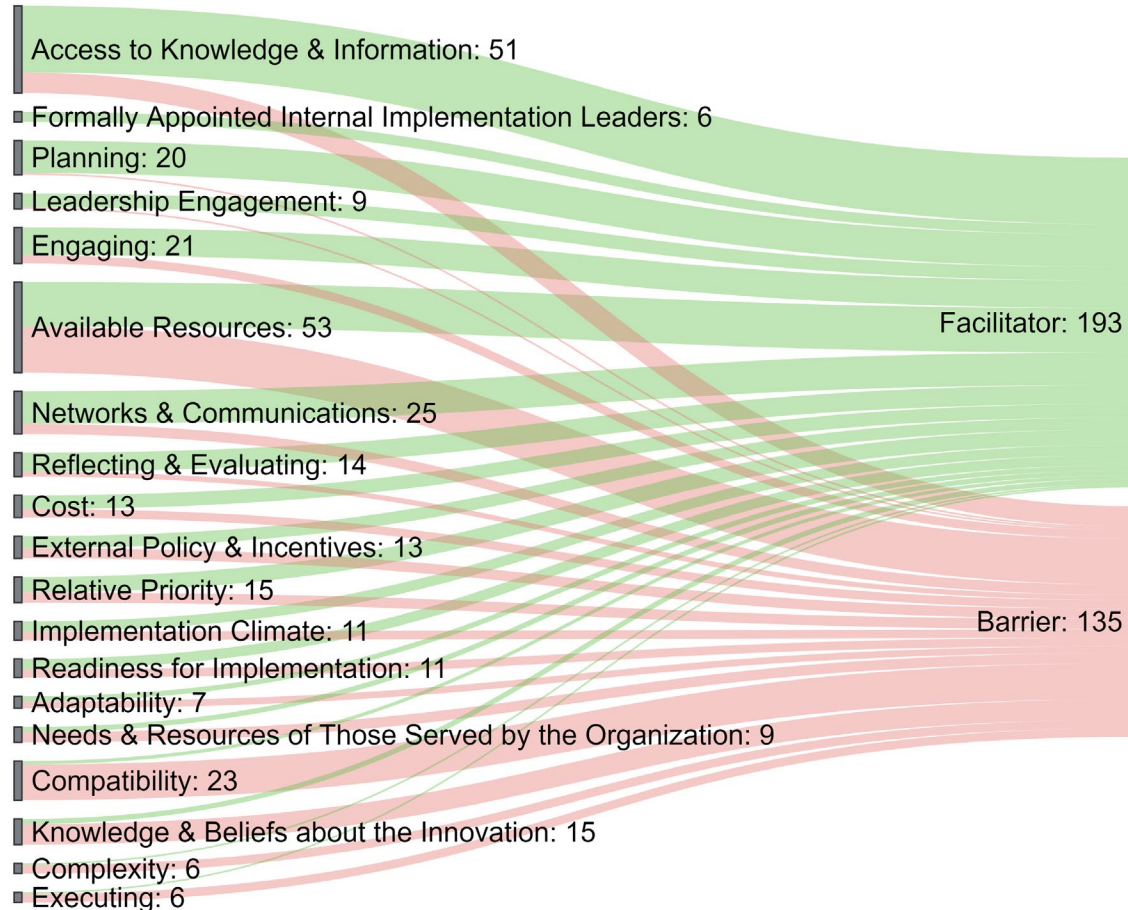
# CFIR Domains

1. Intervention Characteristics
2. Outer Setting
3. Inner Setting
4. Characteristics of Individuals
5. Process

Image Source: Damschroder, L. Image source: Consolidated Framework for Implementation Research (CFIR) Tools & Resources: Current and Future Plans. Presentation to VA QUERI Cyber Seminar. April 2, 2015.



# Overall Facilitators and Barriers





## Q3: Main Points

Facilitators and barriers are similar across settings and uses

- Constructs most frequently mentioned as facilitators
  - Access to knowledge and information about the intervention and how to incorporate it into work tasks
  - Available resources including money, training, physical space, time
- Constructs most frequently mentioned as barriers
  - Available resources including money, training, physical space, time
  - Compatibility with existing values, workflows & systems
- Challenges that may be unique to rural applications
  - Lack of consulting provider familiarity with limitations and resources available in rural settings
  - Resources and commitment required may be difficult for individual rural organizations
  - Technology and support must be tailored for frequency of use – as some use cases are commonly used and others are infrequent

# Conclusion: Barriers and Facilitators

Studies confirm ***Provider to Provider Telehealth needs:***

- **Fit** with the organizational mission and address a specific need
- **Backing** from organizational leadership, a local champion and support from key people at all levels

***Challenges that may be unique*** to rural provider telehealth:

- Consulting providers need to **understand rural areas and populations** and what resources are available
- **Implementation and sustainment** require resources on a scale that may not be feasible for individual rural organizations
- Technology and support need to be tailored to frequency of use

Rapid increase in the use of telehealth in response to the **COVID-19 pandemic is likely to produce more data** and may offer opportunities for more rigorous studies



## **Question 4: Methodological Weaknesses**



# Research on Telehealth: Important Challenges

Way to facilitate a VERY different health services and interventions

- Examples: remote ICU vs. cell text message-based remote education
- Some comparisons across uses may not be appropriate

Often designed to increase access, not always to impact patient, provider or payer outcomes

- Studies are not designed to evaluate quality of services provided via telehealth



# Study Design Considerations

## RCT and other designs by setting

\*Before/After: different groups/systems measured before and after implementation  
 † Pre/Post: same group measured before and after implementation

	Education	EMS/ED	Inpatient	Outpatient	Total
RCT	3	1	0	15	19
Prospective Cohort	2	10	2	4	18
Retrospective Cohort	1	7	2	4	14
Before/After*	2	7	8	2	19
Pre/Post†	11	0	0	3	14
Total	19	25	12	28	84





# Study Design Considerations con't

## Study Sample Sizes

- Sample size requirements vary by study purpose (establishing superiority vs. equivalence)
- Sample size requirements vary by outcome measure, and baseline risk for the outcome


	Education	EMS/ED	Inpatient	Outpatient	All
Mean N	131	8,639	1,457	214	3,050
Largest N	593	133,396	12,258	1,024	133,396
Smallest N	20	47	93	12	12

# Study Design Considerations con't

## Multisite versus Single-site studies

- Single-site studies increases the likelihood that the results could be due to some characteristic or other event at the particular site
- Multi-site studies increases confidence that the result can be attributed to telehealth
  - 17% single site vs. 83% multi-site
  - Highest for Education studies (100%)

	Education	EMS/ED	Inpatient	Outpatient	Total
Multisite	19	20	7	24	70
Single Center	0	5	5	4	14
Total	19	25	12	28	84



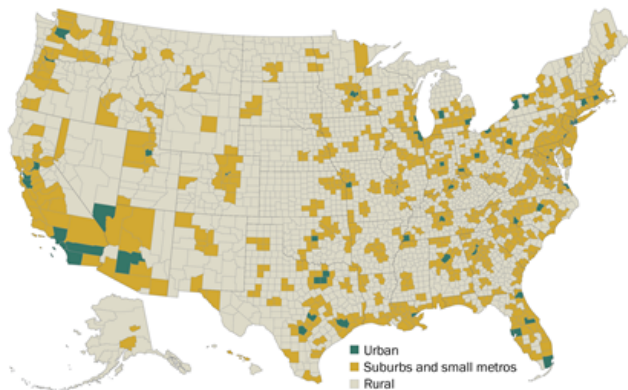
# Strength of Evidence: Confidence in the Findings Across a Group of Studies

- **Methodological weaknesses** (described previously)
- **Directness (populations, interventions, outcomes of interest)**
  - Not a concern in this review
- **Consistency**
  - Difficult to assess – inconsistent and variable outcome reporting, inability to pool data
  - More common reason for low or insufficient rating
- **Precision**
  - Often low due to inadequate sample sizes and inability to combine the studies
- **Publication bias**
  - Suspected, but could not be formally assessed

# Applicability Issues

- Diversity across rural settings
- Diversity of technology options or technology limitations for specific clinical uses
- Data collection and analysis pre pandemic

Majority of U.S. counties are rural, especially in the Midwest



Source: Pew Research Center analysis of National Center for Health Statistics Urban-Rural Classification Scheme for Counties.  
"What Unites and Divides Urban, Suburban and Rural Communities"

PEW RESEARCH CENTER





# Additional Limitations

- Lack of agreement about important outcomes or goals
- Lack of consideration and measurement of harms and unintended consequences
- Limited, specific details on interventions
- Limited details (though improving) on comparators



# Conclusions: Methods

Studies of provider-to-provider telehealth for rural areas could be improved by addressing methodological weakness

Key weakness: difficult to attribute impact to telehealth because:

- Most common: weaker study designs are common
  - Lack of control for confounders
- Next most frequent: small sample sizes
  - Lack of power to detect differences or confirm equivalence

Data limitations

- Use of retrospective data
- Data produced for care delivery and billing purposes and not research may be incomplete or coded differently across organizations



# Initial Reactions

**What do you perceive  
to be the biggest  
barrier to widespread  
use of telehealth?**



**Are there risks to  
continued expansion  
of telehealth?**



# General Moderated Discussion and Q & A



# Implications for Policy, Equity, and Health Systems

**Arshad Rahim, MD, MBA, RACP**

Chief Medical Officer and Senior Vice President of Population Health – Mount Sinai Health System

**Janice Tufte**

Owner of Hassanah Consulting, an active patient ambassador whose work focuses on systems improvement, evidence-based medicine, quality measurements, and clinical guidelines

**Ann Zerr, MD**

Medical Director – Indiana Medicaid



**Thank you for you joining us!**

To obtain your CME credit, please follow the link in the chat to complete an evaluation survey

Upcoming EPC Grand Rounds theme:

**Maternal Health**

A date and time will be announced soon